



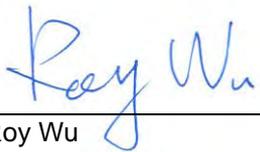
# FCC Test Report

According to

## 47 CFR Part 15 Subpart C

Equipment : PDA Phone  
Model No. : DIAM110  
FCC ID : NM8DM  
Filing Type : Certification  
Applicant : High Tech Computer Corp.  
23 Xinghua Rd., Taoyuan 330, Taiwan

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
- **Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.**
- The data shown in this test report were carried out during Apr. 25, 2008 at **Sporton International Inc. LAB.**
- Report No.: FR832620A, Report Version: Rev.01



Roy Wu  
Manager

***SPORTON International Inc.***

***No. 52, Hwa Ya 1<sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.***

***SPORTON International Inc.***

TEL : 886-3-327-3456

FAX : 886-3-328-4978

Report Version: Rev.01

## Table of Contents

History of This Test Report .....	ii
<b>1. General Description of Equipment under Test.....</b>	<b>1</b>
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
<b>2. Test Configuration of Equipment under Test.....</b>	<b>2</b>
2.1 Test Manner .....	2
2.2 Test Mode .....	3
2.3 Ancillary Equipment List .....	3
2.4 Connection Diagram of Test System .....	4
<b>3. RF Utility .....</b>	<b>5</b>
<b>4. General Information of Test.....</b>	<b>6</b>
4.1 Test Voltage .....	6
4.2 Standard for Methods of Measurement .....	6
4.3 Test Compliance.....	6
4.4 Frequency Range .....	6
4.5 Test Distance.....	6
<b>5. Test Data and Test Result .....</b>	<b>7</b>
5.1 List of Measurements and Examinations.....	7
5.2 Band Edges Measurement .....	8
5.3 Hopping Channel Separation .....	16
5.4 Number of Hopping Frequency.....	27
5.5 Hopping Channel Bandwidth .....	32
5.6 Dwell Time of Each Frequency.....	43
5.7 Peak Output Power Measurement.....	63
5.8 Conducted Emission.....	74
5.9 Radiated Emission Measurement.....	95
5.10 Antenna Requirements.....	117
<b>6. List of Measuring Equipments.....</b>	<b>118</b>
<b>7. Uncertainty Evaluation .....</b>	<b>119</b>
<b>Appendix A. Photographs of EUT</b>	
<b>Appendix B. Setup Photographs</b>	



# 1. General Description of Equipment under Test

## 1.1 Applicant

High Tech Computer Corp.  
23 Xinghua Rd., Taoyuan 330, Taiwan

## 1.2 Manufacturer

High Tech Computer Corp.  
23 Xinghua Rd., Taoyuan 330, Taiwan

## 1.3 Basic Description of Equipment under Test

Sample A	PDA Phone with LCD Panel 1 + Photo Camera 1 + Video Camera 1
Sample B	PDA Phone with LCD Panel 2 + Photo Camera 2 + Video Camera 2
Sample C	PDA Phone with LCD Panel 1 + Photo Camera 1
Sample D	PDA Phone with LCD Panel 2 + Photo Camera 2

## 1.4 Feature of Equipment under Test

Product Feature & Specification			
DUT Type :	PDA Phone		
Model Name :	DIAM110		
FCC ID :	NM8DM		
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: -0.23 dBm (1Mbps) Bluetooth EDR: 0.77dBm (2Mbps) / 0.42dBm (3Mbps)		
Antenna Type :	PIFA Antenna		
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, 2Mbps, 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	-1.03 dBm	-0.03 dBm	-0.39 dBm
Ch39	2441MHz	-0.32 dBm	0.73 dBm	0.34 dBm
Ch78	2480MHz	-0.23 dBm	<b>0.77</b> dBm	0.42 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

Application	Test Mode		
Radiated Emission	BT Tx	BT Tx(EDR 2Mbps)	BT Tx(EDR 3Mbps)
	Mode 1: CH78_2480 MHz	Mode 2: CH00_2402 MHz Mode 3: CH39_2441 MHz Mode 4: CH78_2480 MHz	Mode 5: CH78_2480 MHz
Conducted Emission	Mode 1 : GSM1900 Idle + BT Link + WLAN Link + GPS Rx + Battery 1 + Camera 1 + Adapter 1 for Sample A Mode 2 : GSM1900 Idle + BT Link + WLAN Link + GPS Rx + Battery 2 + Camera 1 + Adapter 2 for Sample A Mode 3 : GSM1900 Idle + BT Link + WLAN Link + GPS Rx + Battery 3 + Camera 1 + Adapter 3 + USB Cable 1 for Sample A Mode 4 : GSM1900 Idle + BT Link + WLAN Link + GPS Rx + Battery 4 + Camera 1 + Adapter 3 + USB Cable 2 for Sample A Mode 5 : EDGE Idle + BT Link + WLAN Link + GPS Rx + Battery 5 + Camera 2 + USB Cable 1 Link with NB for Sample A Mode 6 : WCDMA Idle + BT Link + WLAN Link + GPS Rx + Battery 5 + MPEG 4 + USB Cable 2 Link with NB for Sample A Mode 7 : GSM1900 Idle + BT Link + WLAN Link + GPS Rx + Battery 2 + Camera 1 + Adapter 2 for Sample B Mode 8 : GSM1900 Idle + BT Link + WLAN Link + GPS Rx + Battery 2 + Camera 1 + Adapter 2 for Sample C Mode 9 : GSM1900 Idle + BT Link + WLAN Link + GPS Rx + Battery 2 + Camera 1 + Adapter 2 for Sample D Mode 10 : GSM1900 Idle + BT Link + WLAN Link + GPS Rx + Battery 6 + Camera 1 + Adapter 2 for Sample B		

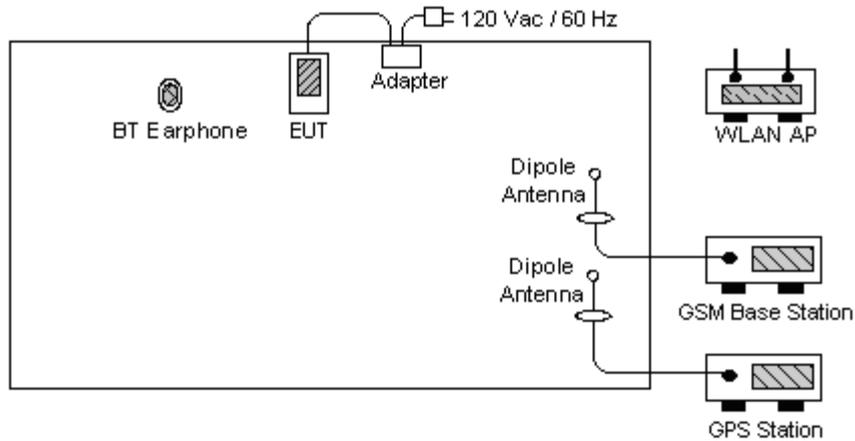
### 2.3 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	GSM Base Station	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	SMC	SMC-100	HEDWG4005ACC	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	D400	E2K24GBRL	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Engotech	ET-BH111	PQY471087	N/A	N/A
6.	RS-232 Mouse	State	MS-303	DoC	Unshielded, 1.2 m	N/A
7.	i-pod	Apple	A1199	N/A	Shielded, 1.2 m	N/A

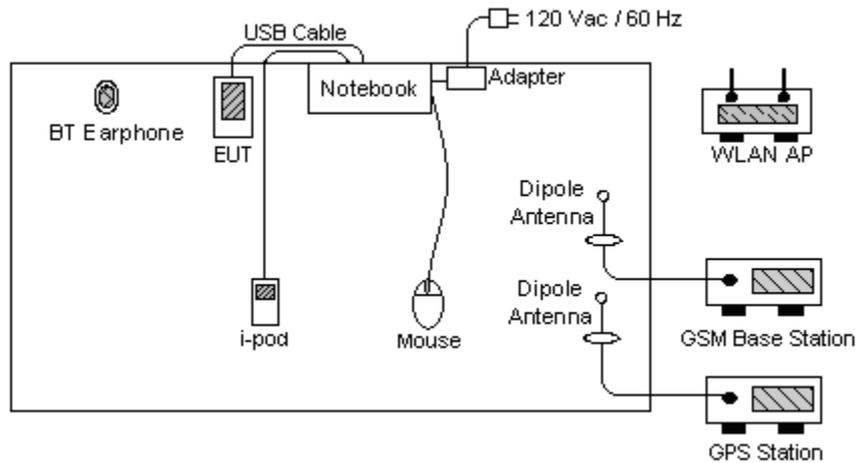
## 2.4 Connection Diagram of Test System

### <Conducted Emission>

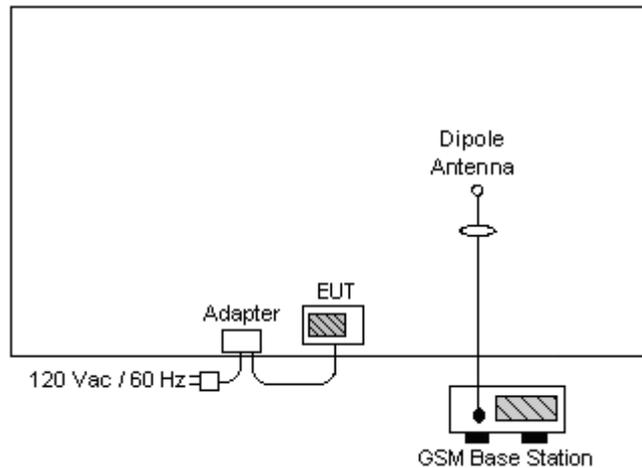
EUT with Adapter Mode



EUT with USB Link Mode



### <Radiated Emission >





### **3. RF Utility**

The programmed RF Utility 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 1<sup>st</sup> 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 : CO04-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)	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 : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

Test Result in BT lower band	:	<b>PASS</b>
Test Result in BT higher band	:	<b>PASS</b>
Test Result in BT EDR(2Mbps) lower band	:	<b>PASS</b>
Test Result in BT EDR(2Mbps) higher band	:	<b>PASS</b>
Test Result in BT EDR(3Mbps) lower band	:	<b>PASS</b>
Test Result in BT EDR(3Mbps) higher band	:	<b>PASS</b>

### 5.2.4 Note on Band Edge Emission

#### ➤ BT EDR(1Mbps)

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
2483.47	56.80	-17.20	74	56.46	31.98	4.05	35.70	100	0	Peak
2483.47	47.11	-6.89	54	46.78	31.98	4.05	35.70	100	5	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
2483.47	50.71	-23.29	74	50.37	31.98	4.05	35.70	100	0	Peak
2483.47	42.28	-11.72	54	41.94	31.98	4.05	35.70	100	261	Average

➤ BT(2Mbps)

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
2389.99	45.44	-28.56	74	45.34	31.86	3.92	35.68	100	0	Peak
2389.99	32.23	-21.77	54	32.13	31.86	3.92	35.68	125	1	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
2389.99	46.40	-27.60	74	46.30	31.86	3.92	35.68	100	0	Peak
2389.99	32.27	-21.73	54	32.17	31.86	3.92	35.68	117	329	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
2483.47	59.30	-14.70	74	58.97	31.98	4.05	35.70	100	0	Peak
2483.47	47.01	-6.99	54	46.68	31.98	4.05	35.70	100	4	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
2483.47	53.02	-20.98	74	52.69	31.98	4.05	35.70	100	0	Peak
2483.47	41.94	-12.06	54	41.61	31.98	4.05	35.70	100	260	Average

➤ BT EDR(3Mbps)

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
2483.47	60.06	-13.94	74	59.73	31.98	4.05	35.70	100	0	Peak
2483.47	46.10	-7.90	54	45.77	31.98	4.05	35.70	100	3	Average

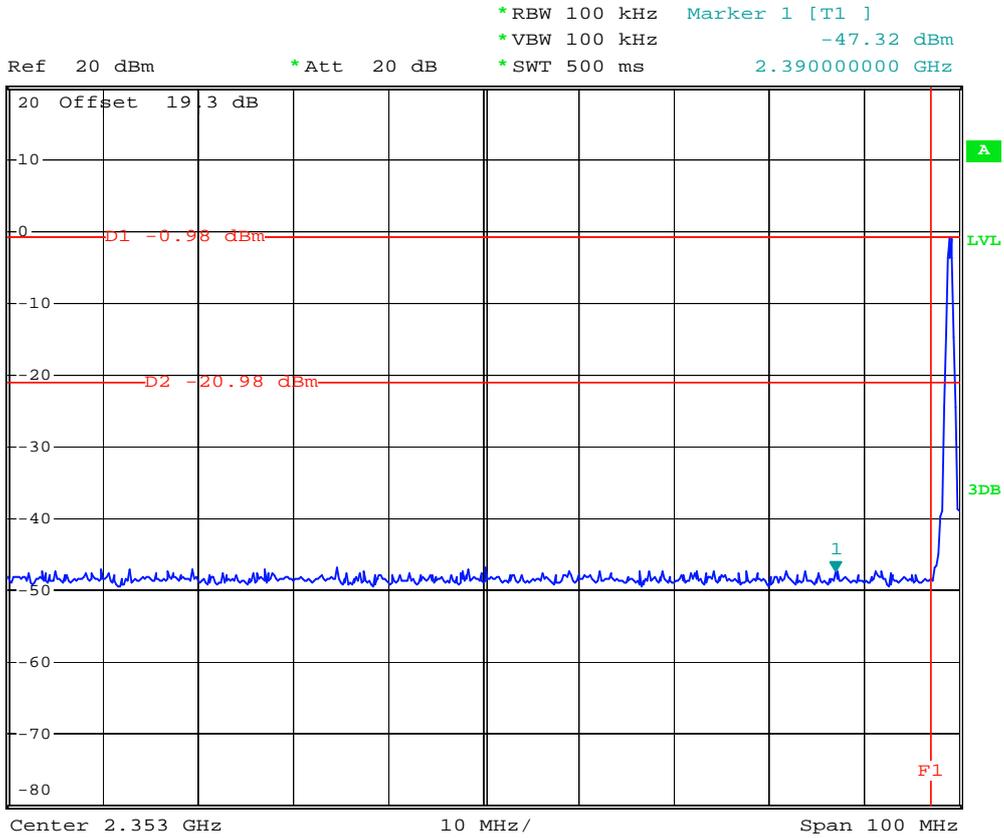
CH78 (Vertical)

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
2483.47	53.85	-20.15	74	53.52	31.98	4.05	35.70	100	0	Peak
2483.47	41.29	-12.71	54	40.96	31.98	4.05	35.70	100	261	Average

5.2.5 20dB Band Edge

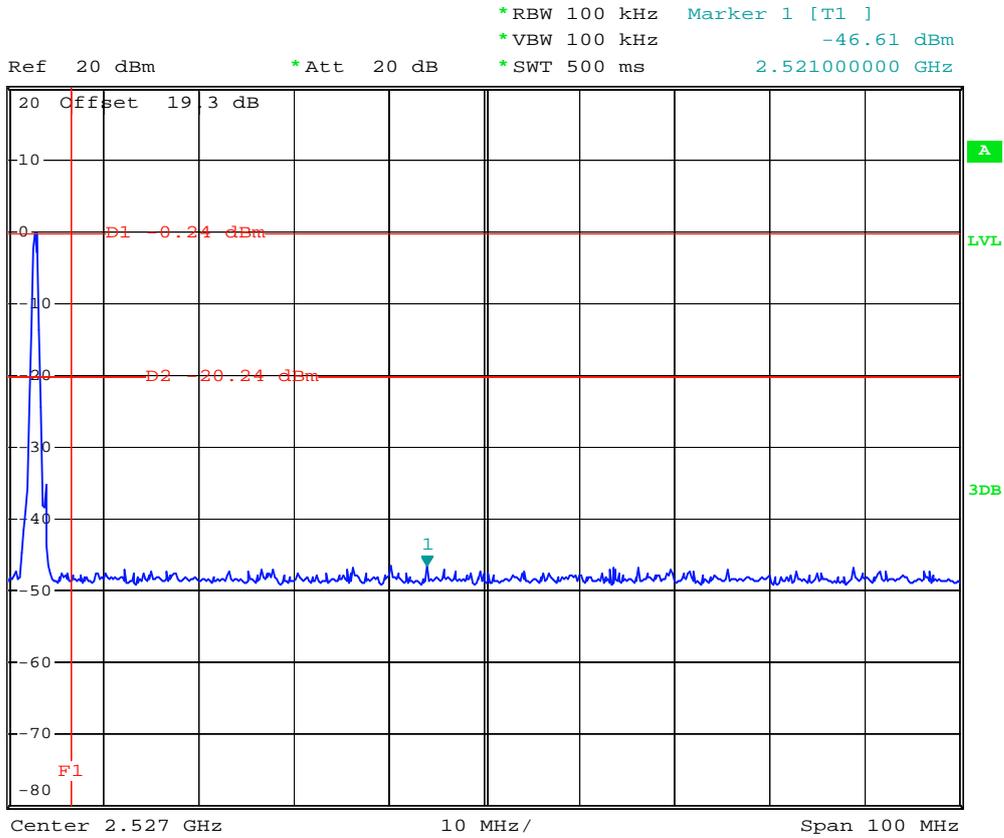
BT

CH00



Date: 29.FEB.2008 11:19:51

CH78



Date: 29.FEB.2008 10:59:55

BT EDR(2Mbps)

CH00



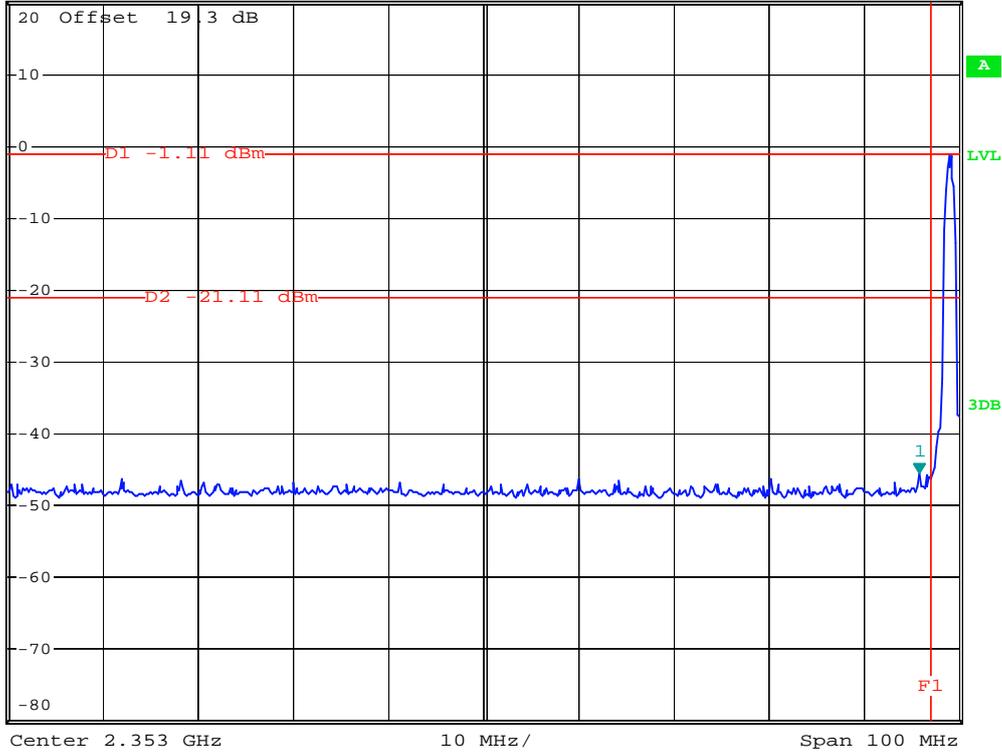
\*RBW 100 kHz Marker 1 [T1 ]  
 \*VBW 100 kHz -45.46 dBm  
 \*SWT 500 ms 2.39880000 GHz

Ref 20 dBm

\*Att 20 dB

2.39880000 GHz

1 PK  
MAXH

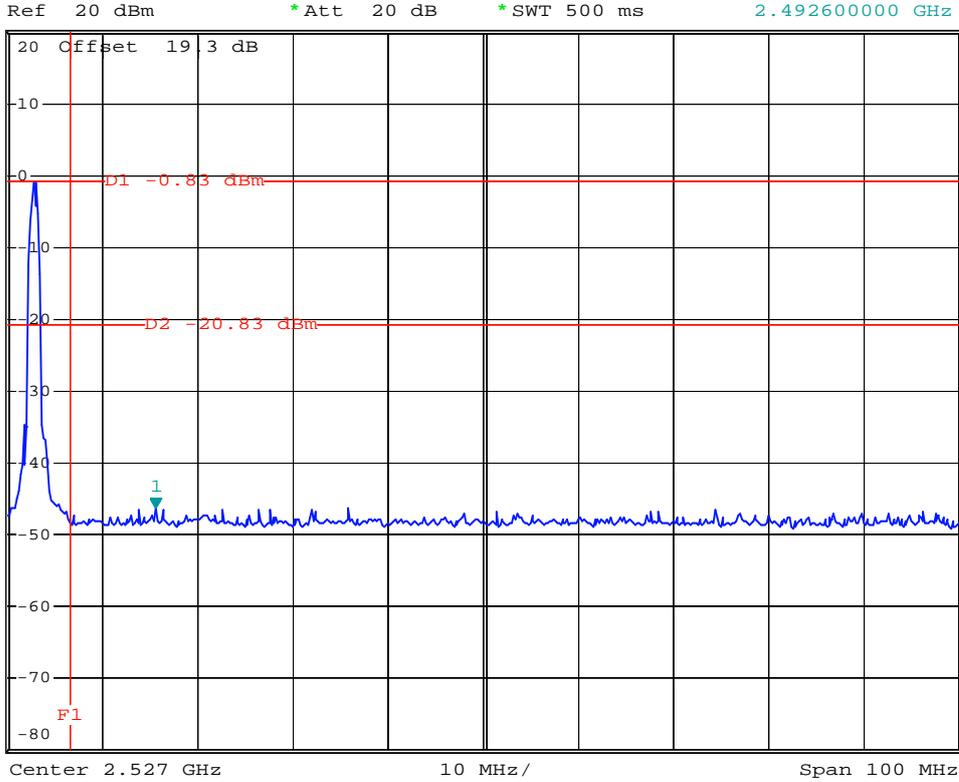


Date: 29.FEB.2008 22:59:15

CH78



\*RBW 100 kHz Marker 1 [T1 ]  
 \*VBW 100 kHz -46.20 dBm  
 \*SWT 500 ms 2.49260000 GHz



Date: 29.FEB.2008 23:04:47

BT EDR(3Mbps)

CH00

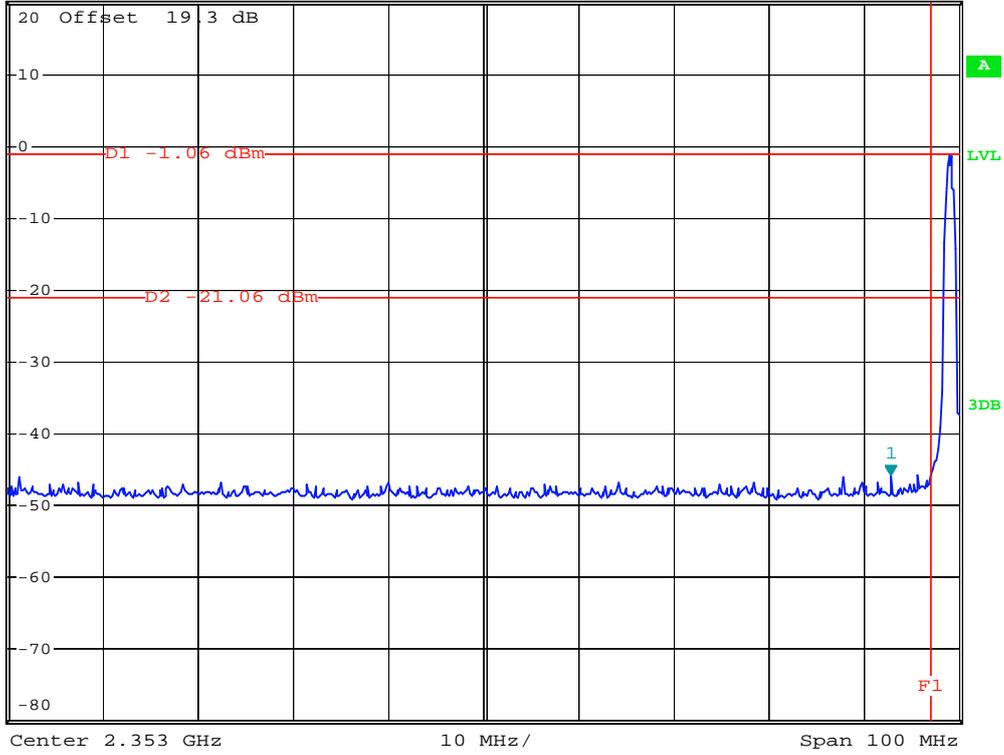


\*RBW 100 kHz Marker 1 [T1 ]  
 \*VBW 100 kHz -45.83 dBm  
 \*SWT 500 ms 2.39580000 GHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



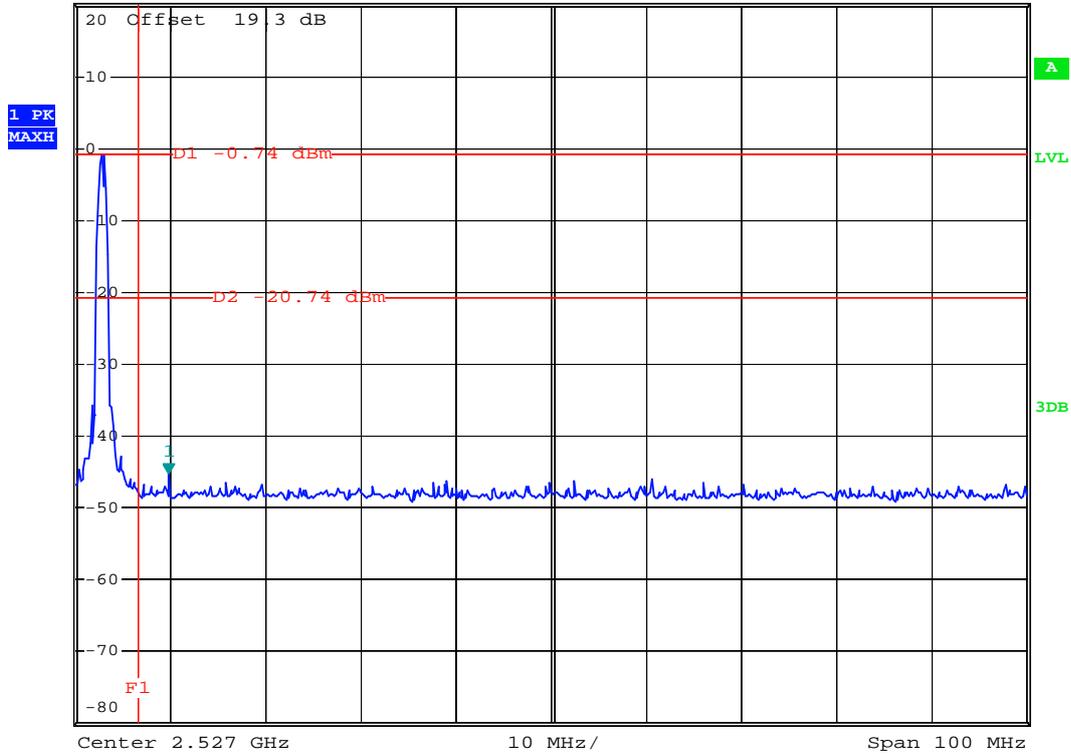
Date: 29.FEB.2008 23:00:43

CH78



\*RBW 100 kHz Marker 1 [T1 ]  
 \*VBW 100 kHz -45.30 dBm  
 \*SWT 500 ms 2.486800000 GHz

Ref 20 dBm \*Att 20 dB



Date: 29.FEB.2008 23:02:38

### 5.3 Hopping Channel Separation

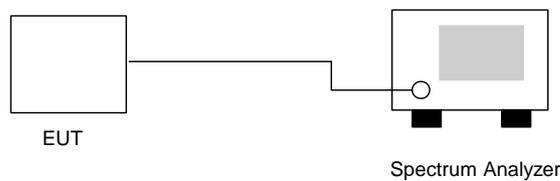
#### 5.3.1 Measuring Instruments

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 : BT
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

Channel	Frequency (MHz)	Carrier Frequency Separation ( MHz )	Limits ( MHz )	Plot Ref. No.
00	2402	1.000	0.572	Mode 1
39	2441	1.000	0.572	Mode 2
78	2480	1.000	0.573	Mode 3

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

- Application Type : BT EDR(2Mbps)
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

Channel	Frequency (MHz)	Carrier Frequency Separation ( MHz )	Limits ( MHz )	Plot Ref. No.
00	2402	1.008	0.832	Mode 4
39	2441	1.000	0.829	Mode 5
78	2480	1.008	0.829	Mode 6

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

- Application Type : BT EDR(3Mbps)
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

Channel	Frequency (MHz)	Carrier Frequency Separation ( MHz )	Limits ( MHz )	Plot Ref. No.
00	2402	1.008	0.805	Mode 7
39	2441	1.008	0.805	Mode 8
78	2480	1.008	0.805	Mode 9

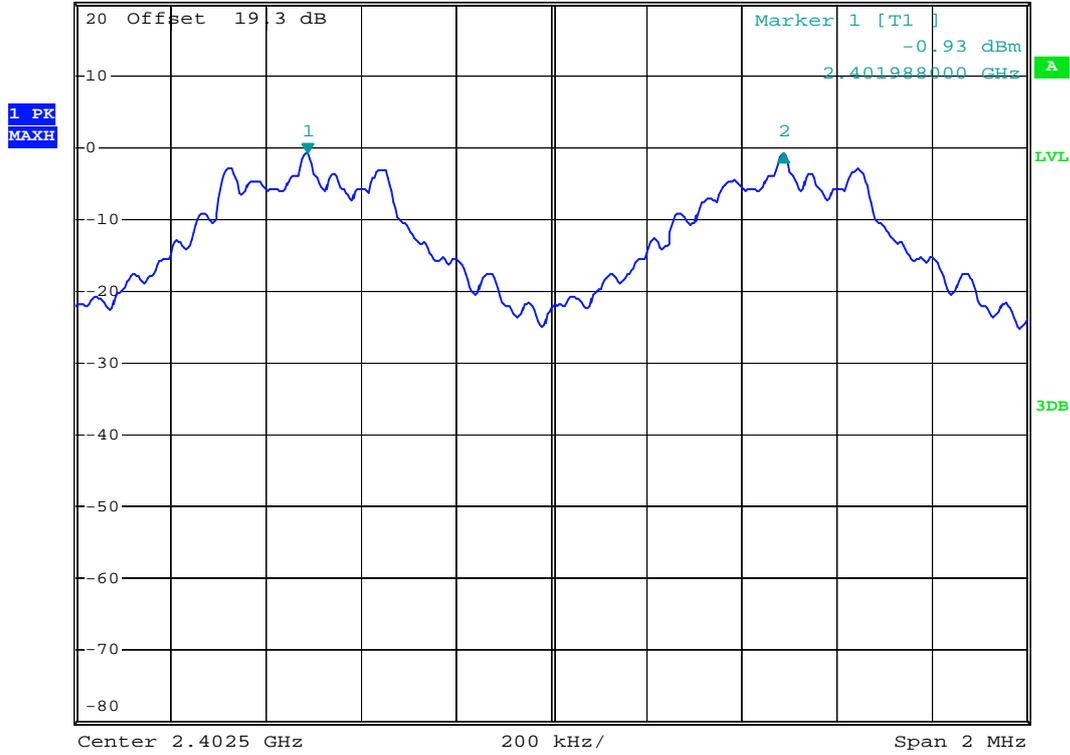
Remark: Hopping Channel Separation shall be greater 2/3 of 20dB bandwidth.

5.3.5 Hopping Channel Separation

Mode 1



Ref 20 dBm      \*Att 20 dB      \*RBW 30 kHz      Delta 2 [T1 ]  
 \*VBW 100 kHz      -0.03 dB  
 \*SWT 500 ms      1.000000000 MHz



Date: 29.FEB.2008 11:20:59

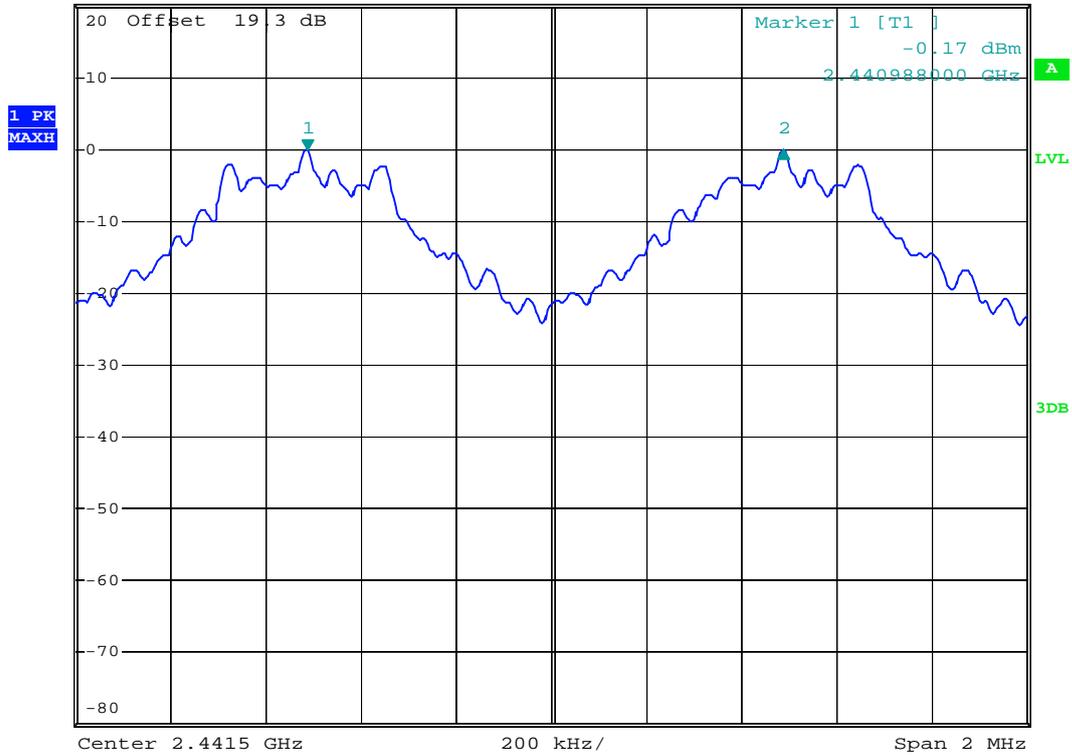
Mode 2



\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 100 kHz -0.01 dB  
 \*SWT 500 ms 1.000000000 MHz

Ref 20 dBm

\*Att 20 dB



Date: 29.FEB.2008 11:21:42

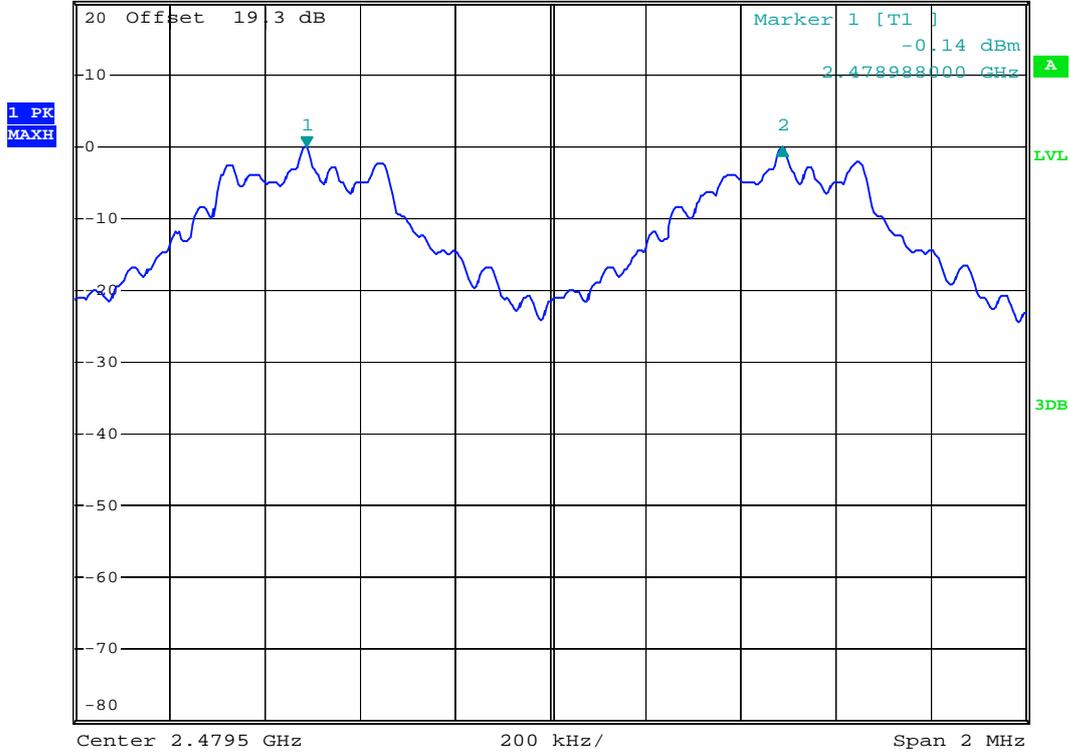
Mode 3



\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 100 kHz -0.04 dB  
 \*SWT 500 ms 1.000000000 MHz

Ref 20 dBm

\*Att 20 dB



Date: 29.FEB.2008 11:22:37

Mode 4

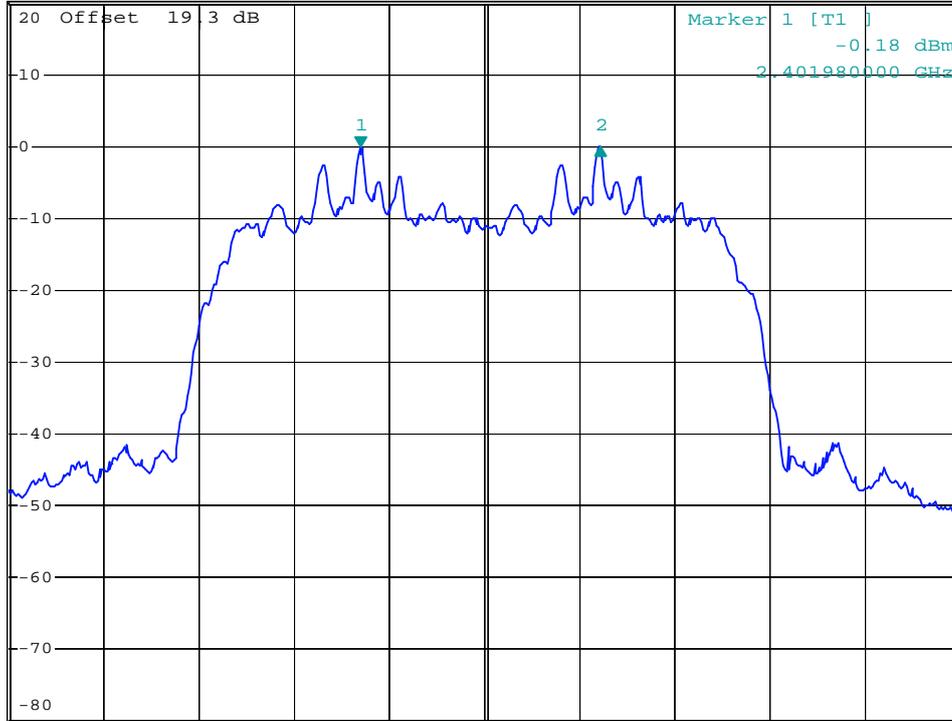


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 100 kHz 0.04 dB  
 \*SWT 500 ms 1.008000000 MHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Date: 29.FEB.2008 23:09:44

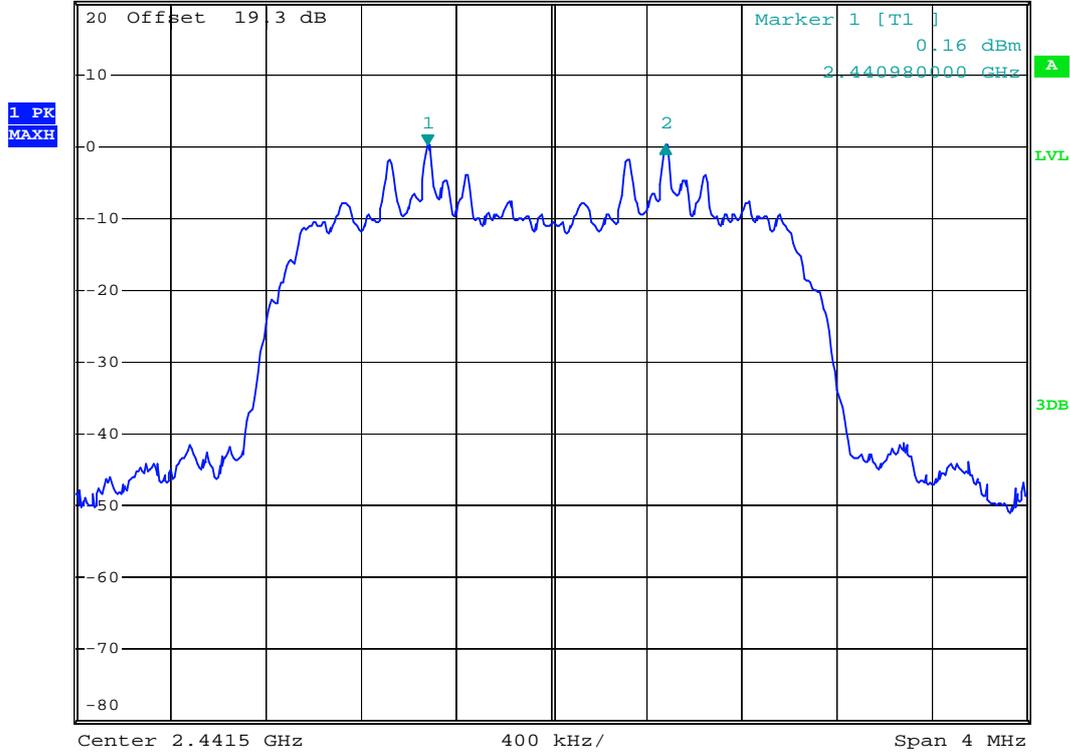
Mode 5



\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 100 kHz -0.04 dB  
 \*SWT 500 ms 1.000000000 MHz

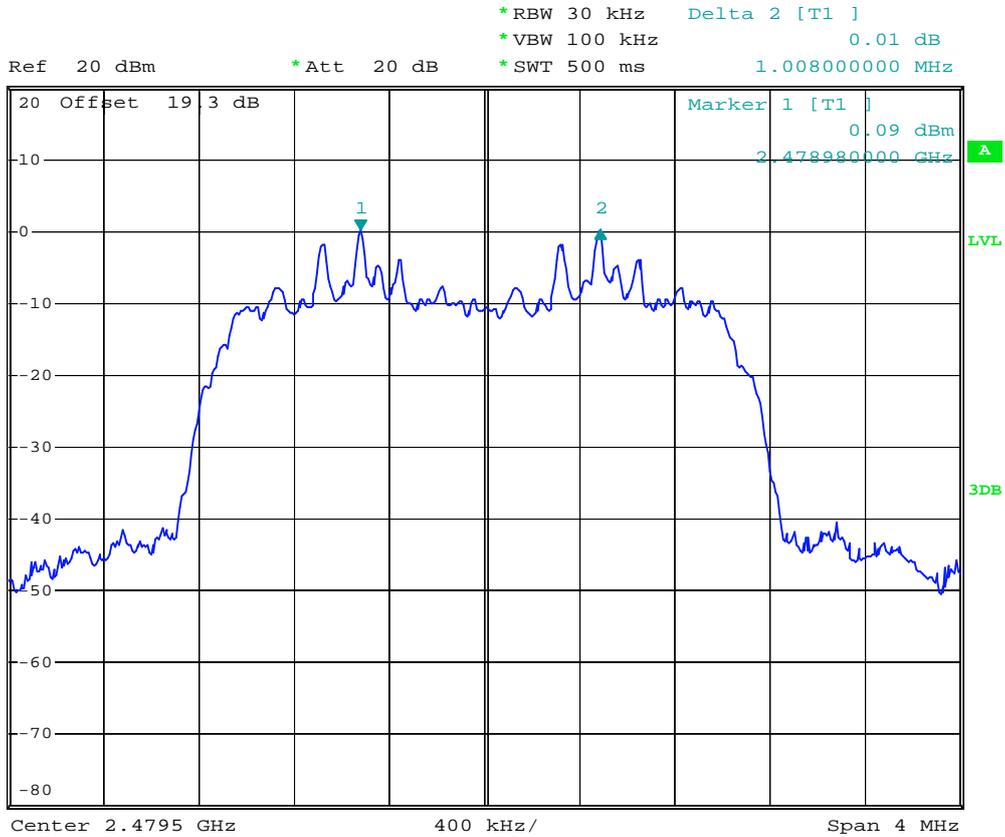
Ref 20 dBm

\*Att 20 dB



Date: 29.FEB.2008 23:11:00

Mode 6



Date: 29.FEB.2008 23:12:08

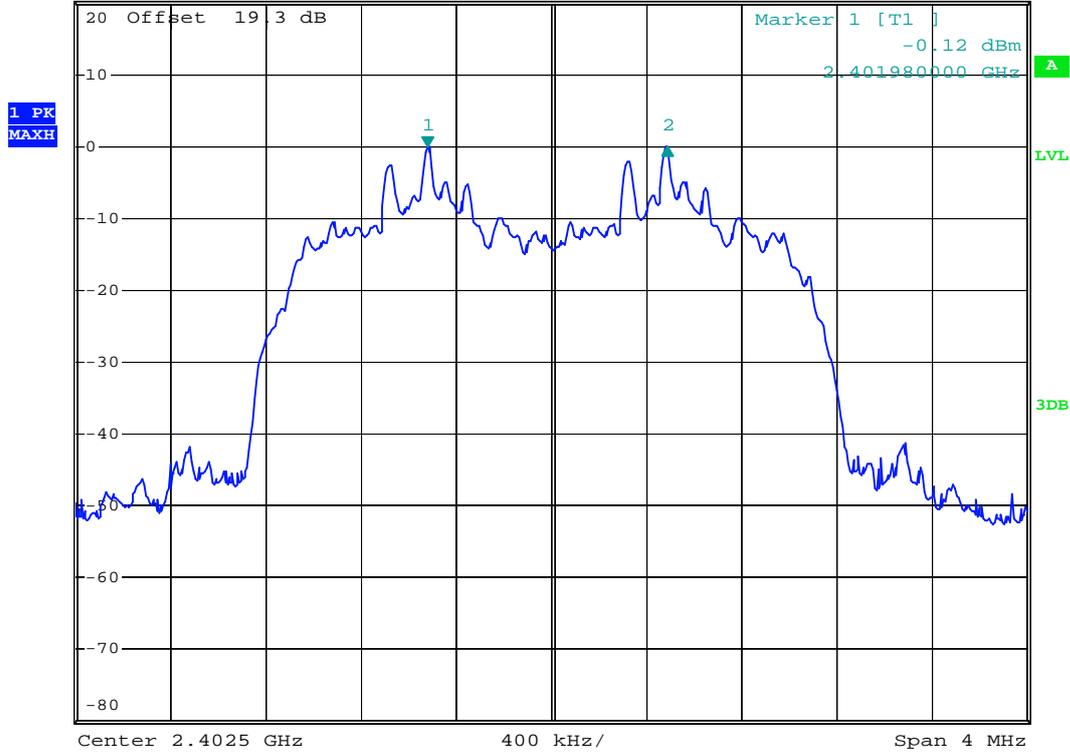
Mode 7



\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 100 kHz 0.03 dB  
 \*SWT 500 ms 1.008000000 MHz

Ref 20 dBm

\*Att 20 dB



Date: 29.FEB.2008 23:13:17

Mode 8

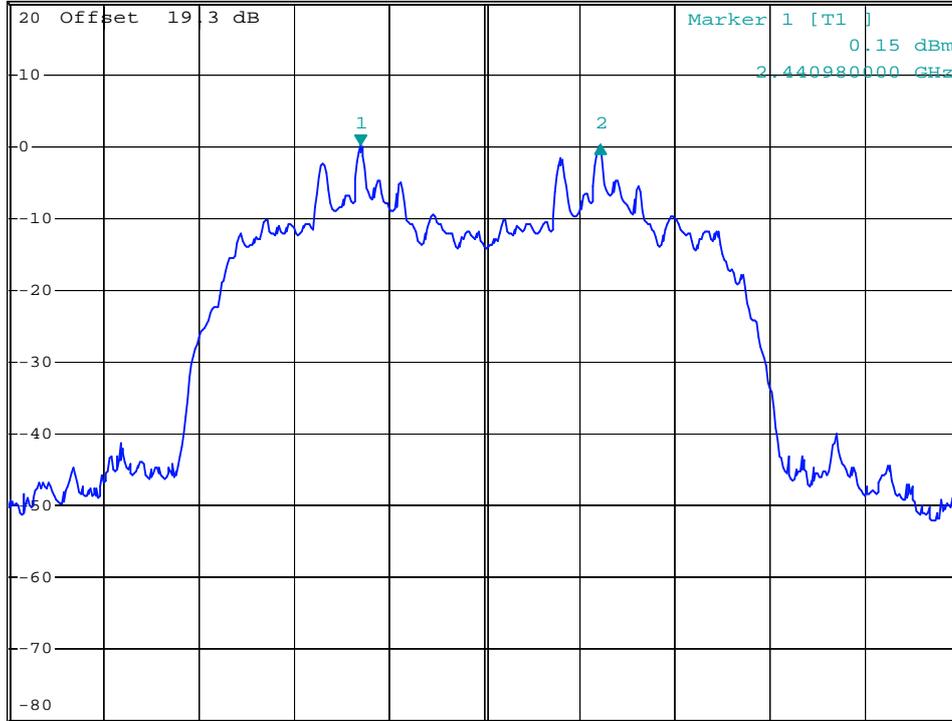


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 100 kHz 0.04 dB  
 \*SWT 500 ms 1.008000000 MHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Date: 29.FEB.2008 23:14:15

Mode 9

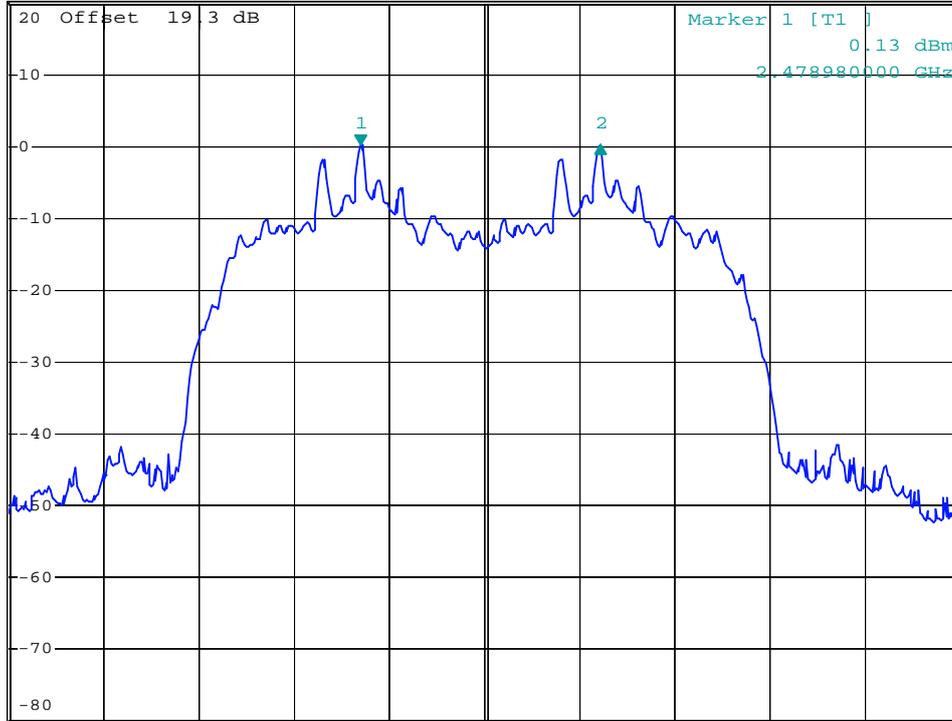


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 100 kHz 0.02 dB  
 \*SWT 500 ms 1.008000000 MHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Date: 29.FEB.2008 23:15:28

## 5.4 Number of Hopping Frequency

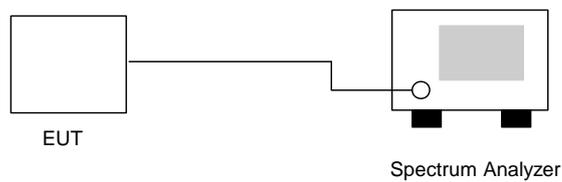
### 5.4.1 Measuring Instruments

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 : BT
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

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

- Application Type : BT EDR(2Mbps)
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

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

- Application Type : BT EDR(3Mbps)
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

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

5.4.5 Number of Hopping Frequency

BT

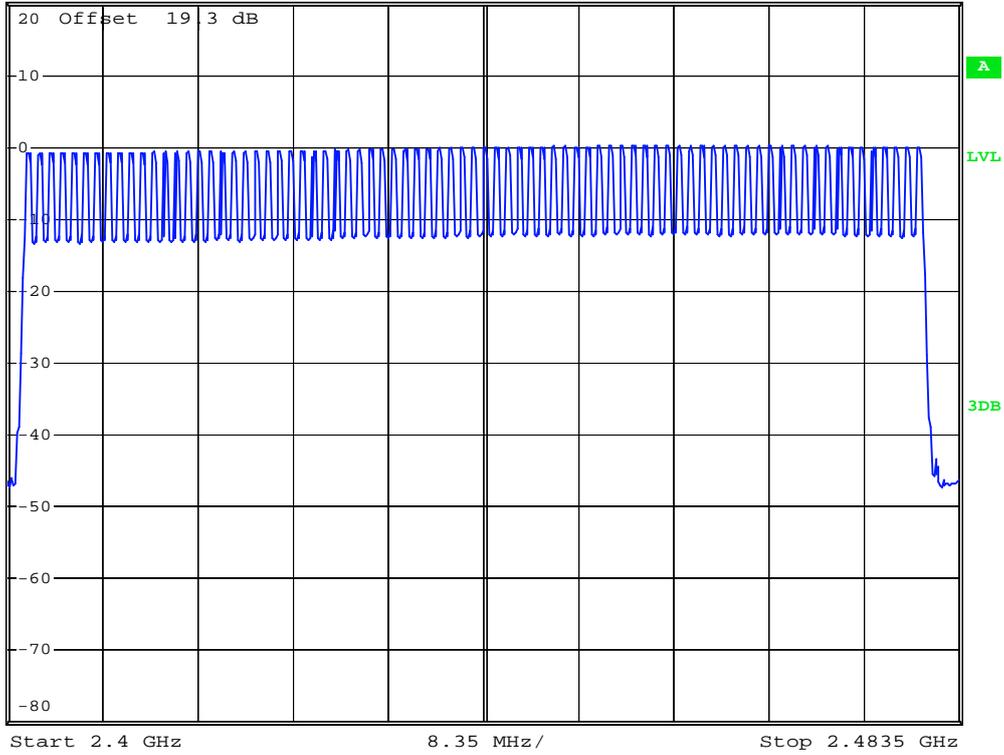


\*RBW 100 kHz  
 \*VBW 100 kHz  
 \*SWT 500 ms

Ref 20 dBm

\*Att 20 dB

1 PK  
 MAXH



Date: 29.FEB.2008 13:09:57



BT EDR(3Mbps)

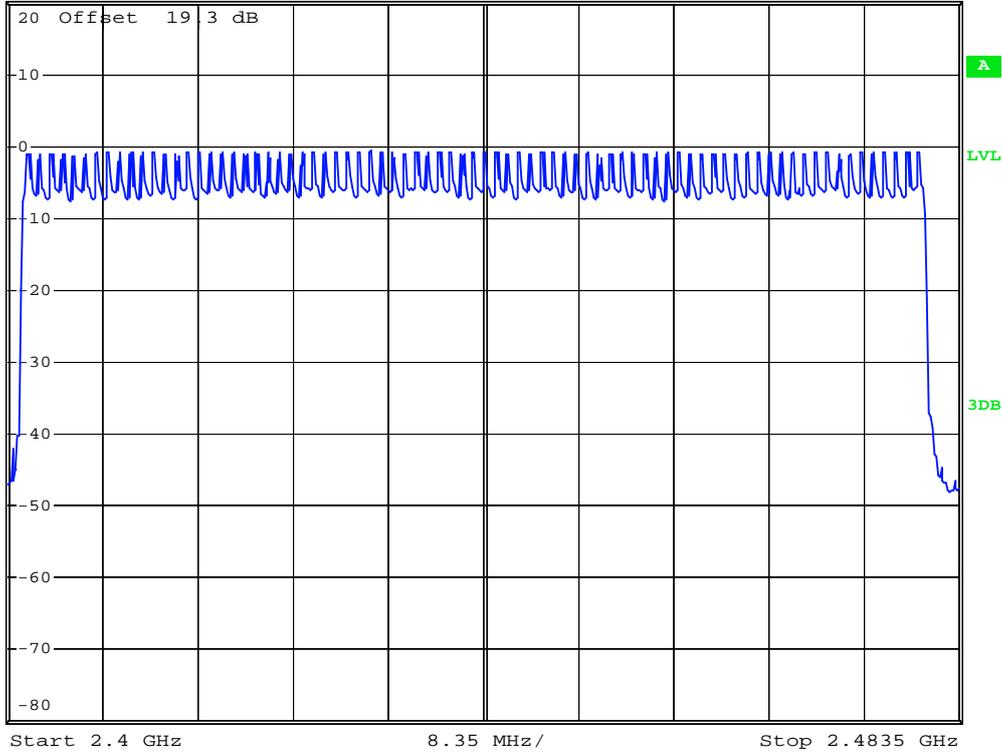


\*RBW 100 kHz  
 \*VBW 100 kHz  
 \*SWT 500 ms

Ref 20 dBm

\*Att 20 dB

1 PK  
 MAXH



Date: 1.MAR.2008 00:01:20

## 5.5 Hopping Channel Bandwidth

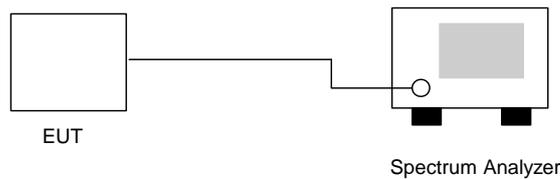
### 5.5.1 Measuring Instruments

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 : BT
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	0.858	Mode 1
39	2441	0.858	Mode 2
78	2480	0.860	Mode 3

- Application Type : BT EDR(2Mbps)
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

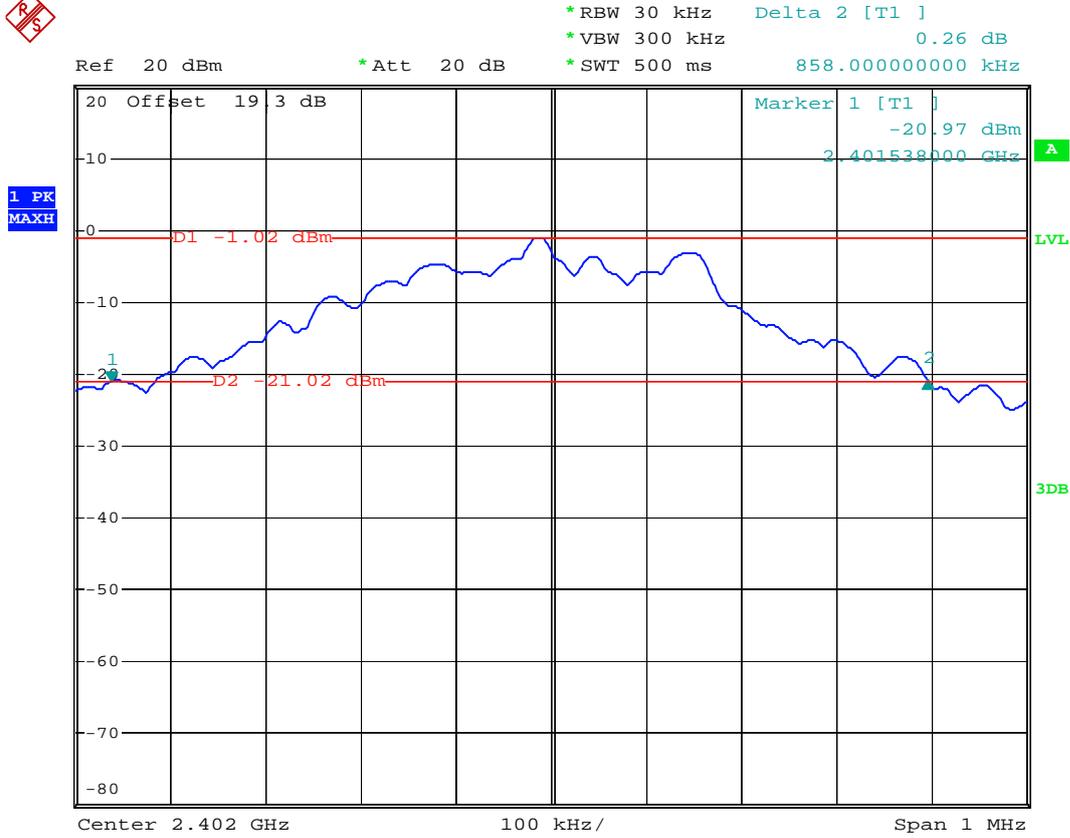
Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.248	Mode 4
39	2441	1.244	Mode 5
78	2480	1.244	Mode 6

- Application Type : BT EDR(3Mbps)
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.208	Mode 7
39	2441	1.208	Mode 8
78	2480	1.208	Mode 9

5.5.5 Hopping Channel Bandwidth

Mode 1



Date: 29.FEB.2008 10:56:28

Mode 2

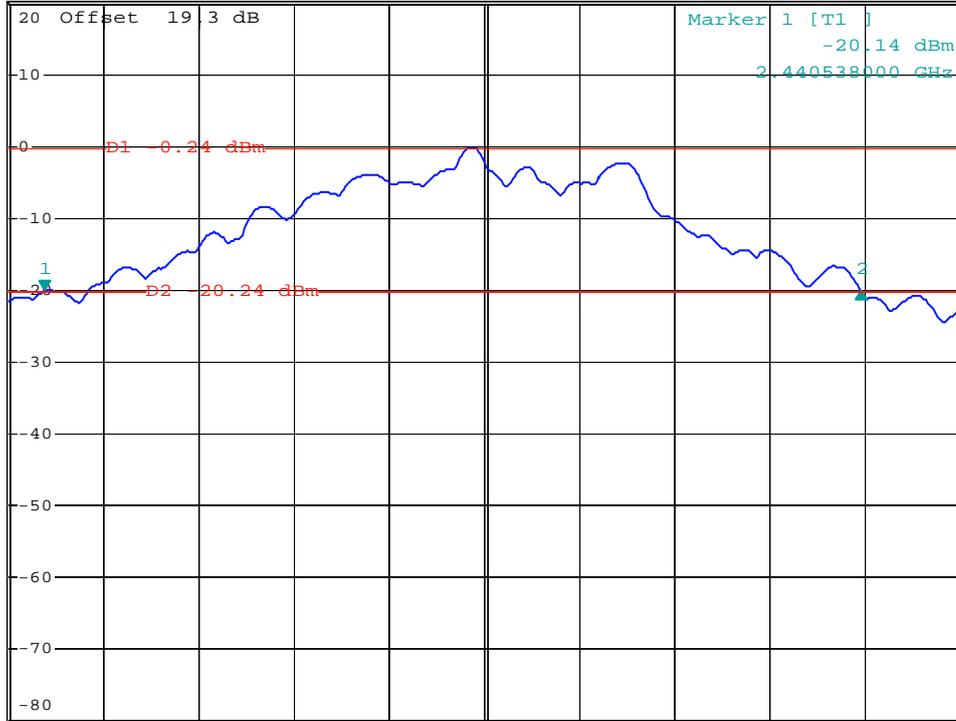


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 300 kHz 0.20 dB  
 \*SWT 500 ms 858.000000000 kHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Center 2.441 GHz 100 kHz/ Span 1 MHz

Date: 29.FEB.2008 10:57:35

Mode 3

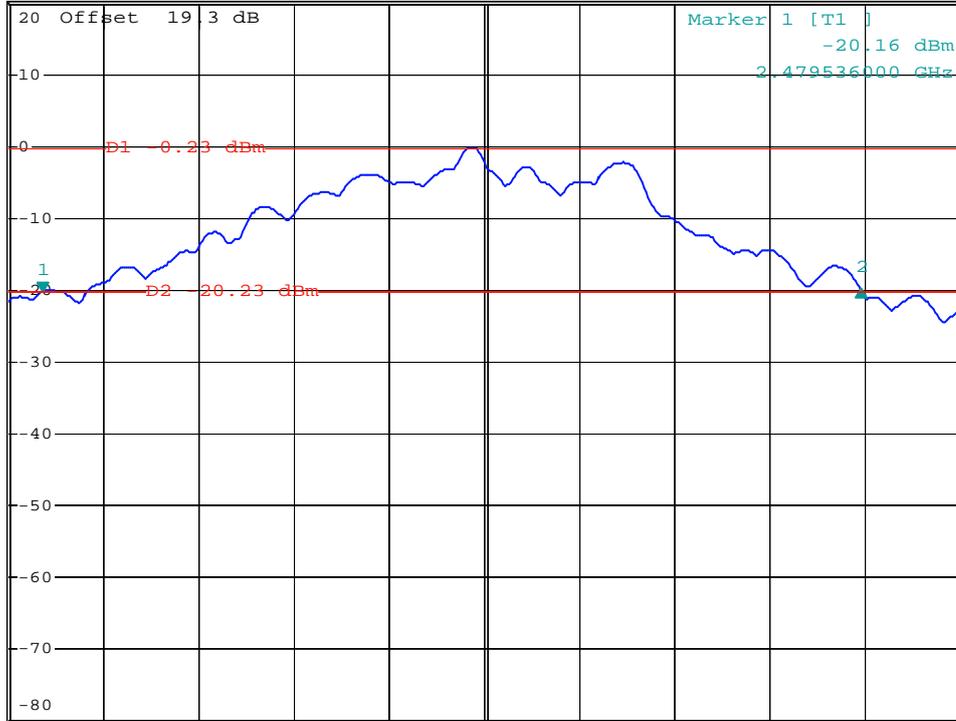


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 300 kHz 0.27 dB  
 \*SWT 500 ms 860.00000000 kHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Center 2.48 GHz 100 kHz/ Span 1 MHz

Date: 29.FEB.2008 10:58:30

Mode 4

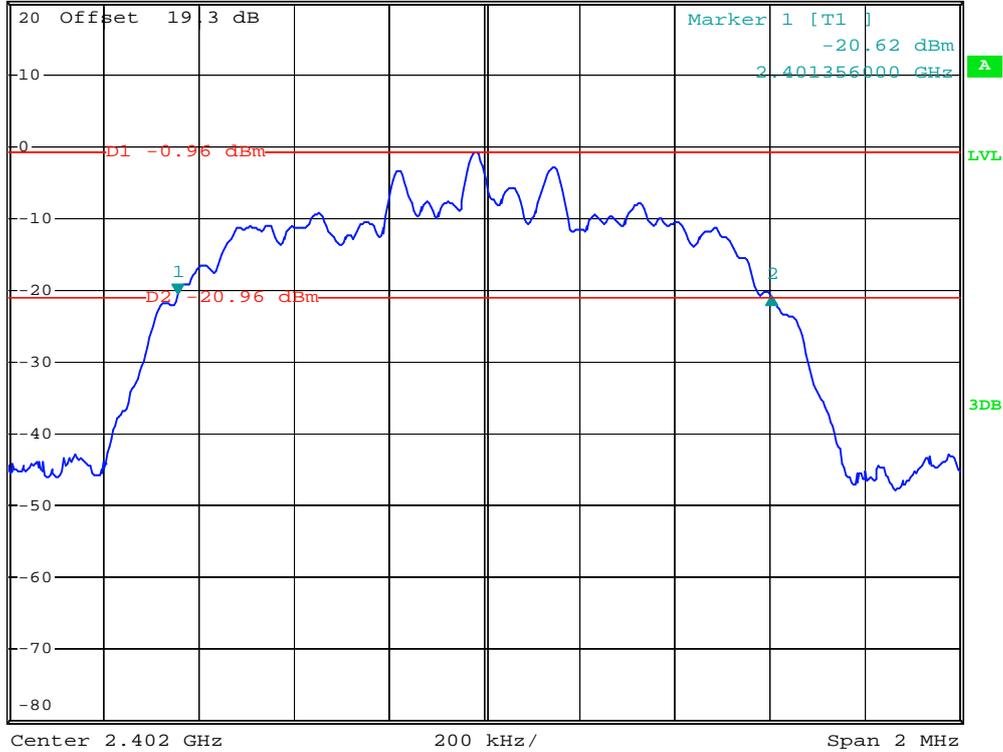


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 300 kHz -0.32 dB  
 \*SWT 500 ms 1.248000000 MHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Date: 29.FEB.2008 22:41:07

Mode 5

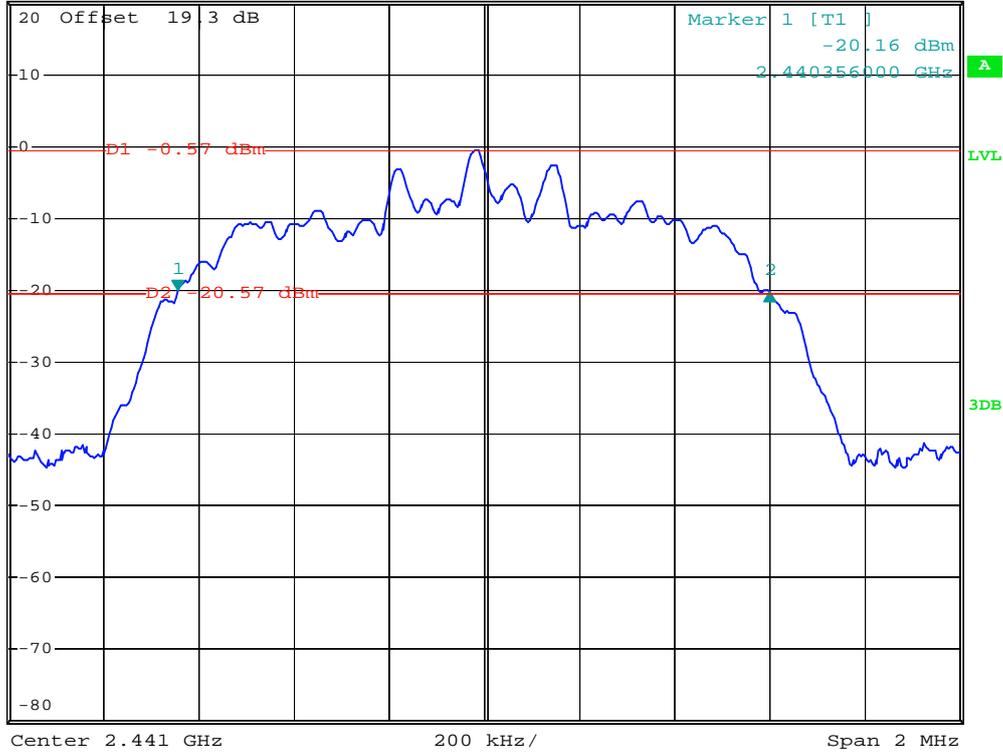


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 300 kHz -0.18 dB  
 \*SWT 500 ms 1.244000000 MHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Date: 29.FEB.2008 22:45:57

Mode 6

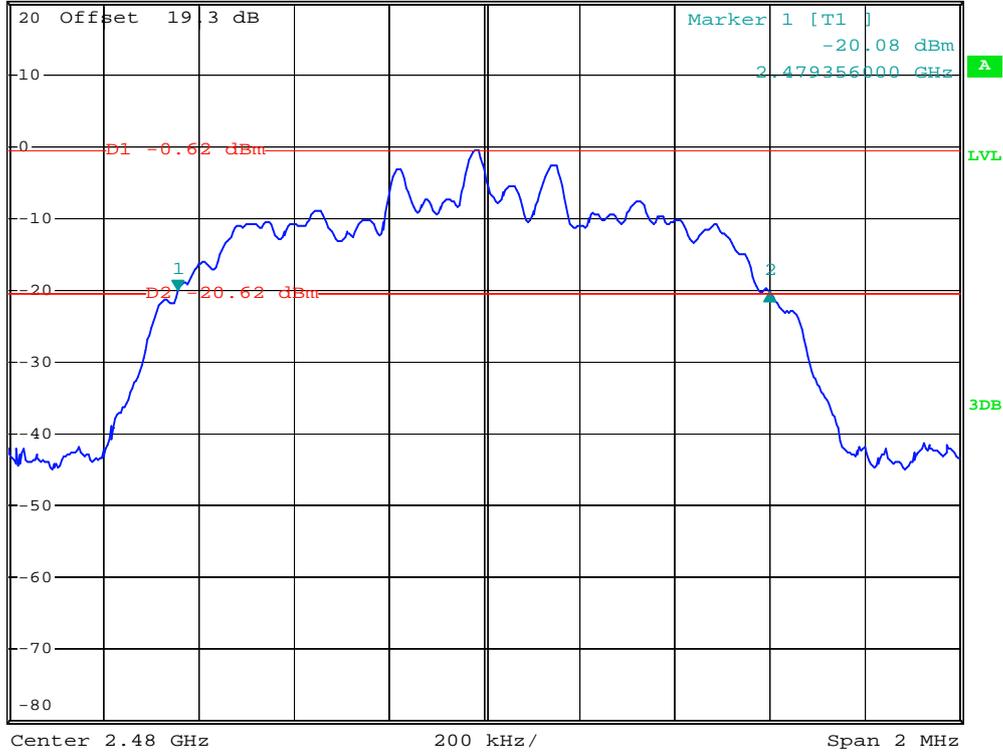


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 300 kHz -0.10 dB  
 \*SWT 500 ms 1.244000000 MHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Date: 29.FEB.2008 22:47:43

Mode 7

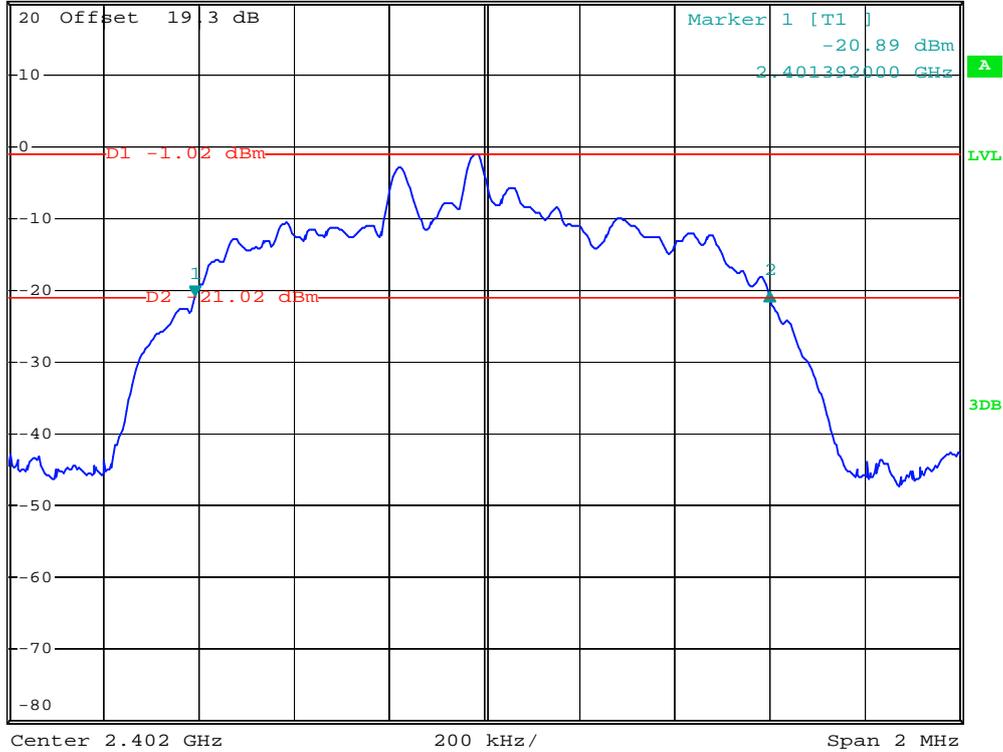


\*RBW 30 kHz Delta 2 [T1 ]  
 \*VBW 300 kHz 0.61 dB  
 \*SWT 500 ms 1.208000000 MHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Date: 29.FEB.2008 22:50:41



Mode 9

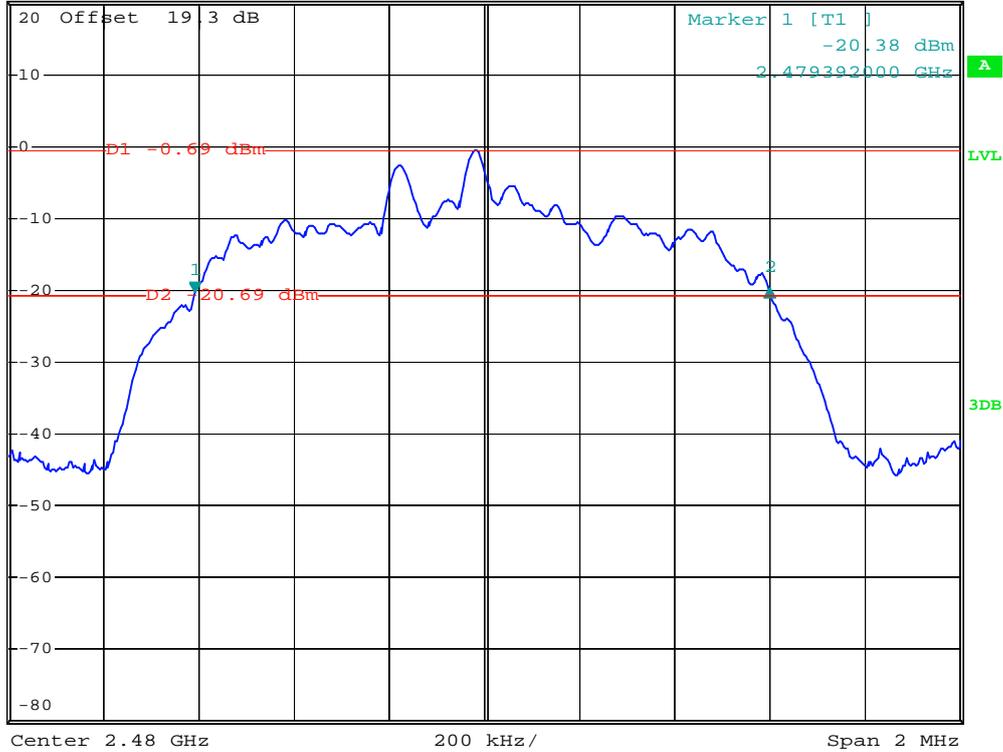


\*RBW 30 kHz    Delta 2 [T1 ]  
 \*VBW 300 kHz    0.49 dB  
 \*SWT 500 ms    1.208000000 MHz

Ref 20 dBm

\*Att 20 dB

1 PK  
MAXH



Date: 29.FEB.2008 22:56:43

## 5.6 Dwell Time of Each Frequency

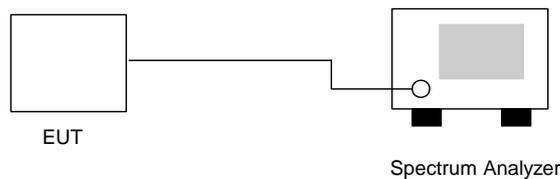
### 5.6.1 Measuring Instruments

As described in chapter 9 of this test report.

### 5.6.2 Test Procedure

- a. The transmitter output was connected to the spectrum analyzer by a low loss cable.
- b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- c. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- d. 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 : BT
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.7	448	0.123	0.4
DH3	4.2	1730	0.230	0.4
DH5	3.3	3020	0.315	0.4

- Application Type : BT EDR(2Mbps)
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.1	452	0.116	0.4
DH3	5.0	1742	0.275	0.4
DH5	3.2	2980	0.301	0.4

- Application Type : BT EDR(3Mbps)
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

CH39

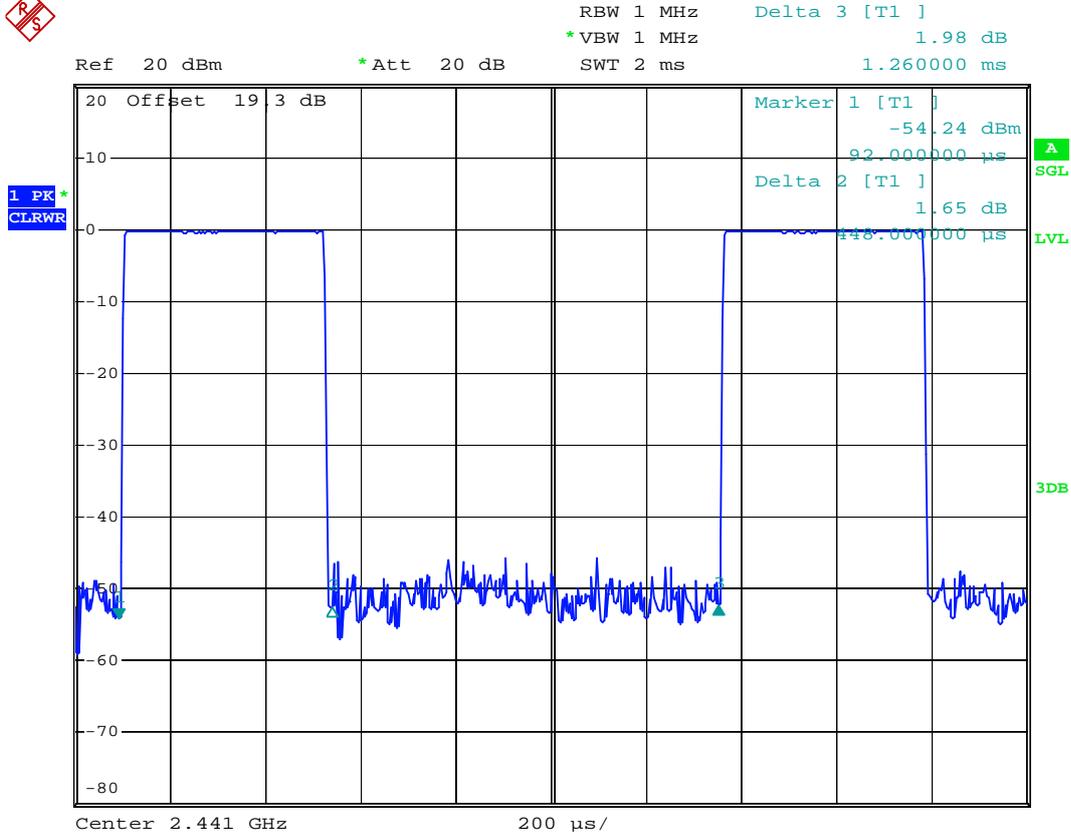
Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.9	452	0.127	0.4
DH3	5.2	1730	0.284	0.4
DH5	3.8	3040	0.365	0.4

※ Remark:

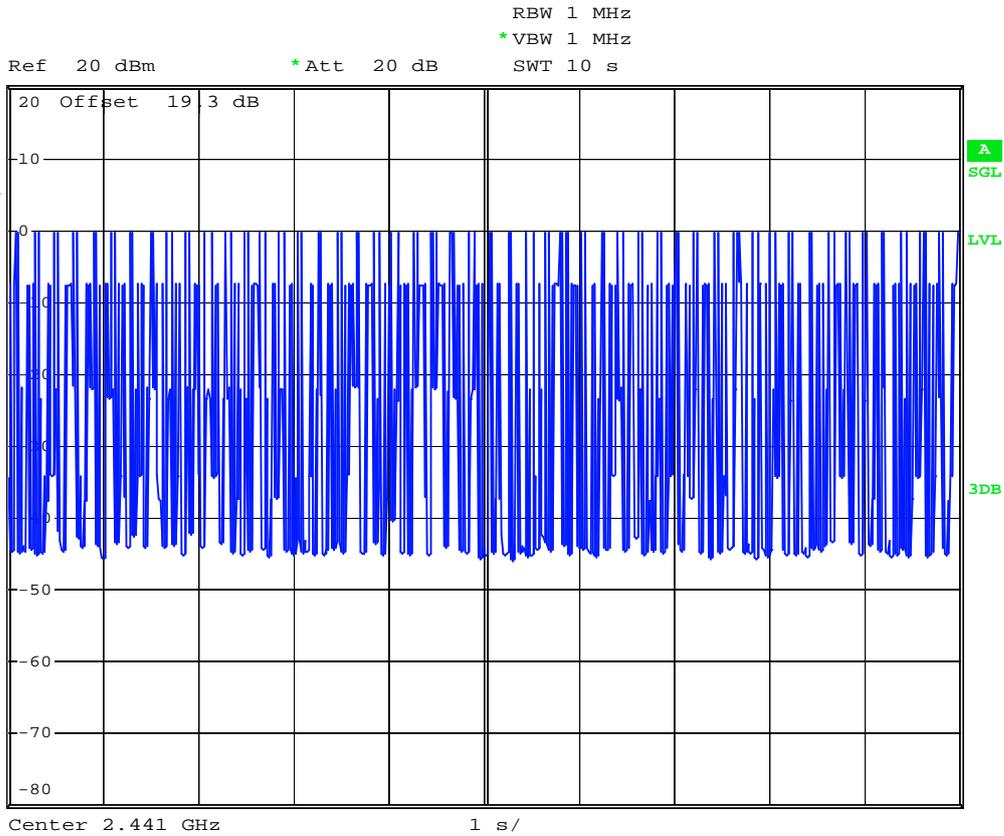
1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79 channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

5.6.5 Dwell Time

DH1 (CH39)



Date: 29.FEB.2008 11:23:56

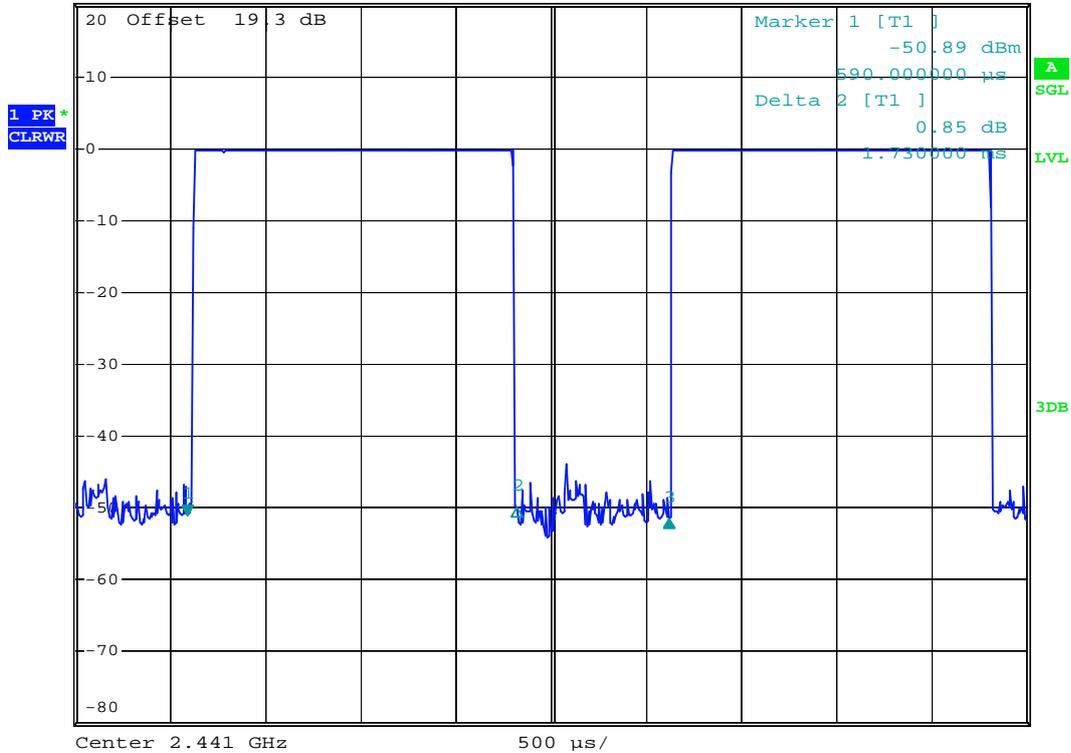


Date: 29.FEB.2008 11:25:54

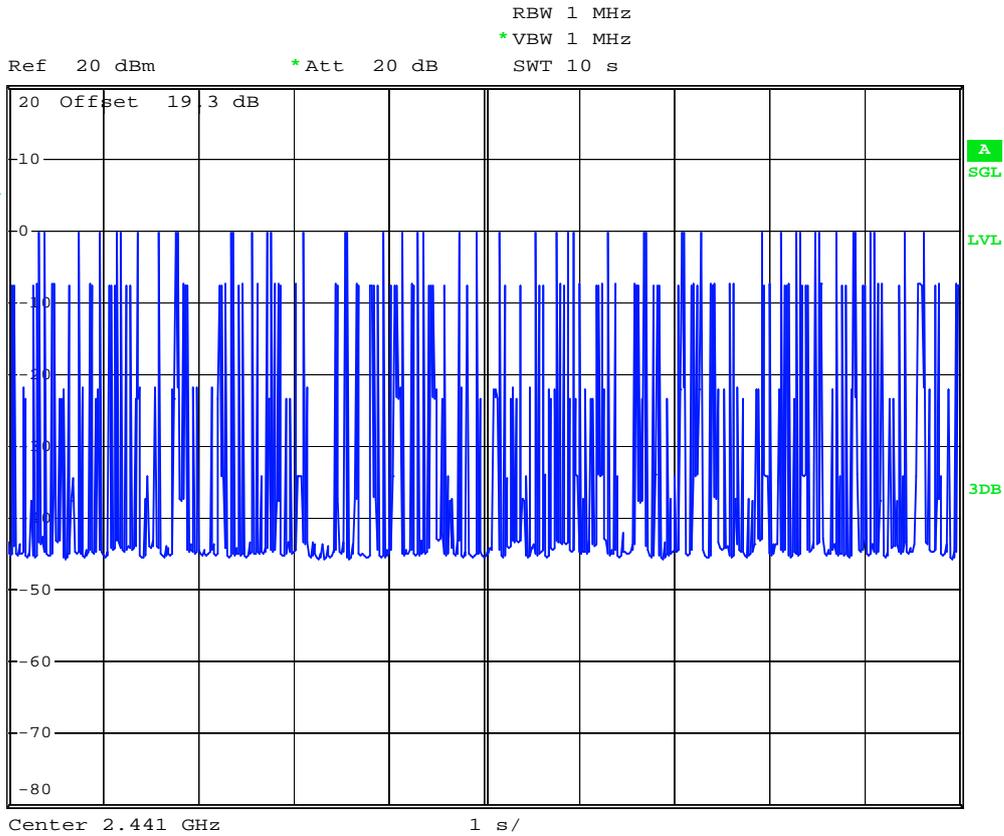
DH3 (CH39)



Ref 20 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      -0.62 dB  
 \*VBW 1 MHz      SWT 5 ms      2.530000 ms



Date: 29.FEB.2008 11:24:29

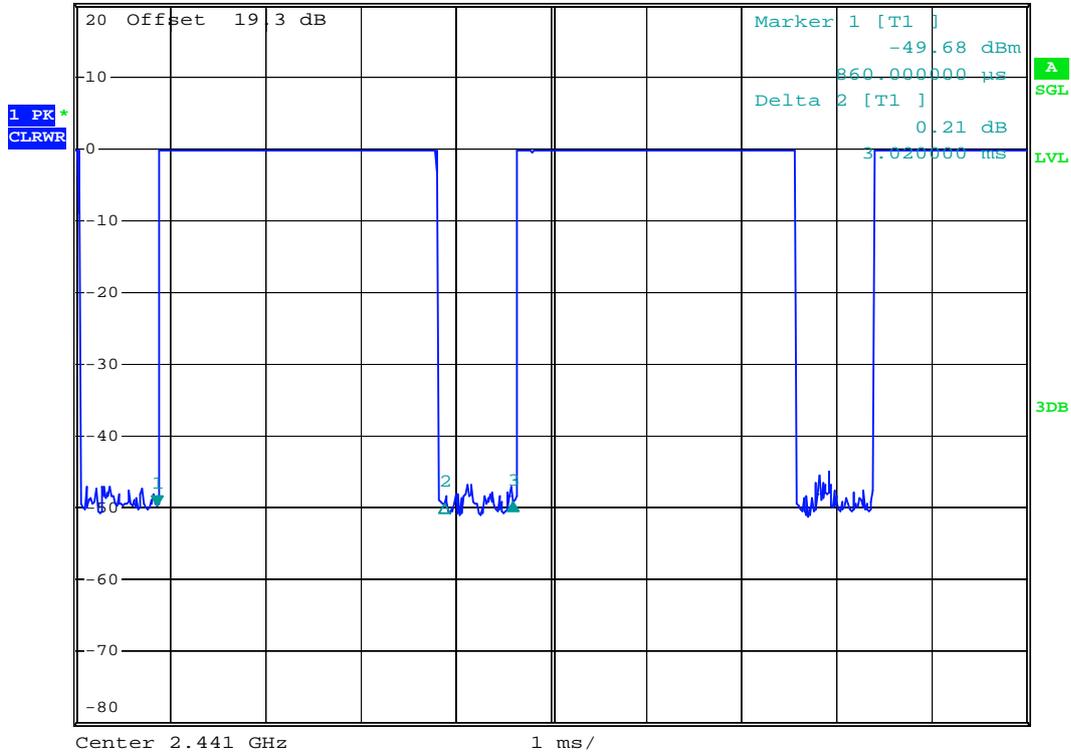


Date: 29.FEB.2008 11:26:16

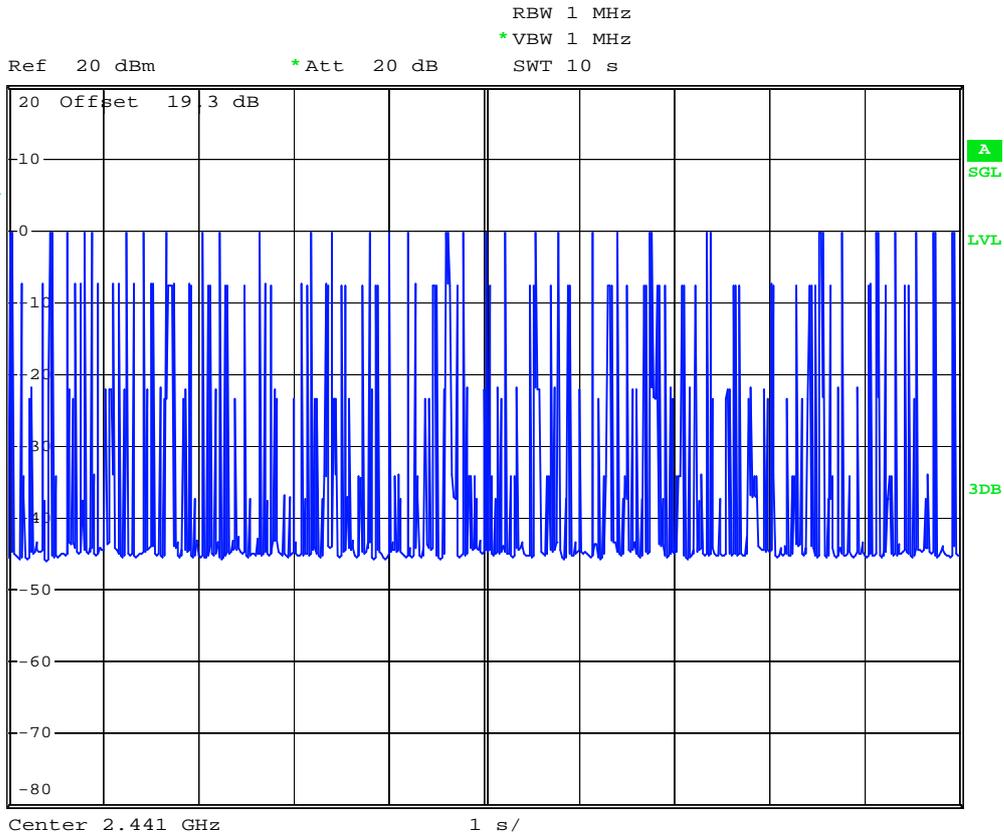
DH5 (CH39)



Ref 20 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      0.63 dB  
 \*VBW 1 MHz      3.740000 ms  
 SWT 10 ms



Date: 29.FEB.2008 11:25:08

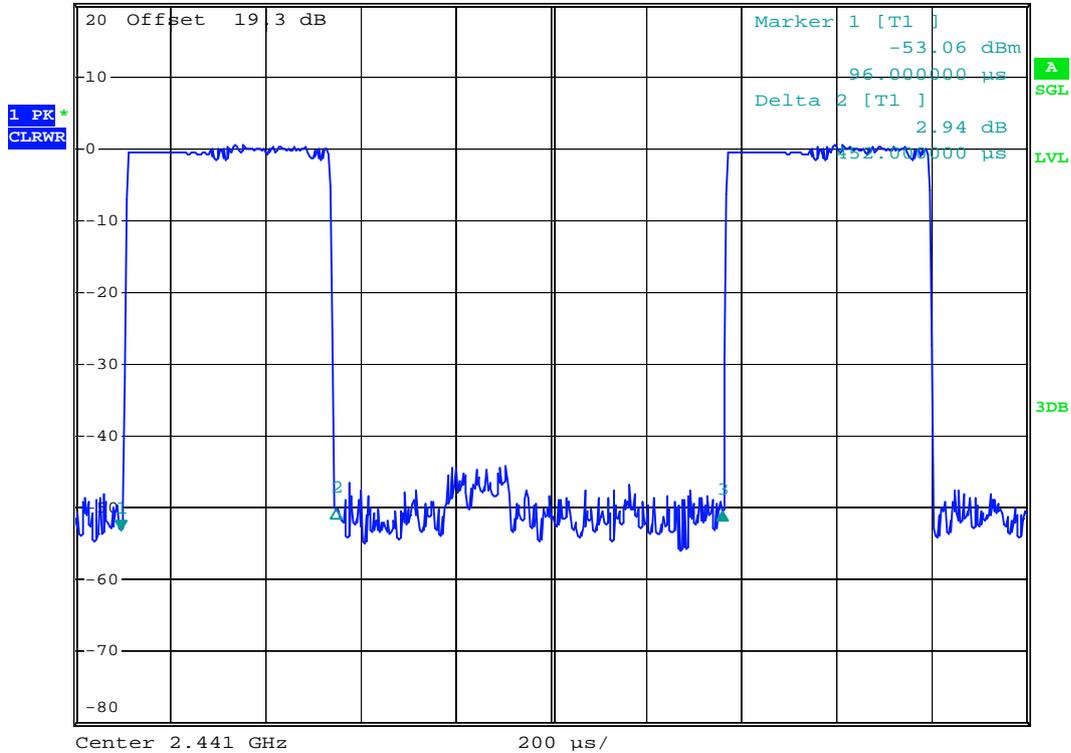


Date: 29.FEB.2008 11:25:31

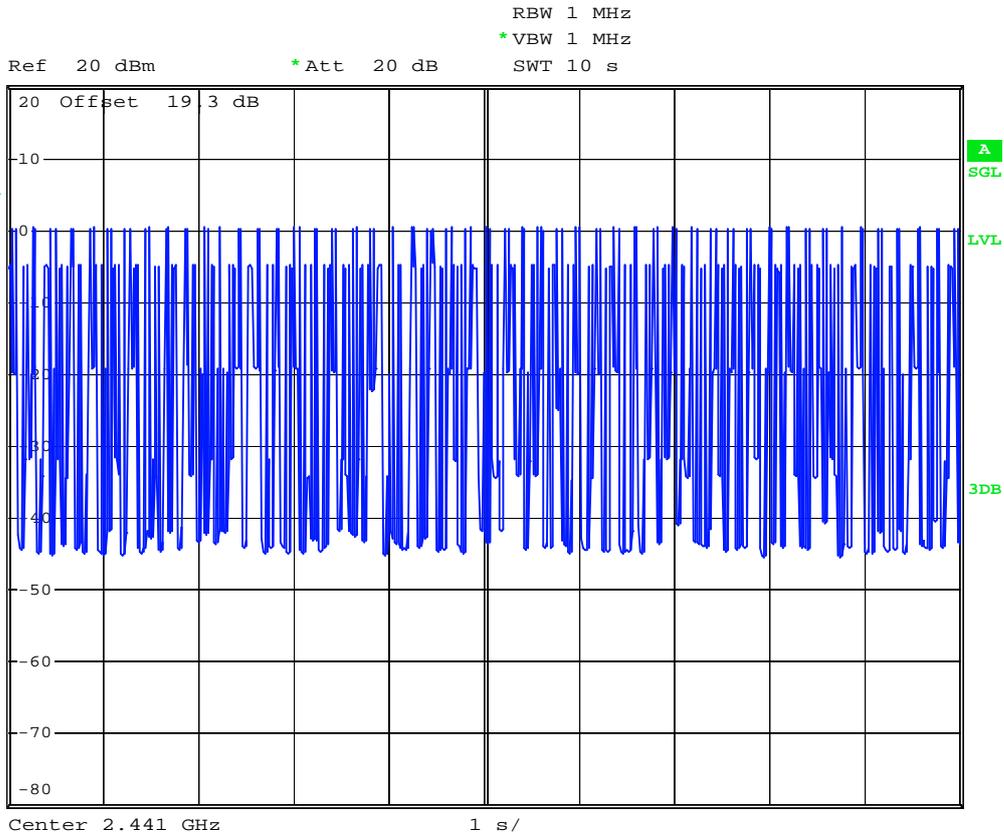
2DH1 (CH39)



Ref 20 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      2.70 dB  
 \*VBW 1 MHz      1.264000 ms  
 SWT 2 ms



Date: 29.FEB.2008 23:18:07

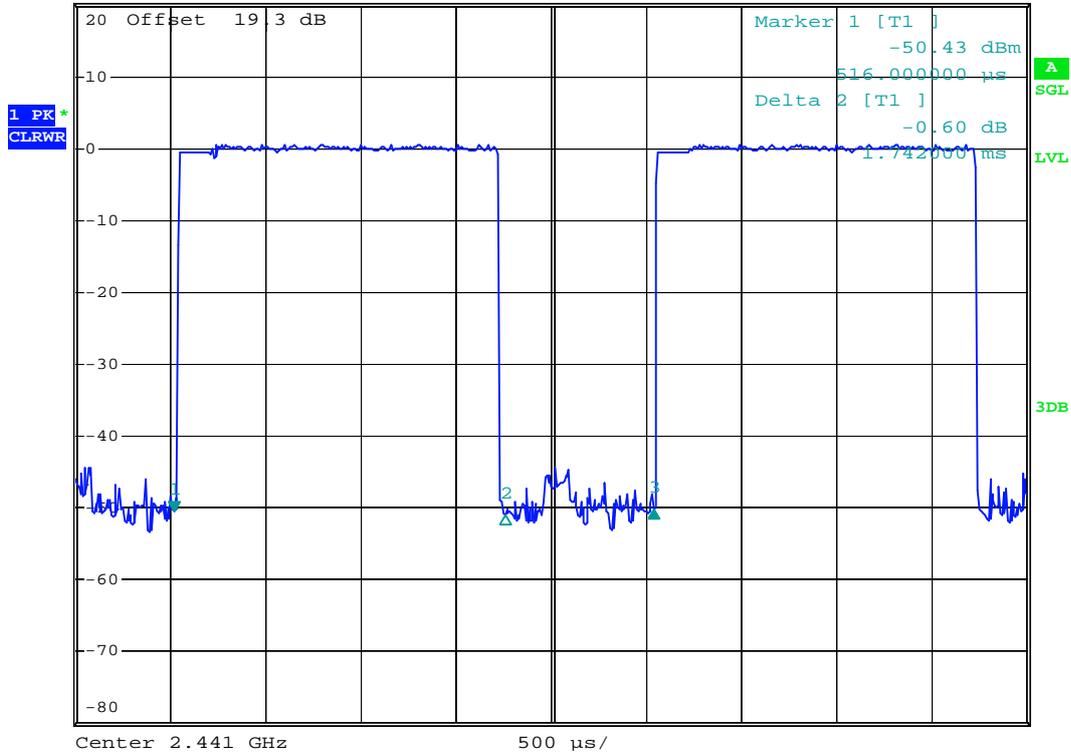


Date: 29.FEB.2008 23:32:19

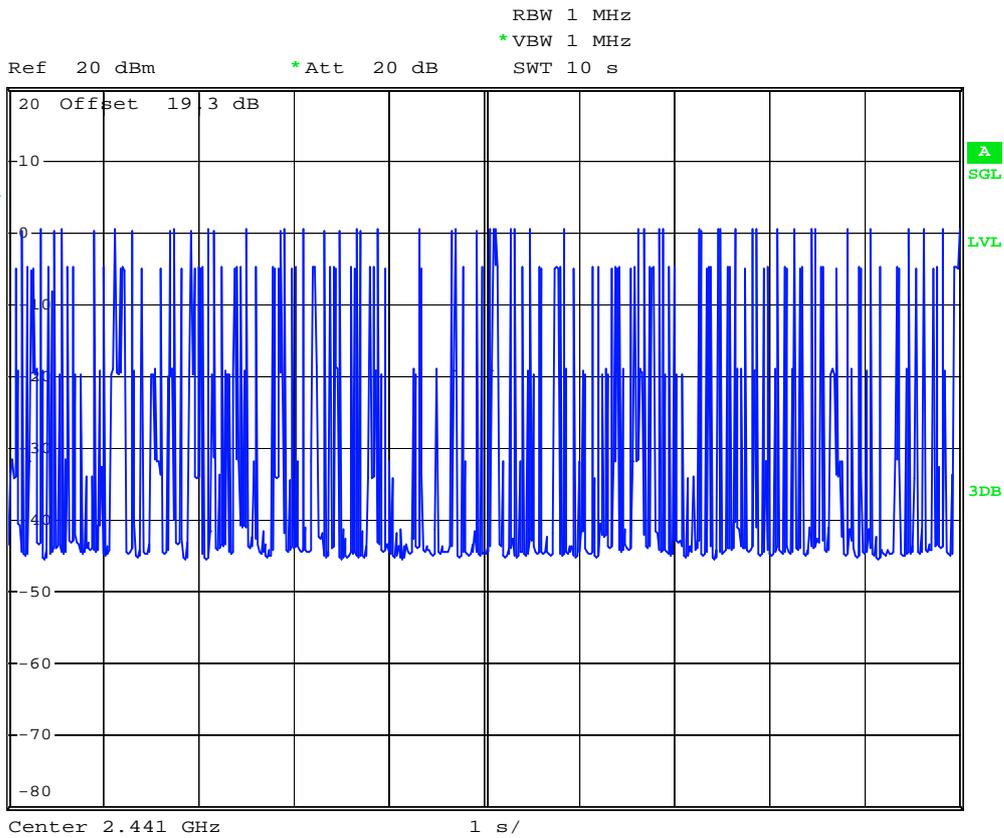
2 DH3 (CH39)



Ref 20 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      0.21 dB  
 \*VBW 1 MHz      2.524000 ms  
 SWT 5 ms



Date: 29.FEB.2008 23:18:40

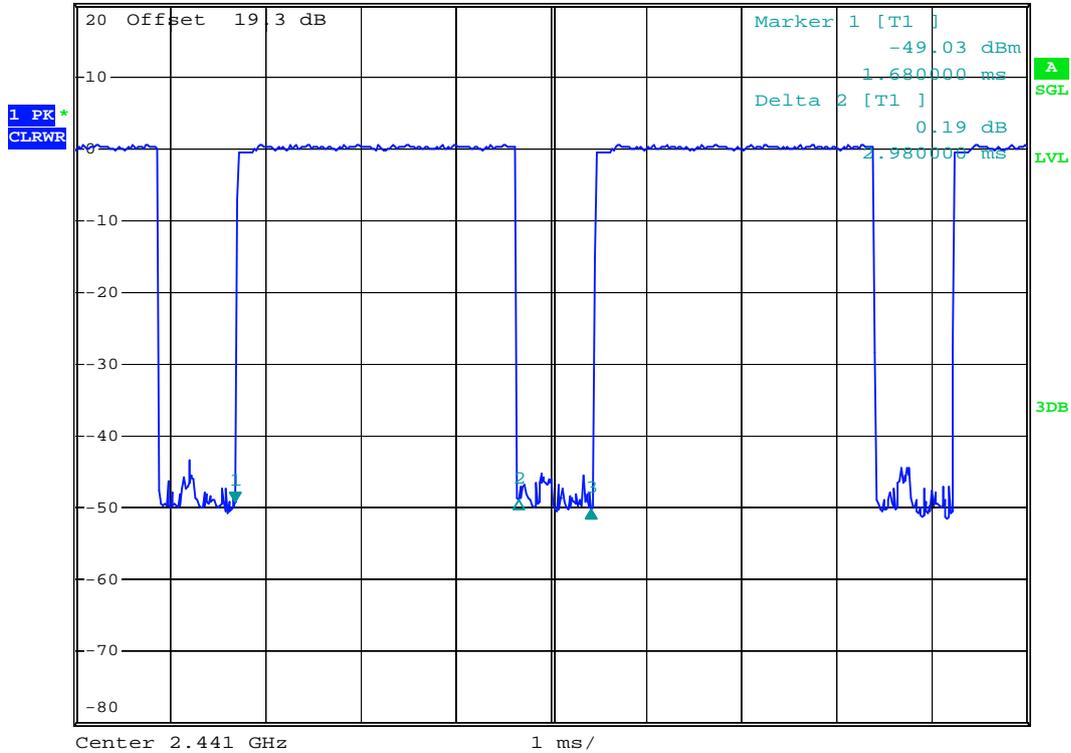


Date: 29.FEB.2008 23:32:47

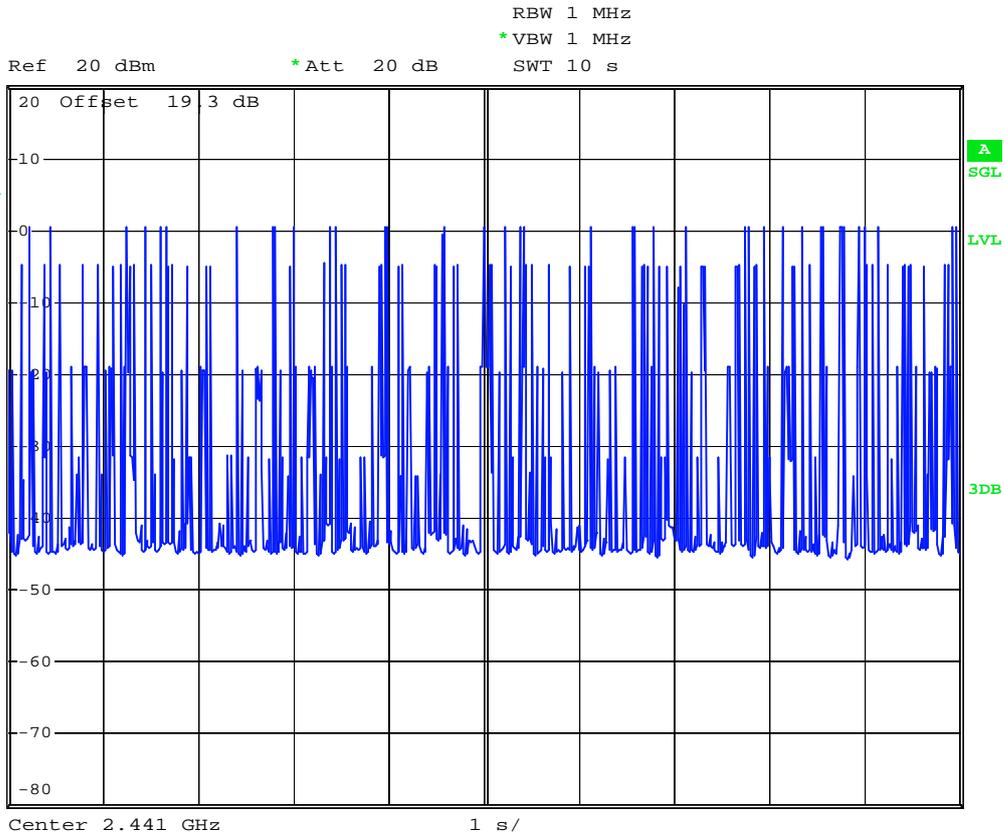
2 DH5 (CH39)



Ref 20 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      -1.19 dB  
 \*VBW 1 MHz      SWT 10 ms      3.740000 ms



Date: 29.FEB.2008 23:17:08

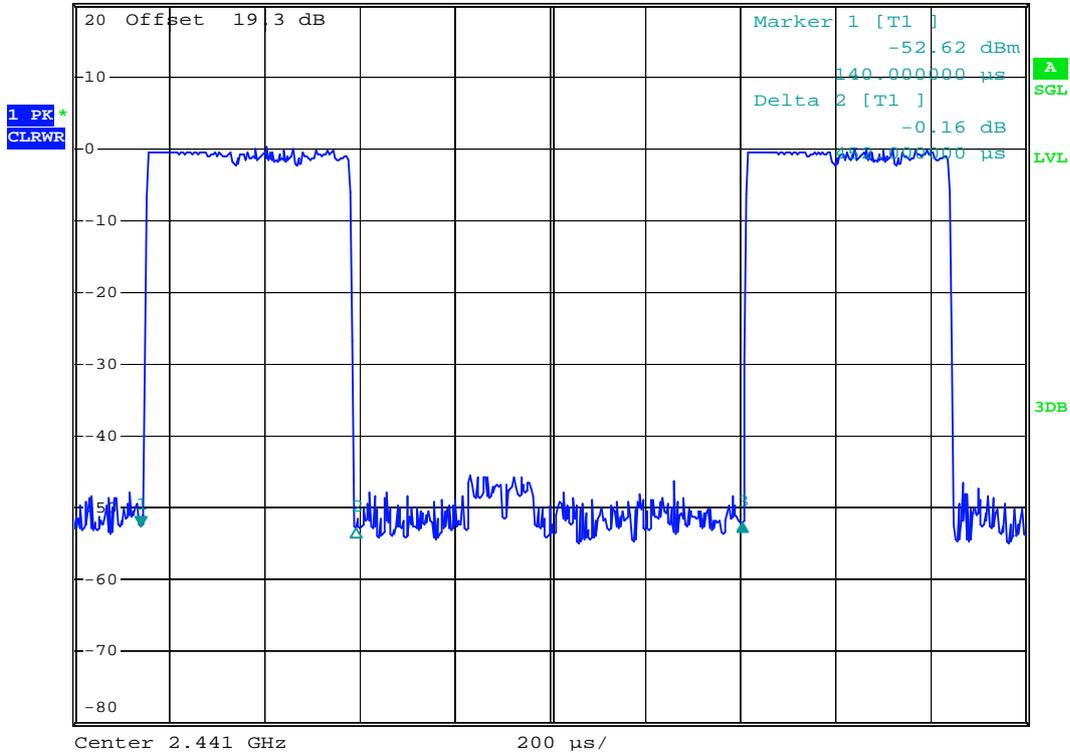


Date: 29.FEB.2008 23:33:11

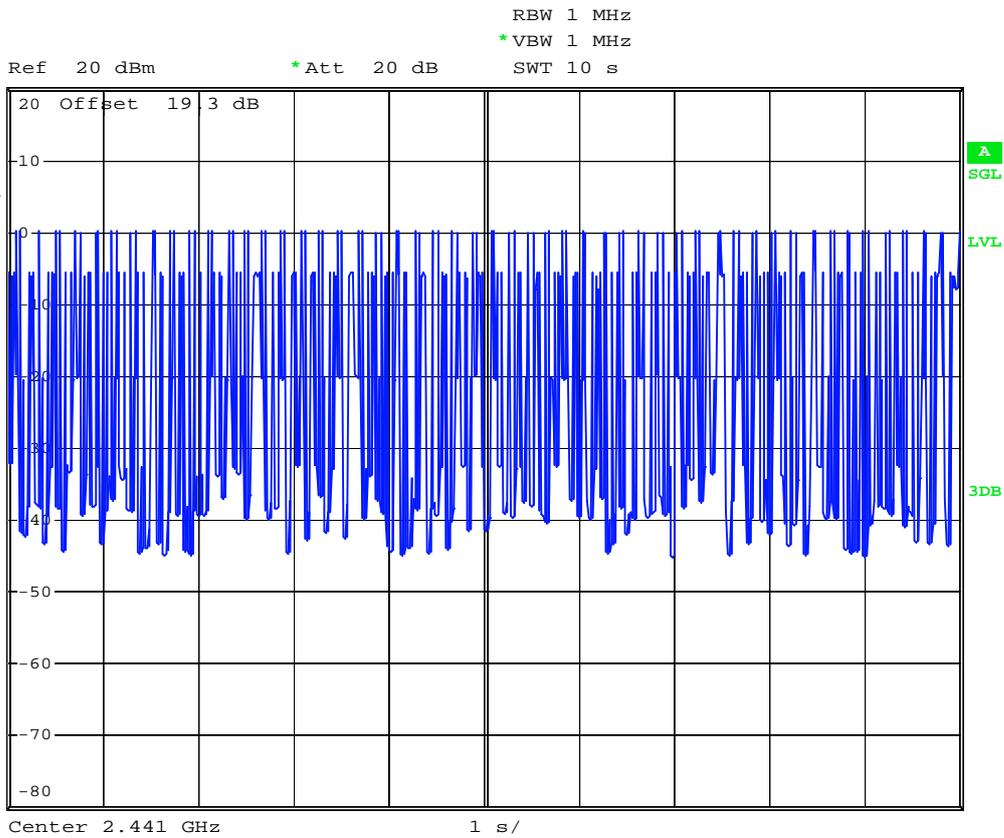
3DH1 (CH39)



Ref 20 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      0.56 dB  
 \*VBW 1 MHz      1.264000 ms  
 SWT 2 ms



Date: 29.FEB.2008 23:30:07

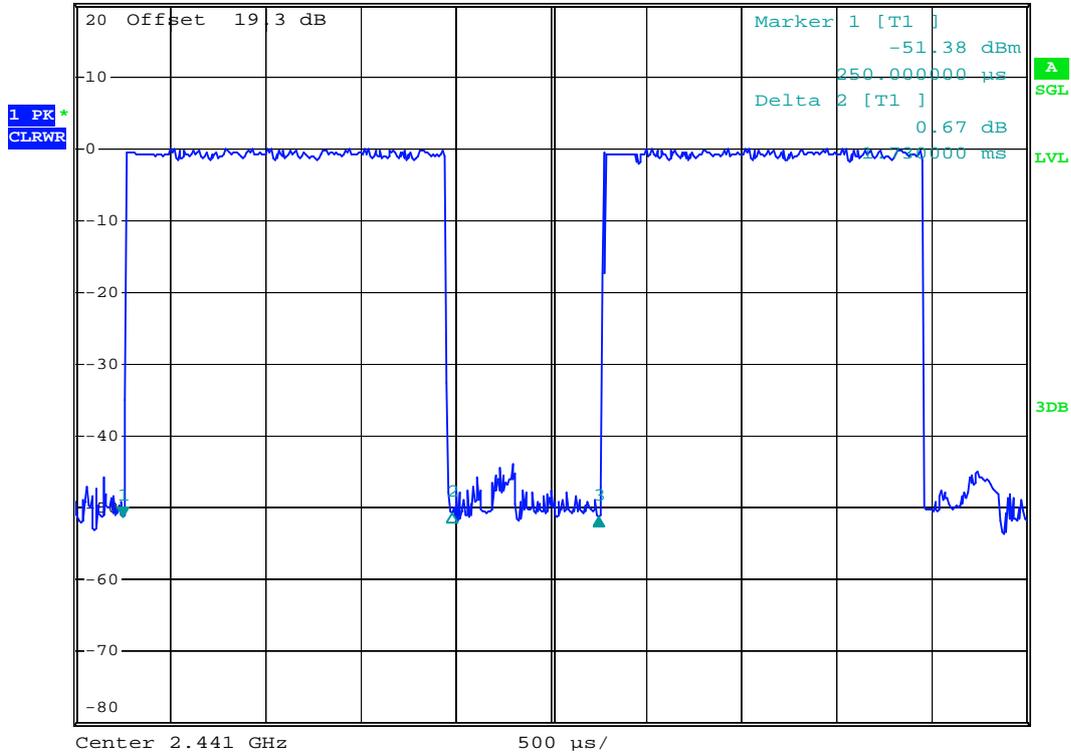


Date: 29.FEB.2008 23:33:54

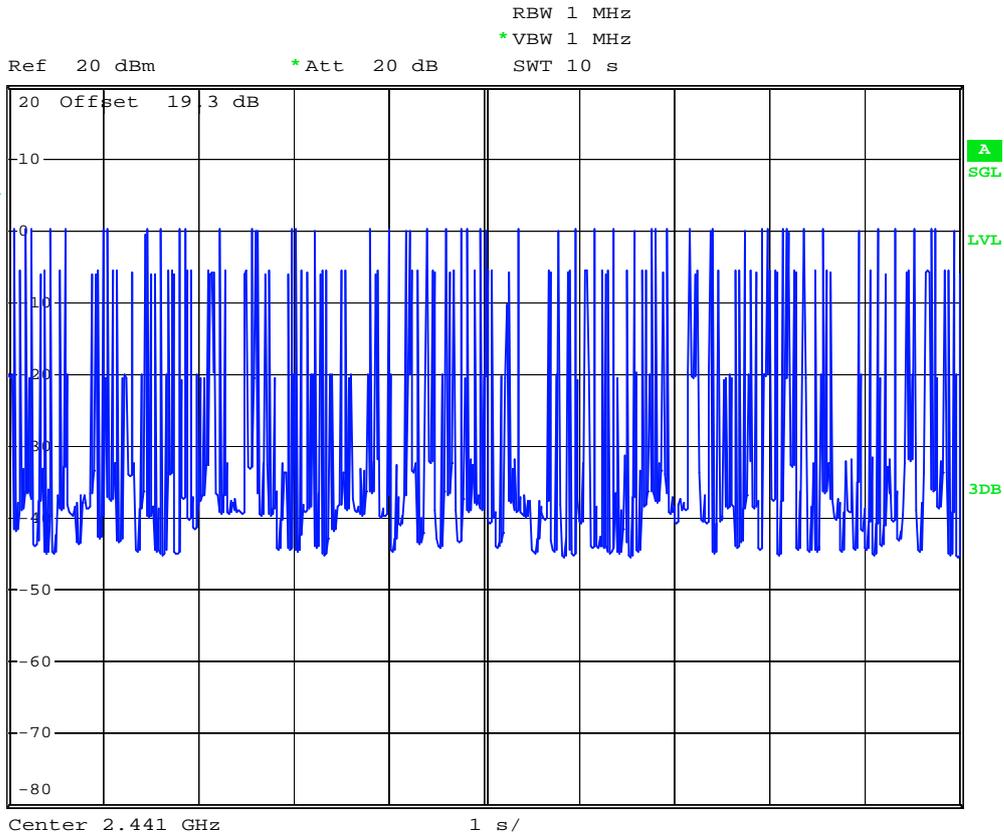
3DH3 (CH39)



Ref 20 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      0.00 dB  
 \*VBW 1 MHz      2.500000 ms  
 SWT 5 ms



Date: 29.FEB.2008 23:30:49

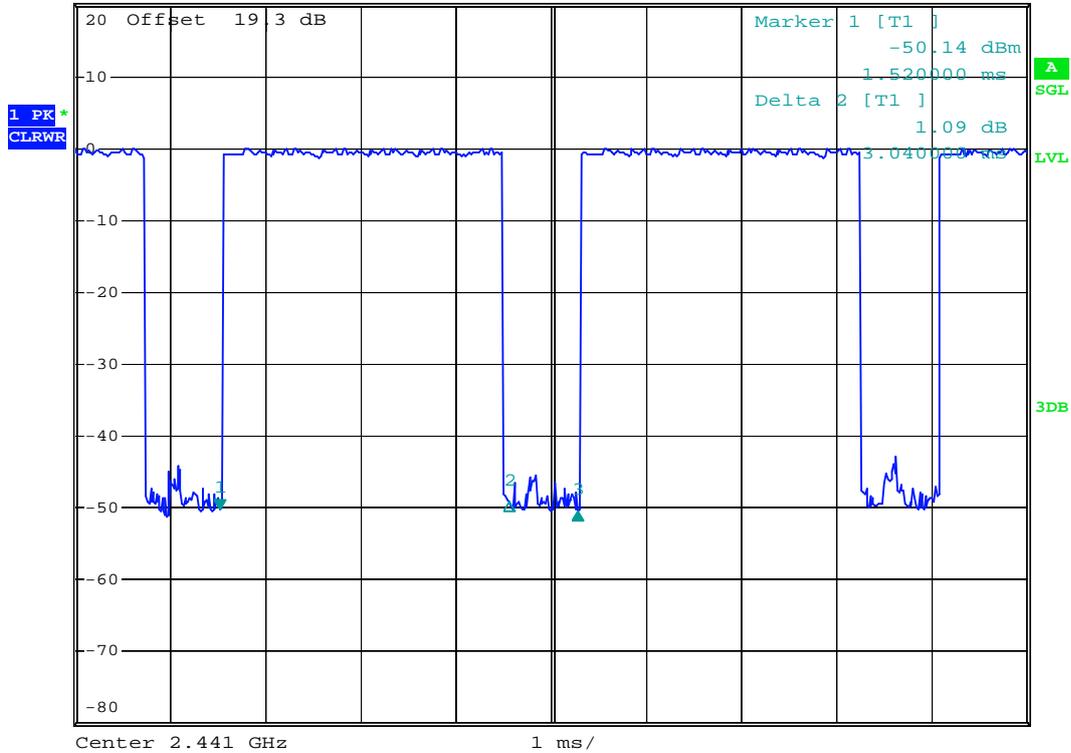


Date: 29.FEB.2008 23:34:23

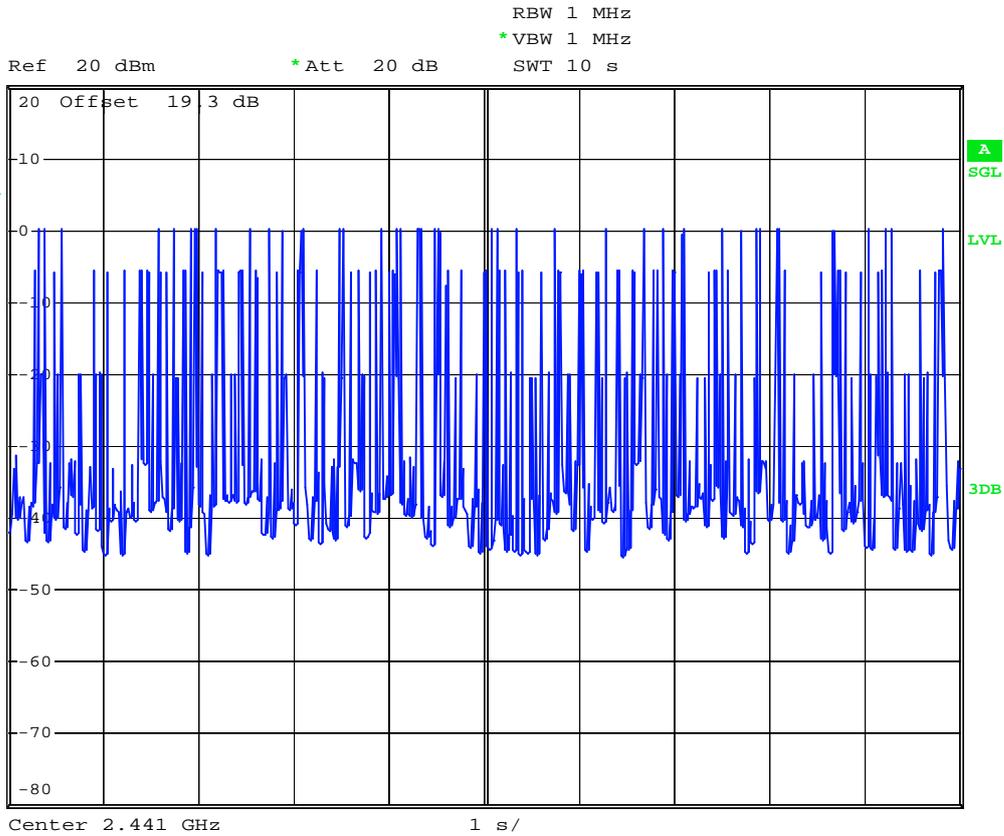
3DH5 (CH39)



Ref 20 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      -0.40 dB  
 \*VBW 1 MHz      SWT 10 ms      3.760000 ms



Date: 29.FEB.2008 23:31:22



Date: 29.FEB.2008 23:34:45

## 5.7 Peak Output Power Measurement

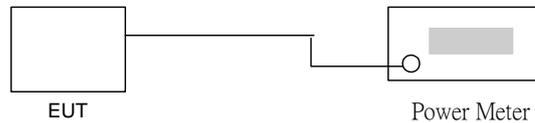
### 5.7.1 Measuring Instruments

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 BT 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 : BT
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer : CKC

▪ BT(1Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	-1.03	1W/30 dBm
39	2441	-0.32	1W/30 dBm
78	2480	-0.23	1W/30 dBm

▪ BT EDR(2Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	-0.03	1W/30 dBm
39	2441	0.73	1W/30 dBm
78	2480	0.77	1W/30 dBm

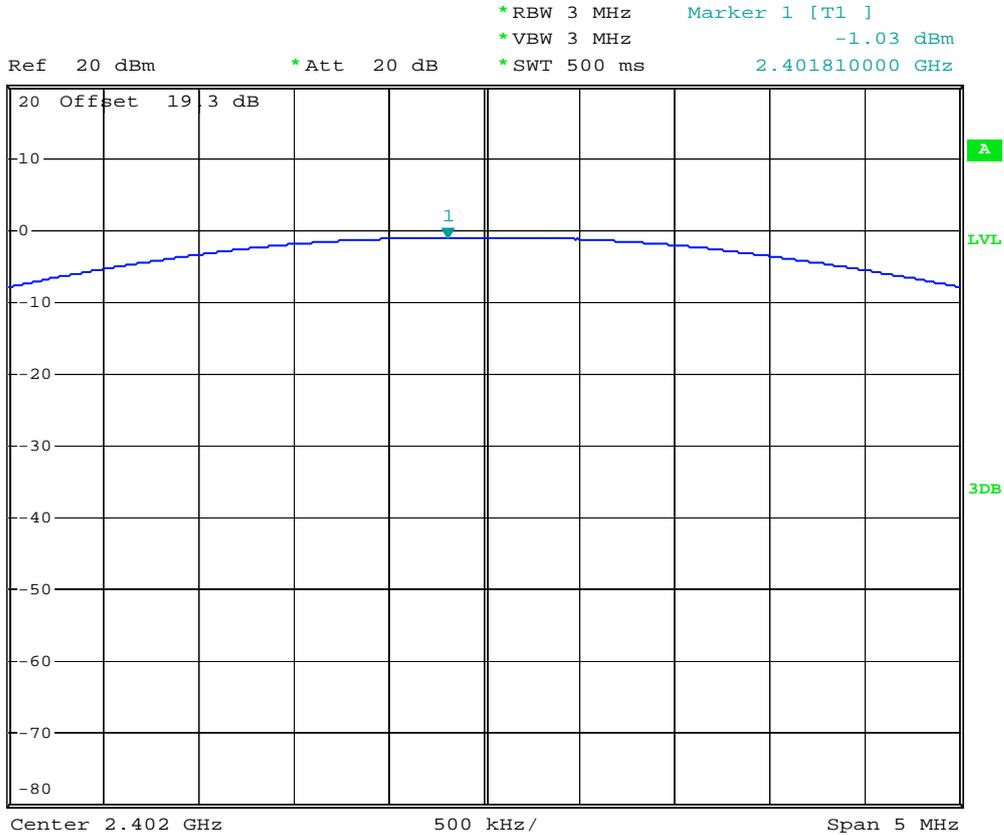
▪ BT EDR(3Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	-0.39	1W/30 dBm
39	2441	0.34	1W/30 dBm
78	2480	0.42	1W/30 dBm

5.7.5 Output Power

BT(1Mbps)

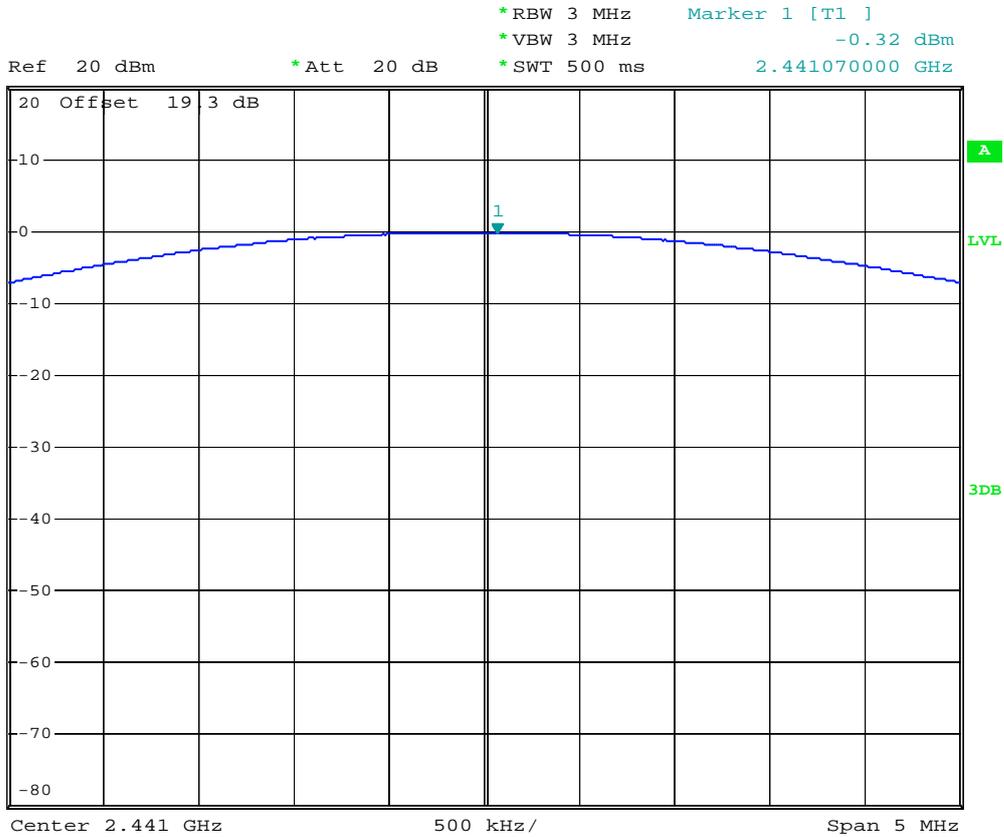
Mode : CH00 (2402MHz)



Date: 29.FEB.2008 10:33:24

BT(1Mbps)

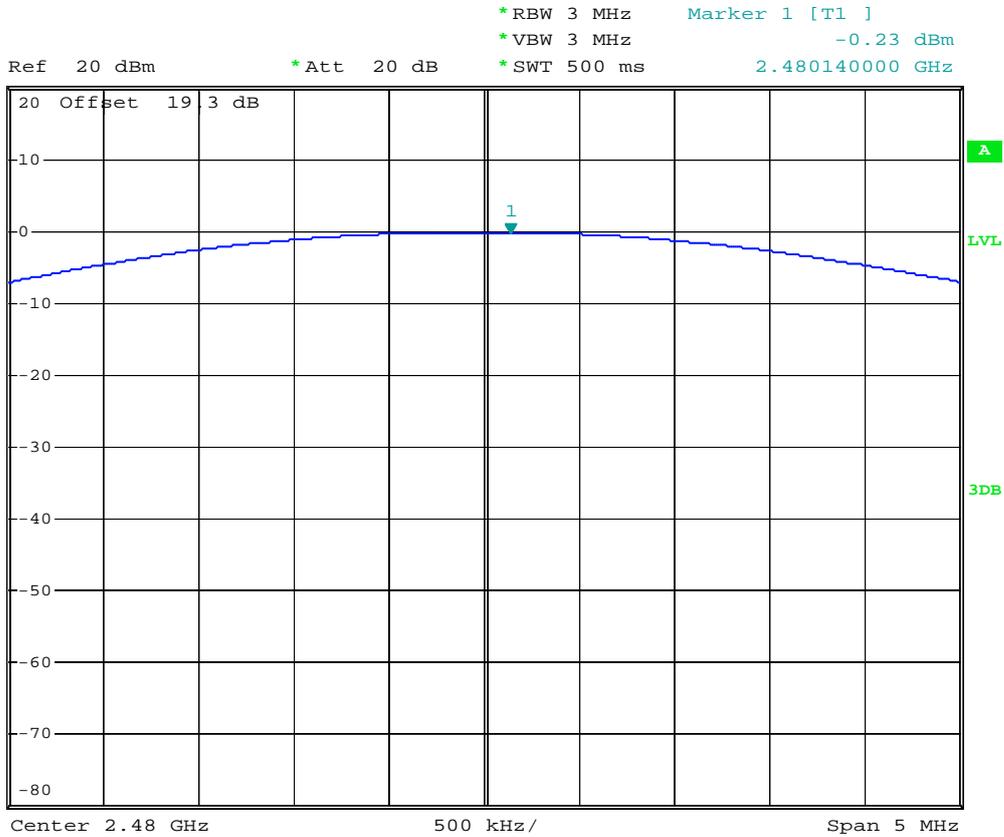
Mode : CH39 (2441MHz)



Date: 29.FEB.2008 10:33:45

Bluetooth(1Mbps)

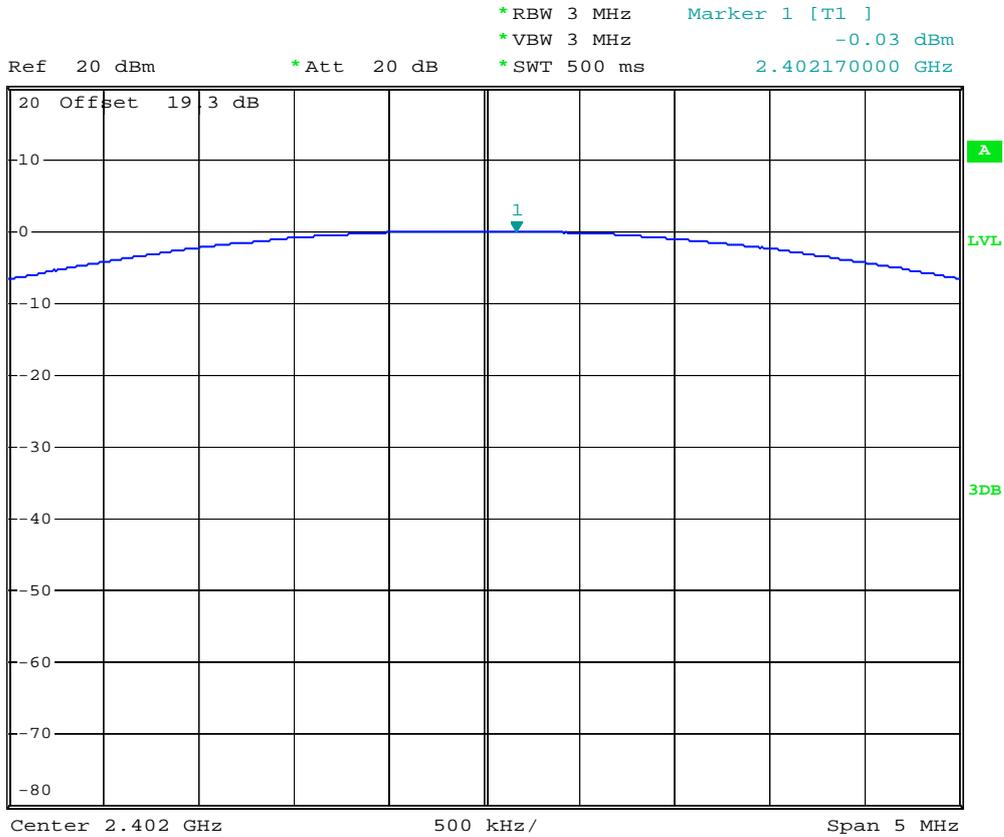
Mode : CH78 (2480MHz)



Date: 29.FEB.2008 10:34:08

Bluetooth(2Mbps)

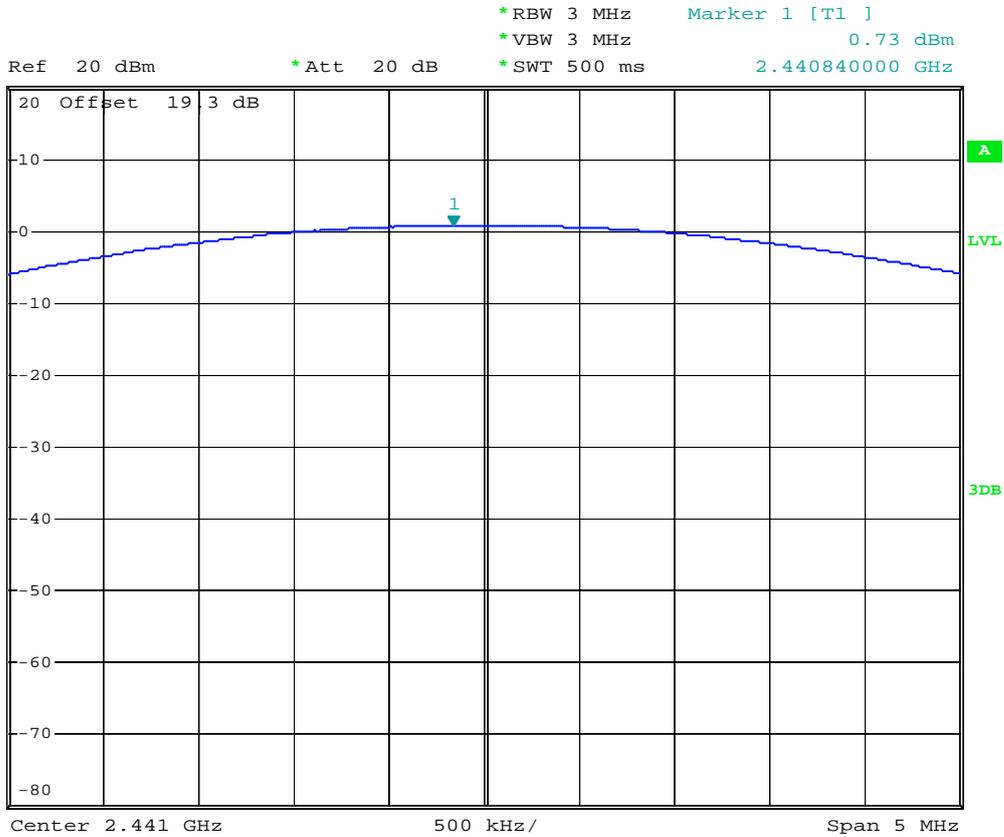
Mode : CH00 (2402MHz)



Date: 29.FEB.2008 10:37:12

Bluetooth(2Mbps)

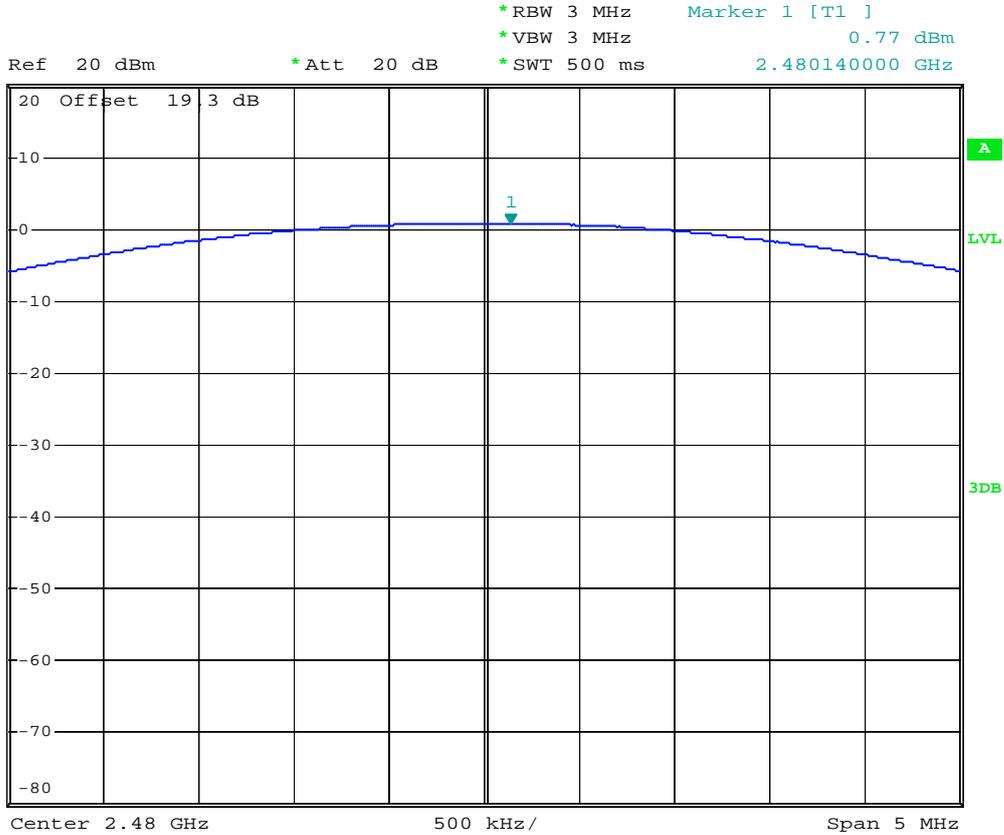
Mode : CH39 (2441MHz)



Date: 29.FEB.2008 10:37:43

Bluetooth(2Mbps)

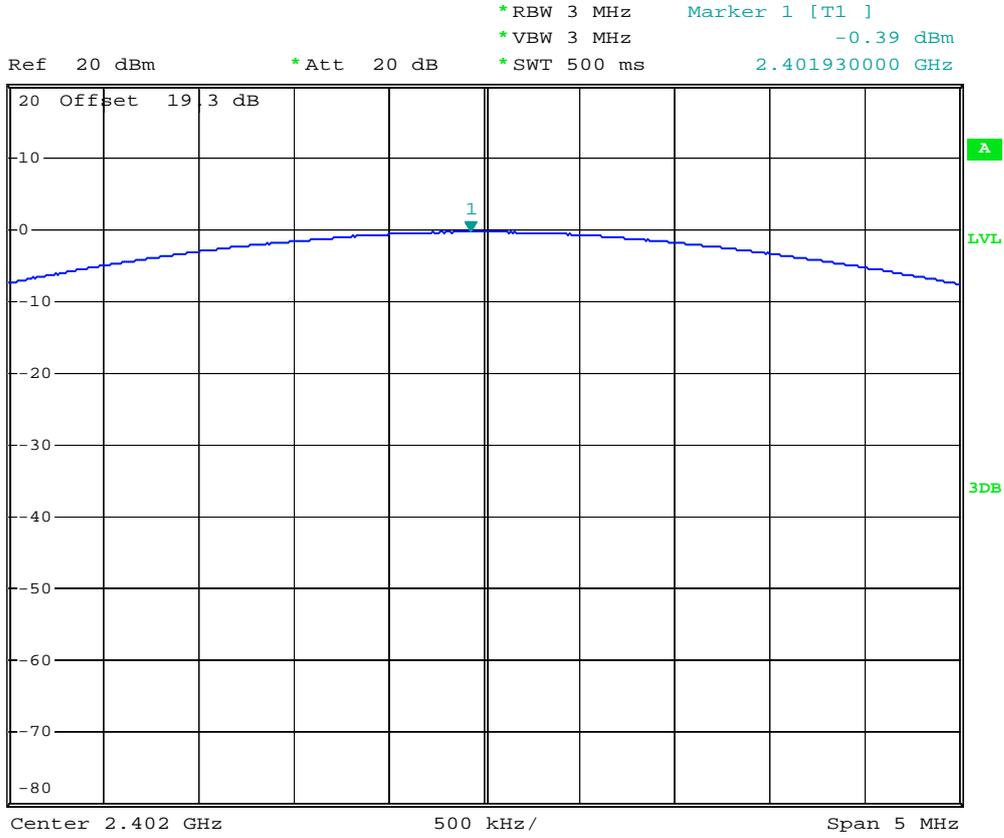
Mode : CH78 (2480MHz)



Date: 29.FEB.2008 10:38:20

Bluetooth(3Mbps)

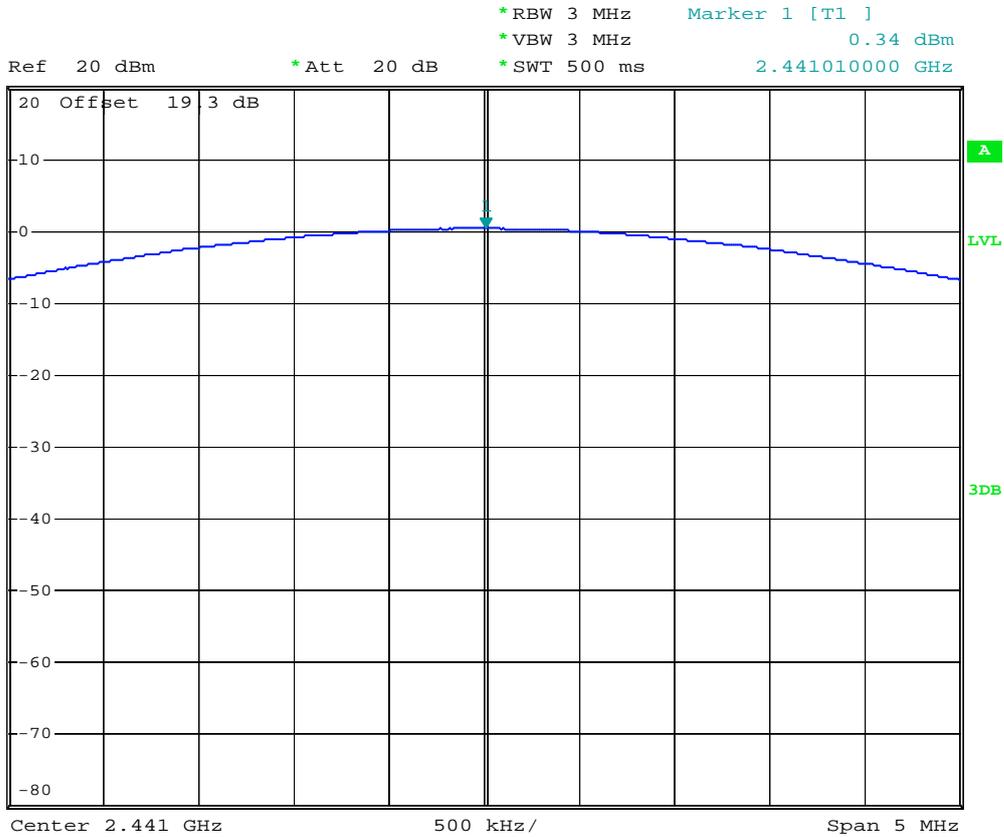
Mode : CH00 (2402MHz)



Date: 29.FEB.2008 10:39:25

Bluetooth(3Mbps)

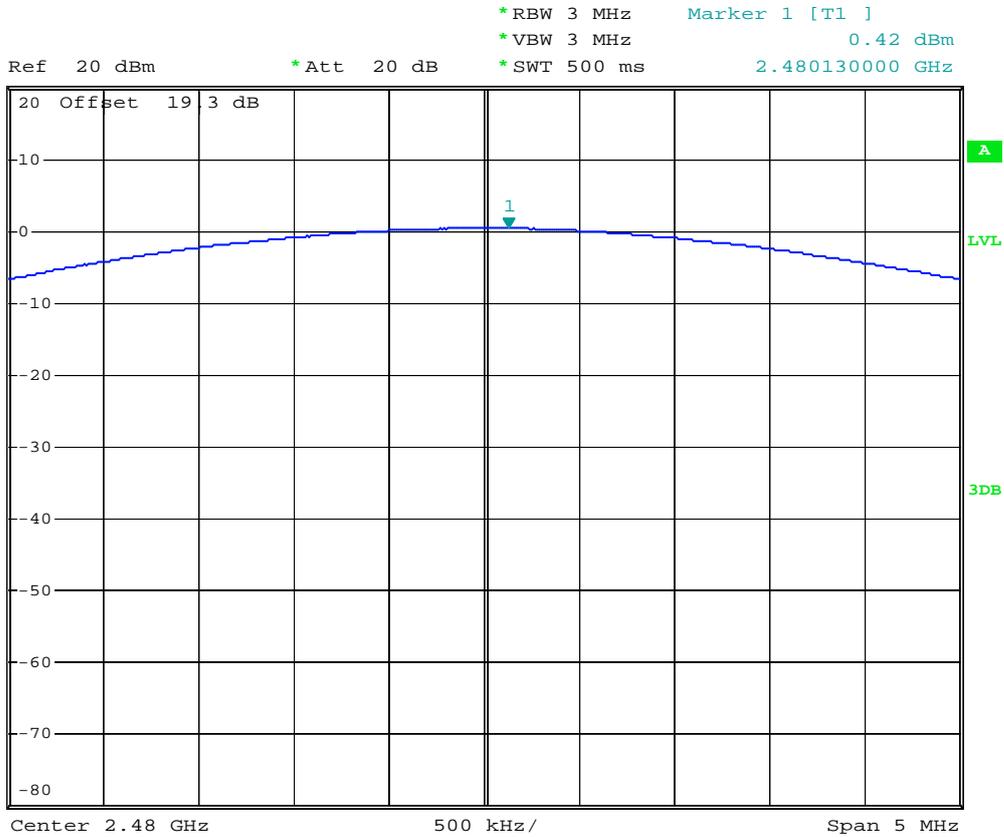
Mode : CH39 (2441MHz)



Date: 29.FEB.2008 10:39:52

Bluetooth(3Mbps)

Mode : CH78 (2480MHz)



Date: 29.FEB.2008 10:40:16

## 5.8 Conducted Emission

### 5.8.1 Measuring Instruments

As described in chapter 6 of this test Report.

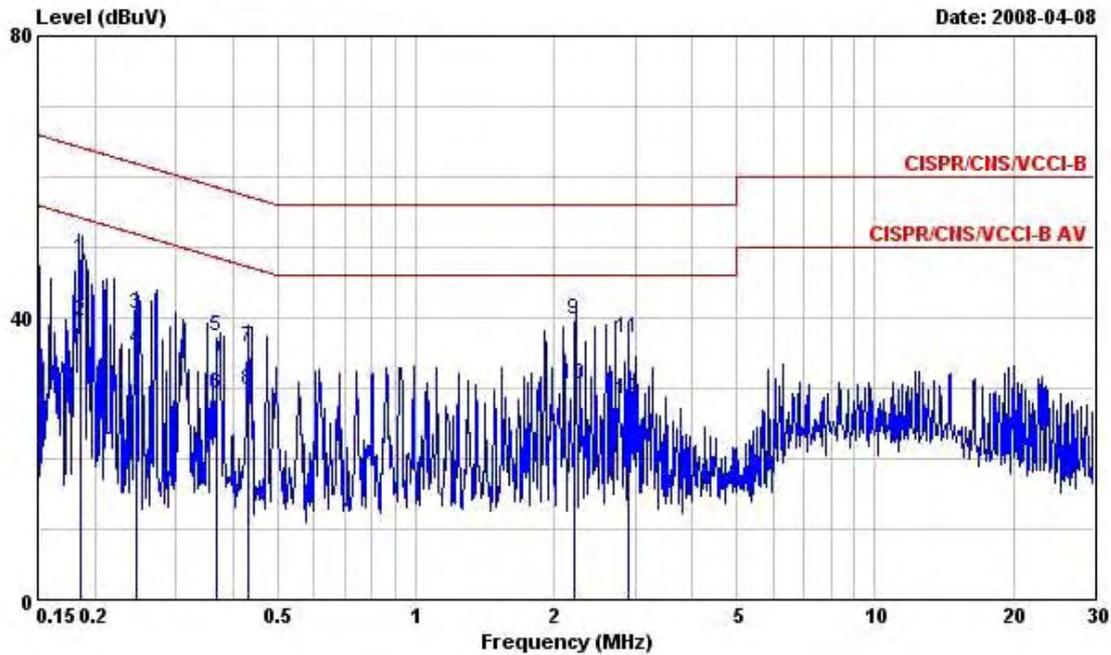
### 5.8.2 Test Procedures

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

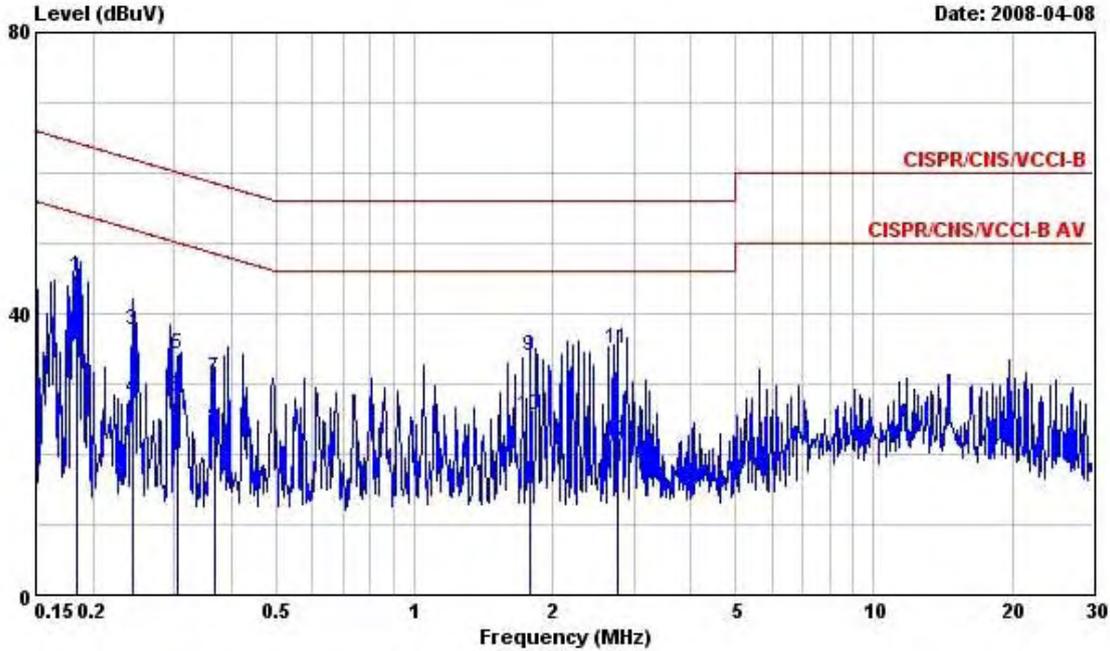
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 1

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+BatteryI  
 Memo : +CameraI+Adaptor A +GPS Rx  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1860800	48.53	-15.68	64.21	48.29	0.10	0.14	QP
2	0.1860800	39.56	-14.65	54.21	39.32	0.10	0.14	Average
3	0.2457740	40.43	-21.47	61.90	40.01	0.10	0.32	QP
4	0.2457740	35.65	-16.25	51.90	35.23	0.10	0.32	Average
5	0.3694120	37.40	-21.11	58.51	36.64	0.10	0.66	QP
6	0.3694120	29.20	-19.31	48.51	28.44	0.10	0.66	Average
7	0.4305230	35.68	-21.56	57.24	34.87	0.10	0.71	QP
8	0.4305230	29.65	-17.59	47.24	28.84	0.10	0.71	Average
9	2.212	39.75	-16.25	56.00	39.24	0.10	0.41	QP
10	2.212	30.62	-15.38	46.00	30.11	0.10	0.41	Average
11	2.889	37.13	-18.87	56.00	36.66	0.10	0.37	QP
12	2.889	28.51	-17.49	46.00	28.04	0.10	0.37	Average

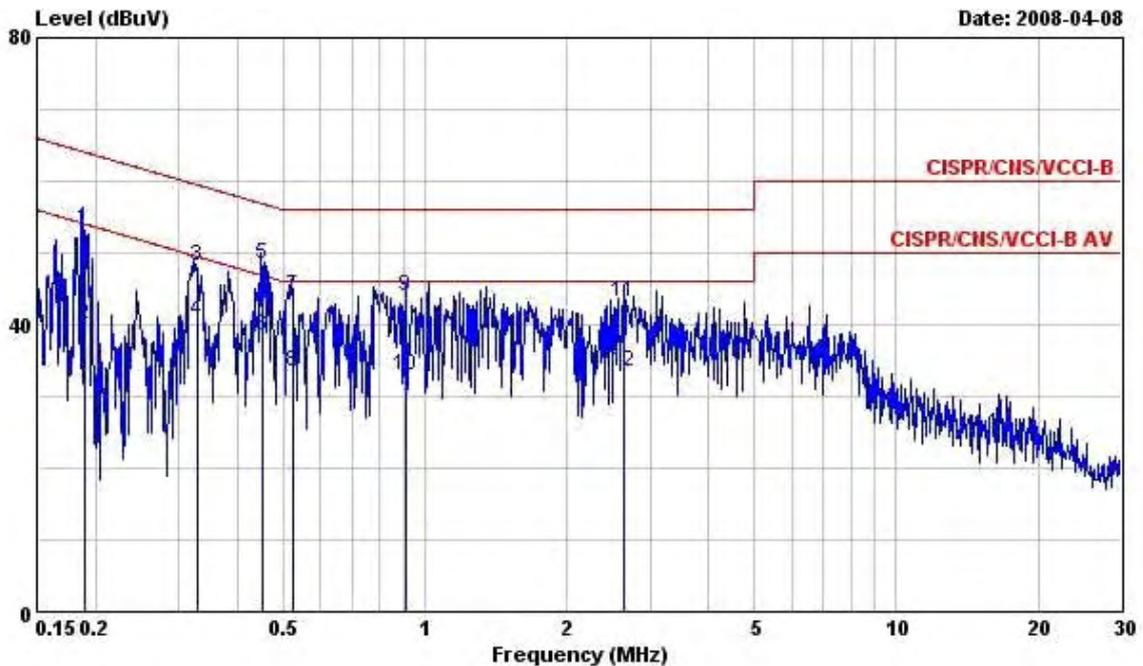


Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link  
 Memo : Battery1 + Camera1+Adaptor A+GPS Rx  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.1844300	45.37	-18.91	64.28	45.13	0.10	0.14	QP
2	0.1844300	35.44	-18.84	54.28	35.20	0.10	0.14	Average
3	0.2449730	37.69	-24.24	61.93	37.28	0.10	0.31	QP
4	0.2449730	27.89	-24.04	51.93	27.48	0.10	0.31	Average
5	0.3064330	34.17	-25.90	60.07	33.57	0.10	0.50	QP
6	0.3064330	28.08	-21.99	50.07	27.48	0.10	0.50	Average
7	0.3672900	30.80	-27.76	58.56	30.05	0.10	0.65	QP
8	0.3672900	23.60	-24.96	48.56	22.85	0.10	0.65	Average
9	1.779	33.90	-22.10	56.00	33.37	0.10	0.43	QP
10	1.779	25.50	-20.50	46.00	24.97	0.10	0.43	Average
11	2.764	34.93	-21.07	56.00	34.40	0.15	0.38	QP
12	2.764	21.78	-24.22	46.00	21.25	0.15	0.38	Average

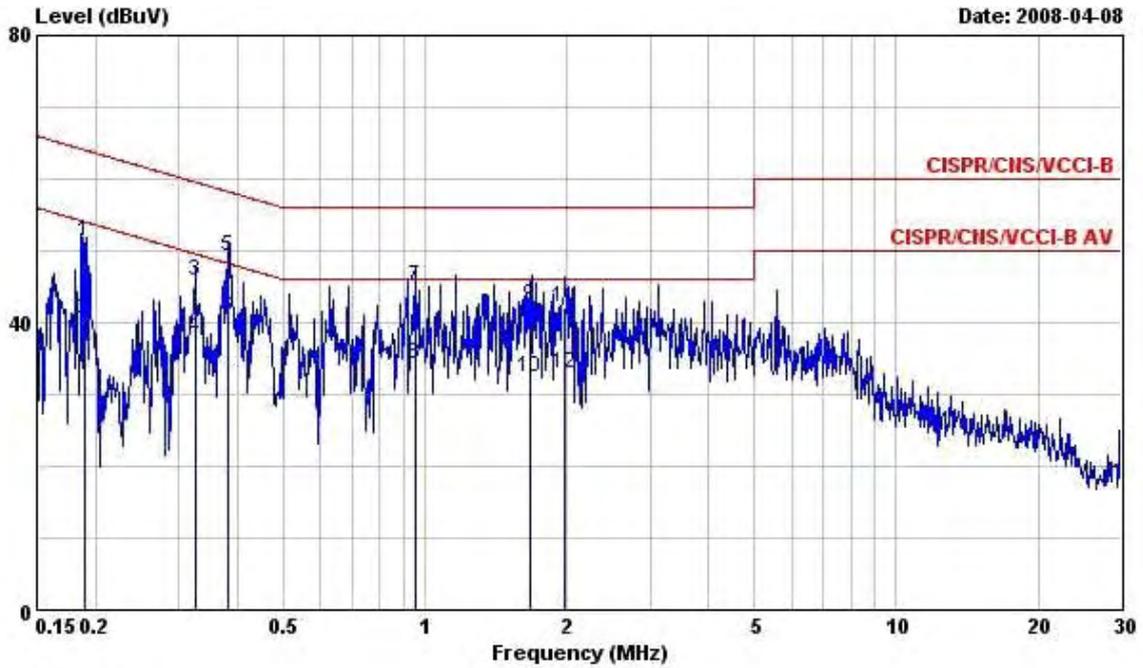
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 2

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link  
 Memo : Battery2 + Camera1+Adaptor B+GPS Rx  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1887450	53.45	-10.64	64.09	53.21	0.10	0.14	QP
2	0.1887450	39.97	-14.12	54.09	39.73	0.10	0.14	Average
3	0.3293420	48.17	-11.30	59.47	47.50	0.10	0.57	QP
4	0.3293420	40.66	-8.81	49.47	39.99	0.10	0.57	Average
5	0.4513640	48.32	-8.53	56.85	47.53	0.10	0.69	QP
6	0.4513640	38.46	-8.39	46.85	37.67	0.10	0.69	Average
7	0.5257450	43.88	-12.12	56.00	43.13	0.10	0.65	QP
8	0.5257450	33.42	-12.58	46.00	32.67	0.10	0.65	Average
9	0.9087440	43.96	-12.04	56.00	43.39	0.10	0.47	QP
10	0.9087440	32.93	-13.07	46.00	32.36	0.10	0.47	Average
11	2.640	43.15	-12.85	56.00	42.66	0.10	0.39	QP
12	2.640	33.30	-12.70	46.00	32.81	0.10	0.39	Average

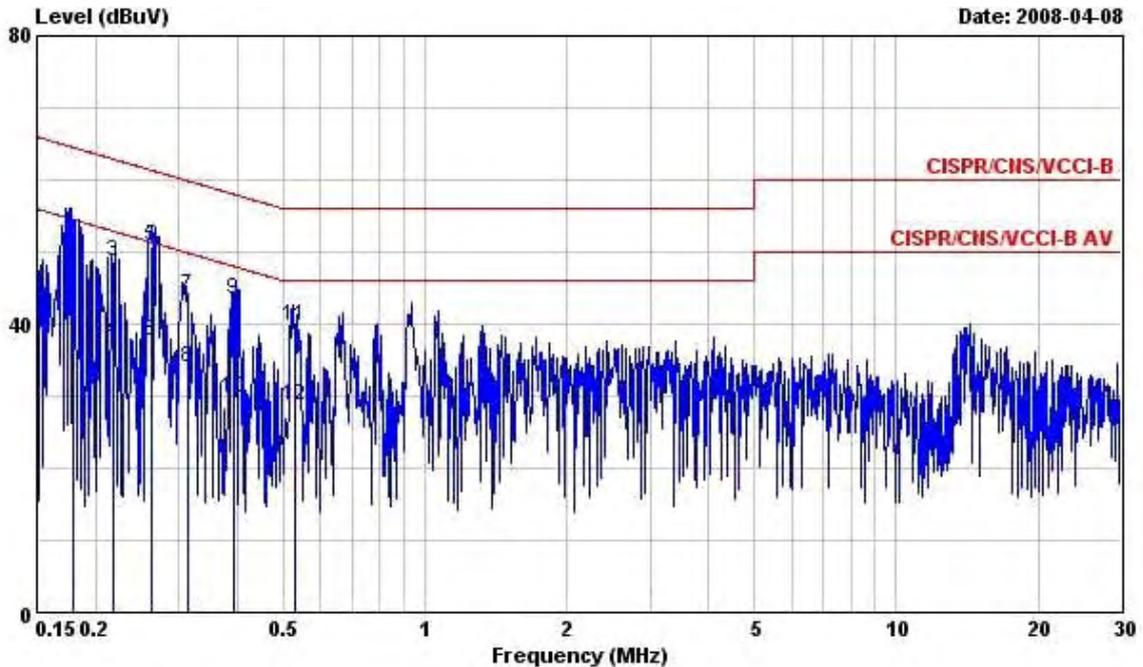


Site : CO04-HY  
 Condition : CISPR/CNS/VCCIB LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link  
 Memo : Battery2 + Camera1+Adaptor B+GPS Rx  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.1889450	51.23	-12.85	64.08	50.99	0.10	0.14	QP
2	0.1889450	40.40	-13.68	54.08	40.16	0.10	0.14	Average
3	0.3251190	45.85	-13.72	59.57	45.20	0.10	0.55	QP
4	0.3251190	37.86	-11.71	49.57	37.21	0.10	0.55	Average
5	0.3811540	49.17	-9.08	58.25	48.38	0.10	0.69	QP
6	0.3811540	40.81	-7.44	48.25	40.02	0.10	0.69	Average
7	0.9510770	44.94	-11.06	56.00	44.38	0.10	0.46	QP
8	0.9510770	34.31	-11.69	46.00	33.75	0.10	0.46	Average
9	1.678	42.38	-13.62	56.00	41.85	0.10	0.43	QP
10	1.678	32.47	-13.53	46.00	31.94	0.10	0.43	Average
11	1.980	42.09	-13.91	56.00	41.56	0.10	0.43	QP
12	1.980	32.83	-13.17	46.00	32.30	0.10	0.43	Average

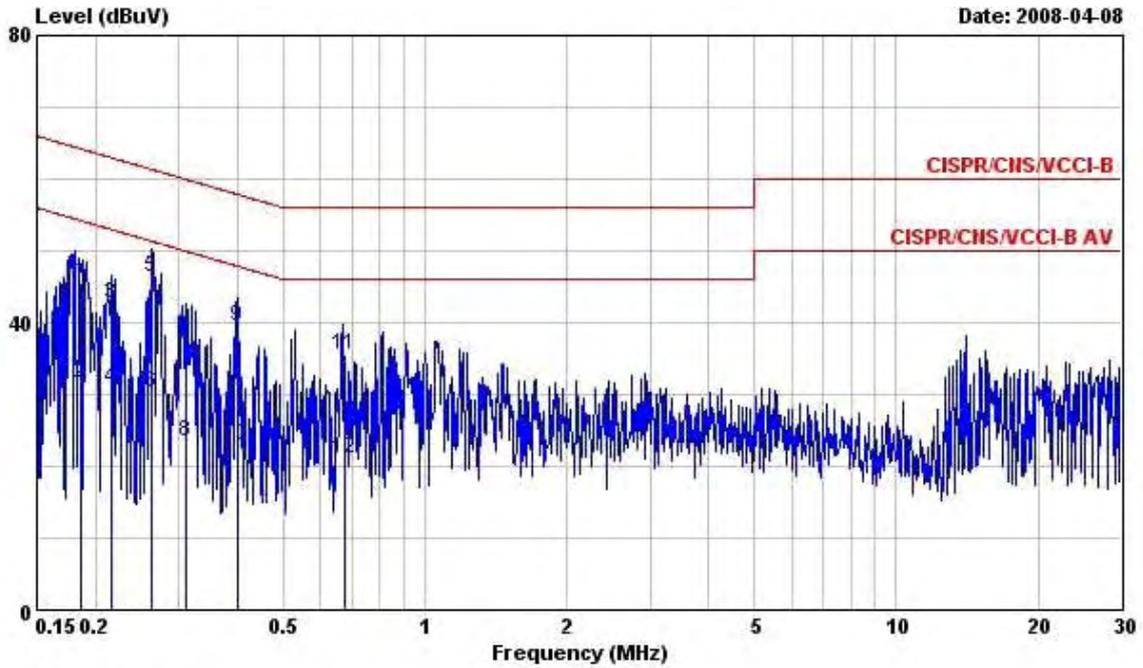
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 3

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery3  
 Memo : +Camera+Adaptor C+GPS Rx+USB Cable A  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.1796920	53.09	-11.41	64.50	52.85	0.10	0.14	QP
2	0.1796920	40.98	-13.52	54.50	40.74	0.10	0.14	Average
3	0.2170340	48.77	-14.16	62.93	48.46	0.10	0.21	QP
4	0.2170340	37.57	-15.36	52.93	37.26	0.10	0.21	Average
5	0.2630270	50.68	-10.66	61.34	50.21	0.10	0.37	QP
6	0.2630270	37.72	-13.62	51.34	37.25	0.10	0.37	Average
7	0.3136910	43.82	-16.05	59.87	43.20	0.10	0.52	QP
8	0.3136910	33.96	-15.91	49.87	33.34	0.10	0.52	Average
9	0.3934320	43.39	-14.60	57.99	42.57	0.10	0.72	QP
10	0.3934320	29.81	-18.18	47.99	28.99	0.10	0.72	Average
11	0.5298950	39.78	-16.22	56.00	39.04	0.10	0.64	QP
12	0.5298950	28.65	-17.35	46.00	27.91	0.10	0.64	Average

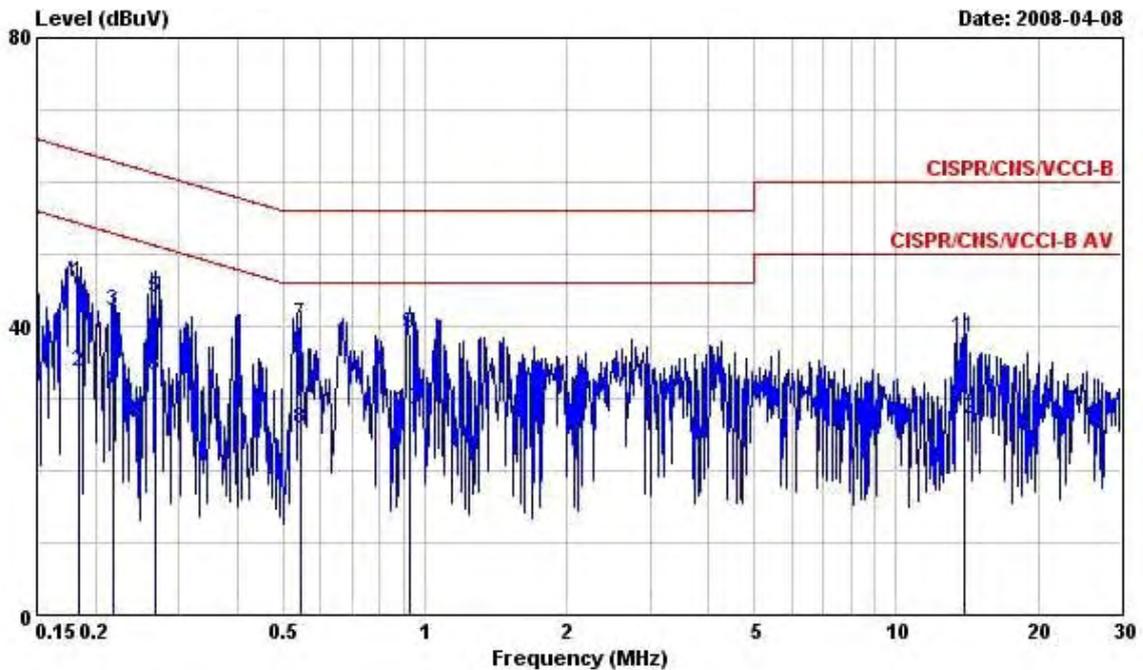


Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery3  
 Memo : +Camearl+Adaptor C+GPS Rx+USB Cable A  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1851720	45.42	-18.83	64.25	45.18	0.10	0.14	QP
2	0.1851720	31.71	-22.54	54.25	31.47	0.10	0.14	Average
3	0.2152530	42.54	-20.46	63.00	42.24	0.10	0.20	QP
4	0.2152530	30.78	-22.22	53.00	30.48	0.10	0.20	Average
5	0.2621770	46.19	-15.17	61.36	45.72	0.10	0.37	QP
6	0.2621770	30.39	-20.97	51.36	29.92	0.10	0.37	Average
7	0.3102290	37.73	-22.23	59.96	37.12	0.10	0.51	QP
8	0.3102290	23.44	-26.52	49.96	22.83	0.10	0.51	Average
9	0.3995180	39.58	-18.28	57.86	38.75	0.10	0.73	QP
10	0.3995180	22.82	-25.04	47.86	21.99	0.10	0.73	Average
11	0.6752160	35.52	-20.48	56.00	34.85	0.10	0.57	QP
12	0.6752160	20.98	-25.02	46.00	20.31	0.10	0.57	Average

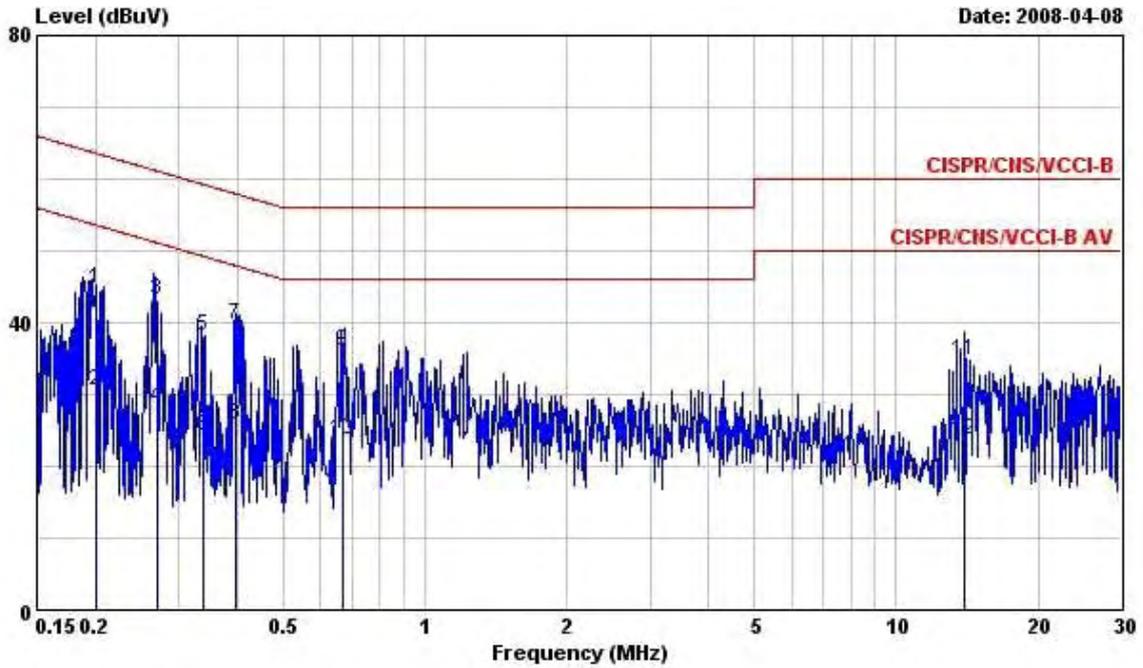
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 4

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery4  
 Memo : +Camearl+Adaptor C+GPS Rx+USB Cable B  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	Remark
1	0.1847420	45.95	-18.32	64.27	45.71	0.10	0.14	QP
2	0.1847420	33.81	-20.46	54.27	33.57	0.10	0.14	Average
3	0.2185070	42.01	-20.87	62.88	41.69	0.10	0.22	QP
4	0.2185070	31.23	-21.65	52.88	30.91	0.10	0.22	Average
5	0.2671410	43.96	-17.25	61.21	43.47	0.10	0.39	QP
6	0.2671410	33.03	-18.18	51.21	32.54	0.10	0.39	Average
7	0.5435530	40.16	-15.84	56.00	39.43	0.10	0.63	QP
8	0.5435530	25.78	-20.22	46.00	25.05	0.10	0.63	Average
9	0.9282090	39.02	-16.98	56.00	38.46	0.10	0.46	QP
10	0.9282090	28.41	-17.59	46.00	27.85	0.10	0.46	Average
11	13.914	38.46	-21.54	60.00	37.77	0.53	0.16	QP
12	13.914	27.10	-22.90	50.00	26.41	0.53	0.16	Average

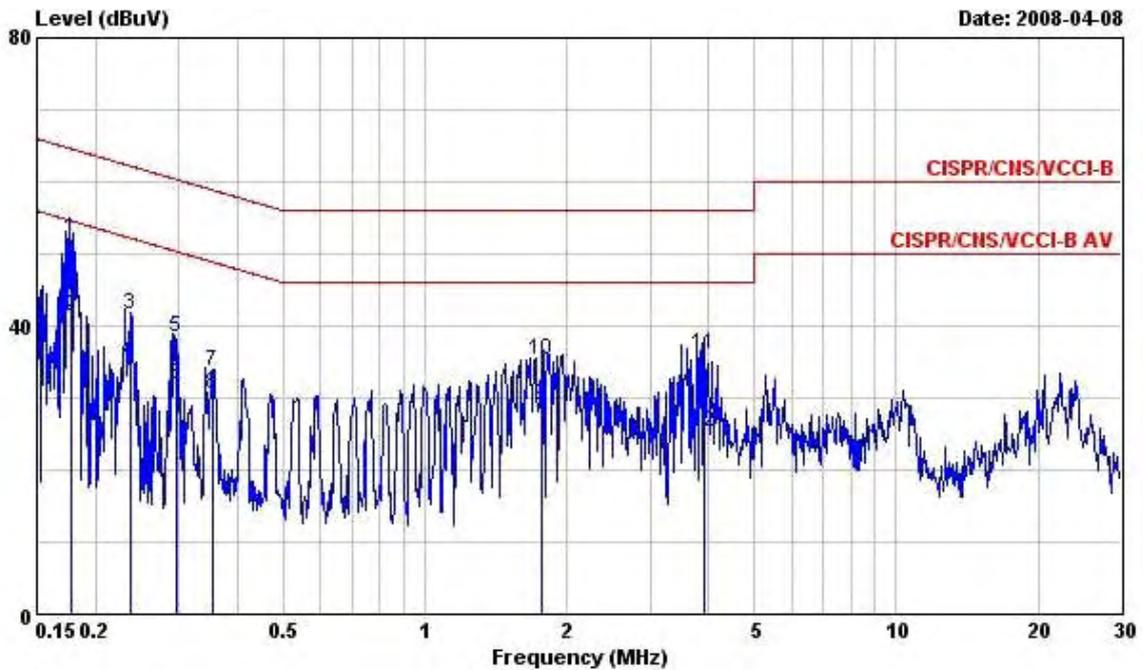


Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery4  
 Memo : +Camera+Adaptor C+GPS Rx+USB Cable B  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1999300	44.71	-18.90	63.61	44.47	0.10	0.14	QP
2	0.1999300	30.43	-23.18	53.61	30.19	0.10	0.14	Average
3	0.2692290	43.13	-18.01	61.14	42.64	0.10	0.39	QP
4	0.2692290	28.22	-22.92	51.14	27.73	0.10	0.39	Average
5	0.3383820	38.26	-20.98	59.24	37.57	0.10	0.59	QP
6	0.3383820	24.29	-24.95	49.24	23.60	0.10	0.59	Average
7	0.3976320	39.71	-18.19	57.90	38.89	0.10	0.72	QP
8	0.3976320	25.69	-22.21	47.90	24.87	0.10	0.72	Average
9	0.6696350	35.95	-20.05	56.00	35.28	0.10	0.57	QP
10	0.6696350	23.65	-22.35	46.00	22.98	0.10	0.57	Average
11	13.912	34.65	-25.35	60.00	34.19	0.30	0.16	QP
12	13.912	23.62	-26.38	50.00	23.16	0.30	0.16	Average

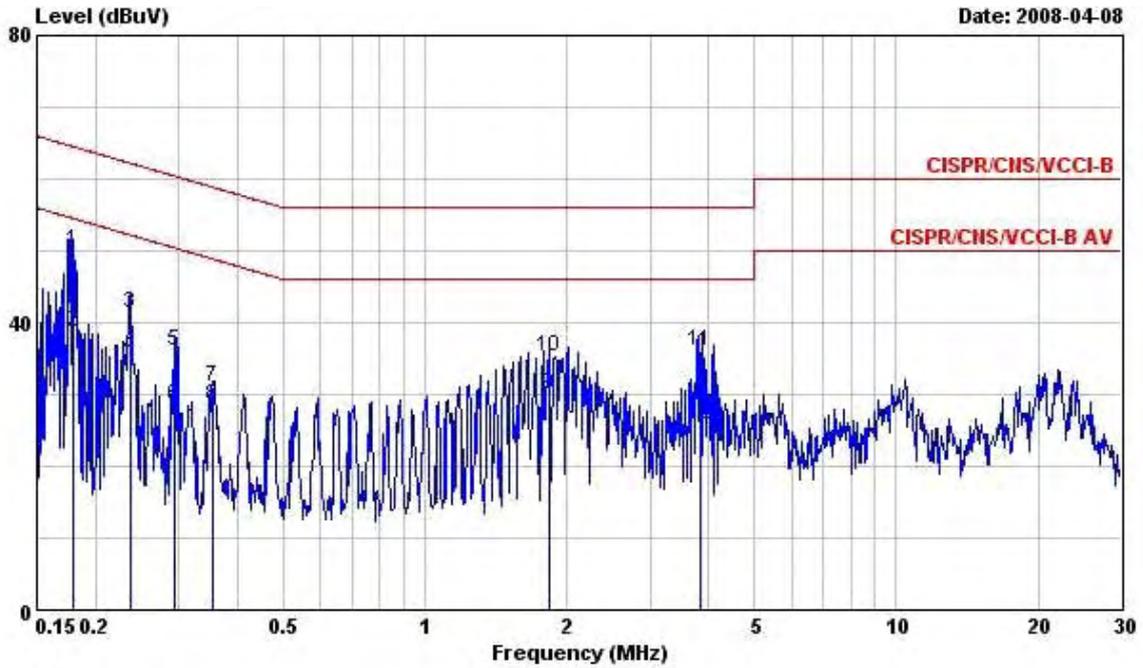
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 5

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: Form NoteBook  
 Model : FR832620  
 Memo : EDGE Idle+BT Link+WLAN Link+Battery5  
 Memo : +Camear2+USB A Link+GPS Rx  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1769920	52.09	-12.54	64.63	51.85	0.10	0.14	QP
2	0.1769920	41.39	-13.24	54.63	41.15	0.10	0.14	Average
3	0.2367700	41.58	-20.63	62.21	41.20	0.10	0.28	QP
4	0.2367700	34.96	-17.25	52.21	34.58	0.10	0.28	Average
5	0.2956790	38.30	-22.06	60.36	37.73	0.10	0.47	QP
6	0.2956790	31.85	-18.51	50.36	31.28	0.10	0.47	Average
7	0.3546470	33.63	-25.22	58.85	32.90	0.10	0.63	QP
8	0.3546470	30.64	-18.21	48.85	29.91	0.10	0.63	Average
9	1.772	28.86	-17.14	46.00	28.33	0.10	0.43	Average
10	1.772	35.28	-20.72	56.00	34.75	0.10	0.43	QP
11	3.908	36.06	-19.94	56.00	35.64	0.10	0.32	QP
12	3.908	25.15	-20.85	46.00	24.73	0.10	0.32	Average

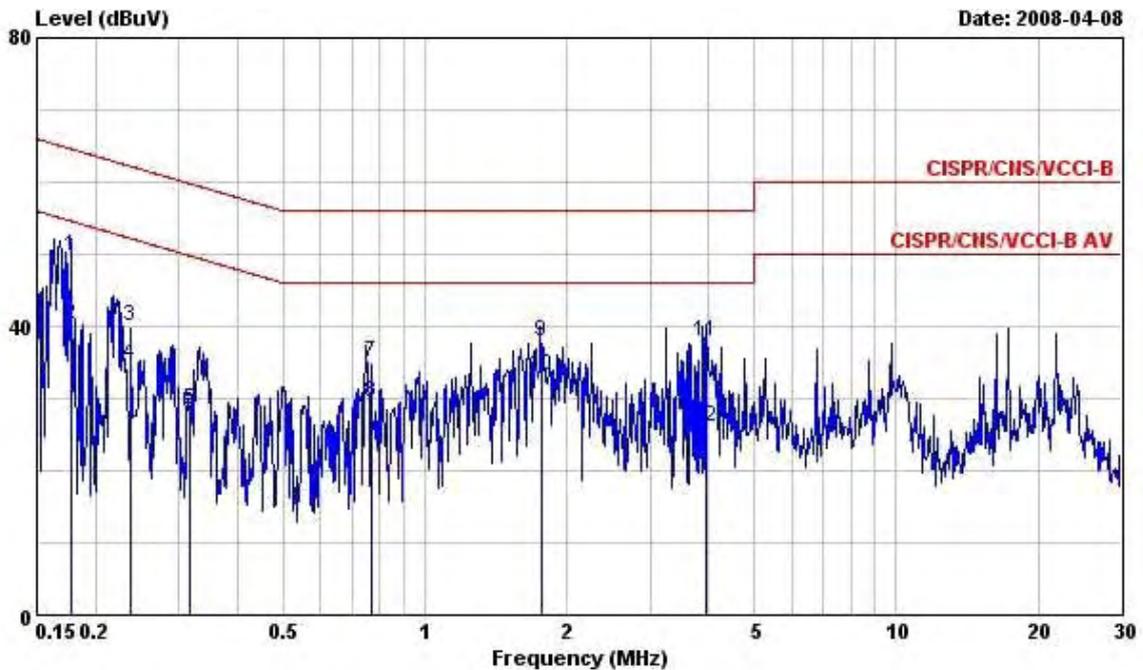


Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: Form NoteBook  
 Model : FR832620  
 Memo : EDGE Idle+BT Link+WLAN Link+Battery5  
 Memo : +Camear2+USB A Link+GPS Rx  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1796590	50.10	-14.40	64.50	49.86	0.10	0.14	QP
2	0.1796590	38.73	-15.77	54.50	38.49	0.10	0.14	Average
3	0.2378380	41.37	-20.80	62.17	40.98	0.10	0.29	QP
4	0.2378380	35.39	-16.78	52.17	35.00	0.10	0.29	Average
5	0.2939830	35.99	-24.42	60.41	35.42	0.10	0.47	QP
6	0.2939830	28.42	-21.99	50.41	27.85	0.10	0.47	Average
7	0.3538820	30.97	-27.90	58.87	30.24	0.10	0.63	QP
8	0.3538820	28.49	-20.38	48.87	27.76	0.10	0.63	Average
9	1.828	29.87	-16.13	46.00	29.34	0.10	0.43	Average
10	1.828	35.18	-20.82	56.00	34.65	0.10	0.43	QP
11	3.854	36.12	-19.88	56.00	35.59	0.20	0.33	QP
12	3.854	25.80	-20.20	46.00	25.27	0.20	0.33	Average

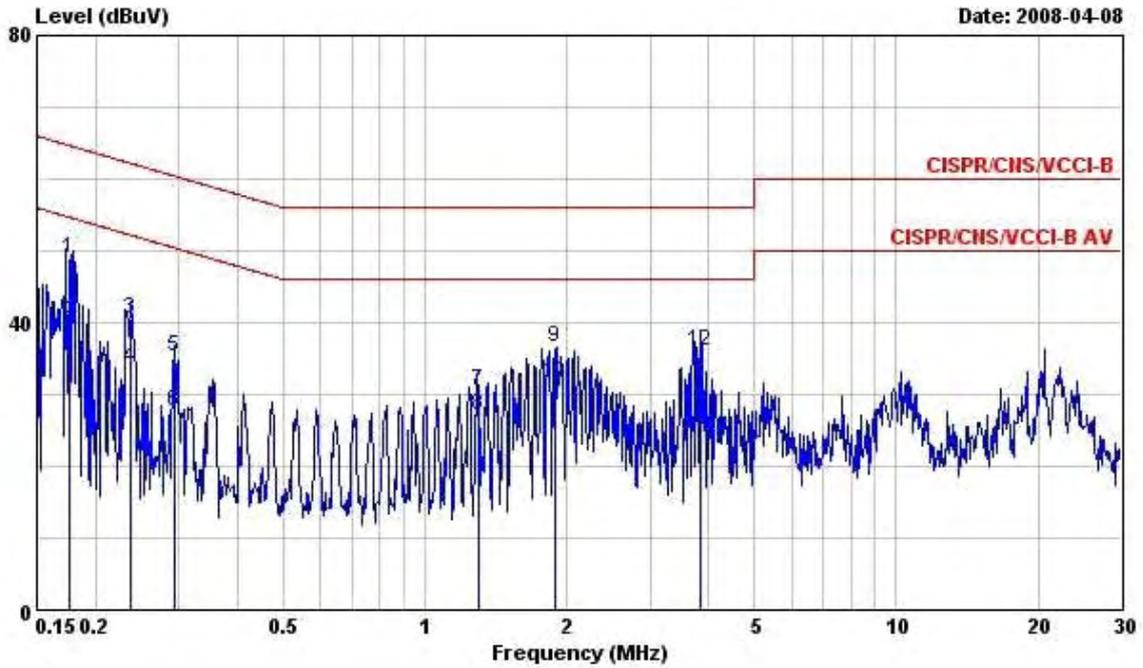
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :  Darren
- Test Mode : Mode 6

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: Form NoteBook  
 Model : FR832620  
 Memo : WCDMA Idle+BT Idle+WLAN Idle+Battery5  
 Memo : +MPEG 4+USB B Link+GPS Rx  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	Remark
1	0.1767580	49.78	-14.86	64.64	49.54	0.10	0.14	QP
2	0.1767580	40.27	-14.37	54.64	40.03	0.10	0.14	Average
3	0.2360570	39.97	-22.26	62.23	39.59	0.10	0.28	QP
4	0.2360570	34.71	-17.52	52.23	34.33	0.10	0.28	Average
5	0.3172320	28.45	-31.33	59.78	27.82	0.10	0.53	QP
6	0.3172320	27.96	-21.82	49.78	27.33	0.10	0.53	Average
7	0.7663890	35.02	-20.98	56.00	34.40	0.10	0.52	QP
8	0.7663890	29.58	-16.42	46.00	28.96	0.10	0.52	Average
9	1.768	37.95	-18.05	56.00	37.42	0.10	0.43	QP
10	1.768	33.19	-12.81	46.00	32.66	0.10	0.43	Average
11	3.956	37.99	-18.01	56.00	37.57	0.10	0.32	QP
12	3.956	26.02	-19.98	46.00	25.60	0.10	0.32	Average

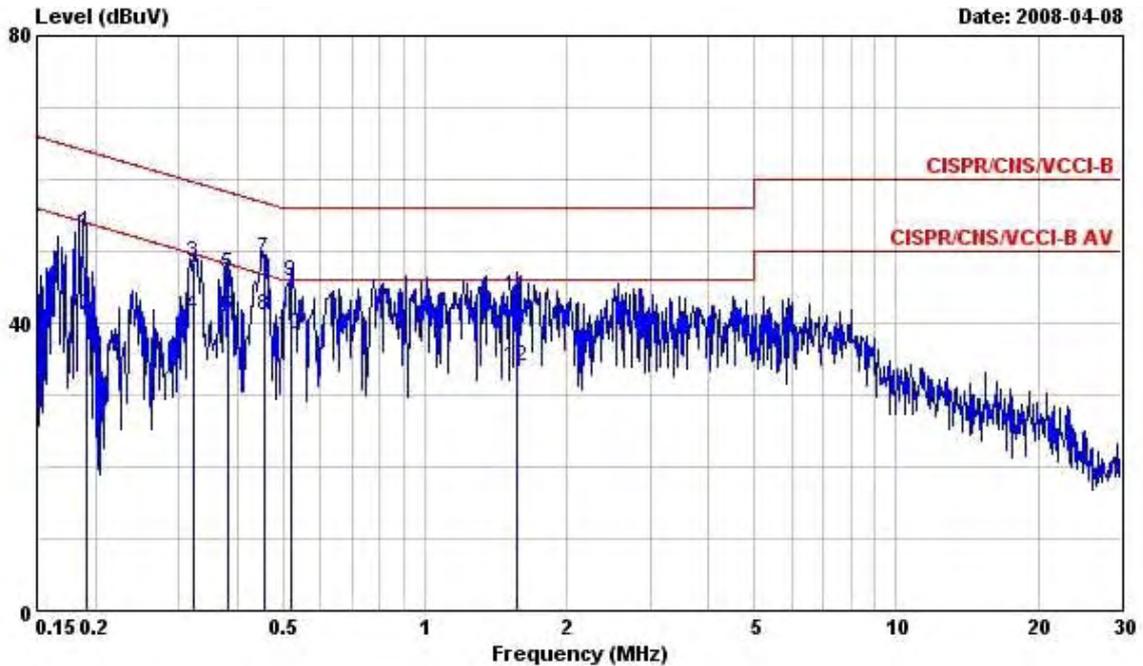


Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: Form NoteBook  
 Model : FR832620  
 Memo : WCDMA Idle+BT Idle+WLAN Idle+Battery5  
 Memo : +MPEG 4+USB B Link+GPS Rx  
 IMEI : 357559010030397  
 SAMPLE : A

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1751190	48.95	-15.76	64.71	48.71	0.10	0.14	QP
2	0.1751190	40.06	-14.65	54.71	39.82	0.10	0.14	Average
3	0.2378380	40.49	-21.68	62.17	40.10	0.10	0.29	QP
4	0.2378380	33.62	-18.55	52.17	33.23	0.10	0.29	Average
5	0.2939830	35.38	-25.03	60.41	34.81	0.10	0.47	QP
6	0.2939830	27.53	-22.88	50.41	26.96	0.10	0.47	Average
7	1.297	30.60	-25.40	56.00	30.06	0.10	0.44	QP
8	1.297	27.13	-18.87	46.00	26.59	0.10	0.44	Average
9	1.883	36.69	-19.31	56.00	36.16	0.10	0.43	QP
10	1.883	31.67	-14.33	46.00	31.14	0.10	0.43	Average
11	3.838	23.94	-22.06	46.00	23.42	0.19	0.33	Average
12	3.838	36.01	-19.99	56.00	35.49	0.19	0.33	QP

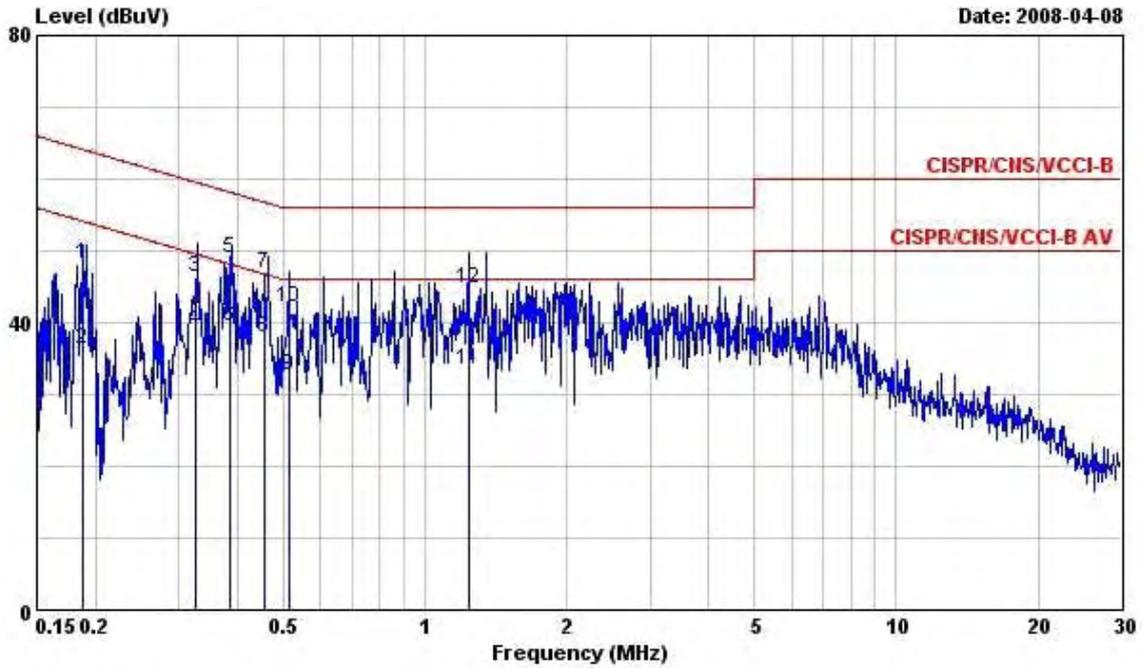
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 7

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery2  
 Memo : +Camera+Apaptor B +GPS Rx  
 IMEI : 357559010030751  
 SAMPLE : B

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1917300	52.59	-11.37	63.96	52.35	0.10	0.14	QP
2	0.1917300	41.08	-12.88	53.96	40.84	0.10	0.14	Average
3	0.3216920	48.45	-11.21	59.66	47.81	0.10	0.54	QP
4	@0.3216920	41.12	-8.54	49.66	40.48	0.10	0.54	Average
5	0.3831540	46.96	-11.25	58.21	46.17	0.10	0.69	QP
6	@0.3831540	41.03	-7.18	48.21	40.24	0.10	0.69	Average
7	@0.4558140	48.85	-7.92	56.77	48.06	0.10	0.69	QP
8	@0.4558140	40.93	-5.84	46.77	40.14	0.10	0.69	Average
9	0.5182420	45.76	-10.24	56.00	45.01	0.10	0.65	QP
10	@0.5182420	38.36	-7.64	46.00	37.61	0.10	0.65	Average
11	1.568	43.56	-12.44	56.00	43.03	0.10	0.43	QP
12	1.568	33.91	-12.09	46.00	33.38	0.10	0.43	Average

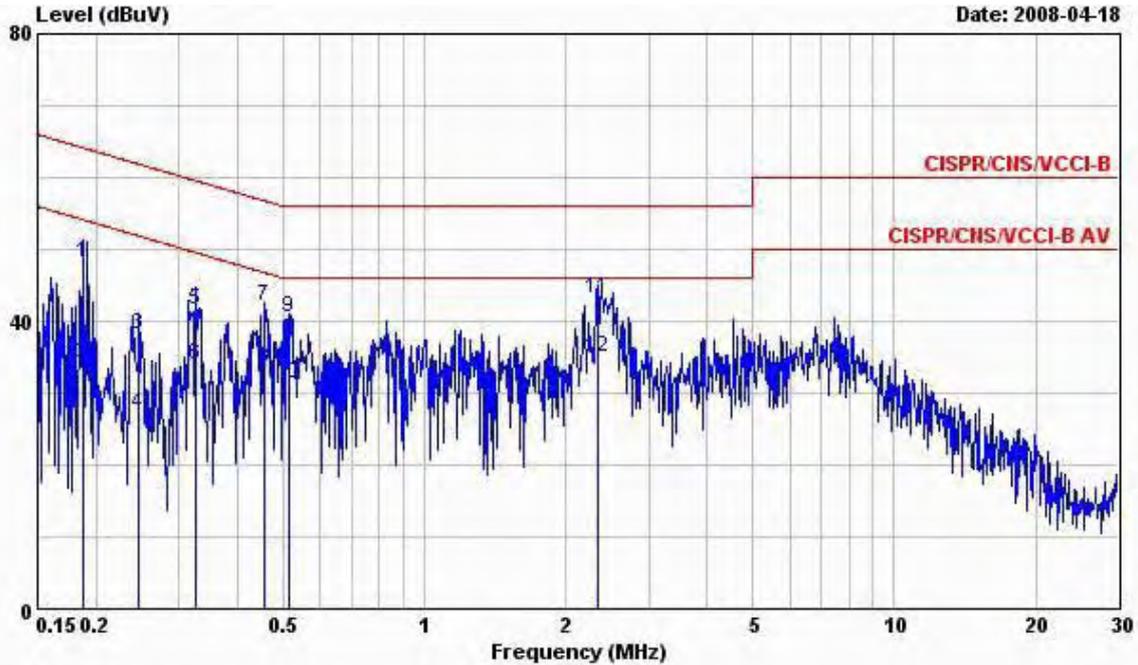


Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery2  
 Memo : +Camera+Apaptor B +GPS Rx  
 IMEI : 357559010030751  
 SAMPLE : B

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1880870	48.17	-15.95	64.12	47.93	0.10	0.14	QP
2	0.1880870	36.19	-17.93	54.12	35.95	0.10	0.14	Average
3	0.3242780	46.44	-13.16	59.60	45.79	0.10	0.55	QP
4	0.3242780	39.01	-10.59	49.60	38.36	0.10	0.55	Average
5	0.3871430	48.92	-9.20	58.12	48.12	0.10	0.70	QP
6	0.3871430	39.53	-8.59	48.12	38.73	0.10	0.70	Average
7	0.4575850	46.75	-9.99	56.74	45.96	0.10	0.69	QP
8	0.4575850	37.85	-8.89	46.74	37.06	0.10	0.69	Average
9	0.5139290	32.68	-13.32	46.00	31.93	0.10	0.65	Average
10	0.5139290	42.04	-13.96	56.00	41.29	0.10	0.65	QP
11	1.240	33.51	-12.49	46.00	32.97	0.10	0.44	Average
12	1.240	44.79	-11.21	56.00	44.25	0.10	0.44	QP

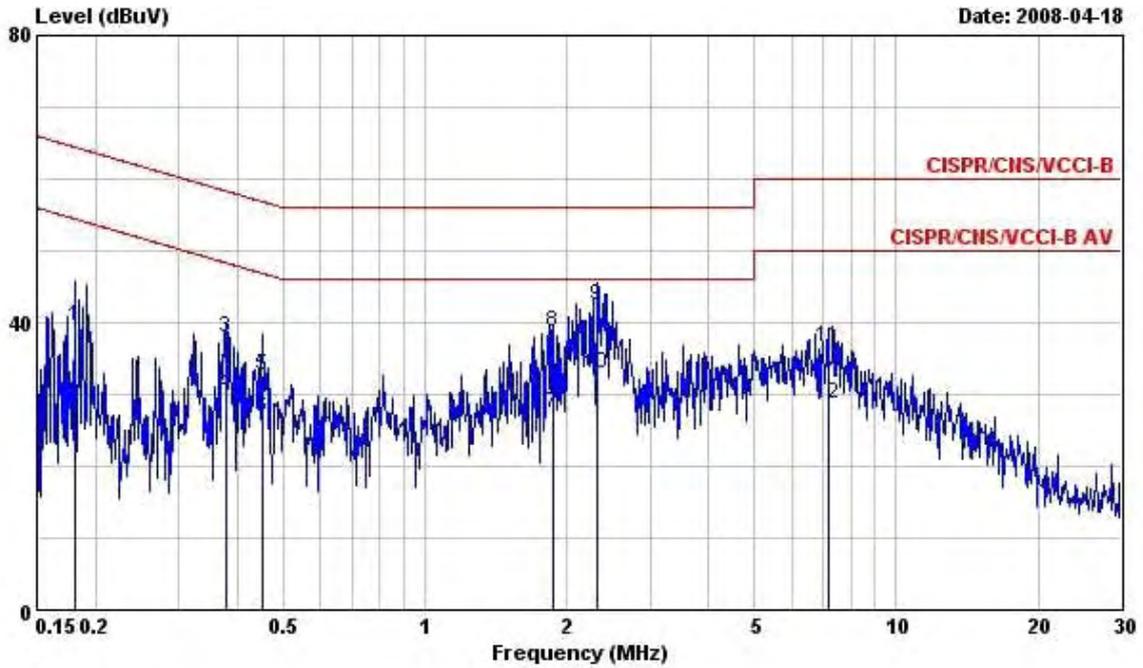
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 8

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery2  
 Memo : +Cameral+Apaptor B +GPS Rx  
 IMEI : 357559010032062  
 SAMPLE : C

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1873850	48.19	-15.96	64.15	47.95	0.10	0.14	QP
2	0.1873850	34.25	-19.90	54.15	34.01	0.10	0.14	Average
3	0.2468240	38.27	-23.59	61.86	37.85	0.10	0.32	QP
4	0.2468240	27.03	-24.83	51.86	26.61	0.10	0.32	Average
5	0.3251190	41.59	-17.98	59.57	40.94	0.10	0.55	QP
6	0.3251190	34.04	-15.53	49.57	33.39	0.10	0.55	Average
7	0.4539490	42.07	-14.73	56.80	41.28	0.10	0.69	QP
8	0.4539490	33.53	-13.27	46.80	32.74	0.10	0.69	Average
9	0.5155030	40.50	-15.50	56.00	39.75	0.10	0.65	QP
10	0.5155030	31.23	-14.77	46.00	30.48	0.10	0.65	Average
11	2.350	43.25	-12.75	56.00	42.75	0.10	0.40	QP
12	2.350	34.99	-11.01	46.00	34.49	0.10	0.40	Average

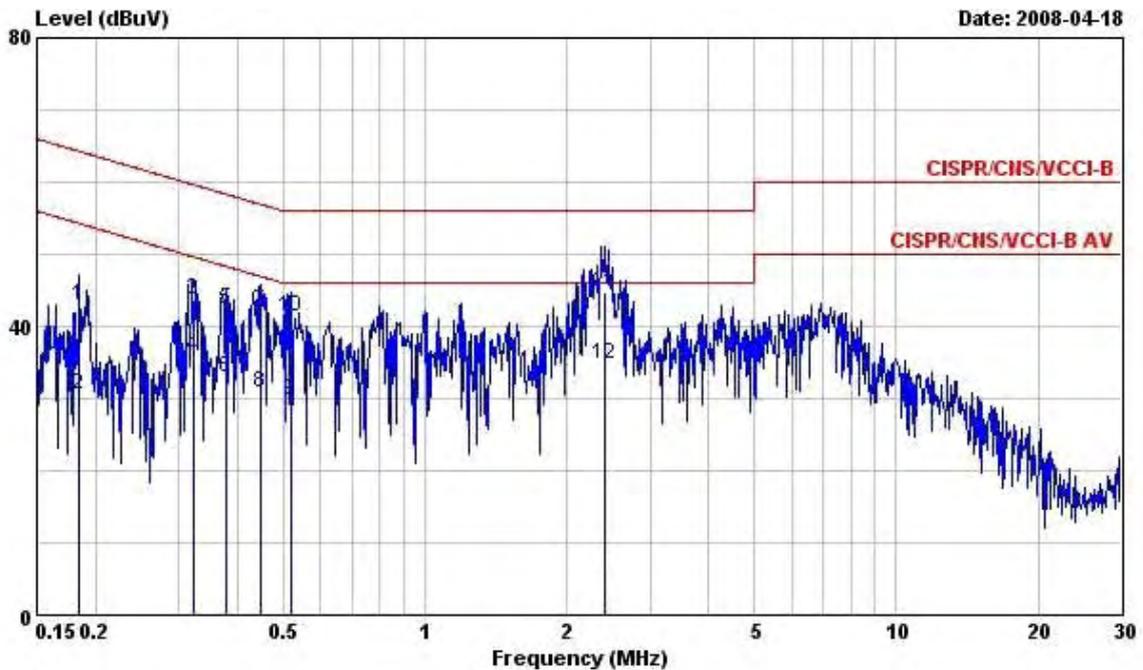


Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery2  
 Memo : +Camera+Apaptor B +GPS Rx  
 IMEI : 357559010032062  
 SAMPLE : C

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1805620	39.49	-24.97	64.46	39.25	0.10	0.14	QP
2	0.1805620	28.80	-25.66	54.46	28.56	0.10	0.14	Average
3	0.3791160	37.82	-20.48	58.30	37.04	0.10	0.68	QP
4	0.3791160	29.92	-18.38	48.30	29.14	0.10	0.68	Average
5	0.4515500	32.62	-24.23	56.85	31.83	0.10	0.69	QP
6	0.4515500	26.92	-19.93	46.85	26.13	0.10	0.69	Average
7	1.870	27.38	-18.62	46.00	26.85	0.10	0.43	Average
8	1.870	38.64	-17.36	56.00	38.11	0.10	0.43	QP
9	2.310	42.35	-13.65	56.00	41.82	0.12	0.41	QP
10	2.310	32.99	-13.01	46.00	32.46	0.12	0.41	Average
11	7.180	36.50	-23.50	60.00	35.98	0.26	0.26	QP
12	7.180	28.81	-21.19	50.00	28.29	0.26	0.26	Average

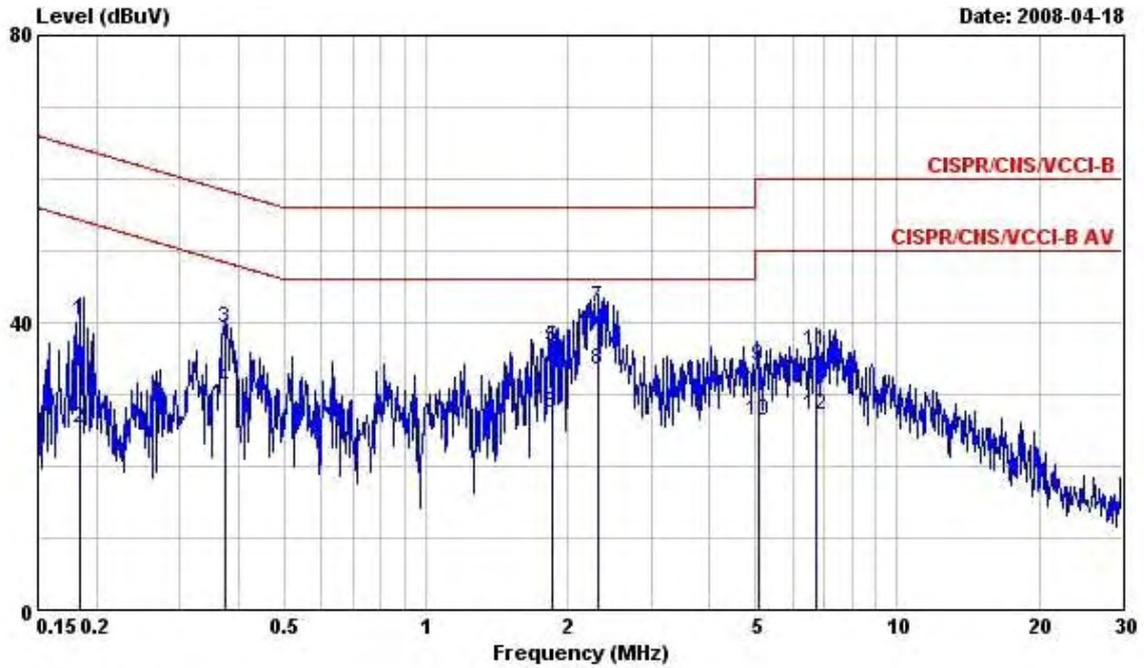
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 9

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery2  
 Memo : +Camera+Apator B +GPS Rx  
 IMEI : 357559010030538  
 SAMPLE : D

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	Remark
1	0.1844300	42.94	-21.34	64.28	42.70	0.10	0.14	QP
2	0.1844300	30.52	-23.76	54.28	30.28	0.10	0.14	Average
3	0.3216920	43.80	-15.86	59.66	43.16	0.10	0.54	QP
4	0.3216920	35.88	-13.78	49.66	35.24	0.10	0.54	Average
5	0.3791160	42.32	-15.98	58.30	41.54	0.10	0.68	QP
6	0.3791160	32.81	-15.49	48.30	32.03	0.10	0.68	Average
7	0.4491640	42.03	-14.86	56.89	41.24	0.10	0.69	QP
8	0.4491640	30.85	-16.04	46.89	30.06	0.10	0.69	Average
9	0.5182420	29.75	-16.25	46.00	29.00	0.10	0.65	Average
10	0.5182420	41.22	-14.78	56.00	40.47	0.10	0.65	QP
11	2.400	44.73	-11.27	56.00	44.23	0.10	0.40	QP
12	2.400	34.65	-11.35	46.00	34.15	0.10	0.40	Average

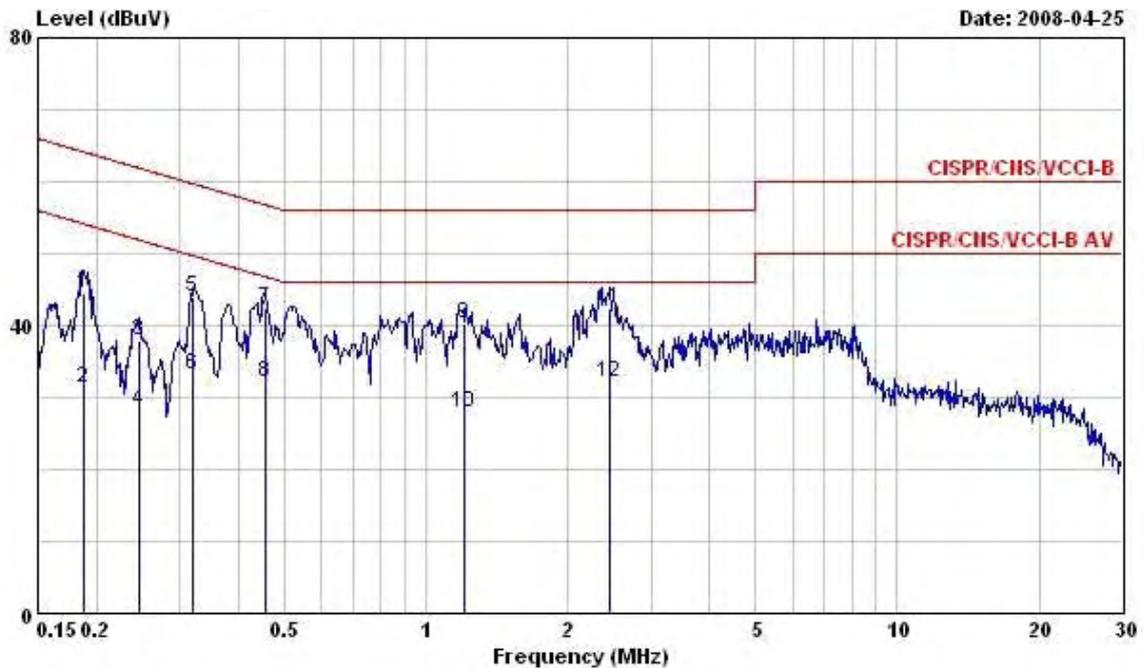


Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idle+BT Link+WLAN Link+Battery2  
 Memo : +Camera1+Apaptor B +GPS Rx  
 IMEI : 357559010030538  
 SAMPLE : D

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1844300	40.22	-24.06	64.28	39.98	0.10	0.14	QP
2	0.1844300	25.26	-29.02	54.28	25.02	0.10	0.14	Average
3	0.3731370	39.27	-19.16	58.43	38.50	0.10	0.67	QP
4	0.3731370	30.71	-17.72	48.43	29.94	0.10	0.67	Average
5	1.850	36.57	-19.43	56.00	36.04	0.10	0.43	QP
6	1.850	27.39	-18.61	46.00	26.86	0.10	0.43	Average
7	2.320	42.15	-13.85	56.00	41.62	0.12	0.41	QP
8	2.320	33.32	-12.68	46.00	32.79	0.12	0.41	Average
9	5.060	33.99	-26.01	60.00	33.47	0.23	0.29	QP
10	5.060	26.37	-23.63	50.00	25.85	0.23	0.29	Average
11	6.730	36.06	-23.94	60.00	35.54	0.26	0.26	QP
12	6.730	27.16	-22.84	50.00	26.64	0.26	0.26	Average

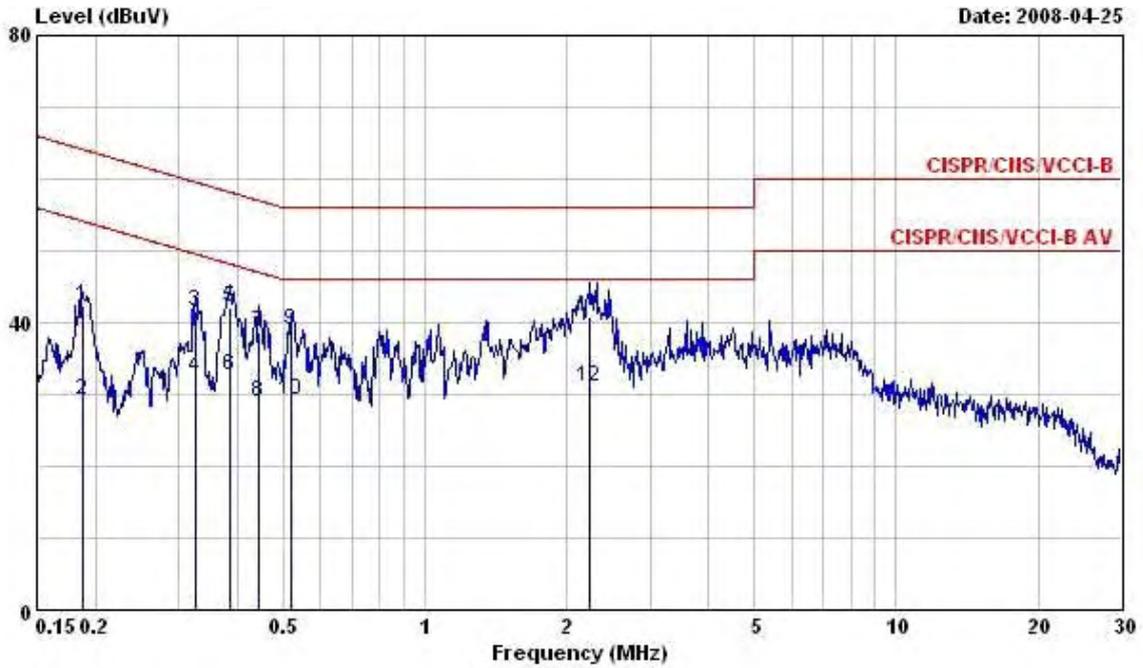
- Temperature : 23~25°C
- Relative Humidity : 43~45%
- Test Engineer :   Darren
- Test Mode : Mode 10

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



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idel+BT Link+WLAN Link+Battery6  
 Memo : +Cameral+Apaptor B +GPS Rx  
 IMEI : 357559010030751  
 SAMPLE : B

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.1883800	44.43	-19.68	64.11	44.19	0.10	0.14	QP
2	0.1883800	31.21	-22.90	54.11	30.97	0.10	0.14	Average
3	0.2455200	37.82	-24.09	61.91	37.40	0.10	0.32	QP
4	0.2455200	28.23	-23.68	51.91	27.81	0.10	0.32	Average
5	0.3199920	44.00	-15.71	59.71	43.36	0.10	0.54	QP
6	0.3199920	33.21	-16.50	49.71	32.57	0.10	0.54	Average
7	@0.4563600	42.29	-14.47	56.76	41.50	0.10	0.69	QP
8	@0.4563600	32.23	-14.53	46.76	31.44	0.10	0.69	Average
9	1.200	40.25	-15.75	56.00	39.71	0.10	0.44	QP
10	1.200	27.85	-18.15	46.00	27.31	0.10	0.44	Average
11	@ 2.460	42.47	-13.53	56.00	41.97	0.10	0.40	QP
12	@ 2.460	32.05	-13.95	46.00	31.55	0.10	0.40	Average



Site : CO04-HY  
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL  
 EUT : Smart Phone WCDMA (GSM/GPRS/EDGE)  
 POWER: 120V/60Hz  
 Model : FR832620  
 Memo : PCS1900 Idel+BT Link+WLAN Link+Battery6  
 Memo : +Camera+Apaptor B +GPS Rx  
 IMEI : 357559010030751  
 SAMPLE : B

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.1873850	42.26	-21.89	64.15	42.02	0.10	0.14	QP
2	0.1873850	29.29	-24.86	54.15	29.05	0.10	0.14	Average
3	0.3268460	41.50	-18.03	59.53	40.84	0.10	0.56	QP
4	0.3268460	32.45	-17.08	49.53	31.79	0.10	0.56	Average
5	0.3872360	42.02	-16.10	58.12	41.22	0.10	0.70	QP
6	0.3872360	32.76	-15.36	48.12	31.96	0.10	0.70	Average
7	0.4444290	38.75	-18.23	56.98	37.95	0.10	0.70	QP
8	0.4444290	28.95	-18.03	46.98	28.15	0.10	0.70	Average
9	0.5209950	39.02	-16.98	56.00	38.27	0.10	0.65	QP
10	0.5209950	29.21	-16.79	46.00	28.46	0.10	0.65	Average
11	2.240	40.91	-15.09	56.00	40.38	0.12	0.41	QP
12	2.240	31.03	-14.97	46.00	30.50	0.12	0.41	Average

## **5.9 Radiated Emission Measurement**

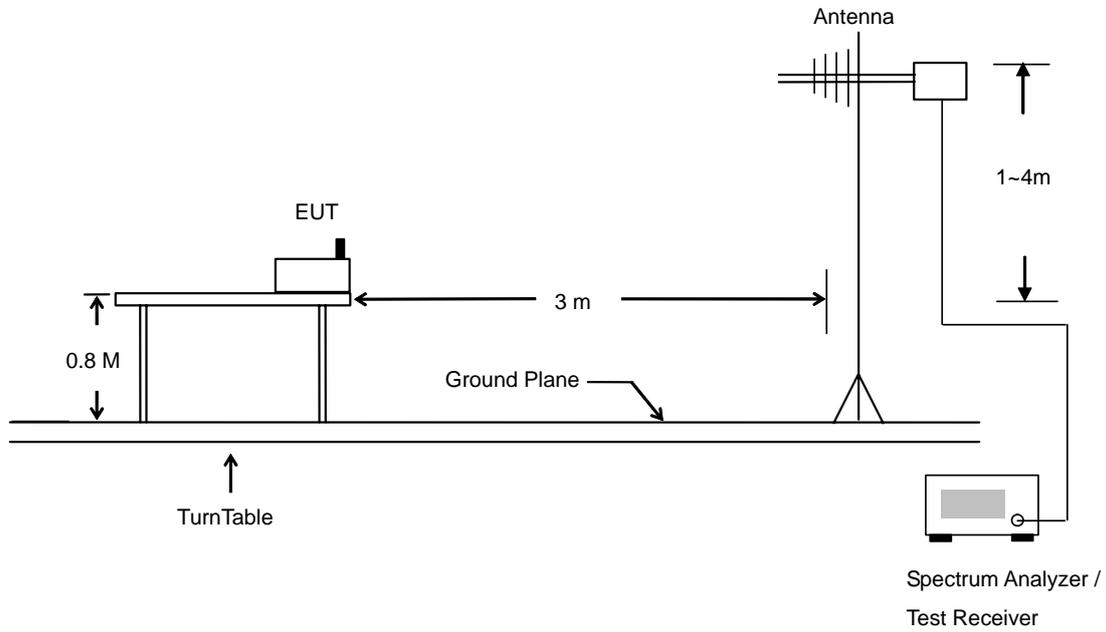
### **5.9.1 Measuring Instruments**

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.

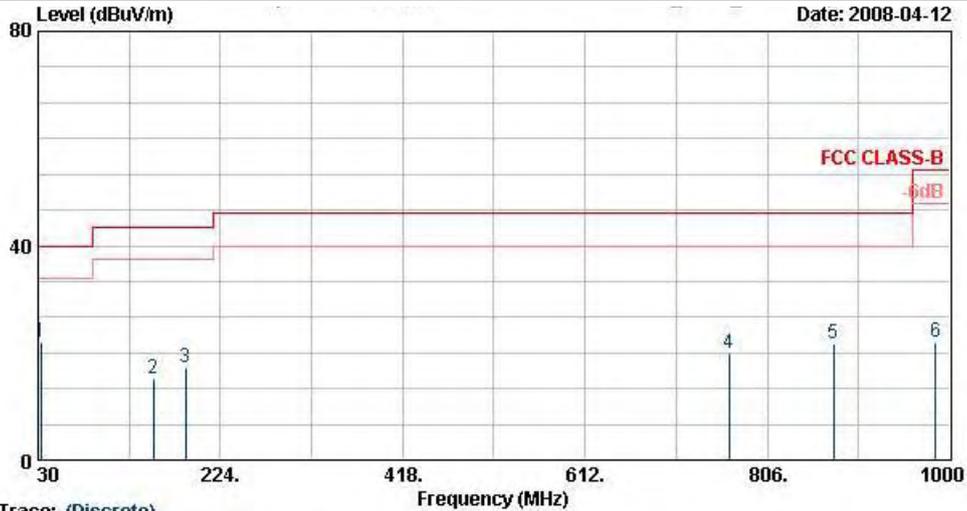
5.9.3 Typical Test Setup Layout of Radiated Emission



5.9.4 Test Data

- Temperature : 22~26°C
- Relating Humidity : 49~56%
- Test Engineer : Sun
- Test Mode : Mode 1
- Polarization : Horizontal (30MHz-1GHz)

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



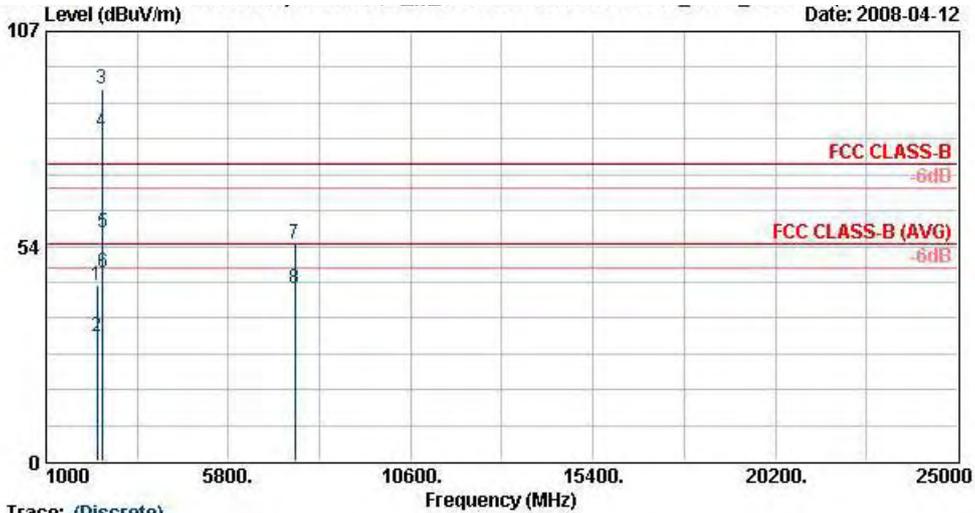
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(051121) HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tr\_CH78 ; 2480MHz + Adaptor  
 Data Rate : DHS  
 Plane : E2  
 IMET : 35755001003041301

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBUV/m	dB	dBUV/m	dBUV	dB/m	dB	dB	cm	deg	
1	33.24	21.98	-18.02	40.00	37.52	17.54	0.30	33.38	100	203	Peak
2	152.58	15.31	-28.19	43.50	37.91	10.35	0.60	33.55	---	---	Peak
3	187.14	17.30	-26.20	43.50	40.80	9.39	0.60	33.49	---	---	Peak
4	764.80	19.82	-26.18	46.00	32.00	19.49	1.10	32.77	---	---	Peak
5	876.80	21.66	-24.34	46.00	32.74	20.36	1.30	32.74	---	---	Peak
6	985.30	22.15	-31.85	54.00	31.89	21.14	1.30	32.18	---	---	Peak

• Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

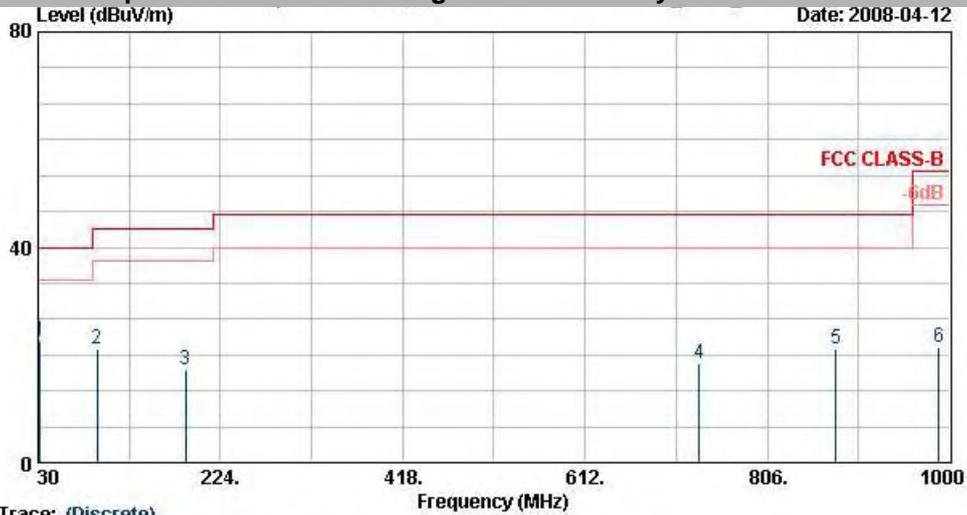
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_CH78 ; 2480MHz + Adaptor  
 Data Rate : DHS  
 Plane : E2  
 TMET : 35755801003041301

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2348.00	43.56	-30.44	74.00	43.60	31.78	3.86	35.67	100	0	Peak
2	2348.00	31.00	-23.00	54.00	31.03	31.78	3.86	35.67	100	5	Average
3 @	2480.00	92.84			92.51	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	81.83			81.50	31.98	4.05	35.70	100	5	Average
5 @	2483.47	56.80	-17.20	74.00	56.47	31.98	4.05	35.70	100	0	Peak
<b>6 @</b>	<b>2483.47</b>	<b>47.11</b>	<b>-6.89</b>	<b>54.00</b>	<b>46.78</b>	<b>31.98</b>	<b>4.05</b>	<b>35.70</b>	<b>100</b>	<b>5</b>	<b>Average</b>
7	7542.00	54.06	-19.94	74.00	47.36	35.61	7.29	36.21	100	0	Peak
8 @	7542.00	42.83	-11.17	54.00	36.14	35.61	7.29	36.21	100	251	Average

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.

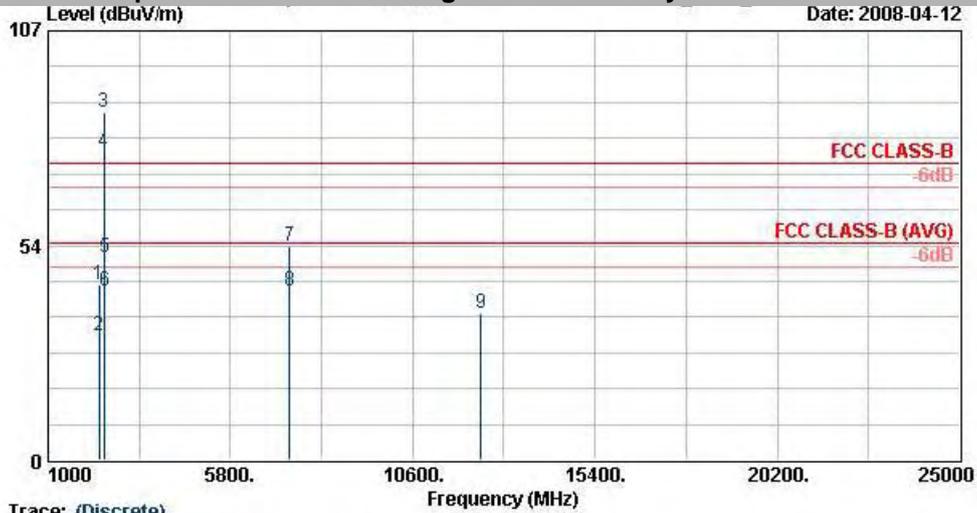


Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tr\_CH78 ; 2480MHz + Adaptor  
 Data Rate : DHS  
 Plane : E2  
 IMEI : 35755901003041301

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	32.43	22.58	-17.42	40.00	38.12	17.54	0.30	33.38	100	133	Peak
2	92.64	21.21	-22.29	43.50	44.43	9.62	0.50	33.33	---	---	Peak
3	187.14	17.17	-26.33	43.50	40.67	9.39	0.60	33.49	---	---	Peak
4	733.30	18.52	-27.48	46.00	31.19	19.20	1.10	32.97	---	---	Peak
5	878.90	21.09	-24.91	46.00	32.16	20.38	1.30	32.75	---	---	Peak
6	988.80	21.26	-32.74	54.00	30.96	21.16	1.30	32.16	---	---	Peak

• Polarization : Vertical (1GHz-25GHz)

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



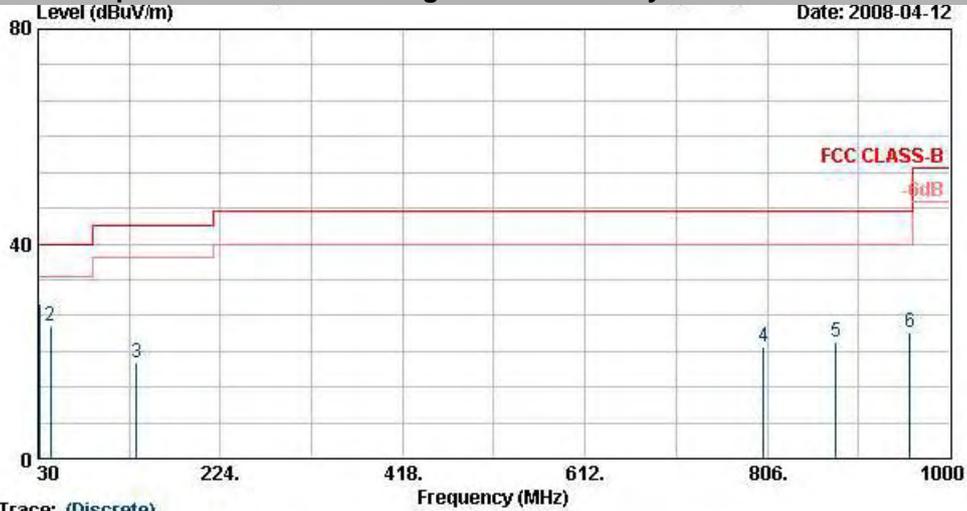
Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_CH78 ; 2460MHz + Adaptor  
 Data Rate : DHS  
 Plane : E2  
 TMET : 35755901003041301

	Freq	Level	Over	Limit	Read	Antenna	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	2348.00	43.62	-30.38	74.00	43.65	31.78	3.86	35.67	100	0	Peak
2	2348.00	31.05	-22.95	54.00	31.08	31.78	3.86	35.67	100	261	Average
3 @	2480.00	86.63			86.30	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	76.90			76.57	31.98	4.05	35.70	100	261	Average
5	2483.47	50.71	-23.29	74.00	50.38	31.98	4.05	35.70	100	0	Peak
6 @	2483.47	42.28	-11.72	54.00	41.95	31.98	4.05	35.70	100	261	Average
7	7356.00	53.13	-20.87	74.00	46.40	35.66	7.22	36.14	100	0	Peak
8 @	7356.00	41.97	-12.03	54.00	35.24	35.66	7.22	36.14	100	114	Average
9	12402.00	36.71	-37.29	74.00	74.19	-10.96	9.54	36.06	100	0	Peak

Remark: #3 and #4 are Fundamental Signals.

- Test Mode : Mode 2
- Polarization : Horizontal (30MHz-1GHz)

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



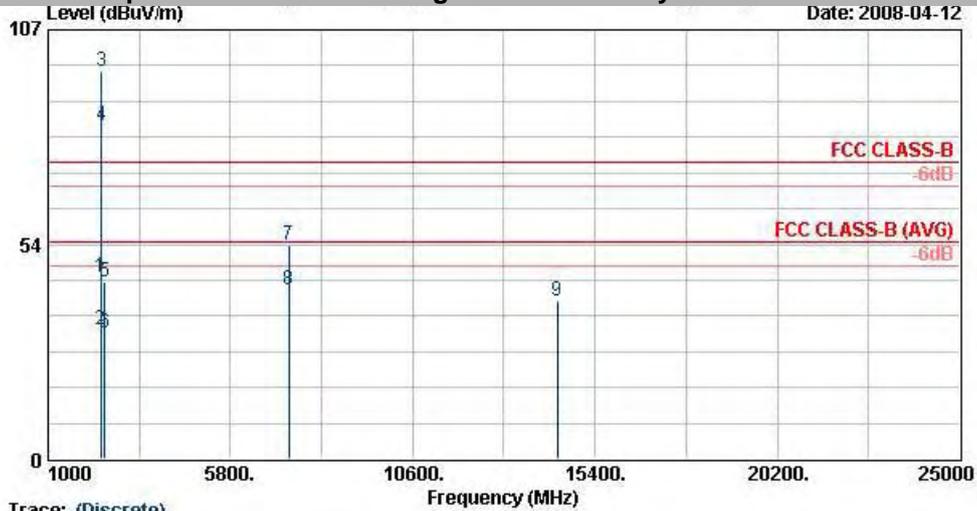
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_Ch00 ; 2402MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 TIME : 35755901003041301

	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	31.08	28.90	-11.10	40.00	43.10	18.95	0.30	33.46	124	Peak
2	43.23	24.61	-15.39	40.00	45.92	11.52	0.30	33.13	---	Peak
3	134.49	17.97	-25.53	43.50	39.85	11.05	0.50	33.43	---	Peak
4	801.90	20.68	-25.32	46.00	32.22	19.83	1.20	32.56	---	Peak
5	878.90	21.56	-24.44	46.00	32.63	20.38	1.30	32.75	---	Peak
6	957.30	23.35	-22.65	46.00	33.52	20.94	1.27	32.38	---	Peak

• Polarization : Horizontal (1GHz-25GHz)

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



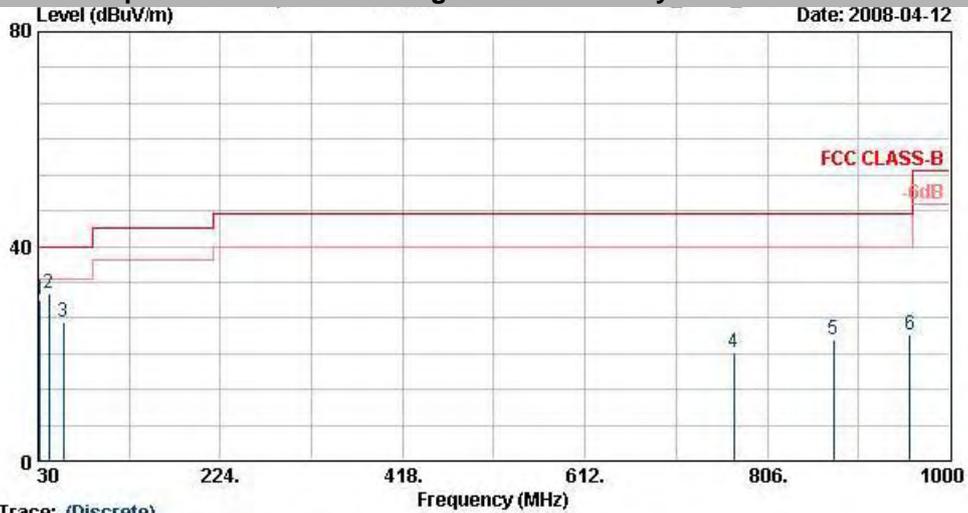
Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_Ch00 ; 2402MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 IMET : 35755001003041301

	Freq	Level	Over	Limit	Read	Antenna	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	2389.99	45.44	-28.56	74.00	45.34	31.86	3.92	35.68	100	0	Peak
2	2389.99	32.23	-21.77	54.00	32.13	31.86	3.92	35.68	125	1	Average
3	2402.00	96.63			96.51	31.88	3.92	35.68	100	0	Peak
4	2402.00	83.11			83.01	31.86	3.92	35.68	125	1	Average
5	2484.00	44.15	-29.85	74.00	43.82	31.98	4.05	35.70	100	0	Peak
6	2484.00	31.25	-22.75	54.00	30.92	31.98	4.05	35.70	125	1	Average
7	7347.00	53.26	-20.74	74.00	46.53	35.66	7.21	36.14	100	0	Peak
8	7347.00	41.97	-12.03	54.00	35.24	35.66	7.21	36.14	100	185	Average
9	14412.00	39.38	-34.62	74.00	71.27	-6.51	9.72	35.09	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.

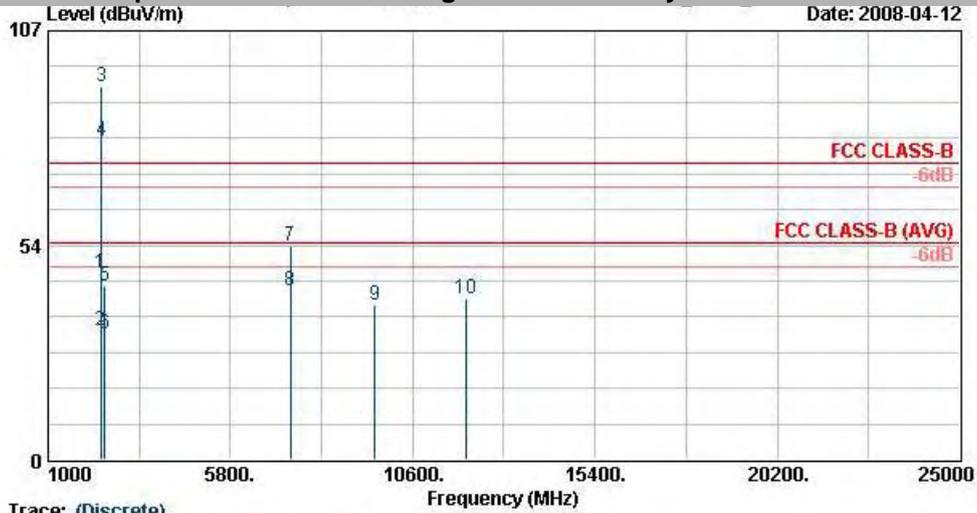


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tr\_CH00 ; 2402MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 TNET : 35755901003041301

	Freq	Level	Over	Limit	Read	Antenna	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	31.89	30.13	-9.87	40.00	45.00	18.25	0.30	33.42	---	---	Peak
<b>2</b>	<b>41.34</b>	<b>31.09</b>	<b>-8.91</b>	<b>40.00</b>	<b>51.44</b>	<b>12.51</b>	<b>0.30</b>	<b>33.16</b>	<b>100</b>	<b>134</b>	<b>Peak</b>
3	56.73	25.87	-14.13	40.00	51.79	7.06	0.40	33.38	---	---	Peak
4	770.40	20.21	-25.79	46.00	32.31	19.54	1.10	32.74	---	---	Peak
5	876.80	22.49	-23.51	46.00	33.57	20.36	1.30	32.74	---	---	Peak
6	957.30	23.55	-22.45	46.00	33.72	20.94	1.27	32.38	---	---	Peak

• Polarization : Vertical (1GHz-25GHz)

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



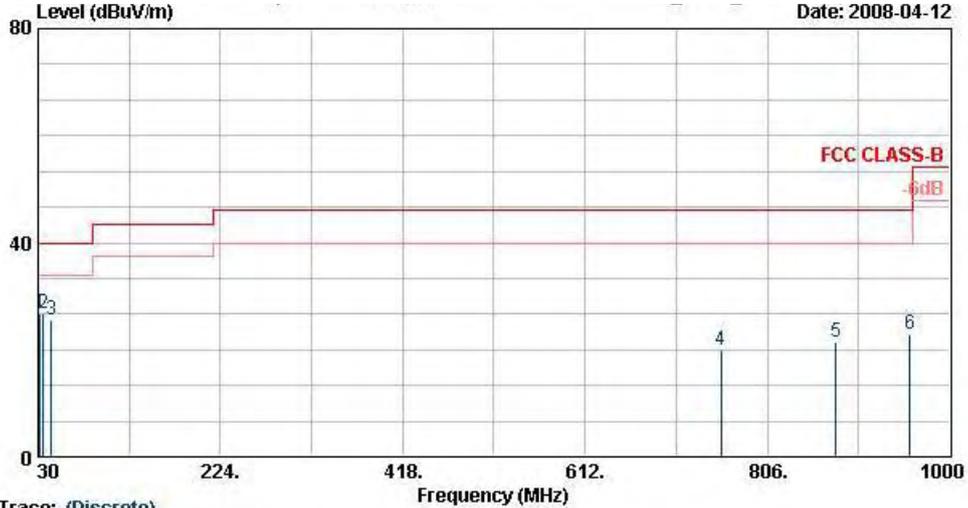
Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_Ch00 ; 2402MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 TMET : 35755001003041301

	Freq	Level	Over Limit	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBUV/m	dB	dBUV/m	dBUV	dB/m	dB	dB	cm	deg	
1	2389.99	46.40	-27.60	74.00	46.30	31.86	3.92	35.68	100	0	Peak
2	2389.99	32.27	-21.73	54.00	32.17	31.86	3.92	35.68	117	329	Average
3 X	2402.00	93.15			93.03	31.88	3.92	35.68	100	0	Peak
4 X	2402.00	79.42			79.32	31.86	3.92	35.68	117	329	Average
5	2494.00	43.29	-30.71	74.00	42.94	32.00	4.05	35.70	100	0	Peak
6	2494.00	31.26	-22.74	54.00	30.91	32.00	4.05	35.70	117	329	Average
7	7371.00	53.31	-20.69	74.00	46.59	35.65	7.22	36.15	100	0	Peak
8	7371.00	42.13	-11.87	54.00	35.41	35.65	7.22	36.15	100	113	Average
9	9606.00	38.65	-35.35	74.00	77.60	-10.16	7.93	36.72	100	0	Peak
10	12012.00	40.31	-33.69	74.00	76.95	-9.63	9.28	36.29	100	0	Peak

Remark: #3 and #4 are Fundamental Signals.

- Test Mode : Mode 3
- Polarization : Horizontal (30MHz-1GHz)

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

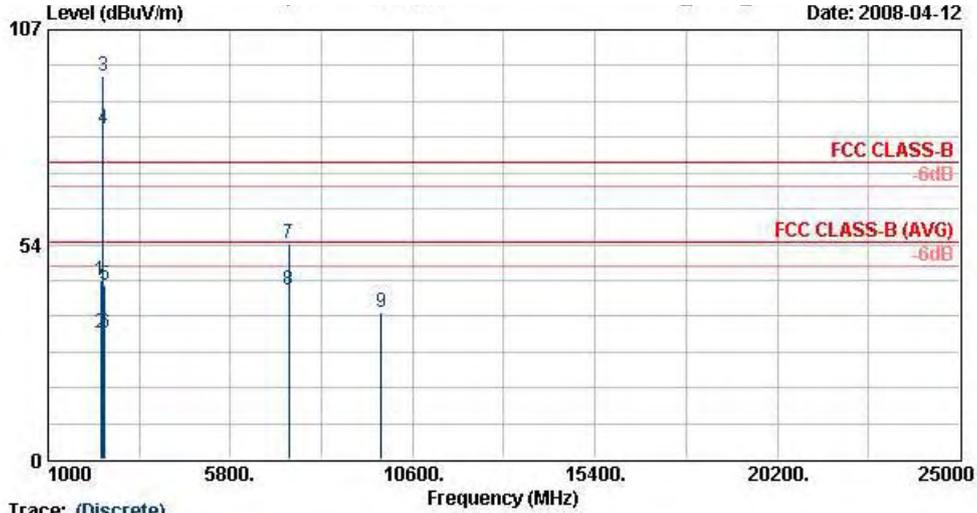


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(051121) HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_Ch39 ; 2441MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 TNET : 35755901003041301

	Freq	Level	Over	Limit	Read	Antenna	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	31.89	26.88	-13.12	40.00	41.76	18.25	0.30	33.42	100	173	Peak
2	35.94	26.73	-13.27	40.00	44.10	15.61	0.30	33.28	---	---	Peak
3	44.31	25.56	-14.44	40.00	47.35	11.02	0.30	33.11	---	---	Peak
4	756.40	19.87	-26.13	46.00	32.18	19.41	1.10	32.83	---	---	Peak
5	878.90	21.31	-24.69	46.00	32.38	20.38	1.30	32.75	---	---	Peak
6	957.30	22.78	-23.22	46.00	32.95	20.94	1.27	32.38	---	---	Peak

• Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

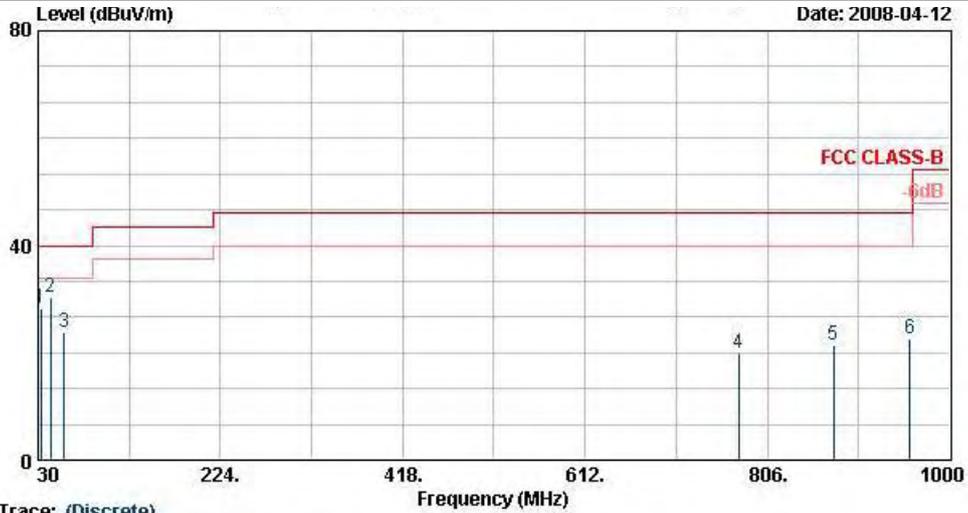
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_Ch39 ; 2441MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 TMET : 35755801003041301

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	44.61	-29.39	74.00	44.52	31.86	3.92	35.68	100	0	Peak
2	2390.00	31.30	-22.70	54.00	31.20	31.86	3.92	35.68	128	354	Average
3	2441.00	95.56			95.33	31.93	3.99	35.69	100	0	Peak
4	2441.00	82.18			81.96	31.93	3.99	35.69	128	354	Average
5	2494.00	43.53	-30.47	74.00	43.18	32.00	4.05	35.70	100	0	Peak
6	2494.00	31.23	-22.77	54.00	30.88	32.00	4.05	35.70	128	354	Average
7	7332.00	53.61	-20.39	74.00	46.86	35.67	7.21	36.13	100	0	Peak
8	7332.00	42.17	-11.83	54.00	35.42	35.67	7.21	36.13	100	124	Average
9	9762.00	36.77	-37.23	74.00	75.36	-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.



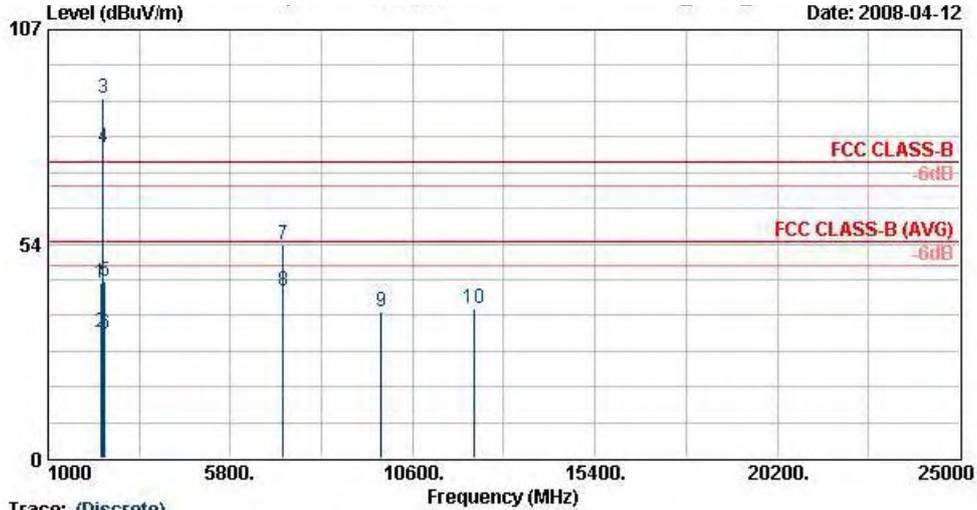
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_Ch39 ; 2441MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 TMET : 35755901003041301

	Freq	Level	Over Limit	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBUV/m	dB	dBUV/m	dBUV	dB	dB	cm	deg	
1	33.24	28.32	-11.68	40.00	43.86	17.54	0.30	33.38	---	Peak
<b>2</b>	<b>43.23</b>	<b>30.22</b>	<b>-9.78</b>	<b>40.00</b>	<b>51.53</b>	<b>11.52</b>	<b>0.30</b>	<b>33.13</b>	<b>100</b>	<b>241</b> Peak
3	58.08	23.71	-16.29	40.00	49.78	6.91	0.40	33.38	---	Peak
4	775.30	20.06	-25.94	46.00	32.04	19.59	1.15	32.71	---	Peak
5	876.80	21.55	-24.45	46.00	32.63	20.36	1.30	32.74	---	Peak
6	957.30	22.61	-23.39	46.00	32.79	20.94	1.27	32.38	---	Peak

- Polarization : Vertical (1GHz-25GHz)

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



Trace: (Discrete)

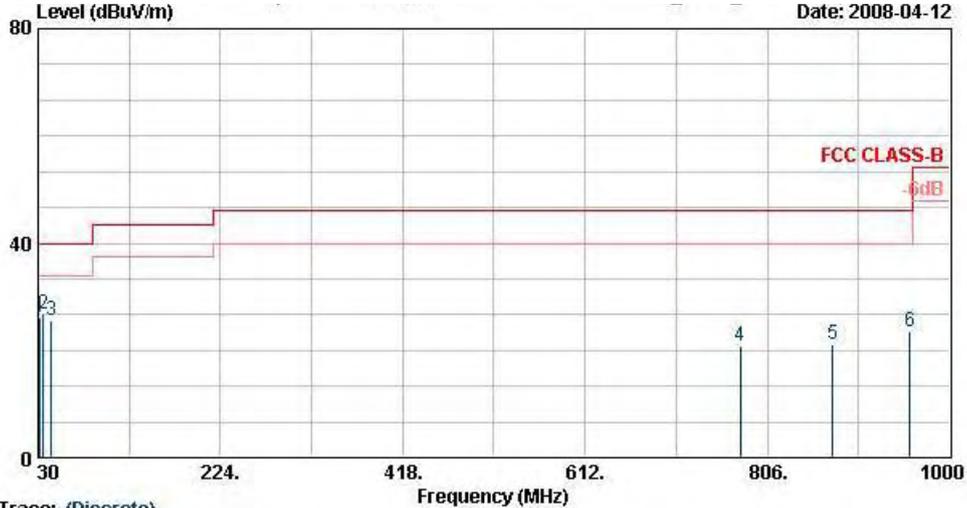
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_Ch39 ; 2441MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 TMEI : 35755901003041301

	Freq	Level	Over	Limit	Read	Antenna	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	2390.00	43.95	-30.05	74.00	43.86	31.86	3.92	35.68	100	0	Peak
2	2390.00	31.27	-22.73	54.00	31.17	31.86	3.92	35.68	100	183	Average
3 X	2441.00	90.01			89.78	31.93	3.99	35.69	100	0	Peak
4 @	2441.00	77.63			77.41	31.93	3.99	35.69	100	183	Average
5	2494.00	44.15	-29.85	74.00	43.80	32.00	4.05	35.70	100	0	Peak
6	2494.00	31.21	-22.79	54.00	30.86	32.00	4.05	35.70	100	183	Average
7	7182.00	53.30	-20.70	74.00	46.49	35.72	7.16	36.07	100	0	Peak
8	7182.00	41.93	-12.07	54.00	35.12	35.72	7.16	36.07	100	108	Average
9	9762.00	36.55	-37.45	74.00	75.14	-9.83	8.00	36.76	100	0	Peak
10	12207.00	37.19	-36.81	74.00	74.28	-10.31	9.41	36.18	100	0	Peak

Remark: #3 and #4 are Fundamental Signals.

- Test Mode : Mode 4
- Polarization : Horizontal (30MHz-1GHz)

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

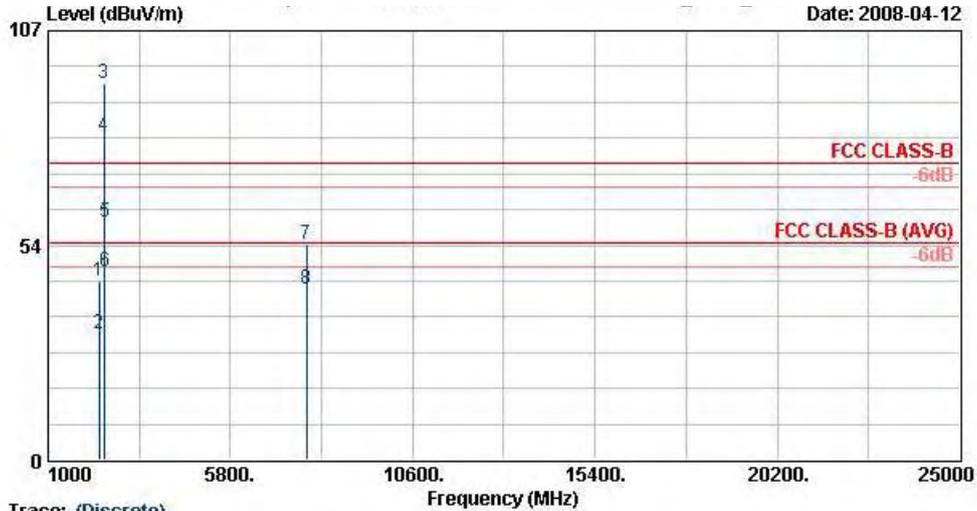


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_CH78 ; 2480MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 IMEI : 35755901003041301

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.89	26.28	-13.72	40.00	41.16	18.25	0.30	33.42	---	---	Peak
2	35.94	26.81	-13.19	40.00	44.18	15.61	0.30	33.28	100	106	Peak
3	44.04	25.64	-14.36	40.00	46.95	11.52	0.30	33.13	---	---	Peak
4	777.40	20.92	-25.08	46.00	32.83	19.61	1.18	32.70	---	---	Peak
5	875.40	21.18	-24.82	46.00	32.26	20.36	1.30	32.74	---	---	Peak
6	957.30	23.36	-22.64	46.00	33.53	20.94	1.27	32.38	---	---	Peak

- Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

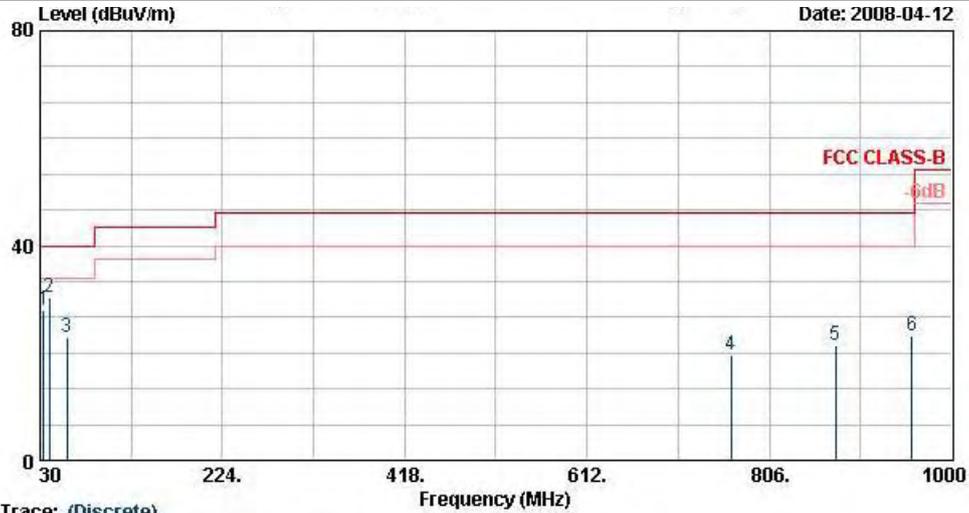
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_CH78 ; 2480MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 IMEI : 35755901003041301

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBUV/m	dB	dBUV/m	dBUV	dB/m	dB	dB	cm	deg	
1	2334.00	44.63	-29.37	74.00	44.68	31.76	3.86	35.67	100	0	Peak
2	2334.00	31.30	-22.70	54.00	31.35	31.76	3.86	35.67	100	4	Average
3 X	2480.00	93.99			93.66	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	80.78			80.45	31.98	4.05	35.70	100	4	Average
5	2483.47	59.30	-14.70	74.00	58.97	31.98	4.05	35.70	100	0	Peak
<b>6</b>	<b>2483.47</b>	<b>47.01</b>	<b>-6.99</b>	<b>54.00</b>	<b>46.68</b>	<b>31.98</b>	<b>4.05</b>	<b>35.70</b>	<b>100</b>	<b>4</b>	<b>Average</b>
7	7797.00	53.66	-20.34	74.00	46.85	35.66	7.41	36.26	100	0	Peak
8	7797.00	42.52	-11.48	54.00	35.71	35.66	7.41	36.26	100	210	Average

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.



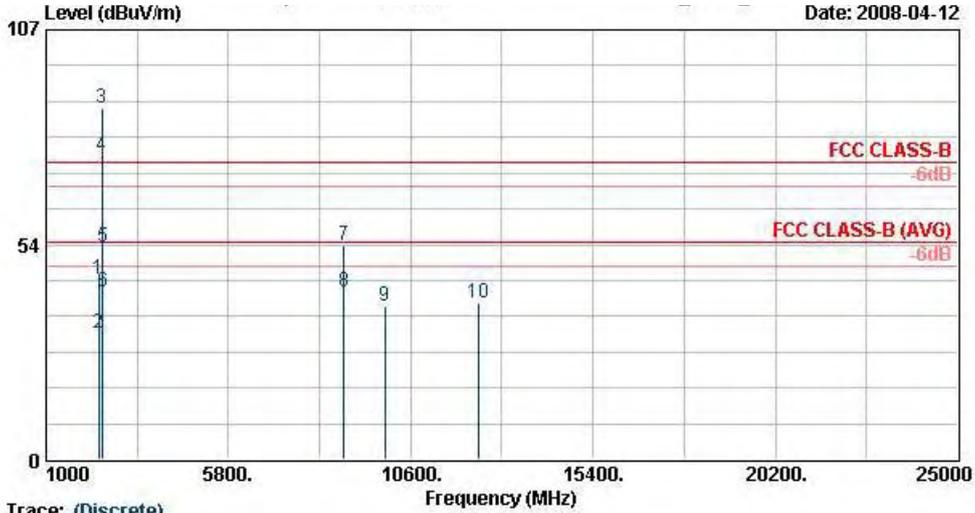
Trace: (Discrete)

Site : D3CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_CH78 ; 2460MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 TIME : 35755801003041301

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	33.78	27.96	-12.04	40.00	44.17	16.84	0.30	33.34	---	Peak
2	39.45	30.36	-9.64	40.00	49.75	13.51	0.30	33.20	100	286 Peak
3	58.89	23.03	-16.97	40.00	49.25	6.77	0.40	33.39	---	Peak
4	764.80	19.66	-26.34	46.00	31.84	19.49	1.10	32.77	---	Peak
5	876.10	21.37	-24.63	46.00	32.45	20.36	1.30	32.74	---	Peak
6	957.30	23.20	-22.80	46.00	33.37	20.94	1.27	32.38	---	Peak

• Polarization : Vertical (1GHz-25GHz)

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



Trace: (Discrete)

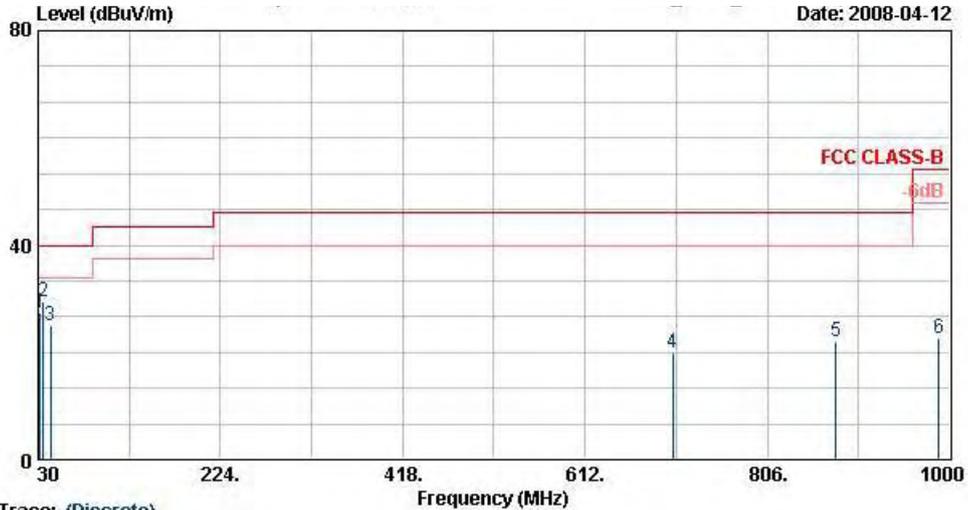
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_Ch78 ; 2480MHz + Adaptor  
 Data Rate : 2DH5  
 Plane : E2  
 MET : 35755901003041301

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2388.00	44.76	-29.24	74.00	44.66	31.86	3.92	35.68	100	0	Peak
2	2388.00	31.40	-22.60	54.00	31.30	31.86	3.92	35.68	100	260	Average
3	2480.00	87.48			87.14	31.98	4.05	35.70	100	0	Peak
4	2480.00	75.54			75.21	31.98	4.05	35.70	100	260	Average
5	2483.47	53.02	-20.98	74.00	52.69	31.98	4.05	35.70	100	0	Peak
6	2483.47	41.94	-12.06	54.00	41.61	31.98	4.05	35.70	100	260	Average
7	8841.00	53.13	-20.87	74.00	45.73	36.27	7.62	36.50	100	0	Peak
8	8841.00	41.64	-12.36	54.00	34.25	36.27	7.62	36.50	100	195	Average
9	9921.00	38.22	-35.78	74.00	76.41	-9.48	8.07	36.79	100	0	Peak
10	12396.00	38.90	-35.10	74.00	76.39	-10.96	9.54	36.06	100	0	Peak

Remark: #3 and #4 are Fundamental Signals.

- Test Mode : Mode 5
- Polarization : Horizontal (30MHz-1GHz)

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

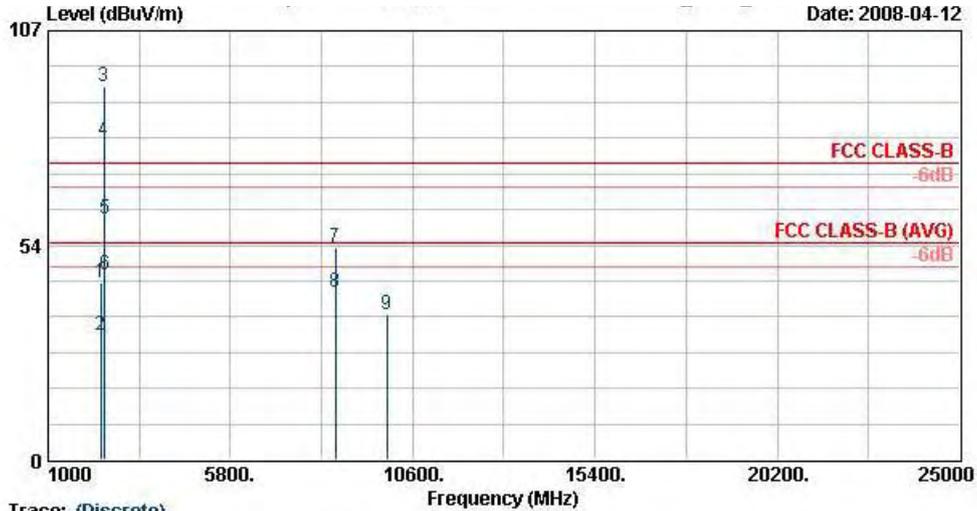


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(051121) HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_CH78 ; 2480MHz + Adaptor  
 Data Rate : 3DH5  
 Plane : E2  
 IMEI : 35755901003041301

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	32.43	27.33	-12.67	40.00	42.86	17.54	0.30	33.38	---	---	Peak
2	35.94	29.51	-10.49	40.00	46.89	15.61	0.30	33.28	100	109	Peak
3	43.23	24.92	-15.08	40.00	46.23	11.52	0.30	33.13	---	---	Peak
4	705.30	19.94	-26.06	46.00	32.99	18.94	1.15	33.14	---	---	Peak
5	878.90	21.94	-24.06	46.00	33.01	20.38	1.30	32.75	---	---	Peak
6	988.80	22.73	-31.27	54.00	32.42	21.16	1.30	32.16	---	---	Peak

- Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

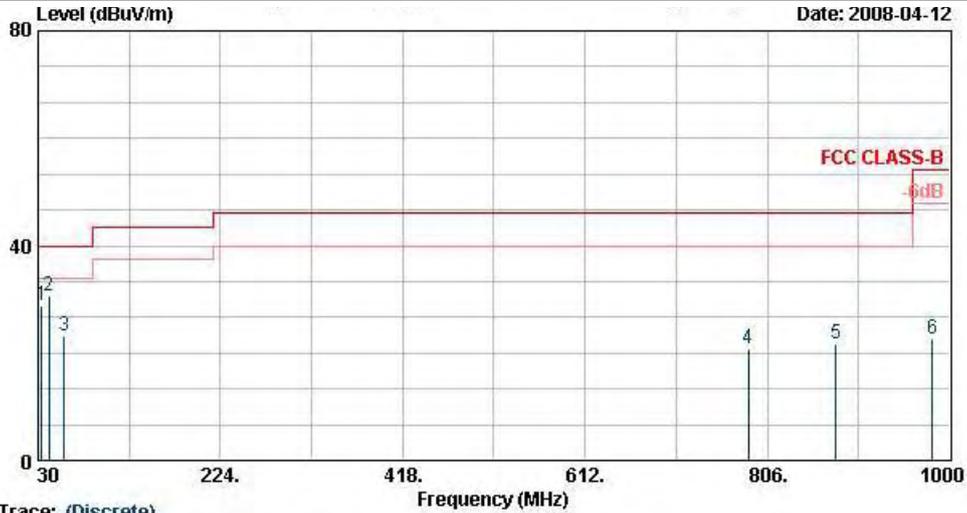
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_CH78 ; 2480MHz + Adaptor  
 Data Rate : 3DH5  
 Plane : E2  
 IMEI : 35755901003041301

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBUV/m	dB	dBUV/m	dBUV	dB/m	dB	dB	cm	deg	
1	2390.00	44.14	-29.86	74.00	44.05	31.86	3.92	35.68	100	0	Peak
2	2390.00	31.19	-22.81	54.00	31.09	31.86	3.92	35.68	100	3	Average
3 X	2480.00	93.00			92.67	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	79.49			79.16	31.98	4.05	35.70	100	3	Average
5	2483.47	60.06	-13.94	74.00	59.73	31.98	4.05	35.70	100	0	Peak
<b>6</b>	<b>2483.47</b>	<b>46.10</b>	<b>-7.90</b>	<b>54.00</b>	<b>45.77</b>	<b>31.98</b>	<b>4.05</b>	<b>35.70</b>	<b>100</b>	<b>3</b>	<b>Average</b>
7	8571.00	52.86	-21.14	74.00	46.04	35.89	7.27	36.35	100	0	Peak
8	8571.00	41.96	-12.04	54.00	35.15	35.89	7.27	36.35	100	173	Average
9	9921.00	36.02	-37.98	74.00	74.21	-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.



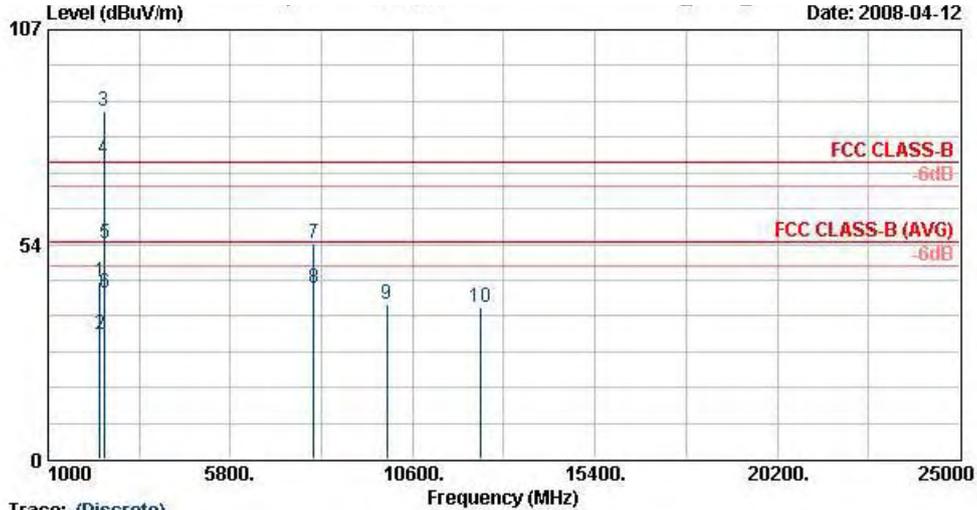
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL  
 EUT : Smart Phone WCDMA/GSM/GPRS/EDGE  
 Power : 120Vac/60Hz  
 Model : FR 832620  
 Memo : BT Tx\_CH78 ; 2460MHz + Adaptor  
 Data Rate : 3DH5  
 Plane : E2  
 TIME : 35755901003041301

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	33.78	28.71	-11.29	40.00	44.92	16.84	0.30	33.34	---	---	Peak
2	41.88	30.72	-9.28	40.00	51.07	12.51	0.30	33.16	100	238	Peak
3	57.54	23.21	-16.79	40.00	49.13	7.06	0.40	33.38	---	---	Peak
4	785.80	20.94	-25.06	46.00	32.70	19.68	1.20	32.65	---	---	Peak
5	878.90	21.73	-24.27	46.00	32.80	20.38	1.30	32.75	---	---	Peak
6	981.80	22.52	-31.48	54.00	32.31	21.11	1.30	32.20	---	---	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       : Smart Phone WCDMA/GSM/GPRS/EDGE
Power     : 120Vac/60Hz
Model     : FR 832620
Memo      : BT Tx_Ch78 ; 2480MHz + Adaptor
Data Rate : 3DH5
Plane     : E2
TMET      : 35755901003041301
    
```

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2366.00	44.10	-29.90	74.00	44.08	31.81	3.89	35.68	100	0	Peak
2	2366.00	31.00	-23.00	54.00	30.98	31.81	3.89	35.68	100	261	Average
3 X	2480.00	86.78			86.45	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	74.68			74.35	31.98	4.05	35.70	100	261	Average
5	2483.47	53.85	-20.15	74.00	53.52	31.98	4.05	35.70	100	0	Peak
6	2483.47	41.29	-12.71	54.00	40.96	31.98	4.05	35.70	100	261	Average
7	7992.00	53.84	-20.16	74.00	46.93	35.70	7.51	36.30	100	0	Peak
8	7992.00	42.73	-11.27	54.00	35.82	35.70	7.51	36.30	100	247	Average
9	9921.00	38.48	-35.52	74.00	76.67	-9.48	8.07	36.79	100	0	Peak
10	12396.00	37.62	-36.38	74.00	75.10	-10.96	9.54	36.06	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 antenna used in this product is PIFA Antennas 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
EMC Receiver	R&S	ESCS 30	100359	9kHz – 2.75GHz	Mar. 03, 2008	Mar. 02, 2009	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2008	Mar. 29, 2009	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2008	Mar. 21, 2009	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2008	Apr. 19, 2009	Conduction (CO04-HY)
ISN	SCHAFFNER	ISN T400	21653	9kHz –30MHz	Mar. 27, 2008	Mar. 26, 2009	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	N/A	Conduction (CO04-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211028	9KHz-26.5GHz	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul. 26, 2007	Jul. 25, 2008	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Dec. 01, 2007	Nov. 30, 2008	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Com-Power	AH118	071025	1G-18G	Jun. 04, 2007	Jun. 03, 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)
Base Station Simulator	R & S	CMU200	103937	Third-Band	Oct. 19, 2007	Oct. 18, 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
<b>Combined standard uncertainty Uc(y)</b>	<b>1.13</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.26</b>		

### 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
<b>Combined standard uncertainty Uc(y)</b>	<b>1.30</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.60</b>		

**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
<b>Combined standard uncertainty <math>U_c(y)</math></b>	<b>2.36</b>				
<b>Measuring uncertainty for a level of confidence of 95% <math>U = 2U_c(y)</math></b>	<b>4.72</b>				

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



## Appendix A. Photographs of EUT

Please refer to Sporton report number EP832620 as below.