



FCC Test Report

According to

47 CFR Part 15 Subpart C

Equipment : Dolphin 9900 Mobile computer

Trade Name : Honey well

Model No. : Dolphin 9900

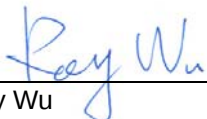
FCC ID : HD59900LUP

Filing Type : Certification

Applicant : Honeywell International Inc.

700 Vision Drive, PO Box 208 Skeneateles Falls, NY 13513

- The test result refers exclusively to the test presented test model / sample.
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- **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 on Mar. 14, 2008 at **Sporton International Inc. LAB.**
- Report No.: FR830601B, Report Version: Rev.01



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Report Version: Rev.01

Table of Contents

History of This Test Report	ii
1. General Description of Equipment under Test	1
1.1 Applicant	1
1.2 Manufacturer	1
1.3 Basic Description of Equipment under Test	1
1.4 Feature of Equipment under Test	2
2. Test Configuration of Equipment under Test	3
2.1 Test Manner	3
2.2 Test Mode	3
2.3 Ancillary Equipment List	4
2.4 Connection Diagram of Test System	4
3. RF Utility	5
4. General Information of Test	6
4.1 Test Voltage	6
4.2 Standard for Methods of Measurement	6
4.3 Test Compliance	6
4.4 Frequency Range	6
4.5 Test Distance	6
5. Test Data and Test Result	7
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	81
5.10 Antenna Requirements	103
6. List of Measuring Equipments	104
7. Uncertainty Evaluation	105
Appendix A. External Photographs of EUT	
Appendix B. Internal Photographs of EUT	
Appendix C. Setup Photographs	

History of This Test Report

Report Issue Date: Mar. 14, 2008

Report No.	Description

1. General Description of Equipment under Test

1.1 Applicant

Honeywell International Inc.

700 Vision Drive, PO Box 208 Skeneateles Falls, NY 13513

1.2 Manufacturer

1. Universal Scientific Industrial Co., Ltd.

141, Lane 351, Taiping Road, Sec.1, Tsao Tuen, Nan-Tou, Taiwan

2. Universal Scientific Industrial (Shanghai) Co., Ltd.

No. 1558, Zhangdong Road Pudong, Shanghai China. P.O. 201203

1.3 Basic Description of Equipment under Test

Equipment		Dolphin 9900 Mobile computer
Trade Name		Honey well
Model Name		Dolphin 9900
FCC ID		HD59900LUP
AC Adapter	Brand Name	DVE
	Model Name	DSA-0421S-09 1
	Power Rating	I/P:100-240Vac, 50-60Hz, 1.2A; O/P: 9.5Vdc, 4A,
	AC Power Cord Type	1.85 meter shielded cable without ferrite core
Cradle	Brand Name	DVE
	Model Name	DSA-01510-09 5
	Power Rating	I/P:100-240Vac, 47-63Hz, 0.4A; O/P: 9.5Vdc, 1.8A
Battery	Brand Name	Honey well
	Model Name	20000591-01
	Power Rating	7.4Vdc, 2400mAh
	Type	Li-ion
Holster	Brand Name	Honey well
	Model Name	Dolphin 9900
Earphone	Brand Name	AATC
	Model Name	AEP-HA36D-01
	Signal Line Type	1.1 meter shielded cable without ferrite core

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

1.4 Feature of Equipment under Test

Product Feature & Specification				
DUT Type :	Dolphin 9900 Mobile computer			
Trade Name :	Honey well			
Model Name :	Dolphin 9900			
FCC ID :	HD59900LUP			
Tx Frequency :	GSM850 : 824 MHz ~ 849 MHz PCS1900 : 1850 MHz ~1910 MHz WLAN / Bluetooth : 2400 MHz ~ 2483.5 MHz			
Rx Frequency :	GSM850 : 869 MHz ~ 894 MHz PCS1900 : 1930 MHz ~ 1990 MHz WLAN / Bluetooth : 2400 MHz ~ 2483.5 MHz			
Number of Channels :	Bluetooth : 79 WLAN : 11			
Carrier Frequency of Each Channel :	Bluetooth : 2402+n*1 MHz; n=0~78 WLAN : 2412+(n-1)*5 MHz; n=1~11			
Channel Spacing :	GSM : 200 KHz Bluetooth : 1 MHz WLAN : 5 MHz			
Maximum Output Power to Antenna :	GSM850 : 32.66 dBm (GSM) / 26.25 dBm (EDGE8) PCS1900 : 29.28 dBm (GSM) / 24.91 dBm (EDGE8) Bluetooth : 1.81 dBm (1Mbps) Bluetooth EDR : 3.53 dBm (2Mbps) / 3.85 dBm (3Mbps) WLAN : 16.06 dBm (802.11b) / 13.69 dBm (802.11g)			
Type of Antenna Connector	N/A			
Antenna Type :	GSM: PIFA Antenna Bluetooth: Chip Antenna WLAN: PIFA Antenna			
Antenna Gain :	850MHz : Peak: -2.15dBi, Average: -6.33dBi 900MHz : Peak: -1.14dBi, Average: -5.01dBi 1800MHz : Peak: 3.22dBi, Average: -1.58dBi 1900MHz : Peak 3.76dBi, Average: -2.18dBi Bluetooth : Peak: -2.35dBi, Average: -6.62dBi 802.11b/g : Peak: 3.18dBi, Average: -2.41dBi			
HW Version :	B2.12			
SW Version :	Revision 04.001 (SV19)			
GPRS / EGPRS Multislot class :	12			
Type of Modulation :	GSM / GPRS : GMSK EDGE : 8PSK Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth EDR (3Mbps) : 8-DPSK WLAN : DSSS / OFDM			
Function Type :	Transmitter		Transceiver	V
DUT Stage :	Identical Prototype			

2. Test Configuration of Equipment under Test

2.1 Test Manner

- The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- The data rate, 3Mbps, was chosen to being tested, due to the highest RF output power.

Channel	Frequency	Data Rate / Modulation		
		GFSK	$\pi/4$ -DQPSK	8-DPSK
		1Mbps	2Mbps	3Mbps
Ch00	2400MHz	1.17 dBm	3.53 dBm	3.85 dBm
Ch39	2441MHz	1.40 dBm	3.06 dBm	3.18 dBm
Ch78	2480MHz	1.81 dBm	3.34 dBm	3.57 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.

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

2.2 Test Mode

Application			
Radiated	BT Tx	BT Tx(EDR 2Mbps)	BT Tx(EDR 3Mbps)
Emission / RF	Mode 1: CH00_2402 MHz	Mode 4: CH00_2402 MHz	Mode 7: CH00_2402 MHz
Conducted	Mode 2: CH39_2441 MHz	Mode 5: CH39_2441 MHz	Mode 8: CH39_2441 MHz
Conducted	Mode 3: CH78_2480 MHz	Mode 6: CH78_2480 MHz	Mode 9: CH78_2480 MHz
Emission	Mode 1: GSM850 Idle Mode + WLAN Link + H Pattern + Scanner + MPEG4 + Adapter + BT Link + Cradle		
	Mode 2: PCS1900 Idle Mode + WLAN Link + H Pattern + Scanner + MPEG4 + Adapter + BT Link + Cradle		
	Mode 3: EDGE Idle Mode + WLAN Link + H Pattern + Scanner + MPEG4 + Adapter + BT Link + Cradle		

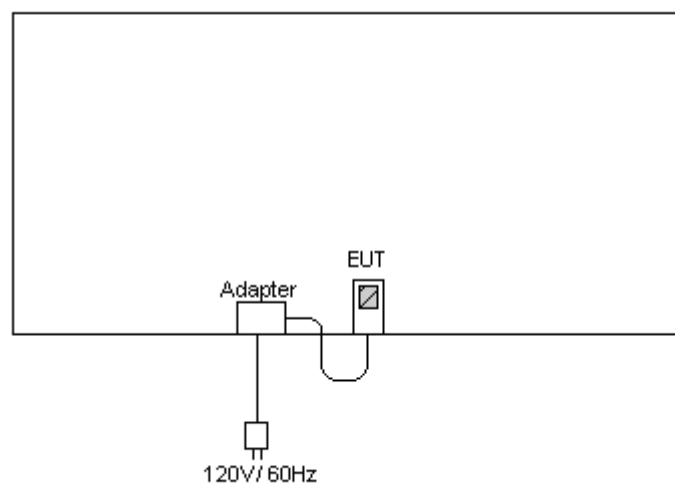
Note: For BT, we tested radiated emissions full modes in 3Mbps and retesting the worst channel, CH78, in 1Mbps and 2Mbps respectively.

2.3 Ancillary Equipment List

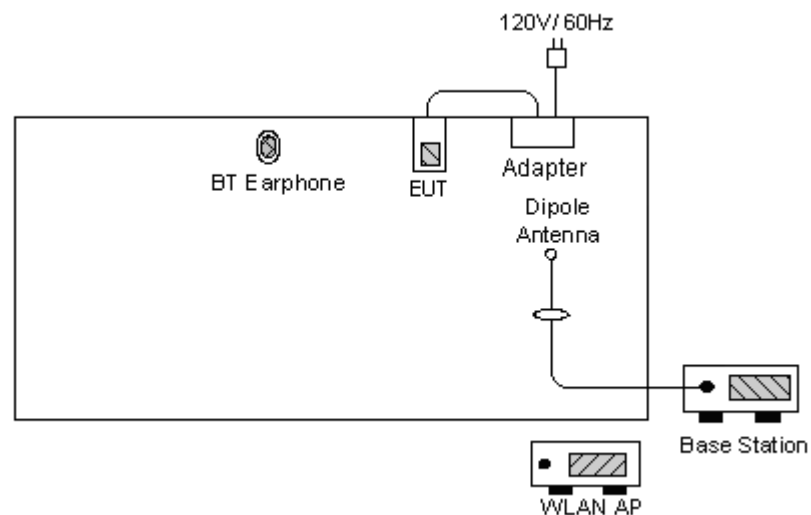
Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable / Power Cord
1.	Base Station	R&S	CMU200	N/A	N/A
2.	Bluetooth Earphone	Engotech	ET-BH111	PQY471087	N/A

2.4 Connection Diagram of Test System

<Radiated Emission>



<Conducted 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 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
TEL : 886-3-327-3456
FAX : 886-3-328-4978
Test Site No : CO01-HY, 03CH06-HY

4.1 Test Voltage

AC 120V / 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2003

4.3 Test Compliance

47 CFR Part 15 Subpart C

4.4 Frequency Range

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

4.5 Test Distance

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

5. Test Data and Test Result

5.1 List of Measurements and Examinations

The Emission Mode: Bluetooth

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

5.2 Band Edges Measurement

5.2.1 Measuring Instruments

As described in chapter 6 of this test report.

5.2.2 Test Procedure

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

5.2.3 Test Result

- Application Type : Bluetooth
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

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

5.2.4 Note on Band Edge Emission

➤ BT(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
2483.50	48.56	-5.44	54.00	48.23	31.98	4.05	35.70	120	275	Average
2483.50	56.73	-17.27	74.00	56.40	31.98	4.05	35.70	100	0	Peak

CH78 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	46.94	-7.06	54.00	46.61	31.98	4.05	35.70	106	11	Average
2483.50	55.11	-18.89	74.00	54.78	31.98	4.05	35.70	100	0	Peak

➤ BT EDR(2Mbps)

CH78 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	50.72	-3.28	54.00	50.39	31.98	4.05	35.70	121	273	Average
2483.50	60.83	-13.17	74.00	60.50	31.98	4.05	35.70	100	0	Peak

CH78 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	48.87	-5.13	54.00	48.54	31.98	4.05	35.70	105	11	Average
2483.50	59.09	-14.91	74.00	58.76	31.98	4.05	35.70	100	0	Peak

➤ BT EDR(3Mbps)

CH00 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.33	40.57	-13.43	54.00	40.47	31.86	3.92	35.68	128	284	Average
2387.33	50.96	-23.04	74.00	50.86	31.86	3.92	35.68	100	0	Peak

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
2314.56	39.59	-14.41	54.00	39.70	31.73	3.82	35.67	100	43	Average
2314.56	50.13	-23.87	74.00	50.24	31.73	3.82	35.67	100	0	Peak

CH78 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	49.46	-4.54	54.00	49.13	31.98	4.05	35.70	106	11	Average
2483.50	59.59	-14.41	74.00	59.26	31.98	4.05	35.70	100	0	Peak

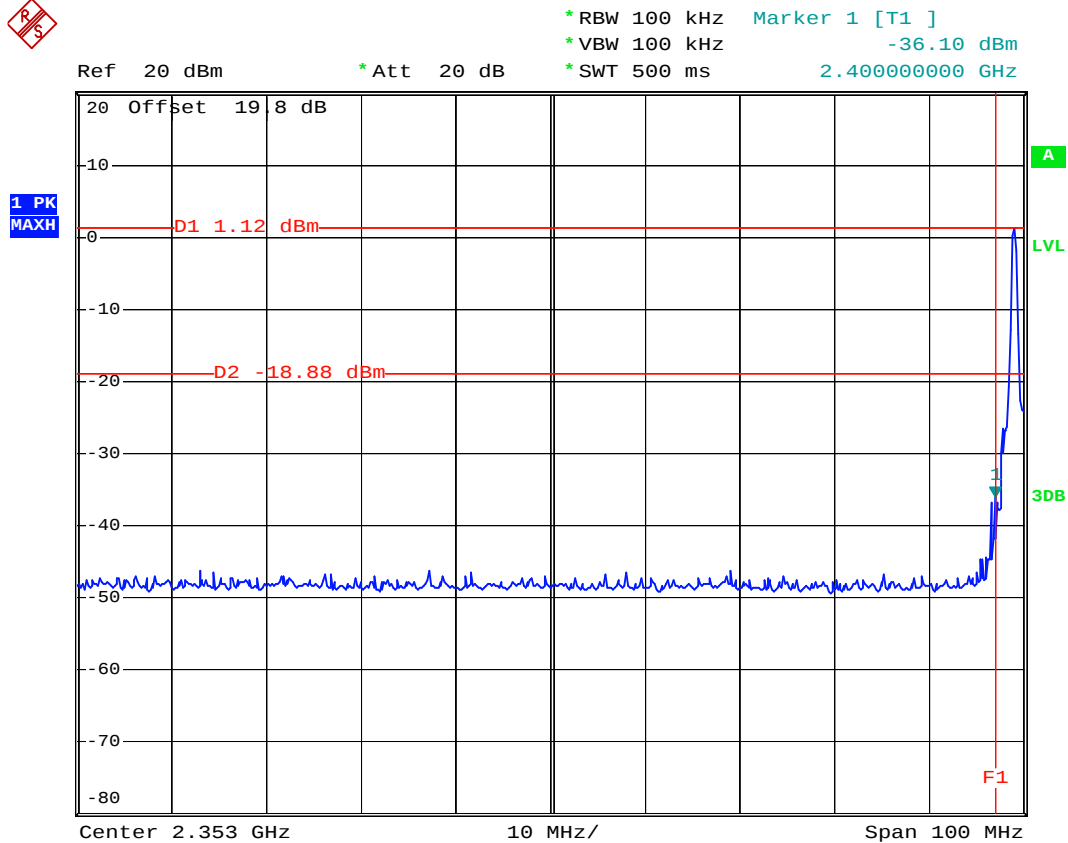
CH78 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	50.72	-3.28	54.00	50.39	31.98	4.05	35.70	121	273	Average
2483.50	60.83	-13.17	74.00	60.50	31.98	4.05	35.70	100	0	Peak

5.2.5 Band Edge

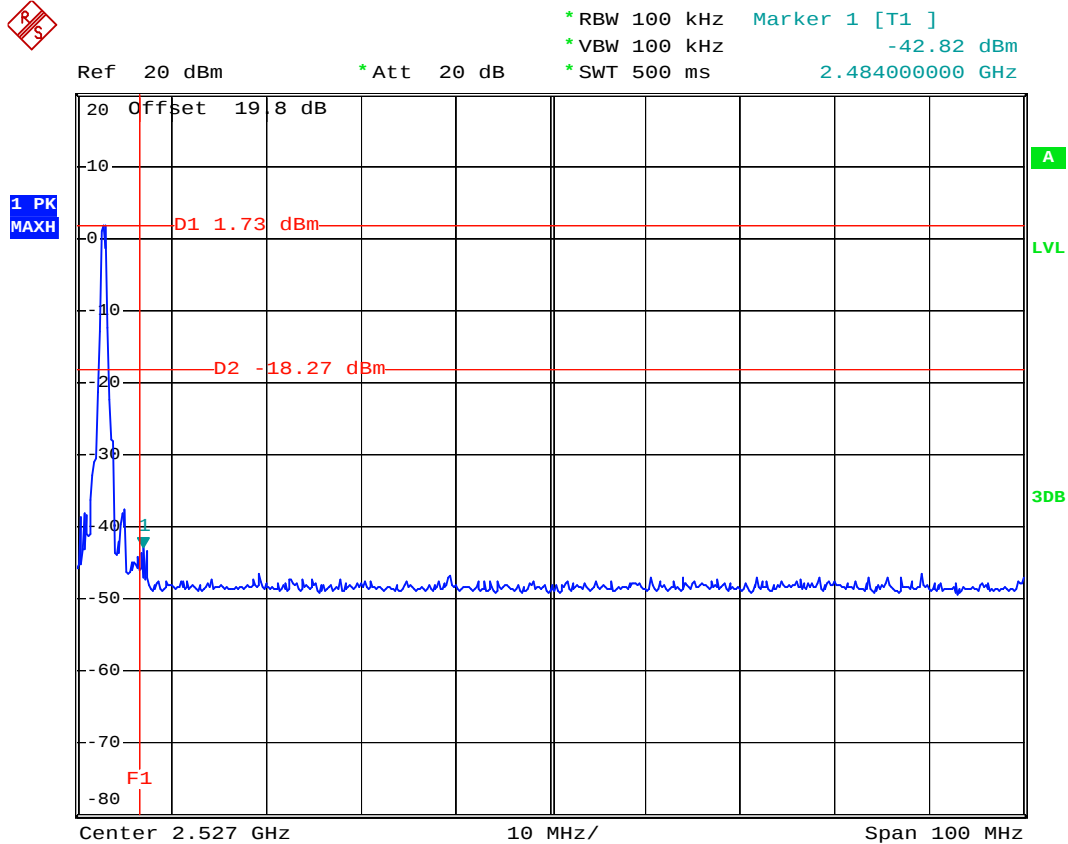
BT

CH00



Date: 6.MAR.2008 23:23:14

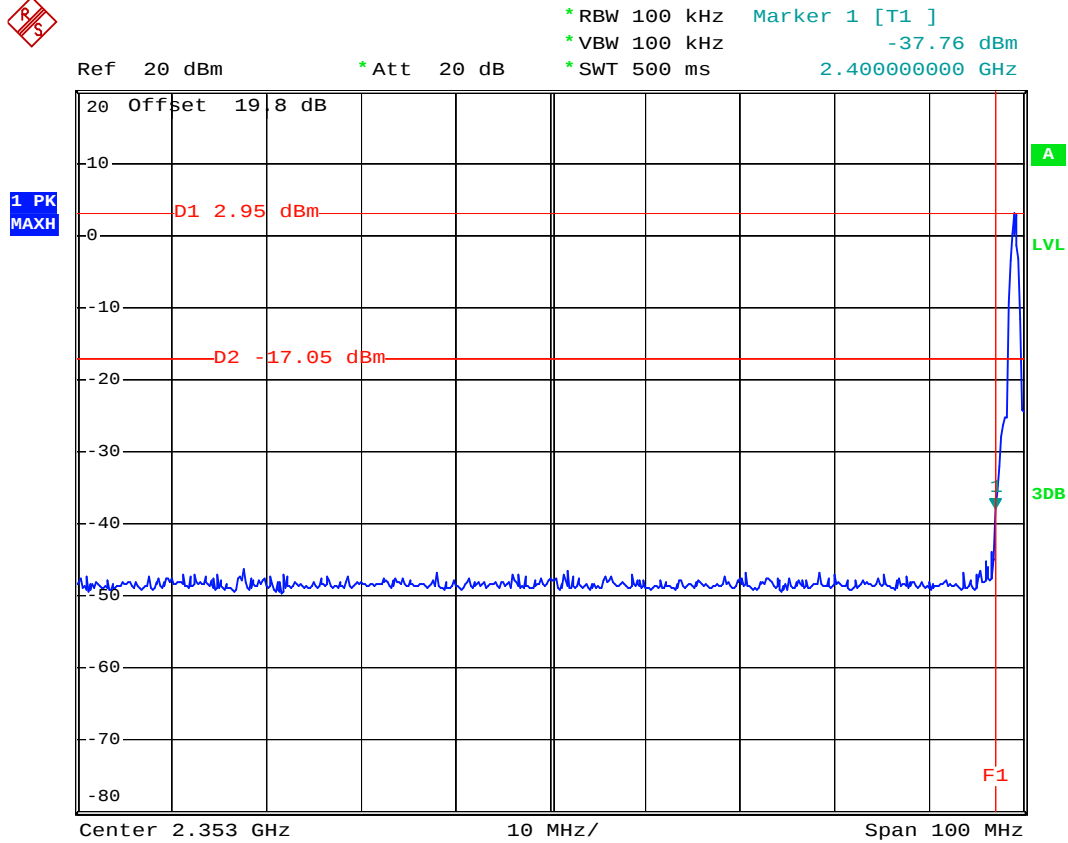
CH78



Date: 6.MAR.2008 23:22:22

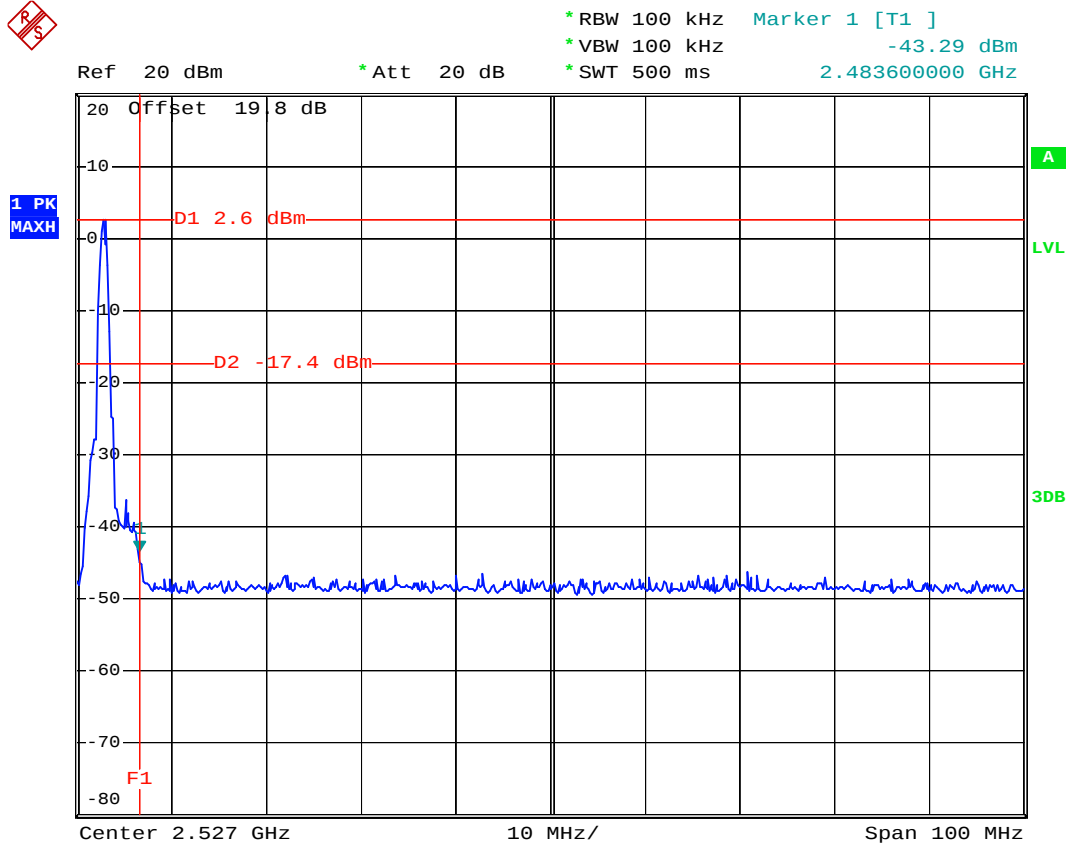
BT EDR(2Mbps)

CH00



Date: 6.MAR.2008 23:44:07

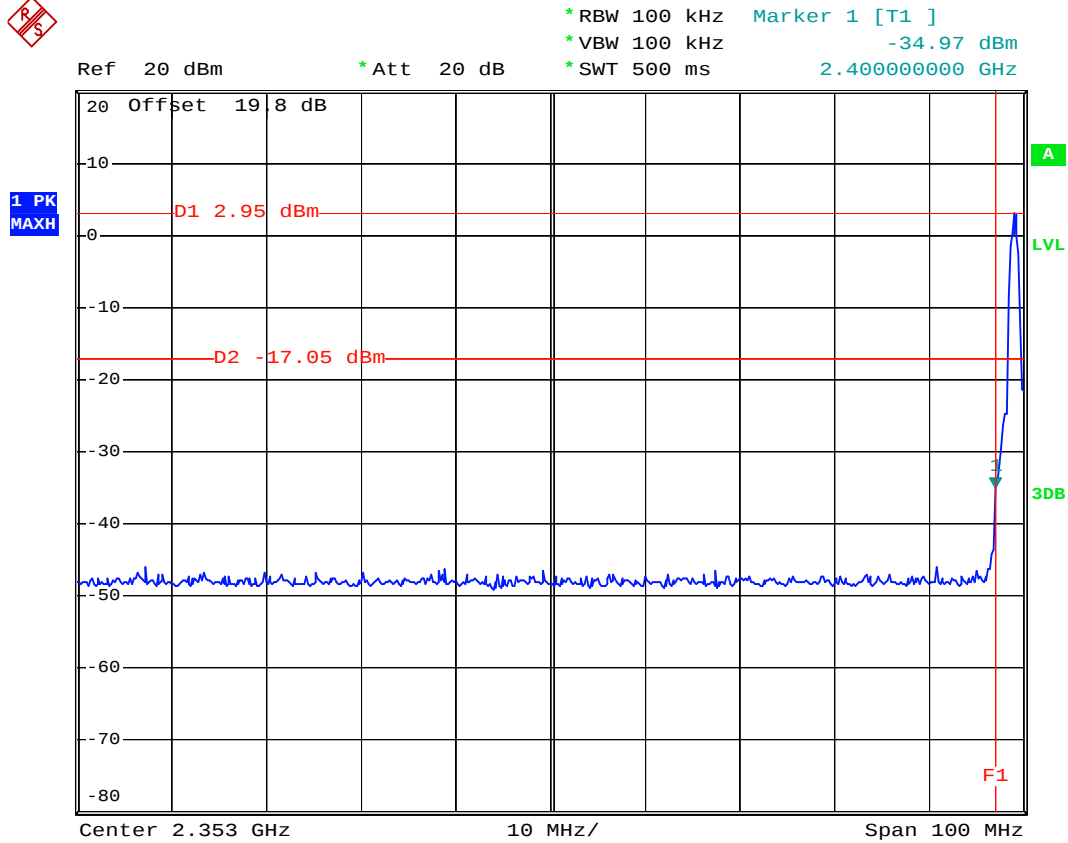
CH78



Date: 6.MAR.2008 23:43:23

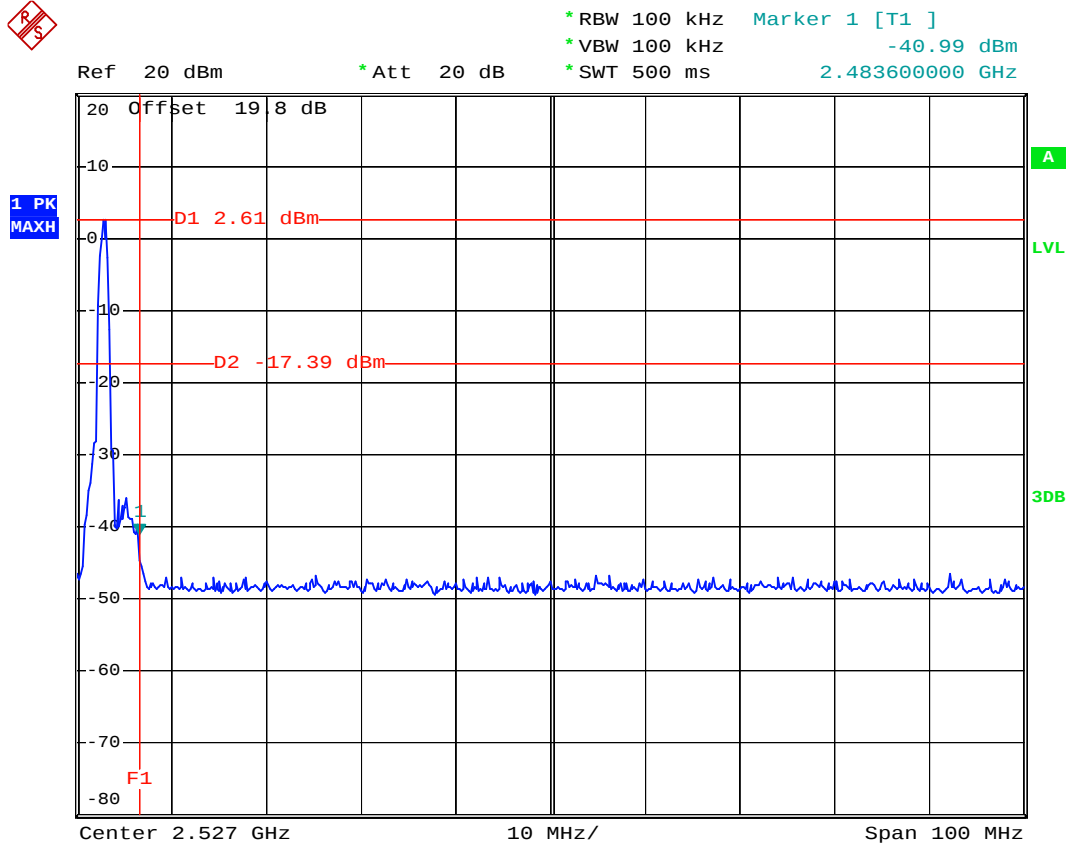
BT EDR(3Mbps)

CH00



Date: 7.MAR.2008 00:11:52

CH78



Date: 7.MAR.2008 00:10:21

5.3 Hopping Channel Separation

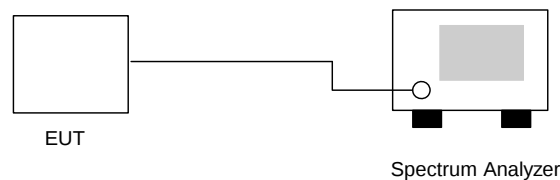
5.3.1 Measuring Instruments

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 : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.581	Mode 1
39	2441	1.000	0.581	Mode 2
78	2480	1.000	0.581	Mode 3

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

- Application Type : BT EDR(2Mbps)
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.808	Mode 4
39	2441	1.000	0.811	Mode 5
78	2480	1.000	0.808	Mode 6

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

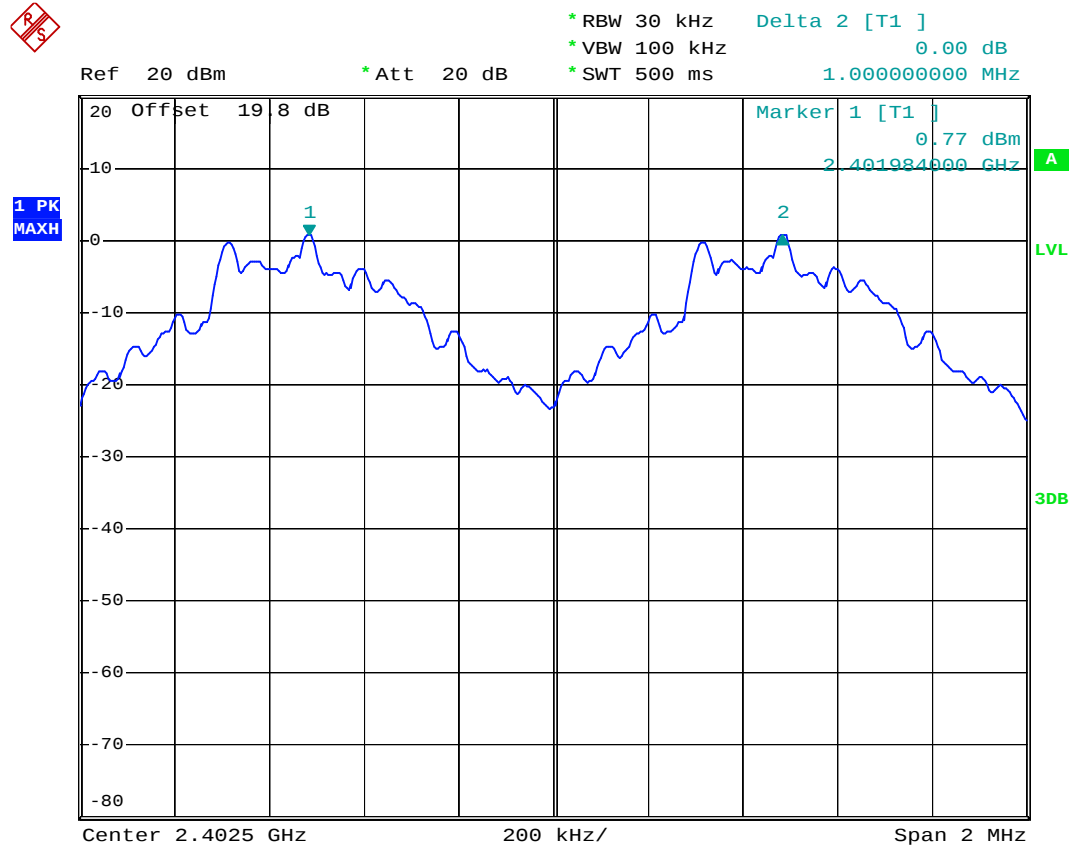
- Application Type : BT EDR(3Mbps)
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.819	Mode 7
39	2441	1.000	0.816	Mode 8
78	2480	1.000	0.819	Mode 9

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

5.3.5 Hopping Channel Separation

Mode 1

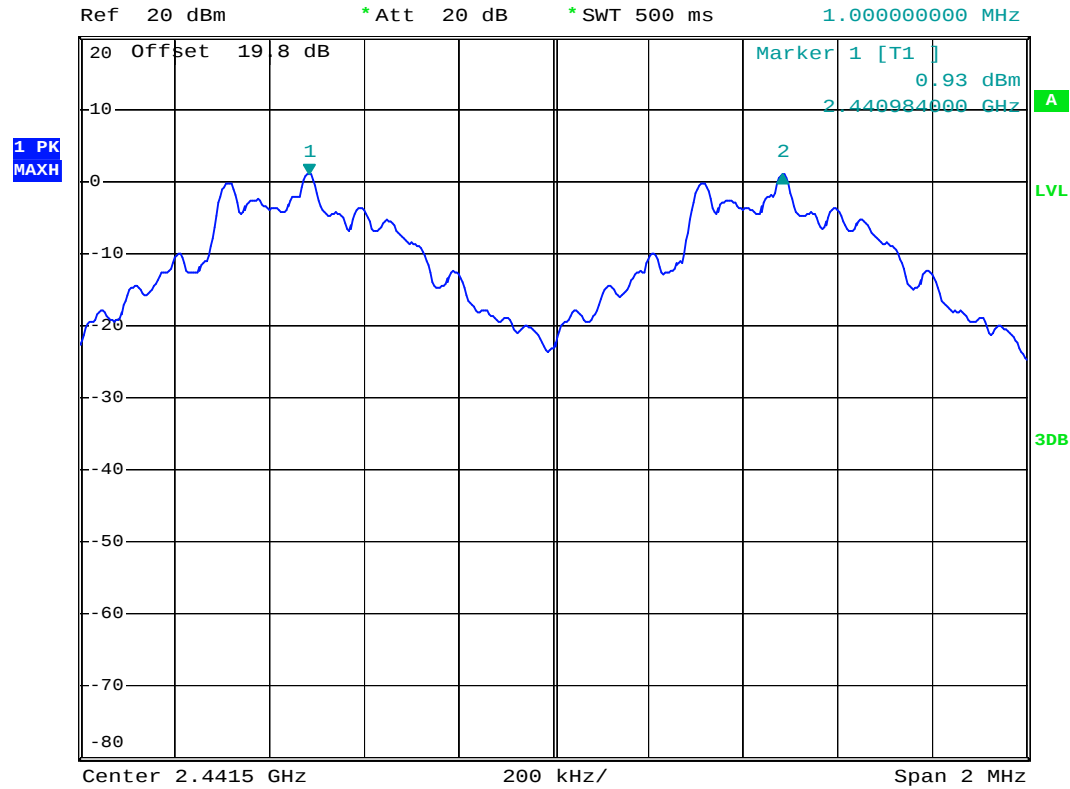


Date: 6.MAR.2008 23:24:28

Mode 2



* RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz -0.00 dB
 * SWT 500 ms 1.000000000 MHz

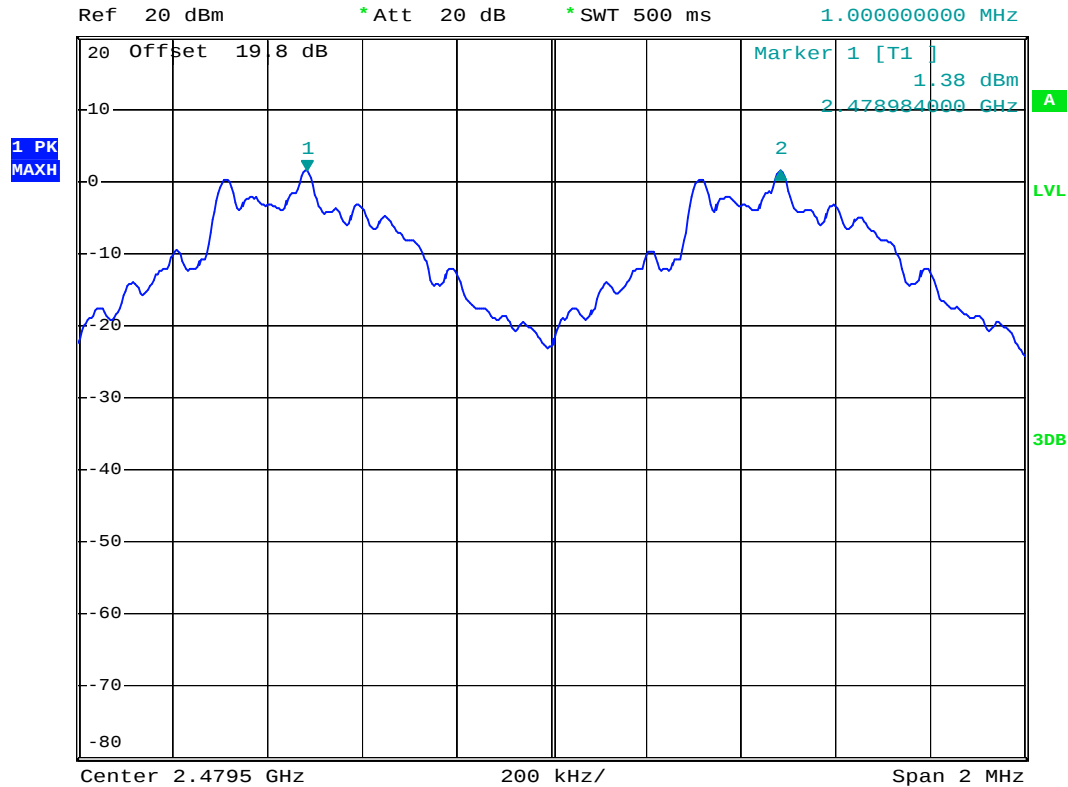


Date: 6.MAR.2008 23:25:39

Mode 3



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

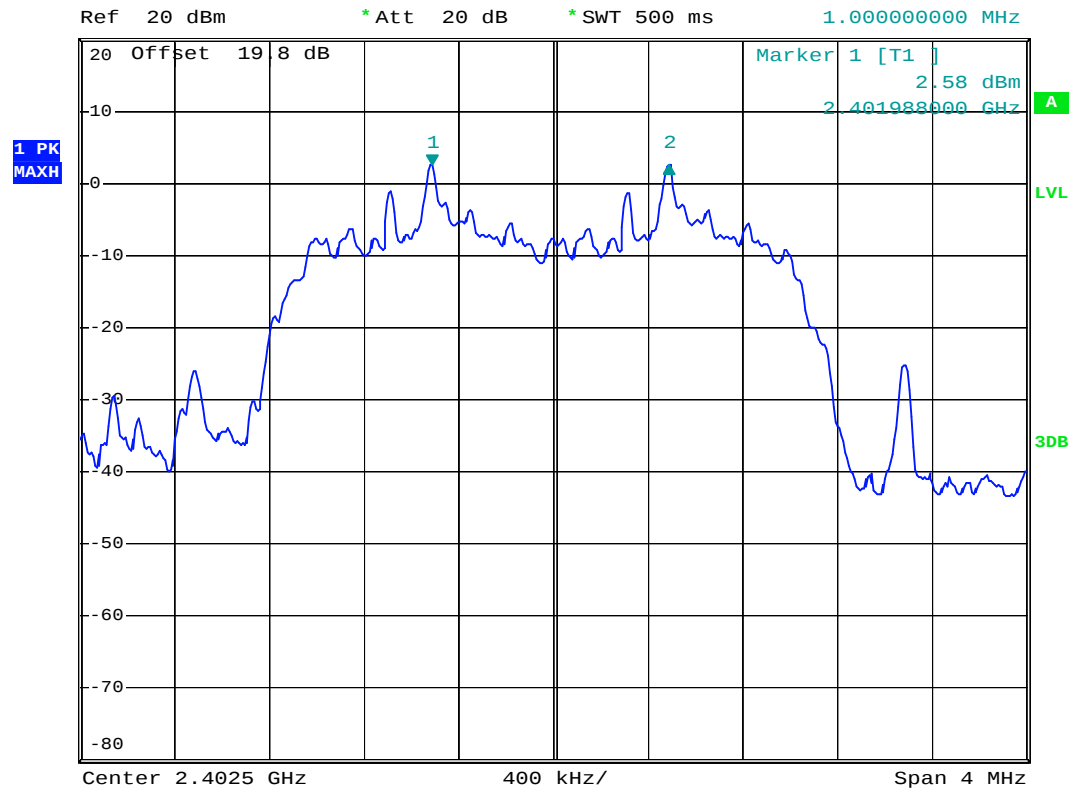


Date: 6.MAR.2008 23:26:24

Mode 4



* RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz -0.03 dB
 * SWT 500 ms 1.000000000 MHz

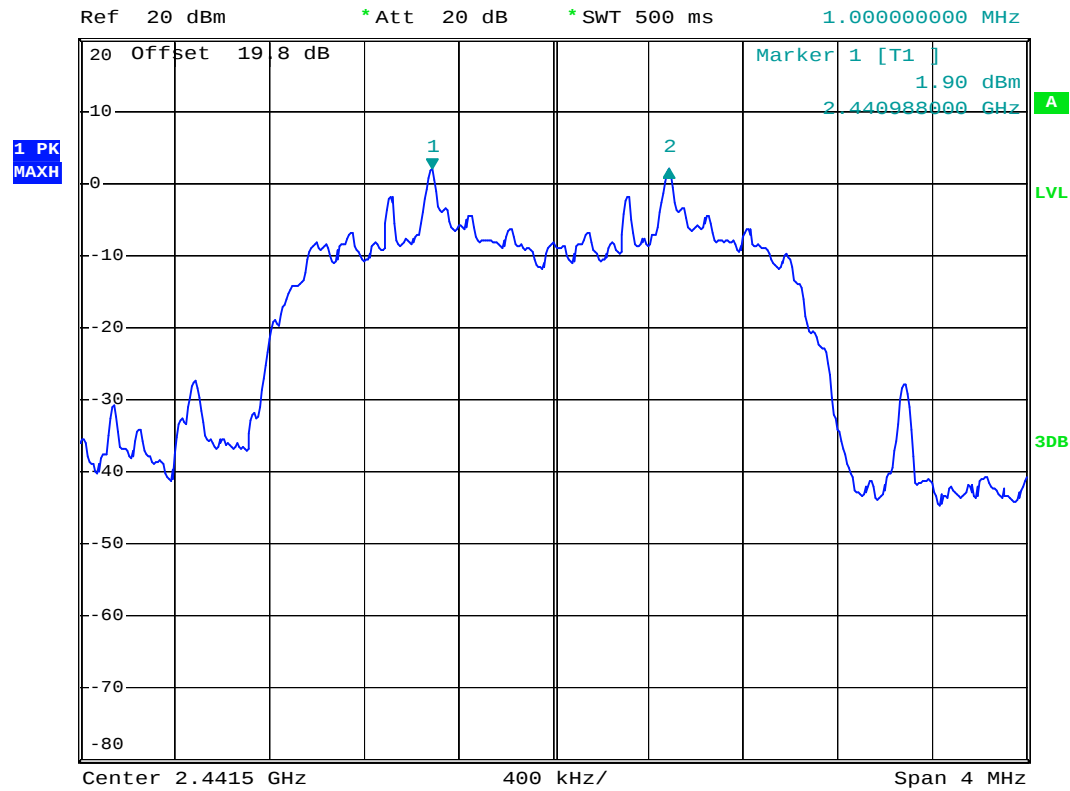


Date: 6.MAR.2008 23:45:32

Mode 5



* RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz 0.02 dB
 * SWT 500 ms 1.000000000 MHz

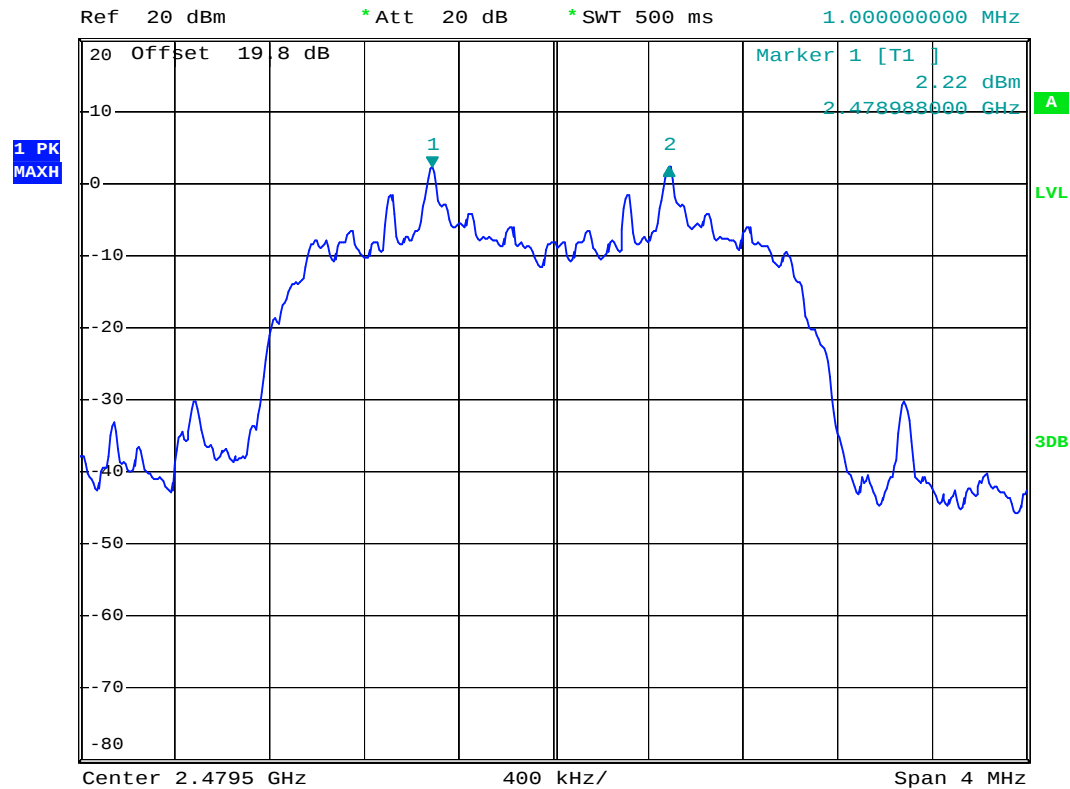


Date: 6.MAR.2008 23:46:09

Mode 6



* RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz -0.03 dB
 * SWT 500 ms 1.000000000 MHz

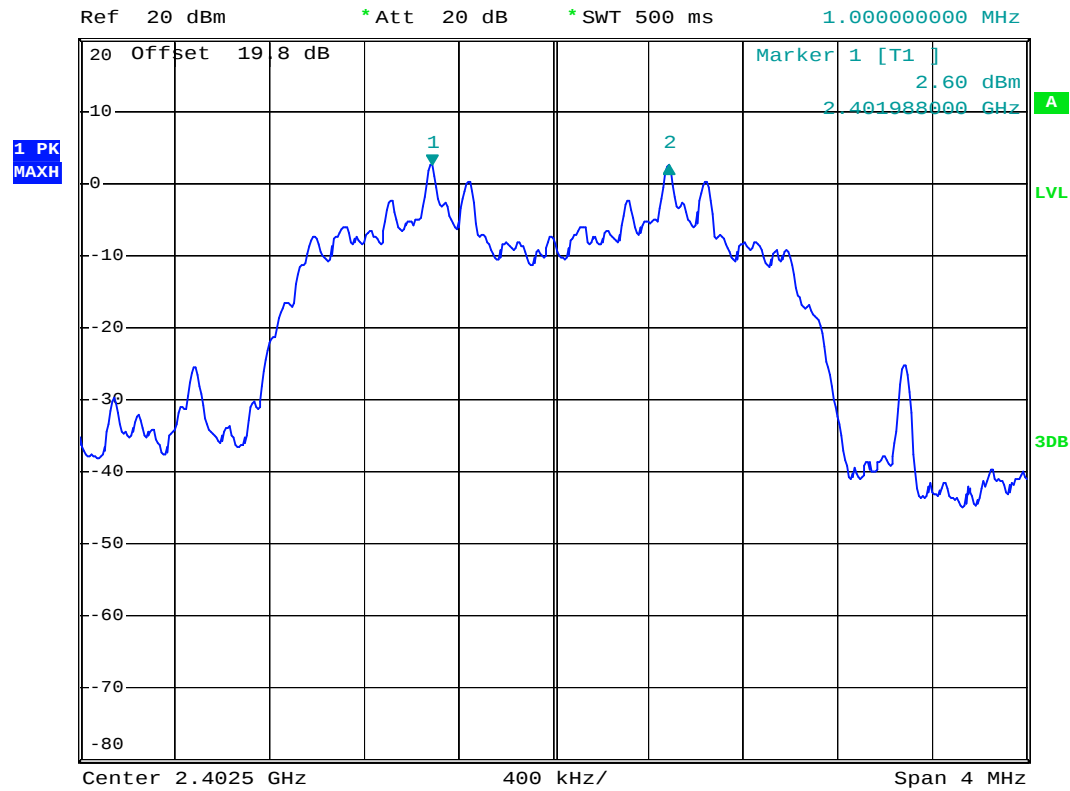


Date: 6.MAR.2008 23:47:29

Mode 7



* RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz -0.02 dB
 * SWT 500 ms 1.000000000 MHz

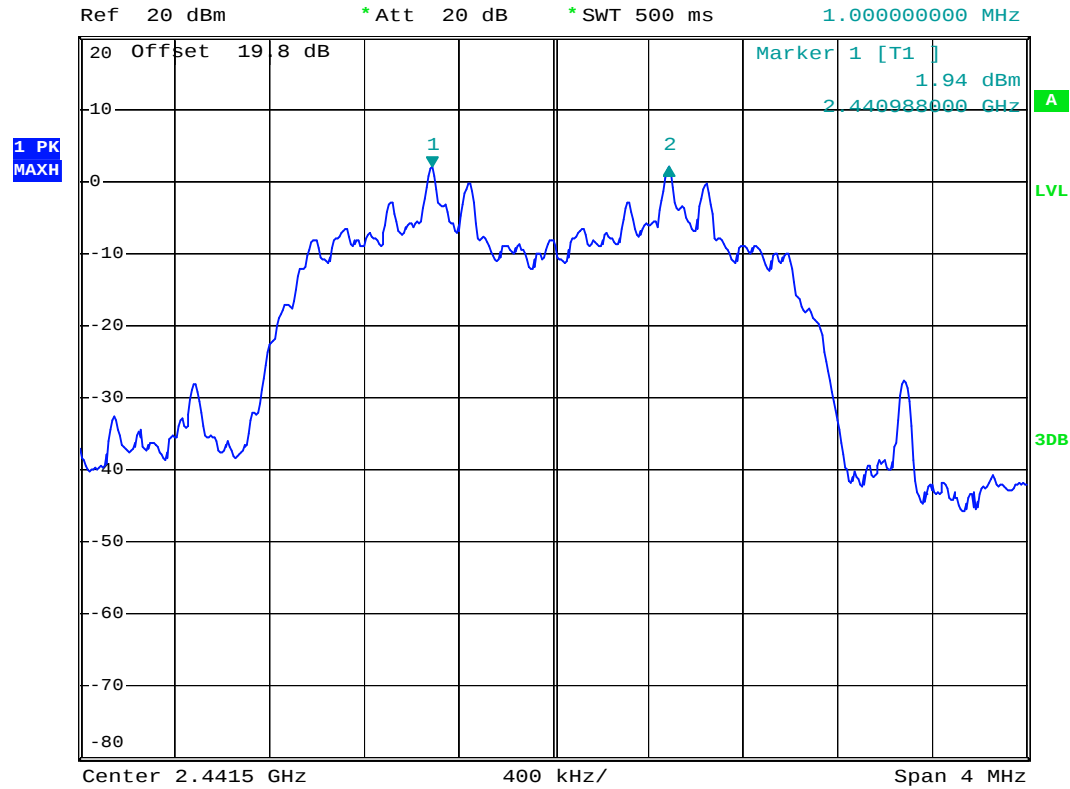


Date: 7.MAR.2008 00:13:55

Mode 8



* RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz -0.00 dB
 * SWT 500 ms 1.000000000 MHz

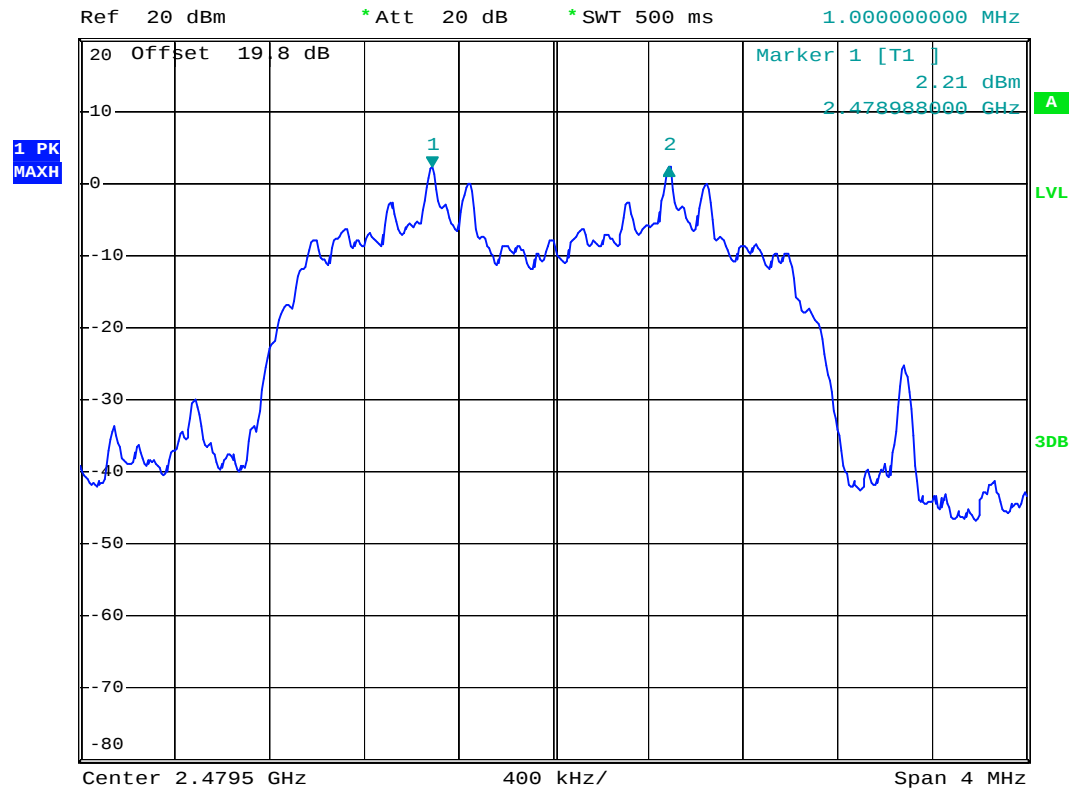


Date: 7.MAR.2008 00:14:40

Mode 9



* RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz 0.03 dB
 * SWT 500 ms 1.000000000 MHz



Date: 7.MAR.2008 00:15:29

5.4 Number of Hopping Frequency

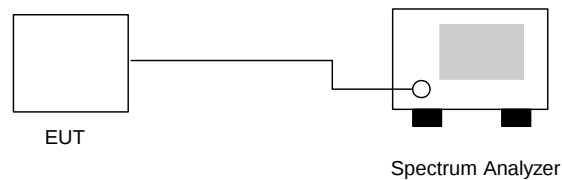
5.4.1 Measuring Instruments

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 : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

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

- Application Type : BT EDR(2Mbps)
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

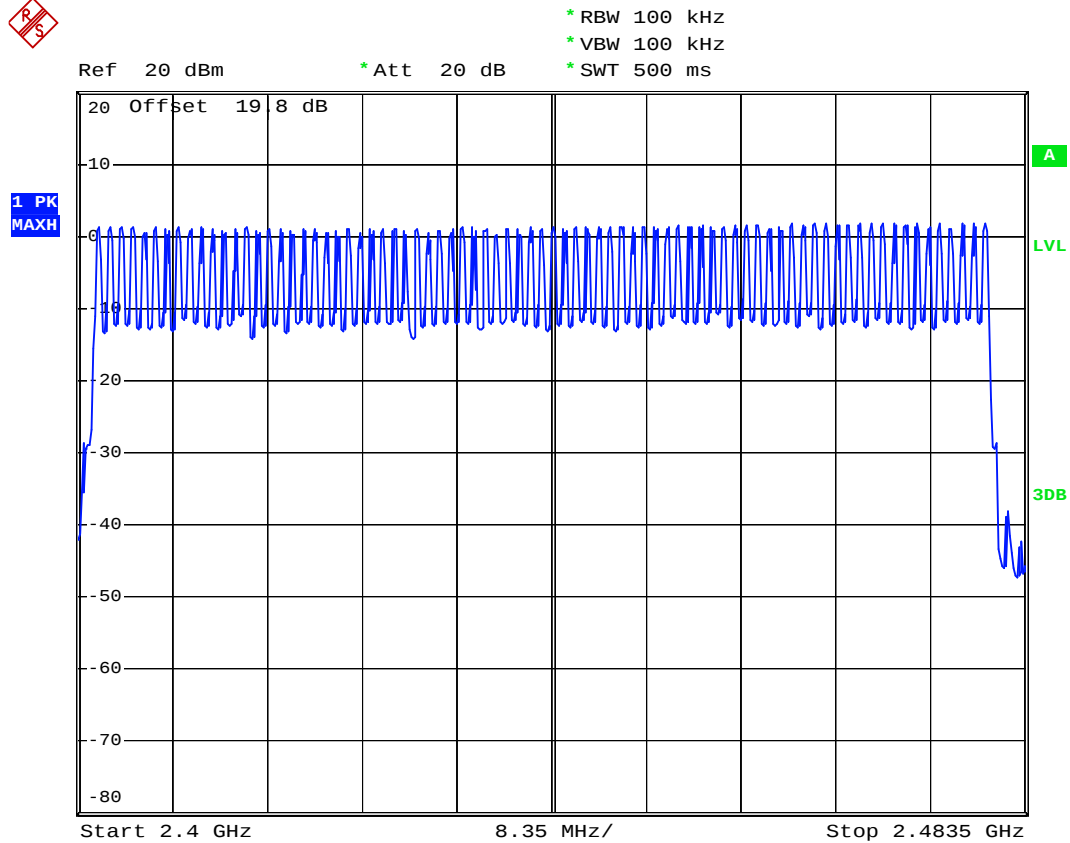
Number of Hopping Frequency (Channel)	Limits (Channel)
79	15

- Application Type : BT EDR(3Mbps)
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

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

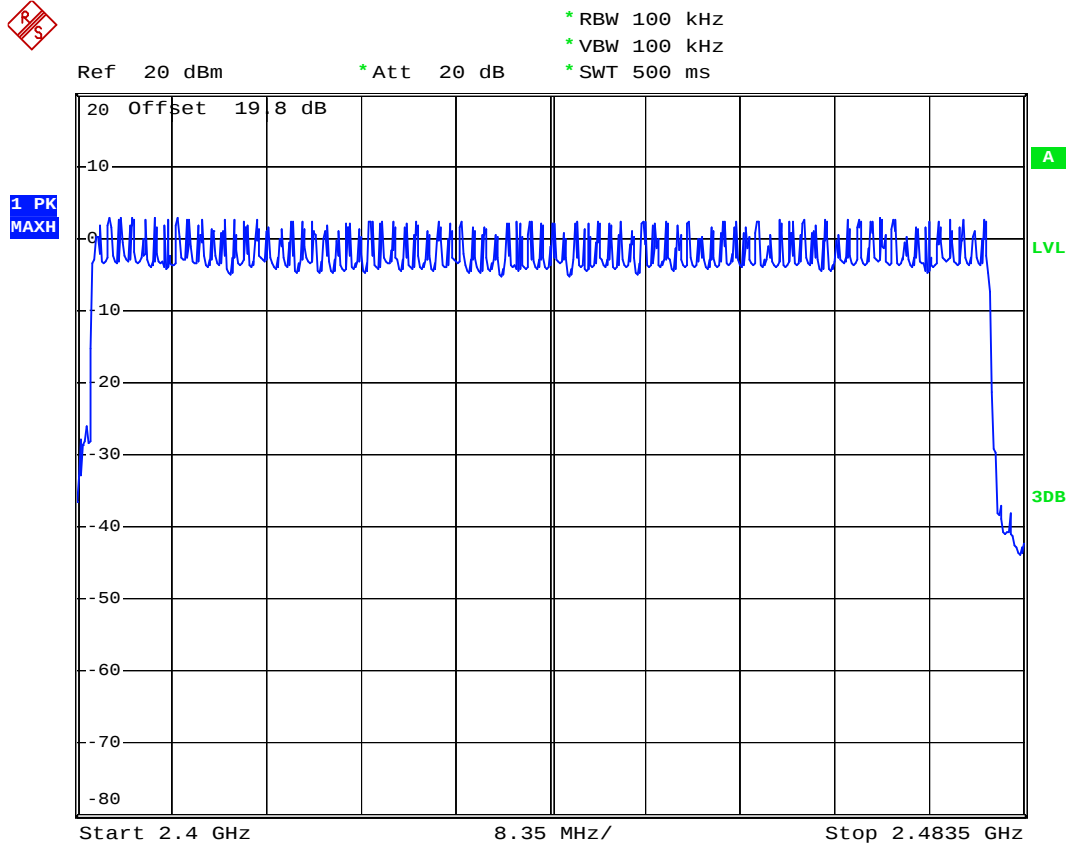
5.4.5 Number of Hopping Frequency

BT



Date: 7.MAR.2008 00:45:02

BT EDR(2Mbps)

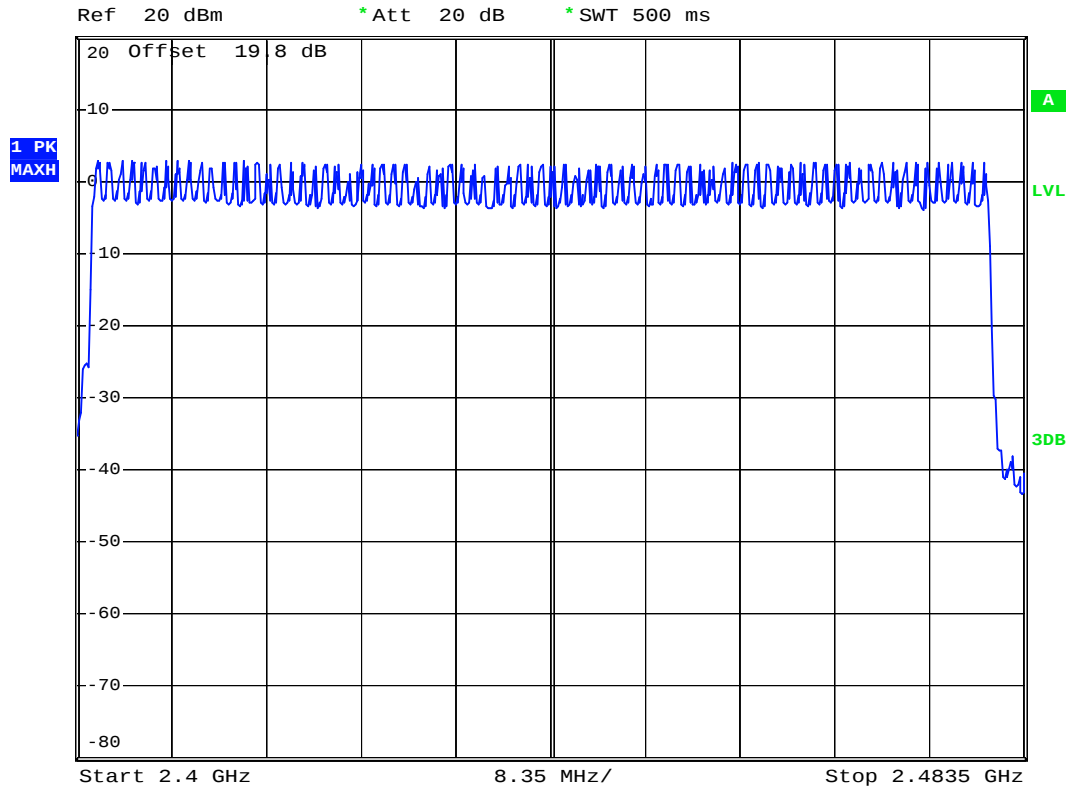


Date: 7.MAR.2008 00:34:42

BT EDR(3Mbps)



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



Date: 7.MAR.2008 00:39:12

5.5 Hopping Channel Bandwidth

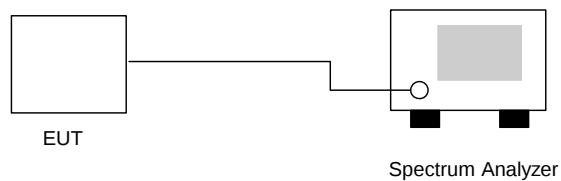
5.5.1 Measuring Instruments

As described in chapter 9 of this test report.

5.5.2 Test Procedure

- The transmitter output was connected to the spectrum analyzer by a low loss cable.
- Set RBW of spectrum analyzer to 30 KHz and VBW to 300 KHz.
- 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 : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	0.872	Mode 1
39	2441	0.872	Mode 2
78	2480	0.872	Mode 3

- Application Type : BT EDR(2Mbps)
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

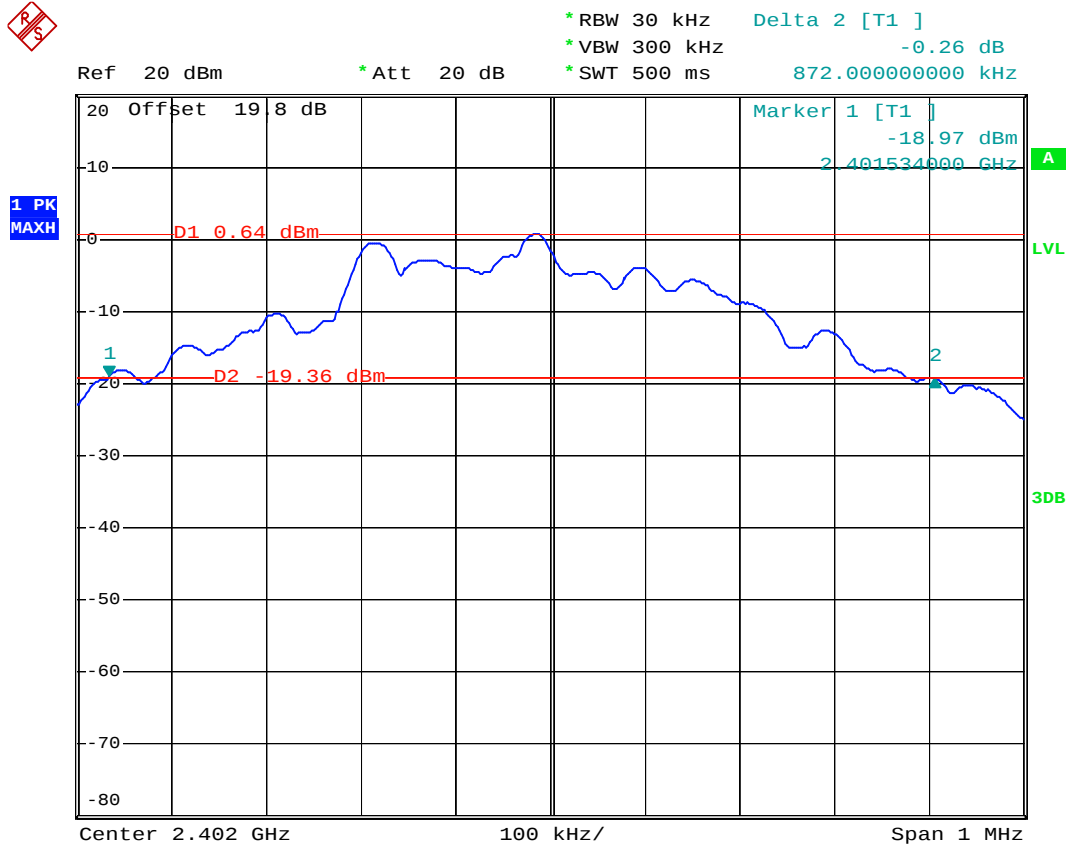
Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.212	Mode 4
39	2441	1.216	Mode 5
78	2480	1.212	Mode 6

- Application Type : BT EDR(3Mbps)
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.228	Mode 7
39	2441	1.224	Mode 8
78	2480	1.228	Mode 9

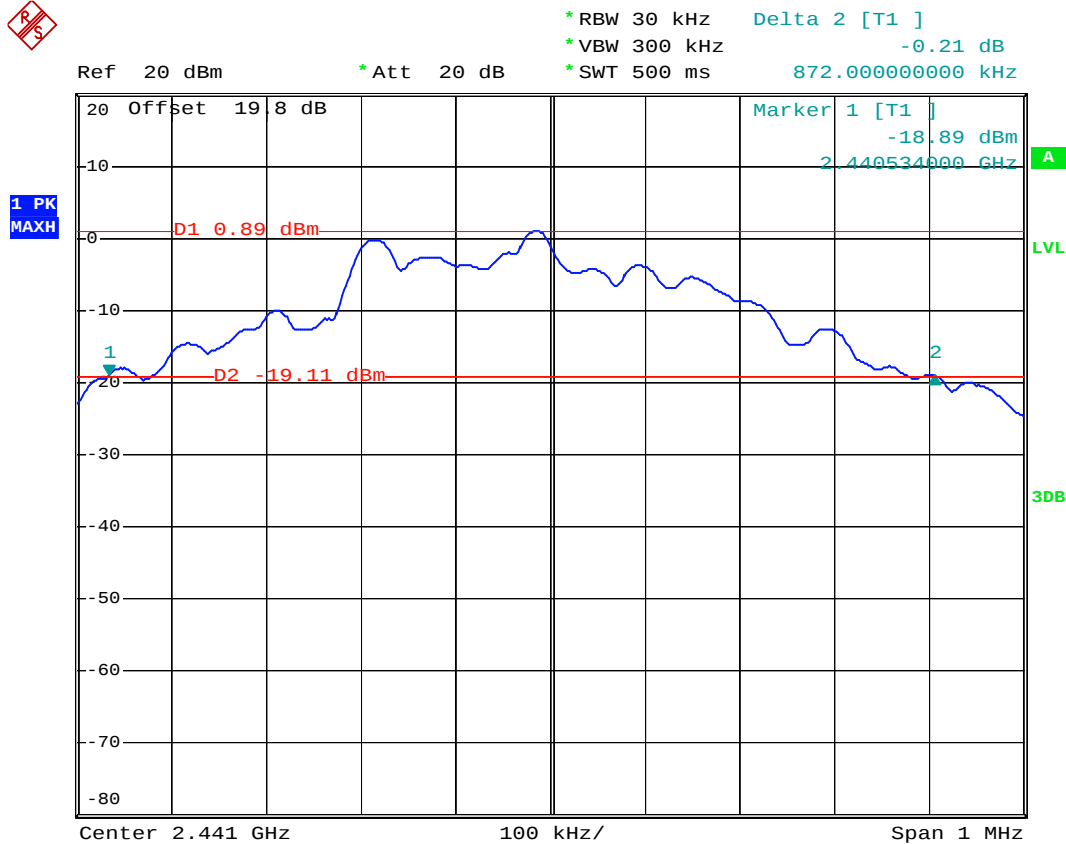
5.5.5 Hopping Channel Bandwidth

Mode 1



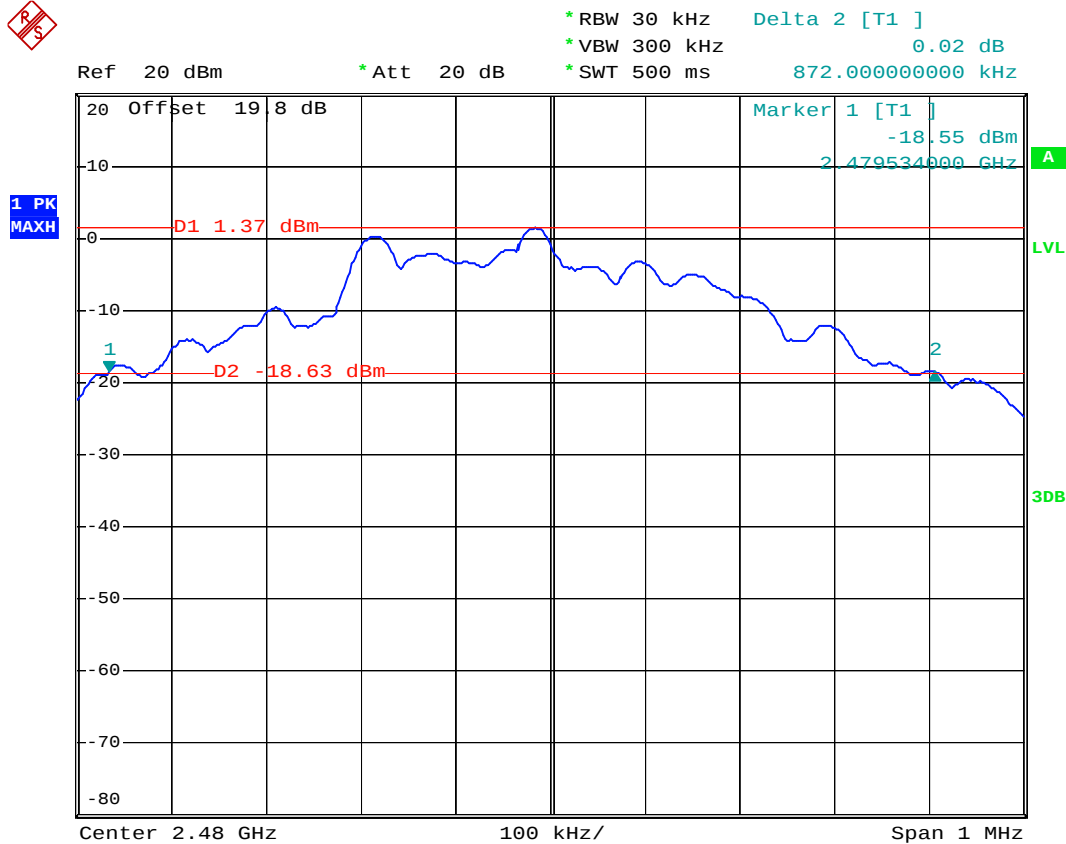
Date: 6.MAR.2008 23:16:36

Mode 2



Date: 6.MAR.2008 23:19:11

Mode 3

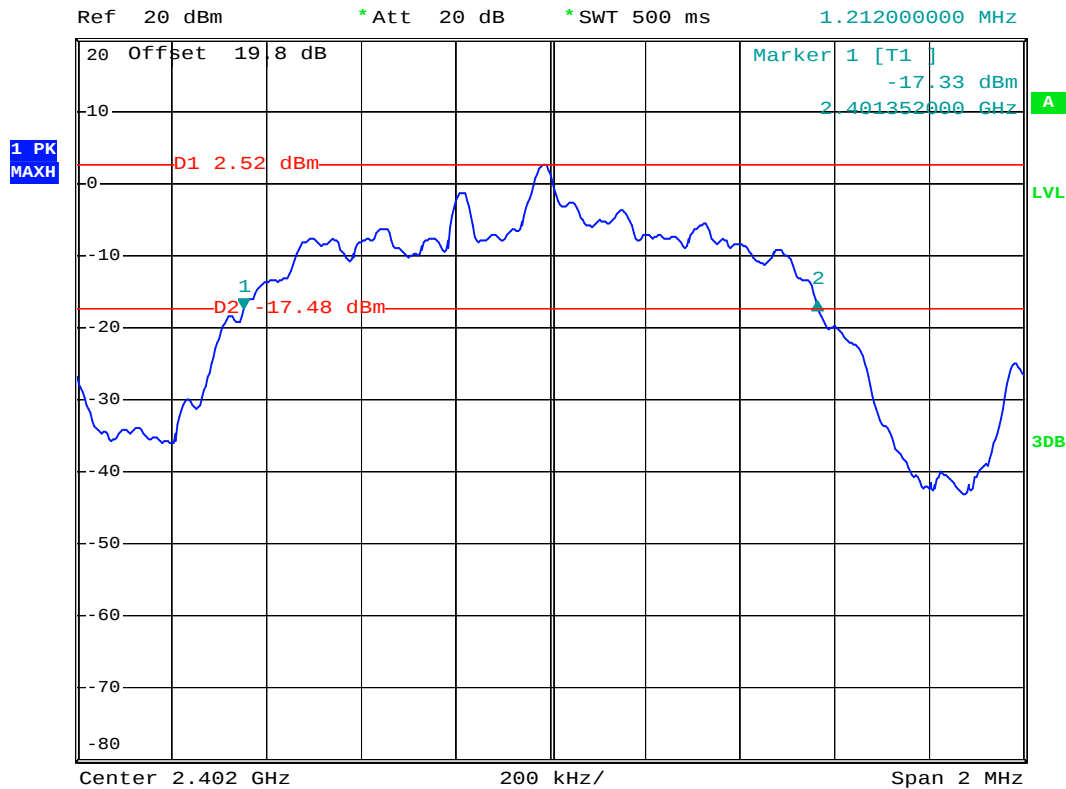


Date: 6.MAR.2008 23:20:36

Mode 4

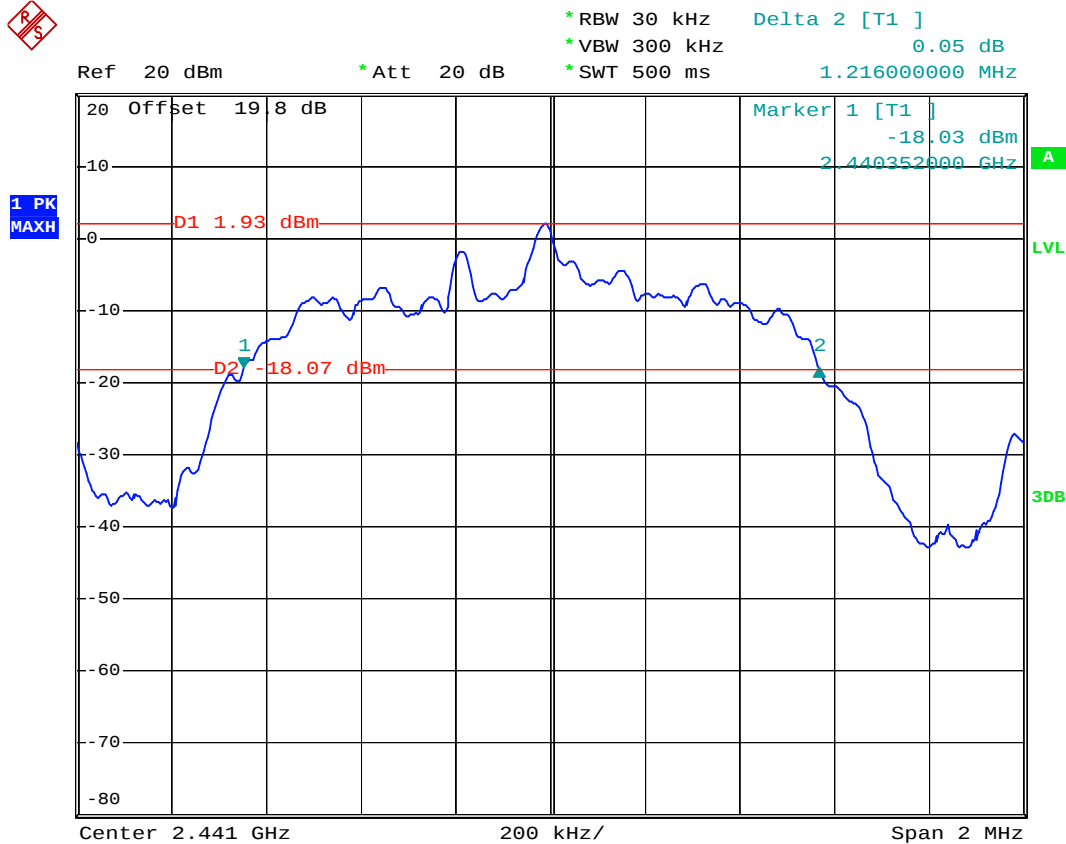


* RBW 30 kHz Delta 2 [T1]
 * VBW 300 kHz 0.96 dB
 * SWT 500 ms 1.212000000 MHz



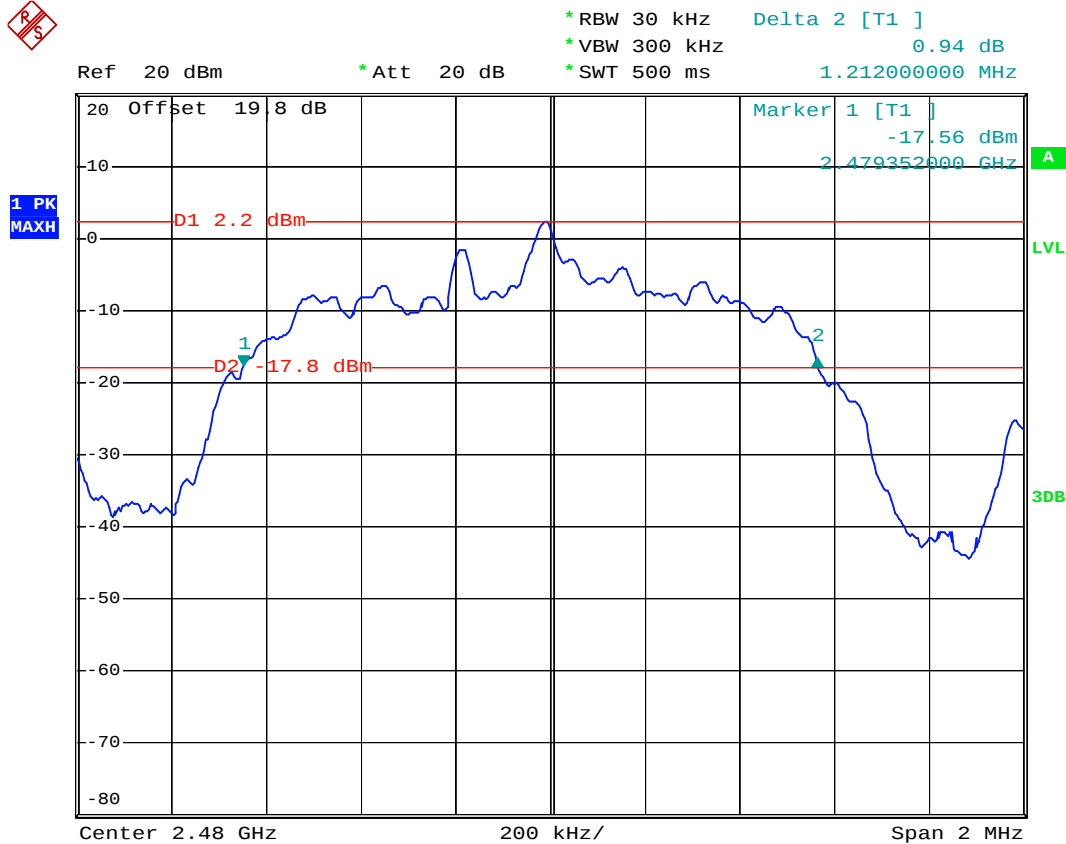
Date: 6.MAR.2008 23:38:25

Mode 5



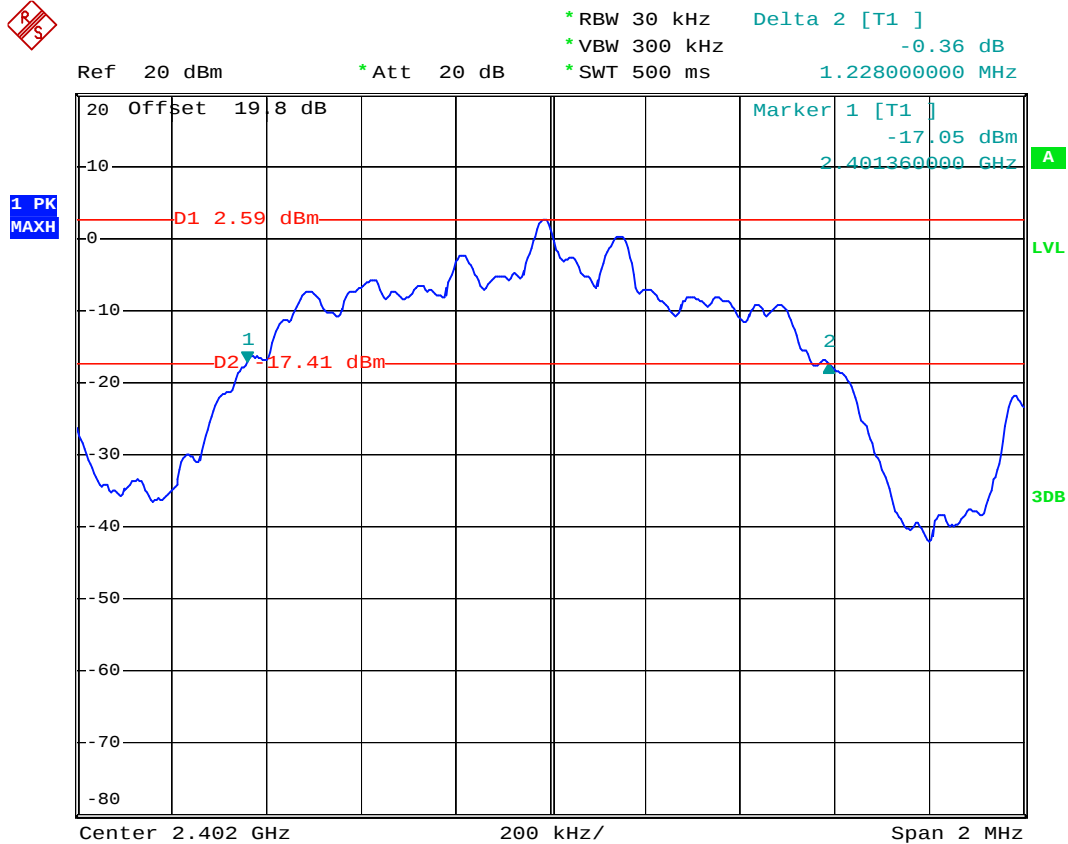
Date: 6.MAR.2008 23:40:35

Mode 6



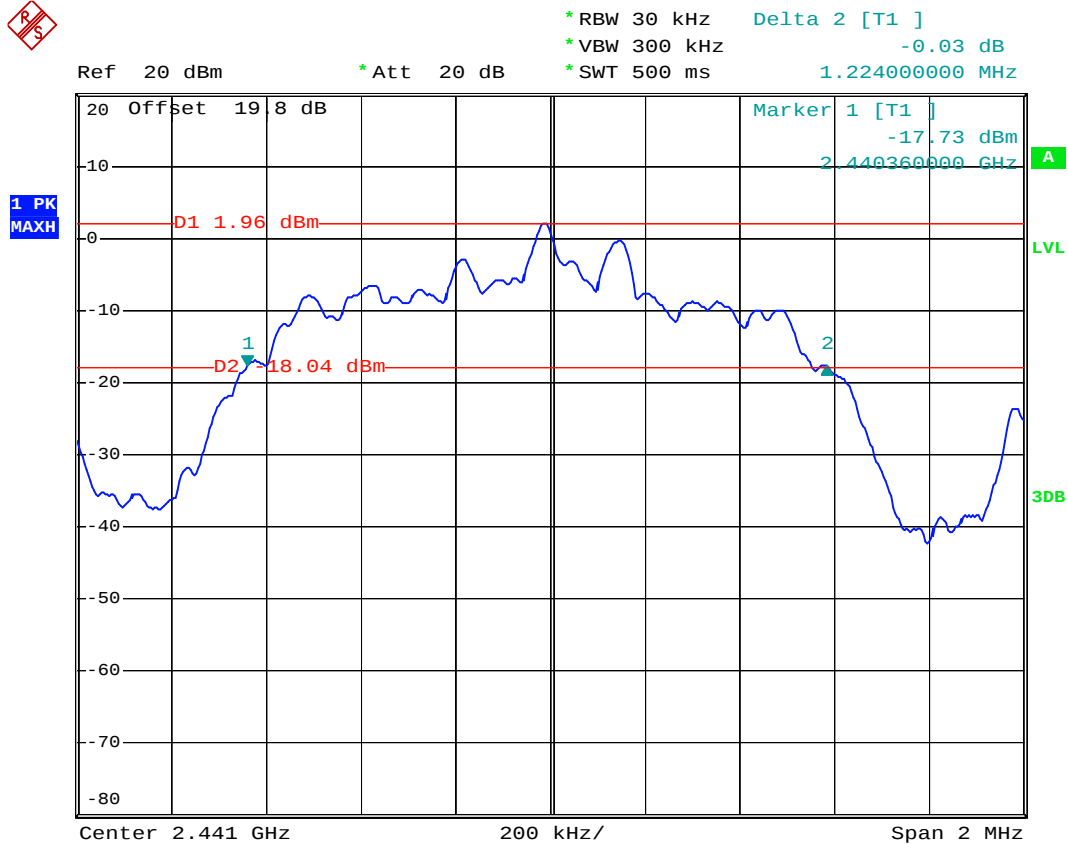
Date: 6.MAR.2008 23:42:19

Mode 7



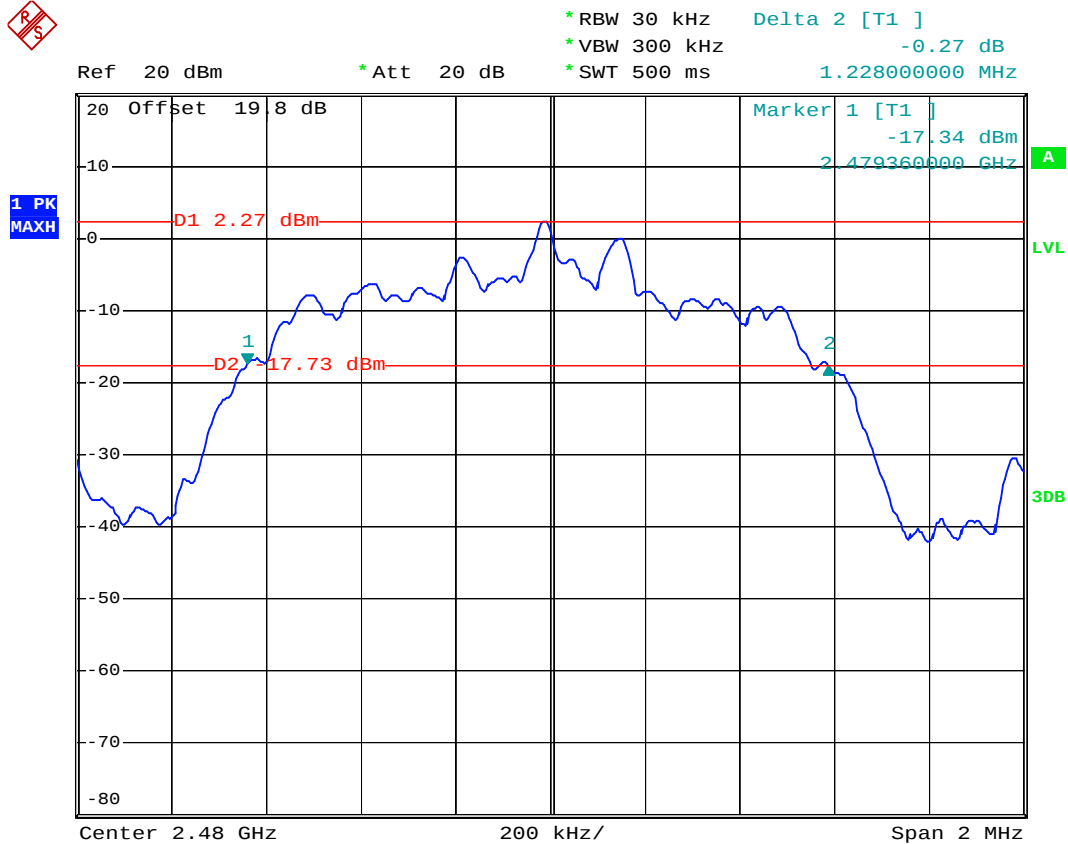
Date: 7.MAR.2008 00:04:25

Mode 8



Date: 7.MAR.2008 00:07:06

Mode 9



Date: 7.MAR.2008 00:09:03

5.6 Dwell Time of Each Frequency

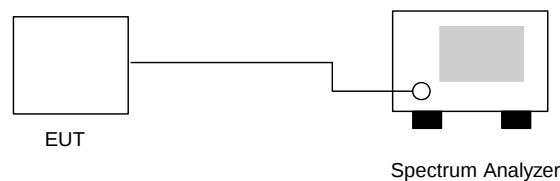
5.6.1 Measuring Instruments

As described in chapter 9 of this test report.

5.6.2 Test Procedure

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

5.6.3 Test Setup Layout



5.6.4 Test Result : See spectrum analyzer plots below

- Application Type : BT
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10	440	0.139	0.4
DH3	5	1710	0.270	0.4
DH5	3.4	3080	0.331	0.4

- Application Type : BT EDR(2Mbps)
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10	452	0.143	0.4
DH3	5.1	1720	0.277	0.4
DH5	3.4	3020	0.324	0.4

- Application Type : BT EDR(3Mbps)
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : Ken

CH39

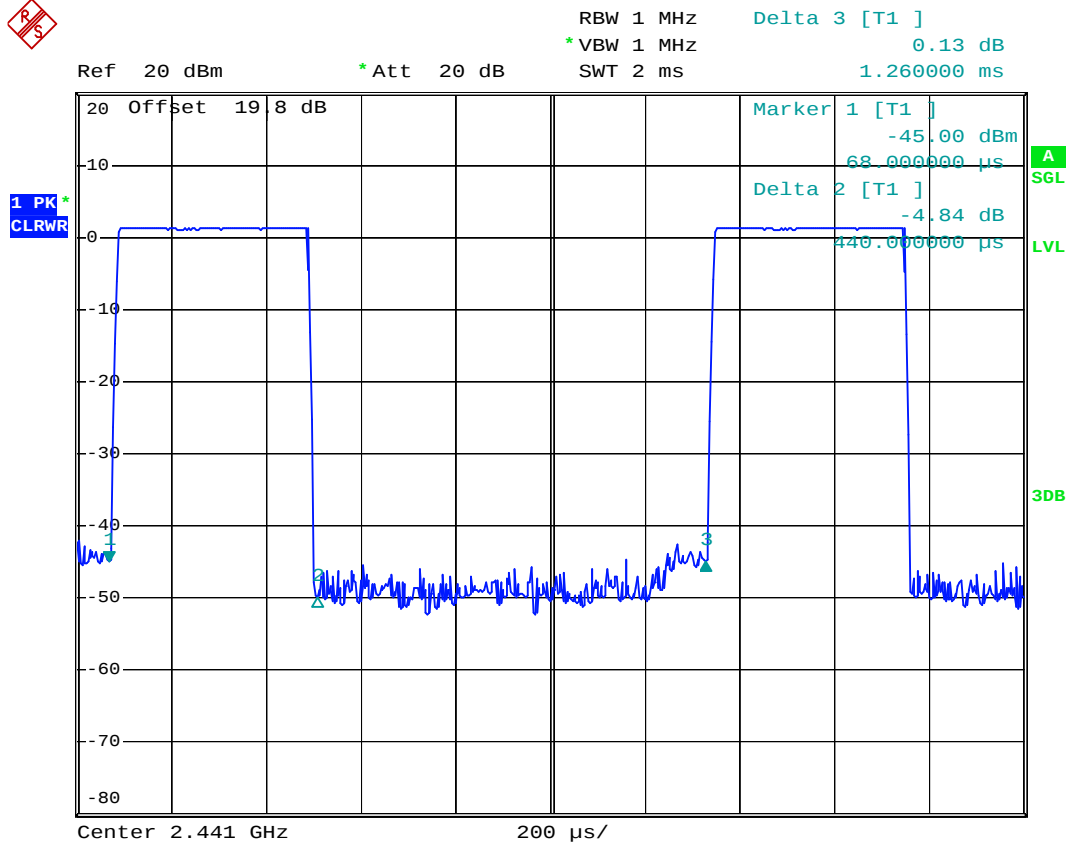
Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10	460	0.145	0.4
DH3	5	1730	0.273	0.4
DH5	3.4	3040	0.327	0.4

※ Remark:

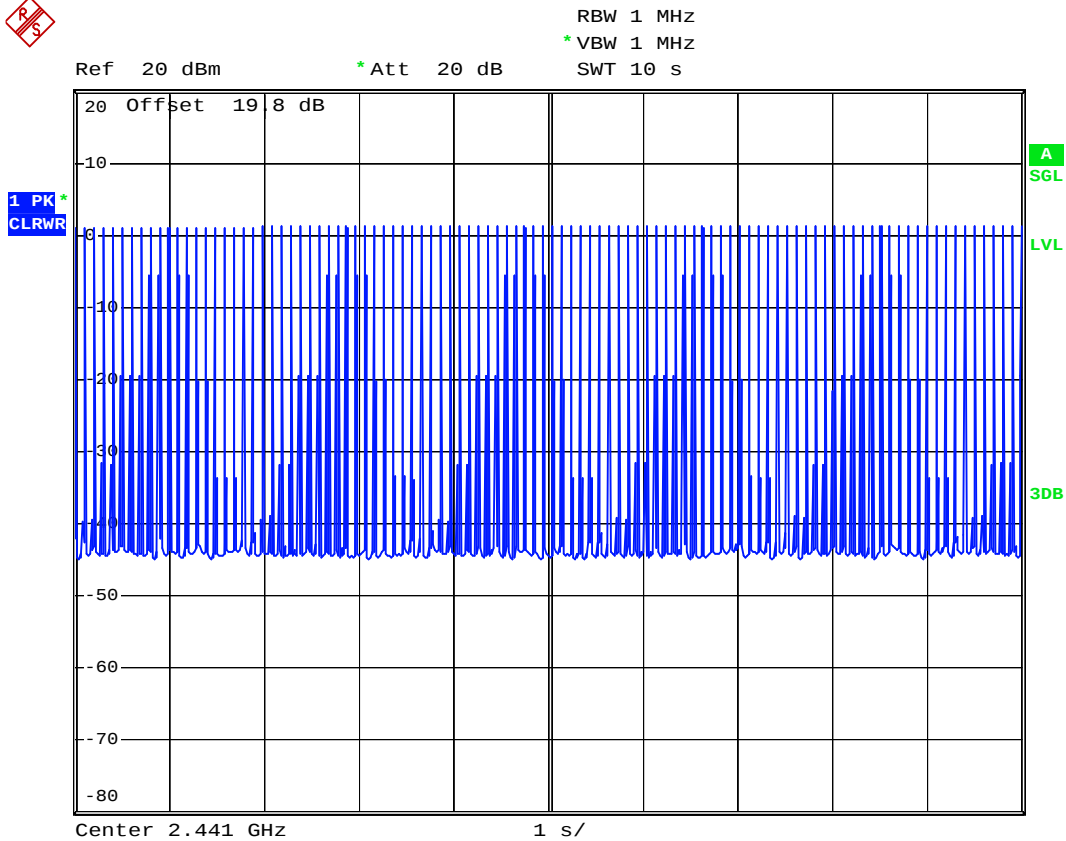
1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79 channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

5.6.5 Dwell Time

DH1 (CH39)

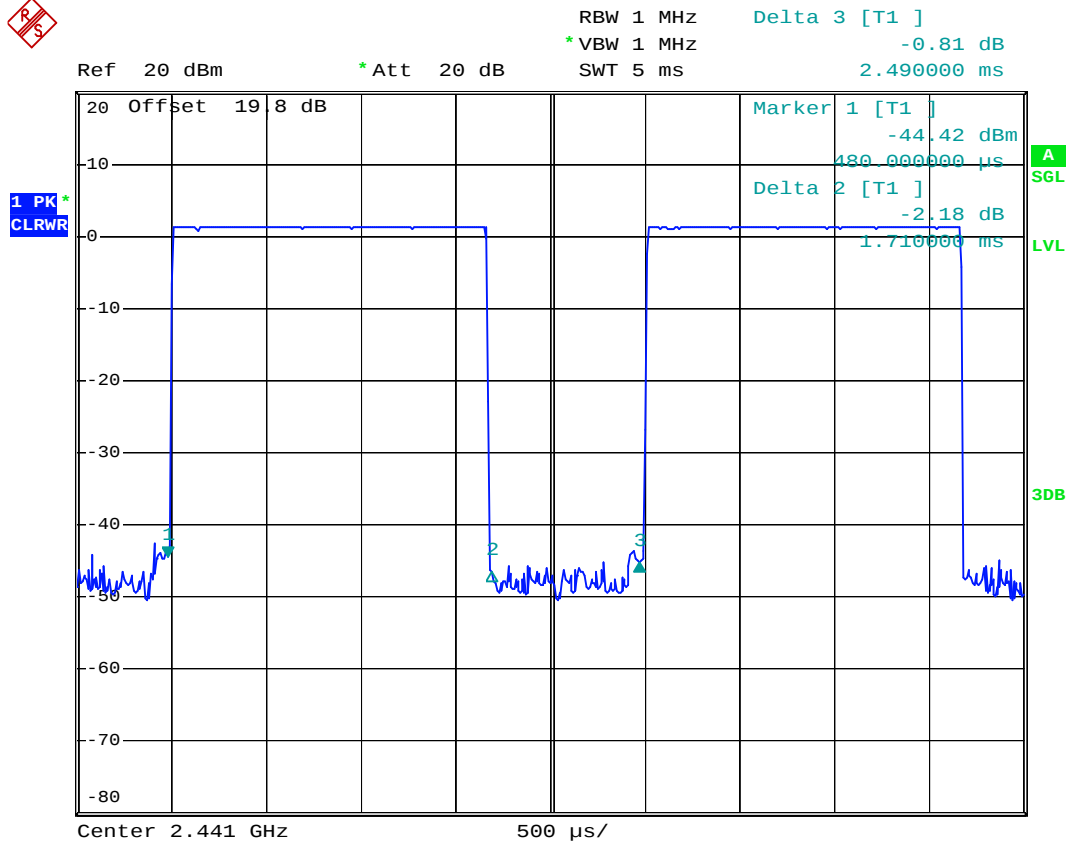


Date: 6.MAR.2008 23:28:52

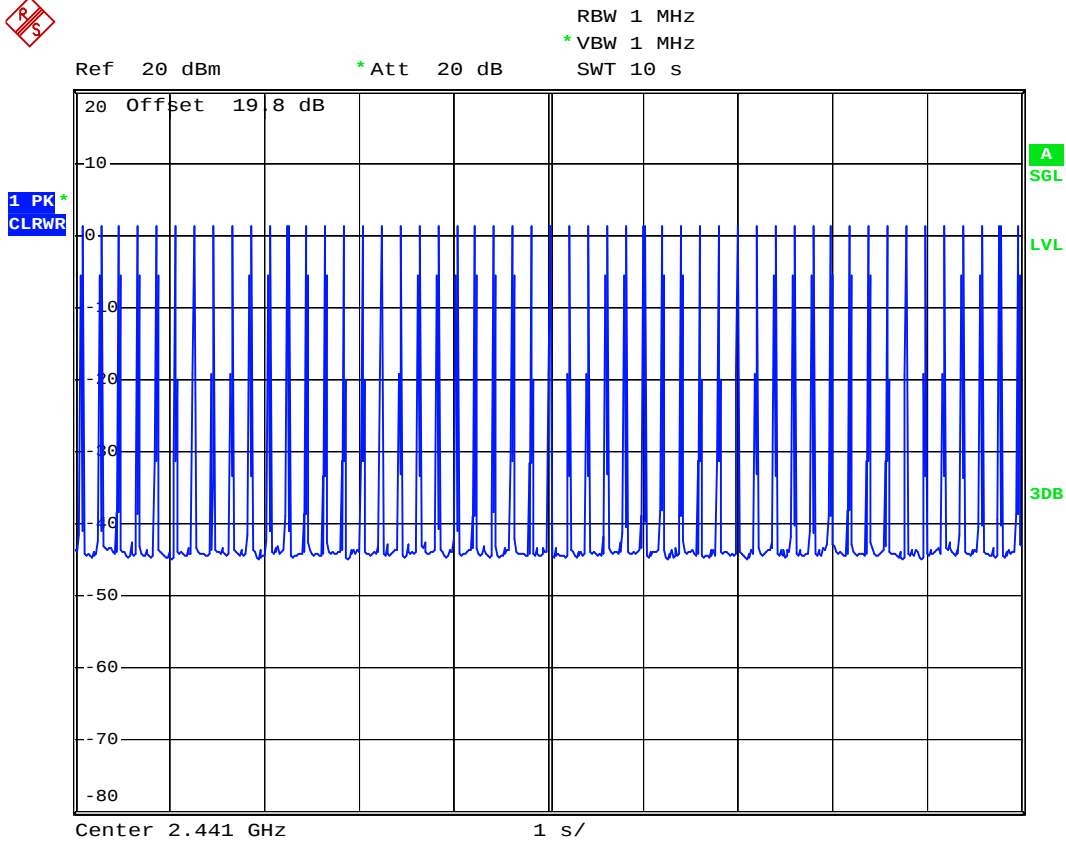


Date: 7.MAR.2008 00:22:58

DH3 (CH39)

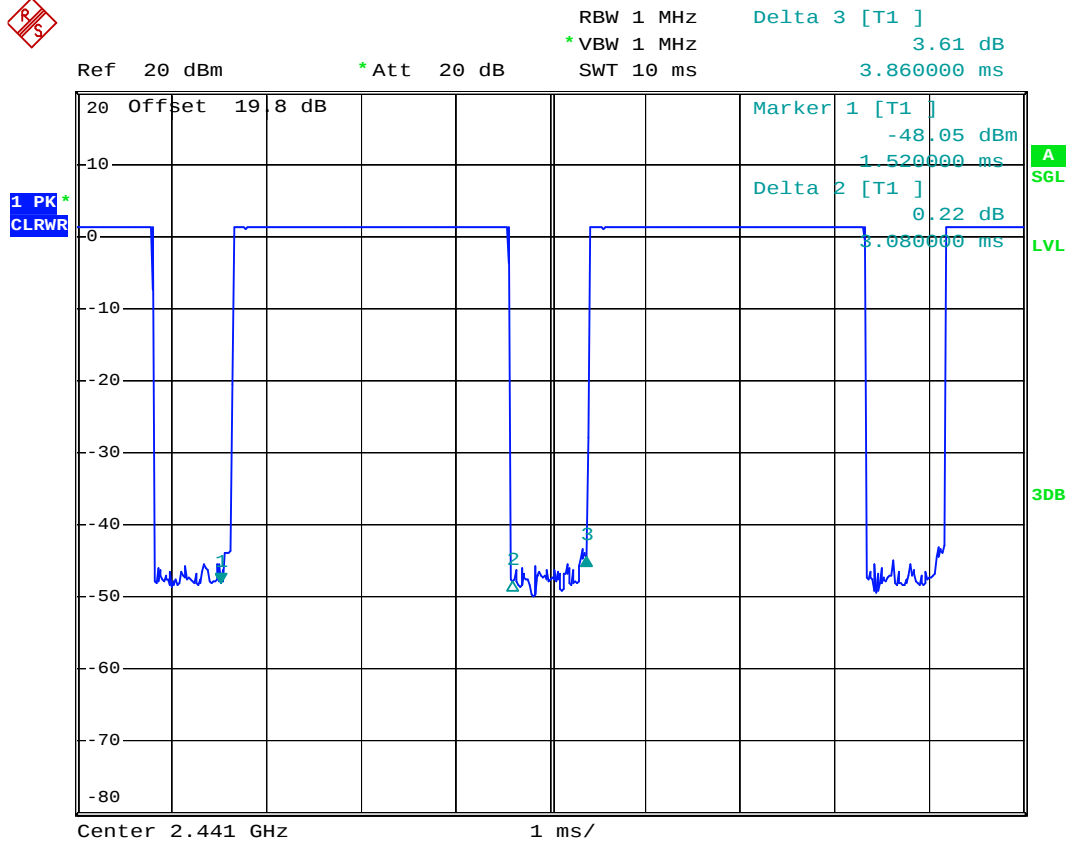


Date: 6.MAR.2008 23:33:17

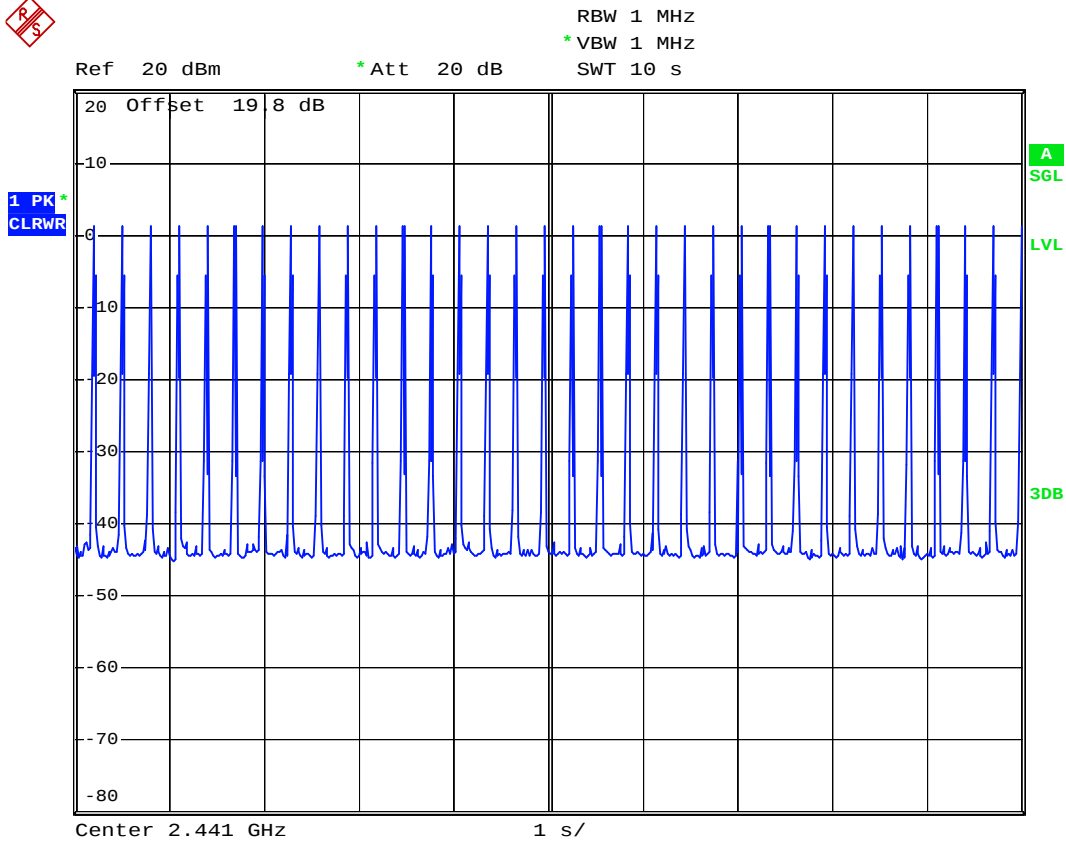


Date: 7.MAR.2008 00:25:07

DH5 (CH39)

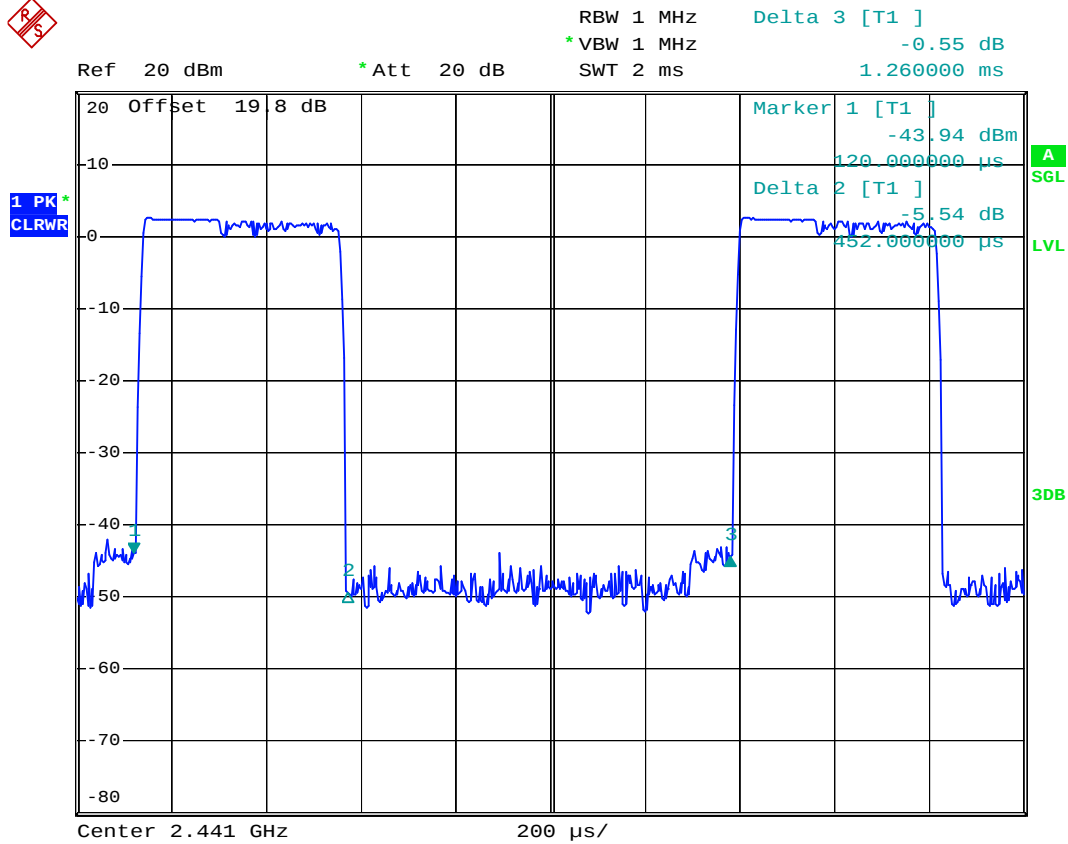


Date: 6.MAR.2008 23:34:56

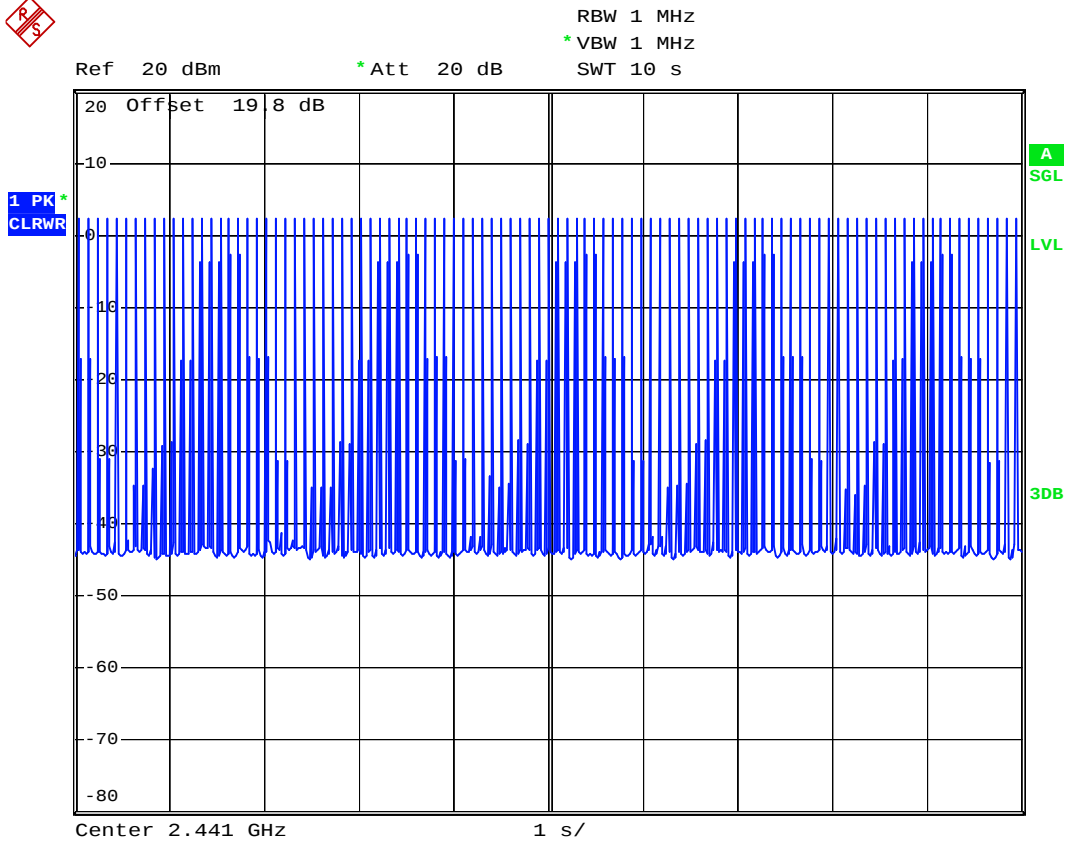


Date: 7.MAR.2008 00:25:52

2DH1 (CH39)

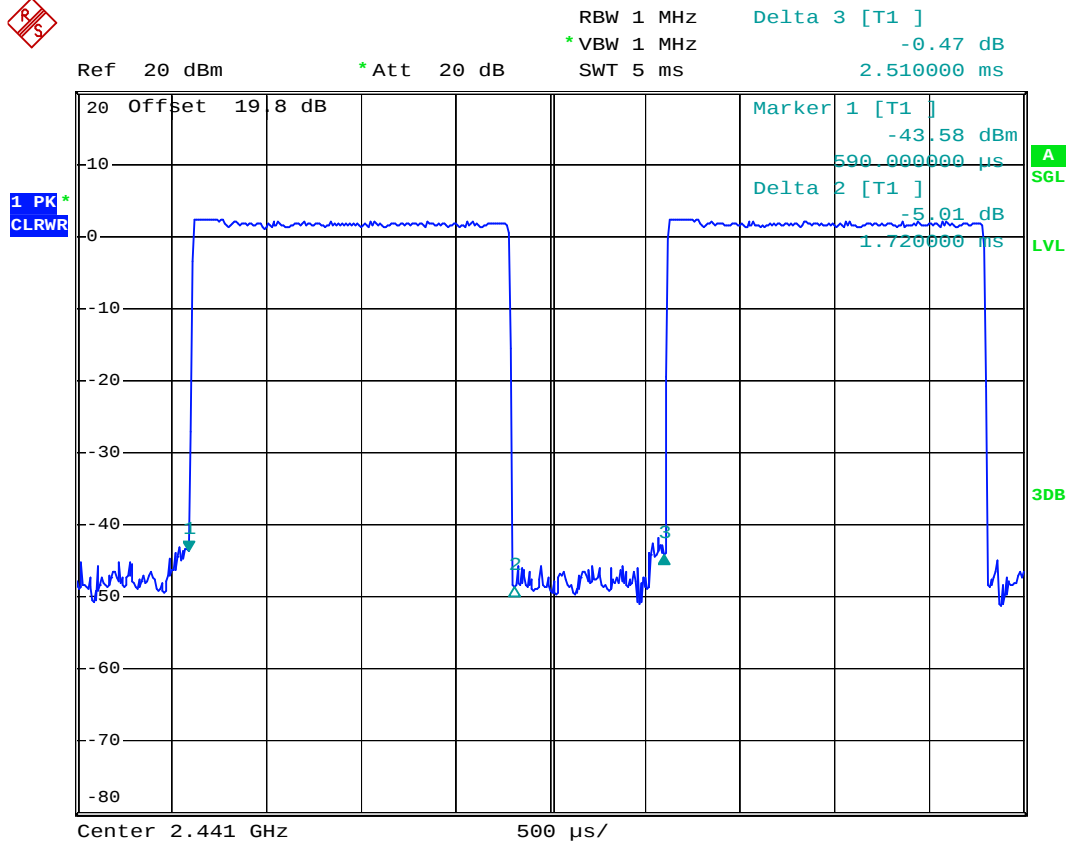


Date: 6.MAR.2008 23:49:52

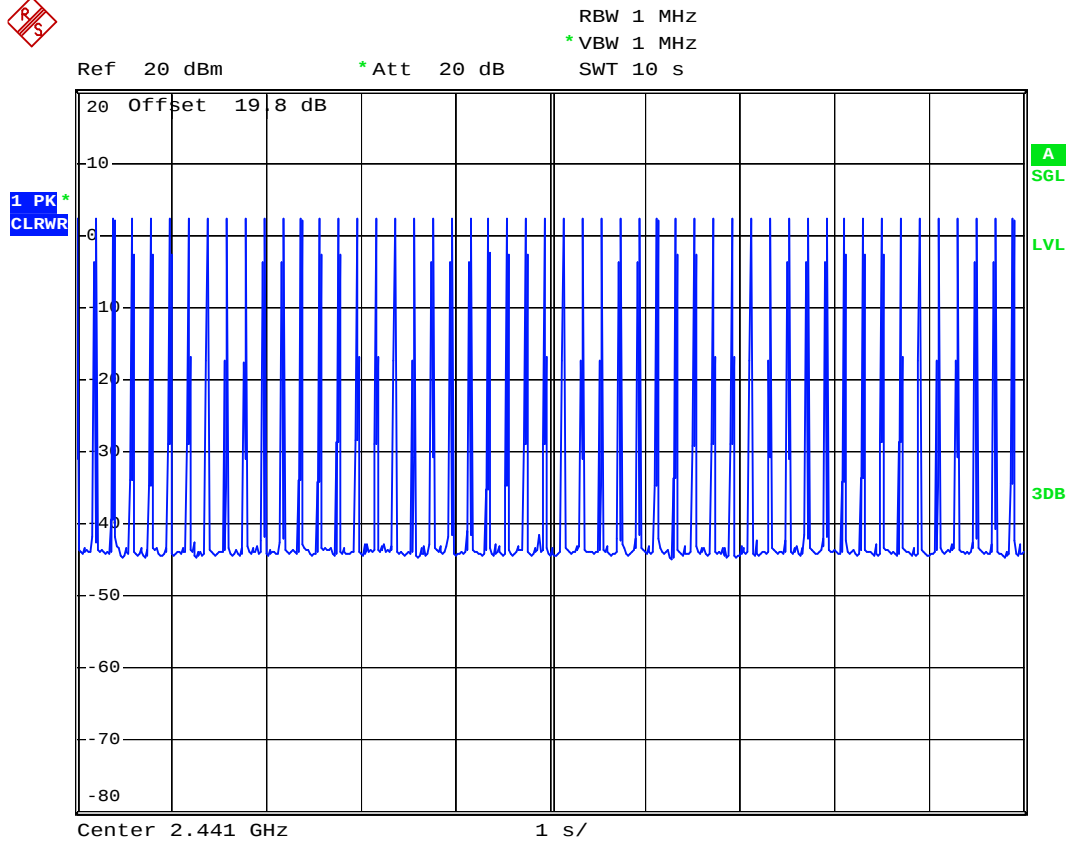


Date: 7.MAR.2008 00:27:27

2 DH3 (CH39)

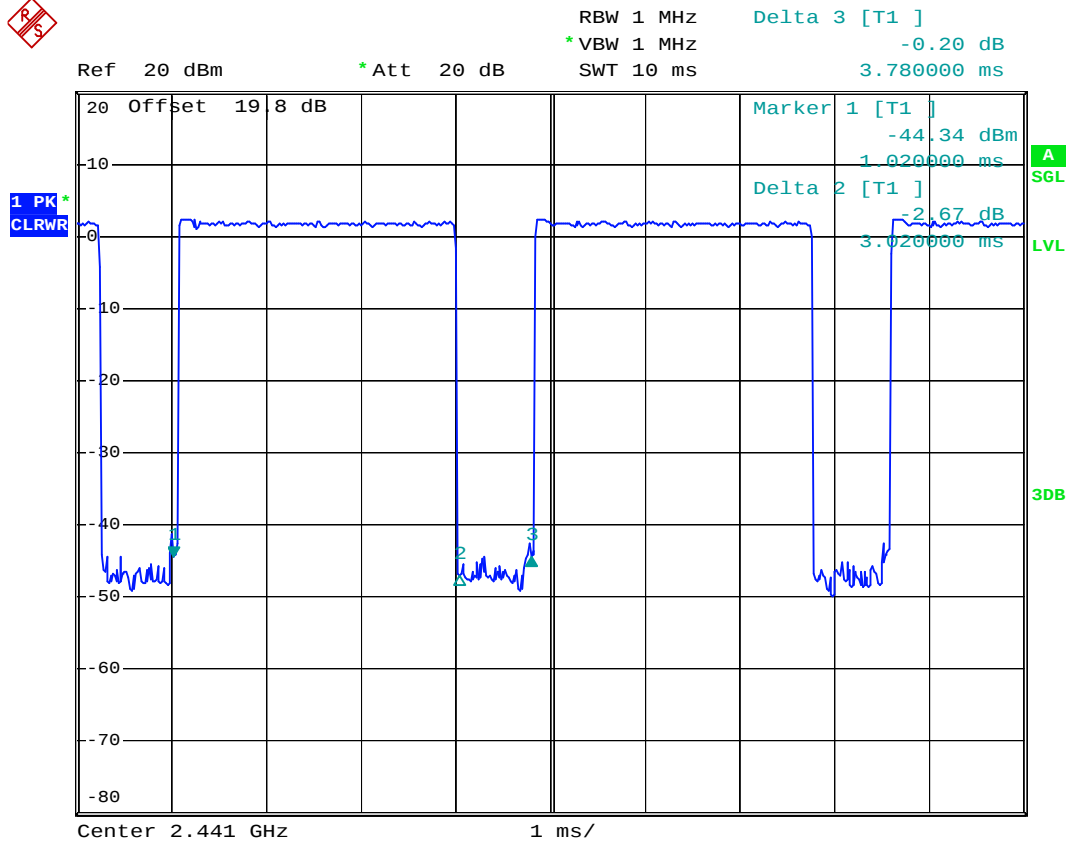


Date: 6.MAR.2008 23:51:19

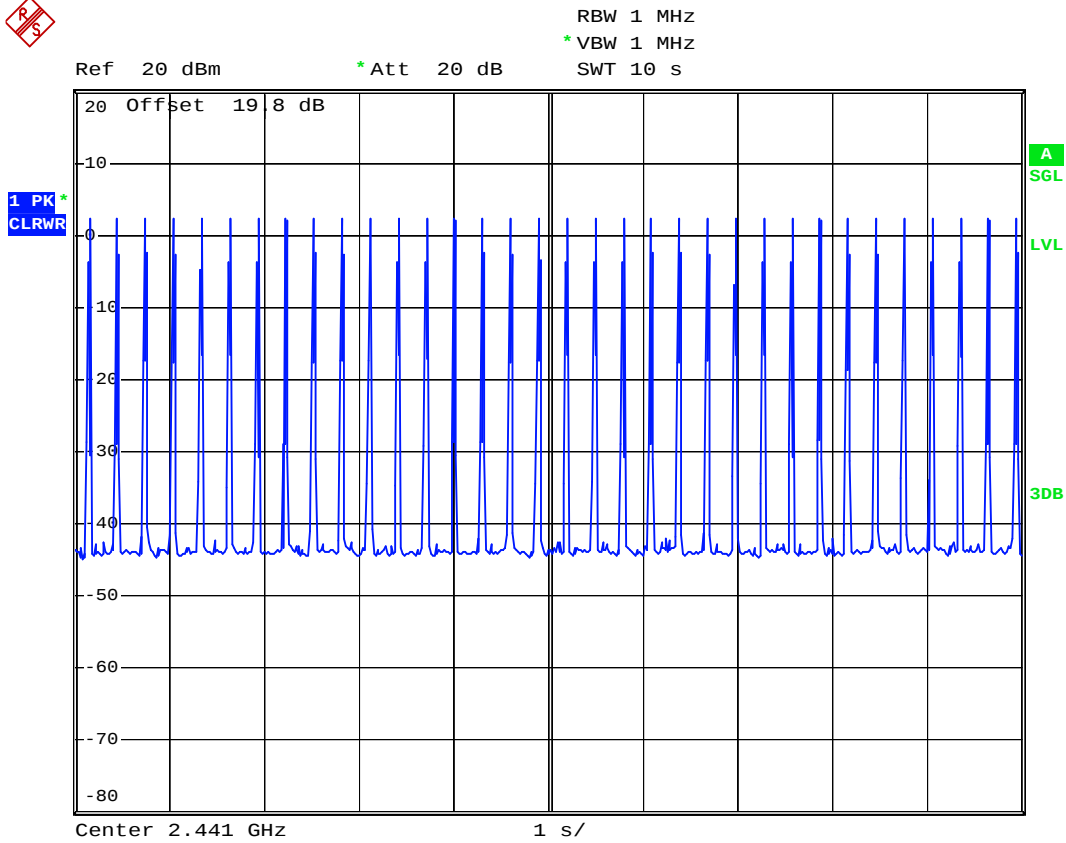


Date: 7.MAR.2008 00:28:12

2 DH5 (CH39)

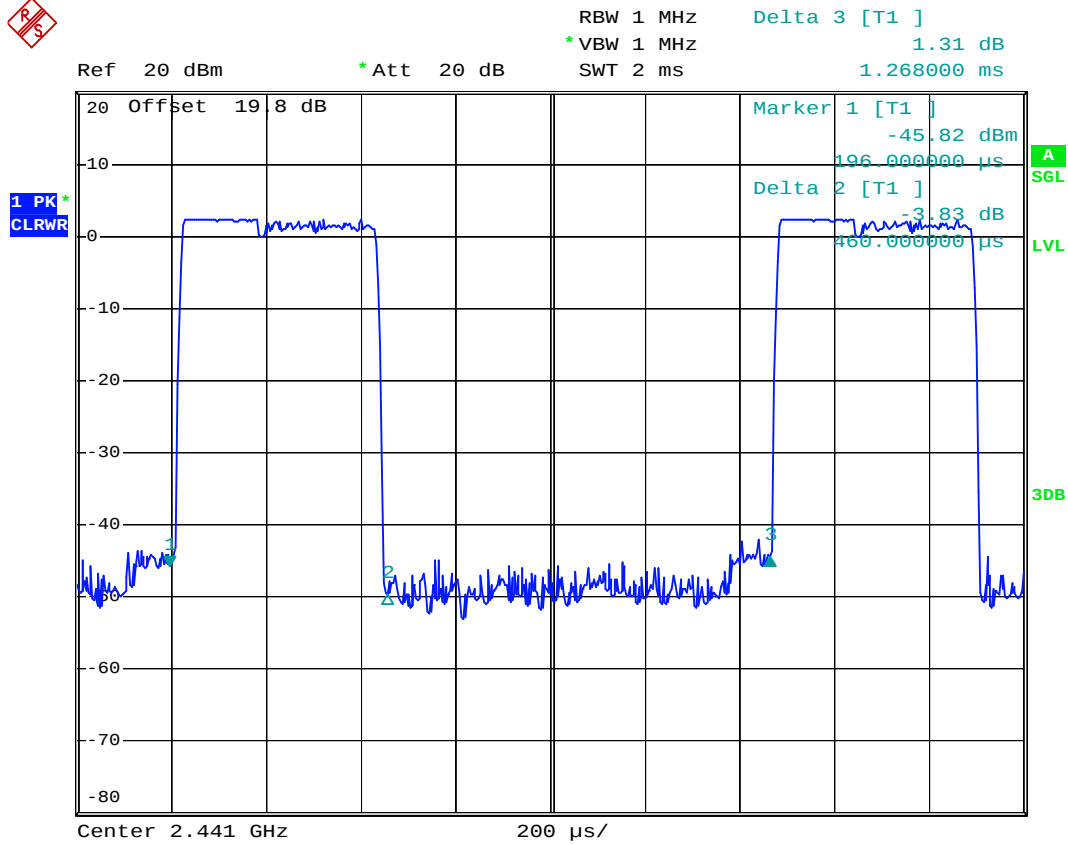


Date: 6.MAR.2008 23:53:04

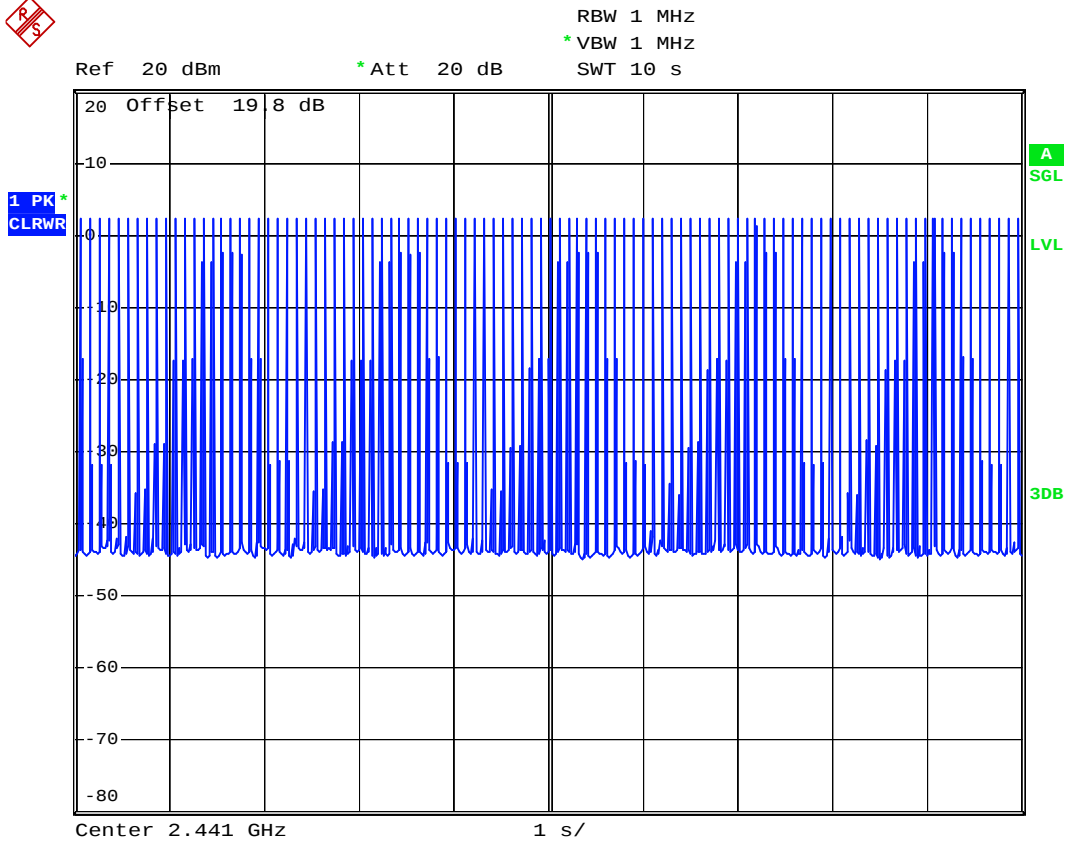


Date: 7.MAR.2008 00:28:53

3DH1 (CH39)

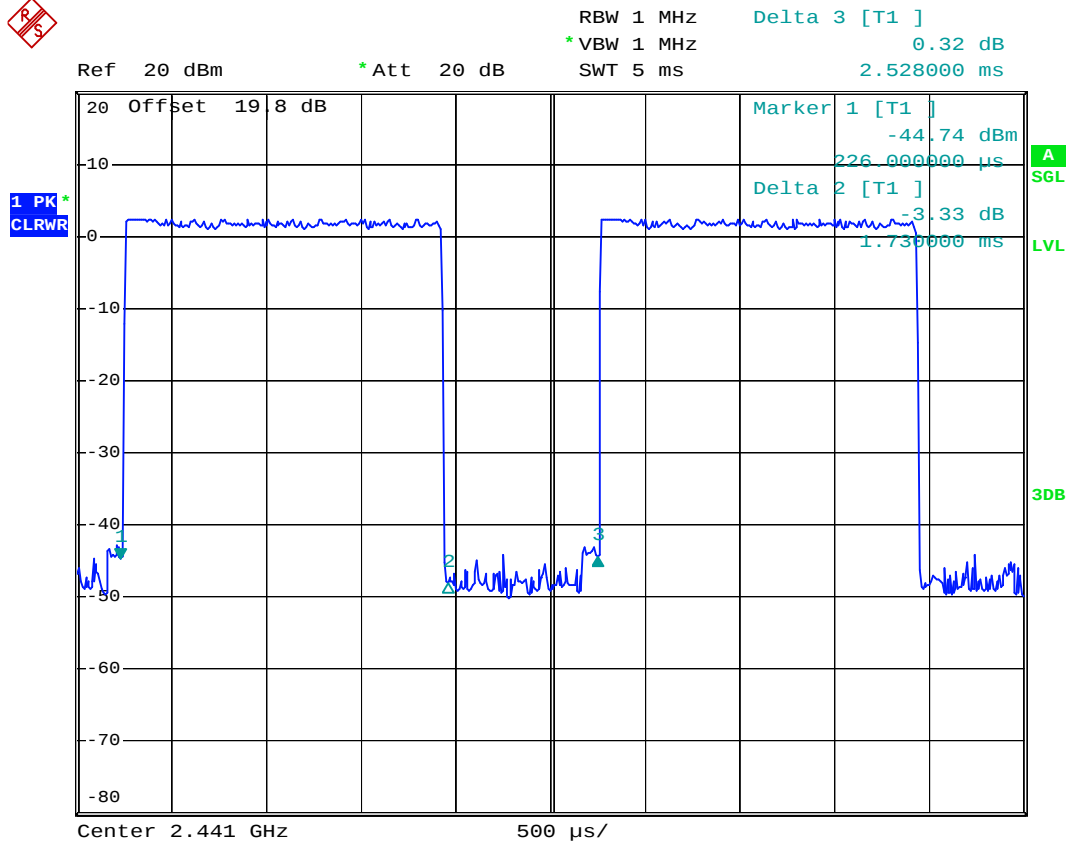


Date: 6.MAR.2008 23:57:06

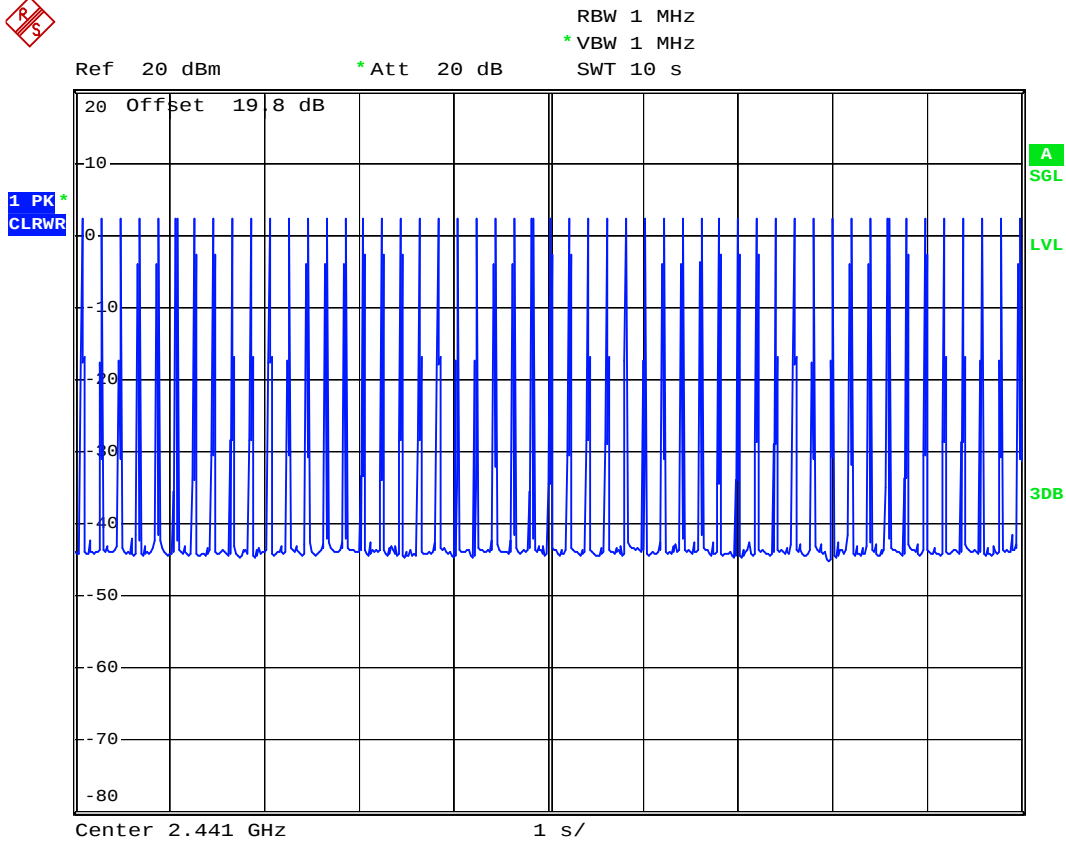


Date: 7.MAR.2008 00:29:59

3DH3 (CH39)

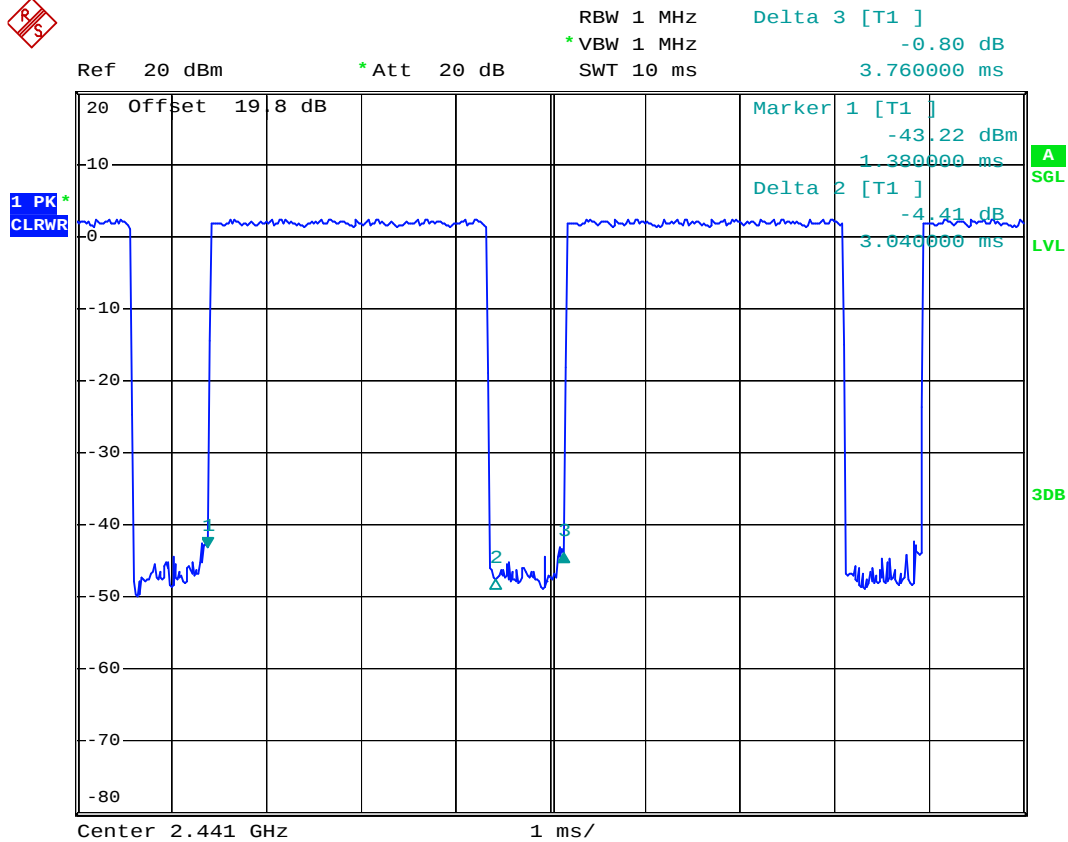


Date: 6.MAR.2008 23:58:24

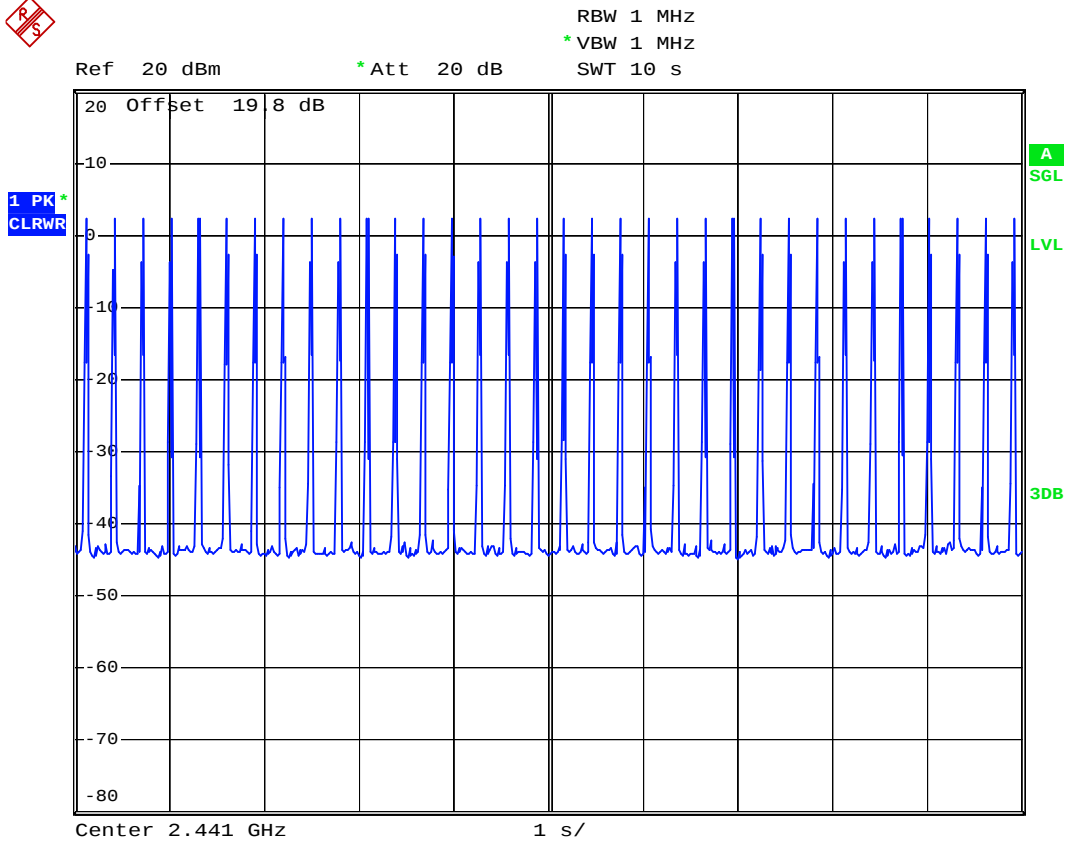


Date: 7.MAR.2008 00:30:36

3DH5 (CH39)



Date: 6.MAR.2008 23:59:54



Date: 7.MAR.2008 00:31:21

5.7 Peak Output Power Measurement

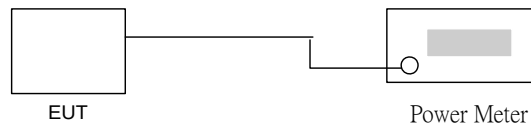
5.7.1 Measuring Instruments

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 : 24~25℃
- Relative Humidity : 55~56%
- Test Engineer : Ken

▪ BT(1Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt / dBm)
00	2402	1.17	1W / 30 dBm
39	2441	1.40	1W / 30 dBm
78	2480	1.81	1W / 30 dBm

▪ BT EDR(2Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt / dBm)
00	2402	3.53	1W / 30 dBm
39	2441	3.06	1W / 30 dBm
78	2480	3.34	1W / 30 dBm

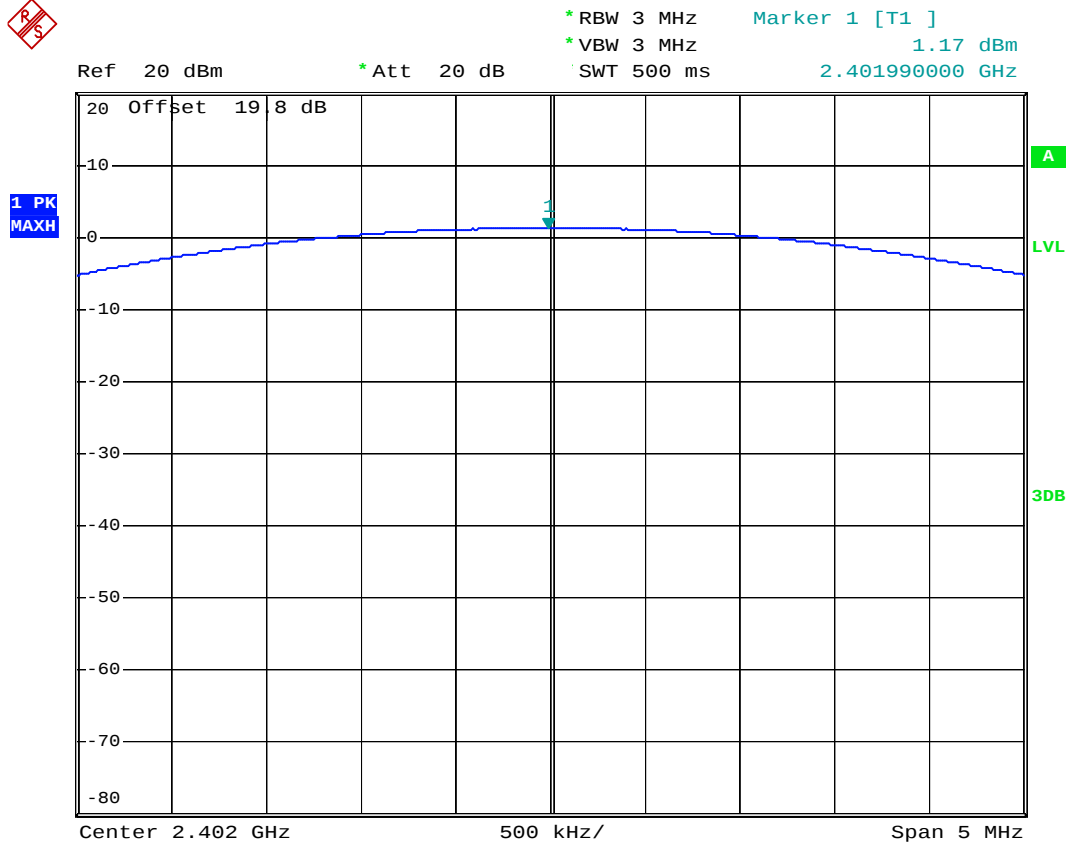
▪ BT EDR(3Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt / dBm)
00	2402	3.85	1W / 30 dBm
39	2441	3.18	1W / 30 dBm
78	2480	3.57	1W / 30 dBm

5.7.5 Output Power

BT(1Mbps)

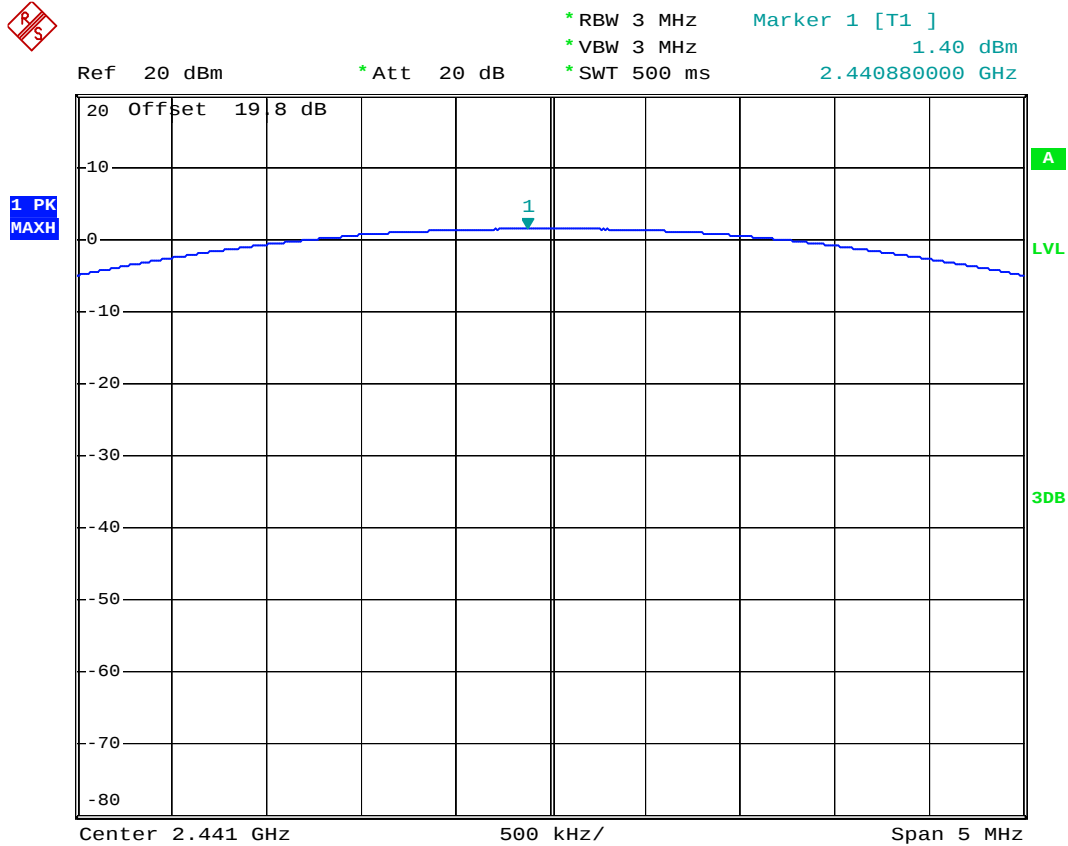
Mode : CH00 (2402MHz)



Date: 6.MAR.2008 21:55:38

BT(1Mbps)

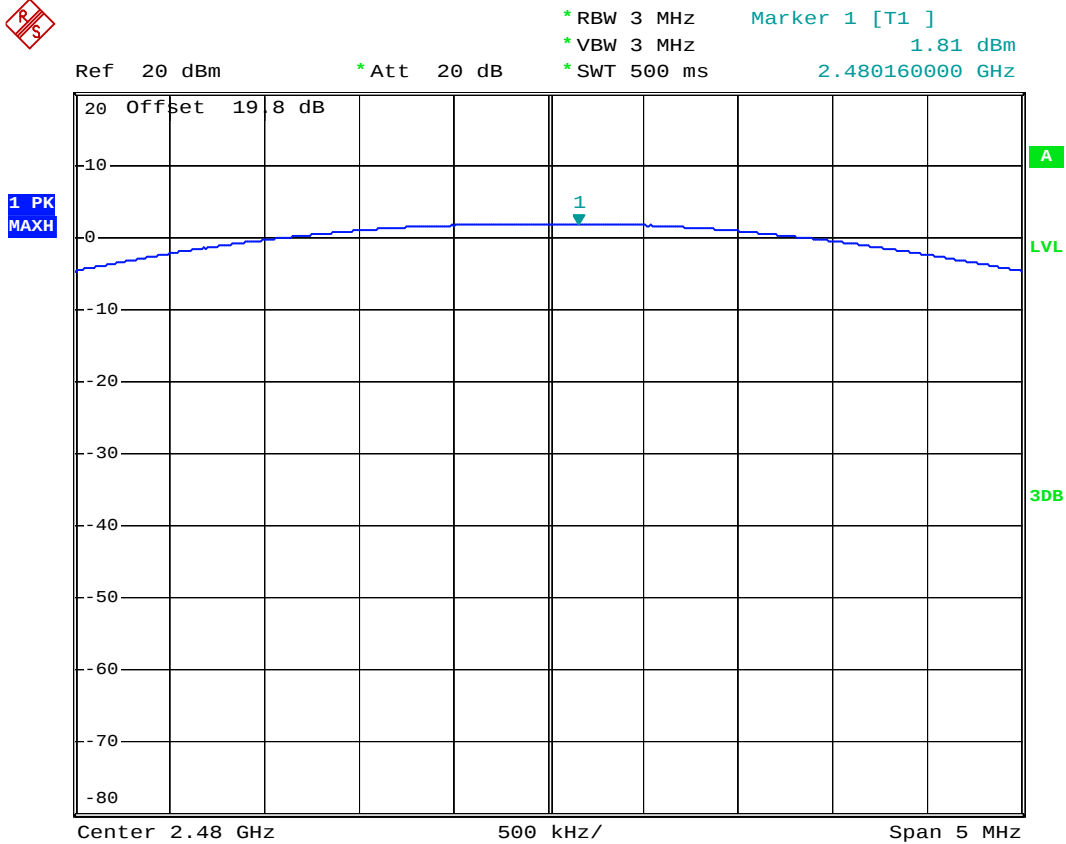
Mode : CH39 (2441MHz)



Date: 6.MAR.2008 21:55:58

Bluetooth(1Mbps)

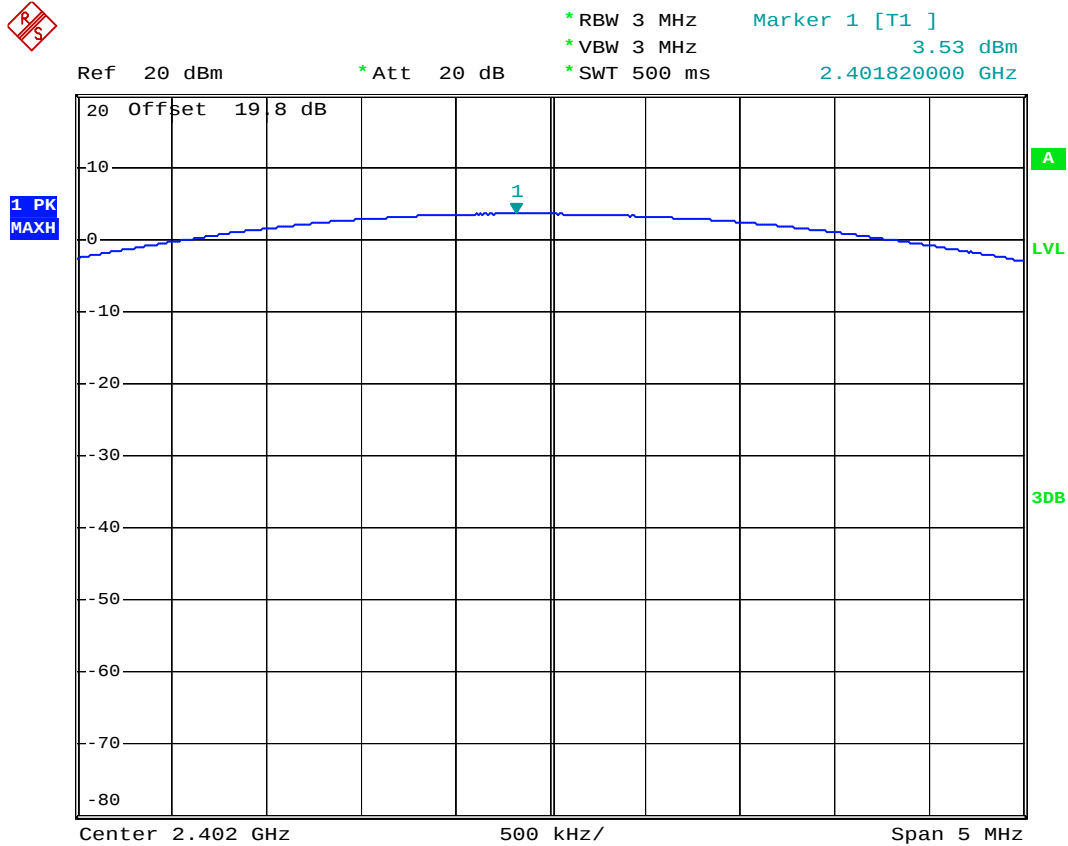
Mode : CH78 (2480MHz)



Date: 6.MAR.2008 21:56:28

Bluetooth(2Mbps)

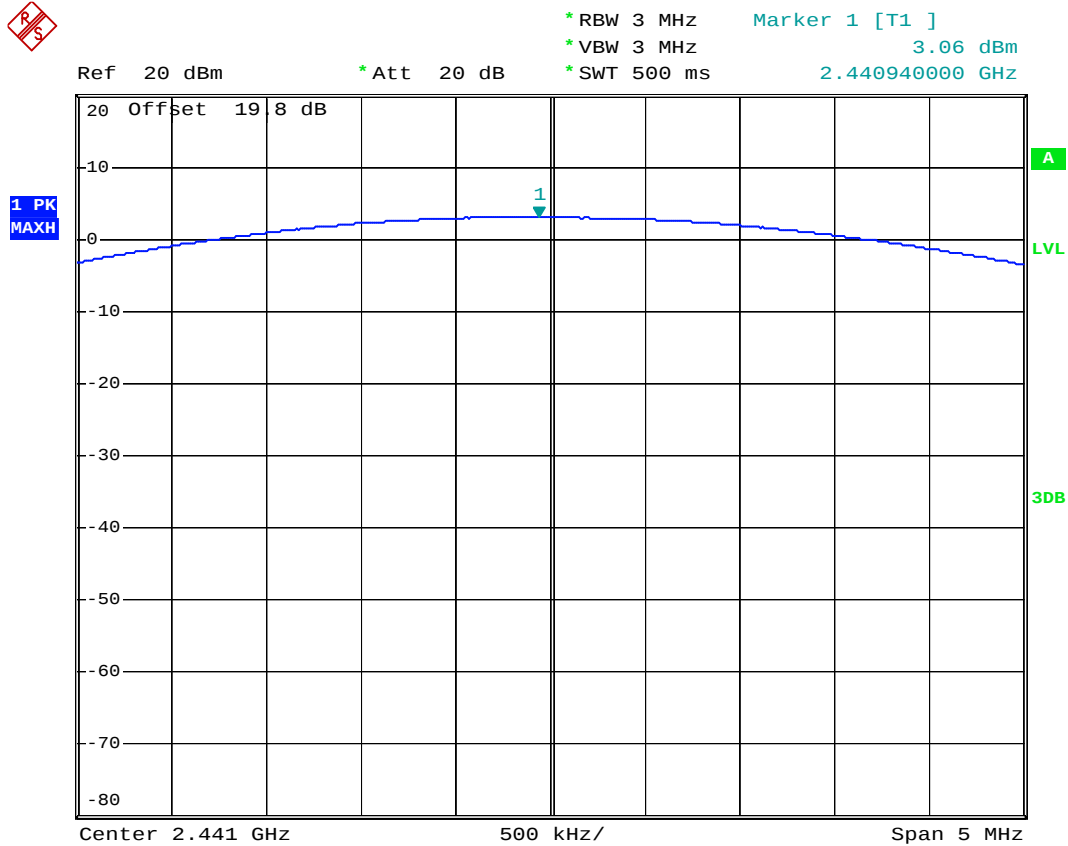
Mode : CH00 (2402MHz)



Date: 6.MAR.2008 22:05:34

Bluetooth(2Mbps)

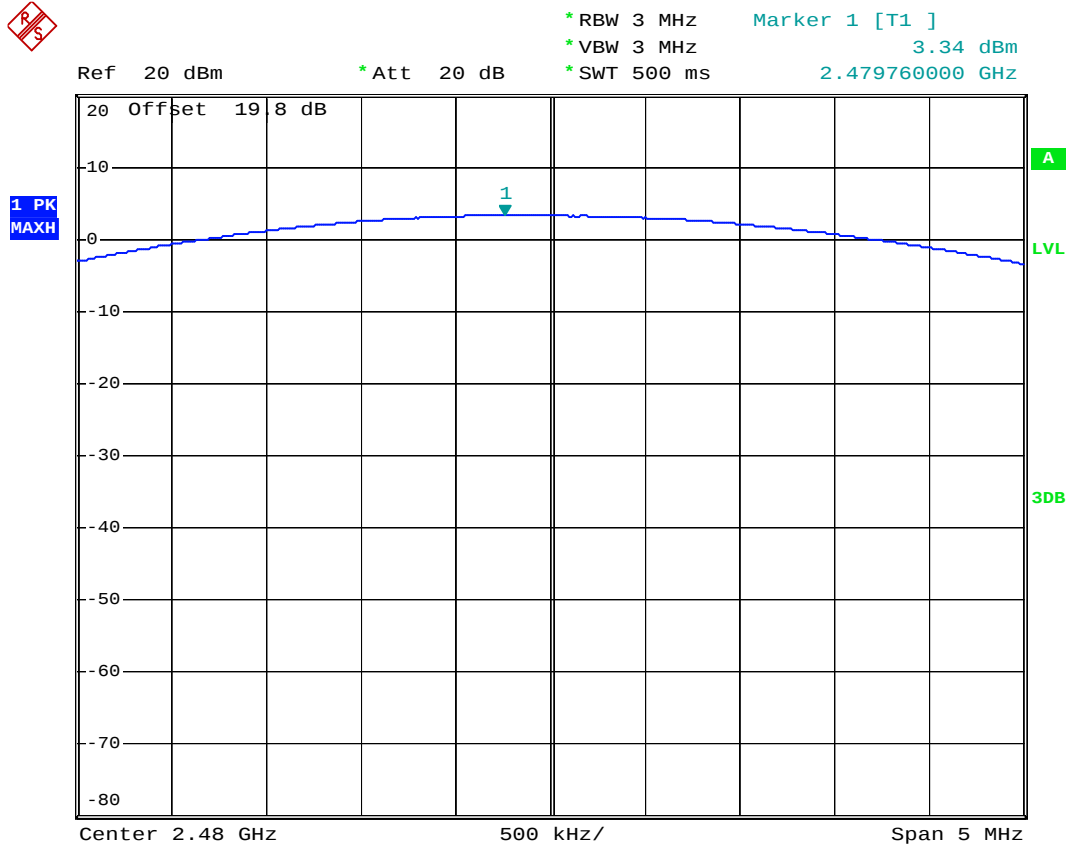
Mode : CH39 (2441MHz)



Date: 6.MAR.2008 22:05:03

Bluetooth(2Mbps)

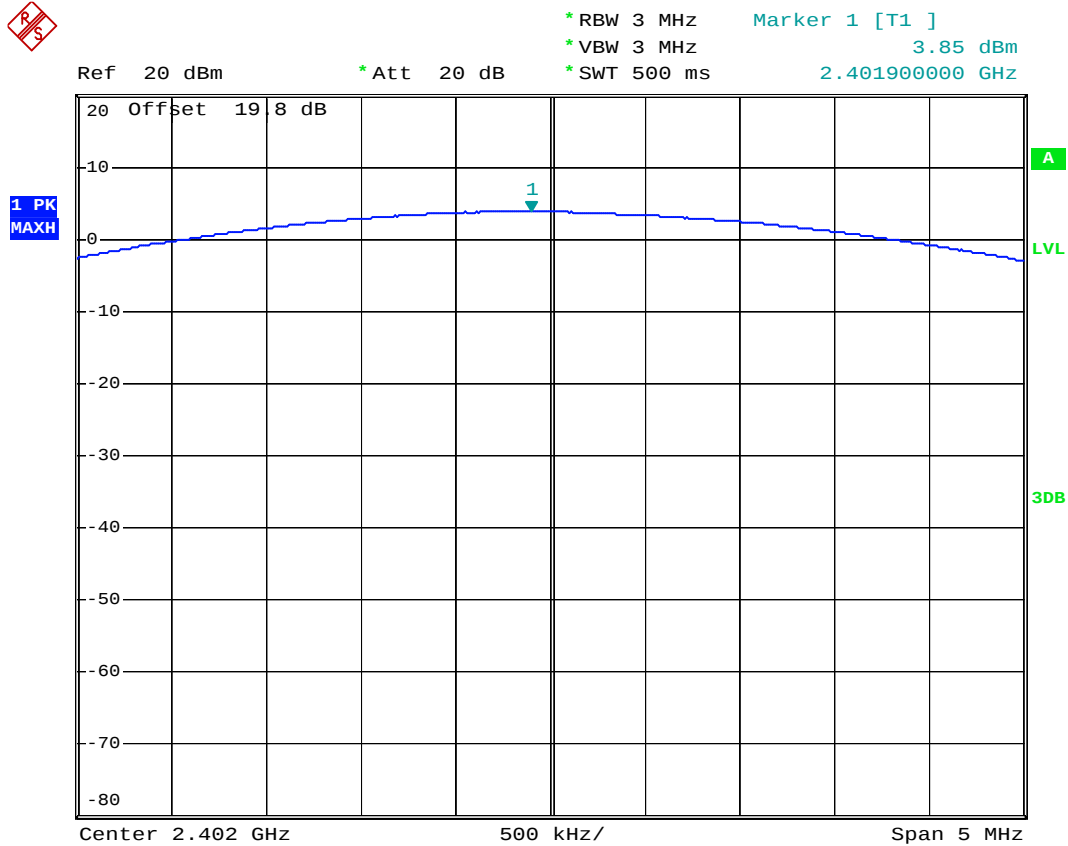
Mode : CH78 (2480MHz)



Date: 6.MAR.2008 22:03:13

Bluetooth(3Mbps)

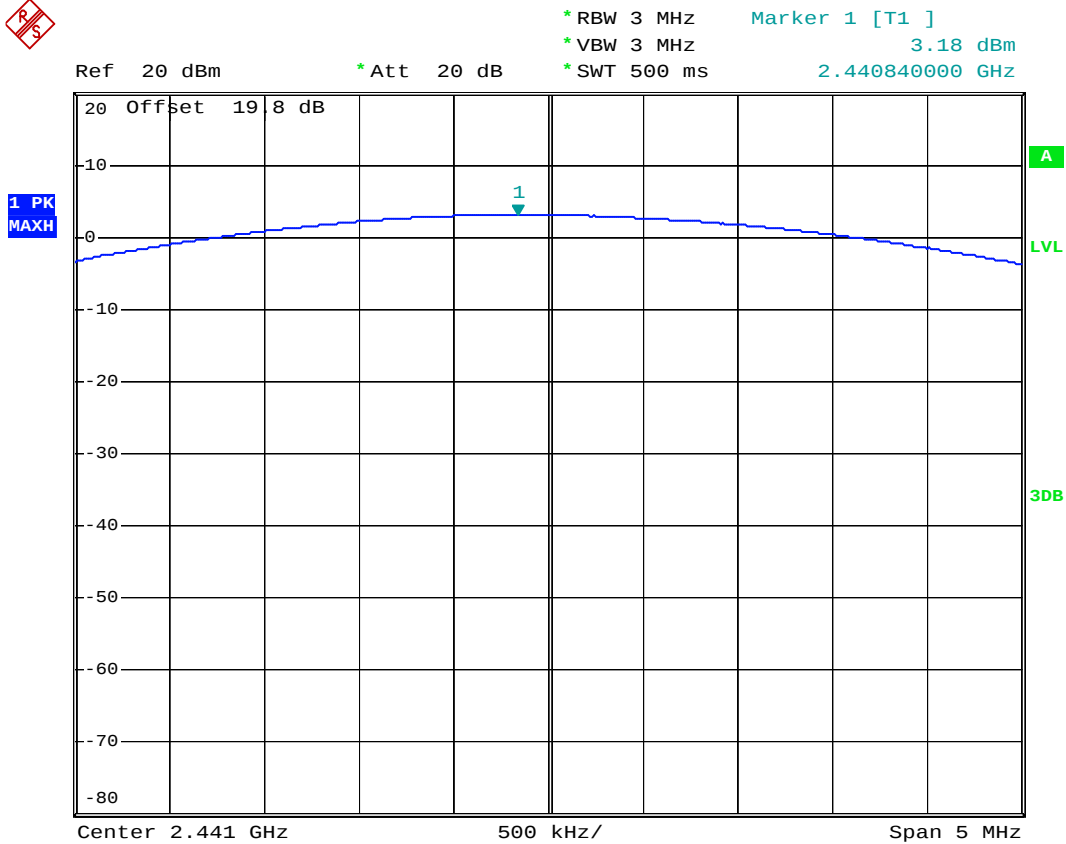
Mode : CH00 (2402MHz)



Date: 6.MAR.2008 22:13:29

Bluetooth(3Mbps)

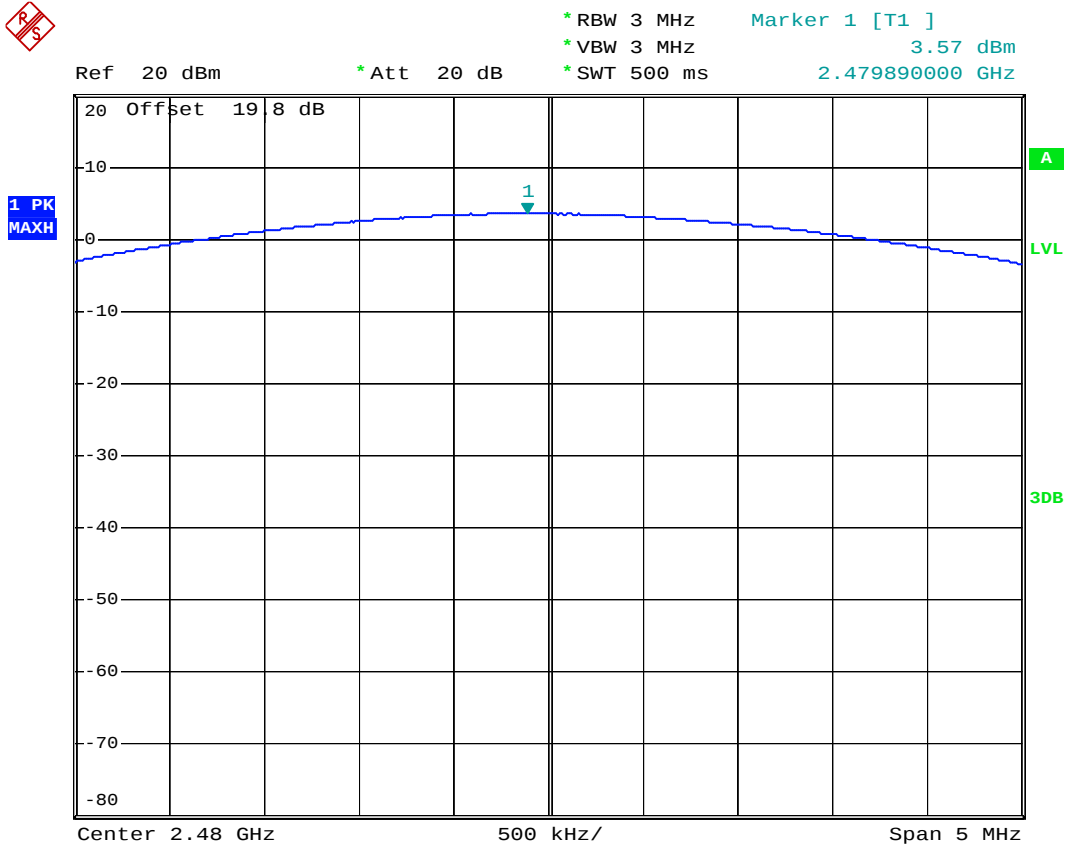
Mode : CH39 (2441MHz)



Date: 6.MAR.2008 22:13:56

Bluetooth(3Mbps)

Mode : CH78 (2480MHz)



Date: 6.MAR.2008 22:14:39

5.8 Conducted Emission

5.8.1 Measuring Instruments

As described in chapter 6 of this test Report.

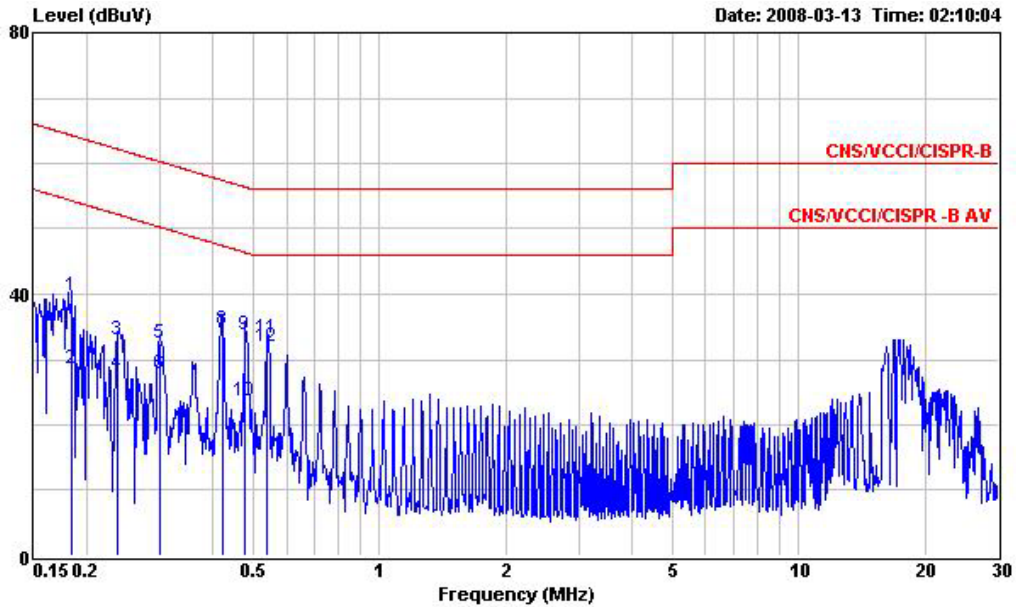
5.8.2 Test Procedures

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

5.8.3 Test Data

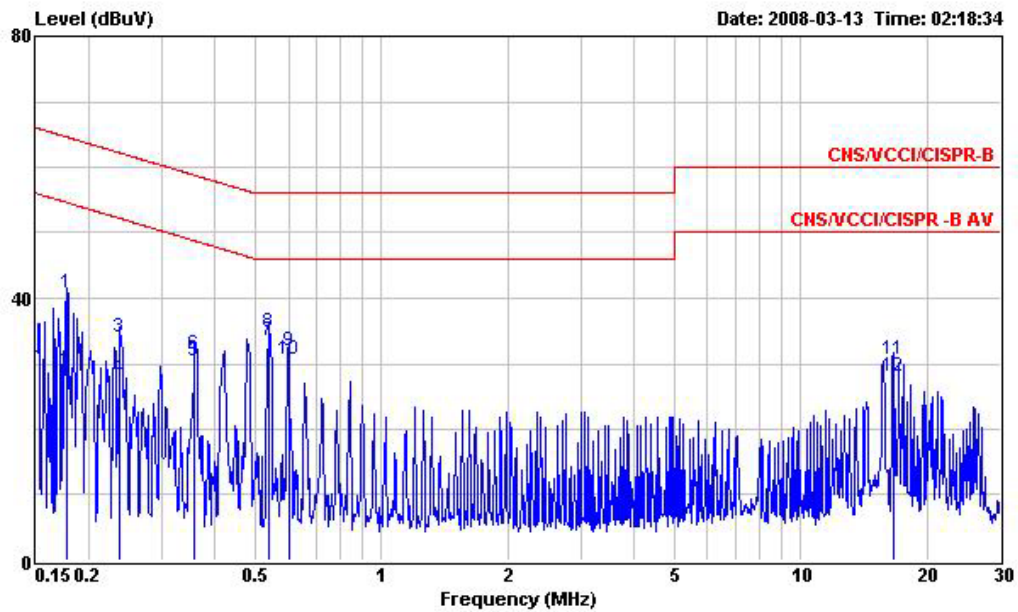
- Temperature : 24~25°C
- Relative Humidity : 55~56%
- Test Engineer : James
- Test Mode : Mode 1

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



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : PDA
Power : 120V/60Hz
Model : FR830601
Memo : GSM850 Idle+WLAN Link +H Pattern+Scanner
Memo : +MPEG4 + Adaptor + BT Link + Cradle

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.184	39.78	-24.52	64.30	39.60	0.10	0.08	QP
2	0.184	28.65	-25.65	54.30	28.47	0.10	0.08	Average
3	0.238	32.98	-29.19	62.17	32.79	0.10	0.09	QP
4	0.238	27.78	-24.39	52.17	27.59	0.10	0.09	Average
5	0.299	32.46	-27.81	60.27	32.26	0.10	0.10	QP
6	0.299	27.75	-22.52	50.27	27.55	0.10	0.10	Average
7	0.421	34.00	-13.43	47.43	33.78	0.10	0.12	Average
8	0.421	34.67	-22.76	57.43	34.45	0.10	0.12	QP
9	0.479	33.72	-22.64	56.36	33.49	0.10	0.13	QP
10	0.479	23.58	-22.78	46.36	23.35	0.10	0.13	Average
11	0.538	33.17	-22.83	56.00	32.93	0.10	0.14	QP
12	0.538	32.08	-13.92	46.00	31.84	0.10	0.14	Average



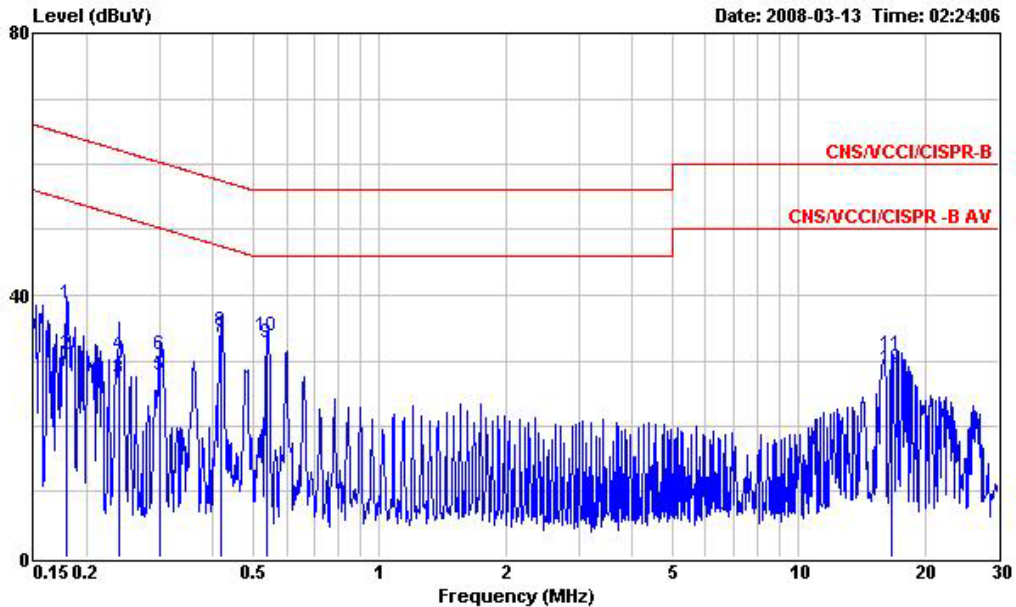
Site : CO01-HV
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : PDA
Power : 120V/60Hz
Model : FR830601
Memo : GSM850 Idle+WLAN Link +H Pattern+Scanner
Memo : +MPEG4 + Adaptor + BT Link + Cradle

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.178	40.85	-23.73	64.58	40.66	0.10	0.09	QP
2	0.178	28.71	-25.87	54.58	28.52	0.10	0.09	Average
3	0.238	33.96	-28.21	62.17	33.77	0.10	0.09	QP
4	0.238	27.79	-24.38	52.17	27.60	0.10	0.09	Average
5	0.358	30.33	-18.44	48.77	30.12	0.10	0.11	Average
6	0.358	31.37	-27.40	58.77	31.16	0.10	0.11	QP
7	0.538	33.52	-12.48	46.00	33.28	0.10	0.14	Average
8	0.538	34.80	-21.20	56.00	34.56	0.10	0.14	QP
9	0.601	31.97	-24.03	56.00	31.73	0.10	0.14	QP
10	0.601	30.67	-15.33	46.00	30.43	0.10	0.14	Average
11	16.651	30.75	-29.25	60.00	29.97	0.34	0.44	QP
12	16.651	27.97	-22.03	50.00	27.19	0.34	0.44	Average

Temperature : 24~25℃

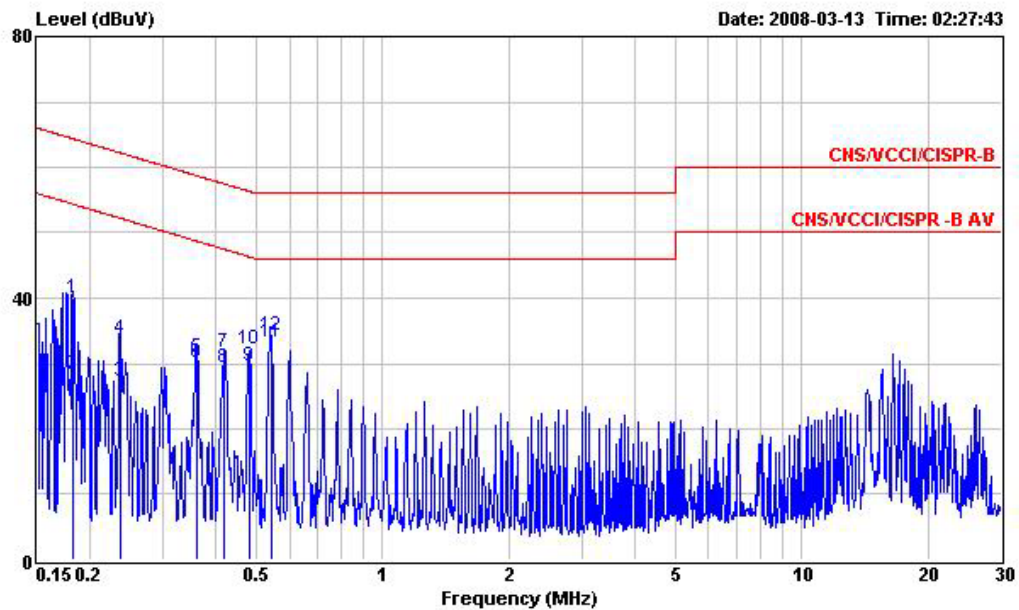
- Relative Humidity : 55~56%
- Test Enginner : James
- Test Mode : Mode 2

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



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
 EUT : PDA
 Power : 120V/60Hz
 Model : FR830601
 Memo : PCS1900 Idle+WLAN Link+H Pattern+Scanner
 Memo : +MPEG4 + Adaptor + BT Link + Cradle

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.179	38.60	-25.93	64.53	38.41	0.10	0.09	QP
2	0.179	30.95	-23.58	54.53	30.76	0.10	0.09	Average
3	0.239	27.29	-24.84	52.13	27.10	0.10	0.09	Average
4	0.239	30.79	-31.34	62.13	30.60	0.10	0.09	QP
5	0.299	27.75	-22.52	50.27	27.55	0.10	0.10	Average
6	0.299	30.96	-29.31	60.27	30.76	0.10	0.10	QP
7	0.419	33.52	-13.95	47.47	33.30	0.10	0.12	Average
8	0.419	34.43	-23.04	57.47	34.21	0.10	0.12	QP
9	0.538	32.64	-13.36	46.00	32.40	0.10	0.14	Average
10	0.538	33.74	-22.26	56.00	33.50	0.10	0.14	QP
11	16.660	31.01	-28.99	60.00	30.23	0.34	0.44	QP
12	16.660	28.81	-21.19	50.00	28.03	0.34	0.44	Average



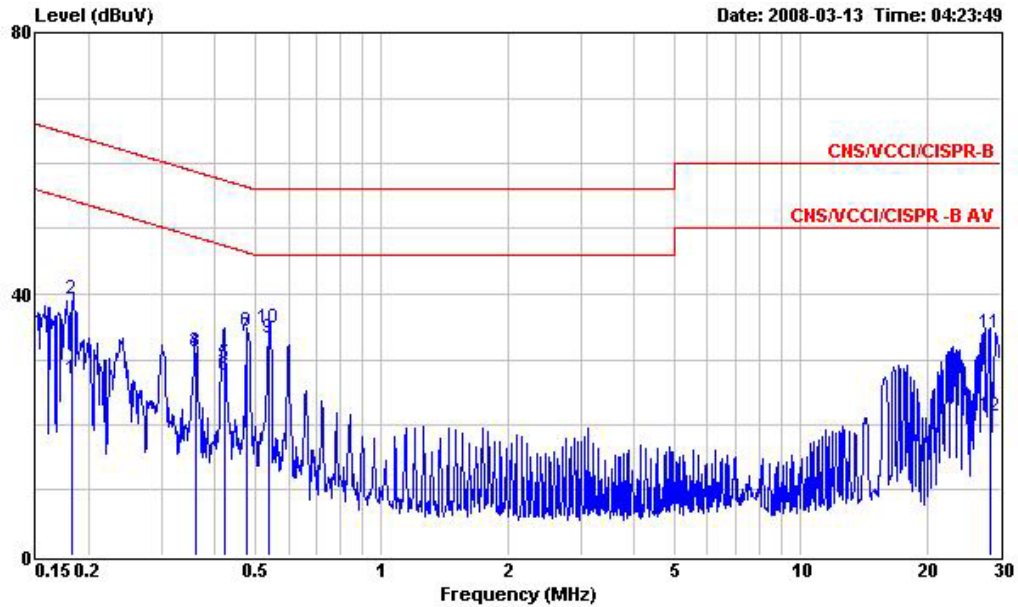
Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : PDA
Power : 120W/60Hz
Model : FR830601
Memo : PCS1900 Idle+WLAN Link+H Pattern+Scanner
Memo : +MPEG4 + Adaptor + BT Link + Cradle

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.182	40.08	-24.31	64.39	39.89	0.10	0.09	QP
2	0.182	28.34	-26.05	54.39	28.15	0.10	0.09	Average
3	0.238	27.18	-24.99	52.17	26.99	0.10	0.09	Average
4	0.238	33.66	-28.51	62.17	33.47	0.10	0.09	QP
5	0.360	31.03	-27.70	58.73	30.82	0.10	0.11	QP
6	0.360	30.15	-18.58	48.73	29.94	0.10	0.11	Average
7	0.419	31.79	-25.68	57.47	31.57	0.10	0.12	QP
8	0.419	29.46	-18.01	47.47	29.24	0.10	0.12	Average
9	0.481	29.72	-16.60	46.32	29.49	0.10	0.13	Average
10	0.481	32.08	-24.24	56.32	31.85	0.10	0.13	QP
11	0.541	33.16	-12.84	46.00	32.92	0.10	0.14	Average
12	0.541	34.21	-21.79	56.00	33.97	0.10	0.14	QP

Temperature : 24~25℃

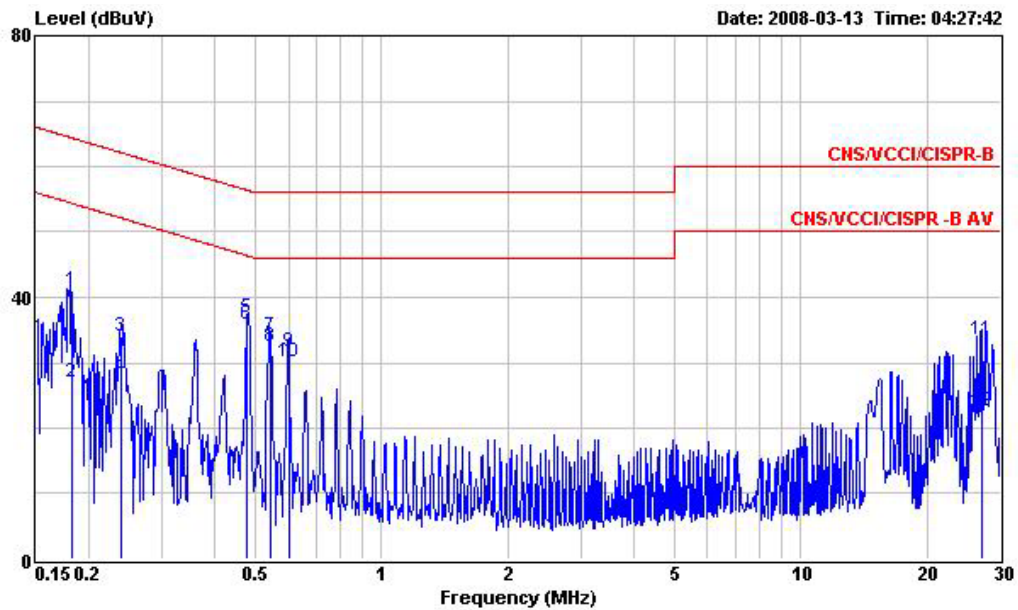
- Relative Humidity : 55~56%
- Test Enginner : James
- Test Mode : Mode 3

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



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : PDA
Power : 120W/60Hz
Model : FR830601
Memo : EDGE Idle+WLAN Link+H Pattern+Scanner
Memo : +MPEG4 + Adaptor + BT Link + Cradle

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.183	27.03	-27.32	54.35	26.85	0.10	0.08	Average
2	0.183	39.31	-25.04	64.35	39.13	0.10	0.08	QP
3	0.360	31.16	-17.57	48.73	30.95	0.10	0.11	Average
4	0.360	31.27	-27.46	58.73	31.06	0.10	0.11	QP
5	0.421	29.37	-28.06	57.43	29.15	0.10	0.12	QP
6	0.421	27.46	-19.97	47.43	27.24	0.10	0.12	Average
7	0.479	33.42	-12.94	46.36	33.19	0.10	0.13	Average
8	0.479	34.38	-21.98	56.36	34.15	0.10	0.13	QP
9	0.538	33.35	-12.65	46.00	33.11	0.10	0.14	Average
10	0.538	34.90	-21.10	56.00	34.66	0.10	0.14	QP
11	28.300	33.97	-26.03	60.00	32.95	0.57	0.45	QP
12	28.300	21.36	-28.64	50.00	20.34	0.57	0.45	Average



Site : CO01-HV
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : PDA
 Power : 120V/60Hz
 Model : FR830601
 Memo : EDGE Idle+WLAN Link+H Pattern+Scanner
 Memo : +MPEG4 + Adaptor + BT Link + Cradle

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.182	40.96	-23.43	64.39	40.77	0.10	0.09	QP
2	0.182	27.11	-27.28	54.39	26.92	0.10	0.09	Average
3	0.239	34.07	-28.06	62.13	33.88	0.10	0.09	QP
4	0.239	27.73	-24.40	52.13	27.54	0.10	0.09	Average
5	0.479	36.84	-19.52	56.36	36.61	0.10	0.13	QP
6	0.479	35.91	-10.45	46.36	35.68	0.10	0.13	Average
7	0.541	34.08	-21.92	56.00	33.84	0.10	0.14	QP
8	0.541	32.50	-13.50	46.00	32.26	0.10	0.14	Average
9	0.601	31.71	-24.29	56.00	31.47	0.10	0.14	QP
10	0.601	30.06	-15.94	46.00	29.82	0.10	0.14	Average
11	27.130	33.38	-26.62	60.00	32.30	0.64	0.44	QP
12	27.130	22.58	-27.42	50.00	21.50	0.64	0.44	Average

5.9 Radiated Emission Measurement

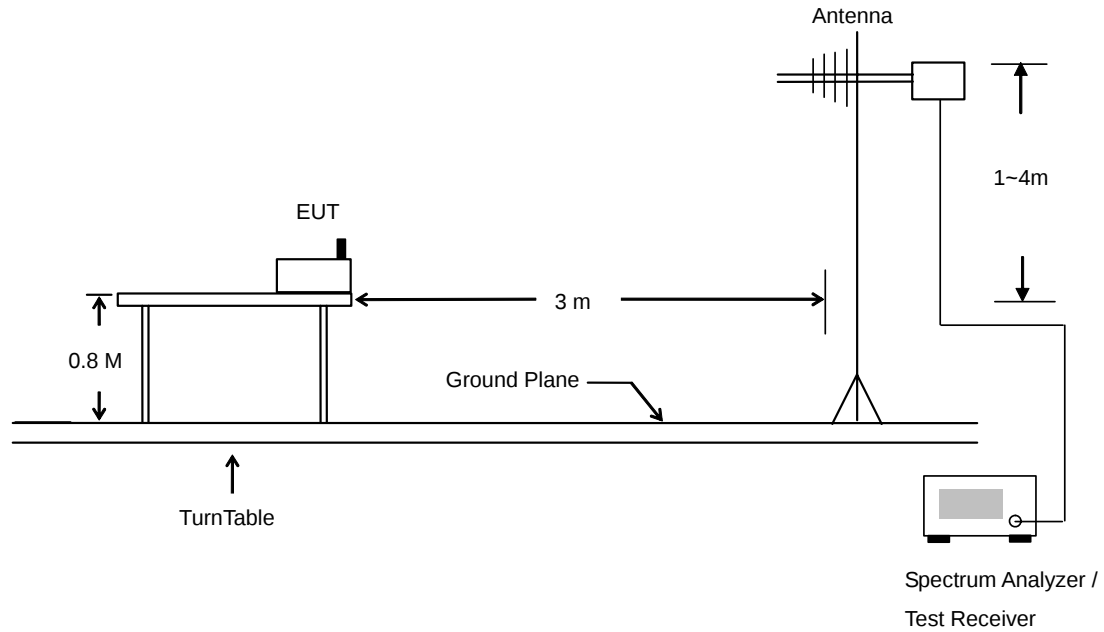
5.9.1 Measuring Instruments

As described in chapter 6 of this Report.

5.9.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. 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.
- e. 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.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. 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.
- h. 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.

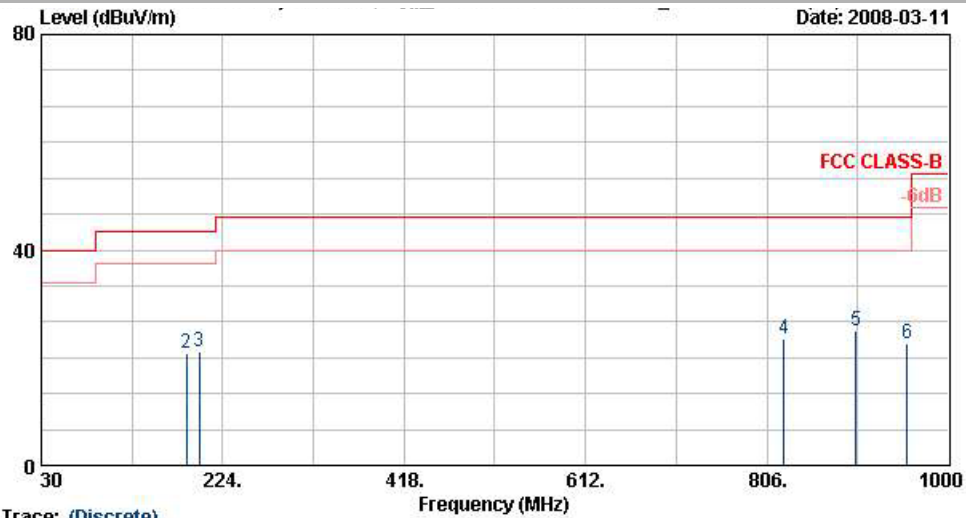
5.9.3 Typical Test Setup Layout of Radiated Emission



5.9.4 Test Data

- Temperature : 25~26°C
- Relating Humidity : 42~45%
- Test Engineer : Derek
- 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(951121) HORIZONTAL

EUT : PDA

Power : 120Vac/60Hz

Model : FR 830601

Memo : BT Tx_CH78;2480MHz + Cradle + Adaptor

TIME : 0605000003

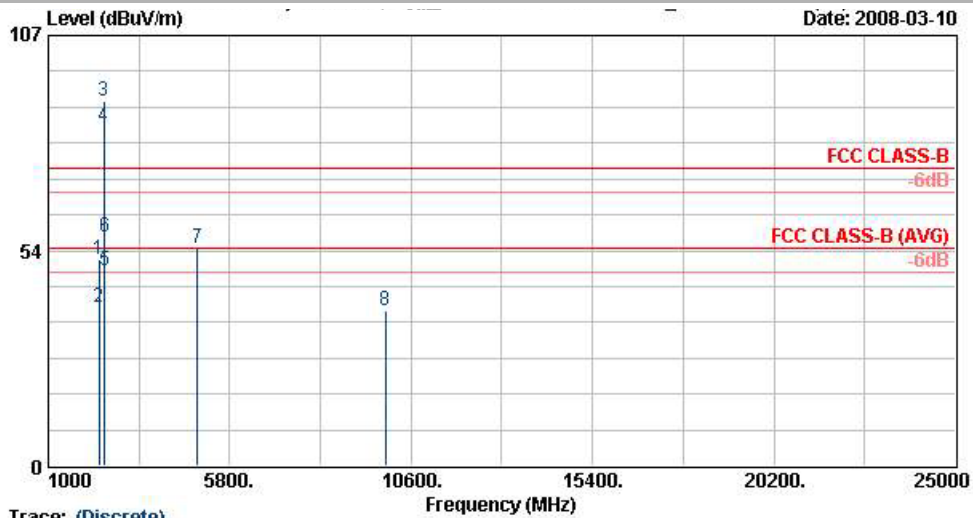
Data Rate : DHS

Plane : H

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	30.54	23.53	-16.47	40.00	37.74	18.95	0.30	33.46	100	139 Peak
2	184.98	20.90	-22.60	43.50	44.33	9.41	0.60	33.44	---	---
3	199.29	21.19	-22.31	43.50	44.82	9.30	0.60	33.53	---	---
4	824.30	23.55	-22.45	46.00	34.98	19.99	1.20	32.62	---	---
5	901.30	24.99	-21.01	46.00	35.95	20.54	1.30	32.79	---	---
6	955.90	22.72	-23.28	46.00	32.91	20.93	1.26	32.39	---	---

- Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

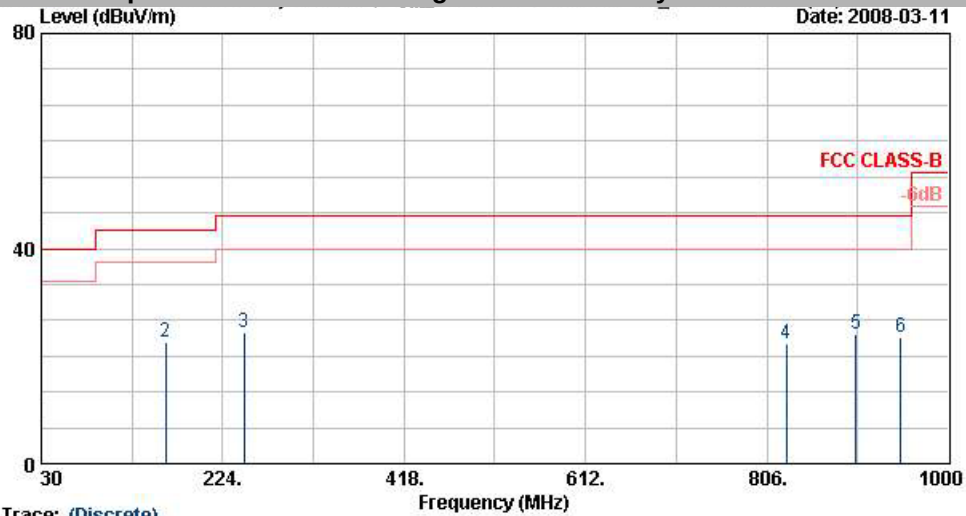
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH78; 2480MHz + Cradle + Adaptor
TMEI : 08050D0003
Data Rate : DR5
Plane : H

	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	2354.00	51.24	-22.76	74.00	51.25	31.81	3.86	35.67	100	0 Peak
2	2354.00	39.32	-14.68	54.00	39.33	31.81	3.86	35.67	120	275 Average
3 X	2480.00	90.72			90.39	31.98	4.05	35.70	100	0 Peak
4 @	2480.00	84.47			84.14	31.98	4.05	35.70	120	275 Average
5 !	2483.50	48.56	-5.44	54.00	48.23	31.98	4.05	35.70	120	275 Average
6	2483.50	56.73	-17.27	74.00	56.40	31.98	4.05	35.70	100	0 Peak
7	4956.00	54.10	-19.90	74.00	49.67	34.19	5.87	35.62	---	--- Peak
8	9921.00	38.75	-35.25	74.00	76.94	-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.

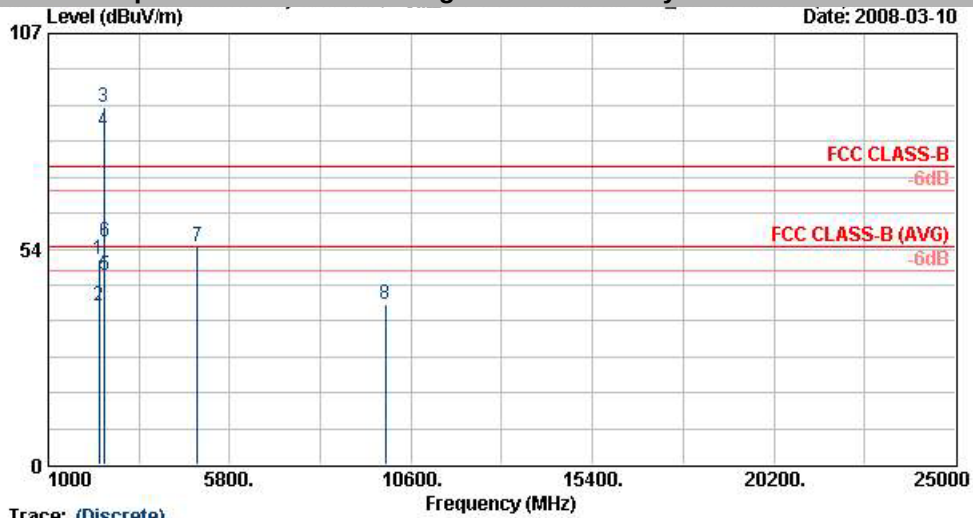


Trace: (Discrete)
 Site : 03CH06-HY
 Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL
 EUT : PDA
 Power : 120Vac/60Hz
 Model : FR 830601
 Memo : BT Tx CH78;2480MHz + Cradle + Adaptor
 TMEI : 0805000003
 Data Rate : DHS
 Plane : H

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.54	23.87	-16.13	40.00	38.08	18.95	0.30	33.46	100	188	Peak
2	162.84	22.73	-20.77	43.50	45.53	10.07	0.60	33.47	---	---	Peak
3	247.08	24.43	-21.57	46.00	45.07	12.10	0.70	33.44	---	---	Peak
4	826.40	22.35	-23.65	46.00	33.76	20.01	1.20	32.62	---	---	Peak
5	901.30	24.17	-21.83	46.00	35.12	20.54	1.30	32.79	---	---	Peak
6	948.90	23.42	-22.58	46.00	33.79	20.87	1.20	32.45	---	---	Peak

- Polarization : Vertical (1GHz-25GHz)

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



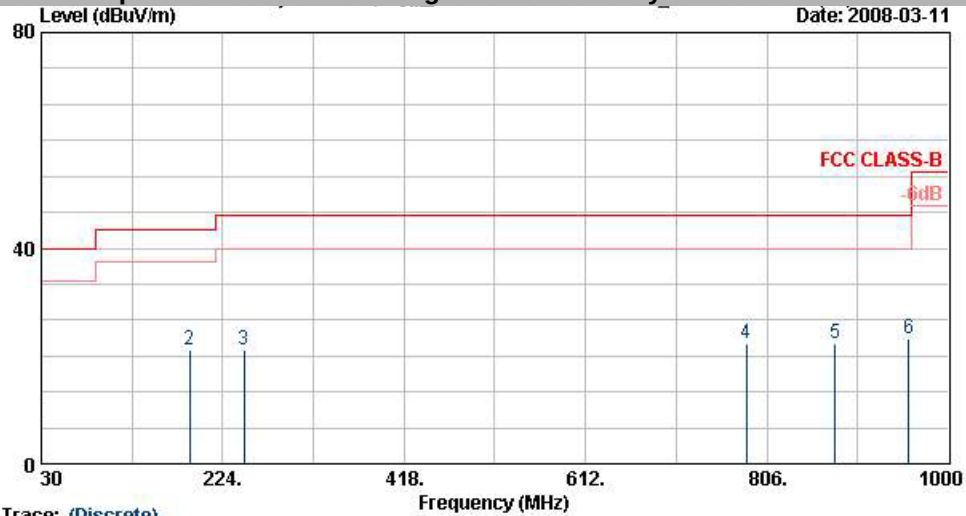
Trace: (Discrete)
 Site : 03CH06-HY
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
 EUT : PDA
 Power : 120Vac/60Hz
 Model : FR 830601
 Memo : BT Tx_CH78;2480MHz + Cradle + Adaptor
 TMEI : 0805000003
 Data Rate : DHS
 Plane : H

	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	2344.00	50.84	-23.16	74.00	50.88	31.78	3.86	35.67	100	0	Peak
2	2344.00	39.25	-14.75	54.00	39.28	31.78	3.86	35.67	106	11	Average
3 X	2480.00	88.76			88.43	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	82.85			82.52	31.98	4.05	35.70	106	11	Average
5	2483.50	46.94	-7.06	54.00	46.61	31.98	4.05	35.70	106	11	Average
6	2483.50	55.11	-18.89	74.00	54.78	31.98	4.05	35.70	100	0	Peak
7	4956.00	54.10	-19.90	74.00	49.67	34.19	5.87	35.62	---	---	Peak
8	9921.00	39.65	-34.35	74.00	77.84	-9.48	8.07	36.79	100	0	Peak

Remark: #3 and #4 are Fundamental Signals

- Test Mode : Mode 6
- Polarization : Horizontal (30MHz-1GHz)

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



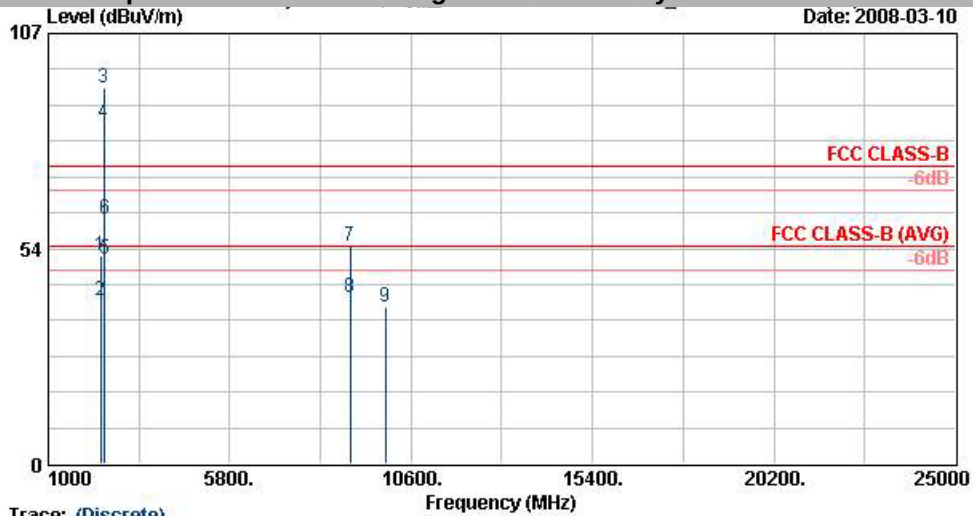
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF-ANT(951121) HORIZONTAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH78; 2480MHz + Cradle + Adaptor
T/MET : 08050D0003
Data Rate : 2DH5
Plane : H

	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	30.00	23.16	-16.84	40.00	36.70	19.66	0.30	33.50	100	125 Peak
2	188.49	21.06	-22.44	43.50	44.60	9.38	0.60	33.52	---	Peak
3	247.08	21.10	-24.90	46.00	41.74	12.10	0.70	33.44	---	Peak
4	784.40	22.20	-23.80	46.00	33.98	19.68	1.20	32.65	---	Peak
5	878.90	22.32	-23.68	46.00	33.39	20.38	1.30	32.75	---	Peak
6	957.30	23.14	-22.86	46.00	33.32	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.



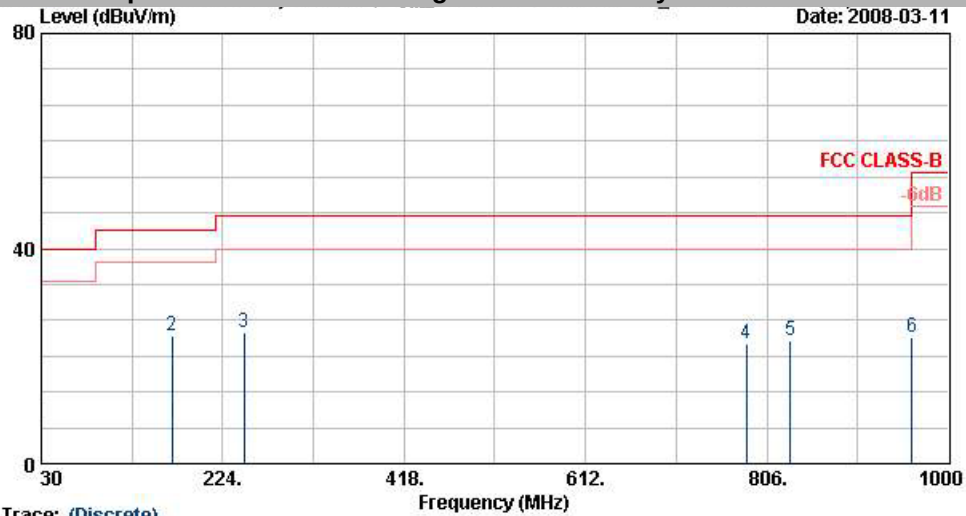
Trace: (Discrete)
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH78; 2480MHz + Cradle + Adaptor
TMEI : 08050D0003
Data Rate : 2DH5
Plane : H

	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	2378.00	51.53	-22.47	74.00	51.48	31.83	3.89	35.68	100	0	Peak
2	2378.00	40.43	-13.57	54.00	40.39	31.83	3.89	35.68	121	273	Average
3 X	2480.00	93.53			93.20	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	84.55			84.22	31.98	4.05	35.70	121	273	Average
5 !	2483.50	50.72	-3.28	54.00	50.39	31.98	4.05	35.70	121	273	Average
6	2483.50	60.83	-13.17	74.00	60.50	31.98	4.05	35.70	100	0	Peak
7	8982.00	54.05	-19.95	74.00	46.36	36.48	7.80	36.59	100	0	Peak
8	8982.00	41.53	-12.47	54.00	33.84	36.48	7.80	36.59	100	314	Average
9	9921.00	39.15	-34.85	74.00	77.34	-9.48	8.07	36.79	---	---	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.



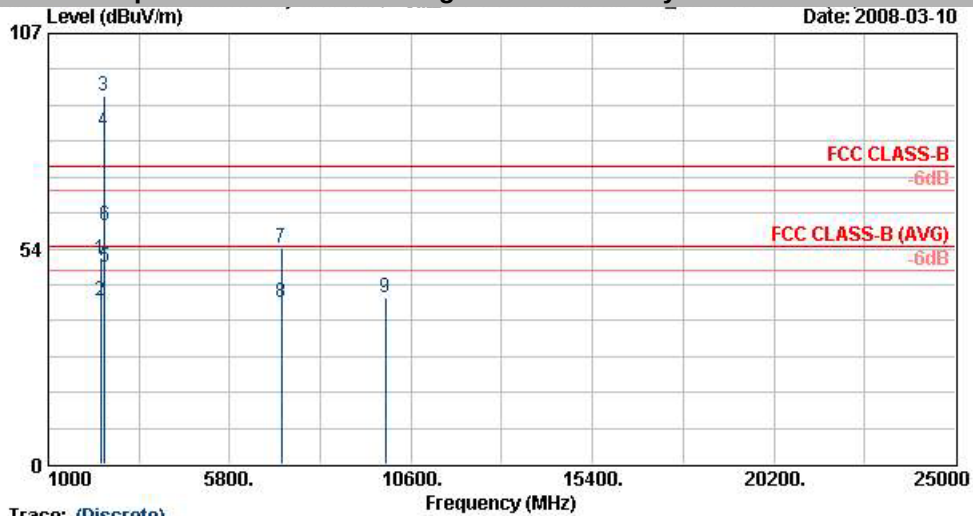
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH78;2460MHz + Cradle + Adaptor
TMEI : 0805000003
Data Rate : 2DH5
Plane : H

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	24.15	-15.85	40.00	37.69	19.66	0.30	33.50	100	299 Peak	
2	169.59	23.70	-19.80	43.50	46.60	9.92	0.60	33.43	---	---	Peak
3	246.54	24.33	-21.67	46.00	45.03	12.04	0.70	33.44	---	---	Peak
4	784.40	22.40	-23.60	46.00	34.18	19.68	1.20	32.65	---	---	Peak
5	831.30	22.95	-23.05	46.00	34.34	20.04	1.20	32.63	---	---	Peak
6	960.80	23.36	-30.64	54.00	33.45	20.96	1.30	32.35	---	---	Peak

- Polarization : Vertical (1GHz-25GHz)

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



Trace: (Discrete)

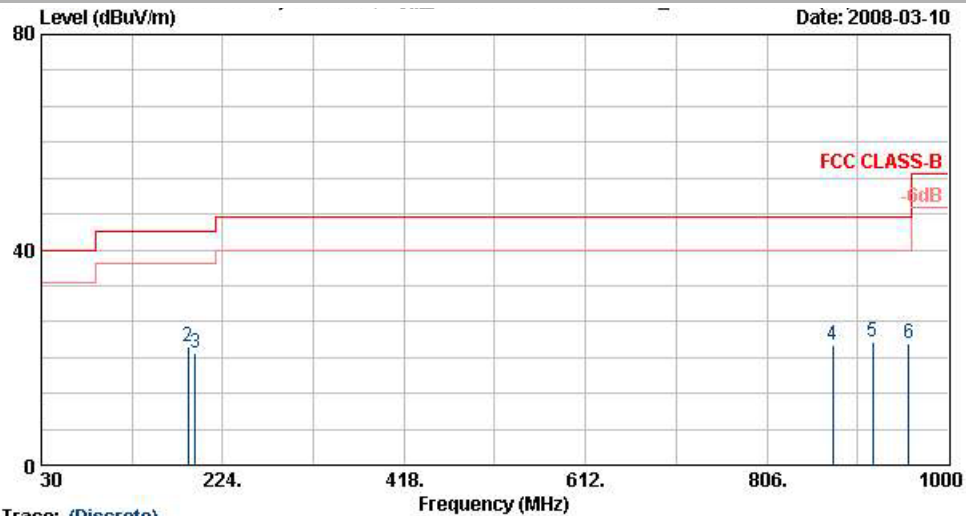
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT T₊ CH78; 2480MHz + Cradle + Adaptor
TMEI : 0805000003
Data Rate : 2DH5
Plane : H

	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	2388.00	50.99	-23.01	74.00	50.89	31.86	3.92	35.68	100	0	Peak
2	2388.00	40.55	-13.45	54.00	40.45	31.86	3.92	35.68	105	11	Average
3 X	2480.00	91.29			90.96	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	82.68			82.35	31.98	4.05	35.70	105	11	Average
5 !	2483.50	48.87	-5.13	54.00	48.54	31.98	4.05	35.70	105	11	Average
6	2483.50	59.09	-14.91	74.00	58.76	31.98	4.05	35.70	100	0	Peak
7	7176.00	53.67	-20.33	74.00	46.86	35.73	7.15	36.07	100	0	Peak
8	7176.00	40.31	-13.69	54.00	33.50	35.73	7.15	36.07	100	51	Average
9	9921.00	41.51	-32.49	74.00	79.70	-9.48	8.07	36.79	---	---	Peak

Remark: #3 and #4 are Fundamental Signals

- Test Mode : Mode 7
- Polarization : Horizontal (30MHz-1GHz)

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



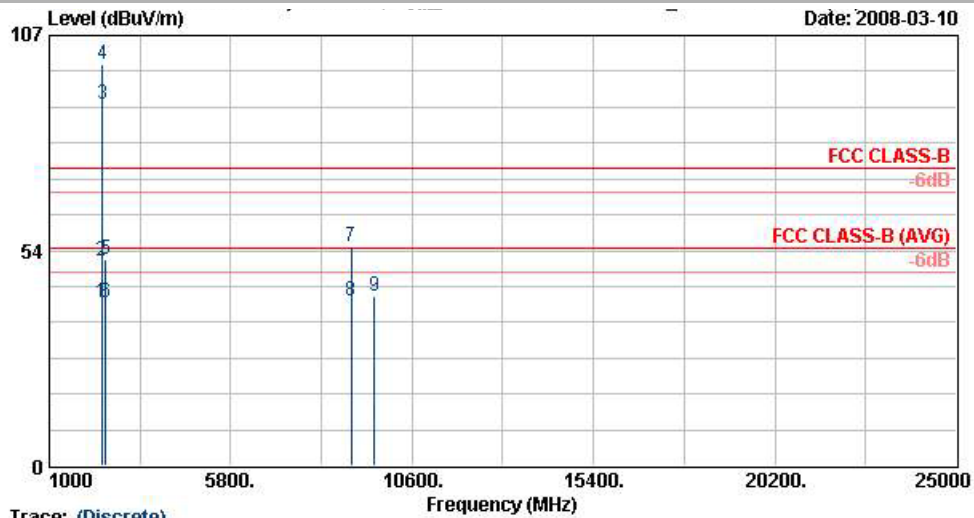
Trace: (Discrete)

Site : 03CH06-HV
Condition : FCC CLASS-B 3m LF-ANT(951121) HORIZONTAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx_CH00;2402MHz + Cradle + Adaptor
TMEI : 06050D0003
Data Rate : 3DH5
Plane : R

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	30.54	24.25	-15.75	40.00	38.46	18.95	0.30	33.46	100	168 Peak
2	187.14	21.91	-21.59	43.50	45.41	9.39	0.60	33.49	---	---
3	194.43	20.91	-22.59	43.50	44.53	9.34	0.60	33.56	---	---
4	876.80	22.28	-23.72	46.00	33.36	20.36	1.30	32.74	---	---
5	918.80	22.88	-23.12	46.00	33.67	20.66	1.22	32.67	---	---
6	957.30	22.57	-23.43	46.00	32.75	20.94	1.27	32.38	---	---

- Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

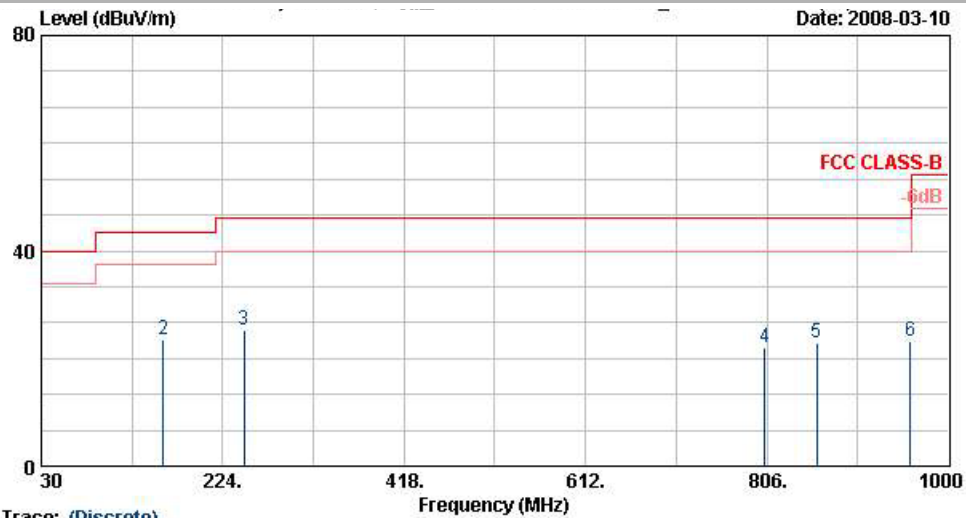
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH00;2402MHz + Cradle + Adaptor
TMEI : 08050D0003
Data Rate : 3DH5
Plane : H

	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	2387.33	40.57	-13.43	54.00	40.47	31.86	3.92	35.68	128	284 Average
2	2387.33	50.96	-23.04	74.00	50.86	31.86	3.92	35.68	100	0 Peak
3 @	2402.00	89.84			89.74	31.86	3.92	35.68	128	284 Average
4 X	2402.00	99.64			99.55	31.86	3.92	35.68	100	0 Peak
5	2484.00	51.31	-22.69	74.00	50.98	31.98	4.05	35.70	100	0 Peak
6	2484.00	40.77	-13.23	54.00	40.44	31.98	4.05	35.70	128	284 Average
7	8982.00	54.33	-19.67	74.00	46.64	36.48	7.80	36.59	100	0 Peak
8	8982.00	41.04	-12.96	54.00	33.35	36.48	7.80	36.59	100	166 Average
9	9606.00	42.00	-32.00	74.00	80.95	-10.16	7.93	36.72	100	0 Peak

Remark: #3 and #4 are Fundamental Signals

- Polarization : Vertical (30MHz-1GHz)

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



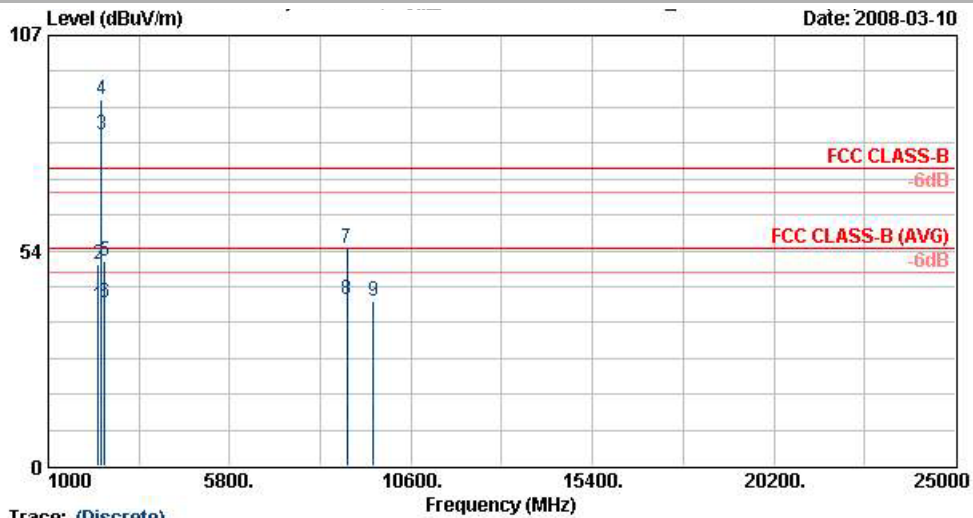
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx_CH00;2402MHz + Cradle + Adaptor
TMEI : 08050D0003
Data Rate : 3DH5
Plane : H

	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		deg	
1	30.00	23.76	-16.24	40.00	37.30	19.66	0.30	33.50	100	255 Peak
2	160.14	23.61	-19.89	43.50	46.37	10.13	0.60	33.49	---	Peak
3	247.08	25.20	-20.80	46.00	45.84	12.10	0.70	33.44	---	Peak
4	803.30	22.09	-23.91	46.00	33.62	19.84	1.20	32.57	---	Peak
5	859.30	22.84	-23.16	46.00	34.10	20.24	1.20	32.70	---	Peak
6	959.40	23.29	-22.71	46.00	33.41	20.95	1.29	32.37	---	Peak

- Polarization : Vertical (1GHz-25GHz)

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



Trace: (Discrete)

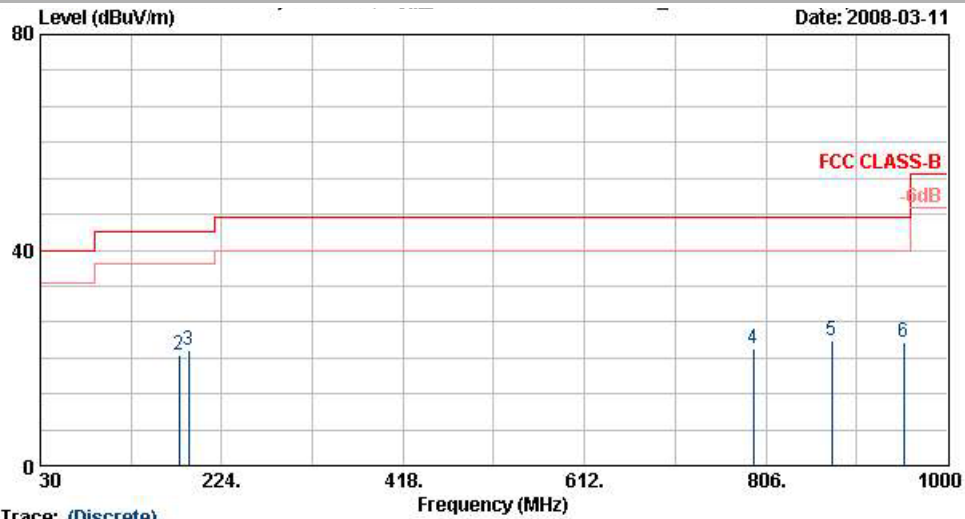
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH00:2402MHz + Cradle + Adaptor
TMEI : 08050D0003
Data Rate : 3DH5
Plane : H

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2314.56	39.59	-14.41	54.00	39.70	31.73	3.82	35.67	100	43 Average
2	2314.56	50.13	-23.87	74.00	50.24	31.73	3.82	35.67	100	0 Peak
3 @	2402.00	82.45			82.35	31.86	3.92	35.68	100	43 Average
4 X	2402.00	91.10			91.00	31.86	3.92	35.68	100	0 Peak
5	2484.00	51.03	-22.97	74.00	50.70	31.98	4.05	35.70	100	0 Peak
6	2484.00	40.76	-13.24	54.00	40.43	31.98	4.05	35.70	100	43 Average
7	8901.00	54.23	-19.77	74.00	46.72	36.36	7.68	36.54	100	0 Peak
8	8901.00	41.55	-12.45	54.00	34.05	36.36	7.68	36.54	100	154 Average
9	9606.00	41.06	-32.94	74.00	80.01	-10.16	7.93	36.72	100	0 Peak

Remark: #3 and #4 are Fundamental Signals

- Test Mode : Mode 8
- Polarization : Horizontal (30MHz-1GHz)

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



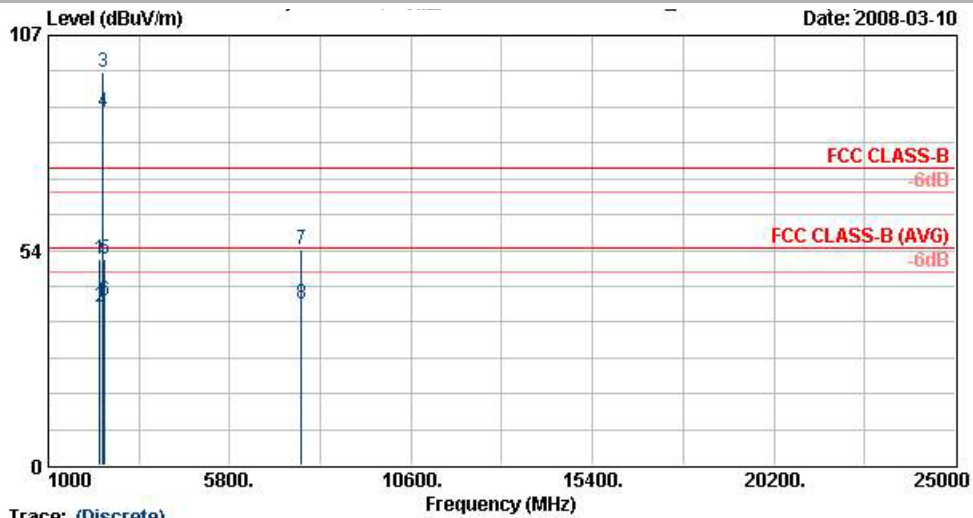
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF-ANT(951121) HORIZONTAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx_CH39;2441MHz + Cradle + Adaptor
TMEI : 0605000003
Data Rate : 3DH5
Plane : R

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	30.00	25.68	-14.32	40.00	39.22	19.66	0.30	33.50	100	144 Peak
2	178.23	20.59	-22.91	43.50	43.74	9.57	0.60	33.32	---	---
3	188.49	21.49	-22.01	43.50	45.02	9.38	0.60	33.52	---	---
4	792.80	21.81	-24.19	46.00	33.47	19.75	1.20	32.61	---	---
5	876.80	23.20	-22.80	46.00	34.28	20.36	1.30	32.74	---	---
6	953.80	22.83	-23.17	46.00	33.10	20.91	1.24	32.41	---	---

- Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

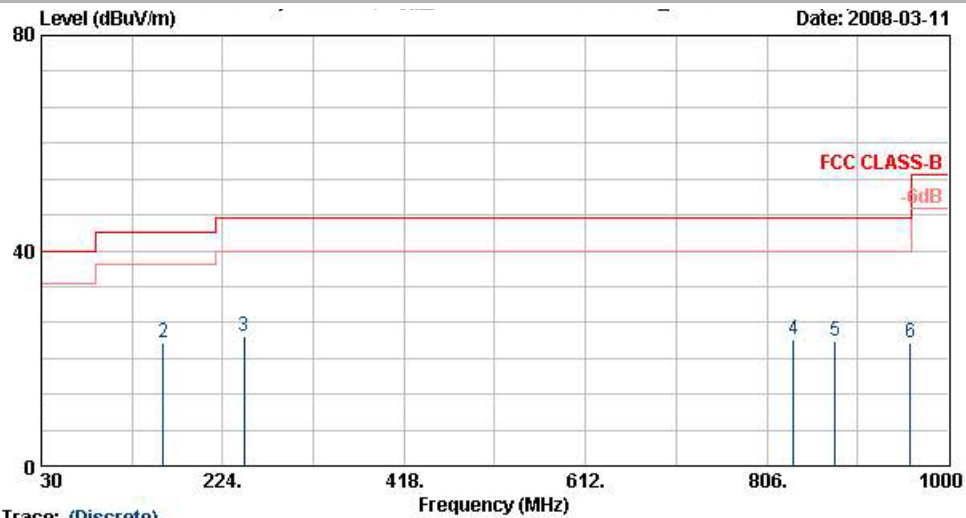
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH39;2441MHz + Cradle + Adaptor
TMET : 08050D0003
Data Rate : 3DH5
Plane : H

	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	2364.00	51.41	-22.59	74.00	51.38	31.81	3.89	35.67	100	0 Peak
2	2364.00	39.27	-14.73	54.00	39.25	31.81	3.89	35.67	156	275 Average
3 X	2441.00	97.67			97.45	31.93	3.99	35.69	100	0 Peak
4 @	2441.00	88.09			87.87	31.93	3.99	35.69	156	275 Average
5	2494.00	51.12	-22.88	74.00	50.77	32.00	4.05	35.70	100	0 Peak
6	2494.00	40.78	-13.22	54.00	40.43	32.00	4.05	35.70	156	275 Average
7	7692.00	53.55	-20.45	74.00	46.78	35.64	7.37	36.24	100	0 Peak
8	7692.00	40.28	-13.72	54.00	33.51	35.64	7.37	36.24	100	157 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.



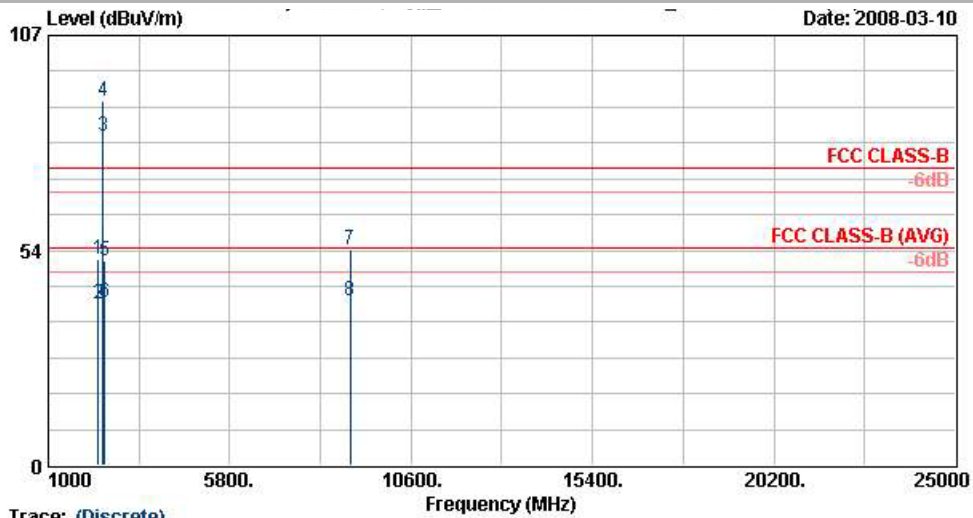
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx_CH39;2441MHz + Cradle + Adaptor
TMEI : 08050D0003
Data Rate : 3DH5
Plane : H

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	30.00	23.58	-16.42	40.00	37.12	19.66	0.30	33.50	100	247 Peak
2	160.68	23.02	-20.48	43.50	45.80	10.11	0.60	33.48	---	---
3	247.08	24.15	-21.85	46.00	44.79	12.10	0.70	33.44	---	---
4	834.80	23.40	-22.60	46.00	34.78	20.07	1.20	32.64	---	---
5	878.90	23.13	-22.87	46.00	34.20	20.38	1.30	32.75	---	---
6	959.40	22.77	-23.23	46.00	32.89	20.95	1.29	32.37	---	---

- Polarization : Vertical (1GHz-25GHz)

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



Trace: (Discrete)

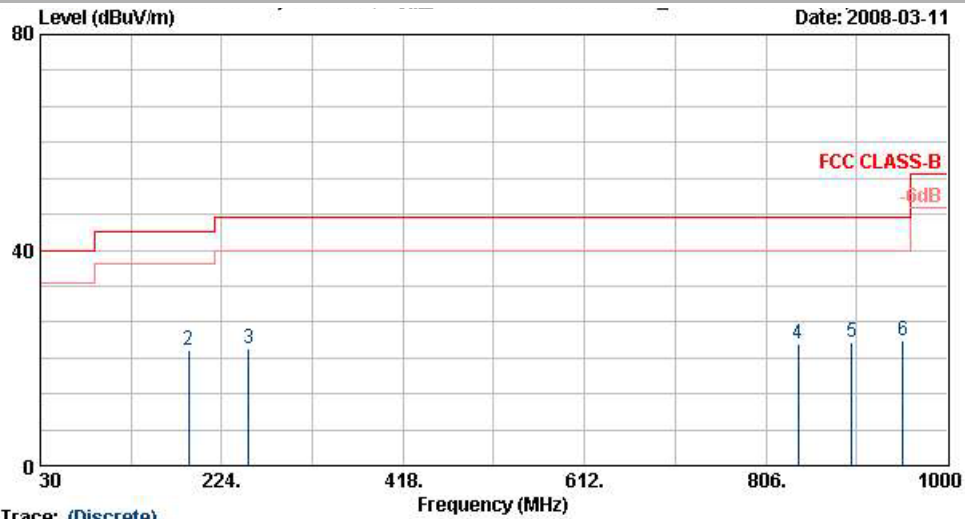
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH39; 2441MHz + Cradle + Adaptor
TMET : 08050D0003
Data Rate : 3DH5
Plane : H

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2314.00	51.16	-22.84	74.00	51.27	31.73	3.82	35.67	100	0 Peak
2	2314.00	40.31	-13.69	54.00	40.42	31.73	3.82	35.67	107	243 Average
3 @	2441.00	81.88			81.66	31.93	3.99	35.69	107	243 Average
4 X	2441.00	90.53			90.31	31.93	3.99	35.69	100	0 Peak
5	2488.00	50.89	-23.11	74.00	50.53	32.00	4.05	35.70	100	0 Peak
6	2488.00	40.76	-13.25	54.00	40.40	32.00	4.05	35.70	107	243 Average
7	8982.00	53.90	-20.10	74.00	46.21	36.48	7.80	36.59	100	0 Peak
8	8982.00	40.90	-13.10	54.00	33.21	36.48	7.80	36.59	100	53 Average

Remark: #3 and #4 are Fundamental Signals

- Test Mode : Mode 9
- Polarization : Horizontal (30MHz-1GHz)

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

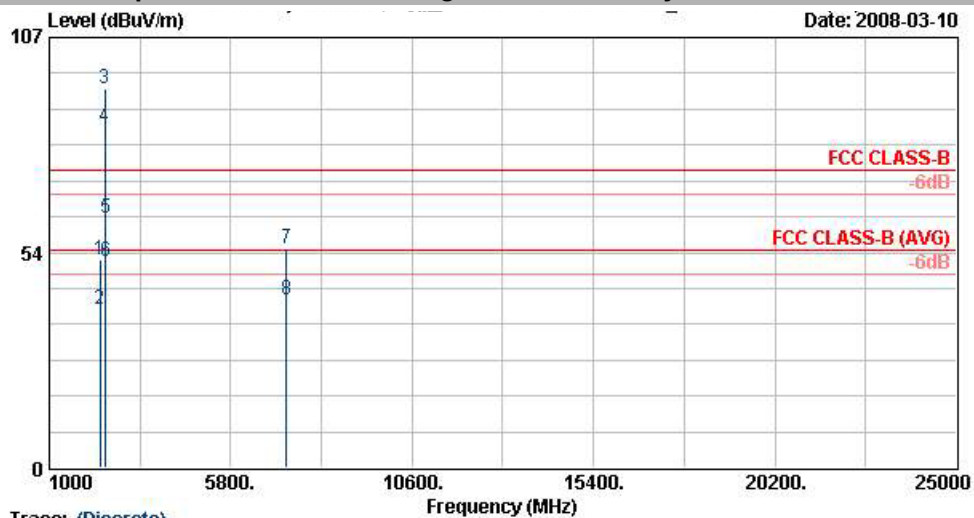


Trace: (Discrete)
 Site : 03CH06-HV
 Condition : FCC CLASS-B 3m LF-ANT(951121) HORIZONTAL
 EUT : PDA
 Power : 120Vac/60Hz
 Model : FR 830601
 Memo : BT Tx_CH78;2480MHz + Cradle + Adaptor
 TMEI : 0805000003
 Data Rate : 3DH5
 Plane : R

	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	30.00	23.82	-16.18	40.00	37.36	19.66	0.30	33.50	100	168	Peak
2	188.49	21.53	-21.97	43.50	45.07	9.38	0.60	33.52	---	---	Peak
3	252.48	21.85	-24.15	46.00	42.27	12.31	0.70	33.43	---	---	Peak
4	840.40	22.69	-23.31	46.00	34.04	20.10	1.20	32.66	---	---	Peak
5	897.80	22.88	-23.12	46.00	33.86	20.52	1.30	32.80	---	---	Peak
6	952.40	23.25	-22.75	46.00	33.53	20.90	1.23	32.42	---	---	Peak

- Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

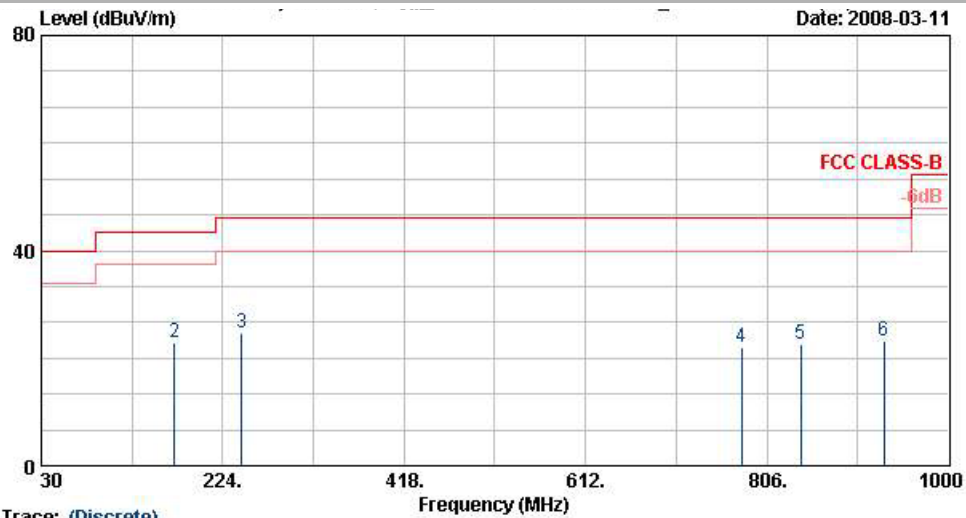
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH78; 2480MHz + Cradle + Adaptor
TMEI : 08050D0003
Data Rate : 3DH5
Plane : H

	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	2348.00	51.79	-22.21	74.00	51.82	31.78	3.86	35.67	100	0 Peak
2	2348.00	39.42	-14.58	54.00	39.45	31.78	3.86	35.67	121	275 Average
3 X	2480.00	94.18			93.84	31.98	4.05	35.70	100	0 Peak
4 @	2480.00	84.86			84.53	31.98	4.05	35.70	121	275 Average
5	2483.50	61.93	-12.07	74.00	61.60	31.98	4.05	35.70	100	0 Peak
6 !	2483.50	51.21	-2.79	54.00	50.88	31.98	4.05	35.70	121	275 Average
7	7281.00	54.67	-19.33	74.00	47.89	35.69	7.19	36.11	100	0 Peak
8	7281.00	41.83	-12.17	54.00	35.06	35.69	7.19	36.11	100	157 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.



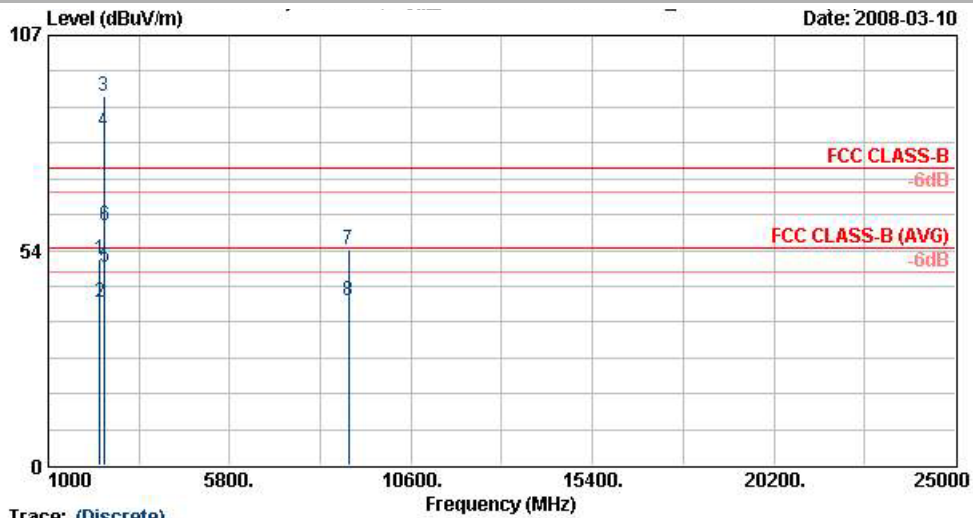
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF-ANT(051121) VERTICAL
EUT : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH78;2480MHz + Cradle + Adaptor
TMEI : 08050D0003
Data Rate : 3DH5
Plane : H

	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	30.00	24.28	-15.72	40.00	37.82	19.66	0.30	33.50	100	110 Peak
2	172.83	22.81	-20.69	43.50	45.74	9.86	0.60	33.39	---	Peak
3	244.38	24.60	-21.40	46.00	45.42	11.93	0.70	33.45	---	Peak
4	778.80	21.91	-24.09	46.00	33.78	19.62	1.19	32.69	---	Peak
5	841.80	22.53	-23.47	46.00	33.88	20.12	1.20	32.66	---	Peak
6	931.40	23.17	-22.83	46.00	33.80	20.75	1.20	32.57	---	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 : PDA
Power : 120Vac/60Hz
Model : FR 830601
Memo : BT Tx CH78; 2480MHz + Cradle + Adaptor
TMET : 08050D0003
Data Rate : 3DH5
Plane : H

	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	2374.00	51.18	-22.82	74.00	51.13	31.83	3.89	35.68	100	0 Peak
2	2374.00	40.61	-13.39	54.00	40.57	31.83	3.89	35.68	106	11 Average
3 X	2480.00	91.98			91.65	31.98	4.05	35.70	100	0 Peak
4 @	2480.00	83.18			82.85	31.98	4.05	35.70	106	11 Average
5 !	2483.50	49.46	-4.54	54.00	49.13	31.98	4.05	35.70	106	11 Average
6	2483.50	59.59	-14.41	74.00	59.26	31.98	4.05	35.70	100	0 Peak
7	8946.00	53.85	-20.15	74.00	46.27	36.41	7.74	36.57	100	0 Peak
8	8946.00	40.94	-13.06	54.00	33.36	36.41	7.74	36.57	100	32 Average

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 Chip Antenna 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	100132	9kHz – 2.75GHz	Jul. 14, 2007	Jul. 13, 2008	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Mar. 30, 2007	Mar. 29, 2008	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 30, 2007	Mar. 29, 2008	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 03, 2007	Dec. 02, 2008	Conduction (CO01-HY)
Isolation Transformer	Erika Fiedler OHG	D-65396 Walluf	58	45MHz-2.15GHz	N/A	N/A	Conduction (CO01-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
Combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of Confidence of 95% U=2Uc(y)	2.26		

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

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

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

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

The measured result is : $y \text{ dBuV} \pm U \text{ dB}$

for a level of confidence of approximately 95% , ($k = 2$)