



FCC TEST REPORT

for

47 CFR Part 15 Subpart C

Equipment : Smart-Phone
Trade Name : Kinpo
Model No. : SP70
FCC ID : ESN-SP70
Filing Type : Certification
Applicant : Kinpo Electronics , Inc.
10TH FL., 99 NAN-KING E. RD., SEC. 5, TAIPEI, TAIWAN, (105)
R.O.C.

- 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 on Jan. 18, 2006 at **Sporton International Inc. LAB.**
- Report No.: FR610605, Report Version: Rev. 01

Dr. Daniel Lee
EMC/SAR Director

SPORTON International Inc.

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



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 Connection Diagram of Test System	3
2.4 Ancillary Equipment List.....	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 in Compliance with	6
4.4 Frequency Range Investigated	6
4.5 Test Distance	6
5. Test Data and Test Result.....	7
5.1 List of Measurements and Examinations	7
5.2 6dB Bandwidth Measurement	9
5.3 Power Spectral Density Measurement.....	13
5.4 Band Edges Measurement.....	17
5.5 Hopping Channel Separation.....	24
5.6 Number of Hopping Frequency.....	28
5.7 Hopping Channel Bandwidth.....	30
5.8 Dwell Time of Each Frequency within a 30 Seconds Period	34
5.9 Peak Output Power Measurement	54
5.10 Conducted Emission	55
5.11 Radiated Emission Measurement	58
5.12 Antenna Requirements	92
6. List of Measuring Equipments Used	93
7. Uncertainty Evaluation.....	94
Appendix A. Photographs of EUT External	
Appendix B. Photographs of EUT Internal	
Appendix C. Photographs of Setup	



History of this test report

Report Issue Date: Jan. 19, 2006

Report No.	Description



1. General Description of Equipment under Test

1.1 Applicant

Kinpo Electronics , Inc.

10TH FL., 99 NAN-KING E. RD., SEC. 5, TAIPEI, TAIWAN, (105) R.O.C.

1.2 Manufacturer

Kinpo Electronics (China)Co., Ltd.

SHA TOU VILLAGE,CHANG AN TOWN DONG GUAN CITY,GUAN DONG PROVINCE

1.3 Basic Description of Equipment under Test

Equipment	: Smart-Phone
Trade Name	: Kinpo
Model No.	: SP70
FCC ID	: ESN-SP70
Power Supply Type	: Switching, From battery 3.7V
AC Power Cord	: AC 120V, Weave-shielded, Wall-mount, 1.7meter, 2pin
Battery	: Kinpo, SXXXX (X=0~9 or A~Z or a~z or black or -)
Adapter	: Phihong, PSC11R-050

**1.4 Feature of Equipment under Test**

Product Feature & Specification			
1. Type of Modulation	PCS: GMSK WLAN:CCK(5.5 and 11Mbps), QPSK(2Mbps), BPSK(1Mbps) BT: GFSK		
2. Number of Channels	WLAN: 11 Channels BT: 79 Channels		
3. Frequency Band	PCS : 1850.2-1909.8 MHz(Tx), 1930.2-1989.8 MHz)(Rx) WLAN/BT: 2.4GHz~2.4835GHz		
4. Carrier Frequency of each channel	WLAN: 2412MHz+(n-1)*5MHz, n=1~11 BT: 2402MHz+n*1MHz, n=0~78		
5. Channel Spacing	WLAN: 5MHz BT: 1MHz		
6. Maximum Output Power to Antenna (Normal Condition)	PCS: 29.2 dBm WLAN: 18.69 dBm BT: 0.13 dBm		
7. Type of Antenna Connector	N/A		
8. Antenna Type	Fixed Internal		
9. Antenna Gain	WLAN: 2.38 dBi Bluetooth: -2 dBi		
10. HW Version	SP70-10		
11. SW Version	SP70XZZZUSAA0316		
12. Function Type	Transmitter		Transceiver V
13. Duty Cycle	WLAN: 100% BT: 36.40%		
14. Power Rating (DC/AC Voltage) :	3.8V/1300mA		

2 Test Configuration of Equipment under Test

2.1 Test Manner

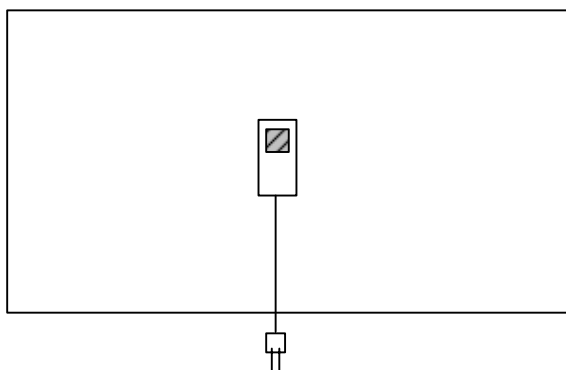
- The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- For spurious emission below 1GHz, only one channel of each application was tested because it is not related to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

2.2 Test Mode

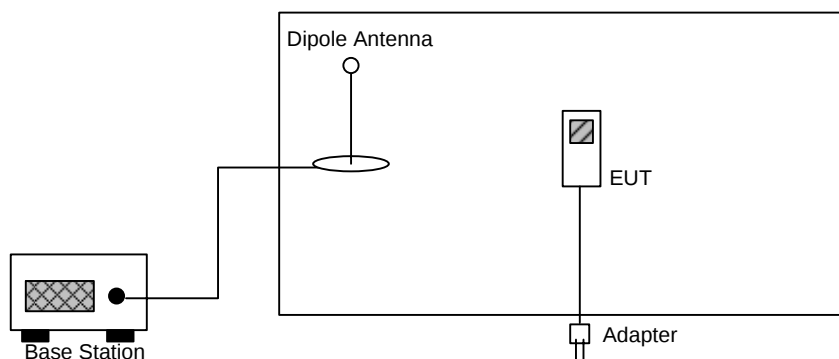
Application	802.11b	BT
Radiated Emission	Mode 1: Tx_CH01_2412 MHz	Mode 4: Tx_CH00_2402 MHz
	Mode 2: Tx_CH06_2437 MHz	Mode 5: Tx_CH39_2441 MHz
	Mode 3: Tx_CH11_2462 MHz	Mode 6: Tx_CH78_2480 MHz

2.3 Connection Diagram of Test System

<WLAN>



<Bluetooth>



2.4 Ancillary Equipment List

Item	Asset	Model Name	Power Cord
1.	Base Station (R&S)	CMU 200	N/A



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 : 886-3-318-0055
Test Site No : CO01-HY, 03CH06-HY

4.1 Test Voltage

120V/ 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2003

4.3 Test in Compliance with

47 CFR Part 15 Subpart C

4.4 Frequency Range Investigated

a. 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: Wireless LAN

FCC Rule	Description of Test	Result
15.207	Conducted Emission	Pass
15.247(a)(2)	6dB Bandwidth	Pass
15.247(b)	Maximum Peak Output Power	Pass
15.209(a)	Radiated Emission	Pass
15.247 (c)	100kHz Bandwidth of Frequency Band Edges	Pass
15.247(d)	Power Spectral Density	Pass
15.203 15.247(b)(4)	Antenna Requirement	Pass

**The Emission Mode: Bluetooth**

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

5.2 6dB Bandwidth Measurement

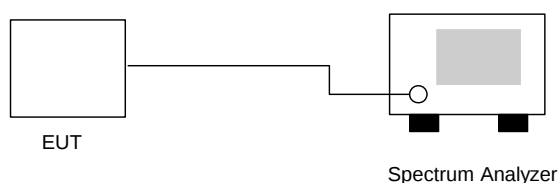
5.2.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.2.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 100kHz and VBW to 100kHz.
3. The 6 dB bandwidth is defined as the frequency range where the power is higher than the peak power minus 6dB.

5.2.3 Test Setup Layout :



5.2.4 Test Result :

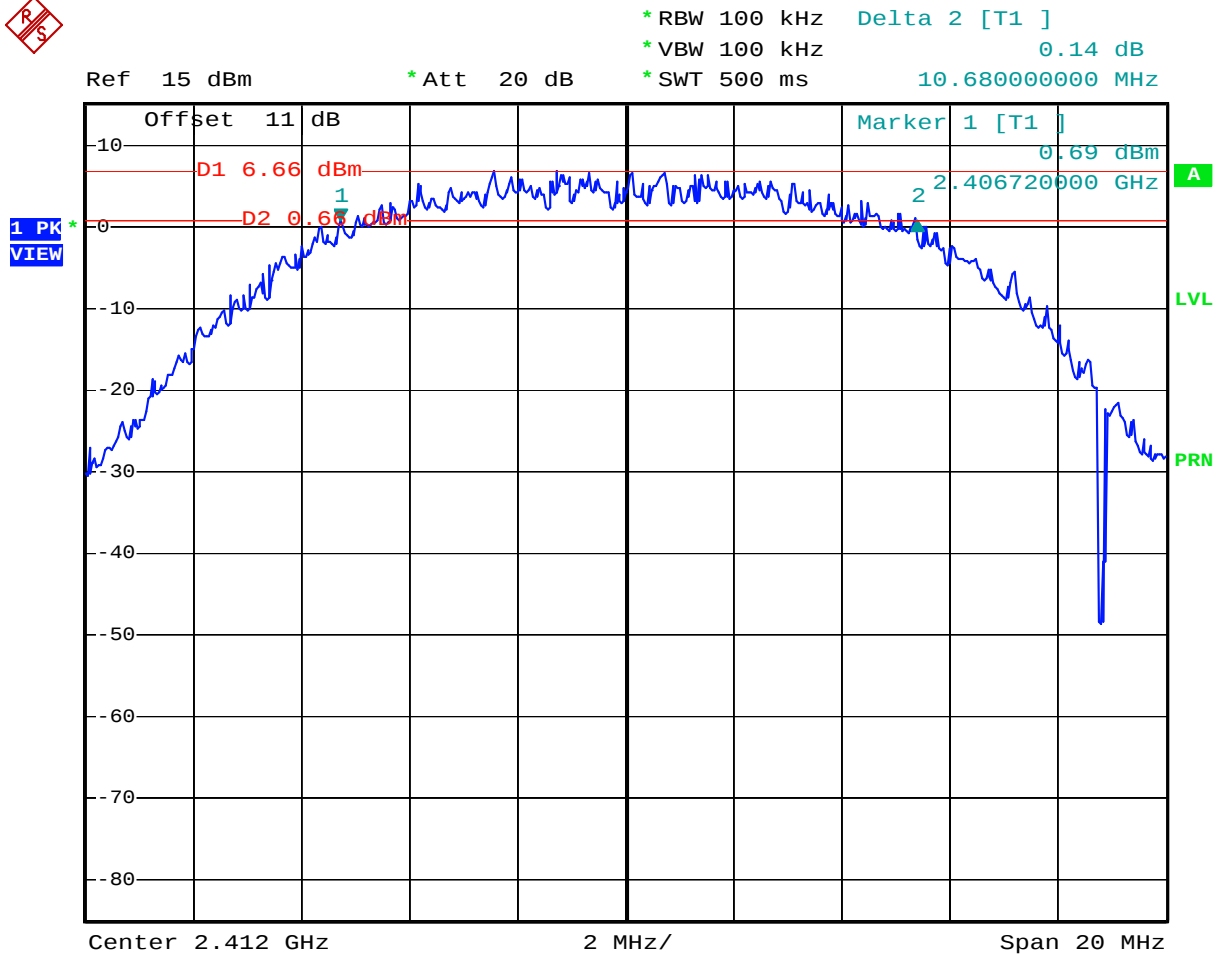
- Application Type : WLAN 802.11b
- Temperature : 24°C
- Relative Humidity : 52%
- Test Enginner : Jay

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	10.68	> 0.5MHz	Mode 1
06	2437	9.60	> 0.5MHz	Mode 2
11	2462	9.28	> 0.5MHz	Mode 3



5.2.5 6dB Bandwidth

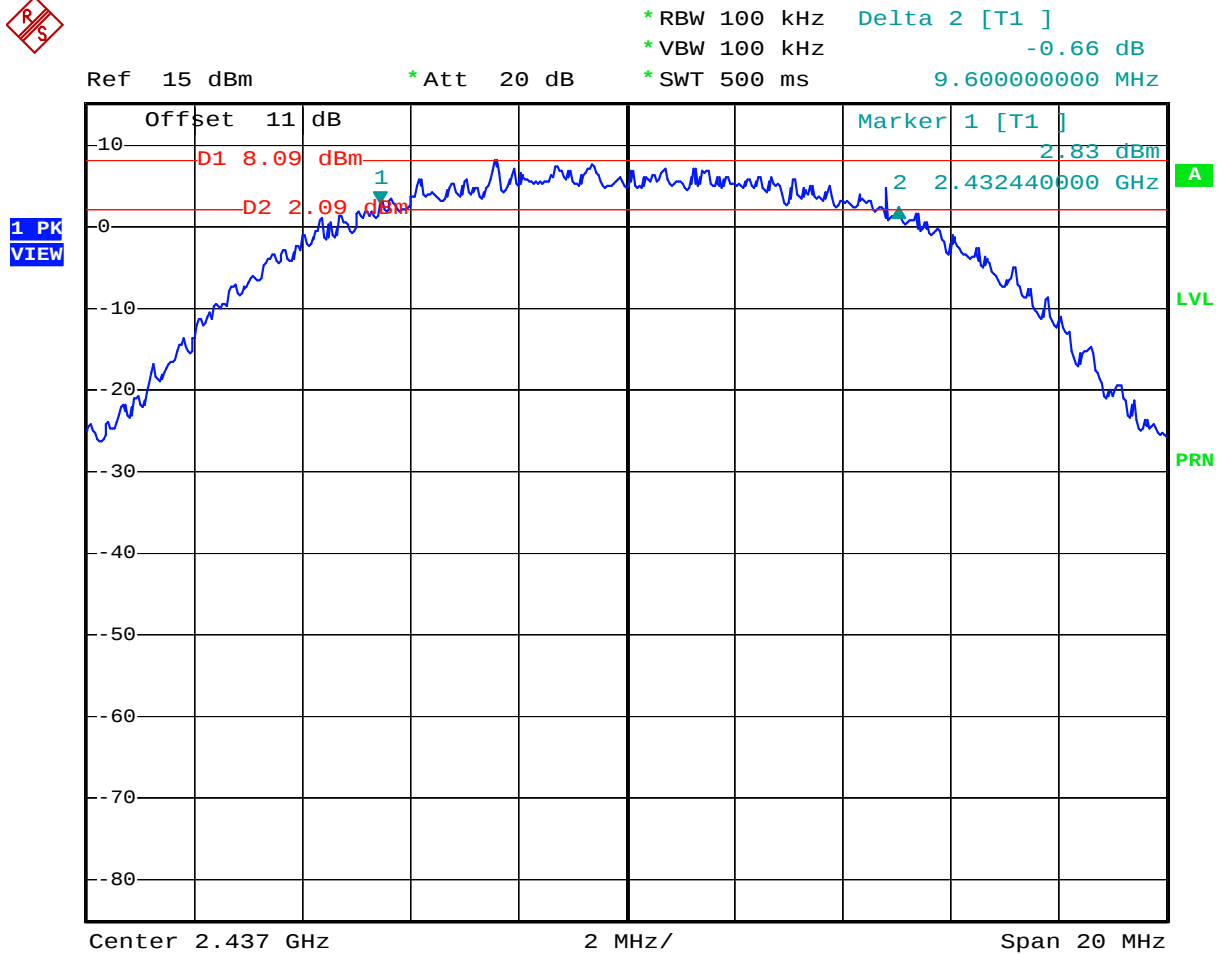
Mode 1



Date: 18.JAN.2006 14:48:59



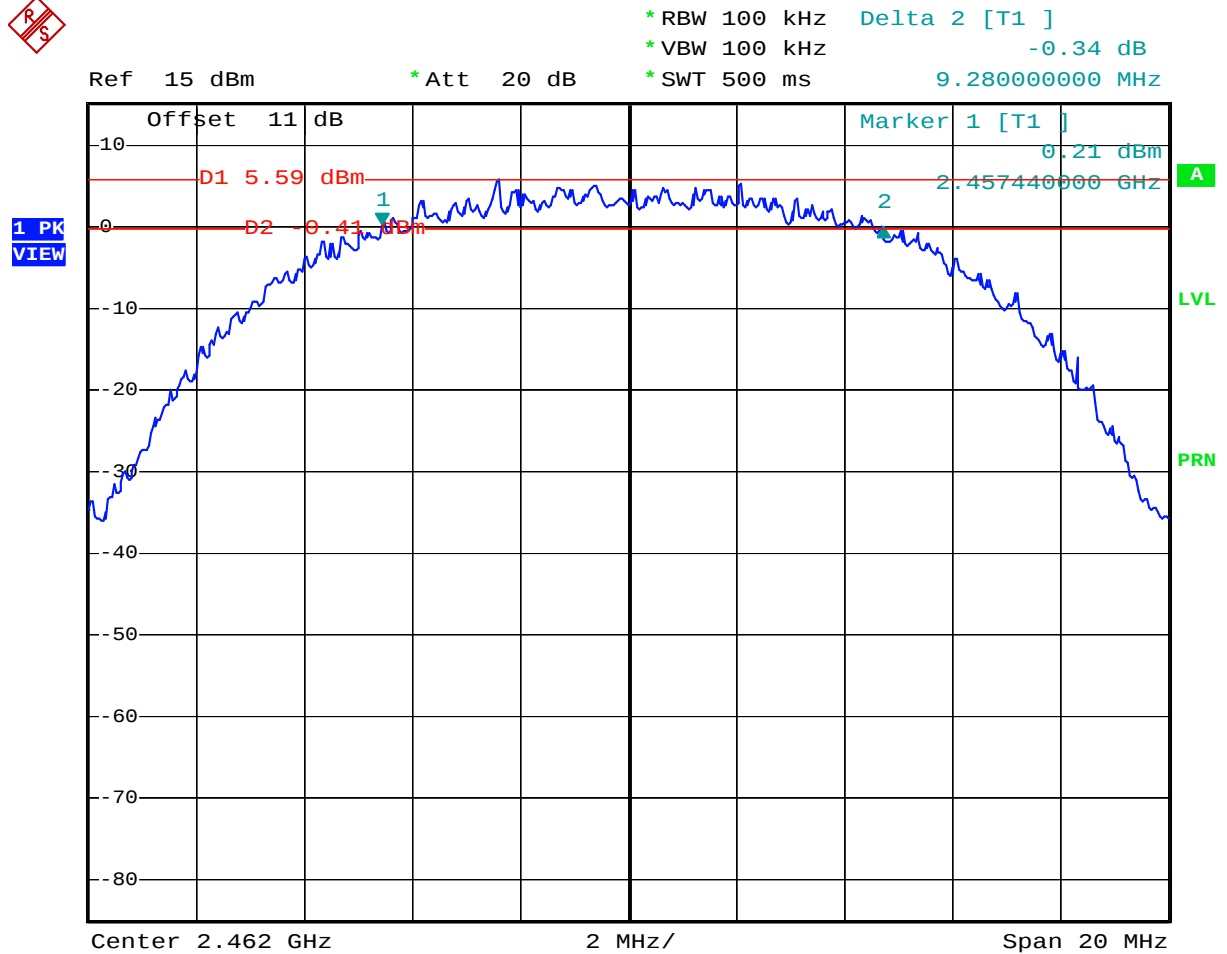
Mode 2



Date: 18.JAN.2006 14:53:03



Mode 3



Date: 18.JAN.2006 14:56:20

5.3 Power Spectral Density Measurement

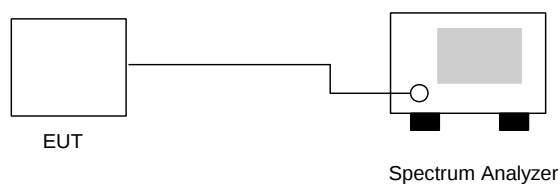
5.3.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.3.2 Test Procedure :

1. The transmitter output was connected to spectrum analyzer directly.
2. The spectrum analyzer's resolution bandwidth was set at 3kHz RBW and 30kHz VBW as that of the fundamental frequency. Set the sweep time=span/3kHz.
3. The power spectral density was measured and recorded.
4. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

5.3.3 Test Setup Layout :



5.3.4 Test Result :

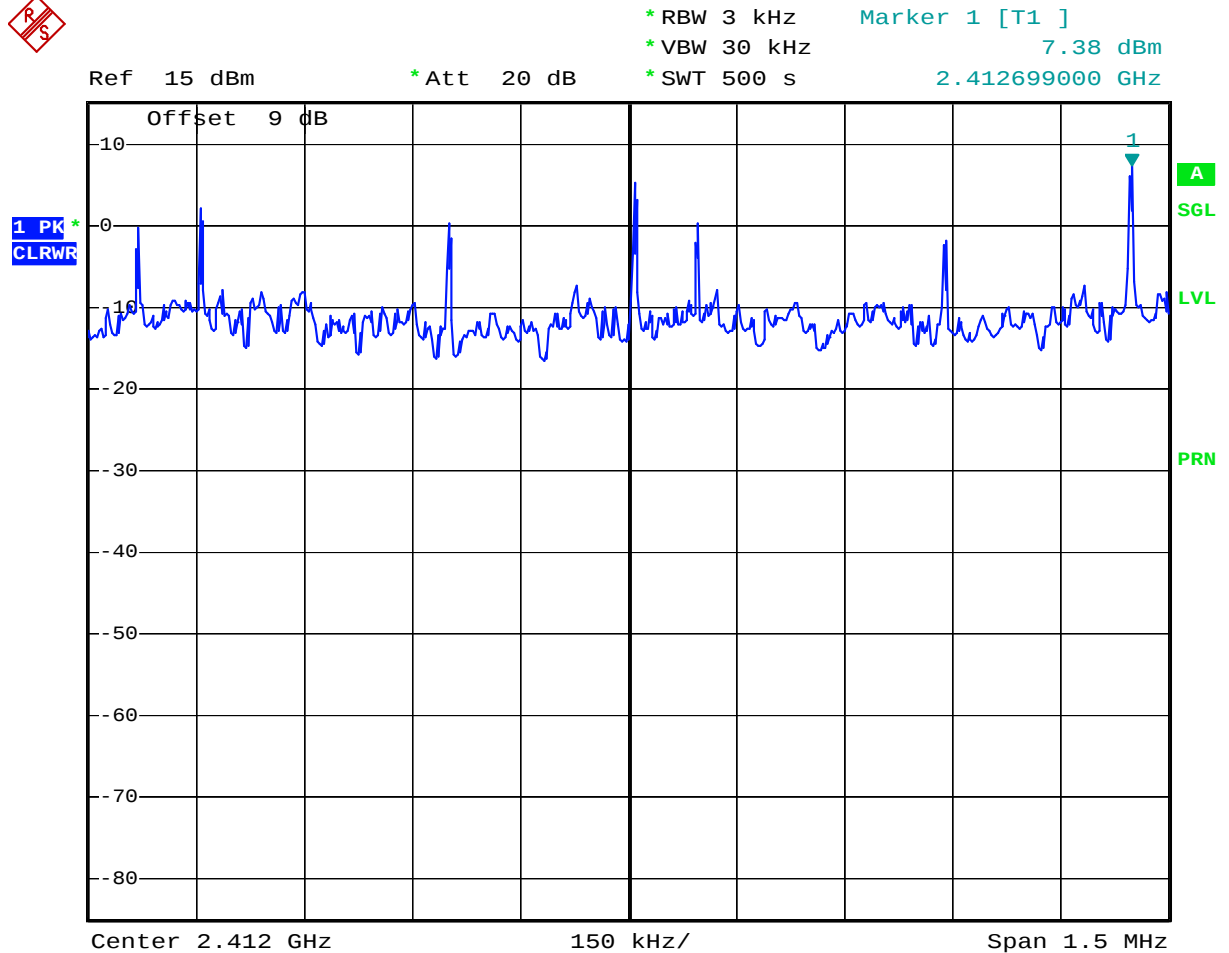
- Application Type : 802.11b
- Temperature : 24°C
- Relative Humidity : 52%
- Test Enginner : Jay

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	7.38	8	Mode 1
06	2437	7.73	8	Mode 2
11	2462	4.17	8	Mode 3



5.3.5 Power Spectral Density

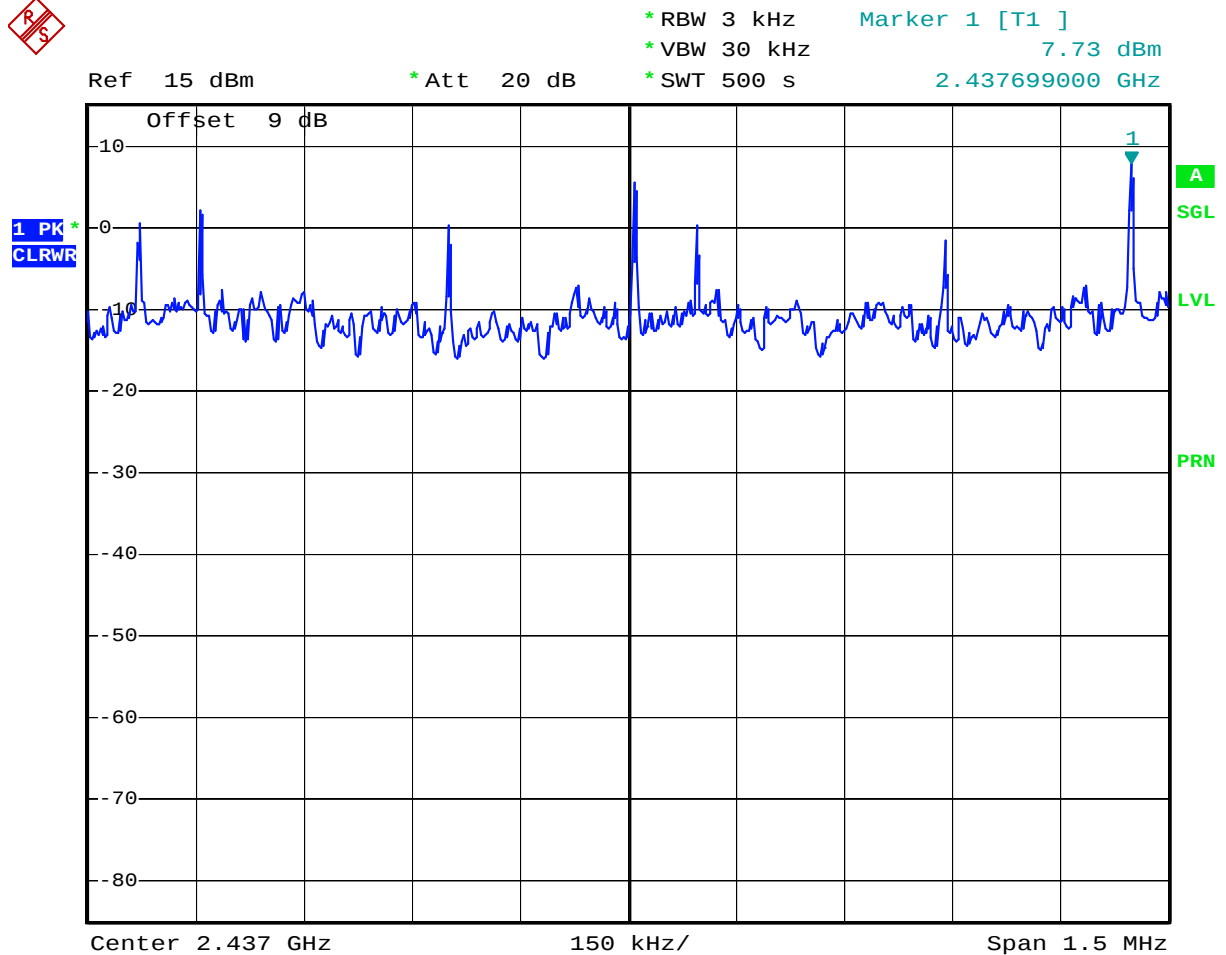
Mode 1



Date: 18.JAN.2006 16:33:26



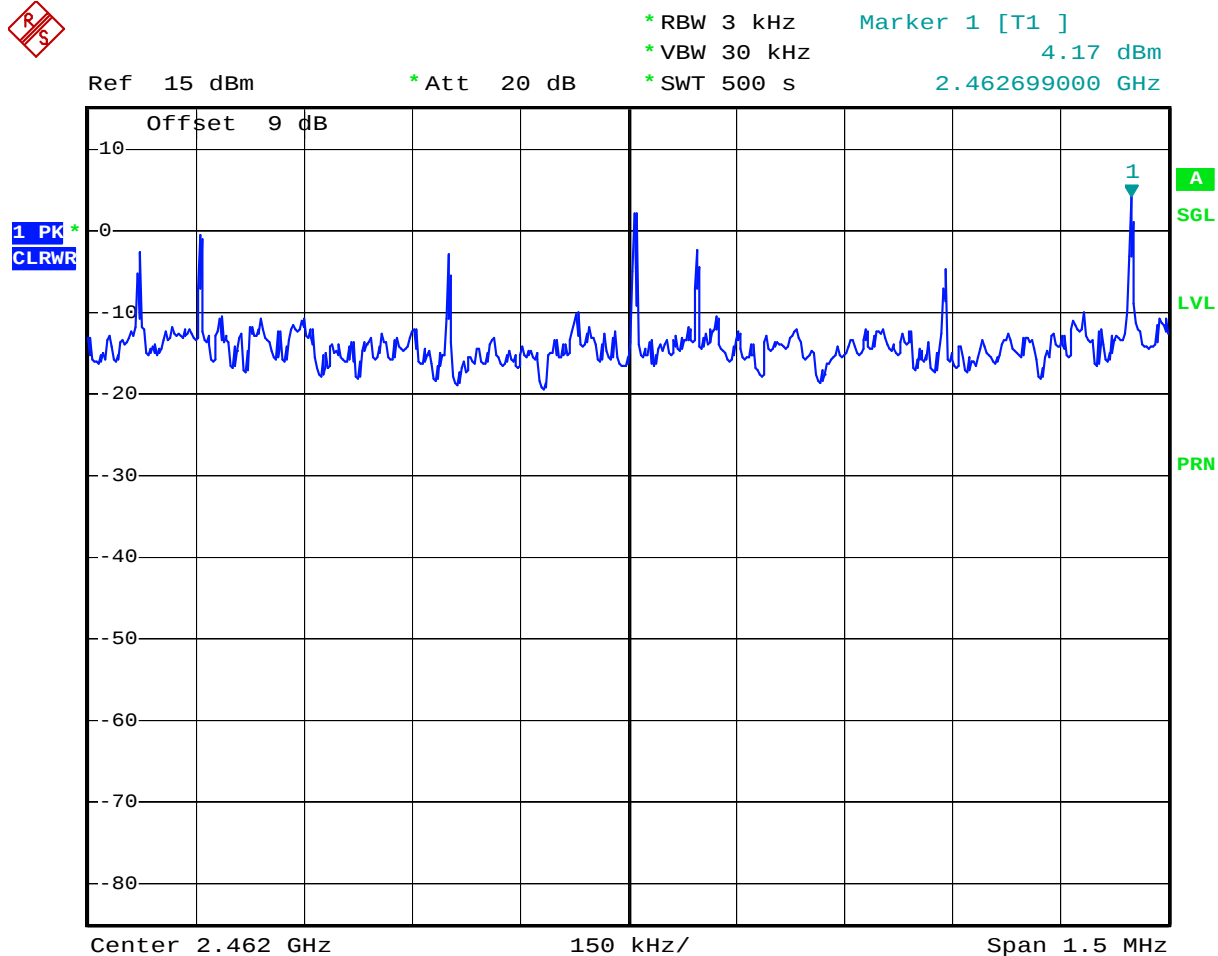
Mode 2



Date: 18.JAN.2006 16:23:03



Mode 3



Date: 18.JAN.2006 16:46:25



5.4 Band Edges Measurement

5.4.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.4.2 Test Procedure :

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

5.4.3 Test Result :

- Application Type : WLAN 802.11b and BT
- Temperature : 24°C
- Relative Humidity : 52%
- Test Enginner : Jay
- Test Result in WLAN lower band (Channel 1) : PASS
- Test Result in WLAN higher band (Channel 11) : PASS
- Test Result in BT lower band (Channel 00) : PASS
- Test Result in BT higher band (Channel 78) : PASS

5.4.4 Note on Band Edge Emission :

➤WLAN 802.11b

CH01 (Horizontal)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2390.00	70.27	-3.73	74.00	70.98	30.48	4.26	35.46	200	0	Peak
2390.00	50.40	-3.60	54.00	51.11	30.48	4.26	35.46	100	341	Average

CH01 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2390.00	67.57	-7.99	74.00	68.28	30.48	4.26	35.46	100	0	Peak
2390.00	46.01	-7.99	54.00	46.72	30.48	4.26	35.46	110	27	Average

**CH11 (Horizontal)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	60.11	-13.89	74.00	60.85	30.41	4.36	35.51	100	0	Peak
2483.50	47.23	-6.77	54.00	47.97	30.41	4.36	35.51	100	341	Average

CH11 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	56.69	-9.49	74.00	57.43	30.41	4.36	35.51	200	0	Peak
2483.50	44.51	-9.49	54.00	45.25	30.41	4.36	35.51	100	286	Average

➤BT**CH00 (Horizontal)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2390.00	50.04	-23.96	74.00	50.76	30.48	4.26	35.46	200	0	Peak
2390.00	38.38	-15.62	54.00	39.09	30.48	4.26	35.46	156	308	Average

CH00 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2390.00	50.70	-23.30	74.00	51.41	30.48	4.26	35.46	200	0	Peak
2390.00	38.32	-15.68	54.00	39.03	30.48	4.26	35.46	100	184	Average

CH78 (Horizontal)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	62.57	-11.43	74.00	63.31	30.41	4.36	35.51	200	0	Peak
2483.50	47.49	-6.51	54.00	48.23	30.41	4.36	35.51	100	185	Average



CH78 (Vertical)

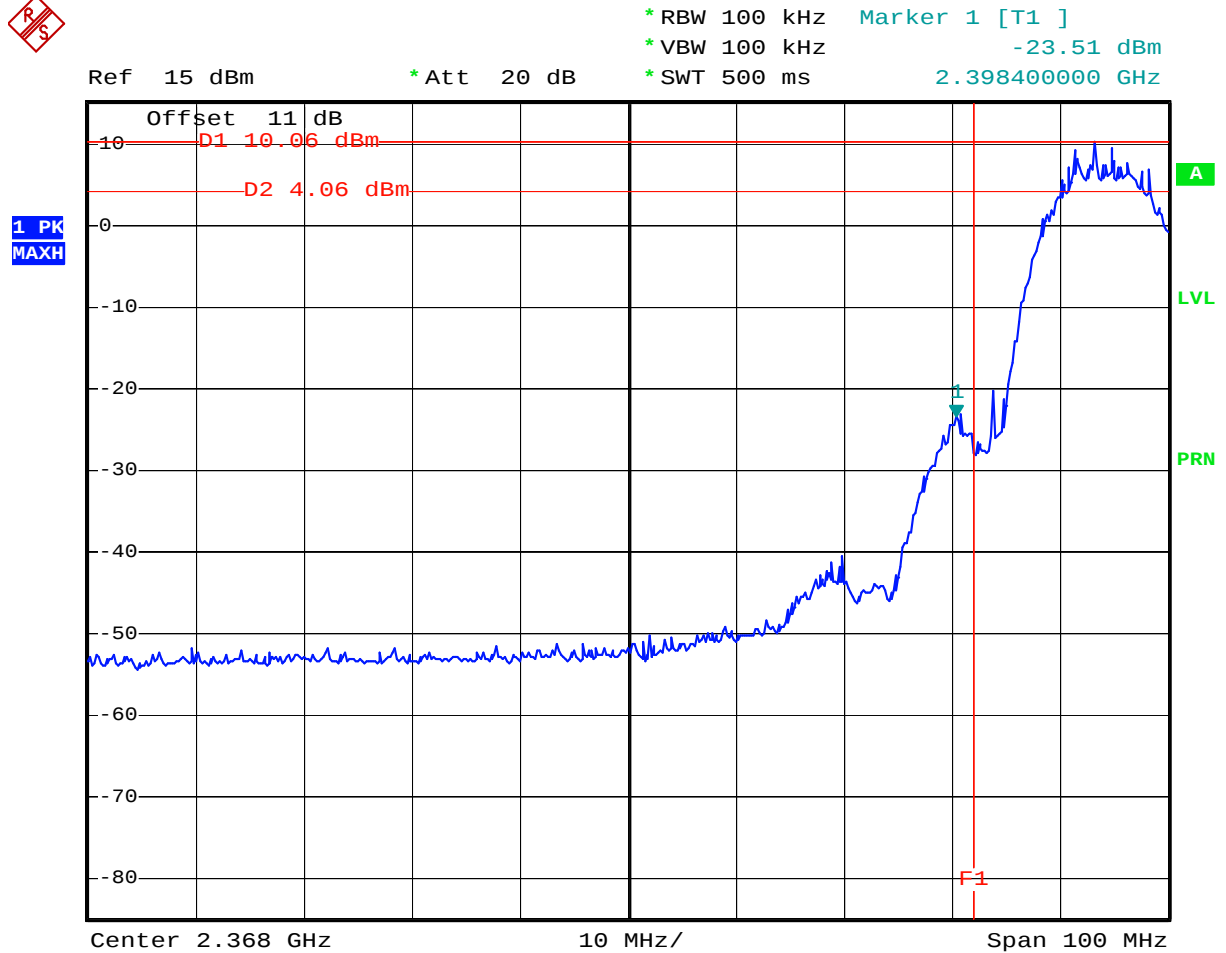
Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
(MHz)	(dBuV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
		(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	70.37	-3.63	74.00	71.10	30.41	4.36	35.51	200	0	Peak
2483.50	45.30	-8.70	54.00	46.04	30.41	4.36	35.51	106	98	Average



5.4.5 20dB Band Edge

WLAN 802.11b:

CH01



Date: 18.JAN.2006 15:04:18



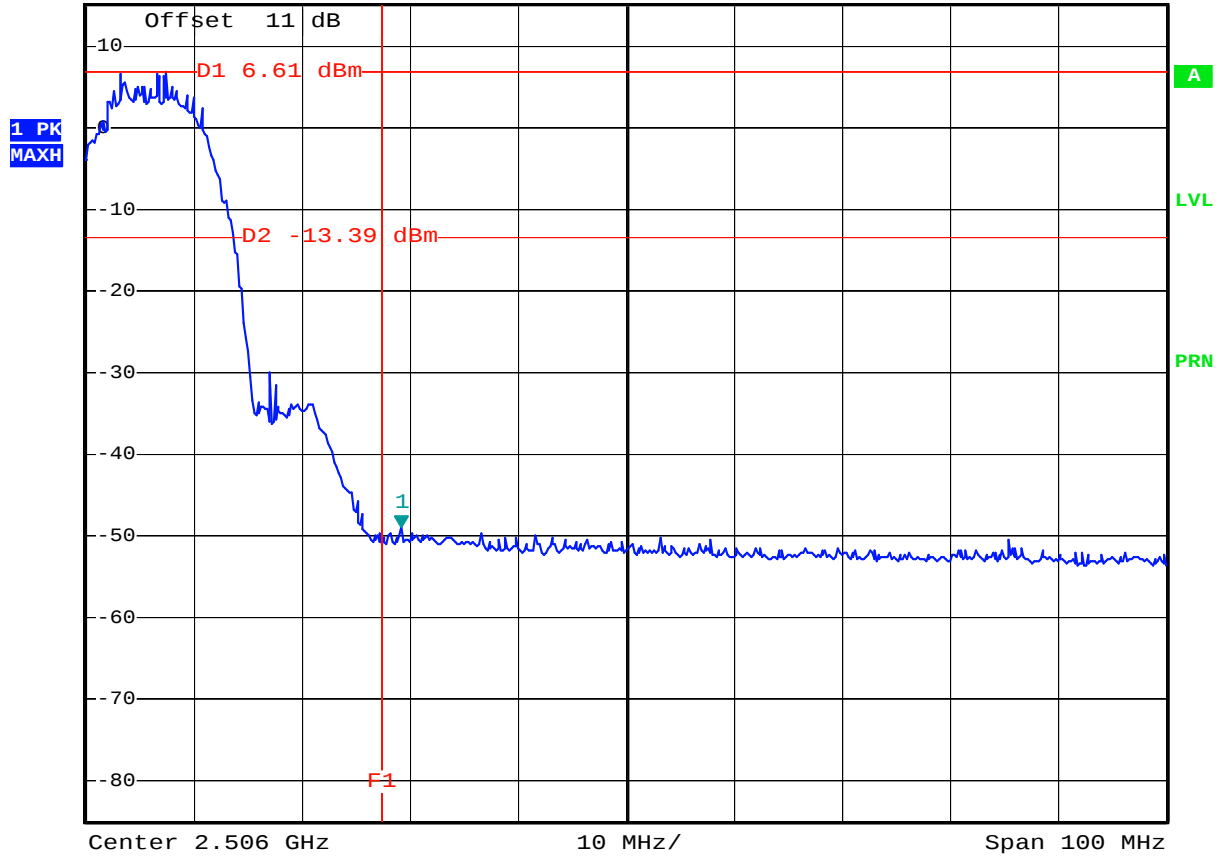
CH11



* RBW 100 kHz Marker 1 [T1]
* VBW 100 kHz -48.95 dBm
* SWT 500 ms 2.485200000 GHz

Ref 15 dBm

* Att 20 dB

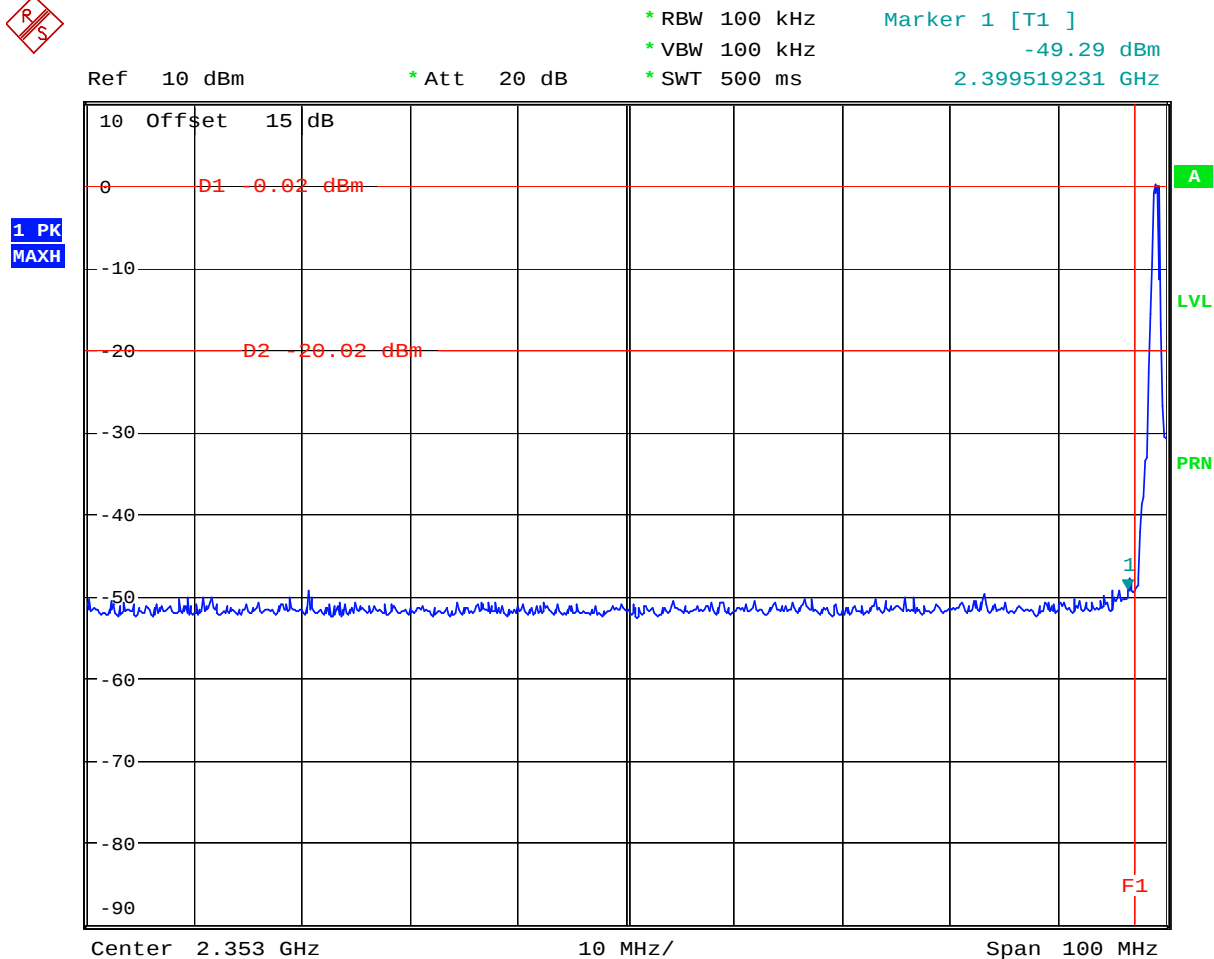


Date: 18.JAN.2006 14:13:49



Bluetooth:

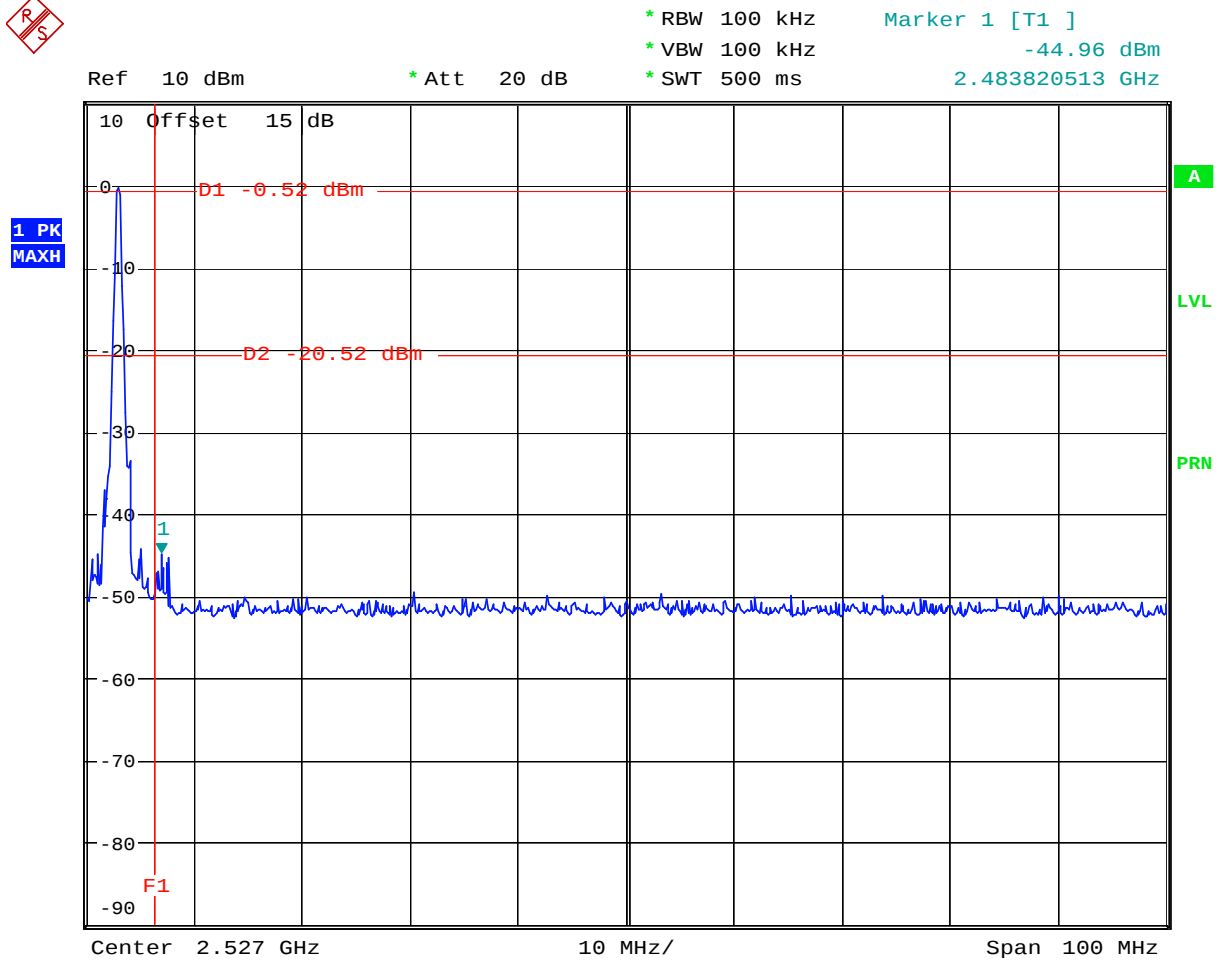
CH00



Date: 17.JAN.2006 13:43:24



CH78



Date: 17.JAN.2006 11:11:20

5.5 Hopping Channel Separation

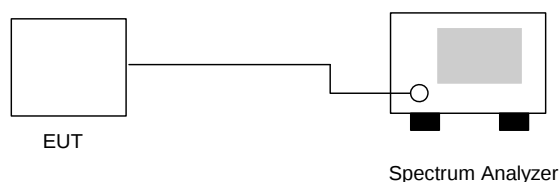
5.5.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.5.2 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 100kHz and VBW to 100kHz.
3. The Hopping Channel Separation is defined as the channel is separated with the next channel.

5.5.3 Test Setup Layout :



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

- Application Type : BT
- Temperature : 24°C
- Relative Humidity : 52%
- Test Enginner : Jay

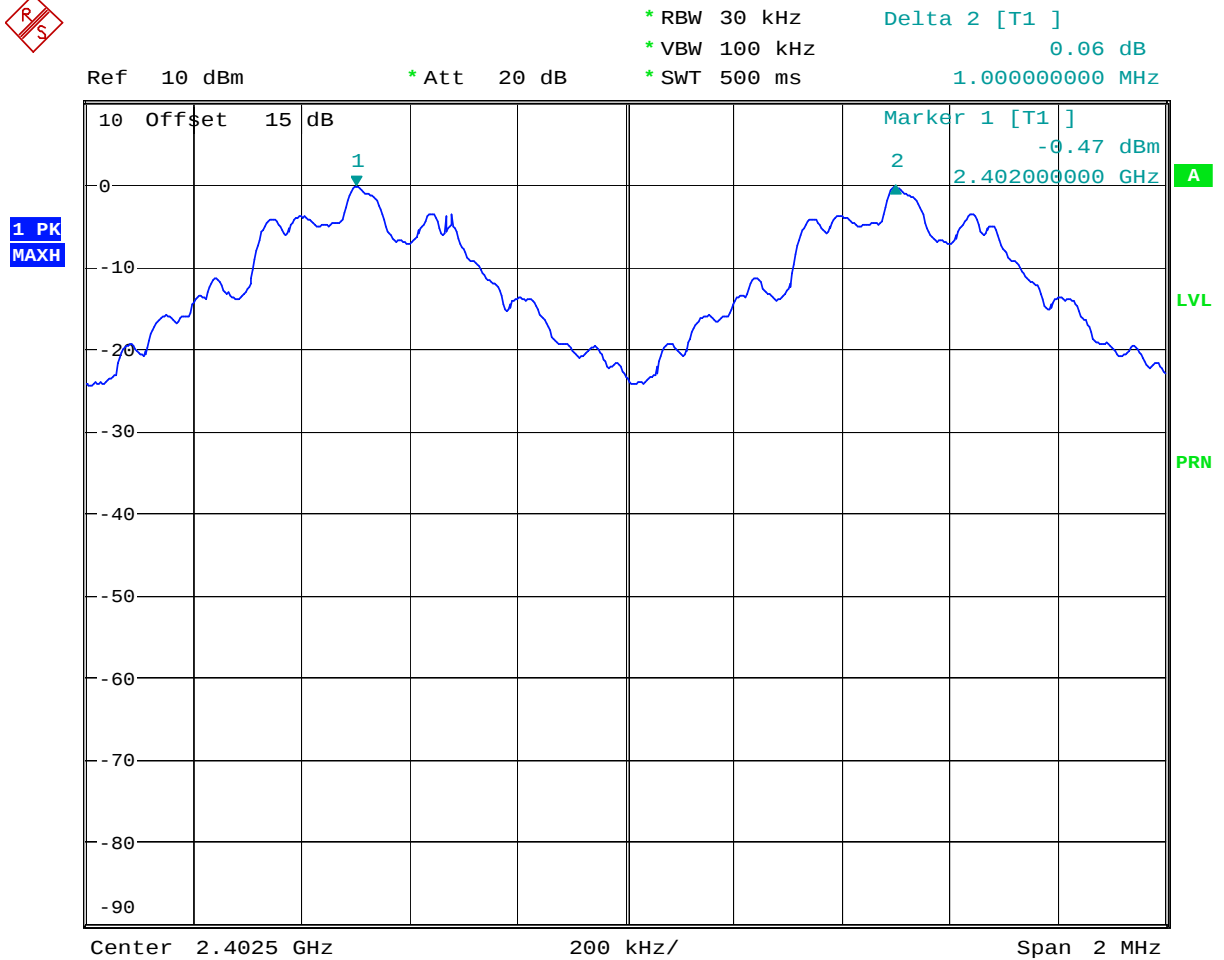
		Carrier Frequency		Limits	Plot
Channel	Frequency	Separation			
	(MHz)	(MHz)	(MHz)		Ref. No.
00	2402	1.000	0.881		Mode 1
39	2441	0.997	0.878		Mode 2
78	2480	1.000	0.883		Mode 3

Note: Limits =25kHz or the 20dB bandwidth of the hopping channel, which ever is greater



5.5.5 Hopping Channel Separation

Mode 1



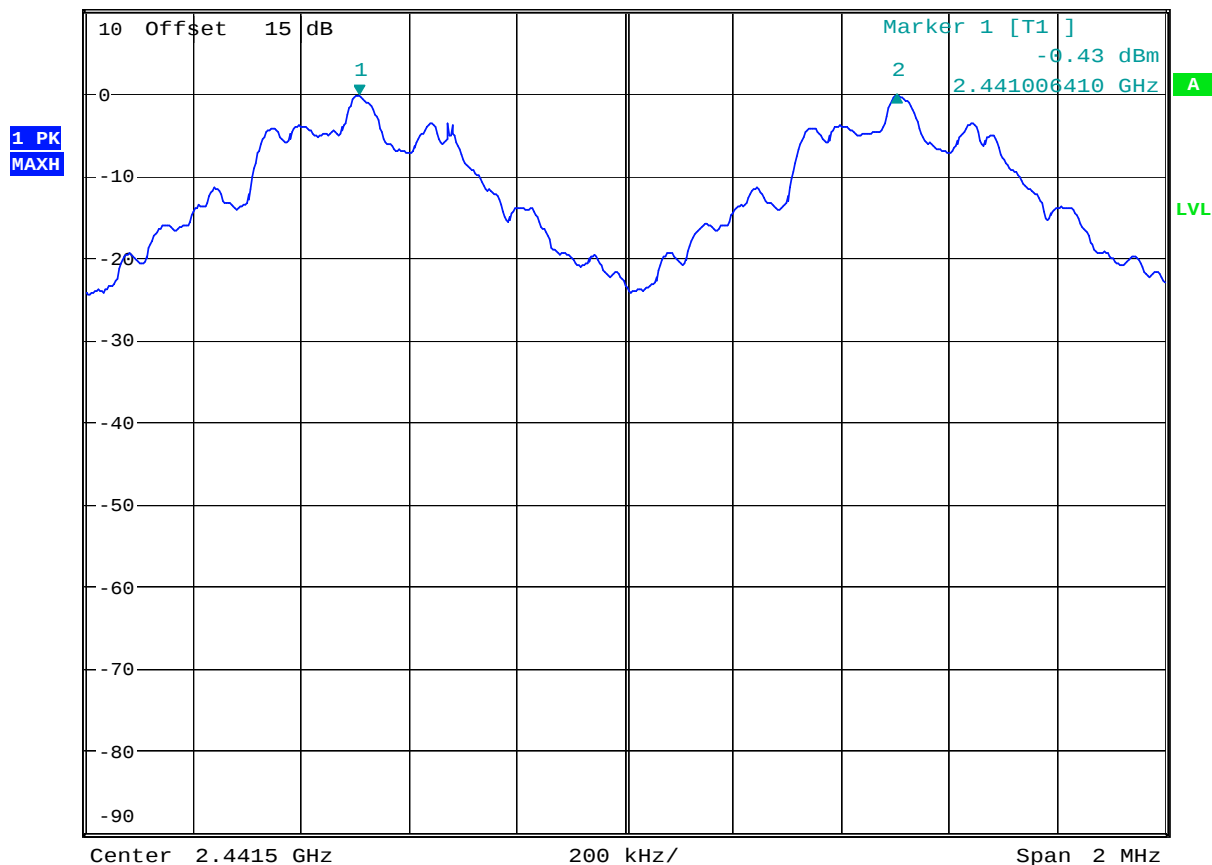
Date: 17.JAN.2006 11:06:27



Mode 2



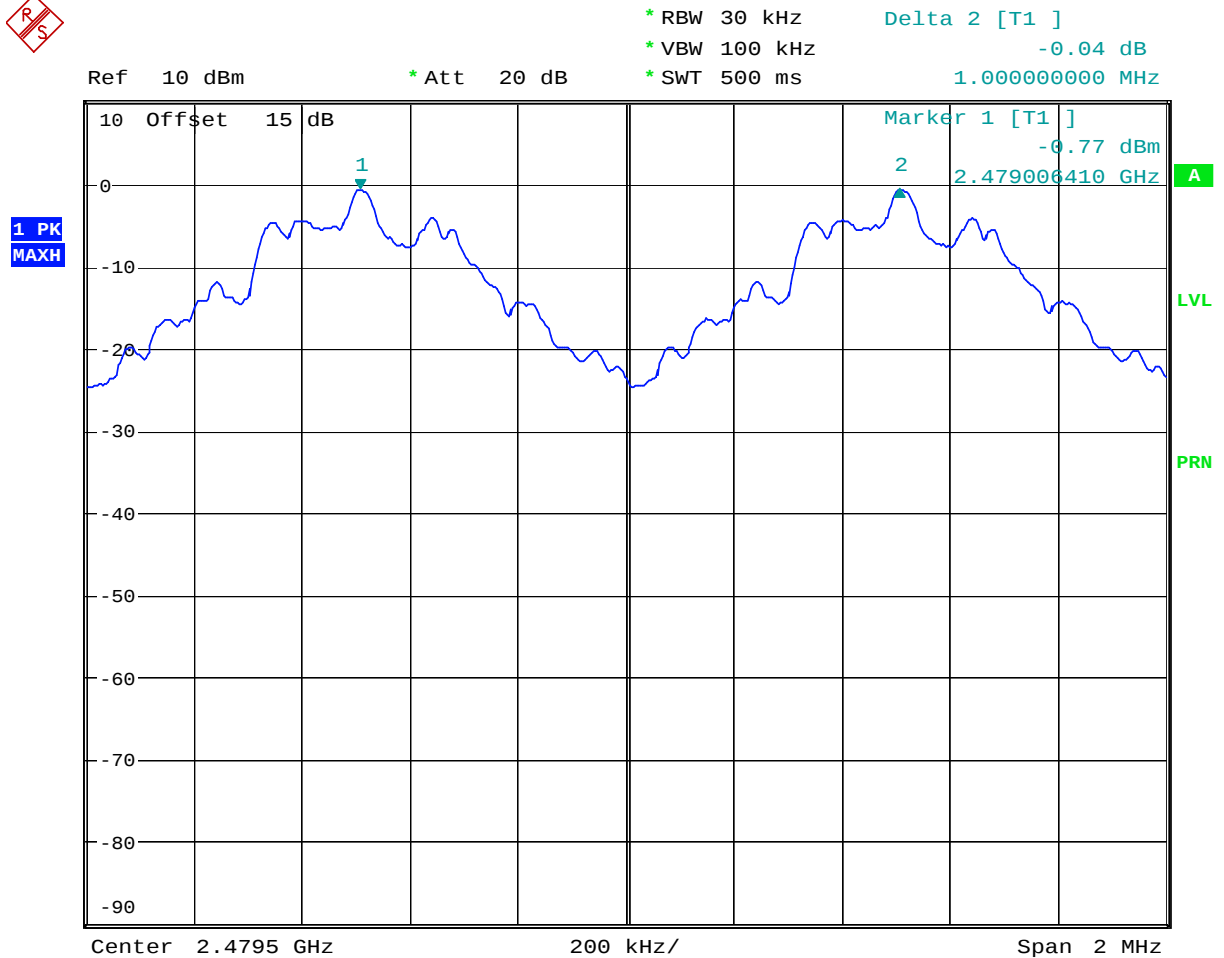
Ref 10 dBm * Att 20 dB * RBW 30 kHz Delta 2 [T1] 0.02 dB
* VBW 100 kHz * SWT 500 ms 996.794871795 kHz



Date: 17.JAN.2006 11:00:34



Mode 3



Date: 17.JAN.2006 10:58:45

5.6 Number of Hopping Frequency

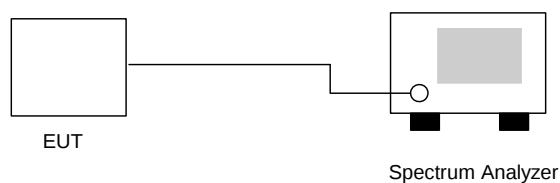
5.6.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.6.2 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 100kHz and VBW to 100kHz.
3. The number of hopping frequency used is defined as the device has the numbers of total channel.

5.6.3 Test Setup Layout :



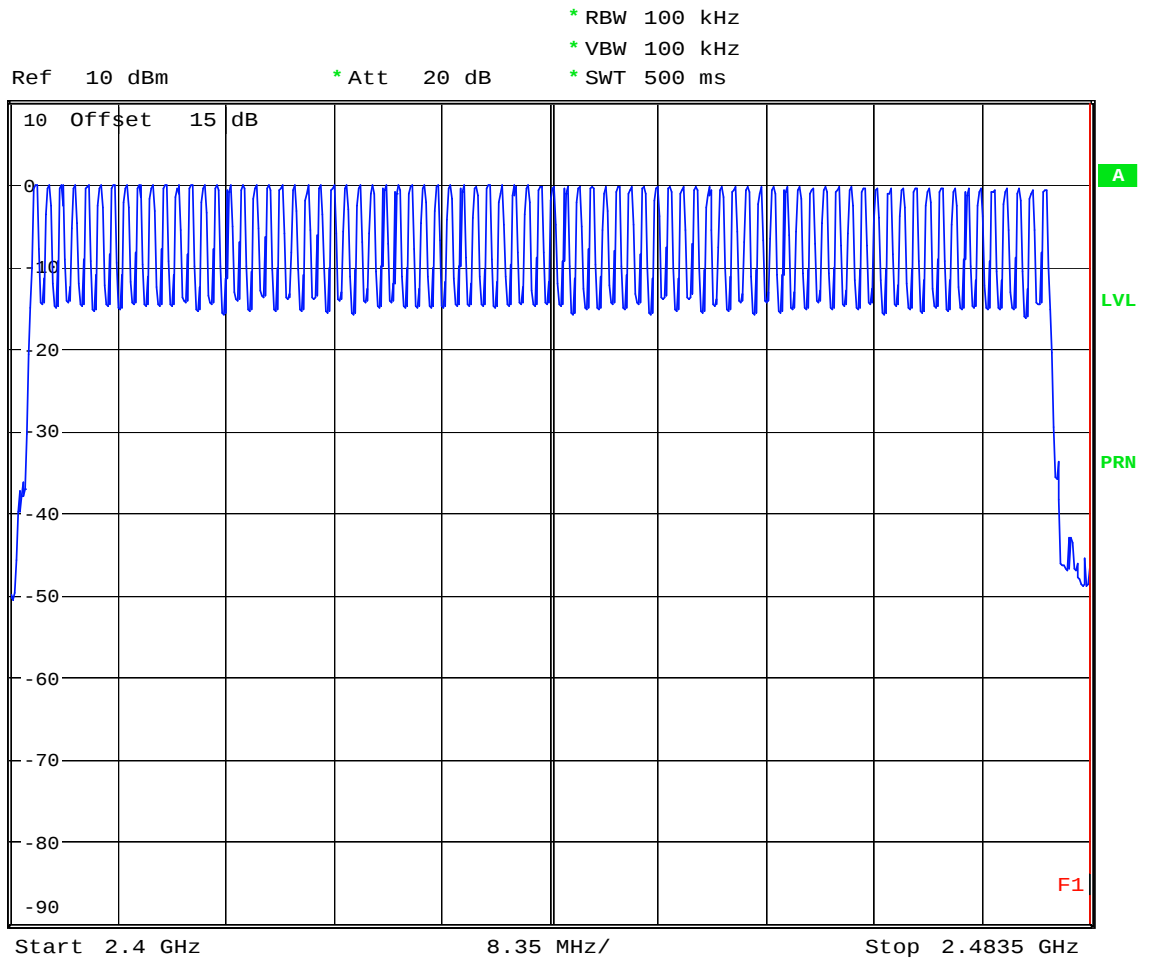
5.6.4 Test Result : See spectrum analyzer plots below

- Application Type : BT
- Temperature : 24°C,
- Relative Humidity : 52%
- Test Enginner : Jay

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



5.6.5 Number of Hopping Frequency



Date: 17.JAN.2006 12:36:04

5.7 Hopping Channel Bandwidth

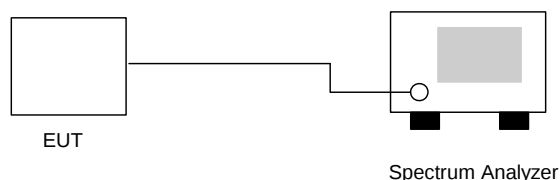
5.7.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.7.2 Test Procedure :

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

5.7.3 Test Setup Layout :



5.7.4 Test Result : See spectrum analyzer plots below

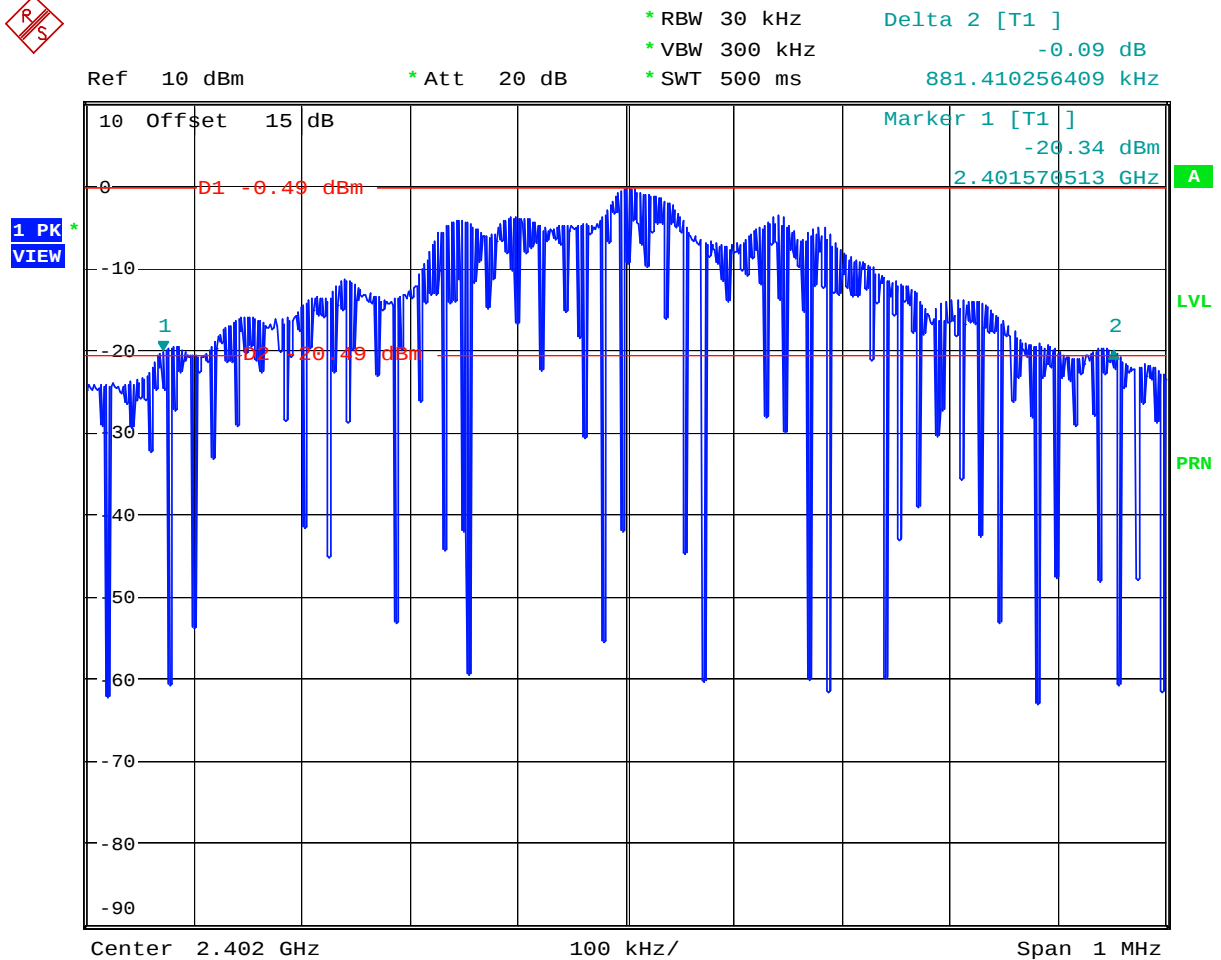
- Application Type : BT
- Temperature : 24°C,
- Relative Humidity : 52%
- Test Enginner : Jay

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	0.881	1.000	Mode 1
39	2441	0.878	1.000	Mode 2
78	2480	0.883	1.000	Mode 3



5.7.5 Hopping Channel Bandwidth

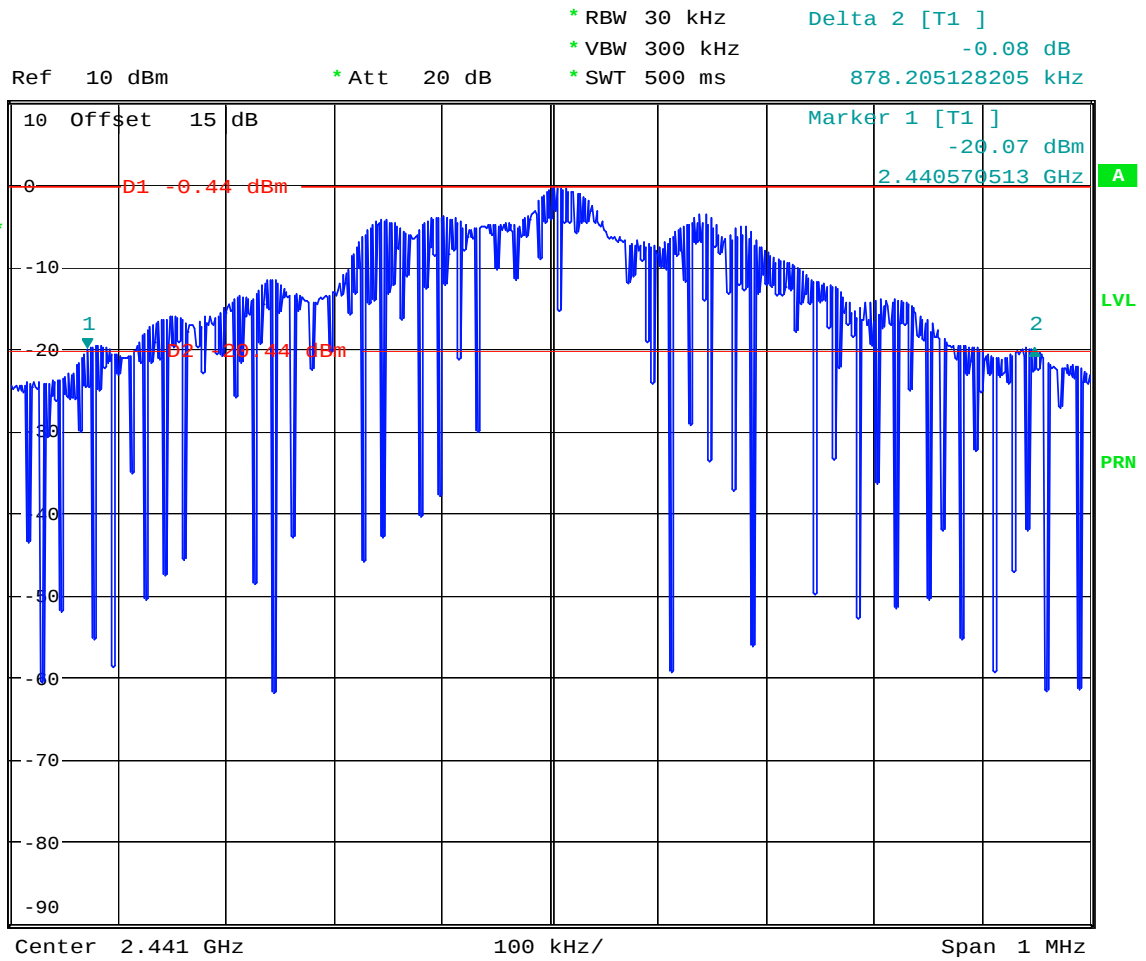
Mode 1



Date: 17.JAN.2006 10:50:59



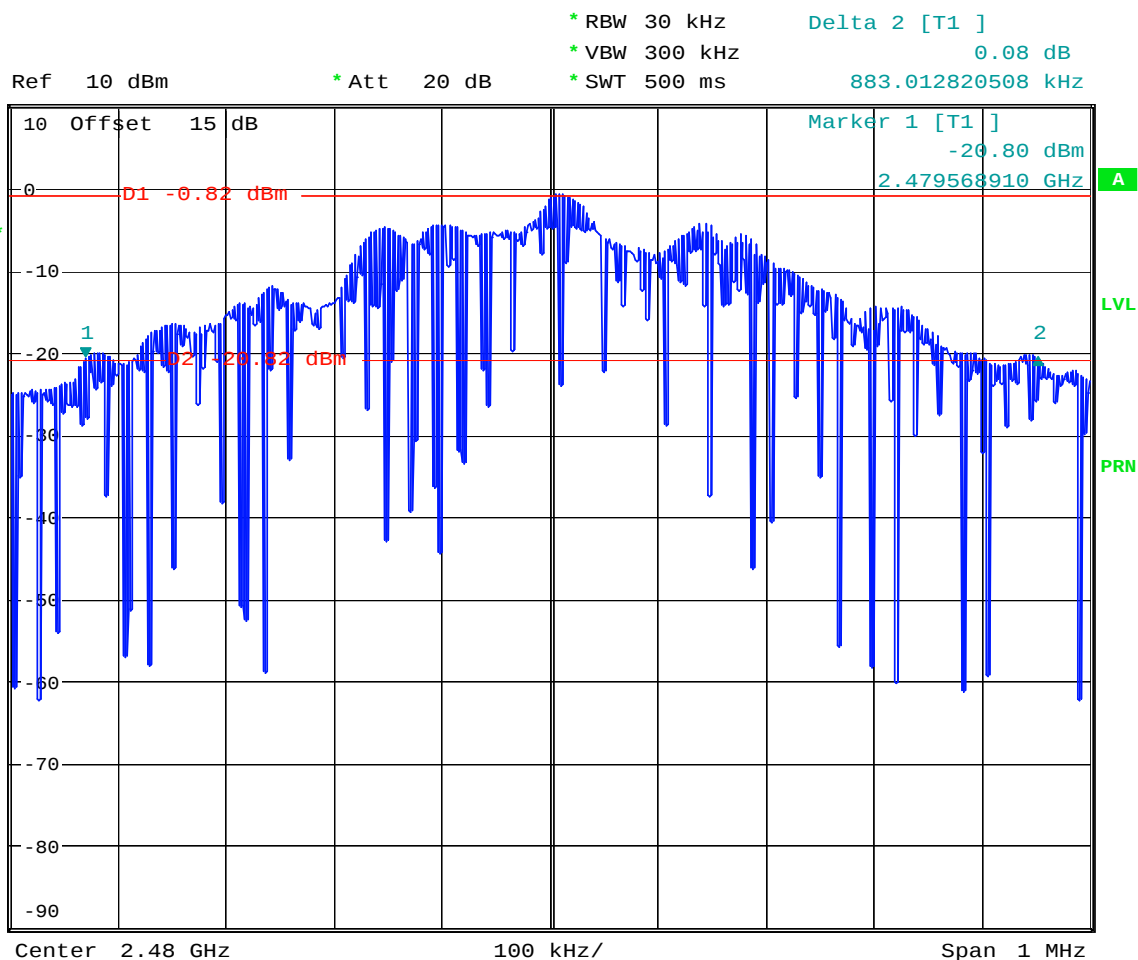
Mode 2



Date: 17.JAN.2006 10:49:00



Mode 3



Date: 17.JAN.2006 10:45:24

5.8 Dwell Time of Each Frequency within a 30 Seconds Period

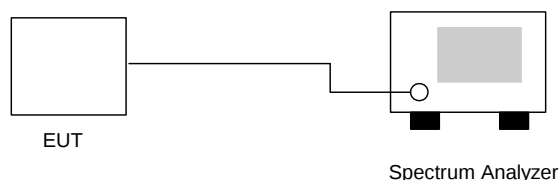
5.8.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.8.2 Test Procedure :

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

5.8.3 Test Setup Layout :



5.8.4 Test Result : See spectrum analyzer plots below

- Application Type : BT
- Temperature : 27°C,
- Relative Humidity : 58%
- Test Enginner : Jay

Ch00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10.1	455.12	0.145	0.4
DH3	5.6	1721.15	0.305	0.4
DH5	3.1	3003.2	0.294	0.4

**CH39**

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10.2	455.12	0.147	0.4
DH3	5.2	1729.16	0.284	0.4
DH5	2.7	2987.17	0.255	0.4

CH78

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10.1	451.92	0.144	0.4
DH3	5.5	1721.15	0.299	0.4
DH5	3.3	2971.15	0.310	0.4

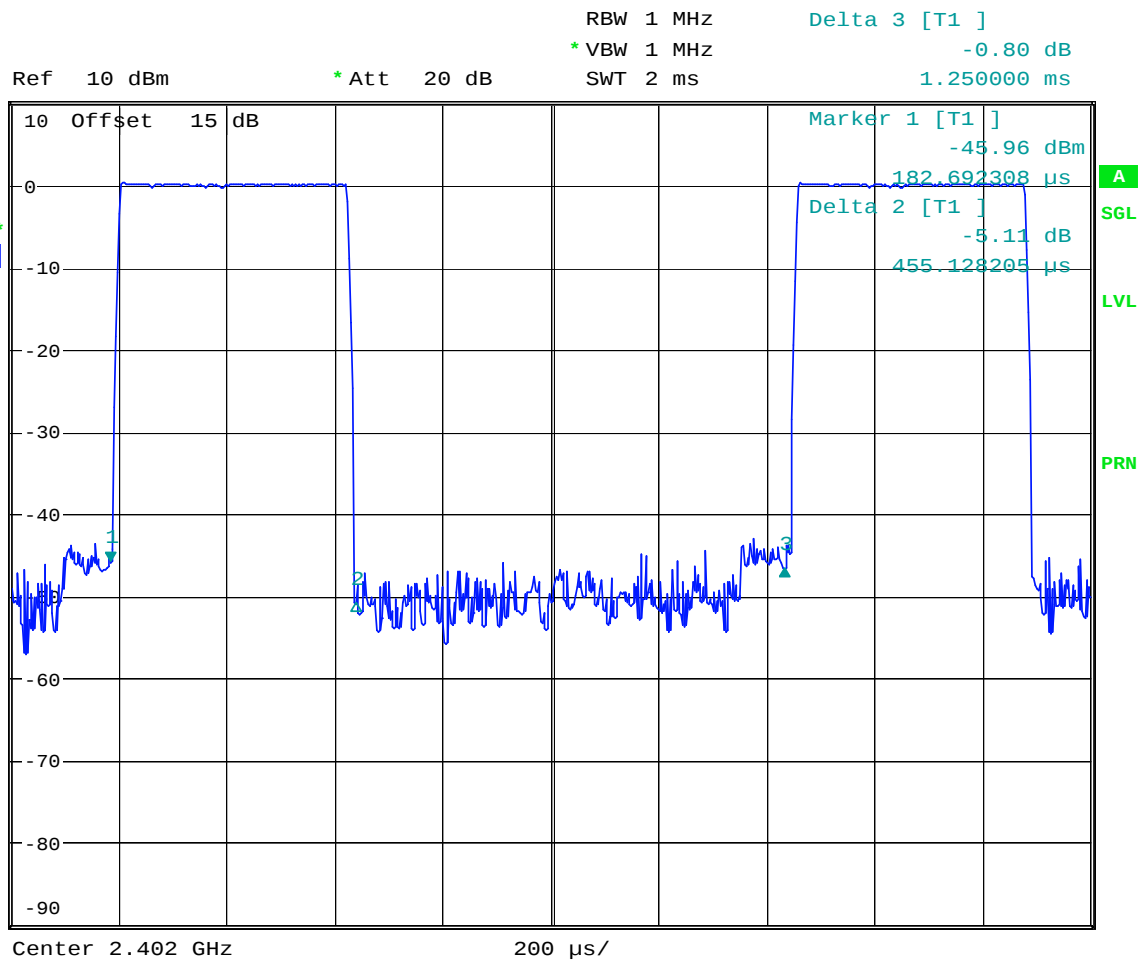
Remark:

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

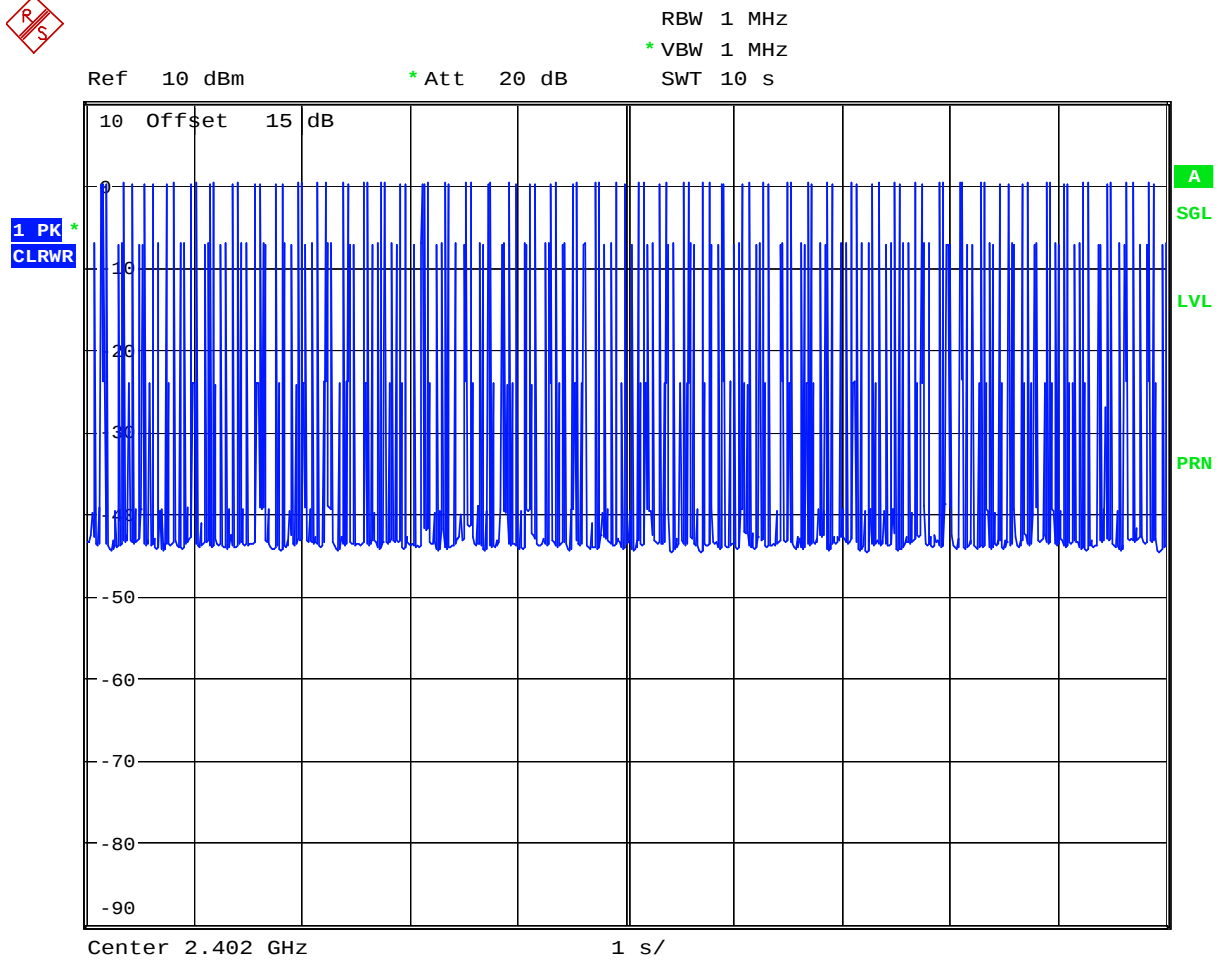


5.8.5 Dwell Time

DH1 (CH00)



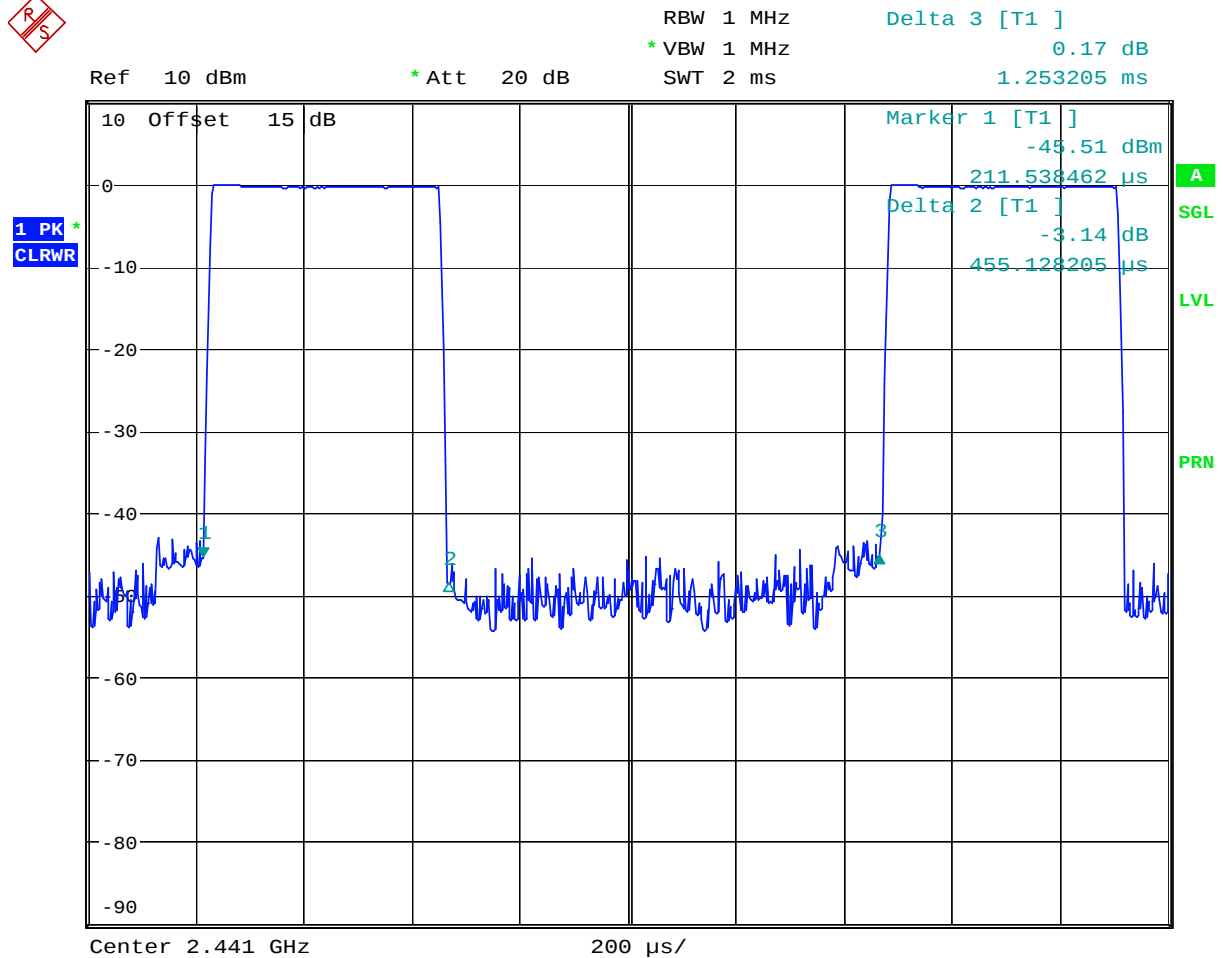
Date: 17.JAN.2006 11:20:17



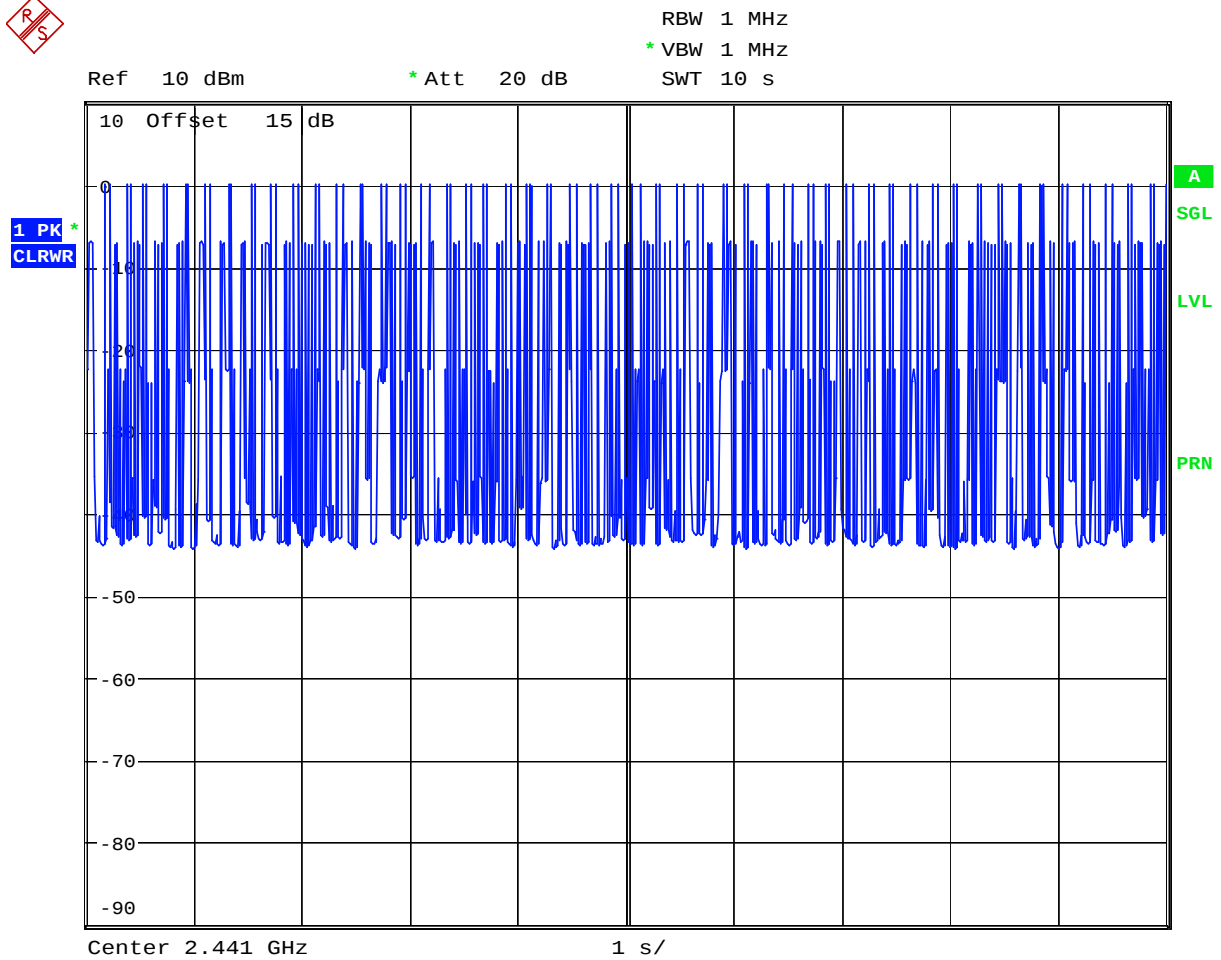
Date: 17.JAN.2006 11:34:51



DH1 (CH39)



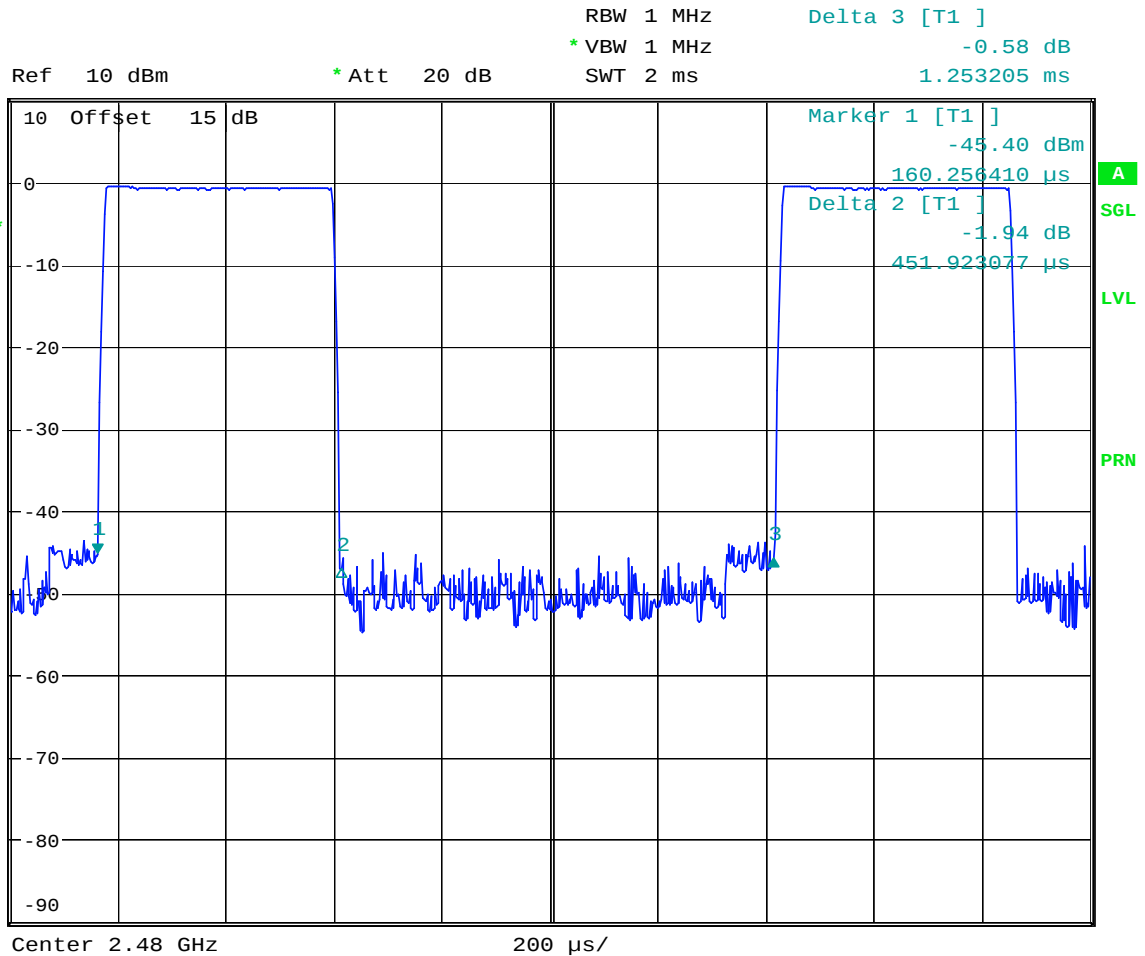
Date: 17.JAN.2006 11:19:00



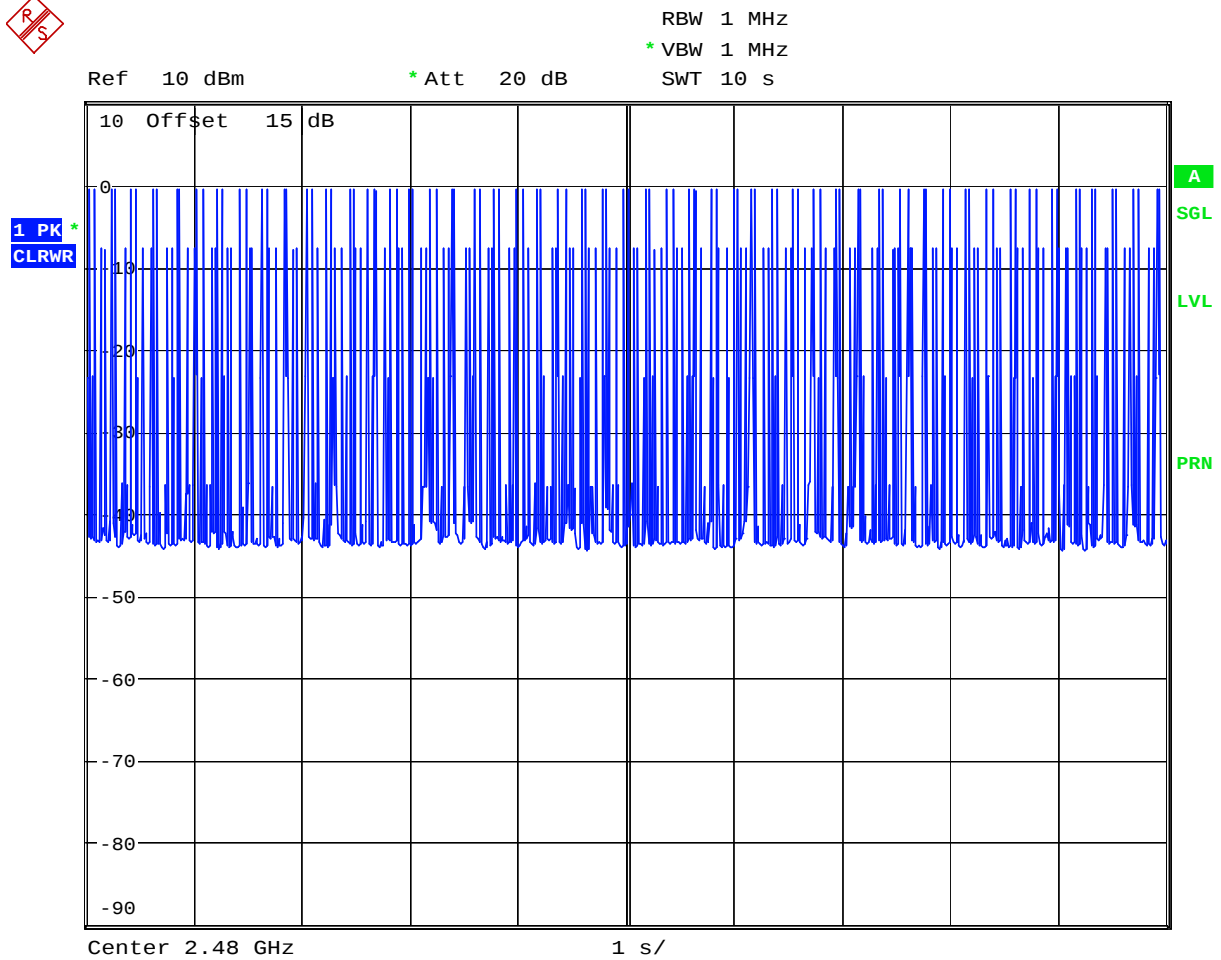
Date: 17.JAN.2006 11:35:23



DH1 (CH78)



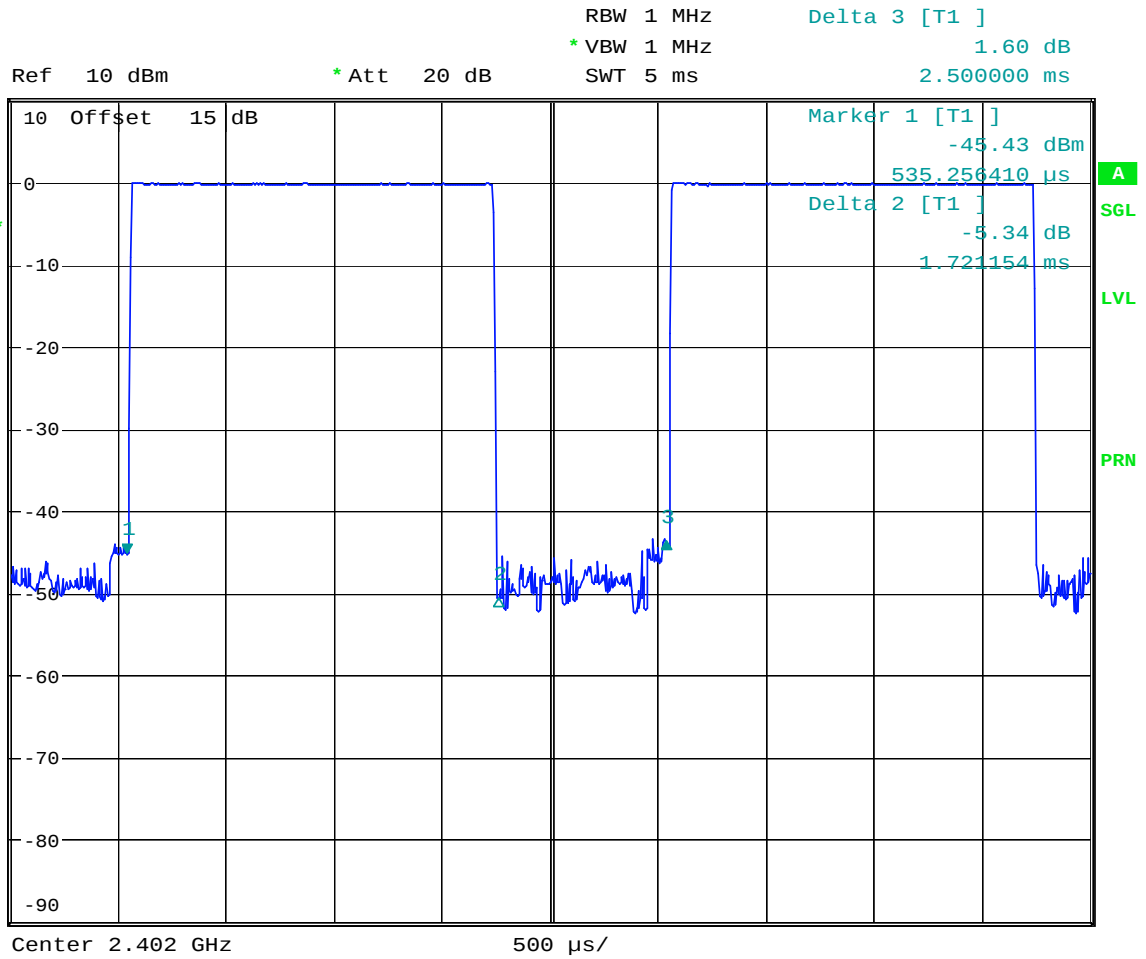
Date: 17.JAN.2006 11:17:23



Date: 17.JAN.2006 11:36:16



DH3 (CH00)

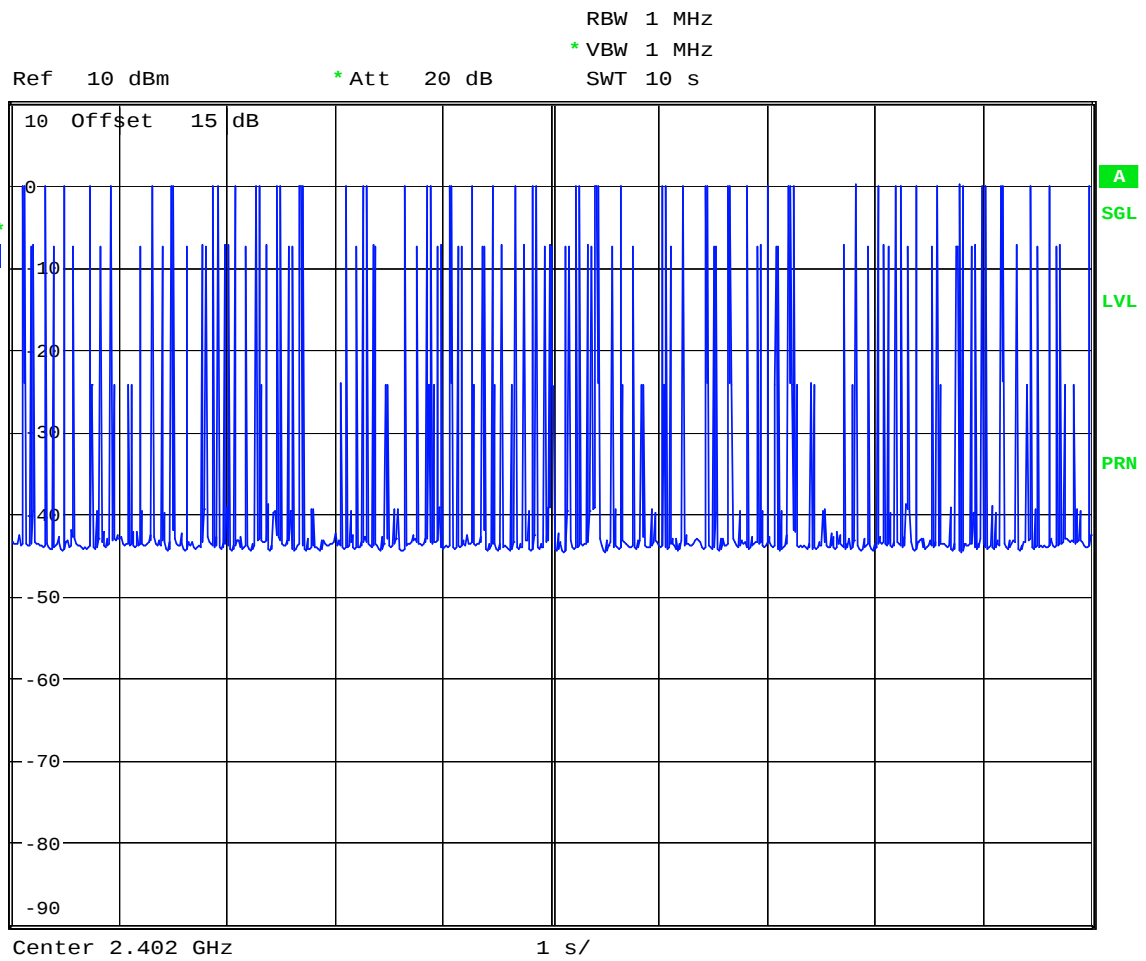


Date: 17.JAN.2006 11:21:31



FCC TEST REPORT

Report No. : FR610605



Date: 17.JAN.2006 12:39:58

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

FCC ID : ESN-SP70

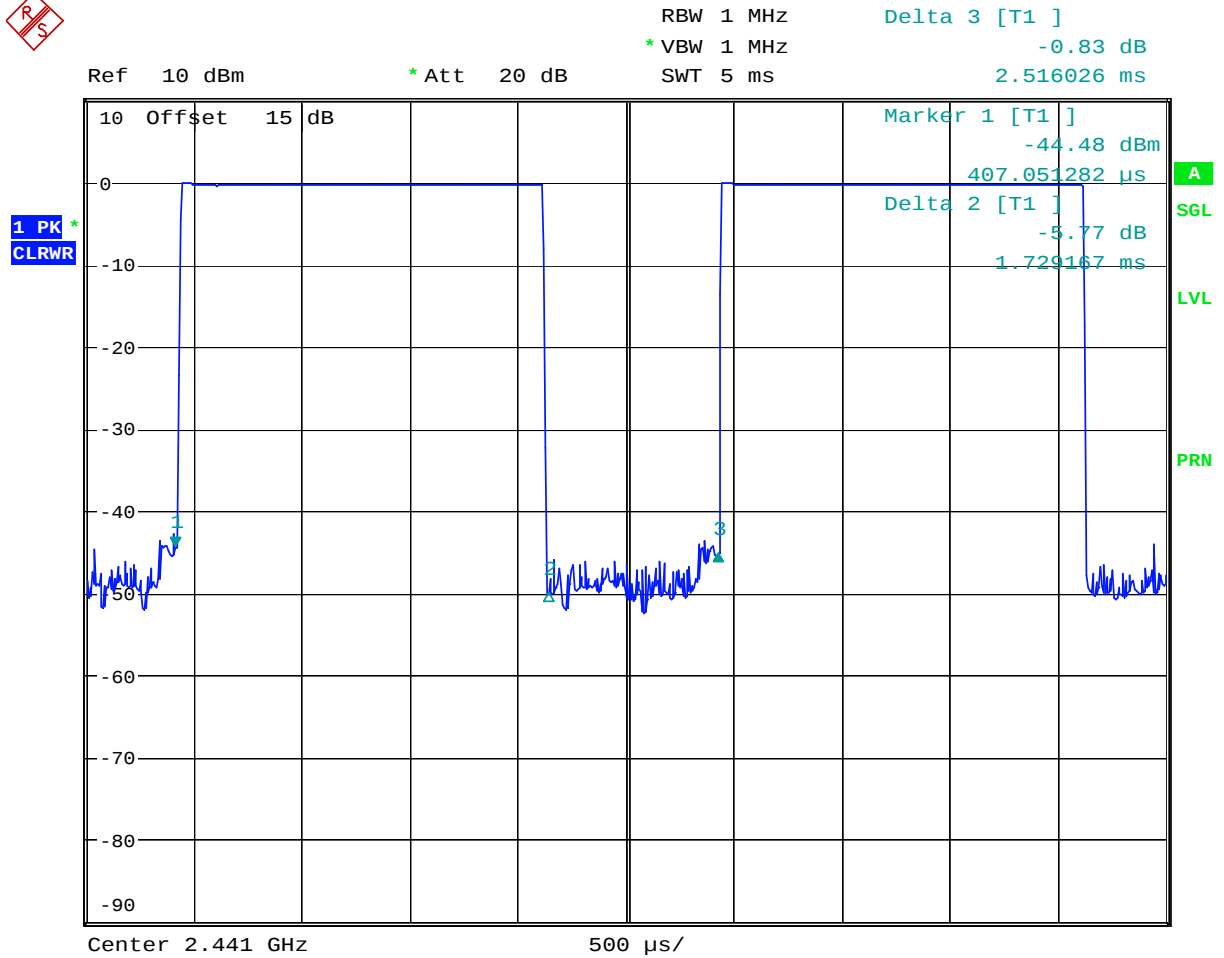
Page No. : 43 of 95

Report Issued Date : Jan. 19, 2006

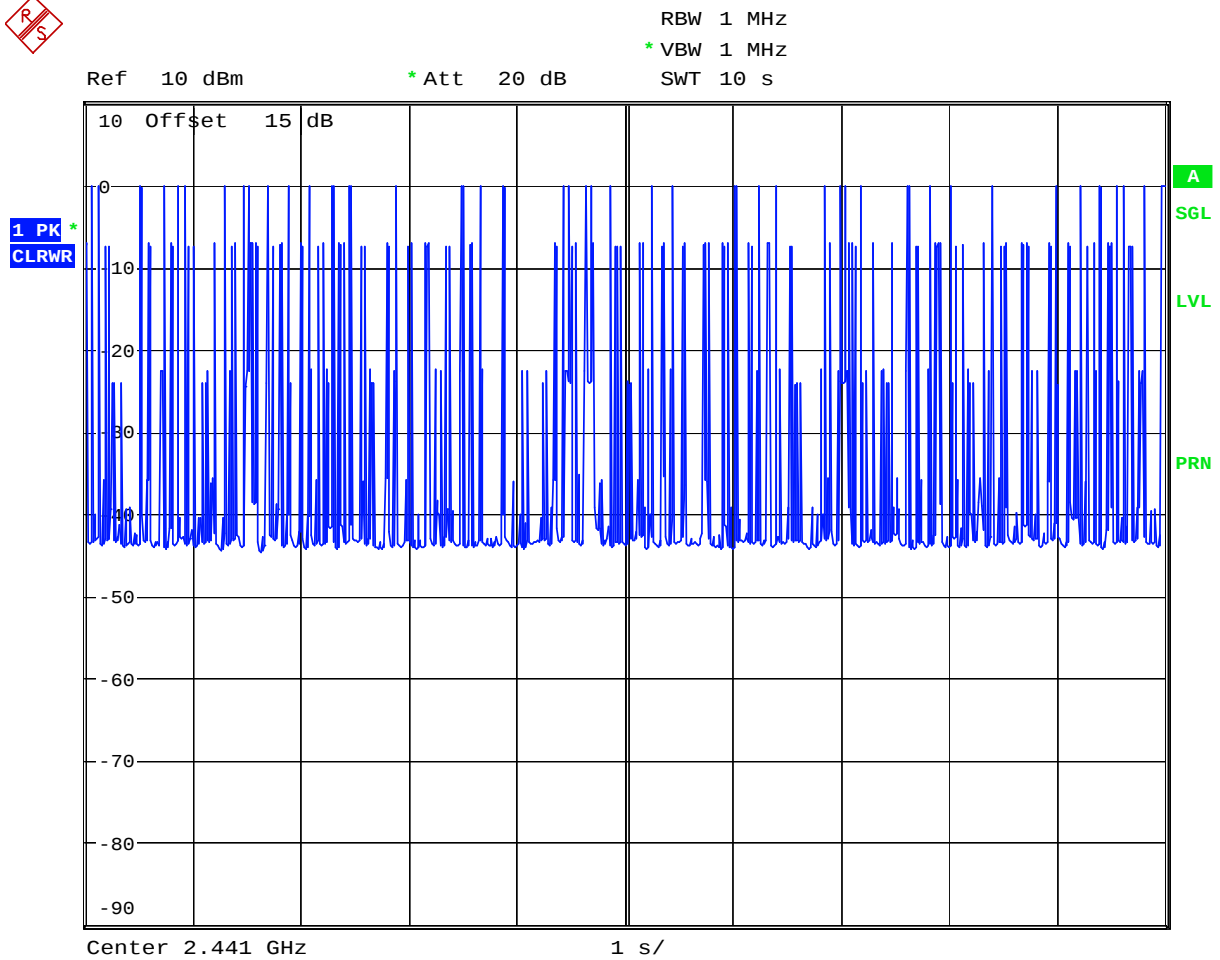
Report Version : Rev. 01



DH3 (CH39)



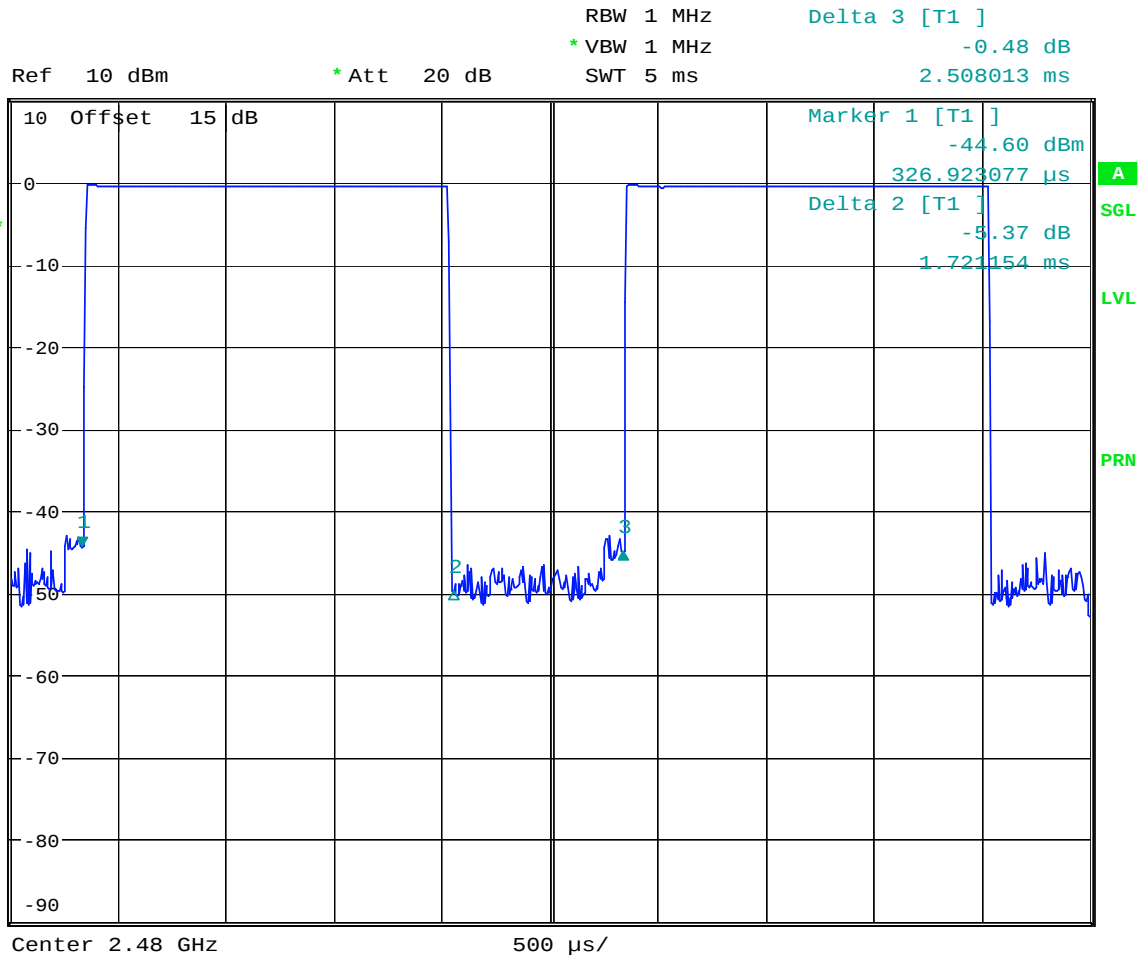
Date: 17.JAN.2006 11:22:10



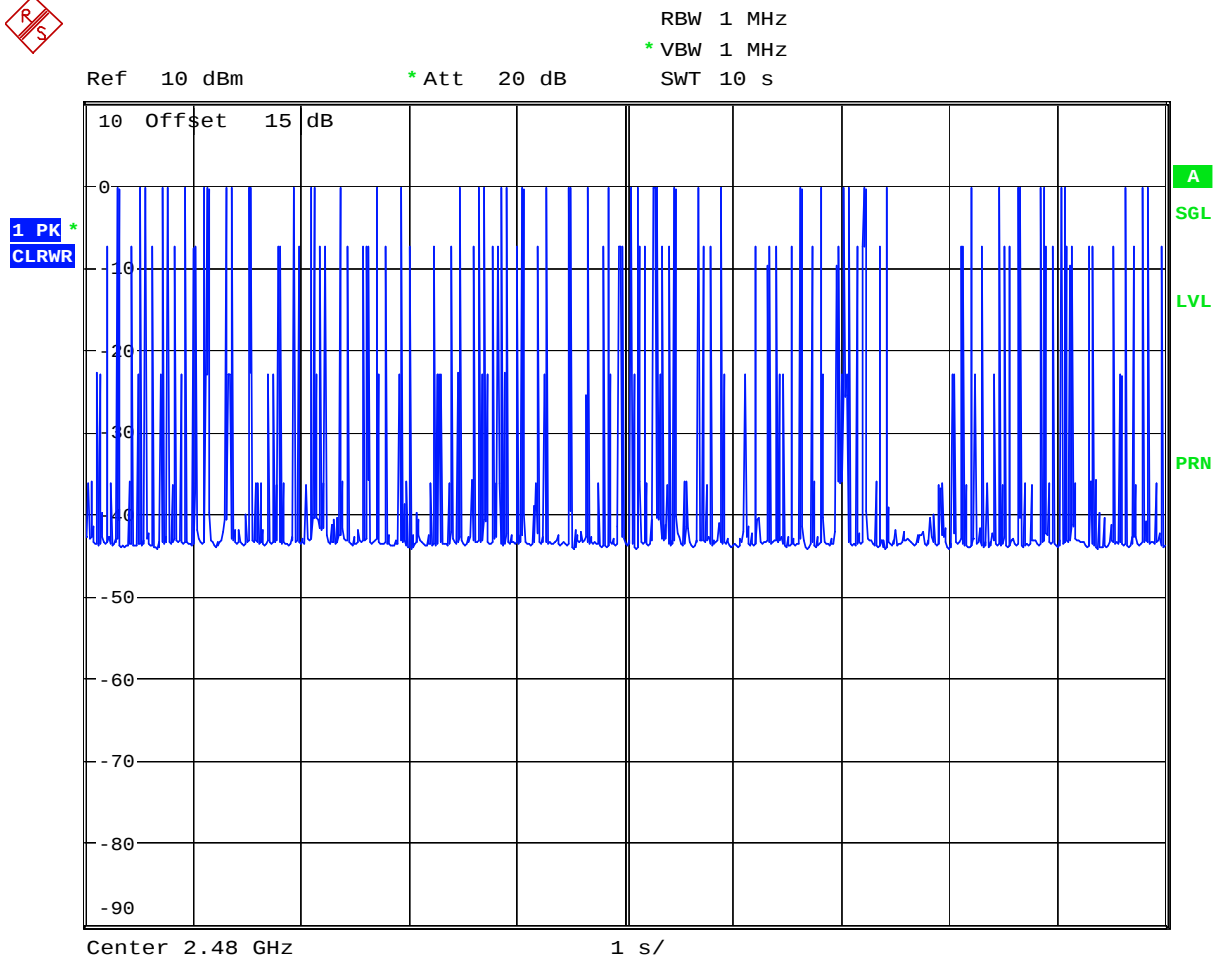
Date: 17.JAN.2006 12:40:34



DH3 (CH78)



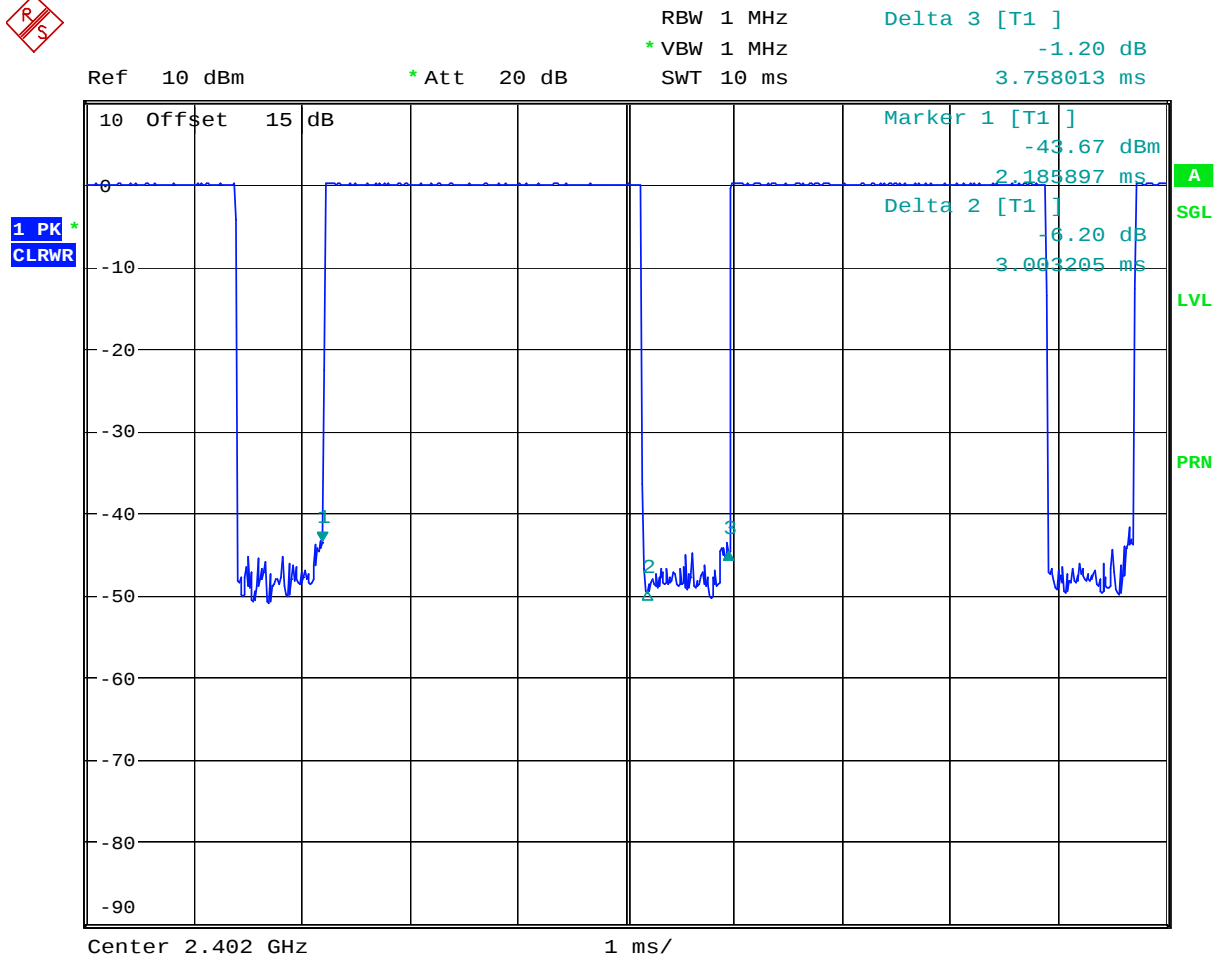
Date: 17.JAN.2006 11:23:35



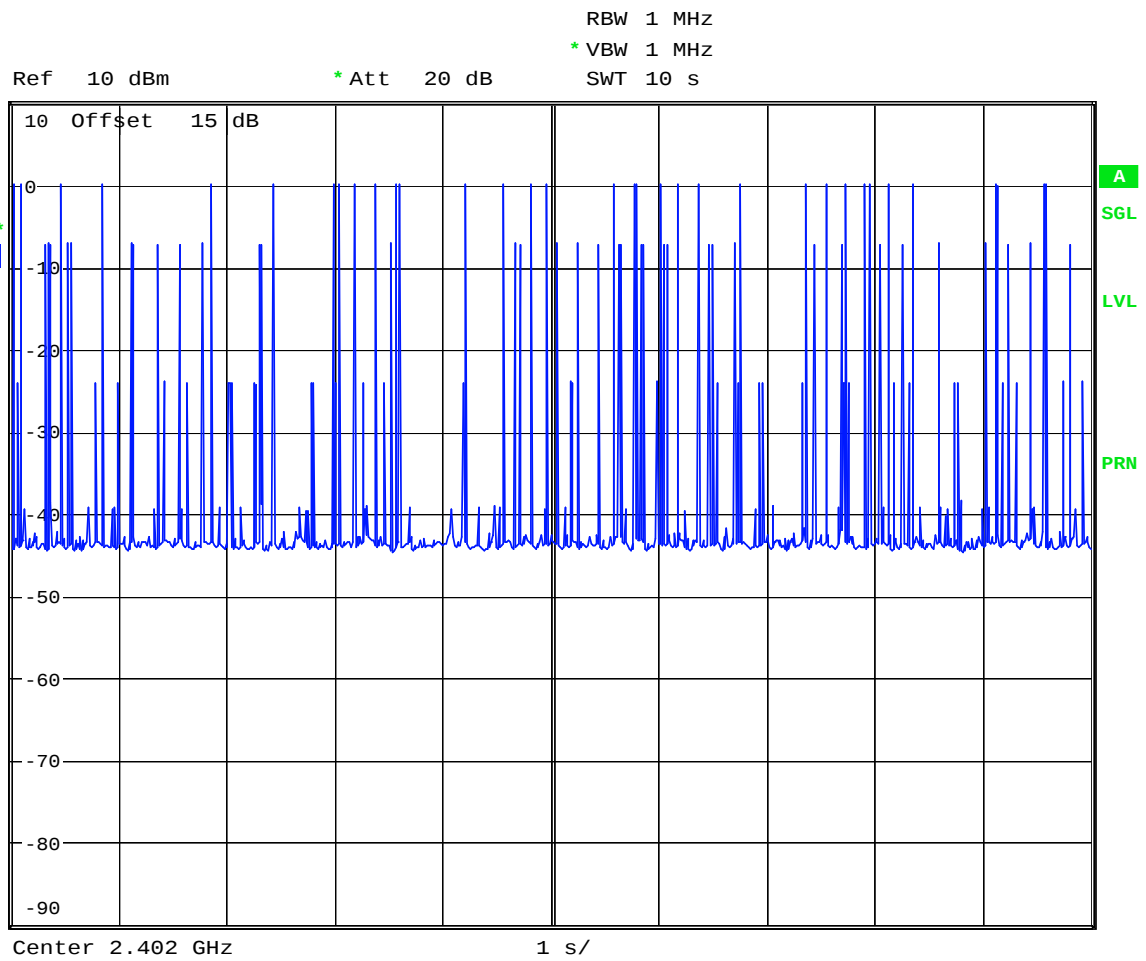
Date: 17.JAN.2006 11:33:14



DH5 (CH00)



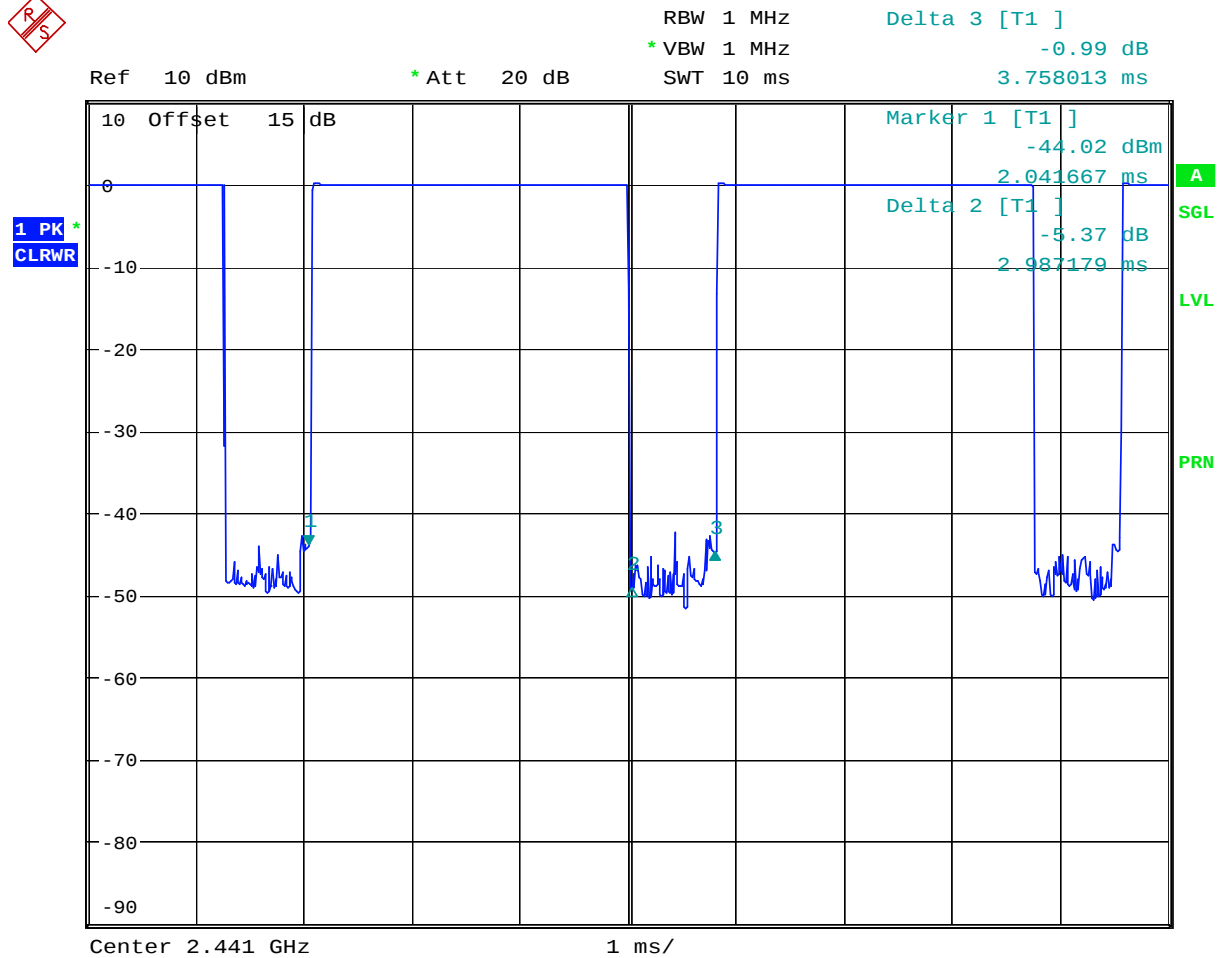
Date: 17.JAN.2006 11:26:13



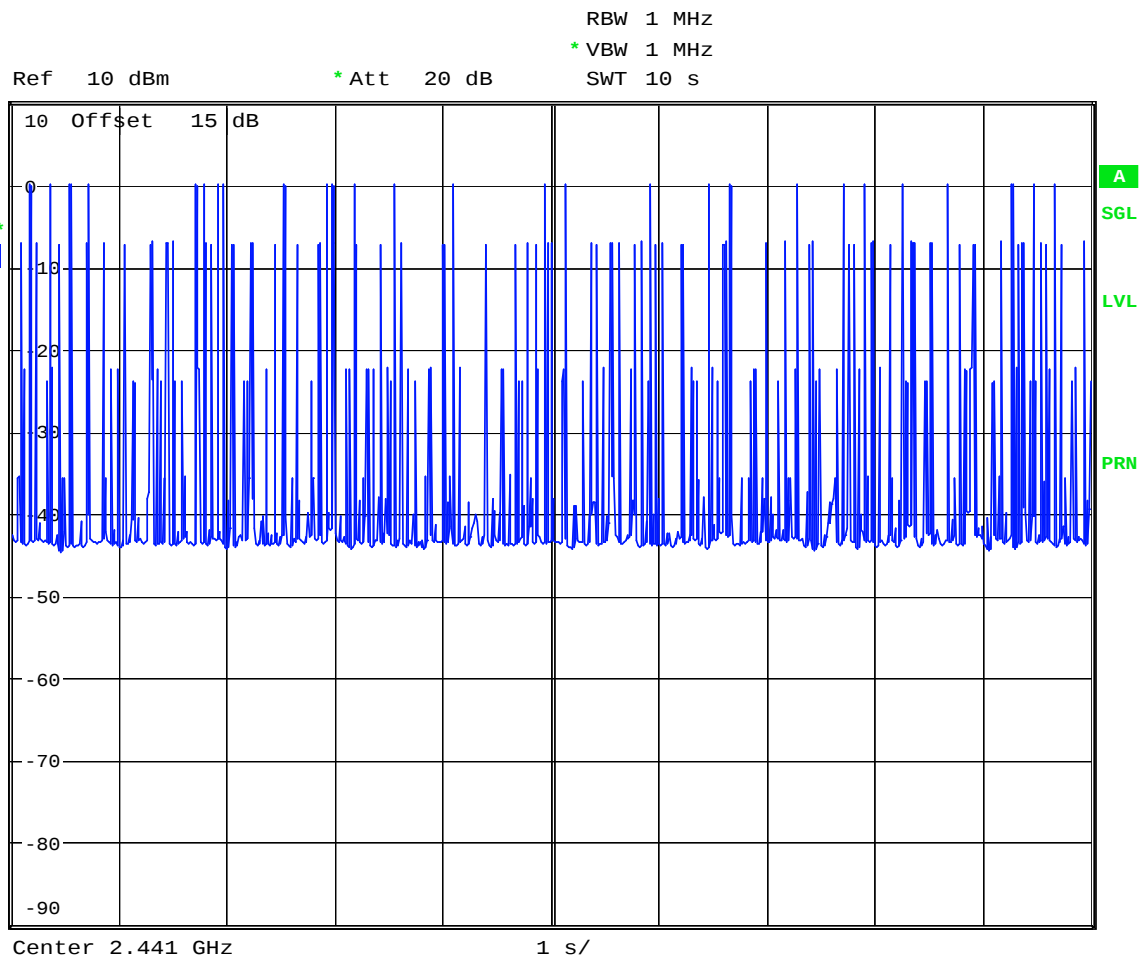
Date: 17.JAN.2006 11:31:24



DH5 (CH39)



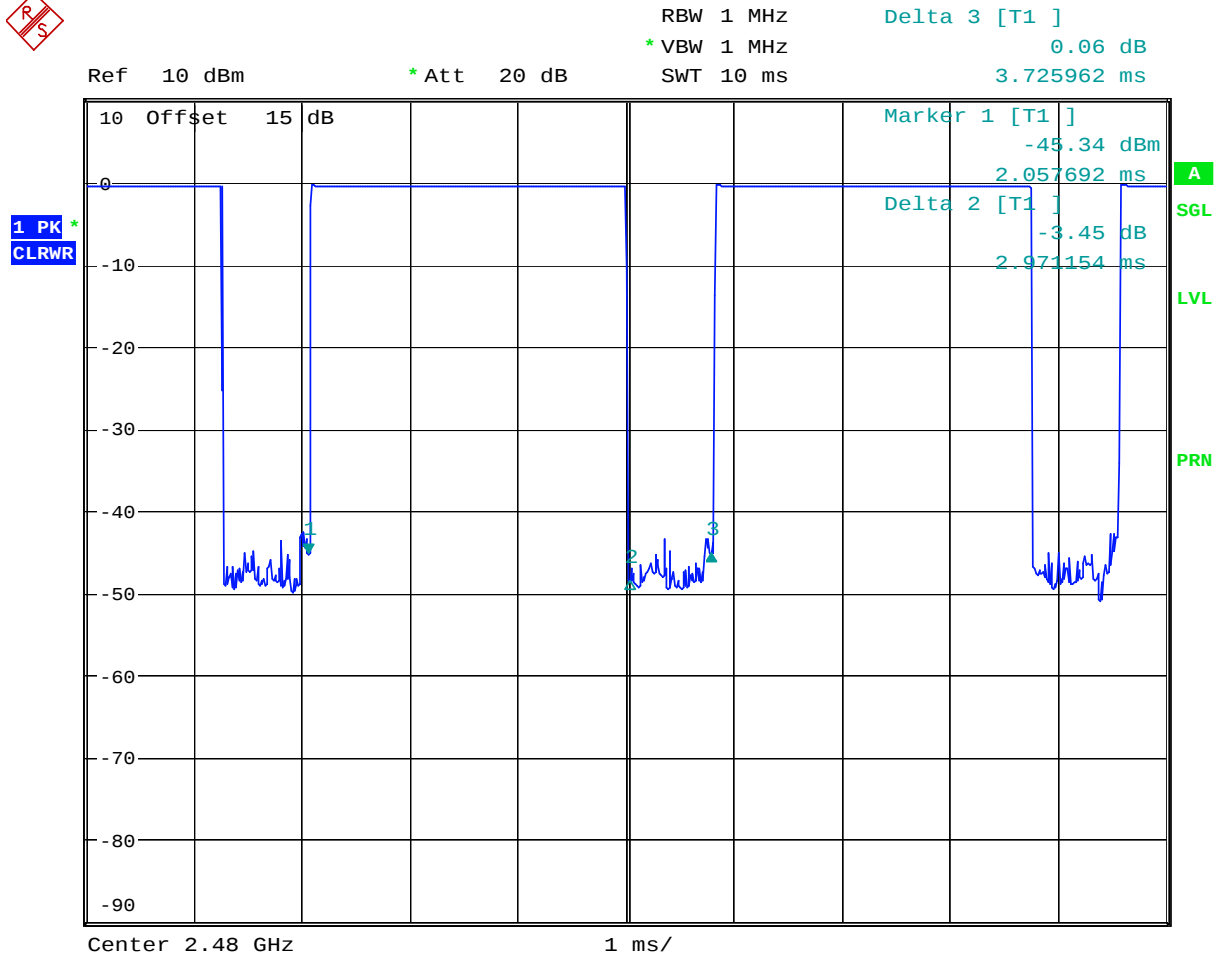
Date: 17.JAN.2006 11:25:34



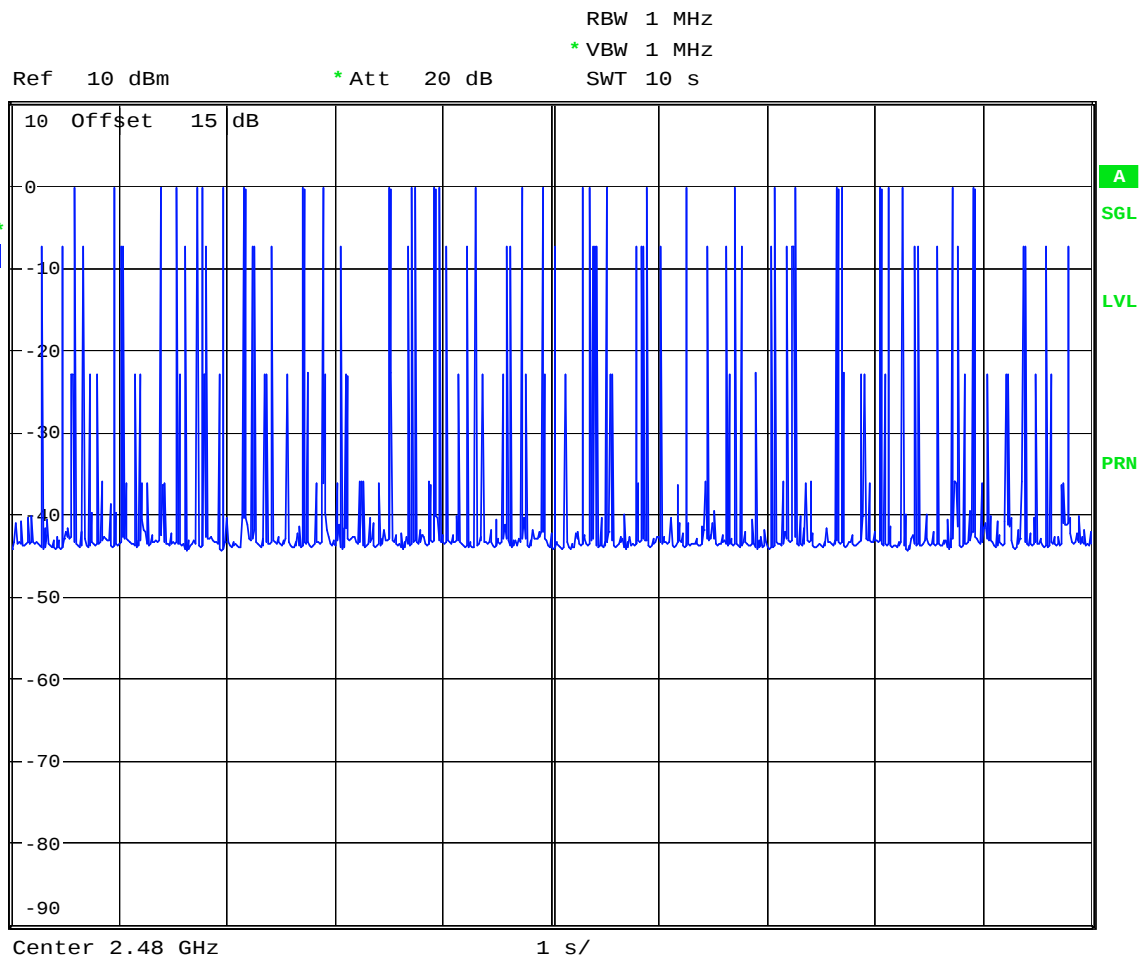
Date: 17.JAN.2006 11:32:01



DH5 (CH78)



Date: 17.JAN.2006 11:24:49



Date: 17.JAN.2006 11:32:42

5.9 Peak Output Power Measurement

5.9.1 Measuring Instruments :

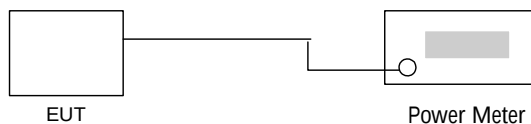
As described in chapter 6 of this test report.

5.9.2 Test Procedure :

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter.

The power is equal to the reading level on power meter plus cable loss at the EUT antenna terminal.

5.9.3 Test Setup Layout :



5.9.4 Test Result :

- Application Type : WLAN 802.11b and BT
- Temperature : 24°C
- Relative Humidity : 52 %
- Test Enginner : Jay

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	18.69	1W/30 dBm
06	2437	18.27	1W/30 dBm
11	2462	18.10	1W/30 dBm

BT

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	0.13	1W/30 dBm
39	2441	0.02	1W/30 dBm
78	2480	-0.42	1W/30 dBm



5.10 Conducted Emission

5.10.1 Measuring Instruments

As described in chapter 6 of this test Report.

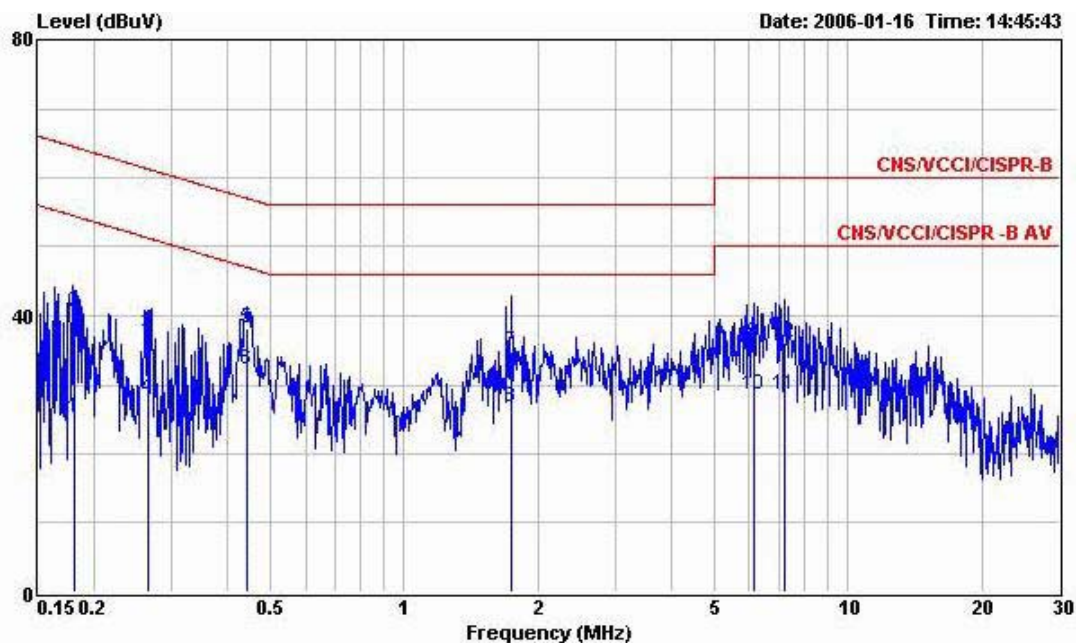
5.10.2 Test Procedures :

- 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.

5.10.3 Test Data

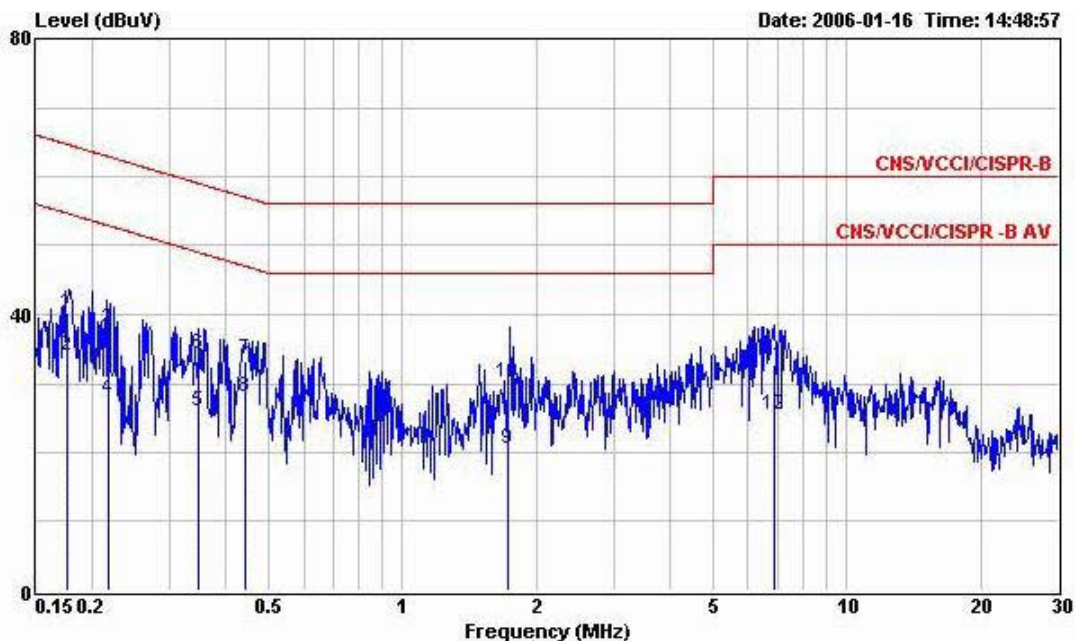
- Temperature : 24 °C
- Relating Humidity : 52 %
- Test Enginner : Jay
- Test Mode : Mode 1

■ 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 200505 LINE
EUT : (900/1800/1900)手機
Power : 120V/60Hz
Model : FD610605
Memo : PCS1900Idle+MPEG 4+Camera+Charger+
Memo : BT Link+WLAN Link+USB Link
Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.180	25.31	-29.18	54.49	25.14	0.06	0.11	Average
2	0.180	40.50	-23.99	64.49	40.33	0.06	0.11	QP
3	0.265	37.32	-23.95	61.27	37.17	0.06	0.09	QP
4	0.265	28.10	-23.17	51.27	27.95	0.06	0.09	Average
5	0.444	38.09	-18.90	56.99	37.96	0.07	0.06	QP
6	0.444	32.31	-14.68	46.99	32.18	0.07	0.06	Average
7	1.740	34.86	-21.14	56.00	34.65	0.11	0.10	QP
8	1.740	26.66	-19.34	46.00	26.45	0.11	0.10	Average
9	6.120	36.23	-23.77	60.00	35.82	0.21	0.20	QP
10	6.120	28.61	-21.39	50.00	28.20	0.21	0.20	Average
11	7.217	28.48	-21.52	50.00	28.06	0.21	0.21	Average
12	7.217	36.07	-23.93	60.00	35.65	0.21	0.21	QP



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200505 NEUTRAL
EUT : (900/1800/1900)手機
Power : 120V/60Hz
Model : FD610605
Memo : PCS1900Idle+MPEG 4+Camera+Charger+
Memo : BT Link+WLAN Link+USB Link
Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.176	40.18	-24.52	64.70	39.96	0.11	0.11	QP
2	0.176	34.03	-20.67	54.70	33.81	0.11	0.11	Average
3	0.218	37.81	-25.07	62.88	37.60	0.11	0.10	QP
4	0.218	27.91	-24.97	52.88	27.70	0.11	0.10	Average
5	0.348	25.87	-23.14	49.01	25.69	0.11	0.07	Average
6	0.348	34.18	-24.83	59.01	34.00	0.11	0.07	QP
7	0.442	33.53	-23.49	57.02	33.35	0.12	0.06	QP
8	0.442	28.03	-18.99	47.02	27.85	0.12	0.06	Average
9	1.731	20.42	-25.58	46.00	20.09	0.23	0.10	Average
10	1.731	30.15	-25.85	56.00	29.82	0.23	0.10	QP
11	6.880	32.62	-27.38	60.00	32.12	0.29	0.21	QP
12	6.880	25.49	-24.51	50.00	24.99	0.29	0.21	Average



5.11 Radiated Emission Measurement

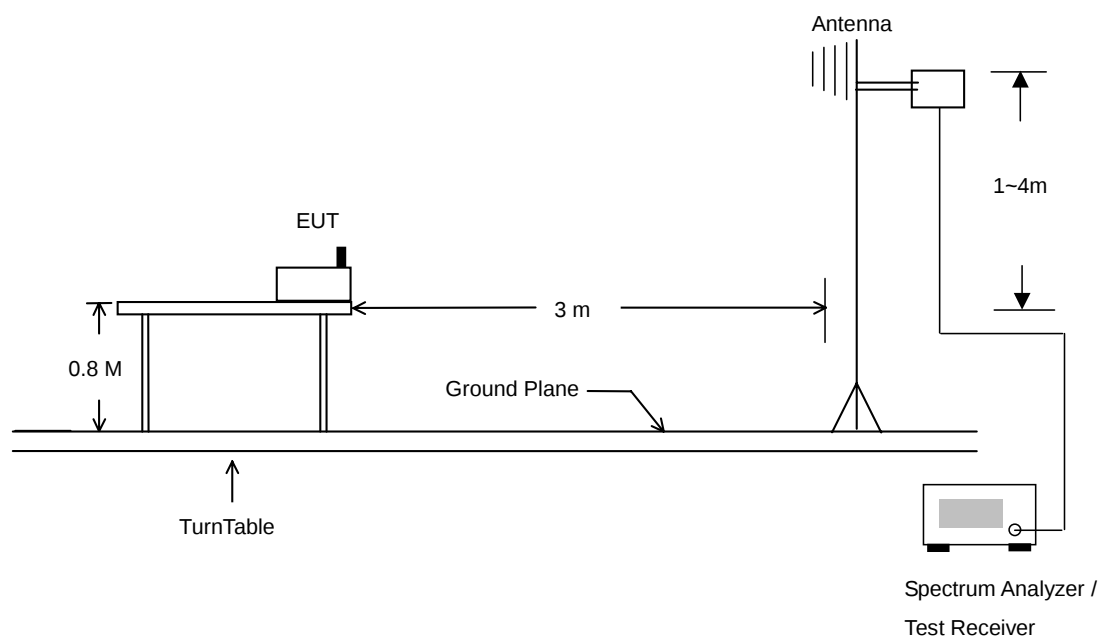
5.11.1 Measuring Instruments

As described in chapter 6 of this Report.

5.11.2 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.

5.11.3 Typical Test Setup Layout of Radiated Emission

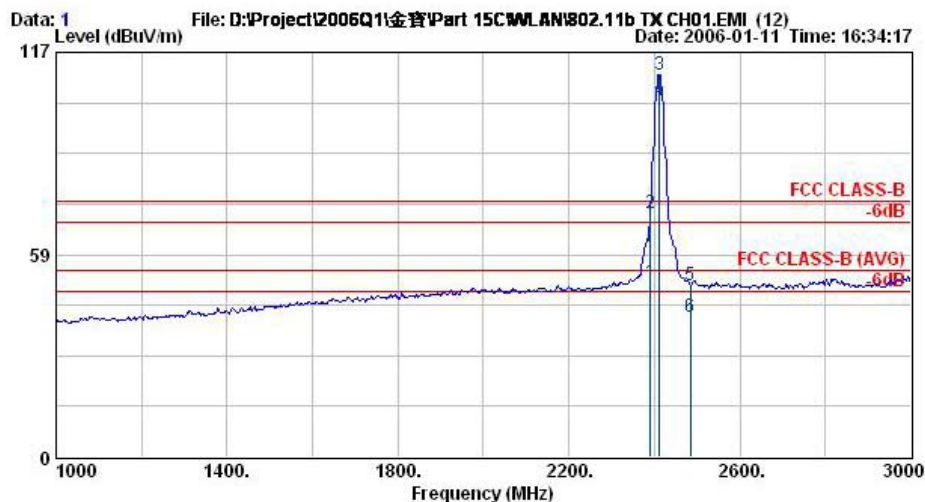




5.11.4 Test Data

- Temperature : 24°C
- Relative Humidity : 52%
- Test Engineer : Jay
- Test Mode : Mode 1
- Polarization : Horizontal

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



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : (900/1800/1900)手機
 Power : 120Vac/60Hz
 Model : FR610605
 Memo : 11b_TX_CH01.2412MHz
 Plane : E2

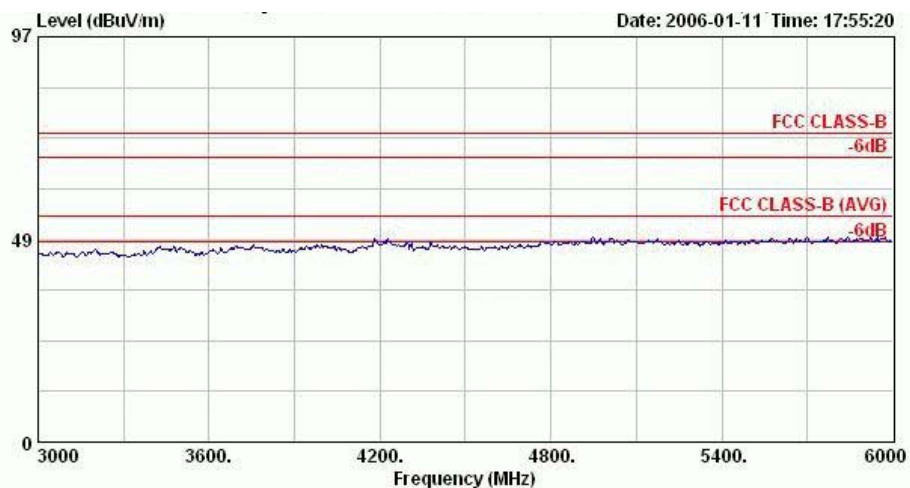
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					Factor					
					dB			cm	deg	
1 @	2390.00	50.40	-3.60	54.00	51.11	30.48	4.26	35.46	100	341 Average
2 @	2390.00	70.27	-3.73	74.00	70.98	30.48	4.26	35.46	200	0 Peak
3 @	2412.00	110.64			111.36	30.47	4.26	35.46	200	0 Peak
4 @	2412.00	103.18			103.90	30.47	4.26	35.46	100	341 Average
5 @	2483.50	49.47	-24.53	74.00	50.21	30.41	4.36	35.51	200	0 Peak
6 @	2483.50	40.33	-13.67	54.00	41.07	30.41	4.36	35.51	100	341 Average

Remark: #3 and #4 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605

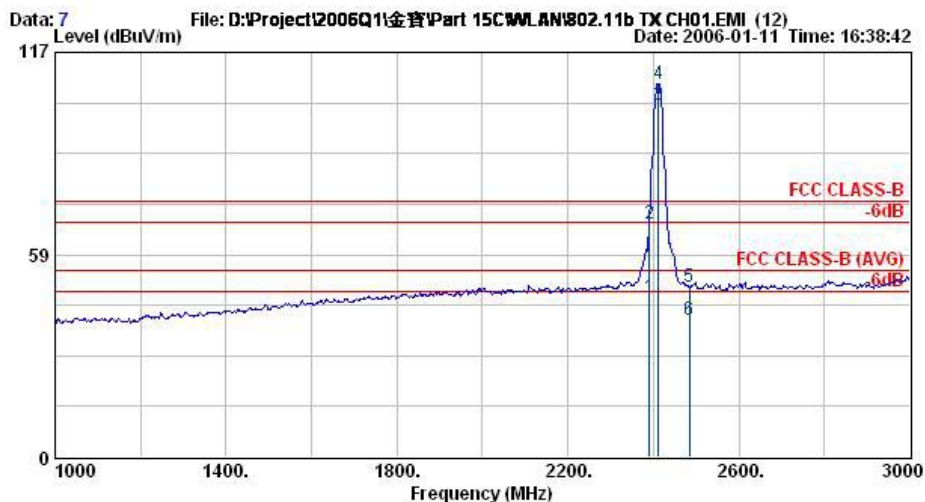


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH01,2412MHz
Plane : E2



- Polarization : Vertical

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



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH01,2412MHz
Plane : E2

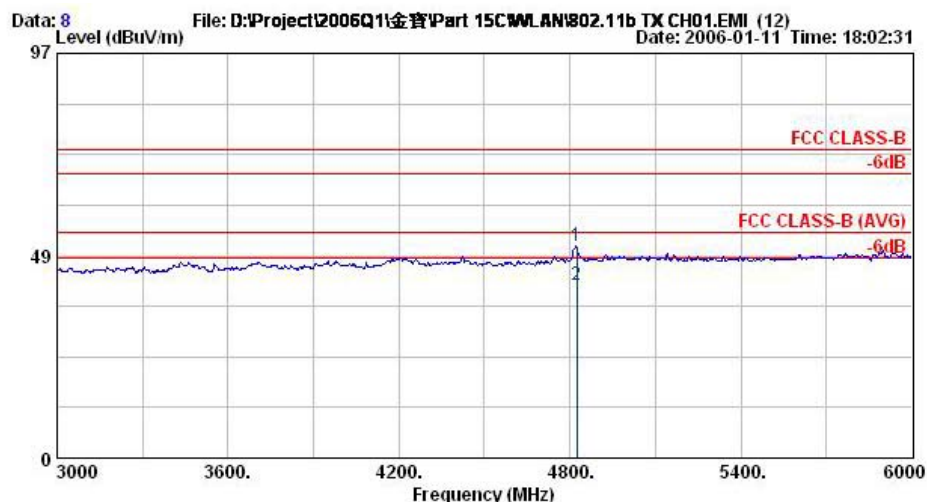
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	2390.00	46.01	-7.99	54.00	46.72	30.48	4.26	35.46	110	27 Average
2 @	2390.00	67.57	-6.43	74.00	68.28	30.48	4.26	35.46	100	0 Peak
3 @	2412.00	101.78			102.50	30.47	4.26	35.46	110	27 Average
4 @	2412.00	108.08			108.80	30.47	4.26	35.46	100	0 Peak
5 @	2483.50	49.28	-24.72	74.00	50.02	30.41	4.36	35.51	100	0 Peak
6 @	2483.50	39.75	-14.25	54.00	40.49	30.41	4.36	35.51	110	27 Average

Remark: #3 and #4 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605

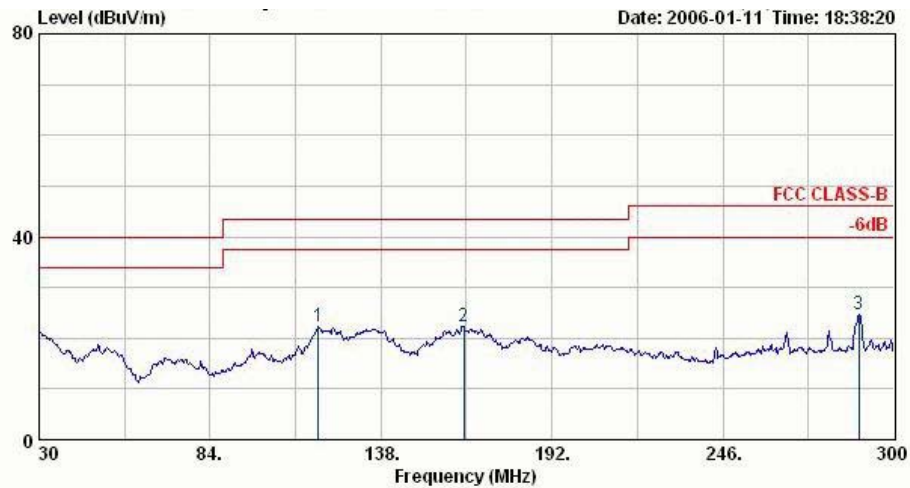


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH01;2412MHz
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	4824.00	51.00	-23.00	74.00	47.67	6.24	36.12	200	360	Peak
2 @	4824.00	41.42	-12.58	54.00	38.08	6.24	36.12	100	267	Average

- Test Mode : Mode 2
- Polarization : Horizontal

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



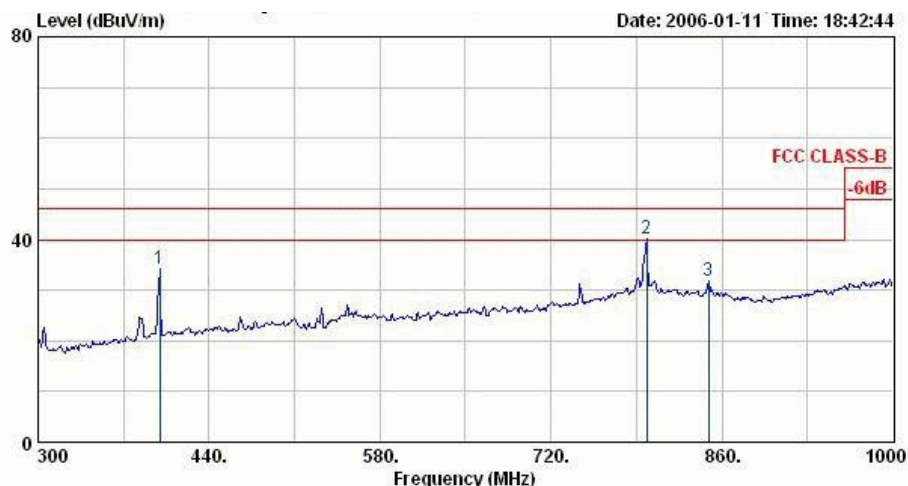
Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : (900/1800/1900)手機
 Power : 120Vac/60Hz
 Model : FR610605
 Memo : 11b_TX_CH06,2437MHz
 Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					dBuV	dB/m		cm	deg	
1 @	118.29	22.43	-21.07	43.50	38.71	12.60	2.60	31.48	400	0 Peak
2 @	164.19	22.29	-21.21	43.50	40.57	10.09	3.16	31.53	400	0 Peak
3 @	288.93	24.58	-21.42	46.00	38.36	12.93	4.26	30.97	400	0 Peak



FCC TEST REPORT

Report No. : FR610605



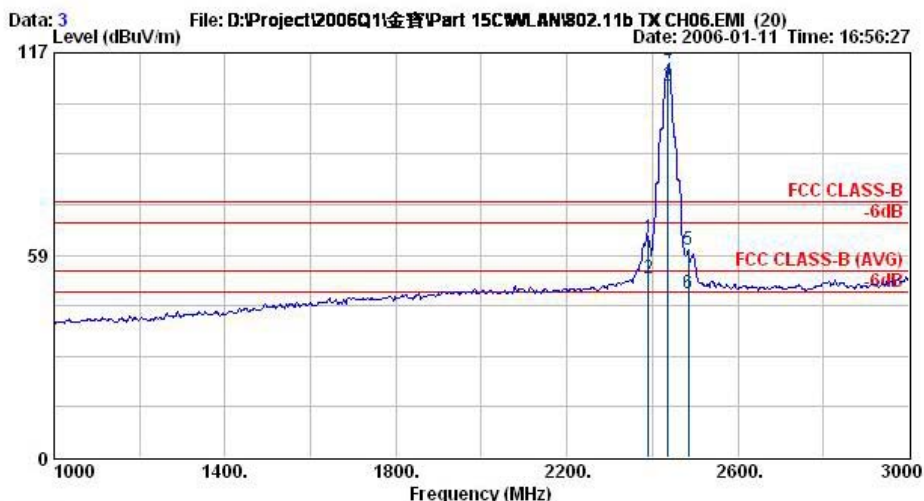
Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH06,2437MHz
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	399.40	34.34	-11.66	46.00	44.19	15.87	5.07	30.79	100	0 Peak
2 @	798.40	40.01	-5.99	46.00	40.85	21.84	7.45	30.13	110	271 Peak
3 @	848.80	31.76	-14.24	46.00	33.21	20.95	7.73	30.13	100	0 Peak



FCC TEST REPORT

Report No. : FR610605



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH06_2437MHz
Plane : E2

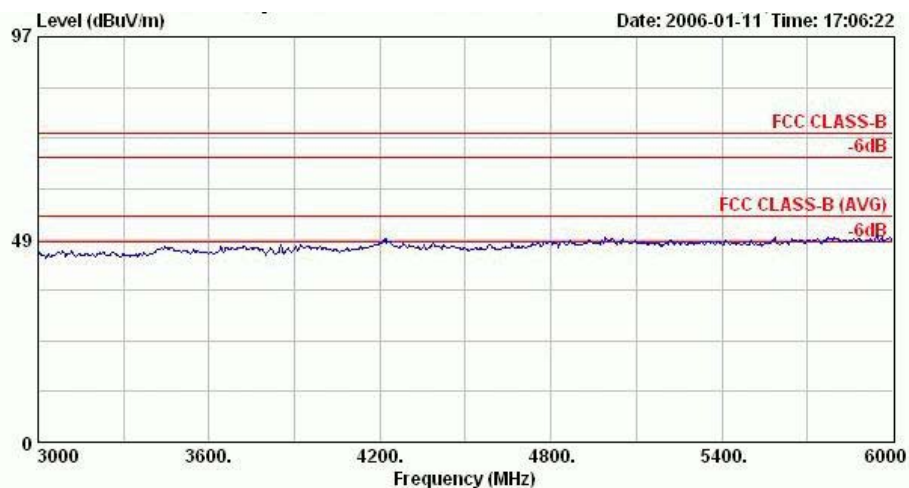
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					dBuV	dB/m	dB	dB	cm	deg
1 @	2390.00	63.66	-10.34	74.00	64.37	30.48	4.26	35.46	200	0 Peak
2 @	2390.00	51.94	-2.06	54.00	52.65	30.48	4.26	35.46	100	341 Average
3 @	2437.00	107.36			108.10	30.44	4.29	35.47	100	341 Average
4 @	2437.00	113.96			114.70	30.44	4.29	35.47	200	0 Peak
5 @	2483.50	60.13	-13.87	74.00	60.87	30.41	4.36	35.51	200	0 Peak
6 @	2483.50	47.55	-6.45	54.00	48.29	30.41	4.36	35.51	100	341 Average

Remark: #3 and #4 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH06_2437MHz
Plane : E2



- Polarization : Vertical

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



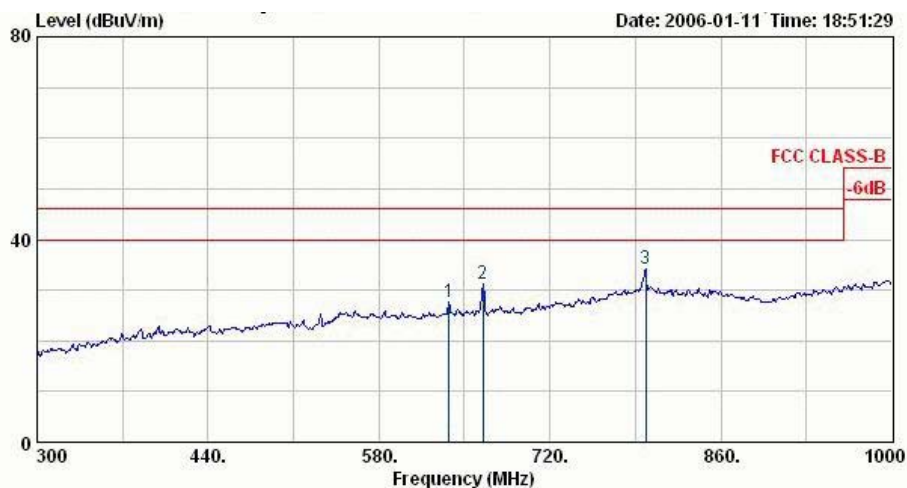
Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH06,2437MHz
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	46.74	31.63	-8.37	40.00	50.16	11.38	1.66	31.57	124	55 Peak
2 @	71.04	26.62	-13.38	40.00	49.89	6.33	2.03	31.63	400	0 Peak
3 @	280.29	25.12	-20.88	46.00	39.18	12.92	4.20	31.17	400	0 Peak



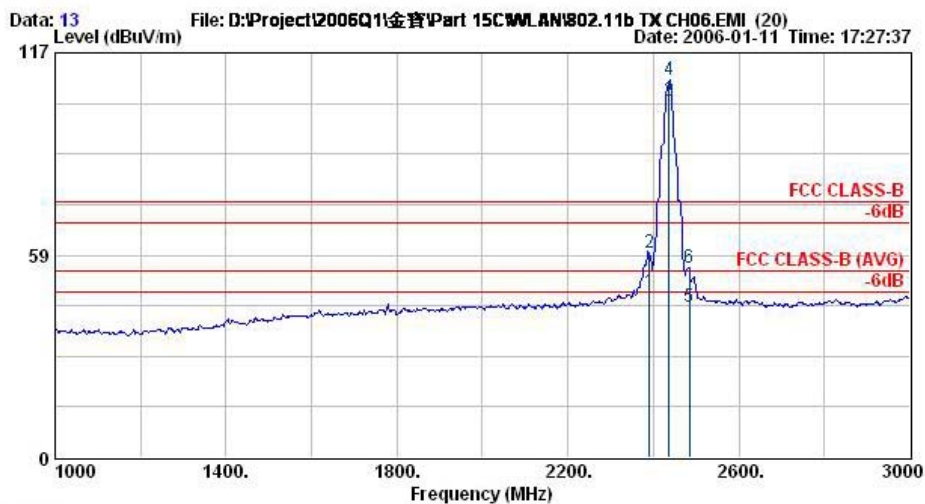
FCC TEST REPORT

Report No. : FR610605



Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH06,2437MHz
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	637.40	27.77	-18.23	46.00	33.44	18.35	6.57	30.58	100	0 Peak
2 @	665.40	31.11	-14.89	46.00	36.36	18.66	6.73	30.64	100	0 Peak
3 @	798.40	34.29	-11.71	46.00	35.13	21.84	7.45	30.13	100	0 Peak



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH06,2437MHz
Plane : E2

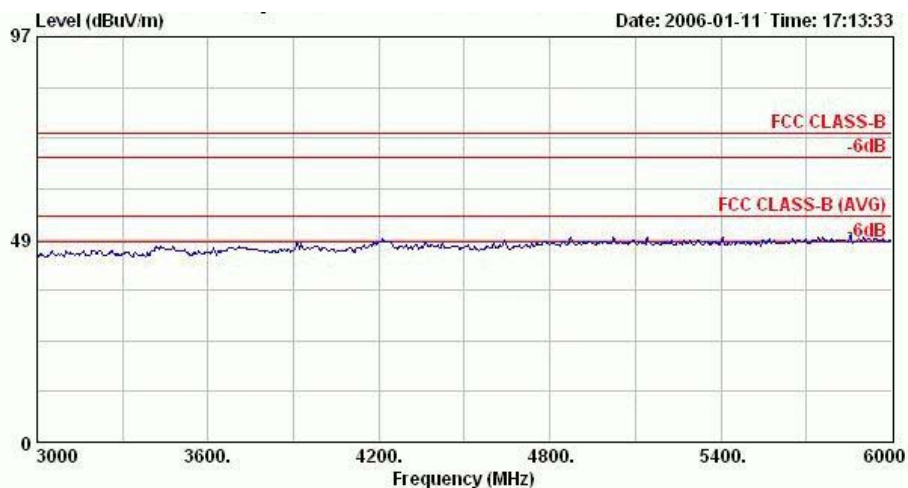
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	2390.00	47.87	-6.13	54.00	48.58	30.48	4.26	35.46	108	25 Average
2 @	2390.00	59.03	-14.97	74.00	59.74	30.48	4.26	35.46	100	0 Peak
3 @	2437.00	102.96			103.70	30.44	4.29	35.47	108	25 Average
4 @	2437.00	109.07			109.81	30.44	4.29	35.47	100	0 Peak
5 @	2483.50	43.33	-10.67	54.00	44.07	30.41	4.36	35.51	108	25 Average
6 @	2483.50	54.80	-19.20	74.00	55.53	30.41	4.36	35.51	100	0 Peak

Remark: #3 and #4 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605



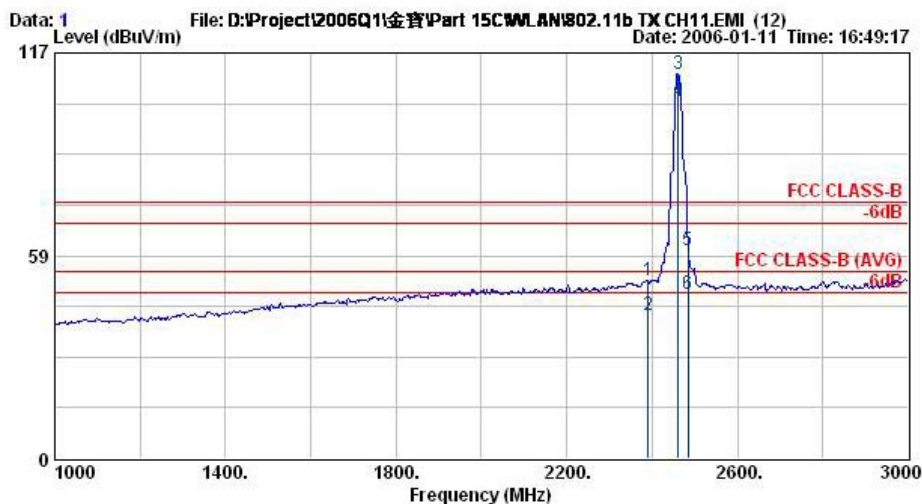
Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH06,2437MHz
Plane : E2



Test Mode : Mode 3

- Polarization : Horizontal

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



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH11;2462MHz
Plane : E2

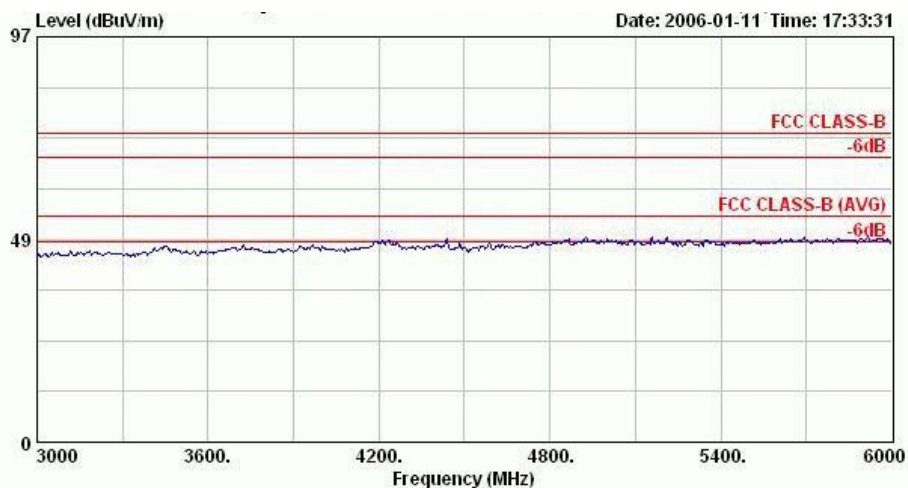
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	2390.00	51.15	-22.85	74.00	51.86	30.48	4.26	35.46	100	0 Peak
2 @	2390.00	41.11	-12.89	54.00	41.82	30.48	4.26	35.46	100	341 Average
3 @	2462.00	110.98			111.72	30.43	4.33	35.49	100	0 Peak
4 @	2462.00	103.16			103.90	30.43	4.33	35.49	100	341 Average
5 @	2483.50	60.11	-13.89	74.00	60.85	30.41	4.36	35.51	100	0 Peak
6 @	2483.50	47.23	-6.77	54.00	47.97	30.41	4.36	35.51	100	341 Average

Remark: #3 and #4 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605

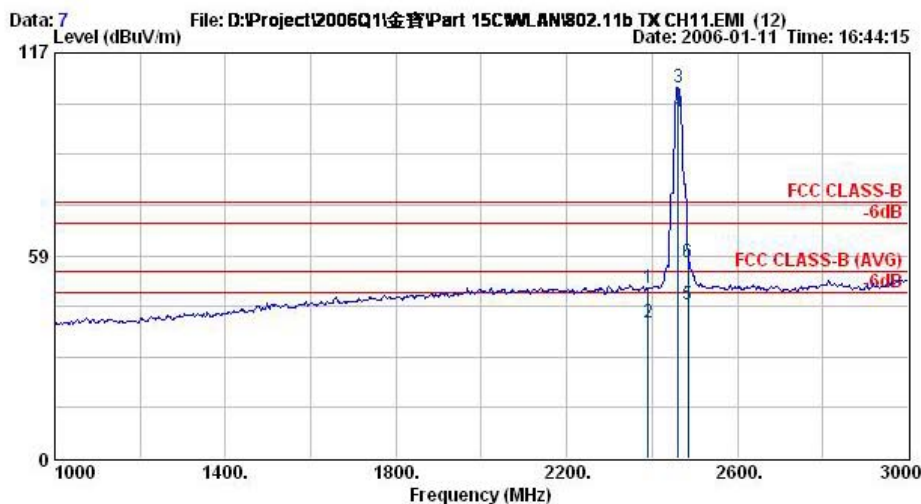


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH11,2462MHz
Plane : E2



- Polarization : Vertical

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



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH11_2462MHz
Plane : E2

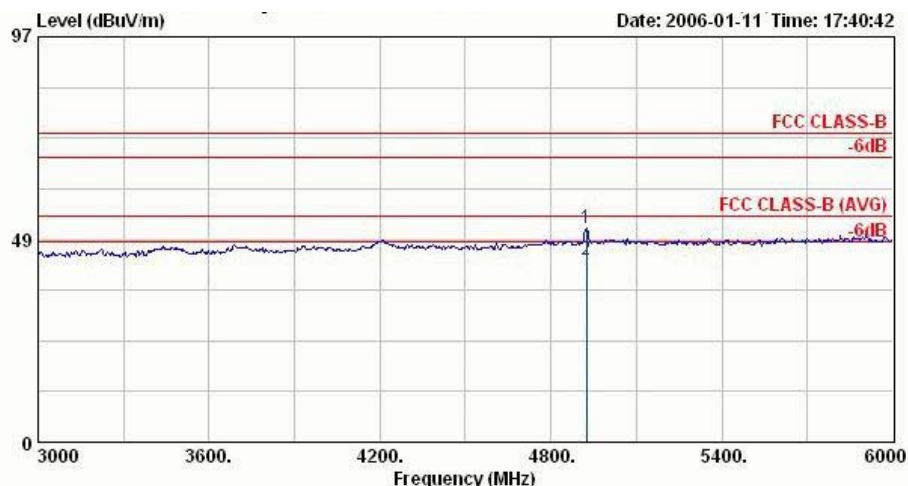
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	2390.00	49.13	-24.87	74.00	49.84	30.48	4.26	35.46	200	0 Peak
2 @	2390.00	39.36	-14.64	54.00	40.07	30.48	4.26	35.46	100	286 Average
3 @	2462.00	106.95			107.69	30.43	4.33	35.49	200	0 Peak
4 @	2462.00	99.96			100.70	30.43	4.33	35.49	100	286 Average
5 @	2483.50	44.51	-9.49	54.00	45.25	30.41	4.36	35.51	100	286 Average
6 @	2483.50	56.69	-17.31	74.00	57.43	30.41	4.36	35.51	200	0 Peak

Remark: #3 and #4 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : 11b_TX_CH11_2462MHz
Plane : E2

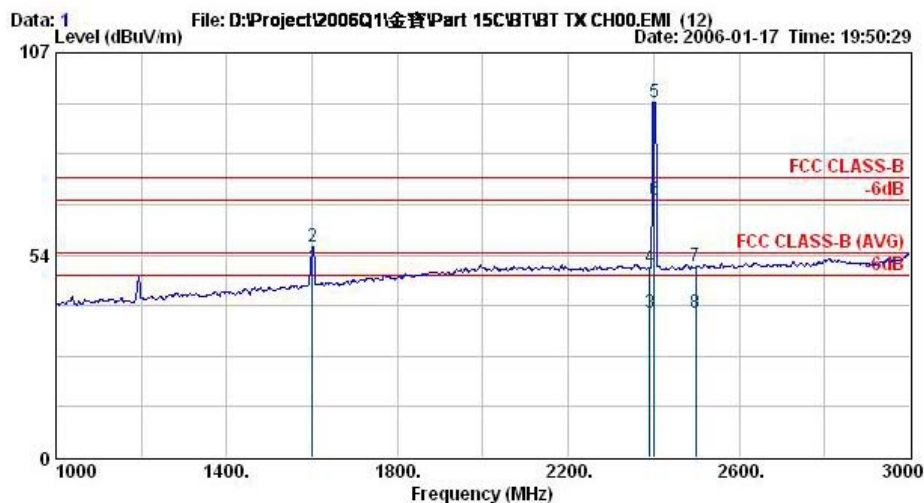
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	4924.00	51.37	-22.63	74.00	47.65	33.57	6.36	36.21	200	360	Peak
2 @	4924.00	43.69	-10.31	54.00	39.97	33.57	6.36	36.21	100	97	Average



Test Mode : Mode 4

Polarization : Horizontal

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



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2

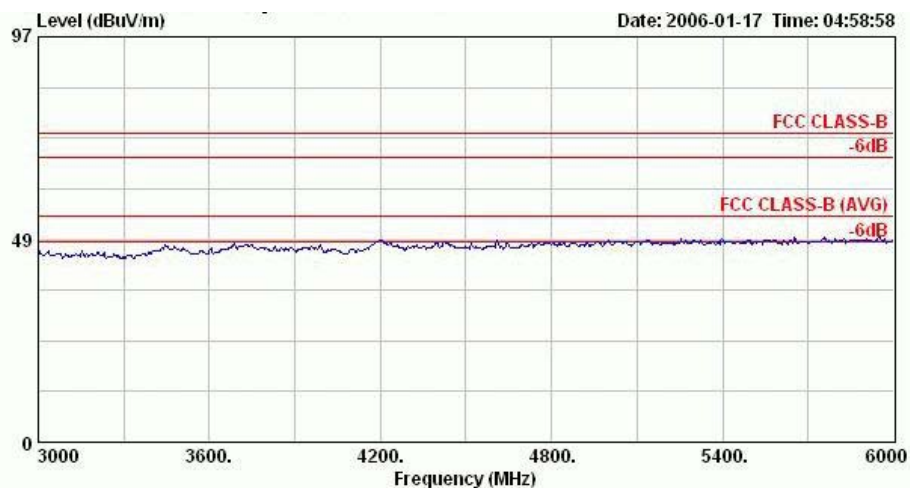
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 !	1601.00	50.28	-3.72	54.00	55.03	27.36	3.48	35.59	100	250 Average
2	1601.00	55.65	-18.35	74.00	60.40	27.36	3.48	35.59	200	0 Peak
3	2390.00	38.38	-15.62	54.00	39.09	30.48	4.26	35.46	156	308 Average
4	2390.00	50.04	-23.96	74.00	50.76	30.48	4.26	35.46	200	0 Peak
5 @	2402.00	93.77			94.48	30.48	4.26	35.46	200	0 Peak
6 @	2402.00	68.03			68.74	30.48	4.26	35.46	156	308 Average
7	2498.00	50.51	-23.49	74.00	51.25	30.40	4.39	35.53	200	0 Peak
8	2498.00	38.17	-15.83	54.00	38.91	30.40	4.39	35.53	156	308 Average

Remark: #5 and 6 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605

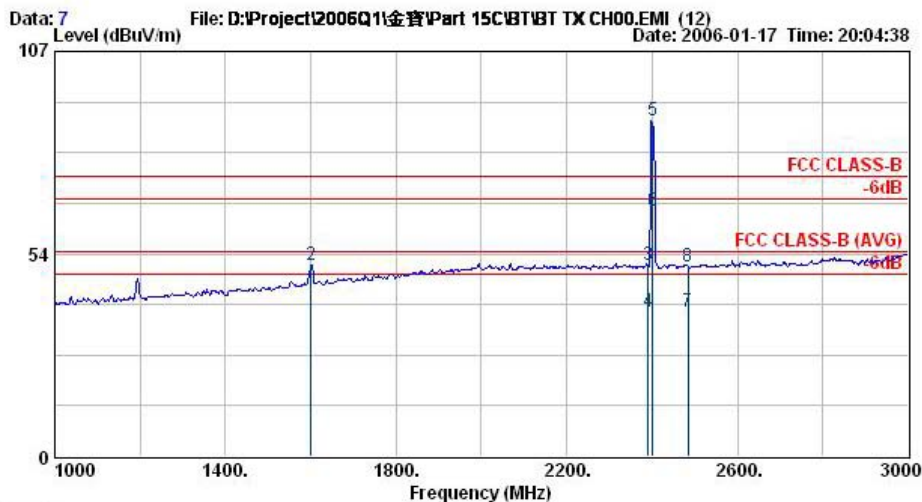


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2



- Polarization : Vertical

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



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2

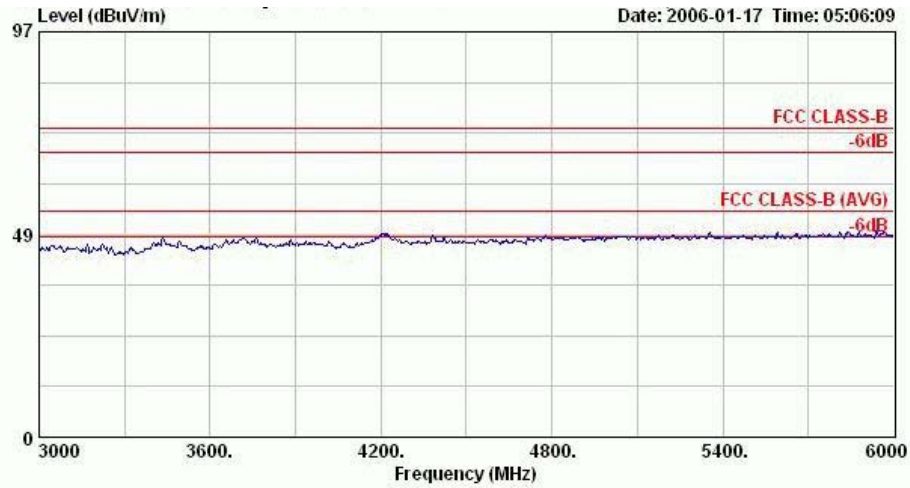
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	1601.00	43.96	-10.04	54.00	48.71	27.36	3.48	35.59	100	287 Average
2	1601.00	50.56	-23.44	74.00	55.17	27.50	3.48	35.59	200	0 Peak
3	2390.00	50.70	-23.30	74.00	51.41	30.48	4.26	35.46	200	0 Peak
4	2390.00	38.32	-15.68	54.00	39.03	30.48	4.26	35.46	100	184 Average
5 @	2402.00	88.75			89.46	30.48	4.26	35.46	200	0 Peak
6 X	2402.00	64.69			65.40	30.48	4.26	35.46	100	184 Average
7	2484.00	38.19	-15.81	54.00	38.93	30.41	4.36	35.51	100	184 Average
8	2484.00	50.25	-23.75	74.00	50.99	30.41	4.36	35.51	200	0 Peak

Remark: #5 and #6 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605



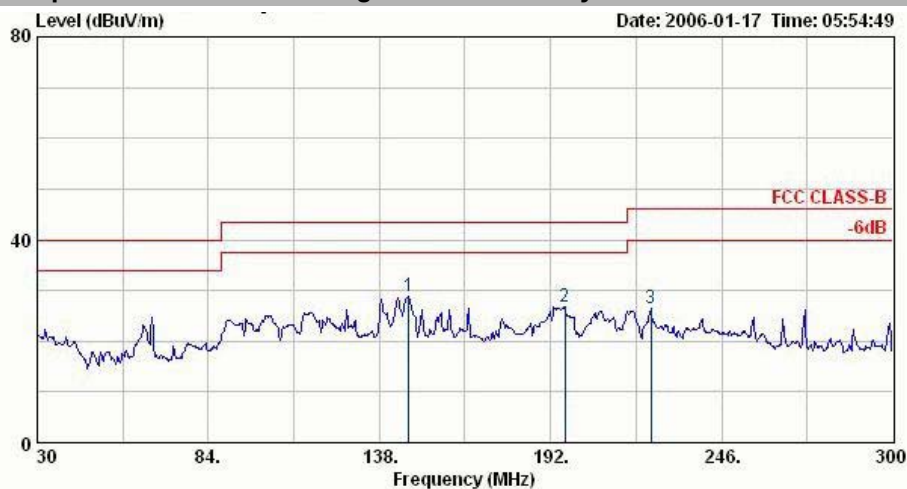
Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2



Test Mode : Mode 5

- Polarization : Horizontal

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



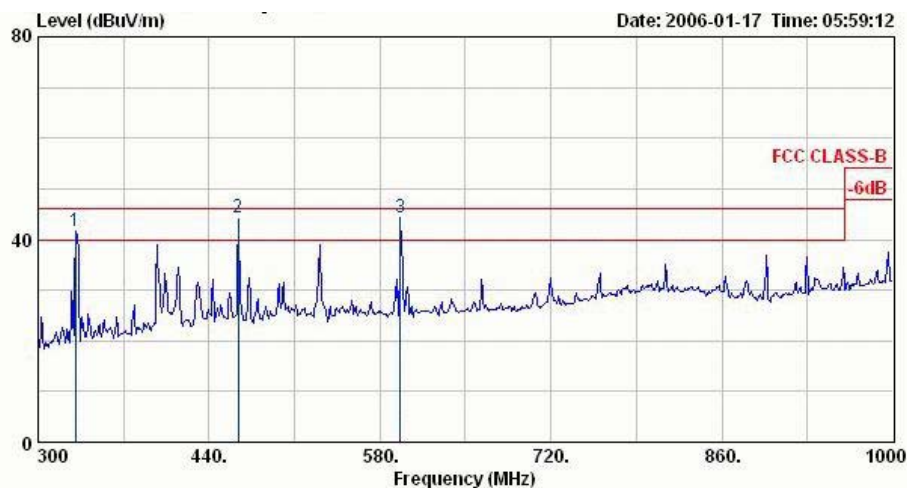
Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	147.18	28.72	-14.78	43.50	47.75	9.47	2.97	31.47	294	122 QP
2 @	196.59	26.81	-16.69	43.50	44.82	9.81	3.47	31.29	400	0 QP
3 @	223.59	26.36	-19.64	46.00	44.09	9.79	3.70	31.22	400	0 QP



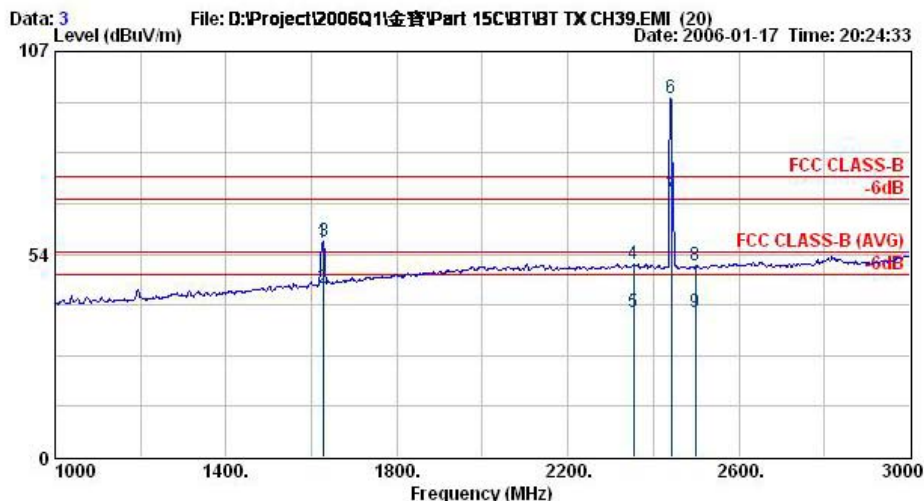
FCC TEST REPORT

Report No. : FR610605



Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	330.80	41.69	-4.31	46.00	54.12	13.85	4.62	30.90	100	0 QP
2 @	463.80	44.22	-1.78	46.00	52.90	16.64	5.47	30.78	100	335 QP
3 @	596.80	44.33	-1.67	46.00	50.70	18.00	6.33	30.70	100	24 QP



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2

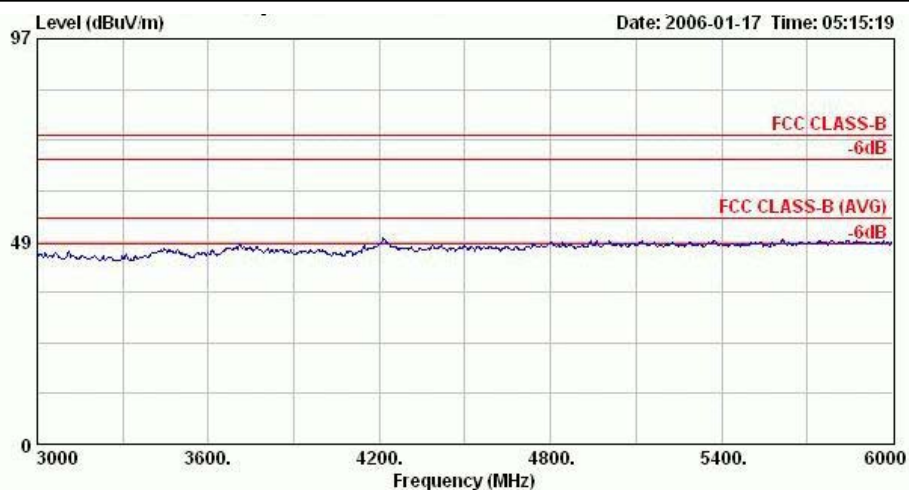
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	1626.50	56.34	-17.66	74.00	60.76	27.65	3.50	35.56	0	0	Peak
2 @	1626.50	44.61	-9.39	54.00	49.03	27.65	3.50	35.56	100	299	Average
3 @	1628.00	56.89	-17.11	74.00	61.31	27.65	3.50	35.56	0	0	Peak
4 @	2354.00	50.93	-23.07	74.00	51.64	30.51	4.20	35.42	0	0	Peak
5 @	2354.00	38.35	-15.65	54.00	39.06	30.51	4.20	35.42	200	270	Average
6 @	2441.00	94.65			95.39	30.44	4.29	35.47	0	0	Peak
7 @	2441.00	68.64			69.37	30.44	4.33	35.49	200	270	Average
8 @	2498.00	50.57	-23.43	74.00	51.31	30.40	4.39	35.53	0	0	Peak
9 @	2498.00	38.16	-15.84	54.00	38.90	30.40	4.39	35.53	200	270	Average

Remark: #6 and 7 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605

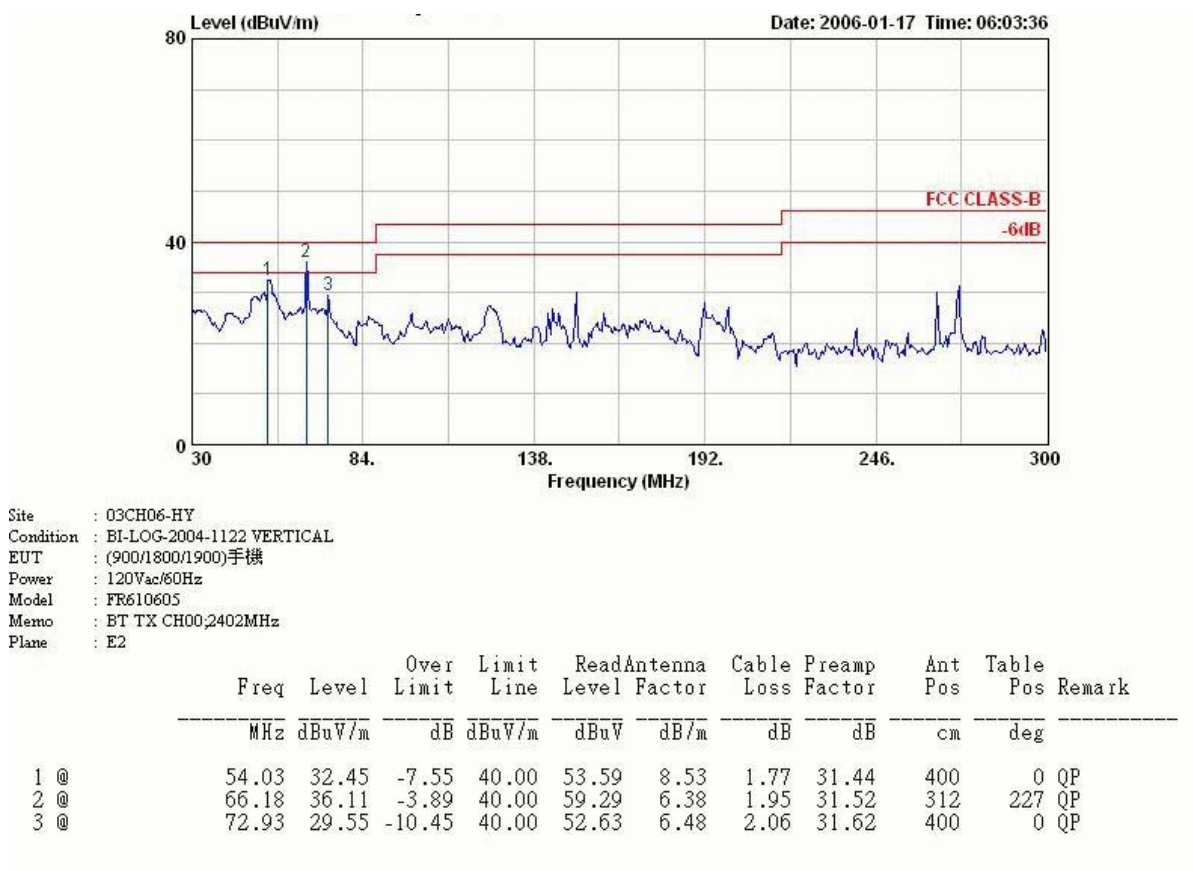


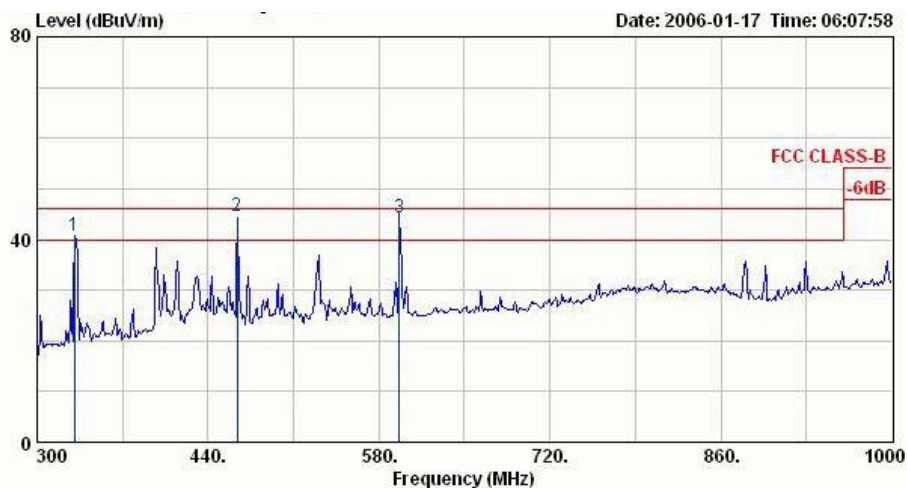
Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2



- Polarization : Vertical

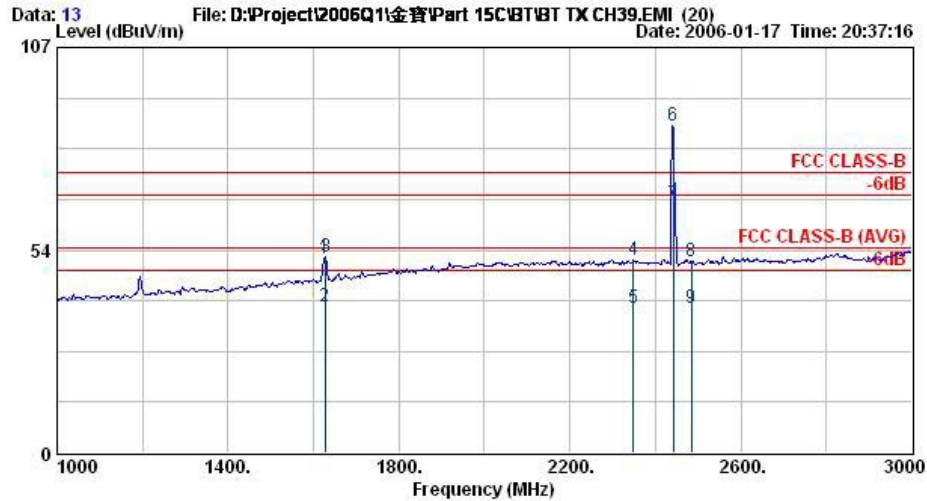
■ The test that passed at minimum margin was marked by the frame in the following table.





Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	330.80	40.77	-5.23	46.00	53.20	13.85	4.62	30.90	100	0 QP
2 @	463.80	44.62	-1.38	46.00	53.30	16.64	5.47	30.78	100	50 QP
3 @	596.80	44.23	-1.77	46.00	50.60	18.00	6.33	30.70	100	320 QP



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2

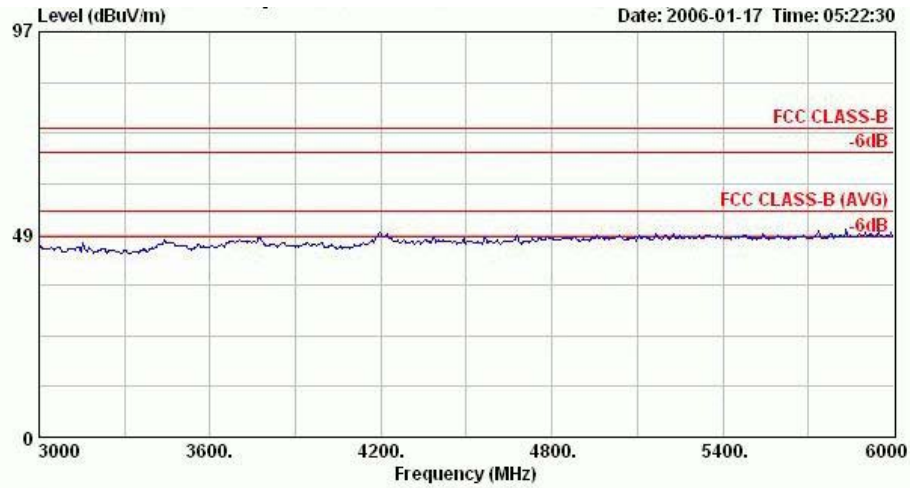
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	1626.50	51.12	-22.88	74.00	55.54	27.65	3.50	35.56	200	0	Peak
2 @	1626.50	38.46	-15.54	54.00	42.88	27.65	3.50	35.56	100	267	Average
3 @	1628.00	51.65	-22.35	74.00	56.07	27.65	3.50	35.56	200	0	Peak
4 @	2348.00	50.73	-23.27	74.00	51.43	30.52	4.20	35.42	200	0	Peak
5 @	2348.00	38.22	-15.78	54.00	38.92	30.52	4.20	35.42	102	227	Average
6 @	2441.00	86.14			86.88	30.44	4.29	35.47	200	0	Peak
7 @	2441.00	65.45			66.18	30.44	4.33	35.49	102	227	Average
8 @	2484.00	50.67	-23.33	74.00	51.41	30.41	4.36	35.51	200	0	Peak
9 @	2484.00	38.23	-15.77	54.00	38.97	30.41	4.36	35.51	102	227	Average

Remark: #6 and #7 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605



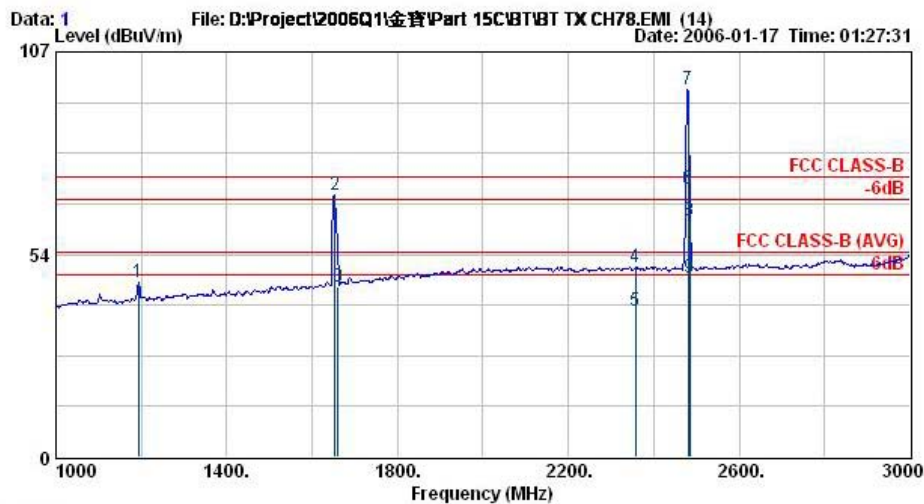
Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH00,2402MHz
Plane : E2



Test Mode : Mode 6

Polarization : Horizontal

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



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH78,2480MHz
Plane : E2

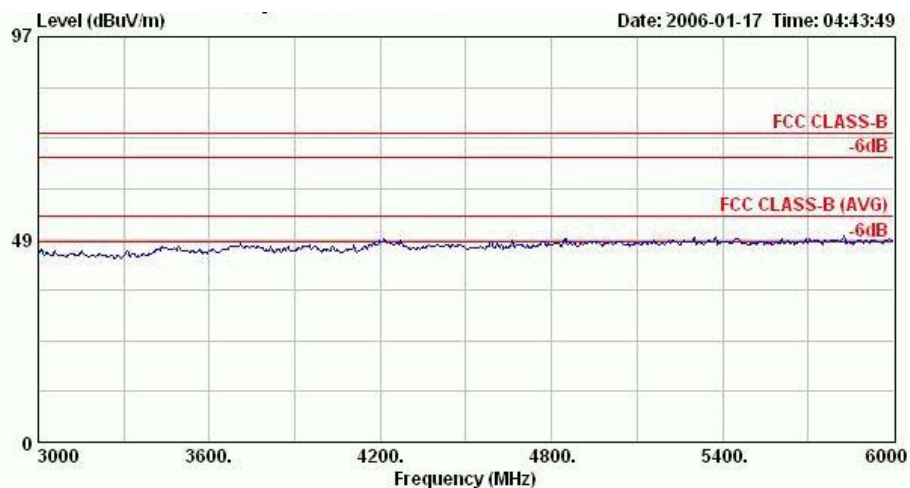
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1194.00	46.26	-27.74	74.00	54.31	25.20	2.99	36.23	200	0 Peak
2	1654.00	69.29	-4.71	74.00	73.52	27.79	3.51	35.53	200	0 Peak
3	1660.00	44.81	-29.19	74.00	48.90	27.93	3.51	35.53	200	0 Peak
4	2358.00	50.09	-23.91	74.00	50.80	30.51	4.20	35.42	200	0 Peak
5	2358.00	38.59	-15.41	54.00	39.30	30.51	4.20	35.42	100	185 Average
6	2480.00	70.73			71.47	30.41	4.36	35.51	100	185 Average
7	2480.00	96.93			97.67	30.41	4.36	35.51	200	0 Peak
8	2483.50	62.57	-11.43	74.00	63.31	30.41	4.36	35.51	200	0 Peak
9	2483.50	47.49	-6.51	54.00	48.23	30.41	4.36	35.51	100	185 Average

Remark: #6 and #7 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605

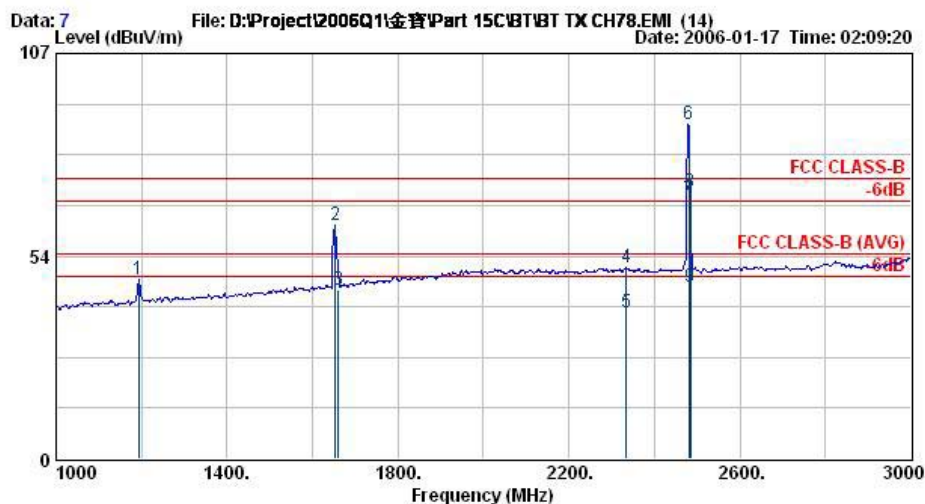


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH78,2480MHz
Plane : E2



Polarization : Vertical

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



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH78,2480MHz
Plane : E2

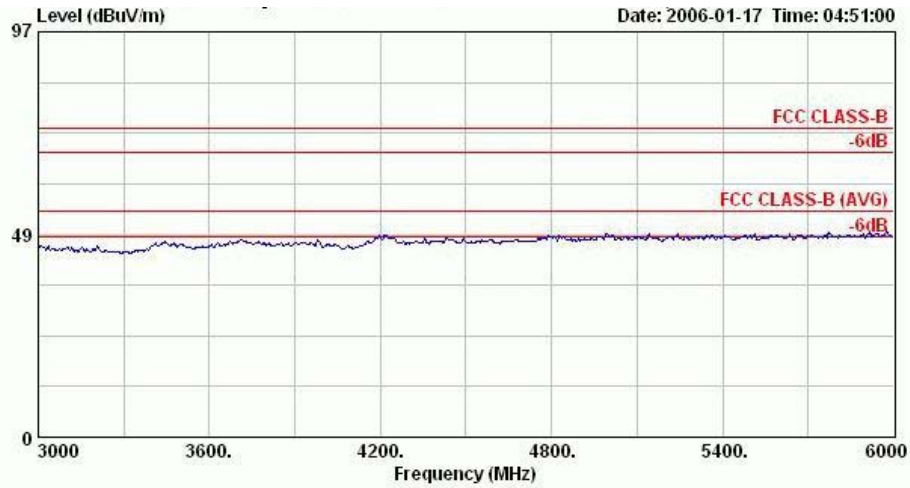
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	1194.00	47.27	-26.73	74.00	55.32	25.20	2.99	36.23	200	0 Peak
2	1654.00	61.50	-12.50	74.00	65.73	27.79	3.51	35.53	200	0 Peak
3	1660.00	44.48	-29.52	74.00	48.57	27.93	3.51	35.53	200	0 Peak
4	2334.00	50.53	-23.47	74.00	51.23	30.54	4.17	35.40	200	0 Peak
5	2334.00	38.73	-15.27	54.00	39.43	30.54	4.17	35.40	106	98 Average
6 X	2480.00	88.22			88.95	30.41	4.36	35.51	200	0 Peak
7 X	2480.00	68.31			69.05	30.41	4.36	35.51	106	98 Average
8 I	2483.50	70.37	-3.63	74.00	71.10	30.41	4.36	35.51	200	0 Peak
9	2483.50	45.30	-8.70	54.00	46.04	30.41	4.36	35.51	106	98 Average

Remark: #6 and #7 Fundamental Signal



FCC TEST REPORT

Report No. : FR610605



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : (900/1800/1900)手機
Power : 120Vac/60Hz
Model : FR610605
Memo : BT TX CH78,2480MHz
Plane : E2

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



5.12 Antenna Requirements

5.12.1 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.

5.12.2 Antenna Connected Construction

The antennas used in this product are fixed internal for WLAN and BT with without connector and it is considered to meet antenna requirement of FCC.

5.12.3 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 Used

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

7. Uncertainty Evaluation

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

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

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

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

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

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