



FCC TEST REPORT

for

47 CFR Part 15 Subpart C and IC RSS-210 Issue 6

Equipment : PDA Phone
Trade Name : Fujitsu Siemens Computer GmbH
Model No. : Pocket LOOX T830 / Pocket LOOX T810
FCC ID : QQXUPX001
IC ID : 4626A-UPX001
Filing Type : Certification
Applicant : **COMPAL COMMUNICATIONS, INC.**
7F, No. 319, Sec. 4, Pa-Te Rd., Taipei, Taiwan

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- The data shown in this test report were carried out on May 09, 2006 at **Sporton International Inc. LAB.**
- Report No.: FR650602, Report Version: Rev. 01

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History of this test report

Report Issue Date: May 18, 2006

Report No.	Description



1. General Description of Equipment under Test

1.1 Applicant

COMPAL COMMUNICATIONS, INC.

7F, No. 319, Sec. 4, Pa-Te Rd., Taipei, Taiwan

1.2 Manufacturer

COMPAL COMMUNICATIONS, INC.

7F, No. 319, Sec. 4, Pa-Te Rd., Taipei, Taiwan

1.3 Basic Description of Equipment under Test

Equipment	: PDA Phone
Trade Name	: Fujitsu Siemens Computer GmbH
Model No.	: Pocket LOOX T830 / Pocket LOOX T810
FCC ID	: QQXUPX001
IC ID	: 4626A-UPX001
Power Supply Type	: Switching
AC Power Cord	: AC 120V, Non-shielded, Wall-mount, 1.8 meter, 2 pin
Desk Docking (Cradle)	: Power Mobile PLT800CS
Main Battery	: WellDone, PLT800MB
Sync Cable USB client	: D-net, USB Client interface 1.2m, shielding
Sync Cable USB host	: D-net, USB Host interface 0.22m, shielding
AC Adapter 1	: PHIHONG, PSC05R-05CP PH
AC Adapter 2	: SUNFONE, ACE005A-05
Stereo Headset	: OBOPro.2, OBO-PT-HB01D

**1.4 Feature of Equipment under Test**

Product Feature & Specification				
1. Type of Modulation	PCS1900 : GMSK WLAN : DSSS / OFDM BT : GFSK			
2. Number of Channels	WLAN : 11 Channels BT : 79 Channels			
3. Frequency Band	PCS1900 : 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)	PCS1900 : 29.51 dBm 802.11b : 17.84 dBm / 802.11g: 16.77 dBm BT : 1.85 dBm			
7. Type of Antenna Connector	Finger			
8. Antenna Type	PIFA			
9. Antenna Gain	WLAN : 1 dBi BT : 1 dBi			
10. Function Type	Transmitter		Transceiver	V
11. Power Rating (DC/AC Voltage) :	WLAN : 3.3V / 450mA BT : 3.3V / 200mA			

2 Test Configuration of Equipment under Test

2.1 Test Manner

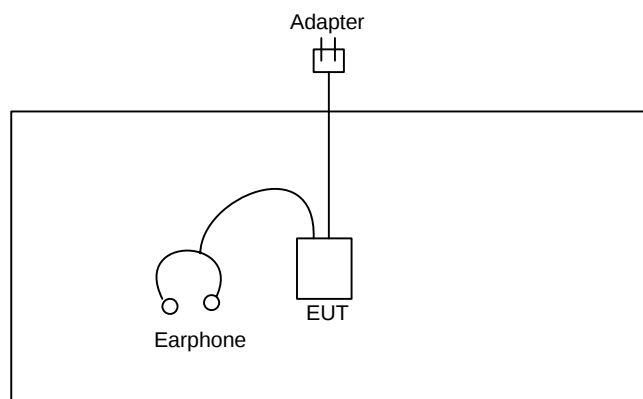
- The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- For spurious emission below 1GHz, only one channel of each application was tested because it is not related to 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.

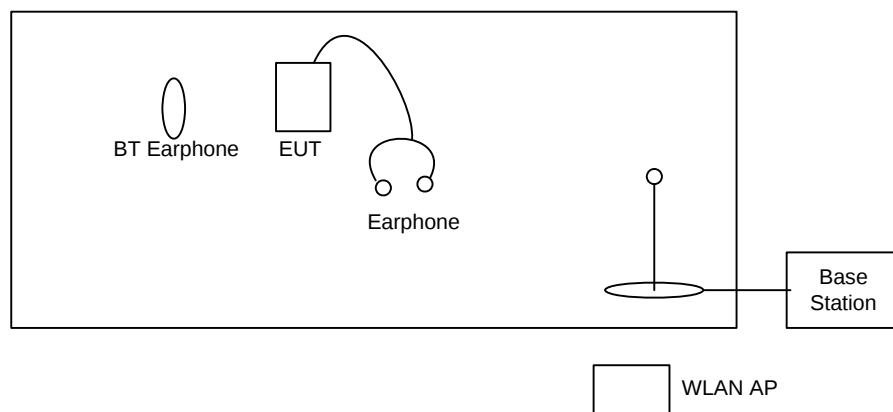
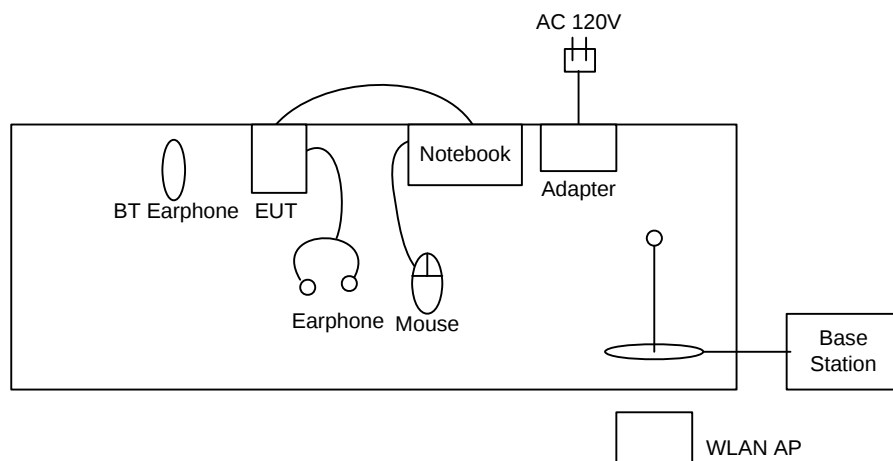
2.2 Test Mode

Application			
	802.11b	802.11g	BT
Radiated Emission	Mode 1: Tx_CH01_2412 MHz	Mode 4: Tx_CH01_2412 MHz	Mode 7: Tx_CH00_2402 MHz
	Mode 2: Tx_CH06_2437 MHz	Mode 5: Tx_CH06_2437 MHz	Mode 8: Tx_CH39_2441 MHz for Adapter 1
	Mode 3: Tx_CH11_2462 MHz	Mode 6: Tx_CH11_2462 MHz	Mode 9: Tx_CH39_2441 MHz for Adapter 2
			Mode 10: Tx_CH78_2480 MHz
Conducted Emission	Mode 1: PCS1900 Idle Mode + BT Link + WLAN Link + Earphone + Camera + Adapter 1		
	Mode 2: PCS1900 Idle Mode + BT Link + WLAN Link + Earphone + Camera + Adapter 2		
	Mode 3: PCS1900 Idle Mode + BT Link + WLAN Link + Earphone + MPEG 4 + Adapter 2		
	Mode 4: PCS1900 Idle Mode + BT Link + WLAN Link + Earphone + Camera + USB Link		

2.3 Connection Diagram of Test System

<Radiated Emission>



<Conducted Emission>
Mode 1~3

Mode 4

2.4 Ancillary Equipment List

Item	Asset	Model Name	Power Cord
1.	Base Station (R&S)	CMU 200	N/A
2.	Notebook (DELL)	PP05L	N/A
3.	USB Mouse (LOGITECH)	M-BE58	Aluminum-shielded, 1.7 m
4.	BT Earphone (Free Style)	JD-100	N/A
5.	WLAN AP (SMC)	SMC-100	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
DA00705 for FHSS
FCC DTS test procedure dated March 2005

4.3 Test in Compliance with

47 CFR Part 15 Subpart C and IC RSS-210 Issued 6

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	IC Rule	Description of Test	Result
15.207	§ 6.3	Conducted Emission	Pass
15.247(a)(2)	Amendment 1	6dB & 20dB Bandwidth	Pass
15.247(b)	§ 6.2.2 (o) (b) & Amendment 1	Maximum Peak Output Power	Pass
15.209(a)	§ 6.3	Radiated Emission	Pass
15.247 (c)	§ 6.3	100kHz Bandwidth of Frequency Band Edges	Pass
15.247(d)	6.2.2 (o) (b) & Amendment 1	Power Spectral Density	Pass
15.203 15.247(b)(4)	N/A	Antenna Requirement	Pass

**The Emission Mode: Bluetooth**

FCC Rule	IC Rule	Description of Test	Result
15.207	6.2.2 (o)(a3)	Conducted Emission	Pass
<u>15.247(a) (1)</u>	6.2.2 (o)(a3)	Hopping Channel Bandwidth	Pass
<u>15.247(a)(1)</u>	6.2.2 (o)(a3)	Hopping Channel Separation	Pass
<u>15.247(a)(1)(iii)</u>	6.2.2 (o)(a3)	Number of Hopping Frequency Used	Pass
<u>15.247(a)(1)(iii)</u>	6.2.2(o)(a3) & Amendment 1	Dwell Time of Each Frequency	Pass
<u>15.247(b)</u>	6.2.2 (o)(e1)	Output Power	Pass
15.247(c)	6.6 & 7.4	100kHz Bandwidth of Frequency Band Edges	Pass
15.209(a)	6.2.2 (o)(e1)	Radiated Emission	Pass
<u>15.203</u> 15.247(b)(4)	6.2.2 (o)(e2) & 6.2.2 (o)(a3)	Antenna Requirement	Pass

5.2 6dB and 20dB Bandwidth Measurement

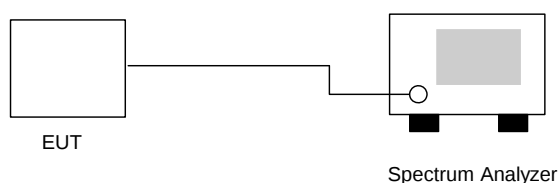
5.2.1 Measuring Instruments :

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 and 20 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/g
- Temperature : 24°C
- Relative Humidity : 54%
- Test Enginner : James

802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	11.60	> 0.5MHz	Mode 1
06	2437	11.72	> 0.5MHz	Mode 2
11	2462	11.80	> 0.5MHz	Mode 3

802.11b

Channel	Frequency (MHz)	20dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	17.40	> 0.5MHz	Mode 4
06	2437	17.68	> 0.5MHz	Mode 5
11	2462	17.44	> 0.5MHz	Mode 6

**802.11g**

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.56	> 0.5MHz	Mode 7
06	2437	16.56	> 0.5MHz	Mode 8
11	2462	16.56	> 0.5MHz	Mode 9

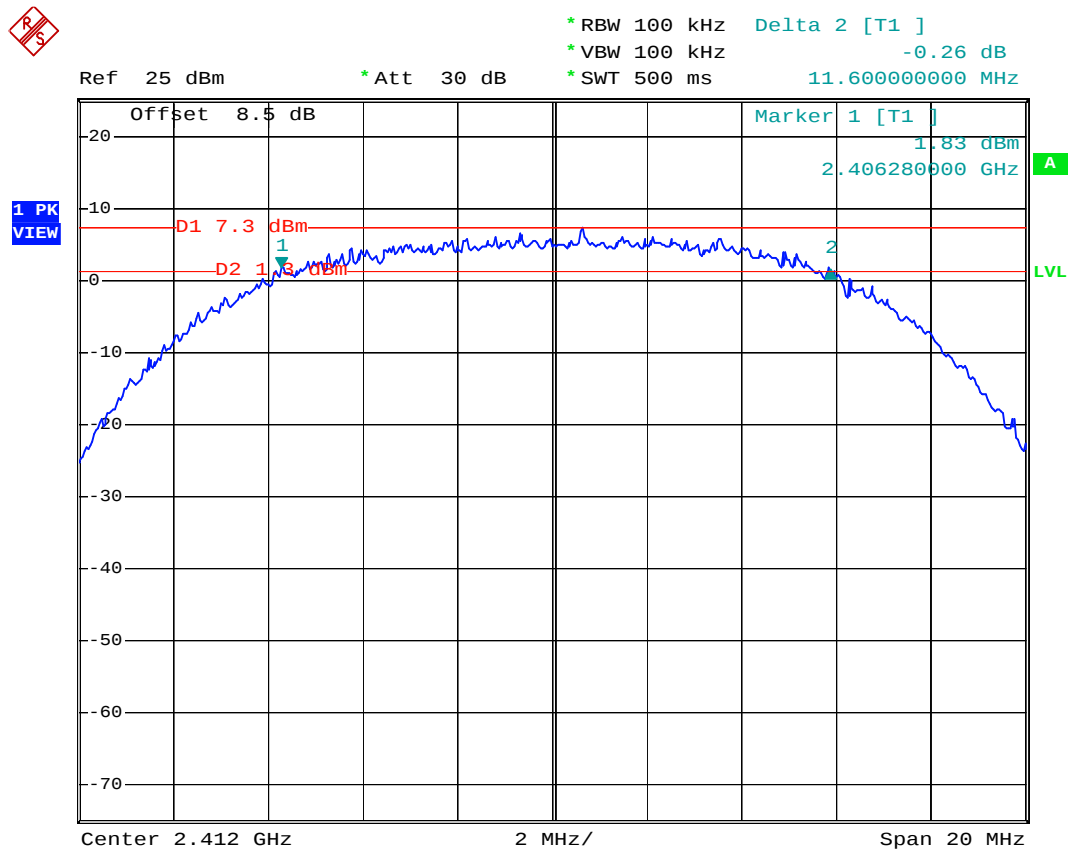
802.11g

Channel	Frequency (MHz)	20dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	19.30	> 0.5MHz	Mode 10
06	2437	20.75	> 0.5MHz	Mode 11
11	2462	20.35	> 0.5MHz	Mode 12



5.2.5 6dB Bandwidth

Mode 1



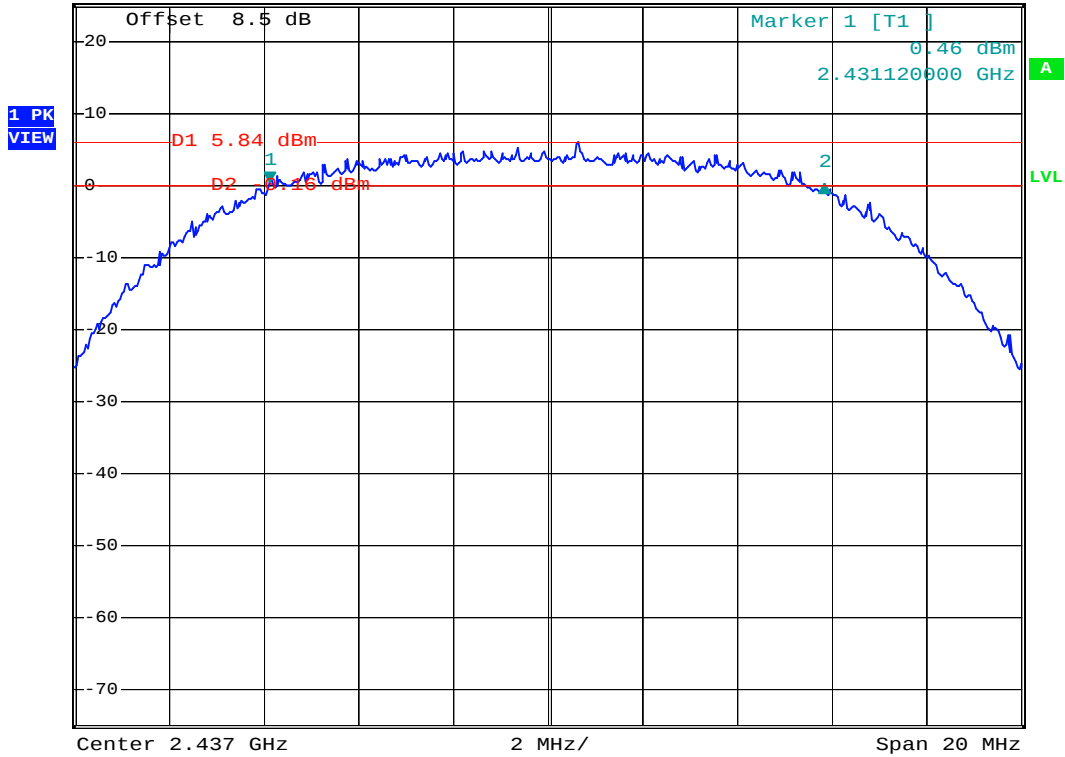
Date: 9.MAY.2006 18:01:19



Mode 2



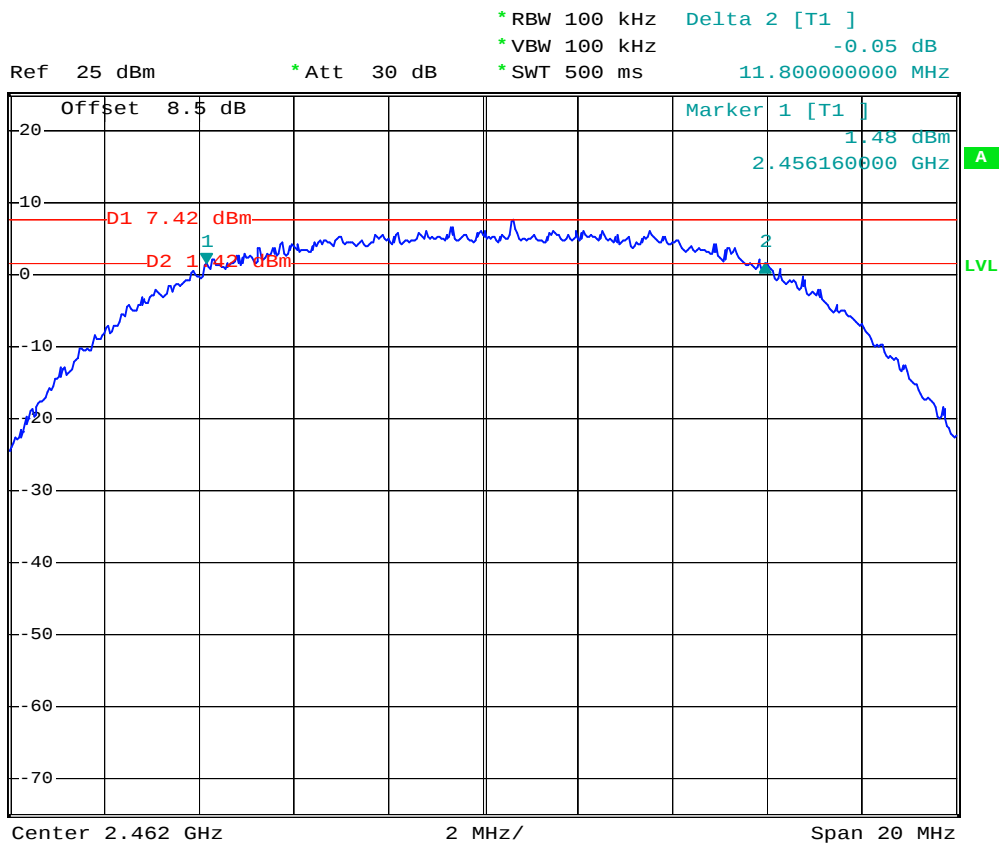
Ref 25 dBm * Att 30 dB * RBW 100 kHz Delta 2 [T1]
* VBW 100 kHz -0.37 dB
* SWT 500 ms 11.720000000 MHz



Date: 9.MAY.2006 18:05:32



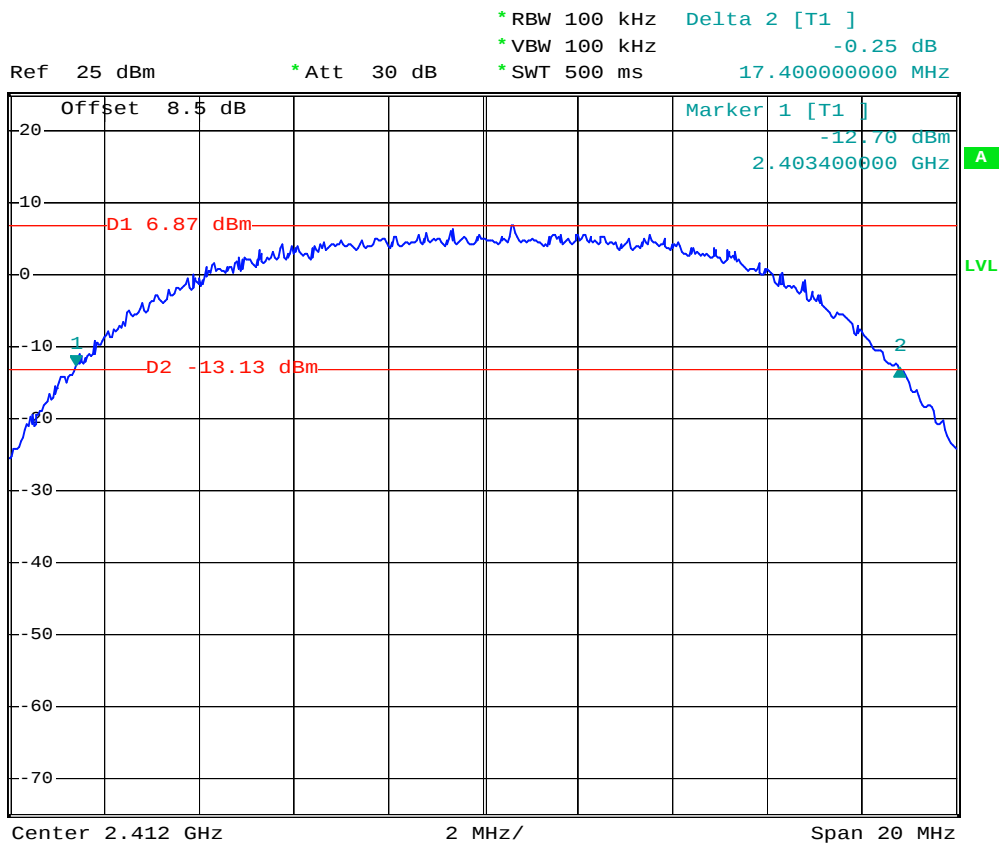
Mode 3



Date: 9.MAY.2006 18:15:11

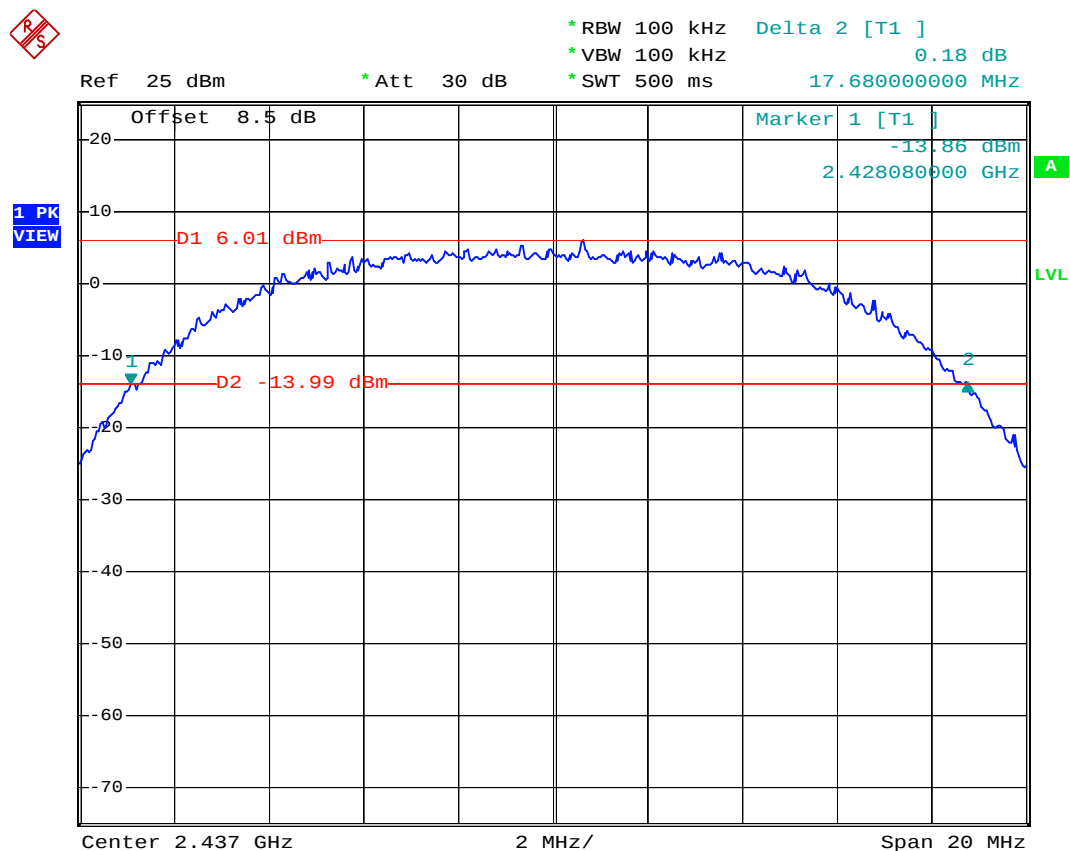


Mode 4



Date: 9.MAY.2006 18:23:05

Mode 5



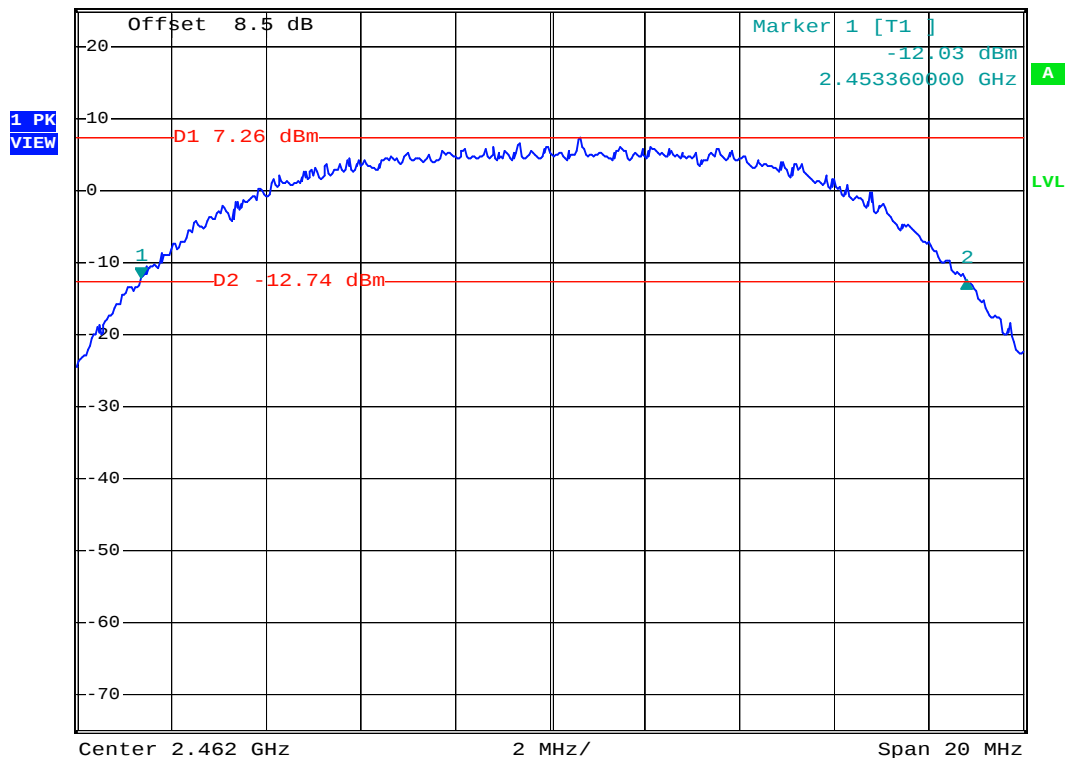
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Mode 6



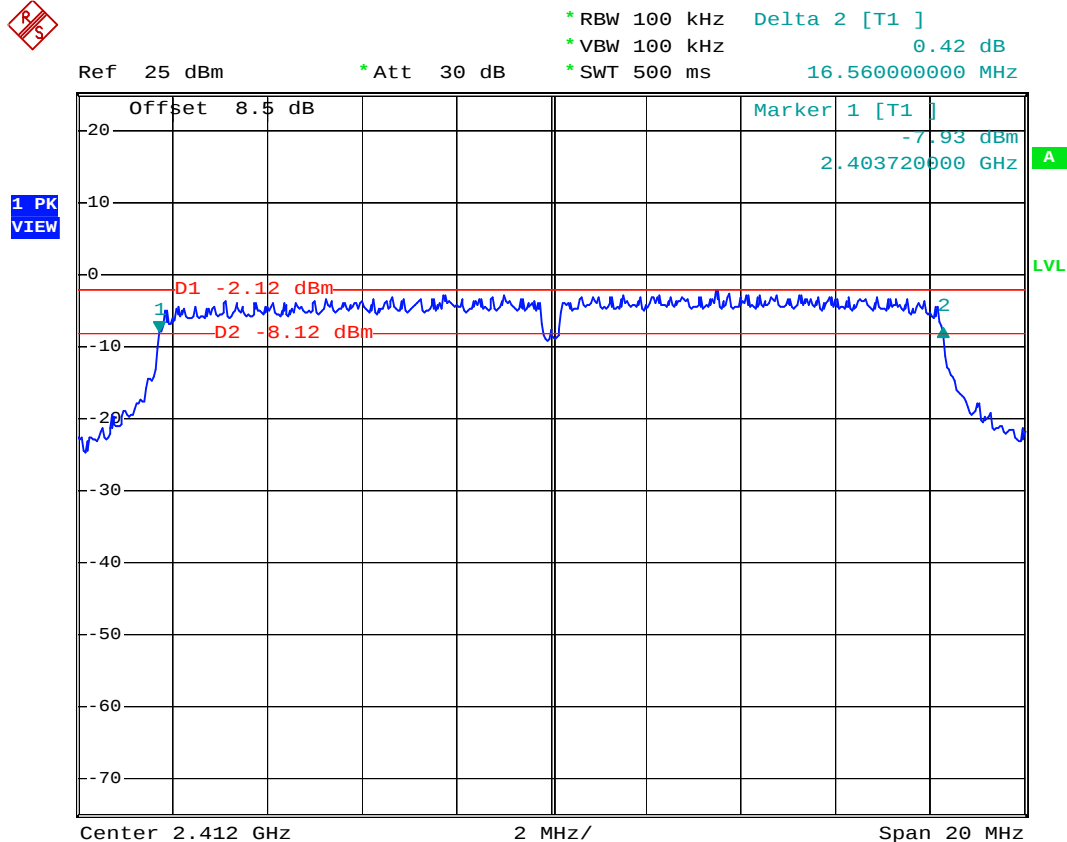
Ref 25 dBm * Att 30 dB * RBW 100 kHz Delta 2 [T1]
* VBW 100 kHz -0.27 dB
* SWT 500 ms 17.440000000 MHz



Date: 9.MAY.2006 18:19:04



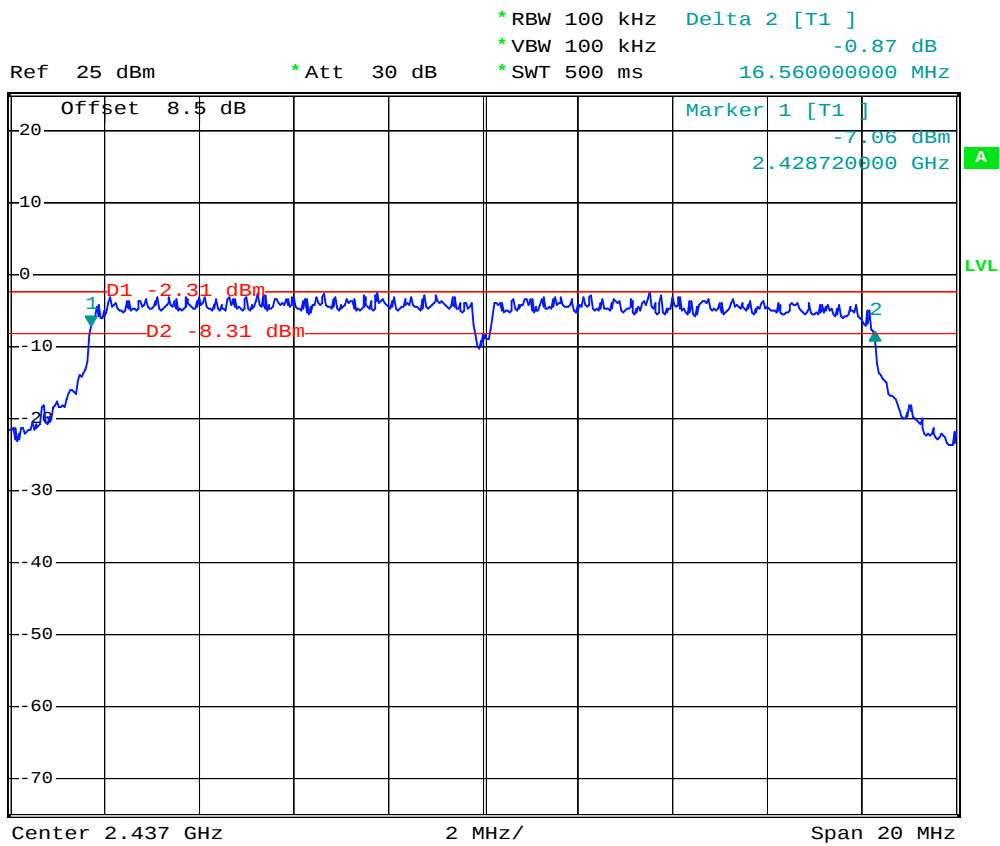
Mode 7



Date: 9.MAY.2006 18:38:42



Mode 8



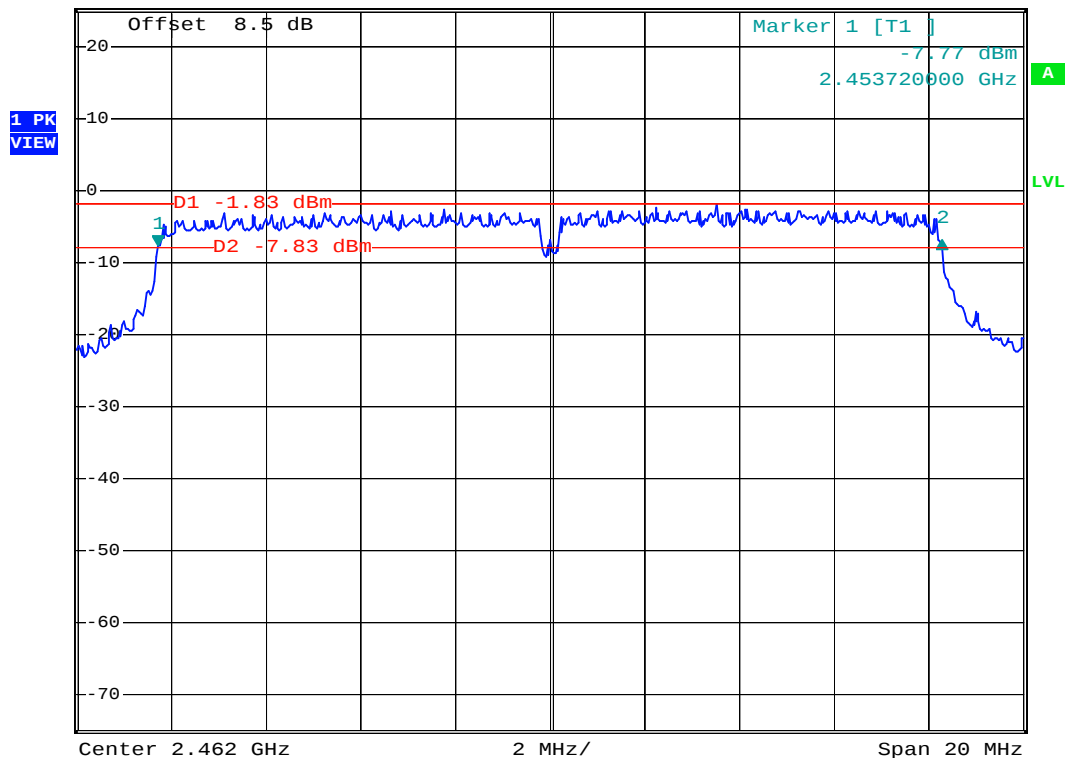
Date: 9.MAY.2006 19:22:01



Mode 9



Ref 25 dBm * Att 30 dB * RBW 100 kHz Delta 2 [T1]
* VBW 100 kHz 0.88 dB
* SWT 500 ms 16.560000000 MHz



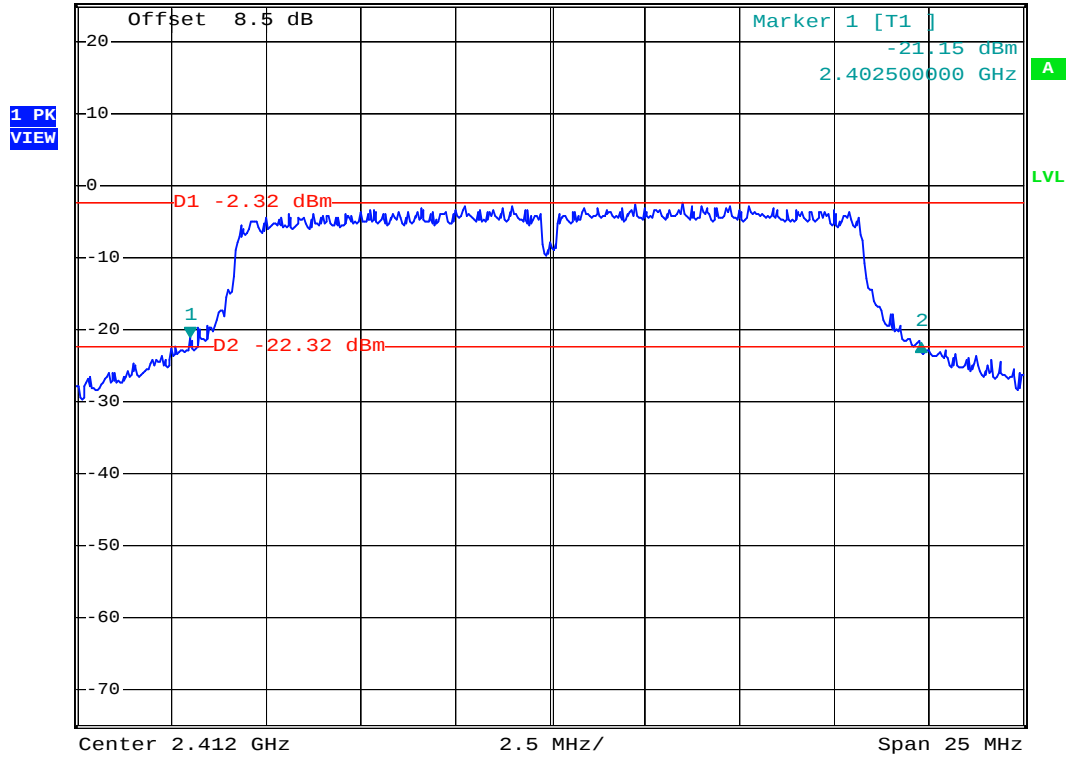
Date: 9.MAY.2006 19:25:31



Mode 10



Ref 25 dBm * Att 30 dB * RBW 100 kHz Delta 2 [T1]
* VBW 100 kHz -0.67 dB
* SWT 500 ms 19.300000000 MHz



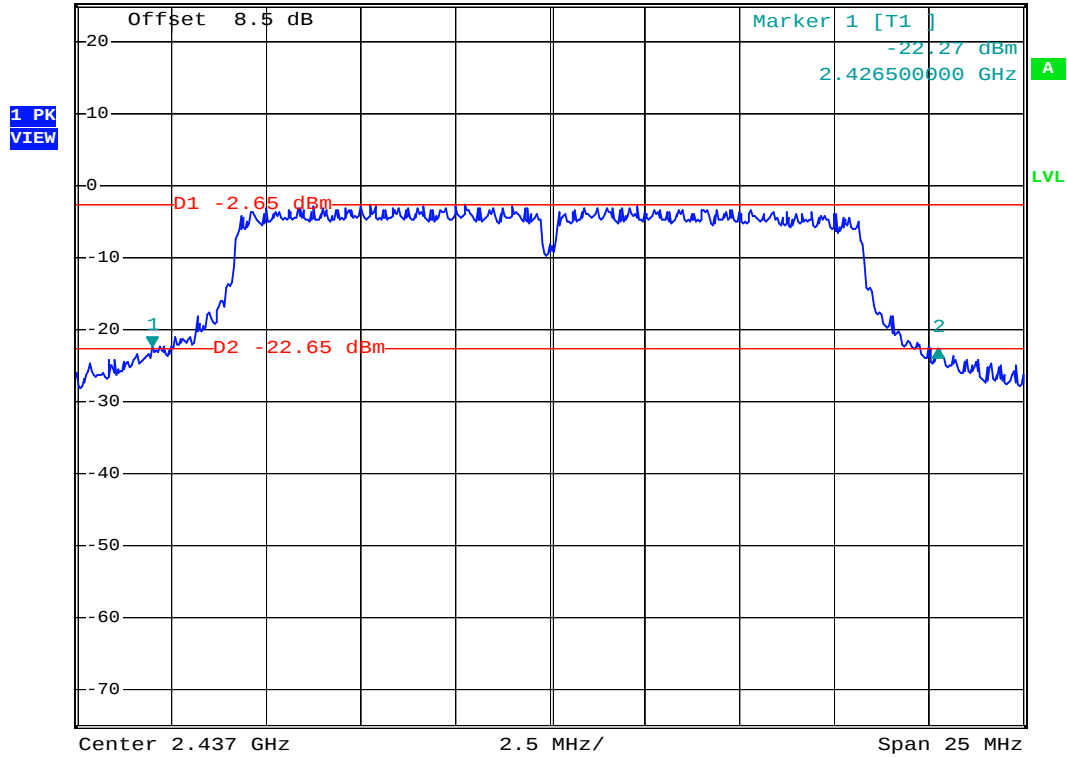
Date: 9.MAY.2006 18:40:47



Mode 11



Ref 25 dBm * Att 30 dB * RBW 100 kHz Delta 2 [T1]
* VBW 100 kHz -0.35 dB
* SWT 500 ms 20.750000000 MHz



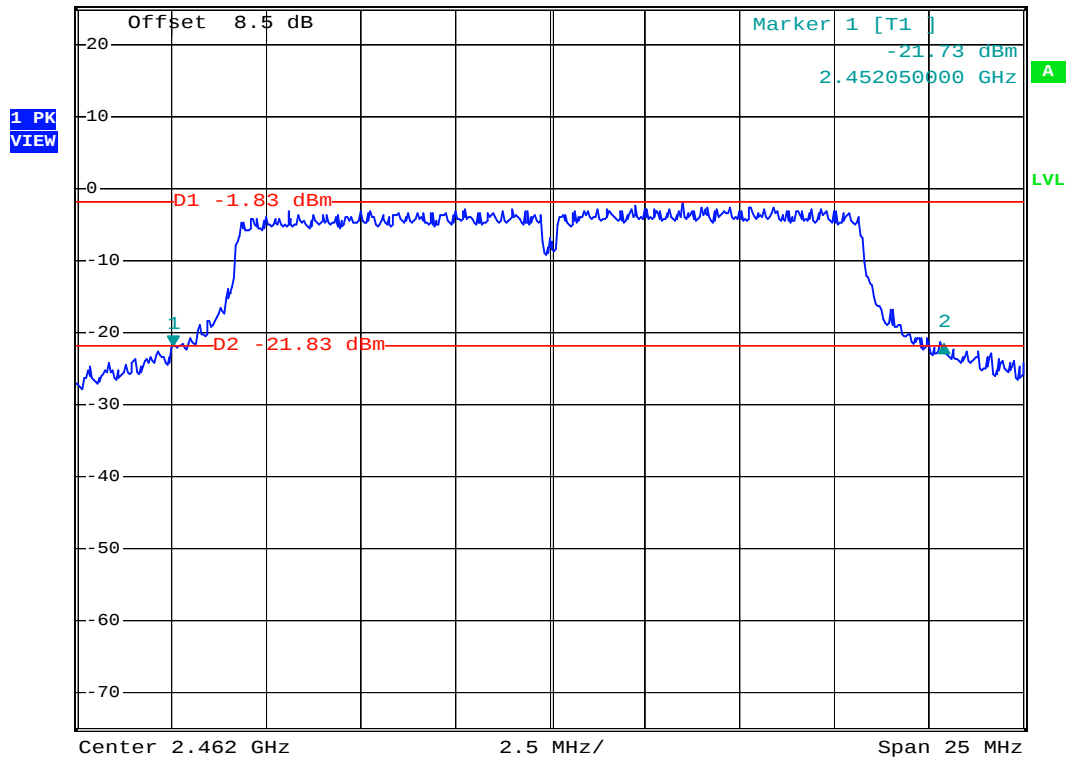
Date: 9.MAY.2006 19:22:57



Mode 12



Ref 25 dBm * Att 30 dB * RBW 100 kHz Delta 2 [T1]
* VBW 100 kHz 0.04 dB
* SWT 500 ms 20.350000000 MHz



Date: 9.MAY.2006 19:26:42

5.3 Power Spectral Density Measurement

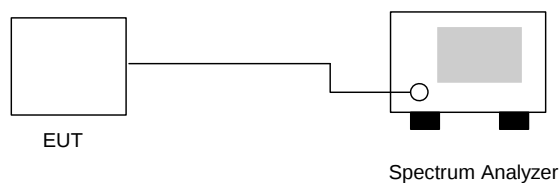
5.3.1 Measuring Instruments :

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/g
- Temperature : 24°C
- Relative Humidity : 54%
- Test Enginner : James

802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-0.07	8	Mode 1
06	2437	-2.50	8	Mode 2
11	2462	-1.81	8	Mode 3

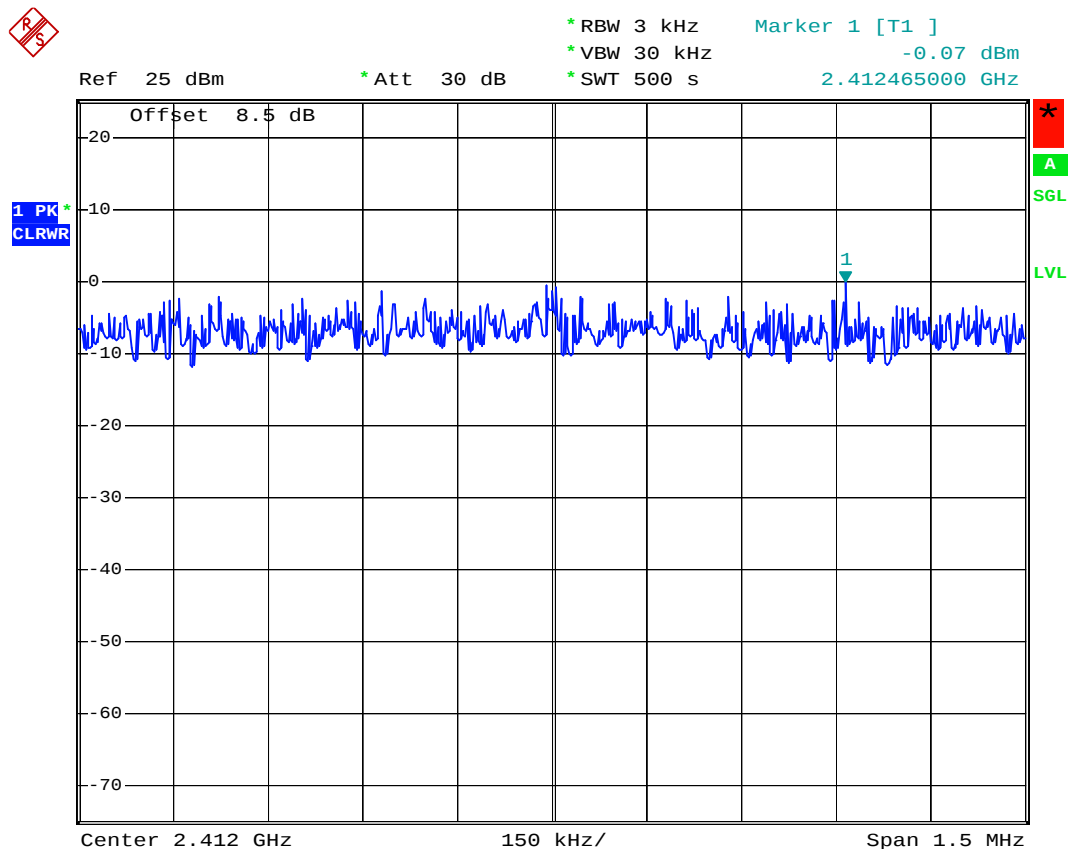
802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-7.37	8	Mode 4
06	2437	-9.37	8	Mode 5
11	2462	-8.19	8	Mode 6



5.3.5 Power Spectral Density

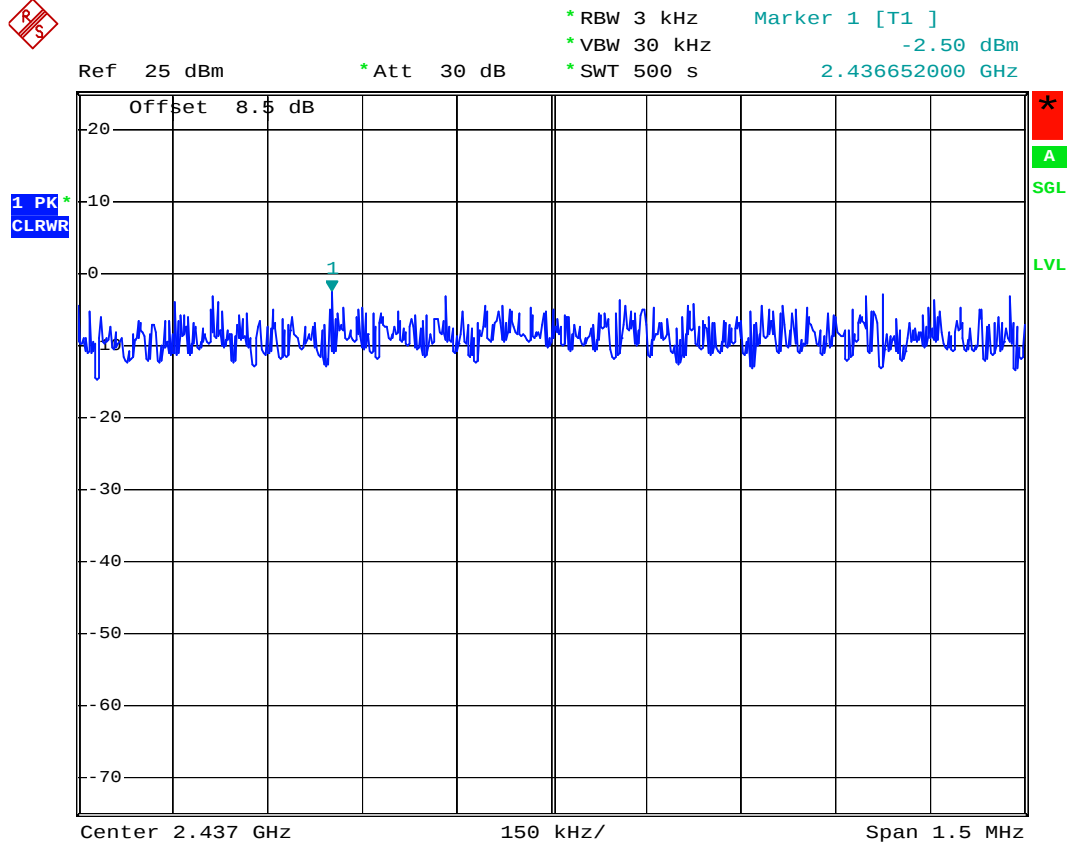
Mode 1



Date: 9.MAY.2006 22:23:28



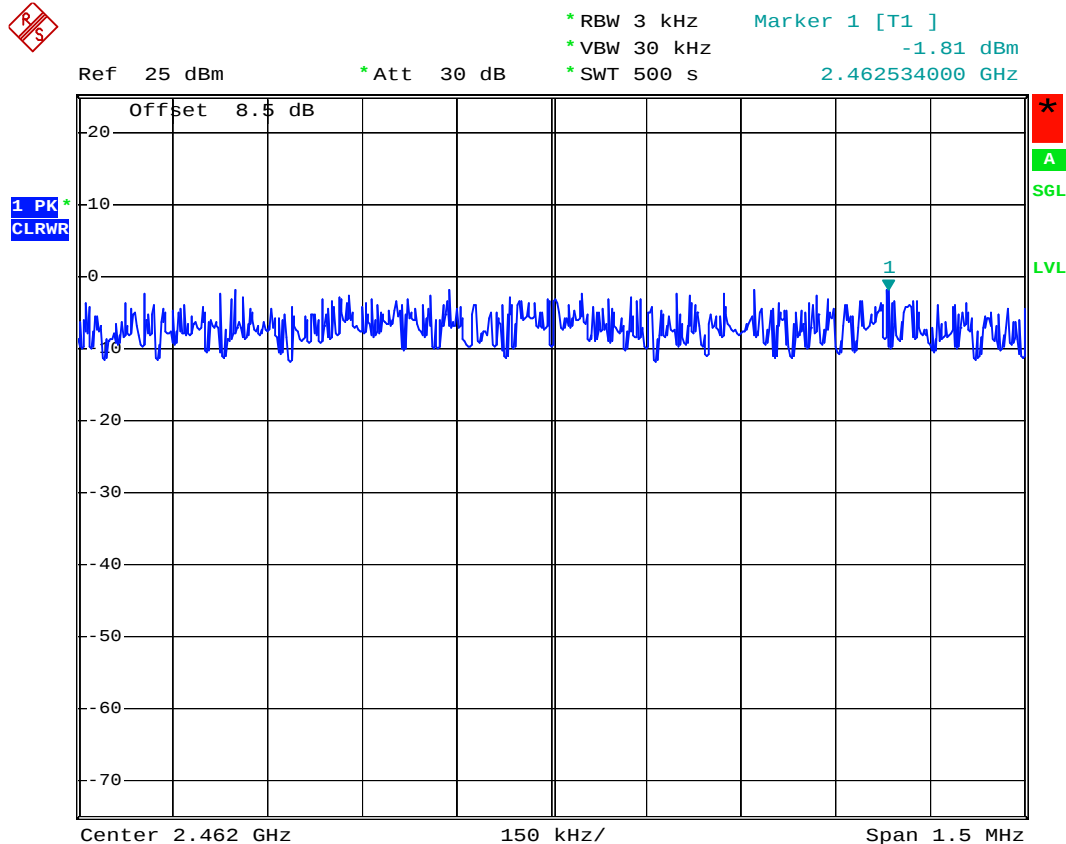
Mode 2



Date: 9.MAY.2006 22:22:13



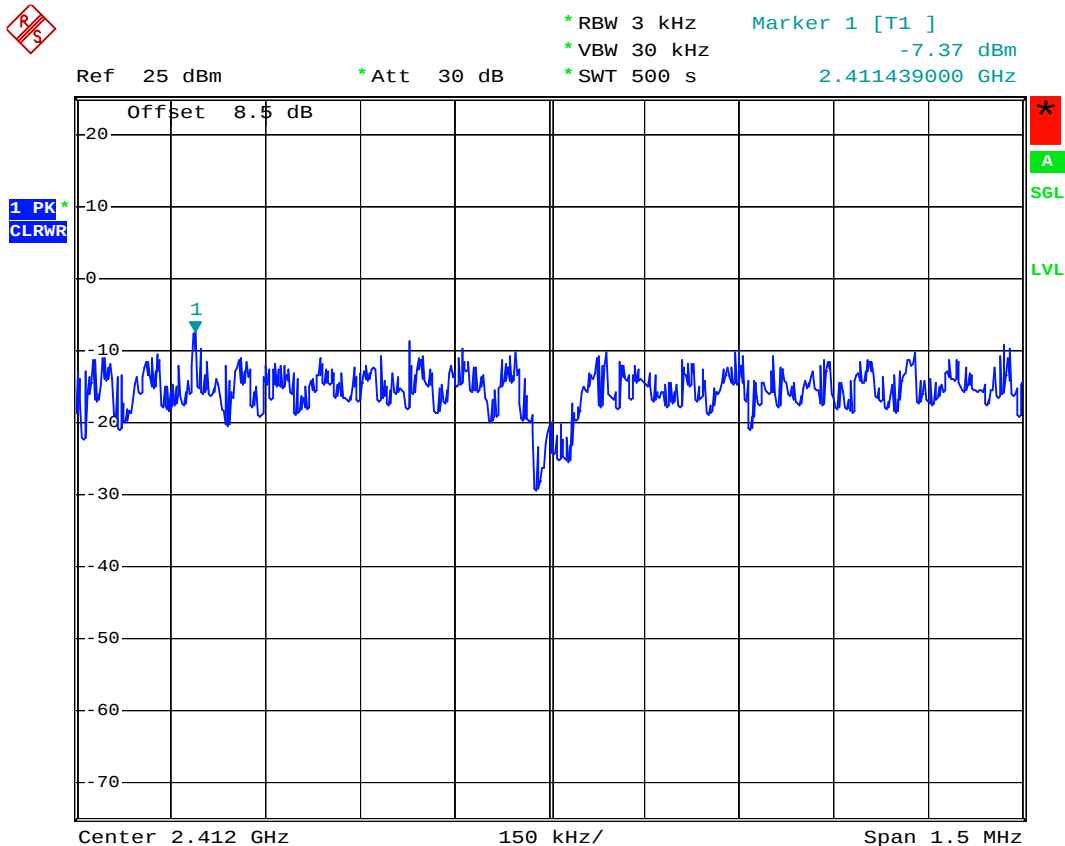
Mode 3



Date: 9.MAY.2006 22:21:19



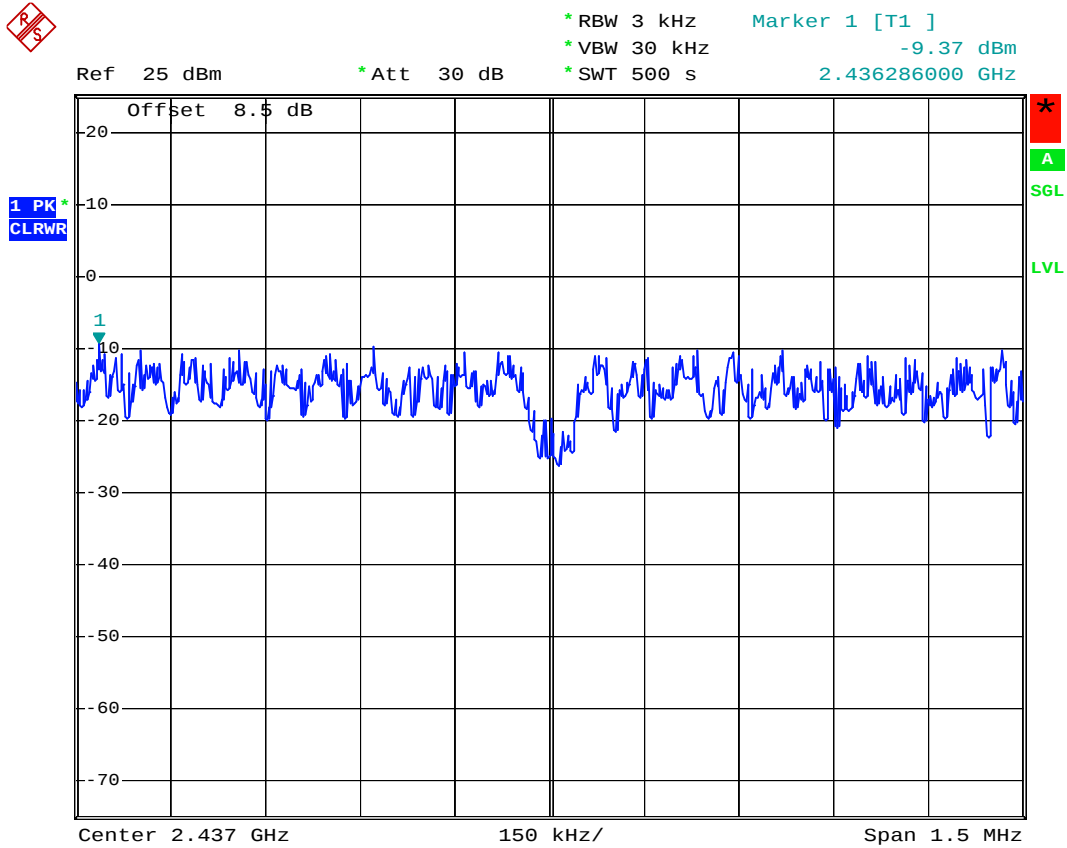
Mode 4



Date: 9.MAY.2006 22:17:21



Mode 5



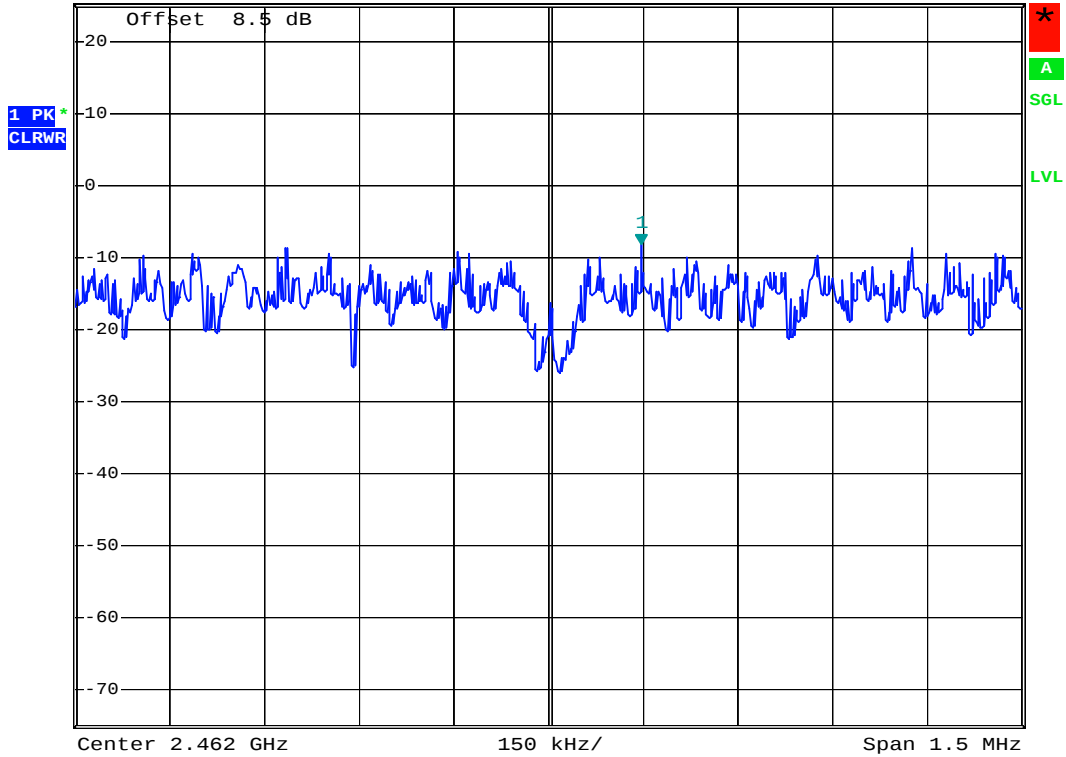
Date: 9.MAY.2006 22:19:04



Mode 6



Ref 25 dBm *Att 30 dB *RBW 3 kHz *VBW 30 kHz *SWT 500 s Marker 1 [T1] -8.19 dBm 2.462147000 GHz



Date: 9.MAY.2006 22:20:02



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 :

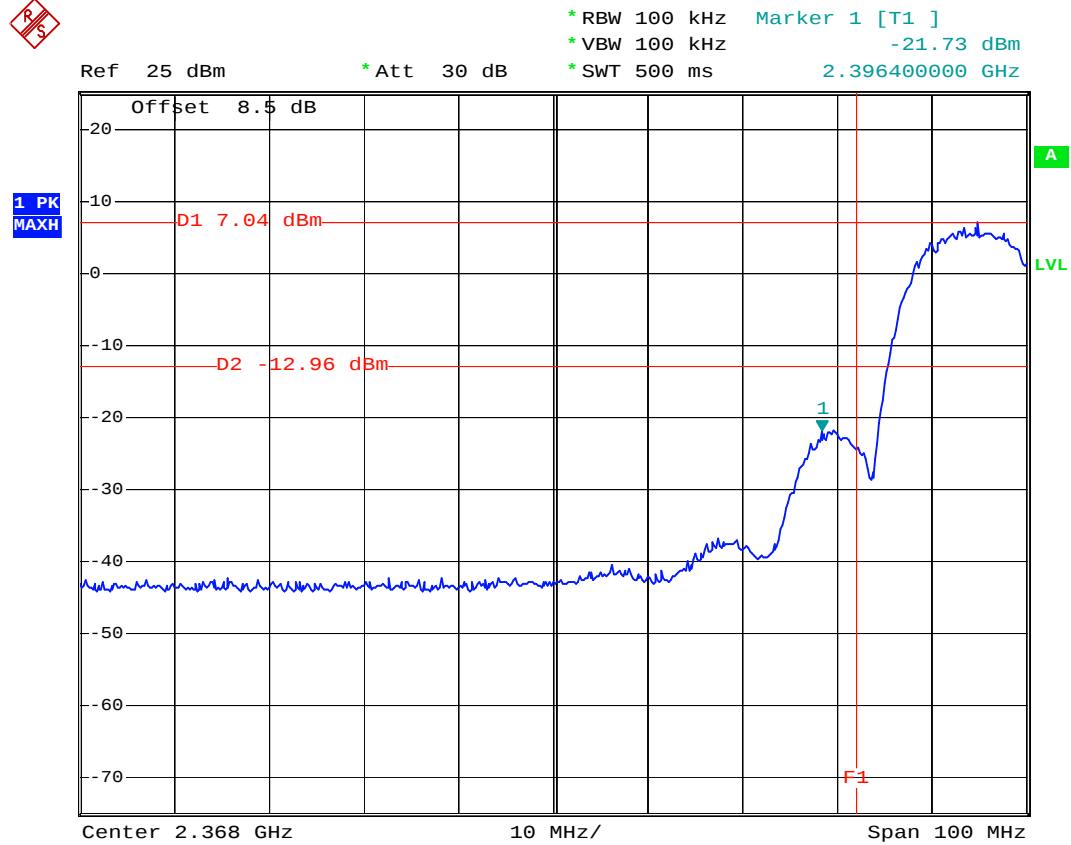
- Application Type : WLAN 802.11b/g and BT
- Temperature : 24°C
- Relative Humidity : 54%
- Test Enginner : James

- 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 20dB Band Edge**

WLAN 802.11b

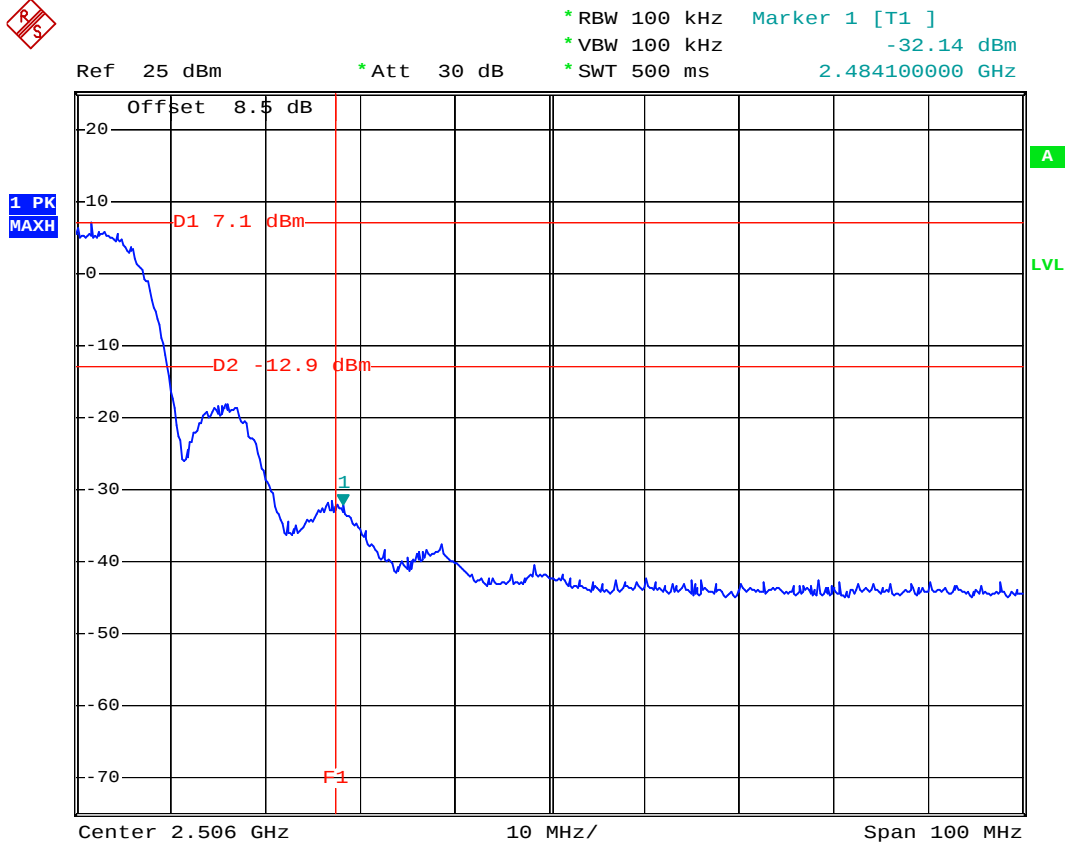
CH01



Date: 9.MAY.2006 18:29:41



CH11

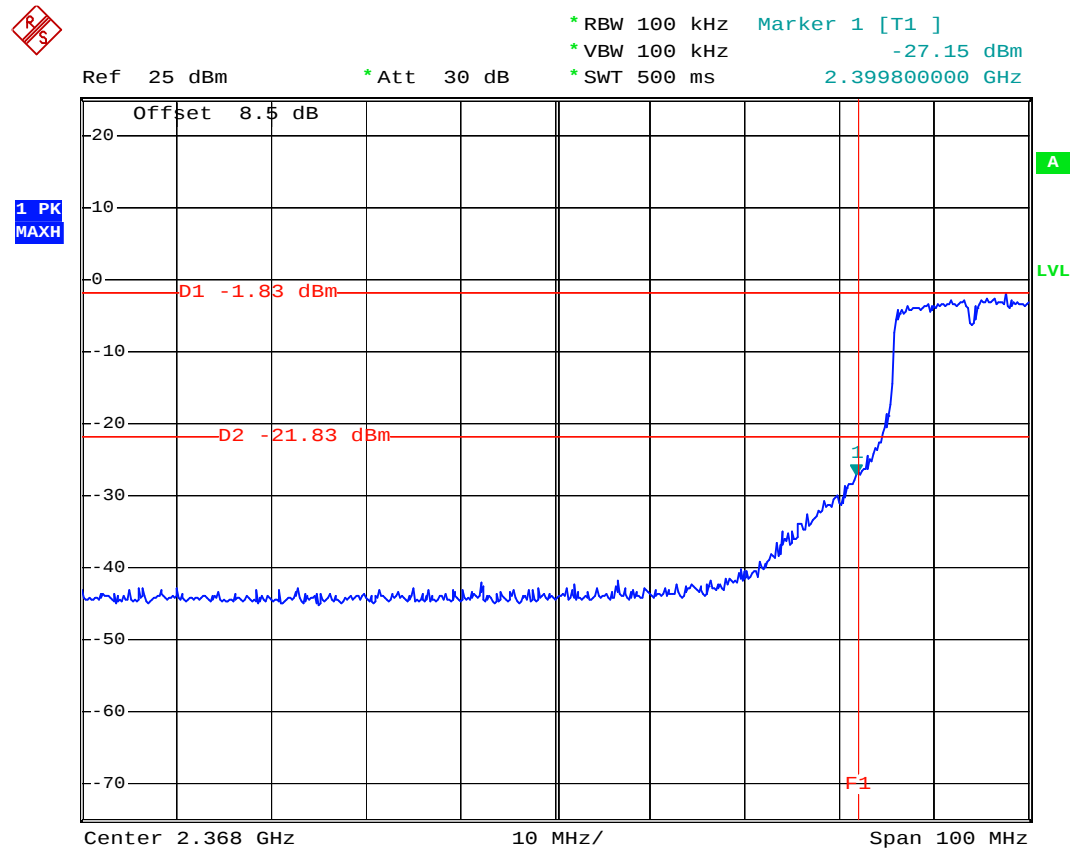


Date: 9.MAY.2006 18:31:39



WLAN 802.11g

CH01



Date: 9.MAY.2006 19:32:23

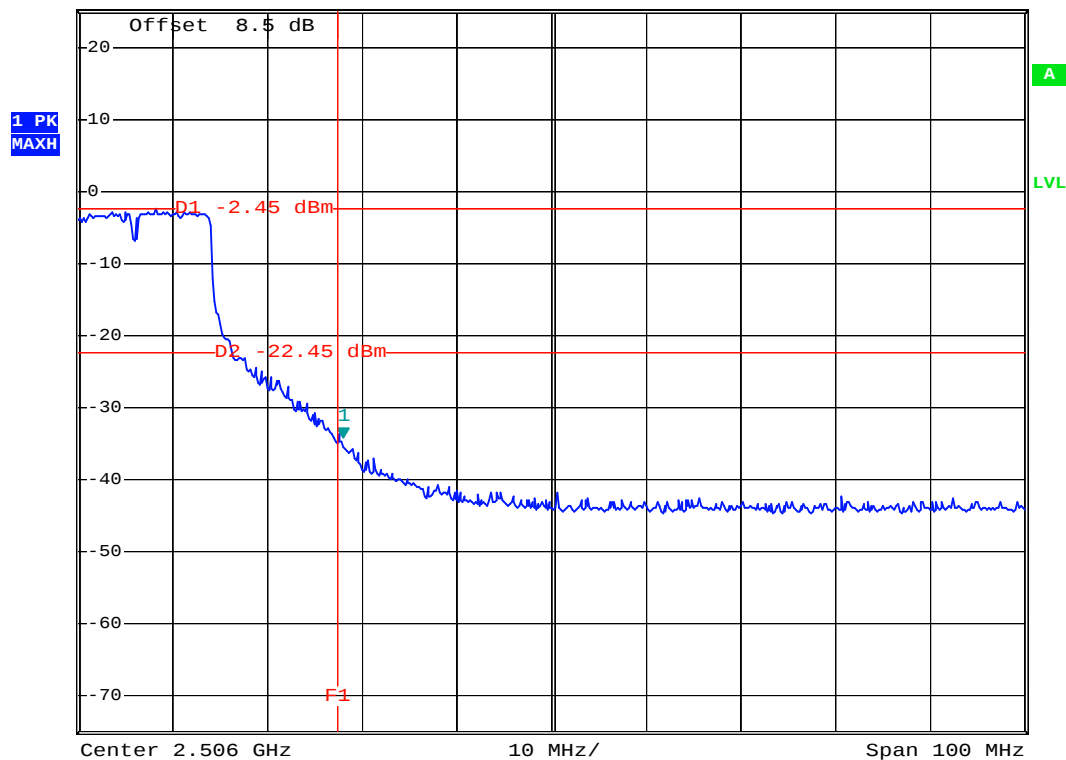


CH11



* RBW 100 kHz Marker 1 [T1]
* VBW 100 kHz -34.30 dBm
* SWT 500 ms 2.483900000 GHz

Ref 25 dBm * Att 30 dB



Date: 9.MAY.2006 19:28:57

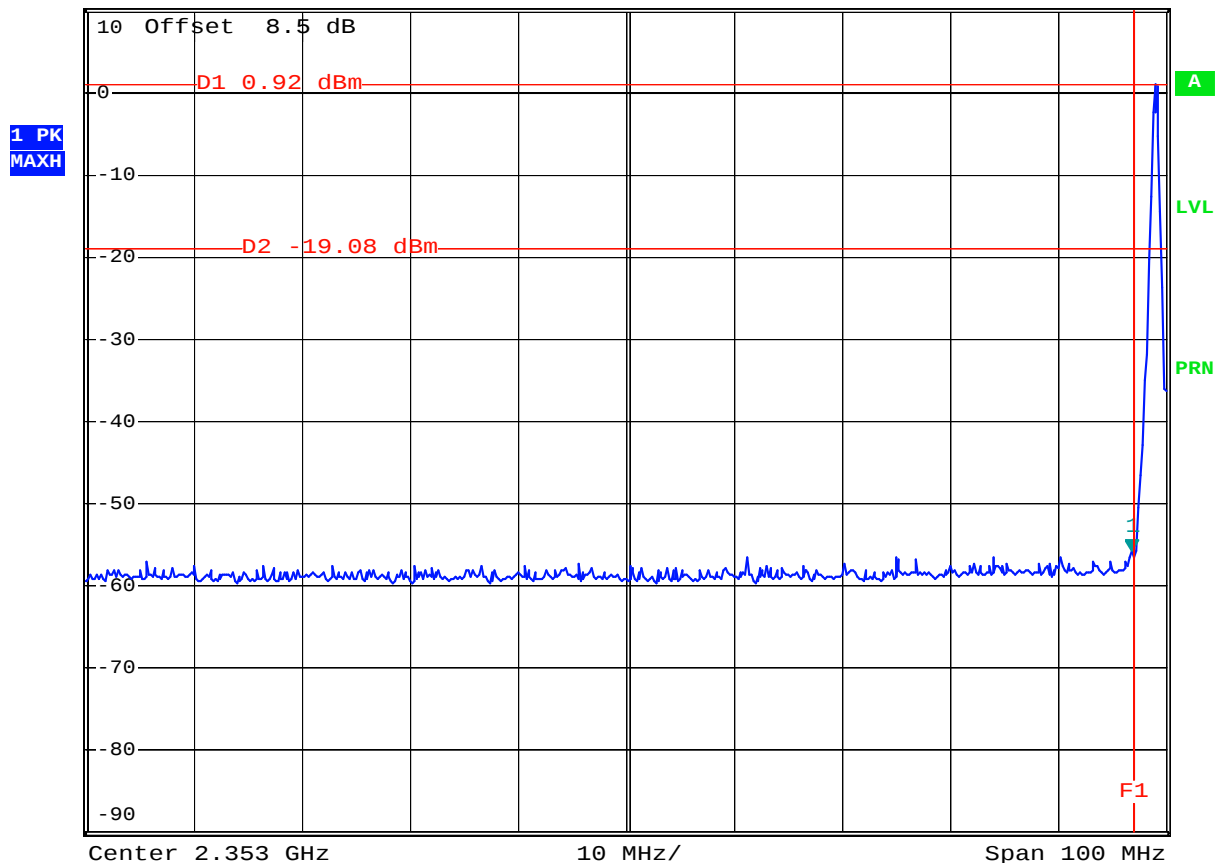


Bluetooth

CH00



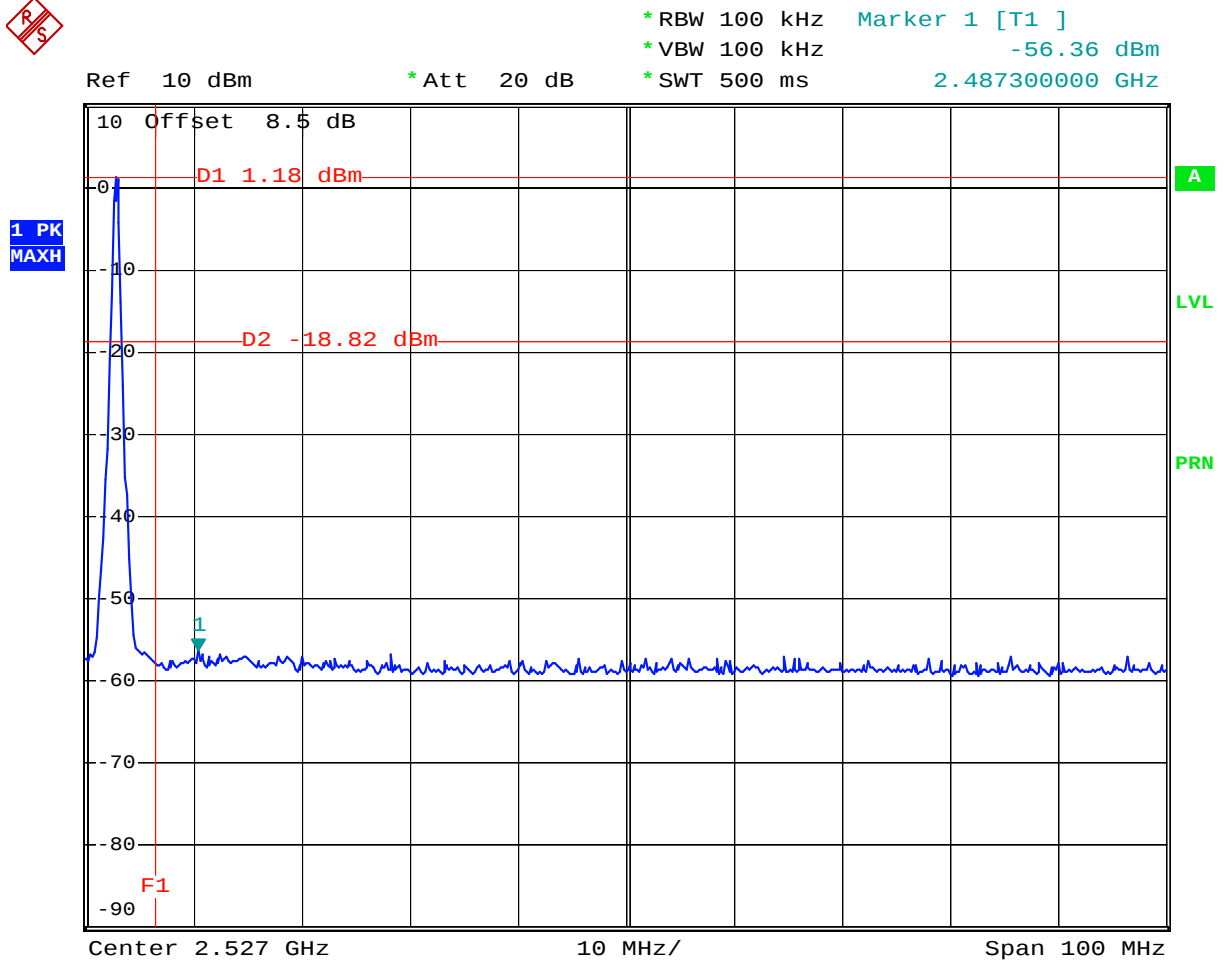
Ref 10 dBm * Att 20 dB * RBW 100 kHz Marker 1 [T1] -55.62 dBm
* VBW 100 kHz * SWT 500 ms 2.399800000 GHz



Date: 26.APR.2006 15:14:22



CH78



Date: 26.APR.2006 15:16:33

5.5 Hopping Channel Separation

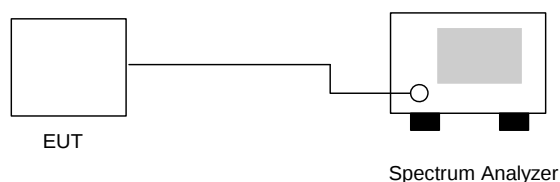
5.5.1 Measuring Instruments :

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 : 54%
- Test Enginner : James

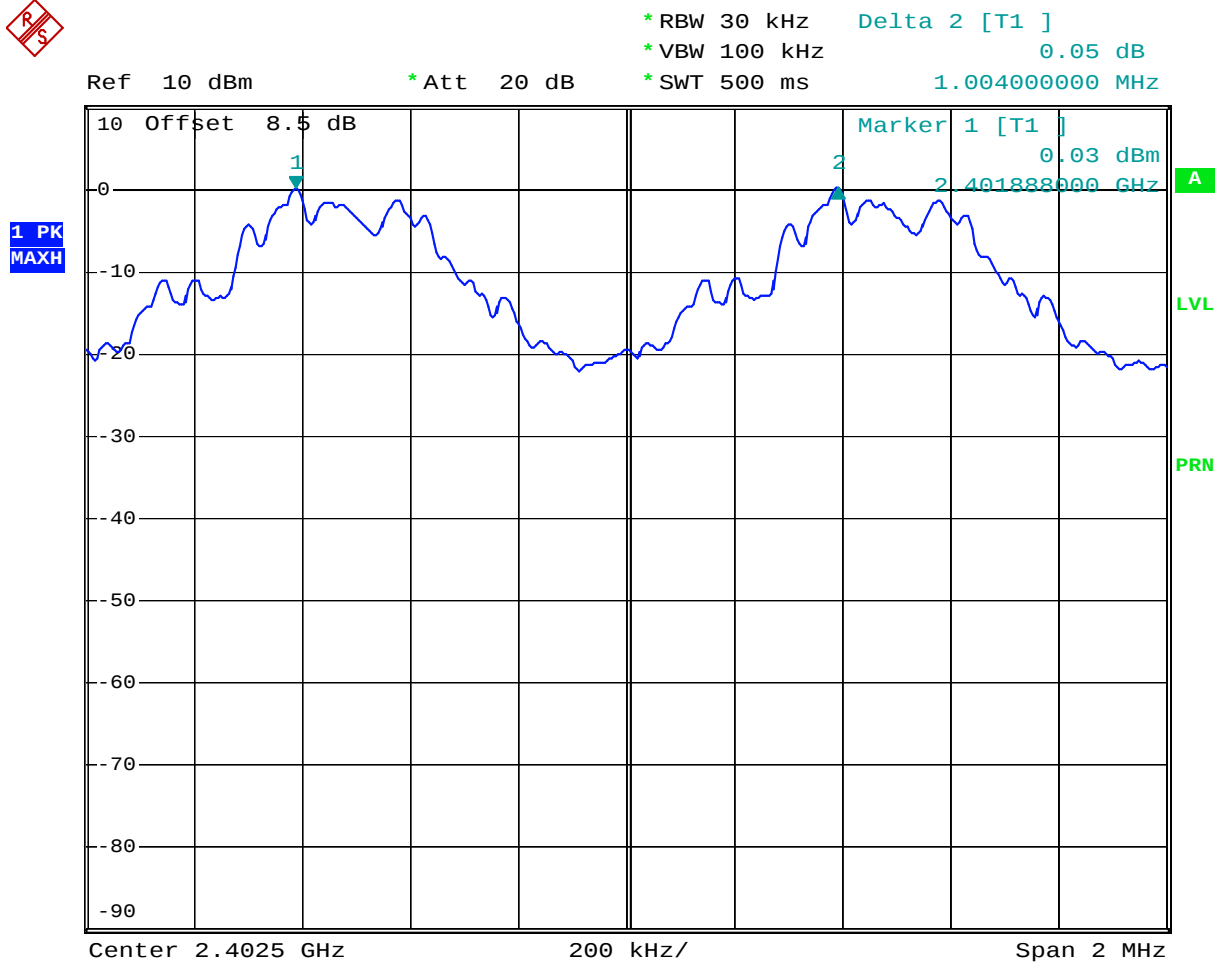
		Carrier Frequency		Limits	Plot
Channel	Frequency	Separation			
	(MHz)	(MHz)	(MHz)		Ref. No.
00	2402	1.004	0.887		Mode 1
39	2441	1.004	0.876		Mode 2
78	2480	1.000	0.873		Mode 3

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



5.5.5 Hopping Channel Separation

Mode 1



Date: 26.APR.2006 15:21:18



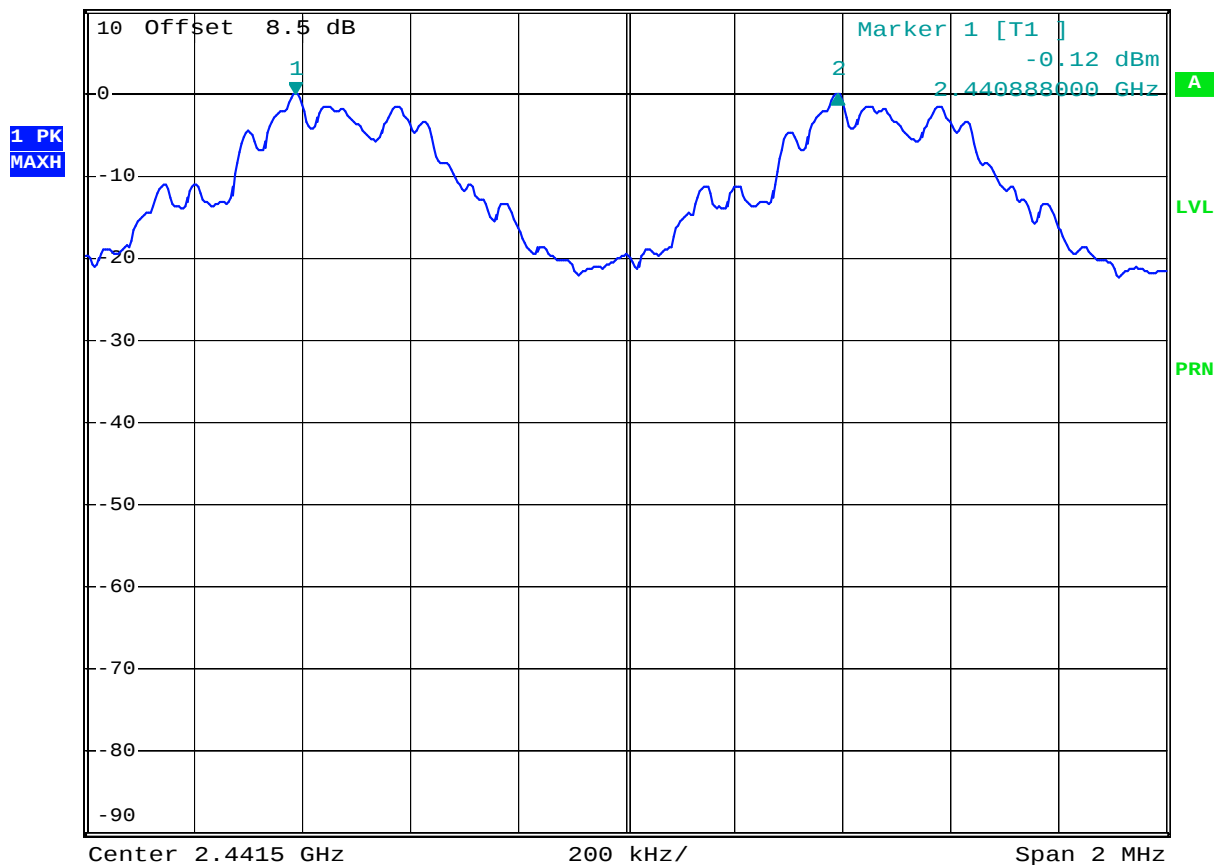
Mode 2



* RBW 30 kHz Delta 2 [T1]
* VBW 100 kHz -0.03 dB
* SWT 500 ms 1.004000000 MHz

Ref 10 dBm

* Att 20 dB



Date: 26.APR.2006 15:22:09



Mode 3

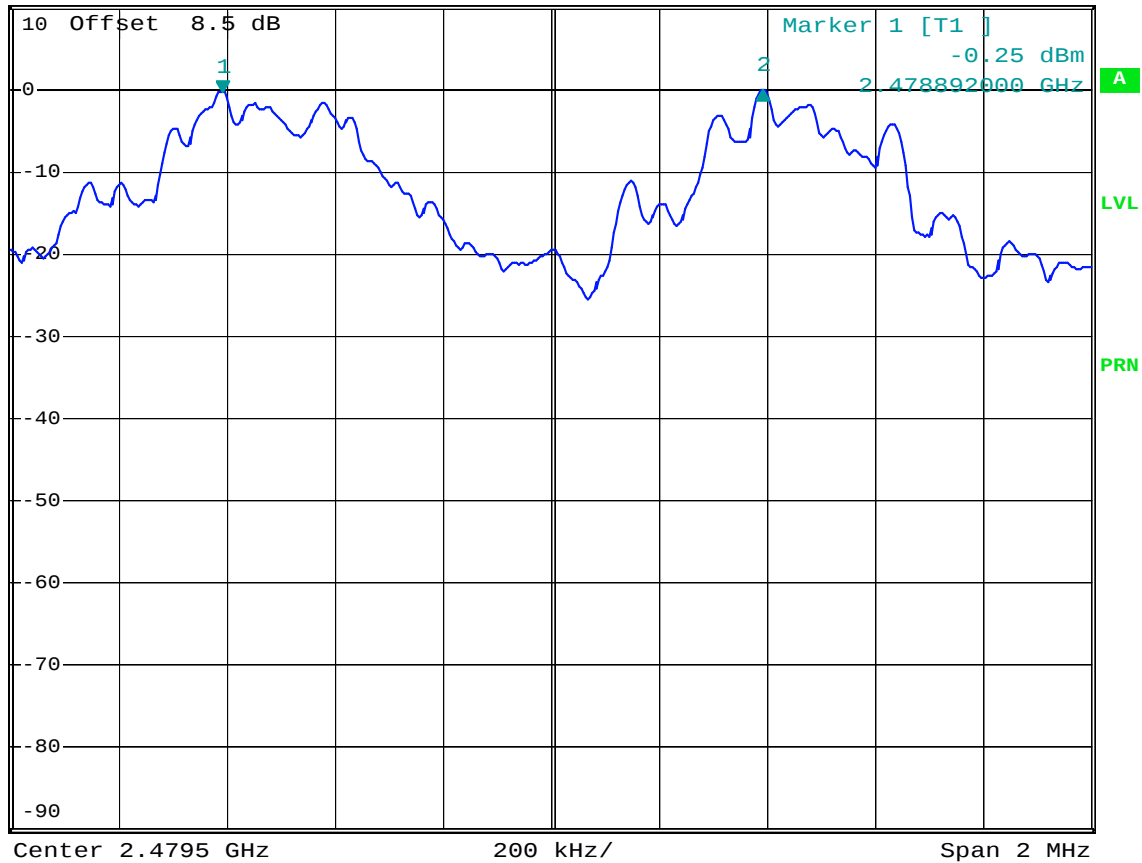


* RBW 30 kHz Delta 2 [T1]
* VBW 100 kHz 0.20 dB
* SWT 500 ms 1.000000000 MHz

Ref 10 dBm

* Att 20 dB

1 PK
MAXH



Date: 26.APR.2006 15:19:37

5.6 Number of Hopping Frequency

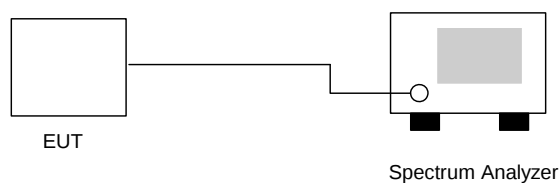
5.6.1 Measuring Instruments :

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 :

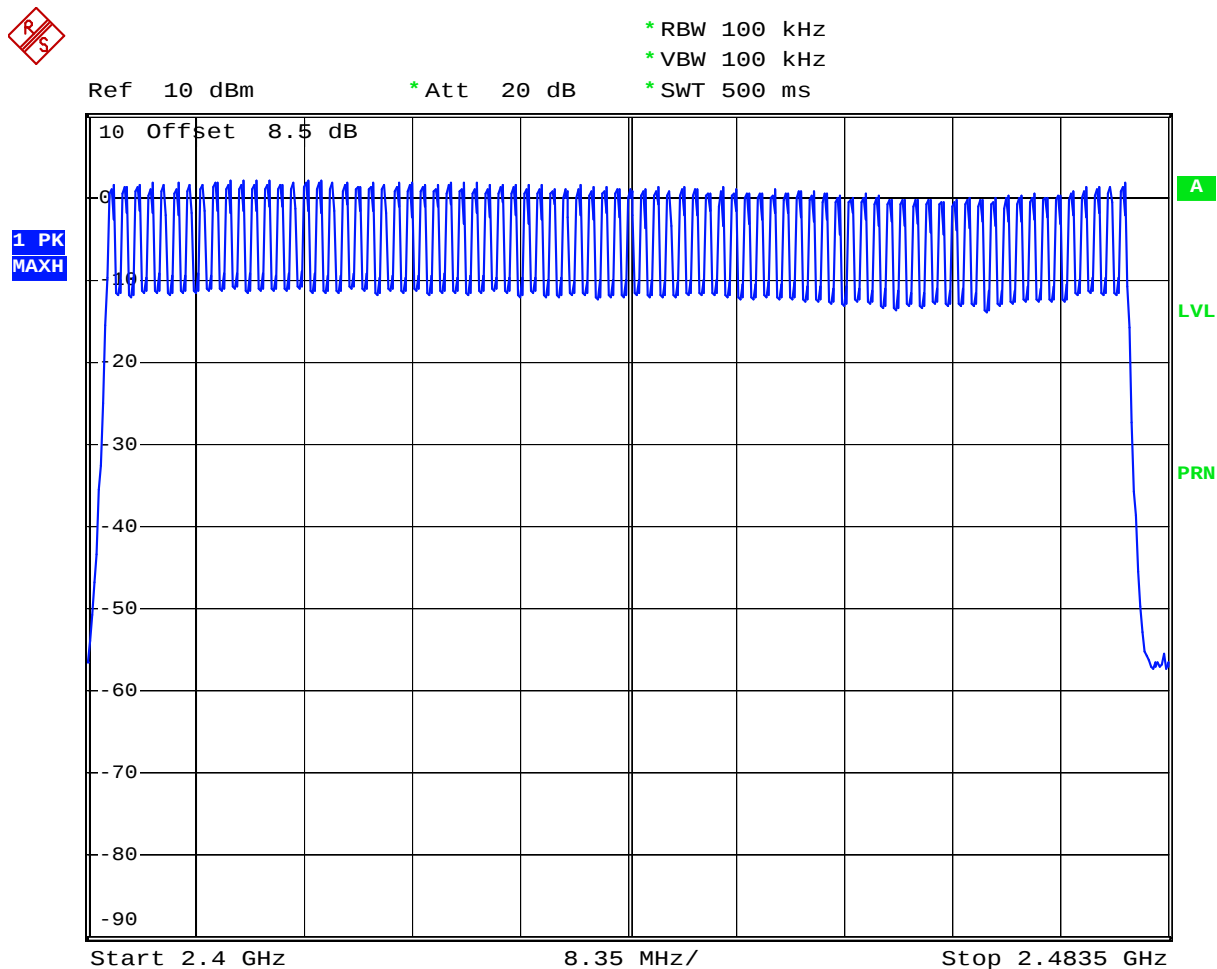


5.6.4 Test Result : See spectrum analyzer plots below

- Application Type : BT
- Temperature : 24°C
- Relative Humidity : 54%
- Test Enginner : James

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

5.6.5 Number of Hopping Frequency



Date: 26.APR.2006 16:12:51

5.7 Hopping Channel Bandwidth

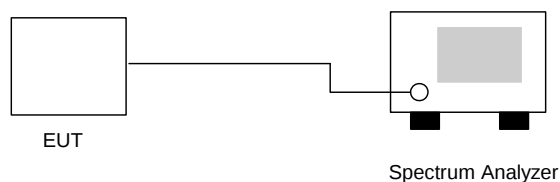
5.7.1 Measuring Instruments :

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 : 54%
- Test Enginner : James

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	0.887	1.000	Mode 1
39	2441	0.876	1.000	Mode 2
78	2480	0.873	1.000	Mode 3



5.7.5 Hopping Channel Bandwidth

Mode 1



Date: 26.APR.2006 15:06:24



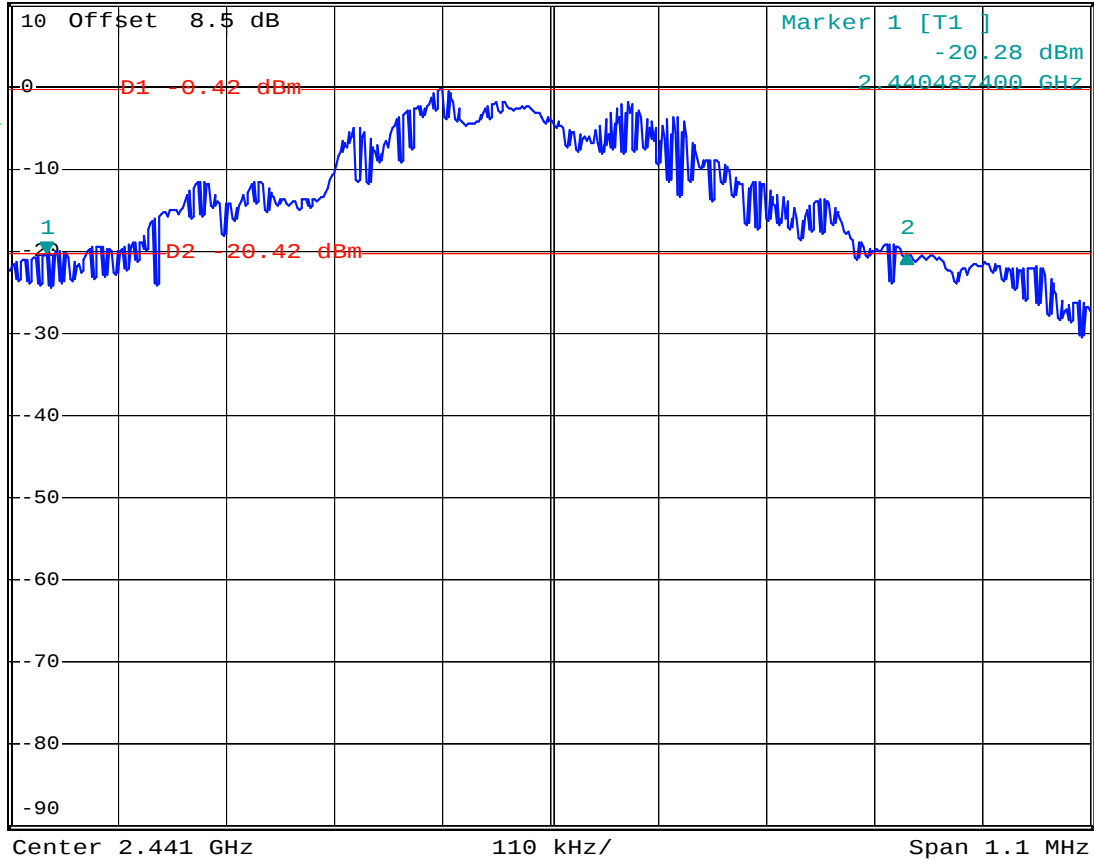
Mode 2



* RBW 30 kHz Delta 2 [T1]
* VBW 300 kHz 0.04 dB
* SWT 500 ms 875.600000000 kHz

Ref 10 dBm

* Att 20 dB



Date: 26.APR.2006 15:08:31

Mode 3



```
* RBW 30 kHz      Delta 2 [T1 ]
```

* VBW 300 kHz 0.09 dB

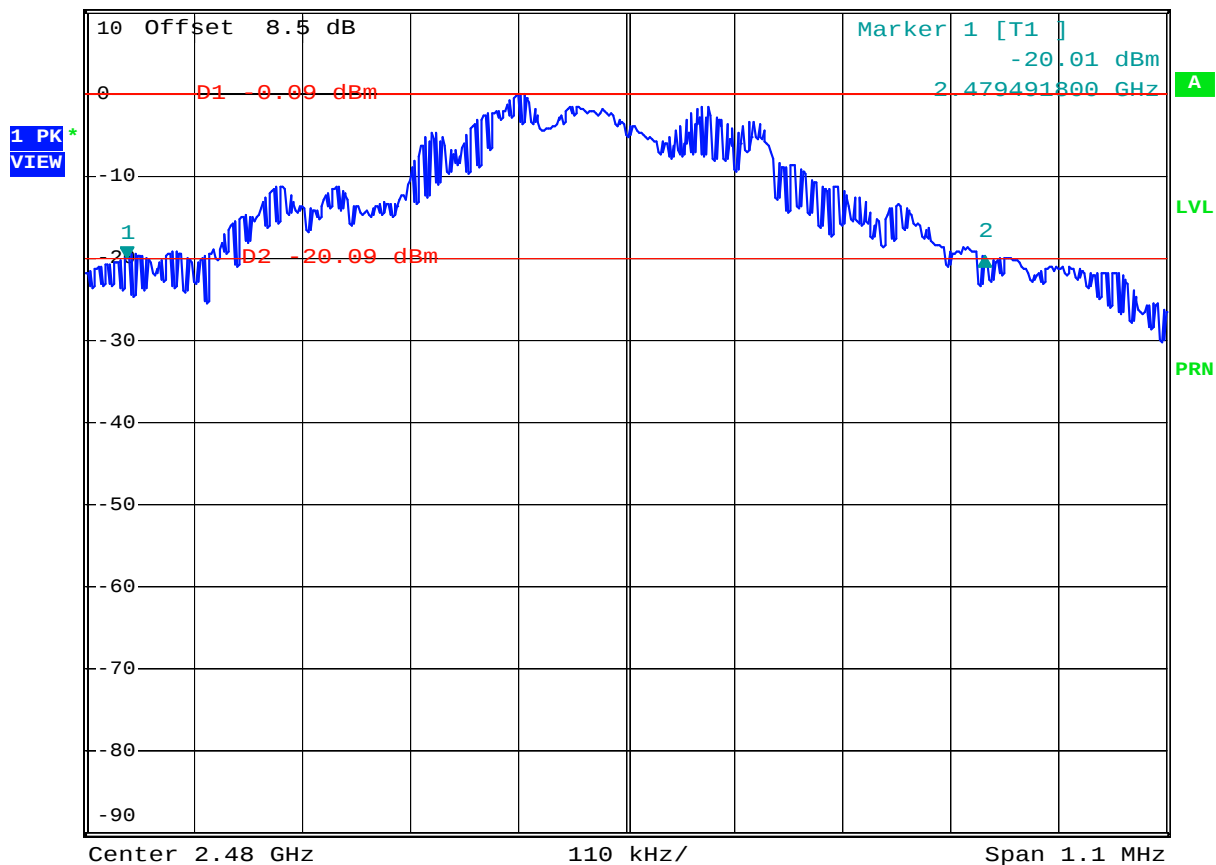
*SWT 500 ms 873.400000000 kHz

Ref 10 dBm

* Att 20 dB

* SWT 500 ms

873.4000000000 kHz



Date: 26.APR.2006 15:10:15

5.8 Dwell Time of Each Frequency

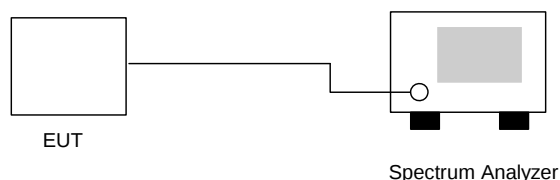
5.8.1 Measuring Instruments :

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 $= 79 * 0.4 * (1600/79) * t$ (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 : 24°C
- Relative Humidity : 54%
- Test Enginner : James

Ch00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.4	460	0.122	0.4
DH3	4.3	1740	0.236	0.4
DH5	2.6	2940	0.242	0.4

**CH39**

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.5	460	0.124	0.4
DH3	3.9	1734	0.214	0.4
DH5	3.6	2940	0.334	0.4

CH78

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	6.9	464	0.101	0.4
DH3	4.5	1724	0.245	0.4
DH5	4	2940	0.372	0.4

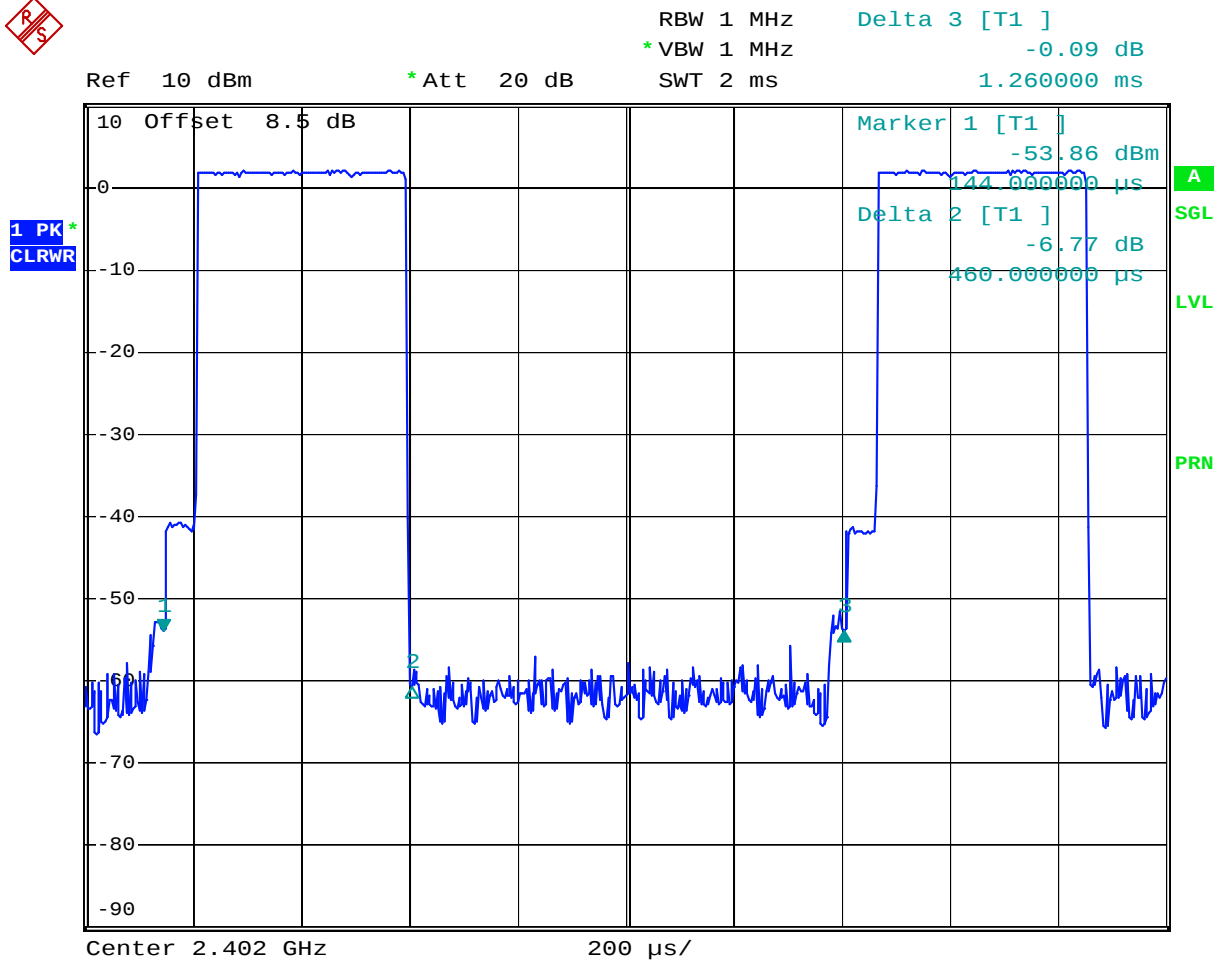
Remark:

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)

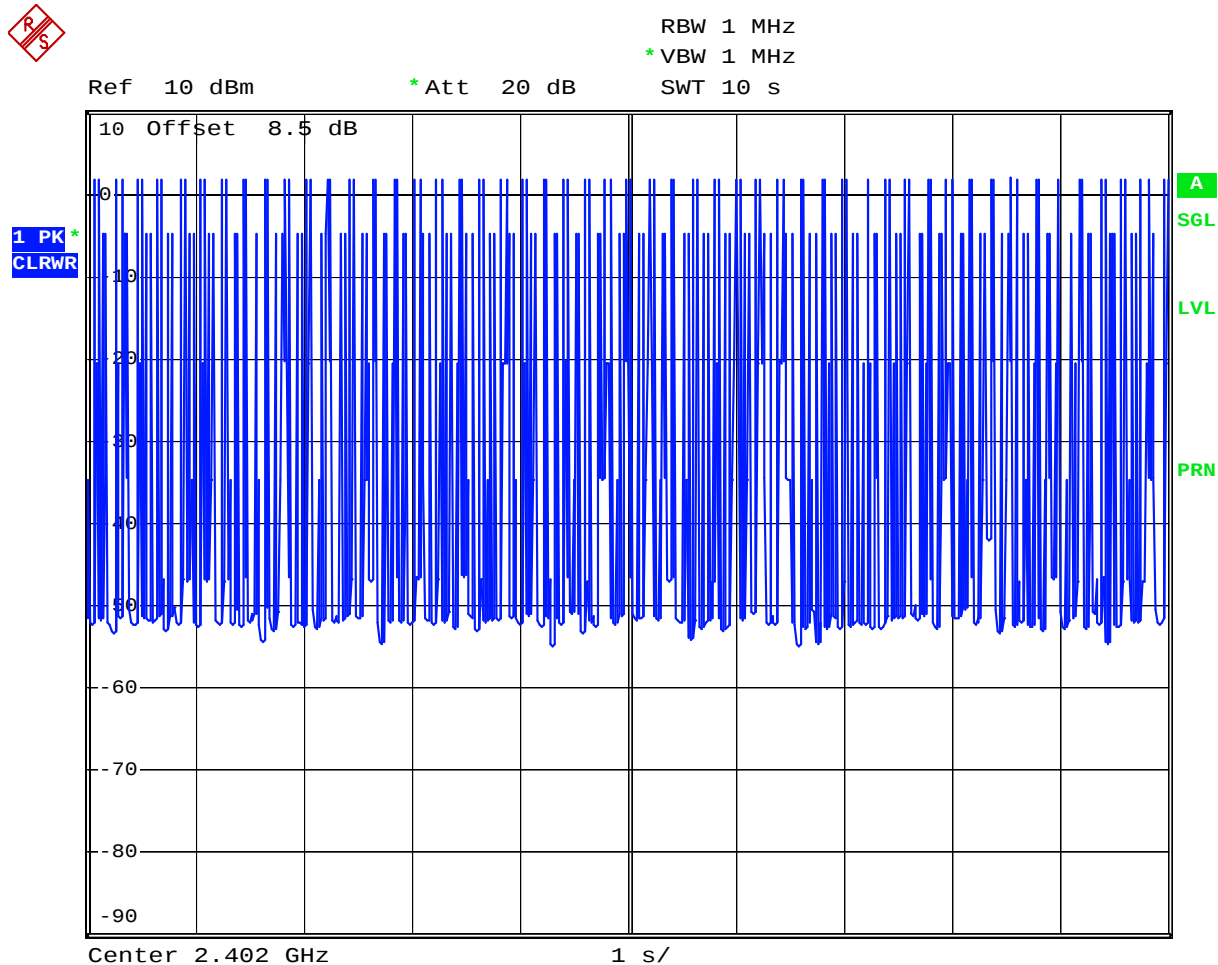


5.8.5 Dwell Time

DH1 (CH00)



Date: 26.APR.2006 15:29:25



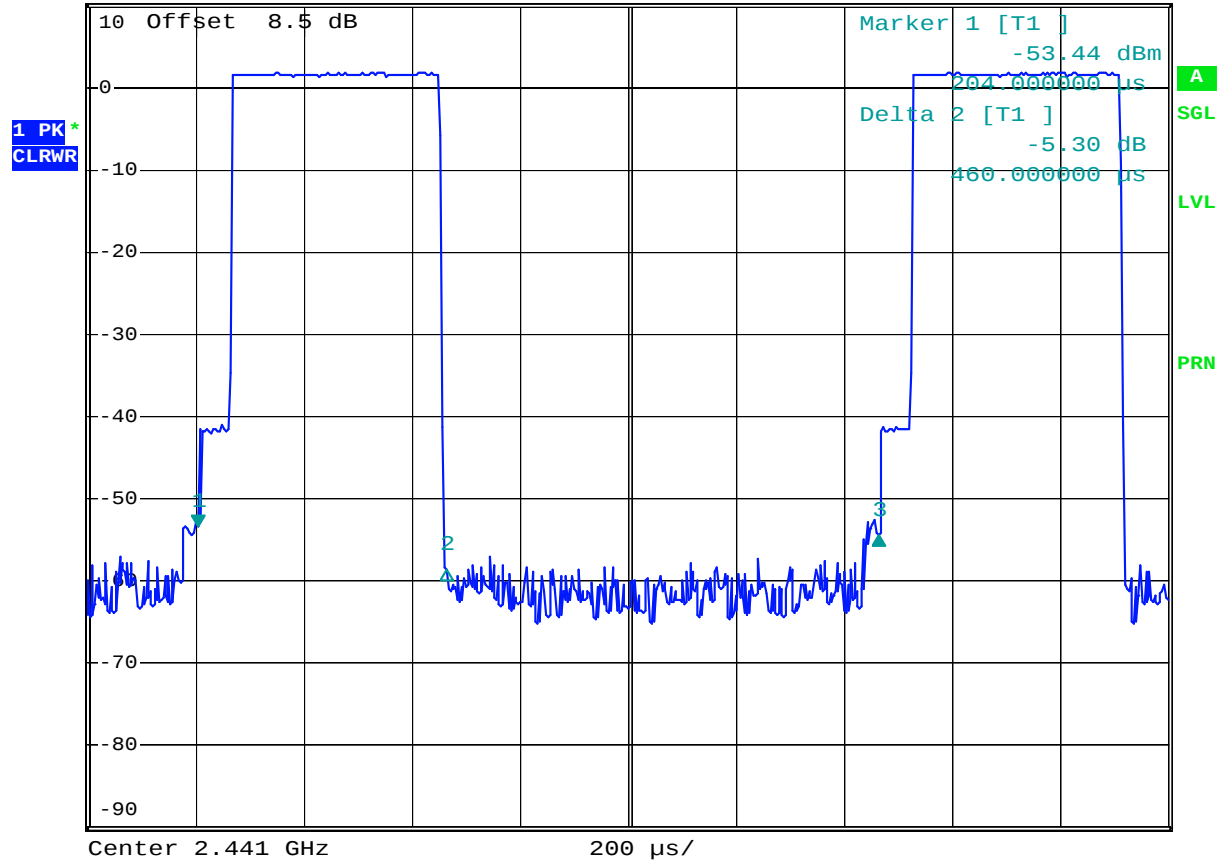
Date: 26.APR.2006 15:53:35



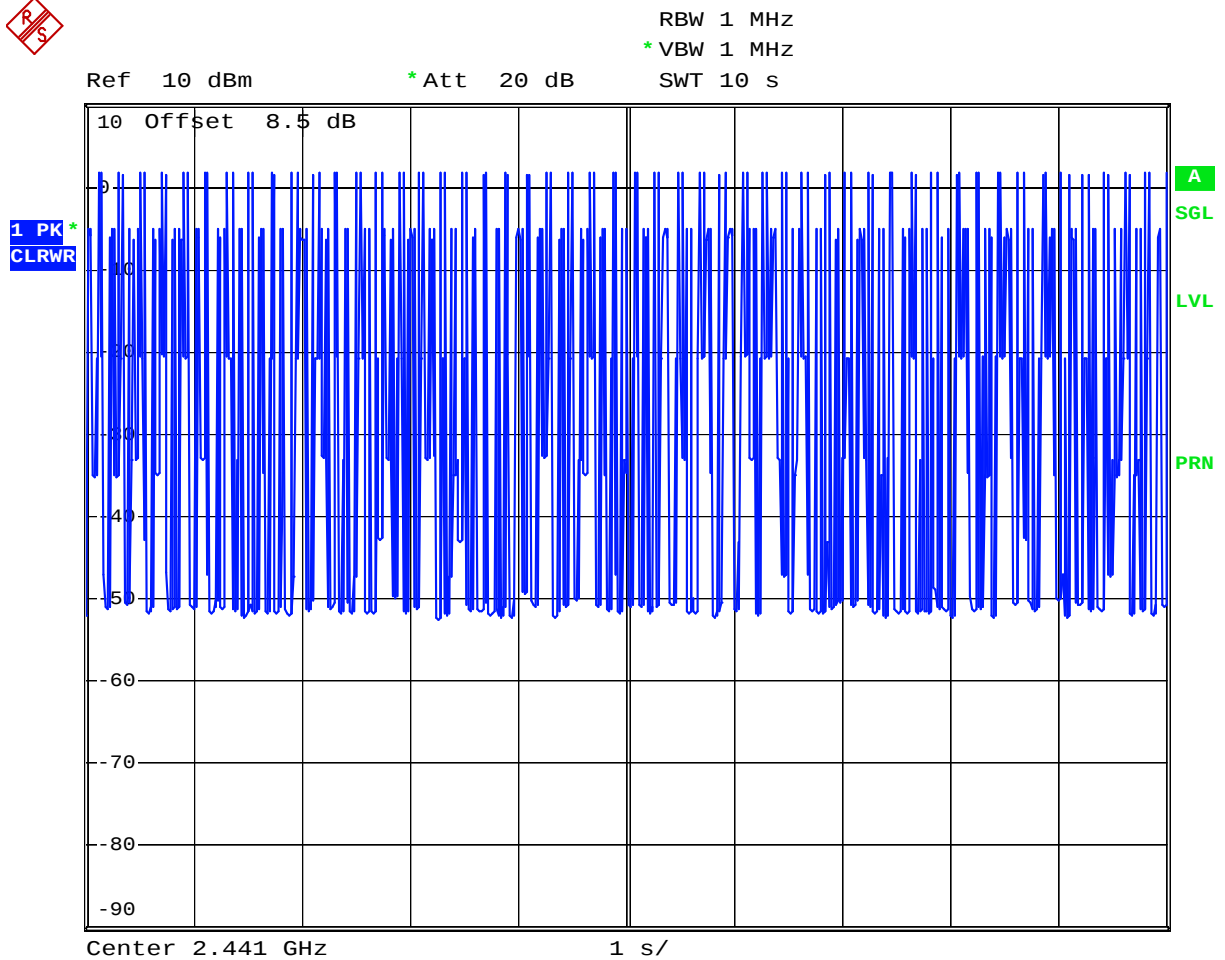
DH1 (CH39)



RBW 1 MHz Delta 3 [T1]
* VBW 1 MHz -1.09 dB
Ref 10 dBm * Att 20 dB SWT 2 ms 1.260000 ms



Date: 26.APR.2006 15:30:38



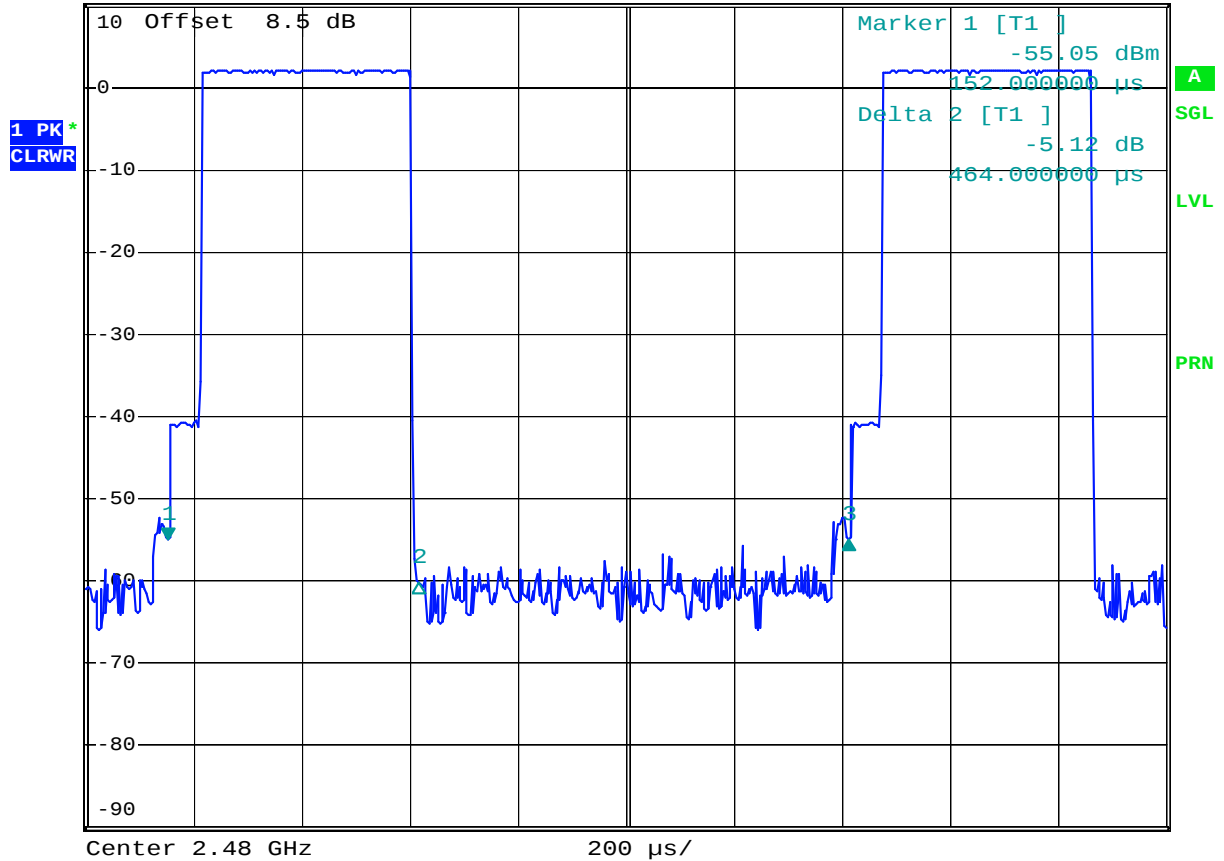
Date: 26.APR.2006 15:54:35



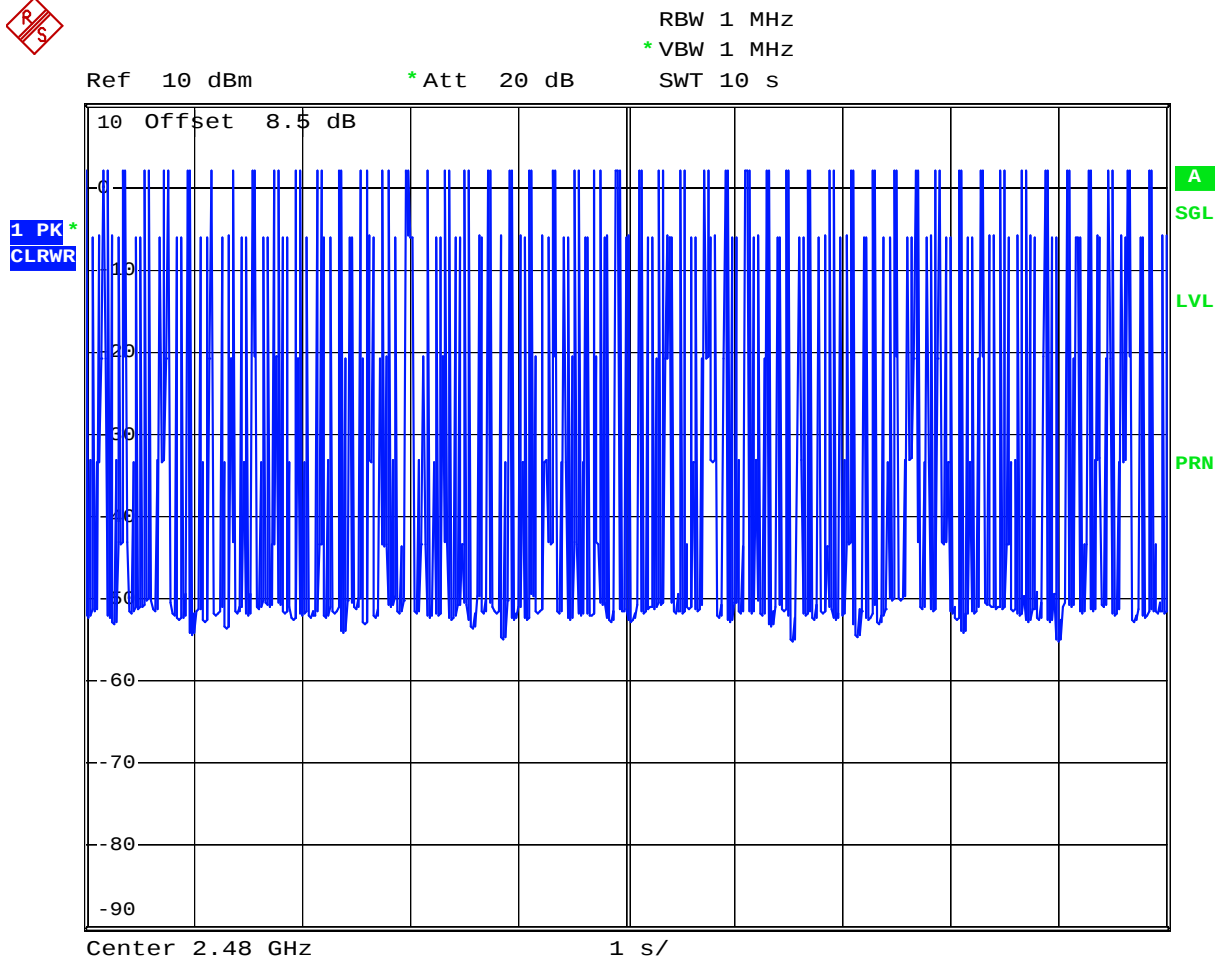
DH1 (CH78)



Ref 10 dBm * Att 20 dB RBW 1 MHz Delta 3 [T1] 0.03 dB
* VBW 1 MHz SWT 2 ms 1.260000 ms



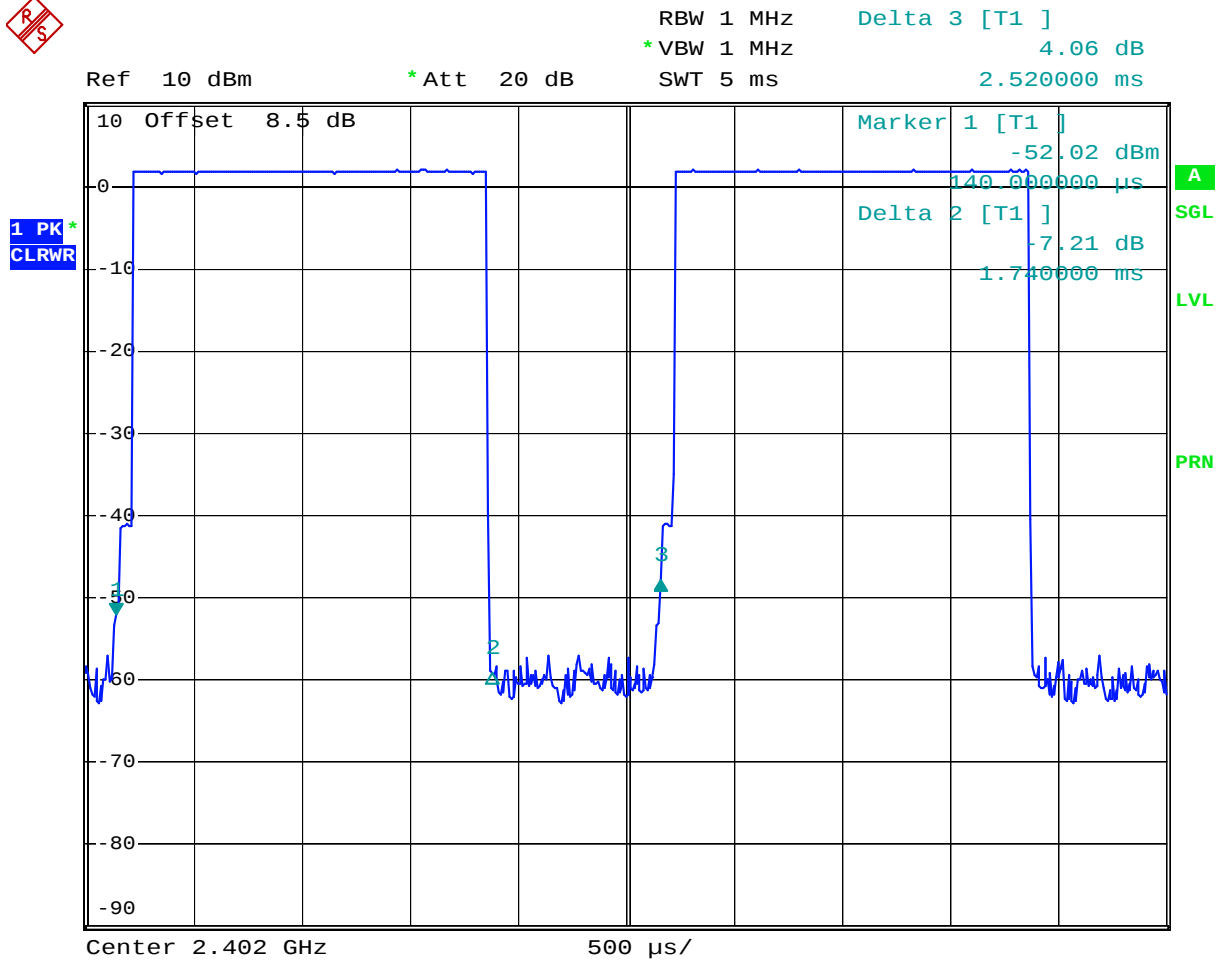
Date: 26.APR.2006 15:31:25



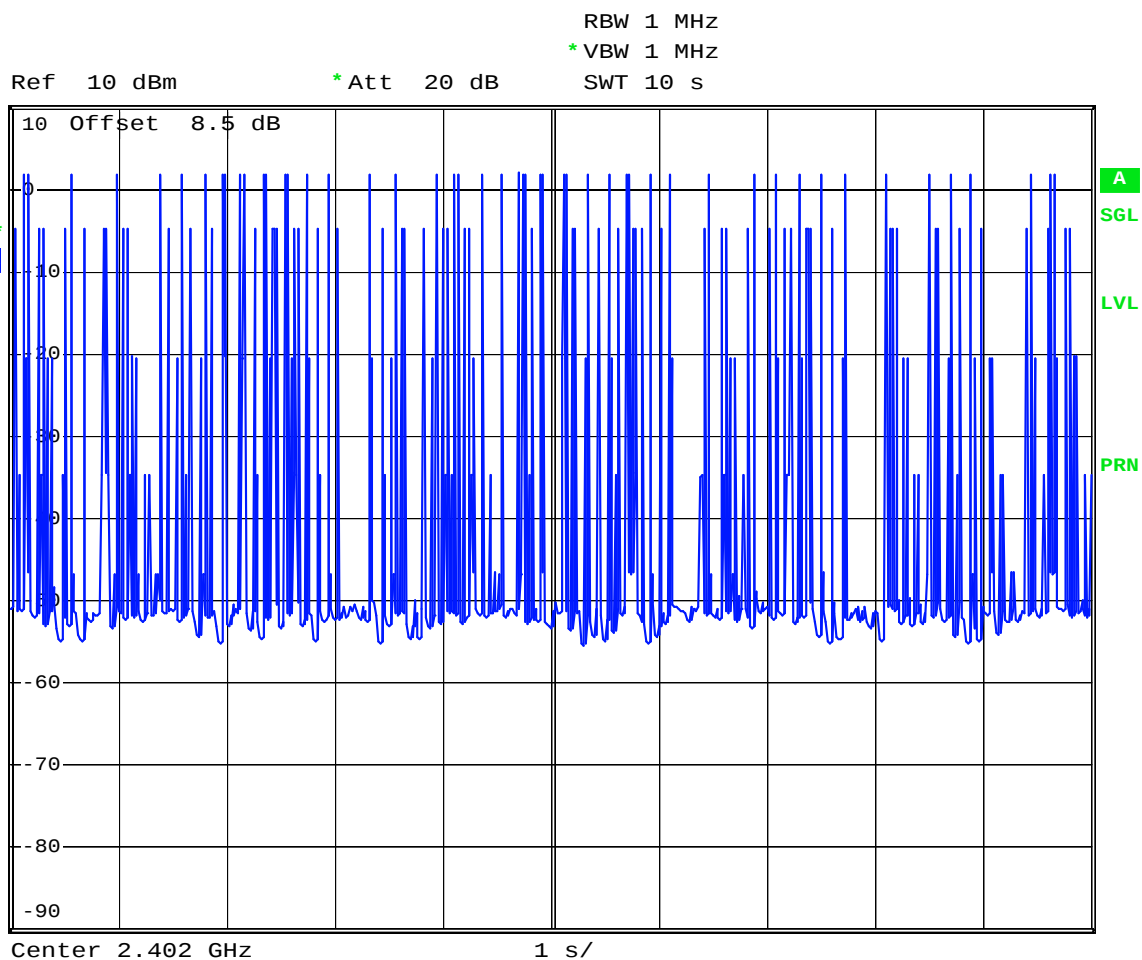
Date: 26.APR.2006 15:55:31



DH3 (CH00)



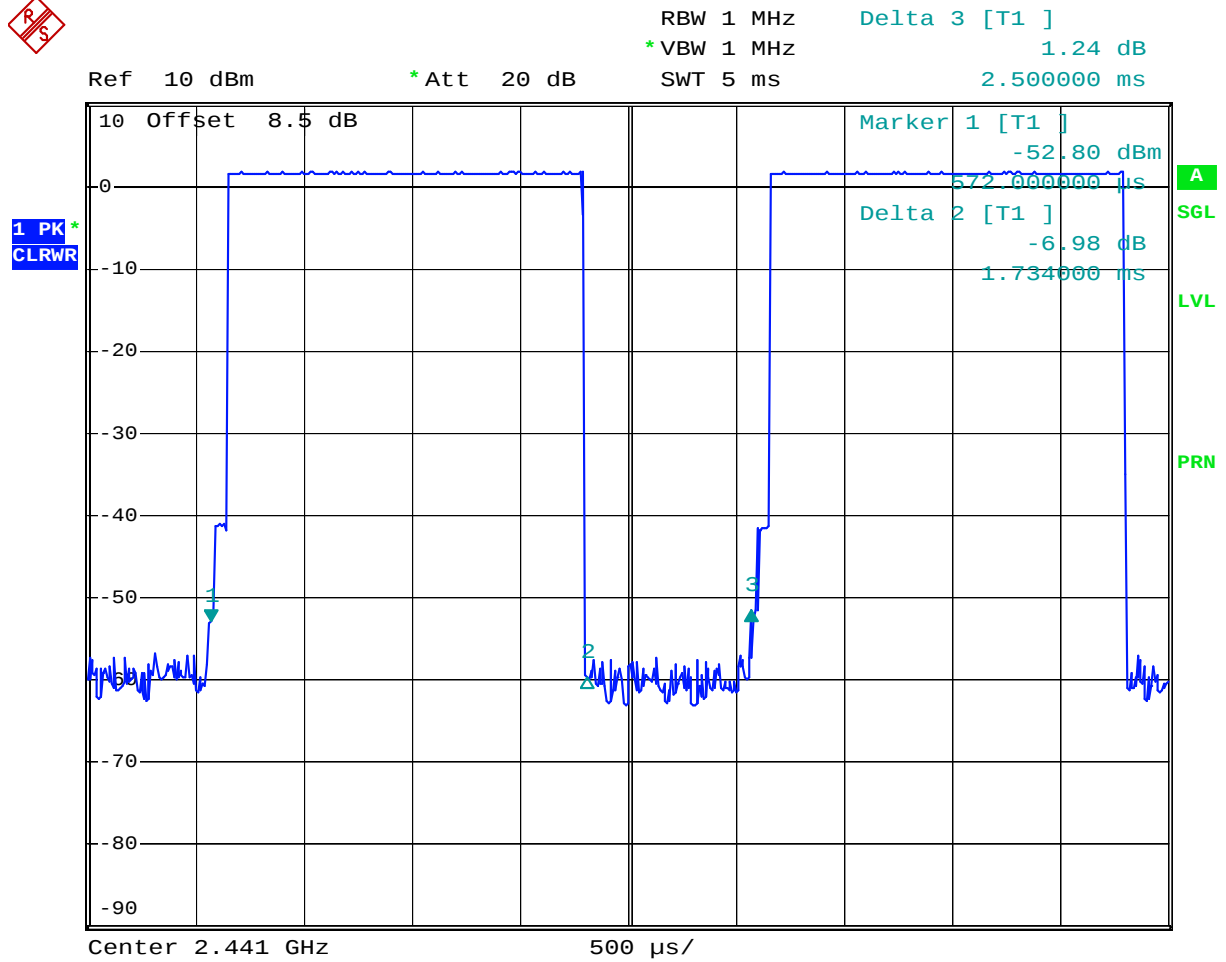
Date: 26.APR.2006 15:37:11



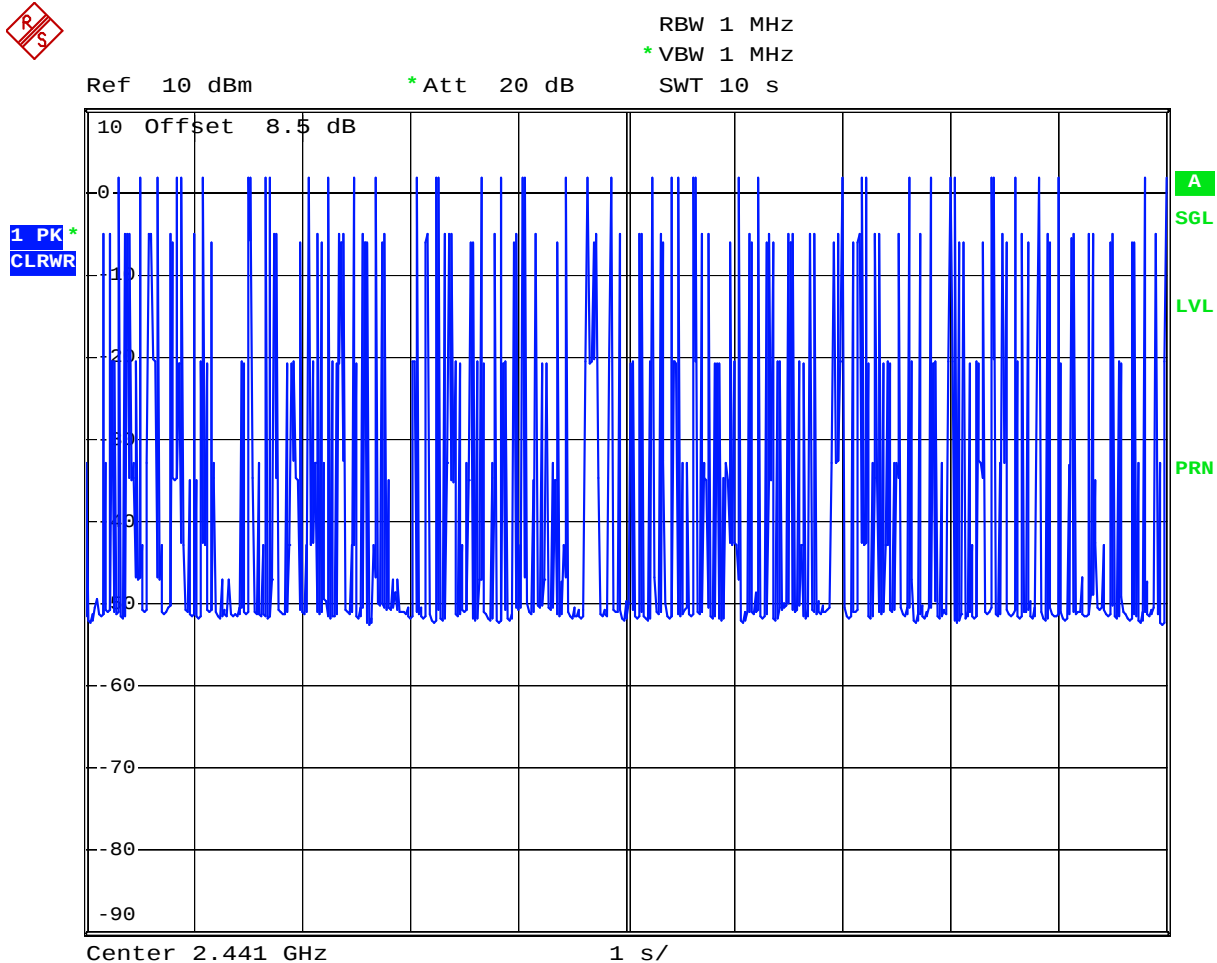
Date: 26.APR.2006 15:52:47



DH3 (CH39)



Date: 26.APR.2006 15:36:01



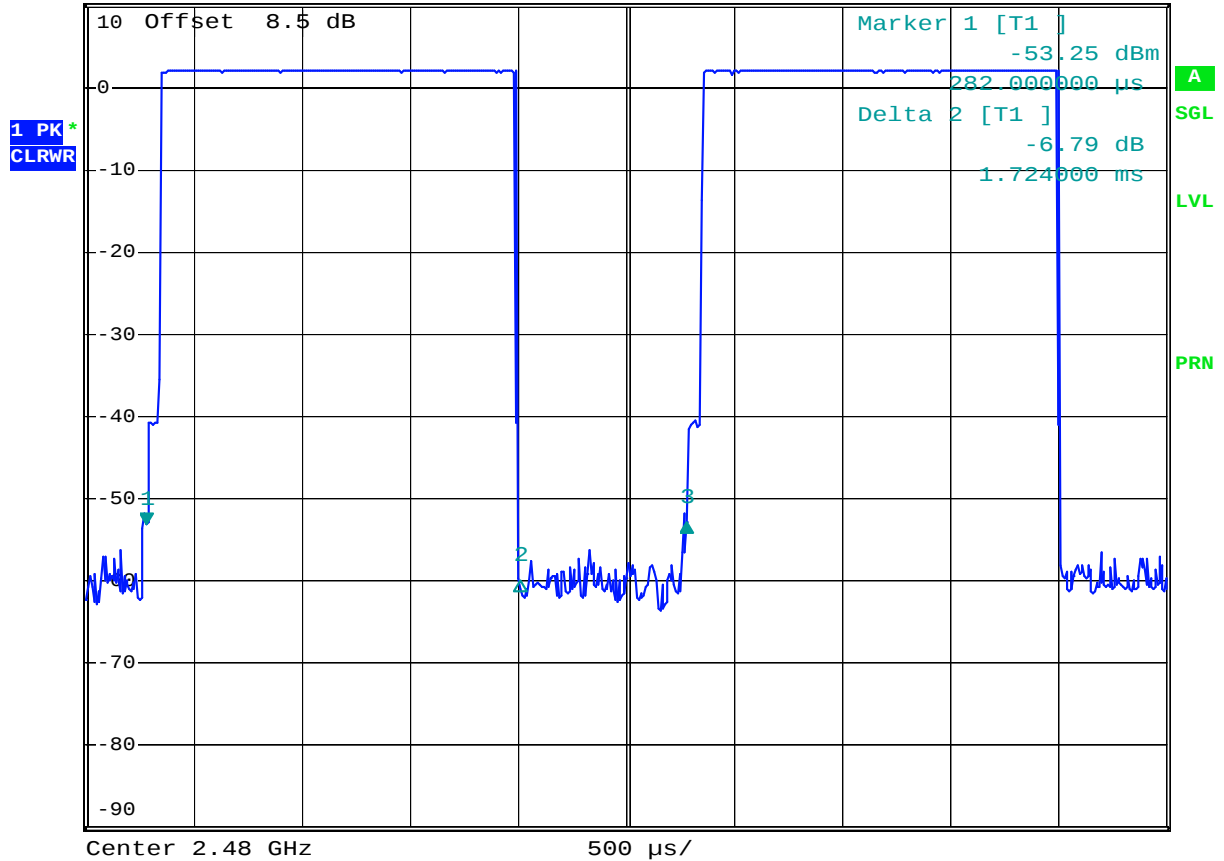
Date: 26.APR.2006 15:49:44



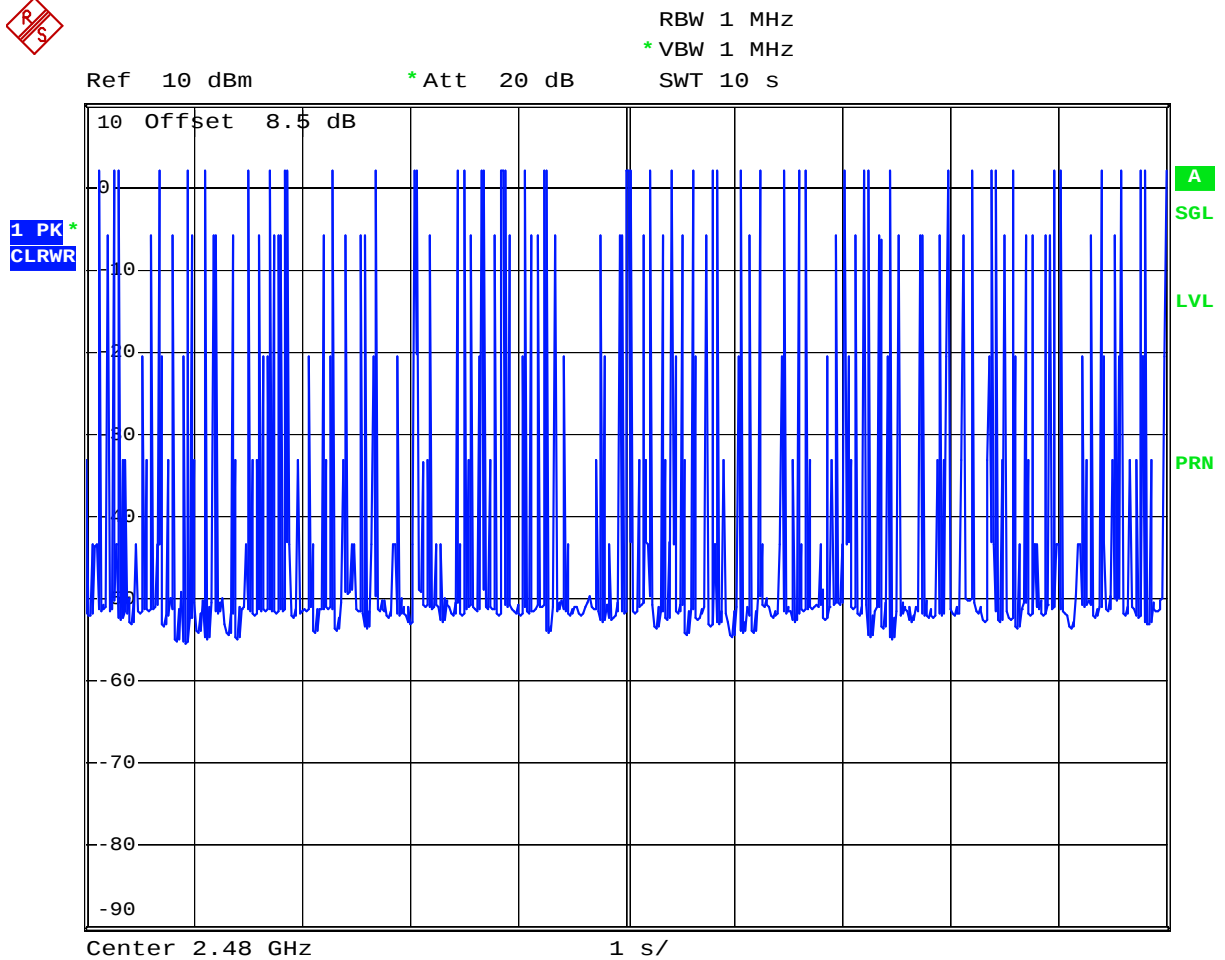
DH3 (CH78)



Ref 10 dBm *Att 20 dB RBW 1 MHz Delta 3 [T1] 0.35 dB
*VBW 1 MHz SWT 5 ms 2.500000 ms



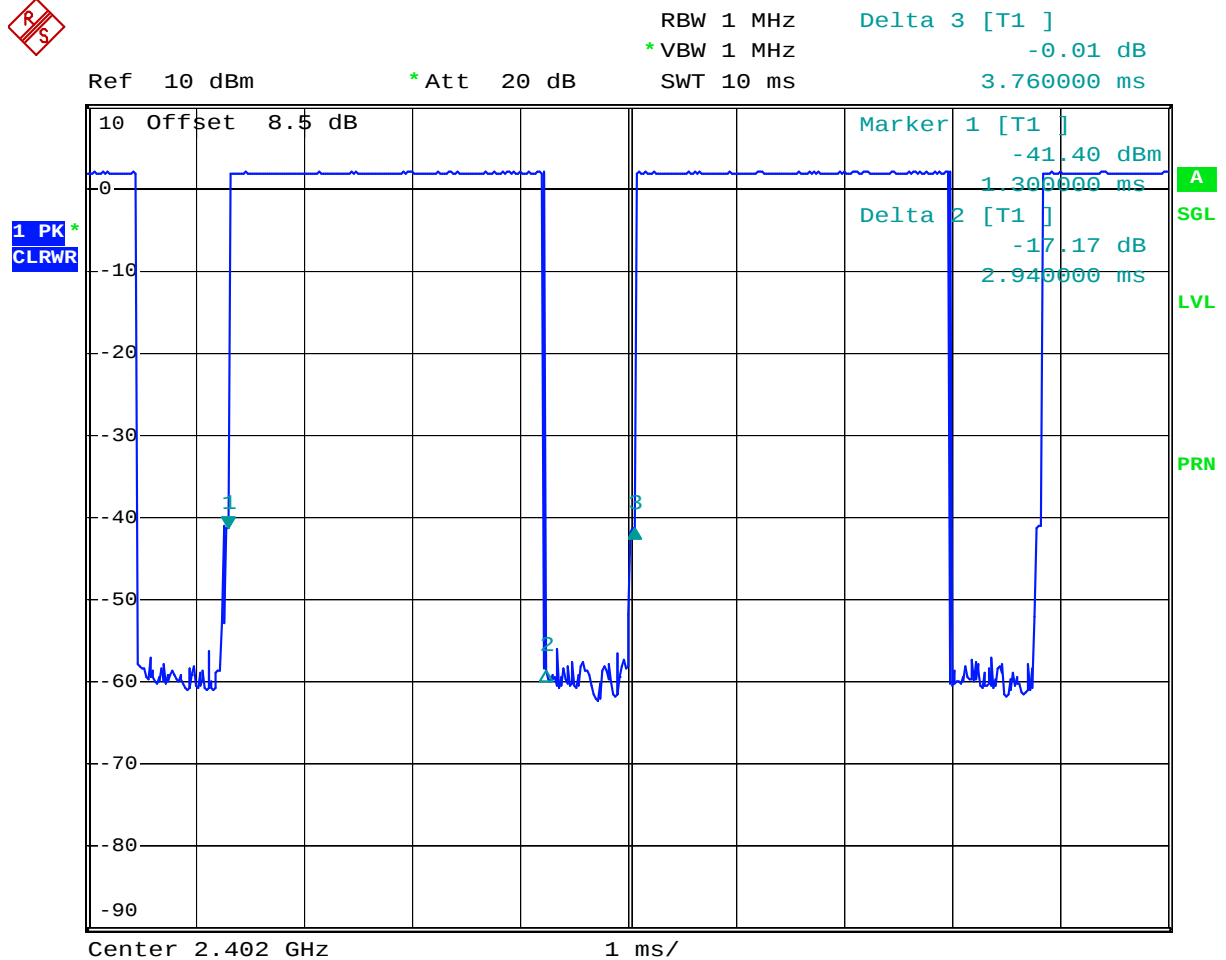
Date: 26.APR.2006 15:34:52



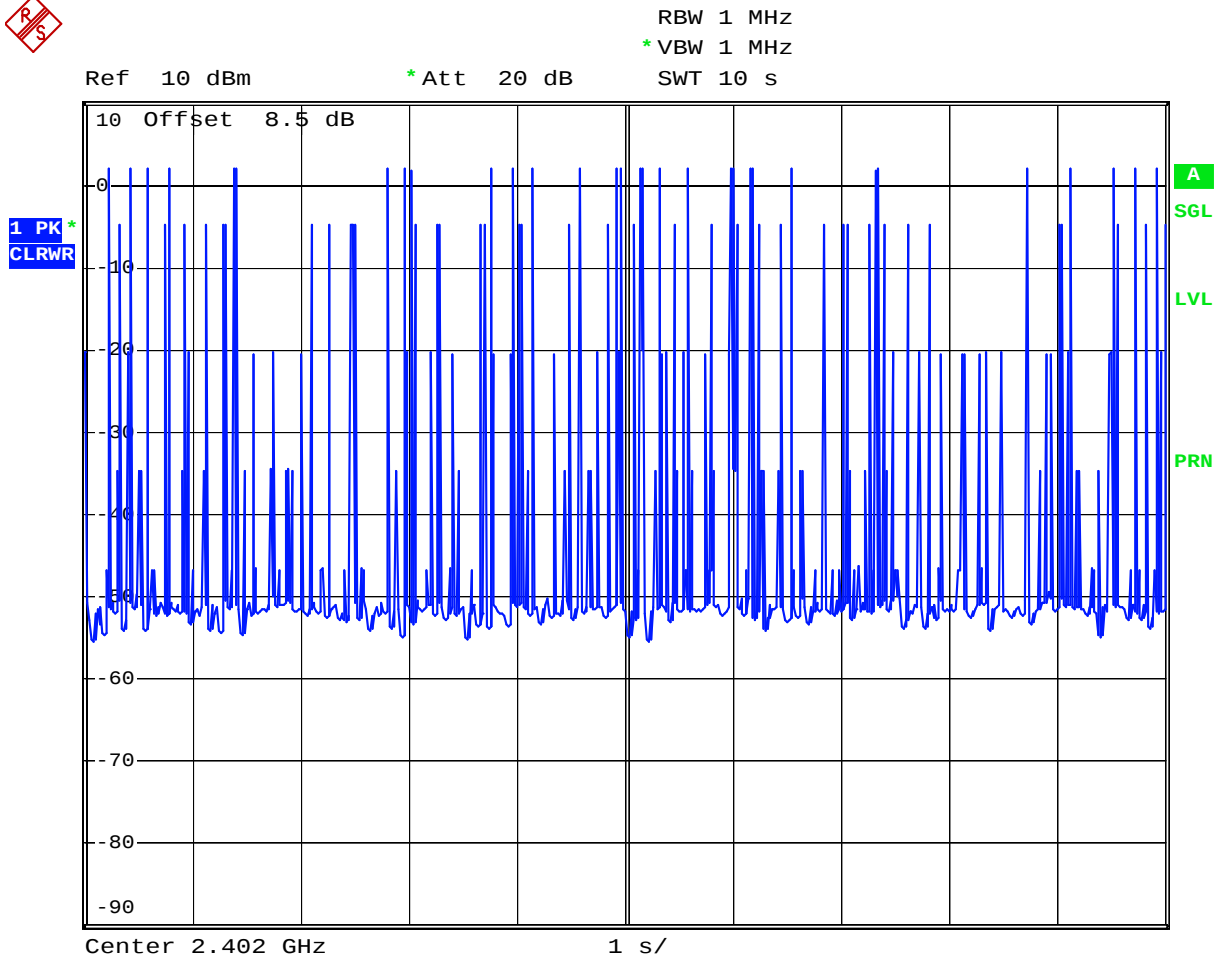
Date: 26.APR.2006 15:50:44



DH5 (CH00)



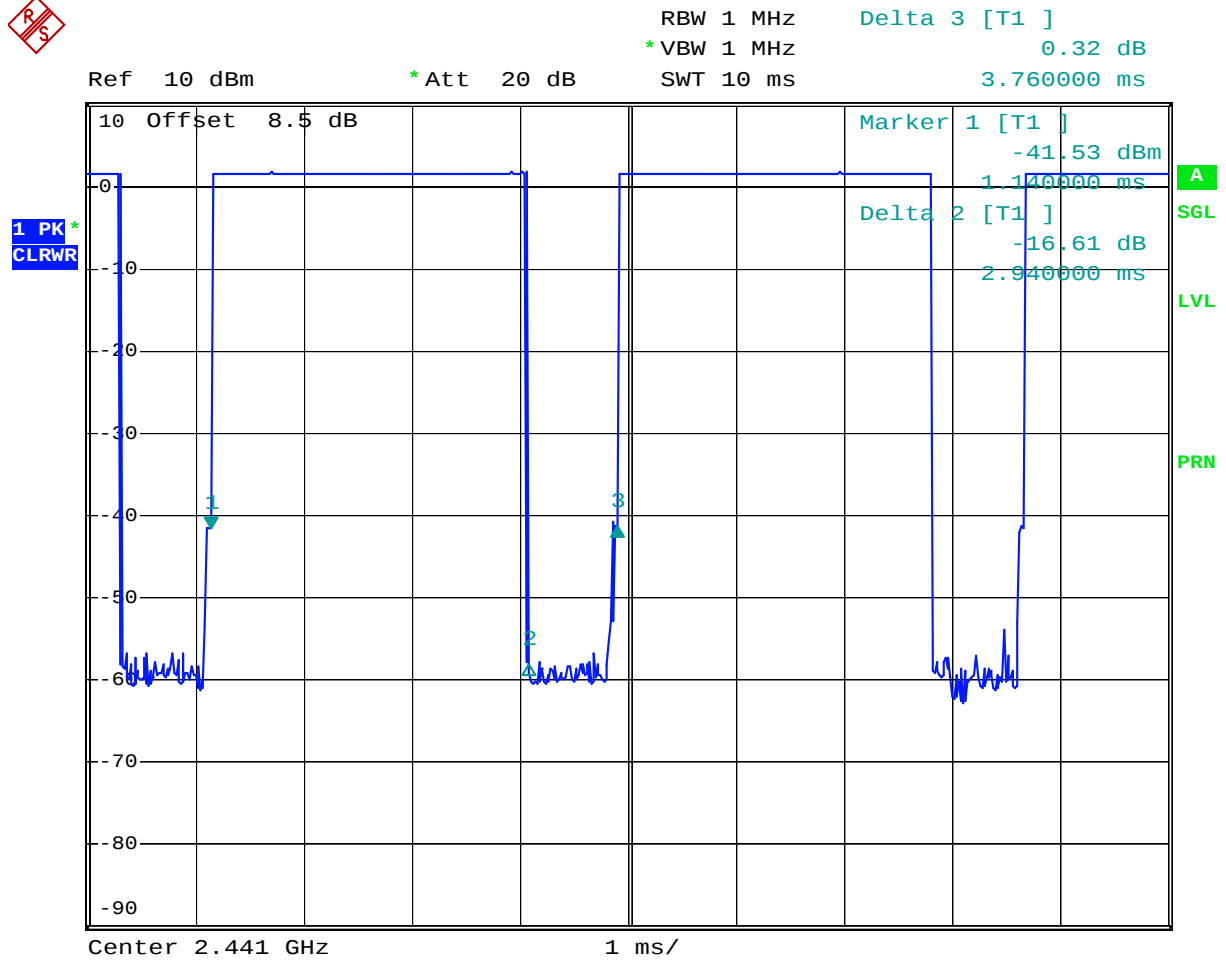
Date: 26.APR.2006 15:39:43



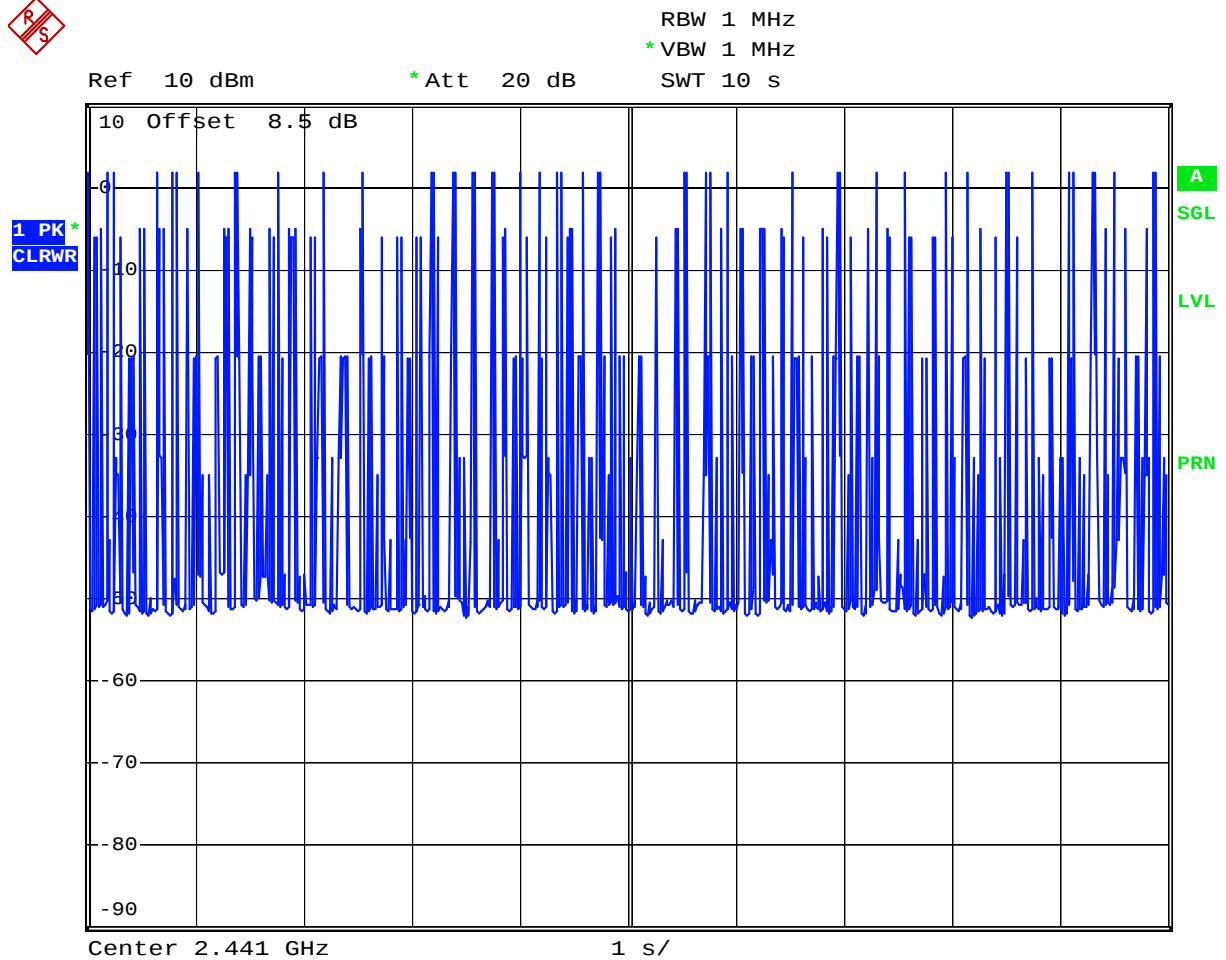
Date: 26.APR.2006 15:47:25



DH5 (CH39)



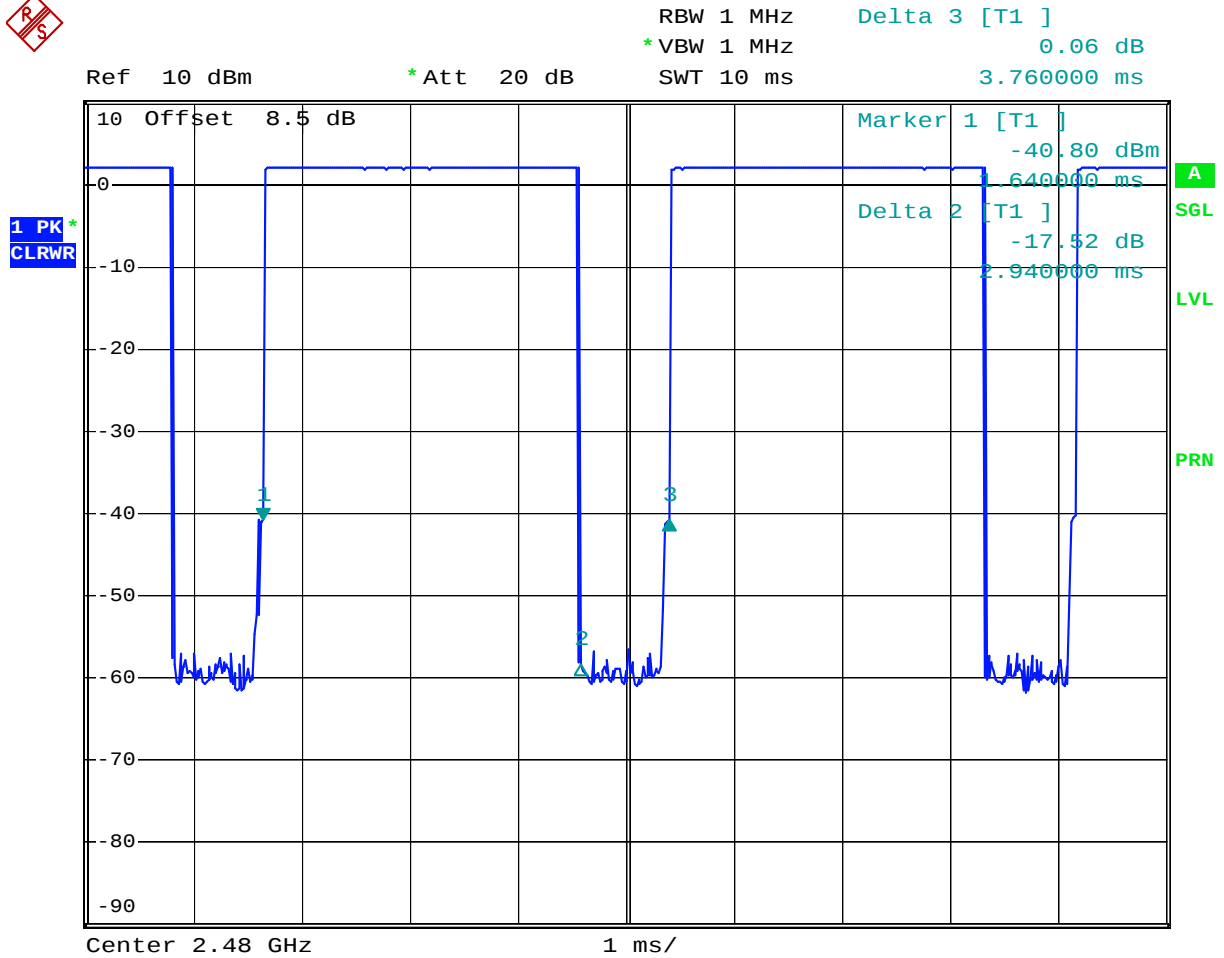
Date: 26.APR.2006 15:40:33



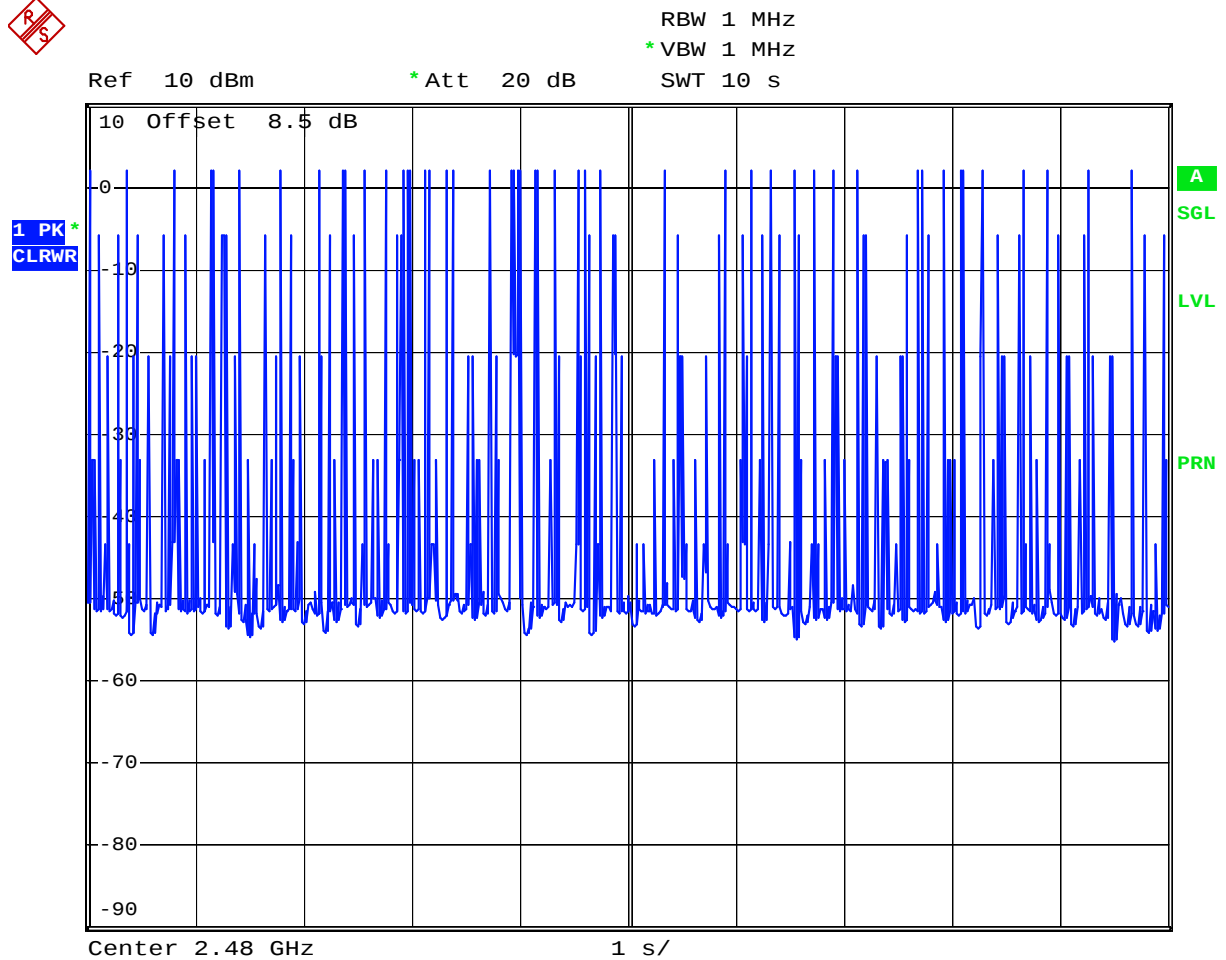
Date: 26.APR.2006 15:46:03



DH5 (CH78)



Date: 26.APR.2006 15:41:13



Date: 26.APR.2006 15:45:15

5.9 Peak Output Power Measurement

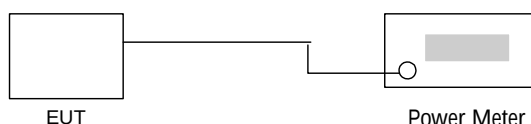
5.9.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.9.2 Test Procedure :

1. The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter for WLAN measurement. The power is equal to the reading level on power meter plus cable loss at the EUT antenna terminal.
2. The antenna port(RF output) of the EUT was connected to the input (RF input) of a spectrum analyzer for BT measurement. The cable loss has been offset before testing.

5.9.3 Test Setup Layout :



5.9.4 Test Result :

- Application Type : WLAN 802.11b/g and BT
- Temperature : 24°C
- Relative Humidity : 54 %
- Test Enginner : James

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	16.82	1W/30 dBm
06	2437	17.84	1W/30 dBm
11	2462	16.74	1W/30 dBm

WLAN 802.11g

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	16.41	1W/30 dBm
06	2437	16.77	1W/30 dBm
11	2462	16.67	1W/30 dBm

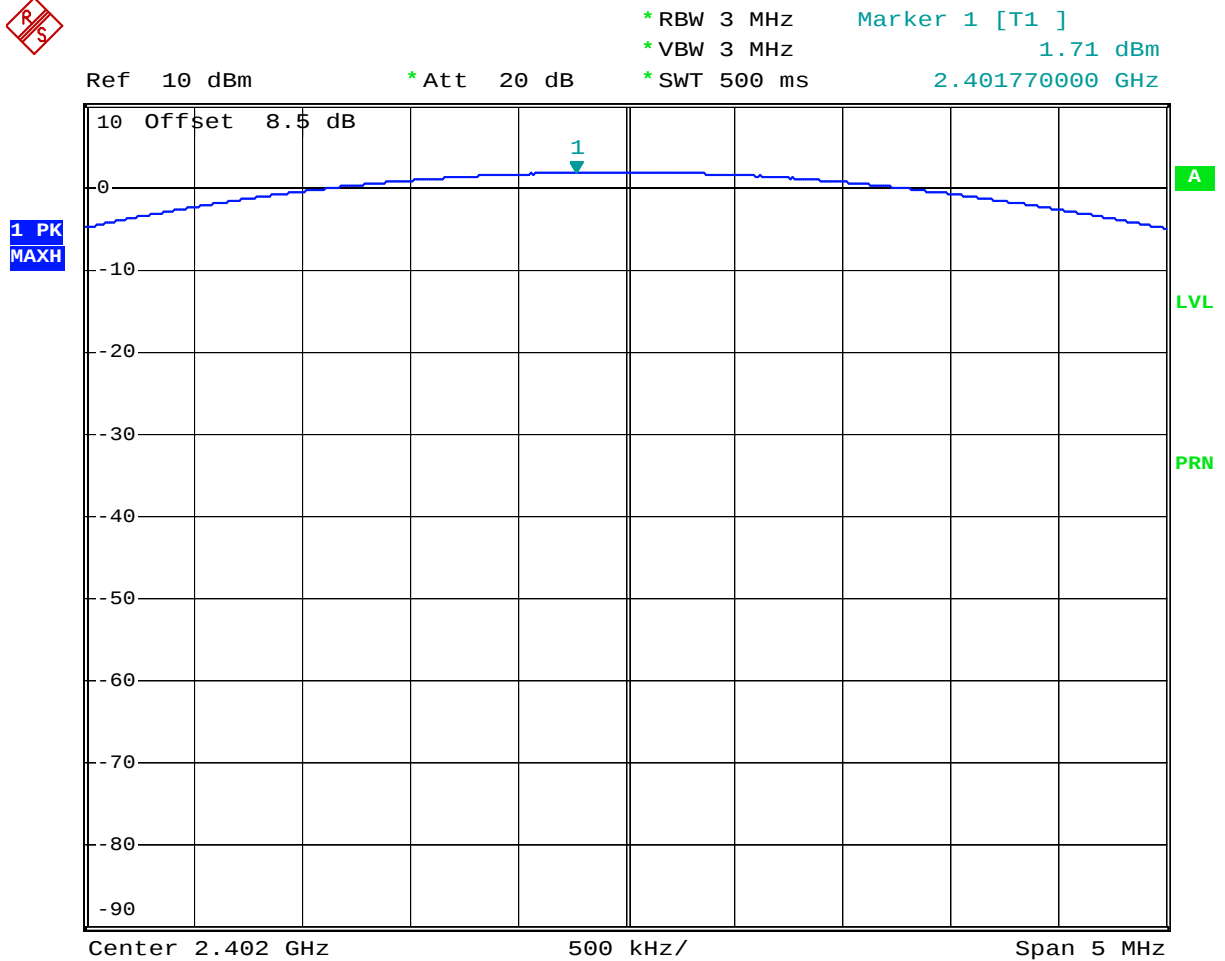
**Bluetooth**

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	1.71	1W/30 dBm
39	2441	1.52	1W/30 dBm
78	2480	1.85	1W/30 dBm



5.9.5 Output Power

BT Mode : CH00 (2402MHz)



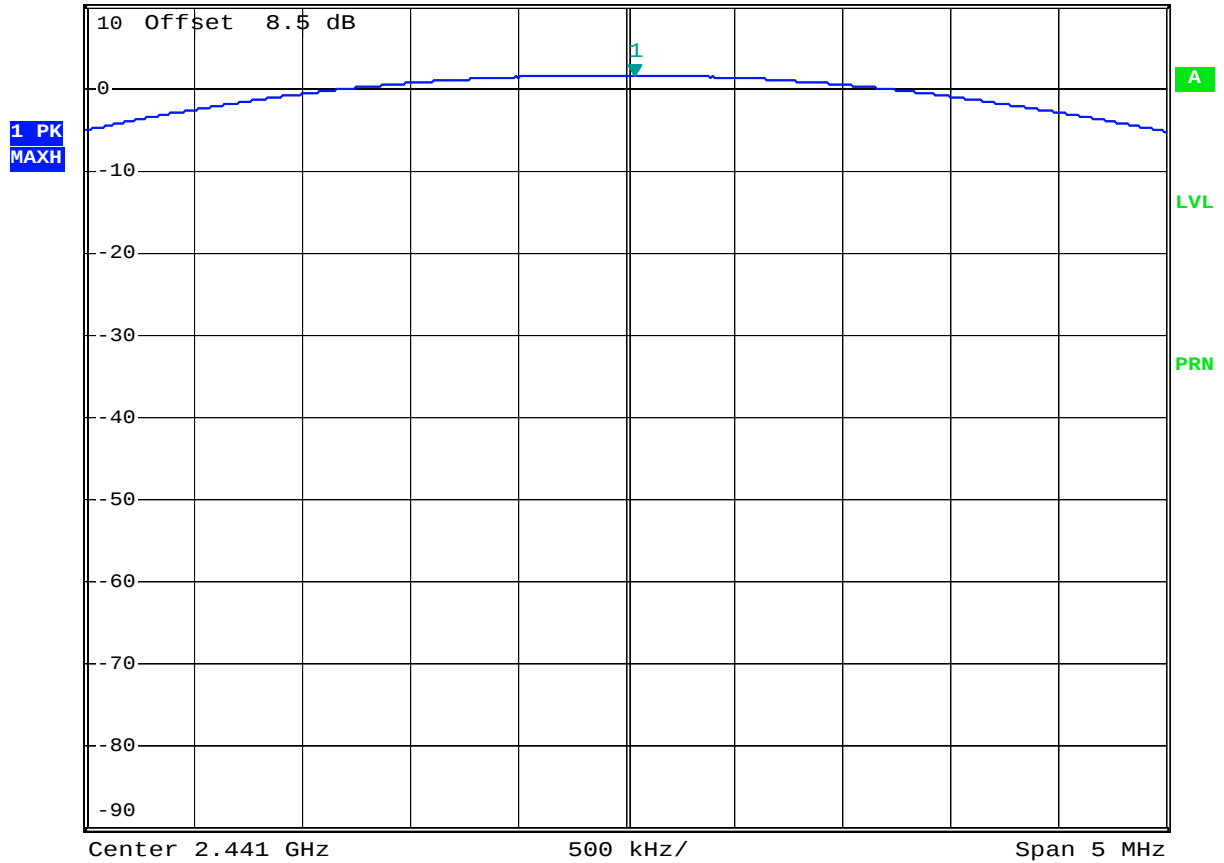
Date: 26.APR.2006 15:12:49



BT Mode : CH39 (2441MHz)



Ref 10 dBm * Att 20 dB * RBW 3 MHz * VBW 3 MHz * SWT 500 ms Marker 1 [T1] 1.52 dBm 2.441040000 GHz



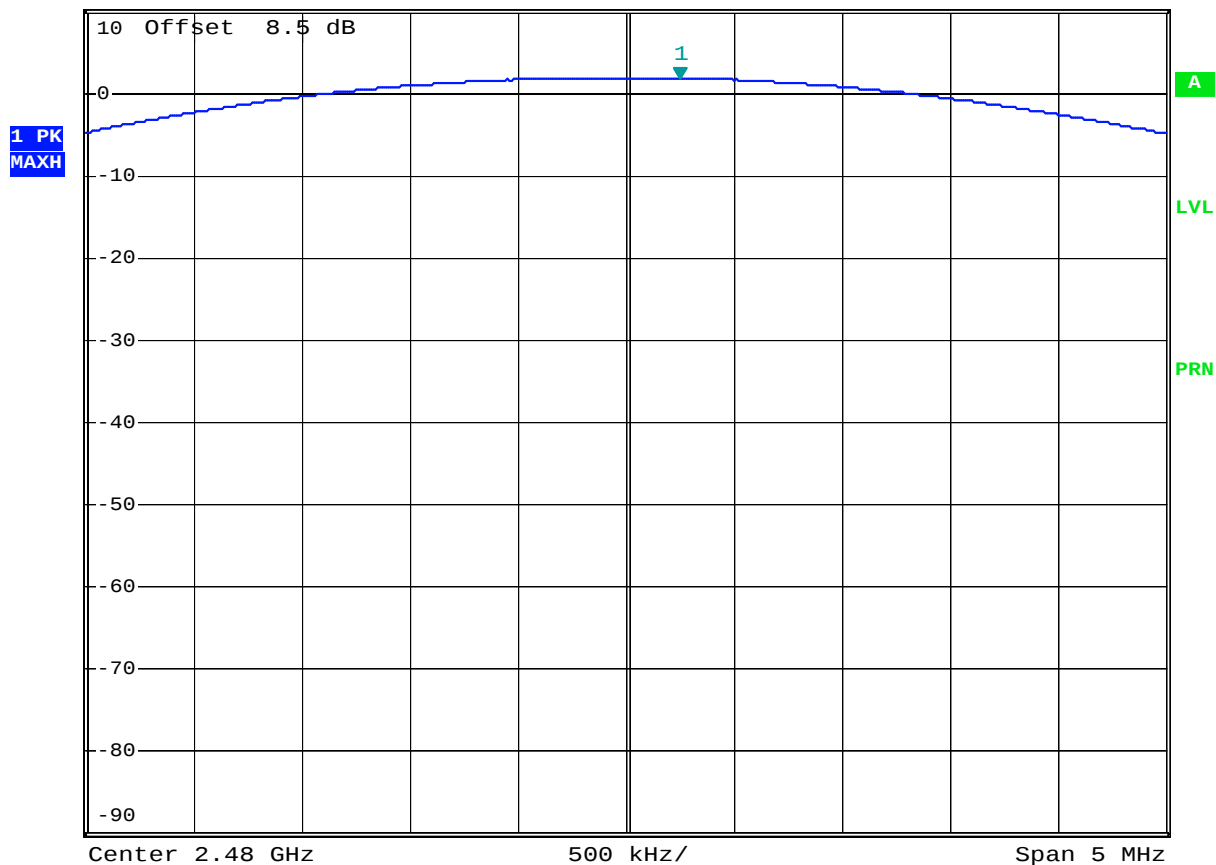
Date: 26.APR.2006 14:56:07



BT Mode : CH78 (2480MHz)



Ref 10 dBm * Att 20 dB * RBW 3 MHz * VBW 3 MHz * SWT 500 ms Marker 1 [T1] 1.85 dBm 2.480250000 GHz



Date: 26.APR.2006 14:56:42



5.10 Conducted Emission

5.10.1 Measuring Instruments

As described in chapter 6 of this test Report.

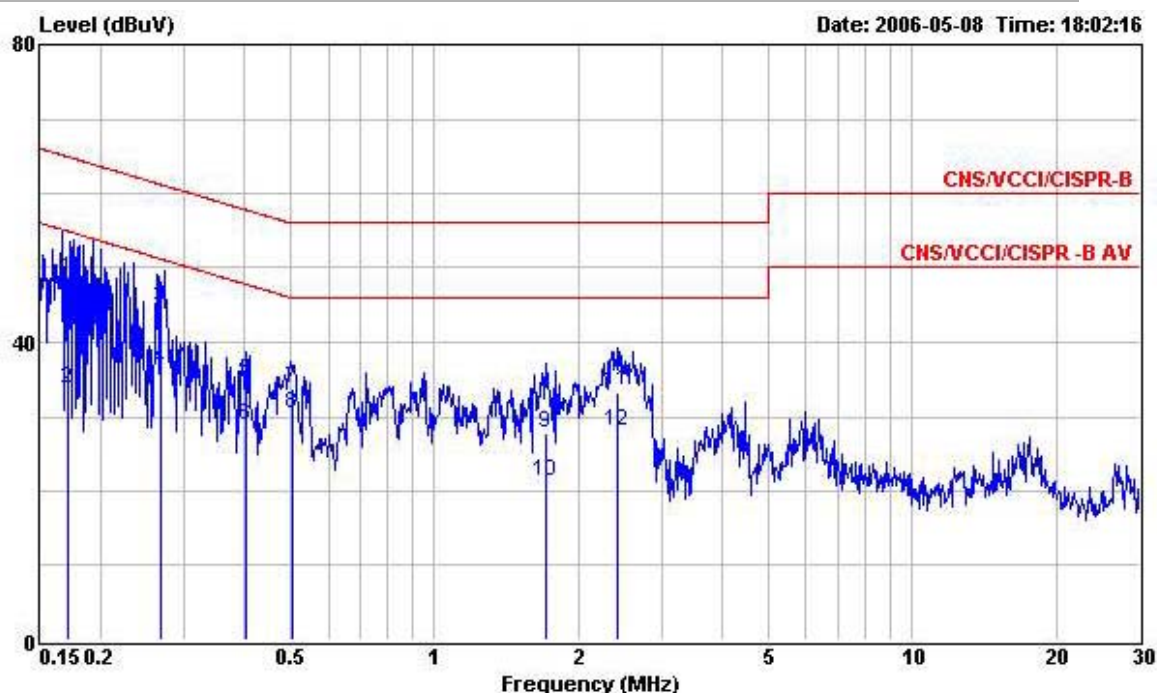
5.10.2 Test Procedures :

- 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

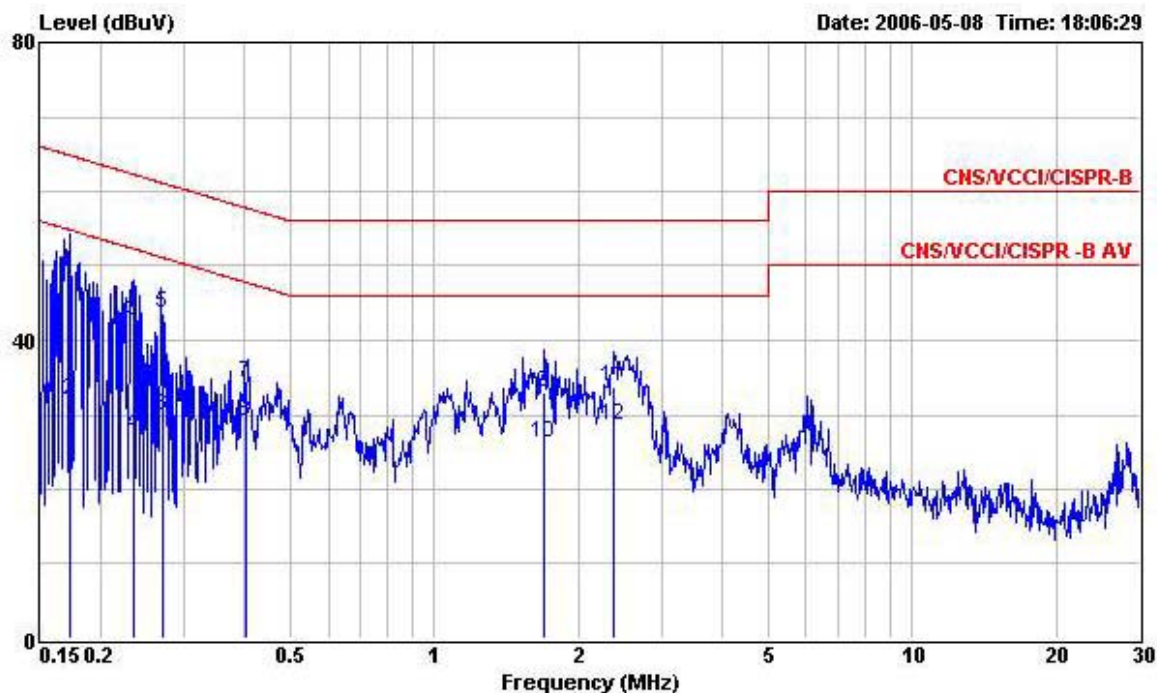
- Temperature : 24 °C
- Relating Humidity : 54 %
- Test Enginner : James
- Test Mode : Mode 1

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



Site : site
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : PDA PHONE
Power : 120V/60Hz
Model : FD650602
Memo : PCS1900 IDLE+Earphone+BT Link+WLAN Link
Memo : +Camera+Adaptor1
Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.172	48.66	-16.23	64.89	48.50	0.10	0.06	QP
2	0.172	33.65	-21.24	54.89	33.49	0.10	0.06	Average
3	0.268	44.78	-16.39	61.17	44.61	0.10	0.07	QP
4	0.268	36.35	-14.82	51.17	36.18	0.10	0.07	Average
5	0.402	34.86	-22.95	57.81	34.68	0.10	0.08	QP
6	0.402	28.73	-19.08	47.81	28.55	0.10	0.08	Average
7	0.502	33.70	-22.30	56.00	33.53	0.10	0.07	QP
8	0.502	30.34	-15.66	46.00	30.17	0.10	0.07	Average
9	1.710	27.79	-28.21	56.00	27.59	0.10	0.10	QP
10	1.710	21.39	-24.61	46.00	21.19	0.10	0.10	Average
11	2.420	33.39	-22.61	56.00	33.14	0.13	0.12	QP
12	2.420	27.95	-18.05	46.00	27.70	0.13	0.12	Average



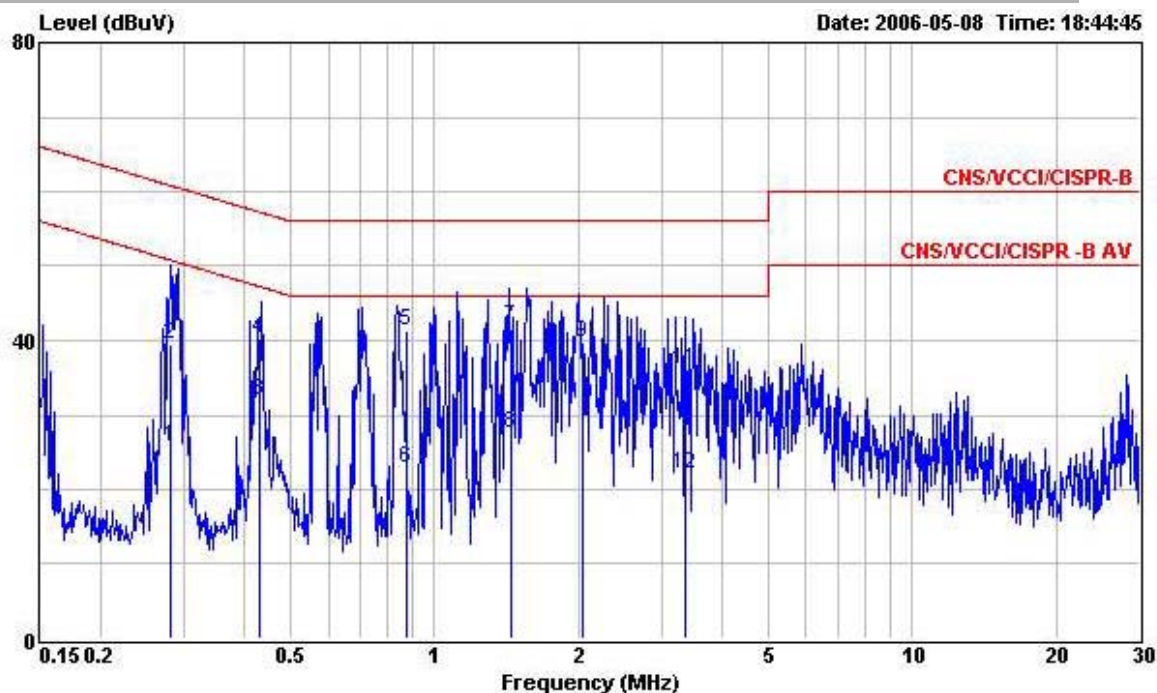
Site : site
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : PDA PHONE
Power : 120V/60Hz
Model : FD650602
Memo : PCS1900 IDLE+Earphone+BT Link+WLAN Link
Memo : +Camera+Adaptor1
Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.172	49.00	-15.86	64.86	48.84	0.10	0.06	QP
2	0.172	31.93	-32.93	64.86	31.77	0.10	0.06	Average
3	0.234	42.60	-19.71	62.31	42.44	0.10	0.06	QP
4	0.234	27.36	-34.95	62.31	27.20	0.10	0.06	Average
5	0.269	43.56	-17.59	61.15	43.39	0.10	0.07	QP
6	0.269	29.75	-31.40	61.15	29.58	0.10	0.07	Average
7	0.403	34.27	-23.52	57.79	34.09	0.10	0.08	QP
8	0.403	29.16	-28.63	57.79	28.98	0.10	0.08	Average
9	1.700	32.98	-23.02	56.00	32.78	0.10	0.10	QP
10	1.700	26.12	-29.88	56.00	25.92	0.10	0.10	Average
11	2.380	33.87	-22.13	56.00	33.65	0.10	0.12	QP
12	2.380	28.68	-27.32	56.00	28.46	0.10	0.12	Average



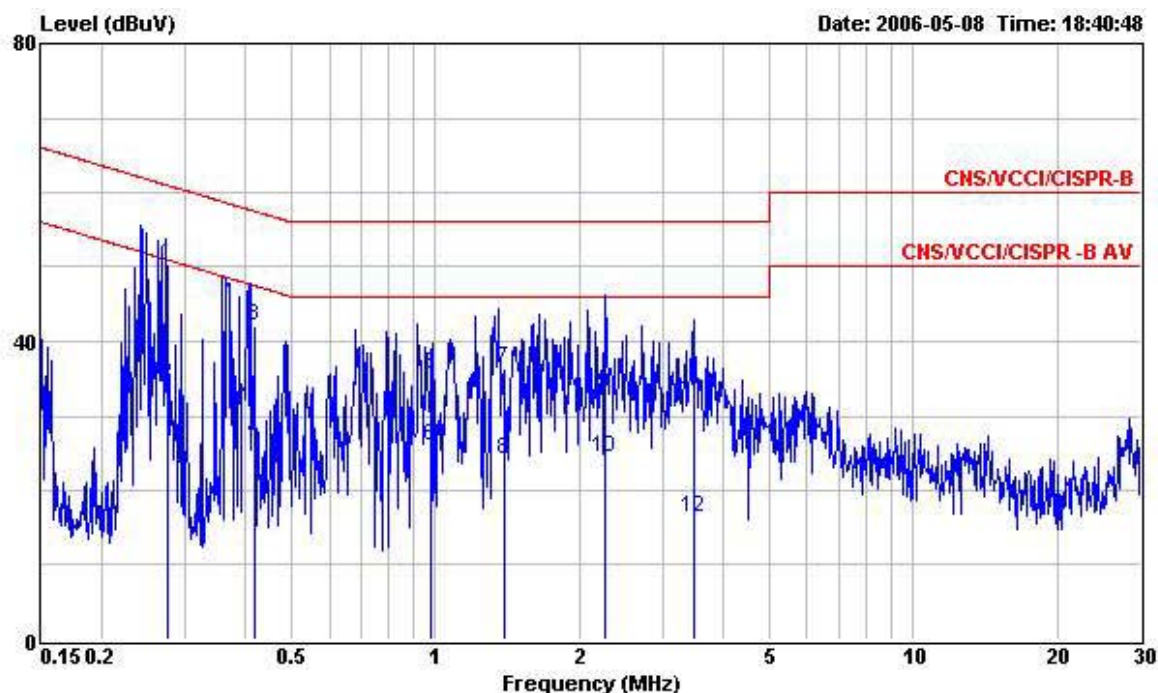
- Temperature : 24 °C
- Relative Humidity : 54 %
- Test Engineer : James
- Test Mode : Mode 2

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



Site : site
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
 EUT : PDA PHONE
 Power : 120V/60Hz
 Model : FD650602
 Memo : PCS1900 IDLE+Earphone+BT Link+WLAN Link
 Memo : +Camera+Adaptor2
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.280	25.75	-25.07	50.82	25.58	0.10	0.07	Average
2	0.280	39.39	-21.43	60.82	39.22	0.10	0.07	QP
3	0.429	31.93	-15.34	47.27	31.75	0.10	0.08	Average
4	0.429	40.28	-16.99	57.27	40.10	0.10	0.08	QP
5	0.871	41.30	-14.70	56.00	41.15	0.10	0.05	QP
6	0.871	22.88	-23.12	46.00	22.73	0.10	0.05	Average
7	1.446	41.83	-14.17	56.00	41.65	0.10	0.08	QP
8	1.446	27.47	-18.53	46.00	27.29	0.10	0.08	Average
9	2.050	39.78	-16.22	56.00	39.56	0.10	0.12	QP
10	2.050	31.42	-14.58	46.00	31.20	0.10	0.12	Average
11	3.360	35.99	-20.01	56.00	35.70	0.17	0.12	QP
12	3.360	21.97	-24.03	46.00	21.68	0.17	0.12	Average

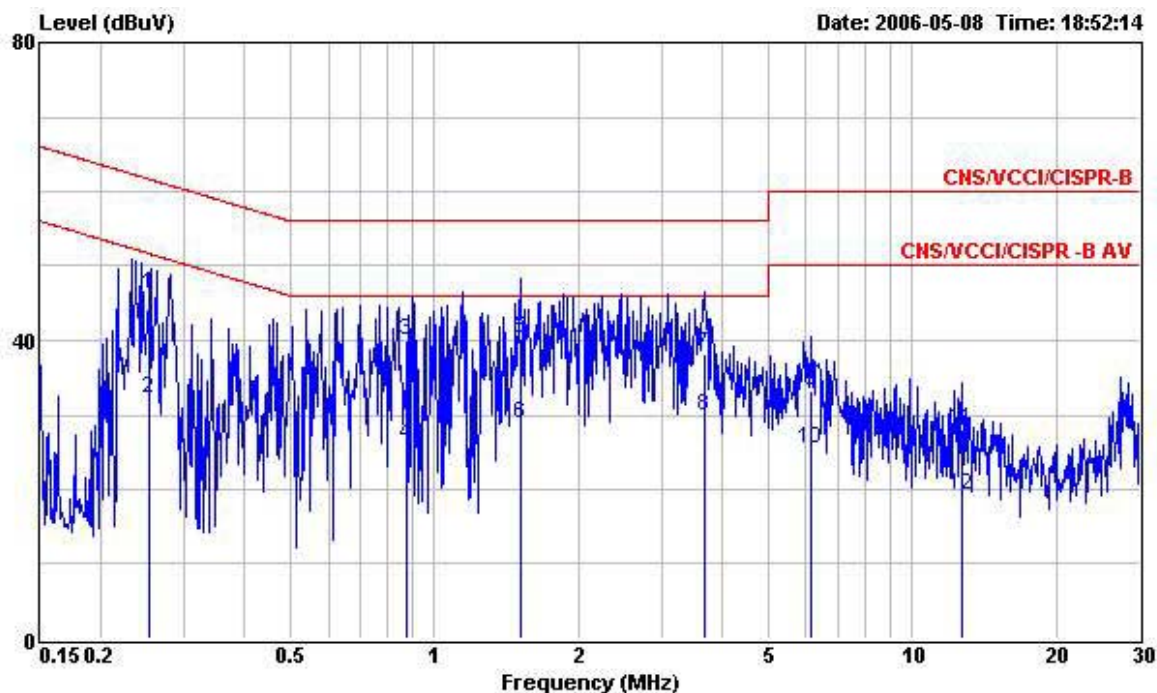


Site : site
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : PDA PHONE
Power : 120V/60Hz
Model : FD650602
Memo : PCS1900 IDLE+Earphone+BT Link+WLAN Link
Memo : +Camera+Adaptor2
Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.276	50.27	-10.67	60.94	50.10	0.10	0.07	QP
2	0.276	34.37	-26.57	60.94	34.20	0.10	0.07	Average
3	0.417	42.11	-15.40	57.51	41.93	0.10	0.08	QP
4	0.417	26.81	-30.70	57.51	26.63	0.10	0.08	Average
5	0.980	35.63	-20.37	56.00	35.49	0.10	0.04	QP
6	0.980	26.07	-29.93	56.00	25.93	0.10	0.04	Average
7	1.400	36.45	-19.55	56.00	36.27	0.10	0.08	QP
8	1.400	24.03	-31.97	56.00	23.85	0.10	0.08	Average
9	2.270	32.90	-23.10	56.00	32.68	0.10	0.12	QP
10	2.270	24.54	-31.46	56.00	24.32	0.10	0.12	Average
11	3.470	32.09	-23.91	56.00	31.87	0.10	0.12	QP
12	3.470	16.41	-39.59	56.00	16.19	0.10	0.12	Average

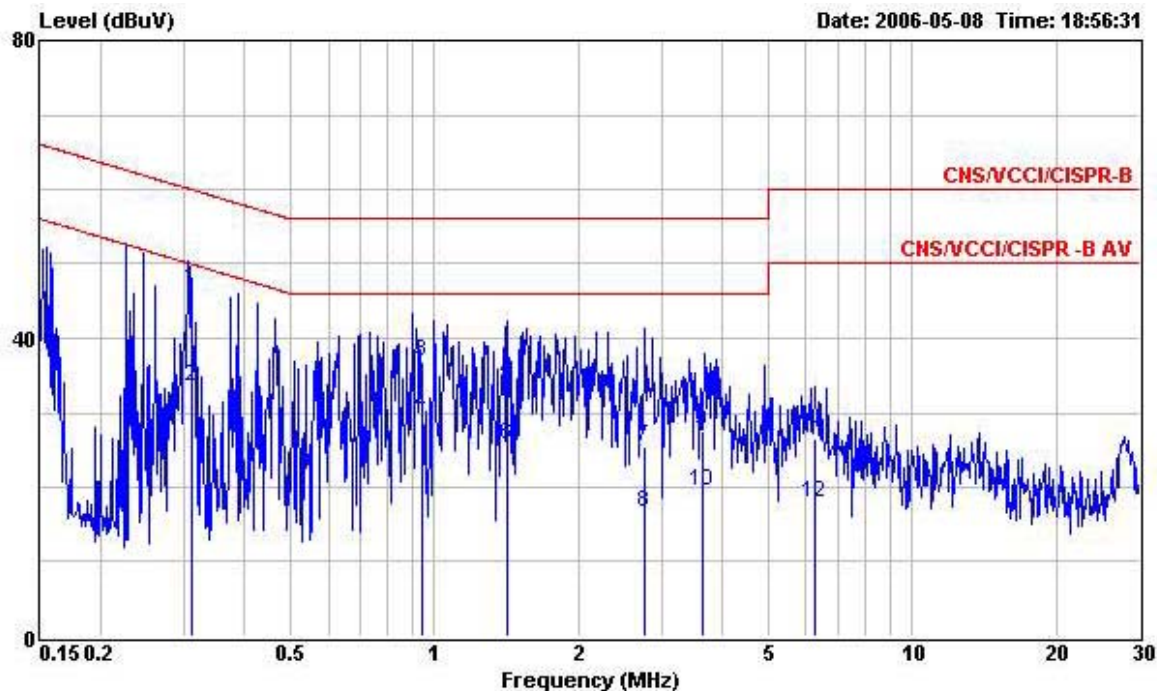
- Temperature : 24 °C
- Relating Humidity : 54 %
- Test Enginner : James
- Test Mode : Mode 3

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



Site : site
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : PDA PHONE
Power : 120V/60Hz
Model : FD650602
Memo : PCS1900 IDLE+Earphone+BT Link+WLAN Link
Memo : +Adaptor2+MPEG4
Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.253	46.24	-15.42	61.66	46.07	0.10	0.07	QP
2	0.253	32.15	-19.51	51.66	31.98	0.10	0.07	Average
3	0.878	39.98	-16.02	56.00	39.83	0.10	0.05	QP
4	0.878	26.04	-19.96	46.00	25.89	0.10	0.05	Average
5	1.510	40.15	-15.85	56.00	39.96	0.10	0.09	QP
6	1.510	28.72	-17.28	46.00	28.53	0.10	0.09	Average
7	3.670	38.07	-17.93	56.00	37.76	0.19	0.12	QP
8	3.670	29.80	-16.20	46.00	29.49	0.19	0.12	Average
9	6.120	33.21	-26.79	60.00	32.83	0.25	0.13	QP
10	6.120	25.46	-24.54	50.00	25.08	0.25	0.13	Average
11	12.720	27.94	-32.06	60.00	27.49	0.30	0.15	QP
12	12.720	19.32	-30.68	50.00	18.87	0.30	0.15	Average

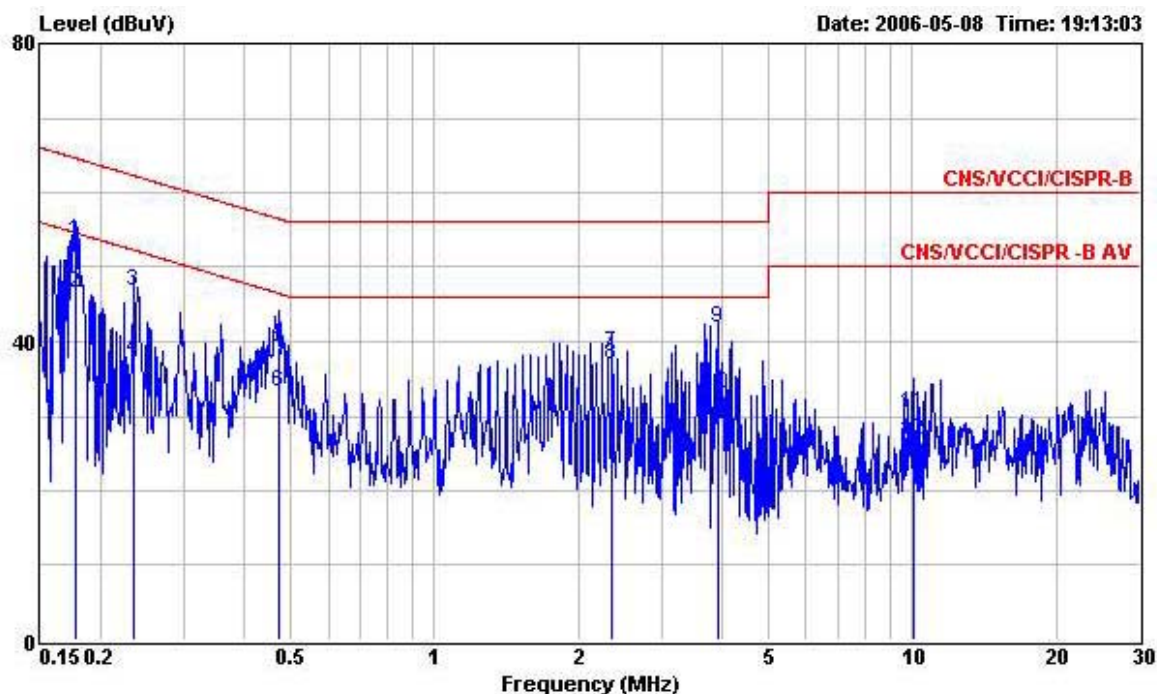


Site : site
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : PDA PHONE
 Power : 120V/60Hz
 Model : FD650602
 Memo : PCS1900 IDLE+Earphone+BT Link+WLAN Link
 Memo : +Adaptor2+MPEG4
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.310	46.64	-13.33	59.97	46.47	0.10	0.07	QP
2	0.310	33.46	-26.51	59.97	33.29	0.10	0.07	Average
3	0.943	36.87	-19.13	56.00	36.73	0.10	0.04	QP
4	0.943	29.95	-26.05	56.00	29.81	0.10	0.04	Average
5	1.420	33.64	-22.36	56.00	33.46	0.10	0.08	QP
6	1.420	25.59	-30.41	56.00	25.41	0.10	0.08	Average
7	2.760	25.48	-30.52	56.00	25.26	0.10	0.12	QP
8	2.760	16.63	-39.37	56.00	16.41	0.10	0.12	Average
9	3.660	27.53	-28.47	56.00	27.31	0.10	0.12	QP
10	3.660	19.50	-36.50	56.00	19.28	0.10	0.12	Average
11	6.250	26.40	-33.60	60.00	26.12	0.15	0.13	QP
12	6.250	18.05	-41.95	60.00	17.77	0.15	0.13	Average

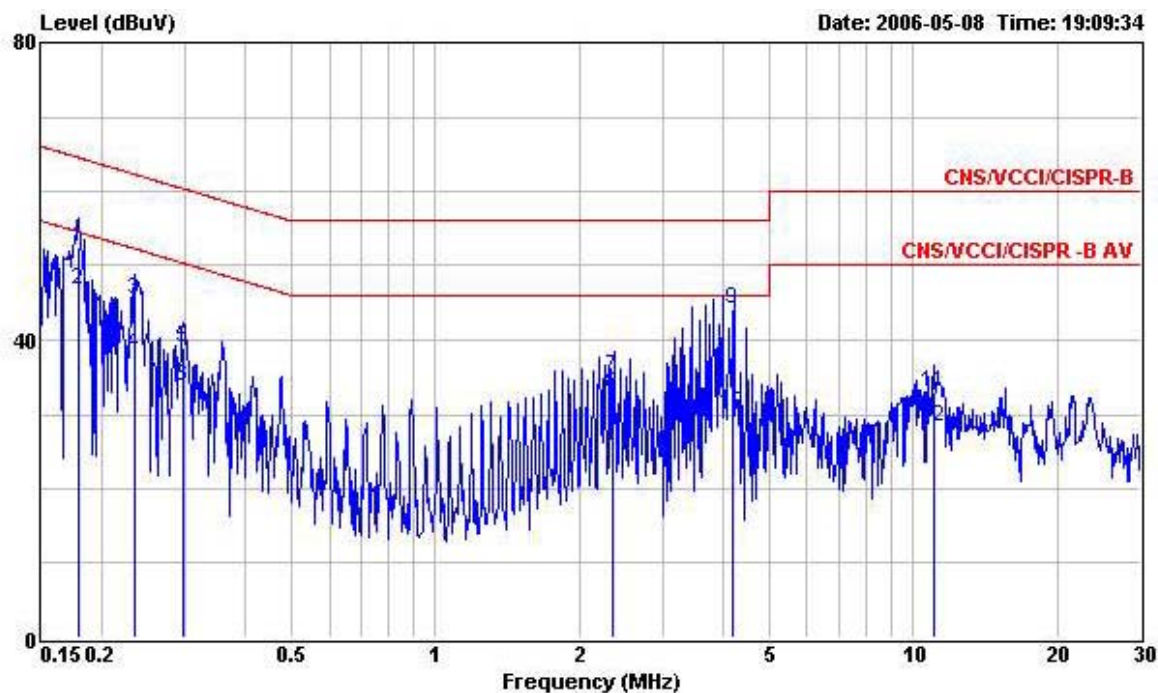
- Temperature : 24 °C
- Relating Humidity : 54 %
- Test Enginner : James
- Test Mode : Mode 4

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



Site : site
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
 EUT : PDA PHONE
 Power : 120V/60Hz
 Model : FD650602
 Memo : PCS1900 IDLE+Earphone+BT Link+WLAN Link
 Memo : +CAMERA+USB LINK
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.177	53.56	-11.07	64.63	53.40	0.10	0.06	QP
2	0.177	46.37	-8.26	54.63	46.21	0.10	0.06	Average
3	0.235	46.64	-15.63	62.27	46.48	0.10	0.06	QP
4	0.235	37.66	-14.61	52.27	37.50	0.10	0.06	Average
5	0.471	39.12	-17.38	56.50	38.95	0.10	0.07	QP
6	0.471	33.17	-13.33	46.50	33.00	0.10	0.07	Average
7	2.354	38.34	-17.66	56.00	38.10	0.12	0.12	QP
8	2.354	36.93	-9.07	46.00	36.69	0.12	0.12	Average
9	3.940	41.83	-14.17	56.00	41.51	0.20	0.12	QP
10	3.940	33.11	-12.89	46.00	32.79	0.20	0.12	Average
11	10.050	30.51	-29.49	60.00	30.07	0.30	0.14	QP
12	10.050	26.85	-23.15	50.00	26.41	0.30	0.14	Average



Site : site
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : PDA PHONE
 Power : 120V/60Hz
 Model : FD650602
 Memo : PCS1900 IDLE+Earphone+BT Link+WLAN Link
 Memo : +CAMERA+USB LINK
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.179	52.38	-12.15	64.53	52.22	0.10	0.06	QP
2	0.179	46.86	-17.67	64.53	46.70	0.10	0.06	Average
3	0.235	45.54	-16.73	62.27	45.38	0.10	0.06	QP
4	0.235	38.30	-23.97	62.27	38.14	0.10	0.06	Average
5	0.297	39.00	-21.33	60.33	38.83	0.10	0.07	QP
6	0.297	33.66	-26.67	60.33	33.49	0.10	0.07	Average
7	2.360	35.02	-20.98	56.00	34.80	0.10	0.12	QP
8	2.360	32.71	-23.29	56.00	32.49	0.10	0.12	Average
9	4.200	44.04	-11.96	56.00	43.81	0.11	0.12	QP
10	4.200	30.14	-25.86	56.00	29.91	0.11	0.12	Average
11	11.040	32.92	-27.08	60.00	32.56	0.22	0.14	QP
12	11.040	28.25	-31.75	60.00	27.89	0.22	0.14	Average

5.11 Radiated Emission Measurement

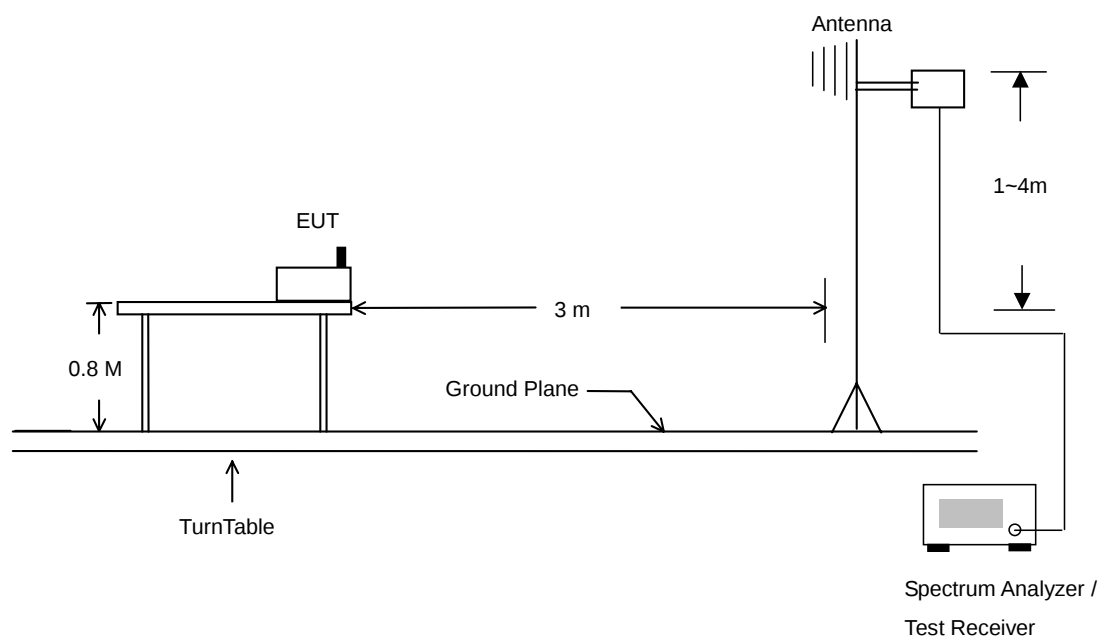
5.11.1 Measuring Instruments

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.

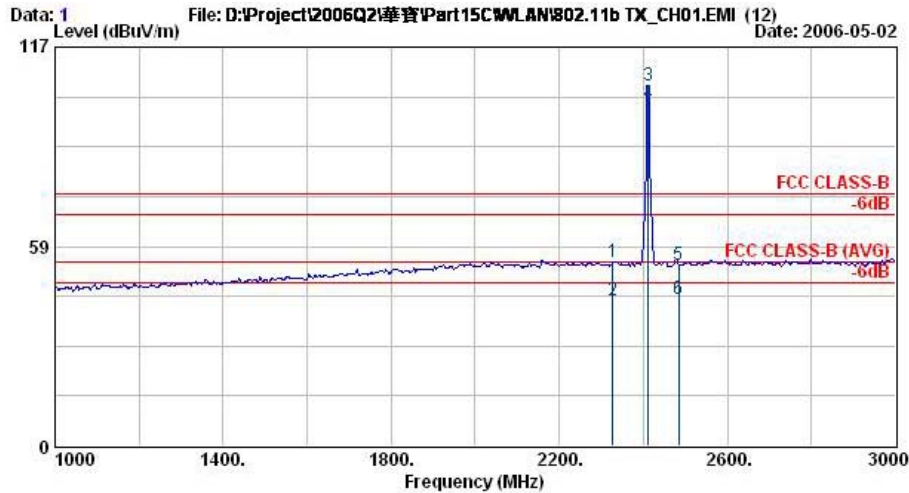
5.11.3 Typical Test Setup Layout of Radiated Emission



5.11.4 Test Data

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

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



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : PDA Phone
Power : 12Vac/60Hz,SUNFONE(MODEL:ACE05W1A)
Model : UPA2
Memo : 802.11b TX CH01_2412MHz
Plane : E1

	Freq	Level	Over	Limit	Read	Remark	Factor
	MHz	dBuV/m	Limit	Line	Level		dB
1	2328.00	53.98	-20.02	74.00	54.99	Peak	-1.00
2	2328.00	42.49	-11.51	54.00	43.49	Average	-1.00
3 X	2412.00	105.75			106.68	Peak	-0.93
4 @	2412.00	100.37			101.30	Average	-0.93
5	2483.50	53.21	-20.79	74.00	54.07	Peak	-0.86
6	2483.50	43.01	-10.99	54.00	43.87	Average	-0.86

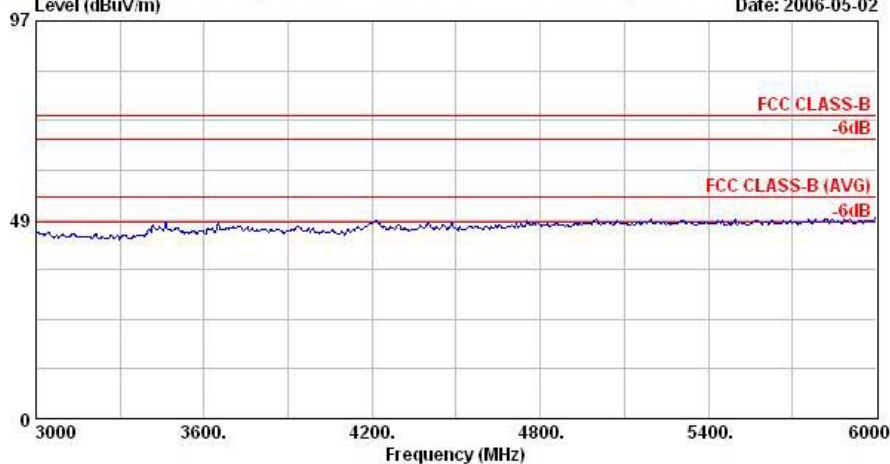
Remark: #3 and #4 Fundamental Signal



FCC/IC TEST REPORT

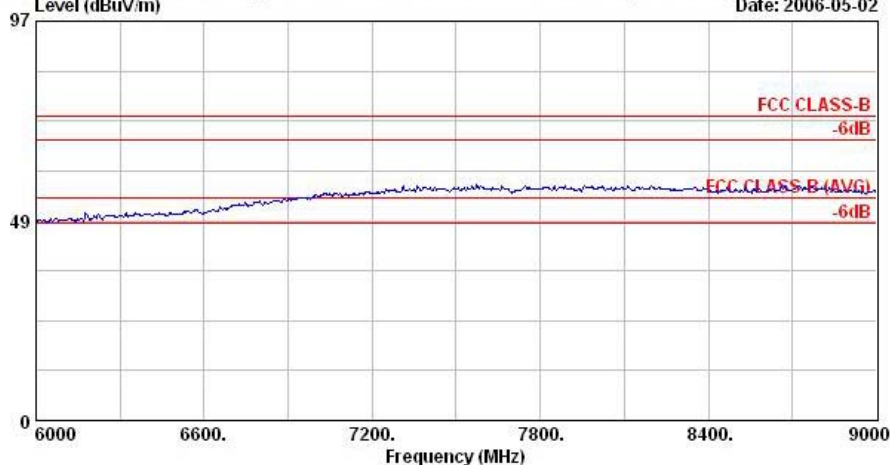
Report No. : FR650602

Data: 2 File: D:\Project\2006Q2\華資\Part15C\WLAN\802.11b TX_CH01.EMI (12) Date: 2006-05-02
Level (dBuV/m)



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : PDA Phone
Power : 12Vac/60Hz,SUNFONE(MODEL:ACE05V1A)
Model : UPA2
Memo : 802.11b TX CH01_2412MHz
Plane : E1

Data: 3 File: D:\Project\2006Q2\華資\Part15C\WLAN\802.11b TX_CH01.EMI (12) Date: 2006-05-02
Level (dBuV/m)

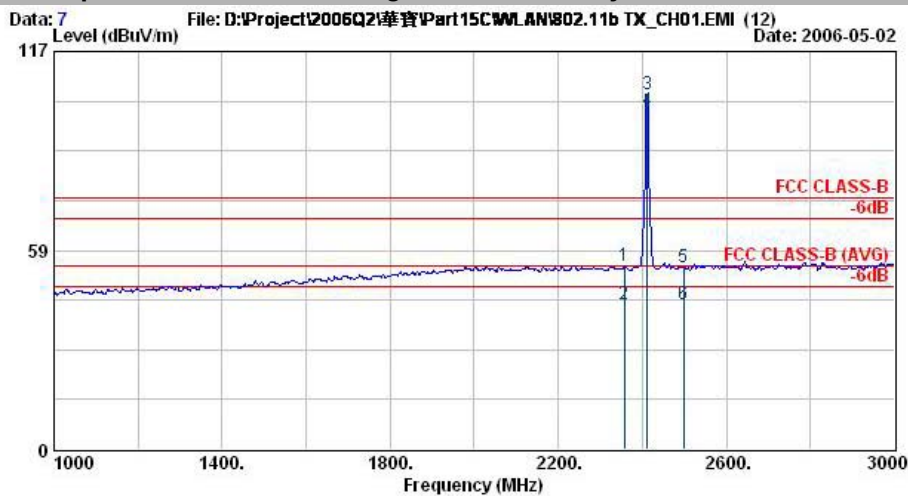


Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : PDA Phone
Power : 12Vac/60Hz,SUNFONE(MODEL:ACE05V1A)
Model : UPA2
Memo : 802.11b TX CH01_2412MHz
Plane : E1



- Polarization : Vertical

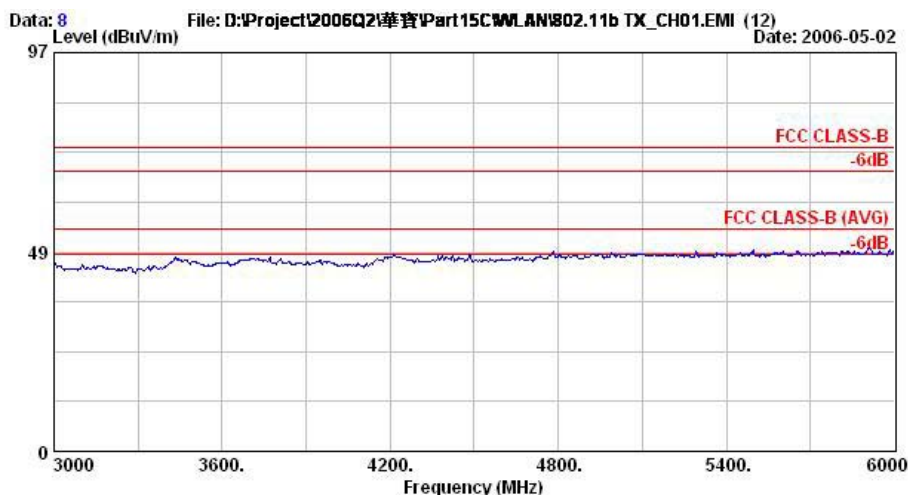
■ The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : PDA Phone
Power : 12Vac/60Hz,SUNFONE(MODEL:ACE05V1A)
Model : UPA2
Memo : 802.11b TX CH01_2412MHz
Plane : E1

	Freq	Level	Over	Limit	Read	Remark	Factor
	MHz	dBuV/m	Limit	Line	Level		dB
1	2358.00	53.73	-20.27	74.00	54.71	Peak	-0.98
2	2358.00	42.45	-11.55	54.00	43.43	Average	-0.98
3 X	2412.00	104.19			105.12	Peak	-0.93
4 @	2412.00	99.57			100.50	Average	-0.93
5	2498.00	53.61	-20.39	74.00	54.45	Peak	-0.84
6	2498.00	42.66	-11.34	54.00	43.50	Average	-0.84

Remark: #3 and #4 Fundamental Signal

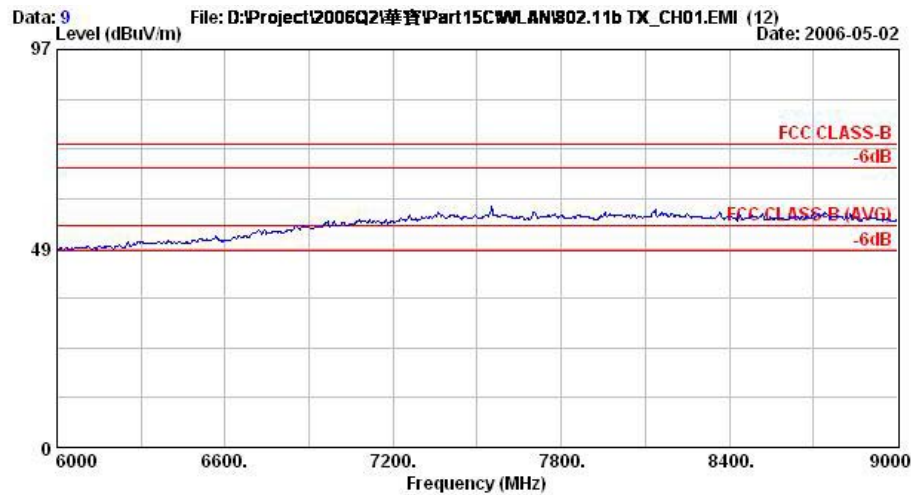


Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : PDA Phone
Power : 12Vac/60Hz,SUNFONE(MODEL:ACE05V1A)
Model : UPA2
Memo : 802.11b TX CH01_2412MHz
Plane : E1



FCC/IC TEST REPORT

Report No. : FR650602



Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : PDA Phone
Power : 12Vac/60Hz,SUNFONE(MODEL:ACE05V1A)
Model : UPA2
Memo : 802.11b TX CH01_2412MHz
Plane : E1