



# FCC/IC TEST REPORT

for

## 47 CFR Part 15 Subpart C and IC RSS-210

**Equipment** : Bluetooth Module  
**Model No.** : BTL040  
**FCC ID** : GM37525BTB  
**IC ID** : 2739D-7525BTB  
**Filing Type** : PC II Change  
**Applicant** : Psion Teklogix Inc.  
2100 Meadowvale Boulevard., Mississauga,  
Ontario, L5N 7J9, Canada

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- The data shown in this test report were carried out on May 08, 2007 at **Sporton International Inc. LAB.**
- Report No.: FR710208, Report Version: Rev. 03.

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Deputy Manager

***SPORTON International Inc.***

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Rev. 03



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### History of this test report

Report Issue Date: May 11, 2007

Report No.	Description



## **1. General Description of Equipment under Test**

### **1.1. Applicant**

**Psion Teklogix Inc.**

2100 Meadowvale Boulevard., Mississauga, Ontario, L5N 7J9, Canada

### **1.2. Manufacturer**

**ASKEY COMPUTER CORP.**

10F, No. 119, Chienkang Rd., Chung-Ho, Taipei, Taiwan, R.O.C.

### **1.3. Basic Description of Equipment under Test**

Equipment : Bluetooth Module  
Model No. : BTL040  
FCC ID : GM37525BTB  
IC ID : 2739D-7525BTB  
AC Power Cord : AC120V, Wall-mount, 1.8 meter, 2 pin

Remark:

1. The CSR Bluetooth module, BTL040, is embedded in the specific Host 7527C / 7527S Series. It can be co-transmitted with WLAN (FCC ID: GM37527RA2041) and GSM (FCC ID: GM375273RADA) on the Host.
2. 7527S is the shorter version of model 7527C. They have the same RF modules and antenna. The only difference between the two models is the keypad.



**1.4. Details of the Accessory**

**Terminal Options**

		Model Number	Part Number	Remark
GSM	Quad-band MC75 GSM Radio with Stubby antenna	RA3030-G2	N/A	
Kit	Blackroc Endcap Kit 3-Port (RS232,TTL,IRDA); kit	BR1000-G1	1050812	Endcap 7
802.11g	802.11g CF Radio	RA2041	N/A	
Endcap with GSM	Imager, 2D HHP 5180 Endcap with GSM antenna	WA8110-G1	1050830	Endcap 5
	Imager, 1D EV15 Endcap, with GSM antenna	WA9113-G1	1050778	Endcap 1
	Scanner, 1D SE955 Endcap, with GSM antenna	WA9112-G1	1050491	Endcap 2
Endcap	Imager, 2D HHP 5180 Endcap	WA8010-G1	1050890	Endcap 6
	Imager, 1D Intermec EV15 Endcap	WA9103-G1	1050777	Endcap 3
	Scanner, 1D SE955 Endcap	WA9102-G1	1050492	Endcap 4
POD	Imager, 1D Intermec EV15 Pod	WA9003-G1	1050462	POD 1
	Scanner, 1D SE955 Pod	WA9002-G1	1050230	POD 2
	Scanner, 1D SE1223HP Pod	WA9000-G1	1050229	POD 3
	Scanner, 1D SE1223LR Pod	WA9005-G1	1051025	POD 4
	Imager, 2D HHP 5180 Pod	WA9012-G1	1050865	POD 6

**Docks and Connectivity Options**

Docking	Desktop Docking Station	WA4003-G2	1050955	Docking 1
	USB Cable	N/A	N/A	USB 1
	Vehicle Cradle - Powered 12V with Port Replicator	WA4005-G1 (port replicator)	1080224 (port replicator)	
	Cigarette light adaptor	WA3113-G2	1050463-001	
	Standalone Power Supply	PS1050-G1	1050465	
USB	USB to Ethernet adaptor module	WA4010-G1	1050236	USB 2
	USB to RS232 adaptor module	WA4015-G1	1050067-300	USB 3
Tether	Tether to Ethernet adaptor module	WA4025	1050255	USB 5
	Tether adaptor cable (for connecting keyboards)	WA1001	1050551	USB 4

**Others**

Battery	3000mAh	WA3006		B2
	4000mAh	WA3010	1050192	B3
Holster	Soft Shell Holster	WA6050	1030227	C1
Pistol Grips	Pistol Grip Symbol SE1223 Scanner	WA6001-G1	1050460	C2

Remark:

1. USB Cable comes in the box as part of the Docking Station WA4003-G2.
2. Desktop Docking system is only used to battery charging.
3. The Endcap and POD use different type of scanner and imager components inside, please find the clause 7.3 of user manual.



**1.5. Feature of Equipment under Test**

**BT Module**

Product Feature & Specification	
1. Model Name	BTL040
2. FCC ID	GM37525BTB
3. IC ID	2739D-7525BTB
4. Modulation Type/Data Rate	GFSK
5. Frequency Range.	2400 MHz ~ 2483.5 MHz
6. Number of Channels	79
7. Carrier Frequency of each channel	2402+ n*1 MHz, n= 0~78
8. Channel Spacing	1 MHz
9. Maximum Output Power to Antenna (Normal condition)	0.59 dBm
10. Type of Antenna Connector	N/A
11. Antenna Type	Chip Antenna
12. Antenna Gain	4.1 dBi
13. Function Type	Transmitter <input type="checkbox"/> Transceiver <input checked="" type="checkbox"/>
14. Power Rating (DC/AC , Voltage)	AC100~240V

**Co-transmission WLAN Module**

Product Feature & Specification	
1. Model Name	RA2041
2. FCC ID	GM37527RA2041
3. IC ID	2739D-BGRADA
4. Modulation Type/Data Rate	DSSS / OFDM
5. Frequency Range.	2400 MHz ~ 2483.5 MHz
6. Number of Channels	11
7. Carrier Frequency of each channel	2412+(n-1)*5 MHz; n=1~11
8. Maximum Output Power to Antenna (Normal condition)	802.11b : 20.65 dBm 802.11g : 22.98 dBm
9. Type of Antenna Connector	N/A
10. Antenna Type	PCB Antenna
11. Antenna Gain	-2.66 dBi (7527C) -2.48 dBi (7527S)
12. Function Type	Transmitter <input type="checkbox"/> Transceiver <input checked="" type="checkbox"/>
13. Power Rating (DC/AC , Voltage)	AC100~240V

**Co-transmission GSM Module**

Product Feature & Specification	
1. Model Name	RA3030-G2
2. FCC ID	GM375273RADA
3. IC ID	2739D-7527RADA
4. Modulation Type/Data Rate	GSM : GMSK EDGE : 8PSK
5. Frequency Range.	GSM850 : 824 ~ 849 MHz (Tx) / 869 ~ 894 MHz (Rx) PCS1900 : 1850 ~ 1910 MHz (Tx) / 1930 ~ 1990 MHz (Rx)
6. Maximum Output Power to Antenna (Normal condition)	GSM : 32.7 dBm (GSM) ; 21.7 dBm (EDGE) PCS : 29.6 dBm (GSM) ; 21.2 dBm (EDGE)
7. Type of Antenna Connector	N/A
8. Antenna Type	PCB Antenna
9. Antenna Gain	5 dBi

**Host**

Product Feature & Specification	
1. Equipment	Hand-held Micro-computer
2. Trade Name	WORKABOUT PRO
3. Model Name	7527C / 7527S Series
4. HW Version	7527C : ES3 7527S : ES2
5. SW Version	A
6. GSM Board	ES2
7. Battery	WA3006
8. DUT Stage	Identical Prototype



## **2. Test Configuration of Equipment under Test**

### **2.1. Test Manner**

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





2.2. Test Mode

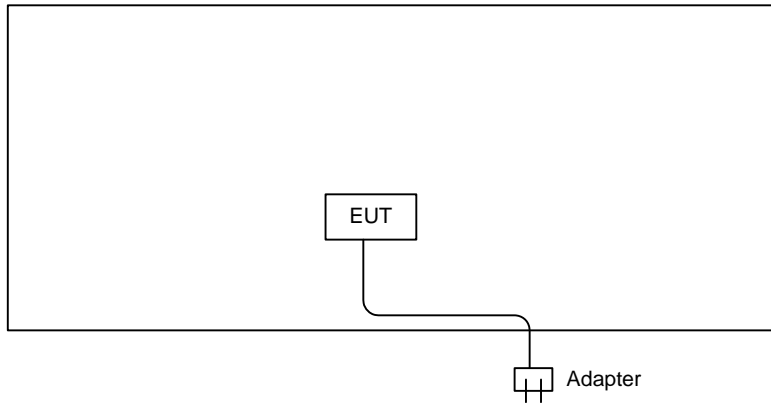
Application	Bluetooth
Radiated Emission	Mode 1: Tx_CH00_2402 MHz for 7527C Mode 2: Tx_CH39_2441 MHz for 7527C Mode 3: Tx_CH78_2480 MHz for 7527C Mode 4: Tx_CH00_2402 MHz for 7527S Mode 5: Tx_CH00_2402 MHz with Endcap 1 for 7527C Mode 6: Tx_CH00_2402 MHz with Endcap 3 for 7527C Mode 7: Tx_CH00_2402 MHz with Endcap 4 for 7527C Mode 8: Tx_CH00_2402 MHz with Endcap 6 for 7527C Mode 9: Tx_CH00_2402 MHz with Endcap 7 for 7527C Mode 10: Tx_CH00_2402 MHz with POD 1 for 7527C Mode 11: Tx_CH00_2402 MHz with POD 2 for 7527C Mode 12: Tx_CH00_2402 MHz with POD 3 for 7527C Mode 13: Tx_CH00_2402 MHz with POD 4 for 7527C Mode 14: Tx_CH00_2402 MHz with POD 6 for 7527C Mode 15: Tx_CH00_2402 MHz with POD 2 for 7527S
Conducted Emission	Mode 1: BT Link Mode + Docking 1 + POD 4 + USB 1 + USB 2 + Adapter for 7527C Mode 2: BT Link Mode + Docking 1 + POD 4 + USB 1 + USB 2 + Adapter for 7527S

Remark:

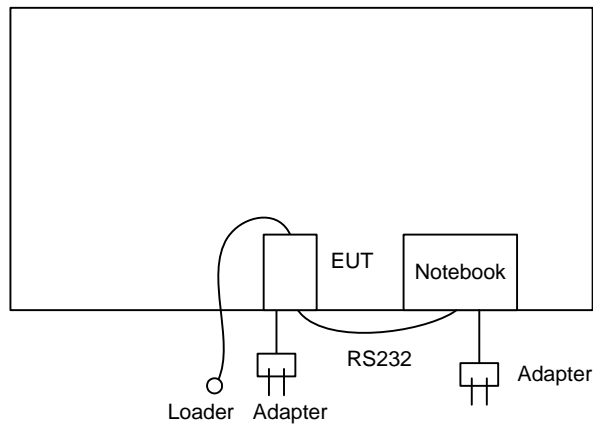
1. The radiated emission testing for BT and WLAN co-transmission on the Host can be referred in Appendix D.
2. The radiated emission testing for BT and GSM co-transmission on the Host can be referred in Appendix E.
3. We chose the worst case mode (Bluetooth Ch00 2402MHz) from test mode 1 through 4 in the original report. The reason we chose is because they were same RF configurations between two versions. At this stage is for PC II change due to co-location and adding new accessories ,Endcap and POD, as listed at clause 1.4 details of the accessory.
4. After selected worst case mode, then performed with new additional tests using different accessories against 7527C in test mode 5 to 14.
5. Finally, we performed test mode 15 against 7527S which is the worst case mode as mentioned above.

### 2.3. Connection Diagram of Test System

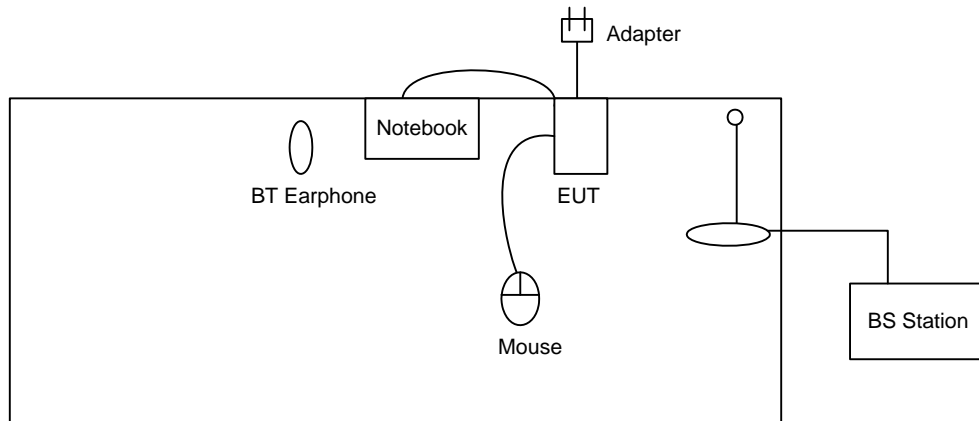
<Radiated Emission>  
Mode 1~8 and 10~15



Mode 9



**<Conducted Emission>**



**2.4. Ancillary Equipment List**

<b>Item</b>	<b>Equipment</b>	<b>Model No.</b>	<b>Serial No.</b>
1.	BT Base Station (Anritus)	8852A	N/A
2.	Notebook (DELL)	D400	N/A
3.	(USB)Mouse (Microsoft)	B75-00093	Non-shielded, 1.8 m
4.	Bluetooth Earphone (Free Style)	JD-100	N/A
5.	Notebook (DELL)	PP01L	N/A



### **3. RF Utility**

The executive programs, "EMCTest.exe" under WINXP installed in notebook which generates a complete line continuously repeating "H" pattern were used as the test software.

The EUT is in BT Link mode for conducted emission or in BT continuous Tx Mode controlled by base station simulator for radiation emission or other conducted tests.



## **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**

AC 120V

### **4.2. Standard for Methods of Measurement**

ANSI C63.4-2003

### **4.3. Test in Compliance with**

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

### **4.4. Frequency Range Investigated**

Conduction: from 150 kHz to 30 MHz  
Radiation: from 30 MHz to 25000MHz

### **4.5. Test Distance**

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



## 5. Report of Measurements and Examinations

### 5.1. List of Measurements and Examinations

FCC Rule	IC Rule	Description of Test	Result	Section
15.247(a)(1)	A8.1 (2)	Hopping Channel Separation	Pass	5.2
15.247(a)(1)(iii)	A8.1 (4)	Number of Hopping Frequency Used	Pass	5.3
15.247(a)(1)	A8.1 (1)	Hopping Channel Bandwidth	Pass	5.4
15.247(a)(1)(iii)	A8.1 (4)	Dwell Time of Each Frequency	Pass	5.5
15.247(b)(1)	A8.4 (2)	Output Power	Pass	5.6
15.247(c)	A8.5	100kHz Bandwidth of Frequency Band Edges	Pass	5.7
15.207	RSS-Gen 7.2.2	Conducted Emission	Pass	5.8
15.209	2.6	Radiated Emission	Pass	5.9
15.203	A8.4 (6)	Antenna Requirement	Pass	5.10

**5.2. Hopping Channel Separation**

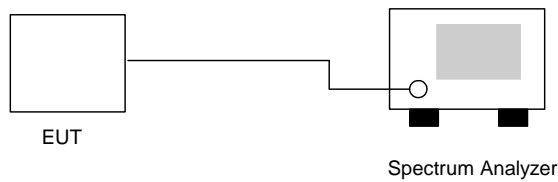
5.2.1. Measuring Instruments :

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 30kHz and VBW to 100kHz.
3. The Hopping Channel Separation is defined as the channel is separated with the next channel.

5.2.3. Test Setup Layout :



5.2.4. Test Result : The spectrum analyzer plots are attached as below

- Temperature: 24°C
- Relative Humidity: 52%
- Test Engineer : James

Channel	Frequency ( MHz )	Hopping Channel Separation ( MHz )	Limits ( MHz )	Plot Ref. No.
00	2402	0.996	0.824	Mode 1
39	2441	1.004	0.832	Mode 2
78	2480	0.996	0.834	Mode 3

Remark: Limit is the greater one of 25kHz or the 20dB bandwidth of the hopping channel.

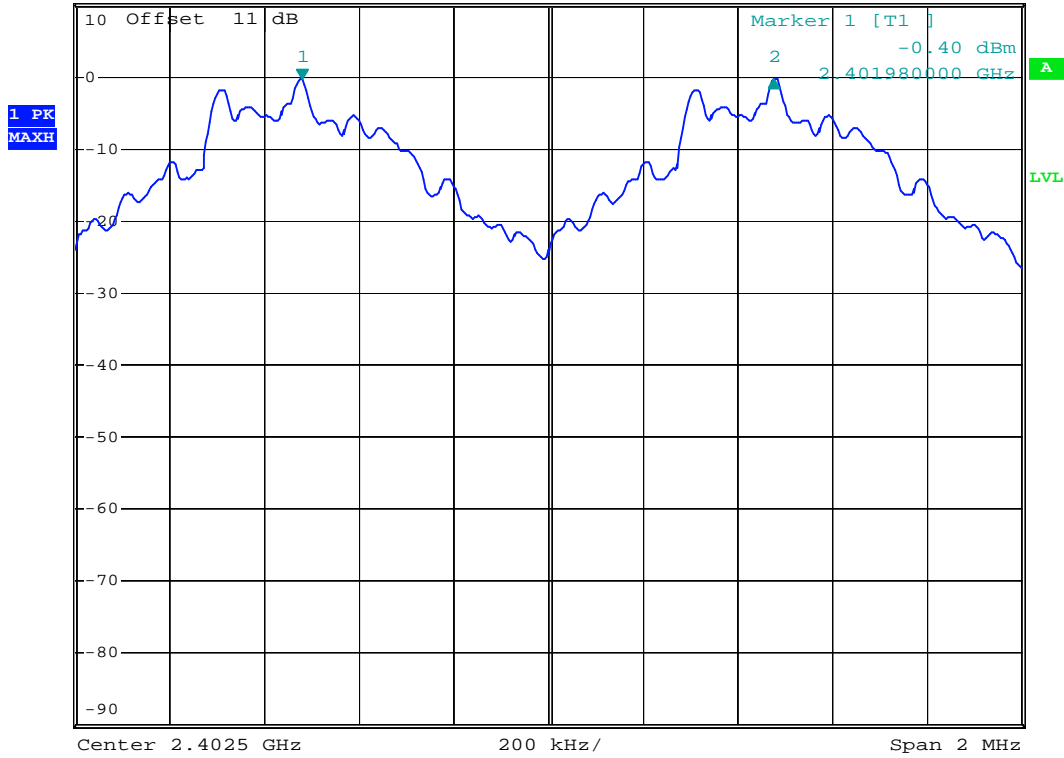


5.2.5 Hopping Channel Separation

Mode 1: CH00 (2402MHz)



Ref 10 dBm      \*Att 20 dB      \*RBW 30 kHz      Delta 2 [T1 ]  
\*VBW 100 kHz      -0.01 dB  
\*SWT 500 ms      996.00000000 kHz



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Mode 2: CH39 (2441MHz)

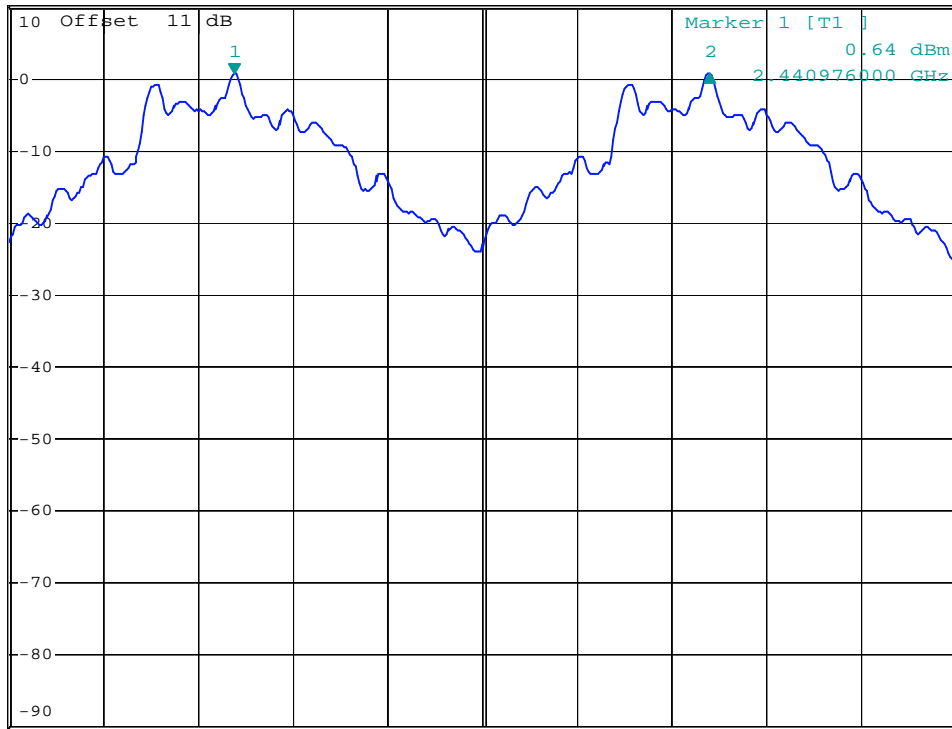


\*RBW 30 kHz    Delta 2 [T1 ]  
 \*VBW 100 kHz    0.03 dB  
 \*SWT 500 ms    1.004000000 MHz

Ref 10 dBm

\*Att 20 dB

1 PK  
MAXH



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Mode 3: CH78 (2480MHz)

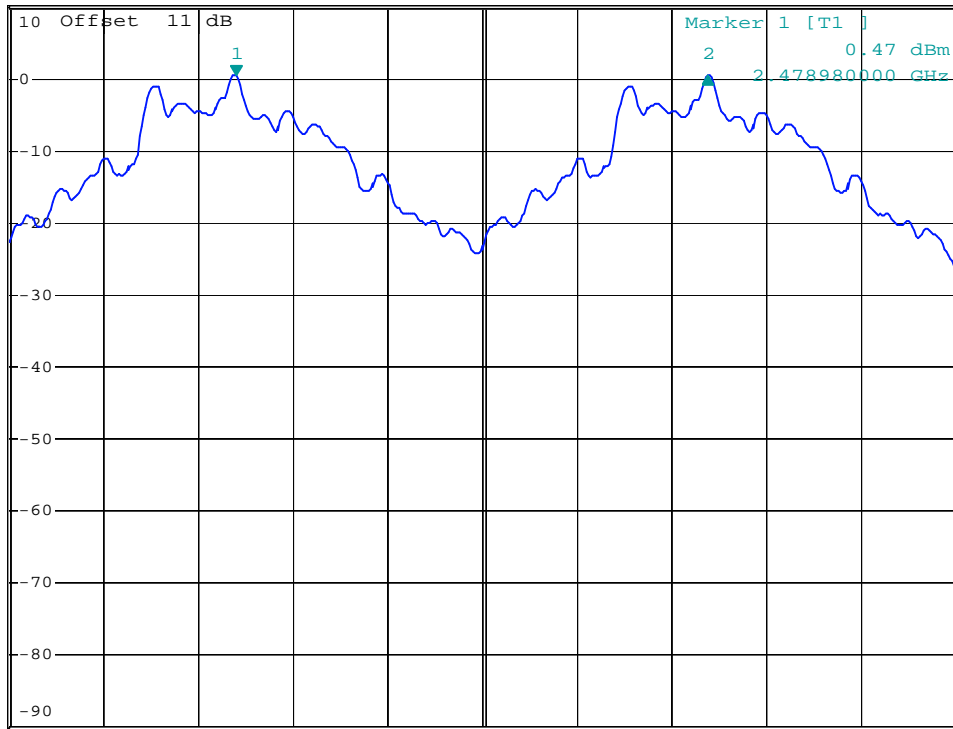


\*RBW 30 kHz    Delta 2 [T1 ]  
\*VBW 100 kHz    -0.13 dB  
\*SWT 500 ms    996.000000000 kHz

Ref 10 dBm

\*Att 20 dB

1 PK  
MAXH



Center 2.4795 GHz

200 kHz/

Span 2 MHz

Date: 30.NOV.2006 11:34:49

**5.3. Number of Hopping Frequency**

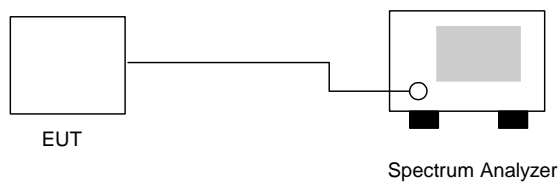
5.3.1. Measuring Instruments :

As described in chapter 6 of this test report.

5.3.2. Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
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.

5.3.3. Test Setup Layout :



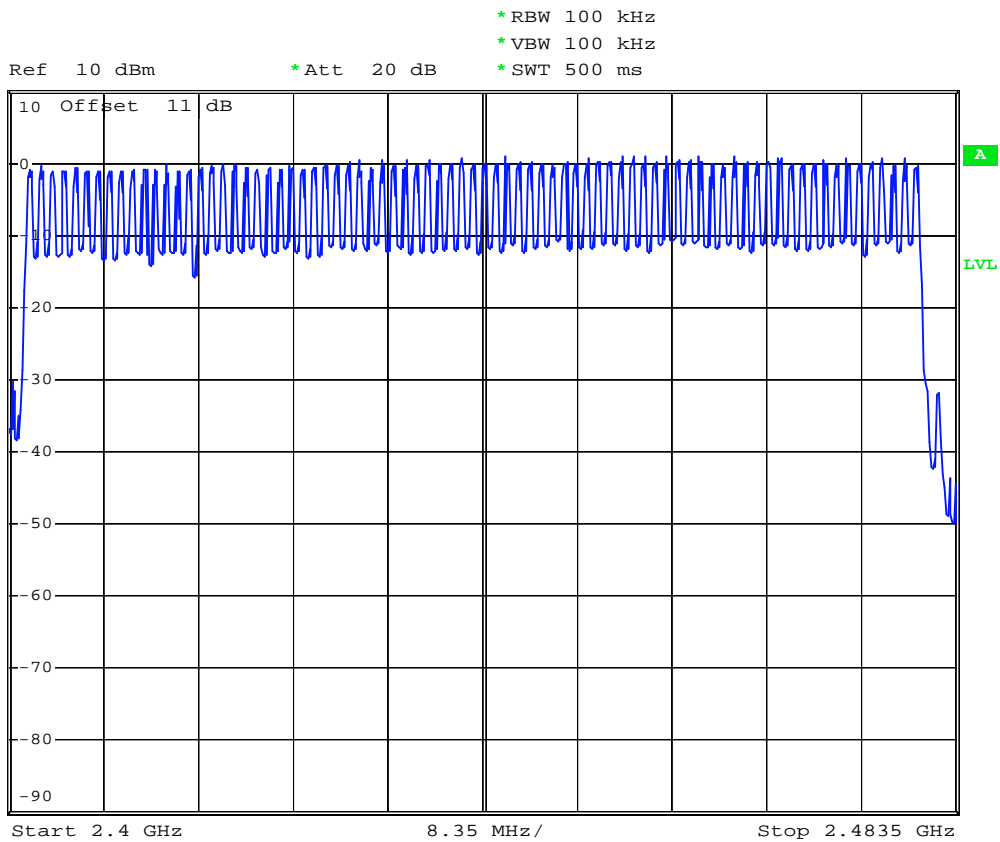
5.3.4. Test Result : See spectrum analyzer plots below

- Temperature: 24°C
- Relative Humidity: 52%
- Test Engineer : James

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



5.3.5 Number of Hopping Frequency



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### 5.4 Hopping Channel Bandwidth

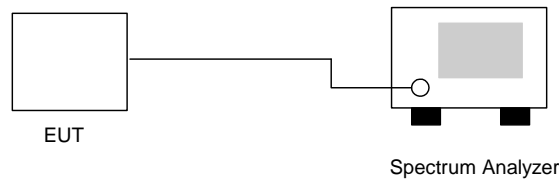
#### 5.4.1 Measuring Instruments :

As described in chapter 6 of this test report.

#### 5.4.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 30kHz and VBW to 300kHz.
3. The Hopping Channel bandwidth is defined as the frequency range where the power is higher than peak power minus 20dB.

#### 5.4.3 Test Setup Layout :



#### 5.4.4 Test Result : See spectrum analyzer plots below

- Temperature: 24°C
- Relative Humidity: 52%
- Test Engineer : James

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	0.824	1.0	Mode 1
39	2441	0.832	1.0	Mode 2
78	2480	0.834	1.0	Mode 3

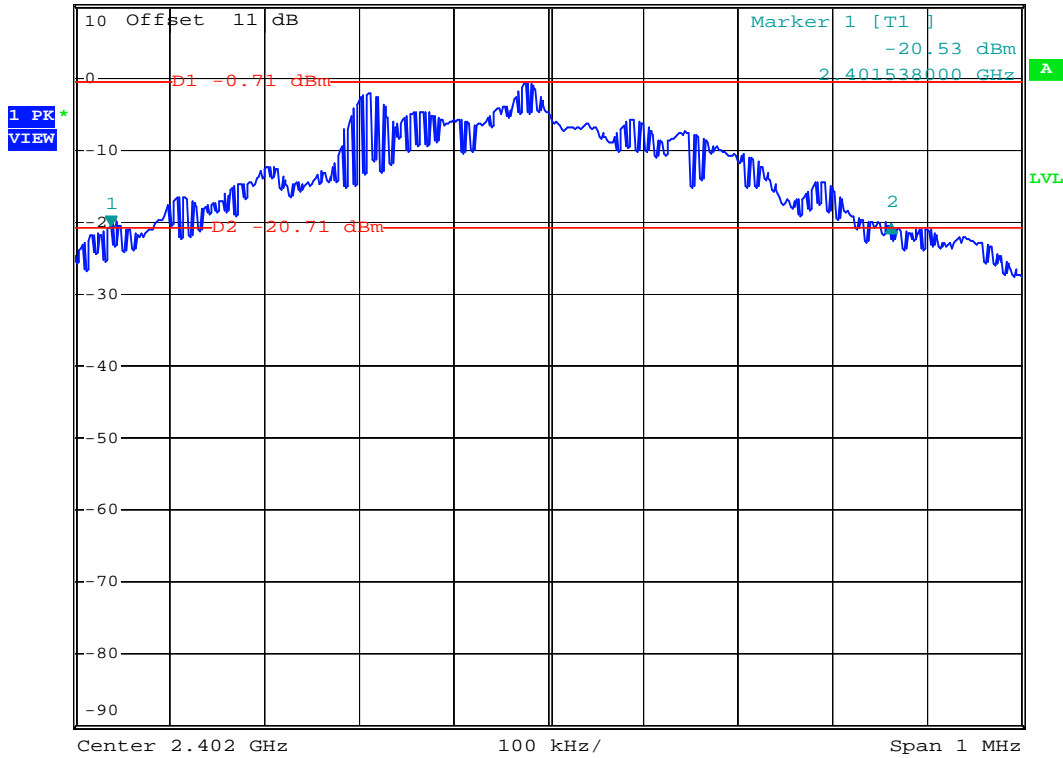


5.4.5 Hopping Channel Bandwidth

Mode 1: CH00 (2402MHz)



Ref 10 dBm      \*Att 20 dB      \*RBW 30 kHz      Delta 2 [T1 ]  
\*VBW 300 kHz      0.21 dB  
\*SWT 500 ms      824.000000000 kHz



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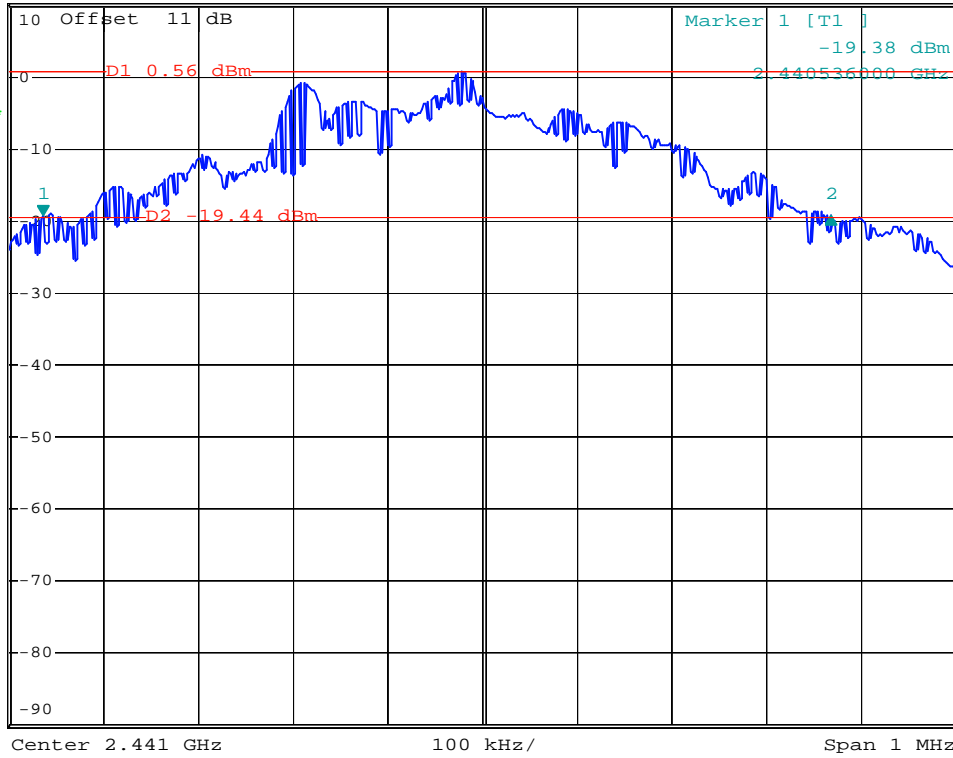
Mode 2: CH39 (2441MHz)



\*RBW 30 kHz    Delta 2 [T1 ]  
 \*VBW 300 kHz    0.02 dB  
 \*SWT 500 ms    832.00000000 kHz

Ref 10 dBm

\*Att 20 dB



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Mode 3: CH78 (2480MHz)

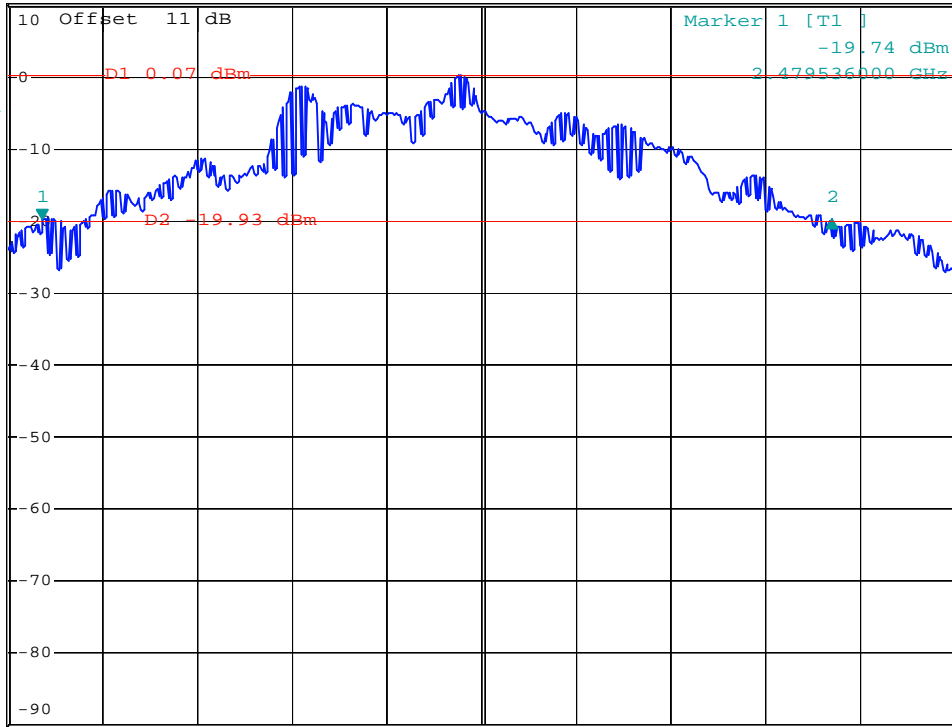


\*RBW 30 kHz    Delta 2 [T1 ]  
 \*VBW 300 kHz    -0.10 dB  
 \*SWT 500 ms    834.00000000 kHz

Ref 10 dBm

\*Att 20 dB

1 PK\*  
VIEW



Center 2.48 GHz

100 kHz/

Span 1 MHz

Date: 30.NOV.2006 11:27:24



**5.5 Dwell Time of Each Frequency within a 30 Seconds Period**

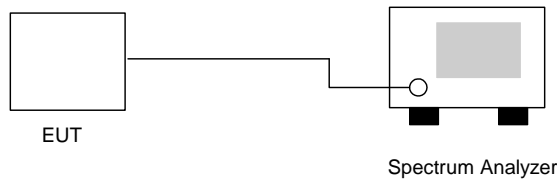
5.5.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.5.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
3. Set the center frequency on any frequency would be measured and set the frequency span to zero span.
4. The equation =  $30 * (1600/79) * t$  (t = the time duration of one single pulse )

5.5.3 Test Setup Layout :



5.5.4 Test Result : See spectrum analyzer plots below

- Temperature: 24°C
- Relative Humidity: 52%
- Test Engineer : James

Ch00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10	556	0.176	0.4
DH3	5	1820	0.288	0.4
DH5	3.4	3100	0.333	0.4

**CH39**

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10.1	552	0.176	0.4
DH3	5.1	1820	0.293	0.4
DH5	3.4	3100	0.333	0.4

**CH78**

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10.1	556	0.177	0.4
DH3	5.1	1820	0.293	0.4
DH5	3.4	3080	0.331	0.4

**Remark:**

6.  $Dwell\ Time = 79(\text{channels}) \times 0.4(\text{s}) \times \text{average hopping channel} \times \text{package transfer time}$
7. 79channels come from the Hopping Channel number.
8.  $Average\ Hopping\ Channel = \text{hops/sweep time}$
9.  $t: \text{Package Transfer Time(us)}$

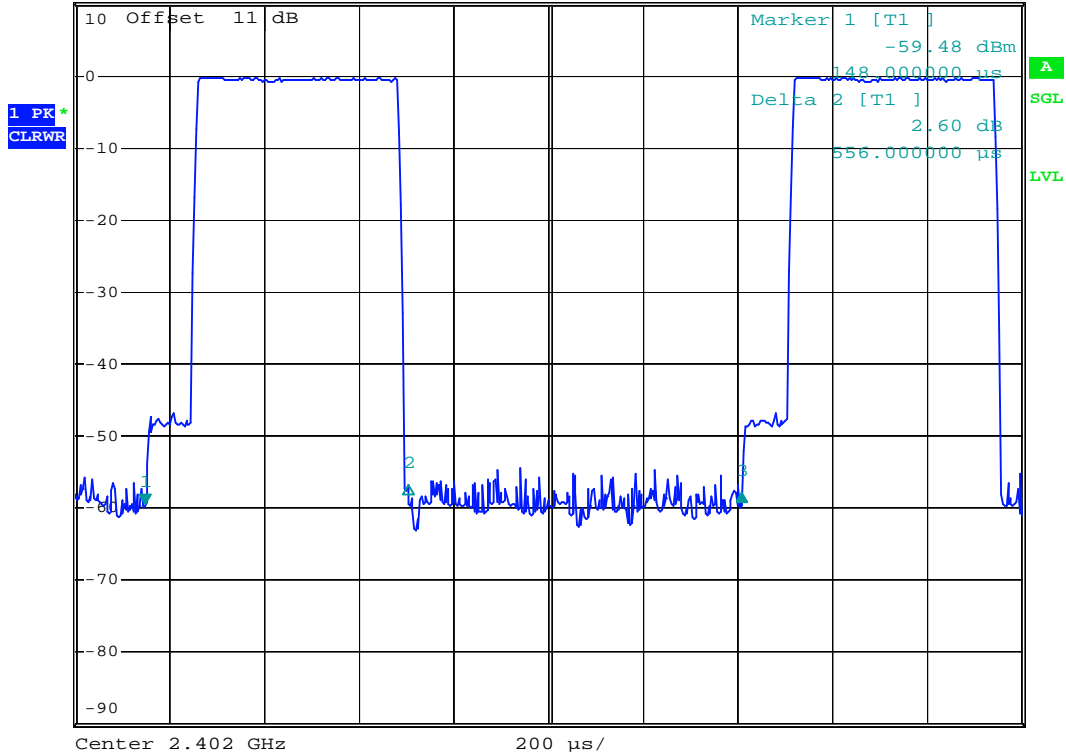


5.5.5 Dwell Time

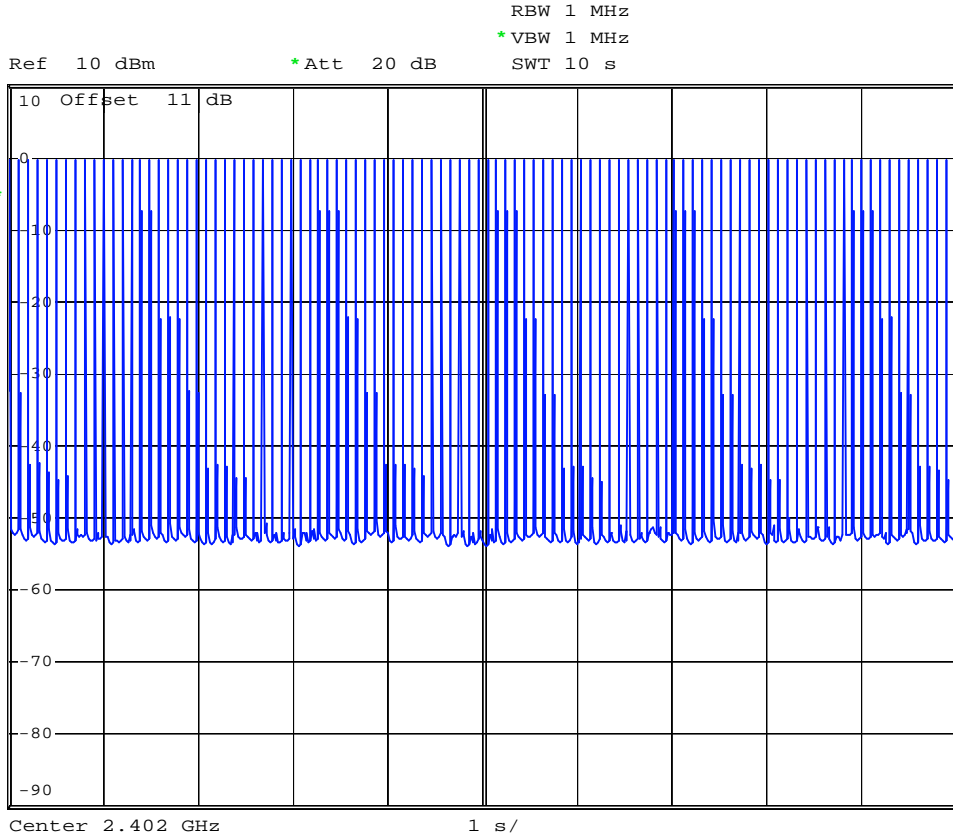
DH1 (CH00)



RBW 1 MHz      Delta 3 [T1 ]  
 \*VBW 1 MHz      1.69 dB  
 Ref 10 dBm      \*Att 20 dB      SWT 2 ms      1.260000 ms



Date: 30.NOV.2006 11:37:00



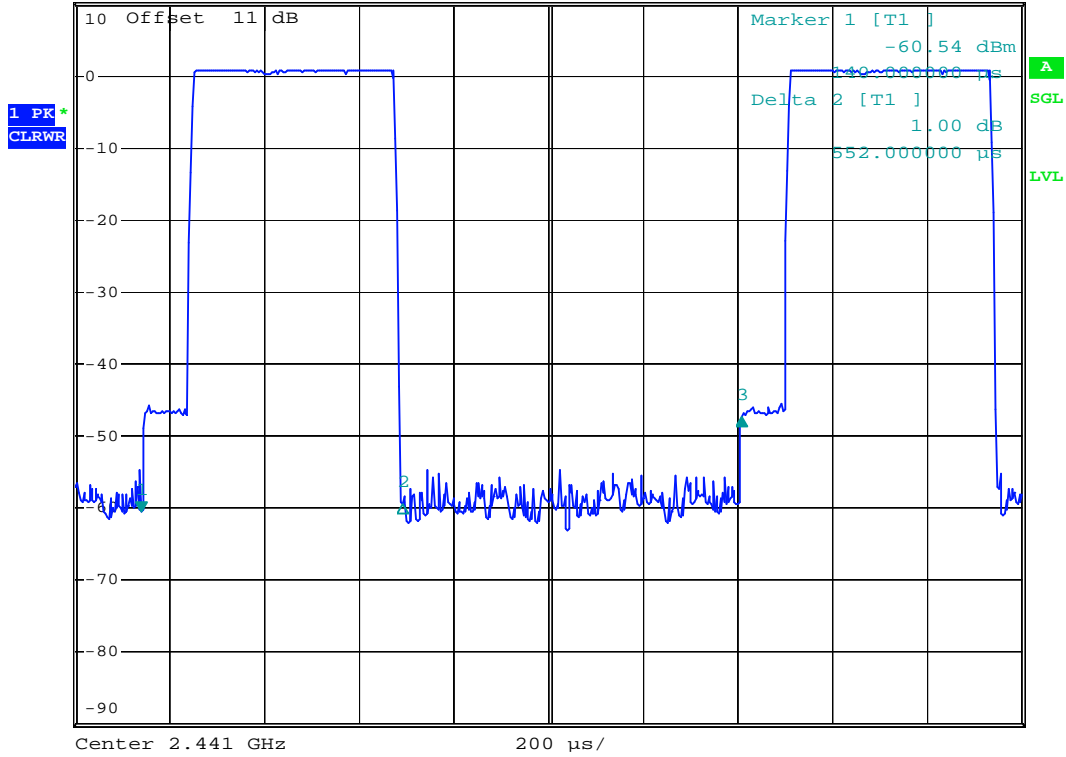
Date: 30.NOV.2006 13:22:24



DH1 (CH39)



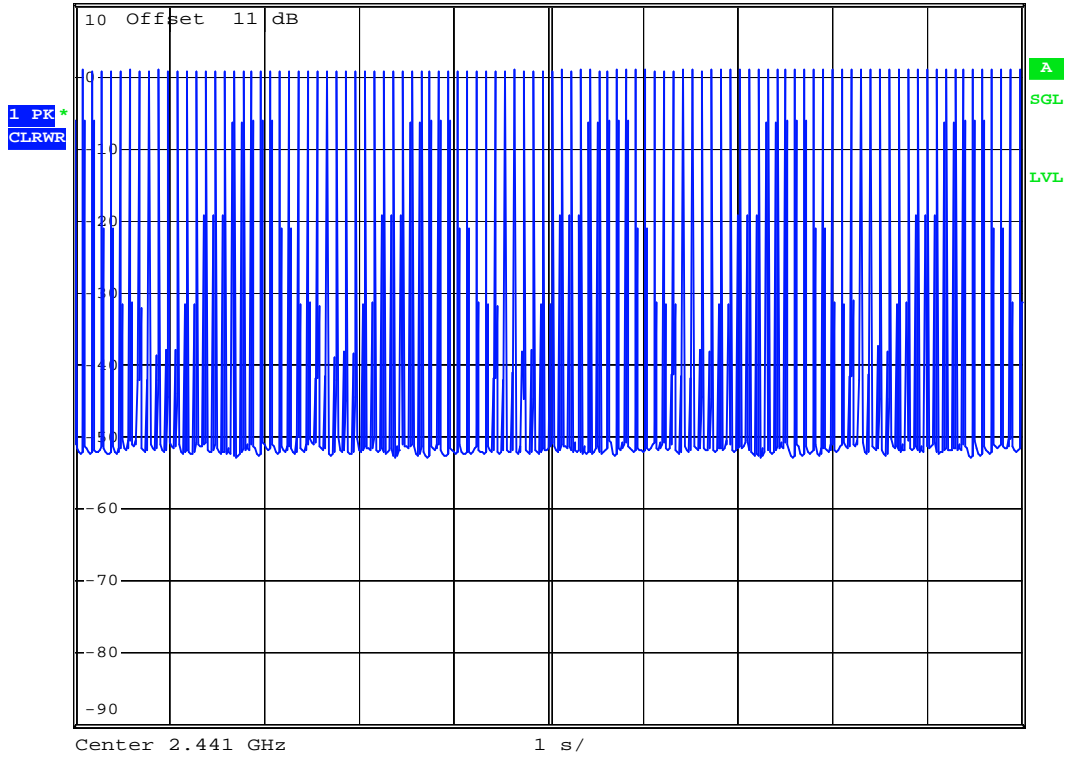
RBW 1 MHz      Delta 3 [T1 ]  
 \*VBW 1 MHz      13.30 dB  
 Ref 10 dBm      \*Att 20 dB      SWT 2 ms      1.268000 ms



Date: 30.NOV.2006 13:10:46



Ref 10 dBm      \*Att 20 dB      RBW 1 MHz  
\*VBW 1 MHz      SWT 10 s



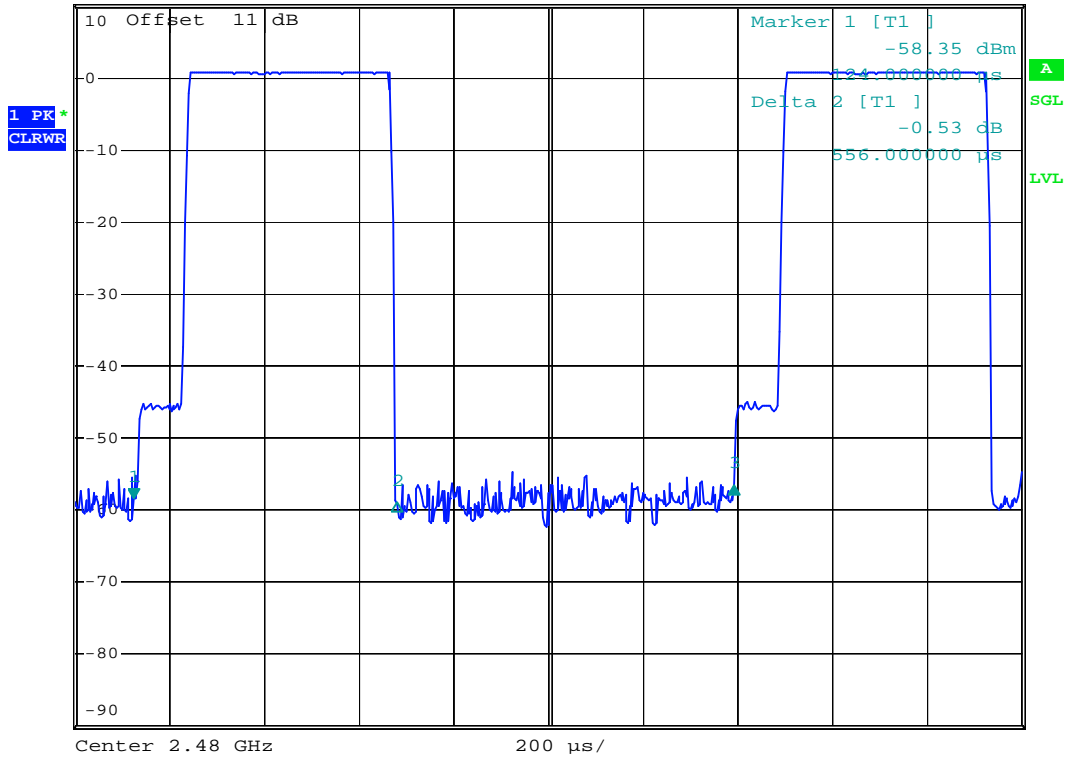
Date: 30.NOV.2006 13:22:45



DH1 (CH78)



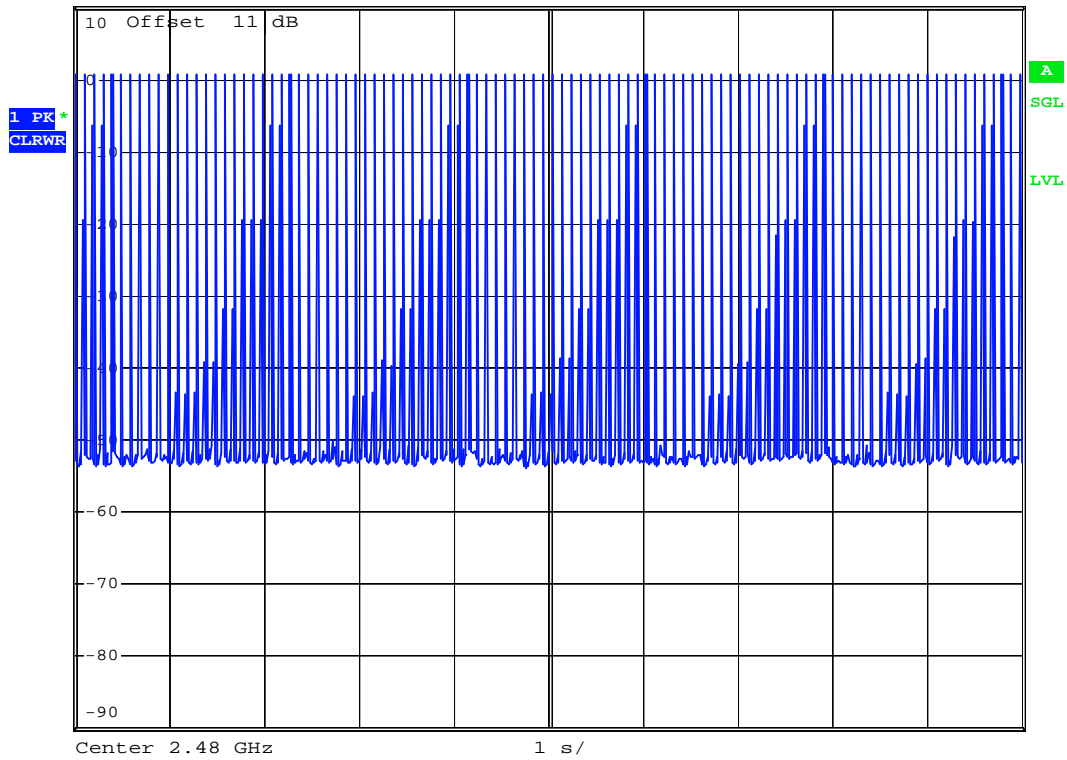
Ref 10 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      1.84 dB  
\*VBW 1 MHz      1.268000 ms  
SWT 2 ms



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Ref 10 dBm      \*Att 20 dB      RBW 1 MHz  
\*VBW 1 MHz      SWT 10 s



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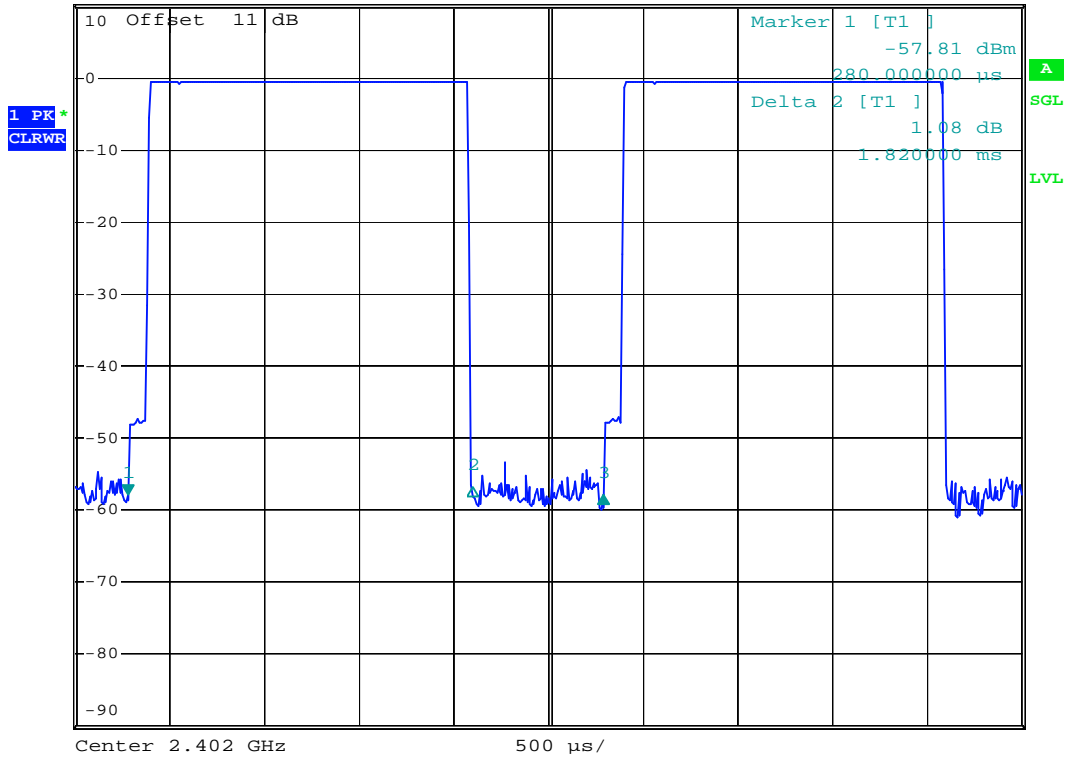




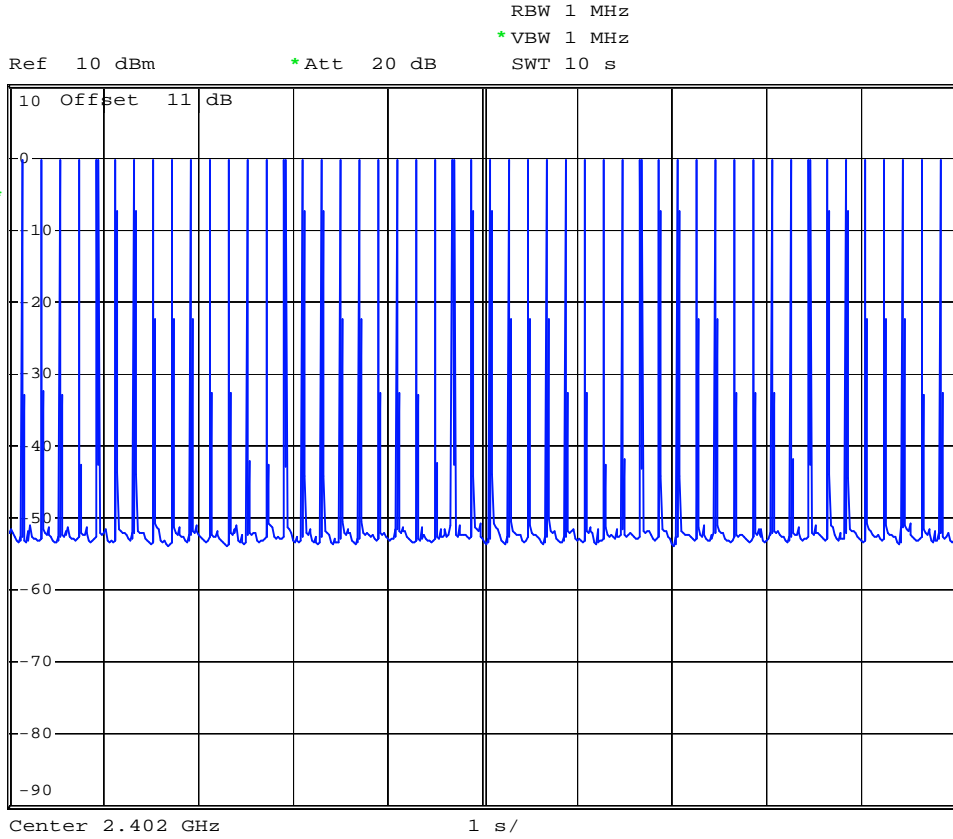
DH3 (CH00)



RBW 1 MHz      Delta 3 [T1 ]  
 \*VBW 1 MHz      -0.16 dB  
 Ref 10 dBm      \*Att 20 dB      SWT 5 ms      2.510000 ms



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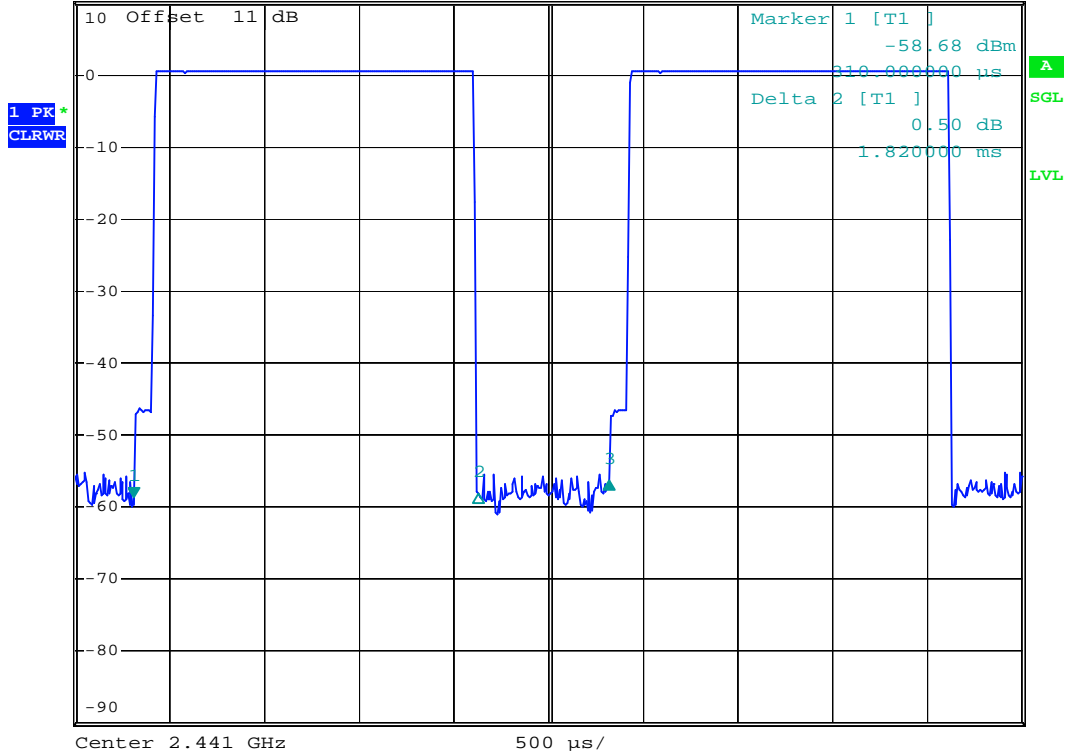
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DH3 (CH39)



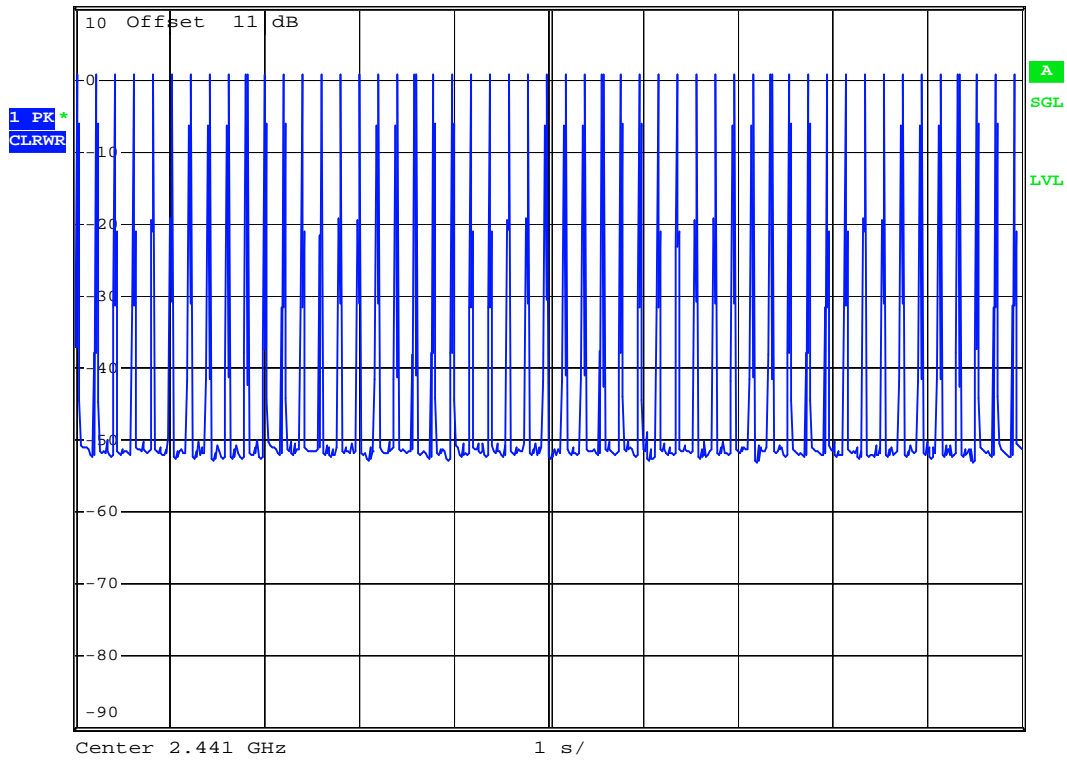
Ref 10 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      2.33 dB  
 \*VBW 1 MHz      2.510000 ms  
 SWT 5 ms



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Ref 10 dBm      \*Att 20 dB      RBW 1 MHz  
\*VBW 1 MHz      SWT 10 s



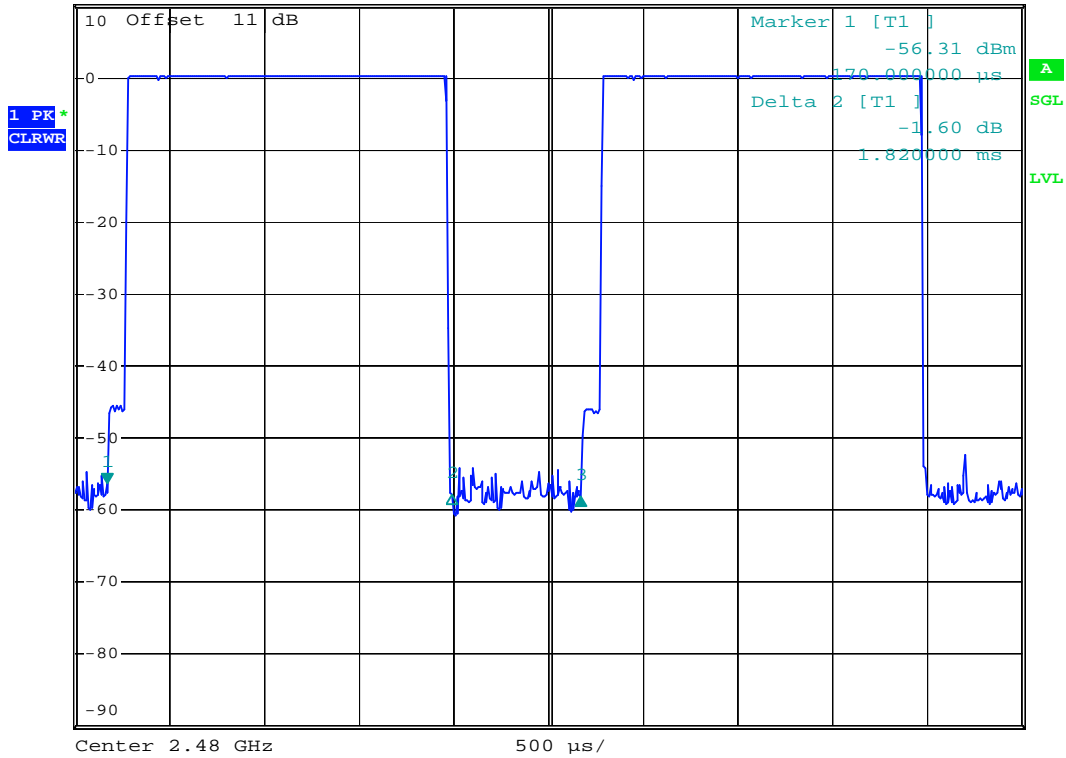
Date: 30.NOV.2006 13:24:38



DH3 (CH78)



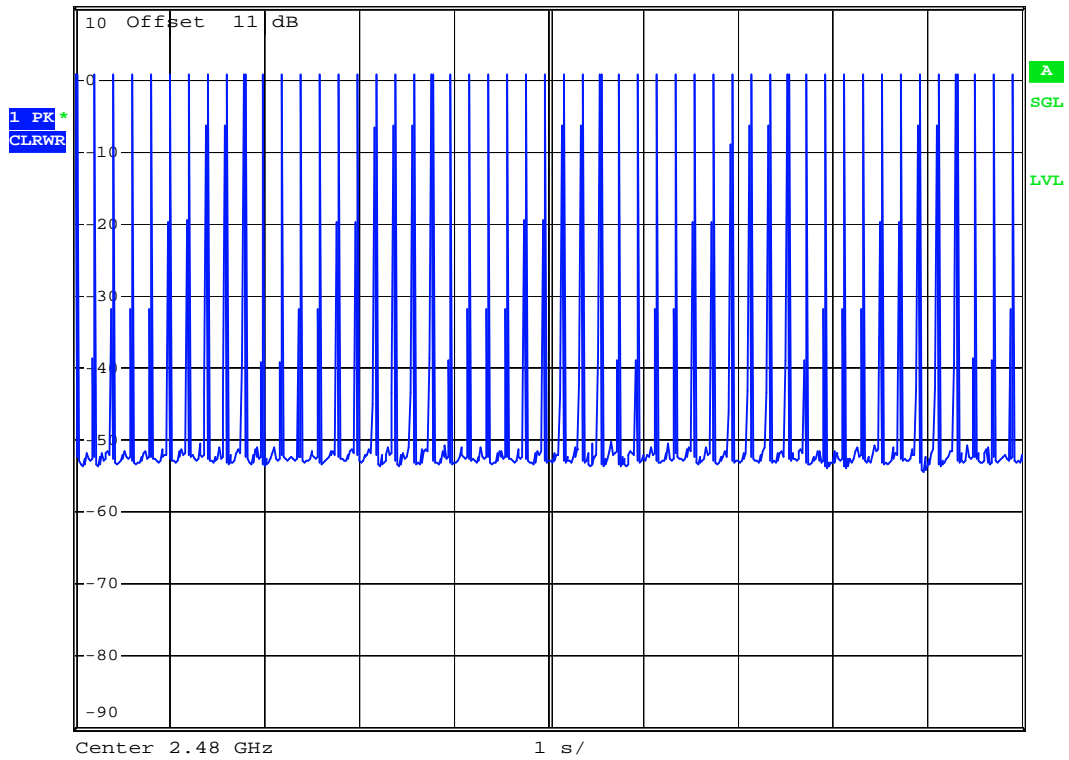
Ref 10 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      -1.72 dB  
 \*VBW 1 MHz      SWT 5 ms      2.500000 ms



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Ref 10 dBm      RBW 1 MHz  
\*Att 20 dB      \*VBW 1 MHz  
SWT 10 s



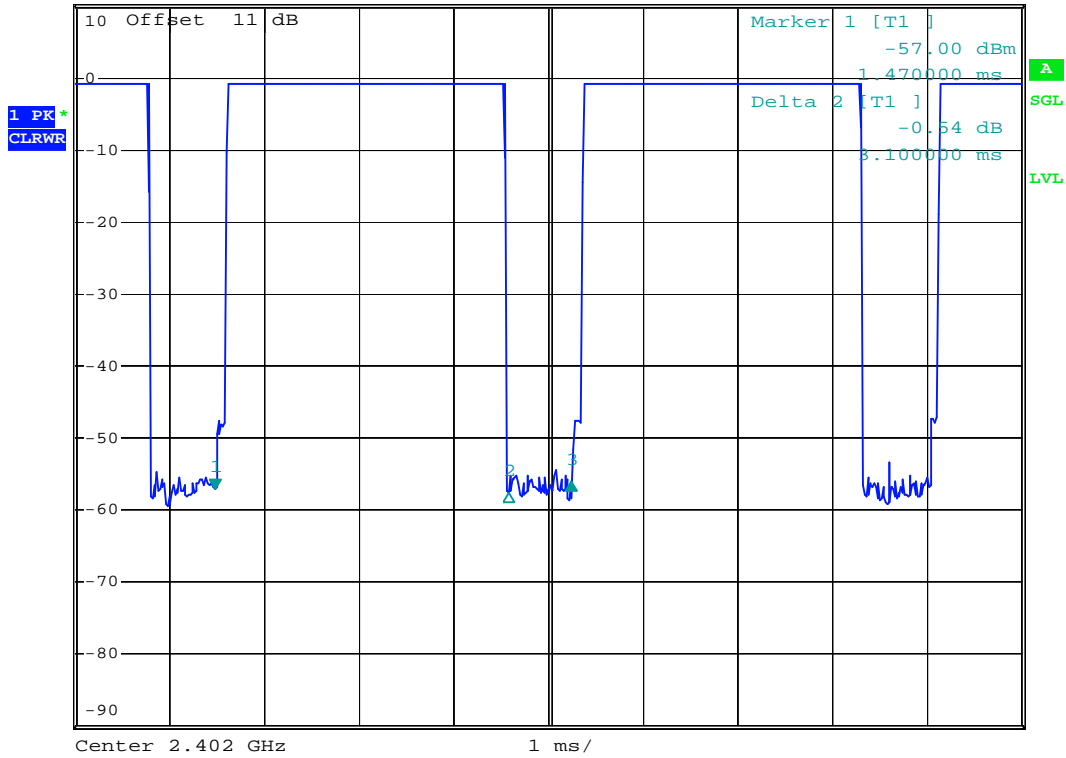
Date: 30.NOV.2006 13:24:58



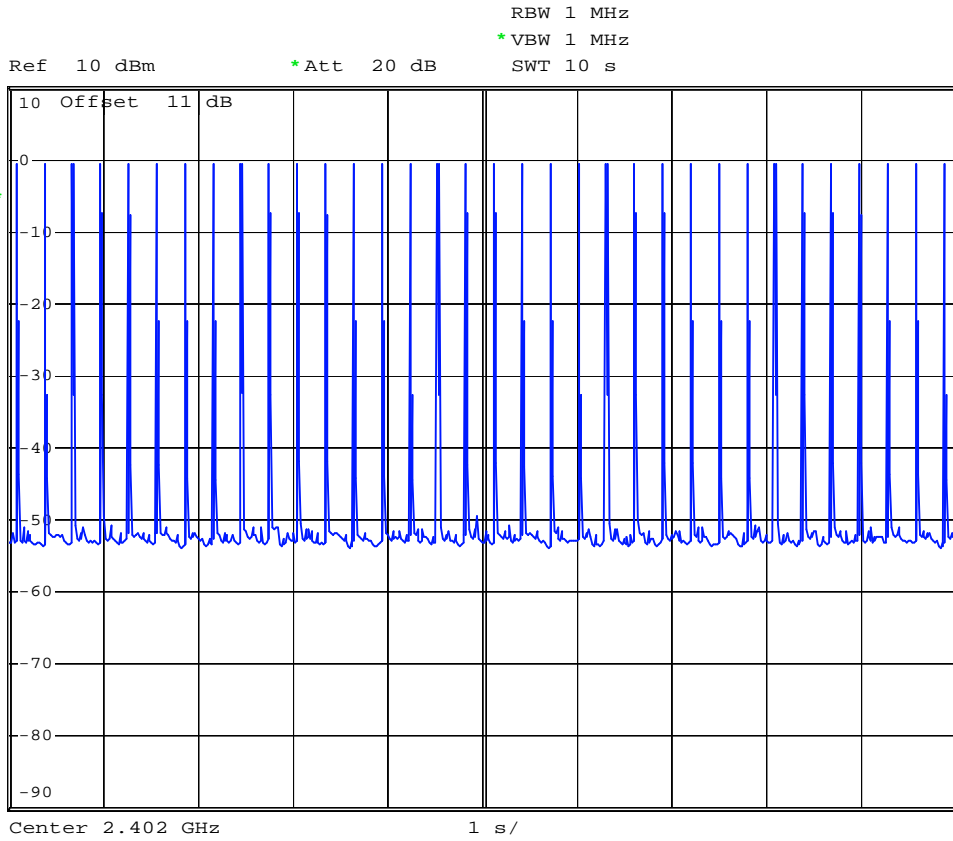
DH5 (CH00)



Ref 10 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]  
\*VBW 1 MHz      0.95 dB  
SWT 10 ms      3.760000 ms



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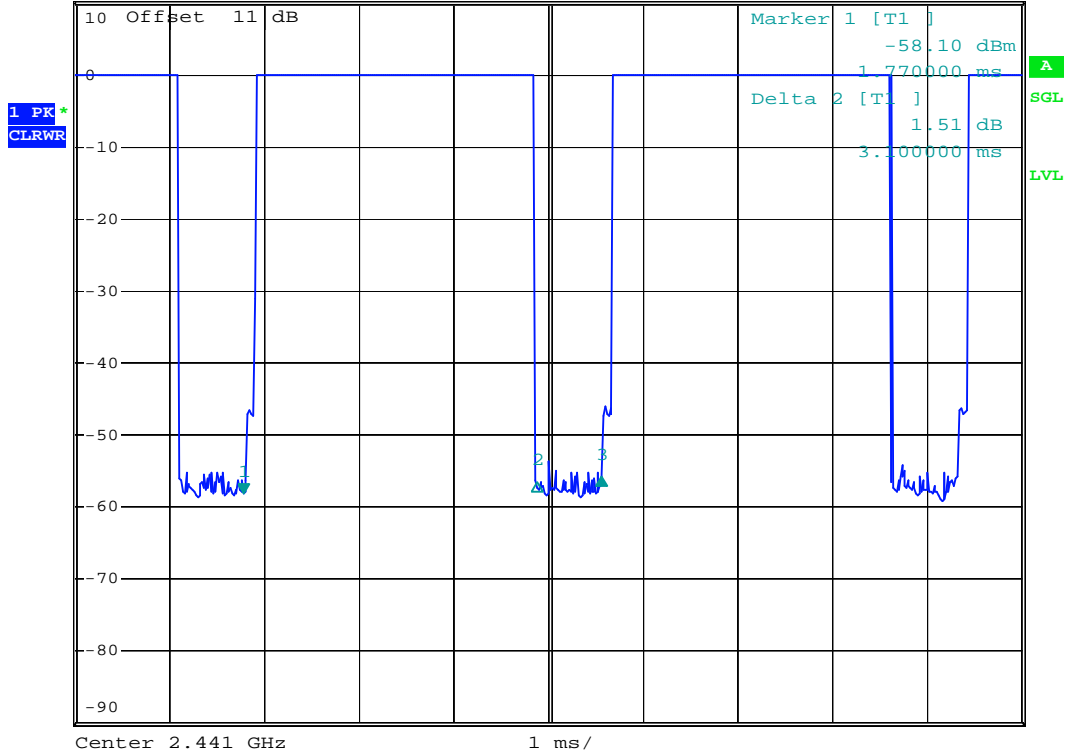




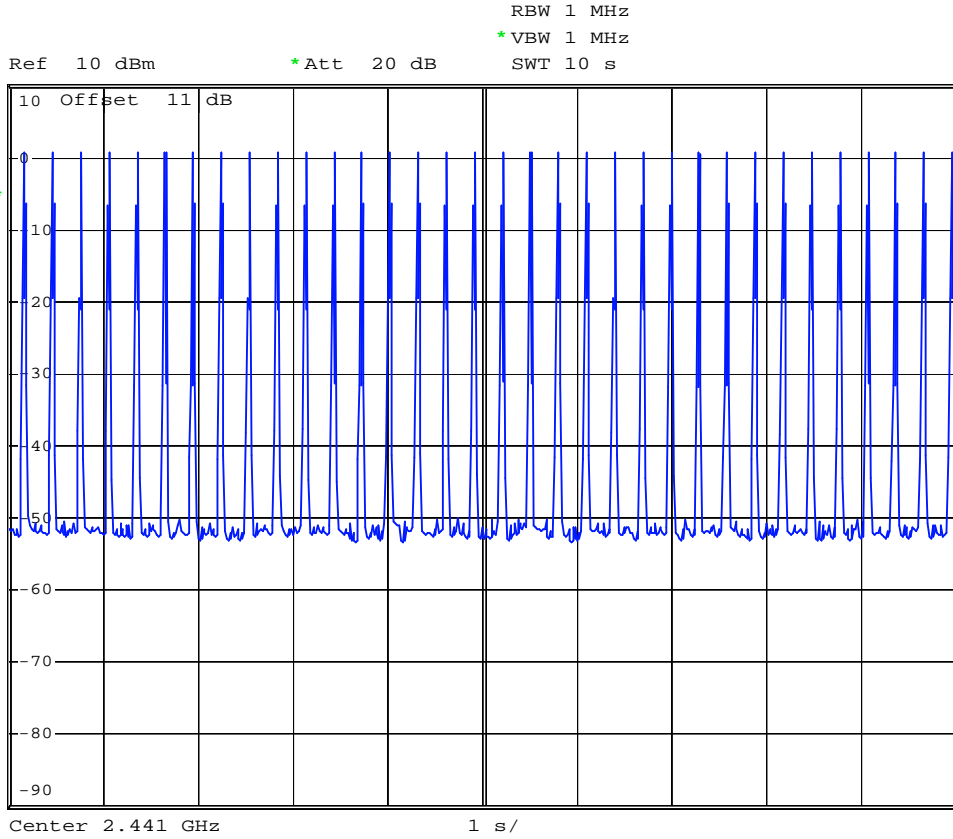
DH5 (CH39)



Ref 10 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      2.31 dB  
 \*VBW 1 MHz      3.780000 ms  
 SWT 10 ms



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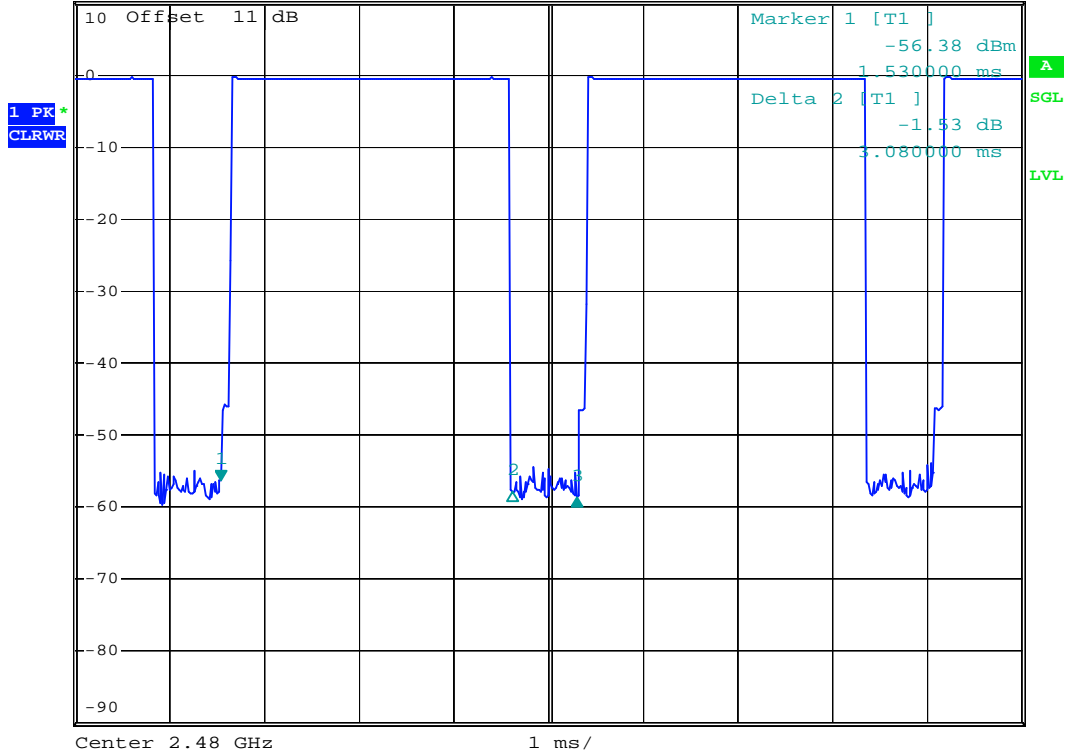
Date: 30.NOV.2006 13:26:22



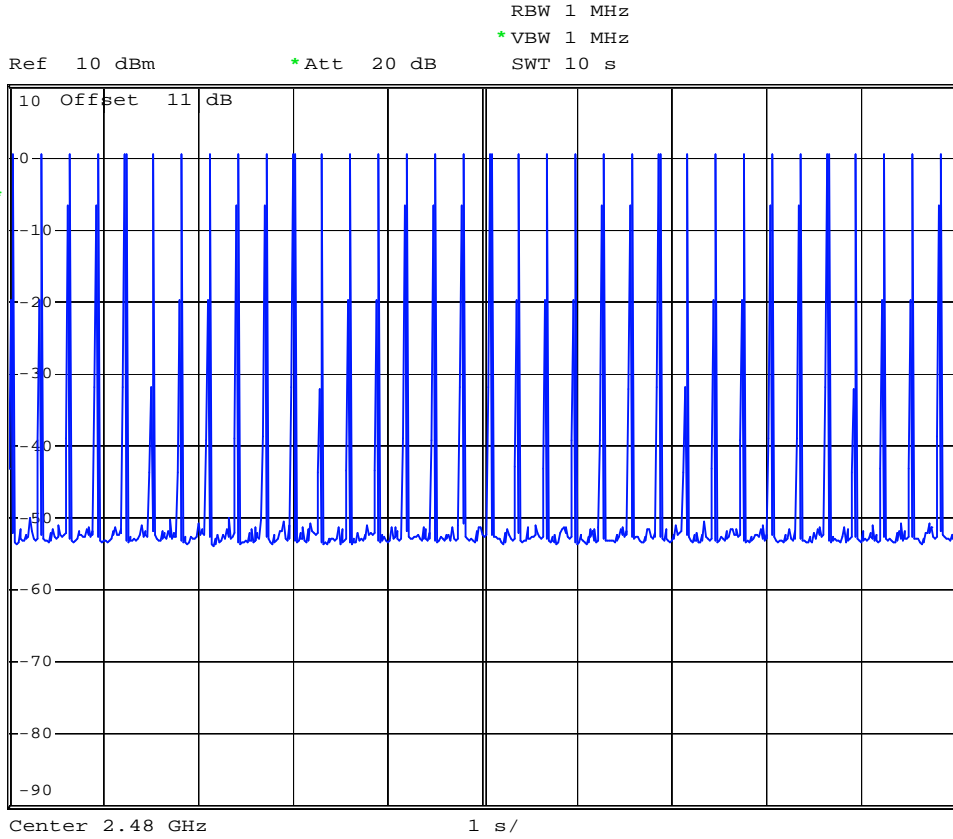
DH5 (CH78)



Ref 10 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1 ]      -2.19 dB  
\*VBW 1 MHz      SWT 10 ms      3.760000 ms



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## 5.6 Output Power

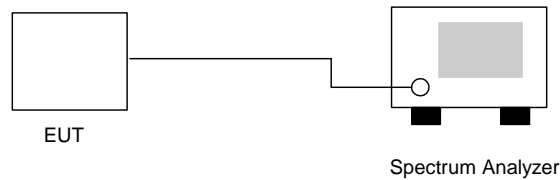
### 5.6.1 Measuring Instruments :

As described in chapter 6 of this test report.

### 5.6.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. The center frequency of the spectrum analyzer was set to the fundamental frequency and set RBW to 3MHz and VBW to 3MHz.

### 5.6.3 Test Setup Layout :



### 5.6.4 Test Result : See spectrum analyzer plots below

- Temperature: 24°C
- Relative Humidity: 52%
- Test Engineer : James

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm )	Plot Ref. No.
00	2402	-0.52	1W/30 dBm	Mode 1
39	2441	0.59	1W/30 dBm	Mode 2
78	2480	-0.19	1W/30 dBm	Mode 3

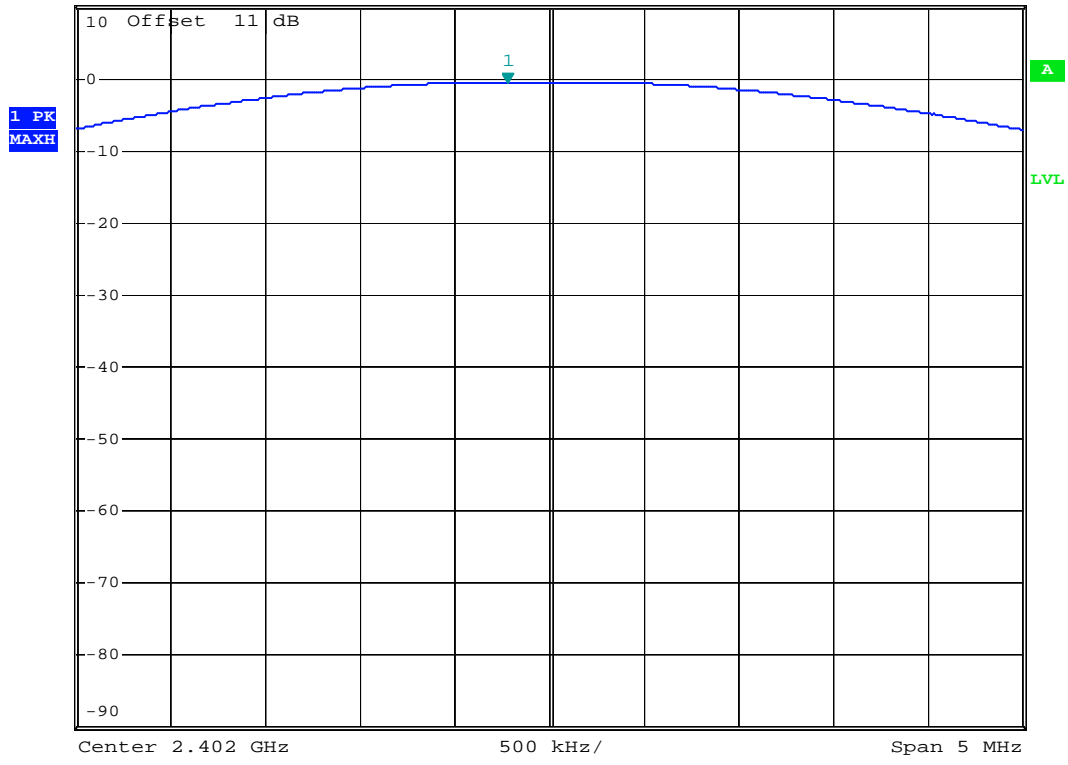


5.6.5 Output Power

Mode 1: CH00 (2402MHz)



Ref 10 dBm      \*Att 20 dB      \*RBW 3 MHz      Marker 1 [T1]      -0.52 dBm  
\*VBW 3 MHz      \*SWT 500 ms      2.401780000 GHz



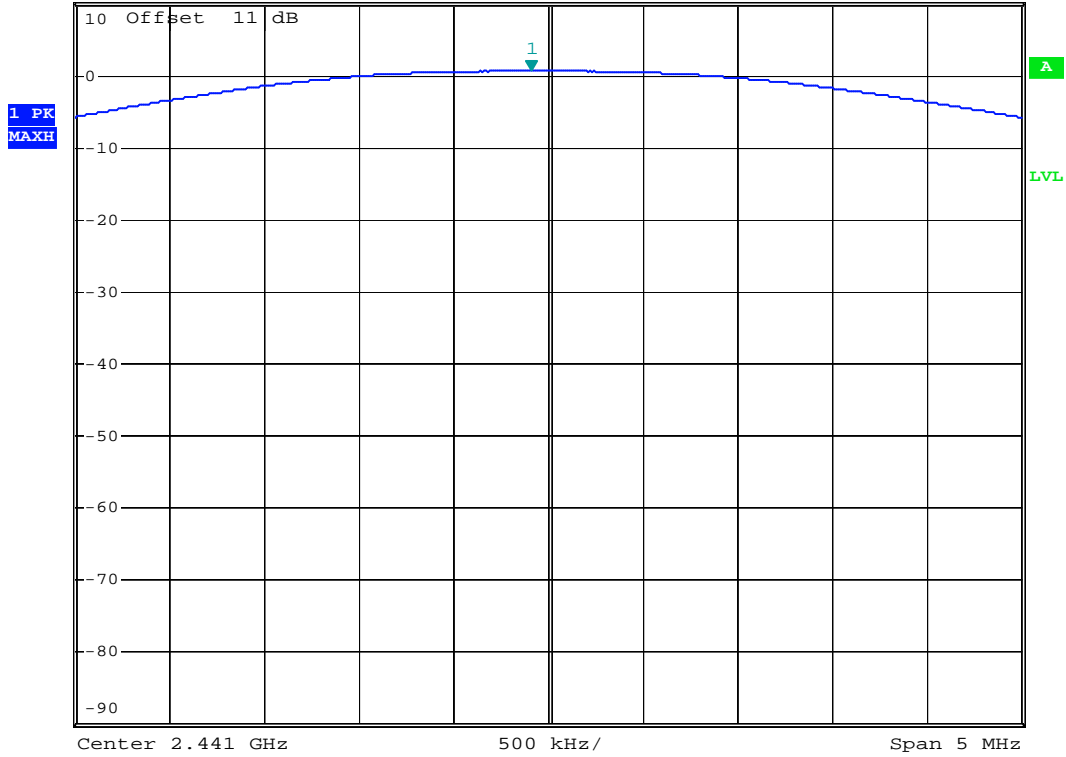
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Mode 2: CH39 (2441MHz)



Ref 10 dBm      \*Att 20 dB      \*RBW 3 MHz      Marker 1 [T1]      0.59 dBm  
\*VBW 3 MHz      \*SWT 500 ms      2.440910000 GHz



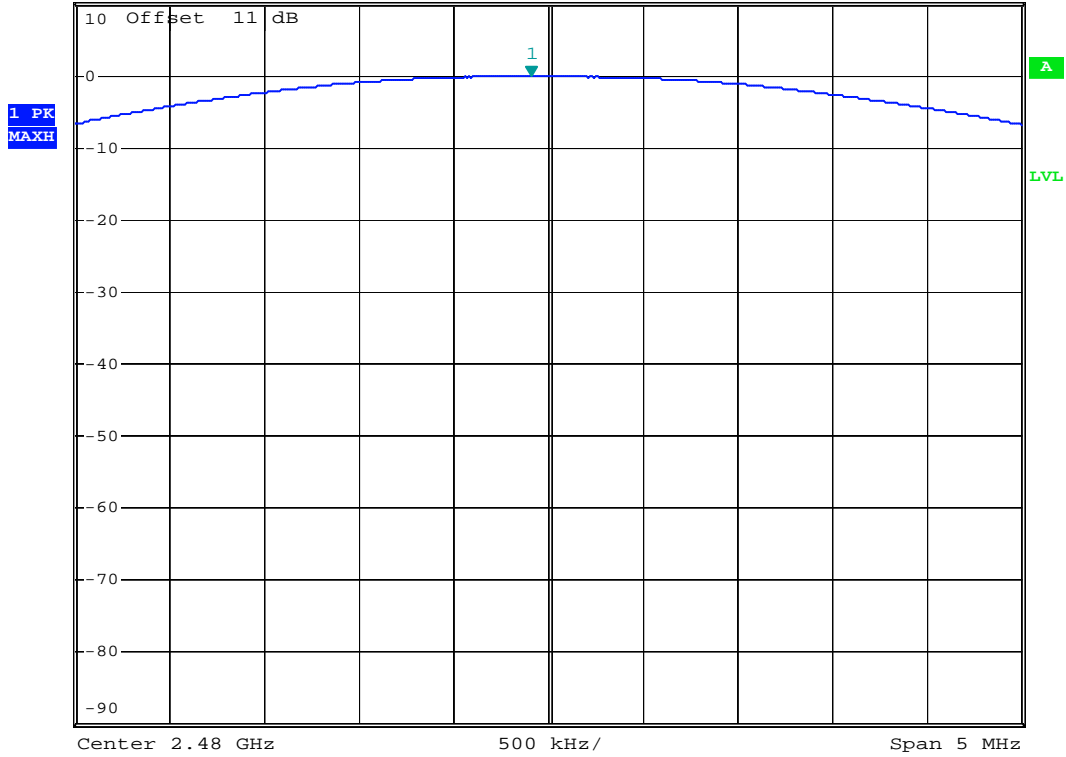
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Mode 3: CH78 (2480MHz)



Ref 10 dBm      \*Att 20 dB      \*RBW 3 MHz      Marker 1 [T1]      -0.19 dBm  
\*VBW 3 MHz      \*SWT 500 ms      2.479910000 GHz



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5.7 100kHz Bandwidth of Frequency Band Edges

5.7.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.7.2 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 for the conducted measurement, and RBW/VBW=1MHz/1MHz for peak measurement and RBW/VBW=1MHz/300Hz for average measurement in the radiated measurement.
3. The band edges was measured and recorded.

5.7.3 Test Result :

- Temperature: 24°C
Relative Humidity: 52%
Test Engineer : James

Test Result in lower band (Channel 00) : PASS

Test Result in higher band(Channel 78) : PASS

5.7.4 Note on Band edge Emission

CH00 (Horizontal)

Table with 12 columns: Frequency, Level, Over Limit, Limit Line, Read Level, Antenna Factor, Cable Loss, Preamp Factor, Ant Pos, Table Pos, Detect Mode. Rows for 2375.8 MHz (Peak) and 2375.8 MHz (Average).

CH00 (Vertical)

Table with 12 columns: Frequency, Level, Over Limit, Limit Line, Read Level, Antenna Factor, Cable Loss, Preamp Factor, Ant Pos, Table Pos, Detect Mode. Rows for 2356.6 MHz (Peak) and 2356.6 MHz (Average).



**CH78 (Horizontal)**

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Detect Mode
2483.5	55.84	-18.16	74.00	57.20	30.29	3.86	35.51	100	0	Peak
2483.5	50.33	-3.67	54.00	51.69	30.29	3.86	35.51	100	8	Average

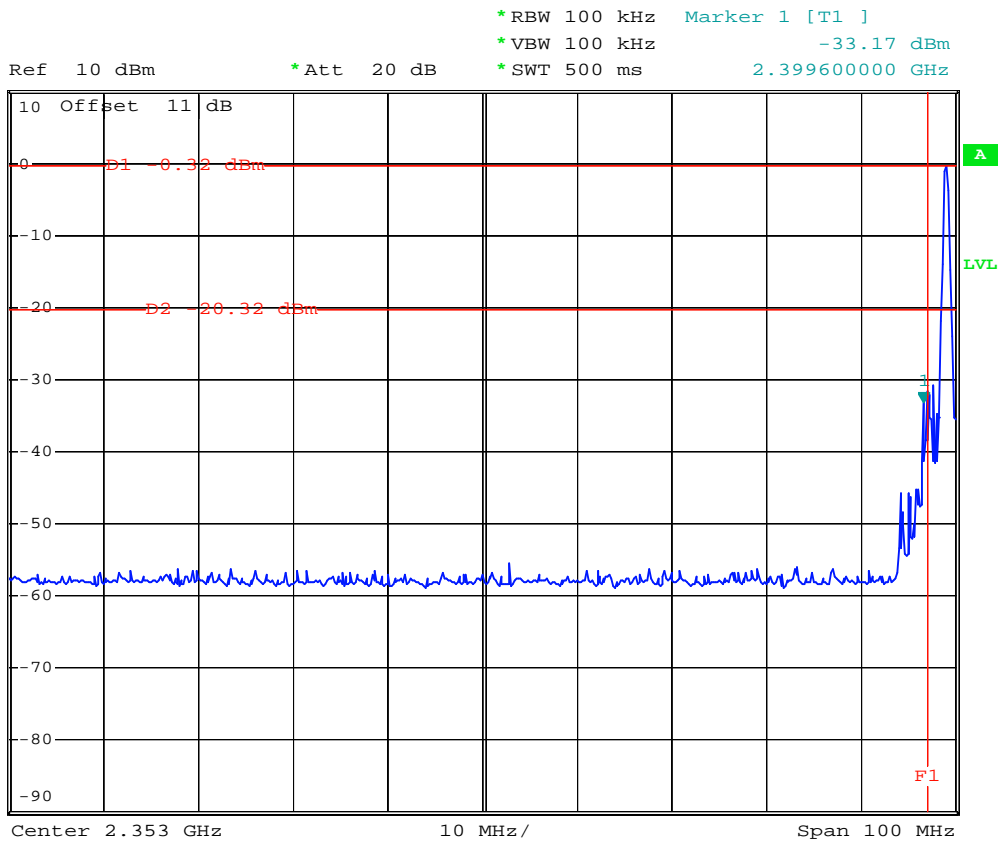
**CH78 (Vertical)**

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Detect Mode
2483.5	59.54	-14.46	74.00	60.90	30.29	3.86	35.51	100	0	Peak
2483.5	53.64	-0.36	54.00	55.00	30.29	3.86	35.51	100	145	Average



5.7.5 Frequency Band Edge

CH00 (2402 MHz)



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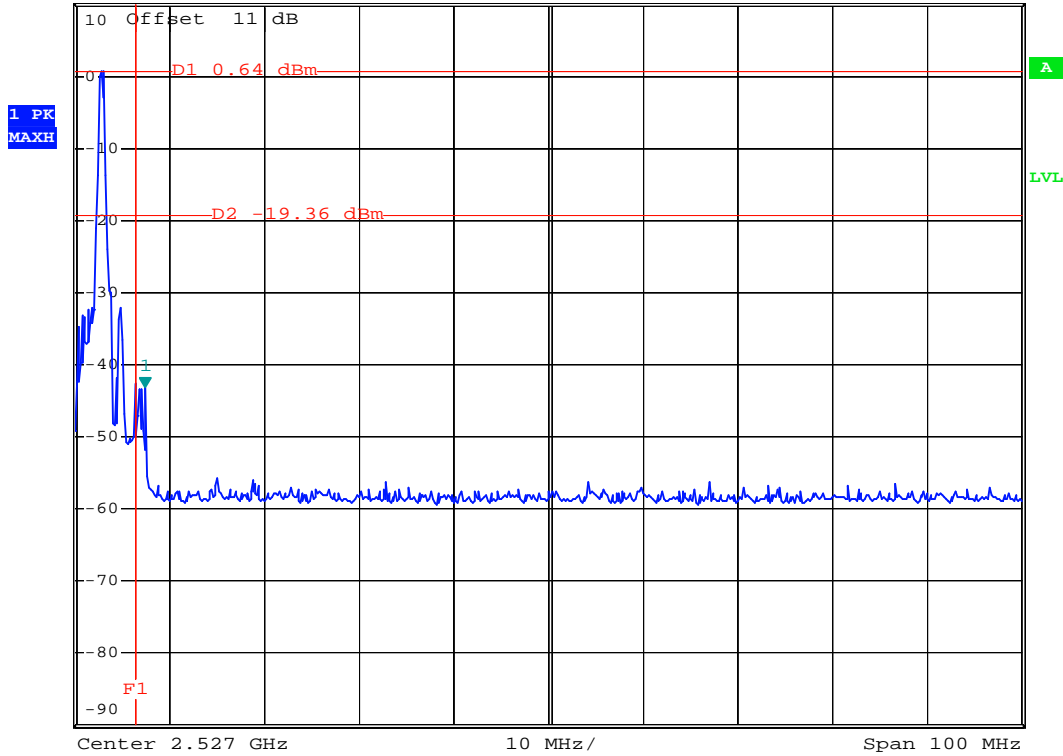
CH78 (2480 MHz)



\*RBW 100 kHz    Marker 1 [T1 ]  
\*VBW 100 kHz                    -43.09 dBm  
\*SWT 500 ms                      2.484400000 GHz

Ref 10 dBm

\*Att 20 dB



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## **5.8 Conducted Emission**

### **5.8.1 Measuring Instruments**

As described in chapter 6 of this test Report.

### **5.8.2 Test Procedures :**

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