10 NUMBER of HOPPING CHANNELS

10.1 Standard Applicable

According to 15.247(b)(1), for frequency hopping systems, operating in the 2400-2483.5MHz band employing at least 75 hopping channels

10.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. The setup of the EUT as shown in figure 4. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set EUT to hopping operating mode and set spectrum analyzer miximum to measure the number of hopping channels.
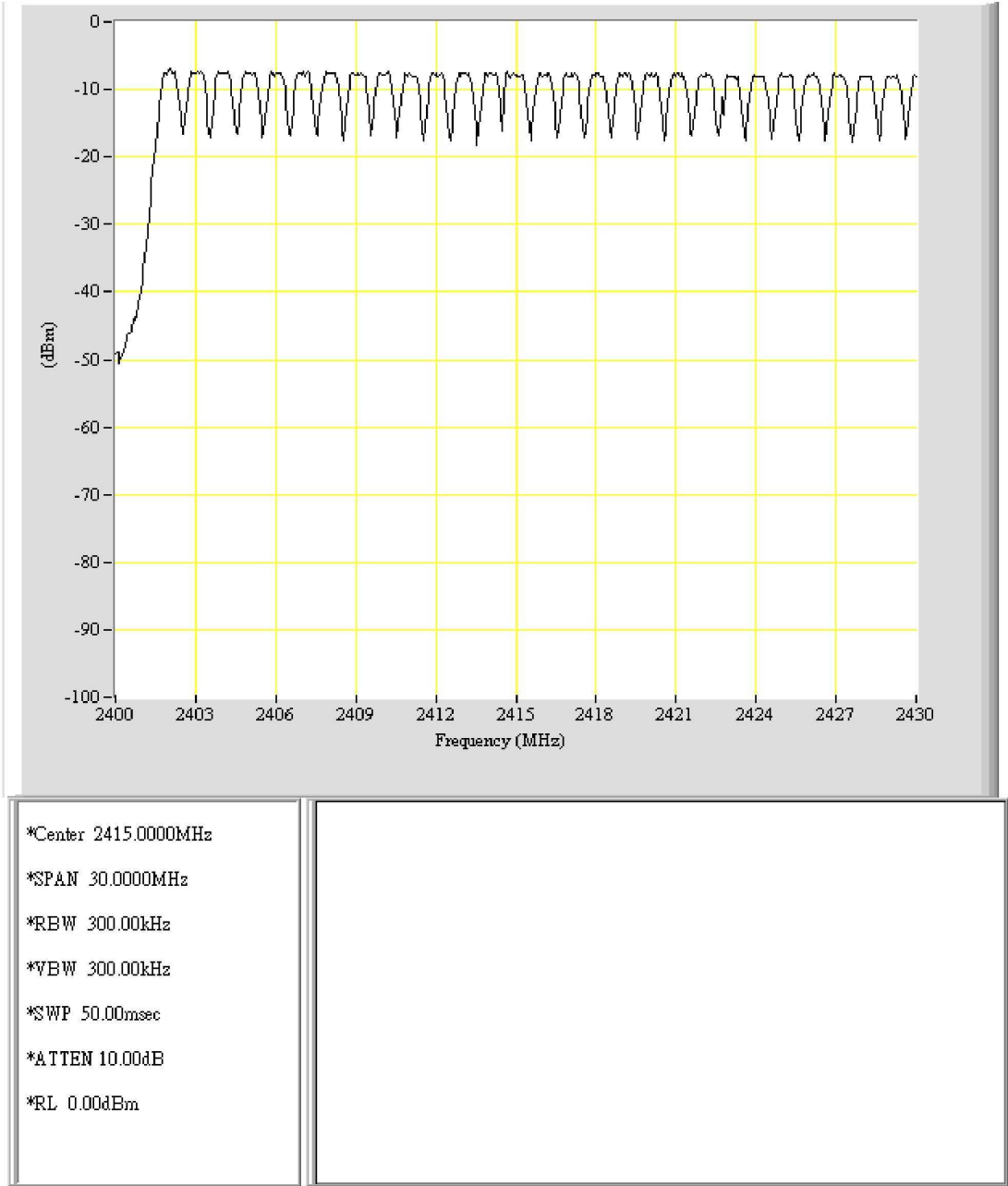
10.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Agilent	8564EC	09/23/2006

10.4 Measurement Data
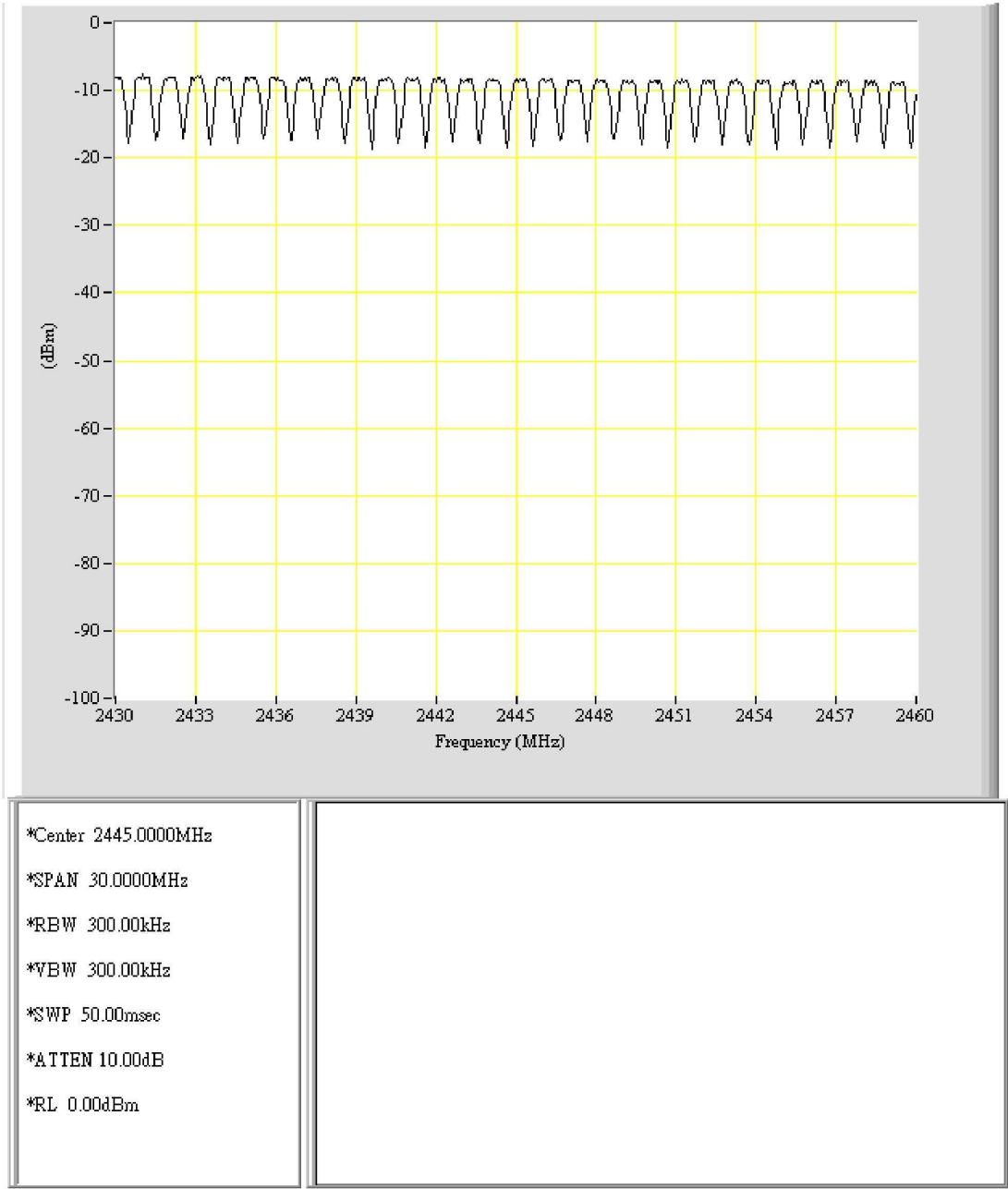
Test Date　　　：Sep. 04, 2006　　Temperature：24℃　　Humidity　　：53%

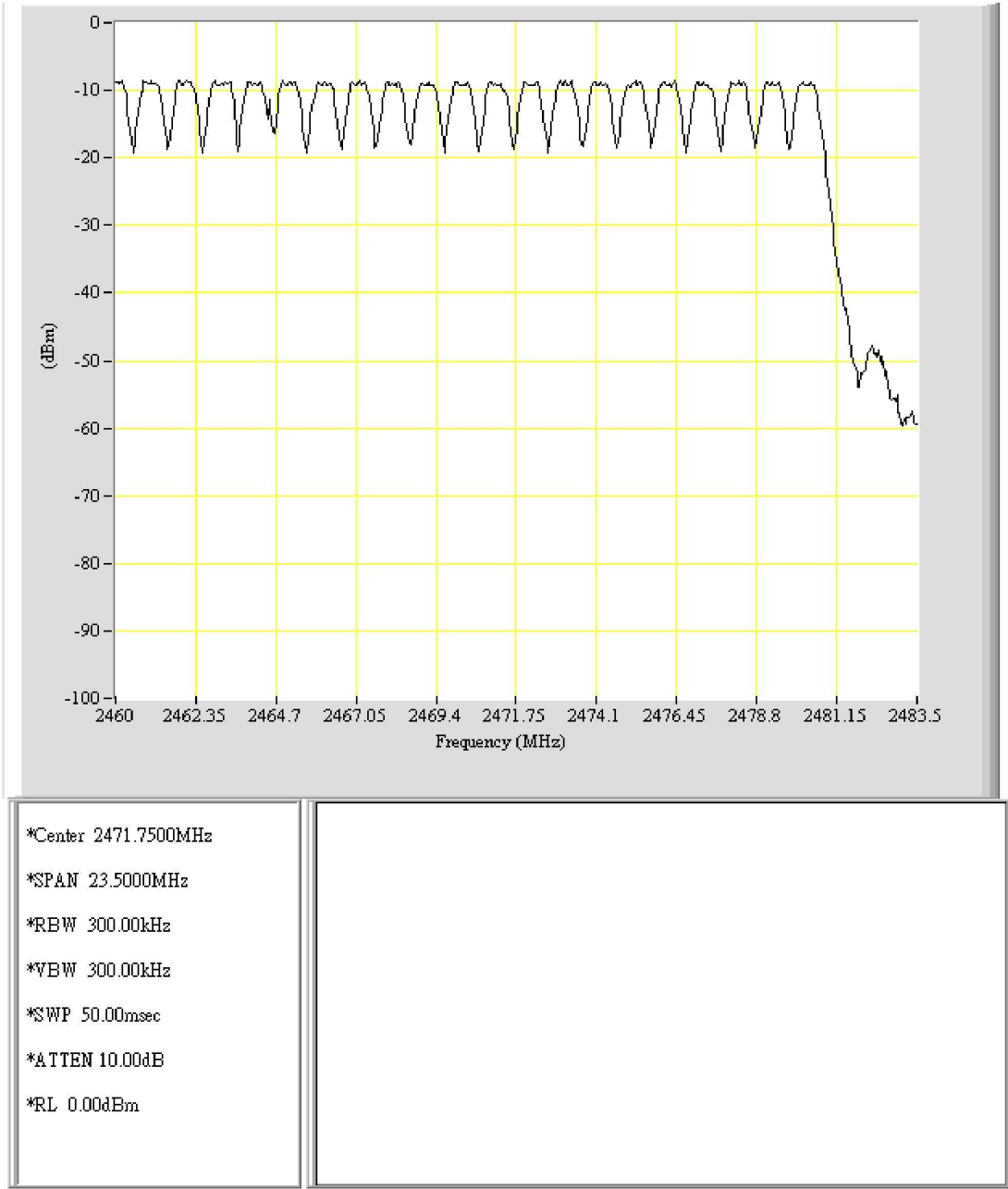Number of hopping channels = 79 channels

Note: Please refer to page 46 to page 48 for chart.

*Center 2415.0000MHz

*SPAN 30.0000MHz

*RBW 300.00kHz

*VBW 300.00kHz

*SWP 50.00msec

*ATTEN 10.00dB

*RL 0.00dBm

EUT: BT
Purpose: No_of_Channel
Condition: 1
Note:

*Center 2445.0000MHz

*SPAN 30.0000MHz

*RBW 300.00kHz

*VBW 300.00kHz

*SWP 50.00msec

*ATTEN 10.00dB

*RL 0.00dBm

EUT: BT
Purpose: No_of_Channel
Condition: 2
Note:

*Center 2471.7500MHz

*SPAN 23.5000MHz

*RBW 300.00kHz

*VBW 300.00kHz

*SWP 50.00msec

*ATTEN 10.00dB

*RL 0.00dBm

EUT: BT
Purpose: No_of_Channel
Condition: 3
Note:

11 HOPPING CHANNEL CARRIER FREQUENCY SEPARATED

11.1 Standard Applicable

According to 15.247(a)(1), the frequency hopping system shall have hopping channel carrier frequencies seperated by minimum of 25kHz or the 20dB bandwidth of hopping channel, whichever is greater.

Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125mW.

11.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. The setup of the EUT as shown in figure 4. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any measurement frequency within its operating ragne and make sure the instrument is operated in its linear range.
3. Set spectrum analyzer maximum hold to measure channel carrier frequency , then adjust channel carrier frequency to adjacent channel.
4. Repeat above procedure until all measured frequencies were complete.

11.3 Measurement Equipment

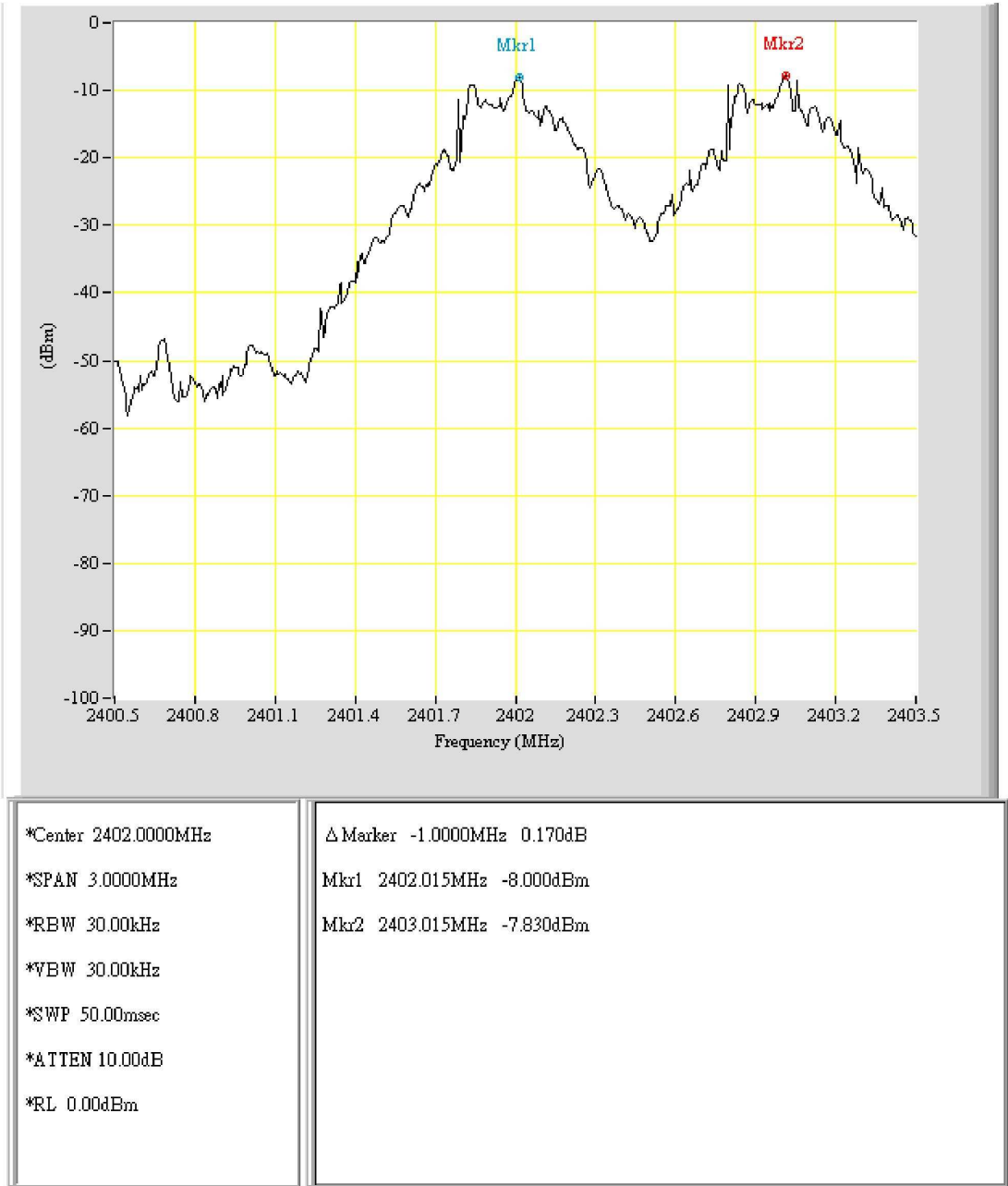| Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Agilent	8564EC	09/23/2006

11.4 Measurement Data

Test Date ：Sep. 04, 2006   Temperature：24℃   Humidity   ：53%

Channel	Frequency (MHz)	Hopping Channel Carrier Frequency Separated (MHz)	Chart
0	2402	1	Page 51
39	2441	1	Page 52
78	2480	1	Page 53

Note: Please refer to page 51 to page 53 for chart.

*Center 2402.0000MHz	△Marker -1.0000MHz 0.170dB
*SPAN 3.0000MHz	Mkr1 2402.015MHz -8.000dBm
*RBW 30.00kHz	Mkr2 2403.015MHz -7.830dBm
*VBW 30.00kHz	
*SWP 50.00msec	
*ATTEN 10.00dB	
*RL 0.00dBm	

EUT: BT
Purpose: Channel_Seperation
Condition: CH00
Note:

*Center 2441.0000MHz

*SPAN 3.0000MHz

*RBW 30.00kHz

*VBW 30.00kHz

*SWP 50.00msec

*ATTEN 10.00dB

*RL 0.00dBm

△Marker 1.0000MHz 0.000dB

Mkr1 2441.020MHz -8.830dBm

Mkr2 2440.020MHz -8.830dBm
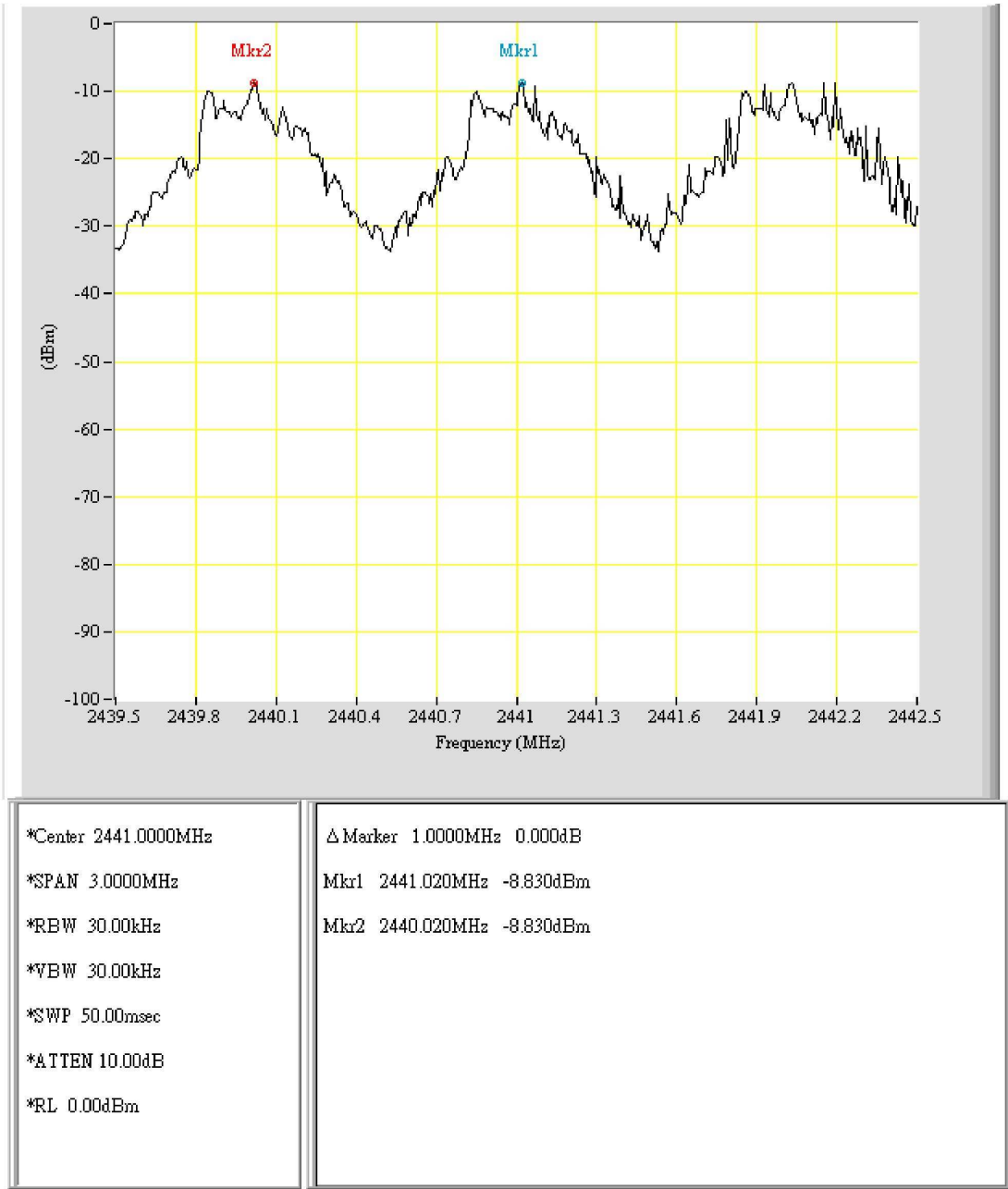
EUT: BT
Purpose: Channel_Seperation
Condition: CH39
Note:

*Center 2480.0000MHz	△Marker 1.0000MHz 0.000dB
*SPAN 3.0000MHz	Mkr1 2480.025MHz -9.660dBm
*RBW 30.00kHz	Mkr2 2479.025MHz -9.660dBm
*VBW 30.00kHz	
*SWP 50.00msec	
*ATTEN 10.00dB	
*RL 0.00dBm	
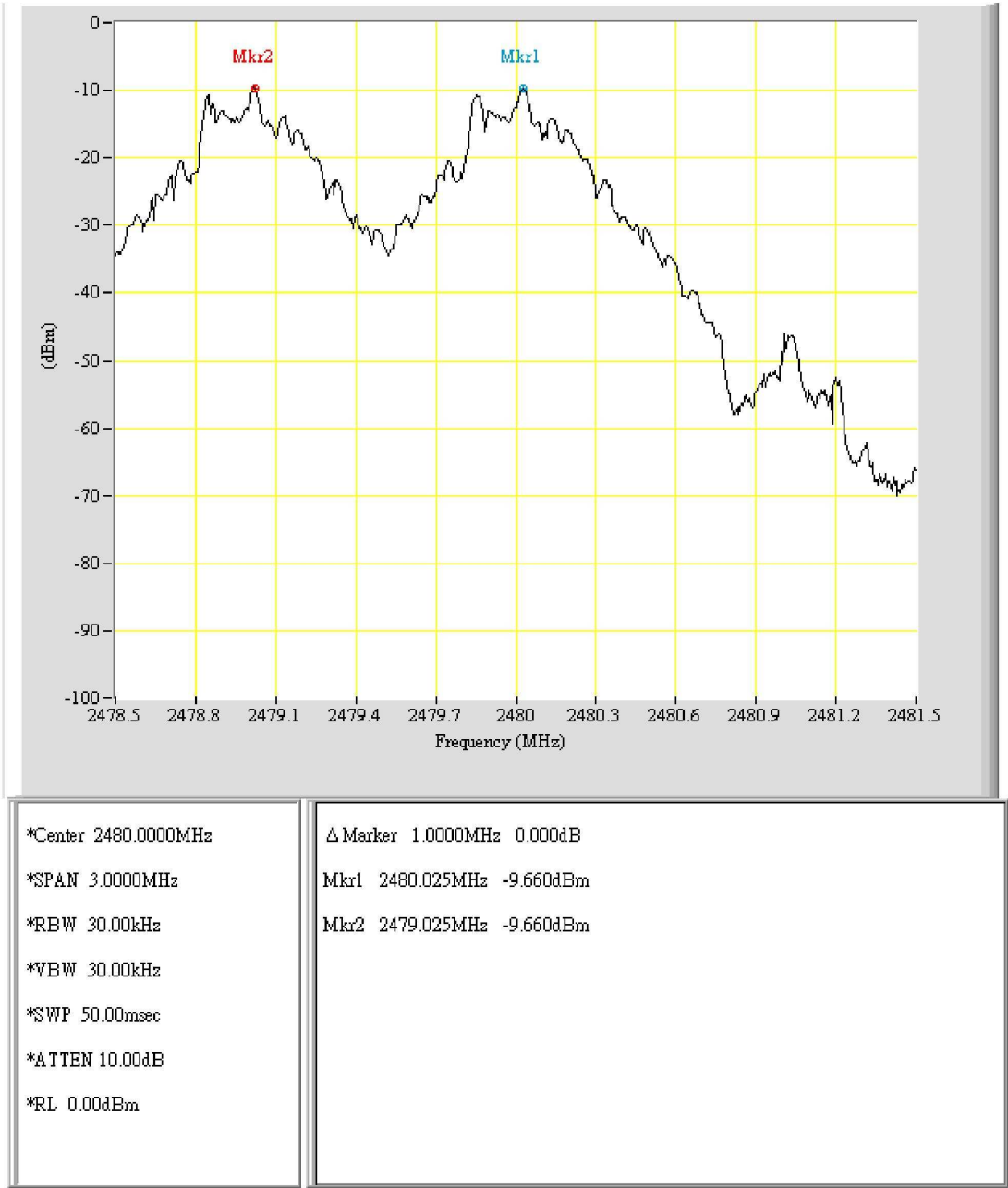
EUT: BT
Purpose: Channel_Seperation
Condition: CH78
Note:

12 Dwell Time

12.1 Standard Applicable

According to 15.247(a)(1)(iii), frequency hopping system in the 2400-2483.5MHz band employing at least 15 non-overlapping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 second multiplied by the number of hopping channels employed.

12.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. The setup of the EUT as shown in figure 4.

12.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Agilent	8564EC	09/23/2006

12.4 Measurement Data

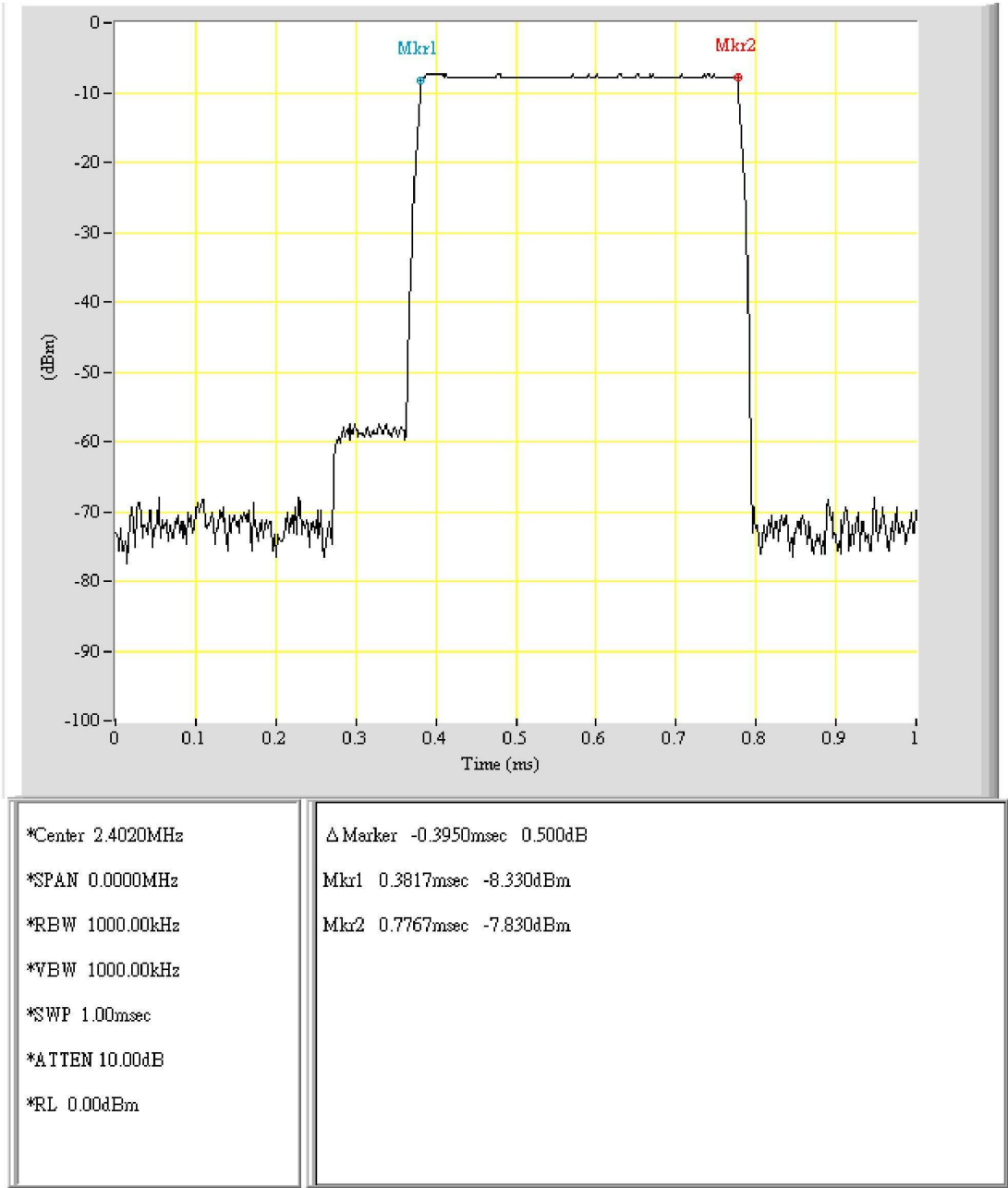Test Date : Sep. 04, 2006   Temperature : 24°C   Humidity   : 53%
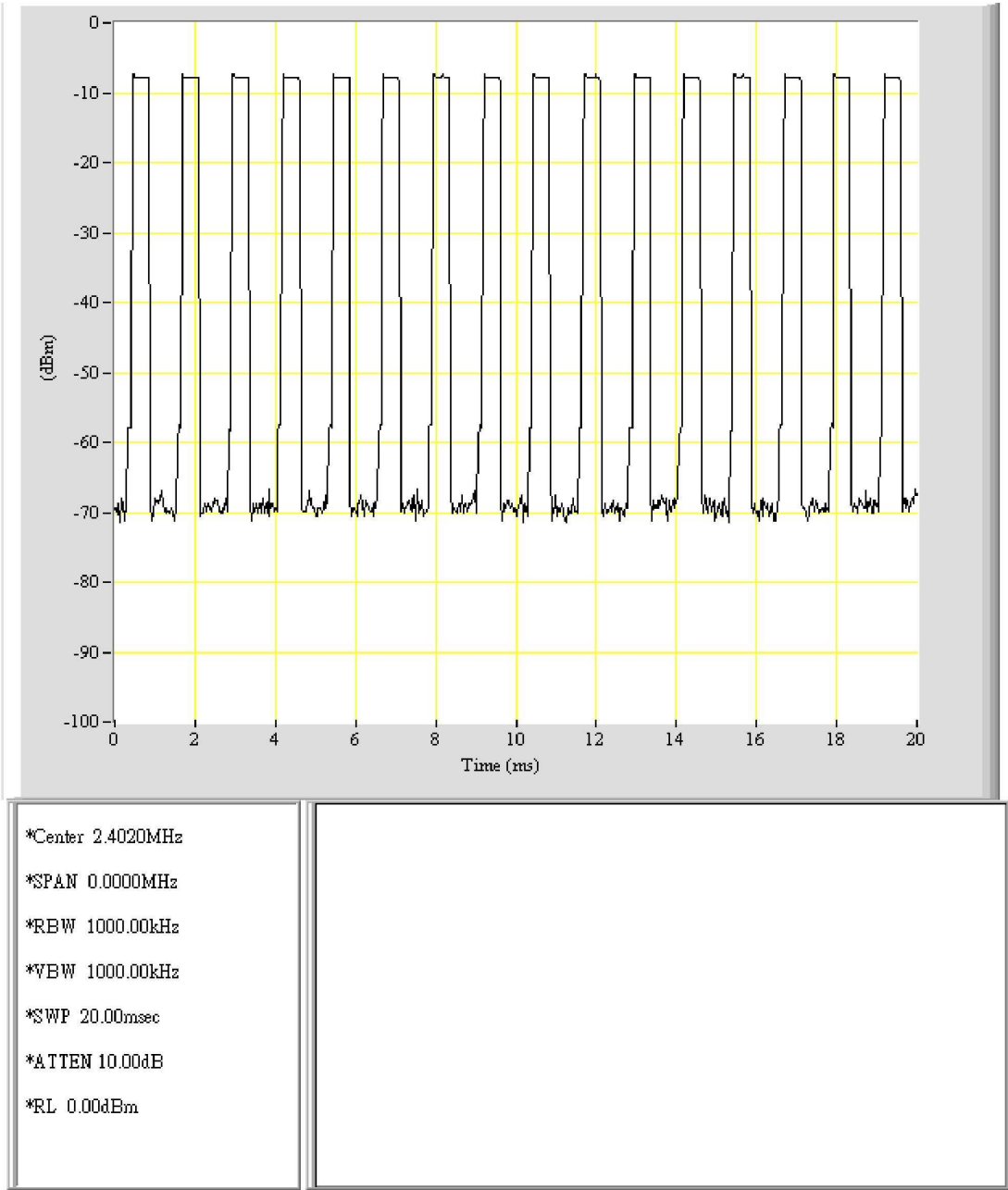
12.4.1 DH1

Test period=0.4(second/channel)$\times 79$ channel=31.6sec

2402MHz dwell time= $395 \text{ us} \times \dfrac{800}{79} \times 31.6 = 126.4 \text{ ms}$

Note: Please refer to page 55 to page 56 for chart.

*Center 2.4020MHz	△Marker -0.3950msec 0.500dB
*SPAN 0.0000MHz	Mkr1 0.3817msec -8.330dBm
*RBW 1000.00kHz	Mkr2 0.7767msec -7.830dBm
*VBW 1000.00kHz	
*SWP 1.00msec	
*ATTEN 10.00dB	
*RL 0.00dBm	

EUT: BT
Purpose: Dwell_Time
Condition: CH00_DH1
Note:

*Center 2.4020MHz

*SPAN 0.0000MHz

*RBW 1000.00kHz

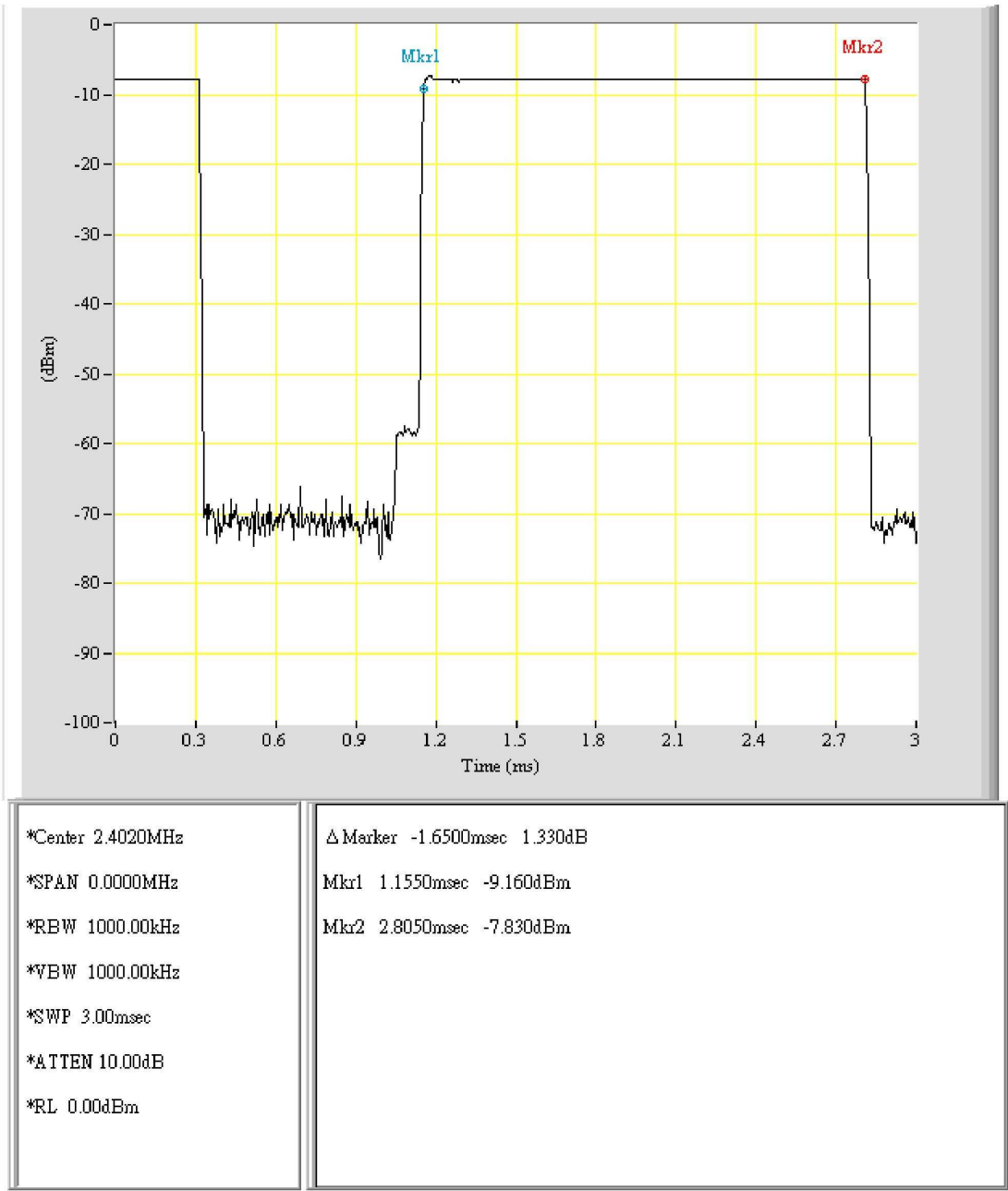*VBW 1000.00kHz

*SWP 20.00msec

*ATTEN 10.00dB

*RL 0.00dBm
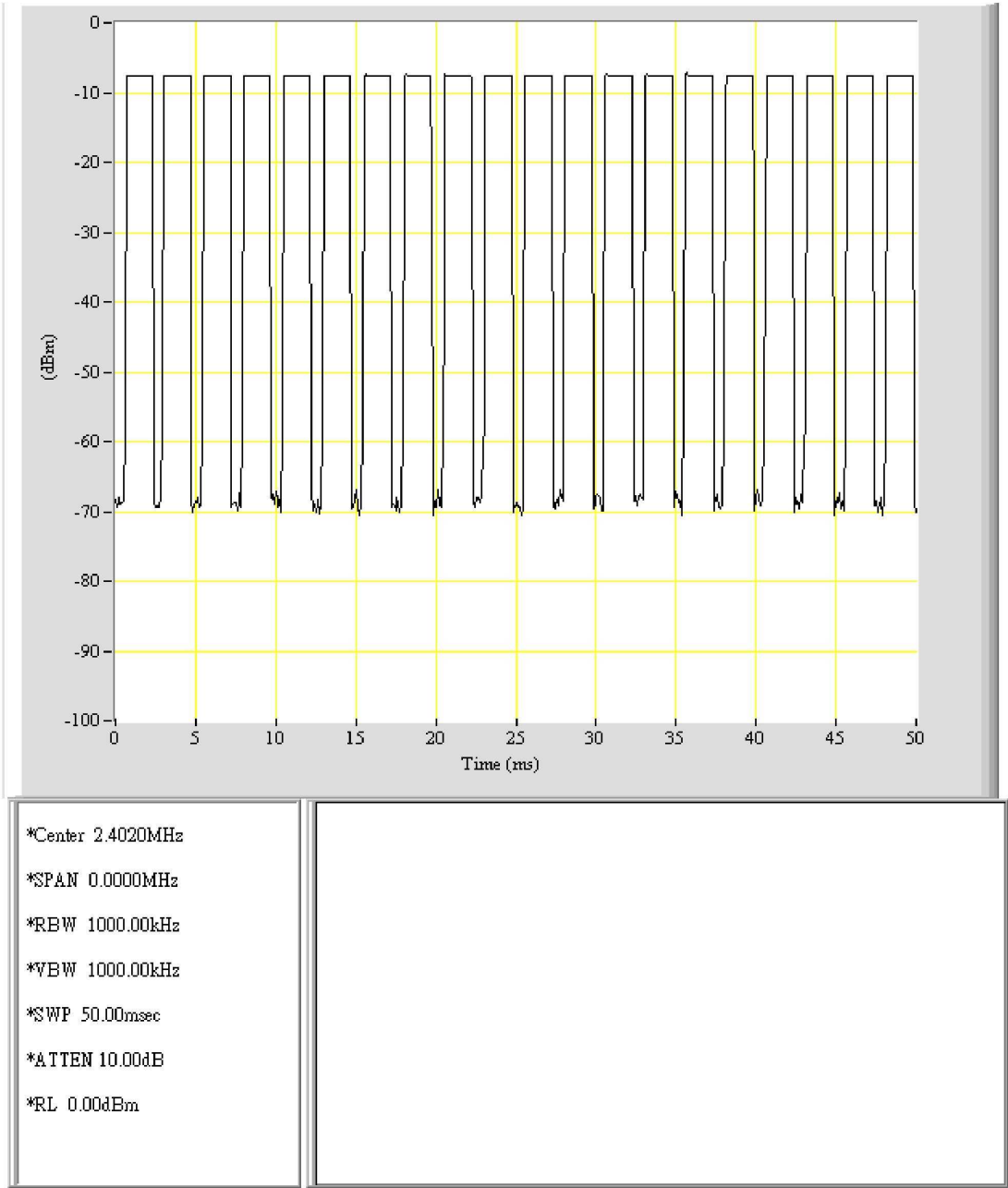
EUT: BT
Purpose: Dwell_Time_Peroid
Condition: CH00_DH1
Note:

12.4.2 DH3

Test period=0.4(second/channel)$\times$ 79 channel=31.6sec

2441MHz dwell time= 1.65 ms$\times \dfrac{400}{79} \times$31.6 = 264.0 ms

Note: Please refer to page 58 to page 59 for chart.

*Center 2.4020MHz	△Marker -1.6500msec 1.330dB
*SPAN 0.0000MHz	Mkr1 1.1550msec -9.160dBm
*RBW 1000.00kHz	Mkr2 2.8050msec -7.830dBm
*VBW 1000.00kHz	
*SWP 3.00msec	
*ATTEN 10.00dB	
*RL 0.00dBm	

EUT: BT
Purpose: Dwell_Time
Condition: CH39_DH3
Note:

*Center 2.4020MHz

*SPAN 0.0000MHz

*RBW 1000.00kHz

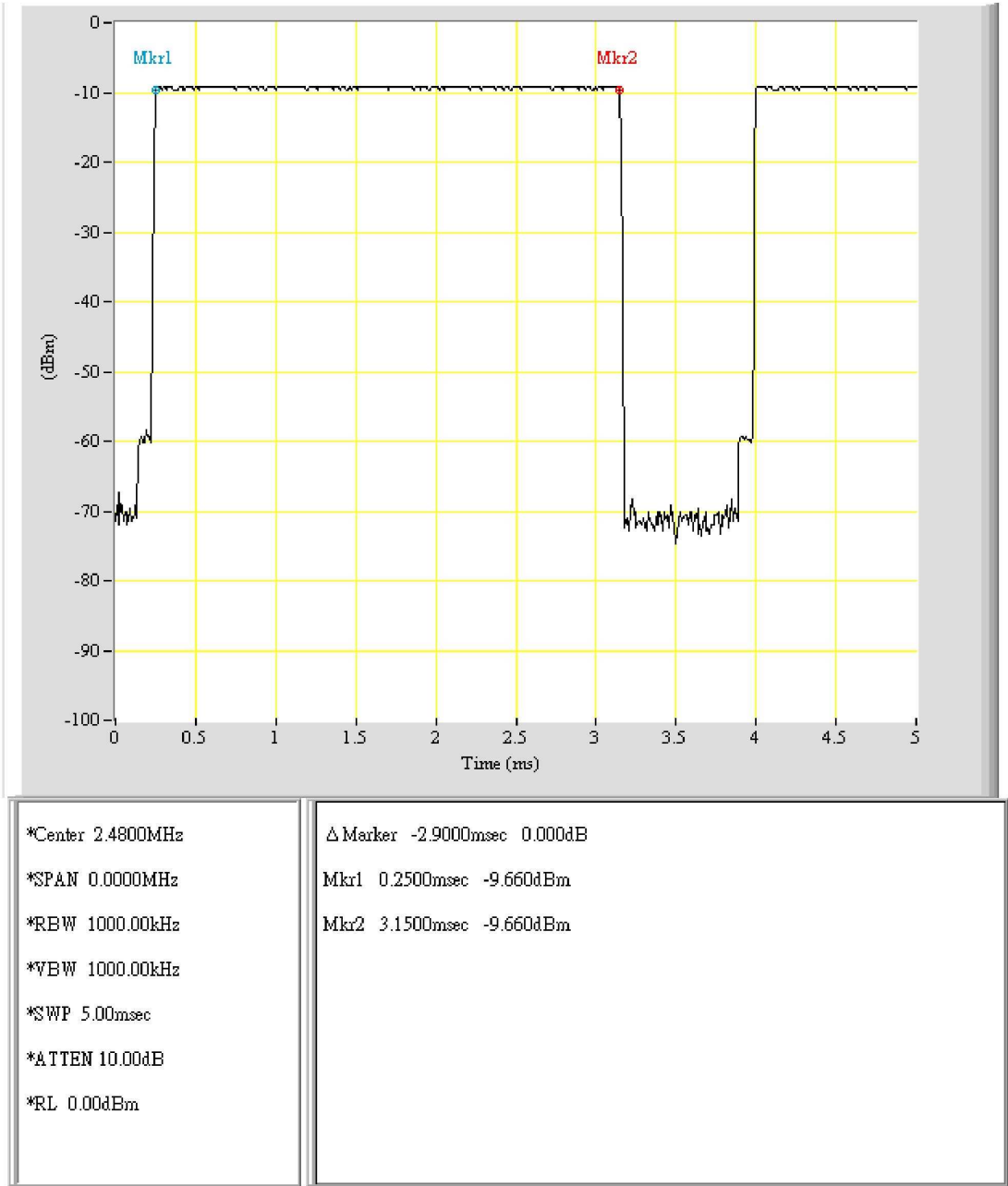*VBW 1000.00kHz

*SWP 50.00msec

*ATTEN 10.00dB

*RL 0.00dBm

EUT: BT
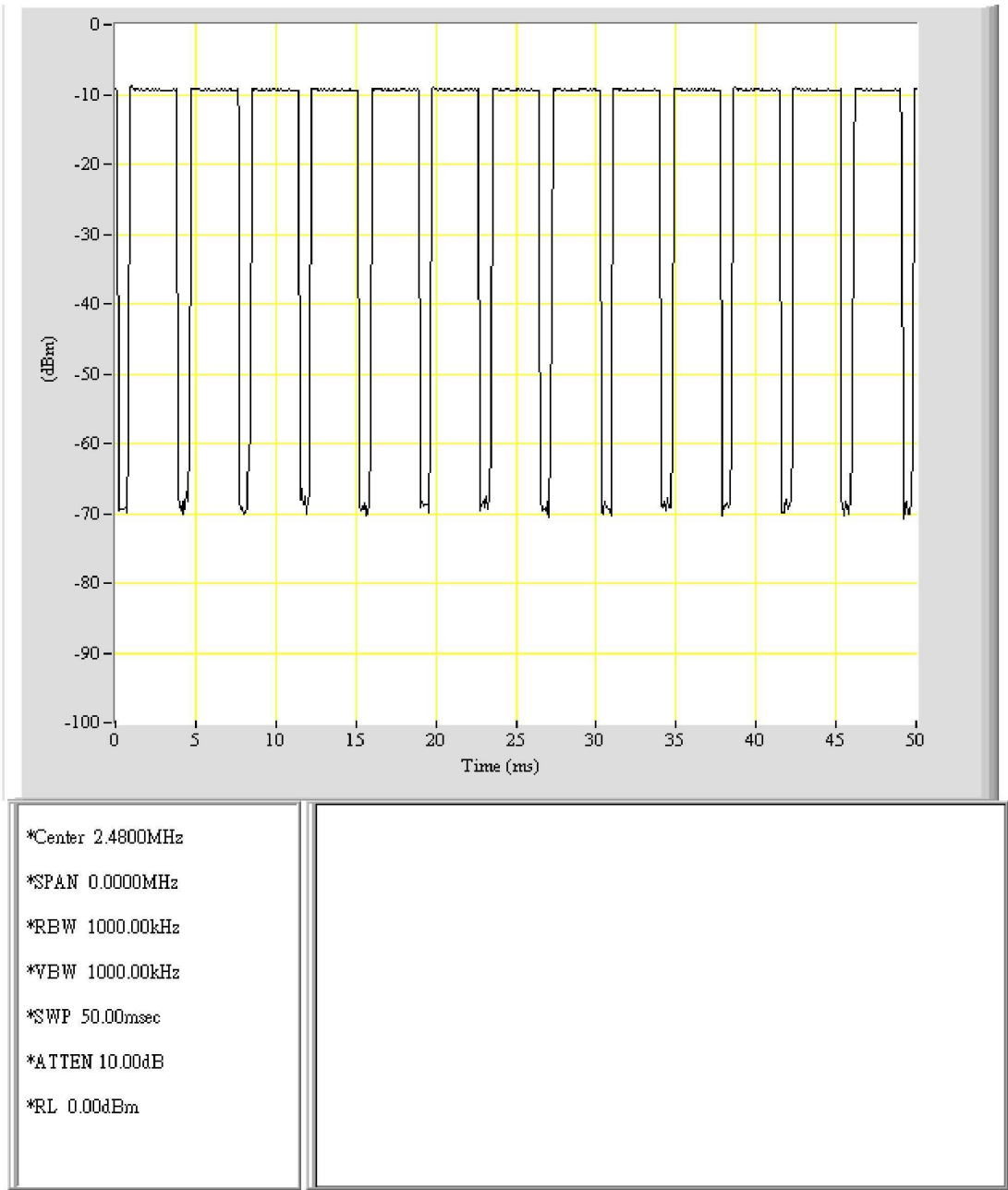Purpose: Dwell_Time_Peroid
Condition: CH39_DH3
Note:

12.4.3 DH5

Test period=0.4(second/channel)$\times$79 channel=31.6sec

2480MHz dwell time= $2.9 \text{ ms} \times \dfrac{260}{79} \times 31.6 = 301.6 \text{ ms}$

Note: Please refer to page 61 to page 62 for chart.

*Center 2.4800MHz	△Marker -2.9000msec 0.000dB
*SPAN 0.0000MHz	Mkr1 0.2500msec -9.660dBm
*RBW 1000.00kHz	Mkr2 3.1500msec -9.660dBm
*VBW 1000.00kHz	
*SWP 5.00msec	
*ATTEN 10.00dB	
*RL 0.00dBm	

EUT: BT
Purpose: Dwell_Time
Condition: CH78_DH5
Note:

*Center 2.4800MHz

*SPAN 0.0000MHz

*RBW 1000.00kHz

*VBW 1000.00kHz

*SWP 50.00msec

*ATTEN 10.00dB

*RL 0.00dBm

EUT: BT
Purpose: Dwell_Time_Peroid
Condition: CH78_DH5
Note: