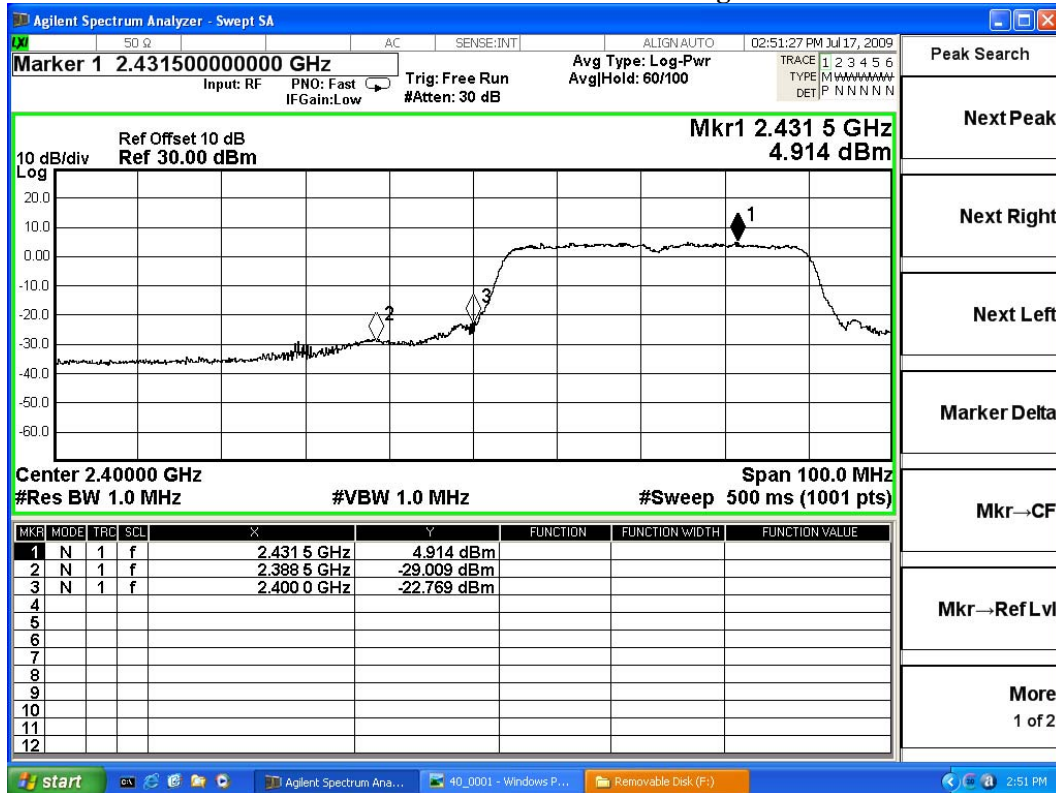
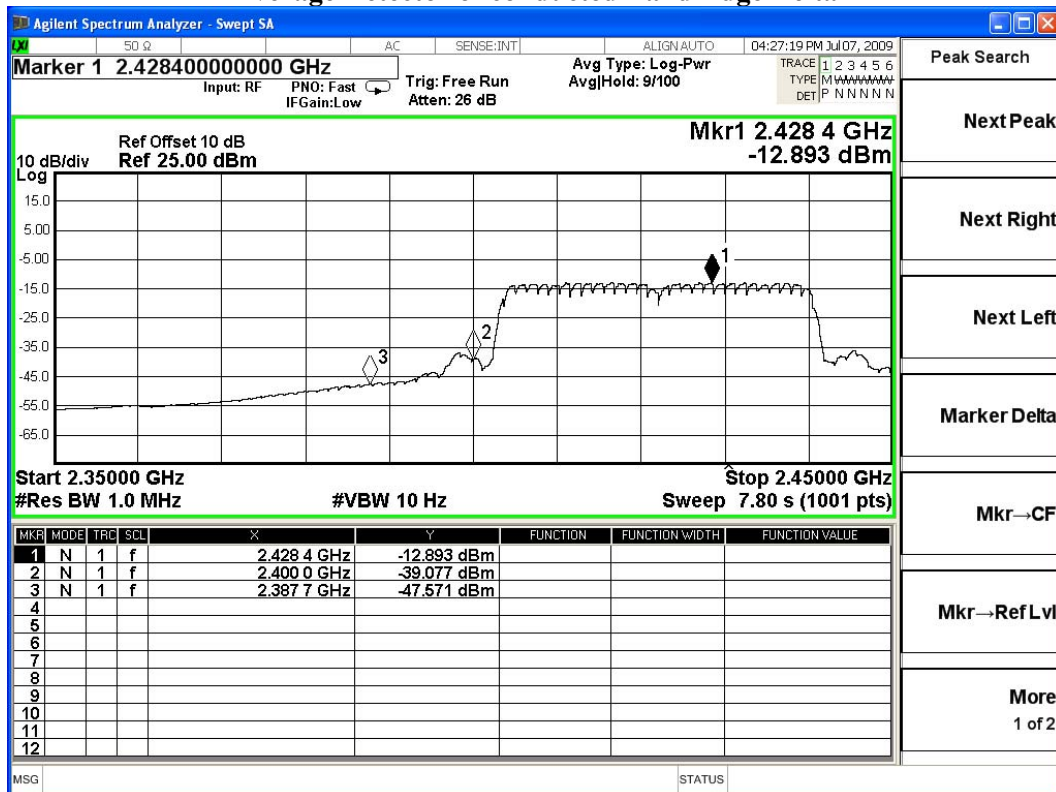


### Peak Detector of conducted Band Edge Delta



### Average Detector of conducted Band Edge Delta



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmitter (802.11n MCS0 13.5Mbps 40M-BW) (2452MHz)

### Marker Delta Method (Low band)

#### Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2452	36.694	55.365	92.059	Peak
Horizontal	2452	35.489	32.948	68.437	Average
Vertical	2452	35.998	66.749	102.746	Peak
Vertical	2452	35.897	50.238	86.134	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

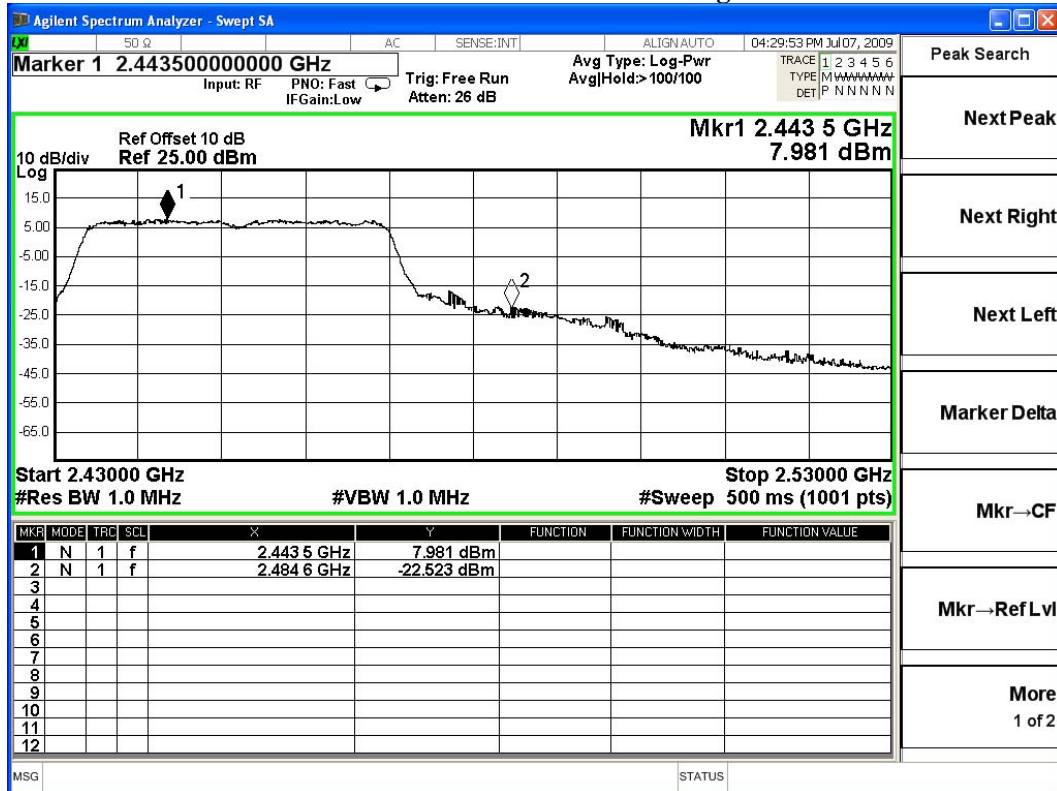
#### Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	$\Delta$ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2484.6	92.059	30.234	61.825	Peak
Horizontal	2484.6	68.437	33.648	34.789	Average
Vertical	2484.6	102.746	30.234	72.512	Peak
Vertical	2484.6	86.134	33.648	52.486	Average

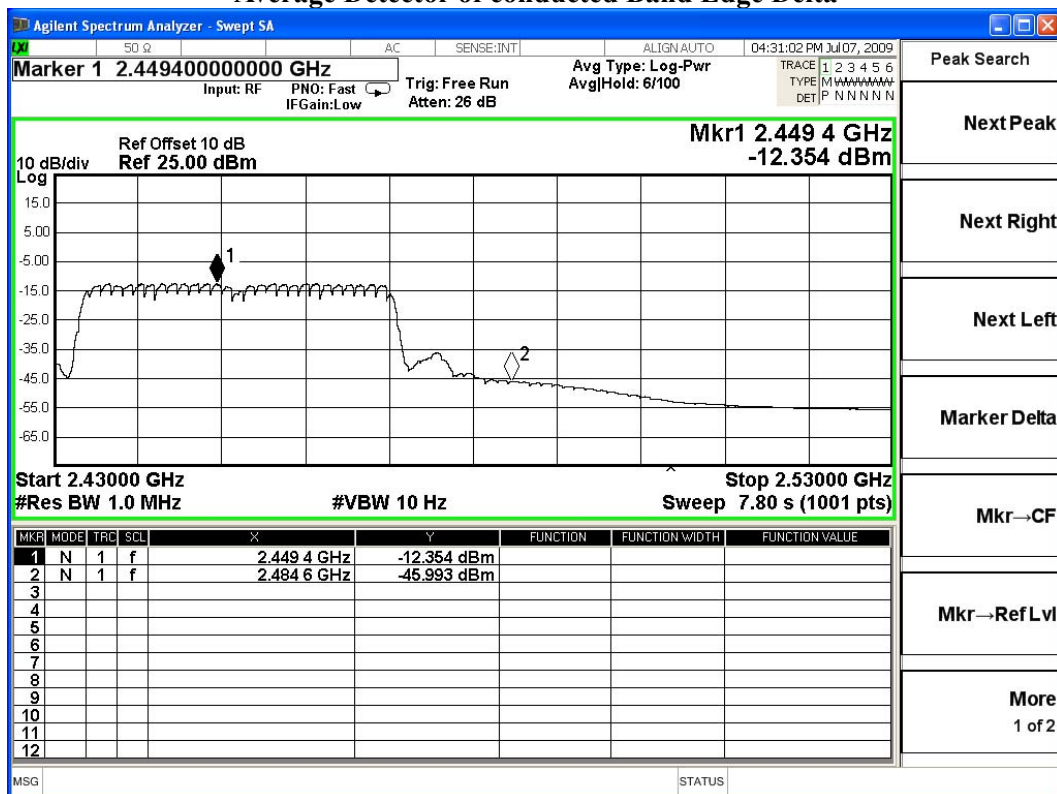
Note:

1. The Marker Delta Method is refer to FCC DA 00-705.
2. The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:  
 Band Edge field Strength = F -  $\Delta$   
 F = Fundamental field Strength (Peak or Average)  
 $\Delta$  = Conducted Band Edge Delta (Peak or Average)
3. AVG Measurement=Peak Measurement + Duty Cycle.
4. If Duty Cycle is smaller than -20dB,based on FCC part15 the duty cycle correction factor is -20dB for calculating average emission.

### Peak Detector of conducted Band Edge Delta



### Average Detector of conducted Band Edge Delta



## 7. Occupied Bandwidth

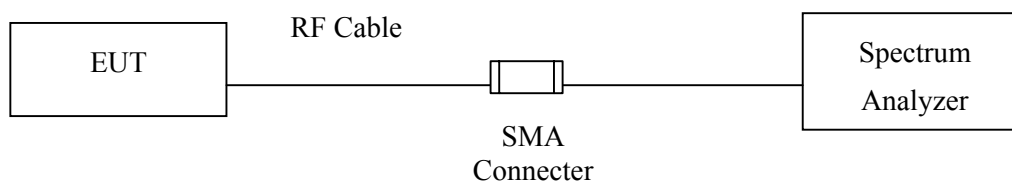
### 7.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009

Note: 1. All instruments are calibrated every one year.  
2. The test instruments marked by “X” are used to measure the final test results.

### 7.2. Test Setup



### 7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

### 7.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

### 7.5. Uncertainty

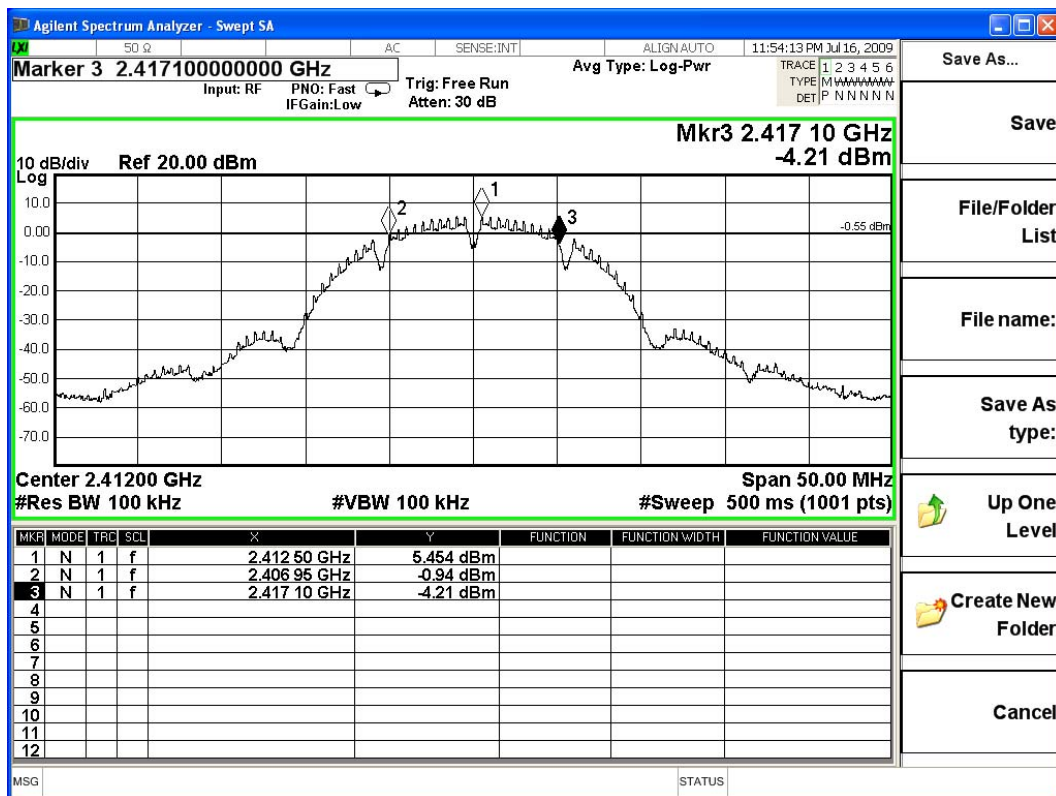
$\pm 150\text{Hz}$

## 7.6. Test Result of Occupied Bandwidth

Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	10150	>500	Pass

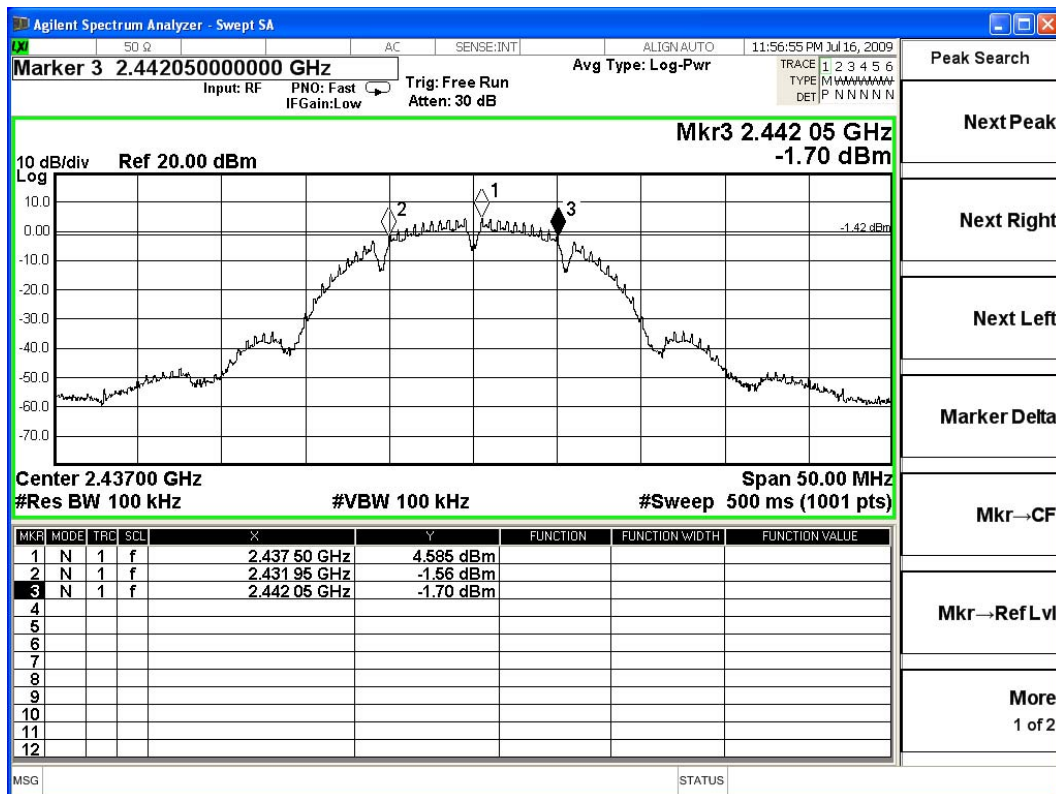
Figure Channel 1:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	10100	>500	Pass

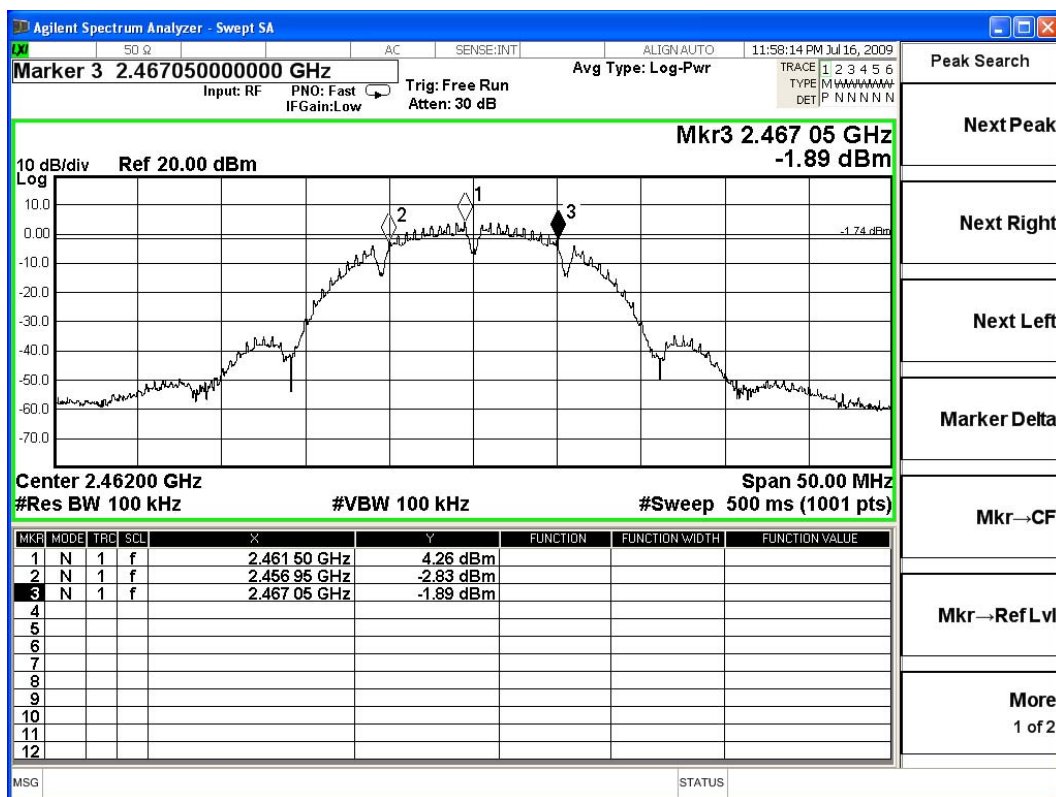
Figure Channel 6:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	10100	>500	Pass

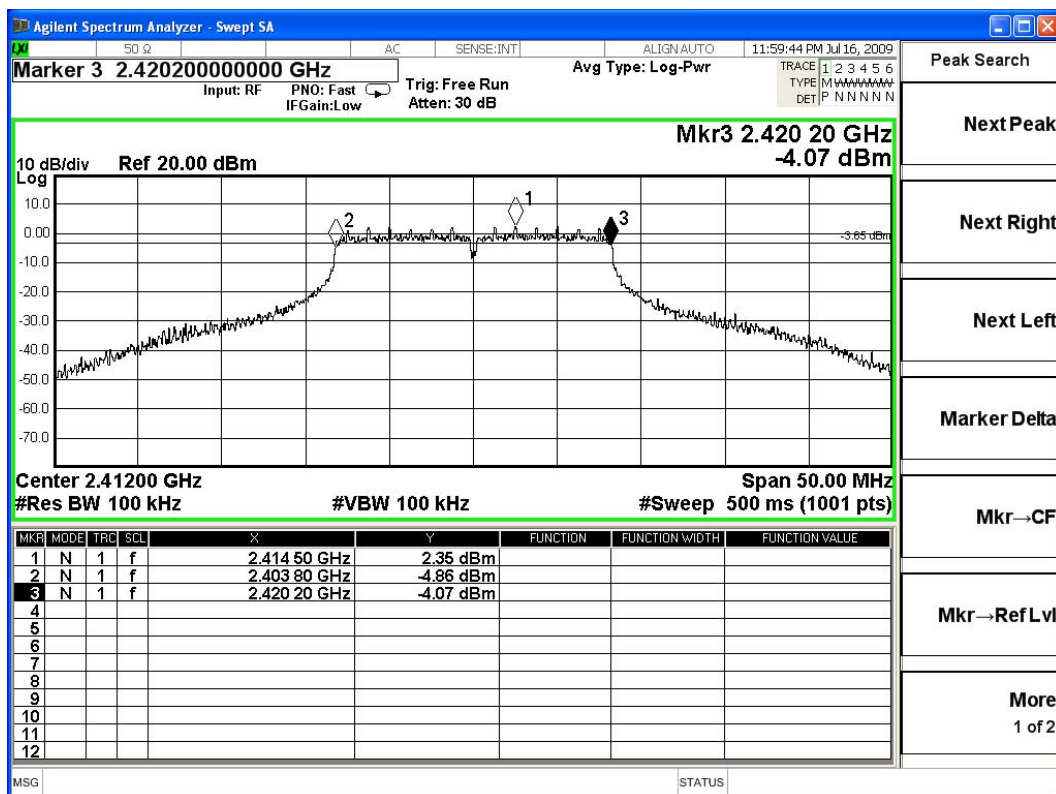
**Figure Channel 11:**



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	16400	>500	Pass

Figure Channel 1:

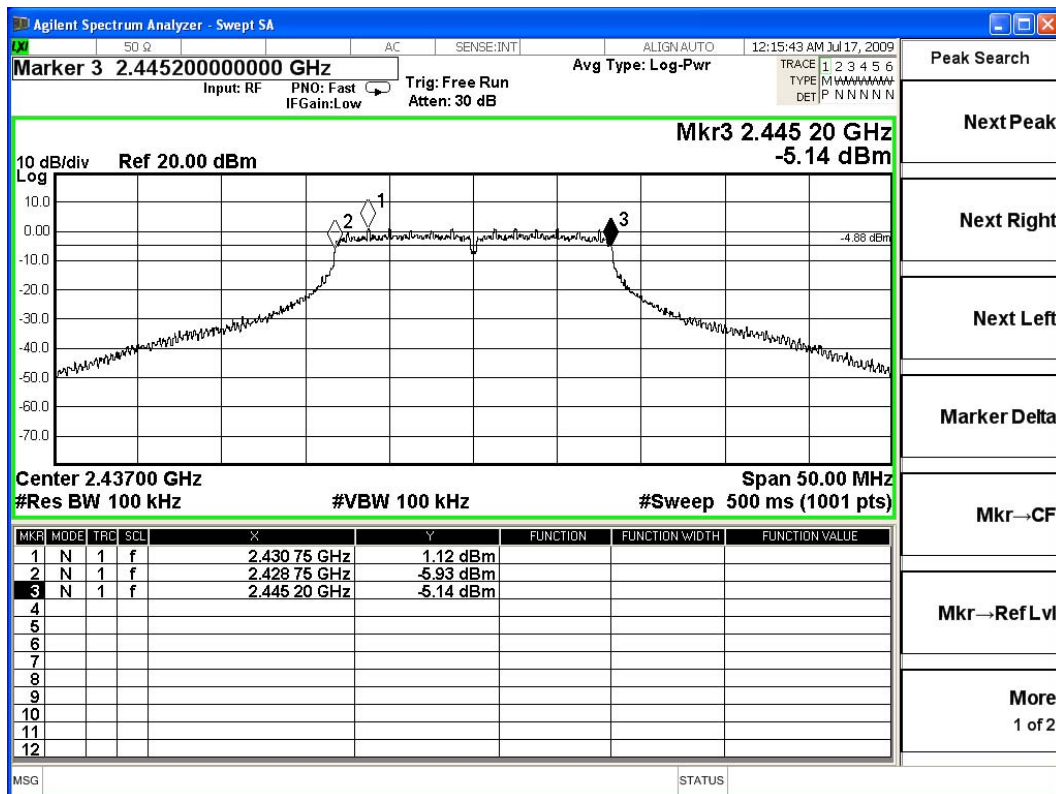




Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	16450	>500	Pass

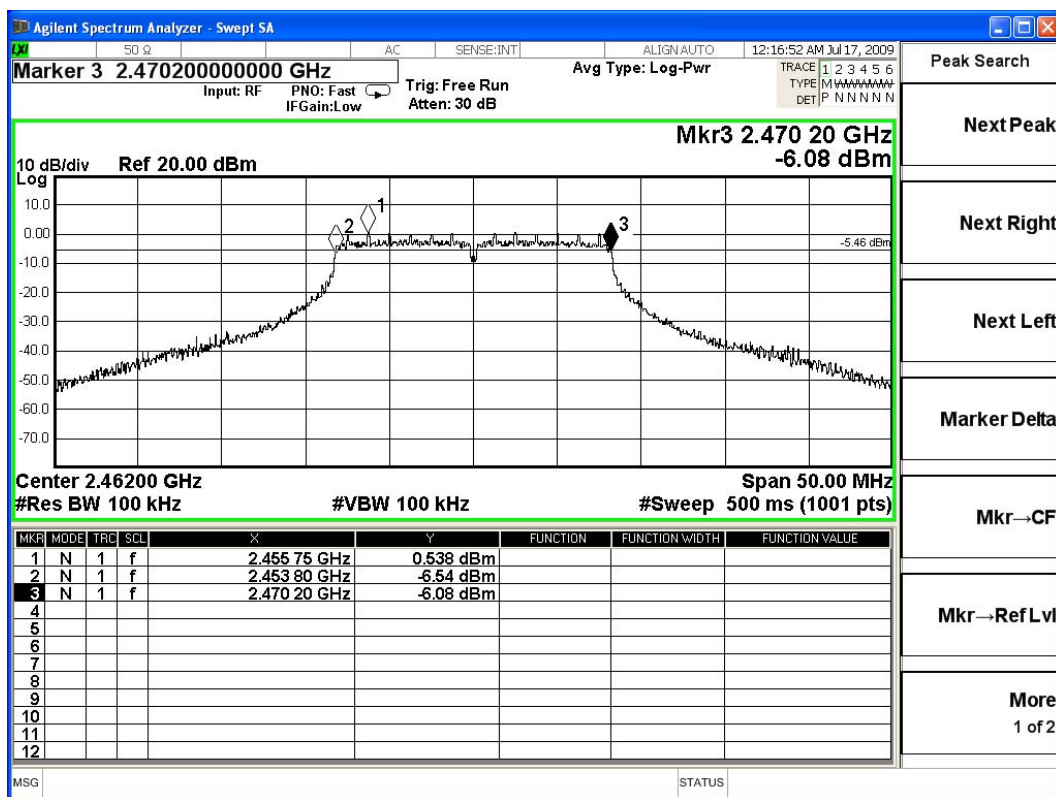
Figure Channel 6:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	16400	>500	Pass

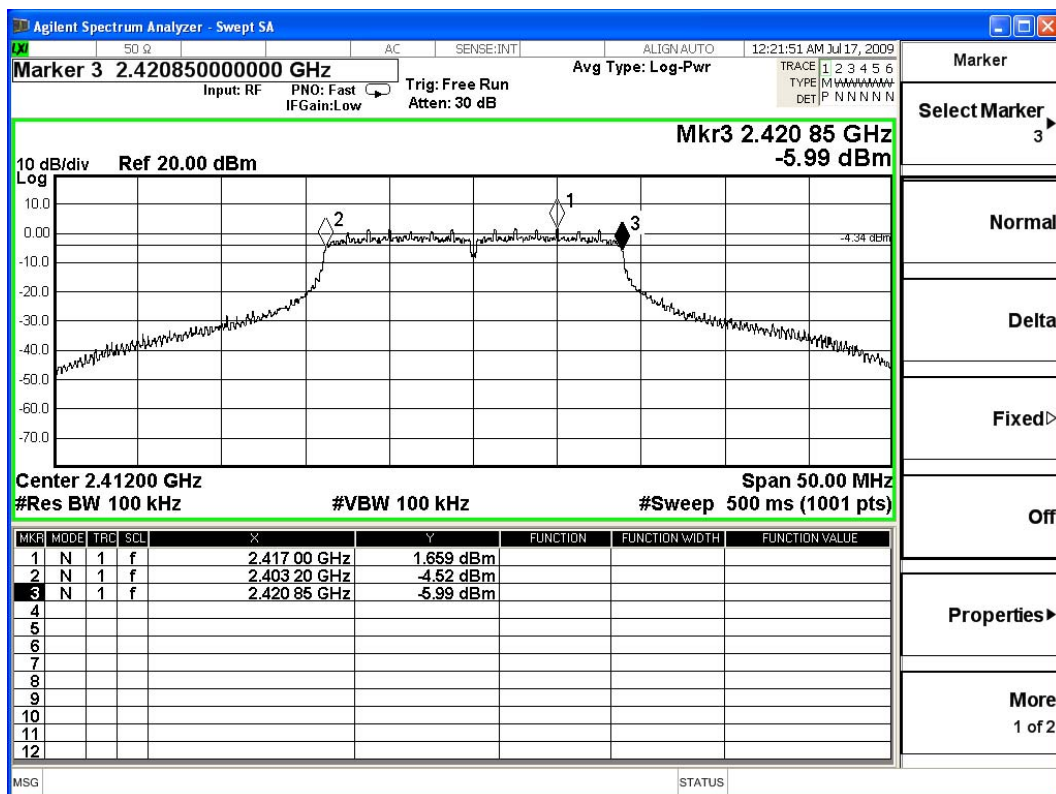
**Figure Channel 11:**



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmitter (802.11n MCS0 6.5Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	17650	>500	Pass

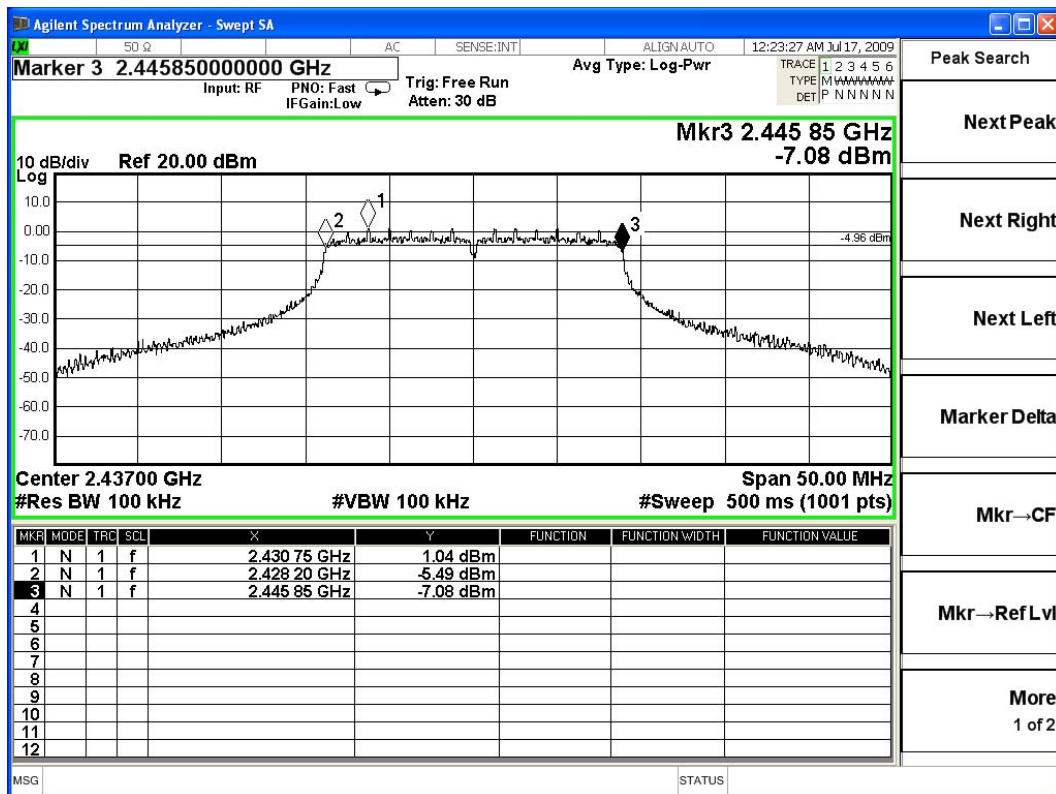
Figure Channel 1:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmitter (802.11n MCS0 6.5Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	17650	>500	Pass

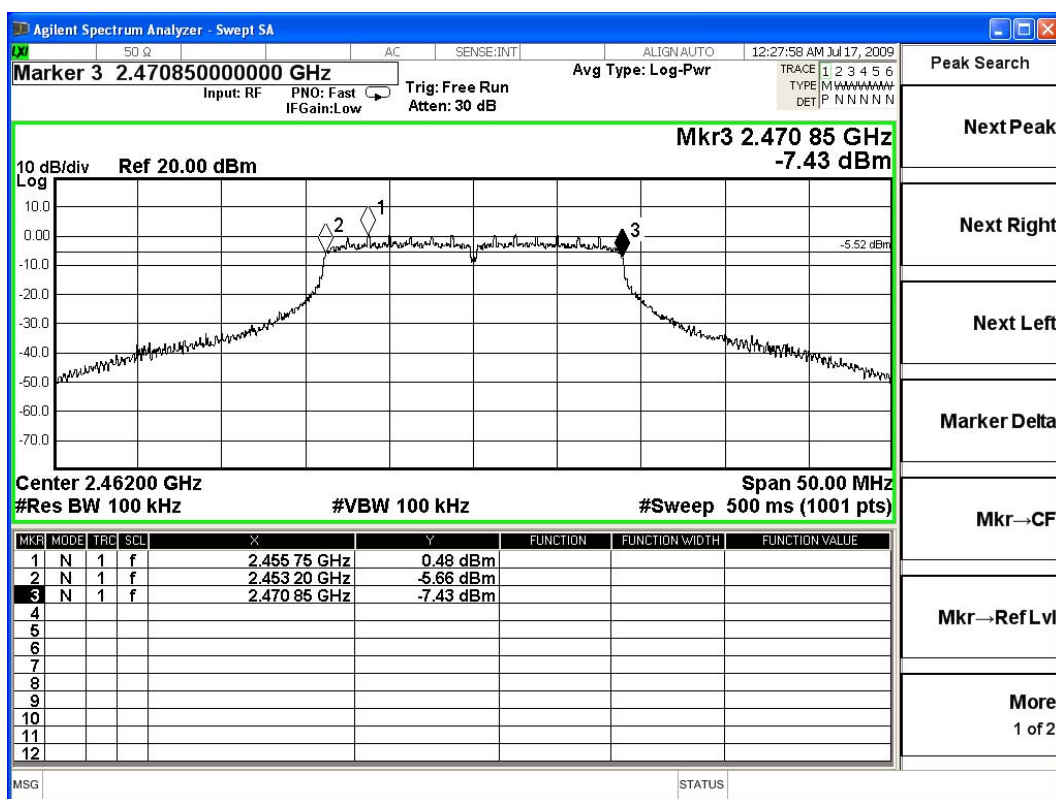
Figure Channel 6:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmitter (802.11n MCS0 6.5Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	17650	>500	Pass

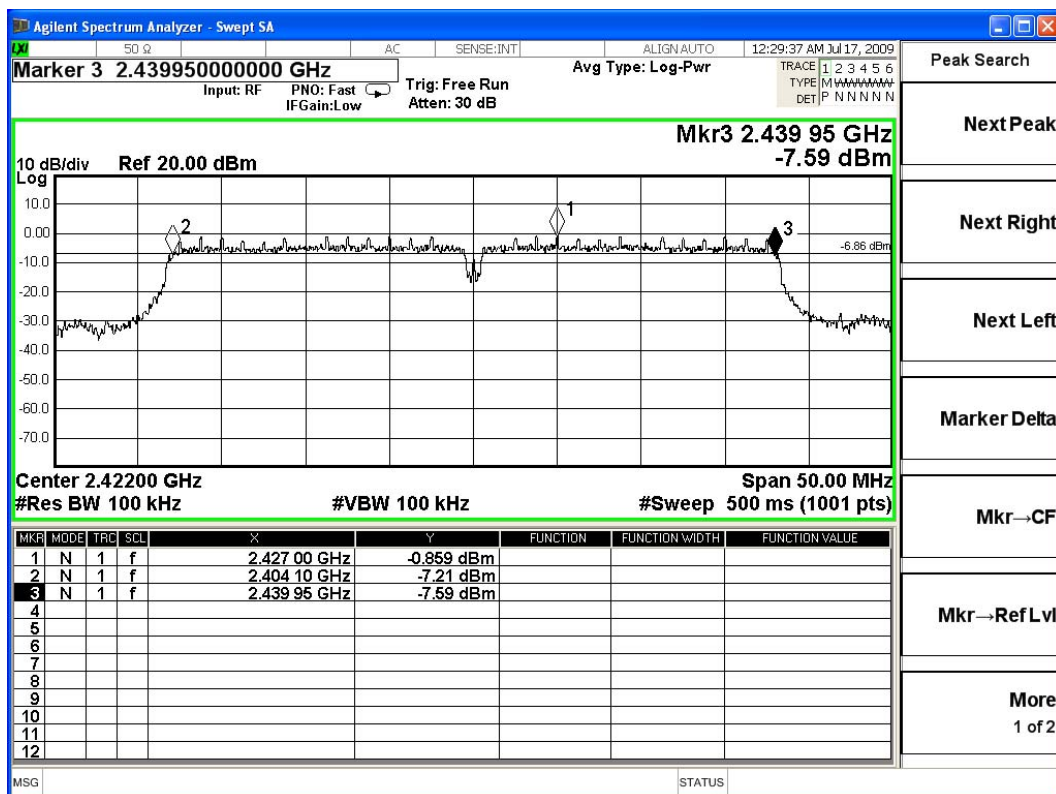
**Figure Channel 11:**



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmitter (802.11n MCS0 13.5Mbps 40M-BW) (2422MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2422.00	35850	>500	Pass

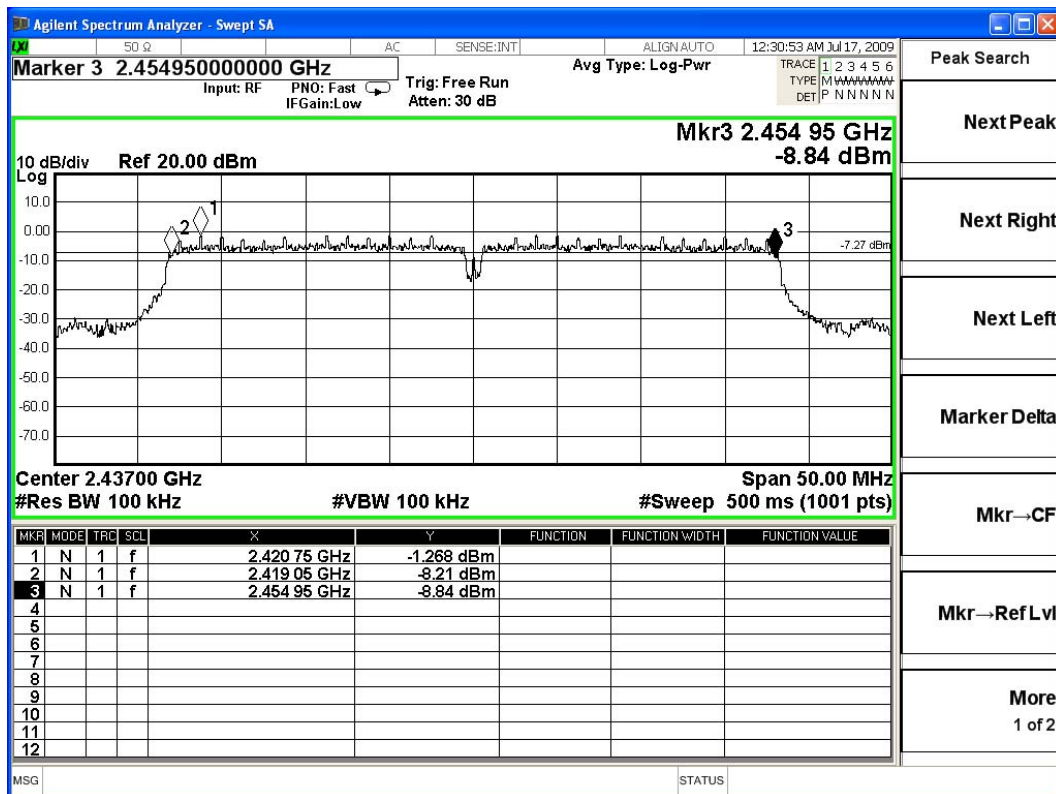
Figure Channel 1:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmitter (802.11n MCS0 13.5Mbps 40M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
4	2437.00	35900	>500	Pass

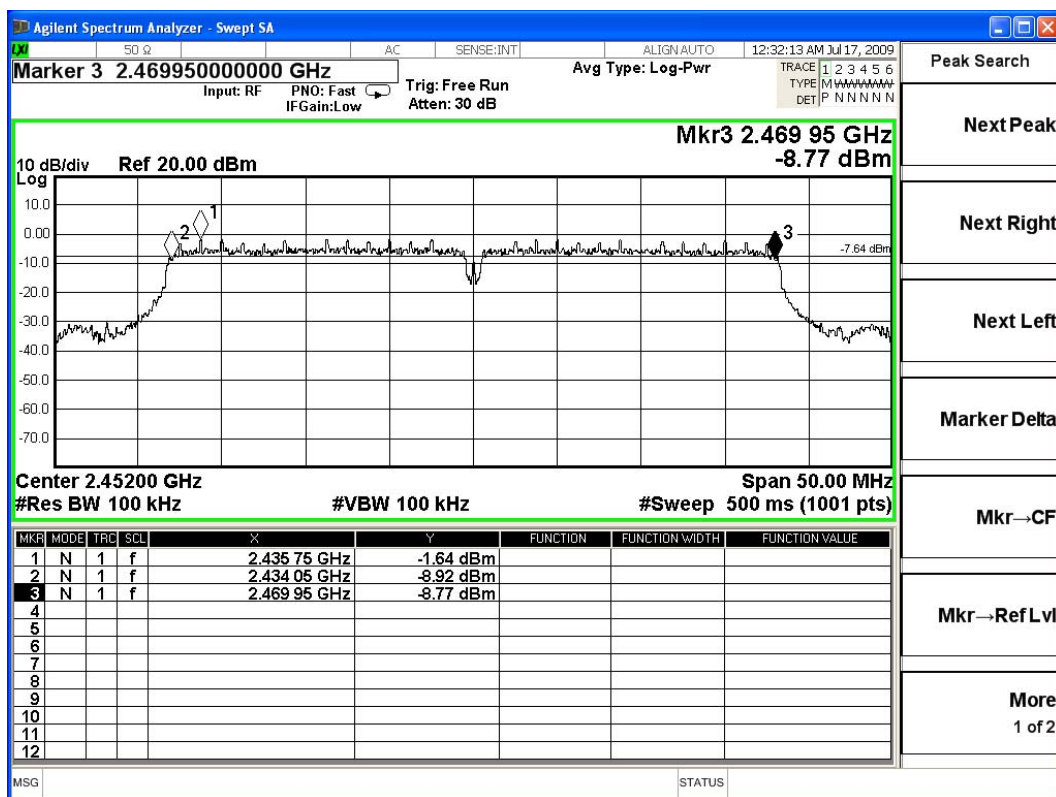
Figure Channel 4:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmitter (802.11n MCS0 13.5Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
7	2452.00	35900	>500	Pass

Figure Channel 7:





## 8. Power Density

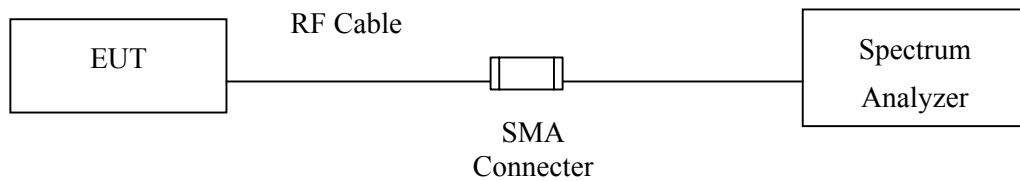
### 8.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments marked by “X” are used to measure the final test results.

### 8.2. Test Setup



### 8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

### 8.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 3 kHz, VBW=10KHz, Sweep time=(SPAN/3KHz), detector=Peak detector

### 8.5. Uncertainty

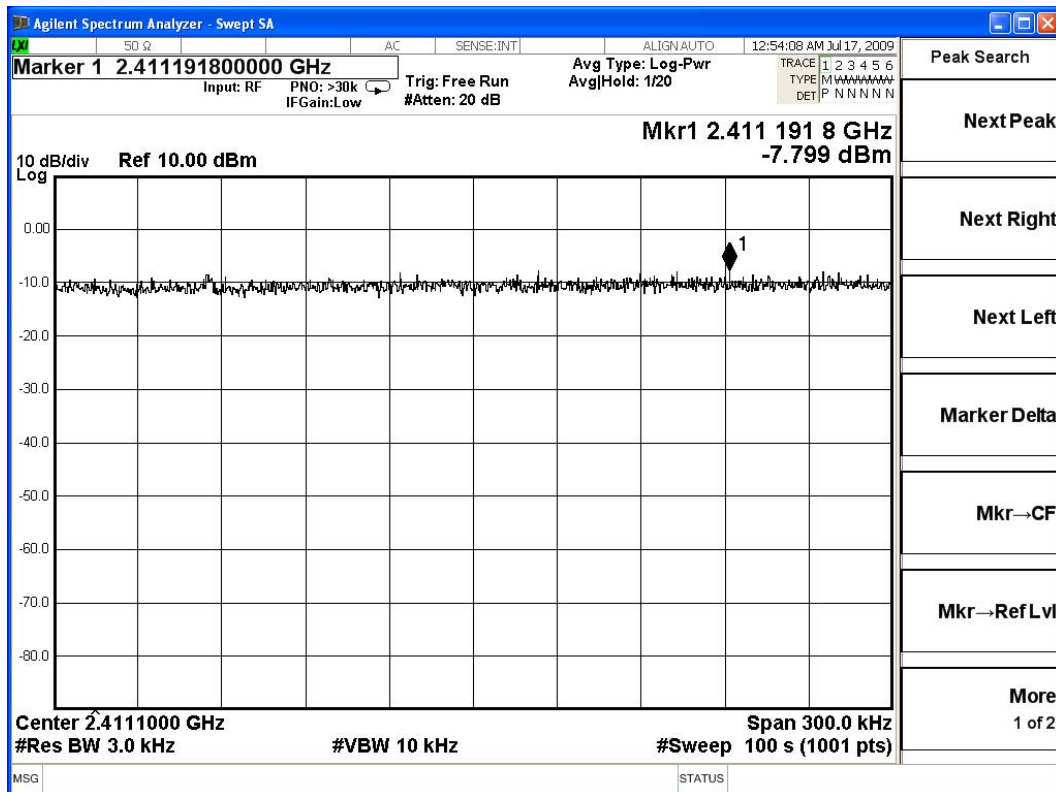
± 1.27 dB

## 8.6. Test Result of Power Density

Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412.00	-7.799	< 8dBm	Pass

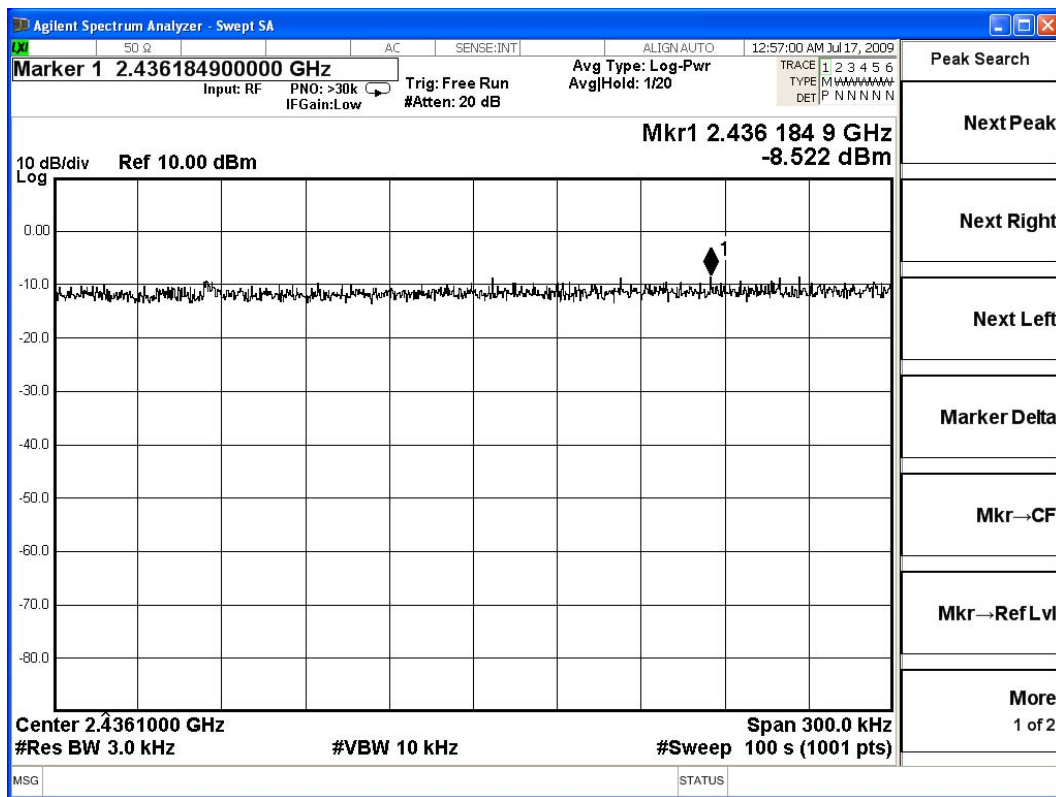
Figure Channel 1:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437.000	-8.522	< 8dBm	Pass

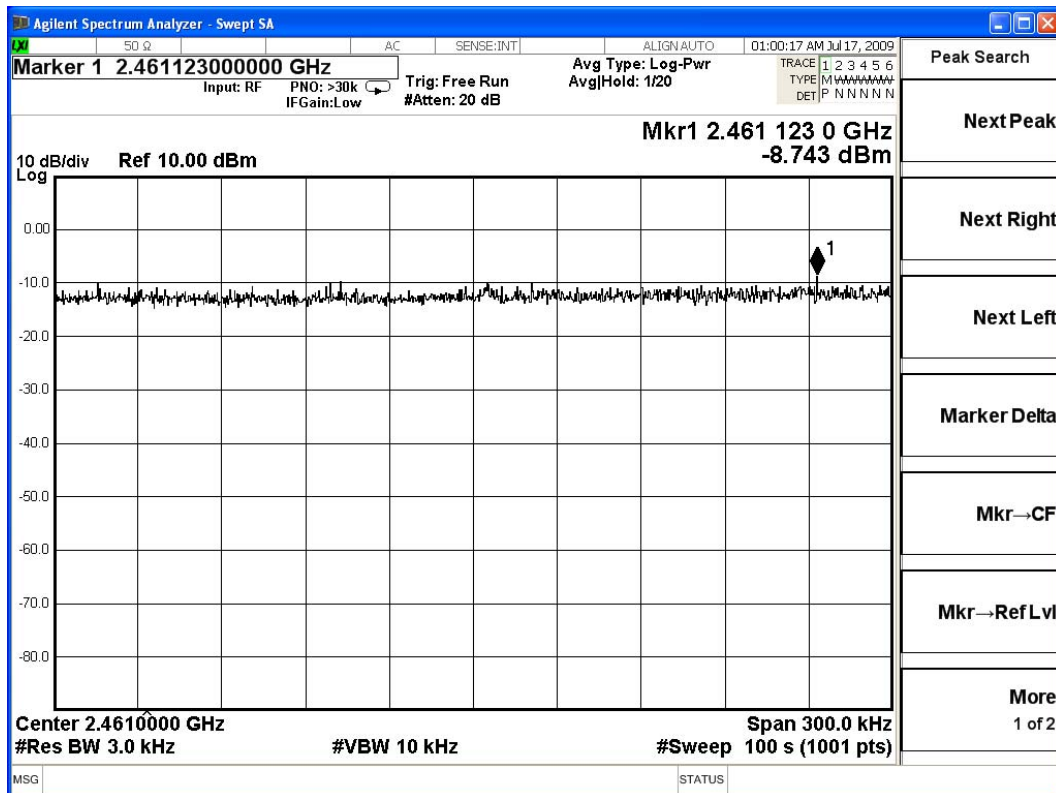
Figure Channel 6:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462.00	-8.743	< 8dBm	Pass

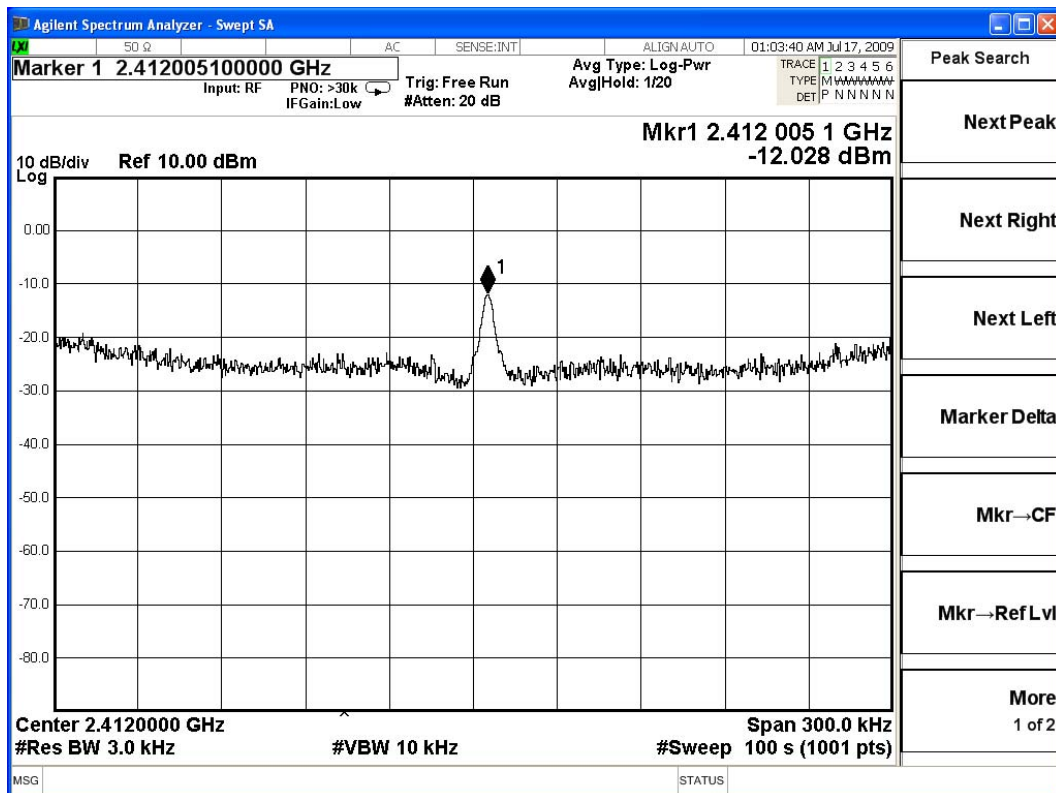
Figure Channel 11:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412.00	-12.028	< 8dBm	Pass

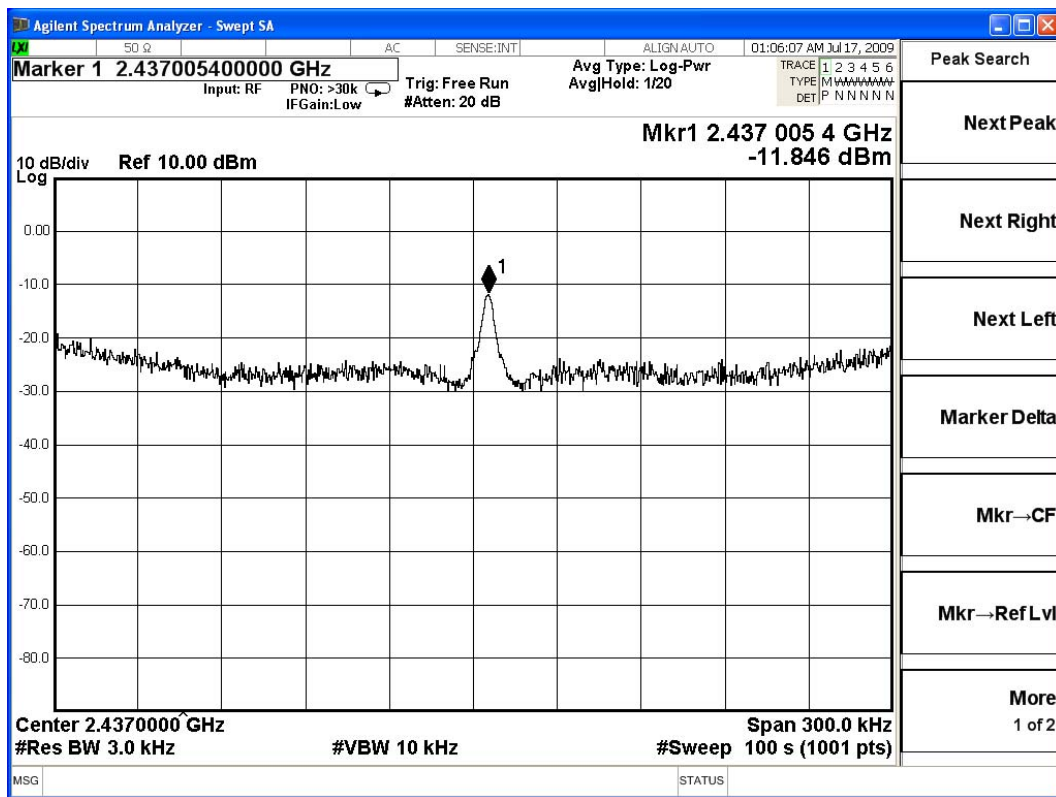
Figure Channel 1:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437.000	-11.846	< 8dBm	Pass

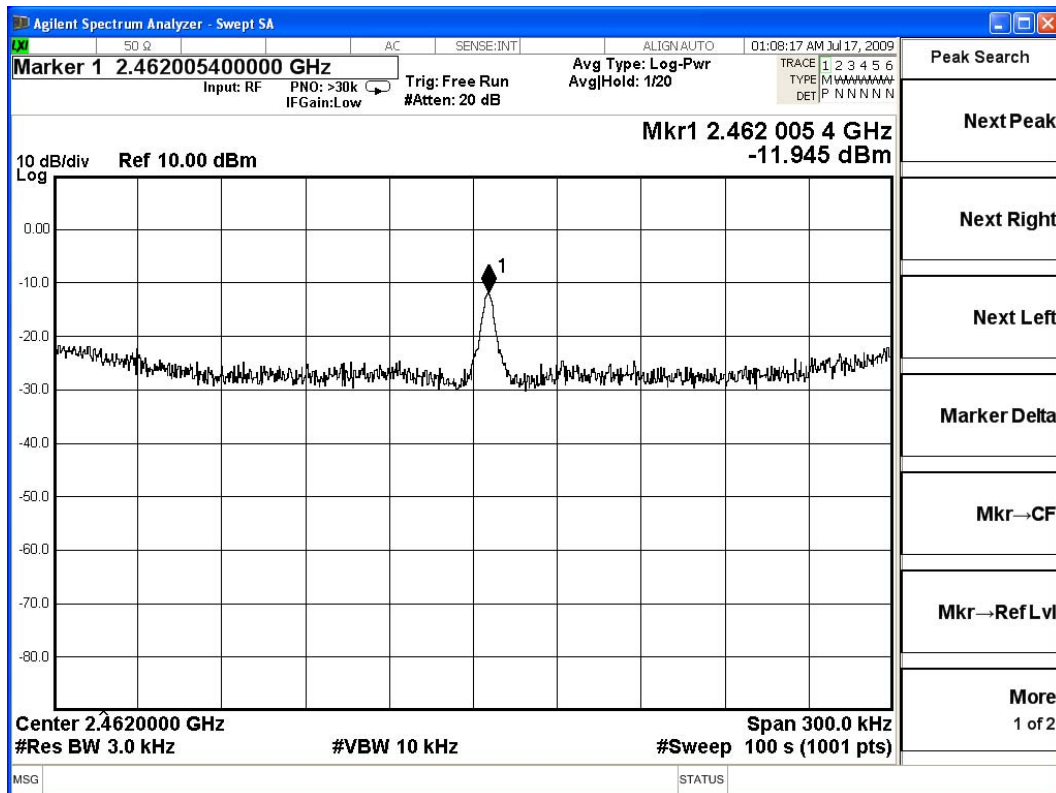
Figure Channel 6:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462.00	-11.945	< 8dBm	Pass

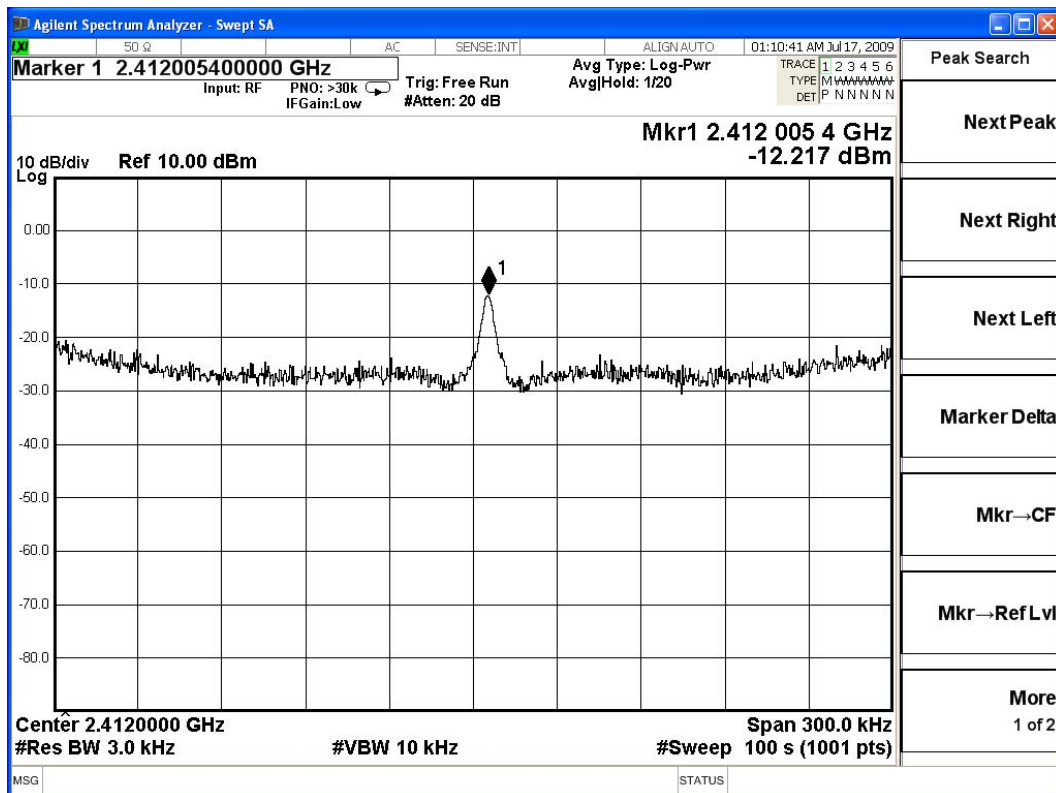
Figure Channel 11:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmitter (802.11n MCS0 6.5Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412.00	-12.217	< 8dBm	Pass

Figure Channel 1:

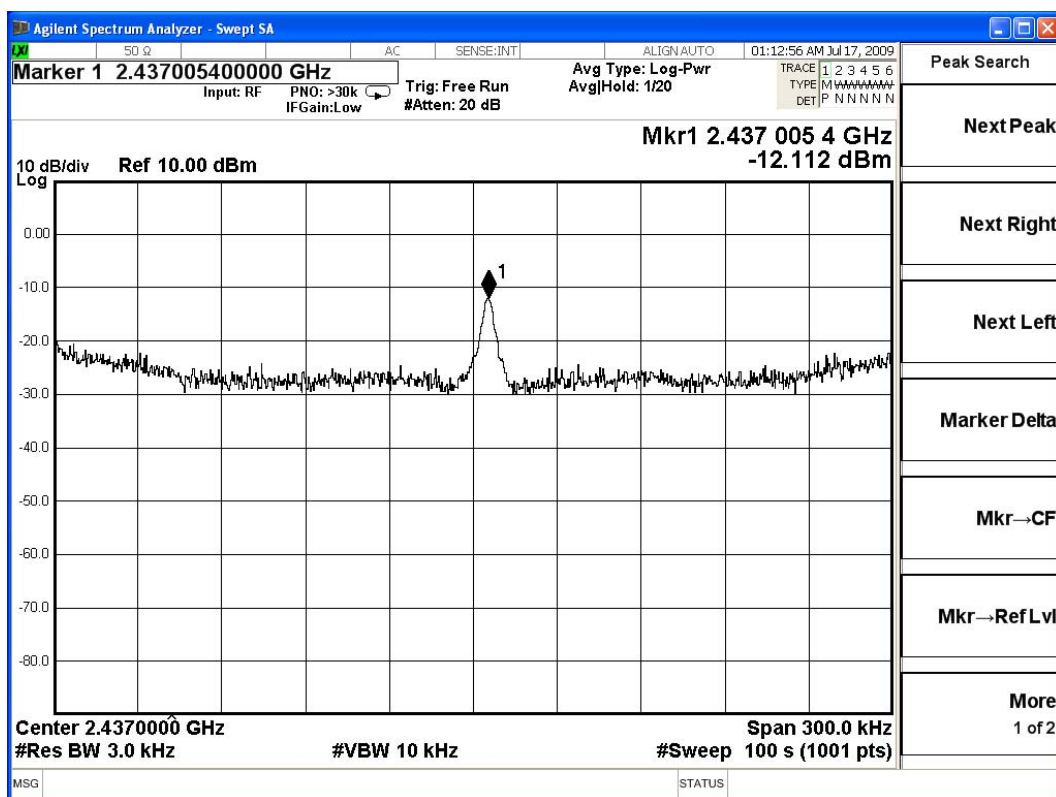




Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 3: Transmitter (802.11n MCS0 6.5Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437.000	-12.112	< 8dBm	Pass

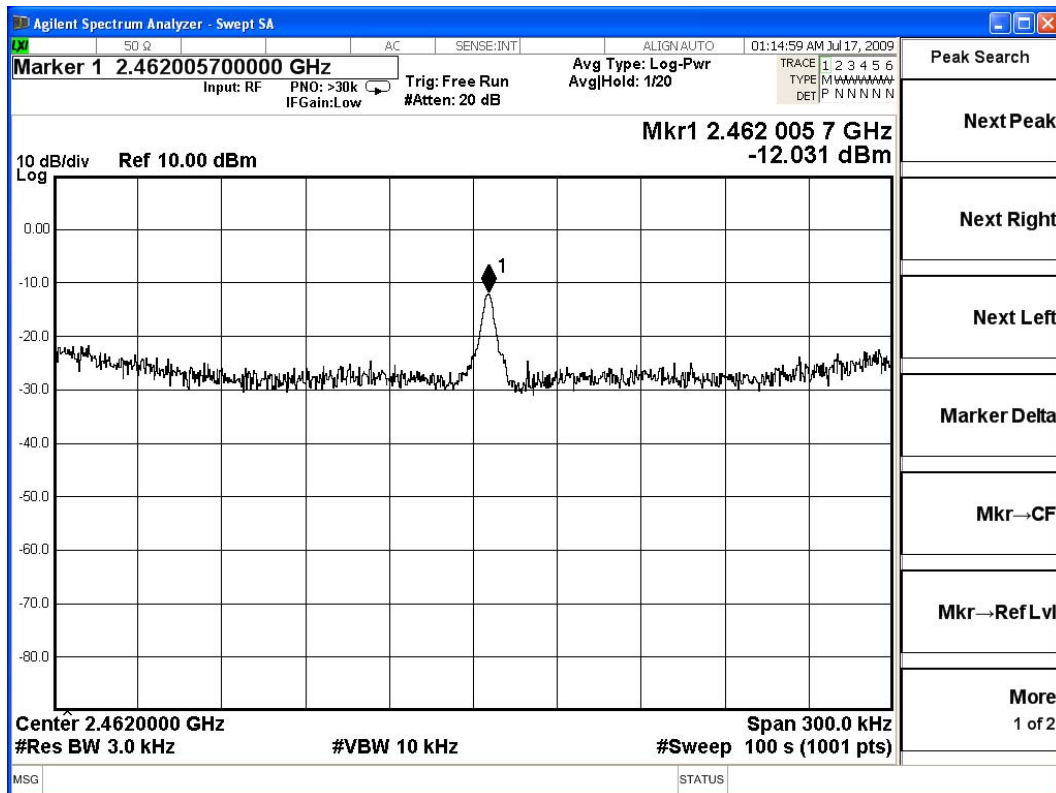
Figure Channel 6:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmitter (802.11n MCS0 6.5Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462.00	-12.031	< 8dBm	Pass

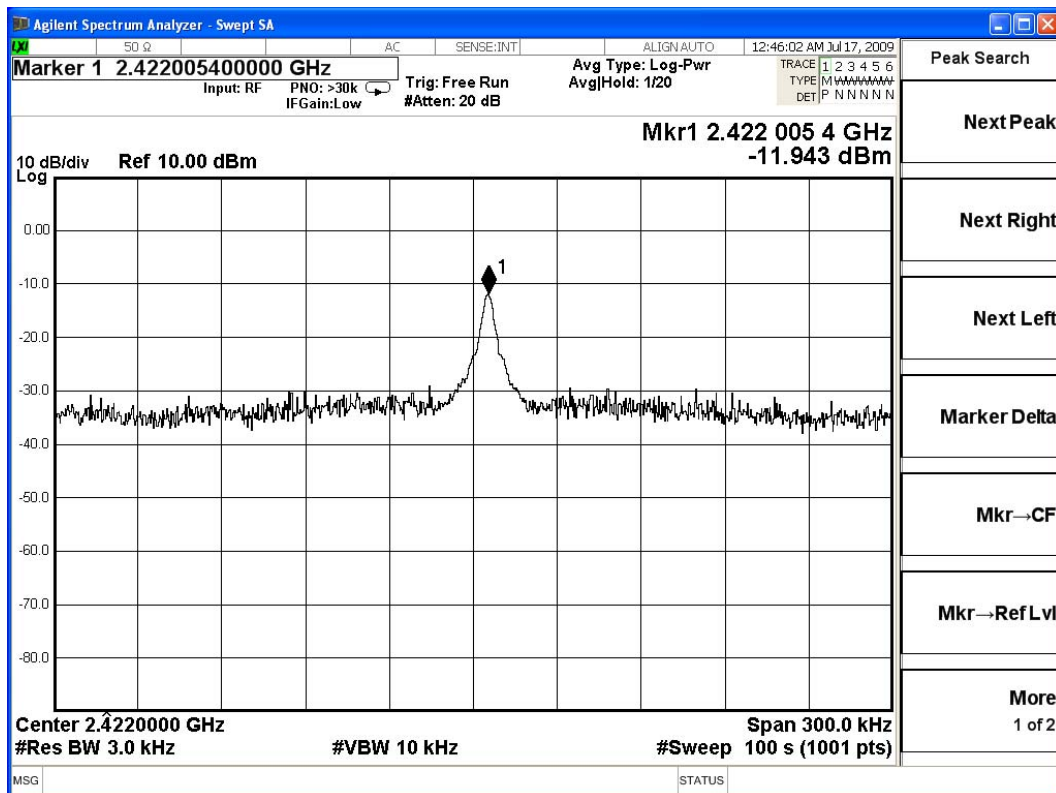
Figure Channel 11:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmitter (802.11n MCS0 13.5Mbps 40M-BW) (2422MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2422.00	-11.943	< 8dBm	Pass

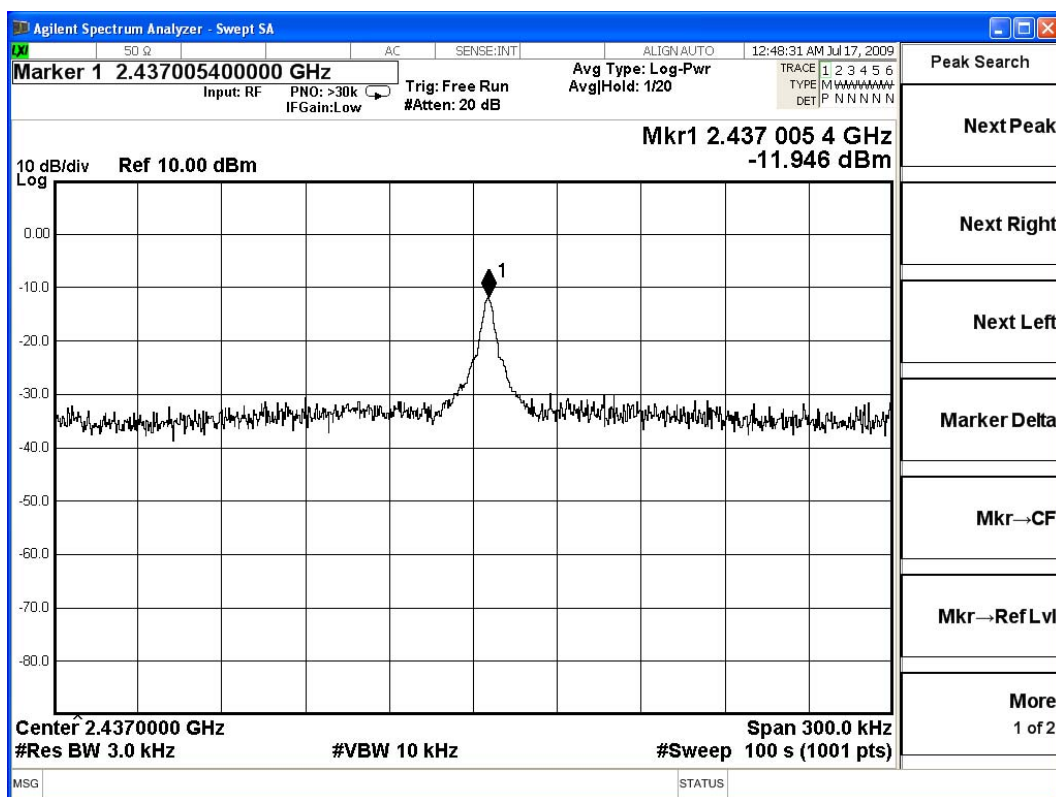
Figure Channel 1:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 4: Transmitter (802.11n MCS0 13.5Mbps 40M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
4	2437.000	-11.946	< 8dBm	Pass

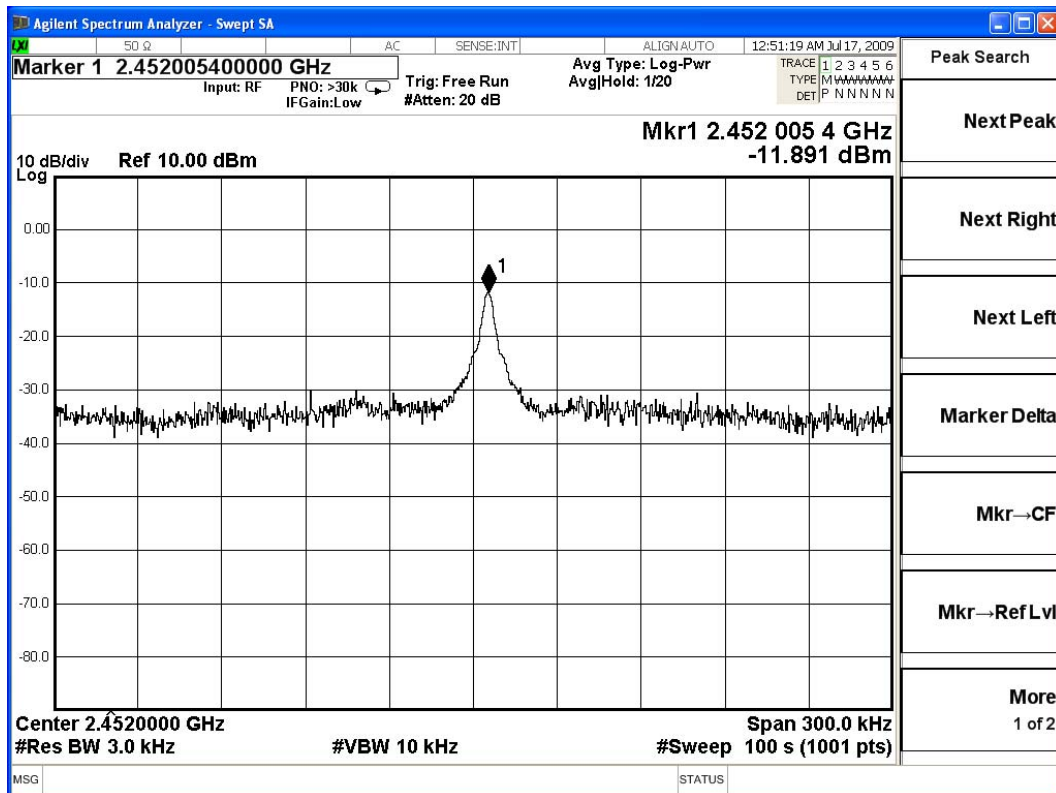
Figure Channel 4:



Product : 802.11b/g/n WLAN USB Dongle  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmitter (802.11n MCS0 13.5Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
7	2452.00	-11.891	< 8dBm	Pass

Figure Channel 7:



## **9. EMI Reduction Method During Compliance Testing**

No modification was made during testing.