



**EMC TEST REPORT for Intentional Radiator**  
**No. 140101279SHA-001**

Applicant : Aruba Networks, Inc  
1344 Crossman Ave. Sunnyvale, CA,94089  
Manufacturer : Aruba Networks, Inc  
1344 Crossman Ave. Sunnyvale, CA,94089  
Product Name : Wireless Access Point  
Type/Model : APIN0103

**SUMMARY**

The equipment complies with the requirements according to the following standard(s):

**47CFR Part 15 (2012):** Radio Frequency Devices (Subpart C)

**ANSI C63.4 (2009):** American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

**RSS-210 Issue 8 (December 2010):** Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

**RSS-Gen Issue 3 (December 2010):** General Requirements and Information for the Certification of Radiocommunication Equipment

Date of issue: Jan. 24, 2014

Prepared by:

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Reviewed by:

Jonny Jing (*Reviewer*)



**FCC ID: Q9DAPIN0103**  
**IC: 4675A-APIN0103**

## **Description of Test Facility**

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## Content

|  |            |
|--|------------|
| <b>SUMMARY</b> .....   | <b>1</b>   |
| <b>1. GENERAL INFORMATION</b> .....                                | <b>4</b>   |
| 1.1 Applicant Information.....                                     | 4          |
| 1.2 Identification of the EUT .....                                | 4          |
| 1.3 Technical specification .....                                  | 5          |
| 1.4 Mode of operation during the test / Test peripherals used..... | 8          |
| <b>2. TEST SPECIFICATION</b> .....                                 | <b>7</b>   |
| 2.1 Instrument list.....   | 7          |
| 2.2 Test Standard.....   | 7          |
| 2.3 Test Summary.....  | 11         |
| <b>3. MINIMUM 6DB BANDWIDTH</b> .....                              | <b>12</b>  |
| 3.1 Limit.....   | 12         |
| 3.2 Test Configuration.....  | 12         |
| 3.3 Test Procedure and test setup .....                            | 12         |
| 3.4 Test Protocol .....  | 13         |
| <b>4. MAXIMUM PEAK OUTPUT POWER</b> .....                          | <b>40</b>  |
| 4.1 Test limit .....   | 40         |
| 4.2 Test Configuration.....  | 40         |
| 4.3 Test procedure and test setup .....                            | 40         |
| 4.4 Test protocol.....   | 41         |
| <b>5. POWER SPECTRUM DENSITY</b> .....                             | <b>42</b>  |
| 5.1 Test limit .....   | 42         |
| 5.2 Test Configuration.....  | 42         |
| 5.3 Test procedure and test setup .....                            | 42         |
| 5.4 Test Protocol .....  | 43         |
| <b>6. RADIATED EMISSION</b> .....                                  | <b>70</b>  |
| 6.1 Test limit .....   | 70         |
| 6.2 Test Configuration.....  | 70         |
| 6.3 Test procedure and test setup .....                            | 71         |
| 6.4 Test protocol.....   | 72         |
| <b>7. EMISSION OUTSIDE THE FREQUENCY BAND</b> .....                | <b>80</b>  |
| 7.1 Limit.....   | 80         |
| 7.2 Test Configuration.....  | 80         |
| 7.3 Test procedure and test setup .....                            | 80         |
| 7.4 Test protocol.....   | 81         |
| <b>8. POWER LINE CONDUCTED EMISSION</b> .....                      | <b>162</b> |
| 8.1 Limit.....   | 162        |
| 8.2 Test configuration.....  | 162        |
| 8.3 Test procedure and test set up .....                           | 163        |
| 8.4 Test protocol.....   | 164        |
| <b>9. OCCUPIED BANDWIDTH</b> .....                                 | <b>166</b> |
| 9.1 Test limit .....   | 166        |
| 9.2 Test Configuration.....  | 166        |
| 9.3 Test procedure and test setup .....                            | 166        |
| 9.4 Test protocol.....   | 167        |



**FCC ID: Q9DAPIN0103**  
**IC: 4675A-APIN0103**

## **1. General Information**

### **1.1 Applicant Information**

Applicant : Aruba Networks, Inc  
1344 Crossman Ave. Sunnyvale, CA,94089  
Name of contact : Greg Rocha  
Tel : 408-419-4093  
Fax : /  
Manufacturer : Aruba Networks, Inc  
1344 Crossman Ave. Sunnyvale, CA,94089

### **1.2 Identification of the EUT**

Product Name : **Wireless Access Point**  
Type/model : **APIN0103**  
FCC ID : Q9DAPIN0103  
IC : 4675A-APIN0103



### 1.3 Technical specification

Operation Frequency : 2412~2462 MHz;  
Band : 5745~5825 MHz

Type of Modulation : CCK,BPSK,QPSK,DSSS,OFDM

EUT Modes of : 802.11a/b/g;  
Modulation : 802.11n HT20,HT40;

Channel Number : 11Channel for 2412MHz~2462MHz for 11b,11g,11n HT20;  
7 Channel for 2422MHz~2452MHz for 11n HT40;  
5745MHz~5825MHz for 11a&11n HT20: channel 149 - 165  
5755~5795MHz for 11n HT40: channel 151 - 159

Description of EUT : The EUT is a wireless access point, and it is a MIMO product.

Port identification : power port 1;  
RJ45 ports 1

Antenna : Integral, 3.9 dBi for 2.4GHz band, 4.1 dBi for 5.15 – 5.35GHz  
band, 4.3 dBi for 5.475 – 5.850 GHz band

Rating : DC 12V, 1A (Adaptor) or DC 57V, 350 mA(PoE)

Declared : 0°C ~ 45°C  
Temperature range

Category of EUT : Class B

EUT type :  Table top  Floor standing

Sample received date : Dec. 26, 2013

Sample Identification :  
No /

Date of test : Dec. 26, 2013 – Jan. 10, 2014



**MIMO Function Description:**

| Freq. Band   | Modulation   | Tx/Rx Function | Beam forming | Array Gain | Note |
|--------------|--------------|----------------|--------------|------------|------|
| 2412-2462MHz | 802.11b      | 2TX/2RX        | NO           | 0 dBi      |      |
|              | 802.11g      | 2TX/2RX        | NO           | 0 dBi      |      |
|              | 802.11n HT20 | 2TX/2RX        | NO           | 0 dBi      |      |
|              | 802.11n HT40 | 2TX/2RX        | NO           | 0 dBi      |      |
| 5745-5825MHz | 802.11a      | 2TX/2RX        | NO           | 0 dBi      |      |
|              | 802.11n HT20 | 2TX/2RX        | NO           | 0 dBi      |      |
|              | 802.11n HT40 | 2TX/2RX        | NO           | 0 dBi      |      |

Note: The mimo mode (IEEE 802.11) is Cyclic Delay Diversity, and the array gain is 0 dBi according to clause f) of KDB 662911.

## 2. Test Specification

### 2.1 Instrument list

| Equipment             | Type                              | Manu.             | Internal no. | Cal. Date  | Due date   |
|-----------------------|-----------------------------------|-------------------|--------------|------------|------------|
| Test Receiver         | ESCS 30                           | R&S               | EC 2107      | 2013-10-21 | 2014-10-20 |
| Test Receiver         | ESIB 26                           | R&S               | EC 3045      | 2013-10-21 | 2014-10-20 |
| Test Receiver         | ESCI 7                            | R&S               | EC4501       | 2013-12-29 | 2014-12-28 |
| Spectrum Analyzer     | N9010                             | Agilent           | EC4890       | 2013-10-21 | 2014-10-20 |
| Power meter           | ML 2495A                          | Anritsu           | EC 4895      | 2013-10-21 | 2014-10-20 |
| A.M.N.                | ESH2-Z5                           | R&S               | EC 3119      | 2014-1-9   | 2015-1-8   |
| Bilog Antenna         | CBL 6112D                         | TESEQ             | EC 4206      | 2013-5-16  | 2014-5-15  |
| Horn antenna          | HF 906                            | R&S               | EC 3049      | 2013-5-13  | 2014-5-12  |
| Pre-amplifier         | Pre-amp 18                        | R&S               | EC 3222      | 2013-4-12  | 2014-4-11  |
| Pre-amplifier         | Tpa0118-40                        | R&S               | EC 4792-2    | 2013-4-12  | 2014-4-11  |
| Log-period antenna    | AT 1080                           | AR                | EC 3044-7    | 2013-5-22  | 2014-5-21  |
| Biconical antenna     | 3109PX                            | ETS               | EC3564       | 2013-8-25  | 2014-8-24  |
| Semi-anechoic chamber | -                                 | Albatross project | EC 3048      | 2013-5-21  | 2014-5-20  |
| Shielded room         | -                                 | Zhongyu           | EC 2838      | 2014-1-12  | 2016-1-11  |
| Shielded room         | -                                 | Zhongyu           | EC 2839      | 2014-1-12  | 2016-1-11  |
| High Pass Filter      | WHKX 1.0/15G-10SS                 | Wainwright        | EC4297-1     | 2013-2-1   | 2014-1-31  |
| High Pass Filter      | WHKX 2.8/18G-12SS                 | Wainwright        | EC4297-2     | 2013-2-1   | 2014-1-31  |
| High Pass Filter      | WHKX 7.0/1.8G-8SS                 | Wainwright        | EC4297-3     | 2013-2-1   | 2014-1-31  |
| Band Reject Filter    | WRCGV 2400/2483-2390/2493-35/10SS | Wainwright        | EC4297-4     | 2013-2-1   | 2014-1-31  |

### 2.2 Test Standard

47CFR Part 15 (2012)  
ANSI C63.4 (2009)  
KDB 558074 (V03R01)  
KDB 662911 (V02R01)  
RSS-210 Issue 8 (December 2010)  
RSS-Gen Issue 3 (December 2010)

### 2.3 Mode of operation during the test / Test peripherals used

While testing transmitting mode of EUT, the internal modulation and continuously transmission was applied.

The lowest, middle and highest channel were tested as representatives.

| Freq. Band   | Modulation   | Lowest(MHz) | Middle(MHz) | Highest(MHz) |
|--------------|--------------|-------------|-------------|--------------|
| 2412-2462MHz | 802.11b      | 2412        | 2437        | 2462         |
|              | 802.11g      | 2412        | 2437        | 2462         |
|              | 802.11n HT20 | 2412        | 2437        | 2462         |
|              | 802.11n HT40 | 2422        | 2437        | 2452         |
| 5745-5825MHz | 802.11a      | 5745        | 5785        | 5825         |
|              | 802.11n HT20 | 5745        | 5785        | 5825         |
|              | 802.11n HT40 | 5755        | /           | 5795         |

#### Test software setting:

The power level setting for 802.11a/b/g/n/ac is used with ART software offered by the manufactory.

For 2.4G Band:

| Mode 1    | Frequency (MHz) | ART Setting | Note |
|-----------|-----------------|-------------|------|
| 802.11b   | 2412            | 18.00       |      |
|           | 2437            | 18.00       |      |
|           | 2462            | 18.00       |      |
| 802.11g   | 2412            | 15.00       |      |
|           | 2437            | 18.00       |      |
|           | 2462            | 14.50       |      |
| 802.11n20 | 2412            | 15.00       |      |
|           | 2437            | 18.00       |      |
|           | 2462            | 15.00       |      |
| 802.11n40 | 2422            | 13.00       |      |
|           | 2437            | 18.00       |      |
|           | 2452            | 11.50       |      |





For 5.8G Band:

| Mode 1    | Frequency (MHz) | ART Setting | Note |
|-----------|-----------------|-------------|------|
| 802.11a   | 5745            | 18.00       |      |
|           | 5785            | 18.00       |      |
|           | 5825            | 18.00       |      |
| 802.11n20 | 5745            | 18.00       |      |
|           | 5785            | 18.00       |      |
|           | 5825            | 18.00       |      |
| 802.11n40 | 5755            | 18.00       |      |
|           | 5795            | 18.00       |      |

Test peripherals used:

| Item No | Description     | Band and Model   | S/No |
|---------|-----------------|------------------|------|
| 1       | Laptop computer | HP ProBook 6470b | NA   |



### Data rate VS Power

The pre-scan for the conducted power with all rates in each modulation and bands was used, and the worst case was found and used in all test cases.

#### 2.4GHz Band:

After this pre-scan, we choose the following table of the data rate as the worst case.

| Freq. Band     | Modulation   | Worst case data rate |
|----------------|--------------|----------------------|
| 2400-2483.5MHz | 802.11b      | 1Mbps                |
|                | 802.11g      | 6Mbps                |
|                | 802.11n HT20 | MCS8                 |
|                | 802.11n HT40 | MCS8                 |

#### 5.8GHz Band:

After this pre-scan, we choose the following table of the data rate as the worst case.

| Freq. Band   | Modulation   | Worst case data rate |
|--------------|--------------|----------------------|
| 5725-5850MHz | 802.11a      | 6Mbps                |
|              | 802.11n HT20 | MCS8                 |
|              | 802.11n HT40 | MCS8                 |



## 2.4 Test Summary

**This report applies to tested sample only. This report shall not be reproduced in part without written approval of Intertek Testing Service Shanghai Limited.**

| TEST ITEM                           | FCC REFERANCE   | IC REFERANCE                    | RESULT |
|-------------------------------------|-----------------|---------------------------------|--------|
| Minimum 6dB Bandwidth               | 15.247(a)(2)    | RSS-210 Issue 8<br>Annex 8      | Pass   |
| Maximum peak output power           | 15.247(b)       | RSS-210 Issue 8<br>Annex 8      | Pass   |
| Power spectrum density              | 15.247(e)       | RSS-210 Issue 8<br>Annex 8      | Pass   |
| Radiated emission                   | 15.205 & 15.209 | RSS-210 Issue 8<br>Clause 2     | Pass   |
| Emission outside the frequency band | 15.247(d)       | RSS-210 Issue 8<br>Annex 8      | Pass   |
| Power line conducted emission       | 15.207          | RSS-Gen Issue 3<br>Clause 7.2.4 | Pass   |
| Occupied bandwidth                  | -               | RSS-Gen Issue 3<br>Clause 4.6.1 | Tested |

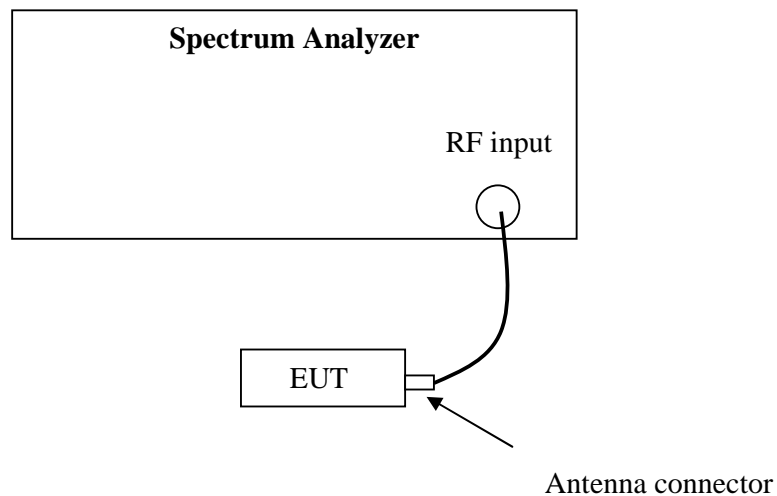
### 3. Minimum 6dB Bandwidth

Test result: PASS

#### 3.1 Limit

For systems using digital modulation techniques that may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands, the minimum 6 dB bandwidth shall be at least 500 kHz.

#### 3.2 Test Configuration



#### 3.3 Test Procedure and test setup

The minimum 6dB bandwidth per FCC §15.247(a)(2) is measured using the Spectrum Analyzer according to DTS test procedure of "KDB558074 D01 DTS Meas Guidance v03r01" for compliance to FCC 47CFR 15.247 requirements.

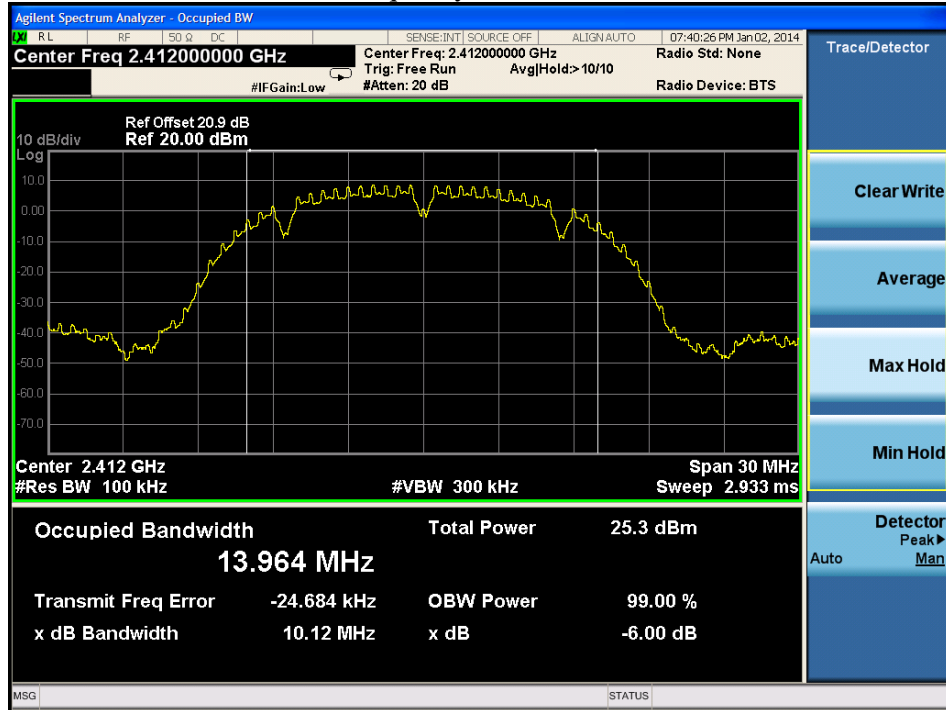
### 3.4 Test Protocol

Temperature : 25°C  
 Relative Humidity : 55%

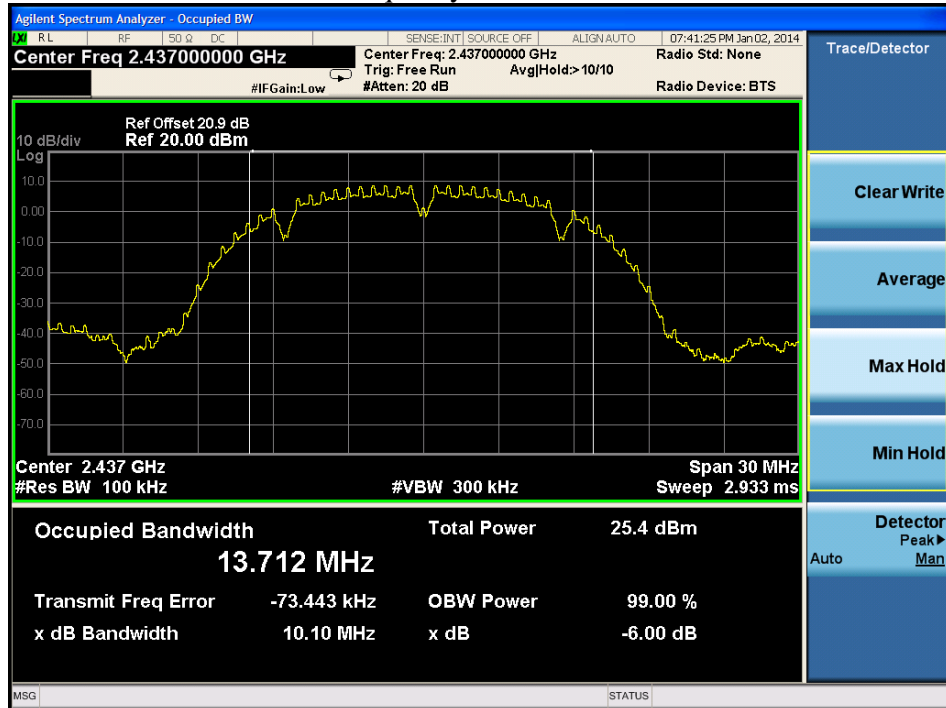
| Mode              | CH | Bandwidth (MHz) | Limit (MHz) |
|-------------------|----|-----------------|-------------|
| 802.11b – chain 0 | L  | 10.12           | ≥0.5        |
|                   | M  | 10.10           |             |
|                   | H  | 10.10           |             |

| Mode              | CH | Bandwidth (MHz) | Limit (MHz) |
|-------------------|----|-----------------|-------------|
| 802.11b – chain 1 | L  | 10.13           | ≥0.5        |
|                   | M  | 10.11           |             |
|                   | H  | 10.09           |             |

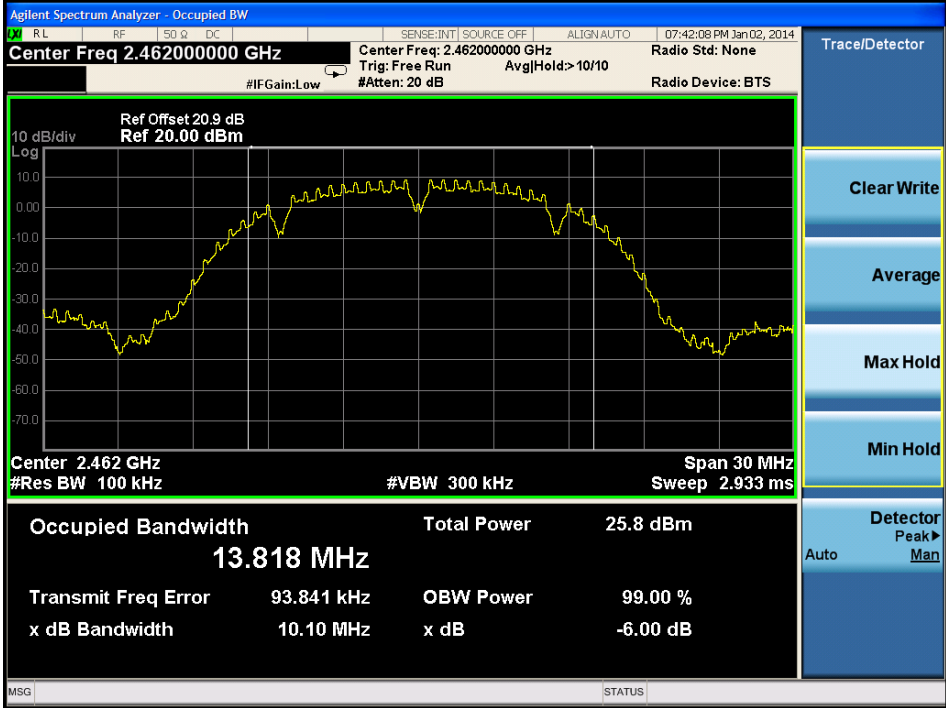
Frequency L – Chain 0



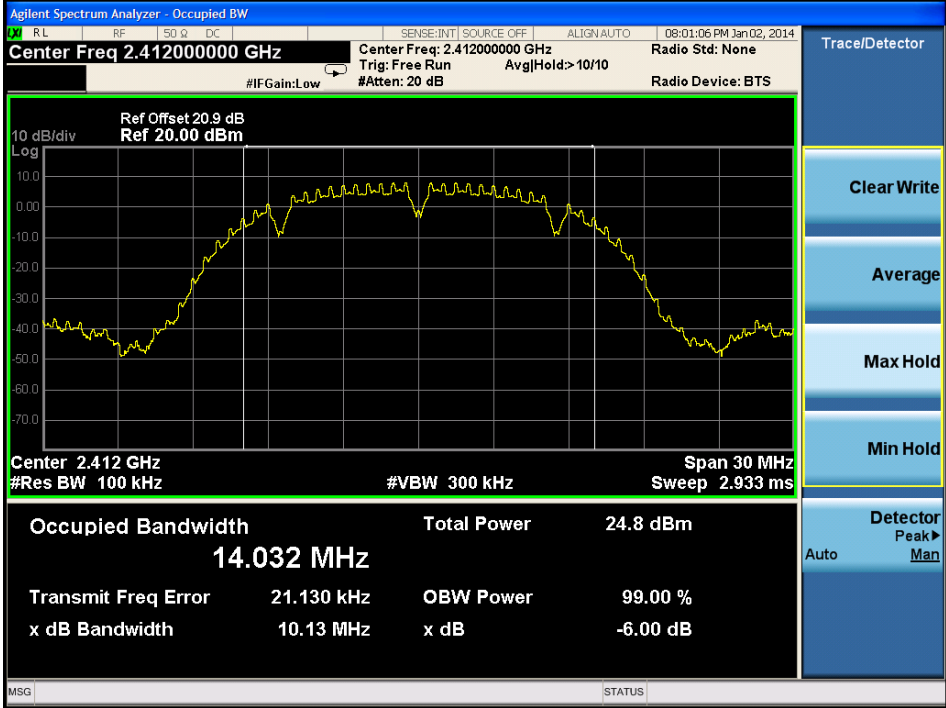
Frequency M – Chain 0



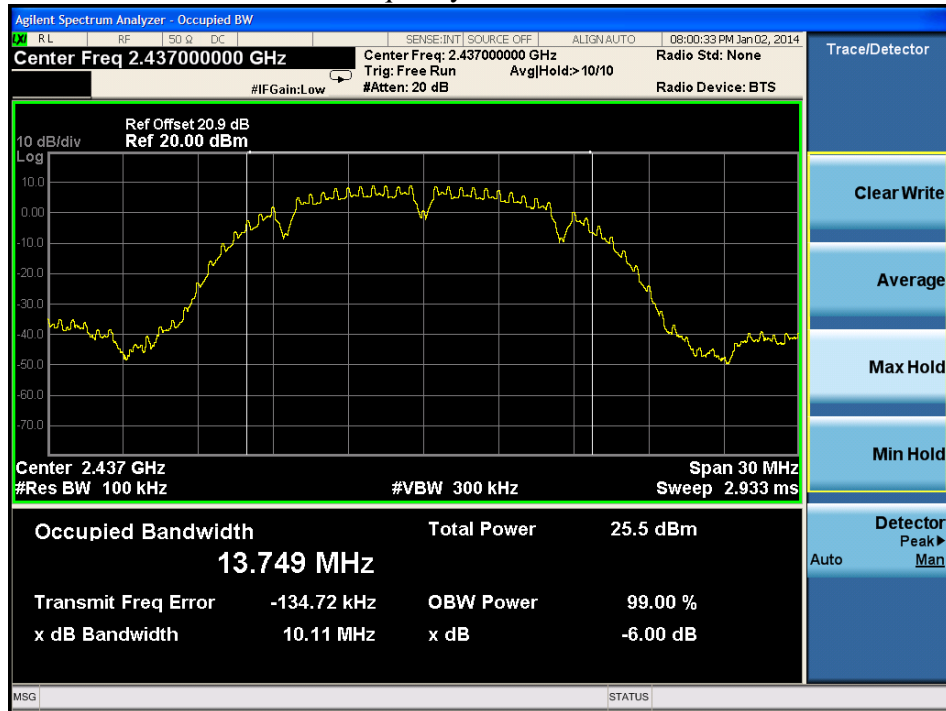
Frequency H – Chain 0



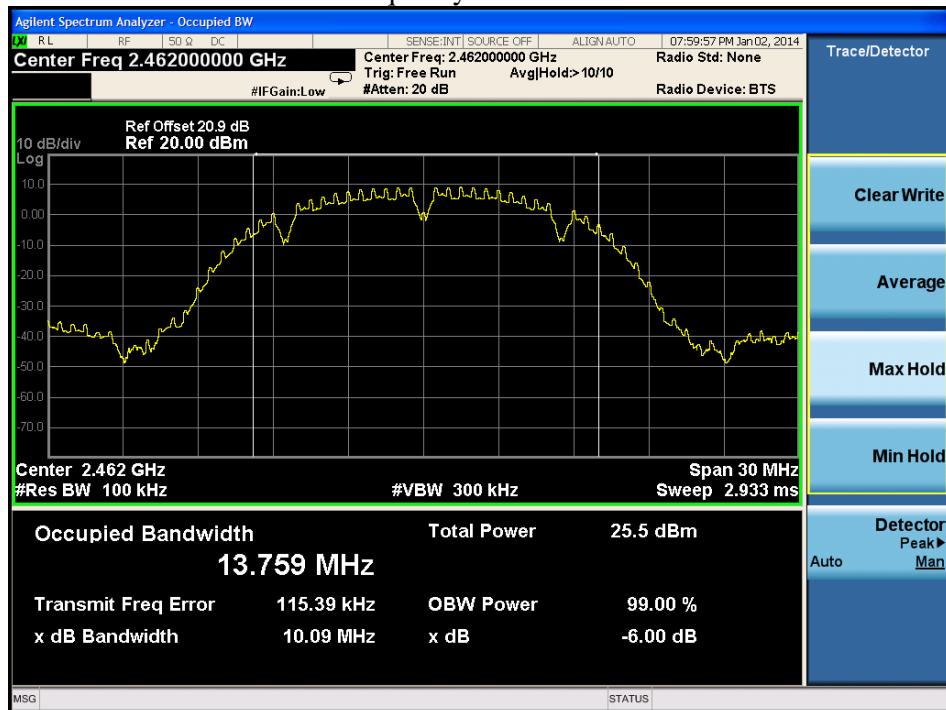
Frequency L – Chain 1



Frequency M – Chain 1



Frequency H – Chain 1

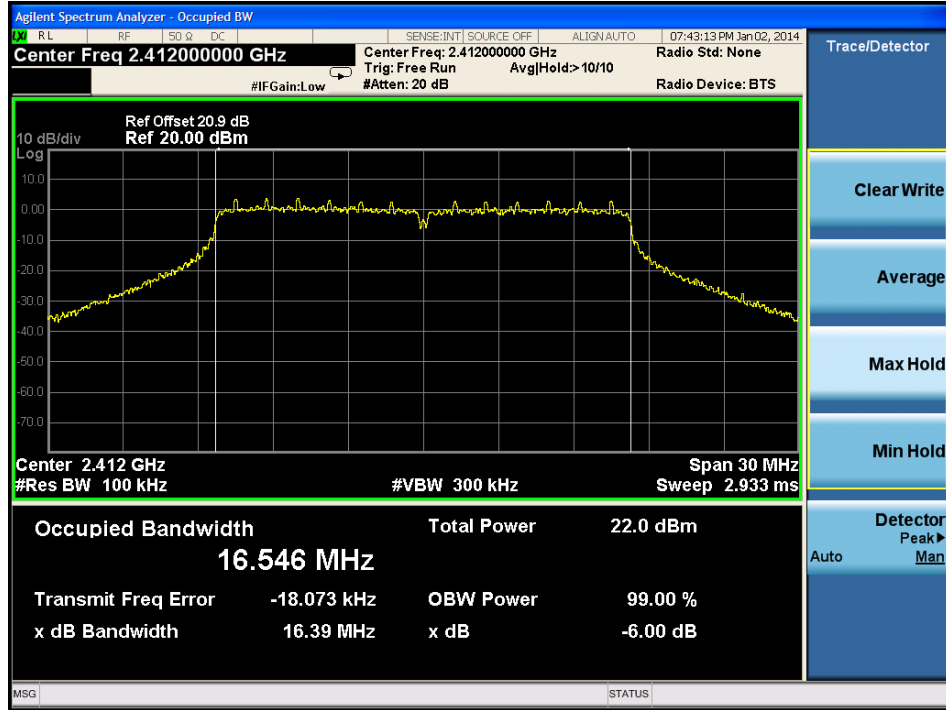




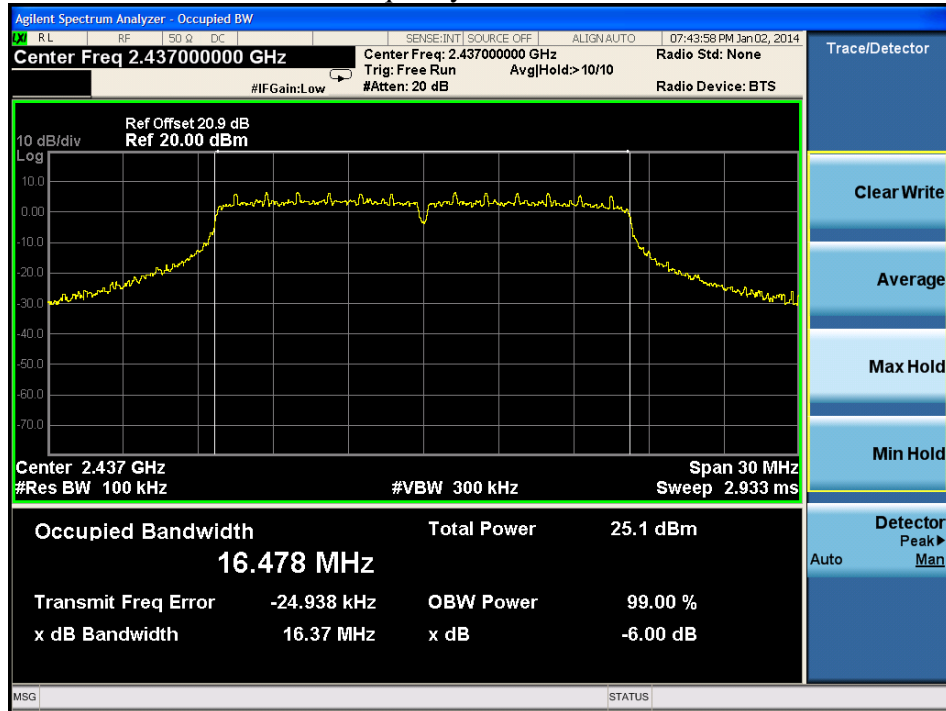
| Mode              | CH | Bandwidth (MHz) | Limit (MHz) |
|-------------------|----|-----------------|-------------|
| 802.11g – chain 0 | L  | 16.39           | ≥0.5        |
|                   | M  | 16.37           |             |
|                   | H  | 16.38           |             |

| Mode              | CH | Bandwidth (MHz) | Limit (MHz) |
|-------------------|----|-----------------|-------------|
| 802.11g – chain 1 | L  | 16.44           | ≥0.5        |
|                   | M  | 16.34           |             |
|                   | H  | 16.38           |             |

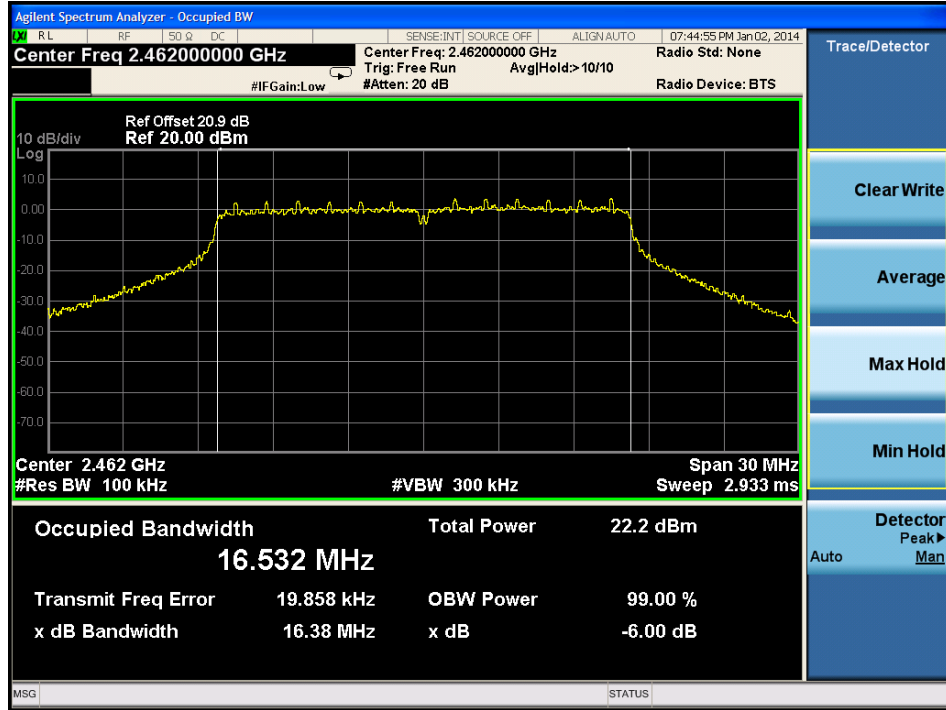
Frequency L – Chain 0



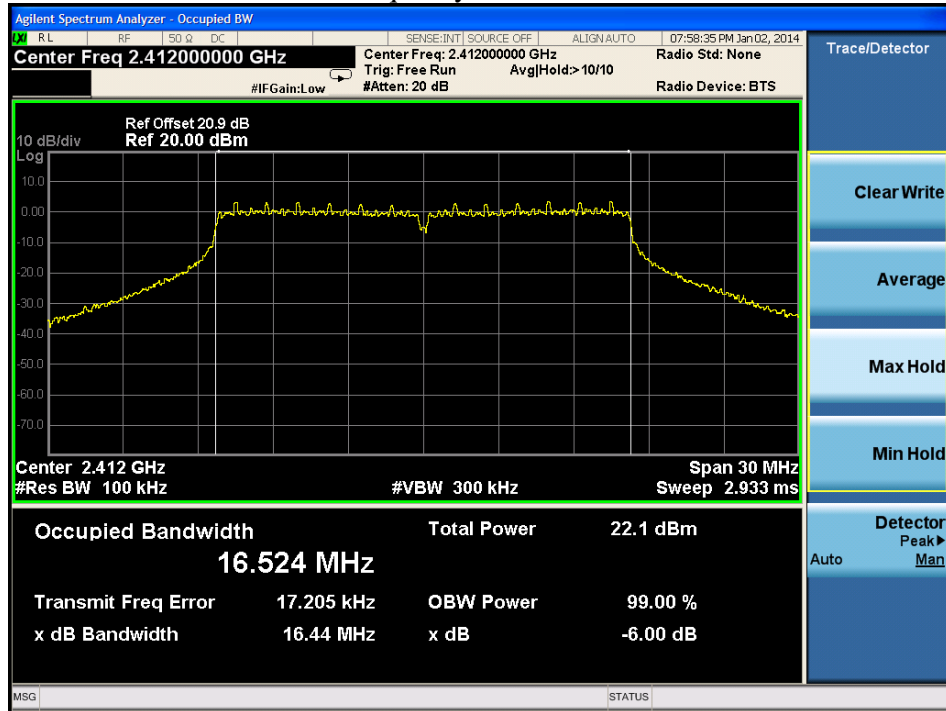
Frequency M – Chain 0



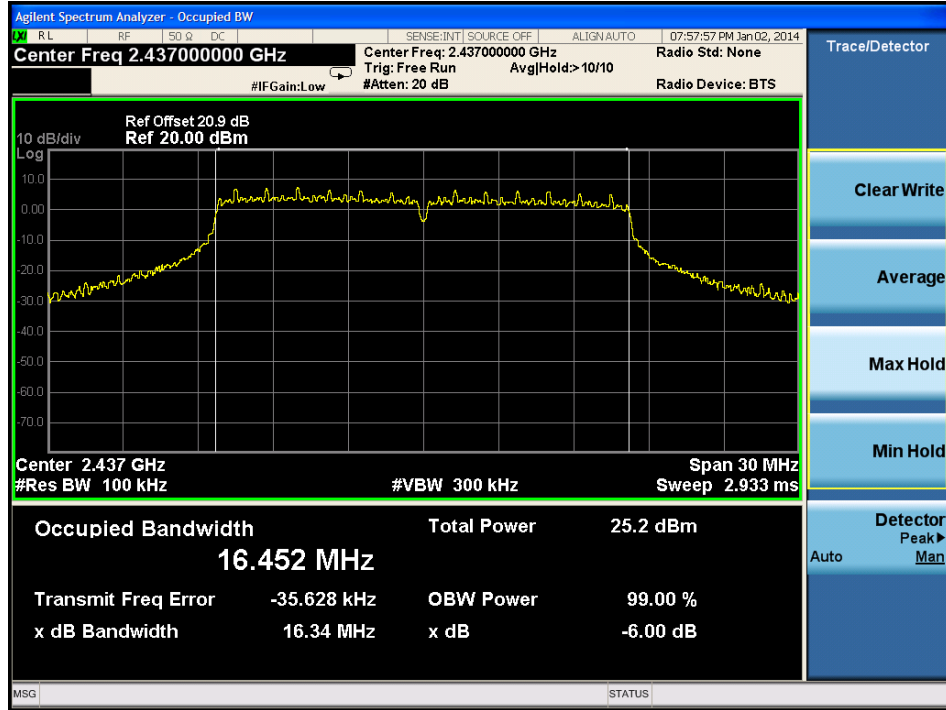
Frequency H – Chain 0



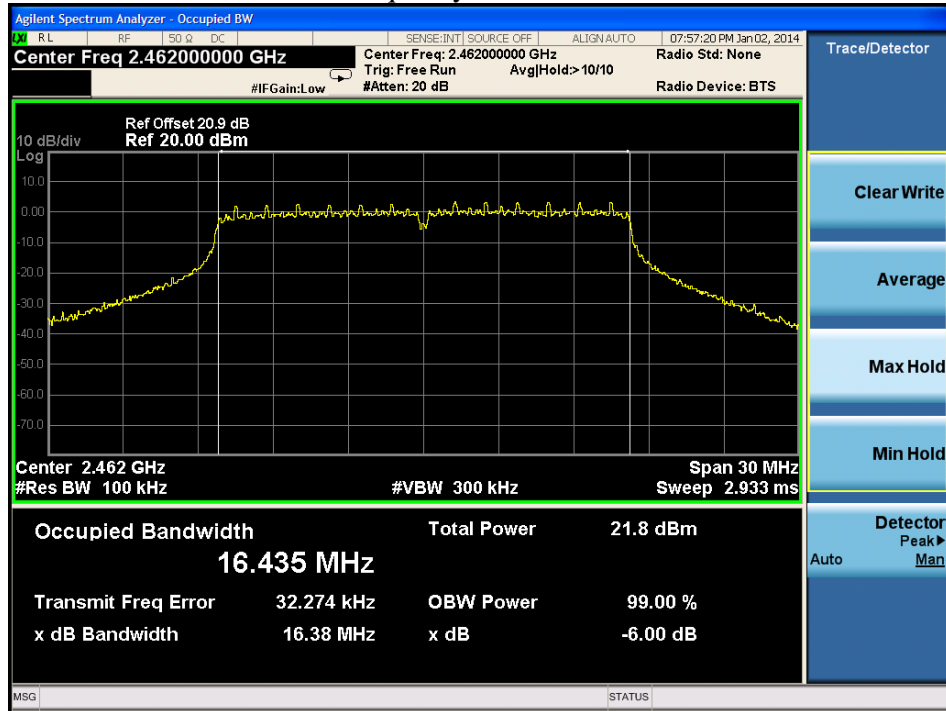
Frequency L – Chain 1



Frequency M – Chain 1



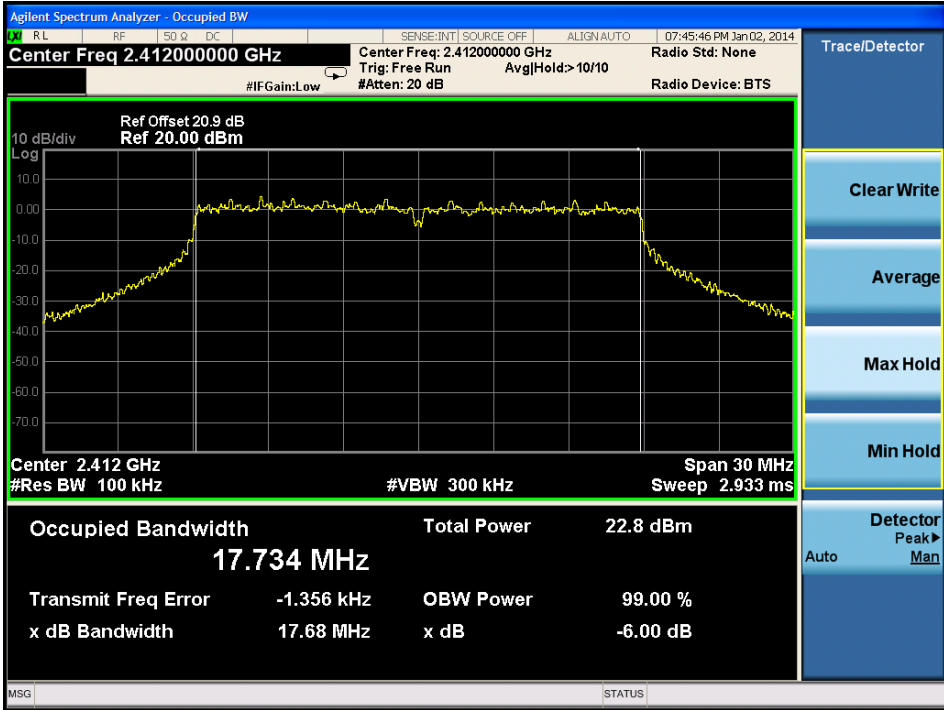
Frequency H – Chain 1



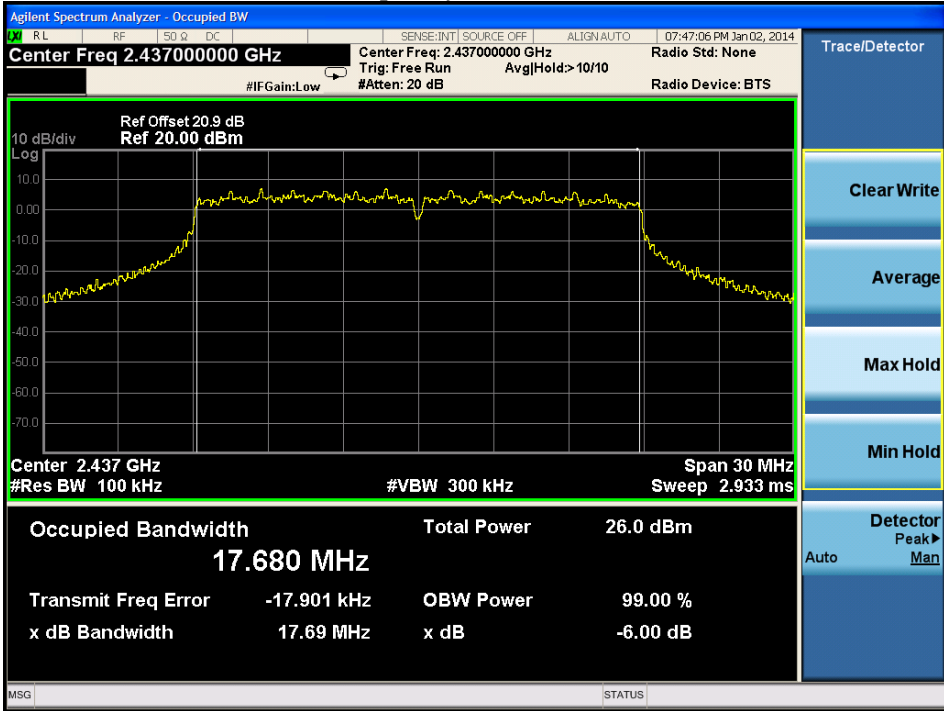
| Mode                | CH | Bandwidth (MHz) | Limit (MHz) |
|---------------------|----|-----------------|-------------|
| 802.11n20 – chain 0 | L  | 17.68           | ≥0.5        |
|                     | M  | 17.69           |             |
|                     | H  | 17.73           |             |

| Mode                | CH | Bandwidth (MHz) | Limit (MHz) |
|---------------------|----|-----------------|-------------|
| 802.11n20 – chain 1 | L  | 17.72           | ≥0.5        |
|                     | M  | 17.59           |             |
|                     | H  | 17.67           |             |

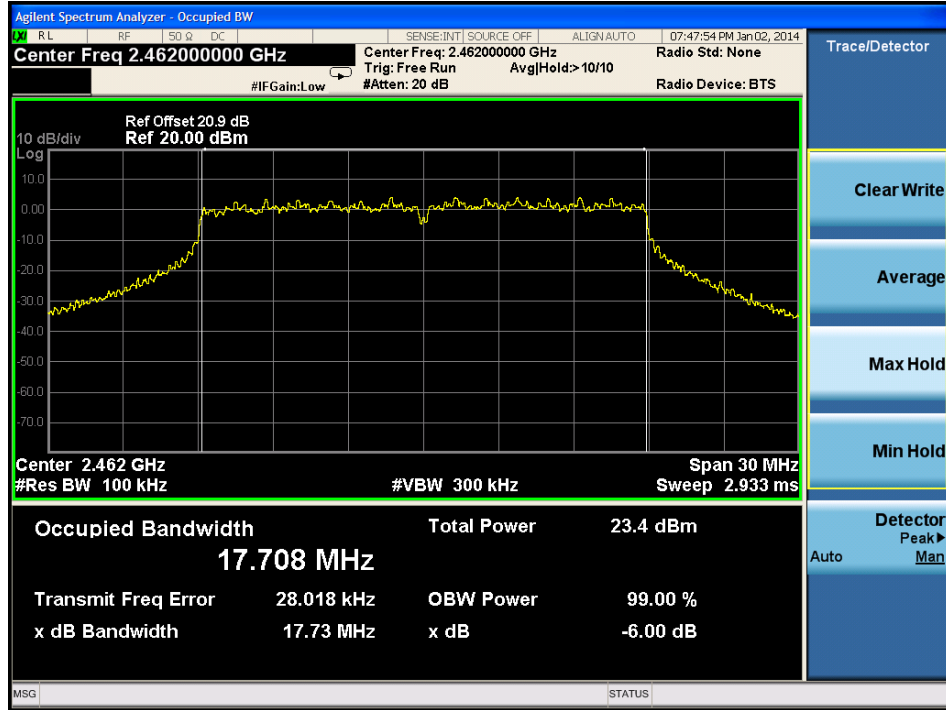
Frequency L – Chain 0



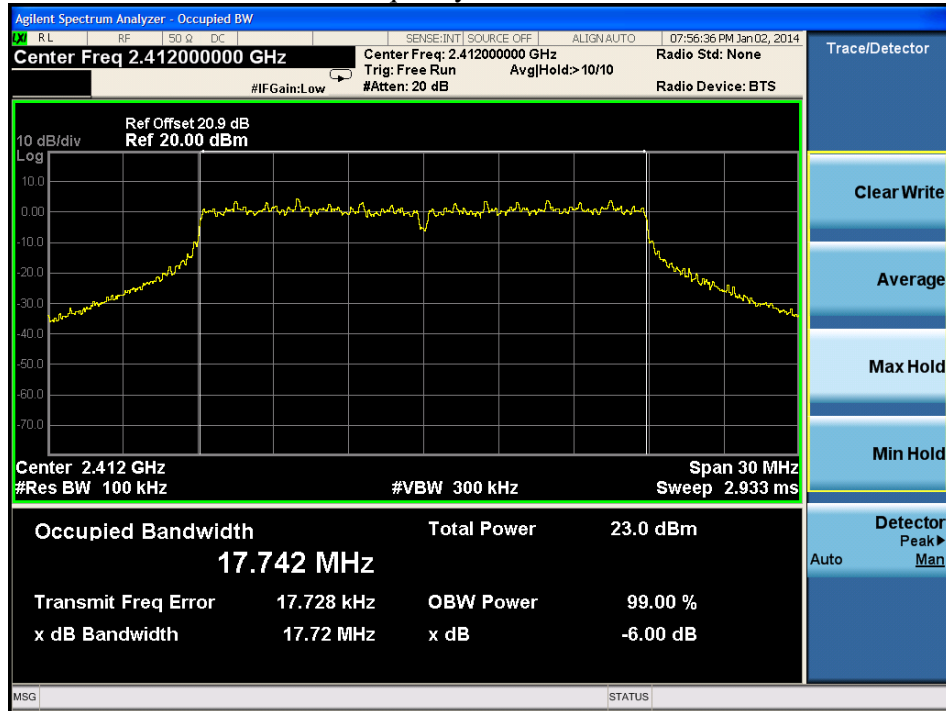
Frequency M – Chain 0



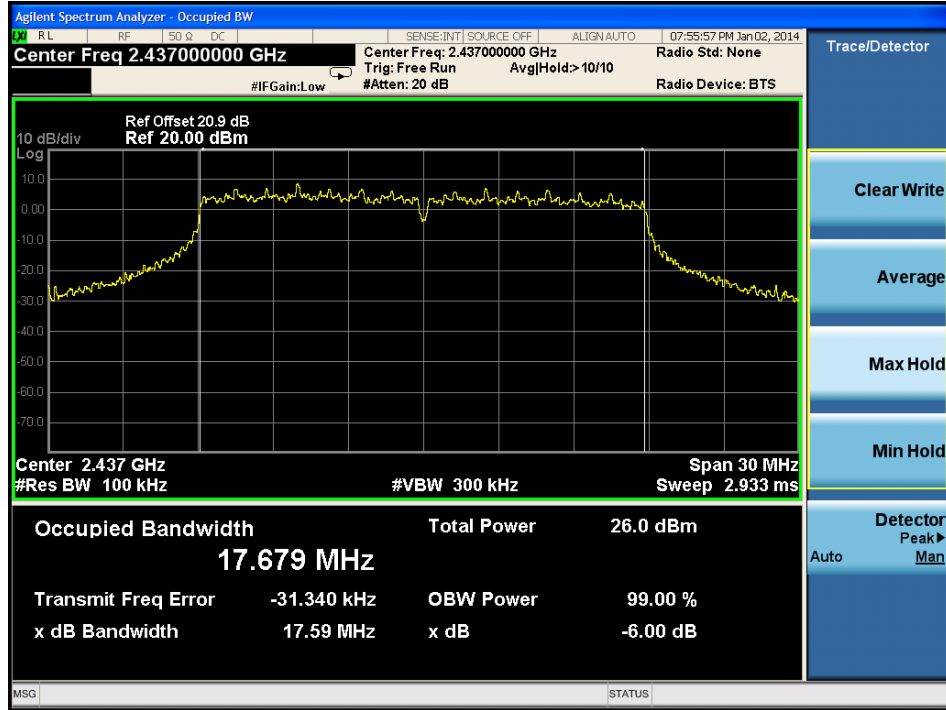
Frequency H – Chain 0



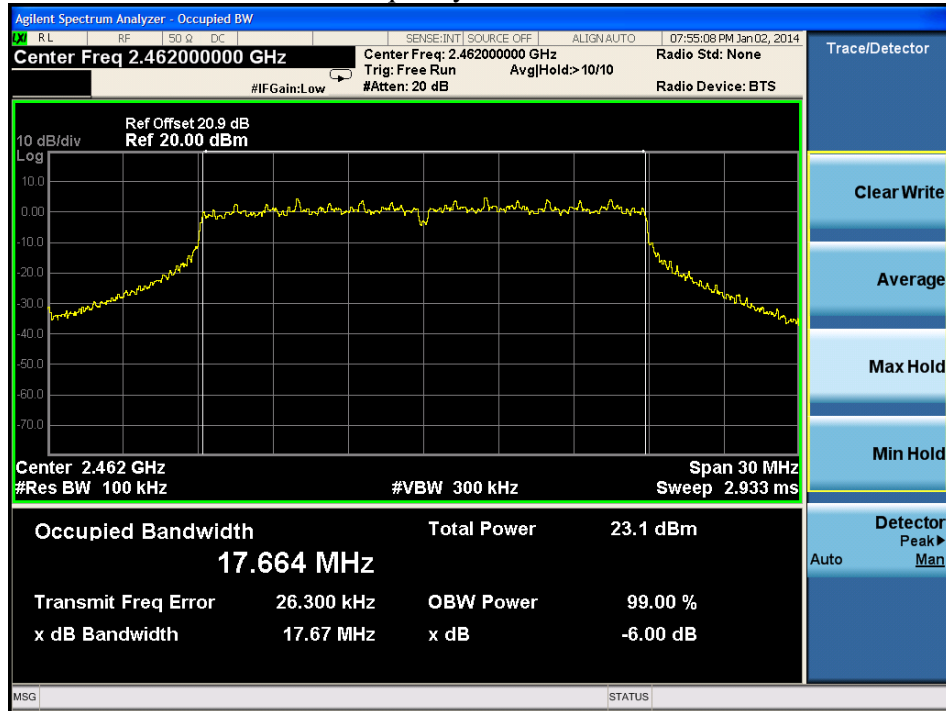
Frequency L – Chain 1



### Frequency M – Chain 1



### Frequency H – Chain 1

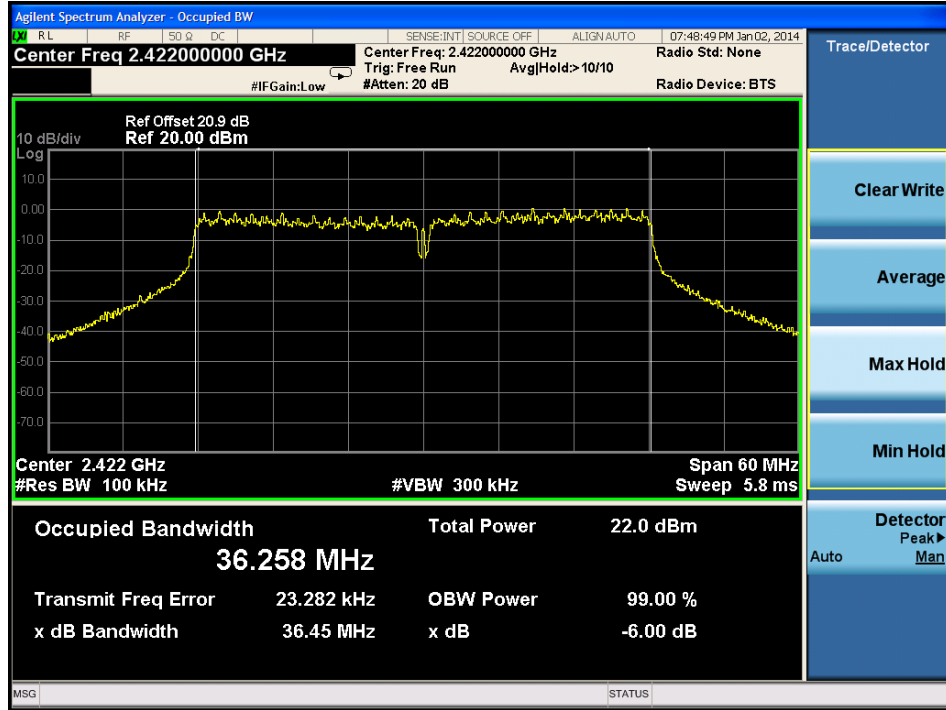




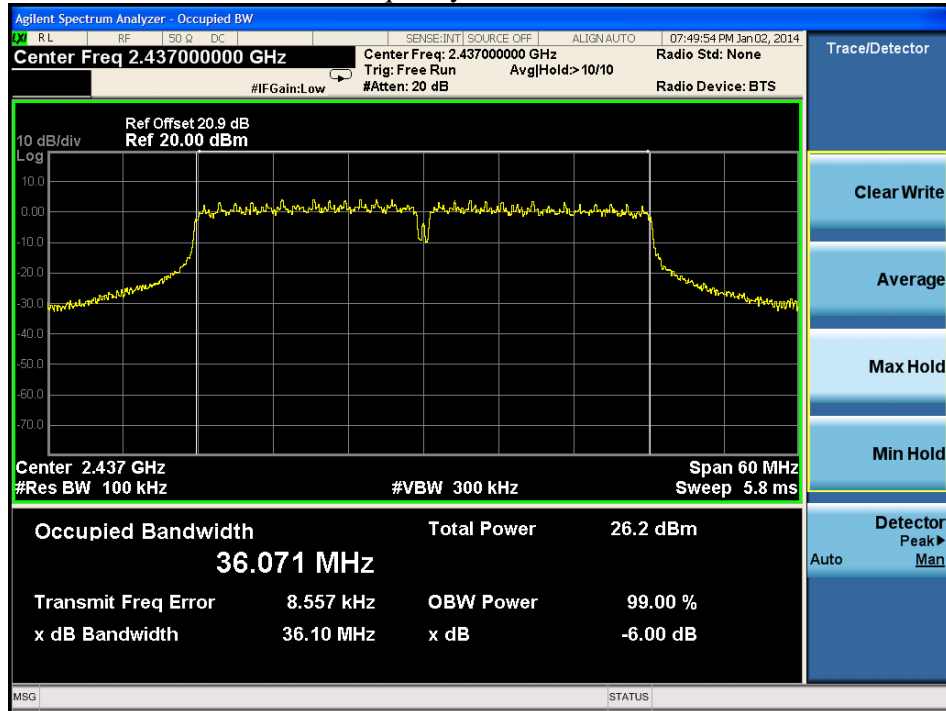
| Mode                | CH | Bandwidth (MHz) | Limit (MHz) |
|---------------------|----|-----------------|-------------|
| 802.11n40 – chain 0 | L  | 36.45           | ≥0.5        |
|                     | M  | 36.10           |             |
|                     | H  | 36.50           |             |

| Mode                | CH | Bandwidth (MHz) | Limit (MHz) |
|---------------------|----|-----------------|-------------|
| 802.11n40 – chain 1 | L  | 36.35           | ≥0.5        |
|                     | M  | 35.94           |             |
|                     | H  | 36.45           |             |

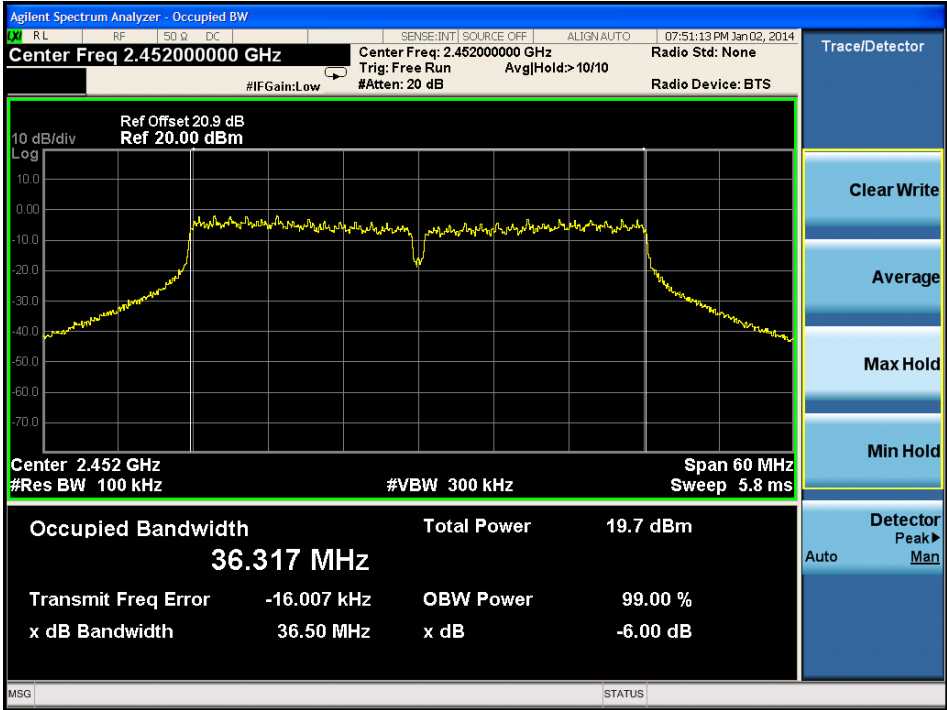
Frequency L – Chain 0



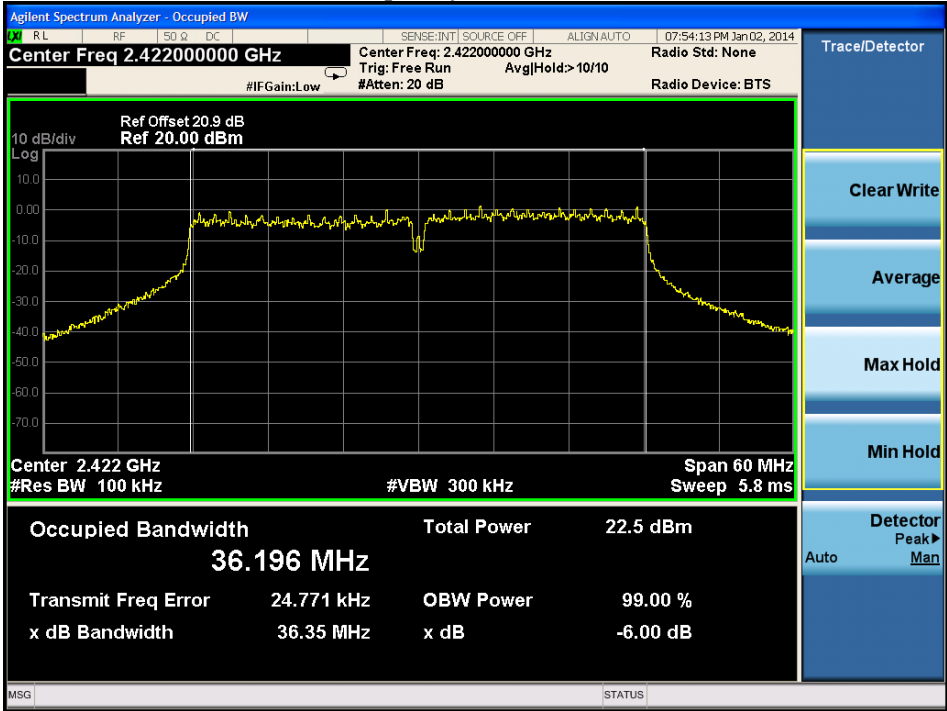
Frequency M – Chain 0



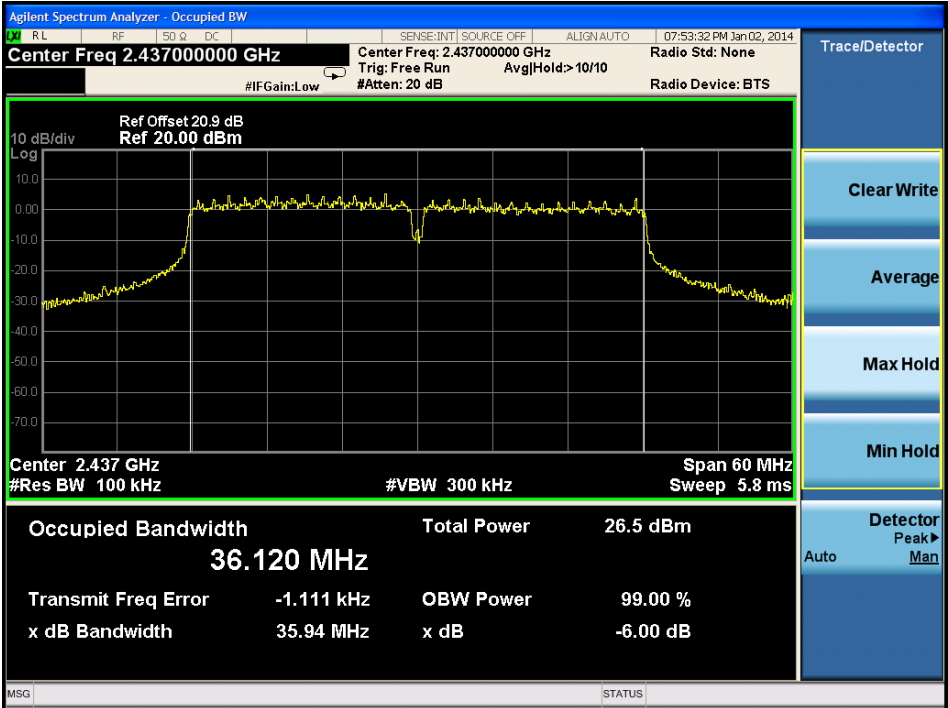
Frequency H – Chain 0



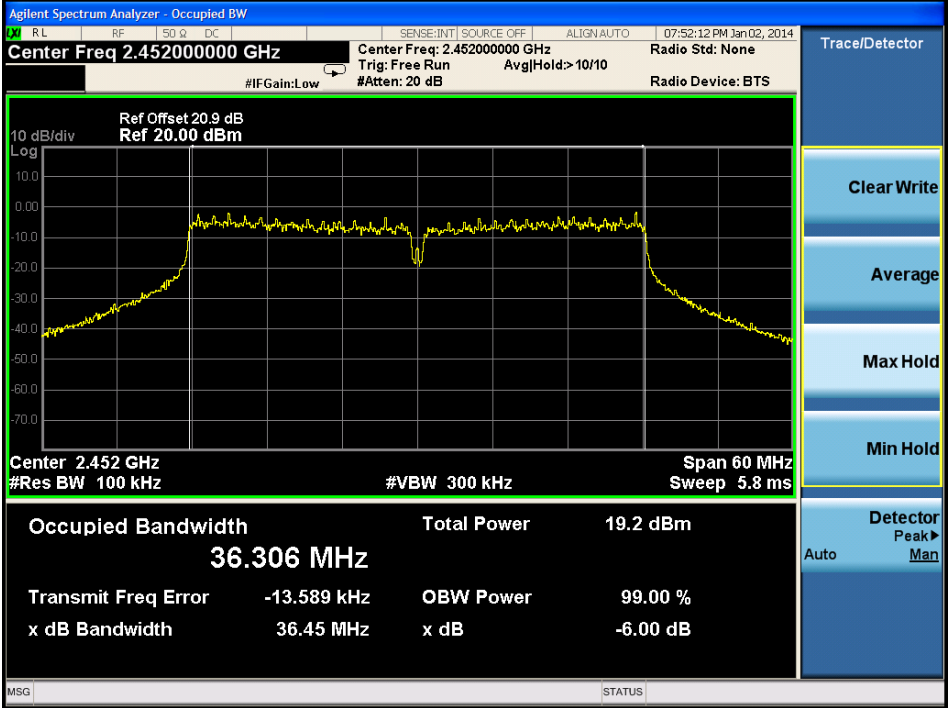
Frequency L – Chain 1



Frequency M – Chain 1



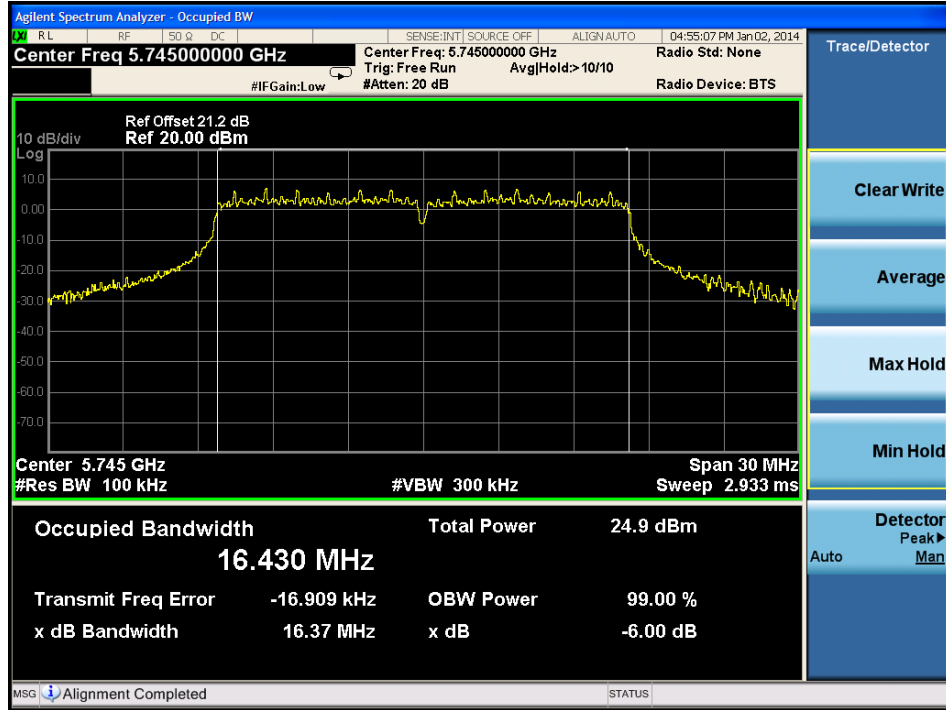
Frequency H – Chain 1



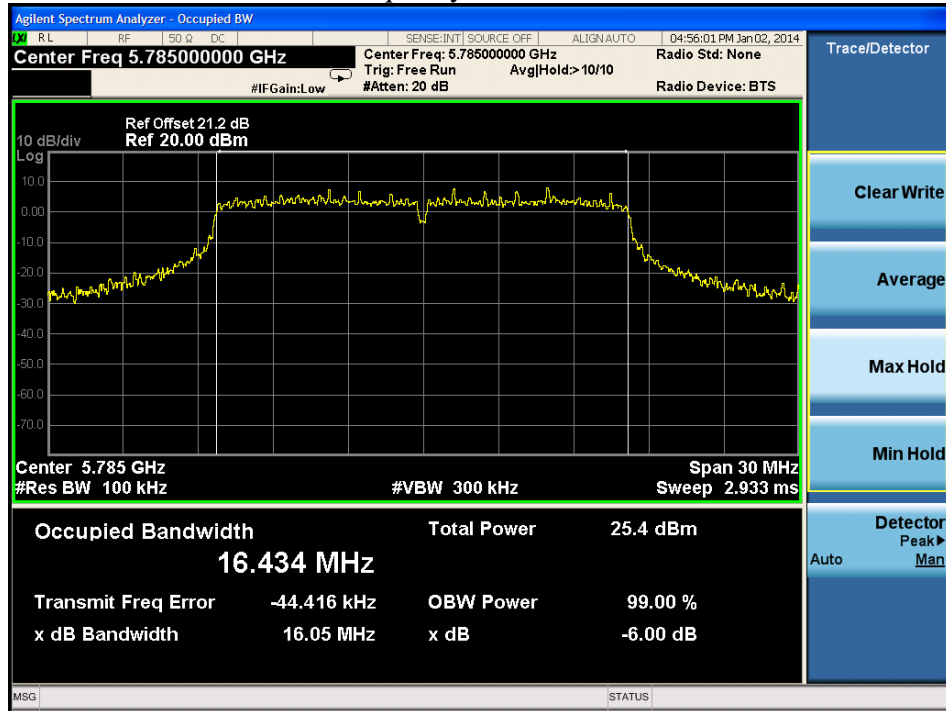
| Mode              | CH | Bandwidth (MHz) | Limit (MHz) |
|-------------------|----|-----------------|-------------|
| 802.11a – chain 0 | L  | 16.37           | ≥0.5        |
|                   | M  | 16.05           |             |
|                   | H  | 16.37           |             |

| Mode              | CH | Bandwidth (MHz) | Limit (MHz) |
|-------------------|----|-----------------|-------------|
| 802.11a – chain 1 | L  | 16.36           | ≥0.5        |
|                   | M  | 16.36           |             |
|                   | H  | 16.34           |             |

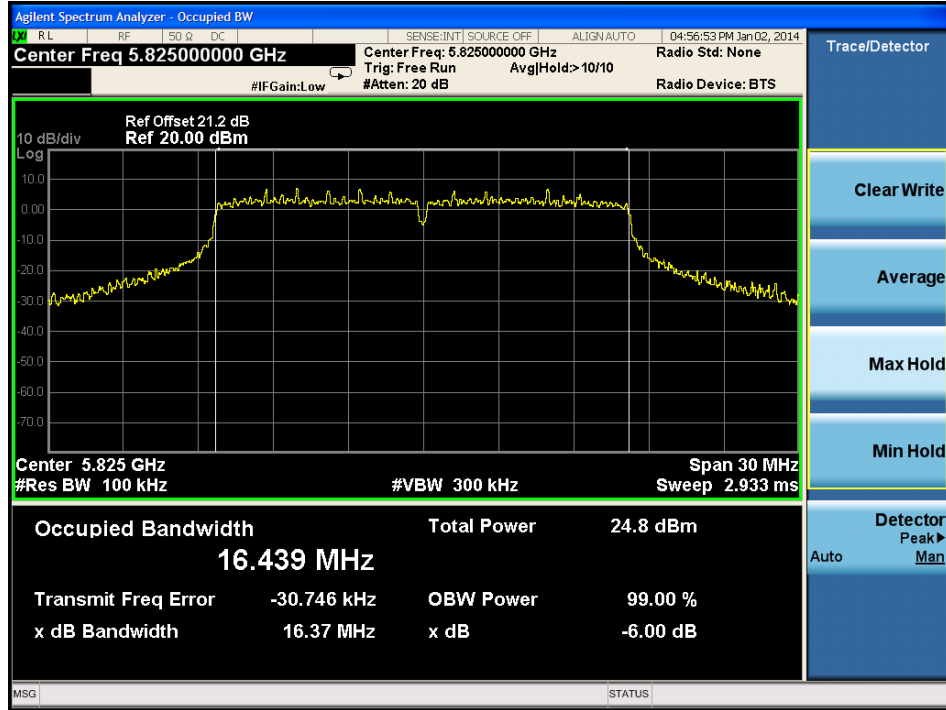
Frequency L – Chain 0



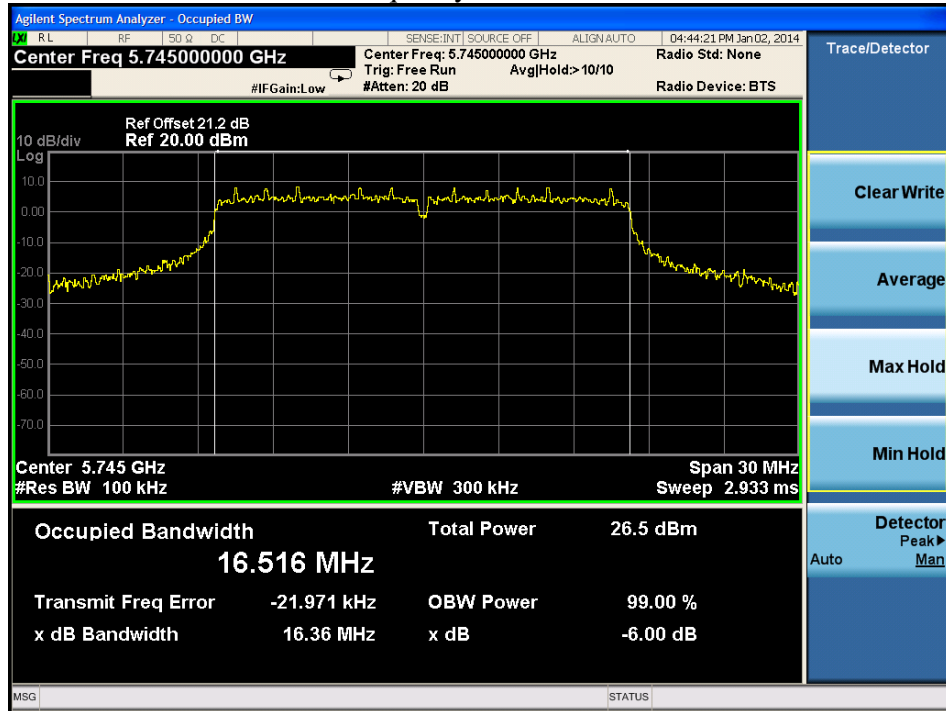
Frequency M – Chain 0



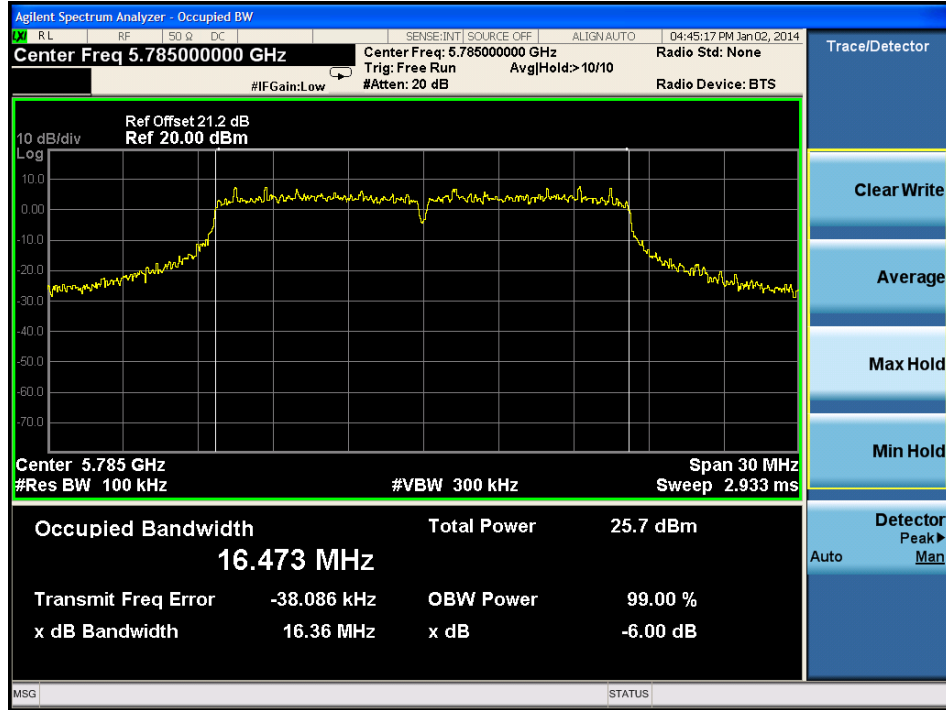
Frequency H – Chain 0



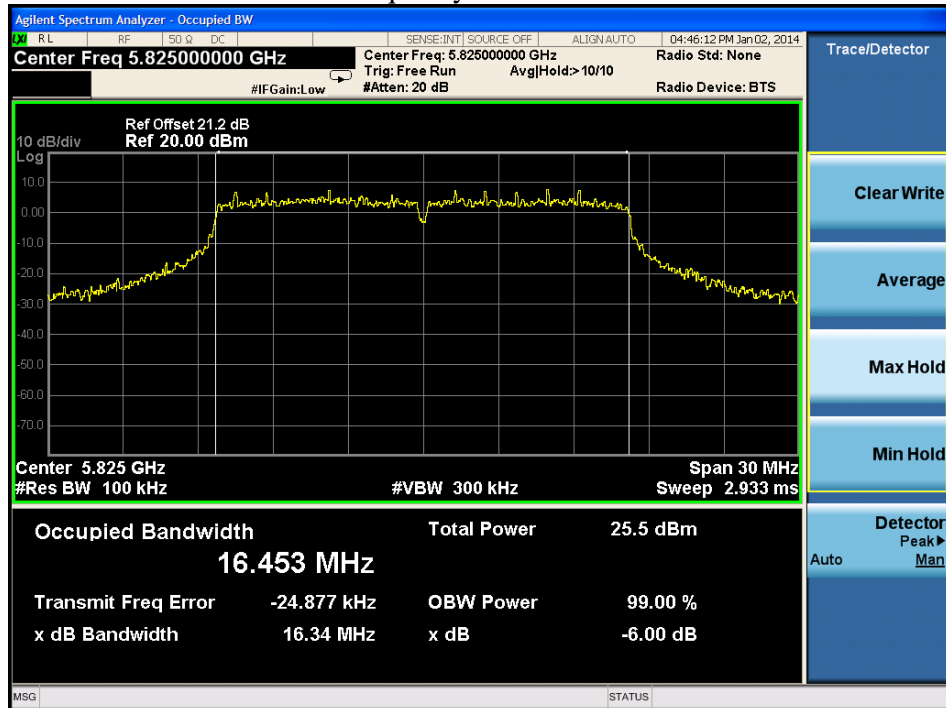
Frequency L – Chain 1



Frequency M – Chain 1



Frequency H – Chain 1

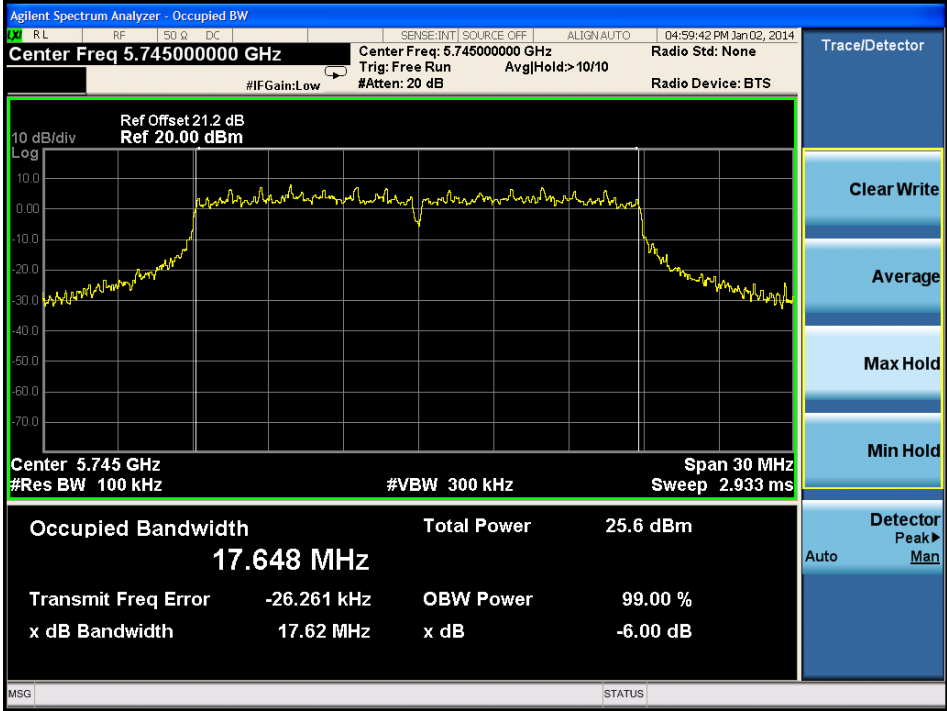




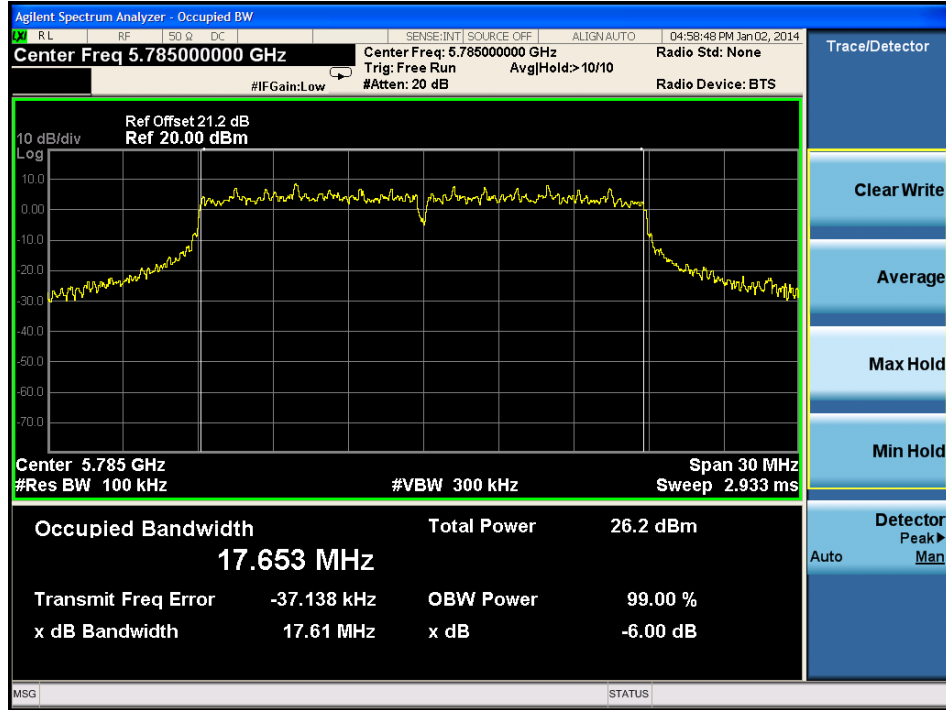
| Mode                | CH | Bandwidth (MHz) | Limit (MHz) |
|---------------------|----|-----------------|-------------|
| 802.11n20 – chain 0 | L  | 17.62           | ≥0.5        |
|                     | M  | 17.61           |             |
|                     | H  | 17.58           |             |

| Mode                | CH | Bandwidth (MHz) | Limit (MHz) |
|---------------------|----|-----------------|-------------|
| 802.11n20 – chain 1 | L  | 17.60           | ≥0.5        |
|                     | M  | 17.62           |             |
|                     | H  | 17.64           |             |

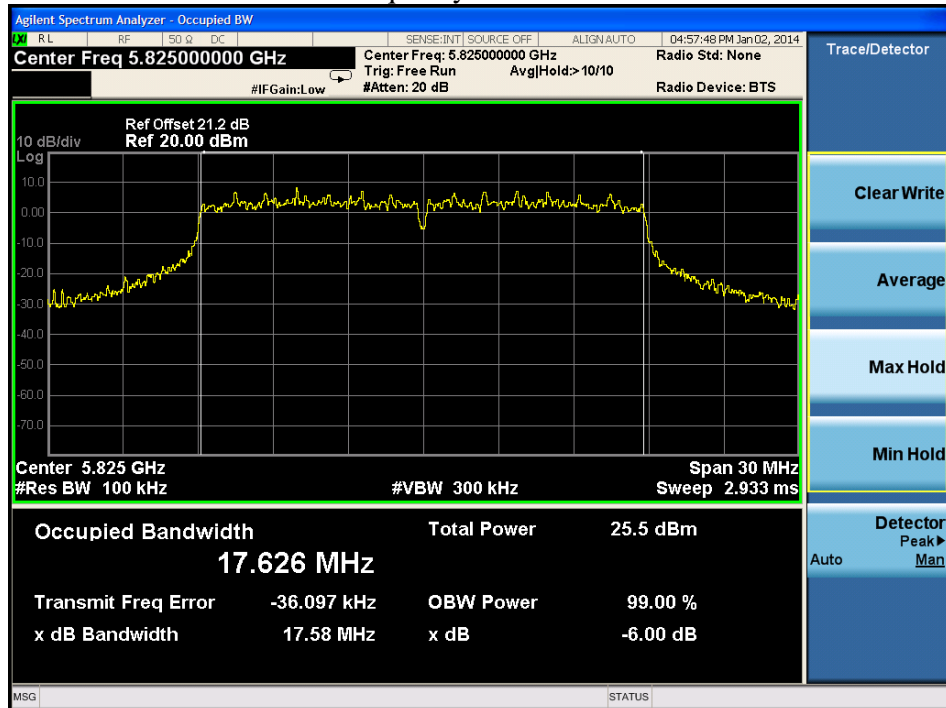
Frequency L – Chain 0



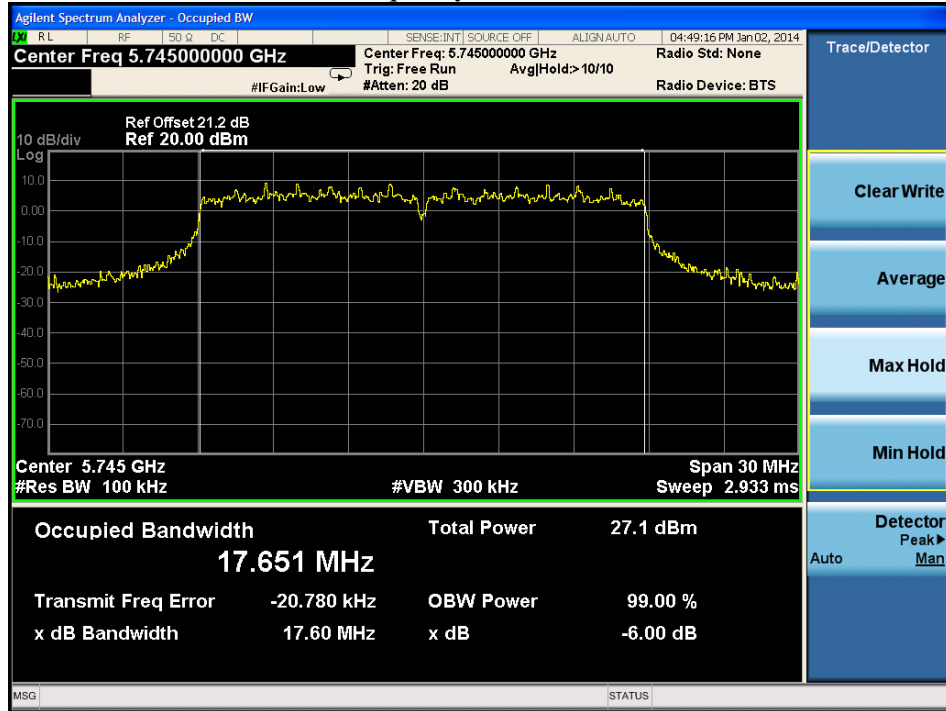
Frequency M – Chain 0



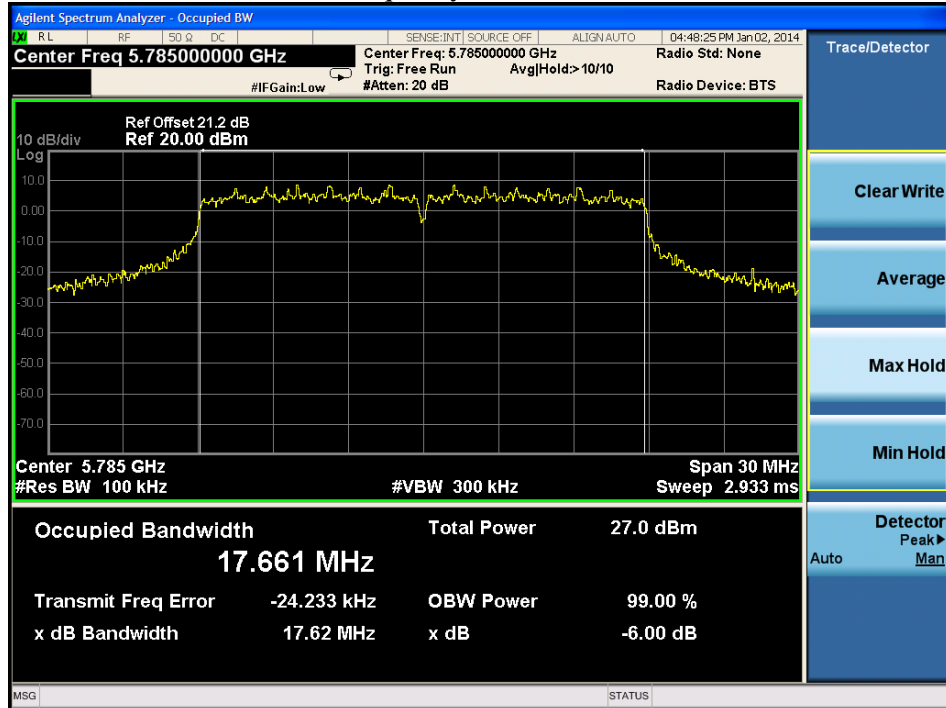
Frequency H – Chain 0



Frequency L – Chain 1

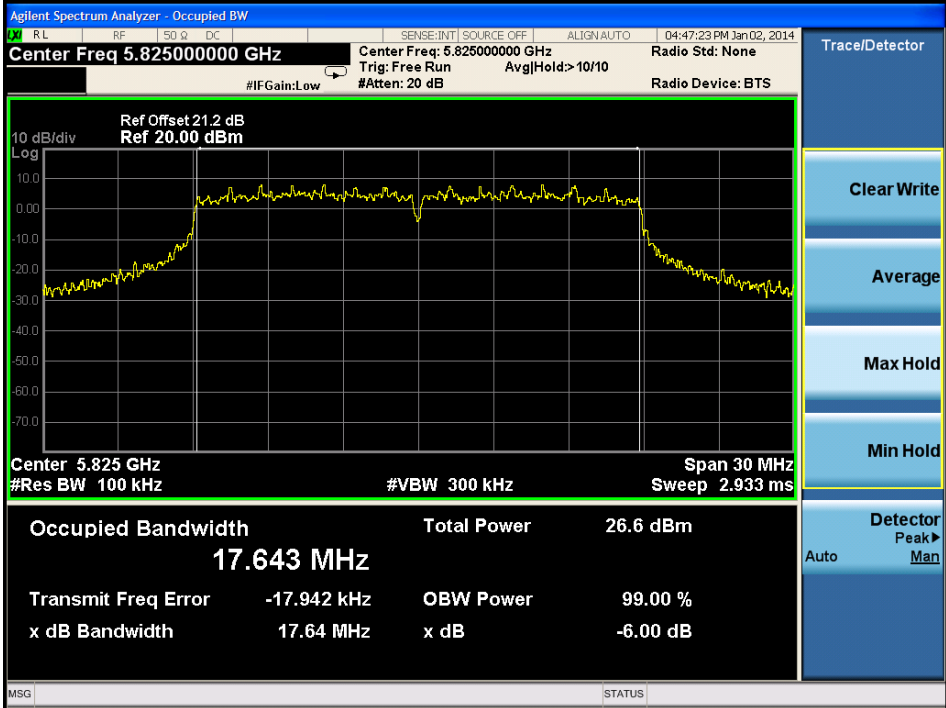


Frequency M – Chain 1





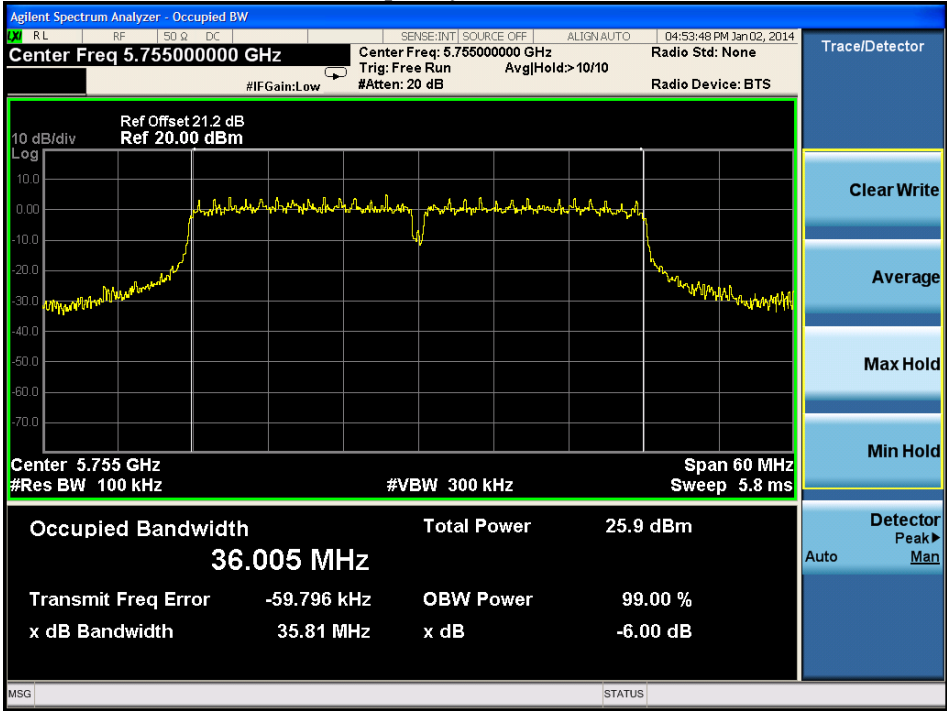
Frequency H – Chain 1



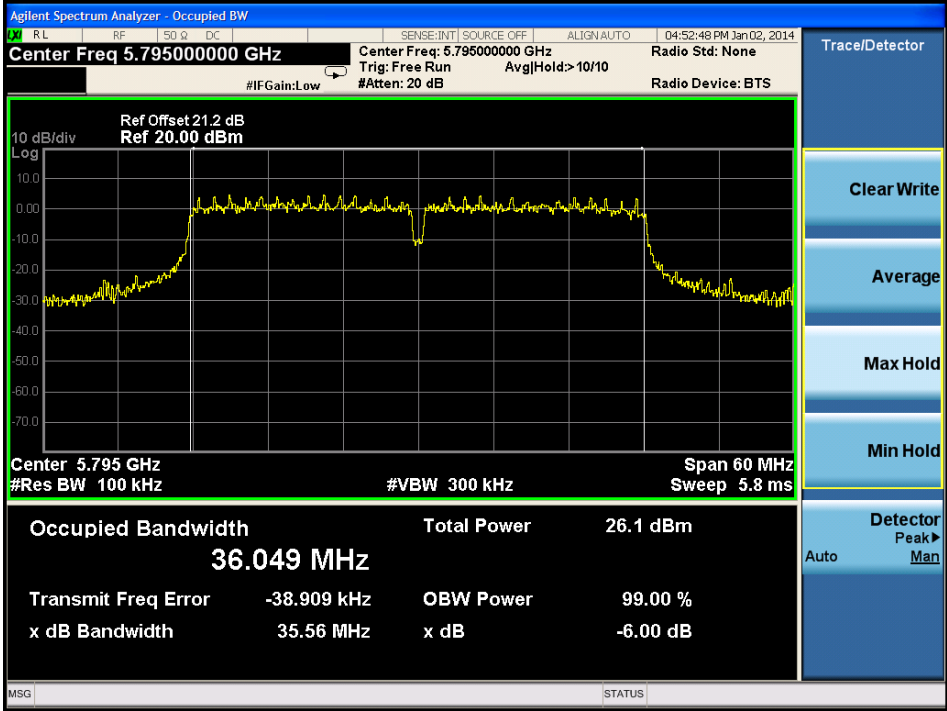
| Mode                | CH | Bandwidth (MHz) | Limit (MHz) |
|---------------------|----|-----------------|-------------|
| 802.11n40 – chain 0 | L  | 35.81           | ≥0.5        |
|                     | H  | 35.56           |             |

| Mode                | CH | Bandwidth (MHz) | Limit (MHz) |
|---------------------|----|-----------------|-------------|
| 802.11n40 – chain 1 | L  | 36.13           | ≥0.5        |
|                     | H  | 36.13           |             |

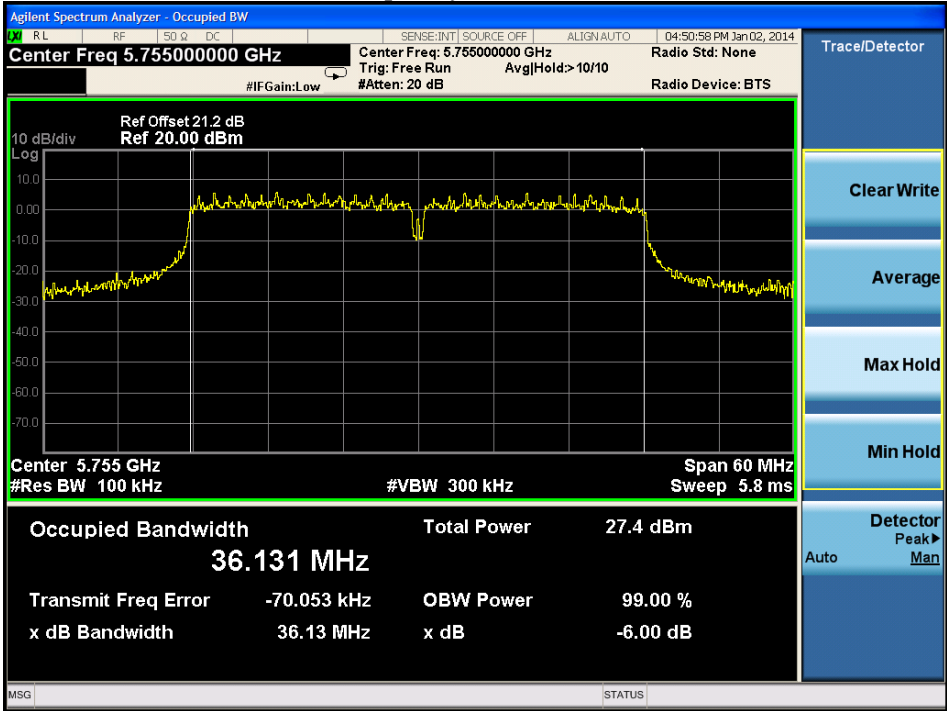
Frequency L – Chain 0



Frequency H – Chain 0

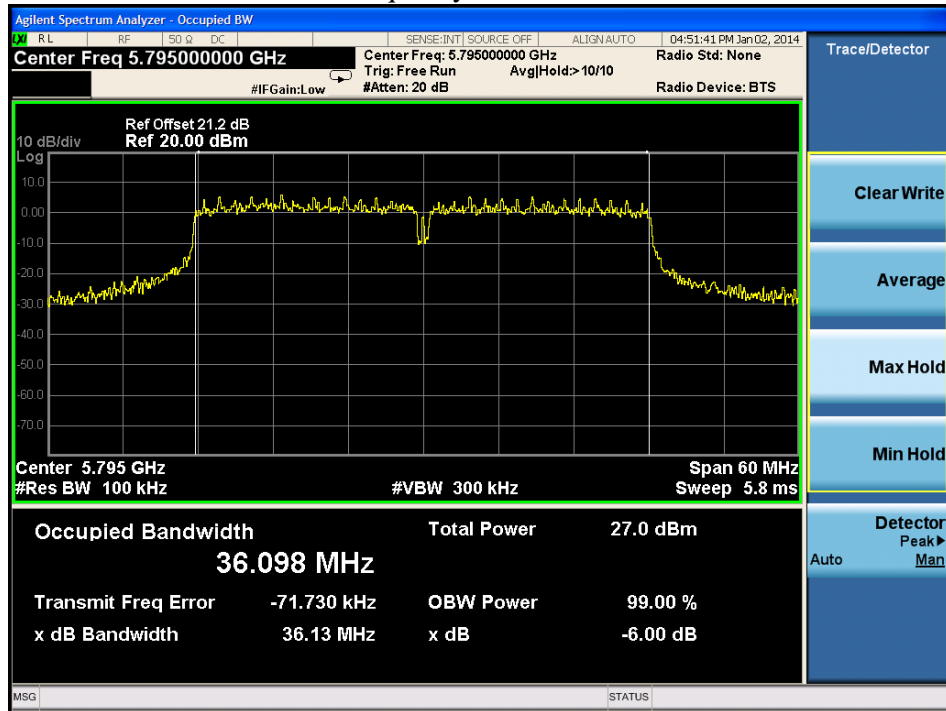


Frequency L – Chain 1





### Frequency H – Chain 1



#### 4. Maximum peak output power

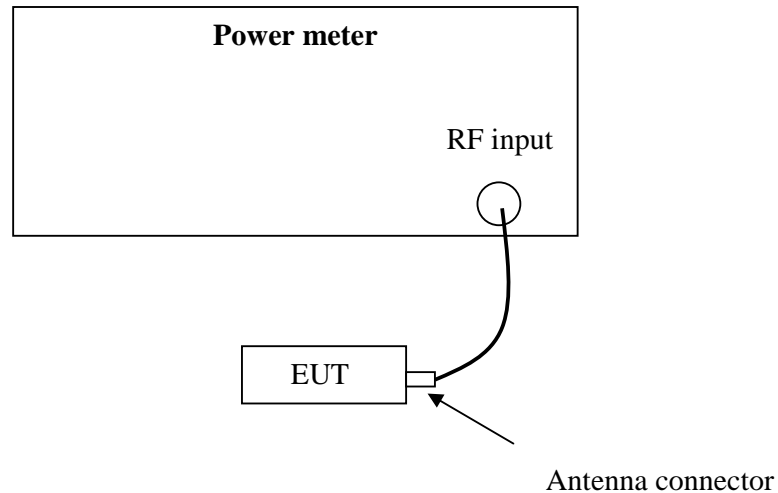
Test result: Pass

##### 4.1 Test limit

- For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt
- For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts
- For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

If the transmitting antenna of directional gain greater than 6dBi is used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

##### 4.2 Test Configuration



##### 4.3 Test procedure and test setup

The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance v03r01” for compliance to FCC 47CFR 15.247 requirements (clause 9.1.3).



#### 4.4 Test protocol

Temperature : 25 °C

Relative Humidity : 55 %

| Mode       | Freq. (MHz) | Cable loss | Reading (dBm) |        | Total Peak power (dBm) | Limit (dBm) | Margin (dB) |
|------------|-------------|------------|---------------|--------|------------------------|-------------|-------------|
|            |             |            | Port 0        | Port 1 |                        |             |             |
| 802. 11b   | 2412        | 20.9       | 20.11         | 19.65  | 22.90                  | 30.00       | 7.10        |
|            | 2437        | 20.9       | 20.64         | 20.62  | 23.64                  | 30.00       | 6.36        |
|            | 2462        | 20.9       | 20.85         | 20.43  | 23.66                  | 30.00       | 6.34        |
| 802. 11g   | 2412        | 20.9       | 24.17         | 24.05  | 27.12                  | 30.00       | 2.88        |
|            | 2437        | 20.9       | 26.14         | 25.95  | 29.06                  | 30.00       | 0.94        |
|            | 2462        | 20.9       | 24.24         | 24.07  | 27.17                  | 30.00       | 2.83        |
| 802. 11n20 | 2412        | 20.9       | 24.45         | 24.33  | 27.40                  | 30.00       | 2.60        |
|            | 2437        | 20.9       | 25.90         | 25.86  | 28.89                  | 30.00       | 1.11        |
|            | 2462        | 20.9       | 24.72         | 24.46  | 27.60                  | 30.00       | 2.40        |
| 802. 11n40 | 2422        | 20.9       | 23.62         | 23.48  | 26.56                  | 30.00       | 3.44        |
|            | 2437        | 20.9       | 25.87         | 25.80  | 28.85                  | 30.00       | 1.15        |
|            | 2452        | 20.9       | 20.94         | 20.78  | 23.87                  | 30.00       | 6.13        |

| Mode       | Freq. (MHz) | Cable loss | Reading (dBm) |        | Total Peak power (dBm) | Limit (dBm) | Margin (dB) |
|------------|-------------|------------|---------------|--------|------------------------|-------------|-------------|
|            |             |            | Port 0        | Port 1 |                        |             |             |
| 802. 11a   | 5745        | 21.2       | 25.08         | 25.48  | 28.29                  | 30.00       | 1.71        |
|            | 5785        | 21.2       | 24.93         | 25.31  | 28.13                  | 30.00       | 1.87        |
|            | 5825        | 21.2       | 24.92         | 25.01  | 27.98                  | 30.00       | 2.02        |
| 802. 11n20 | 5745        | 21.2       | 24.89         | 25.15  | 28.03                  | 30.00       | 1.97        |
|            | 5785        | 21.2       | 25.15         | 25.41  | 28.29                  | 30.00       | 1.71        |
|            | 5825        | 21.2       | 24.84         | 25.12  | 27.99                  | 30.00       | 2.01        |
| 802. 11n40 | 5755        | 21.2       | 25.31         | 25.43  | 28.38                  | 30.00       | 1.62        |
|            | 5795        | 21.2       | 25.34         | 25.28  | 28.32                  | 30.00       | 1.68        |

***The maximum EIRP of the EUT = 29.06dBm + 3.9dBi = 32.96dBm = 1857.80mW which is lower than the EIRP limit of RSS-210.***

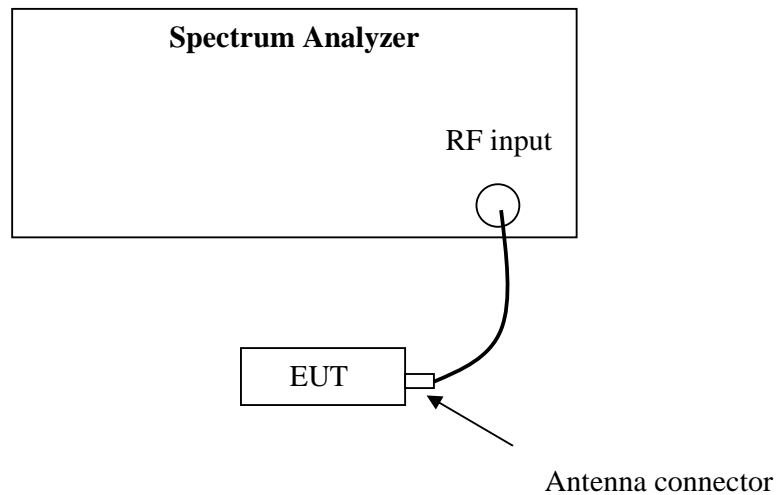
## 5. Power spectrum density

Test result: Pass

### 5.1 Test limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

### 5.2 Test Configuration



### 5.3 Test procedure and test setup

The power output per FCC §15.247(e) was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance v03r01” (clause 10.2) for compliance to FCC 47CFR 15.247 requirements.



5.4 Test Protocol

Temperature : 25 °C

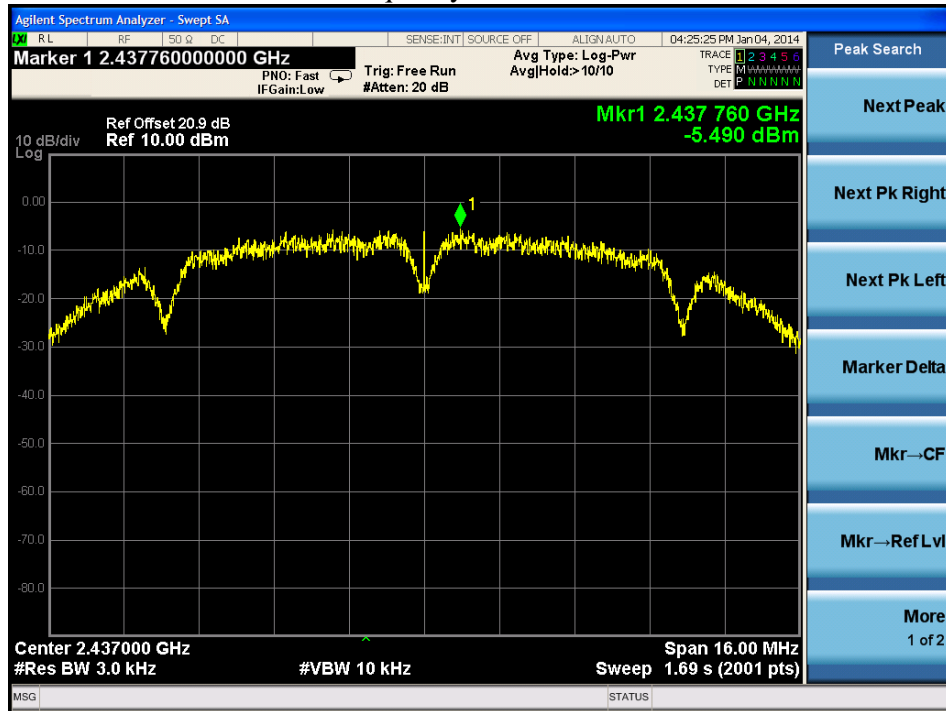
Relative Humidity: 55 %

| Mode    | CH | Cable loss (dB) | PSD (dBm/3kHz) |        | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) |
|---------|----|-----------------|----------------|--------|----------------------|------------------|
|         |    |                 | Port 0         | Port 1 |                      |                  |
| 802.11b | L  | 20.9            | -5.845         | -5.954 | -2.890               | ≤8.00            |
|         | M  | 20.9            | -5.490         | -5.532 | -2.500               |                  |
|         | H  | 20.9            | -5.081         | -5.565 | -2.310               |                  |

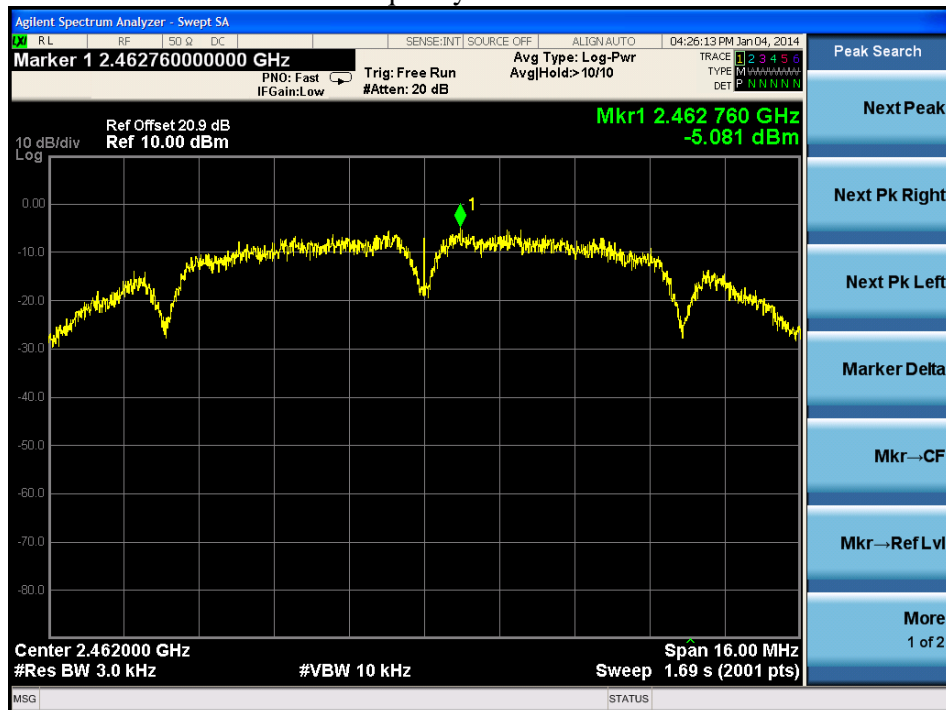
Frequency L – Chain 0



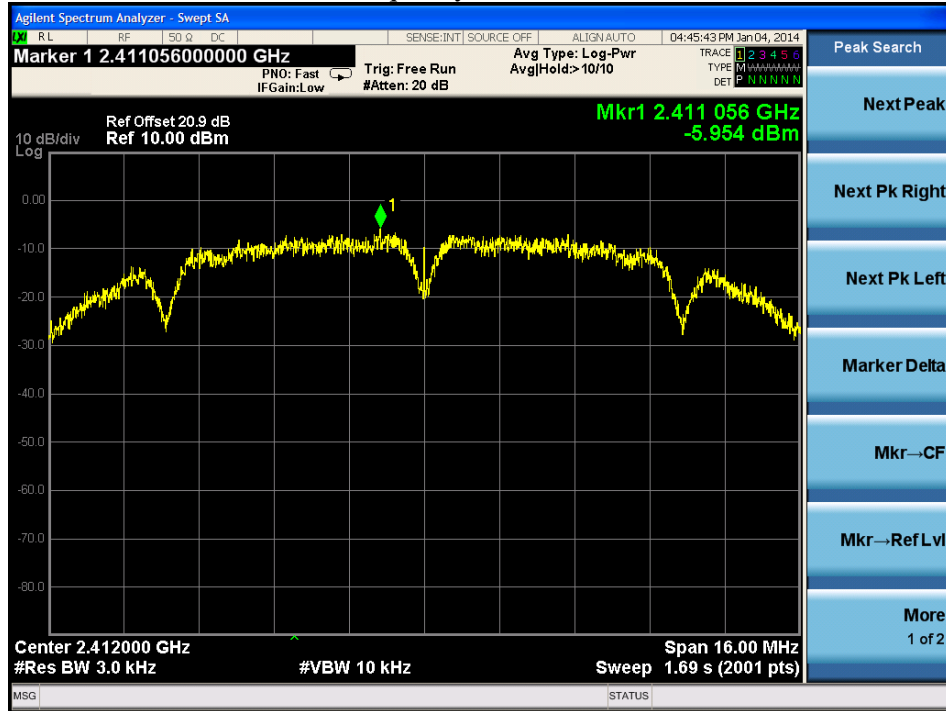
Frequency M – Chain 0



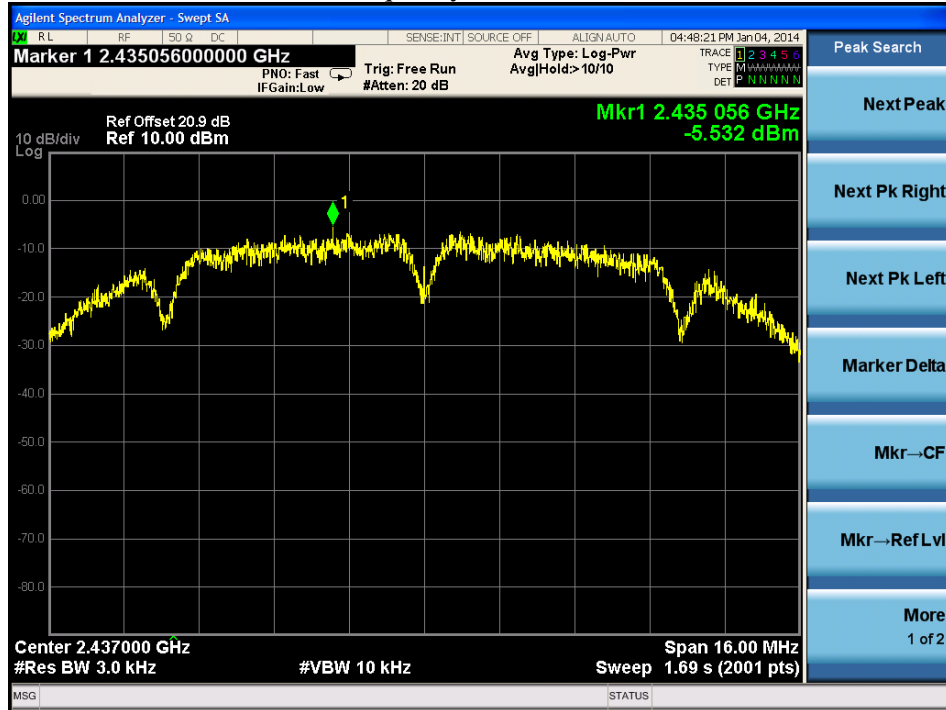
Frequency H – Chain 0



Frequency L – Chain 1



Frequency M – Chain 1





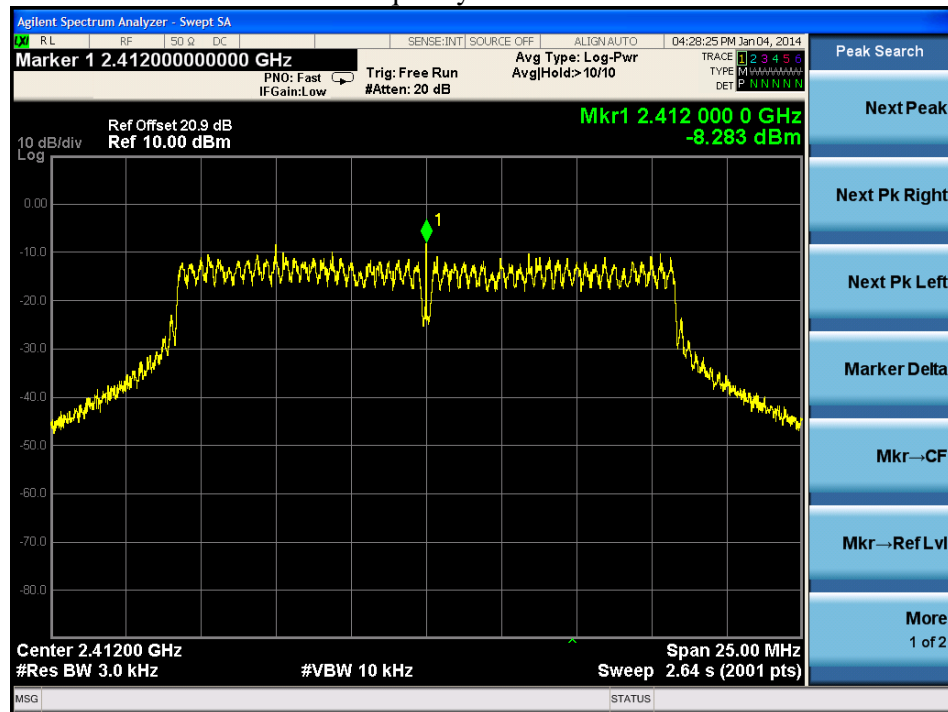
Frequency H – Chain 1



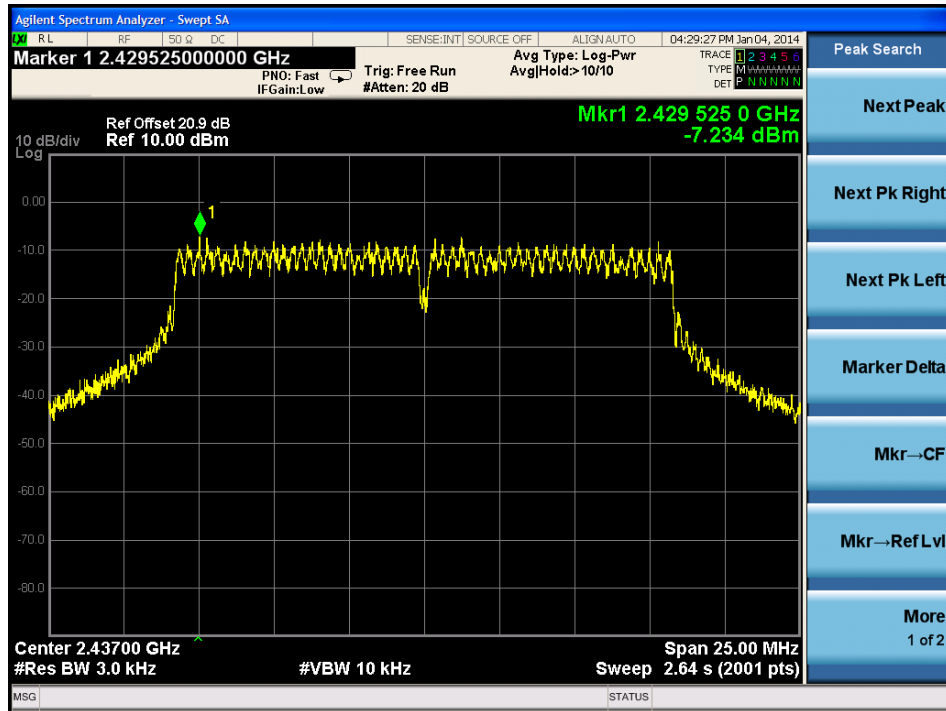


| Mode    | CH | Cable loss (dB) | PSD (dBm/3kHz) |         | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) |
|---------|----|-----------------|----------------|---------|----------------------|------------------|
|         |    |                 | Port 0         | Port 1  |                      |                  |
| 802.11g | L  | 20.9            | -8.283         | -10.083 | -6.080               | ≤8.00            |
|         | M  | 20.9            | -7.234         | -5.608  | -3.340               |                  |
|         | H  | 20.9            | -9.604         | -8.998  | -6.280               |                  |

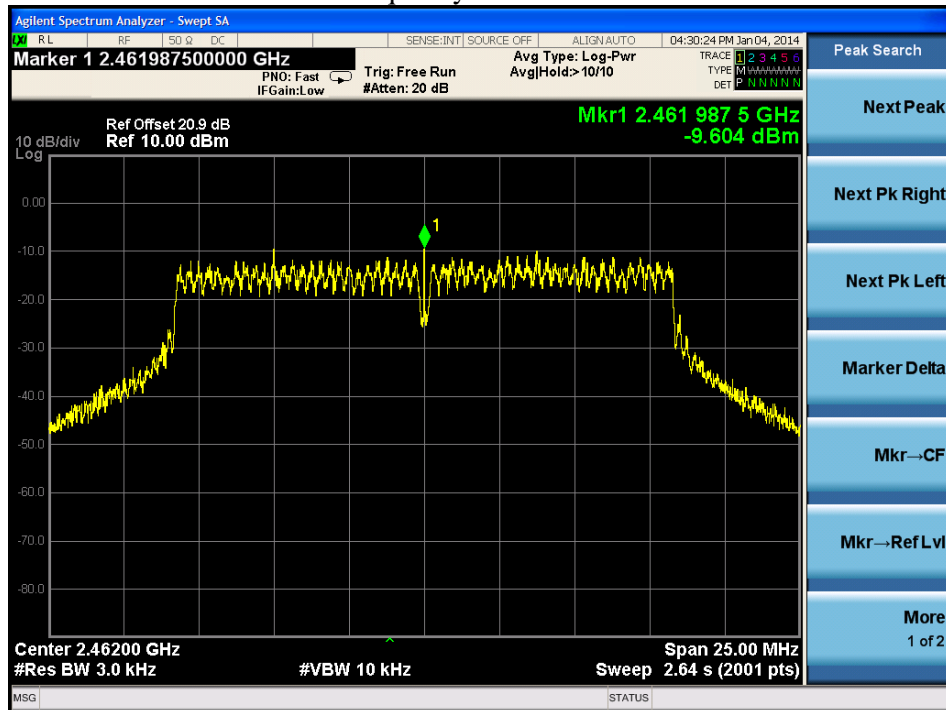
Frequency L – Chain 0



Frequency M – Chain 0

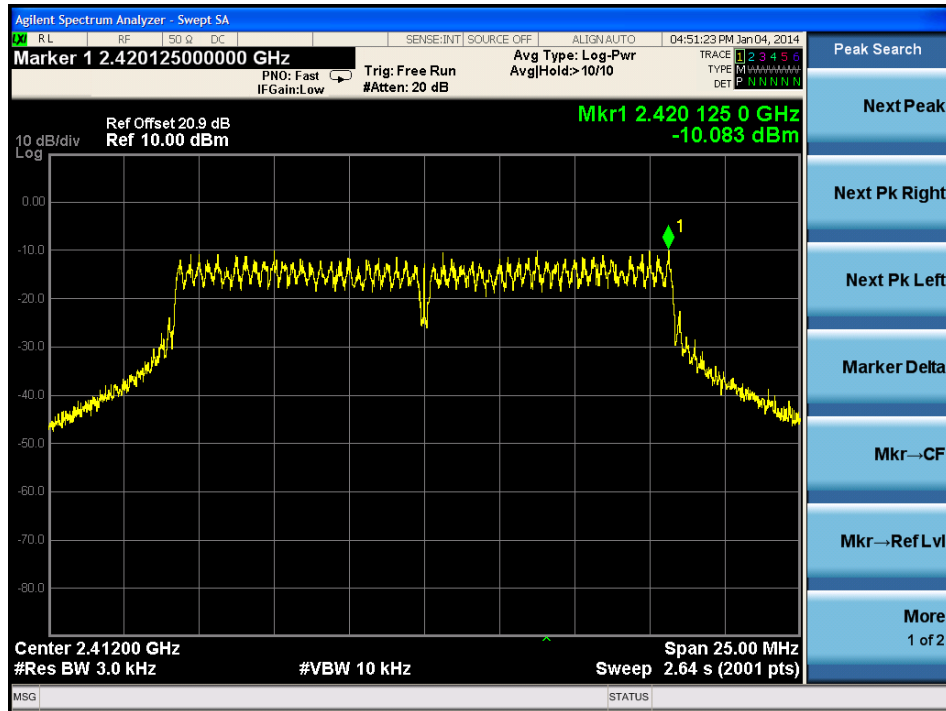


Frequency H – Chain 0

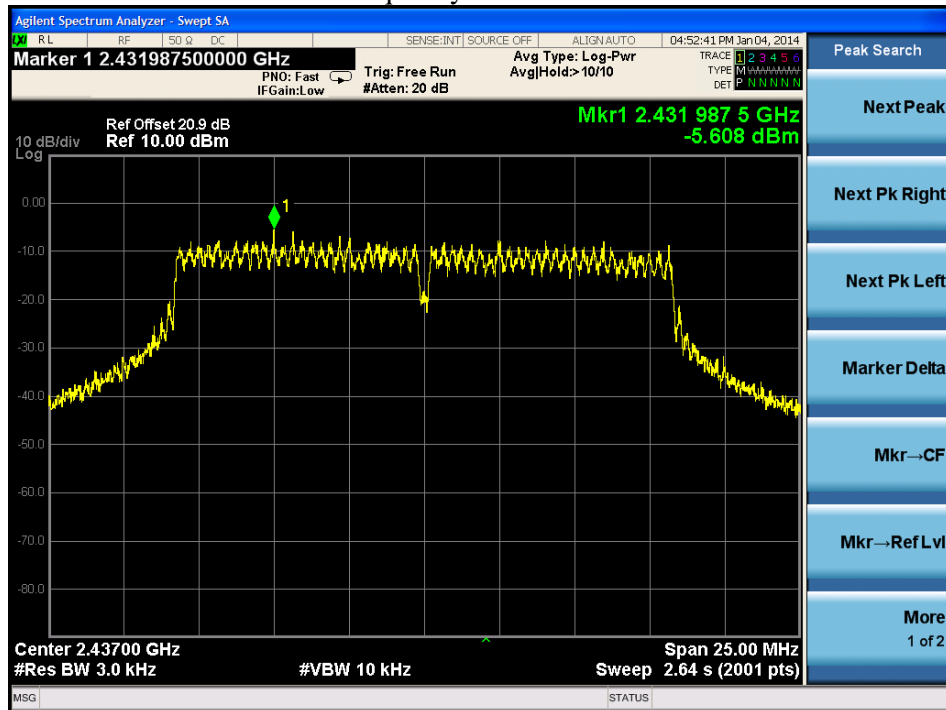


Frequency L – Chain 1

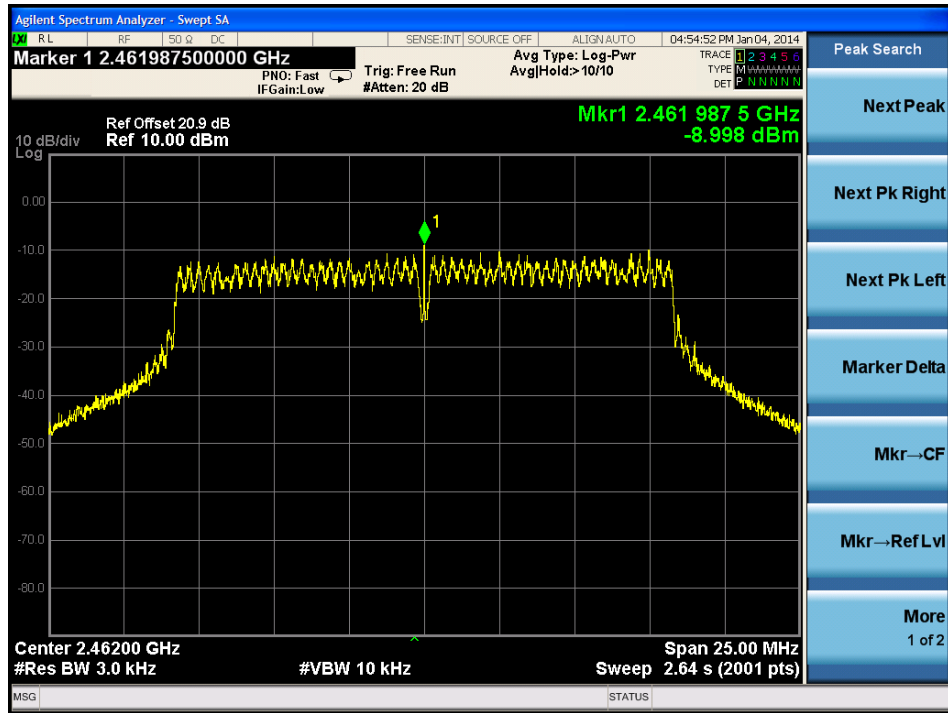




Frequency M – Chain 1



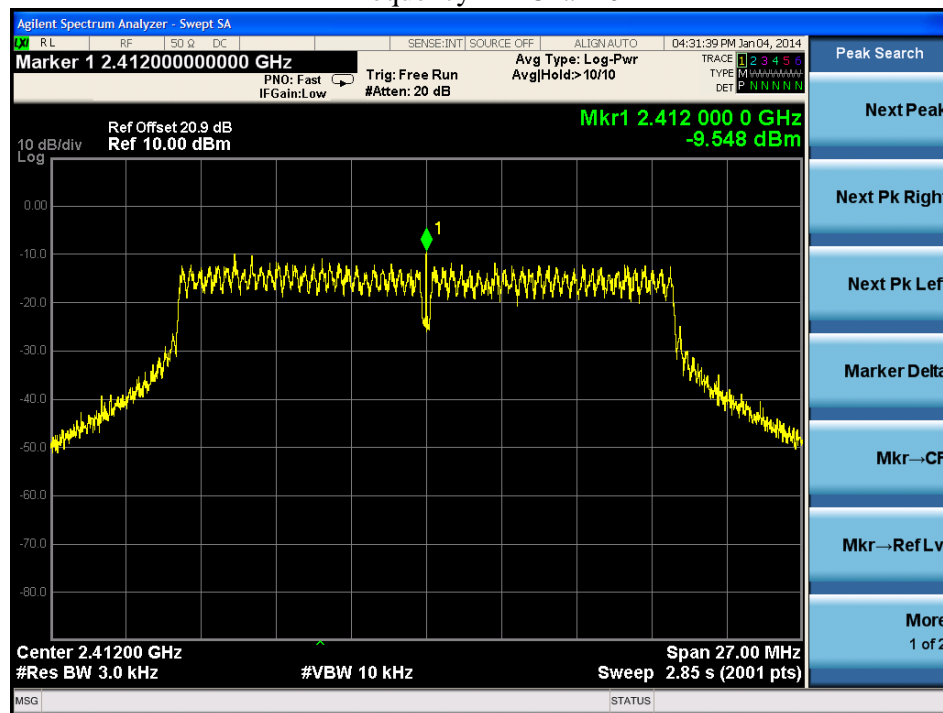
Frequency H – Chain 1



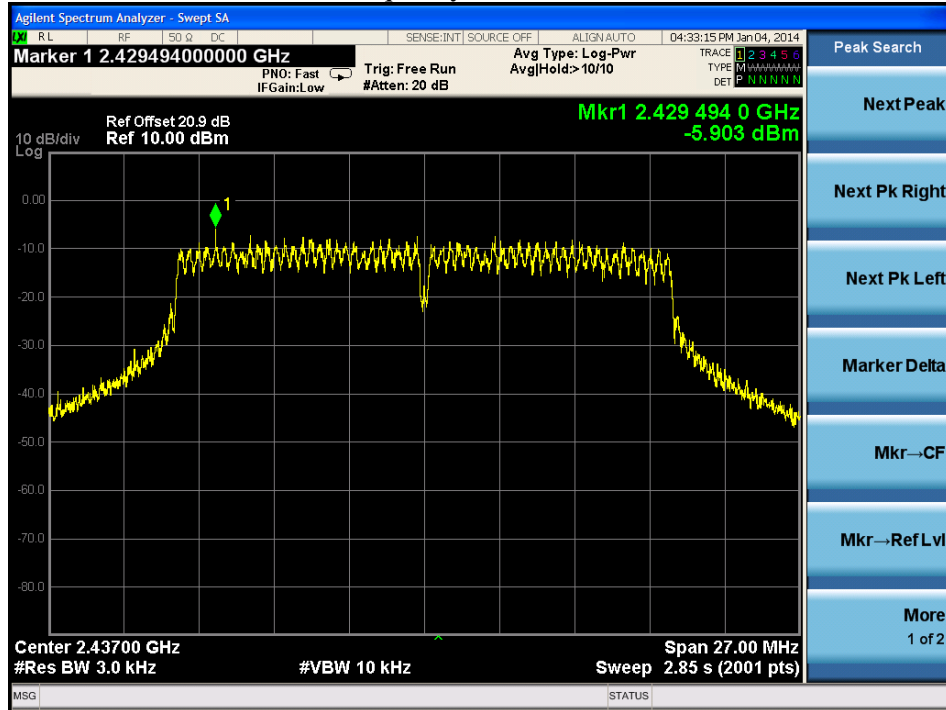


| Mode          | CH | Cable loss (dB) | PSD (dBm/3kHz) |         | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) |
|---------------|----|-----------------|----------------|---------|----------------------|------------------|
|               |    |                 | Port 0         | Port 1  |                      |                  |
| 802.11n<br>20 | L  | 20.9            | -9.548         | -10.571 | -7.020               | ≤8.00            |
|               | M  | 20.9            | -5.903         | -6.702  | -3.270               |                  |
|               | H  | 20.9            | -10.708        | -9.564  | -7.090               |                  |

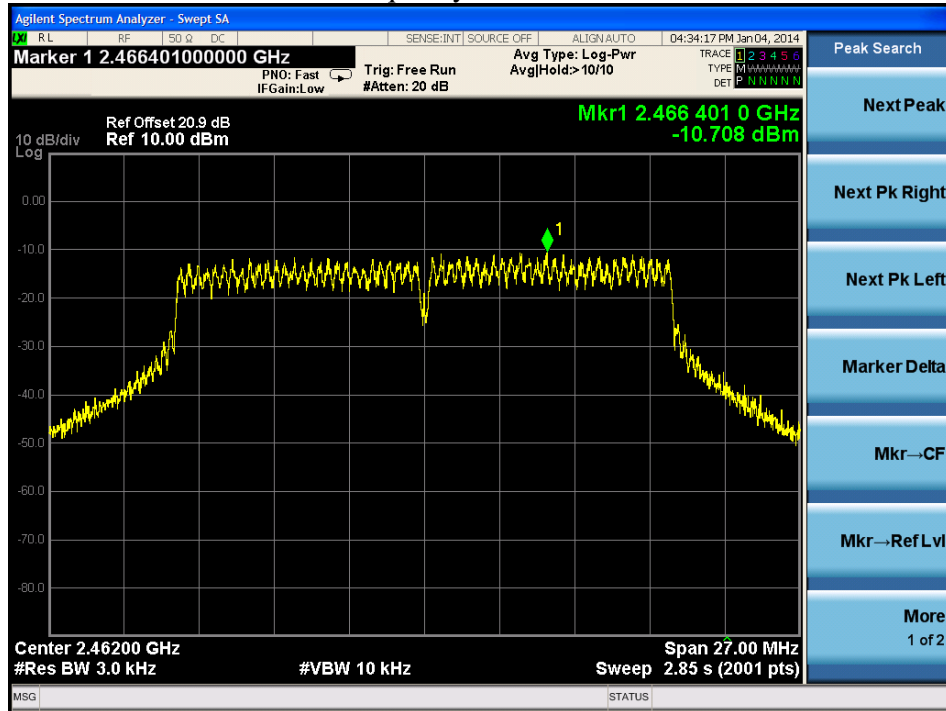
Frequency L – Chain 0



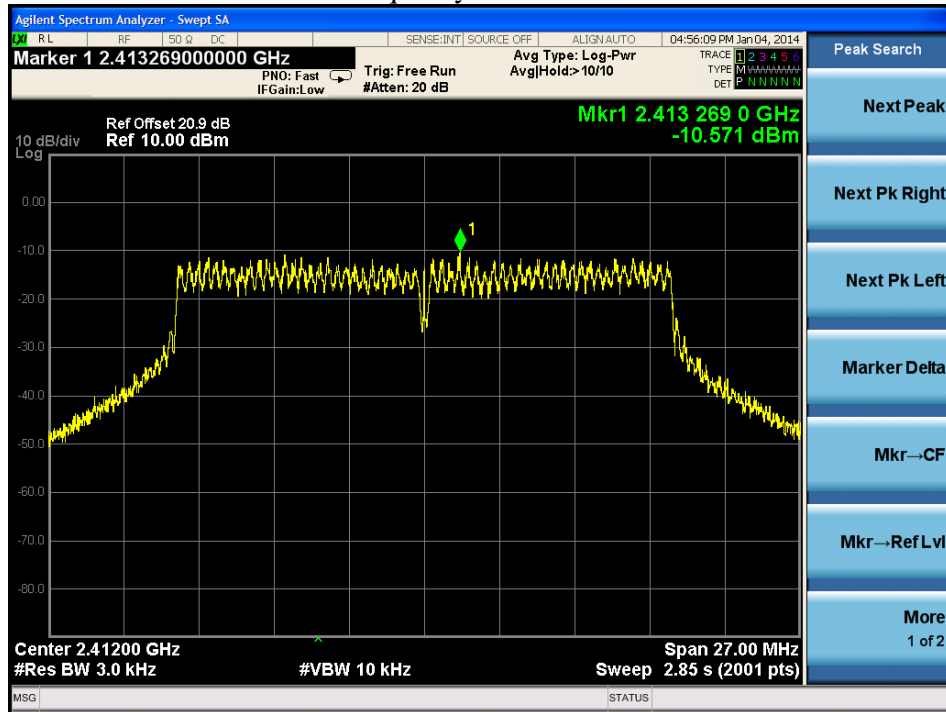
Frequency M – Chain 0



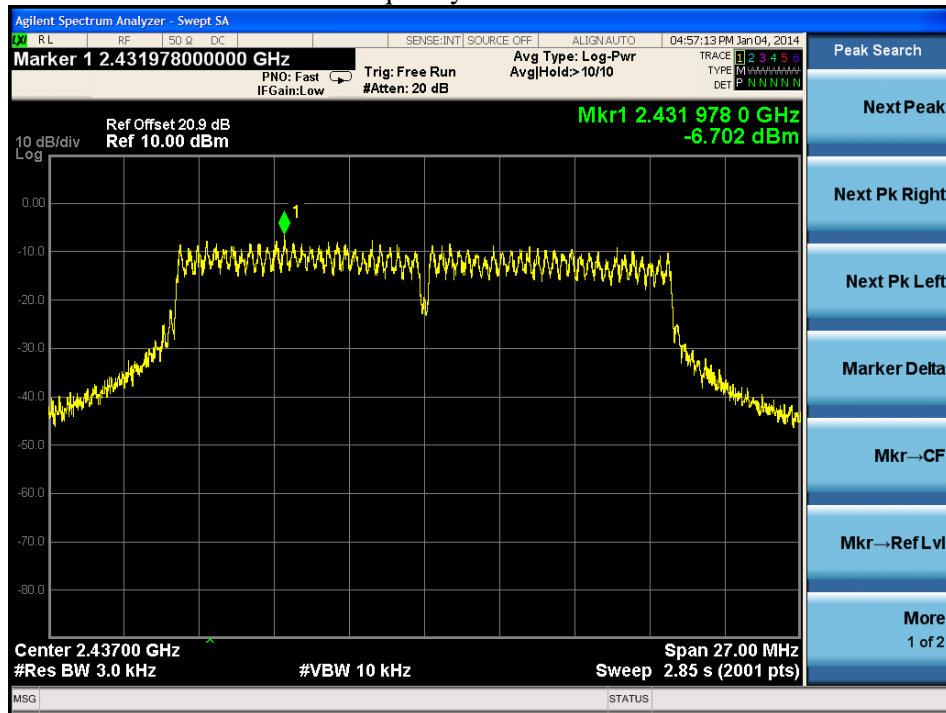
Frequency H – Chain 0



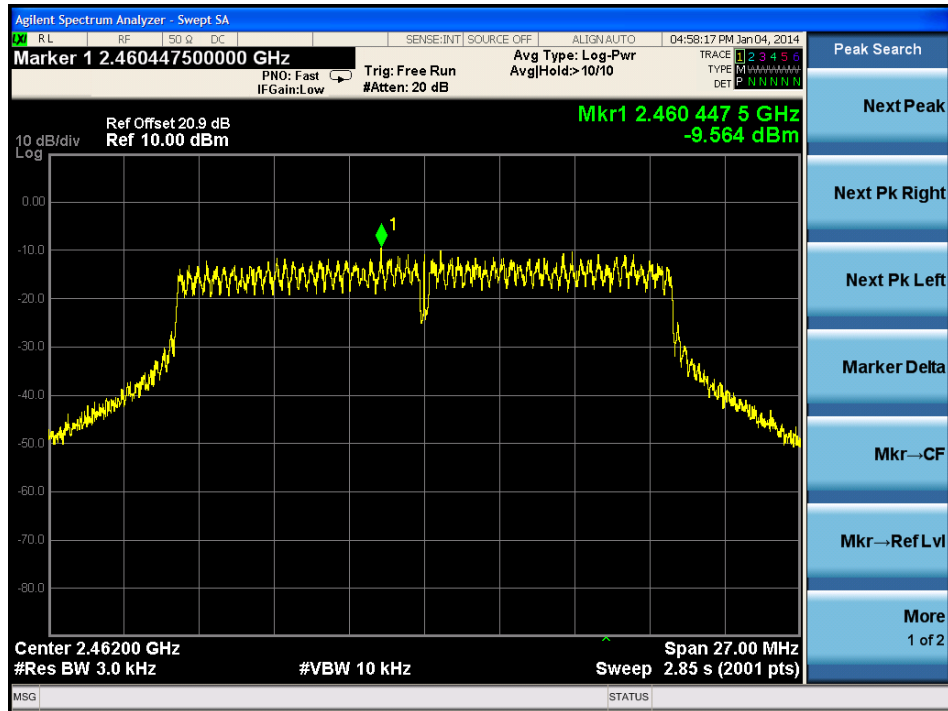
Frequency L – Chain 1



Frequency M – Chain 1



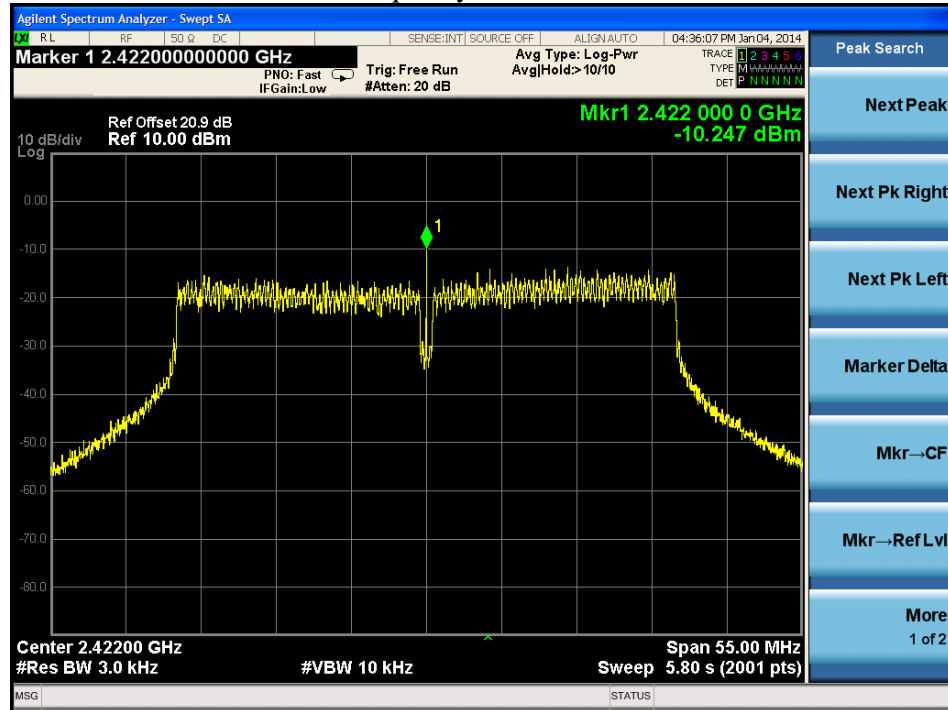
Frequency H – Chain 1



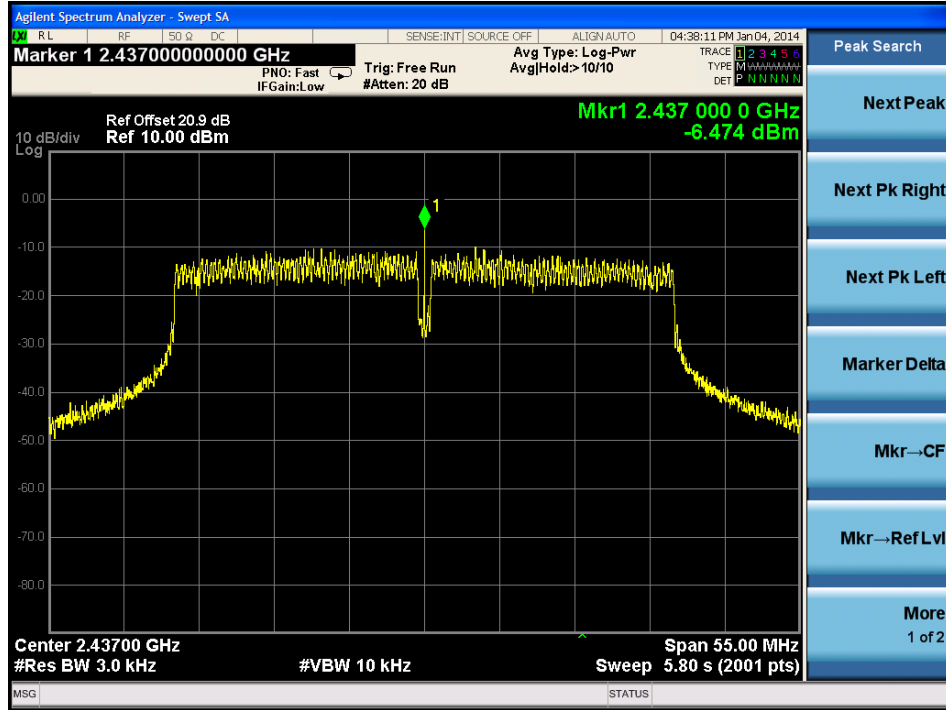


| Mode      | CH | Cable loss (dB) | PSD (dBm/3kHz) |         | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) |
|-----------|----|-----------------|----------------|---------|----------------------|------------------|
|           |    |                 | Port 0         | Port 1  |                      |                  |
| 802.11n40 | L  | 20.9            | -10.247        | -10.874 | -7.540               | ≤8.00            |
|           | M  | 20.9            | -6.474         | -9.674  | -4.780               |                  |
|           | H  | 20.9            | -16.372        | -16.934 | -13.630              |                  |

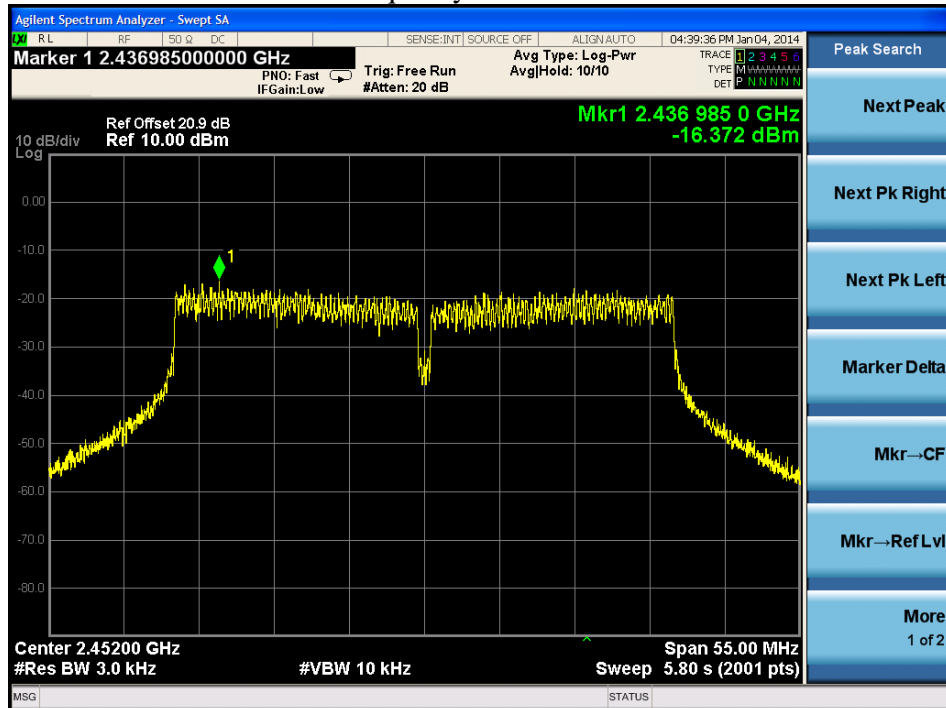
Frequency L – Chain 0



Frequency M – Chain 0

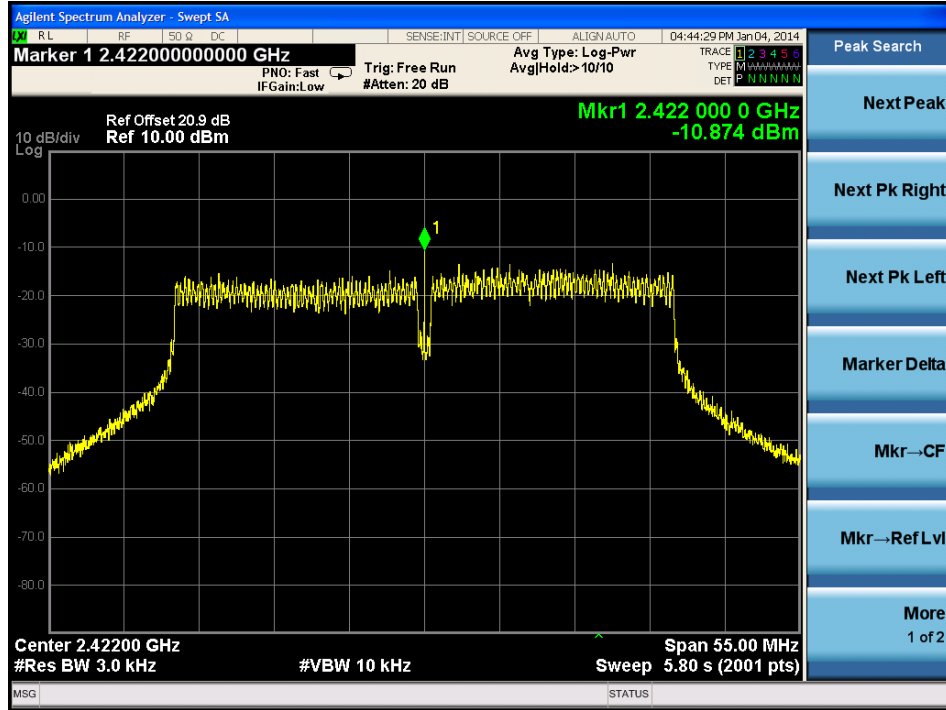


Frequency H – Chain 0

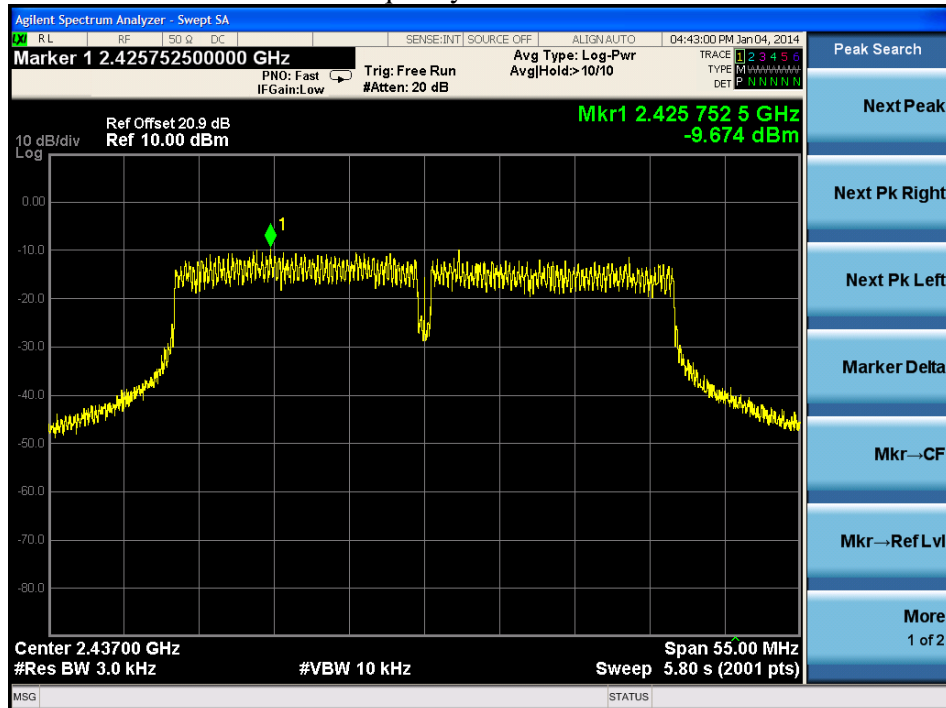




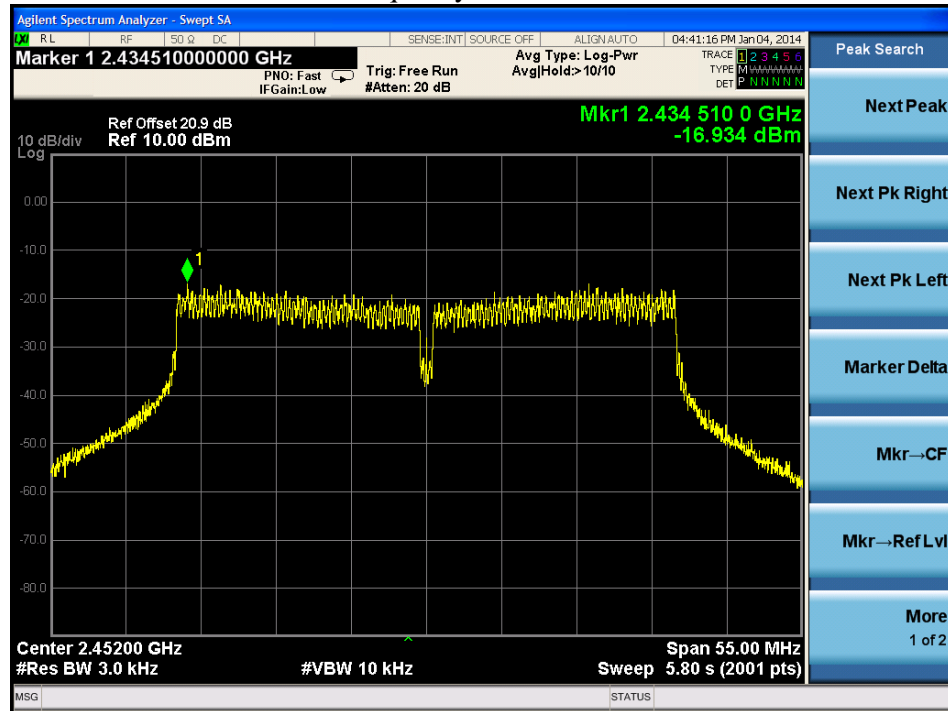
Frequency L – Chain 1



Frequency M – Chain 1



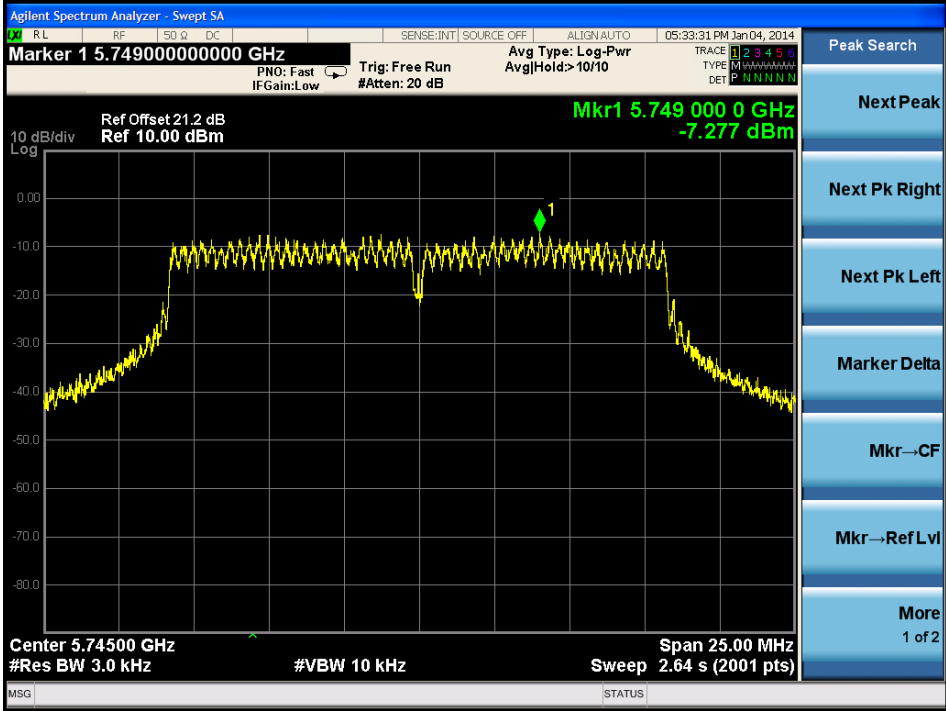
Frequency H – Chain 1



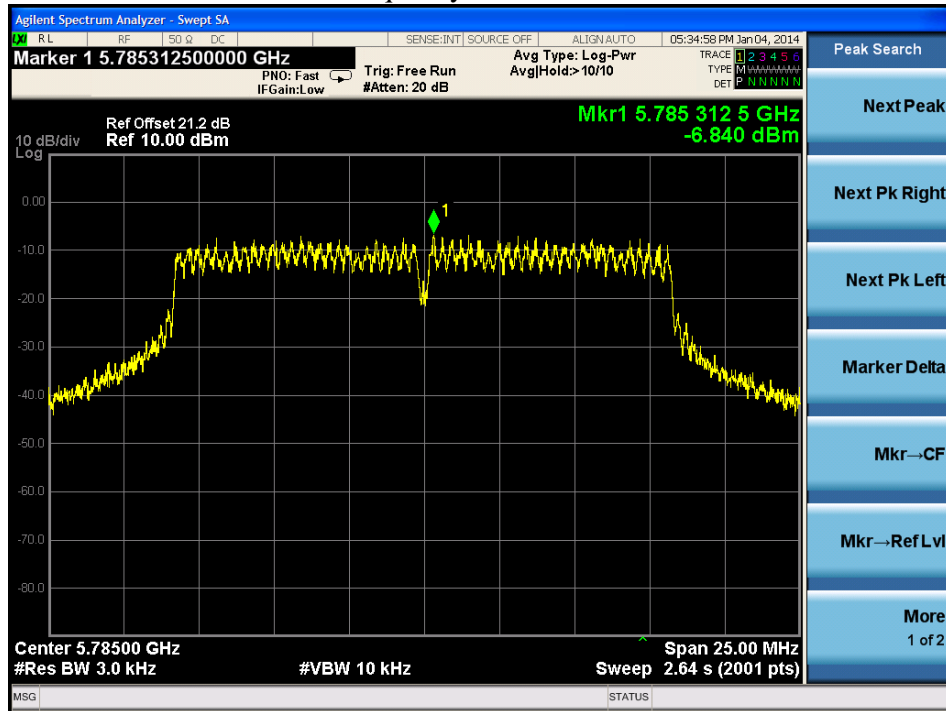


| Mode    | CH | Cable loss (dB) | PSD (dBm/3kHz) |        | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) |
|---------|----|-----------------|----------------|--------|----------------------|------------------|
|         |    |                 | Port 0         | Port 1 |                      |                  |
| 802.11a | L  | 20.9            | -7.277         | -5.239 | -3.130               | ≤8.00            |
|         | M  | 20.9            | -6.840         | -6.113 | -3.450               |                  |
|         | H  | 20.9            | -7.383         | -6.810 | -4.080               |                  |

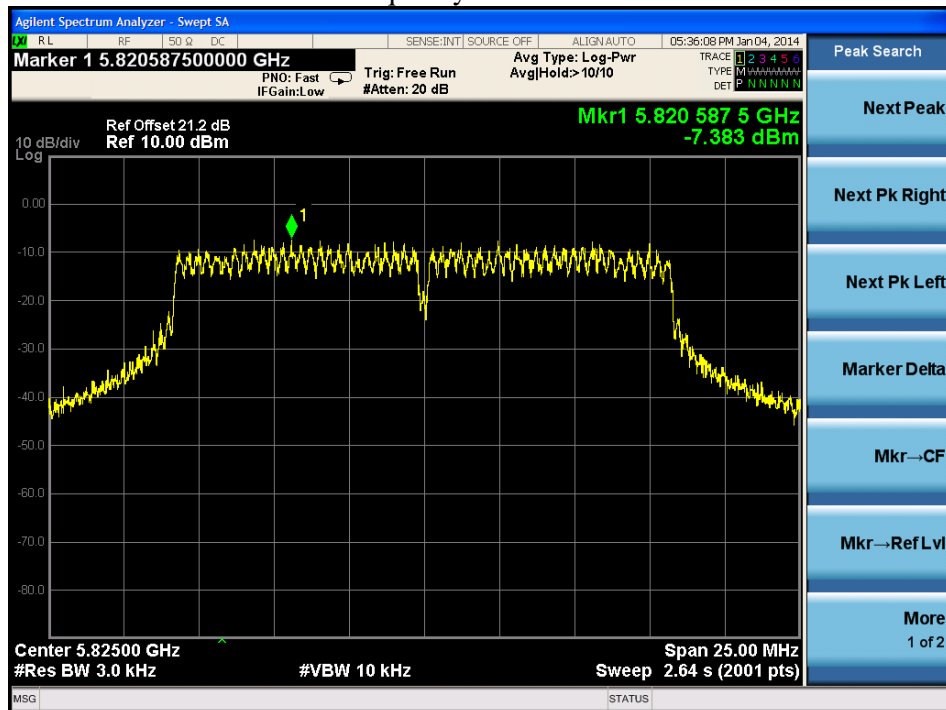
Frequency L – Chain 0



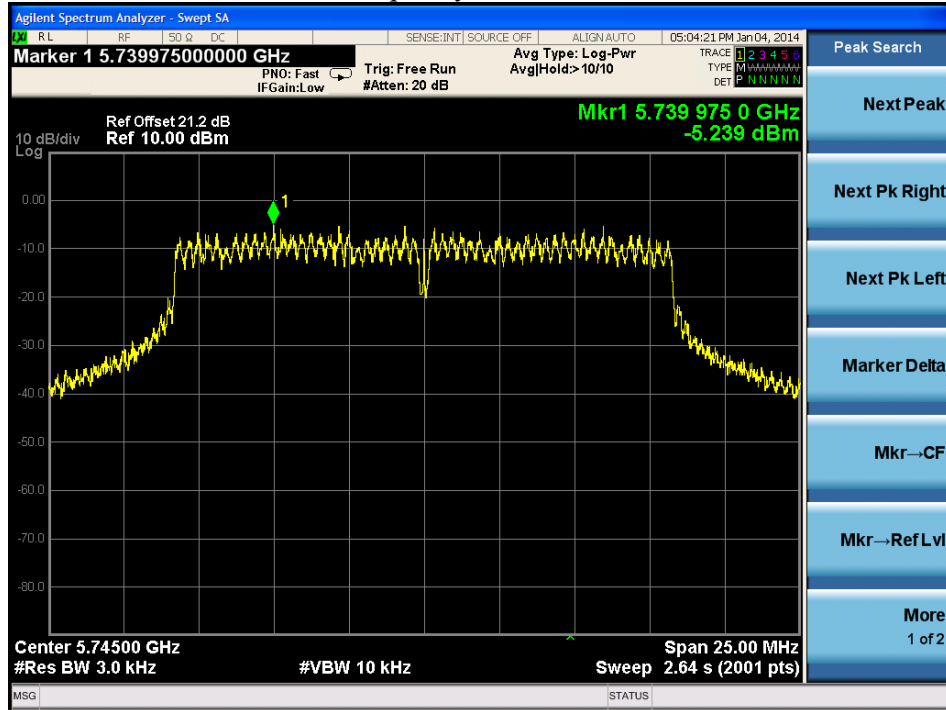
Frequency M – Chain 0



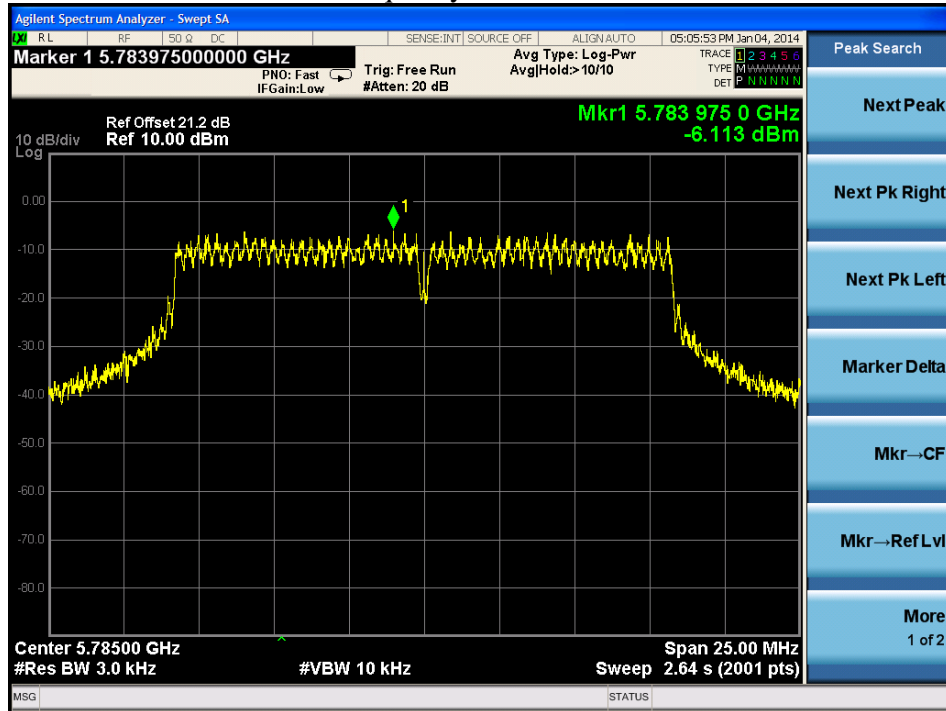
Frequency H – Chain 0



Frequency L – Chain 1

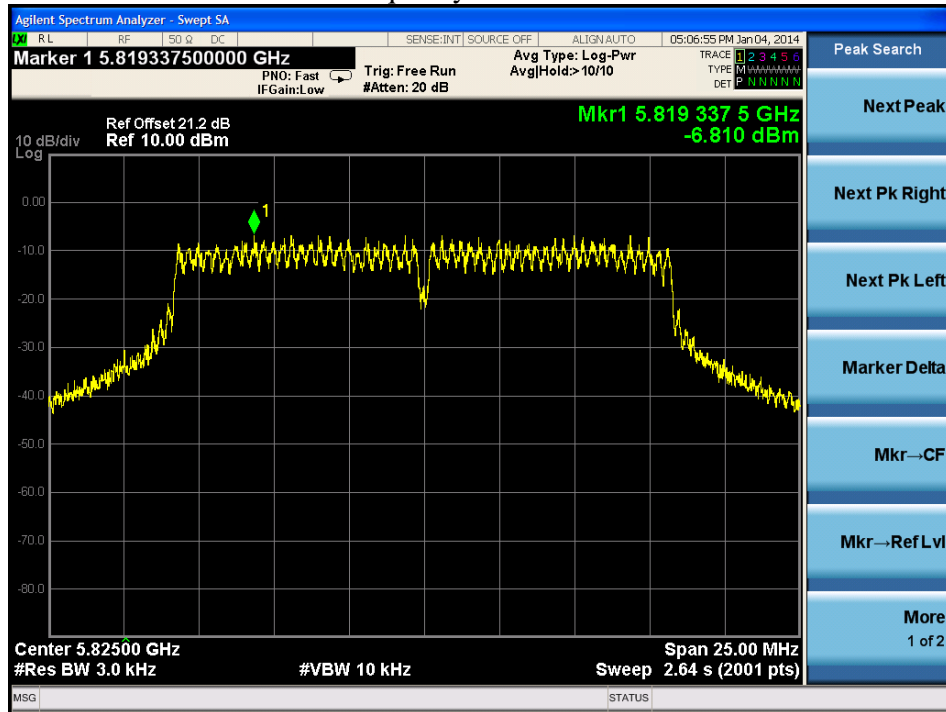


Frequency M – Chain 1





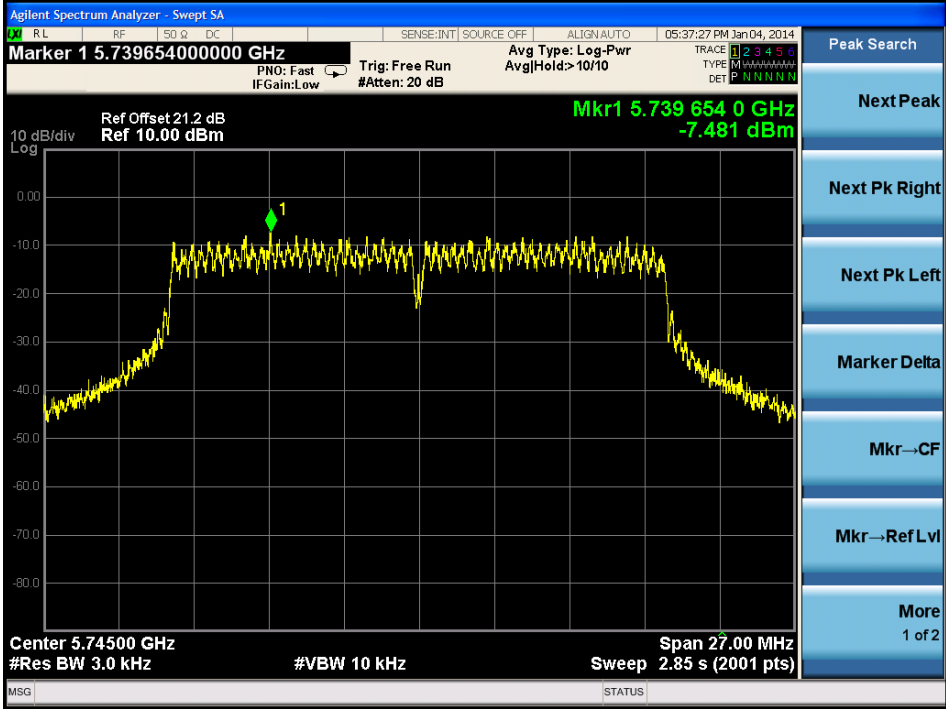
Frequency H – Chain 1



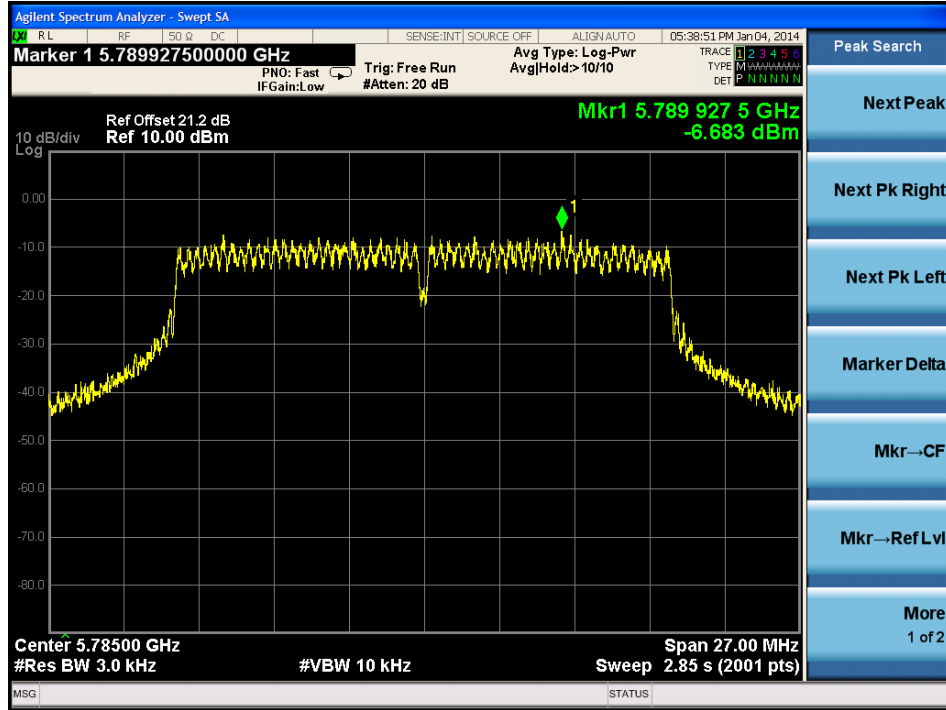


| Mode      | CH | Cable loss (dB) | PSD (dBm/3kHz) |        | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) |
|-----------|----|-----------------|----------------|--------|----------------------|------------------|
|           |    |                 | Port 0         | Port 1 |                      |                  |
| 802.11n20 | L  | 20.9            | -7.481         | -6.852 | -4.140               | ≤8.00            |
|           | M  | 20.9            | -6.683         | -6.090 | -3.370               |                  |
|           | H  | 20.9            | -7.590         | -6.198 | -3.830               |                  |

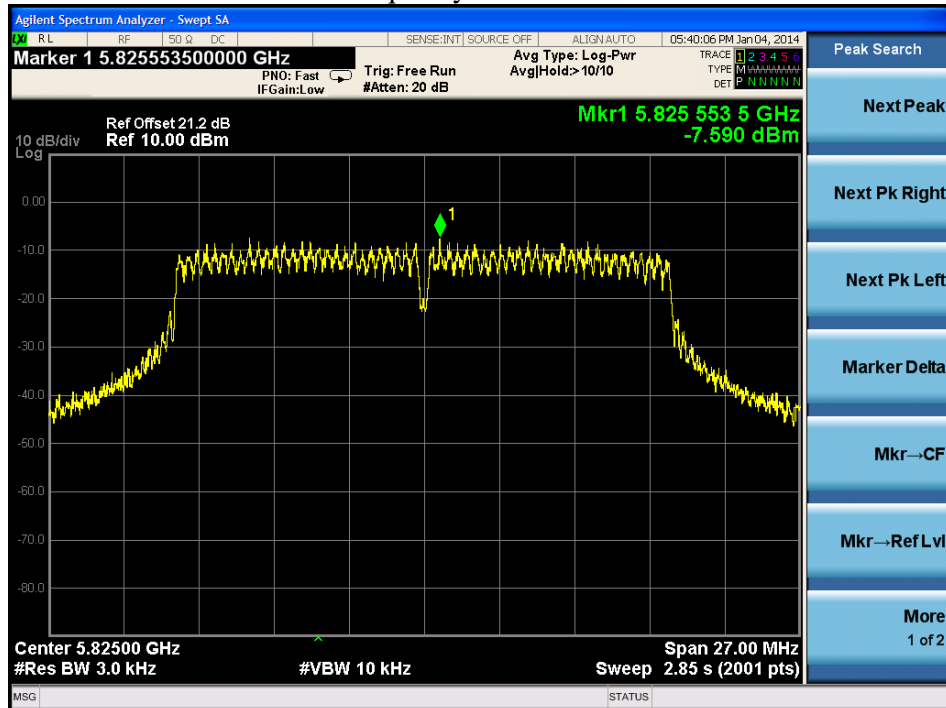
Frequency L – Chain 0



Frequency M – Chain 0

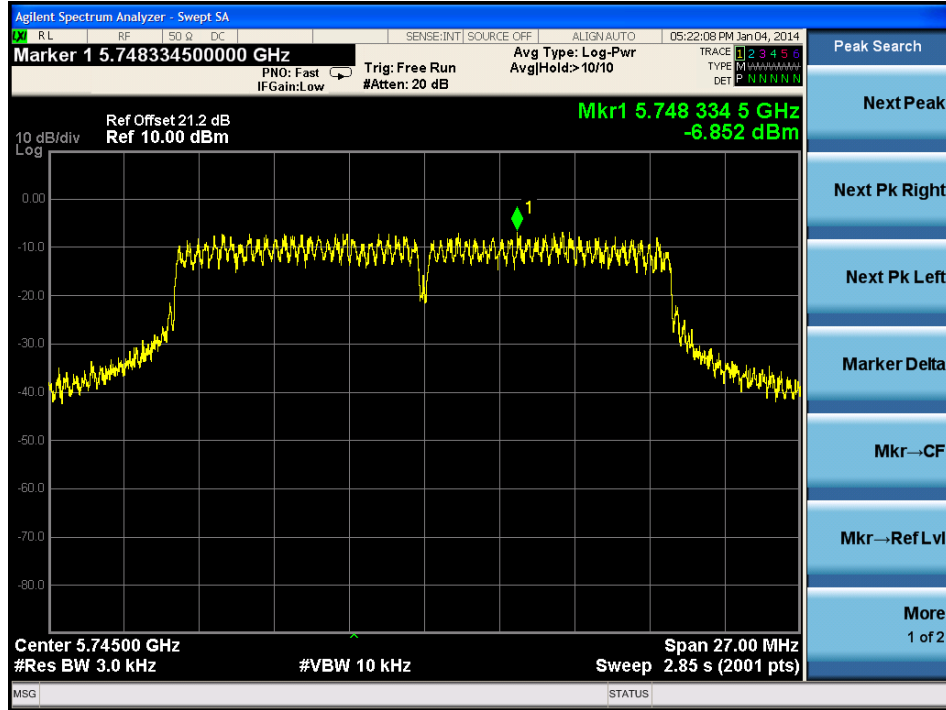


Frequency H – Chain 0

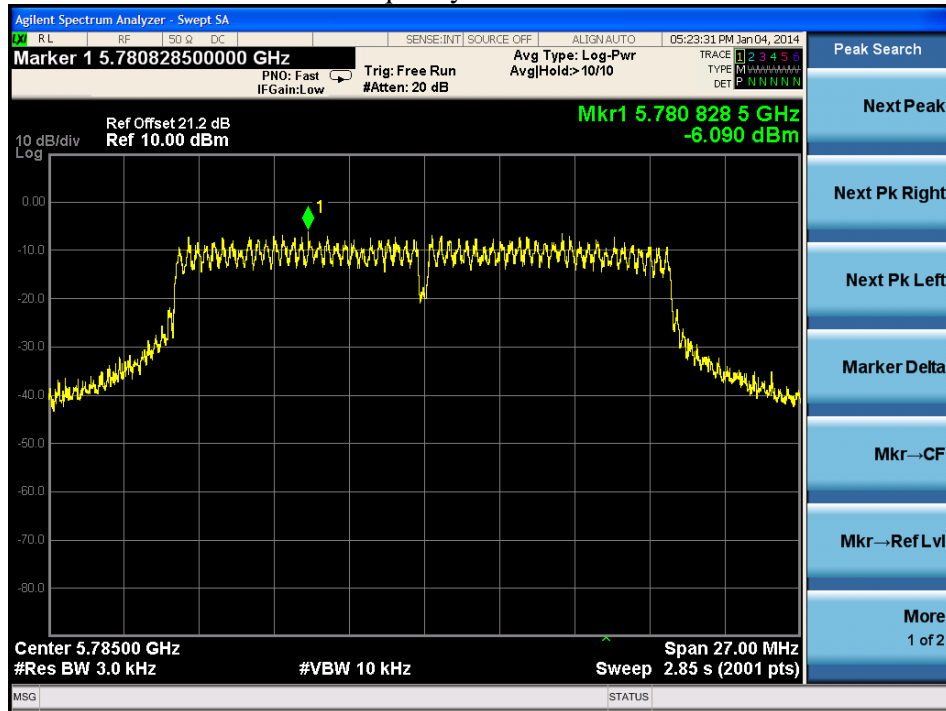




Frequency L – Chain 1

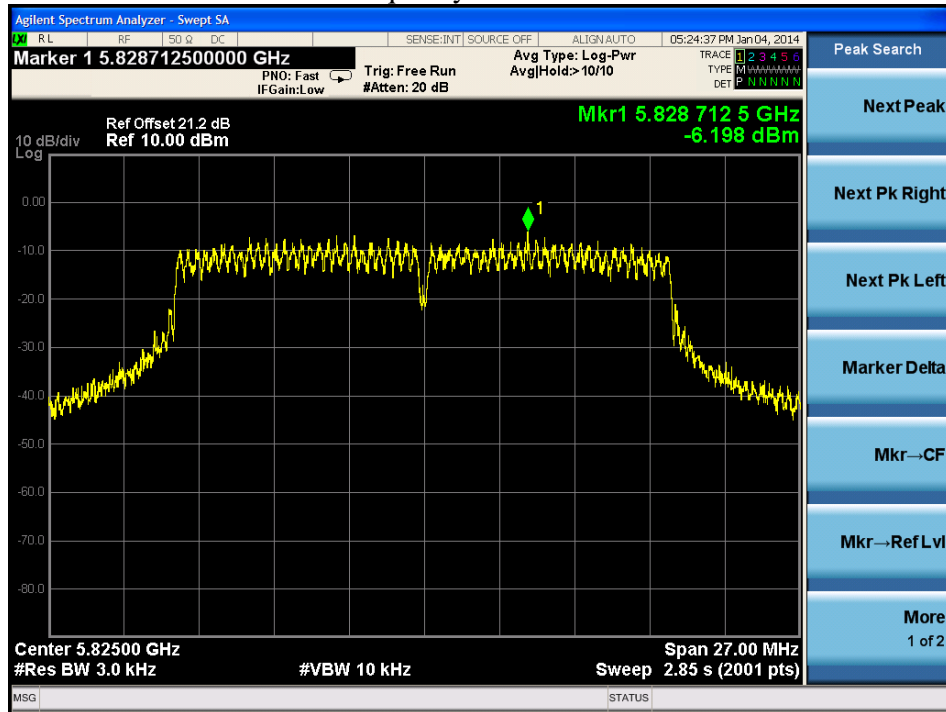


Frequency M – Chain 1





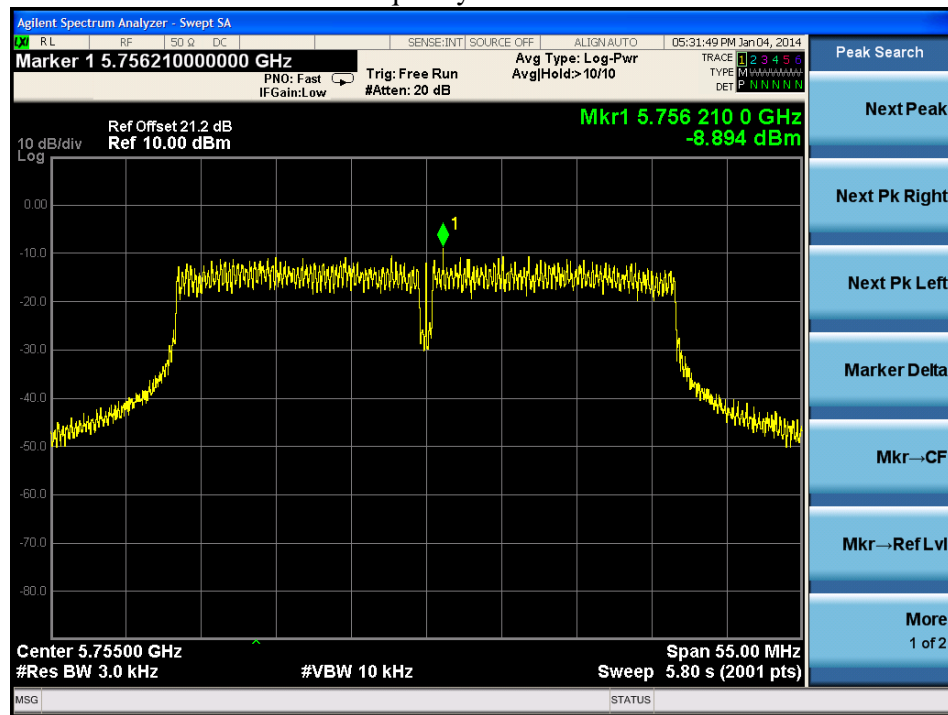
Frequency H – Chain 1



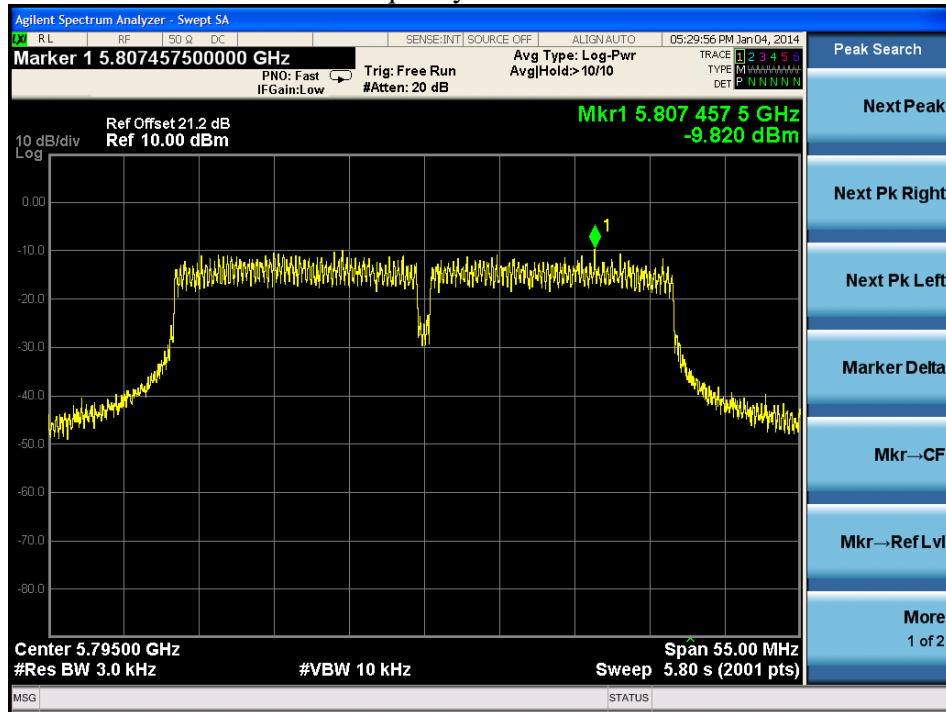


| Mode      | CH | Cable loss (dB) | PSD (dBm/3kHz) |        | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) |
|-----------|----|-----------------|----------------|--------|----------------------|------------------|
|           |    |                 | Port 0         | Port 1 |                      |                  |
| 802.11n20 | L  | 20.9            | -8.894         | -7.376 | -5.060               | ≤8.00            |
|           | H  | 20.9            | -9.820         | -9.334 | -6.560               |                  |

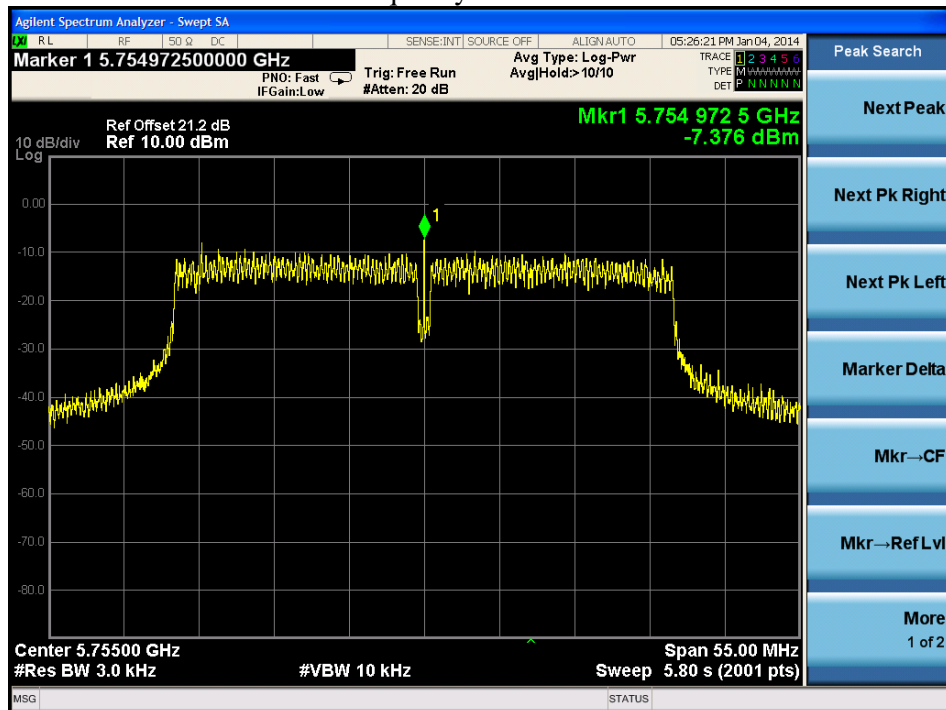
Frequency L – Chain 0



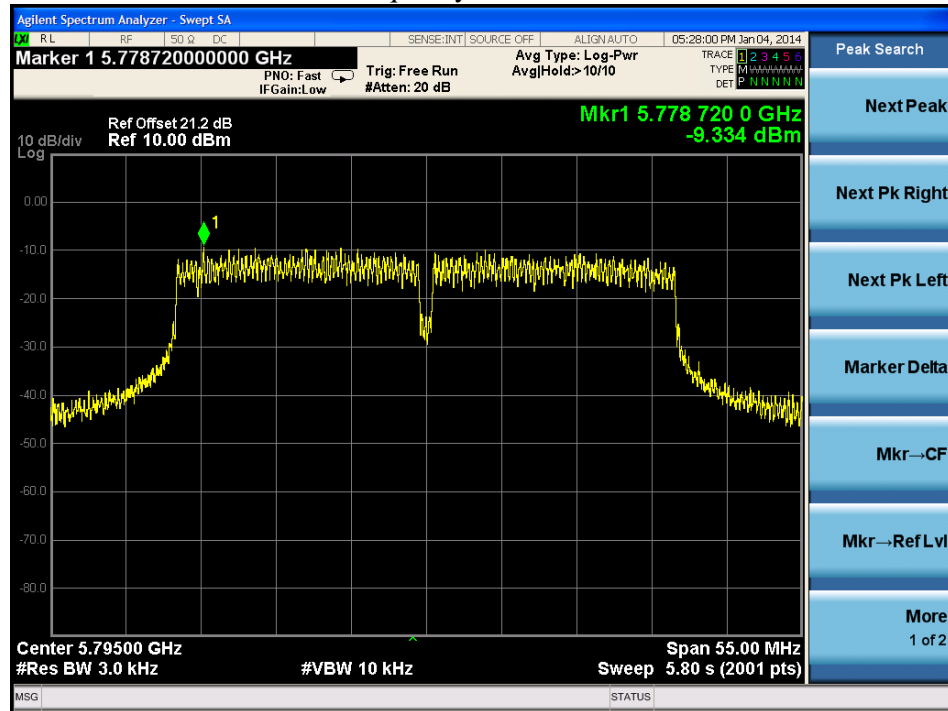
Frequency H – Chain 0



Frequency L – Chain 1



Frequency H – Chain 1



## 6. Radiated emission in the restricted bands

**Test result: PASS**

### 6.1 Test limit

The radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) showed as below:

| Frequency (MHz) | Field Strength (dBuV/m) | Measurement Distance (m) |
|-----------------|-------------------------|--------------------------|
| 30 - 88         | 40.0                    | 3                        |
| 88 - 216        | 43.5                    | 3                        |
| 216 - 960       | 46.0                    | 3                        |
| Above 960       | 54.0                    | 3                        |

### 6.2 Test Configuration

