

# EMC TEST REPORT

**Report No.** : TS10070159-EME  
**Model No.** : WiDRIVE DX-325  
**Issued Date** : Aug. 09, 2010

**Applicant:** EDSLAB Technologies Inc.  
4F., No. 150, Sec. 2, Nanking E Rd., Taipei City 10489,  
Taiwan

**Test Method/  
Standard:** 47 CFR FCC Part 15.247 & ANSI C63.4 2003

**Test By:** Intertek Testing Services Taiwan Ltd.  
No. 11, Lane 275, Ko-Nan 1 Street, Chia-Tung Li,  
Shiang-Shan District, Hsinchu City, Taiwan

It may be duplicated completely for legal use with the allowance of the applicant.  
It shall not be reproduced except in full, without the written approval of Intertek  
Laboratory. The test result(s) in this report only applies to the tested sample(s).

**The test report was prepared by:** Sign on File  
Grace Lee/ Assistant

**These measurements were taken by:** Sign on File  
Jacky Chen/ Engineer

**The test report was reviewed by:**

**Name** Rex Liao  
**Title** Engineer

## Table of Contents

1. Summary of Test Data.....	3
2. General Information.....	4
3. Maximum 6 dB Bandwidth.....	6
4. 99% Occupied Bandwidth .....	17
5. Maximum Output Power.....	28
6. Power Spectral Density .....	30
7. RF Antenna conducted Spurious.....	41
8. Radiated Spurious Emission .....	51
9. Emission on Band Edge .....	65
Appendix A: Test Equipment List.....	90

## 1. Summary of Test Data

Test/Requirement Description	Applicable Rule	Result
Minimum 6dB Bandwidth	15.247(a)(2)	Pass
Maximum Output Power	15.247(b)	Pass
Power Spectral Density	15.247(e)	Pass
RF Antenna Conducted Spurious	15.247(d)	Pass
Radiated Spurious Emission	15.247(d), 15.205, 15.209	Pass
Emission on the Band Edge	15.247(d)	Pass
AC Power Line Conducted Emission	15.207	Pass

## 2. General Information

### Identification of the EUT

Product:	WiFi Storage Router
Model No.:	WiDRIVE DX-325
FCC ID.:	WYR-EDS-1389
Frequency Range:	2412 MHz ~ 2472 MHz
Channel Number:	1. 13 channels for 802.11b, 802.11g, 802.11n HT20 2. 9 channels for 802.11n HT40
Rated Power:	DC 5 V, from adapter Model: JF015WR-0500200U V, I/P: 100-240 Vac, 50/60 Hz, 0.5 A
Power Cord:	N/A
Sample Received:	Jul. 23, 2010
Test Date(s):	Jul. 28, 2010 ~ Aug. 02, 2010
Note 1:	This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.
Note 2:	When determining the test conclusion, the Measurement Uncertainty of test has been considered.

## Description of EUT

The EUT is a WiFi Storage Router, and was defined as information technology equipment.

For more detail features, please refer to User's manual as file name "Installation guide.pdf"

## Antenna description

The antenna is affixed to the EUT using a unique connector, which allows for replacement of a broken antenna, but DOES NOT use a standard antenna jack or electrical connector.

### Antenna 0

Antenna Gain: -3.14 dBi max

Antenna Type: PCB Printed antenna

Connector Type: N/A

### Antenna 1

Antenna Gain: -3.55dBi max

Antenna Type: PCB printed antenna

Connector Type: N/A

### 3. Maximum 6 dB Bandwidth

<b>Name of Test</b>	Maximum 6dB Bandwidth
<b>Base Standard</b>	FCC 15.247 (a)(2)

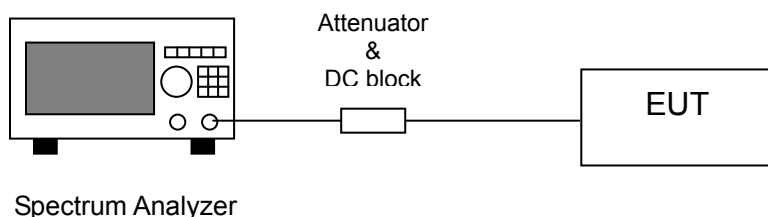
**Test Result:** Complies  
**Measurement Data:** See Table & plots below

#### Method of Measurement:

#### Reference FCC document: KDB558074

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1 % of the bandwidth of the transmitted signal. The resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform. The appropriate bandwidth mask is applied to the output waveform to verify compliance.

#### Test Diagram:



**Note:** The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps data rate for 802.11b mode, 6 Mbps data rate for 802.11g mode, 6.5 Mbps data rate for 802.11n HT20 mode and 13 Mbps data rate for 802.11n HT40 mode. The EUT was tuned to a low, middle and high channel.

Table 1. Maximum 6dB Bandwidth

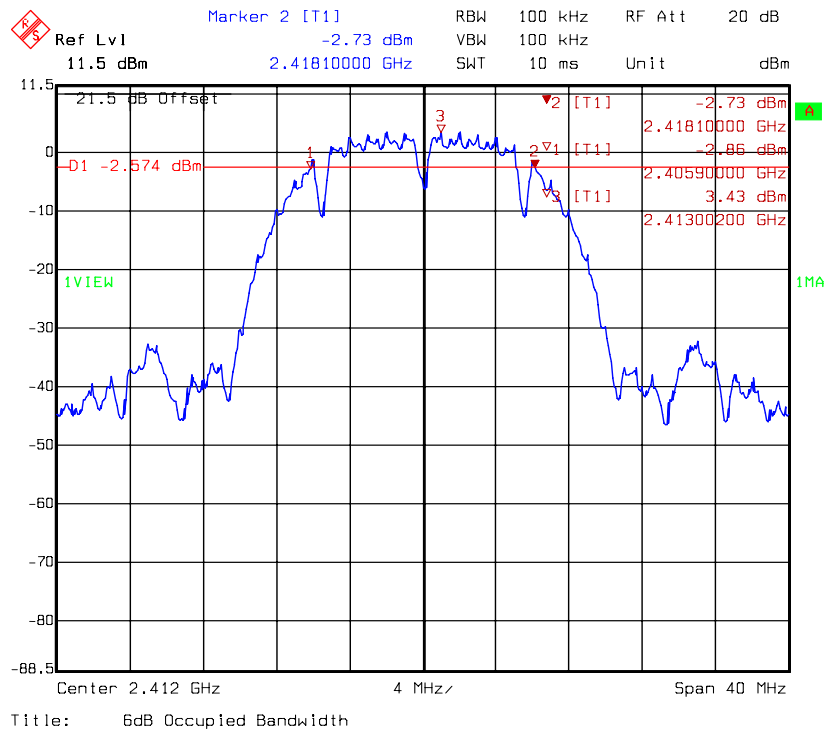
### Single TX

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Min. Limit (MHz)
802.11b	1	2412	12.2	0.5
	6	2437	11.25	0.5
	11	2462	11.25	0.5
802.11g	1	2412	16.55	0.5
	6	2437	16.475	0.5
	11	2462	16.55	0.5

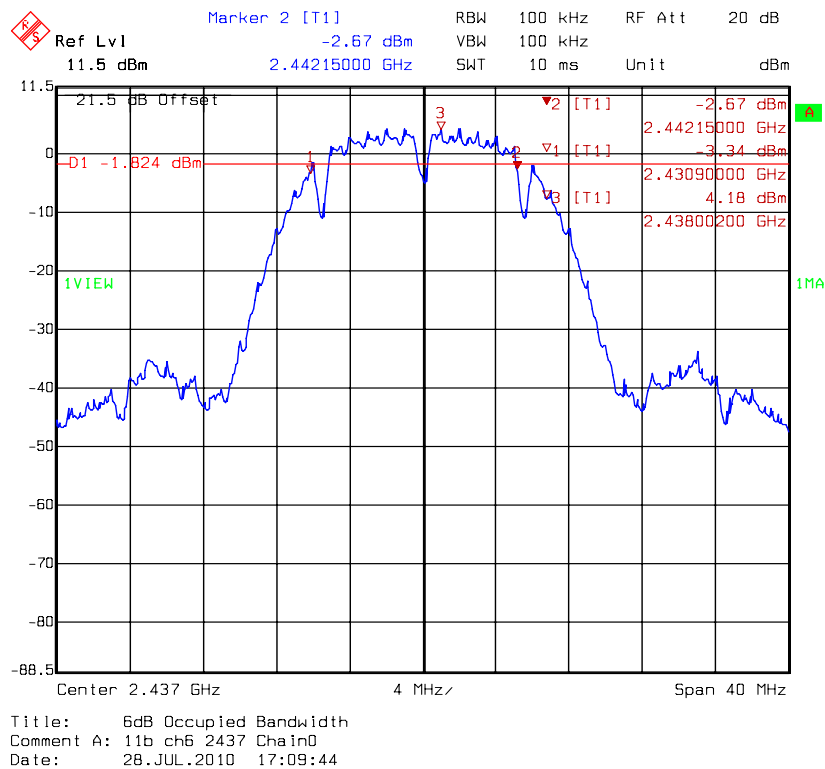
### 2TX

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Min. Limit (MHz)
			Chain 0	Chain 1	
802.11 HT20	1	2412	17.275	17.35	0.5
	6	2437	17.025	17.275	0.5
	11	2462	17.5	17.35	0.5
802.11 HT40	3	2422	35.3	35.45	0.5
	6	2437	35.45	36.25	0.5
	9	2452	36.425	36.10	0.5

### Chain 0: 6dB Bandwidth @ 802.11b mode channel 1

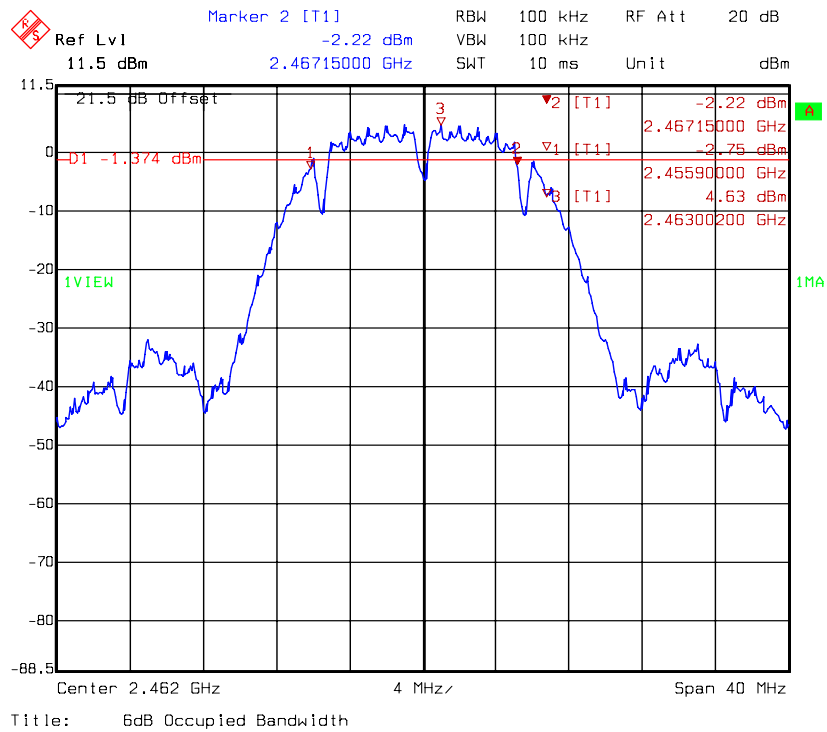


### Chain 0: 6dB Bandwidth @ 802.11b mode channel 6

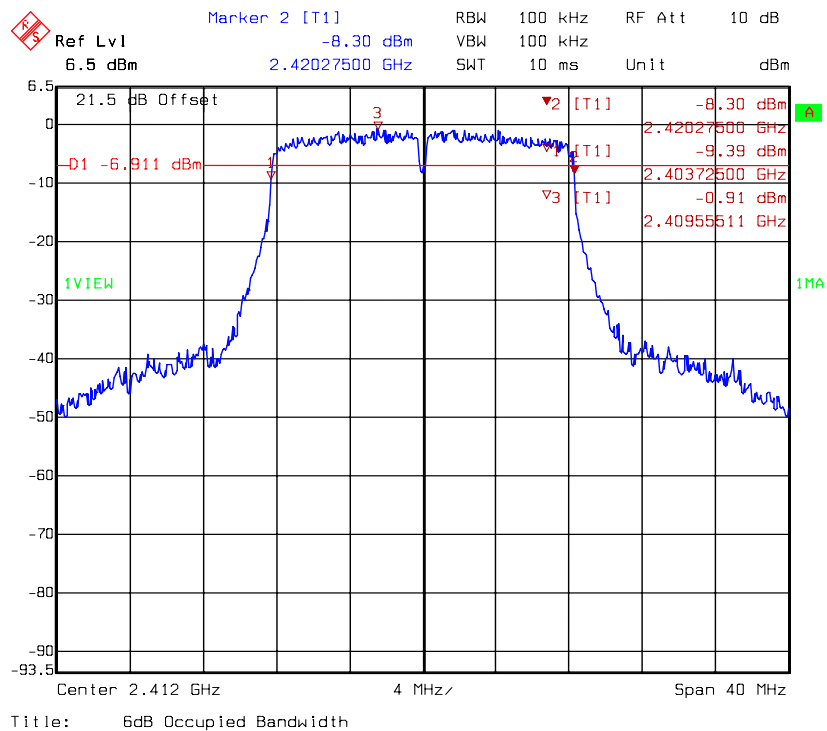




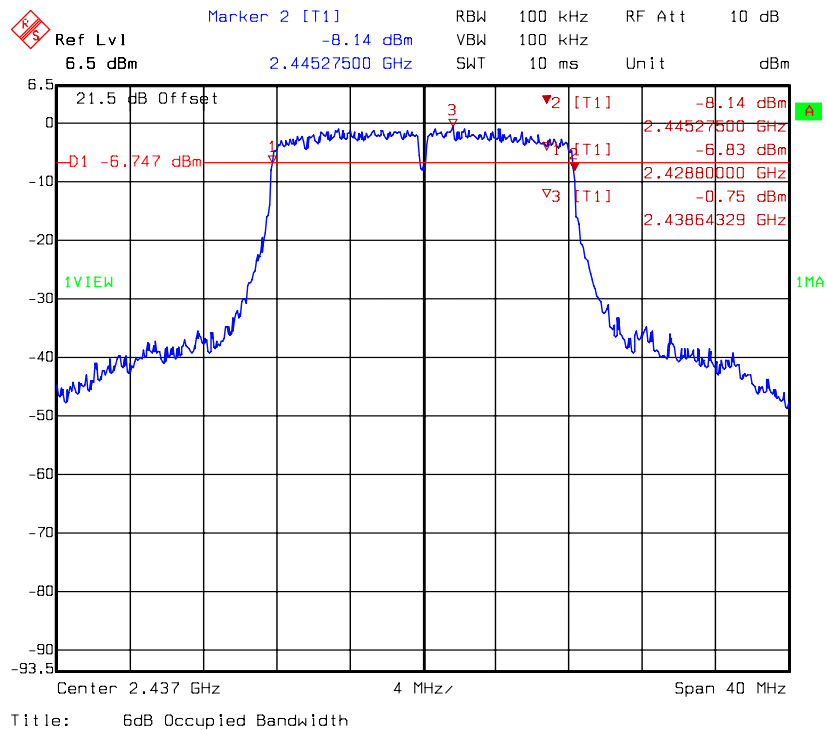
### Chain 0: 6dB Bandwidth @ 802.11b mode channel 11



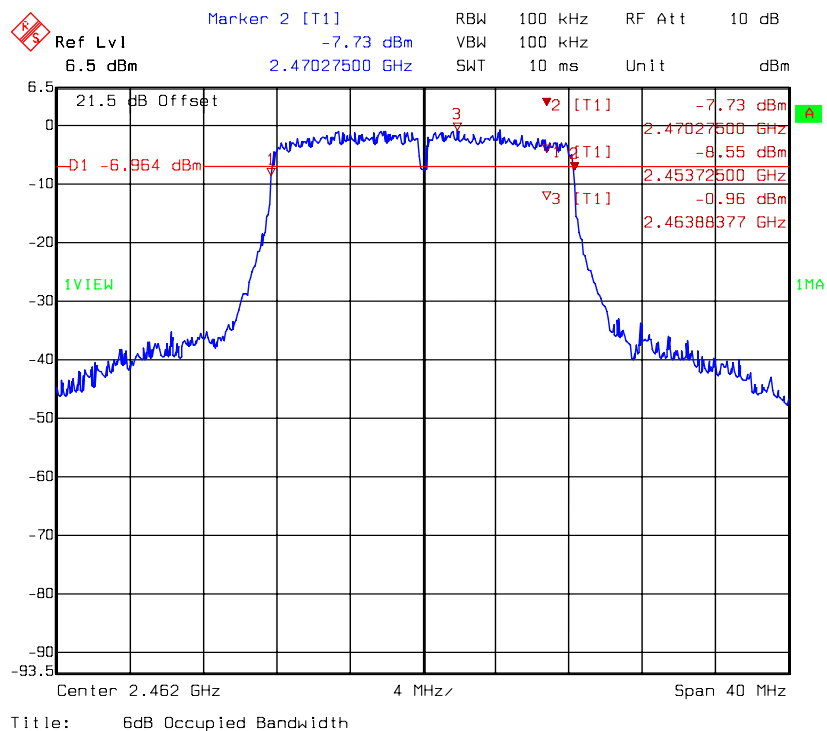
### Chain 0: 6dB Bandwidth @ 802.11g mode channel 1



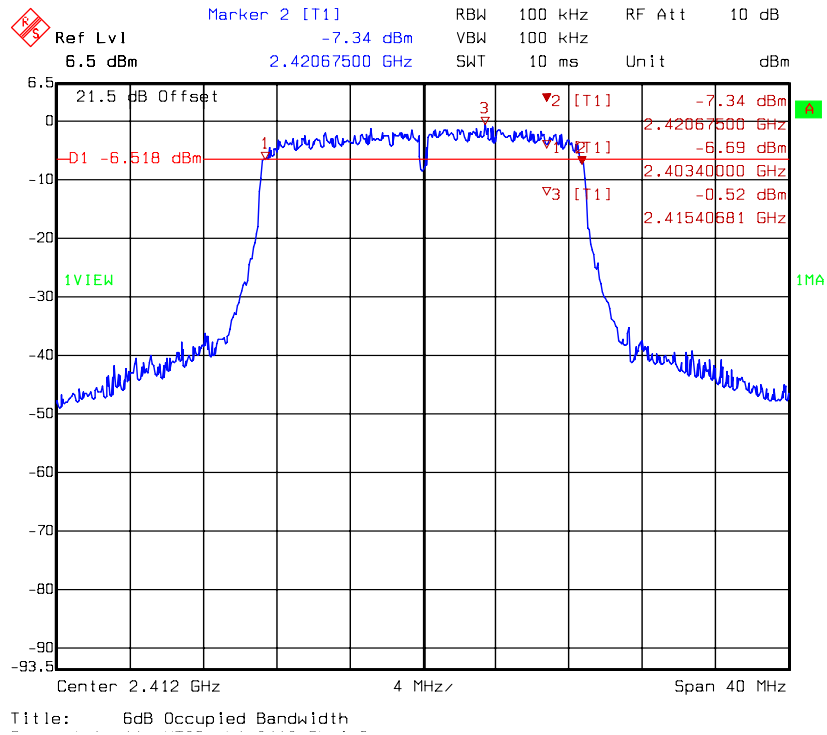
### Chain 0: 6dB Bandwidth @ 802.11g mode channel 6



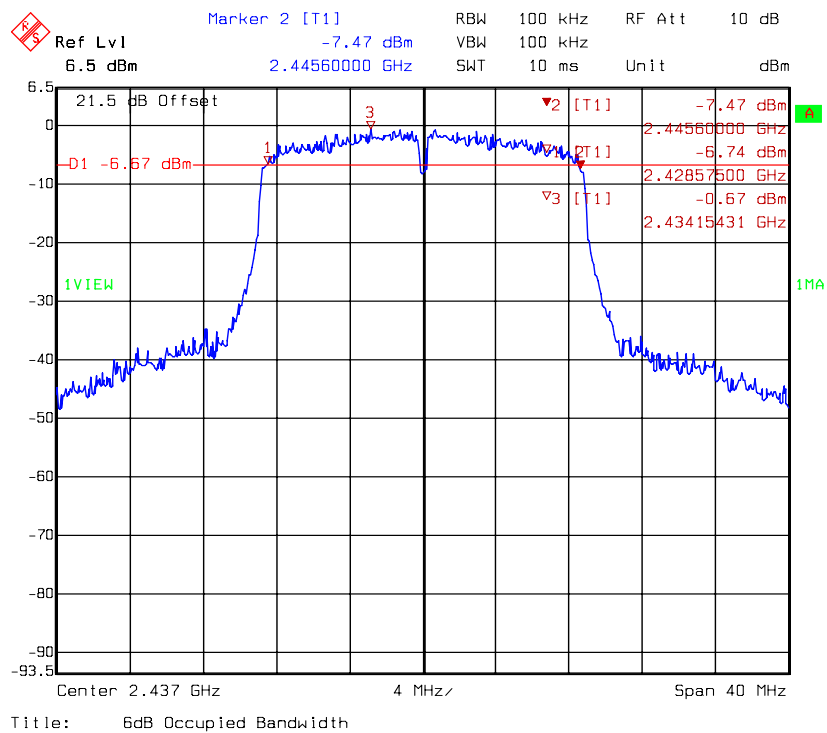
### Chain 0: 6dB Bandwidth @ 802.11g mode channel 11



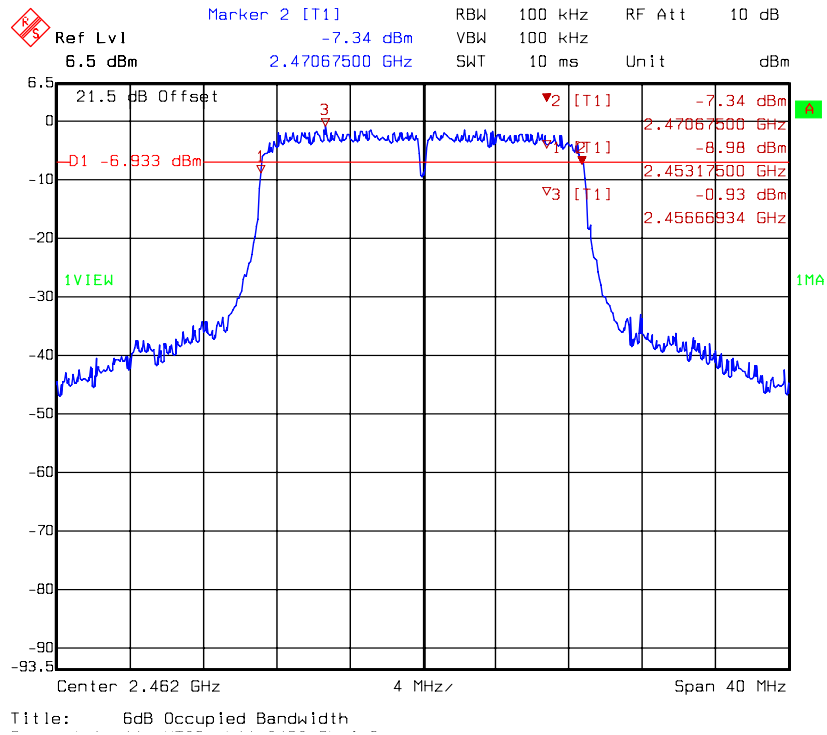
### Chain 0: 6dB Bandwidth @ 802.11n HT20 mode channel 1



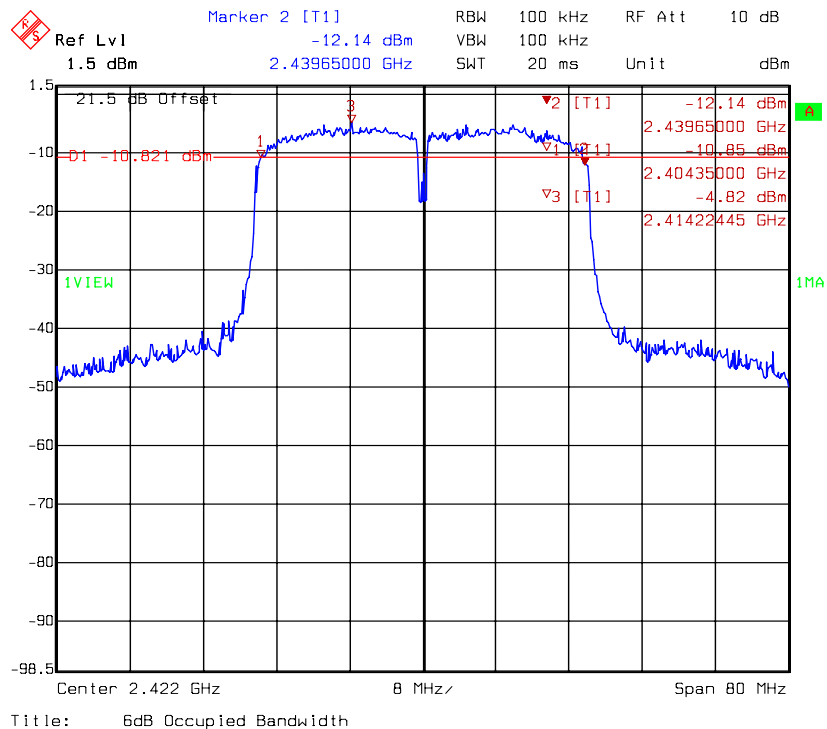
### Chain 0: 6dB Bandwidth @ 802.11n HT20 mode channel 6



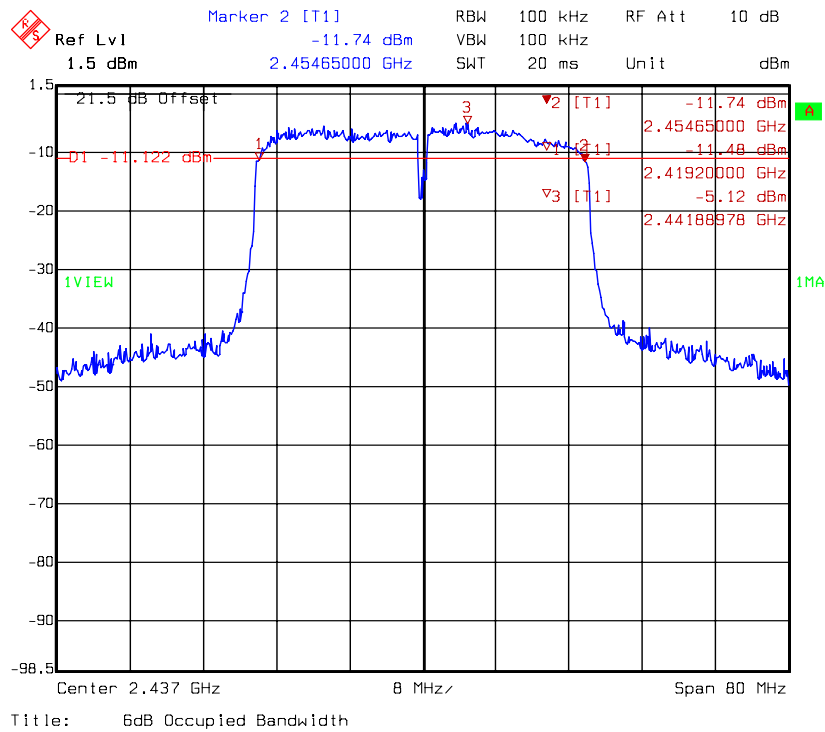
### Chain 0: 6dB Bandwidth @ 802.11n HT20 mode channel 11



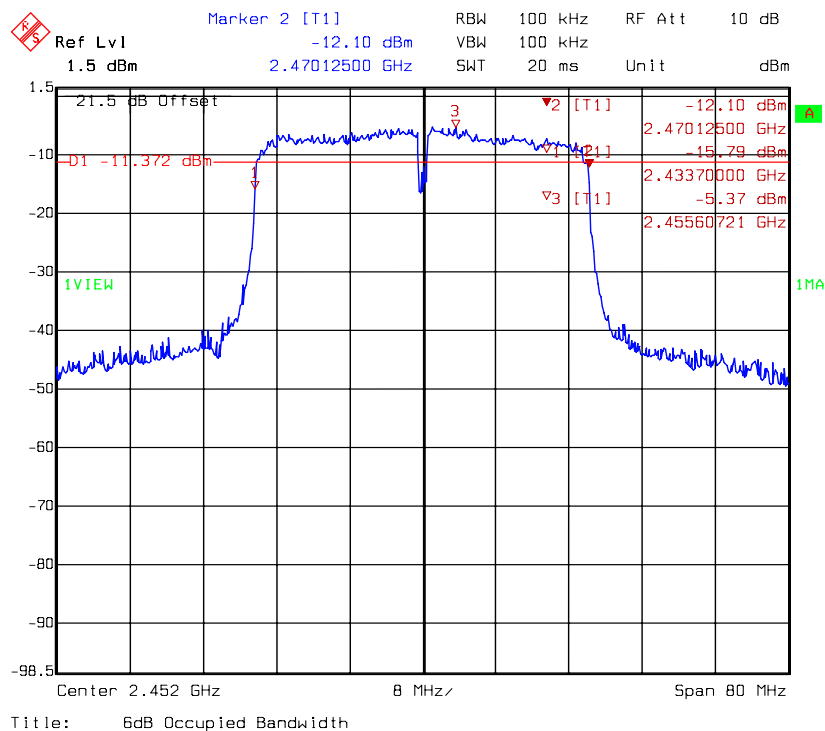
### Chain 0: 6dB Bandwidth @ 802.11n HT40 mode channel 3



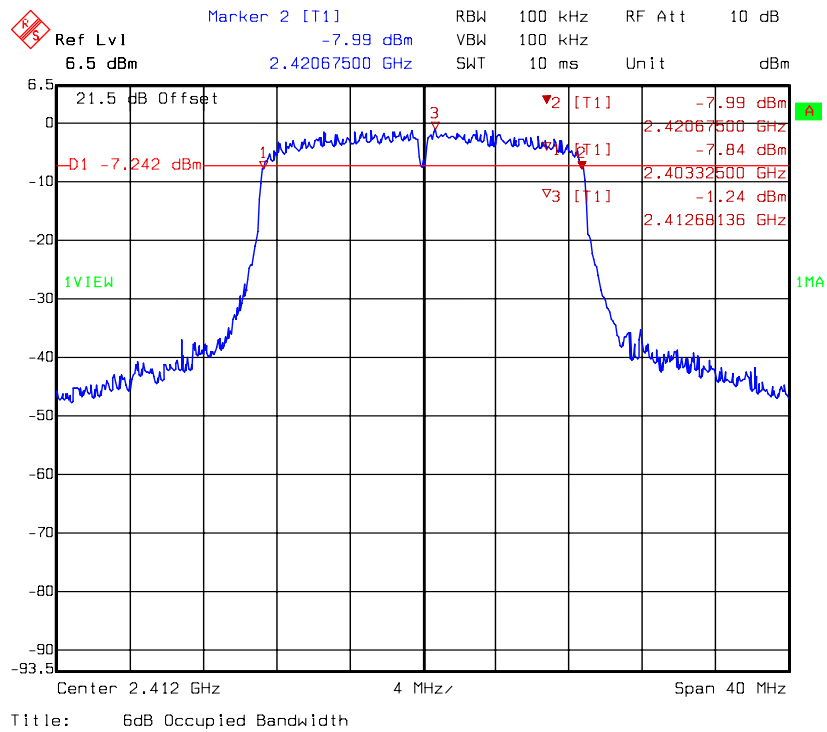
### Chain 0: 6dB Bandwidth @ 802.11n HT40 mode channel 6



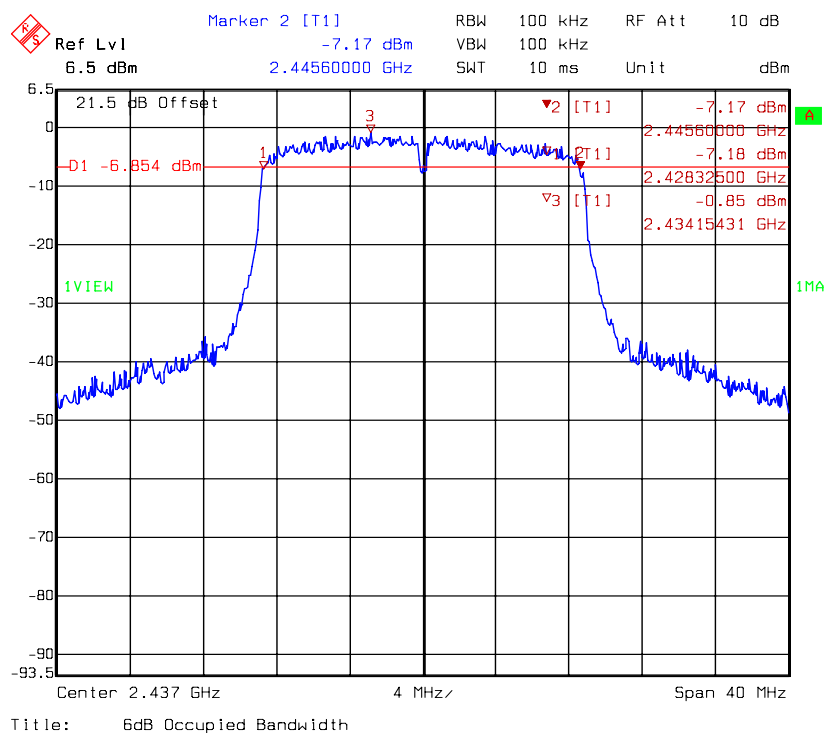
**Chain 0:** 6dB Bandwidth @ 802.11n HT40 mode channel 9



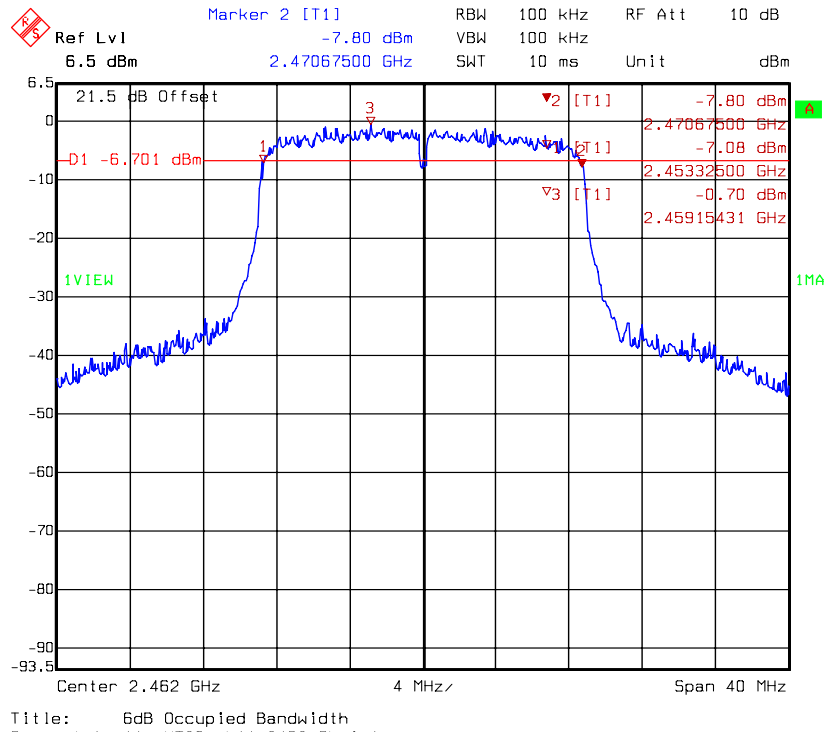
### Chain 1: 6dB Bandwidth @ 802.11n HT20 mode channel 1



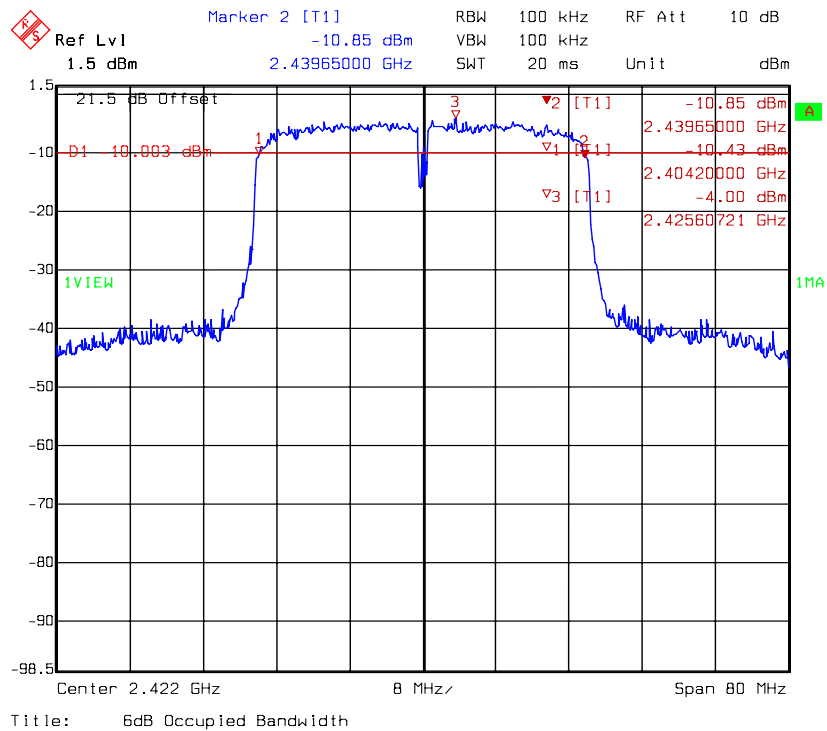
### Chain 1: 6dB Bandwidth @ 802.11n HT20 mode channel 6



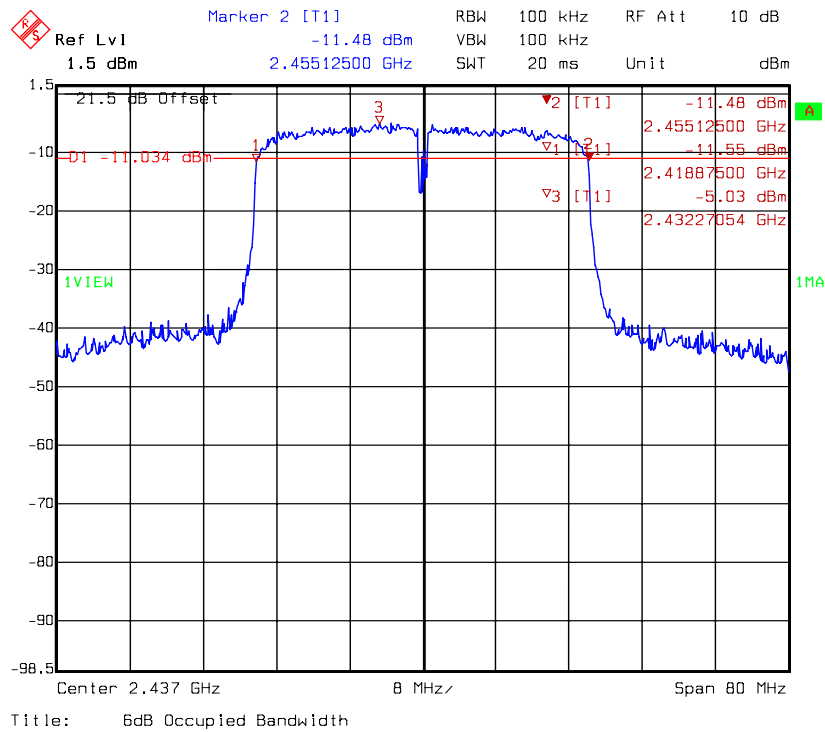
### Chain 1: 6dB Bandwidth @ 802.11n HT20 mode channel 11



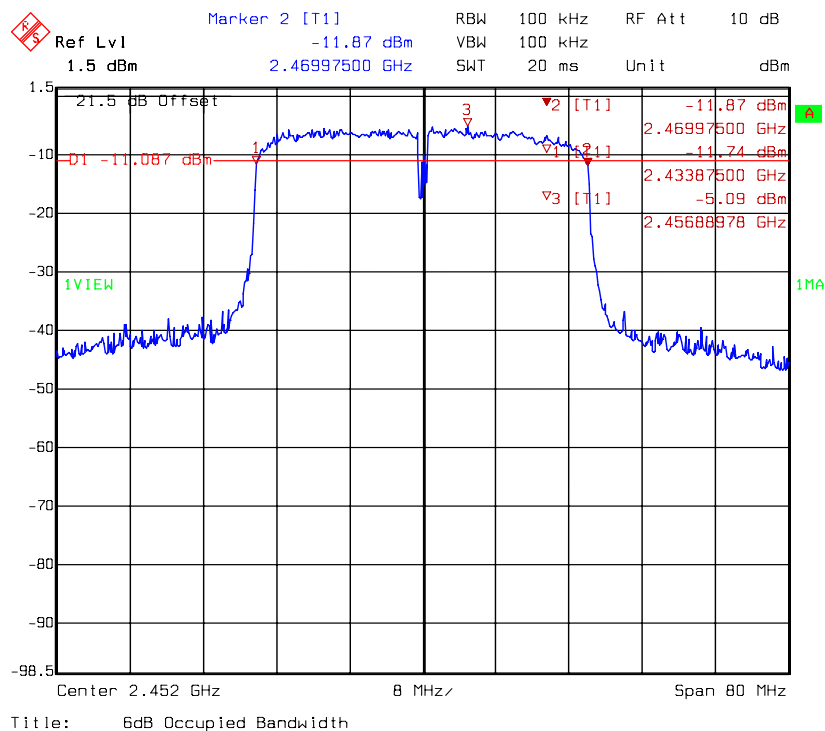
### Chain 1: 6dB Bandwidth @ 802.11n HT40 mode channel 3



### Chain 1: 6dB Bandwidth @ 802.11n HT40 mode channel 6



**Chain 1: 6dB Bandwidth @ 802.11n HT40 mode channel 9**





## 4. 99% Occupied Bandwidth

<b>Name of Test</b>	99% Occupied Bandwidth
<b>Base Standard</b>	None; for reporting purposes only

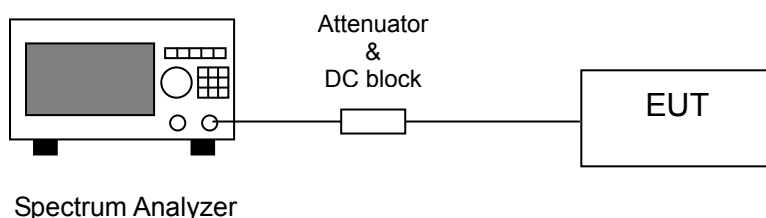
**Test Result:** Complies  
**Measurement Data:** See Table & plots below

### Method of Measurement:

#### Reference FCC document: KDB558074

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1 % of the bandwidth of the transmitted signal. The resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform. The appropriate bandwidth mask is applied to the output waveform to verify compliance.

### Test Diagram:



**Note:** The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps data rate for 802.11b mode, 6 Mbps data rate for 802.11g mode, 6.5 Mbps data rate for 802.11n HT20 mode and 13 Mbps data rate for 802.11n HT40 mode. The EUT was tuned to a low, middle and high channel.

Table 2. 99% Occupied Bandwidth

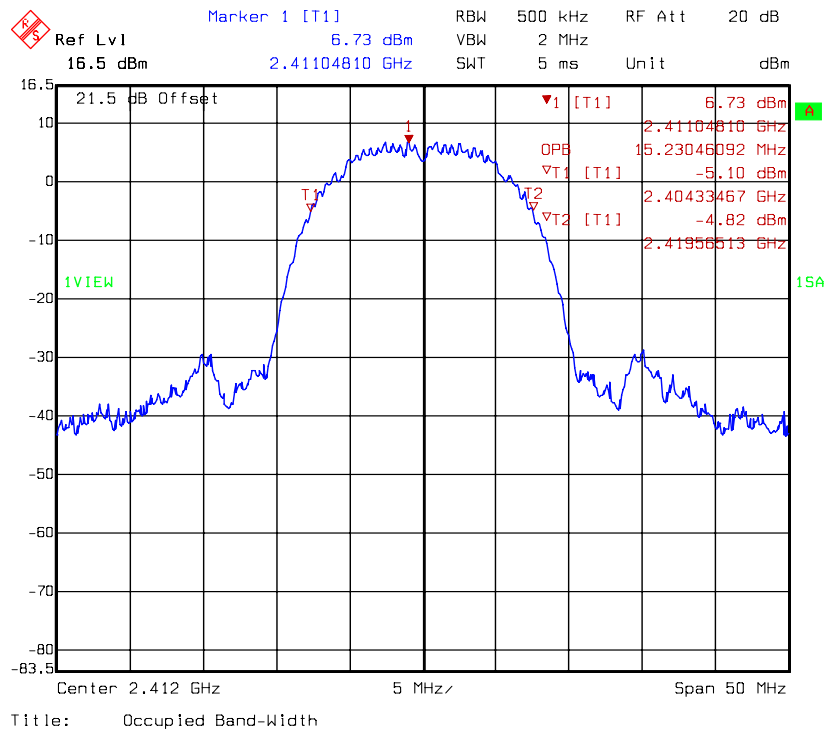
### Single TX

Mode	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
802.11b	1	2412	15.23046
	6	2437	14.42886
	11	2462	14.42886
802.11g	1	2412	16.73347
	6	2437	16.53307
	11	2462	16.63327

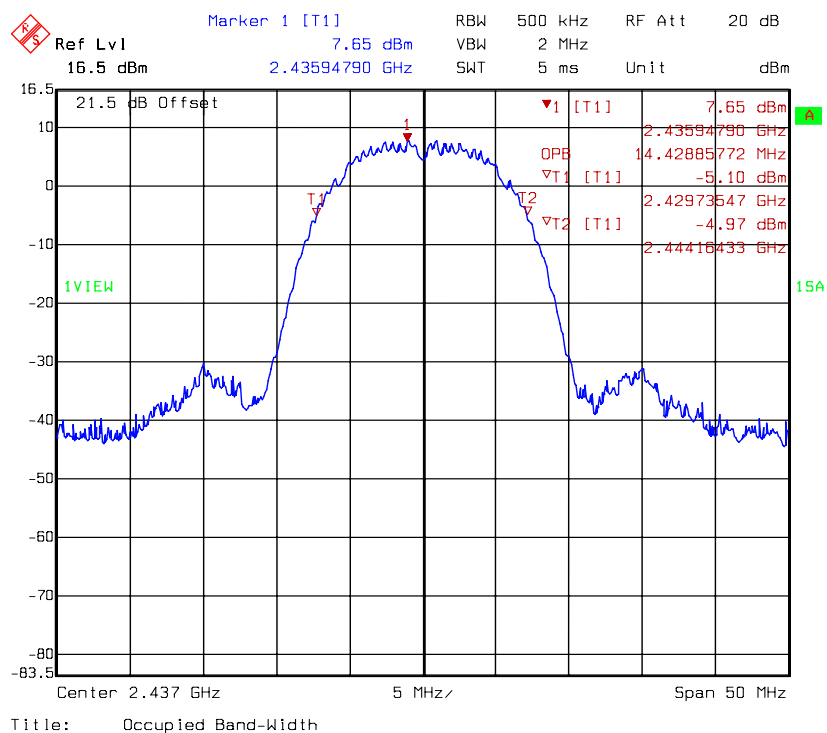
### 2TX

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	
			Chain 0	Chain 1
802.11 HT20	1	2412	17.53507	17.43487
	6	2437	17.33467	17.53507
	11	2462	17.63527	17.53507
802.11 HT40	3	2422	35.67134	35.87174
	6	2437	35.87174	36.07214
	9	2452	36.07214	35.87174

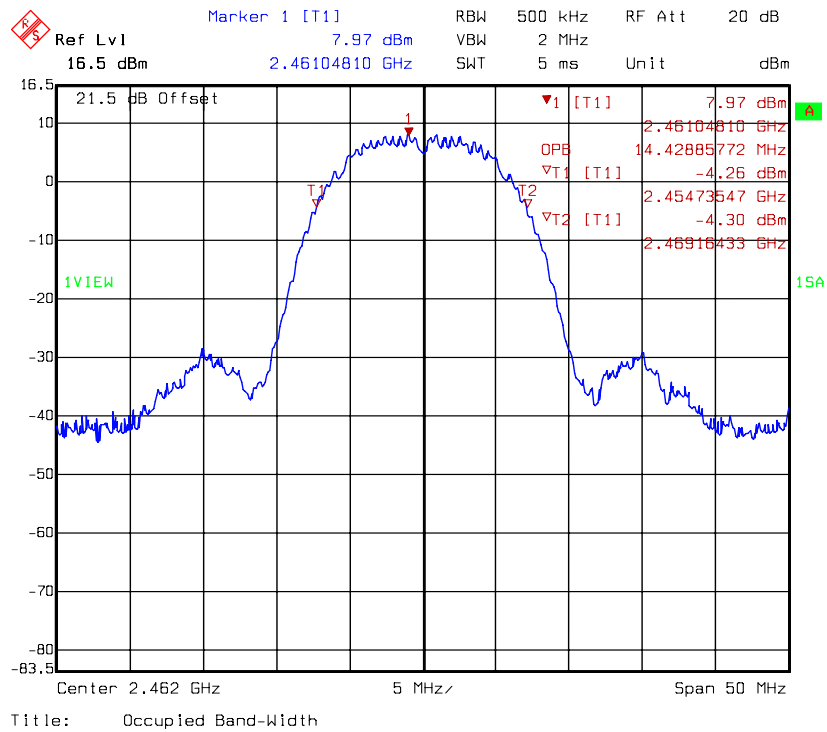
**Chain 0: 99% Occupied Bandwidth @ 802.11b mode channel 1**



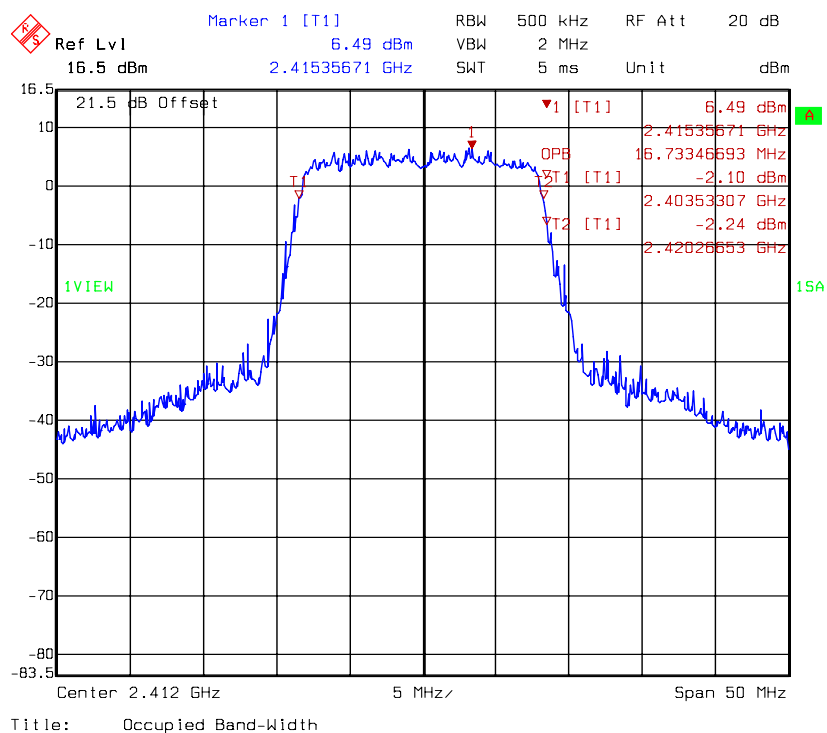
**Chain 0: 99% Occupied Bandwidth @ 802.11b mode channel 6**



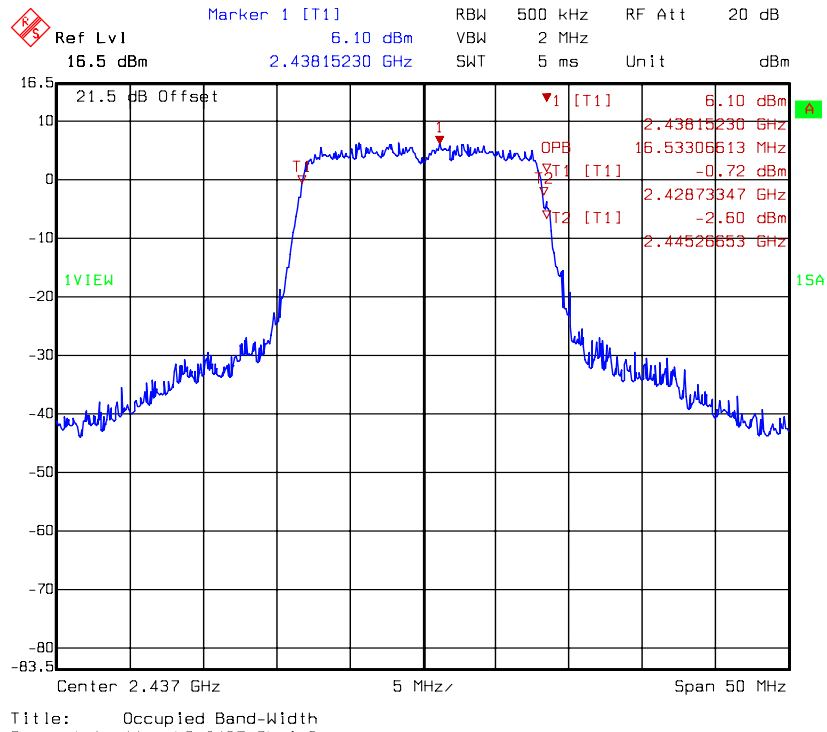
**Chain 0: 99% Occupied Bandwidth @ 802.11b mode channel 11**



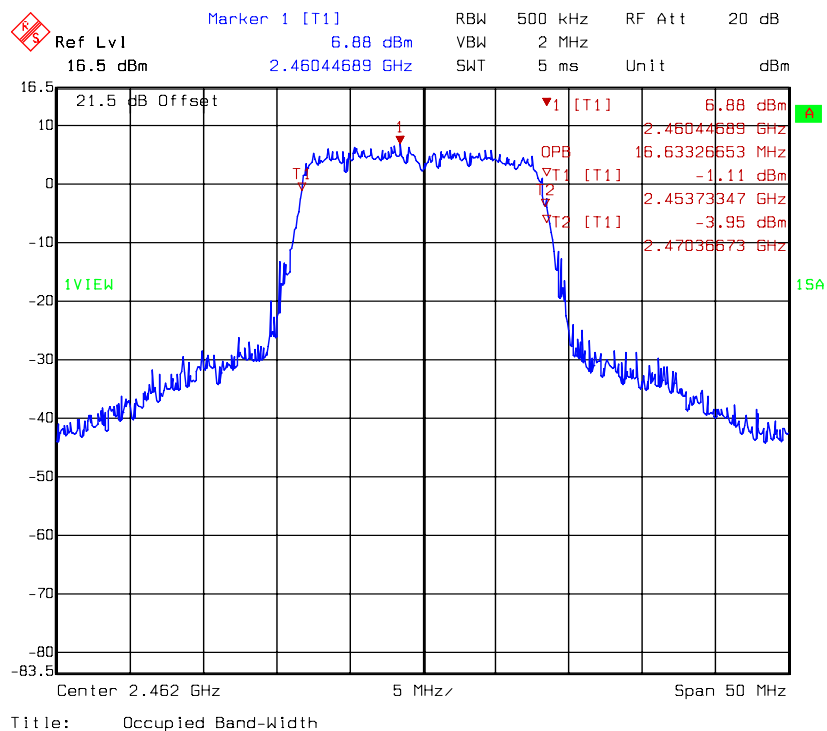
**Chain 0: 99% Occupied Bandwidth @ 802.11g mode channel 1**



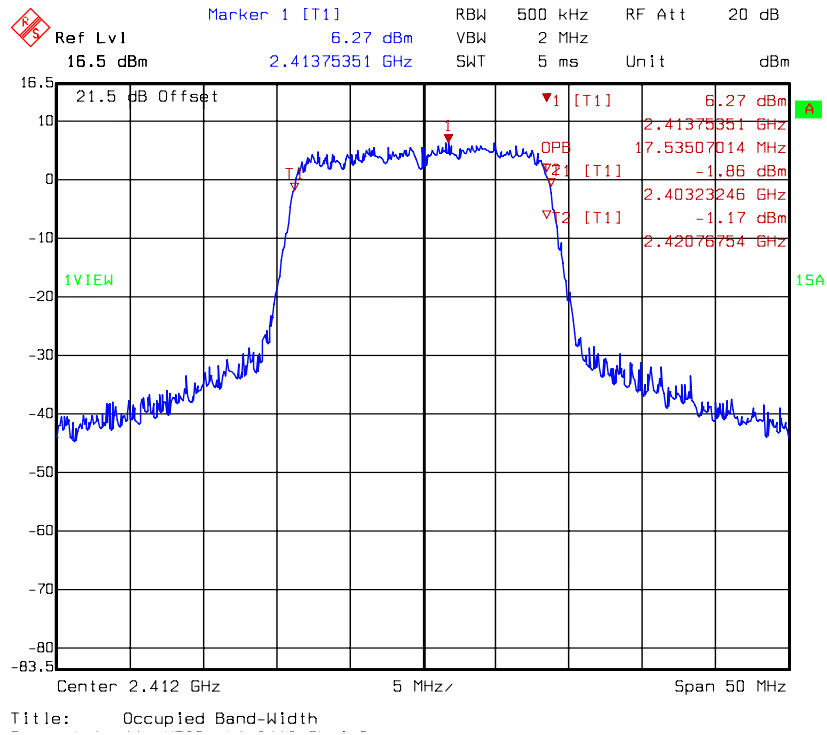
**Chain 0: 99% Occupied Bandwidth @ 802.11g mode channel 6**



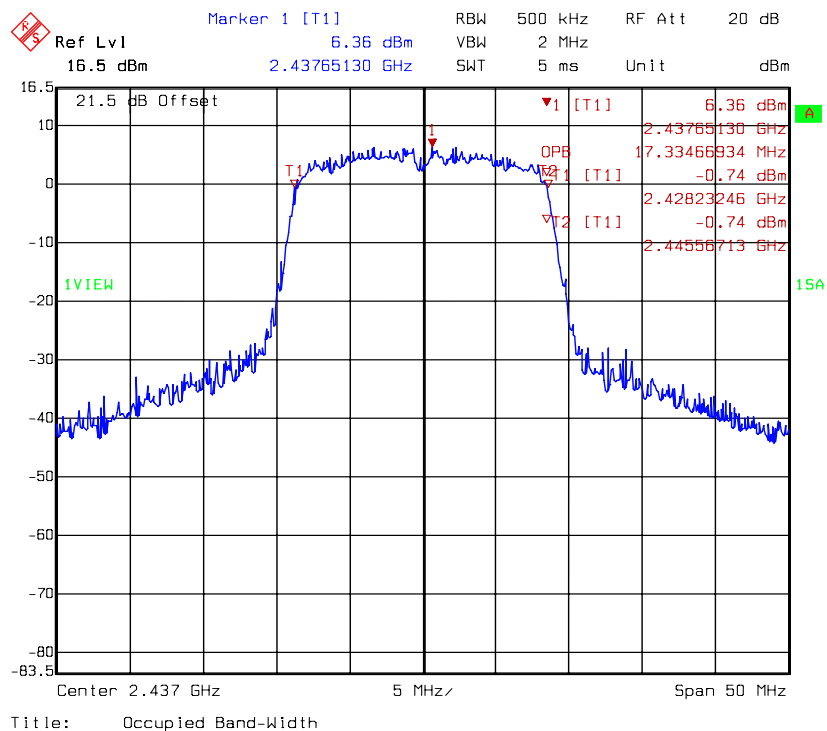
**Chain 0: 99% Occupied Bandwidth @ 802.11g mode channel 11**



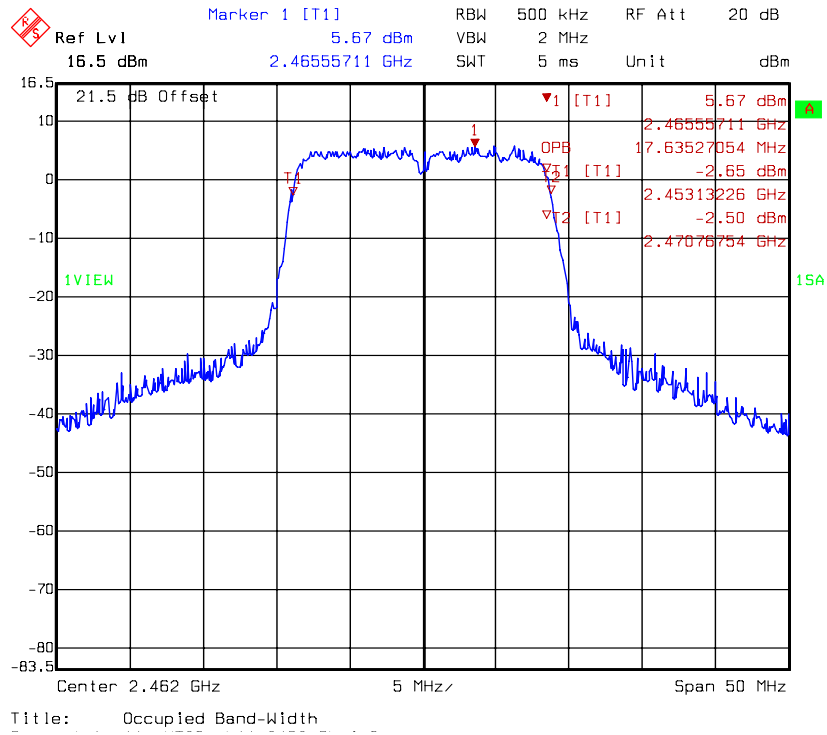
**Chain 0: 99% Occupied Bandwidth @ 802.11n HT20 mode channel 1**



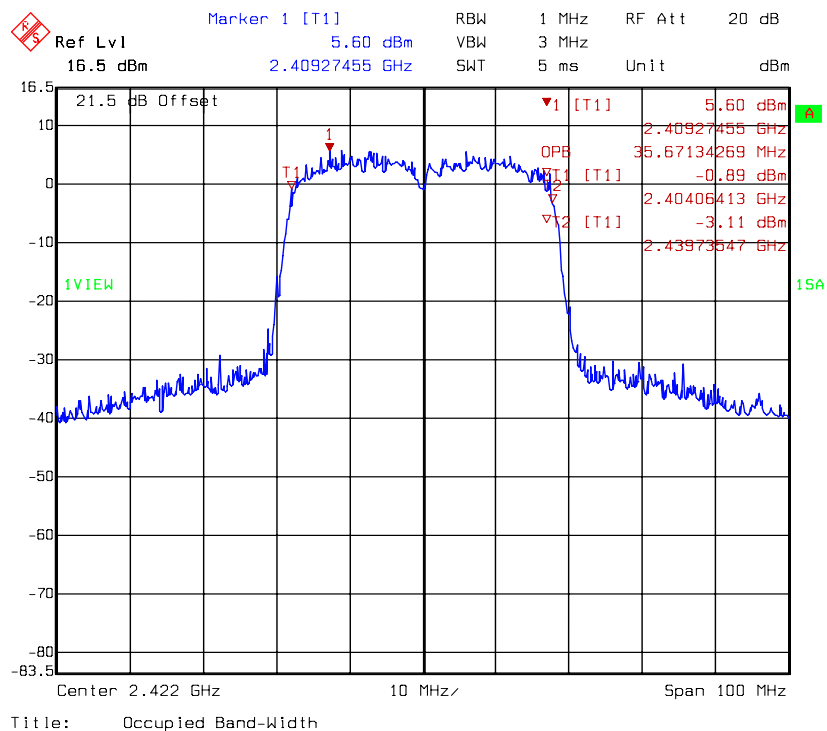
**Chain 0: 99% Occupied Bandwidth @ 802.11n HT20 mode channel 6**



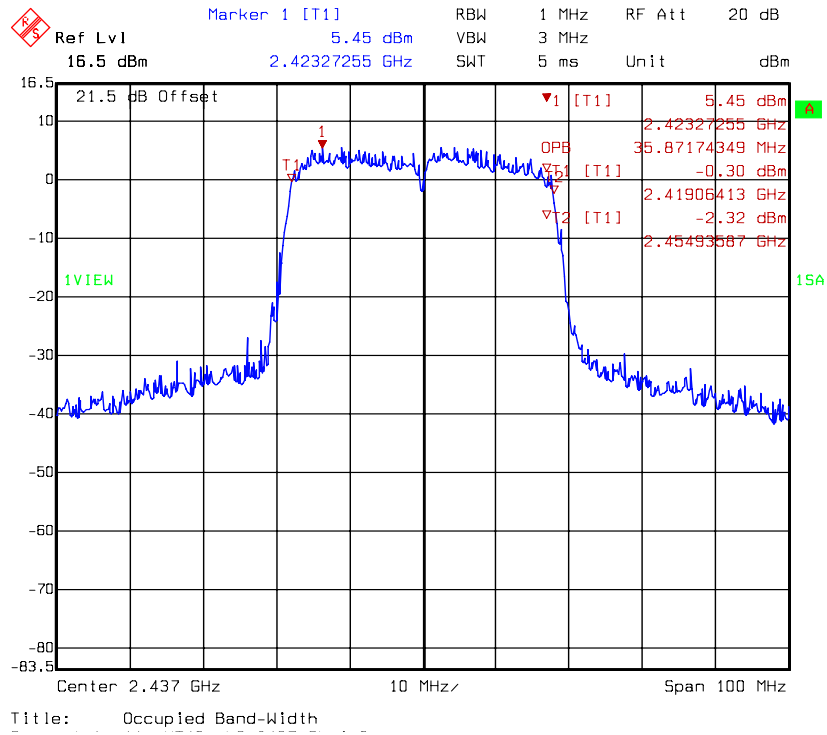
**Chain 0: 99% Occupied Bandwidth @ 802.11n HT20 mode channel 11**



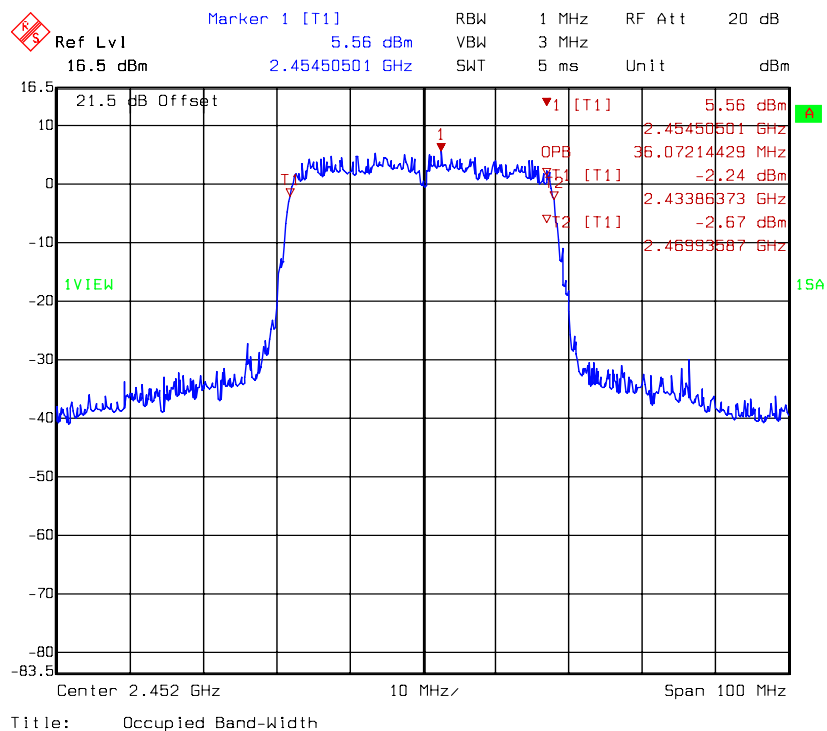
**Chain 0: 99% Occupied Bandwidth @ 802.11n HT40 mode channel 3**



**Chain 0: 99% Occupied Bandwidth @ 802.11n HT40 mode channel 6**

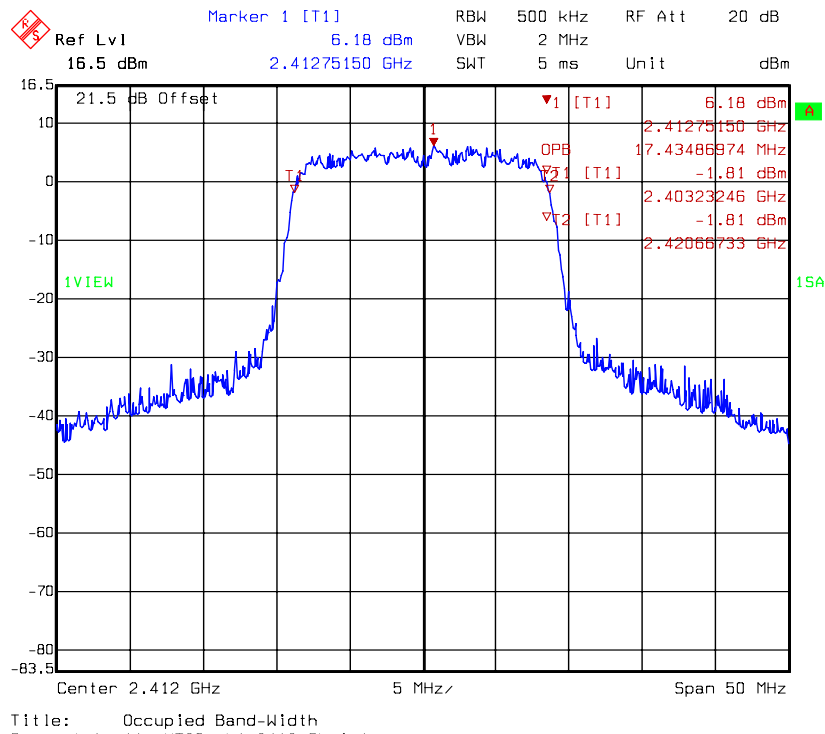


**Chain 0: 99% Occupied Bandwidth @ 802.11n HT40 mode channel 9**

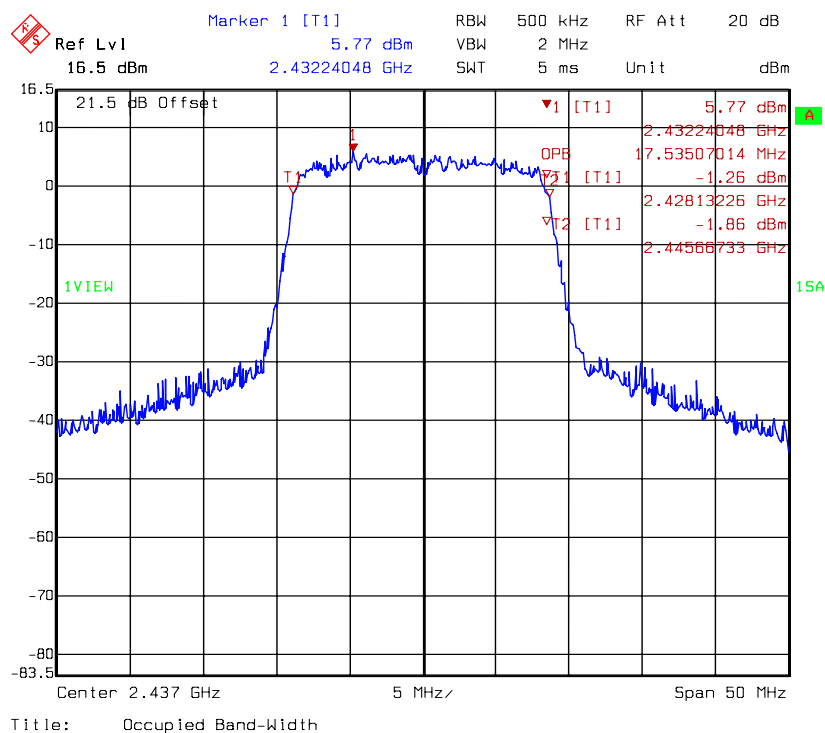




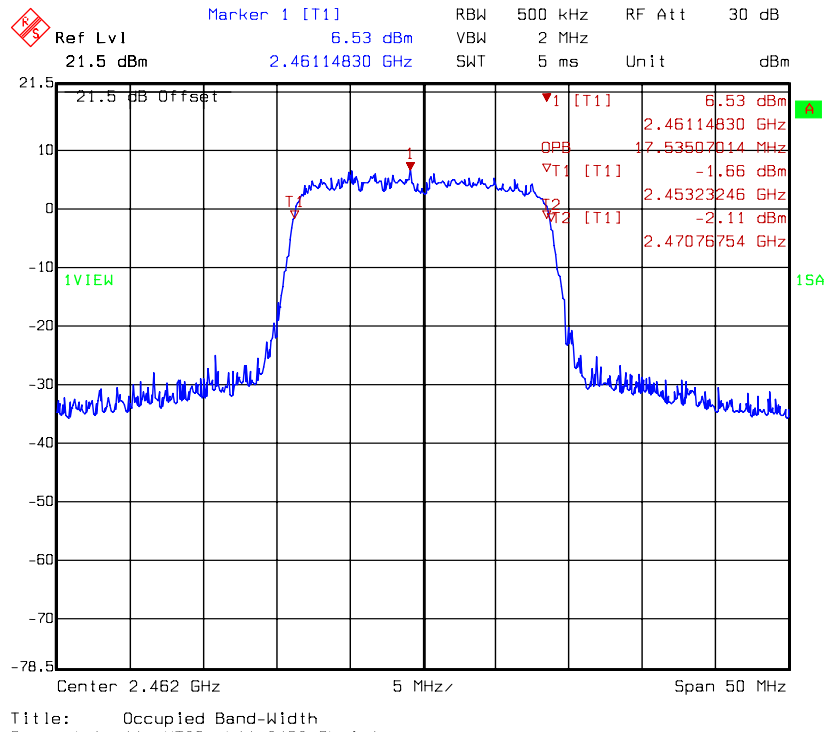
### Chain 1: 99% Occupied Bandwidth @ 802.11n HT20 mode channel 1



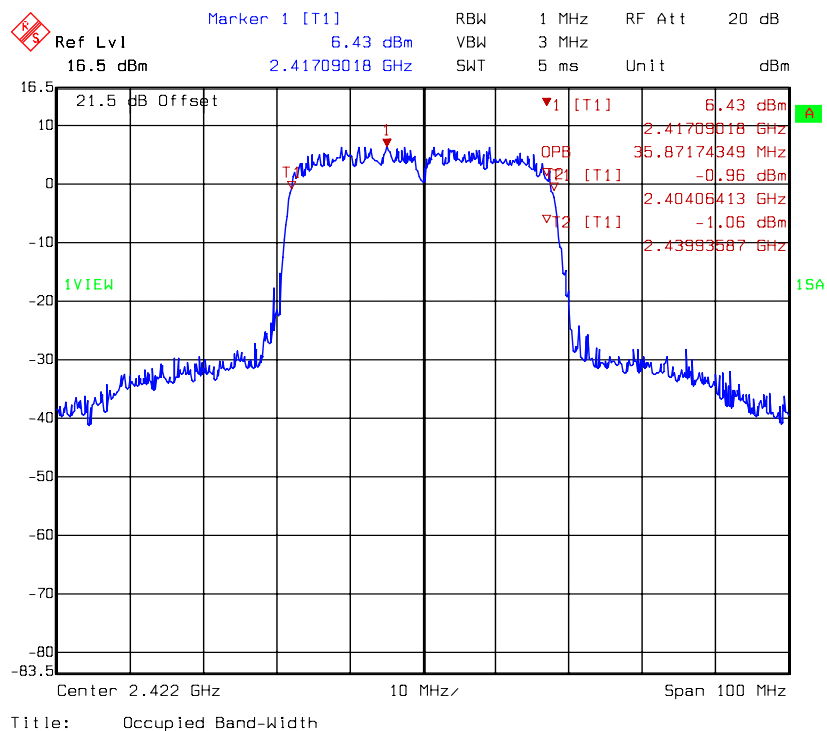
### Chain 1: 99% Occupied Bandwidth @ 802.11n HT20 mode channel 6



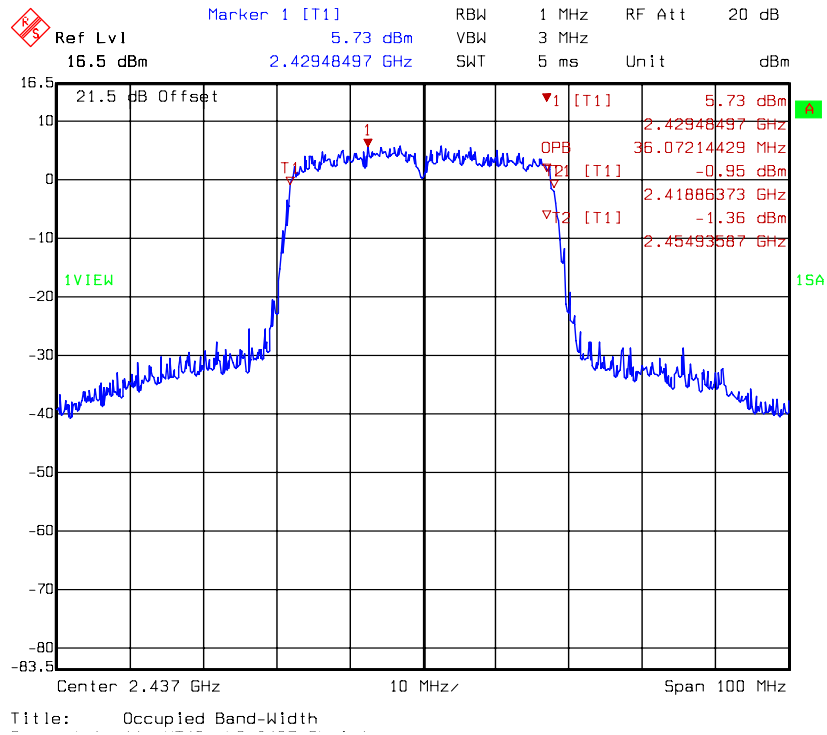
### Chain 1: 99% Occupied Bandwidth @ 802.11n HT20 mode channel 11



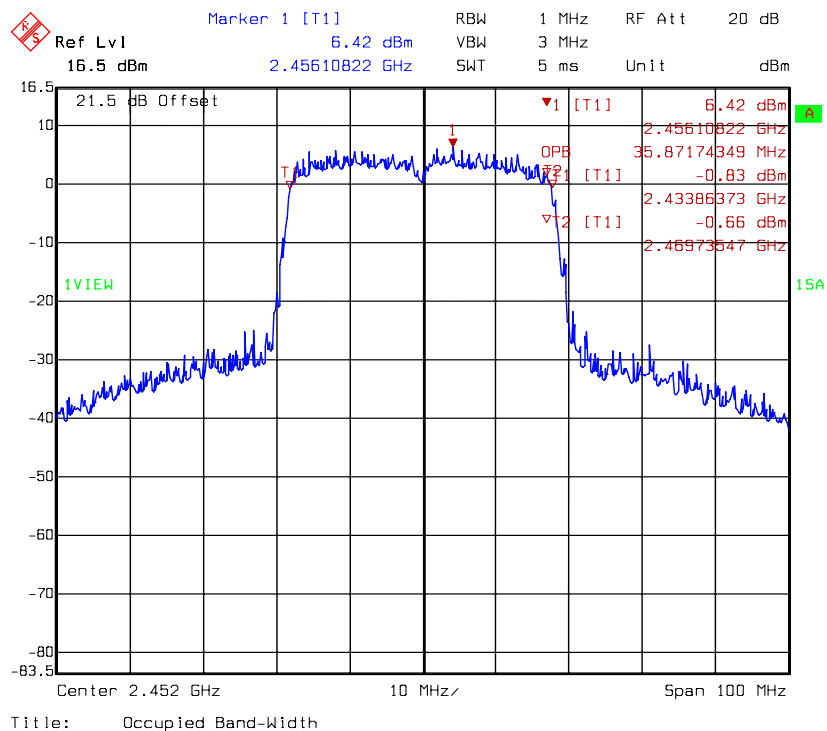
### Chain 1: 99% Occupied Bandwidth @ 802.11n HT40 mode channel 3



**Chain 1: 99% Occupied Bandwidth @ 802.11n HT40 mode channel 6**



**Chain 1: 99% Occupied Bandwidth @ 802.11n HT40 mode channel 9**



## 5. Maximum Output Power

<b>Name of Test</b>	Maximum output power
<b>Base Standard</b>	FCC 15.247(b)

**Measurement Uncertainty:**  $\pm 0.392$  dB (k=2)  
**Test Result:** Complies  
**Measurement Data:** See Table below

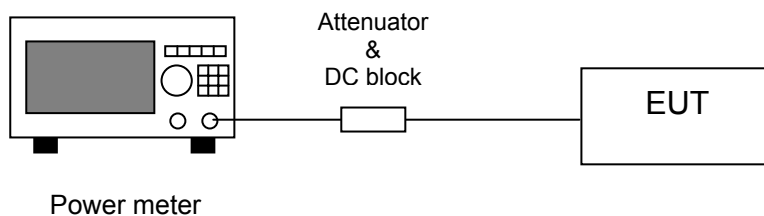
### Method of Measurement:

#### Reference FCC document: KDB558074

The power output was measured on the EUT using a 50 ohm SMA Cable connected to peak power meter via power sensor for below 20MHz bandwidth. For 40MHz bandwidth (HT40 mode), the spectrum analyzer was used.

Power output was measured with the maximum rated input level.

### Test Diagram:



**Note 1:** The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps data rate for 802.11b mode, 6 Mbps data rate for 802.11g mode, 6.5 Mbps data rate for 802.11n HT20 mode and 13 Mbps data rate for 802.11n HT40 mode. The EUT was tuned to a low, middle and high channel.

**Note 2:** §15.247 (b) (4) Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**Note 3:** §15.247 (b) (4) (ii) Systems operating in the 5725–5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

Table 3. Maximum output power

### Single Tx

Mode	Channel	Frequency (MHz)	Output Power (dBm)	Total Power (mw)	Limit (dBm)
			PK	PK	
802.11b	1	2412	20.52	112.72	30
	6	2437	18.06	63.97	30
	11	2462	18.63	72.95	30
802.11g	1	2412	23.58	228.03	30
	6	2437	23.33	215.28	30
	11	2462	23.12	205.12	30

### 2Tx

Mode	Channel	Frequency (MHz)	Output Power (dBm)		Total Power (PK)		Limit (dBm)
			Chain 0	Chain 1			
			PK	PK	mW	dBm	
802.11n HT20	1	2412	23.27	22.35	384.12	25.84	30
	6	2437	22.22	22.09	328.53	25.17	30
	11	2462	22.25	22.83	359.75	25.56	30
802.11n HT40	3	2422	22.74	22.54	367.41	25.65	30
	6	2437	22.54	22.74	367.41	25.65	30
	9	2452	22.72	22.33	358.07	25.54	30

## 6. Power Spectral Density

<b>Name of Test</b>	Power Spectral Density
<b>Base Standard</b>	FCC 15.247(e)

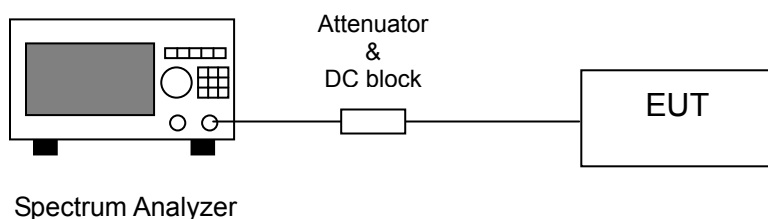
**Test Result:** Complies  
**Measurement Data:** See Table & plots below

### Method of Measurement:

#### Reference FCC document: KDB558074

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1 % of the bandwidth of the transmitted signal. The resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform. The appropriate bandwidth mask is applied to the output waveform to verify compliance.

### Test Diagram:



**Note:** The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps data rate for 802.11b mode, 6 Mbps data rate for 802.11g mode, 6.5 Mbps data rate for 802.11n HT20 mode and 13 Mbps data rate for 802.11n HT40 mode. The EUT was tuned to a low, middle and high channel.

Table 4. Power Spectral Density

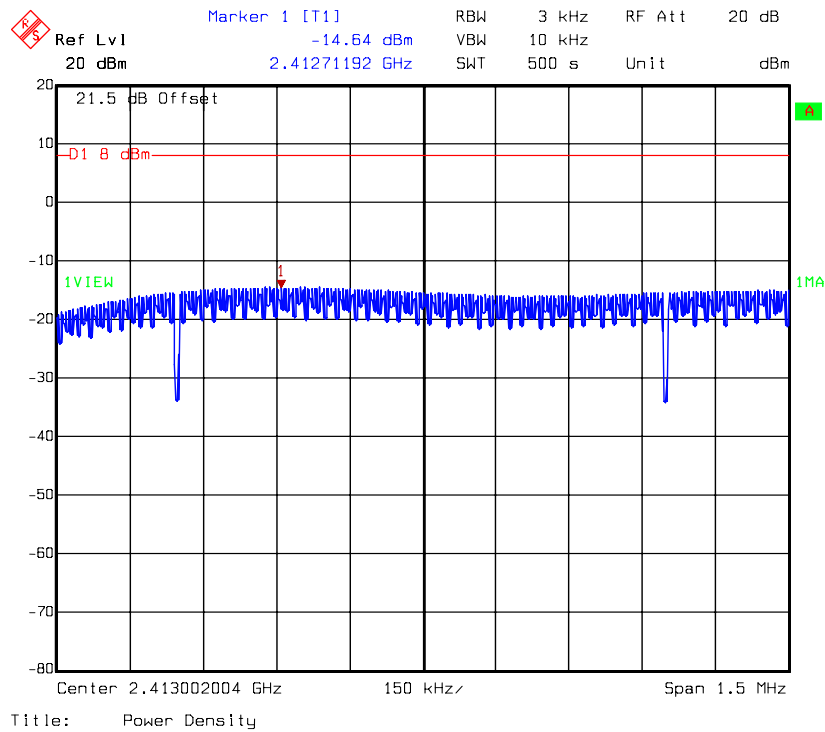
### Single TX

Mode	Channel	Frequency (MHz)	PSD (dBm)	PSD (mW)	Limit (dBm)	Margin (dB)
802.11b	1	2412	-14.64	0.03	8	-22.64
	6	2437	-13.65	0.04	8	-21.65
	11	2462	-13.32	0.05	8	-21.32
802.11g	1	2412	-15.48	0.03	8	-23.48
	6	2437	-15.13	0.03	8	-23.13
	11	2462	-15.29	0.03	8	-23.29

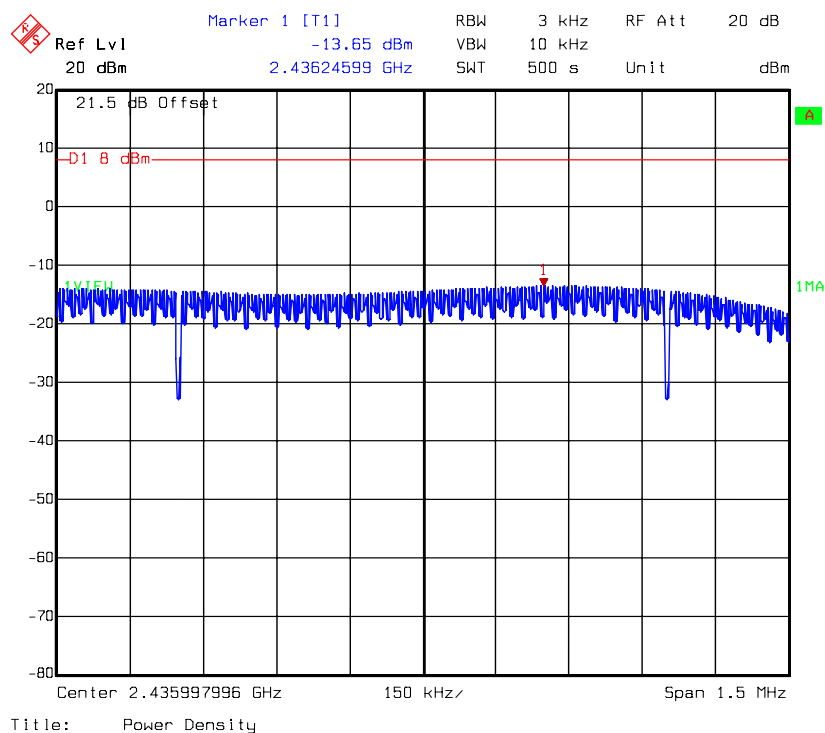
### 2TX

Mode	Channel	Frequency (MHz)	PSD (dBm)		Total PSD		Limit (dBm)	Margin (dB)
			Chain 0	Chain 1	mW	dBm	dBm	
802.11n HT20	1	2412	-14.32	-15.53	0.06	-11.87	8	-19.87
	6	2437	-15.13	-15.45	0.06	-12.28	8	-20.28
	11	2462	-15.41	-15.39	0.06	-12.39	8	-20.39
802.11n HT40	3	2422	-17.85	-17.53	0.03	-14.68	8	-22.68
	6	2437	-17.38	-18.48	0.03	-14.88	8	-22.88
	9	2452	-17.92	-17.33	0.03	-14.60	8	-22.60

### Chain 0: Power Spectral Density @ 802.11b mode channel 1

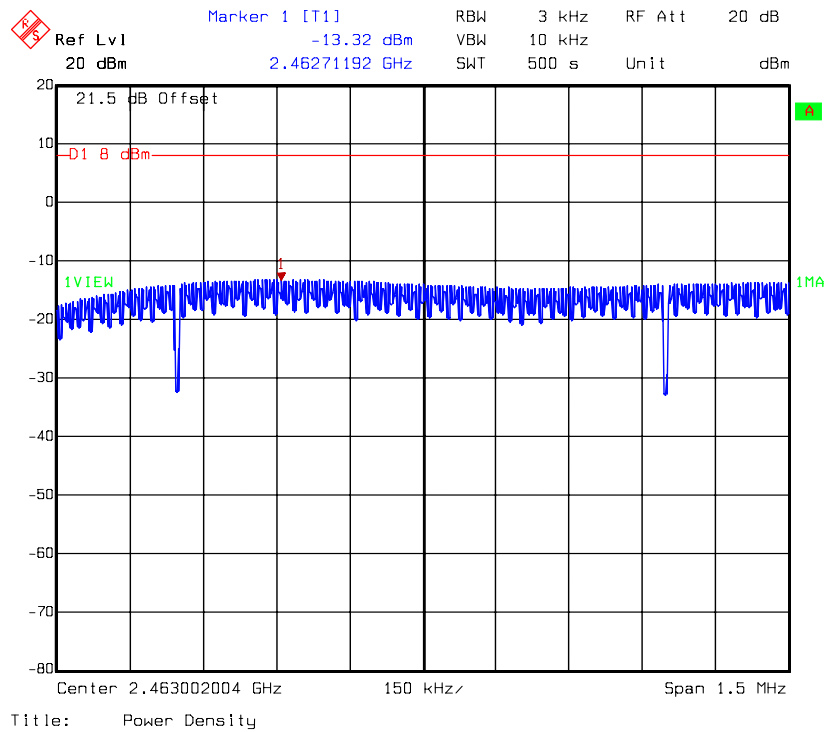


### Chain 0: Power Spectral Density @ 802.11b mode channel 6

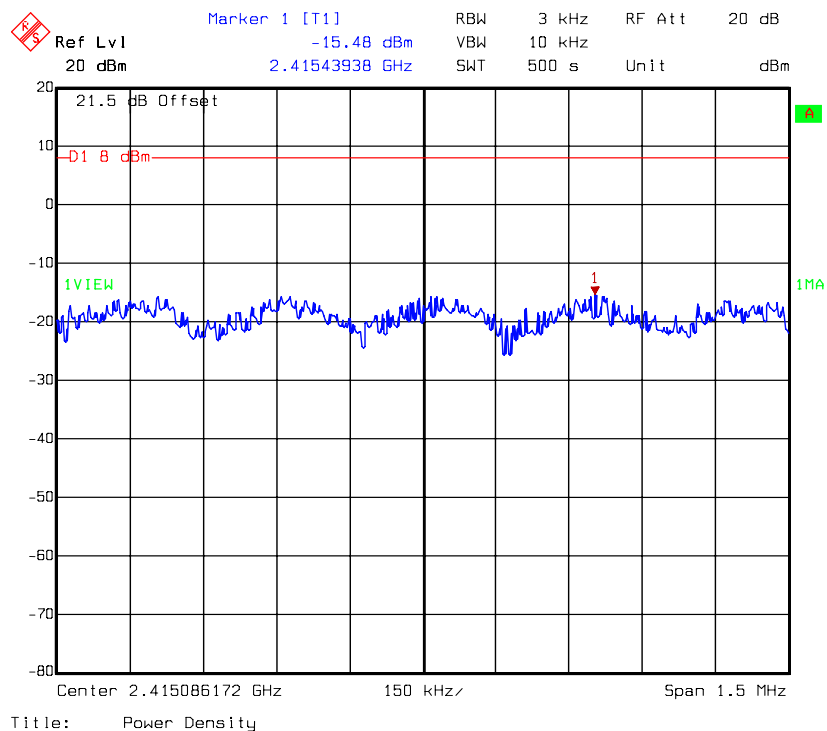




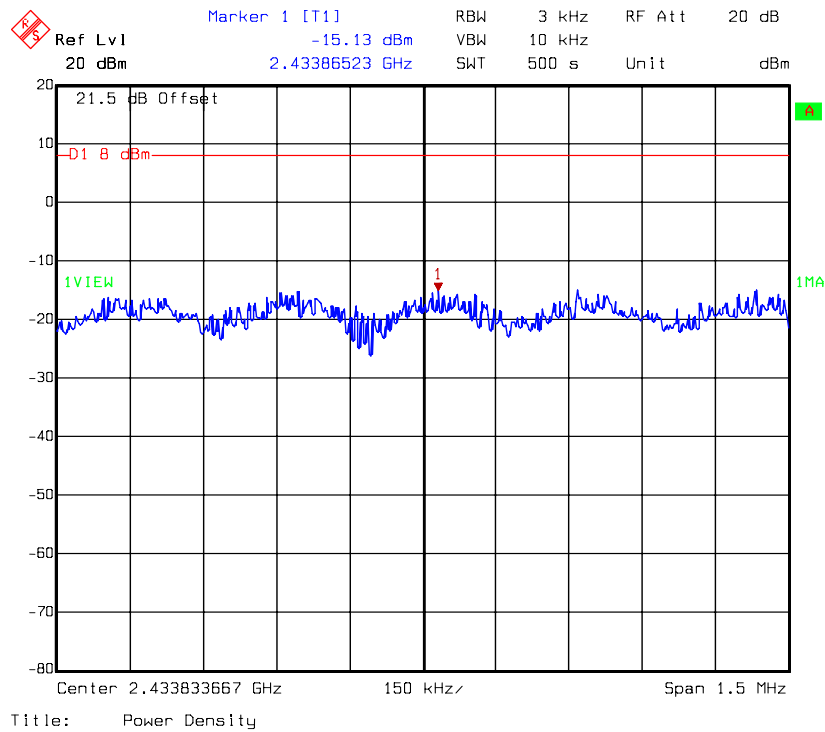
### Chain 0: Power Spectral Density @ 802.11b mode channel 11



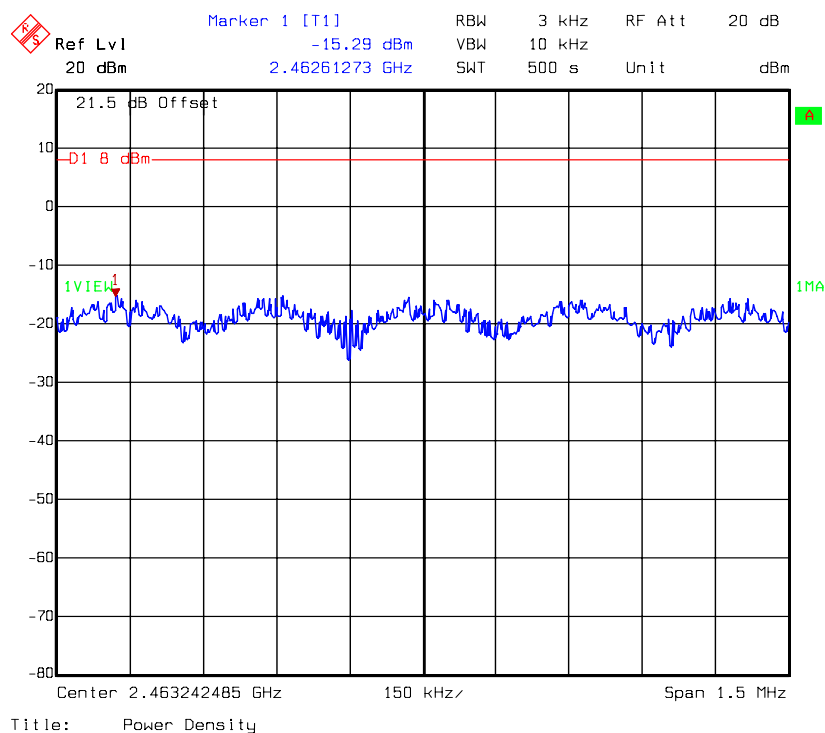
### Chain 0: Power Spectral Density @ 802.11g mode channel 1



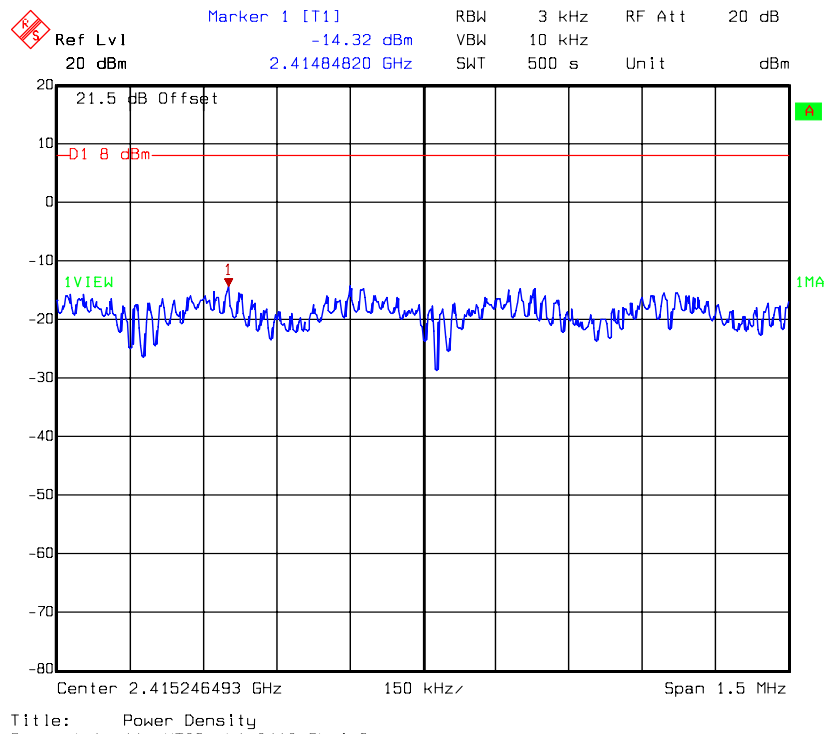
### Chain 0: Power Spectral Density @ 802.11g mode channel 6



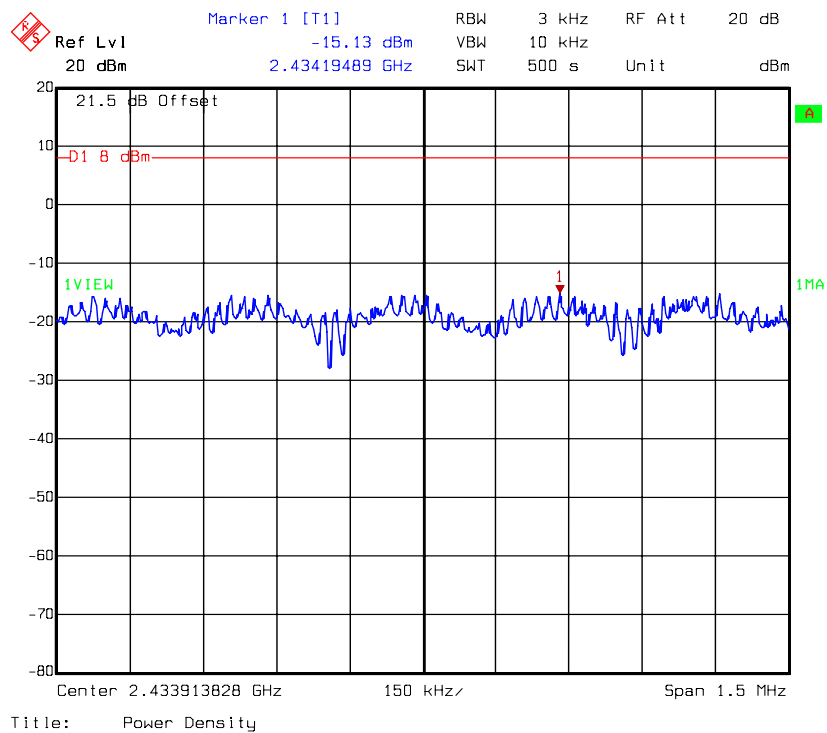
### Chain 0: Power Spectral Density @ 802.11g mode channel 11



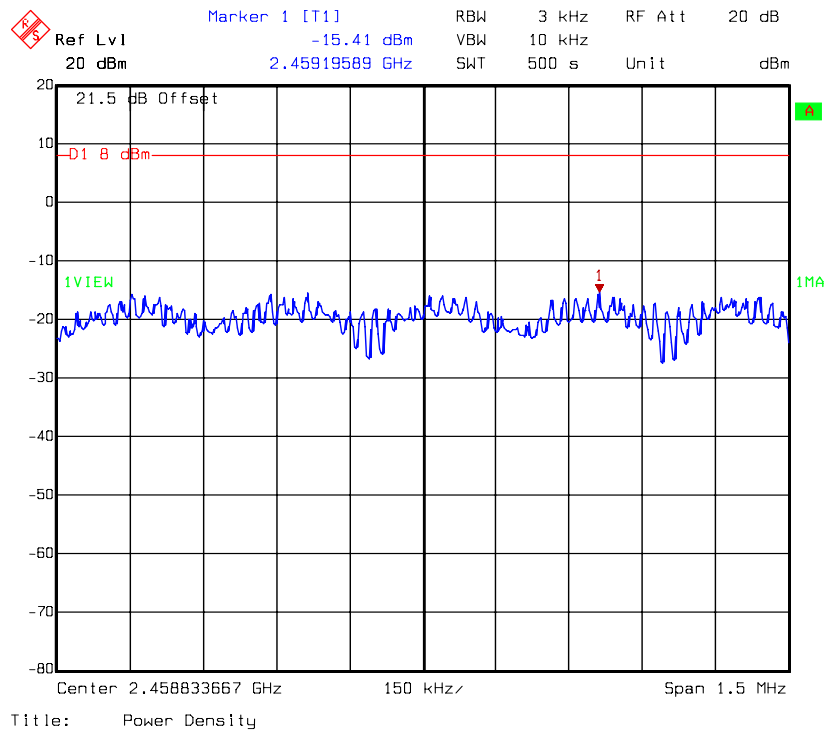
### Chain 0: Power Spectral Density @ 802.11n HT20 mode channel 1



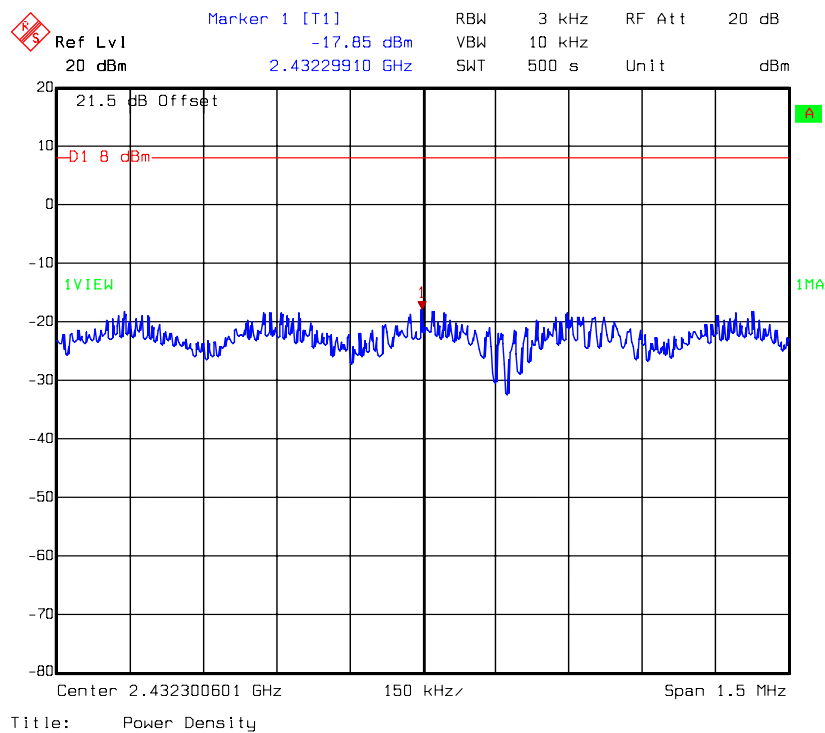
### Chain 0: Power Spectral Density @ 802.11n HT20 mode channel 6



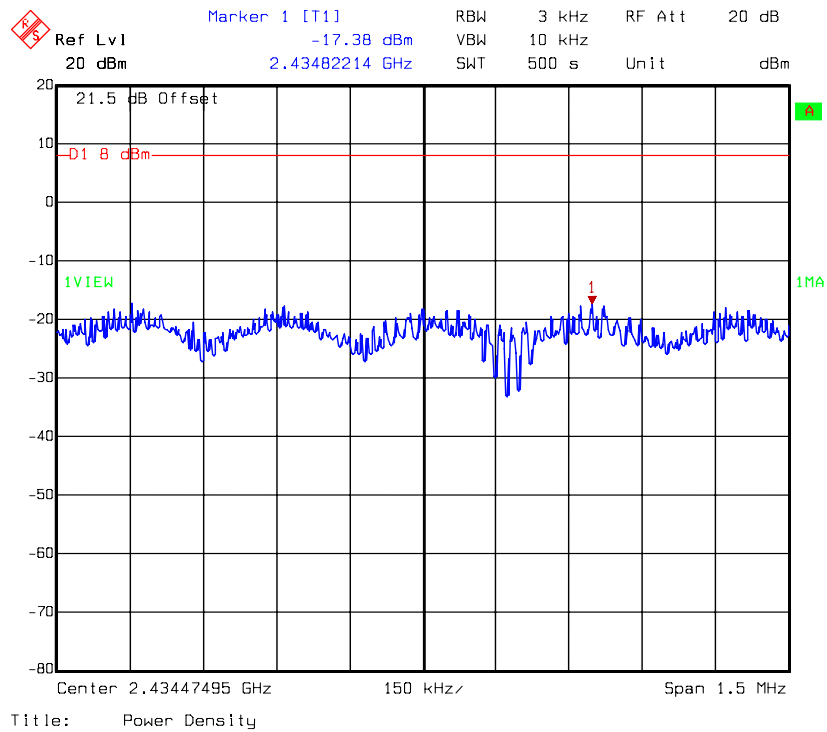
**Chain 0: Power Spectral Density @ 802.11n HT20 mode channel 11**



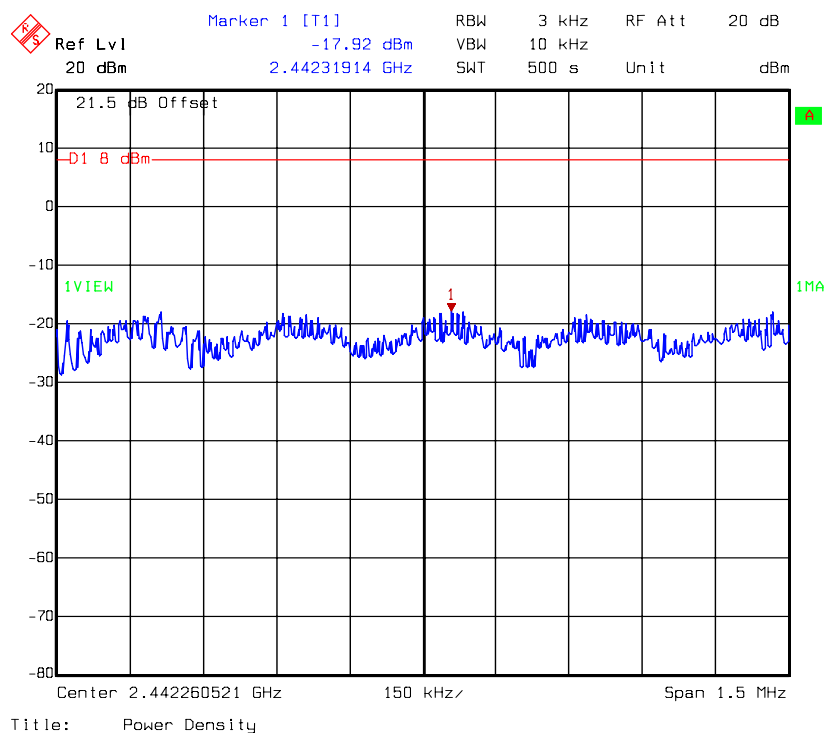
**Chain 0: Power Spectral Density @ 802.11n HT40 mode channel 3**



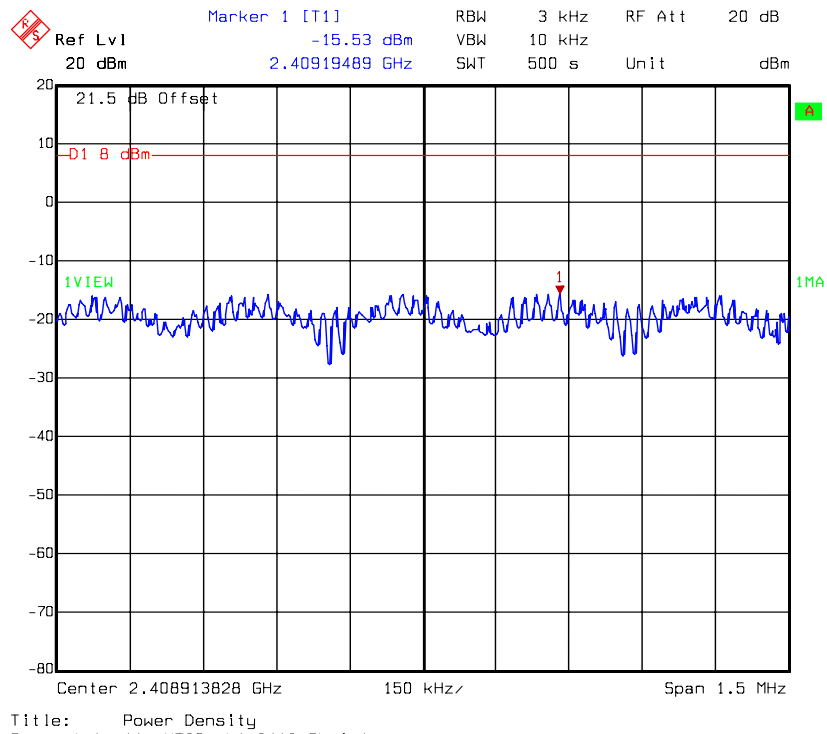
### Chain 0: Power Spectral Density @ 802.11n HT40 mode channel 6



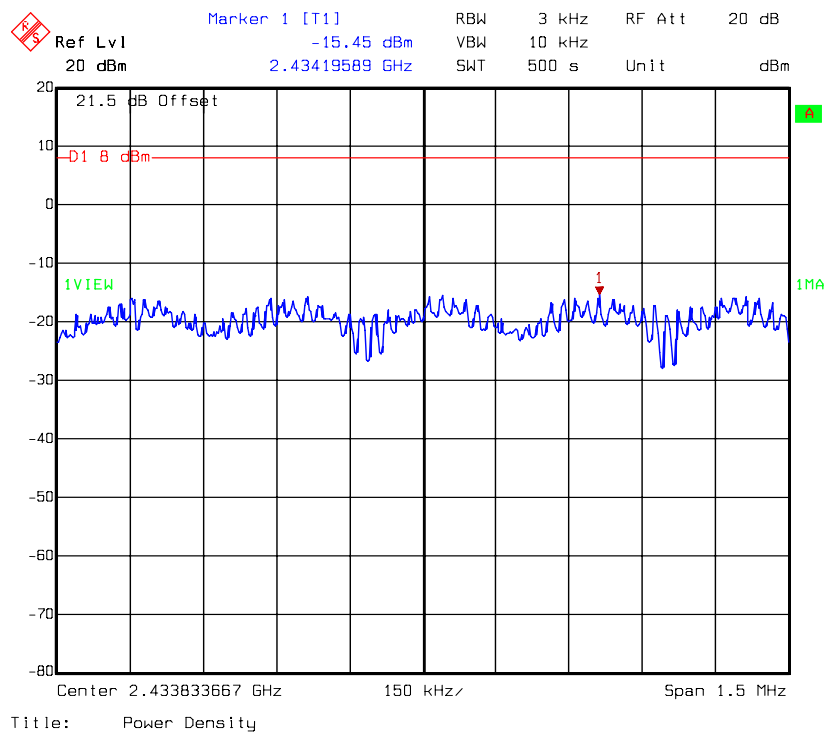
### Chain 0: Power Spectral Density @ 802.11n HT40 mode channel 9



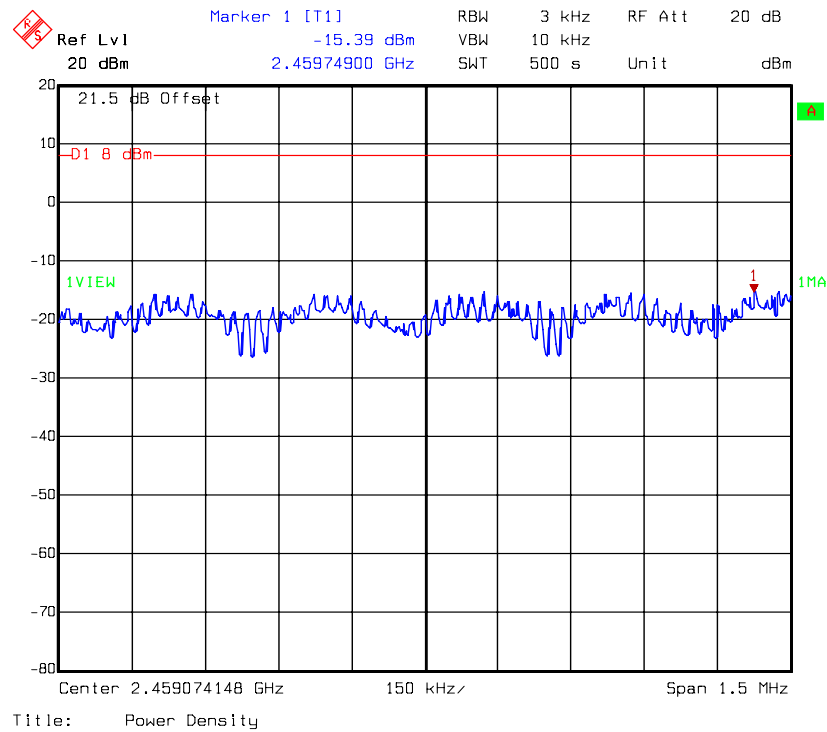
### Chain 1: Power Spectral Density @ 802.11n HT20 mode channel 1



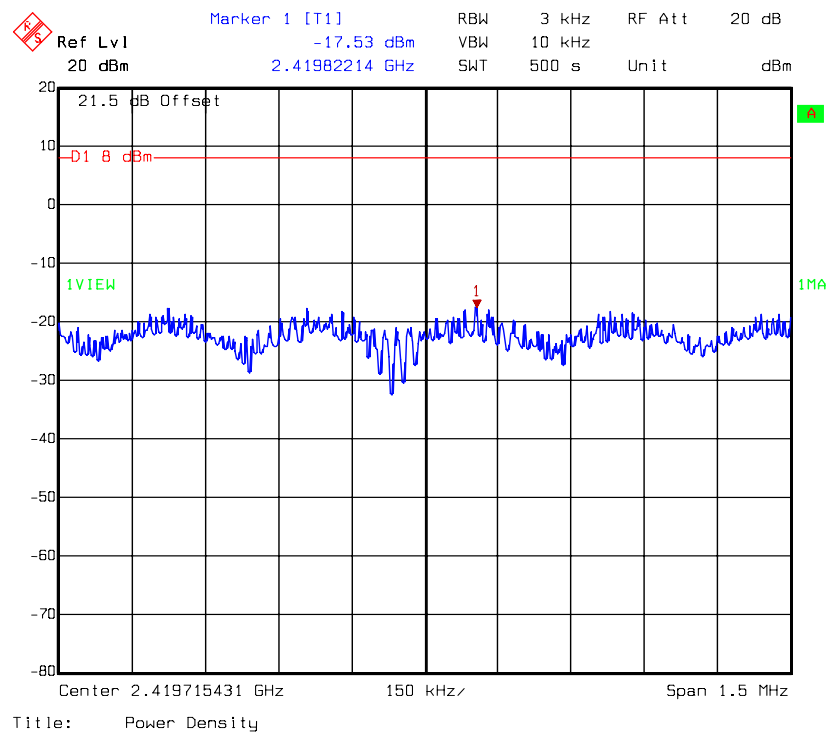
### Chain 1: Power Spectral Density @ 802.11n HT20 mode channel 6



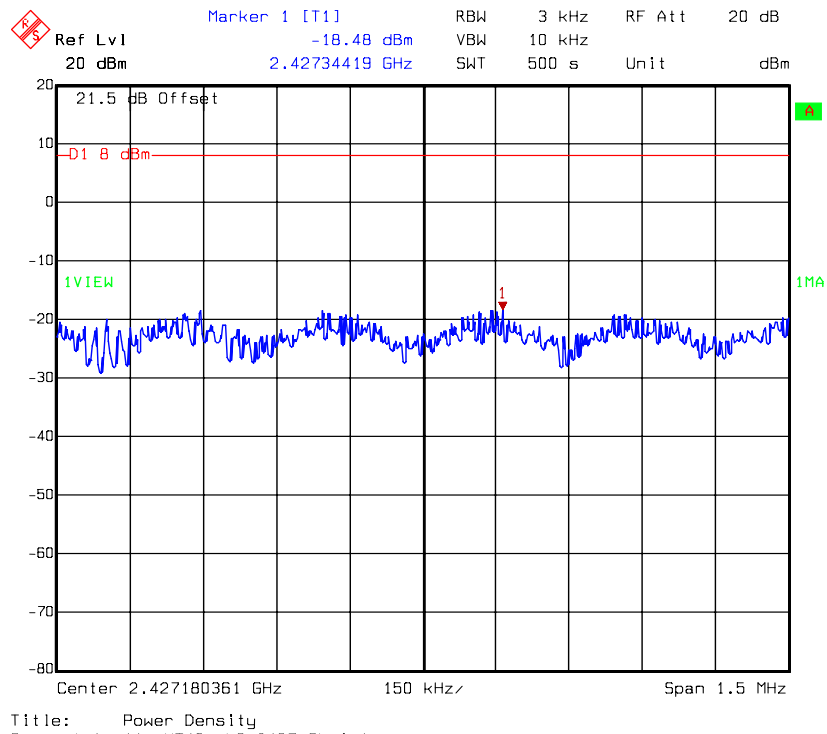
Chain 1: Power Spectral Density @ 802.11n HT20 mode channel 11



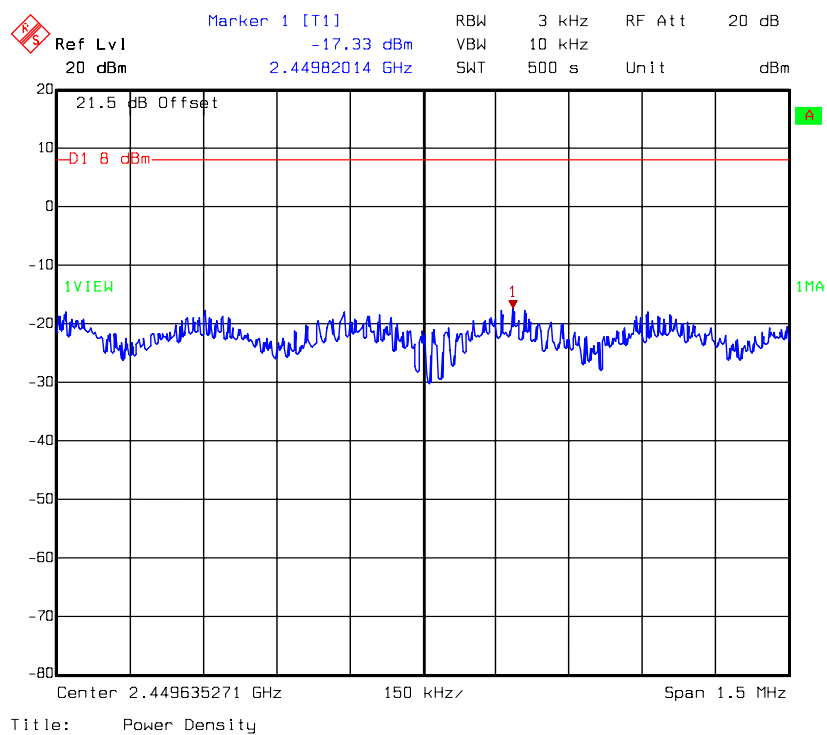
Chain 1: Power Spectral Density @ 802.11n HT40 mode channel 3



### Chain 1: Power Spectral Density @ 802.11n HT40 mode channel 6



### Chain 1: Power Spectral Density @ 802.11n HT40 mode channel 9





## 7. RF Antenna conducted Spurious

<b>Name of Test</b>	RF Antenna Conducted Spurious
<b>Base Standard</b>	FCC 15.247(d)

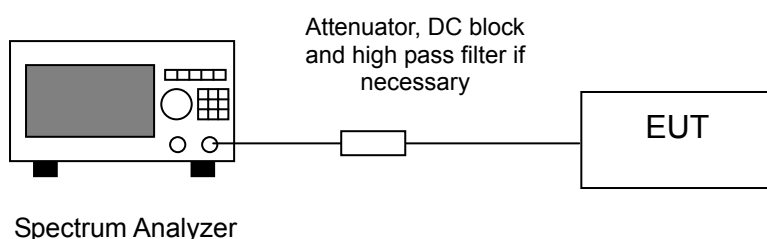
**Test Result:** Complies  
**Measurement Data:** See plots below

### Method of Measurement:

#### Reference FCC document: KDB558074

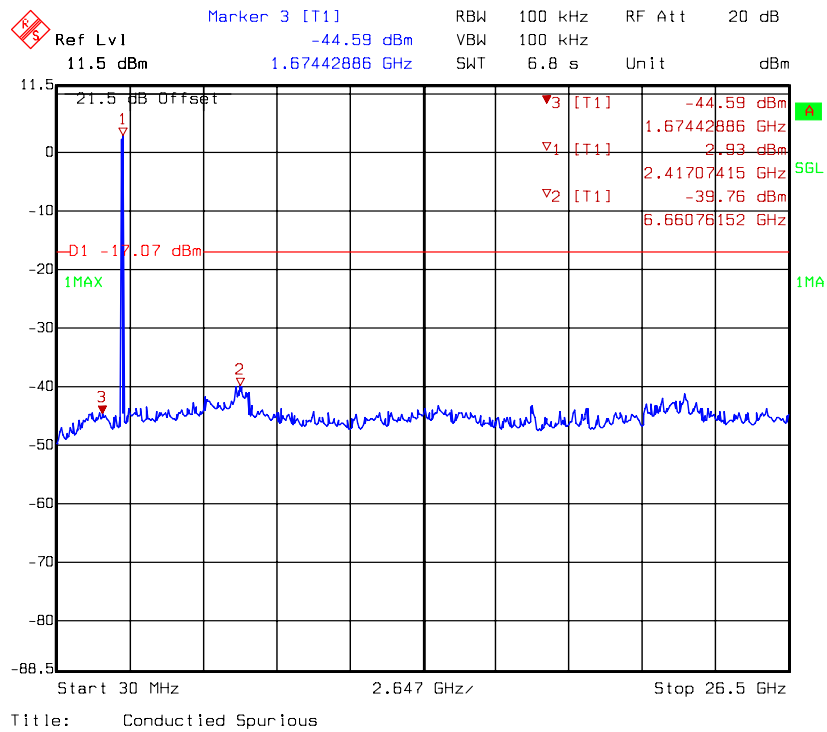
The measurements were performed from 30 MHz to 25 GHz RF antenna conducted per FCC 15.247 (d) was measured from the EUT antenna port using a 50 ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 100 kHz. Harmonics and spurious noise must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. The table below is the results from the highest emission for each channel within the authorized band. This table was used to determine the spurious limits for each channel.

### Test Diagram:

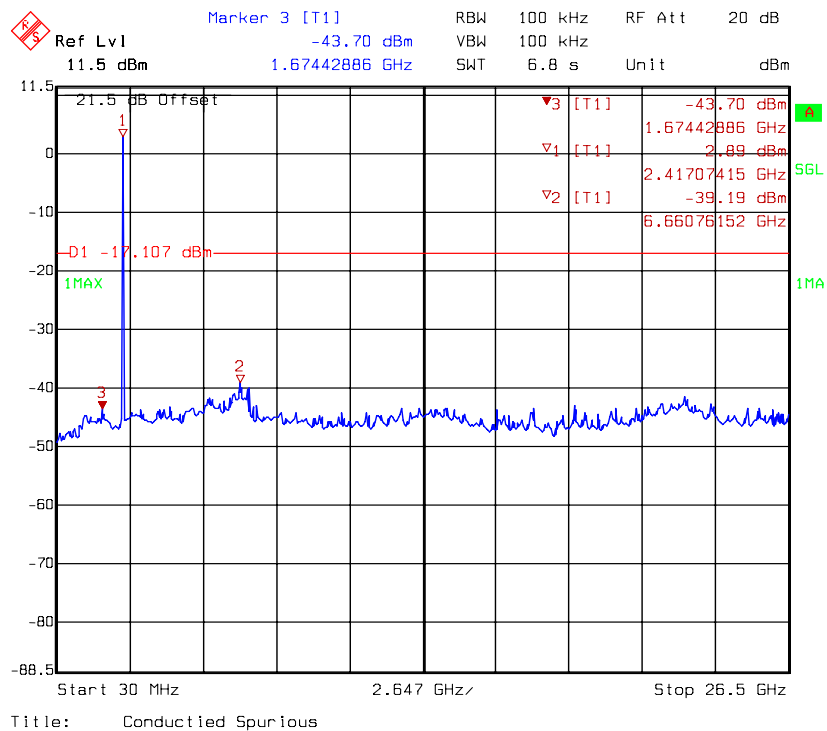


- Note:**
- (1) The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps data rate for 802.11b mode, 6 Mbps data rate for 802.11g mode, 6.5 Mbps data rate for 802.11n HT20 mode and 13 Mbps data rate for 802.11n HT40 mode. The EUT was tuned to a low, middle and high channel.
  - (2) The EUT operating at 2.4 GHz ISM band. Frequency Range scanned from 30 MHz to 25 GHz.

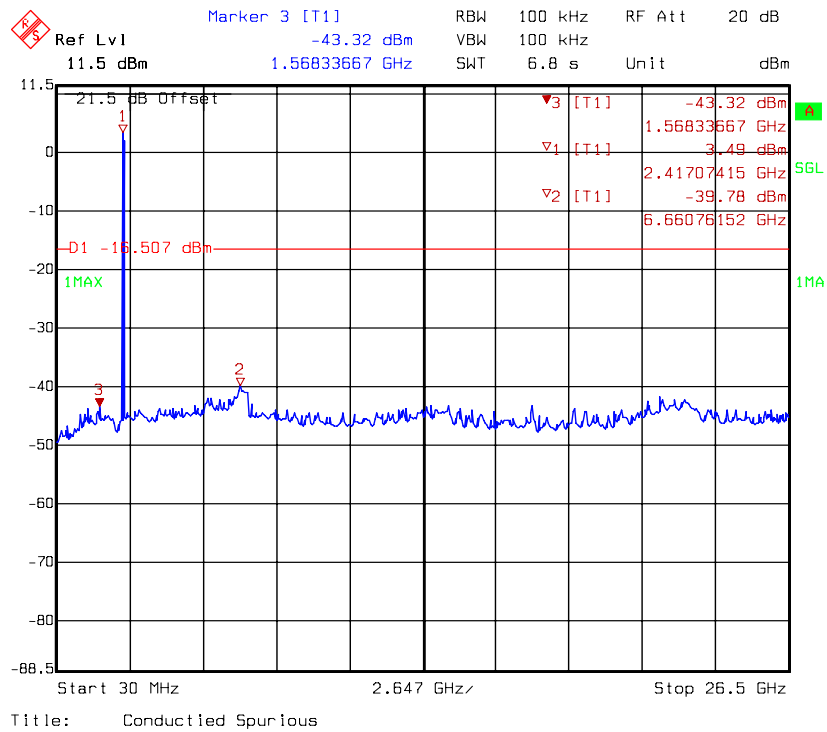
**Chain 0:** conducted spurious @ 802.11b mode channel 1



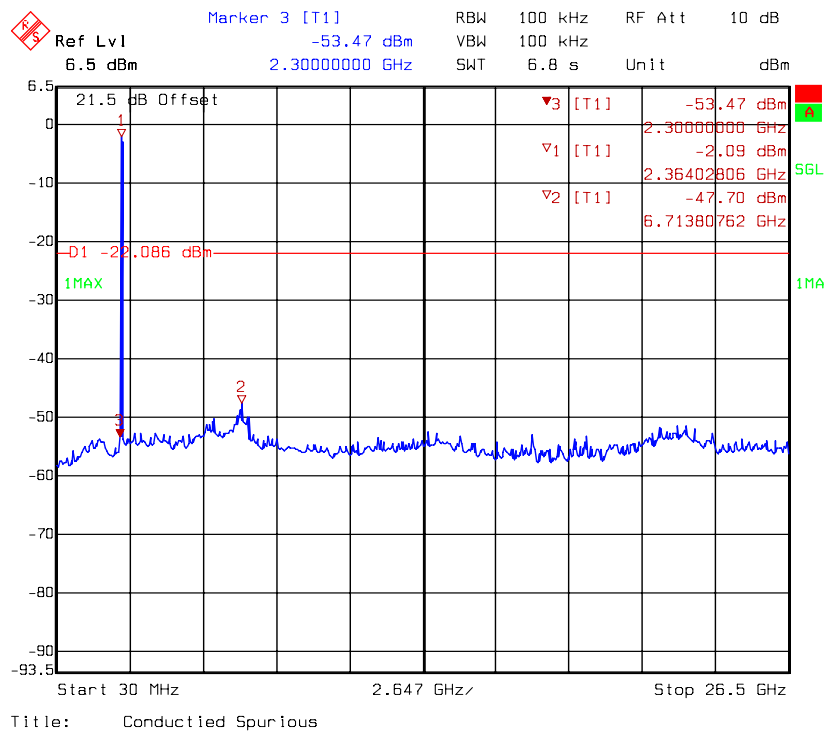
**Chain 0:** conducted spurious @ 802.11b mode channel 6



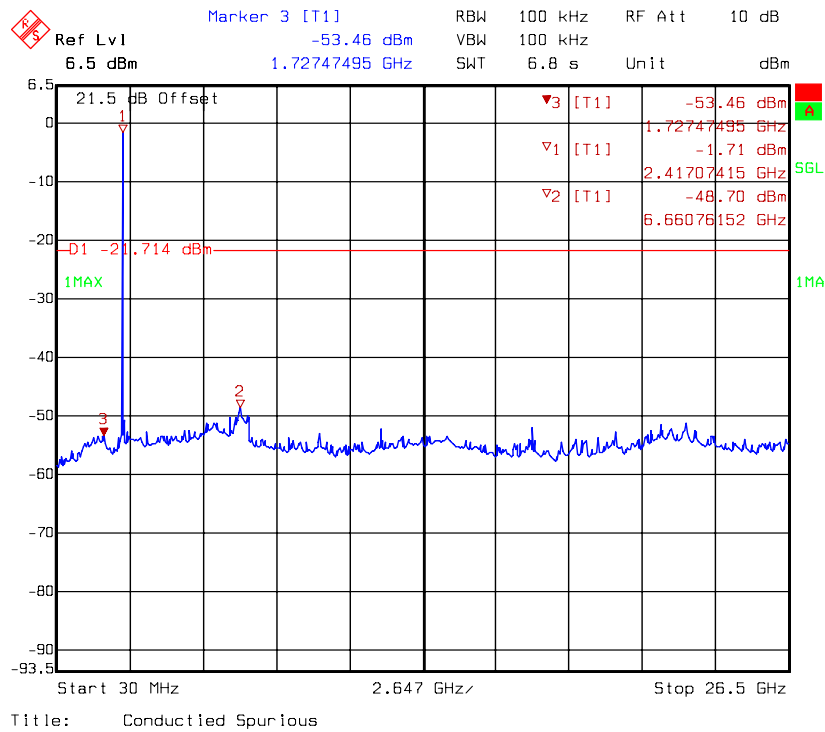
**Chain 0:** conducted spurious @ 802.11b mode channel 11



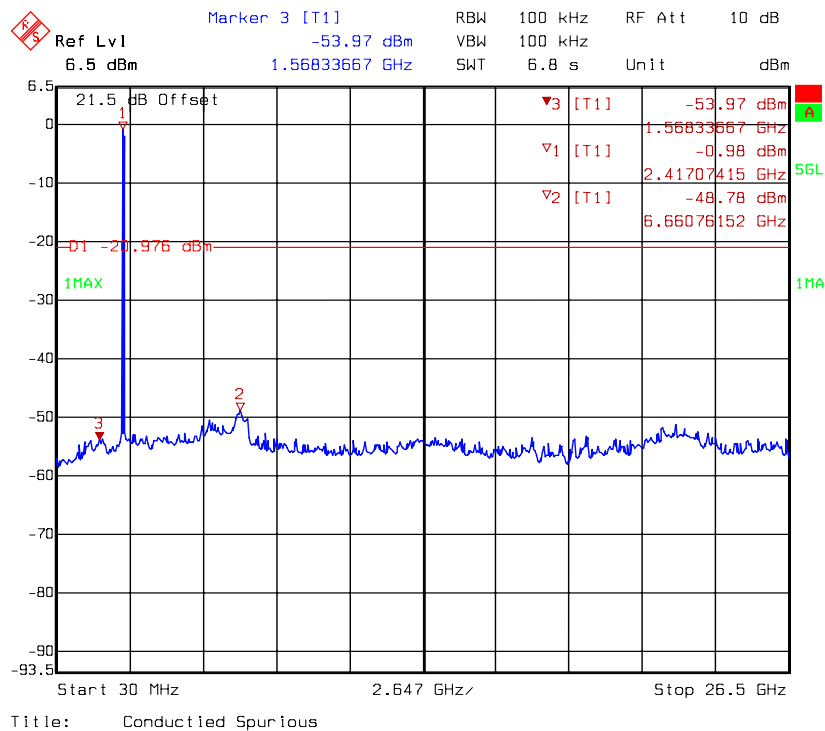
**Chain 0:** conducted spurious @ 802.11g mode channel 1



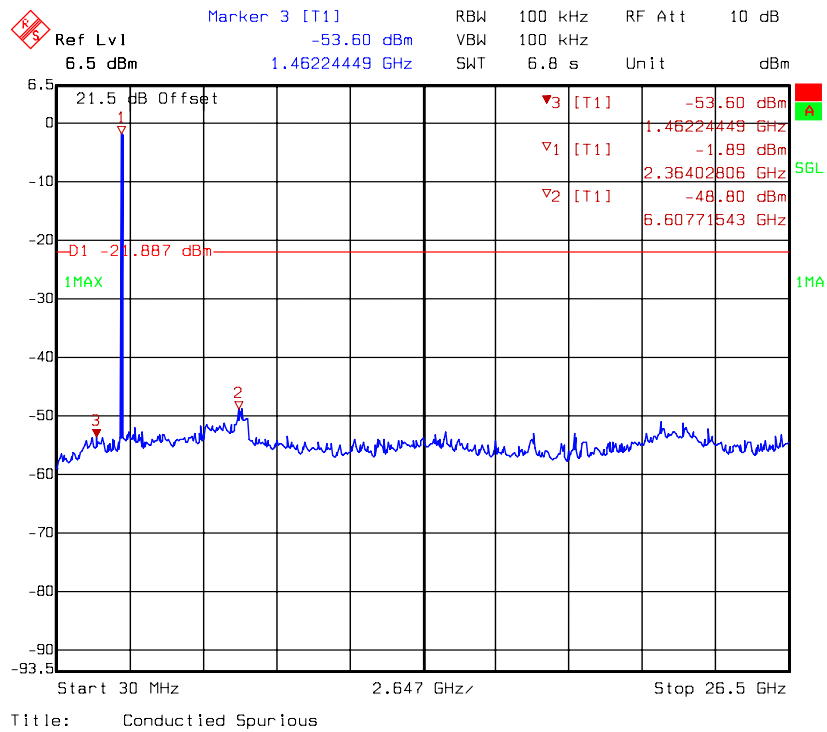
### Chain 0: conducted spurious @ 802.11g mode channel 6



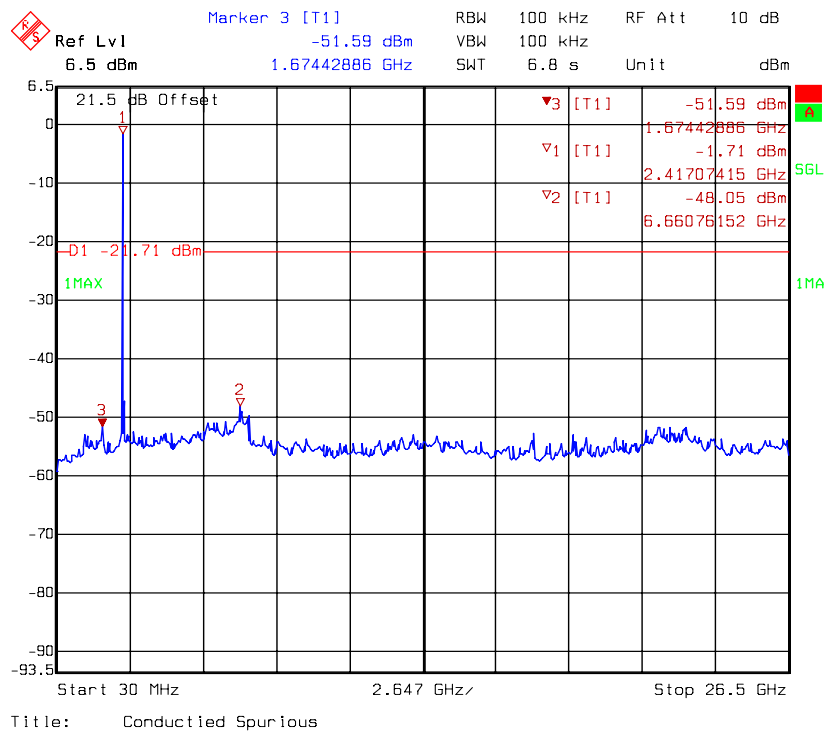
### Chain 0: conducted spurious @ 802.11g mode channel 11



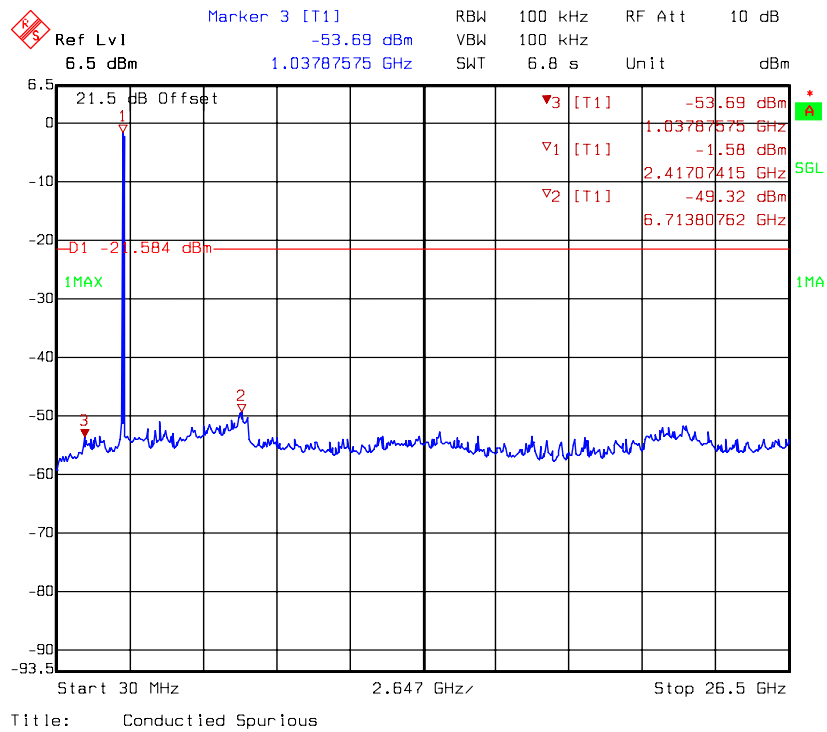
### Chain 0: conducted spurious @ 802.11n HT20 mode channel 1



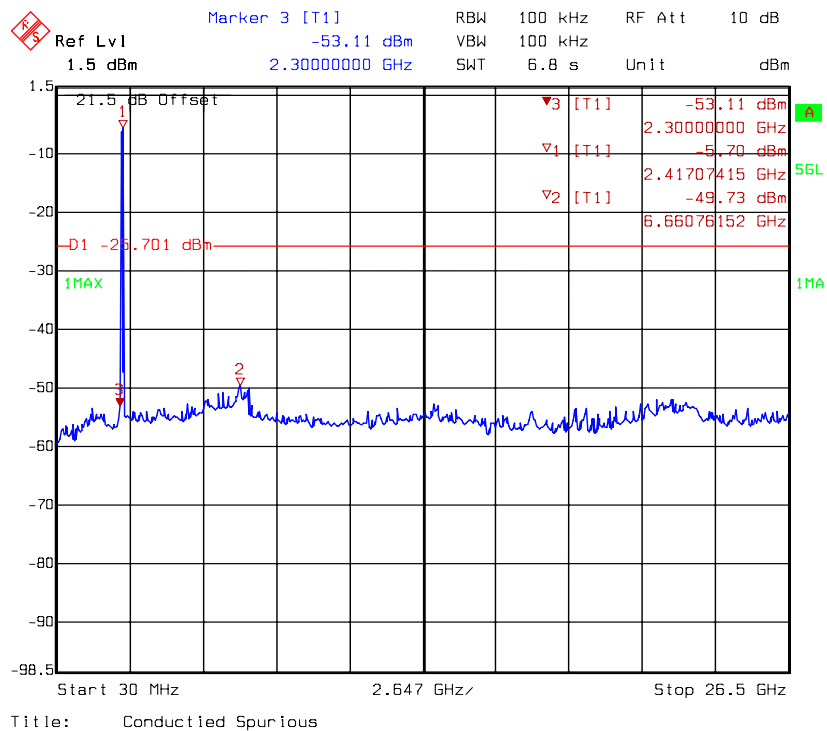
### Chain 0: conducted spurious @ 802.11n HT20 mode channel 6



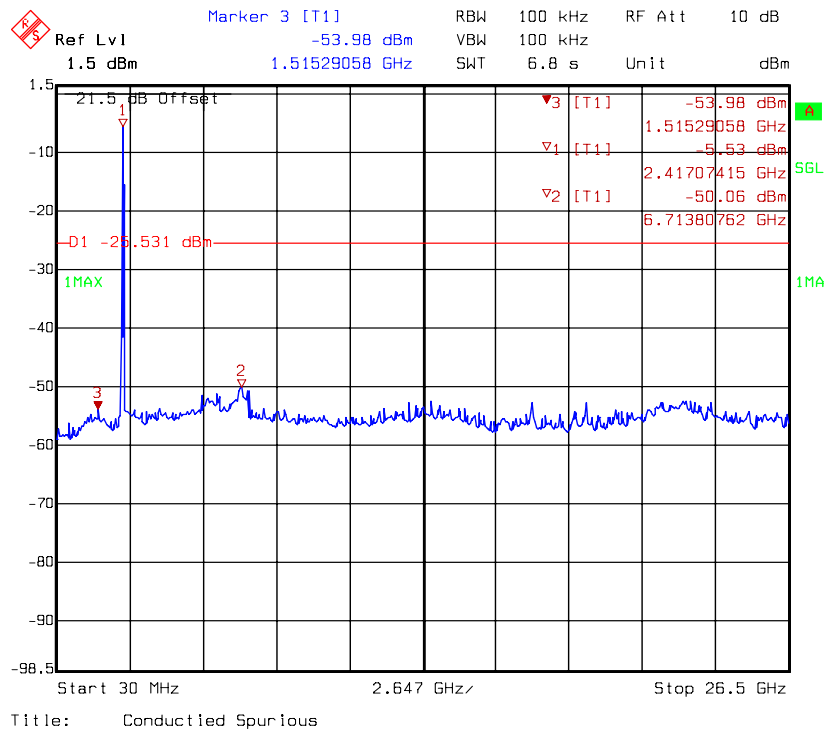
### Chain 0: conducted spurious @ 802.11n HT20 mode channel 11



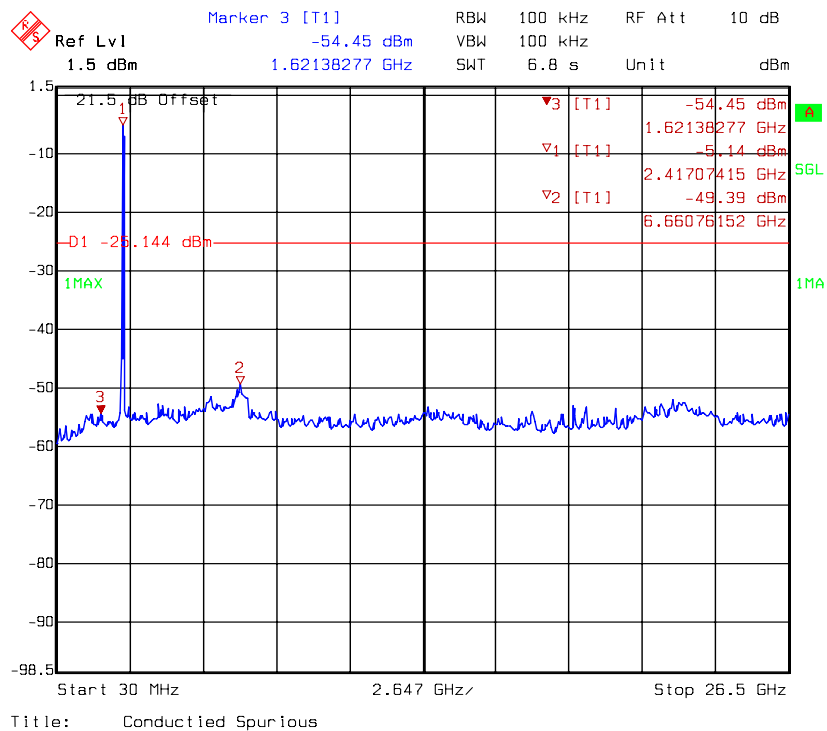
### Chain 0: conducted spurious @ 802.11n HT40 mode channel 3



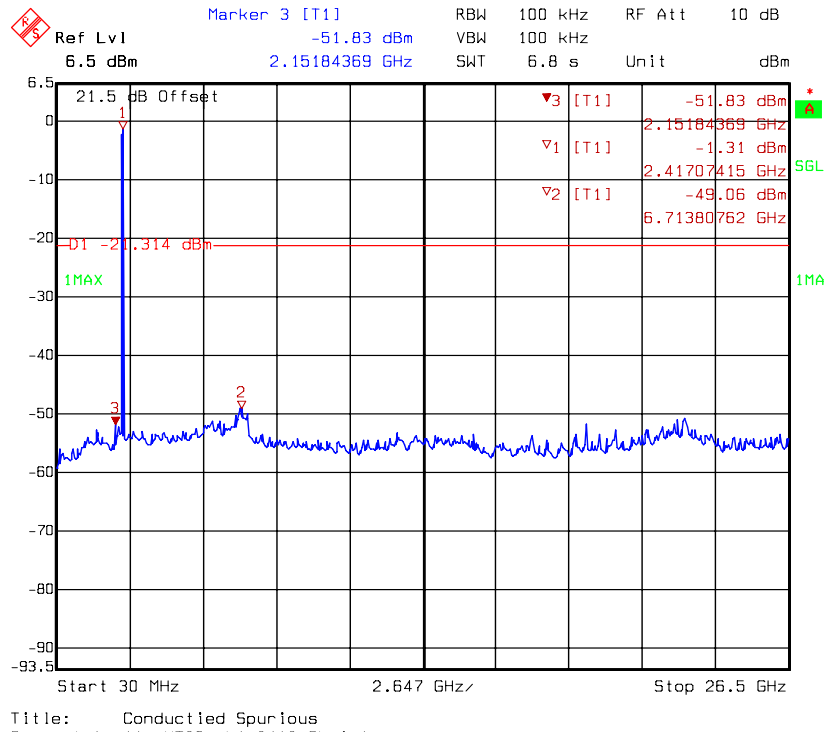
**Chain 0:** conducted spurious @ 802.11n HT40 mode channel 6



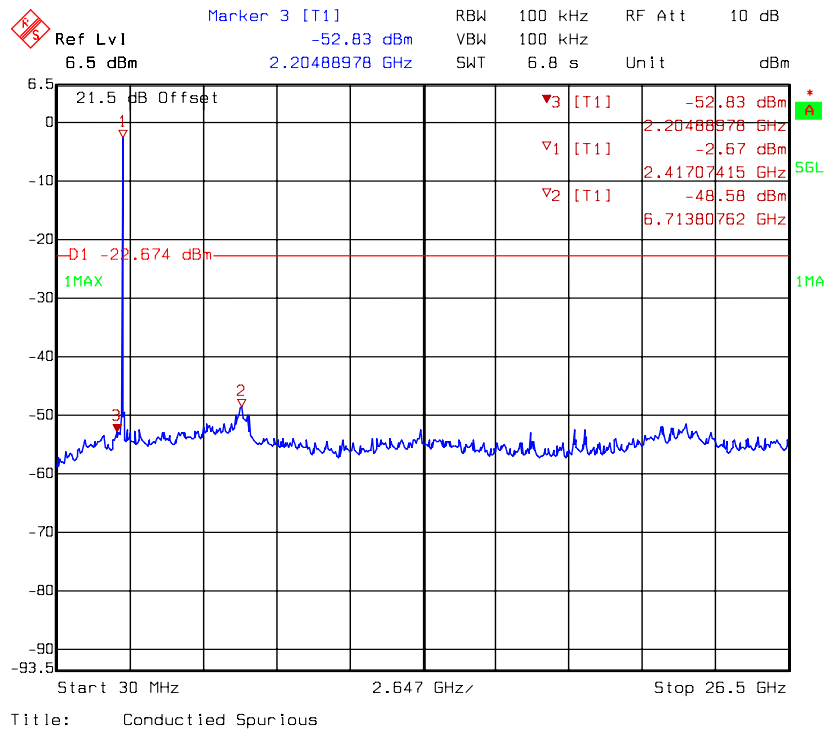
**Chain 0:** conducted spurious @ 802.11n HT40 mode channel 9



### Chain 1: conducted spurious @ 802.11n HT20 mode channel 1

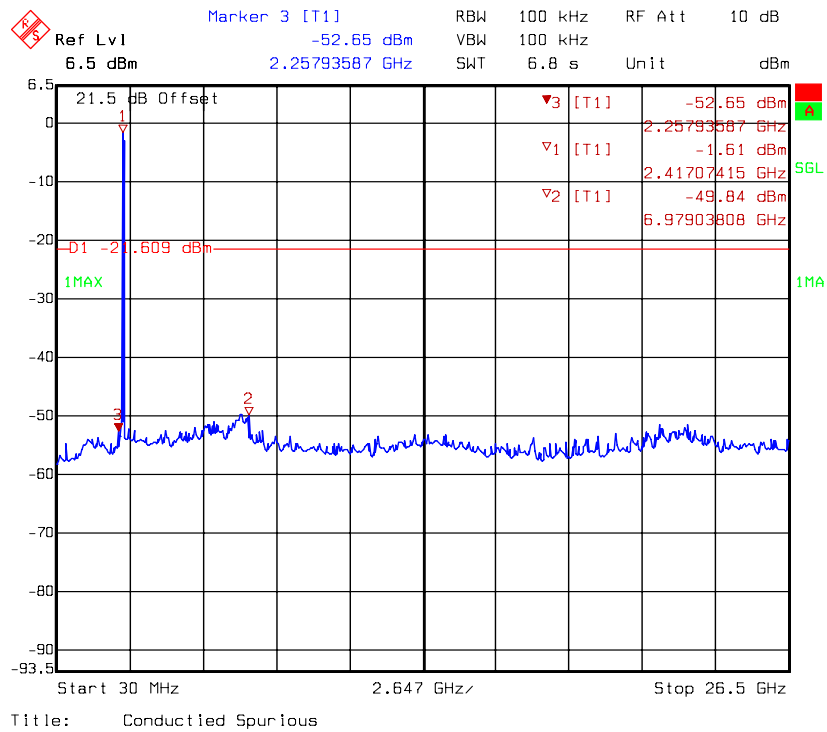


### Chain 1: conducted spurious @ 802.11n HT20 mode channel 6

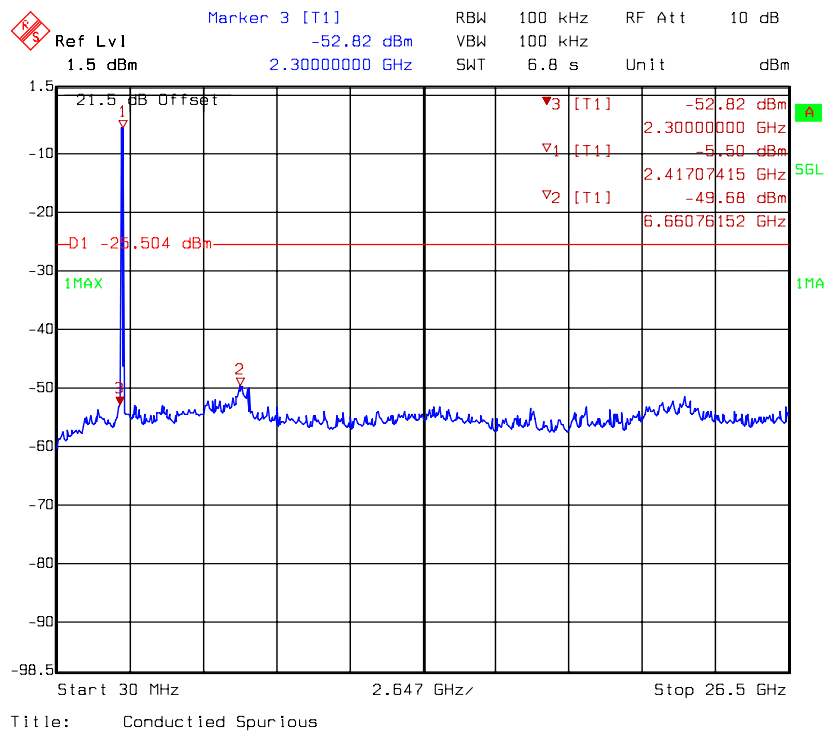




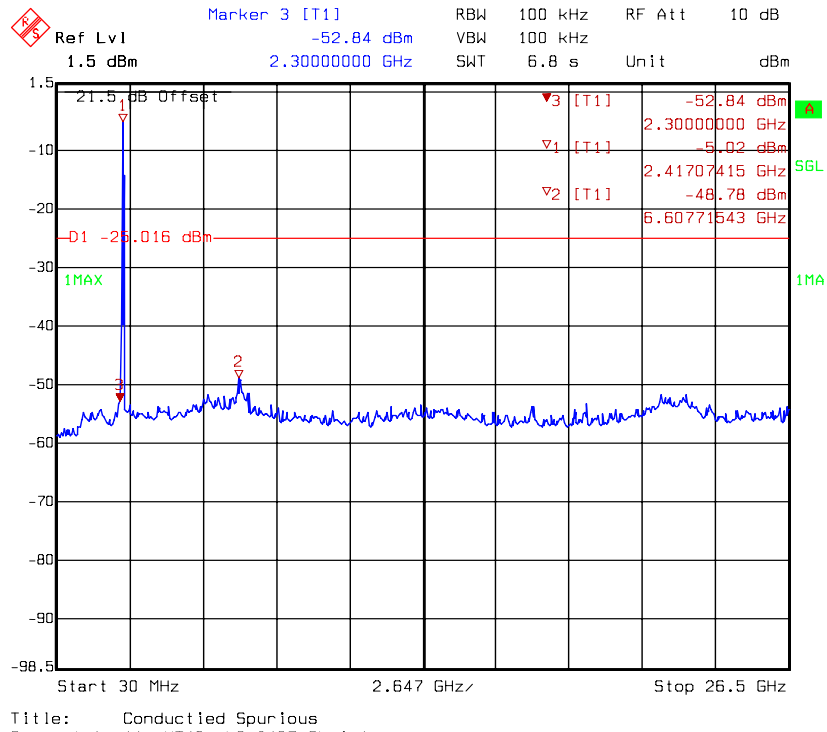
### Chain 1: conducted spurious @ 802.11n HT20 mode channel 11



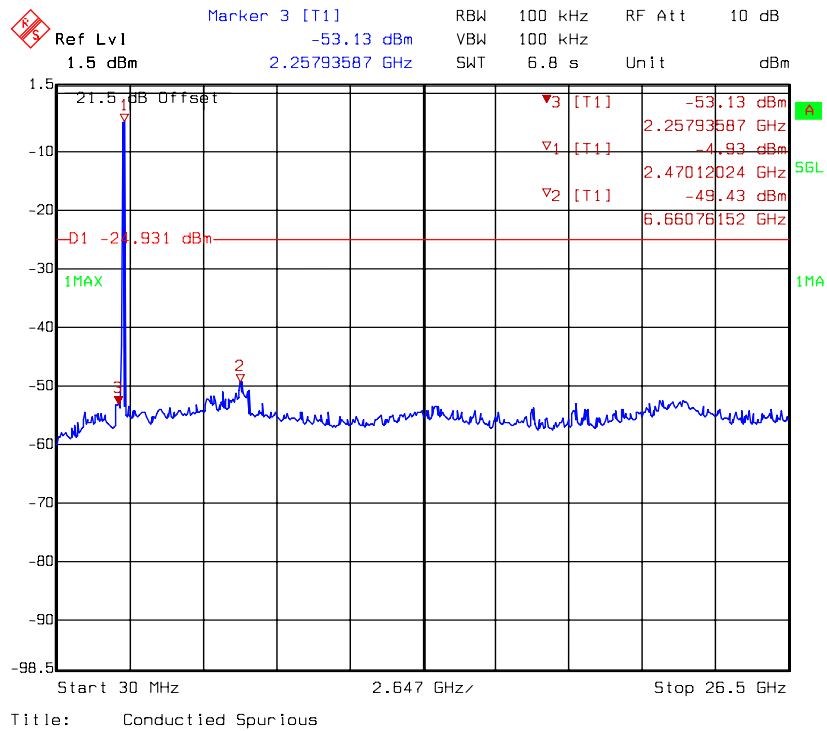
### Chain 1: conducted spurious @ 802.11n HT40 mode channel 3



**Chain 1: conducted spurious @ 802.11n HT40 mode channel 6**



**Chain 1: conducted spurious @ 802.11n HT40 mode channel 9**



## 8. Radiated Spurious Emission

<b>Name of Test</b>	Radiated Spurious Emission
<b>Base Standard</b>	FCC 15.247(d), 15.209, 15.205

**Test Result:** Complies  
**Measurement Data:** See Tables below

### Method of Measurement:

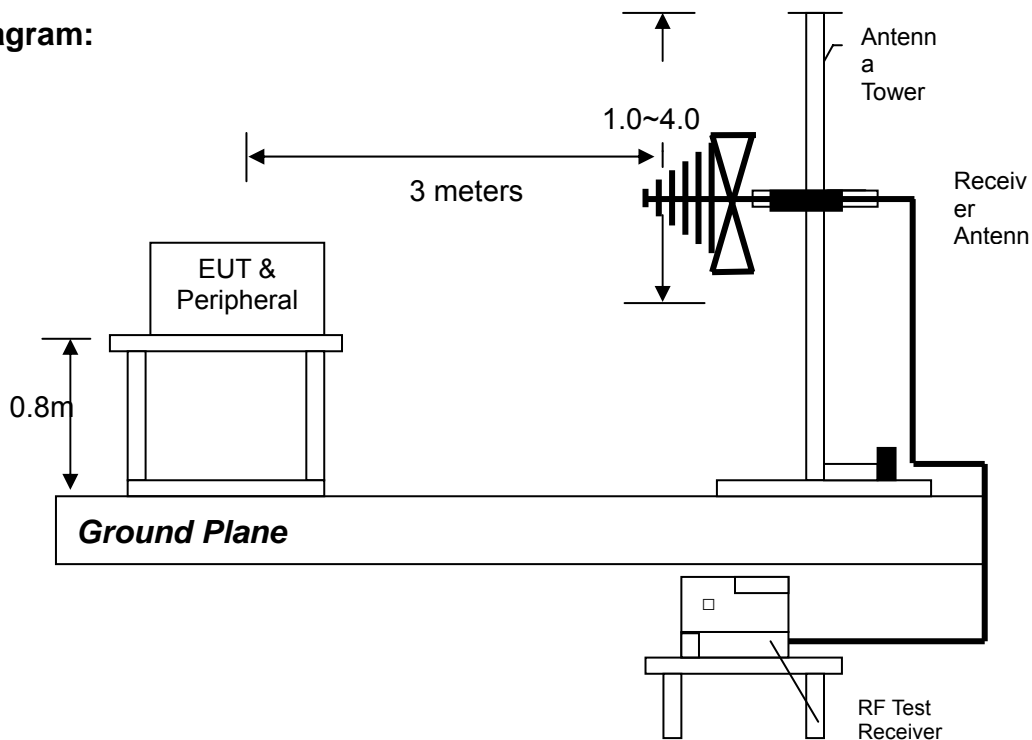
#### Reference FCC document: KDB558074, ANSI C63.4

The frequency range from 30 MHz to 1000 MHz using Bilog Antenna.  
The frequency range over 1 GHz using Horn Antenna.

Radiated emissions were investigated cover the frequency range from 30 MHz to 1000 MHz using a receiver RBW of 120 kHz record QP reading, and the frequency over 1 GHz using a spectrum analyzer RBW of 1 MHz and 10 Hz VBW record Average reading. (15.209 paragraph), the Peak reading (1 MHz RBW/VBW) recorded also on the report. The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter. The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent 3 meters reading using inverse scaling with distance.

The EUT configuration please refer to the "Spurious set-up photo.pdf".

**Test Diagram:**



**Emission Limit:**

The spurious Emission shall test through the 10th harmonic. In addition, 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).

Frequency (MHz)	Limits (dBµV/m@ 3 meter)
30-88	40
88-216	43.5
216-960	46
Above 960	54

**Remark:**

1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

- Note:**
- (1) The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps data rate for 802.11b mode, 6 Mbps data rate for 802.11g mode, 6.5 Mbps data rate for 802.11n HT20 mode and 13 Mbps data rate for 802.11n HT40 mode. The EUT was tuned to a low, middle and high channel.
  - (2) The EUT operating at 2.4 GHz ISM band. Frequency Range scanned from 30 MHz to 25 GHz.

### Measurement results: frequencies equal to or less than 1 GHz

The test was performed on EUT under 802.11b and 802.11g AP mode. Channel 1, 6, 11 were verified. The worst case occurred at 802.11b Tx channel 1 by AP mode.

EUT : WiDRIVE DX-325  
Worst Case : 802.11b Tx at channel 1 by AP mode

Antenna Polariz. (V/H)	Freq. (MHz)	Receiver Detector	Corr. Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
V	47.46000	QP	12.84	23.89	36.73	40.00	-3.27
V	127.97000	QP	9.47	33.00	42.46	43.50	-1.04
V	384.05000	QP	16.40	27.25	43.65	46.00	-2.35
V	575.14000	QP	20.71	23.77	44.48	46.00	-1.52
V	639.16000	QP	21.53	22.70	44.23	46.00	-1.77
V	701.24000	QP	22.29	22.55	44.83	46.00	-1.17
H	127.97000	QP	11.62	27.29	38.90	43.50	-4.60
H	384.05000	QP	16.74	27.11	43.85	46.00	-2.15
H	402.48000	QP	16.81	27.64	44.45	46.00	-1.55
H	639.16000	QP	21.55	21.62	43.16	46.00	-2.84
H	713.85000	QP	22.44	19.55	41.99	46.00	-4.01
H	895.24000	QP	24.62	20.21	44.82	46.00	-1.18

#### Remark:

1. Corr. Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Corr. Factor

## Measurement results: frequency above 1GHz

EUT : WiDRIVE DX-325  
Test : 802.11b Tx at channel 1

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4824.00	PK	V	35.10	38.54	51.62	55.06	74.00	-18.94
4824.00	AV	V	35.10	38.54	45.51	48.95	54.00	-5.05
7236.00	PK	V	33.00	44.60	62.17	73.77	100.03	-26.26
7236.00	AV	V	33.00	44.60	51.23	62.83	80.03	-17.20
9648.00	PK	V	32.70	49.30	45.68	62.28	100.03	-37.75
9648.00	AV	V	32.70	49.30	42.74	59.34	80.03	-20.69
4824.00	PK	H	35.10	38.54	46.65	50.09	74.00	-23.91
4824.00	AV	H	35.10	38.54	44.53	47.97	54.00	-6.03
7236.00	PK	H	33.00	44.60	50.8	62.4	100.03	-37.63
7236.00	AV	H	33.00	44.60	47.45	59.05	80.03	-20.98
9648.00	PK	H	32.70	49.30	48.46	65.06	100.03	-34.97
9648.00	AV	H	32.70	49.30	45.63	62.23	80.03	-17.80

### Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11b Tx at channel 6

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4874.00	PK	V	35.10	38.54	48.93	52.37	74.00	-21.63
4874.00	AV	V	35.10	38.54	47.06	50.50	54.00	-3.50
7311.00	PK	V	33.00	44.60	47.68	59.28	74.00	-14.72
7311.00	AV	V	33.00	44.60	41.37	52.97	54.00	-1.03
9748.00	PK	V	32.70	49.30	42.73	59.33	102.33	-43.00
9748.00	AV	V	32.70	49.30	40.39	56.99	82.33	-25.34
4874.00	PK	H	35.10	38.54	46.88	50.32	74.00	-23.68
4874.00	AV	H	35.10	38.54	46.25	49.69	54.00	-4.31
7311.00	PK	H	33.00	44.60	44.78	56.38	74.00	-17.62
7311.00	AV	H	33.00	44.60	40.83	52.43	54.00	-1.57
9748.00	PK	H	32.70	49.30	52.19	68.79	102.33	-33.54
9748.00	AV	H	32.70	49.30	51.22	67.82	82.33	-14.51

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11b Tx at channel 11

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4924.00	PK	V	35.10	38.54	53.67	57.11	74.00	-16.89
4924.00	AV	V	35.10	38.54	49.51	52.95	54.00	-1.05
7386.00	PK	V	33.00	44.60	45.73	57.33	74.00	-16.67
7386.00	AV	V	33.00	44.60	40.49	52.09	54.00	-1.91
9848.00	PK	V	32.70	49.30	43.89	60.49	99.65	-39.16
9848.00	AV	V	32.70	49.30	42.07	58.67	79.65	-20.98
4924.00	PK	H	35.10	38.54	44.61	48.05	74.00	-25.95
4924.00	AV	H	35.10	38.54	41.44	44.88	54.00	-9.12
7386.00	PK	H	33.00	44.60	38.78	50.38	74.00	-23.62
7386.00	AV	H	33.00	44.60	31.65	43.25	54.00	-10.75
9848.00	PK	H	32.70	49.30	47.92	64.52	99.65	-35.13
9848.00	AV	H	32.70	49.30	44.65	61.25	79.65	-18.40

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.



EUT : WiDRIVE DX-325  
Test : 802.11g Tx at channel 1

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4824.00	PK	V	35.10	38.54	41.52	44.96	54.00	-9.04
7236.00	PK	V	33.00	44.60	51.89	63.49	74.00	-10.51
7236.00	AV	V	33.00	44.60	35.51	47.11	54.00	-6.89
9648.00	PK	V	32.70	49.30	36.17	52.77	54.00	-1.23
4824.00	PK	H	35.10	38.54	39.96	43.40	54.00	-10.60
7236.00	PK	H	33.00	44.60	43.5	55.10	74.00	-18.90
7236.00	AV	H	33.00	44.60	29.76	41.36	54.00	-12.64
9648.00	PK	H	32.70	49.30	41.08	57.68	74.00	-16.32
9648.00	AV	H	32.70	49.30	30.23	46.83	54.00	-7.17

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11g Tx at channel 6

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4874.00	PK	V	35.10	38.54	36.48	39.92	54.00	-14.08
7311.00	PK	V	33.00	44.60	49.99	61.59	74.00	-12.41
7311.00	AV	V	33.00	44.60	37.99	49.59	54.00	-4.41
9748.00	PK	V	32.70	49.30	39.95	56.55	74.00	-17.45
9748.00	AV	V	32.70	49.30	29.95	46.55	54.00	-7.45
4874.00	PK	H	35.10	38.54	37.76	41.20	54.00	-12.80
7311.00	PK	H	33.00	44.60	41.20	52.80	54.00	-1.20
9748.00	PK	H	32.70	49.30	42.45	59.05	74.00	-14.95
9748.00	AV	H	32.70	49.30	31.77	48.37	54.00	-5.63

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11g Tx at channel 11

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4924.00	PK	V	35.10	38.54	37.72	41.16	54.00	-12.84
7386.00	PK	V	33.00	44.60	45.93	57.53	74.00	-16.47
7386.00	AV	V	33.00	44.60	34.67	46.27	54.00	-7.73
9848.00	PK	V	32.70	49.30	38.46	55.06	74.00	-18.94
9848.00	AV	V	32.70	49.30	26.46	43.06	54.00	-10.94
4924.00	PK	H	35.10	38.54	37.25	40.69	54.00	-13.31
7386.00	PK	H	33.00	44.60	39.39	50.99	54.00	-3.01
9848.00	PK	H	32.70	49.30	38.75	55.35	74.00	-18.65
9848.00	AV	H	32.70	49.30	27.68	44.28	54.00	-9.72

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11n HT20 Tx at channel 1

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4824.00	PK	V	35.10	38.54	48.18	51.62	54.00	-2.38
7236.00	PK	V	33.00	44.60	49.92	61.52	74.00	-12.48
7236.00	AV	V	33.00	44.60	37.78	49.38	54.00	-4.62
9648.00	PK	V	32.70	49.30	37.80	54.40	74.00	-19.60
9648.00	AV	V	32.70	49.30	27.20	43.80	54.00	-10.20
4824.00	PK	H	35.10	38.54	45.36	48.80	54.00	-5.20
7236.00	PK	H	33.00	44.60	41.00	52.60	54.00	-1.40
9648.00	PK	H	32.70	49.30	40.98	57.58	74.00	-16.42
9648.00	AV	H	32.70	49.30	30.12	46.72	54.00	-7.28

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz. The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11n HT20 Tx at channel 6

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4874.00	PK	V	35.10	38.54	47.17	50.61	54.00	-3.39
7311.00	PK	V	33.00	44.60	49.97	61.57	74.00	-12.43
7311.00	AV	V	33.00	44.60	37.52	49.12	54.00	-4.88
9748.00	PK	V	32.70	49.30	37.48	54.08	74.00	-19.92
9748.00	AV	V	32.70	49.30	27.11	43.71	54.00	-10.29
4874.00	PK	H	35.10	38.54	45.43	48.87	54.00	-5.13
7311.00	PK	H	33.00	44.60	43.42	55.02	74.00	-18.98
7311.00	AV	H	33.00	44.60	29.60	41.20	54.00	-12.80
9748.00	PK	H	32.70	49.30	38.45	55.05	74.00	-18.95
9748.00	AV	H	32.70	49.30	26.02	42.62	54.00	-11.38

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11n HT20 Tx at channel 11

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4924.00	PK	V	35.10	38.54	45.81	49.25	54.00	-4.75
7386.00	PK	V	33.00	44.60	48.54	60.14	74.00	-13.86
7386.00	AV	V	33.00	44.60	36.75	48.35	54.00	-5.65
9848.00	PK	V	32.70	49.30	36.64	53.24	74.00	-20.76
9848.00	AV	V	32.70	49.30	24.66	41.26	54.00	-12.74
4924.00	PK	H	35.10	38.54	44.00	47.44	54.00	-6.56
7386.00	PK	H	33.00	44.60	40.41	52.01	54.00	-1.99
9848.00	PK	H	32.70	49.30	39.75	56.35	74.00	-17.65
9848.00	AV	H	32.70	49.30	27.77	44.37	54.00	-9.63

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11n HT40 Tx at channel 3

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4844.00	PK	V	35.10	38.54	42.75	46.19	54.00	-7.81
7266.00	PK	V	33.00	44.60	46.00	57.60	74.00	-16.40
7266.00	AV	V	33.00	44.60	36.17	47.77	54.00	-6.23
4844.00	PK	H	35.10	38.54	41.32	44.76	54.00	-9.24
7266.00	PK	H	33.00	44.60	36.98	48.58	54.00	-5.42
9688.00	PK	H	32.70	49.30	37.02	53.62	74.00	-20.38
9688.00	AV	H	32.70	49.30	27.15	43.75	54.00	-10.25

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11n HT40 Tx at channel 6

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4874.00	PK	V	35.10	38.54	43.23	46.67	54.00	-7.33
7311.00	PK	V	33.00	44.60	41.11	52.71	54.00	-1.29
4874.00	PK	H	35.10	38.54	41.23	44.67	54.00	-9.33
9748.00	PK	H	32.70	49.30	36.62	53.22	74.00	-20.78
9748.00	AV	H	32.70	49.30	28.64	45.24	54.00	-8.76

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : WiDRIVE DX-325  
Test : 802.11n HT40 Tx at channel 9

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4914.00	PK	V	35.10	38.54	42.00	45.44	54.00	-8.56
7371.00	PK	V	33.00	44.60	44.26	55.86	74.00	-18.14
7371.00	AV	V	33.00	44.60	33.47	45.07	54.00	-8.93
4914.00	PK	H	35.10	38.54	41.22	44.66	54.00	-9.34
7371.00	PK	H	33.00	44.60	38.14	49.74	54.00	-4.26
9828.00	PK	H	32.70	49.30	34.59	51.19	54.00	-2.81

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.



## 9. Emission on Band Edge

<b>Name of Test</b>	Emission Band Edge
<b>Base Standard</b>	FCC 15.247(d)

**Test Result:** Complies

**Measurement Data:** See Tables & plots below

**Method of Measurement:**

**Reference FCC document: KDB558074, ANSI C63.4**

The frequency range from 30 MHz to 1000 MHz using Bilog Antenna.

The frequency range over 1 GHz using Horn Antenna.

Radiated emissions were investigated cover the frequency range from 30 MHz to 1000 MHz using a receiver RBW of 120 kHz record QP reading, and the frequency over 1 GHz using a spectrum analyzer RBW of 1 MHz and 10 Hz VBW record Average reading. (15.209 paragraph), the Peak reading (1 MHz RBW/VBW) recorded also on the report.

**Note:** The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps data rate for 802.11b mode, 6 Mbps data rate for 802.11g mode, 6.5 Mbps data rate for 802.11n HT20 mode and 13 Mbps data rate for 802.11n HT40 mode. The EUT was tuned to a low, middle and high channel.

**Test Mode: 802.11b**

Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
1 (lowest)	2310-2390	PK	59.31	74	-14.69
		AV	49.03	54	-4.97
11 (highest)	2483.5-2500	PK	58.86	74	-15.14
		AV	47.30	54	-6.70

**Test Mode: 802.11g**

Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
1 (lowest)	2310-2390	PK	60.60	74	-13.40
		AV	47.65	54	-6.35
11 (highest)	2483.5-2500	PK	62.45	74	-11.55
		AV	47.55	54	-6.45

**Test Mode: 802.11n HT20**

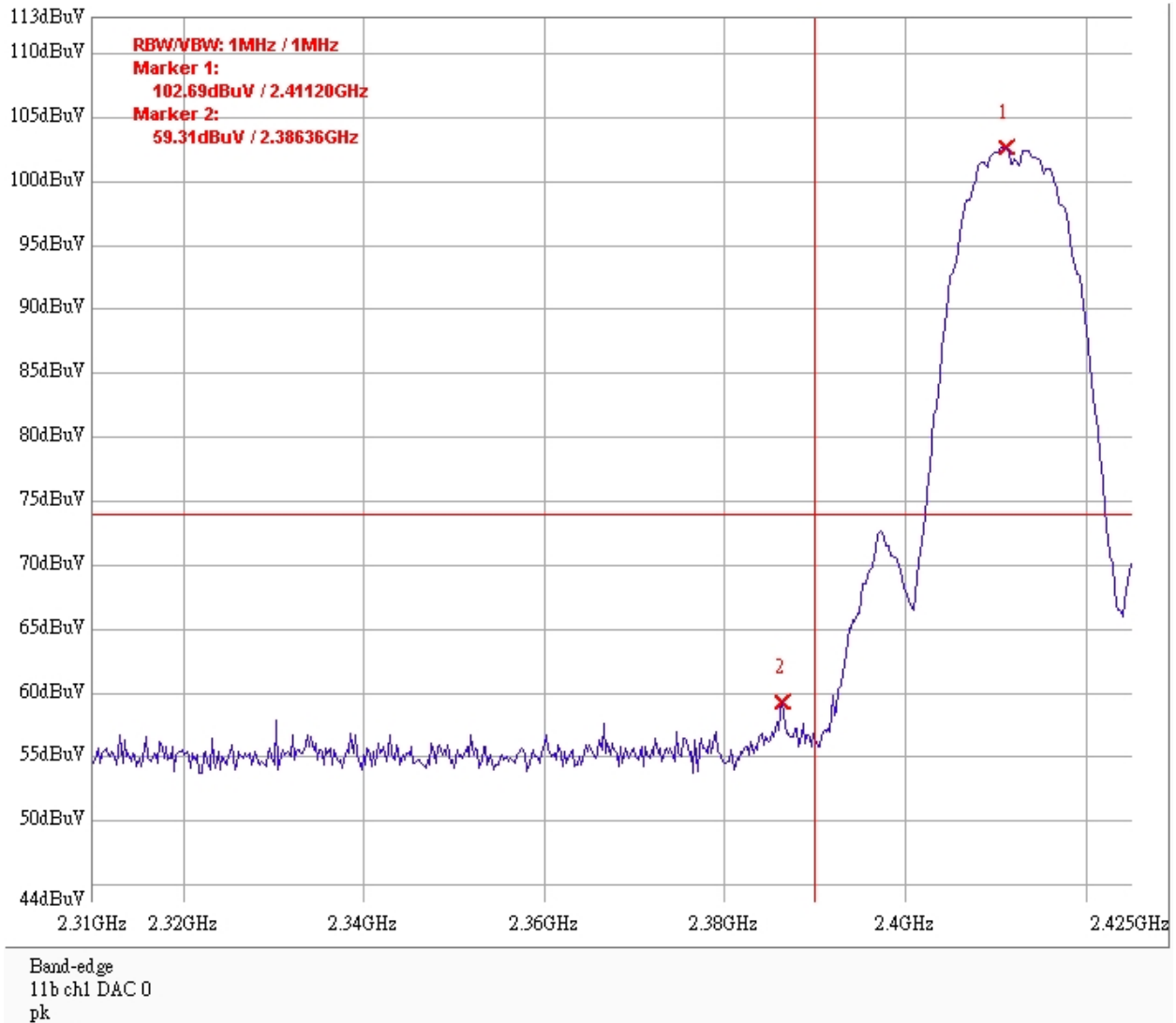
Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
1 (lowest)	2310-2390	PK	60.23	74	-13.77
		AV	46.14	54	-7.86
11 (highest)	2483.5-2500	PK	60.61	74	-13.39
		AV	47.43	54	-6.57

**Test Mode: 802.11n HT40**

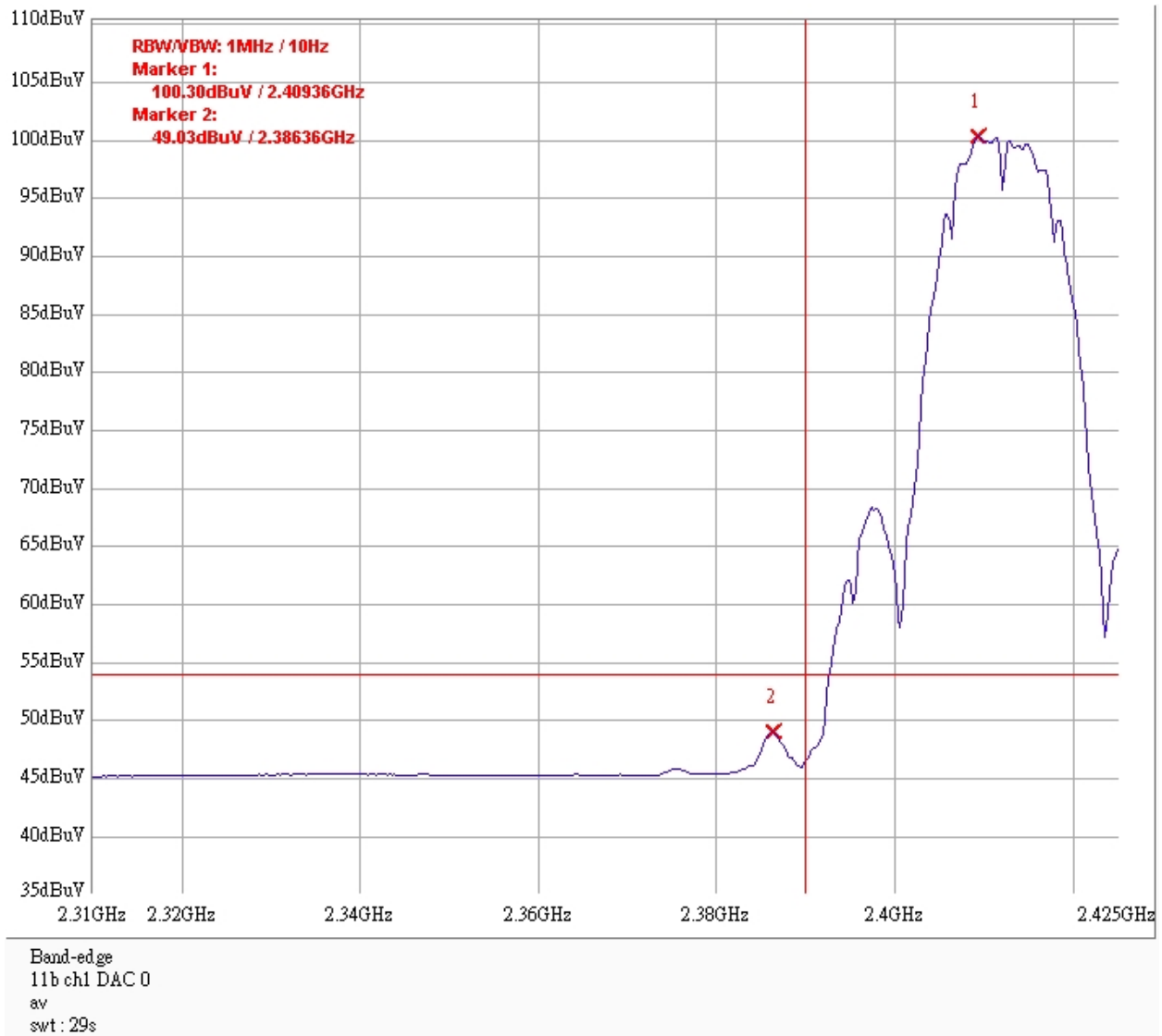
Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
3 (lowest)	2310-2390	PK	63.99	74	-10.01
		AV	49.23	54	-4.77
9 (highest)	2483.5-2500	PK	63.07	74	-10.93
		AV	51.58	54	-2.42

## Dual Tx

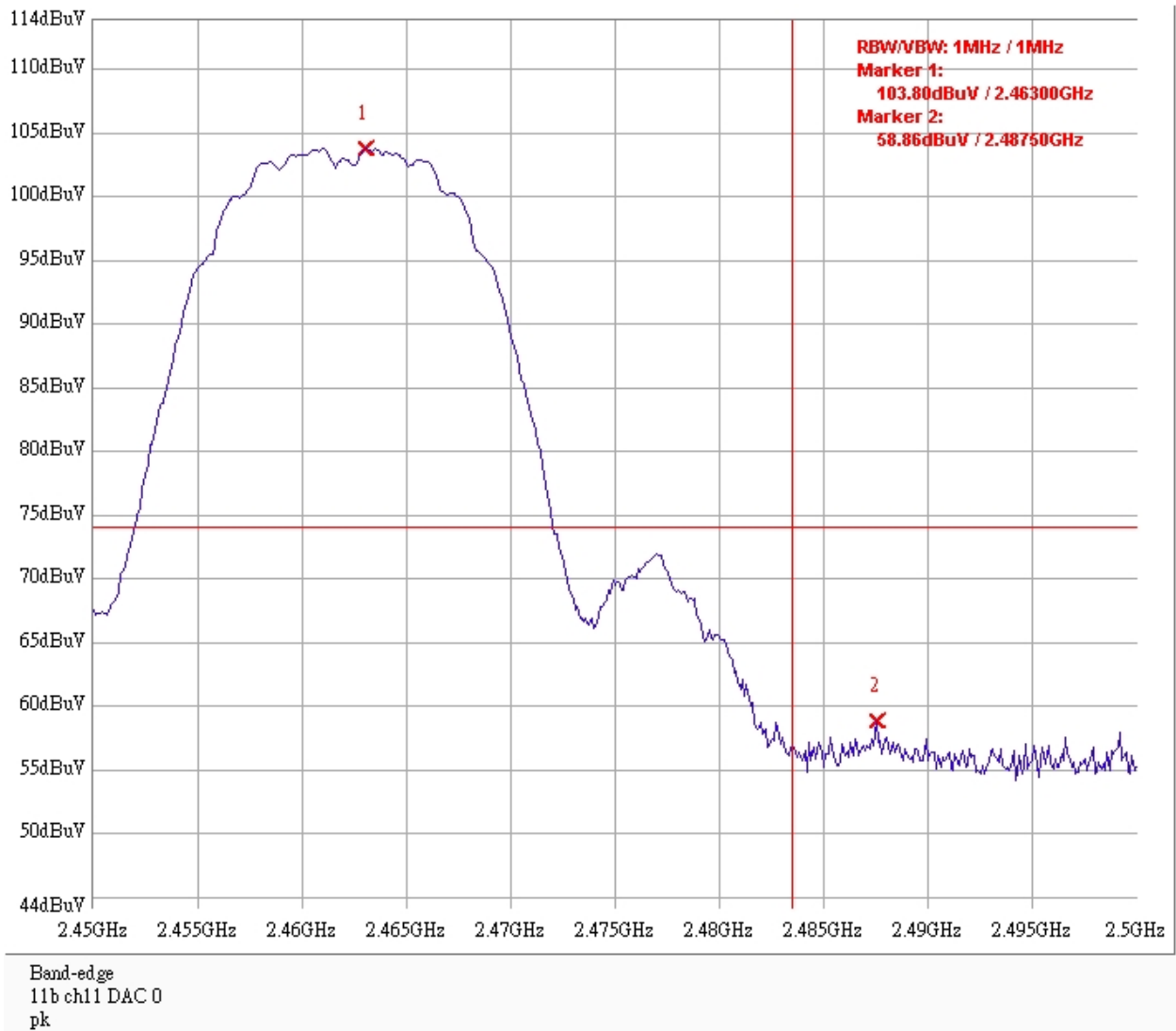
Dual: Bandage @ 802.11b mode channel 1 (PK)



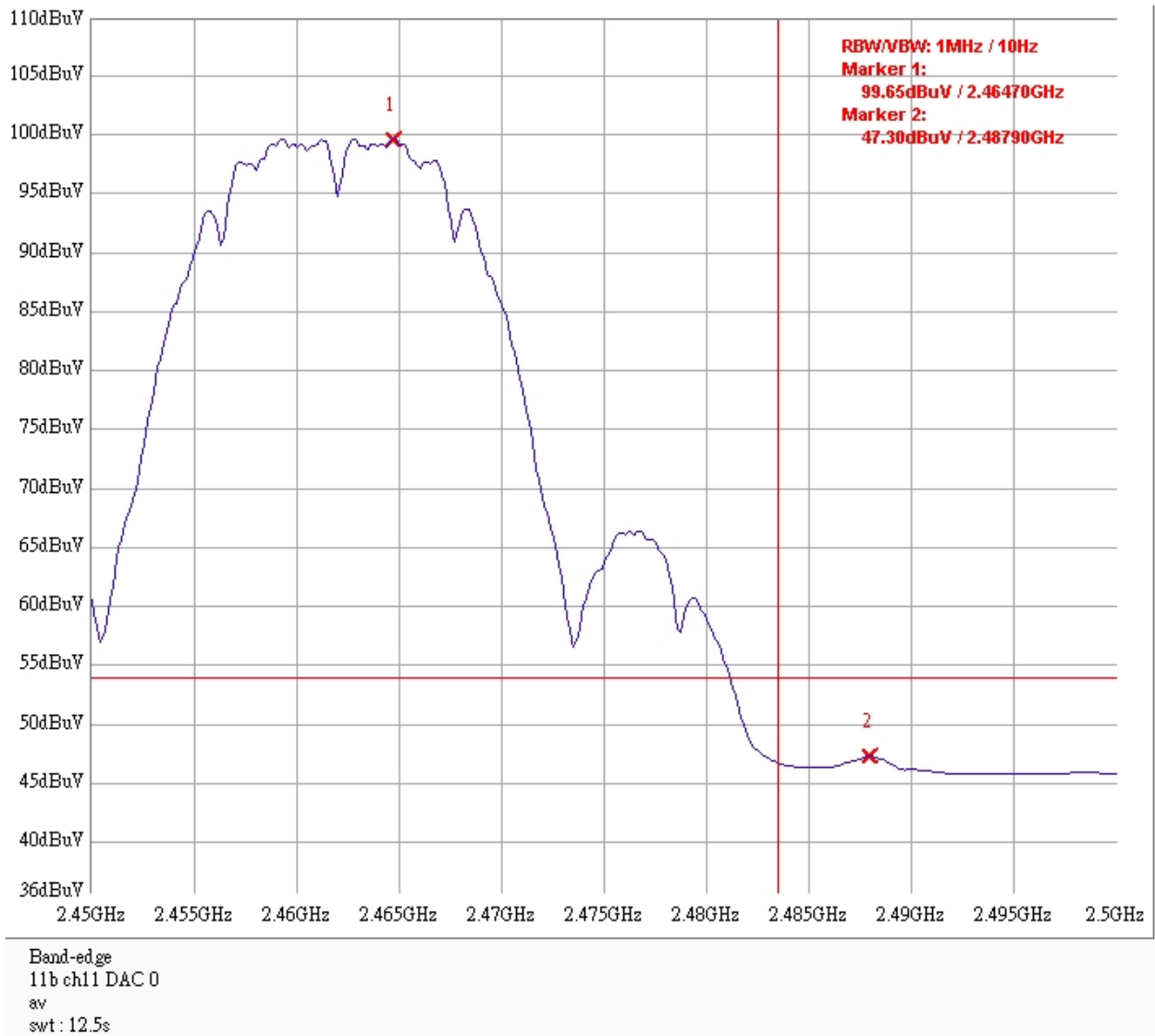
Dual: Bandage @ 802.11b mode channel 1 (AV)



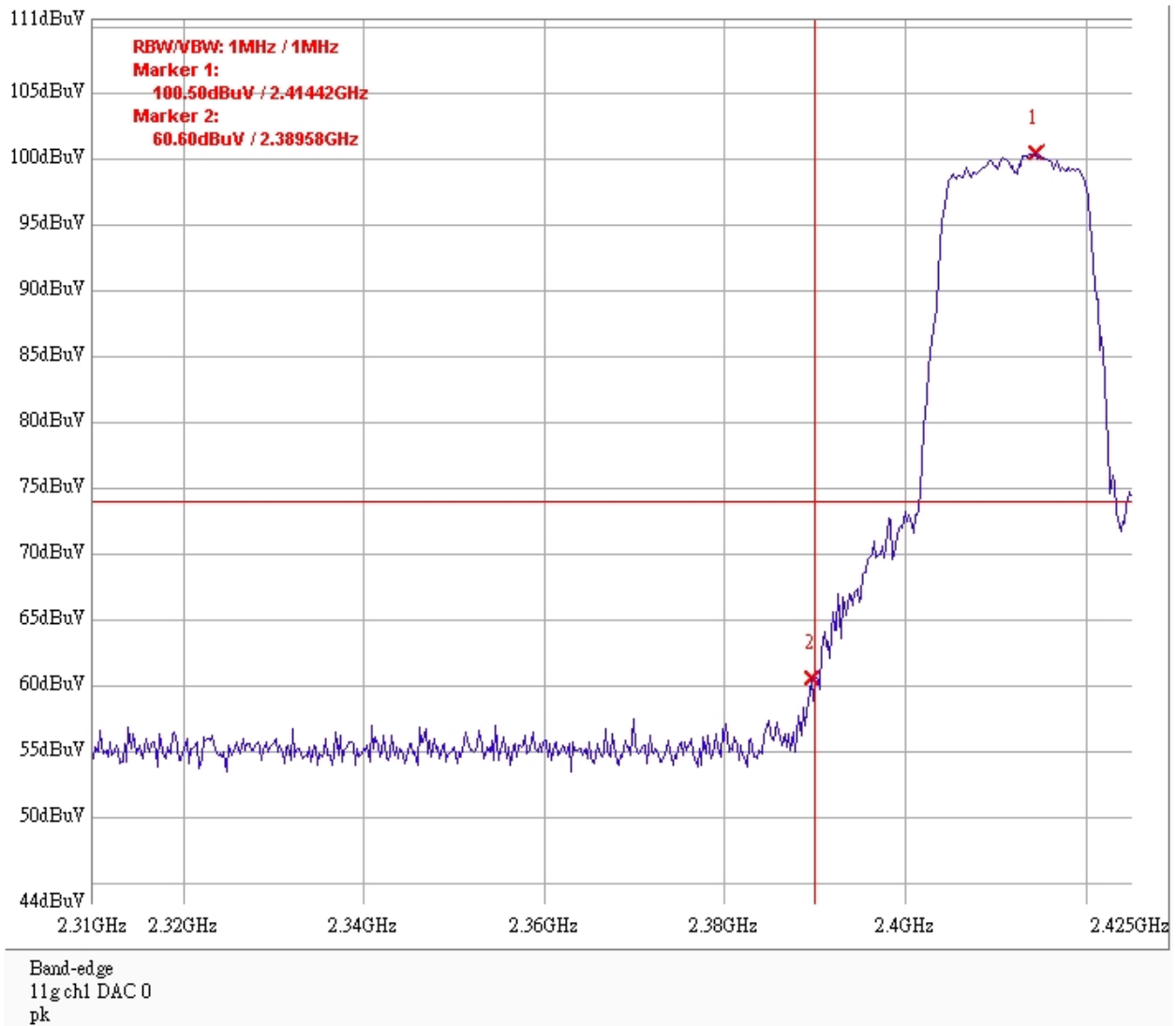
Dual: Bandage @ 802.11b mode channel 11 (PK)



Dual: Bandage @ 802.11b mode channel 11 (AV)

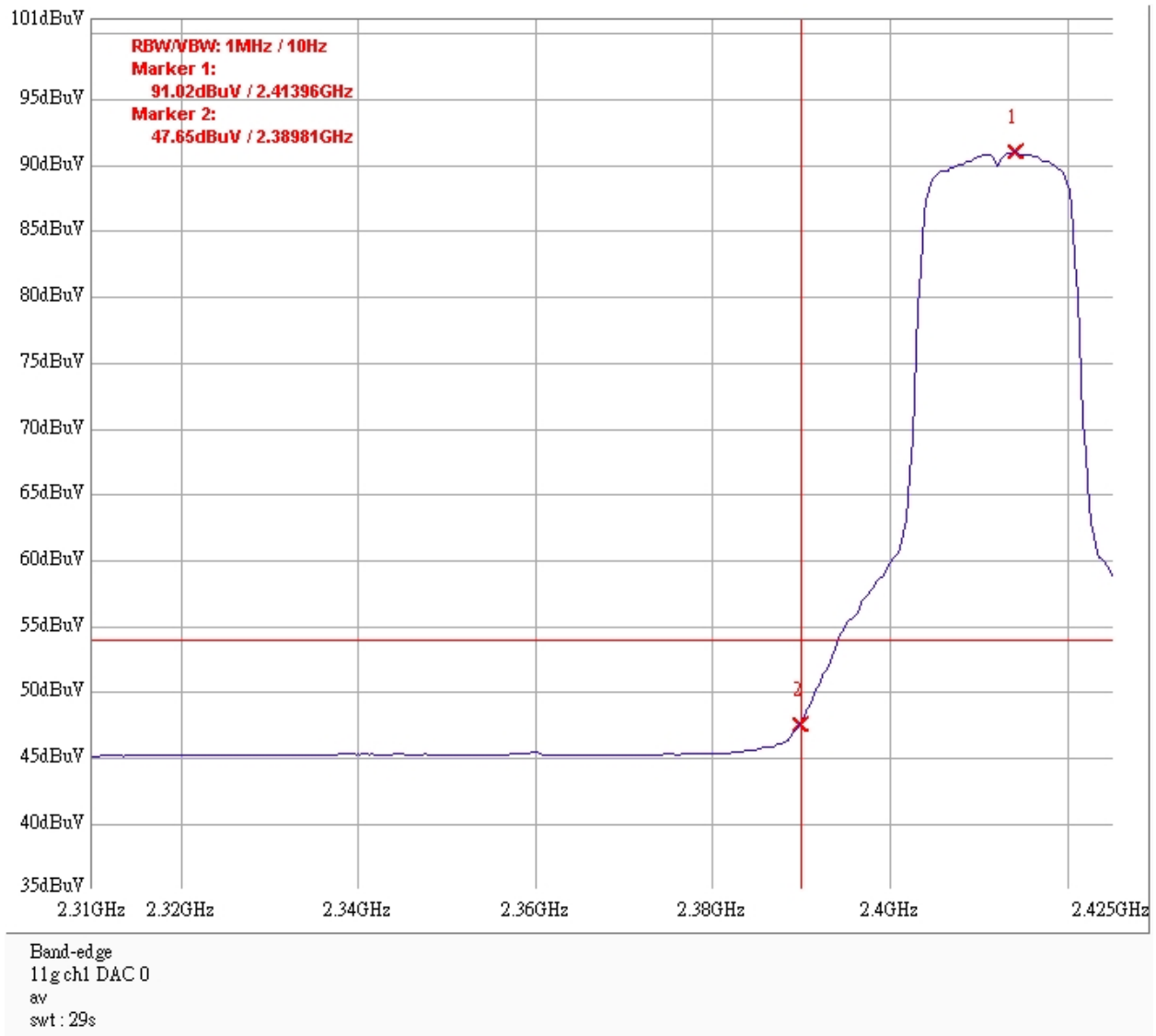


Dual: Bandage @ 802.11g mode channel 1 (PK)

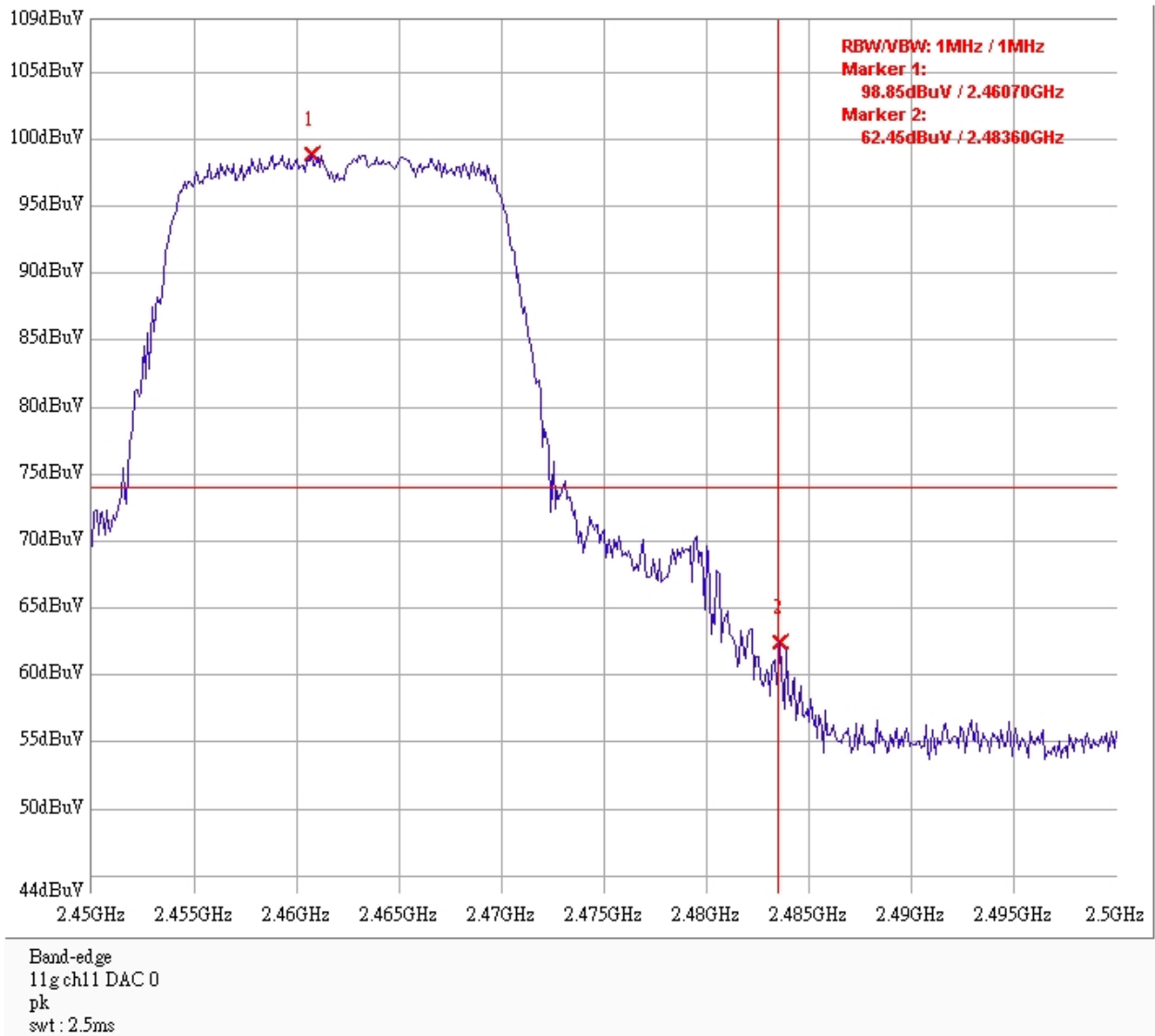




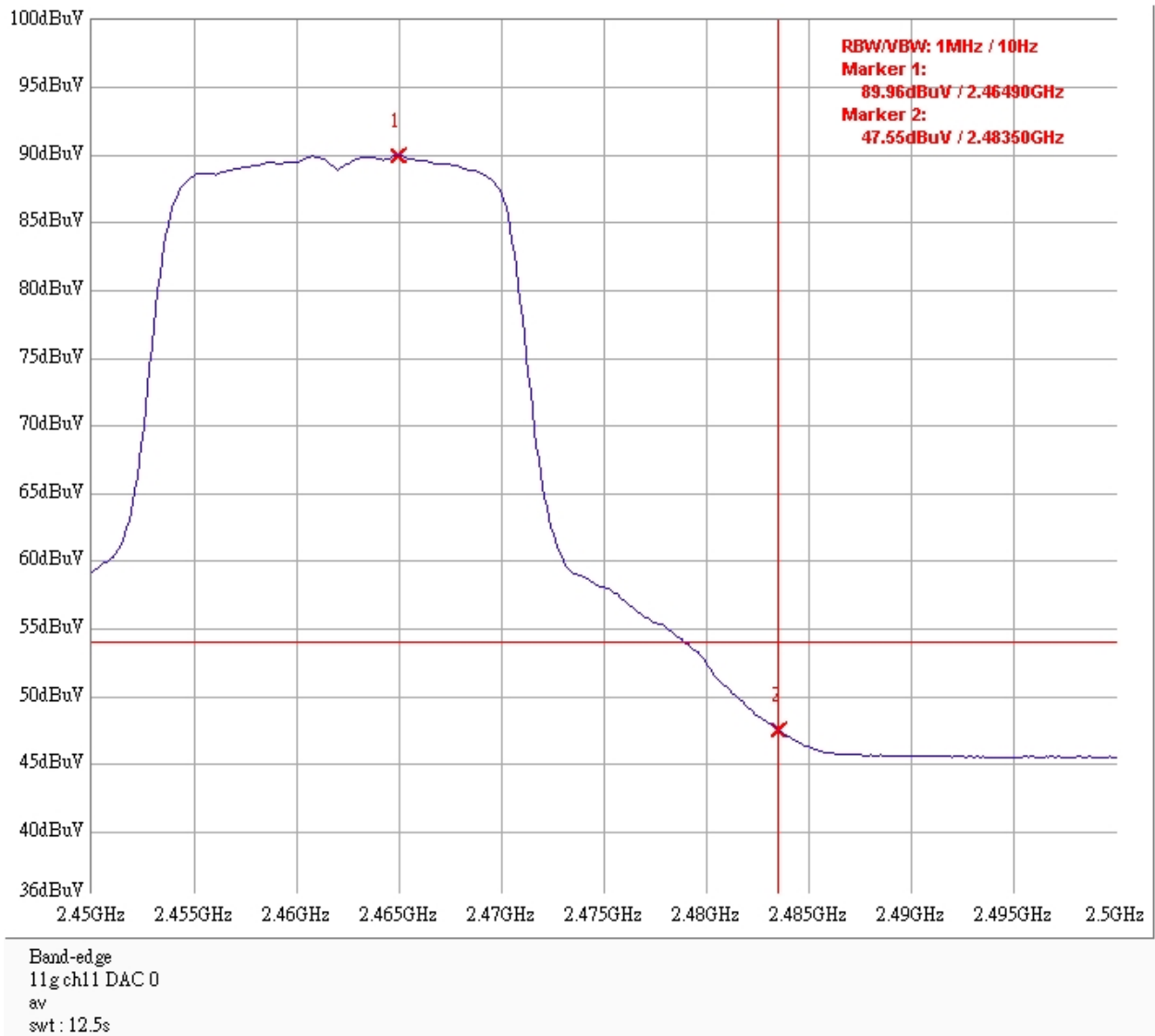
Dual: Bandage @ 802.11g mode channel 1 (AV)



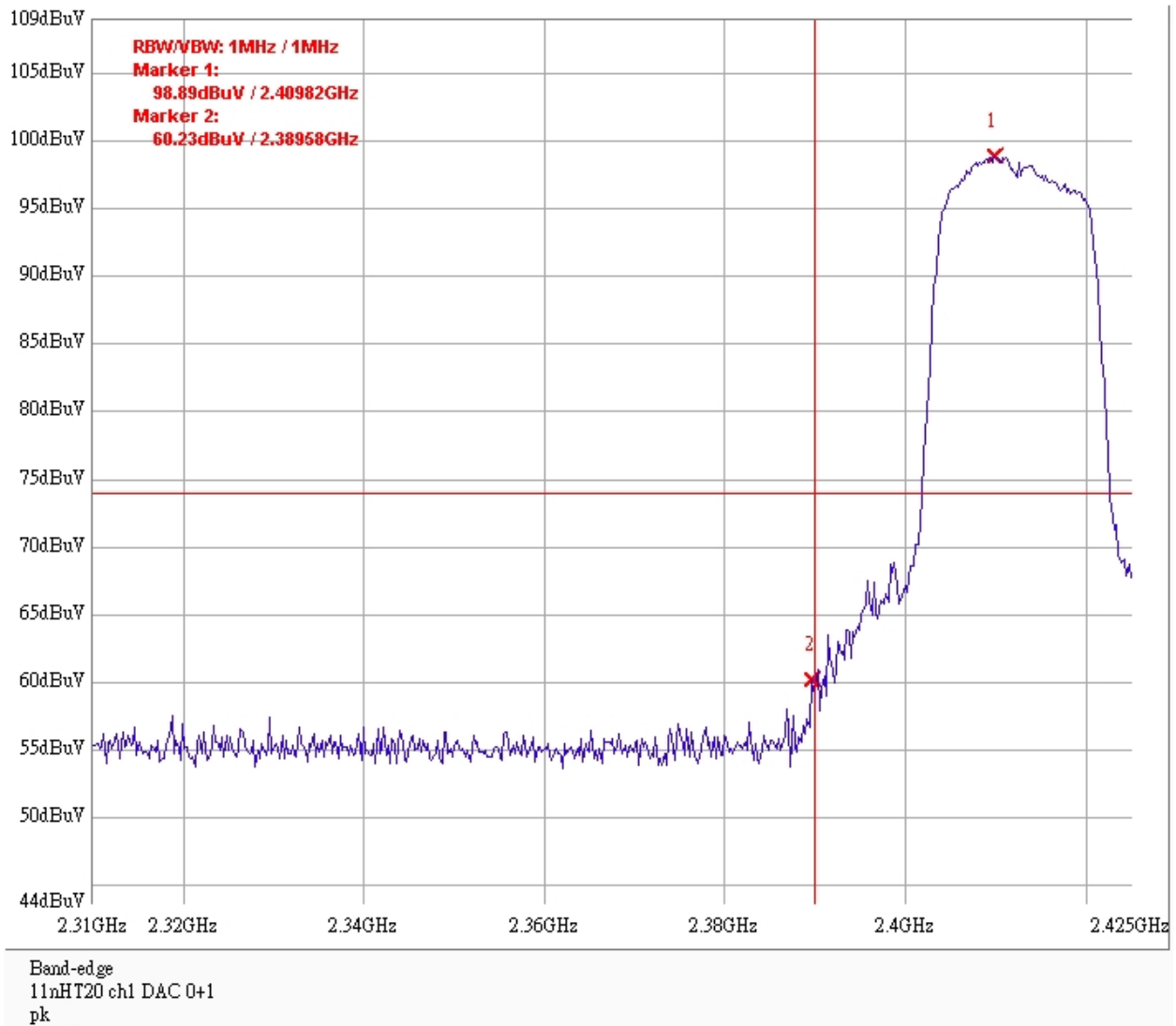
Dual: Bandage @ 802.11g mode channel 11 (PK)



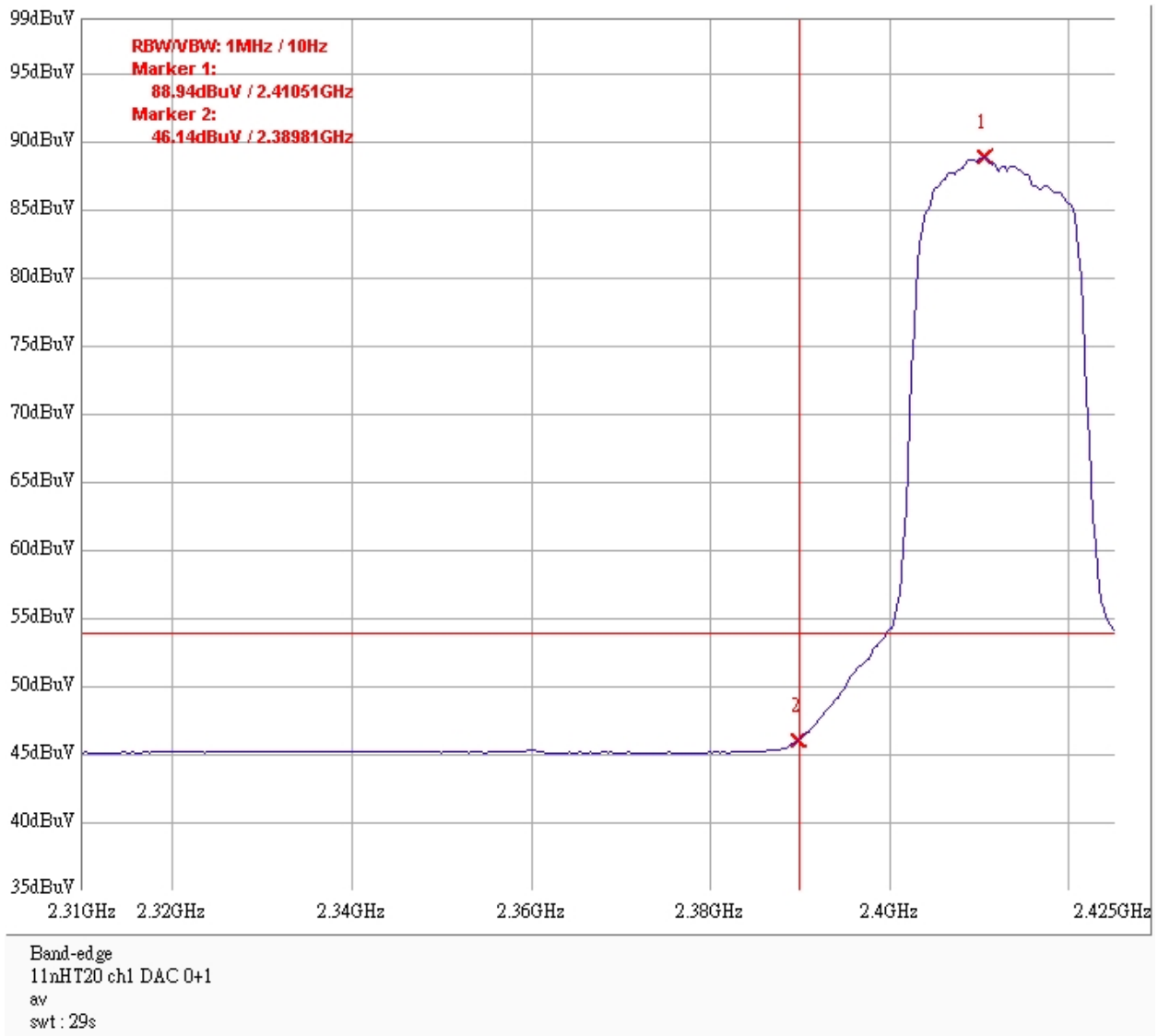
Dual: Bandage @ 802.11g mode channel 11 (AV)



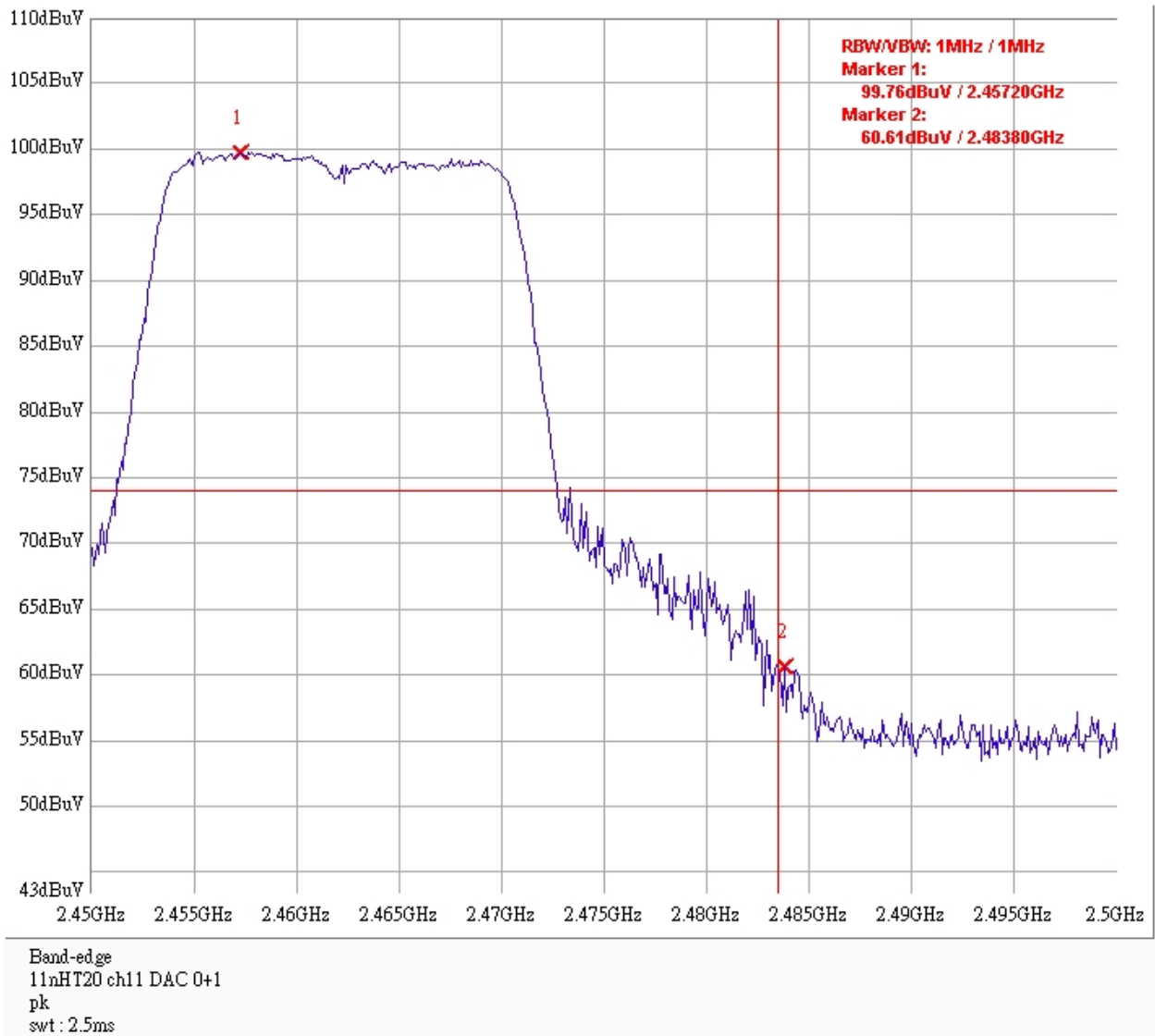
Dual: Bandage @ 802.11n HT20 mode channel 1 (PK)



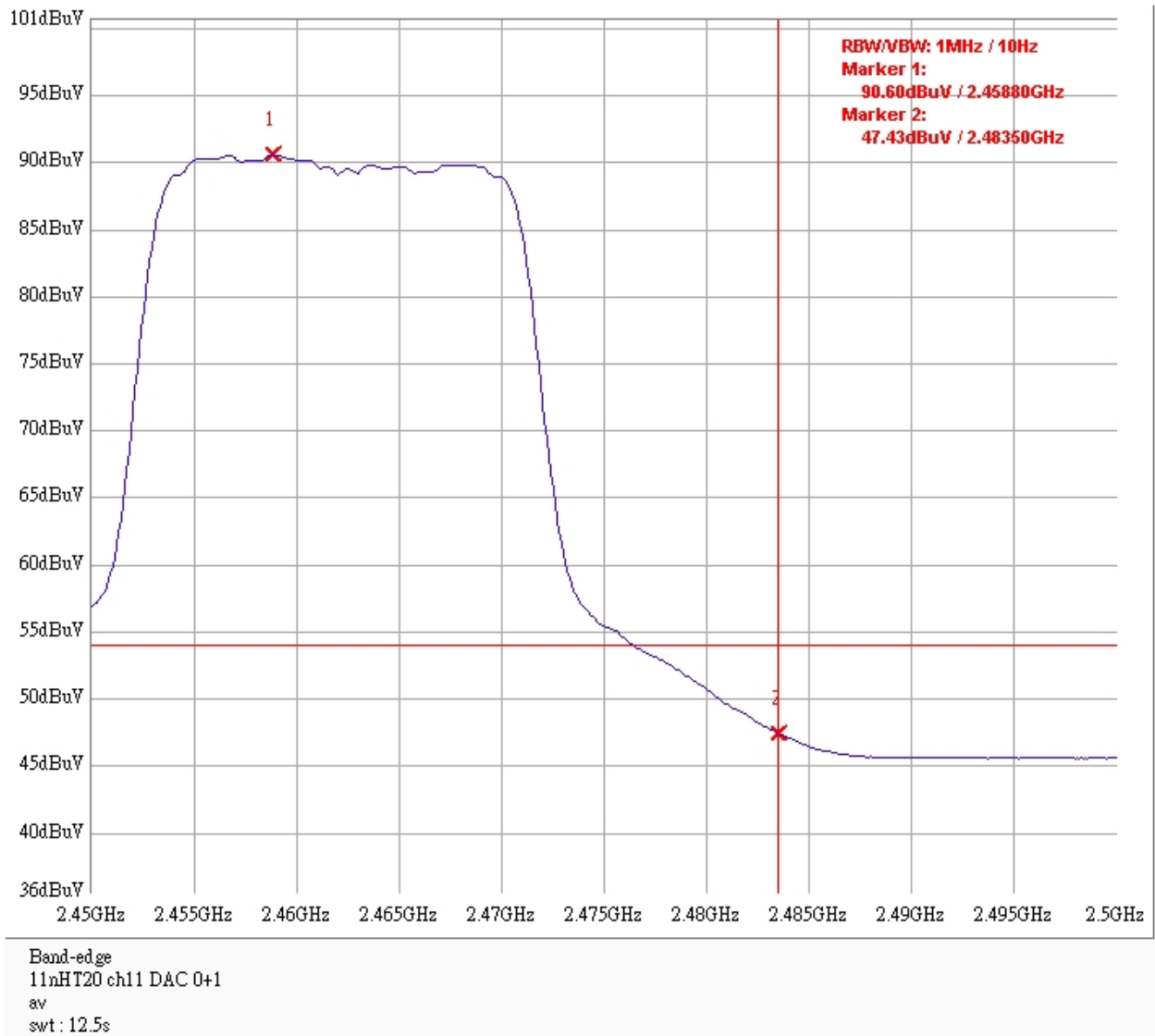
Dual: Bandage @ 802.11n HT20 mode channel 1 (AV)



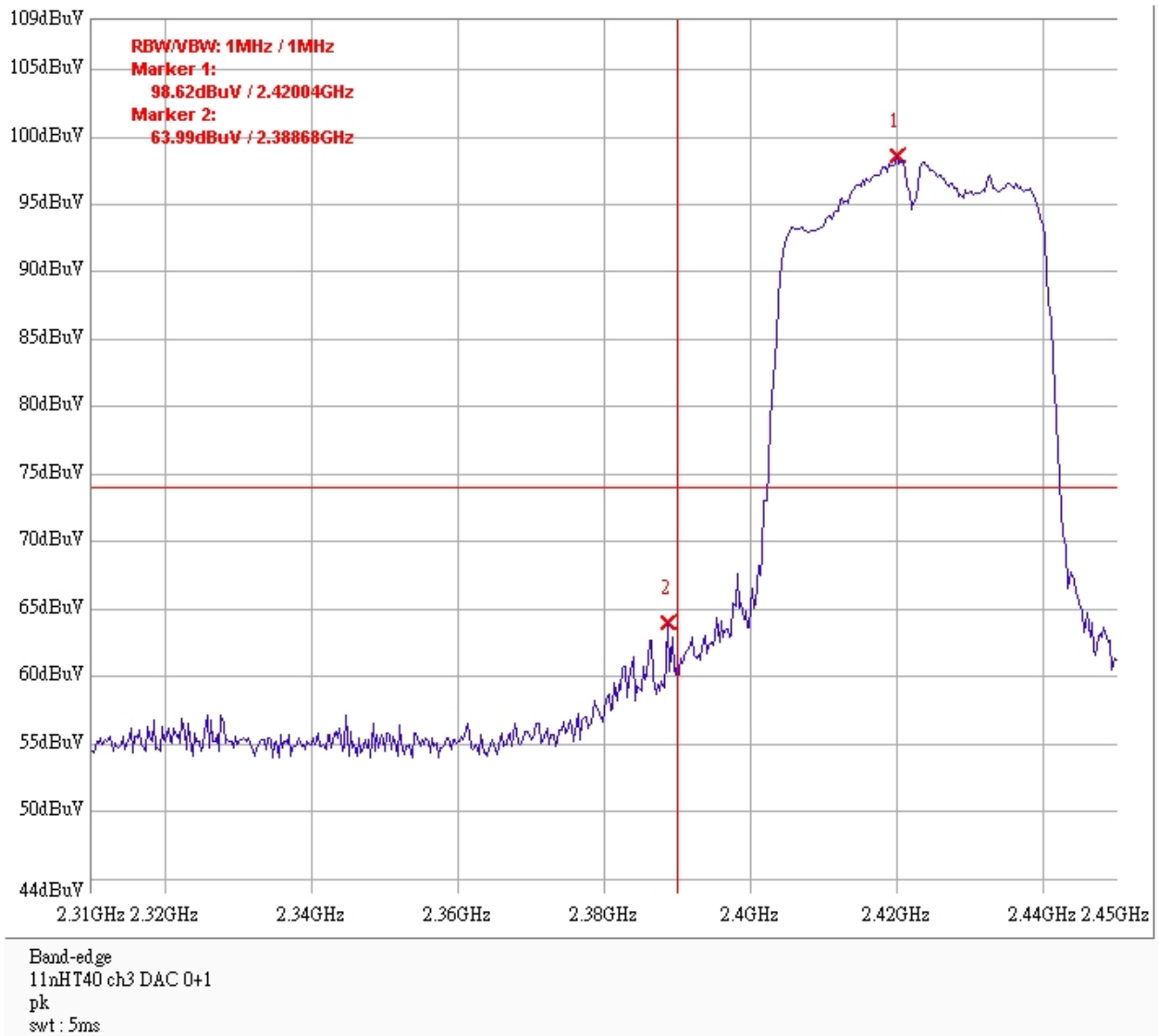
Dual: Bandage @ 802.11n HT20 mode channel 11 (PK)



Dual: Bandage @ 802.11n HT20 mode channel 11 (AV)

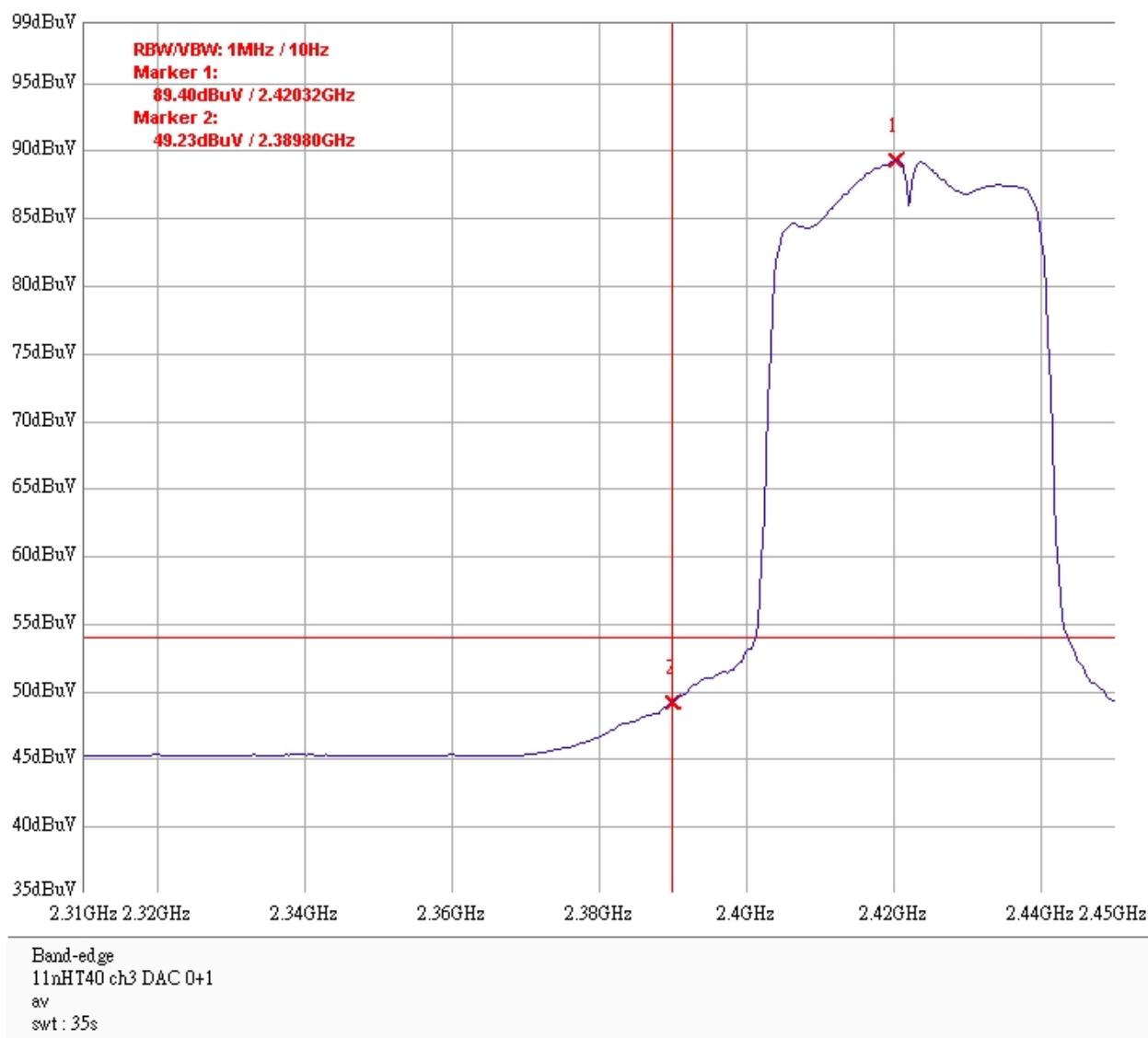


## Dual: Bandage @ 802.11n HT40 mode channel 3 (PK)

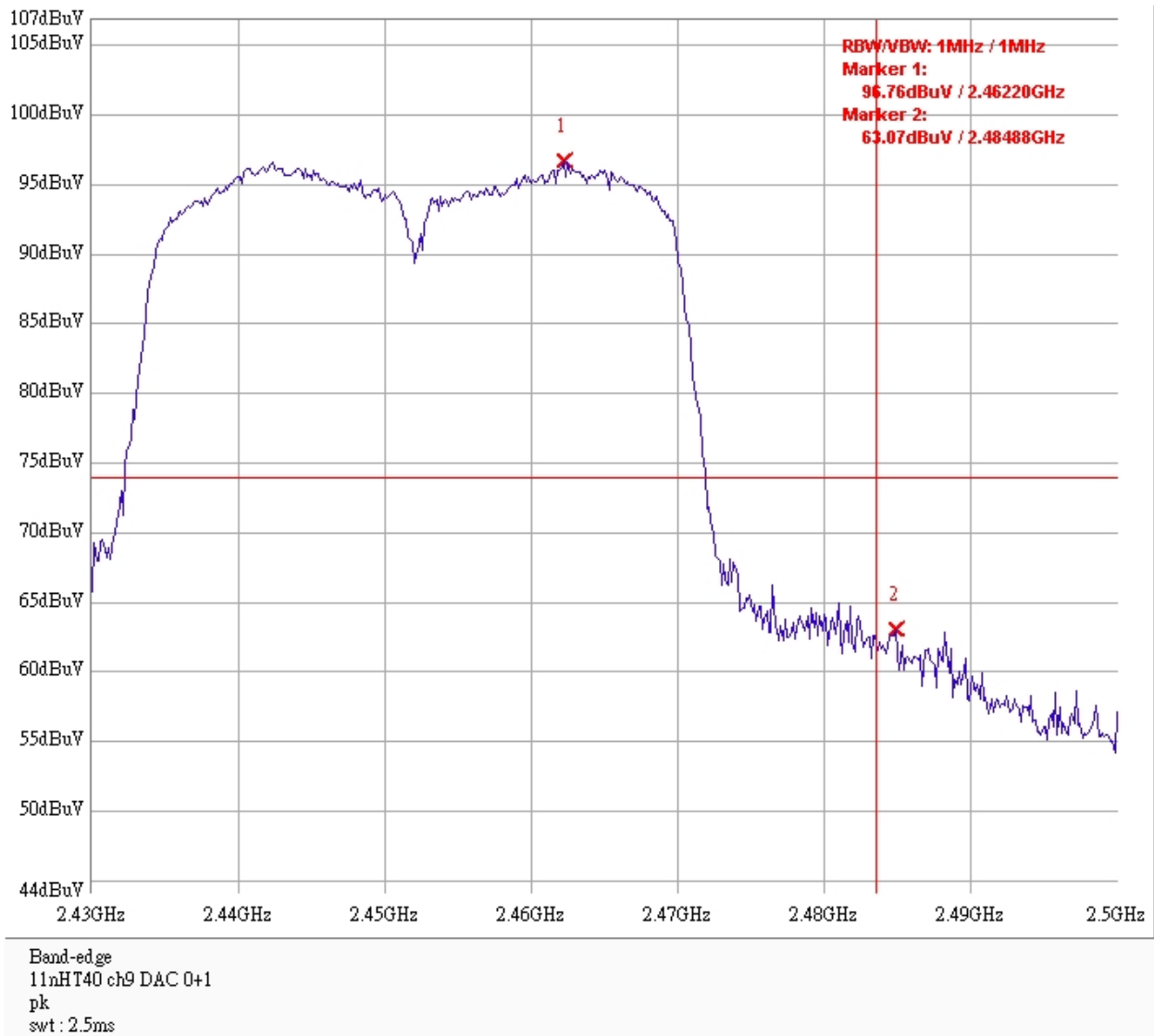




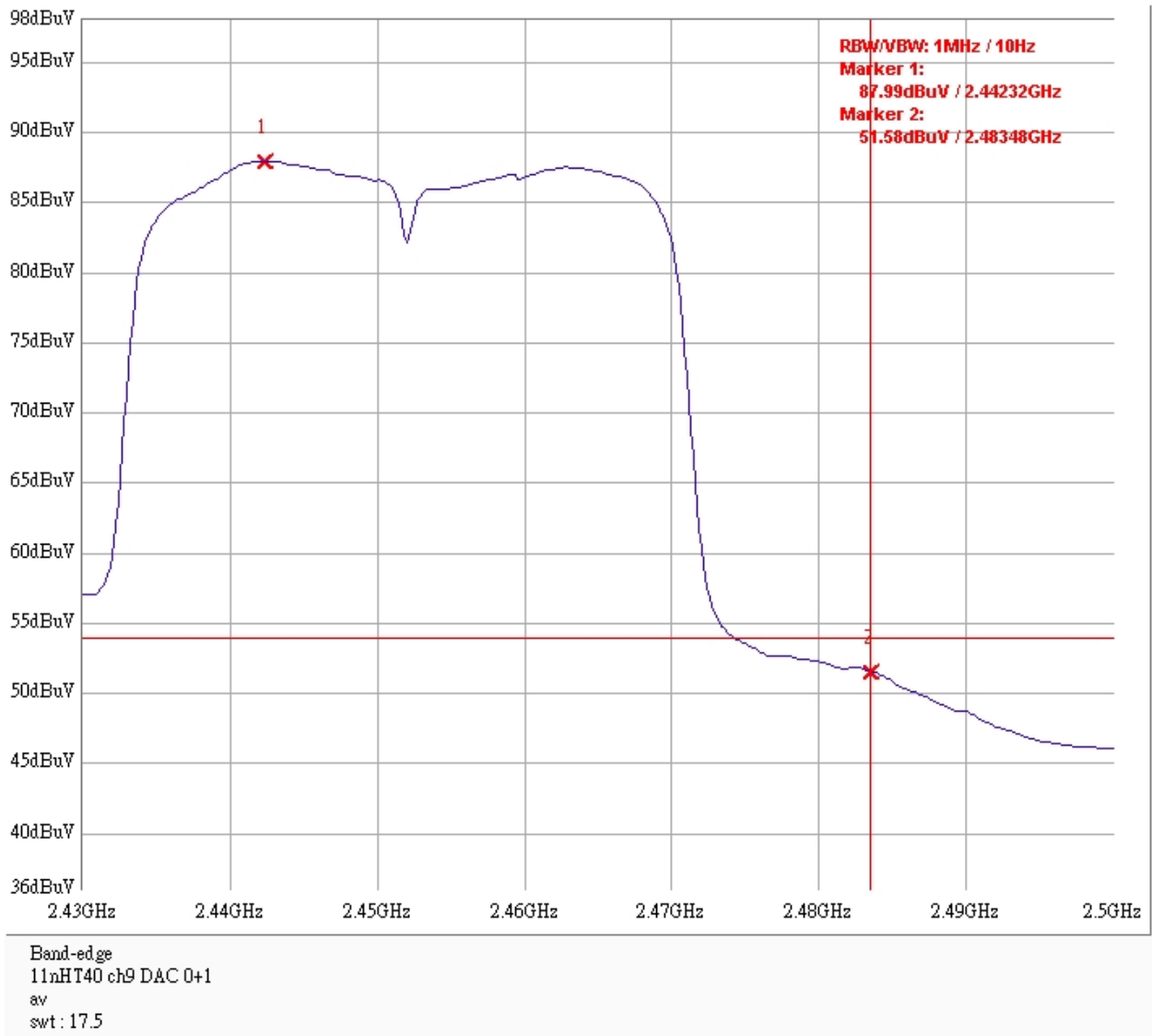
Dual: Bandage @ 802.11n HT40 mode channel 3 (AV)



**Dual: Bandage @ 802.11n HT40 mode channel 9 (PK)**



Dual: Bandage @ 802.11n HT40 mode channel 9 (AV)



## 10. AC power line conducted emission

<b>Name of Test</b>	AC power line conducted emission
<b>Base Standard</b>	FCC 15.207

**Test Result:** Complies  
**Measurement Data:** See Tables & plots below  
**Method of Measurement:**  
**Reference FCC document:** KDB558074, ANSI C63.4

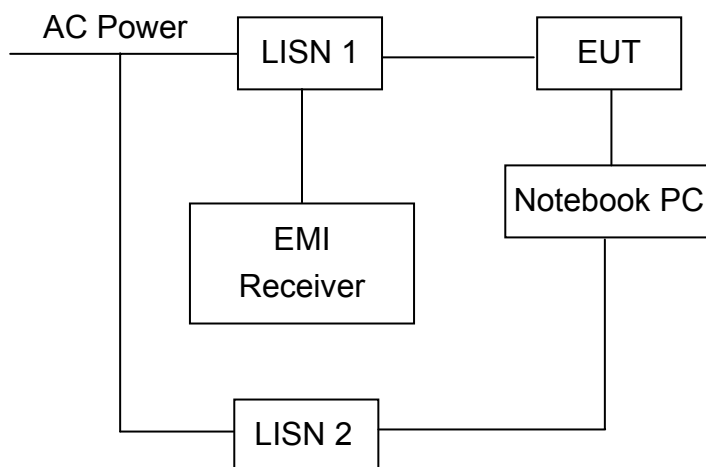
The EUT are connected to the main power through a line impedance stabilization network (LISN). This provides a 50 ohm/50 uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm/ 50 uH coupling impedance with 50 ohm termination.

Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4/2003 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

The EUT configuration please refer to the "Conducted set-up photo.pdf".

### Test Diagram:



(1) RJ-45 UTP Cat.5 10 meter

**Emission Limit:**

Freq. (MHz)	Conducted Limit (dBuV)	
	Q.P.	Ave.
0.15~0.50	66 – 56*	56 – 46*
0.50~5.00	56	46
5.00~30.0	60	50

\*Decreases with the logarithm of the frequency.

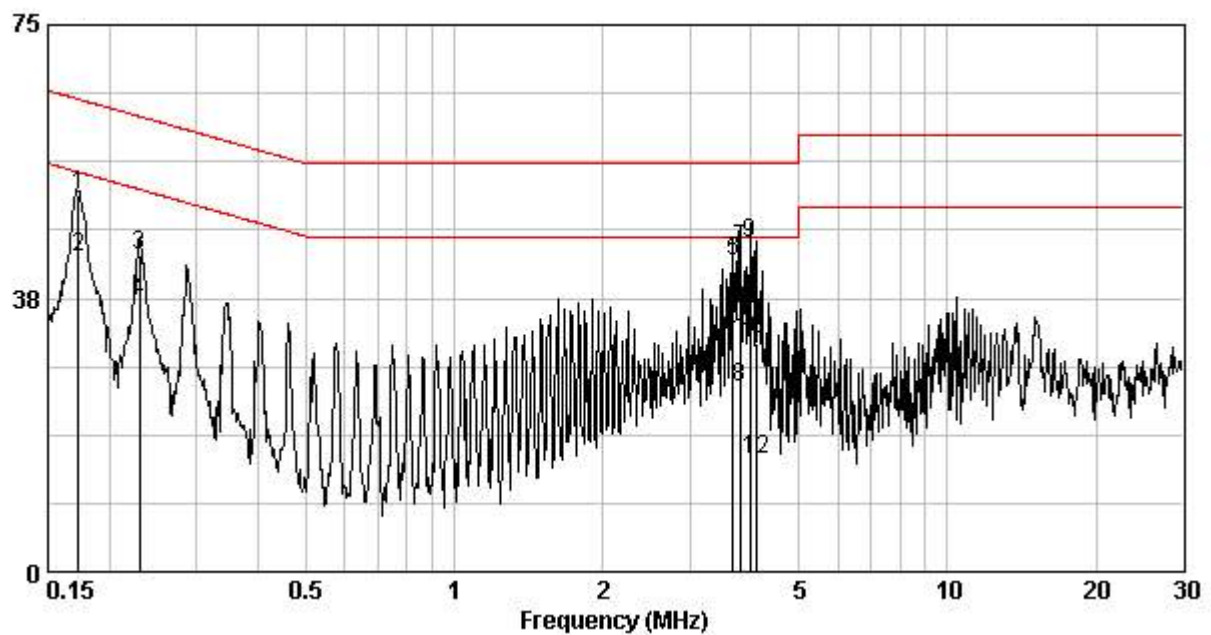
**Note:** The EUT was tested while in continues transmit mode.

Phase : Line  
EUT : WiDRIVE DX-325  
Operating mode : Disk mode

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.17	0.81	51.56	64.83	43.08	54.83	-13.27	-11.75
0.23	0.66	43.50	62.44	37.08	52.44	-18.93	-15.35
3.68	0.23	42.54	56.00	33.33	46.00	-13.46	-12.67
3.80	0.24	44.35	56.00	25.34	46.00	-11.65	-20.66
3.97	0.24	44.95	56.00	31.88	46.00	-11.05	-14.12
4.09	0.25	31.41	56.00	15.36	46.00	-24.59	-30.64

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)

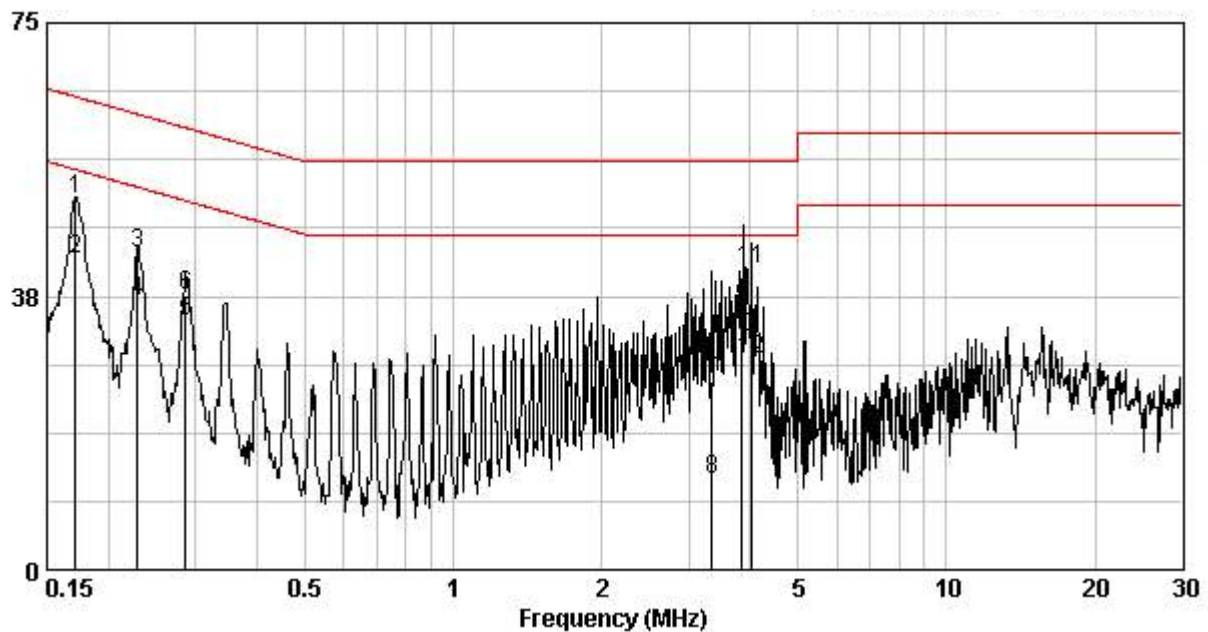


Phase : Neutral  
EUT : WiDRIVE DX-325  
Operating : Disk mode

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.17	0.11	50.90	64.90	42.45	54.90	-14.00	-12.45
0.23	0.11	43.44	62.48	36.87	52.48	-19.04	-15.61
0.29	0.11	37.54	60.63	34.06	50.63	-23.09	-16.57
3.35	0.22	25.85	56.00	12.32	46.00	-30.15	-33.68
3.85	0.24	36.07	56.00	31.96	46.00	-19.93	-14.04
4.02	0.25	41.25	56.00	28.86	46.00	-14.75	-17.14

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)

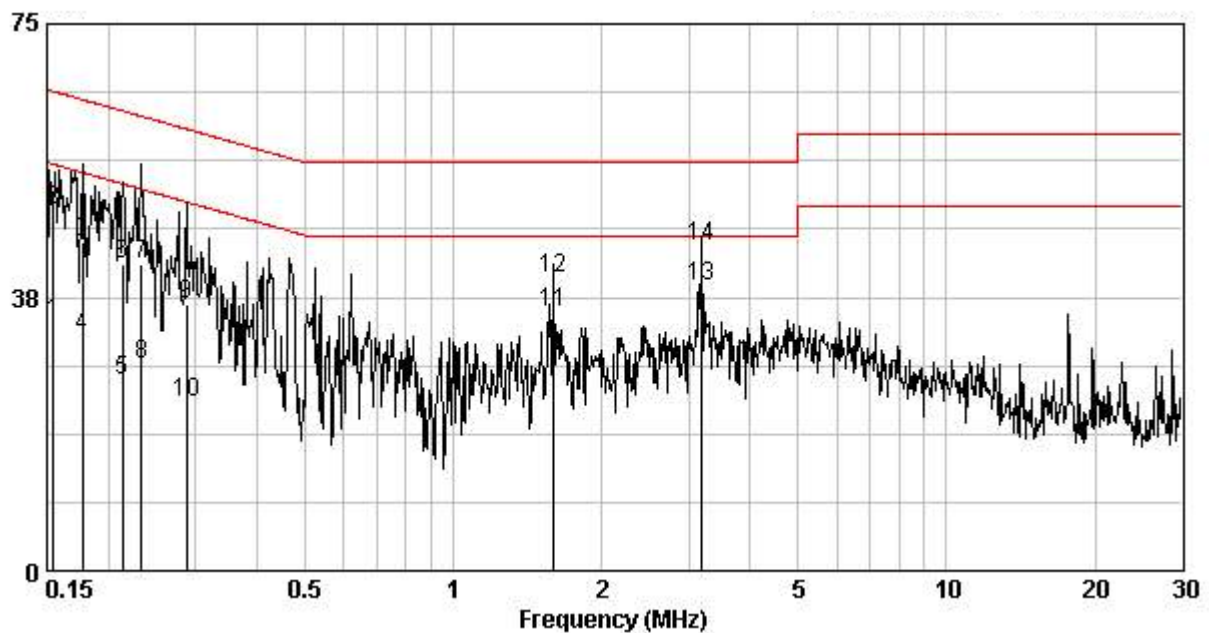


Phase : Line  
EUT : WiDRIVE DX-325  
Operating mode : AP mode

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.15	0.81	49.37	65.74	34.02	55.74	-16.37	-21.72
0.18	0.81	45.03	64.64	32.08	54.64	-19.61	-22.56
0.21	0.73	41.95	63.05	26.09	53.05	-21.10	-26.96
0.23	0.65	42.01	62.35	28.31	52.35	-20.33	-24.03
0.29	0.44	36.54	60.59	23.10	50.59	-24.05	-27.49
1.60	0.12	40.12	56.00	35.33	46.00	-15.88	-10.67
3.19	0.21	44.60	56.00	39.05	46.00	-11.40	-6.95

## Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)



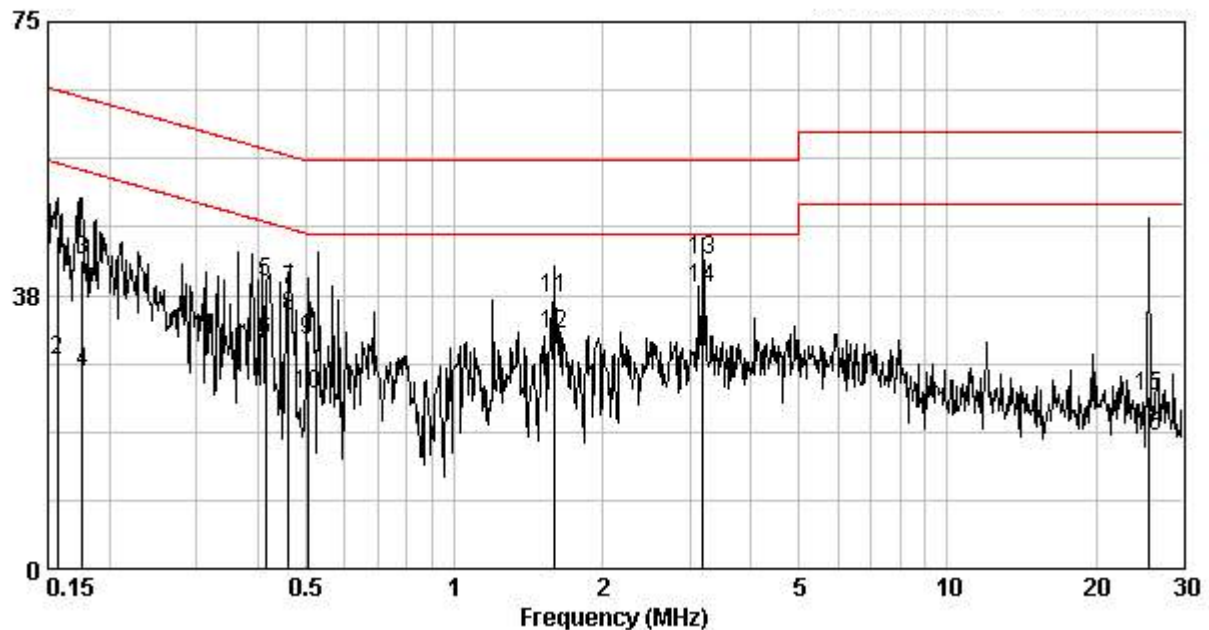


Phase : Neutral  
EUT : WiDRIVE DX-325  
Operating : AP mode

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.16	0.11	45.58	65.65	28.57	55.65	-20.07	-27.08
0.18	0.11	42.28	64.68	26.95	54.68	-22.40	-27.73
0.42	0.11	39.31	57.54	31.19	47.54	-18.24	-16.36
0.46	0.11	38.17	56.68	34.59	46.68	-18.51	-12.09
0.50	0.11	31.41	56.00	23.91	46.00	-24.59	-22.09
1.60	0.12	37.09	56.00	32.27	46.00	-18.91	-13.73
3.20	0.21	42.30	56.00	38.42	46.00	-13.70	-7.58
25.69	0.63	23.57	60.00	18.25	50.00	-36.43	-31.75

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)



## Appendix A: Test Equipment List

Equipment	Brand	Model No.
EMI Test Receiver	Rohde & Schwarz	ESCS 30
Spectrum Analyzer	Rohde & Schwarz	FSP 30
Spectrum Analyzer	Rohde & Schwarz	FSEK 30
Signal Generator	Rohde & Schwarz	SMR27
Horn Antenna	SCHWARZBECK	BBHA 9120 D
Horn Antenna	SCHWARZBECK	BBHA 9170
Bilog Antenna	SCHWARZBECK	VULB 9168
Pre-Amplifier	MITEQ	919981
Pre-Amplifier	MITEQ	828825
Controller	HDGmbH	CM 100
Antenna Tower	HDGmbH	MA 2400
LISN	Rohde & Schwarz	ESH3-Z5
Wideband Peak Power Meter/ Sensor	Anritsu	ML2495A/ MA2411B
Temperature Humidity Test Chamber	Juror	TR-4010

- Note: 1. The above equipments are within the valid calibration period.  
2. The test antennas (receiving antenna) are calibration per 3 years.  
3. The video bandwidth of the power meter and sensor can be up to 65 MHz.

### Measurement Uncertainty:

Measurement uncertainty was calculated in accordance with TR 100 028-1.

Parameter	Uncertainty
Radiated Emission	$\pm 5.056$ dB
Conducted Emission	$\pm 2.786$ dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of  $k=2$ .