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**TEST REPORT**

**Report Number: 13090143HKG-001**

Application  
for  
Original Grant of 47 CFR Part 15 Certification  
New Family of RSS-210 Issue 8 Equipment Certification

Video Baby Monitor - Parent Unit

**FCC ID: VLJ-BLINKBUDDY**

**IC: 4522A-BUDDY**

Prepared and Checked by:

A handwritten signature in black ink, appearing to be 'Wong Kwok Yeung'.

Wong Kwok Yeung, Kenneth  
Lead Engineer

Approved by:

A handwritten signature in black ink, appearing to be 'Chan Chi Hung'.

Chan Chi Hung, Terry  
Supervisor  
November 19, 2013

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**Intertek Testing Services Hong Kong Ltd.**

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## GENERAL INFORMATION

<b>Applicant Name:</b>	Binatone Electronics International Limited
<b>Applicant Address:</b>	Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong.
<b>FCC Specification Standard:</b>	FCC Part 15, October 1, 2012 Edition
<b>FCC ID:</b>	VLJ-BLINKBUDDY
<b>FCC Model(s):</b>	BLINK Buddy, Buddy
<b>IC Specification Standard:</b>	RSS-210 Issue 8, December 2010 RSS-Gen Issue 3, December 2010
<b>IC:</b>	4522A-BUDDY
<b>IC Model(s):</b>	BLINK Buddy, Buddy
<b>Type of EUT:</b>	Digital Transmission System
<b>Description of EUT:</b>	Video Baby Monitor - Parent Unit
<b>Serial Number:</b>	N/A
<b>Sample Receipt Date:</b>	September 2, 2013
<b>Date of Test:</b>	September 17, 2013 to September 26, 2013
<b>Report Date:</b>	November 19, 2013
<b>Environmental Conditions:</b>	Temperature: +10 to 40°C Humidity: 10 to 90%

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FCC ID: VLJ-BLINKBUDDY  
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**EXHIBIT 1**  
**SUMMARY OF TEST RESULTS & STATEMENT OF COMPLIANCE**

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## 1.0 Summary of Test Results

Test Items	FCC Part 15 Section	RSS-210/ RSS-Gen# Section	Results	Details see section
Antenna Requirement	15.203	7.1.2#	Pass	2.1
Max. Conducted Output Power	15.247(b)(3)&(4)	A8.4(4)	Pass	4.1
Min. 6dB RF Bandwidth	15.247(a)(2)	A8.2(a)	Pass	4.2
Max. Power Density	15.247(e)	A8.2(b)	Pass	4.3
Out of Band Antenna Conducted Emission	15.247(d)	A8.5	Pass	4.4
Radiated Emission in Restricted Bands and Spurious Emissions	15.247(d), 15.209 & 15.109	A8.5	Pass	4.6
AC Power Line Conducted Emission	15.207 & 15.107	7.2.4#	Pass	4.7

Note: Pursuant to FCC Part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

### 1.1 Statement of Compliance

The equipment under test is found to be complying with the following standards:

FCC Part 15, October 1, 2012 Edition  
RSS-210 Issue 8, December 2010  
RSS-Gen Issue 3, December 2010

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**EXHIBIT 2**  
**GENERAL DESCRIPTION**

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## **2.0 General Description**

### **2.1 Product Description**

The BLINK Buddy is a Video Baby Monitor - Parent Unit.

For 802.11b mode, it operates at frequency range of 2412.000MHz to 2462.000MHz with 11 channels. It transmits via direct-sequence spread spectrum (DSSS) modulation. Maximum bit rate can be up to 11Mbps. For 802.11g mode, it operates at frequency range of 2412.000MHz to 2462.000MHz with 11 channels. It transmits via Orthogonal Frequency Division Multiplexing (OFDM) modulation. Maximum bit rate can be up to 54Mbps. For 802.11n (with 20MHz bandwidth) mode, it operates at frequency range of 2412.000MHz to 2462.000MHz with 11 channels. It transmits via Orthogonal Frequency Division Multiplexing (OFDM) modulation. Maximum bit rate can support up to 65Mbps.

The EUT is power by a "Li-ion" type rechargeable battery pack (3.7V 910mAh).

The antenna(s) used in the EUT is Internal and Integral.

For FCC, The Model(s): Buddy is the same as the Model: BLINK Buddy in electrical designs, including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between this model is color, cosmetic details and model number to be sold for marketing purpose.

For IC, The Model(s): Buddy is the same as the Model: BLINK Buddy in electrical designs, including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between this model is color, cosmetic details and model number to be sold for marketing purpose.

The circuit description is saved with filename: descri.pdf.

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## 2.2 Test Methodology

Both AC power line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009). Preliminary radiated scans and all radiated measurements were performed in Open Area Test Sites. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. Antenna port conducted measurements were performed according to ANSI C63.10 (2009) and KDB Publication No. 558074 D01 v03r01 (09-April-2013). All other measurements were made in accordance with the procedures in RSS-Gen Issue 3 (2010).

## 2.3 Test Facility

The open area test site, AC Power Line conducted measurement facility, and antenna port conducted measurement facility used to collect the radiated data, AC Power Line conducted data, and conductive data are at Roof Top, 2<sup>nd</sup> Floor, and 5<sup>th</sup> Floor respectively of Intertek Testing Services Hong Kong Ltd., which is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC and the Industry Canada.



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**EXHIBIT 3**  
**SYSTEM TEST CONFIGURATION**

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### **3.0 System Test Configuration**

#### **3.1 Justification**

For radiated emissions testing, the equipment under test (EUT) was setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables (if any) were manipulated to produce worst case emissions.

The EUT is powered by a "Li-ion" type rechargeable battery pack (3.7V 910mAh).

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable. If the EUT attached to peripherals, they were connected and operational (as typical as possible).

The signal was maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization were varied during the search for maximum signal level. The antenna height was varied from 1 to 4 meters. Radiated emissions were taken at three meters unless the signal level was too low for measurement at that distance. If necessary, a pre-amplifier was used and/or the test was conducted at a closer distance.

For any intentional radiator powered by AC power line, measurements of the radiated signal level of the fundamental frequency component of the emission was performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

Radiated emission measurement for transmitter were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

Emission that are directly caused by digital circuits in the transmit path and transmitter portion were measured, and the limit are according to FCC Part 15 Section 15.209. Digital circuitry used to control additional functions other than the operation of the transmitter are subject to FCC Part 15 Section 15.109 Limits.

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### 3.1 Justification – Cont'd

Detector function for radiated emissions was in peak mode. Average readings, when required, were taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in section 4.2.3.

Determination of pulse desensitization was made according to *Hewlett Packard Application Note 150-2, Spectrum Analysis... Pulsed RF*. The effective period (Teff) was referred to Exhibit 4.6.3. With the resolution bandwidth 1MHz and spectrum analyzer IF bandwidth 3dB, the pulse desensitization factor was 0dB.

The EUT along with its peripherals were placed on a 1.0m(W)x1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT power cord connected to one LISN (Line impedance stabilization network), which provided 50ohm coupling impedance for measuring instrument. Meanwhile, the peripheral or support equipment power cords connected to a separate LISN. The ac powers for all LISNs were obtained from the same power source. The LISN housing, measuring instrument case, reference ground plane, and vertical ground plane were bounded together. The excess power cable between the EUT and the LISN was bundled. Power cords of non-EUT equipment (peripherals) were not bundled. AC power cords of peripheral equipments draped over the rear edge of the table, and routed them down onto the floor of the ac power line conducted emission test site to the second LISN.

All connecting cables of EUT and peripherals were manipulated to find the maximum emission.

Different data rates have been tested. Worst case is reported only.

All relevant operation modes have been tested, and the worst case data is included in this report.

All data rates were tested under normal mode of WiFi. Only the worst-case data is shown in the report for DSSS and OFDM

### 3.2 EUT Exercising Software

The EUT exercise program (if any) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

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### 3.3 Details of EUT and Description of Accessories

#### Details of EUT:

A battery (provided with the unit) was used to power the device. Their description are listed below.

- (1) A "Li-ion" type rechargeable battery (3.7V 910mAh) (Supplied by Client)

#### Description of Accessories:

- (1) Extra Charger of Docking base station: An AC adaptor (100-120VAC to OUTPUT1: 5.8V 600mA; OUTPUT2: 5.8V 1000mA, Model: SSA-10W2 US 058100/058060L, Brand: Sunstrong) (Supplied by Client)

### 3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

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**EXHIBIT 4**  
**TEST RESULTS**

## 4.0 Test Results

### 4.1 Maximum Conducted Output Power at Antenna Terminals

The antenna port of the EUT was connected to the input of a spectrum analyzer.

- External attenuation and cable loss were compensated for using the OFFSET function of the analyser. The measurement procedure 9.1.2 was used.
- The EUT should be configured to transmit continuously (at a minimum duty cycle of 98%) at full power over the measurement duration. The measurement procedure AVG1 was used.

IEEE 802.11b (DSSS, 11 Mbps) Antenna Gain = 2 dBi		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	20.32	107.6
Middle Channel: 2437	19.79	95.3
High Channel: 2462	19.30	85.1

IEEE 802.11g (OFDM, 54 Mbps) Antenna Gain = 2 dBi		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	22.12	162.9
Middle Channel: 2437	21.94	156.3
High Channel: 2462	21.53	142.2

IEEE 802.11n (20MHz) (OFDM, 28.9 Mbps) Antenna Gain = 2 dBi		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	22.05	160.3
Middle Channel: 2437	21.55	142.9
High Channel: 2462	21.12	129.4

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#### 4.1 Maximum Conducted Output Power at Antenna Terminals – Cont'd

Cable loss : 0.5 dB External Attenuation : 0 dB

Cable loss, external attenuation:  included in OFFSET function  
 added to SA raw reading

IEEE 802.11b (DSSS, 11 Mbps)  
dBm max. output level = 20.32 dBm

IEEE 802.11g (OFDM, 54 Mbps)  
dBm max. output level = 22.12 dBm

IEEE 802.11n (20MHz) (OFDM, 28.9 Mbps)  
dBm max. output level = 22.05 dBm

Limits:

1W (30dBm) for antennas with gains of 6dBi or less

\_\_\_W (\_\_\_dBm) for antennas with gains more than 6dBi

The plots of conducted output power are saved as below.

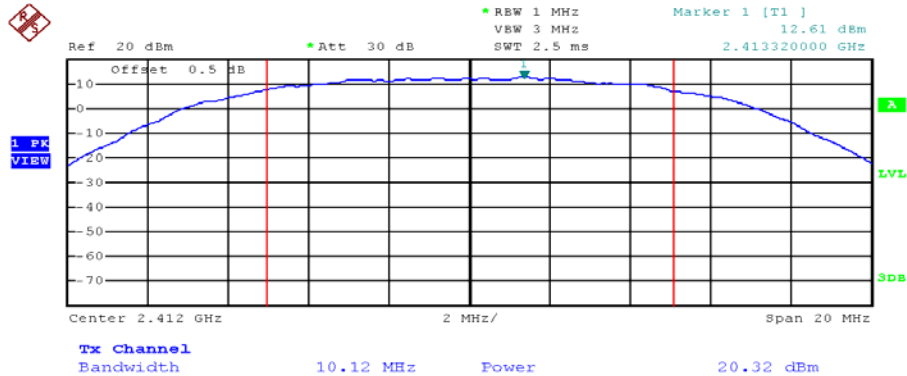
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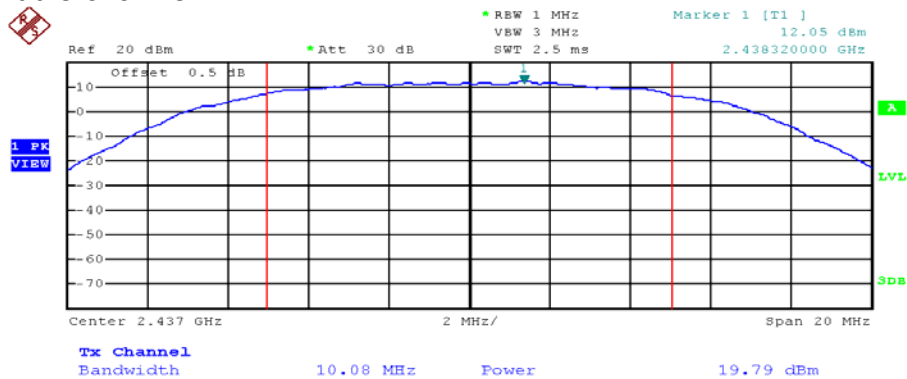


## Plots of maximum output power

### 802.11b, Lowest channel



### 802.11b, Middle channel





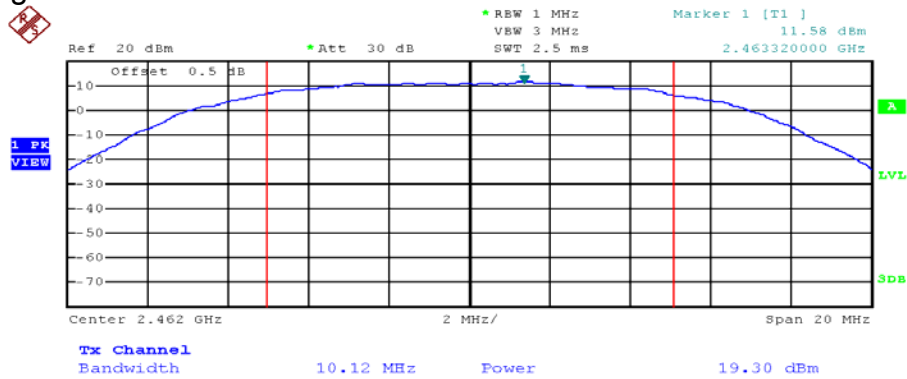
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## Plots of maximum output power

802.11b, Highest channel



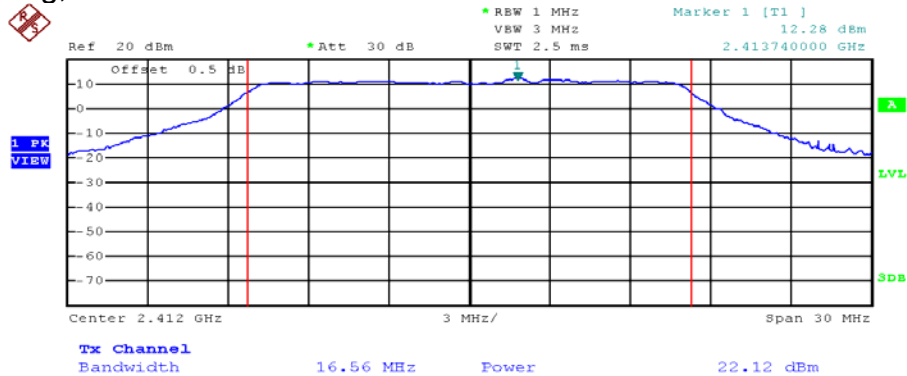
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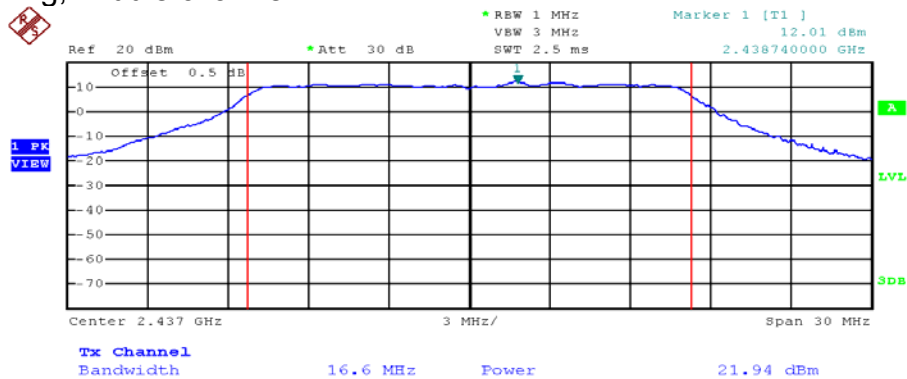


## Plots of maximum output power

### 802.11g, Lowest channel



### 802.11g, Middle channel



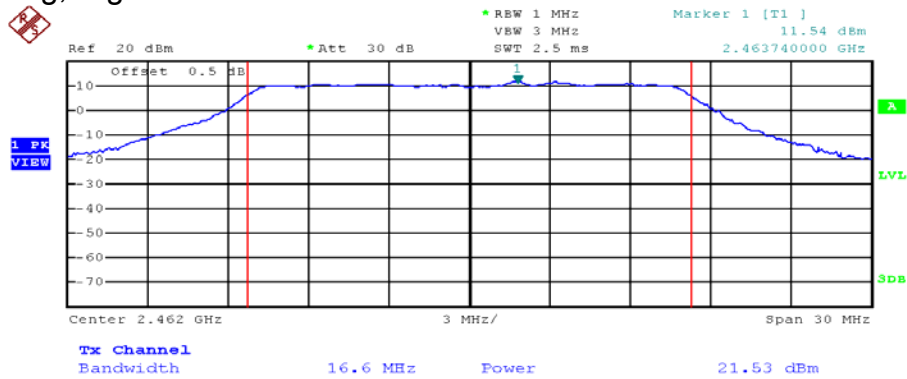
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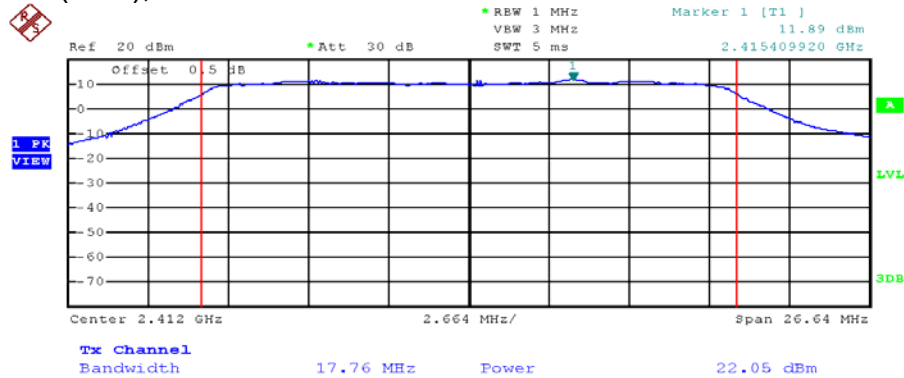
## Plots of maximum output power

802.11g, Highest channel

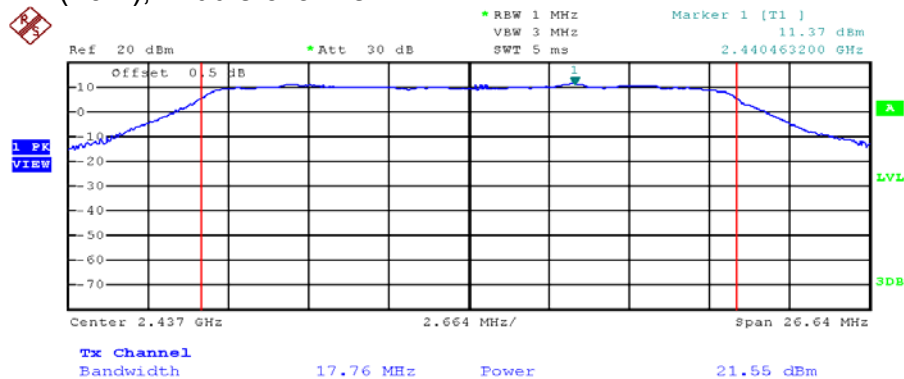


## Plots of maximum output power

802.11n(20M), Lowest channel



802.11n(20M), Middle channel



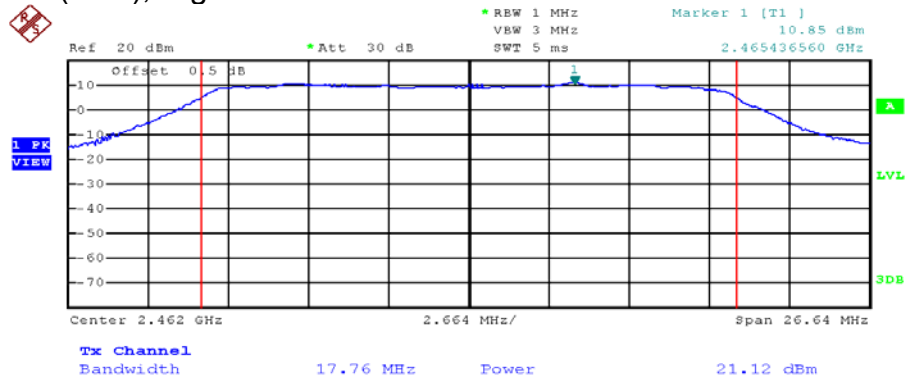
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## Plots of maximum output power

802.11n(20M), Highest channel



#### 4.2 Minimum 6dB RF Bandwidth

The antenna port of the EUT was connected to the input of a spectrum analyzer. The EBW measurement procedure was used. A PEAK output reading was taken, a DISPLAY line was drawn 6dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

For Industry Canada, the 99% occupied bandwidth was measured, and the procedure under the section 4.6.1 of RSS-GEN was used.

IEEE 802.11b (DSSS, 11 Mbps)	
Frequency (MHz)	6dB Bandwidth (kHz)
Low Channel: 2412	10120
Middle Channel: 2437	10080
High Channel: 2462	10120

IEEE 802.11g (OFDM, 54 Mbps)	
Frequency (MHz)	6dB Bandwidth (kHz)
Low Channel: 2412	16560
Middle Channel: 2437	16600
High Channel: 2462	16600

IEEE 802.11n (20MHz) (OFDM, 28.9 Mbps)	
Frequency (MHz)	6dB Bandwidth (kHz)
Low Channel: 2412	17760
Middle Channel: 2437	17760
High Channel: 2462	17760

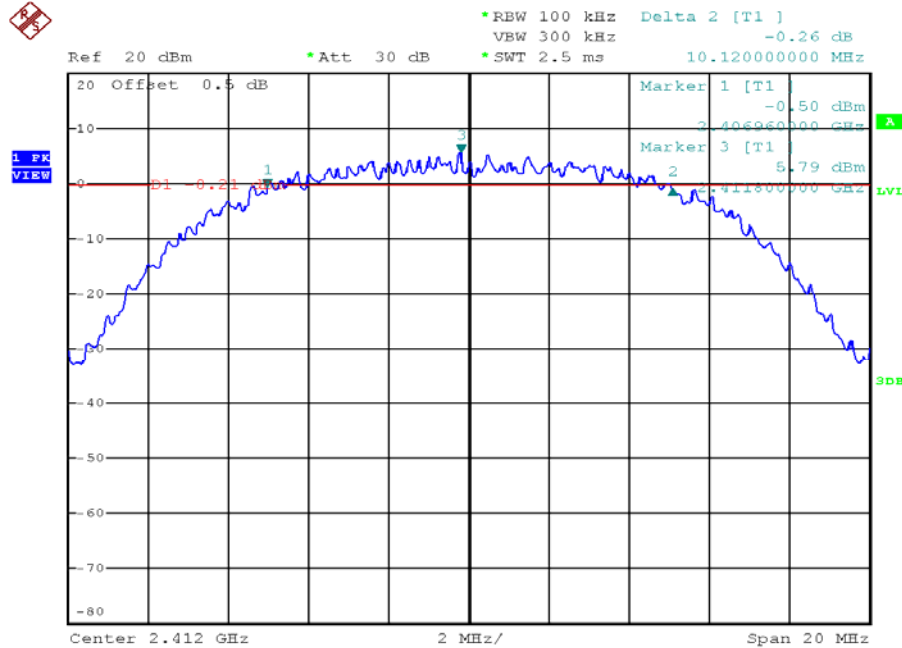
#### Limits

6 dB bandwidth shall be at least 500kHz

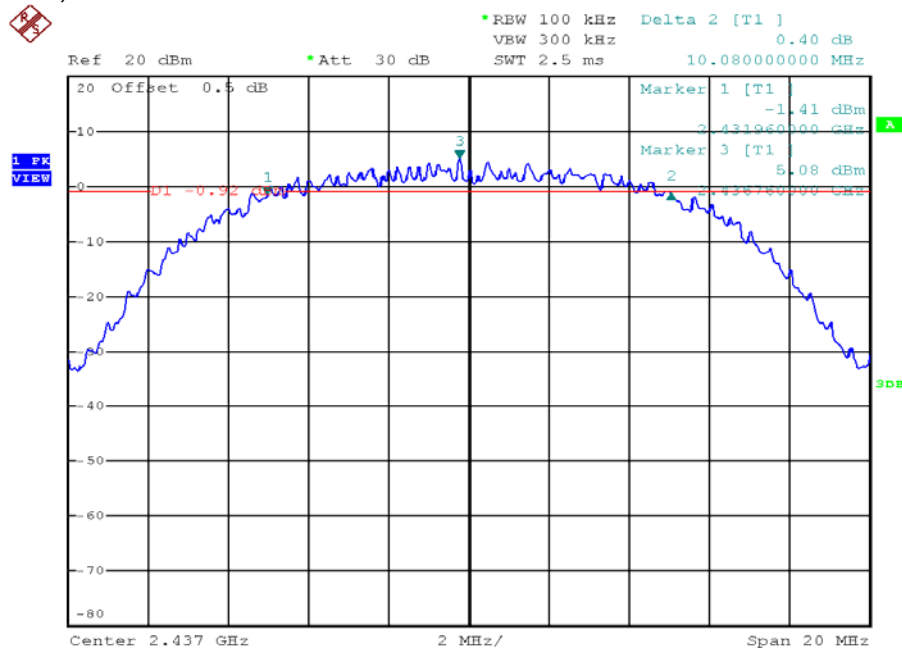
The plots of 6dB RF bandwidth and occupied bandwidth are saved as below.

## Plots of 6dB RF bandwidth

### 802.11b, Lowest Channel



### 802.11b, Middle Channel



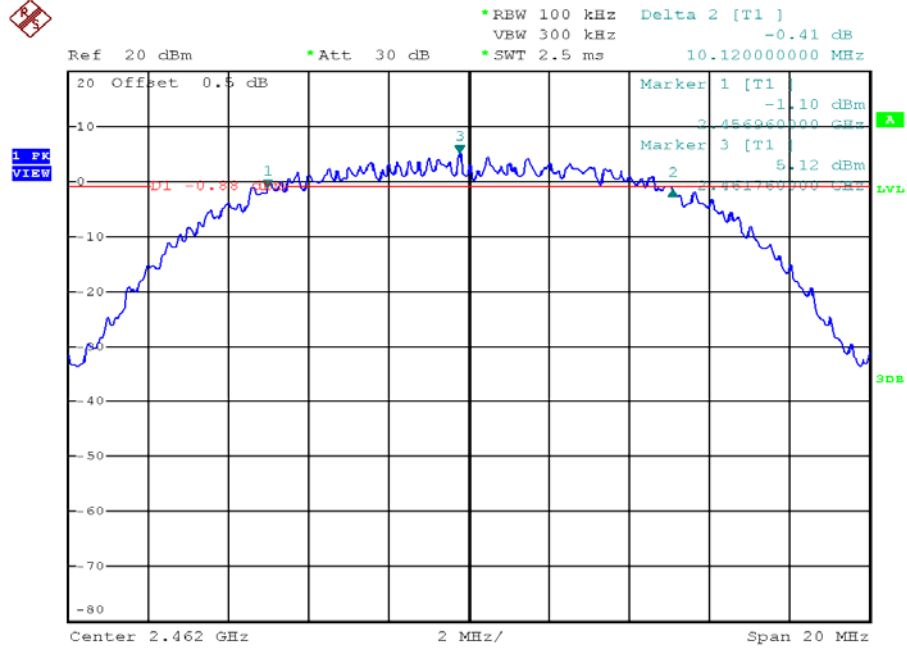
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## Plots of 6dB RF bandwidth

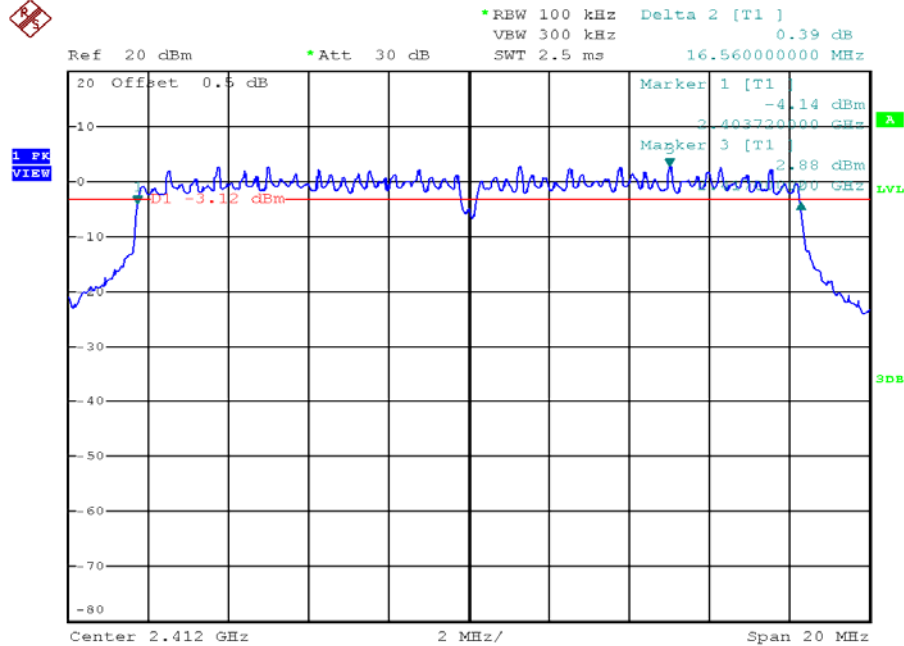
802.11b, Highest Channel



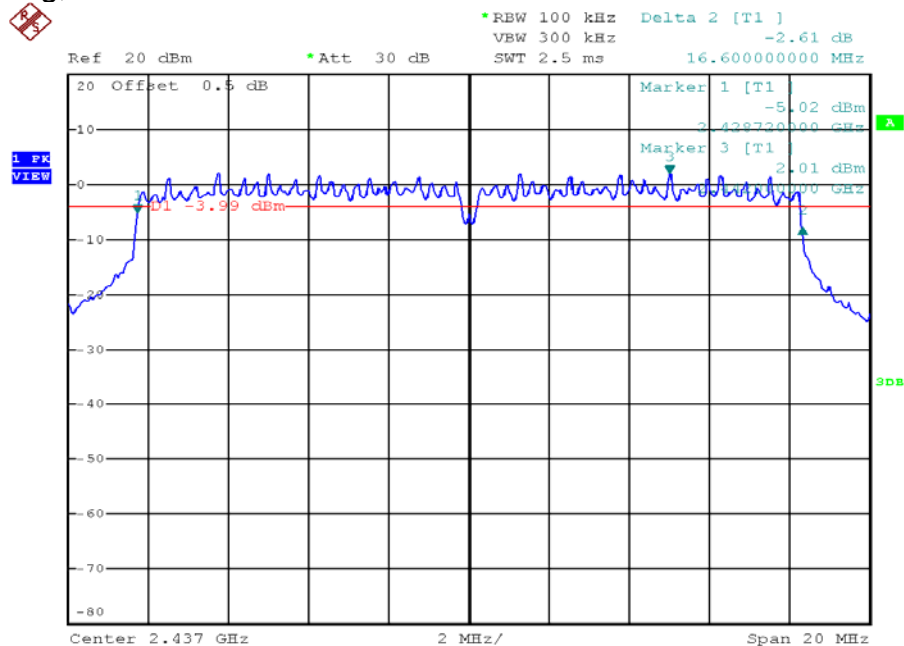


## Plots of 6dB RF bandwidth

### 802.11g, Lowest Channel



### 802.11g, Middle Channel



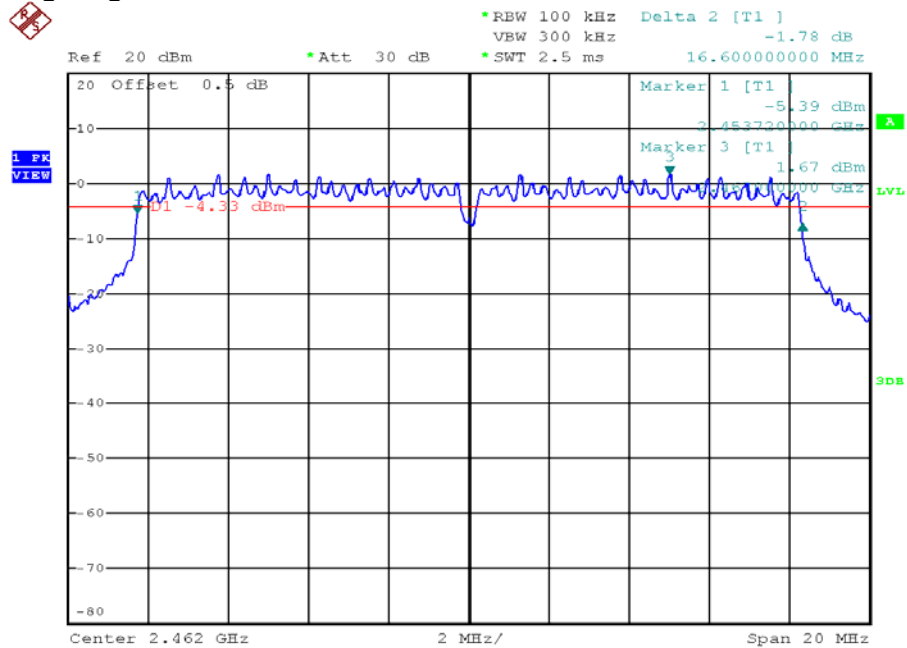
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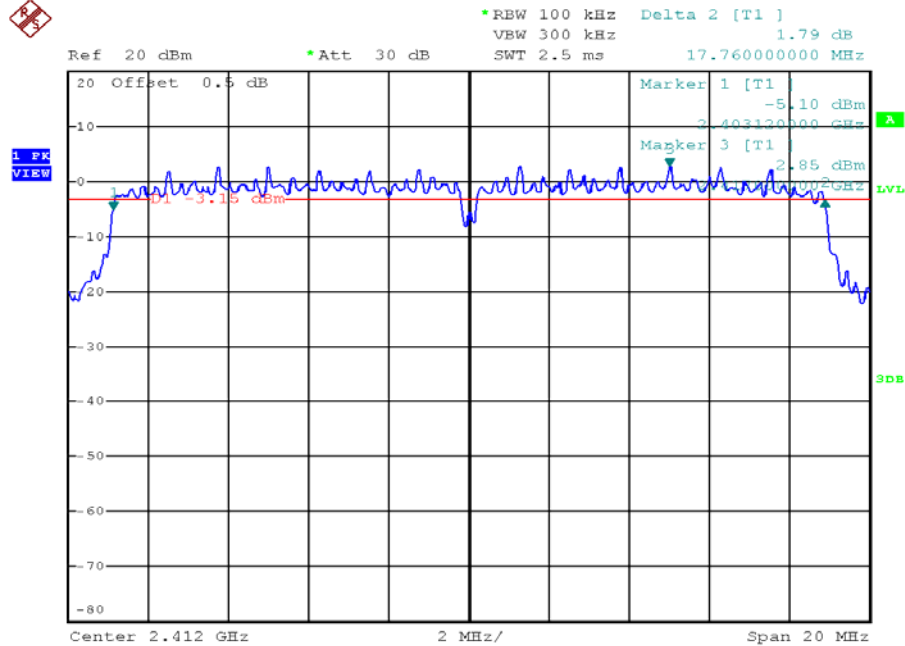
### Plots of 6dB RF bandwidth

802.11g, Highest Channel

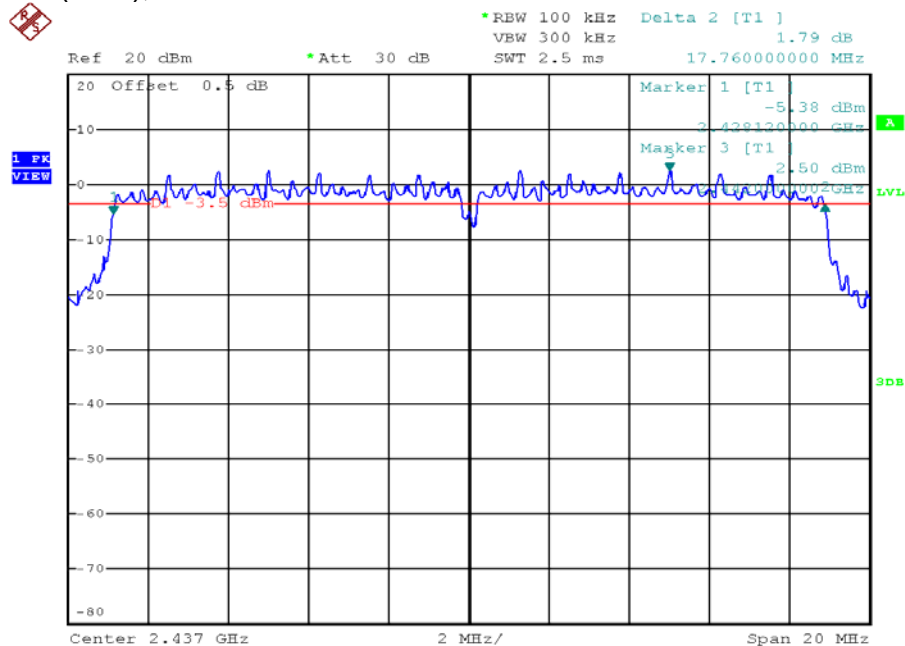


## Plots of 6dB RF bandwidth

### 802.11n(20M), Lowest Channel



### 802.11n(20M), Middle Channel



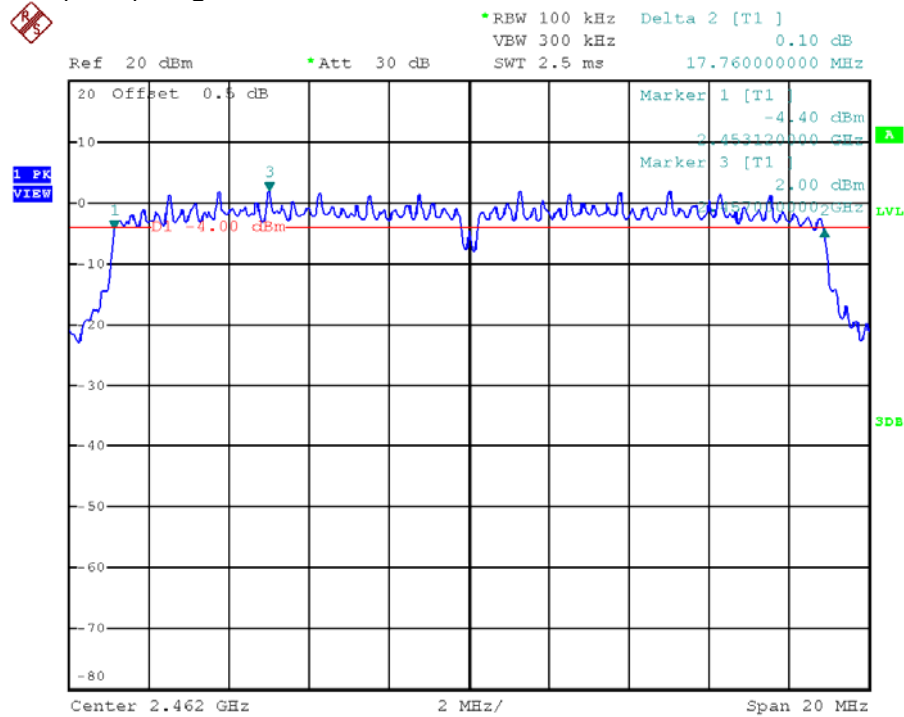
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### Plots of 6dB RF bandwidth

802.11n(20M), Highest Channel



### 4.3 Maximum Power Spectral Density

Antenna output of the EUT was coupled directly to spectrum analyzer. The measurement procedure 10.2 PKPSD was used. If an external attenuator and/or cable was used, these losses are compensated for using the OFFSET function of the analyser.

IEEE 802.11b (DSSS, 11 Mbps)	
Frequency (MHz)	PSD in 100kHz (dBm)
Low Channel: 2412	5.69
Middle Channel: 2437	5.35
High Channel: 2462	4.98

IEEE 802.11g (OFDM, 54 Mbps)	
Frequency (MHz)	PSD in 100kHz (dBm)
Low Channel: 2412	2.73
Middle Channel: 2437	2.51
High Channel: 2462	2.05

IEEE 802.11n (20MHz) (OFDM, 28.9 Mbps)	
Frequency (MHz)	PSD in 100kHz (dBm)
Low Channel: 2412	3.17
Middle Channel: 2437	2.57
High Channel: 2462	2.12

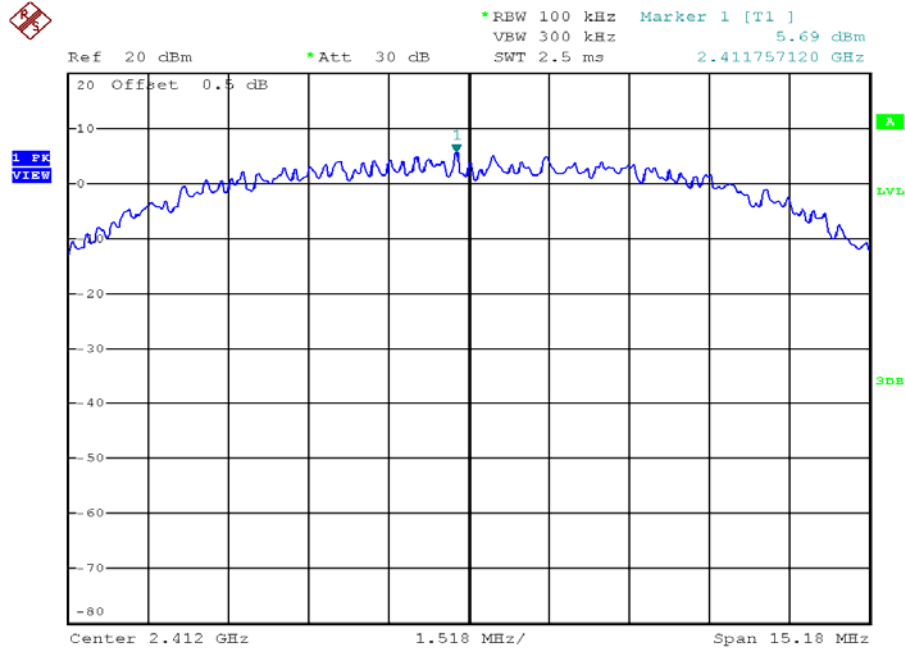
Cable Loss: 0.5 dB

Limit:  
8dBm

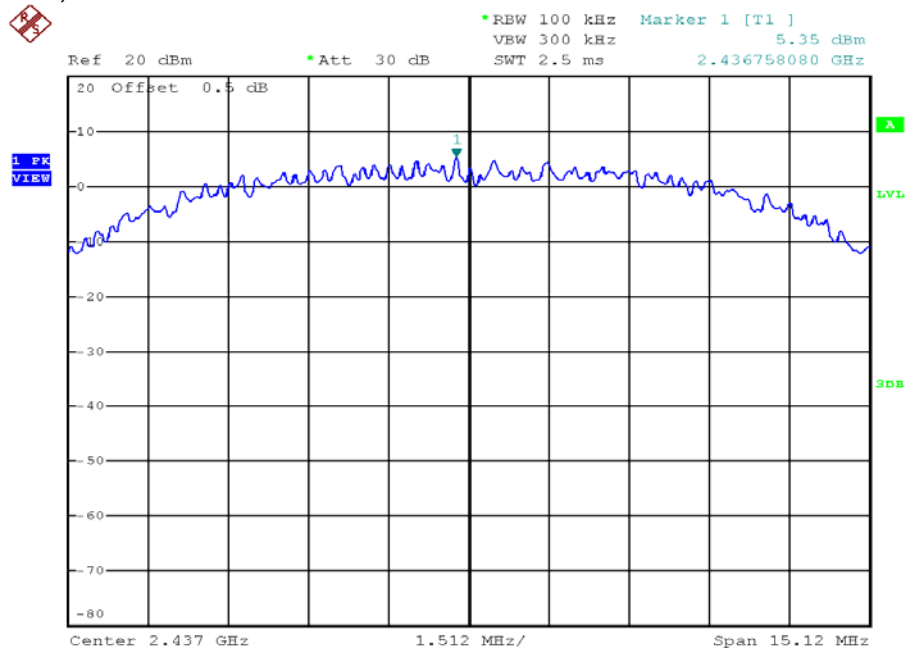
The plots of power spectral density are as below.

## Plots of power spectral density

### 802.11b, Lowest channel



### 802.11b, Middle channel



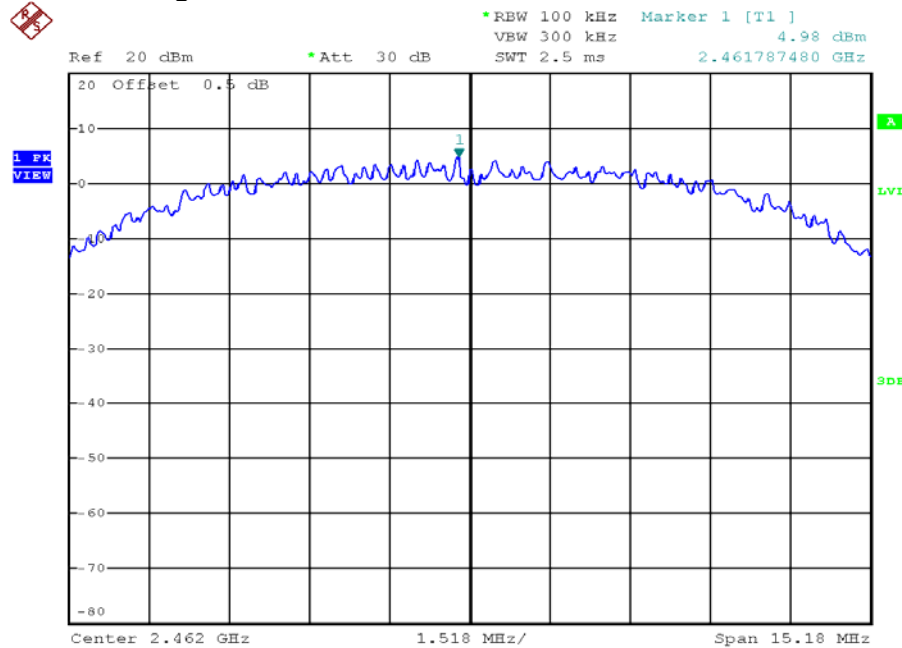
Issuing Laboratory:  
Intertek Testing Services Hong Kong Limited

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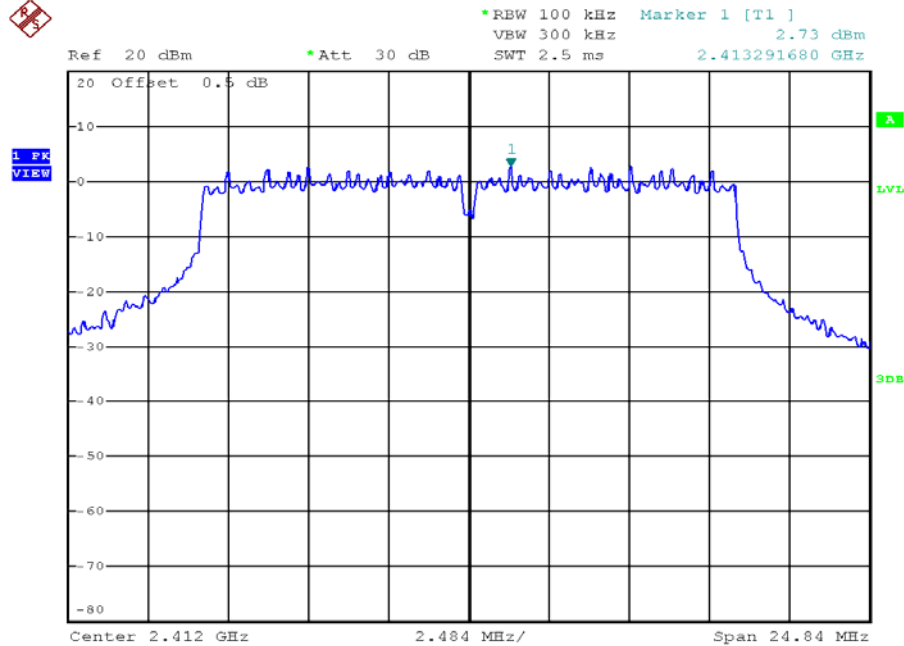
## Plots of power spectral density

### 802.11b, Highest channel

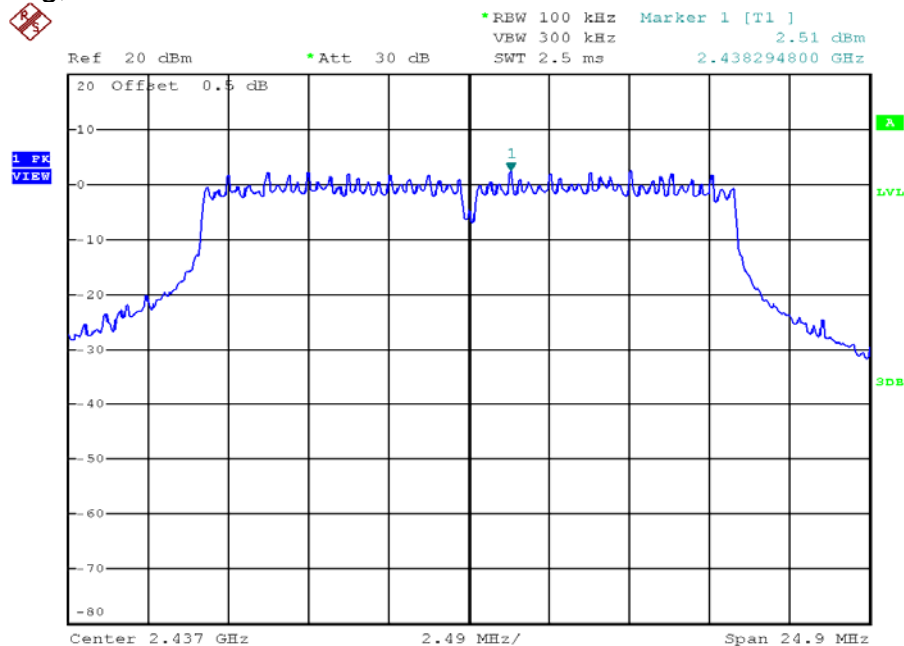


## Plots of power spectral density

802.11g, Lowest channel



802.11g, Middle channel





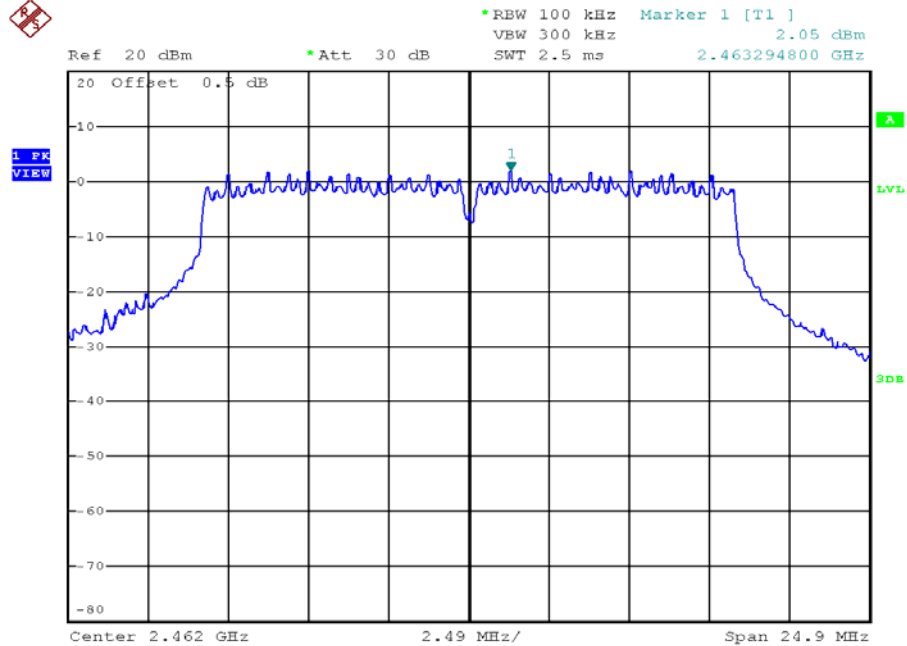
Issuing Laboratory:  
Intertek Testing Services Hong Kong Limited

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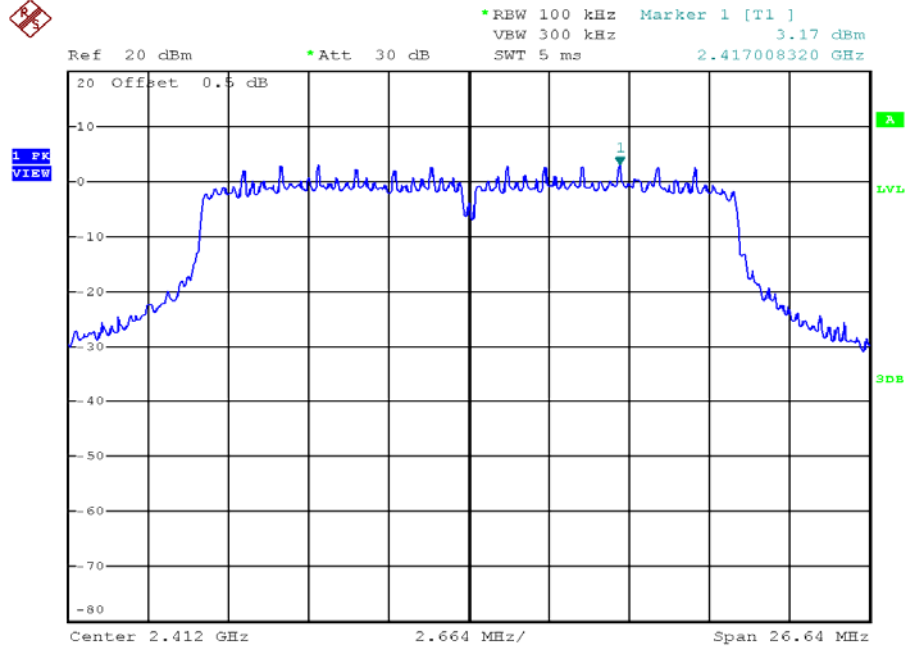
## Plots of power spectral density

802.11g, Highest channel

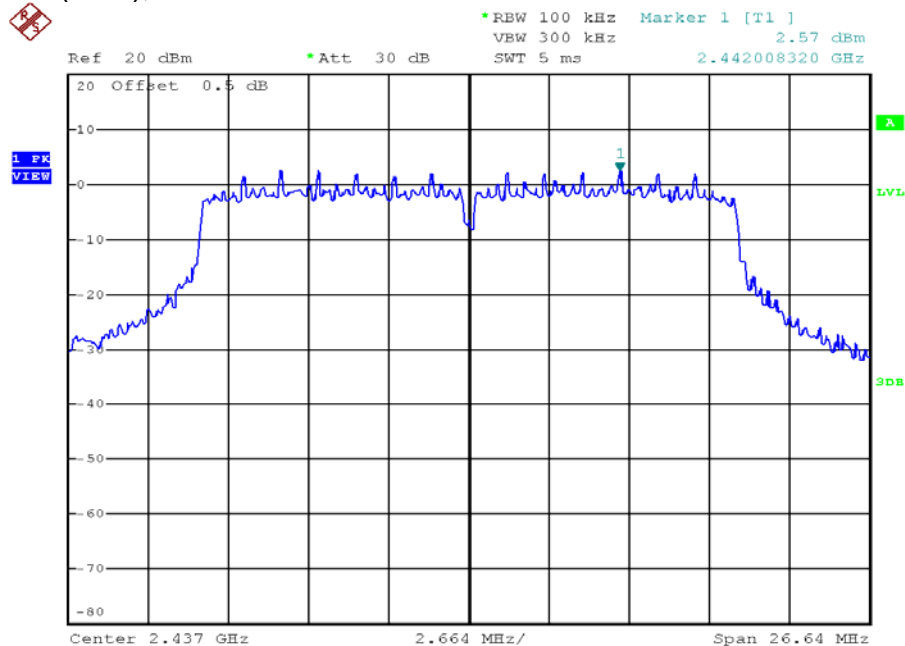


## Plots of power spectral density

802.11n(20M), Lowest channel



802.11n(20M), Middle channel



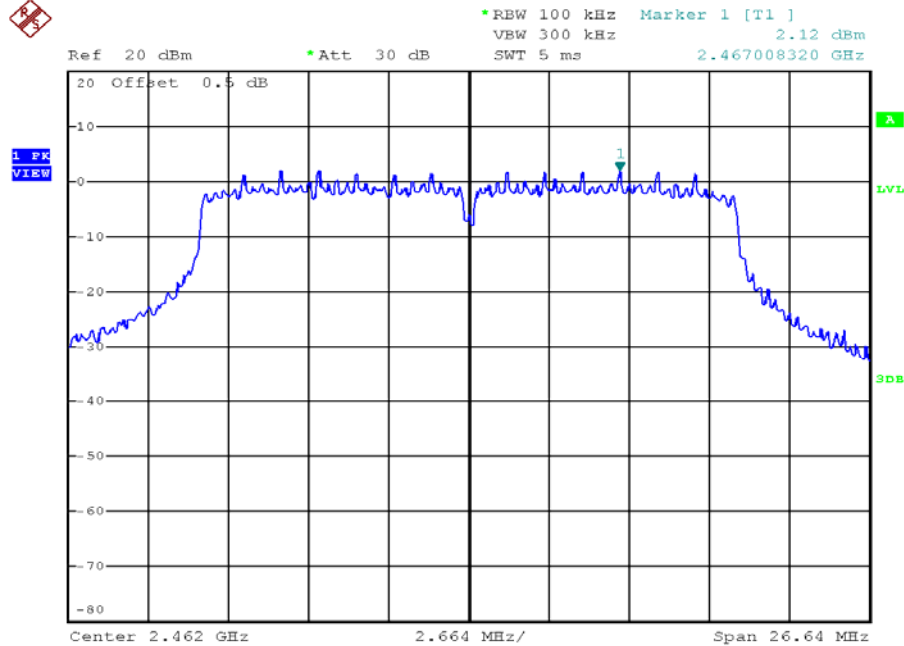
Issuing Laboratory:  
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### Plots of power spectral density

802.11n(20M), Highest channel



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#### 4.4 Out of Band Conducted Emissions

RBW was set to 1MHz rather than 100KHz in order to increase the measurement speed.

The display line ( in red ) shown in the following plots denotes the limit at 20dB below maximum measured in-band peak PSD level in 100KHz bandwidth. The traces in the following plots are measured with 1MHz RBW but not 100KHz in measurement range from 10MHz to 2GHz and 2.8GHz to 25GHz.

The measurement procedures under sections 11 of KDB558074 were used.

Furthermore, delta measurement technique for measuring bandedge emissions was incorporated in the test of the edge at 2483.5MHz.

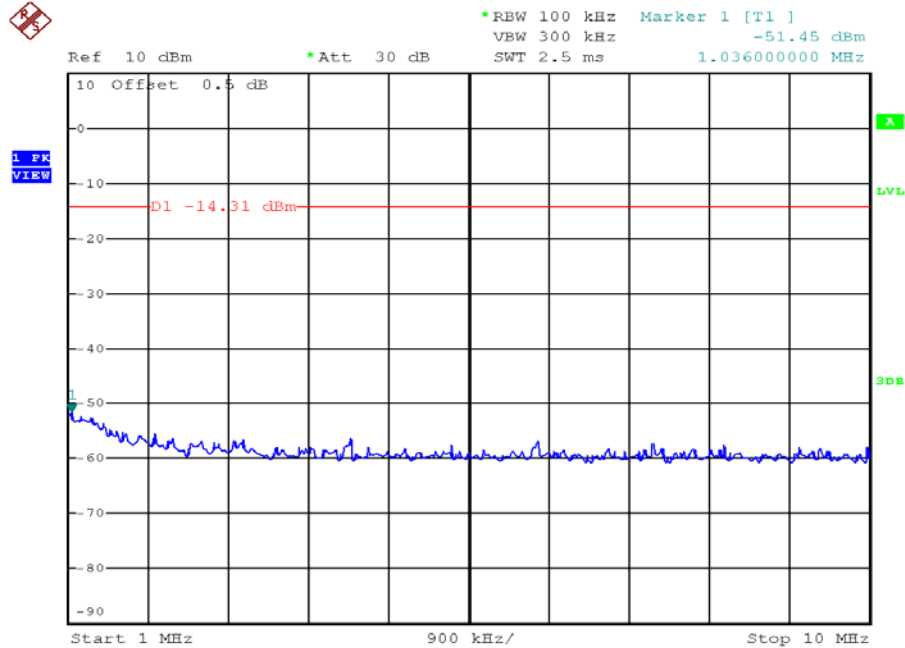
**Limits:**

All spurious emission and up to the tenth harmonic was measured and they were found to be at least 20 dB below the maximum measured in-band peak PSD level.

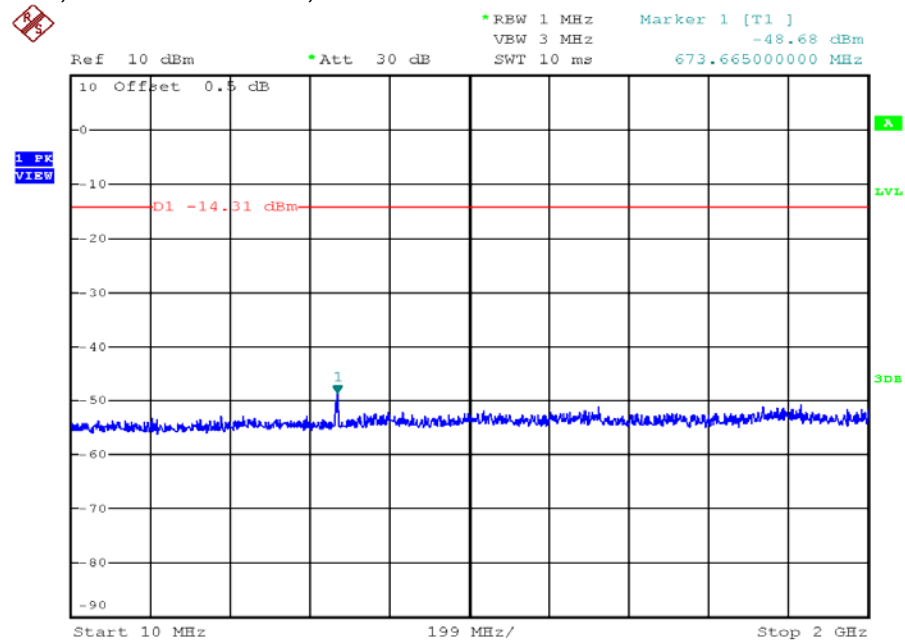
The plots of out of band conducted emissions and bandedge are as below.

## Plots of out of band conducted emissions

802.11b, Lowest Channel, Plot A

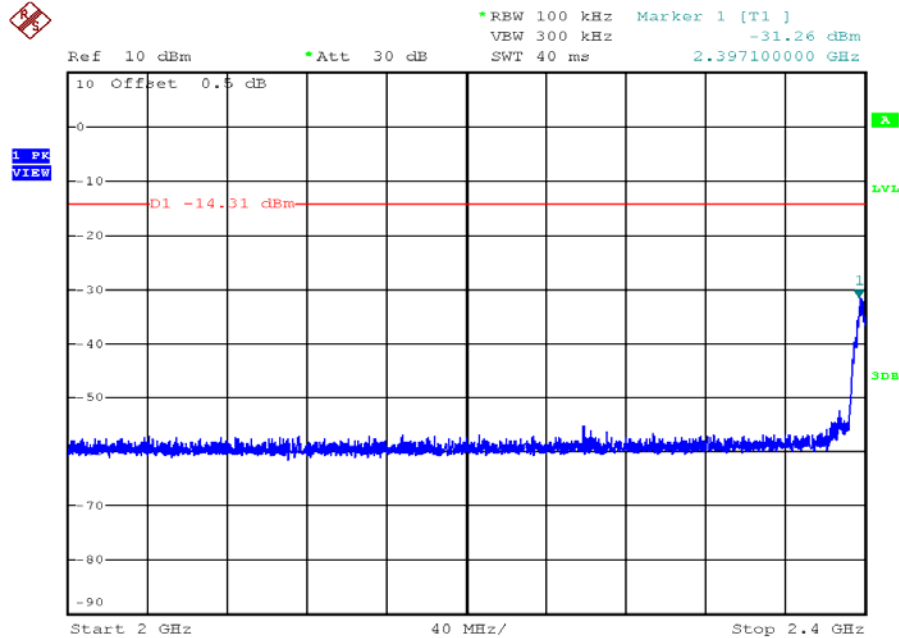


802.11b, Lowest Channel, Plot B

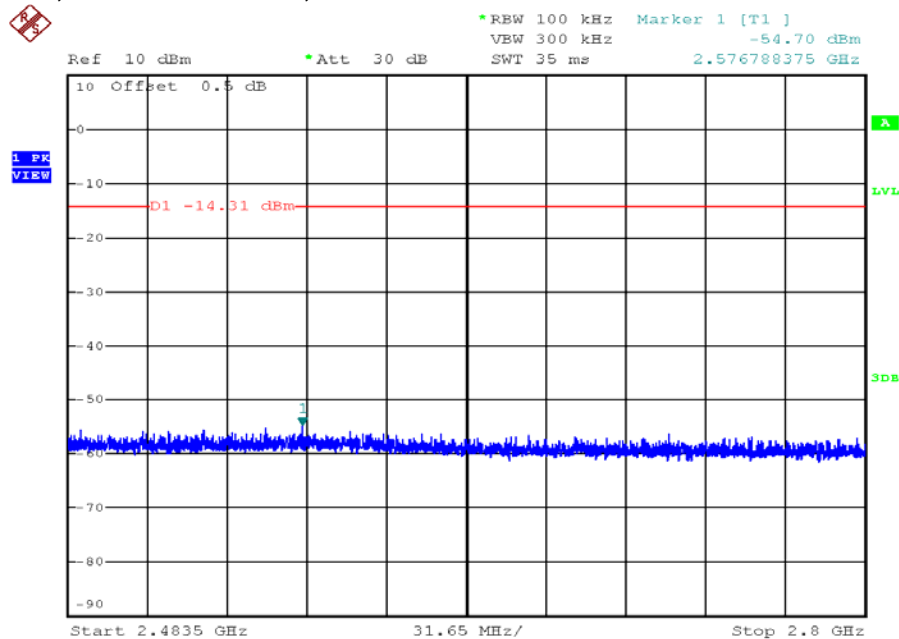


## Plots of out of band conducted emissions

802.11b, Lowest Channel, Plot C

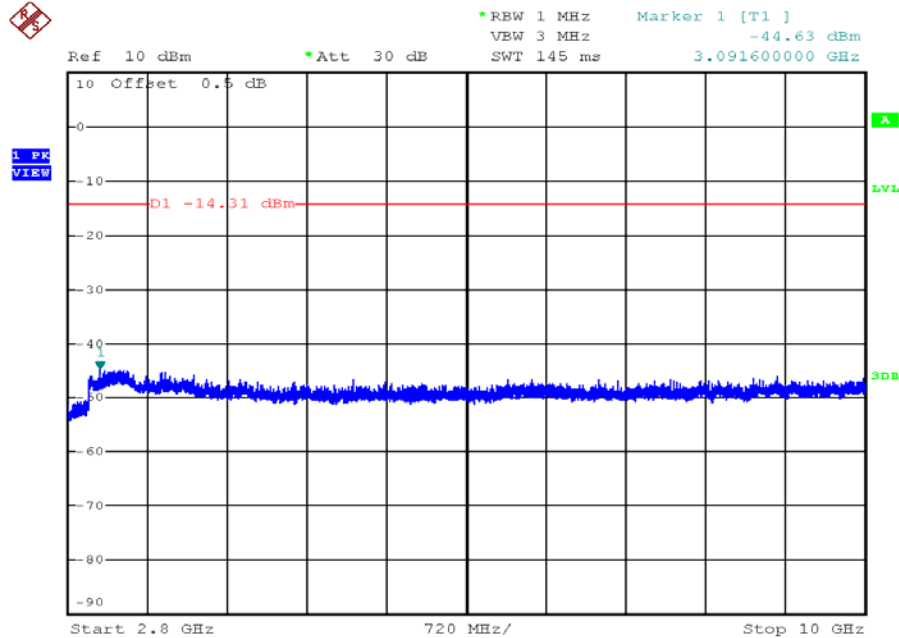


802.11b, Lowest Channel, Plot D

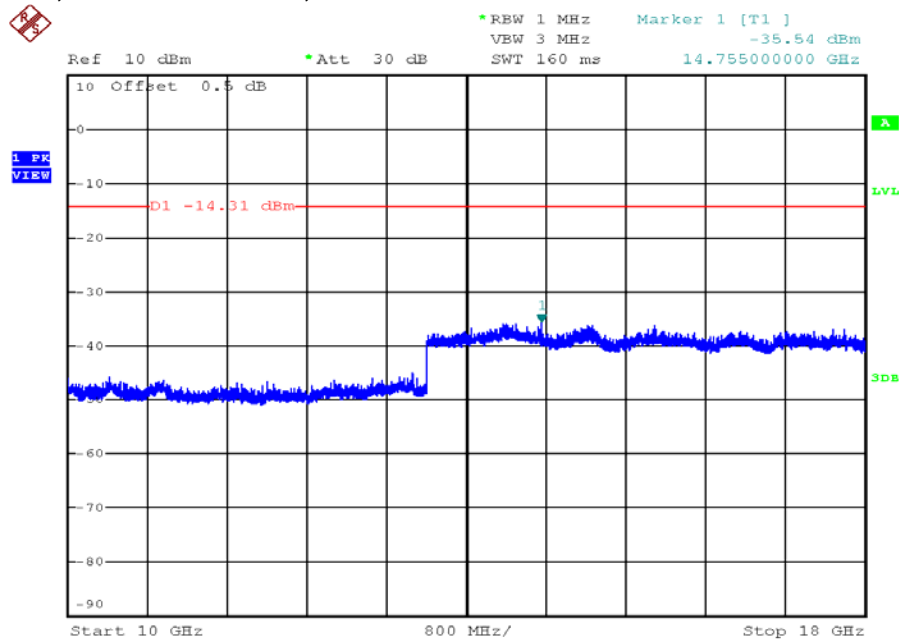


## Plots of out of band conducted emissions

802.11b, Lowest Channel, Plot E



802.11b, Lowest Channel, Plot F



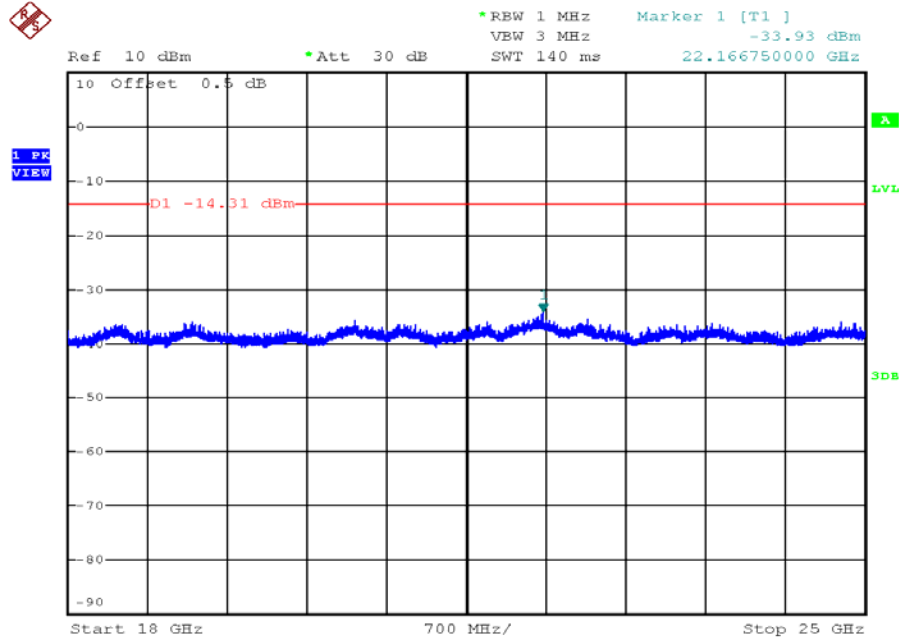
Issuing Laboratory:  
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### Plots of out of band conducted emissions

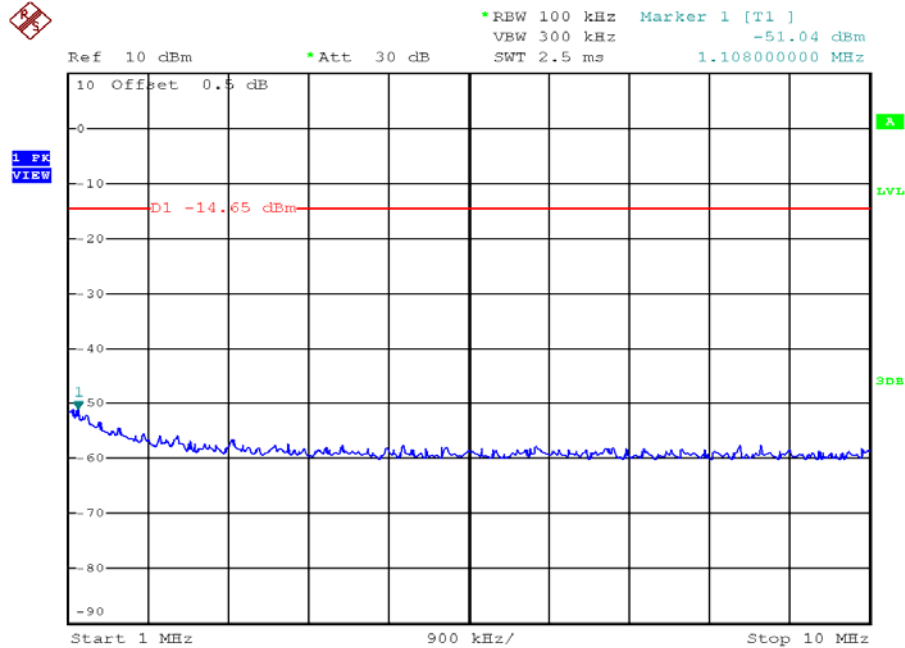
802.11b, Lowest Channel, Plot G



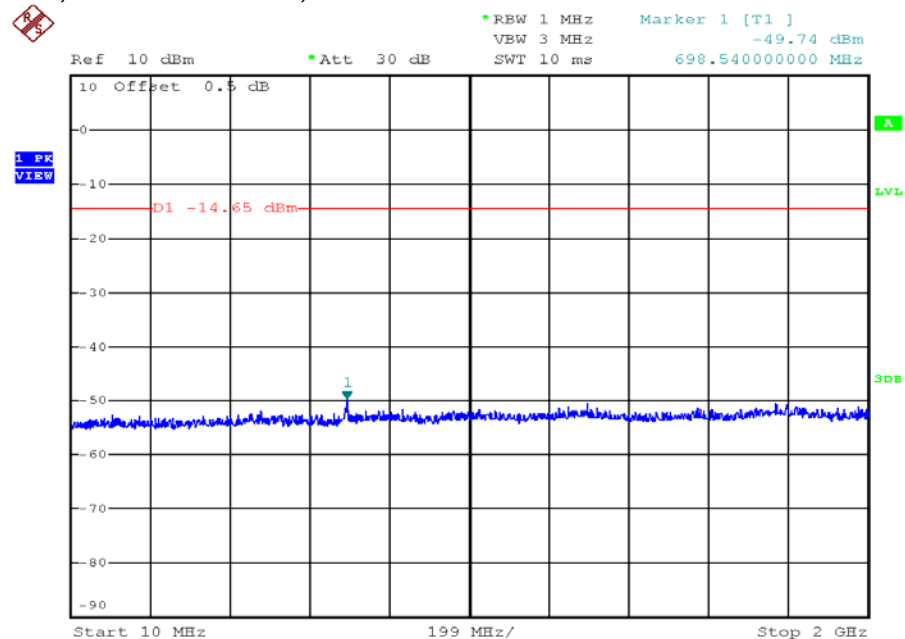


## Plots of out of band conducted emissions

802.11b, Middle Channel, Plot A

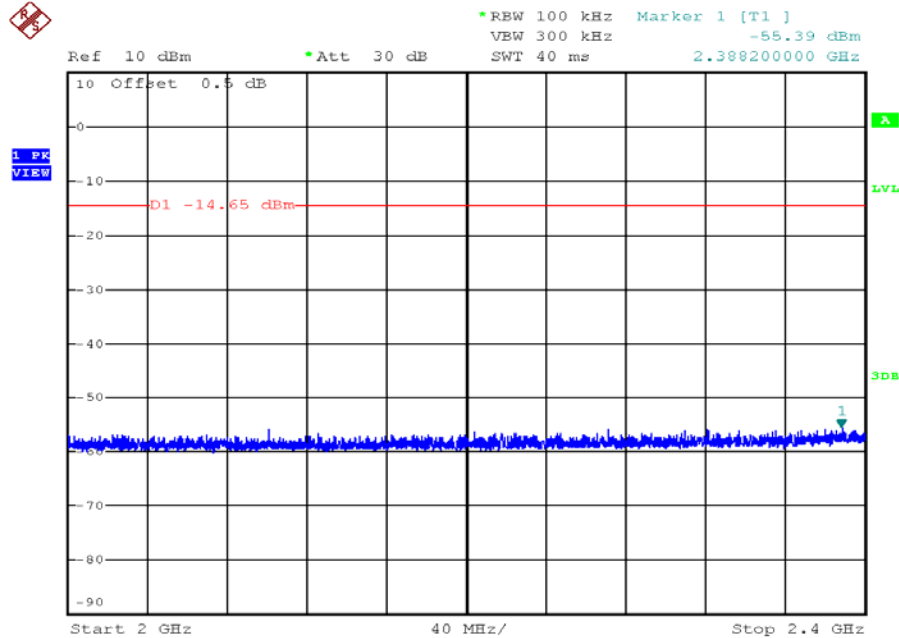


802.11b, Middle Channel, Plot B

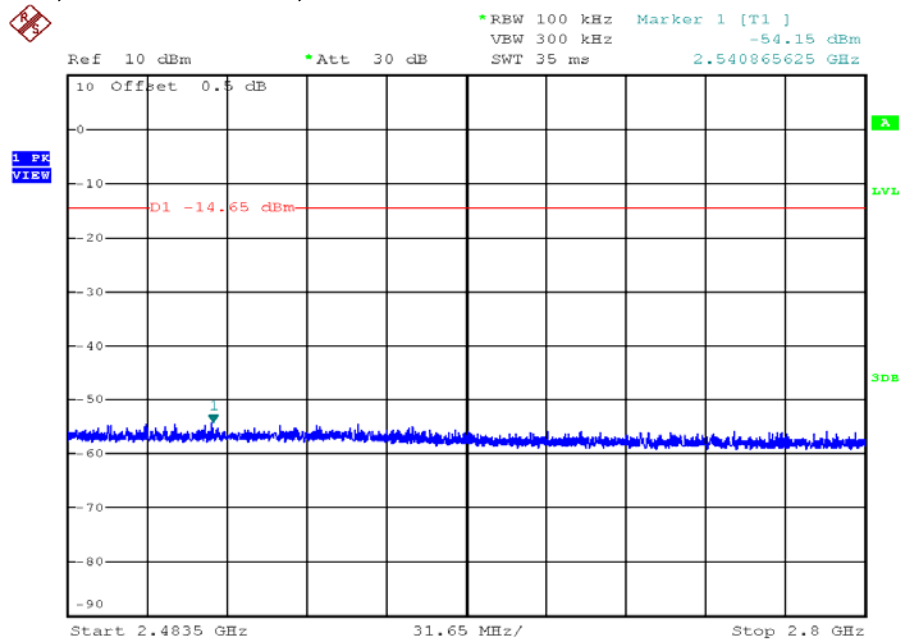


## Plots of out of band conducted emissions

802.11b, Middle Channel, Plot C

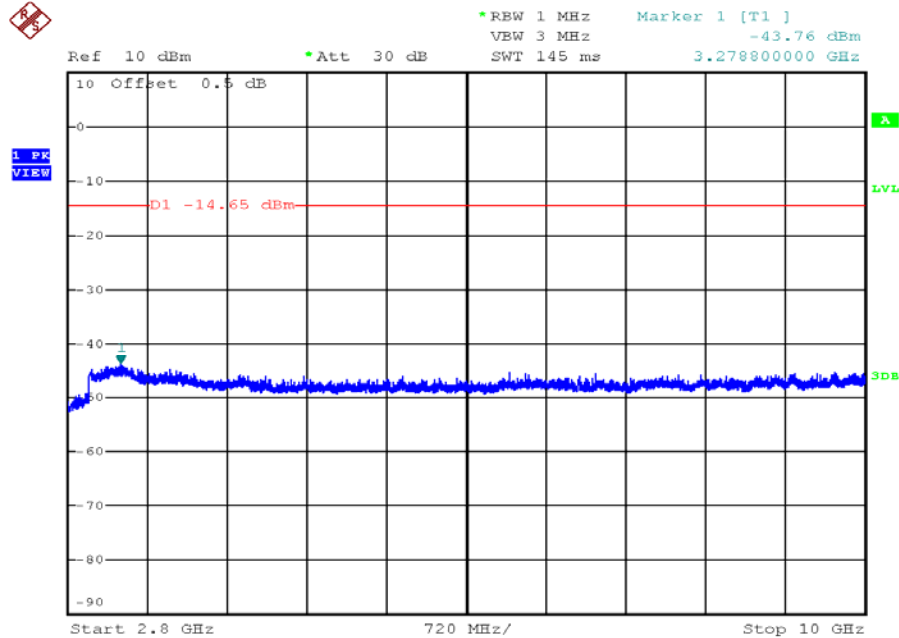


802.11b, Middle Channel, Plot D

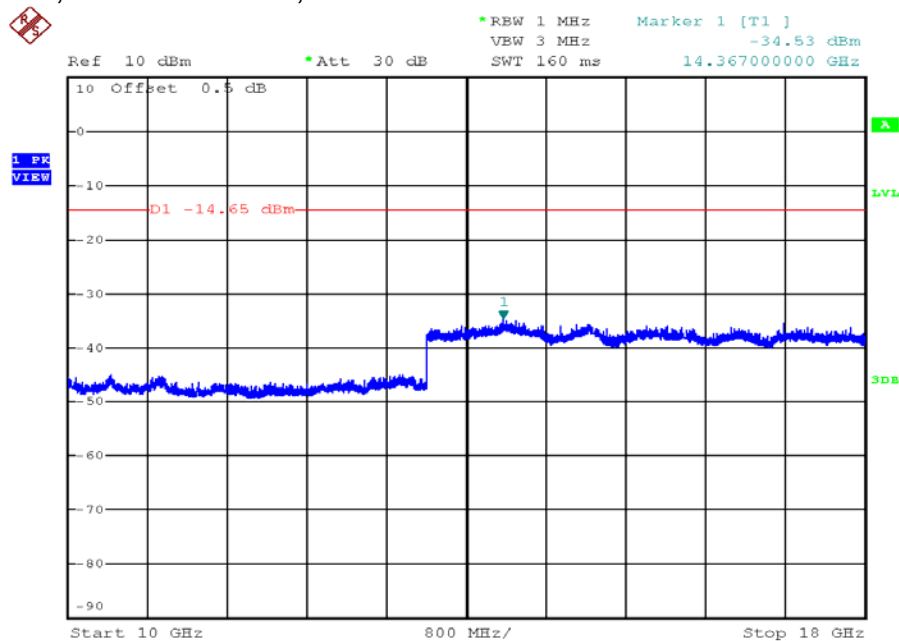


## Plots of out of band conducted emissions

802.11b, Middle Channel, Plot E



802.11b, Middle Channel, Plot F



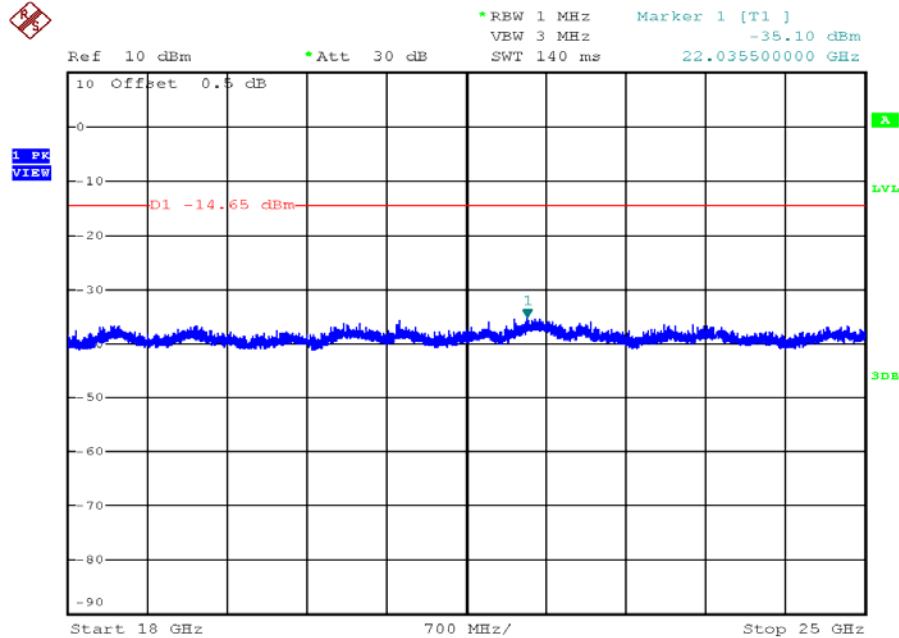
Issuing Laboratory:  
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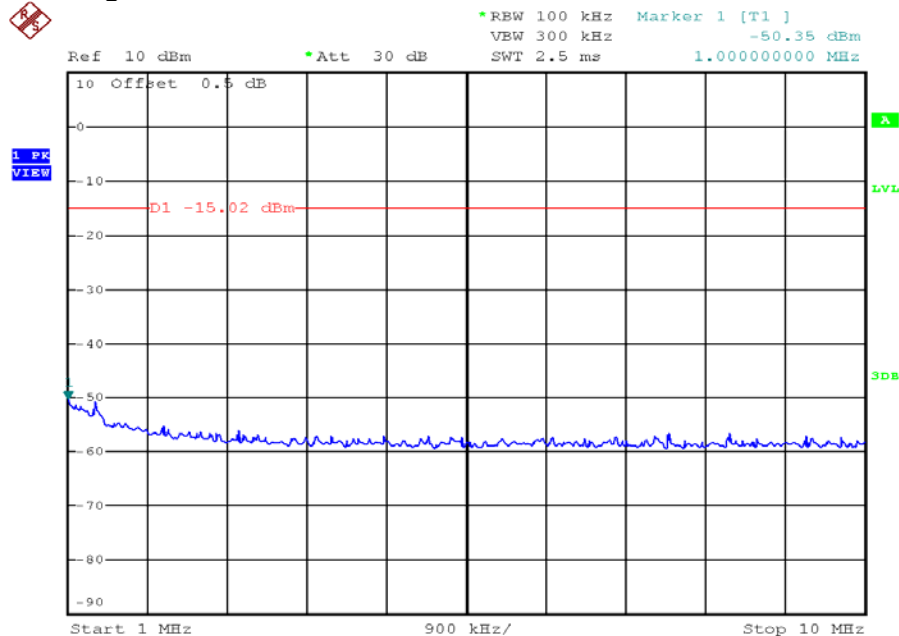
### Plots of out of band conducted emissions

802.11b, Middle Channel, Plot G

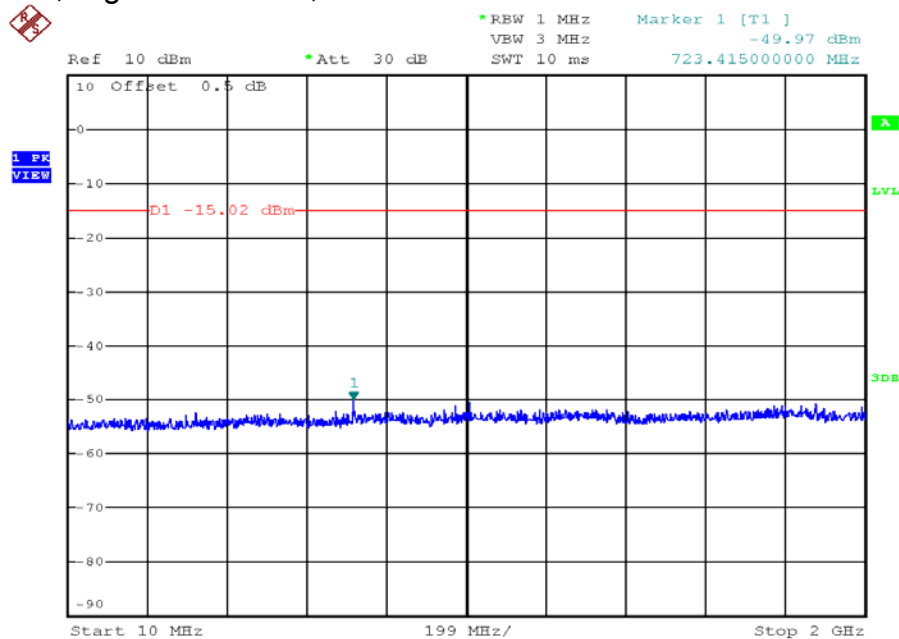


## Plots of out of band conducted emissions

802.11b, Highest Channel, Plot A

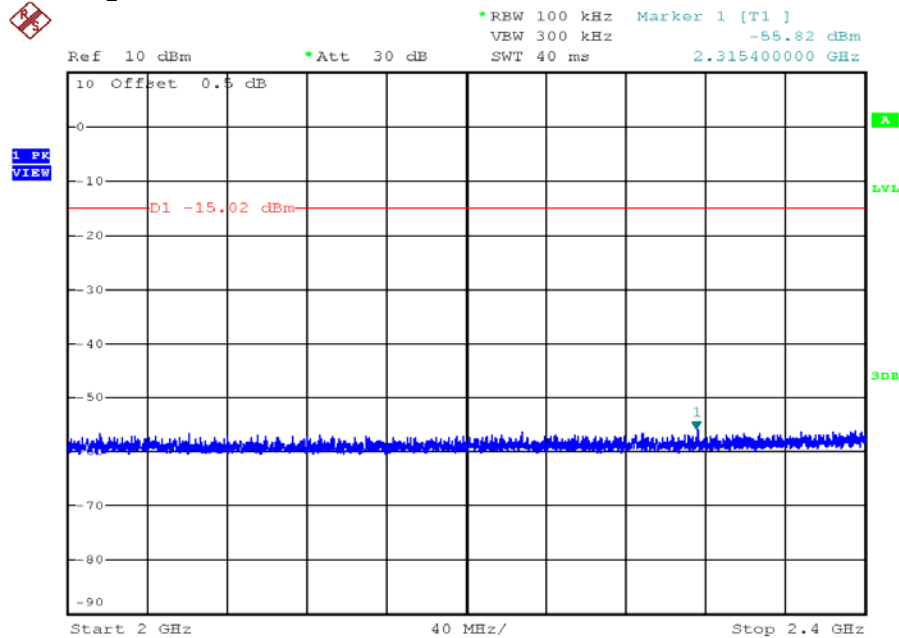


802.11b, Highest Channel, Plot B

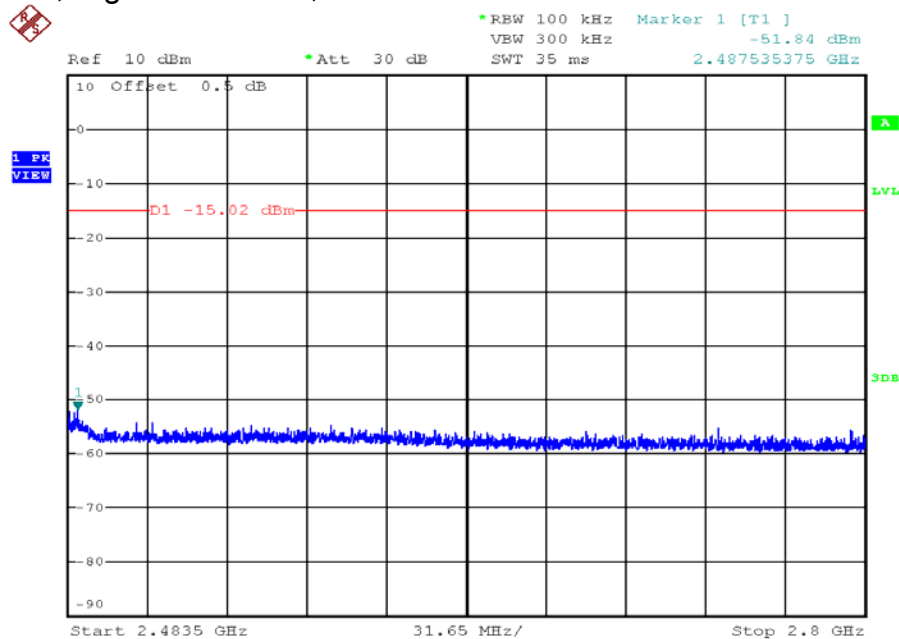


## Plots of out of band conducted emissions

802.11b, Highest Channel, Plot C

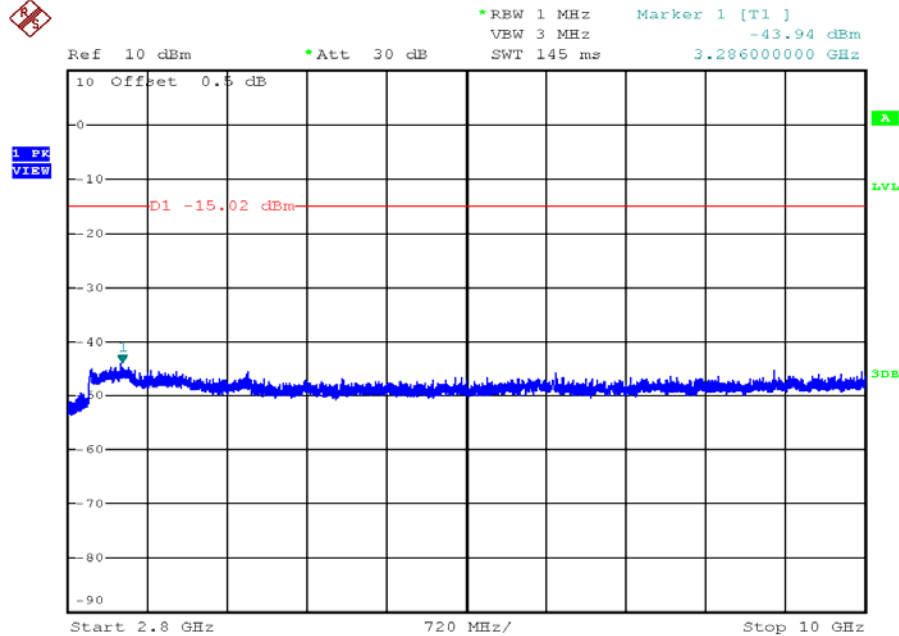


802.11b, Highest Channel, Plot D

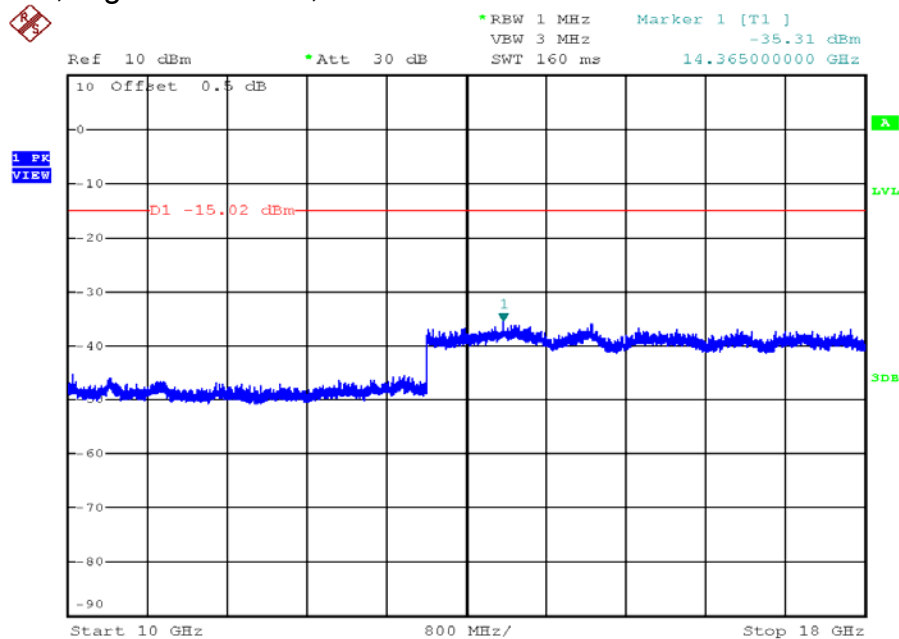


## Plots of out of band conducted emissions

802.11b, Highest Channel, Plot E



802.11b, Highest Channel, Plot F



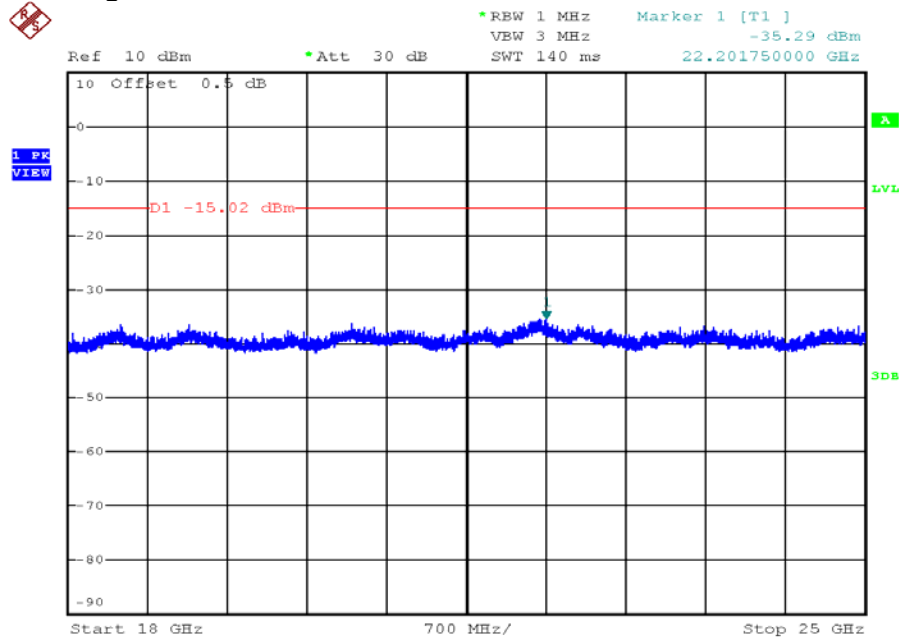
Issuing Laboratory:  
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### Plots of out of band conducted emissions

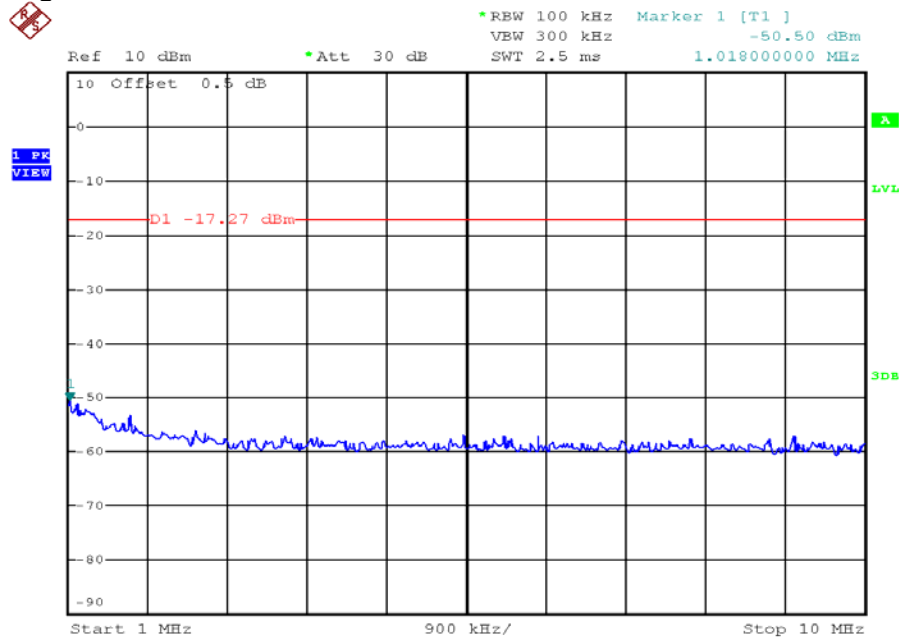
802.11b, Highest Channel, Plot G



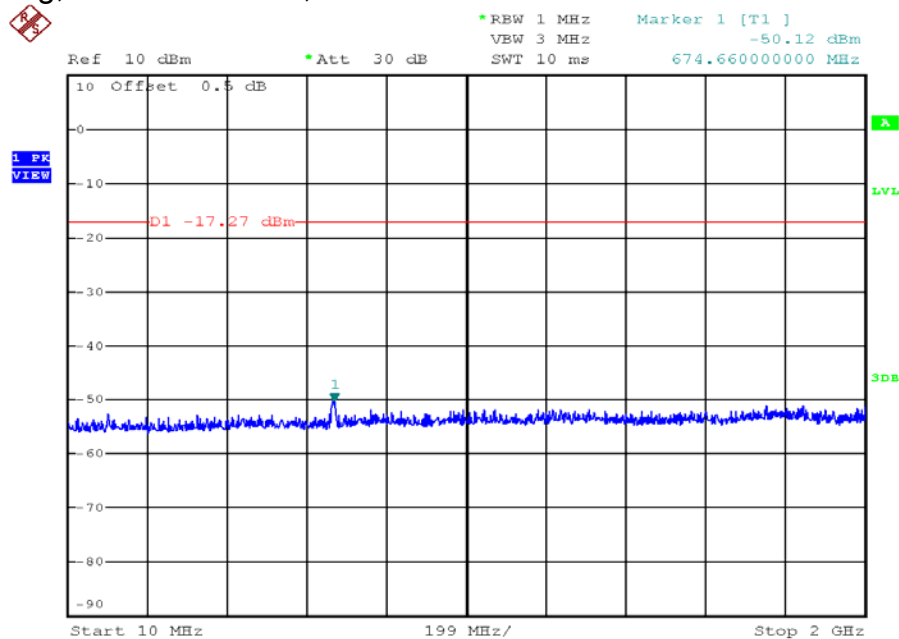


## Plots of out of band conducted emissions

802.11g, Lowest Channel, Plot A

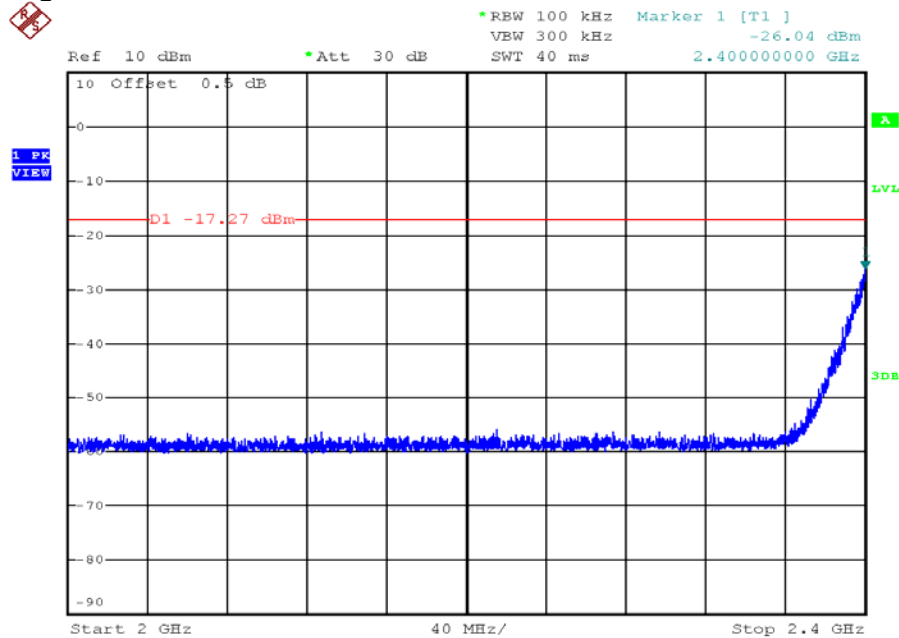


802.11g, Lowest Channel, Plot B

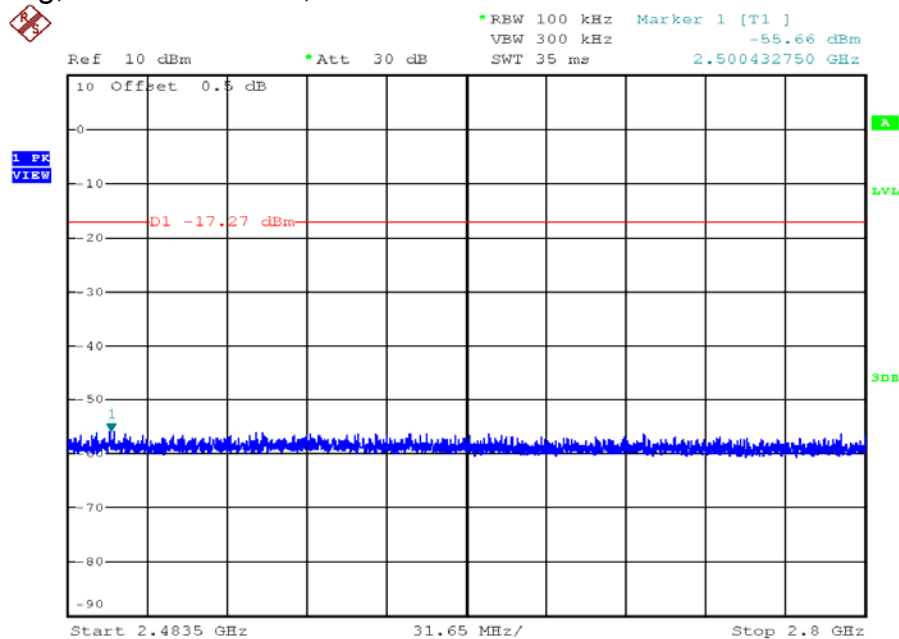


## Plots of out of band conducted emissions

802.11g, Lowest Channel, Plot C

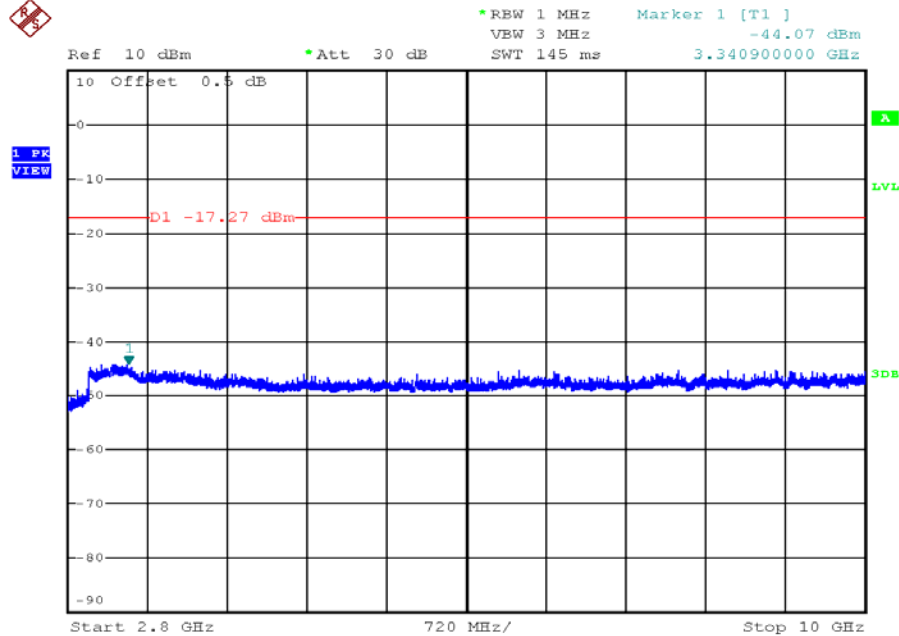


802.11g, Lowest Channel, Plot D

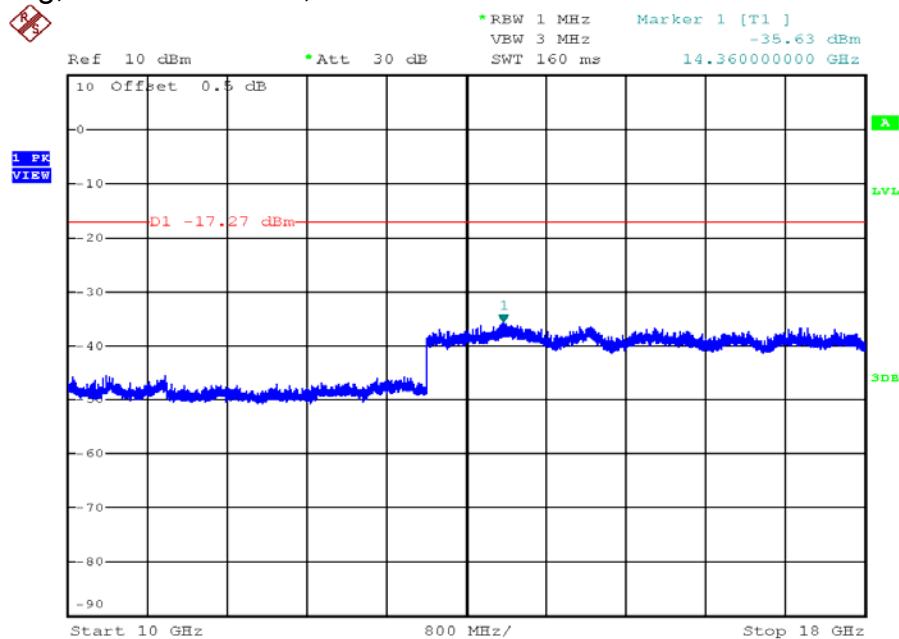


## Plots of out of band conducted emissions

802.11g, Lowest Channel, Plot E



802.11g, Lowest Channel, Plot F



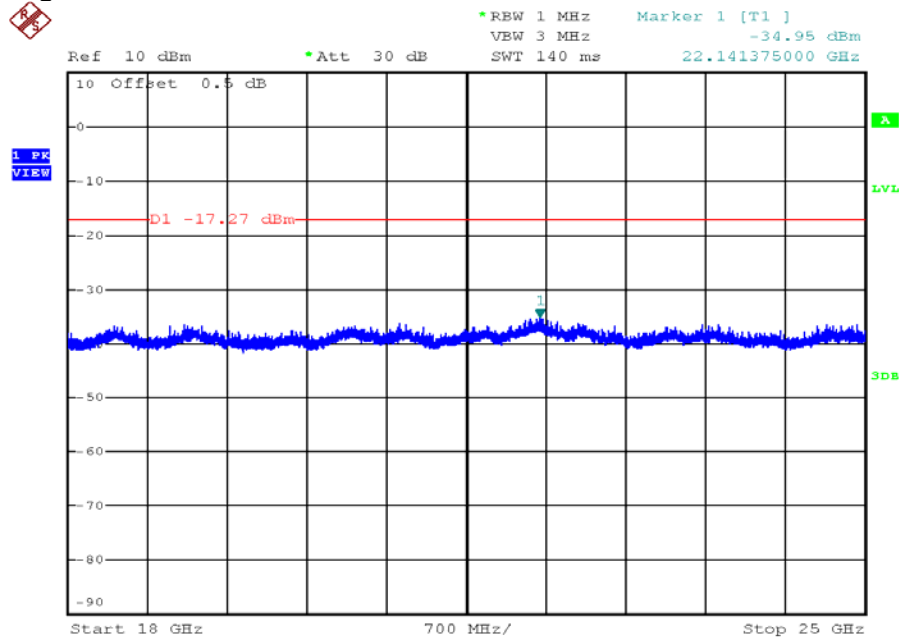
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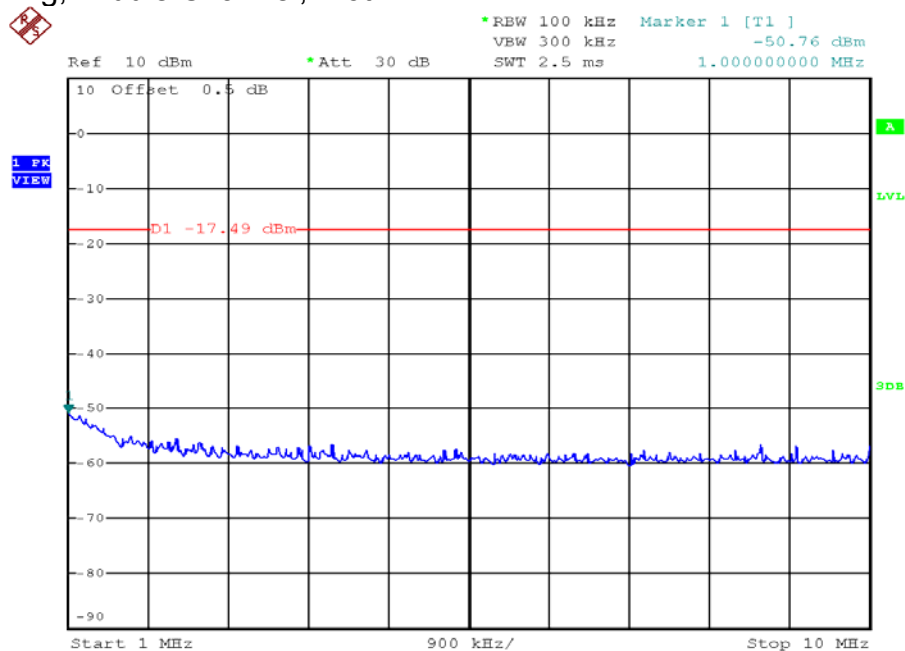
### Plots of out of band conducted emissions

802.11g, Lowest Channel, Plot G

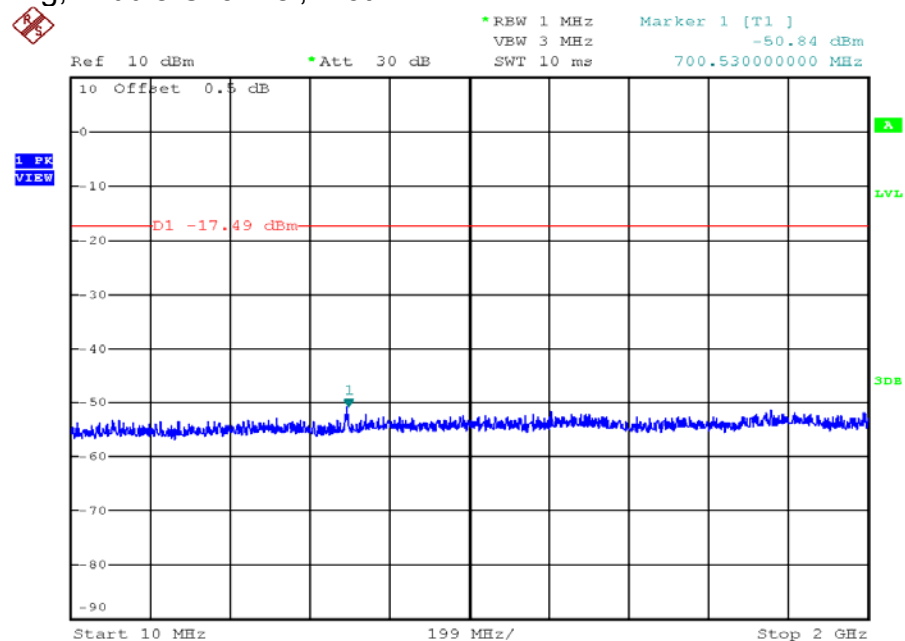


## Plots of out of band conducted emissions

802.11g, Middle Channel, Plot A

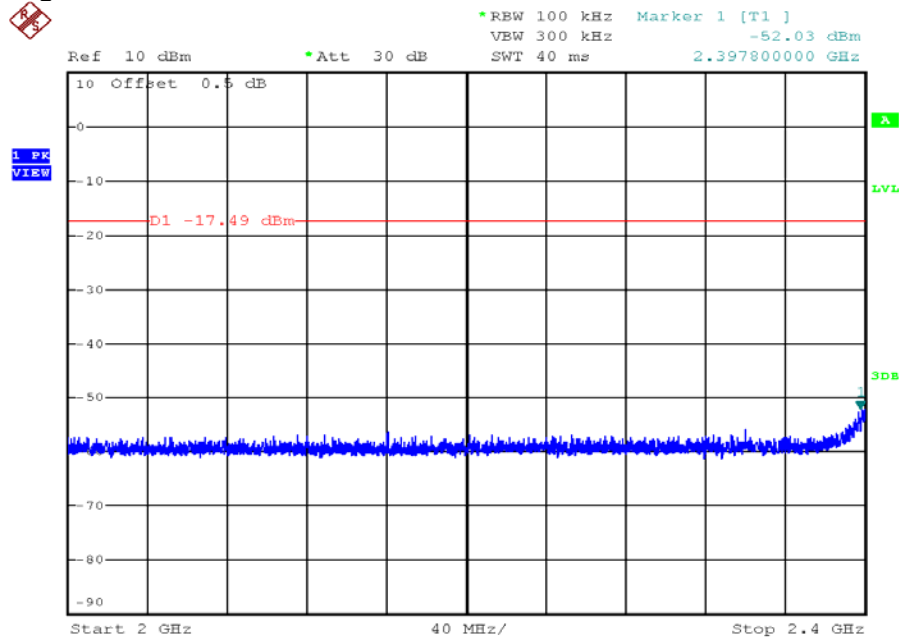


802.11g, Middle Channel, Plot B

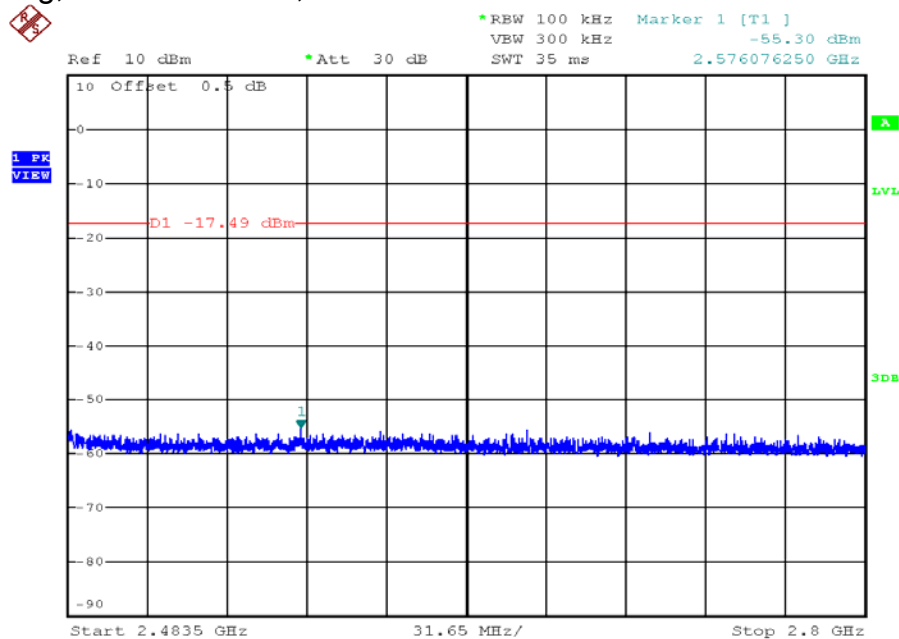


## Plots of out of band conducted emissions

802.11g, Middle Channel, Plot C

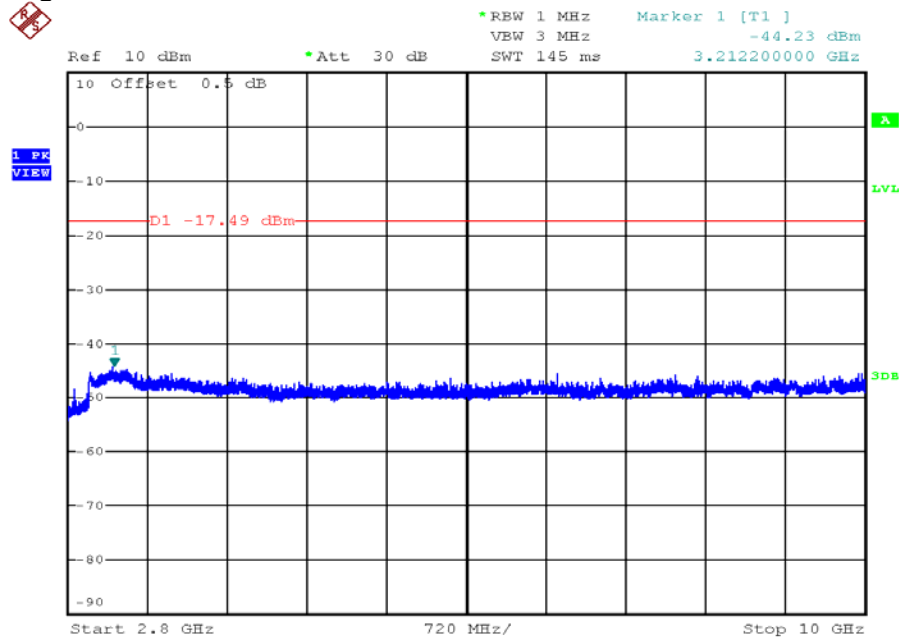


802.11g, Middle Channel, Plot D

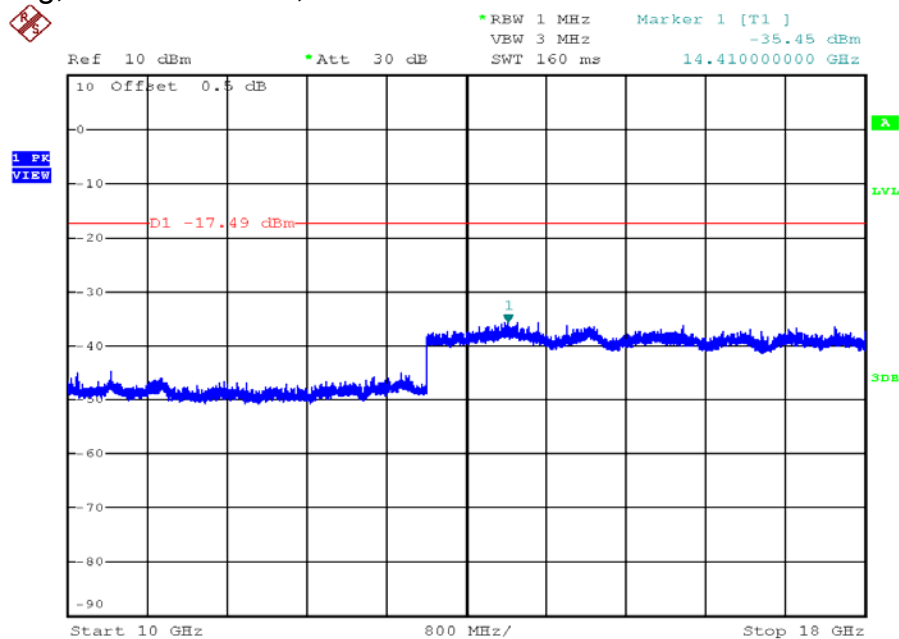


## Plots of out of band conducted emissions

802.11g, Middle Channel, Plot E



802.11g, Middle Channel, Plot F



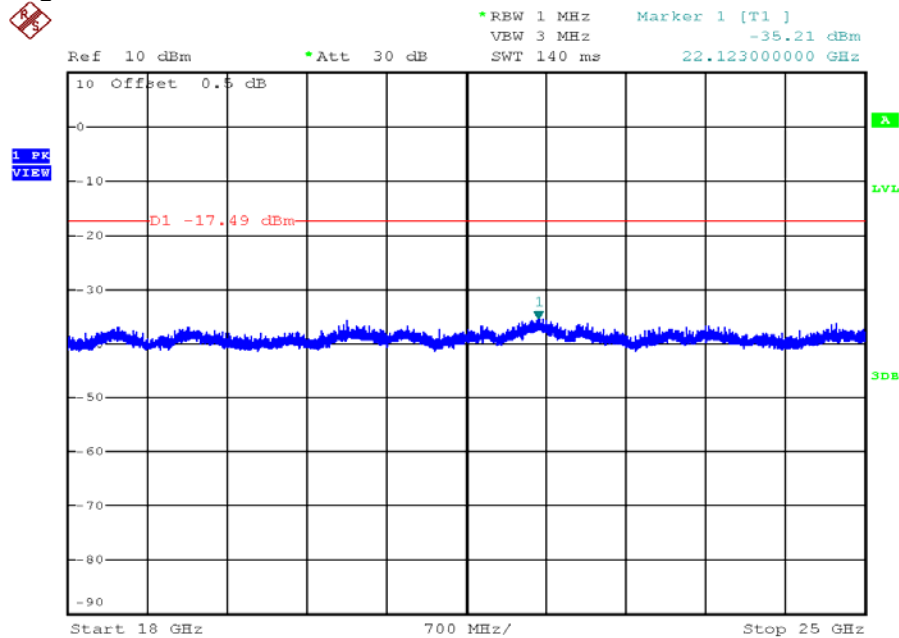
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### Plots of out of band conducted emissions

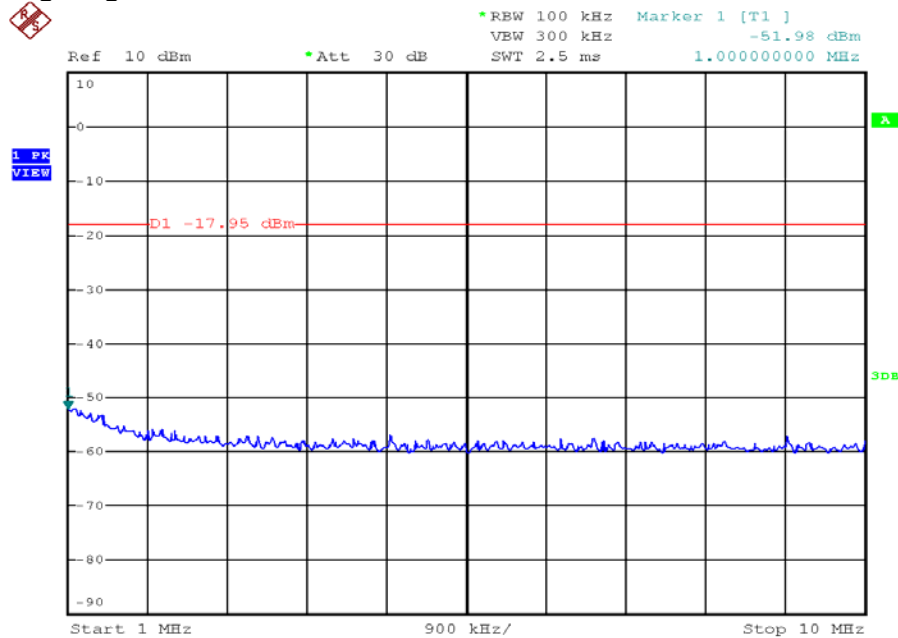
802.11g, Middle Channel, Plot G



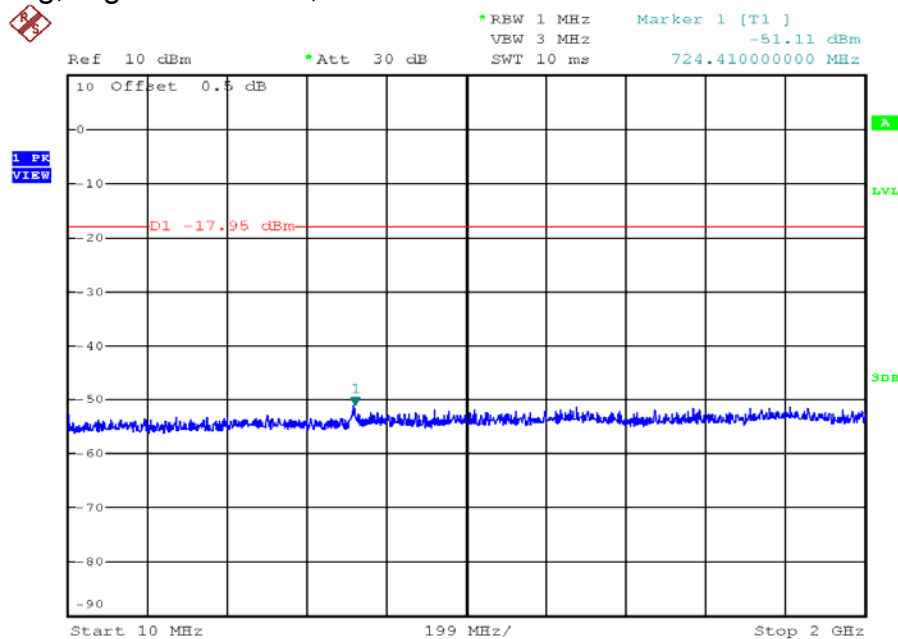


## Plots of out of band conducted emissions

802.11g, Highest Channel, Plot A



802.11g, Highest Channel, Plot B

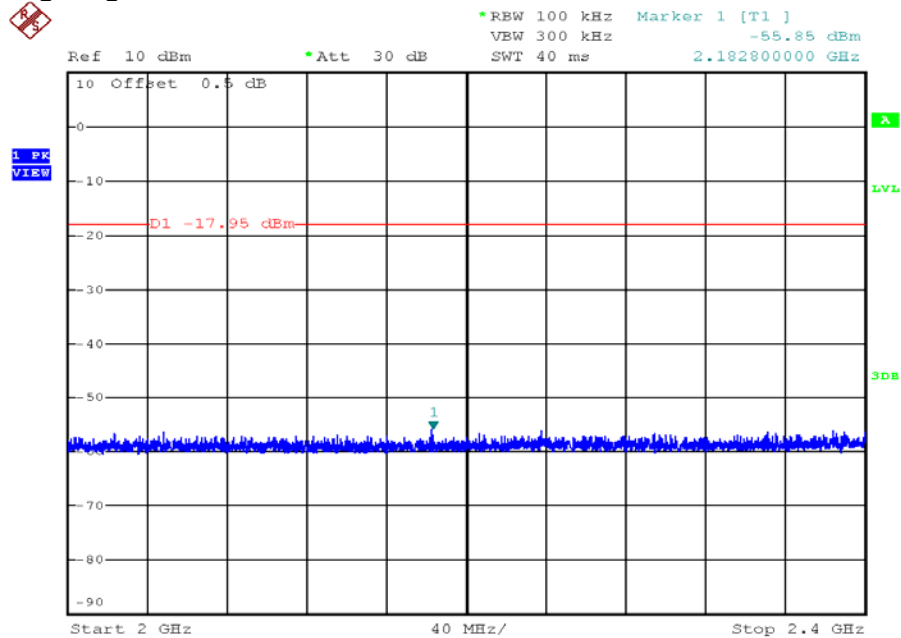


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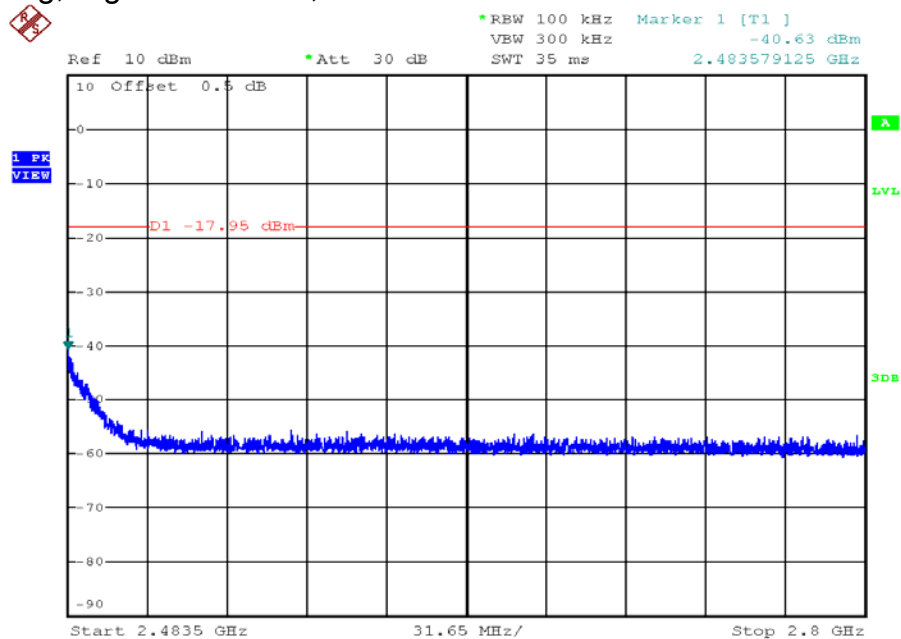


## Plots of out of band conducted emissions

802.11g, Highest Channel, Plot C

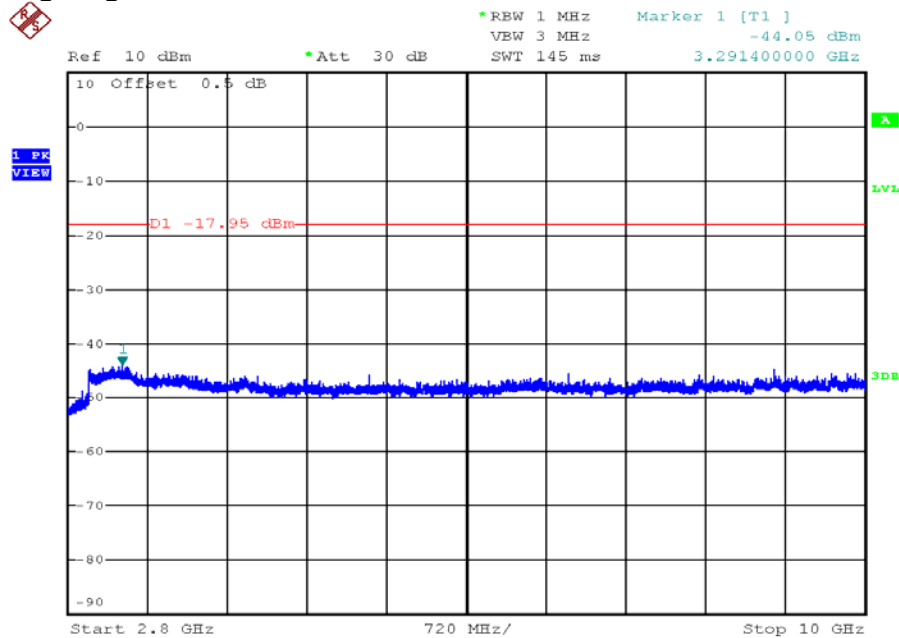


802.11g, Highest Channel, Plot D

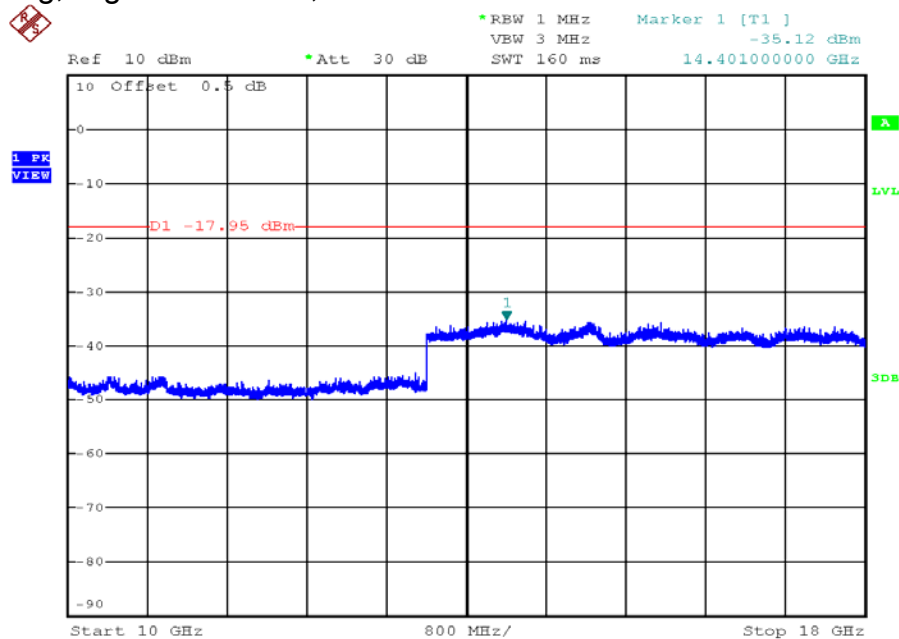


## Plots of out of band conducted emissions

802.11g, Highest Channel, Plot E



802.11g, Highest Channel, Plot F



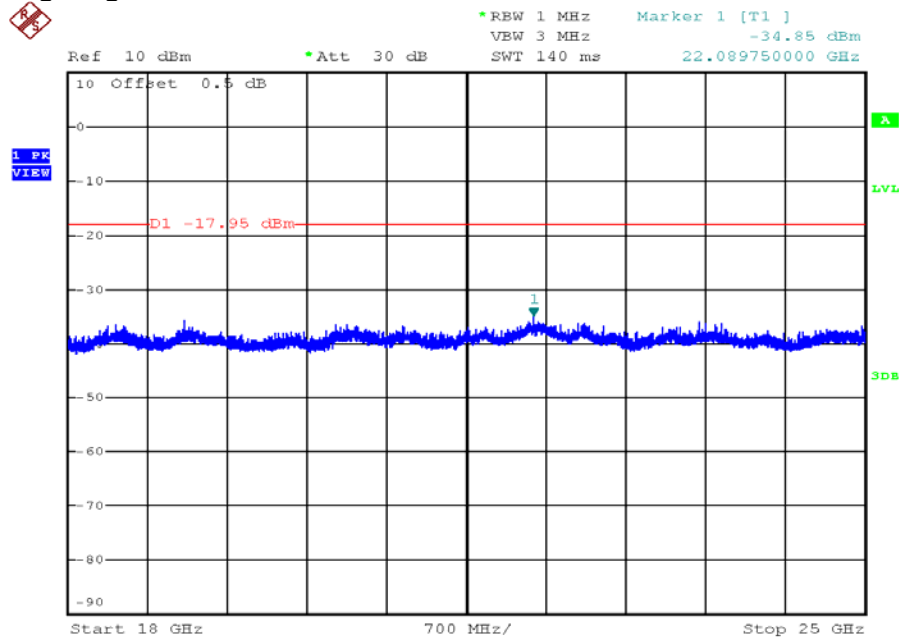
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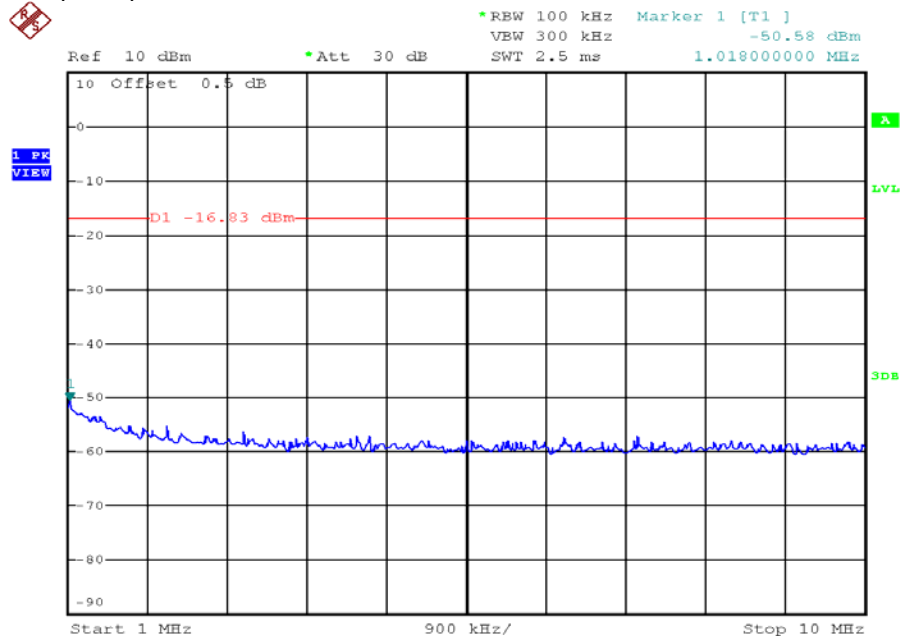
## Plots of out of band conducted emissions

802.11g, Highest Channel, Plot G

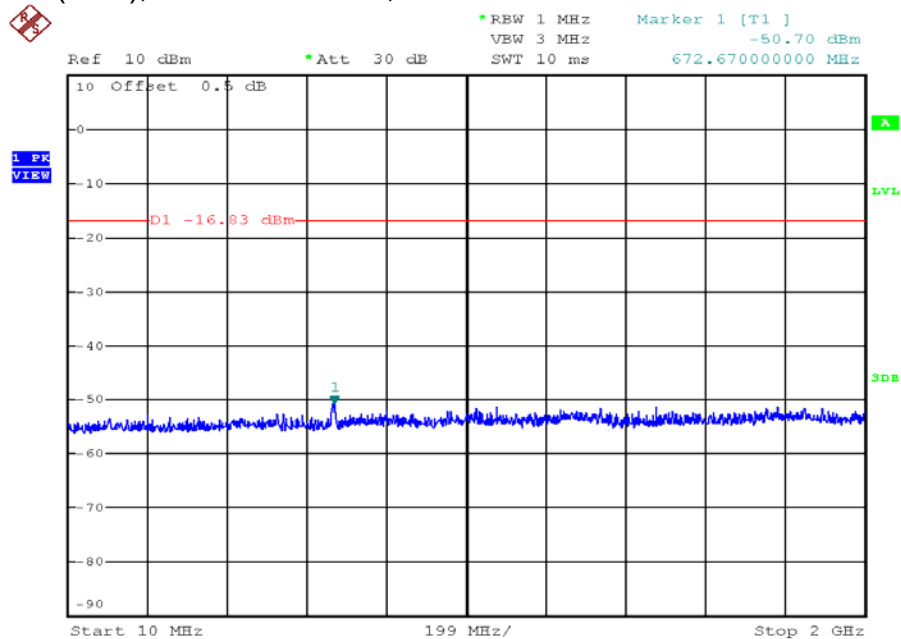


## Plots of out of band conducted emissions

802.11n(20M), Lowest Channel, Plot A

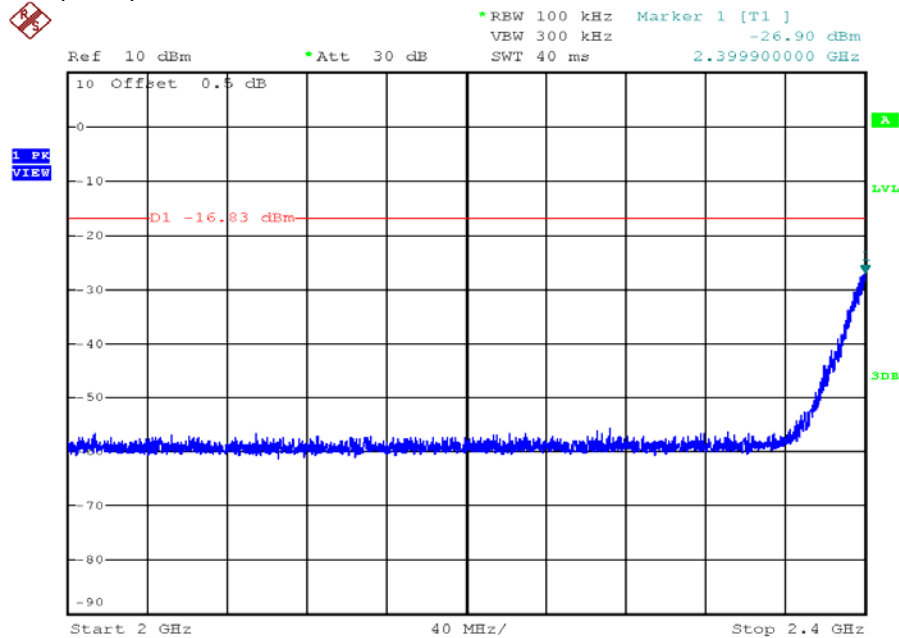


802.11n(20M), Lowest Channel, Plot B

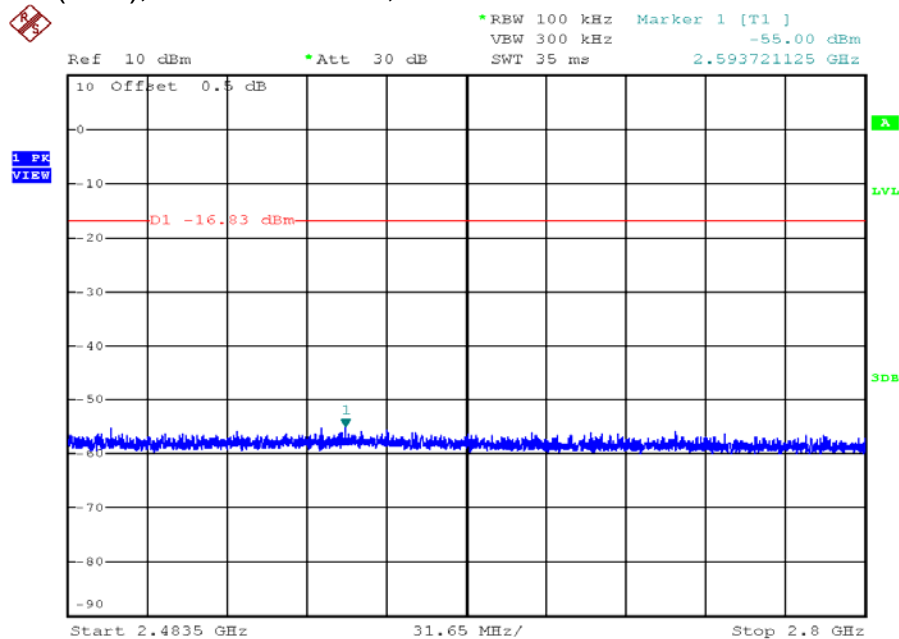


## Plots of out of band conducted emissions

802.11n(20M), Lowest Channel, Plot C

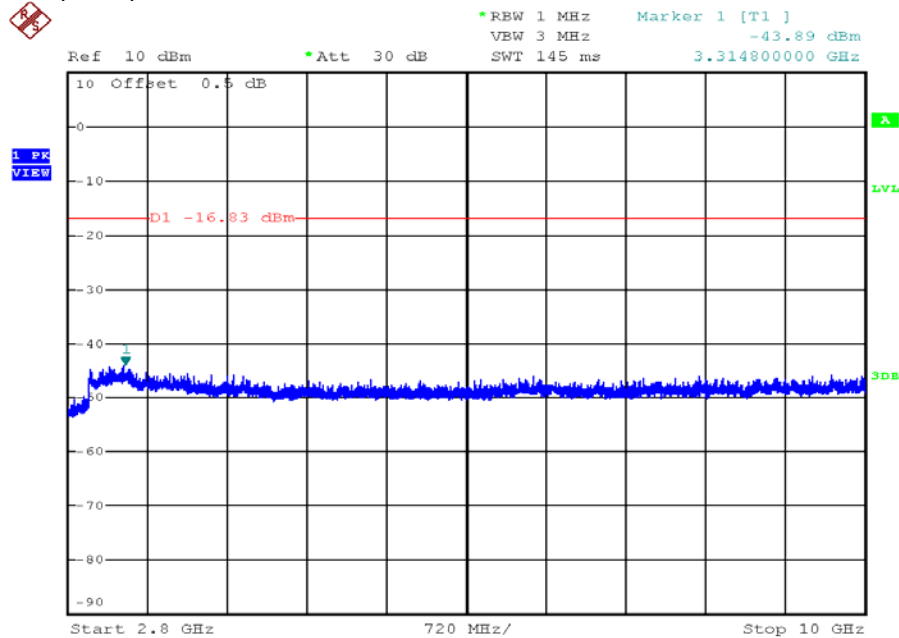


802.11n(20M), Lowest Channel, Plot D

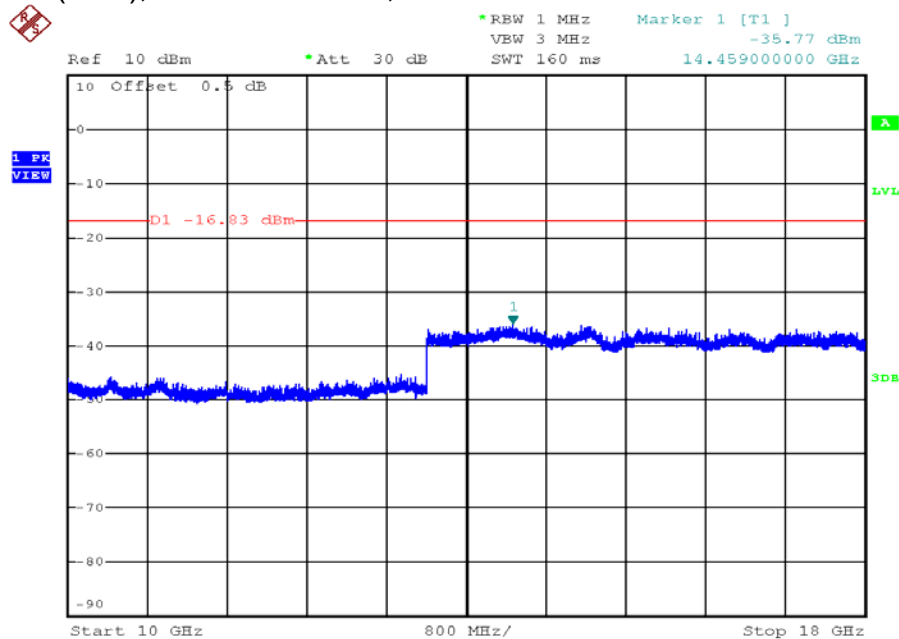


## Plots of out of band conducted emissions

802.11n(20M), Lowest Channel, Plot E



802.11n(20M), Lowest Channel, Plot F



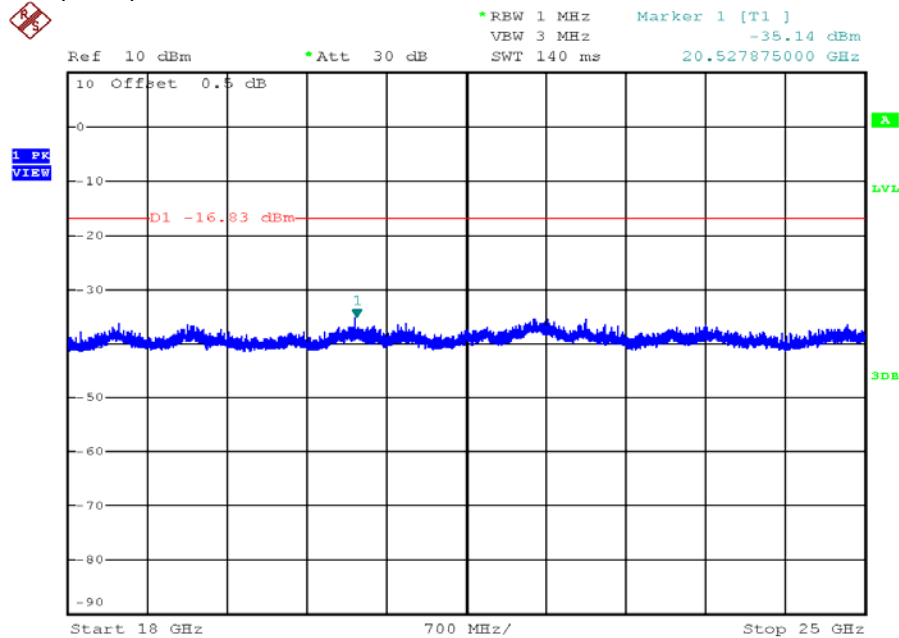
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### Plots of out of band conducted emissions

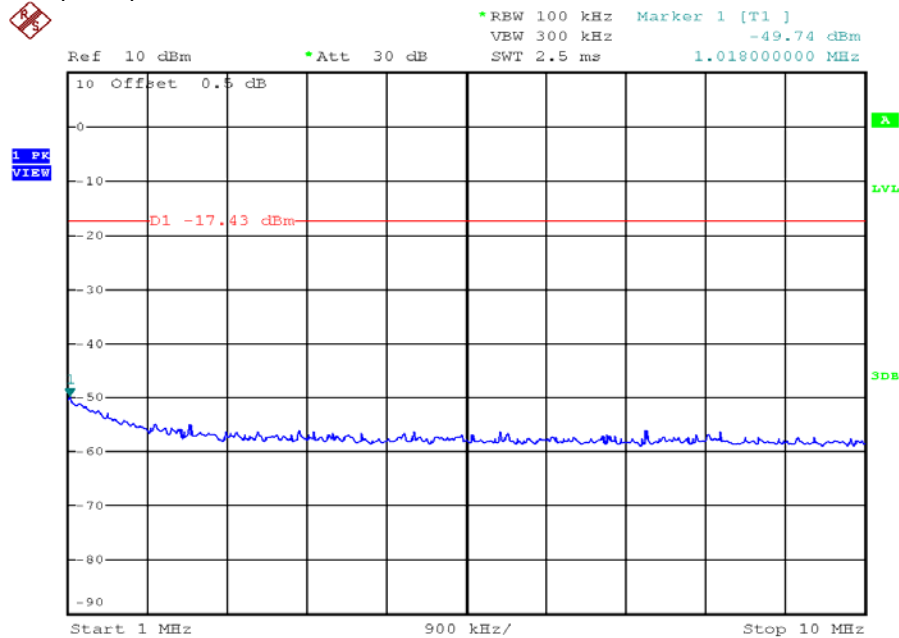
802.11n(20M), Lowest Channel, Plot G



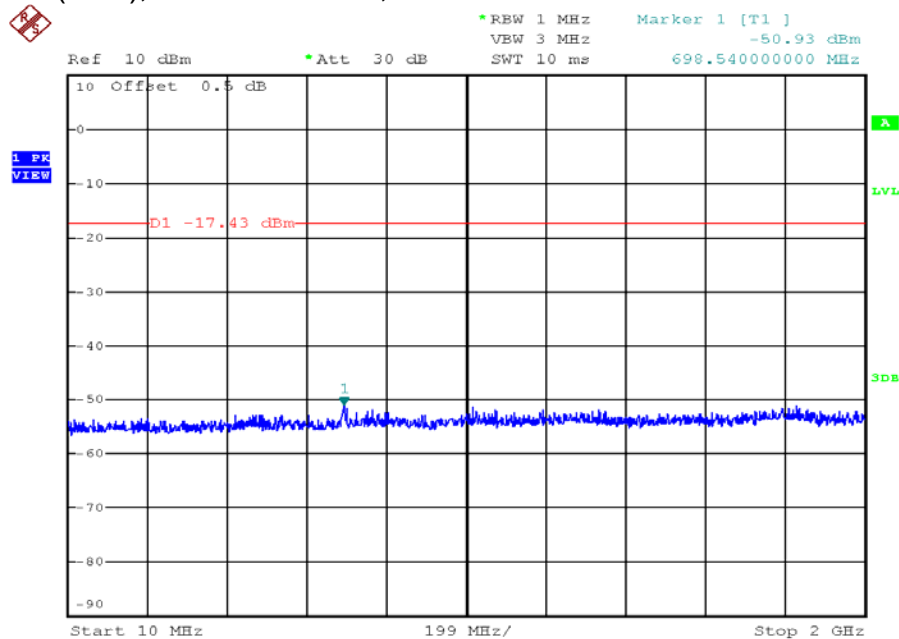


## Plots of out of band conducted emissions

802.11n(20M), Middle Channel, Plot A

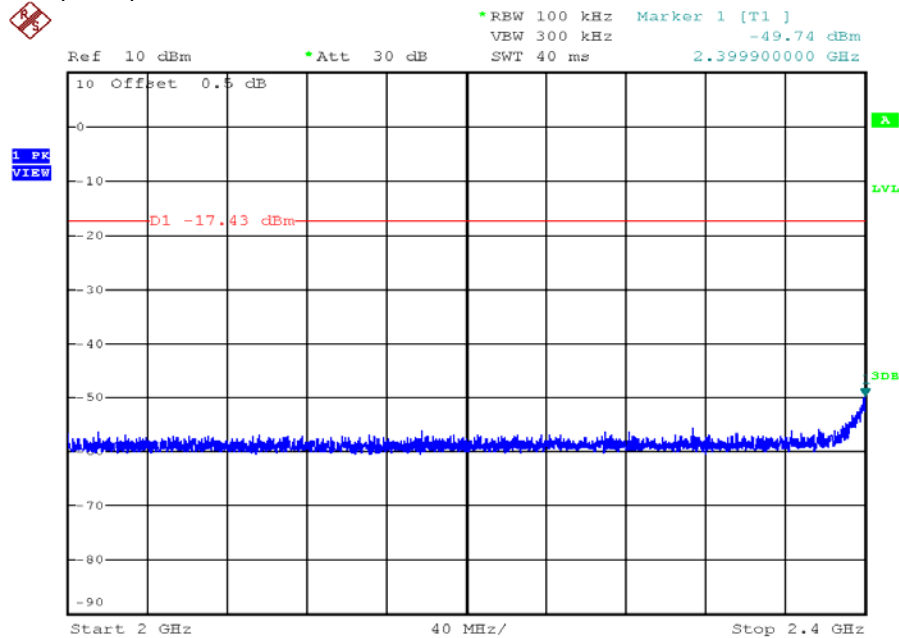


802.11n(20M), Middle Channel, Plot B

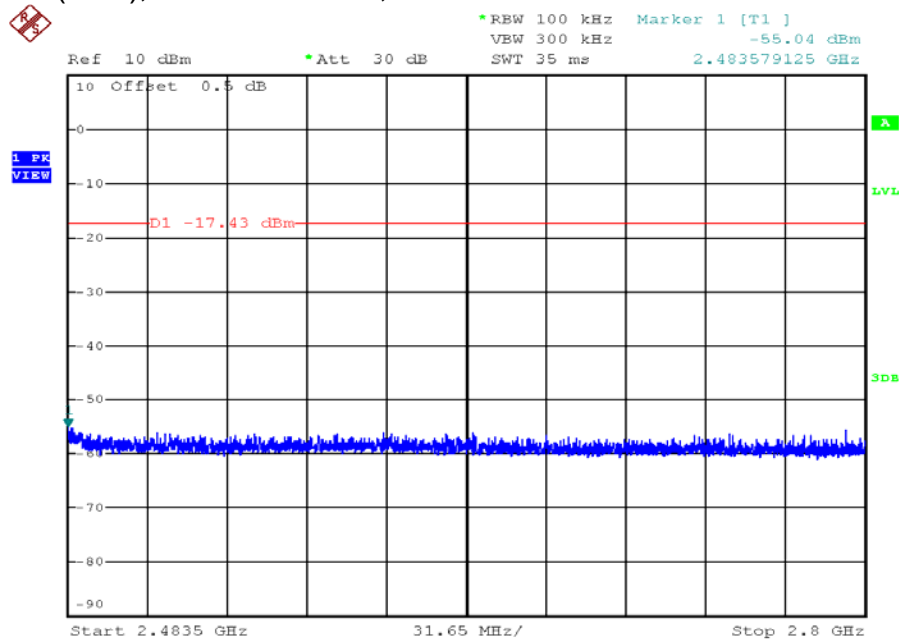


## Plots of out of band conducted emissions

802.11n(20M), Middle Channel, Plot C



802.11n(20M), Middle Channel, Plot D



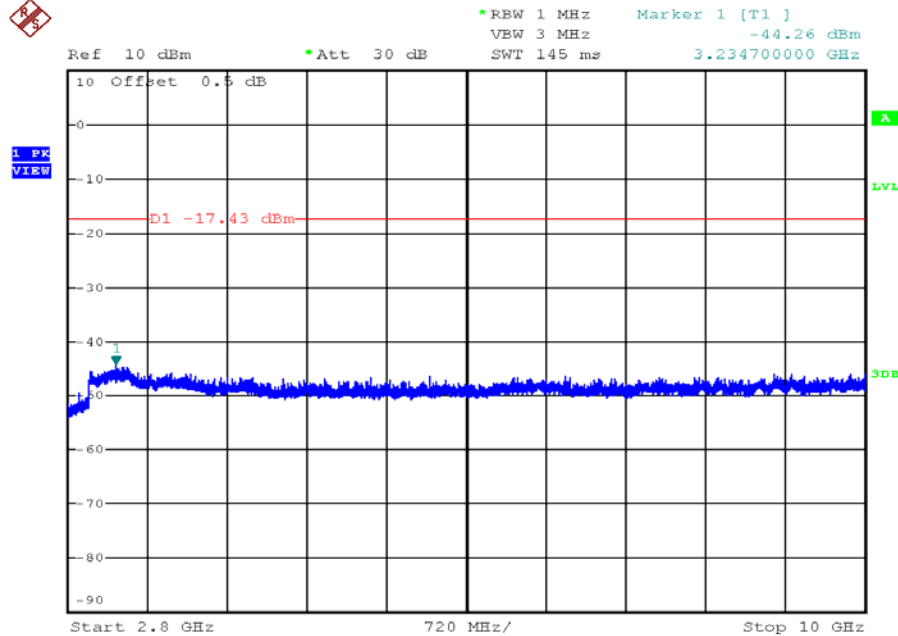
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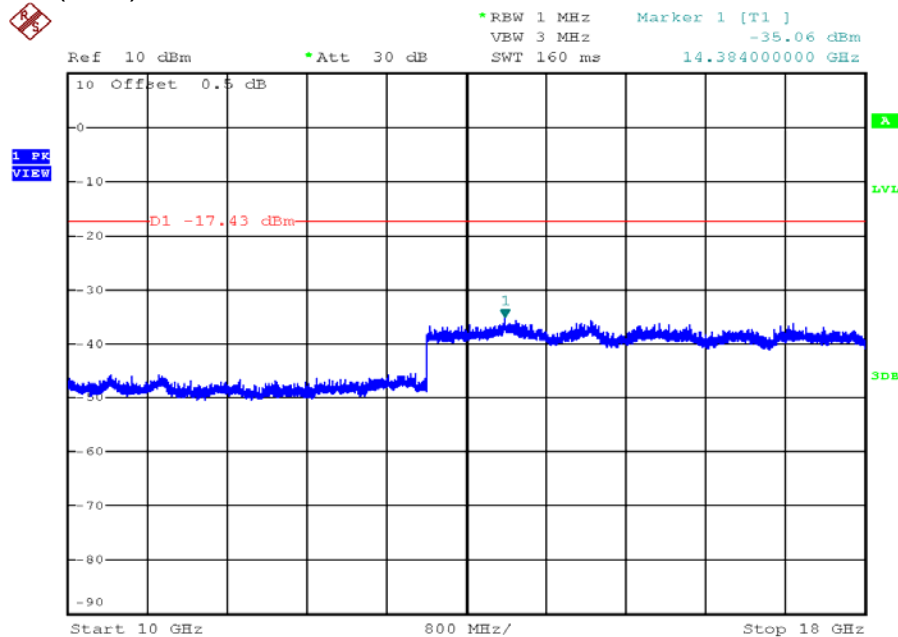


### Plots of out of band conducted emissions

802.11n(20M), Middle Channel, Plot E



802.11n(20M), Middle Channel, Plot F



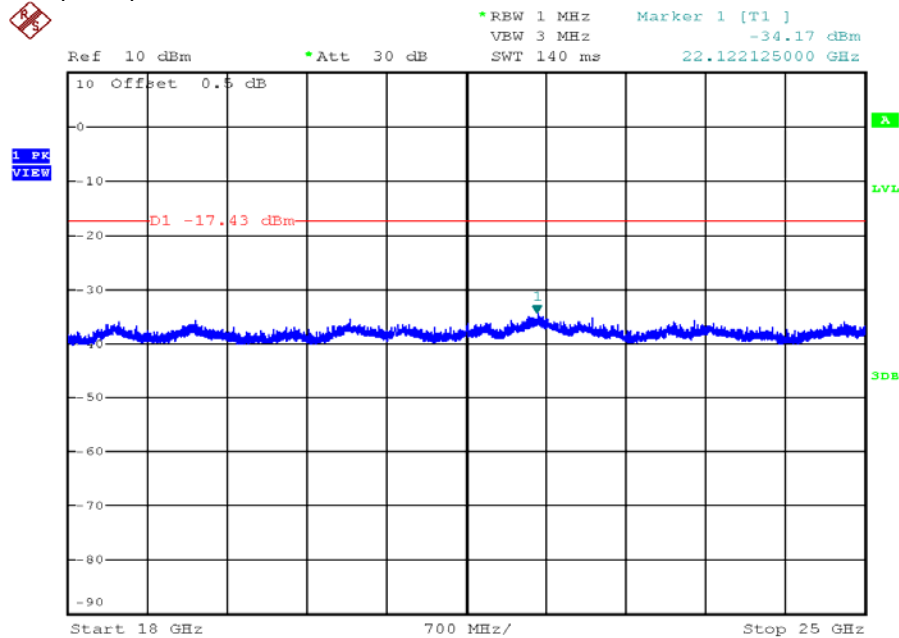
Issuing Laboratory:  
Intertek Testing Services Hong Kong Limited

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



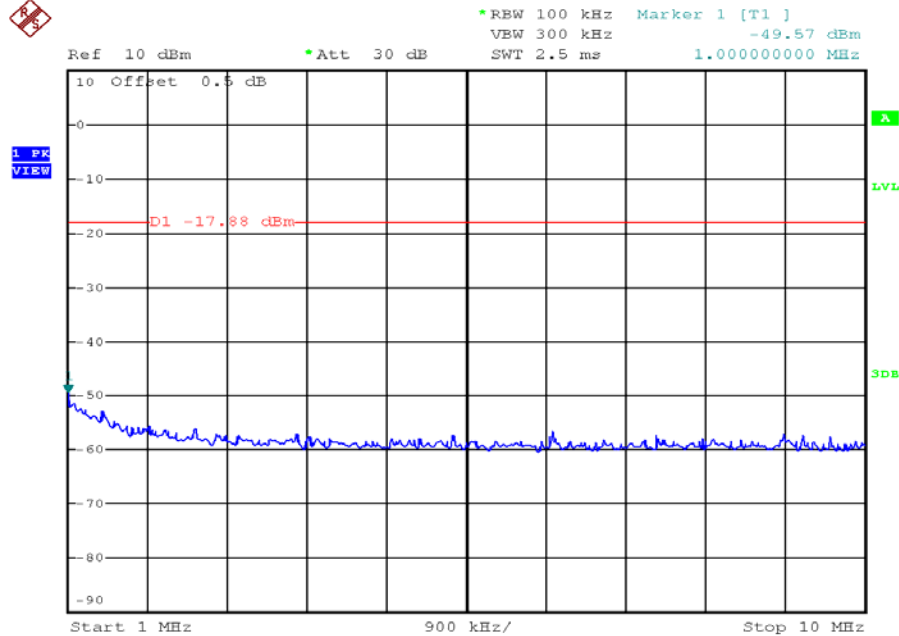
## Plots of out of band conducted emissions

802.11n(20M), Middle Channel, Plot G

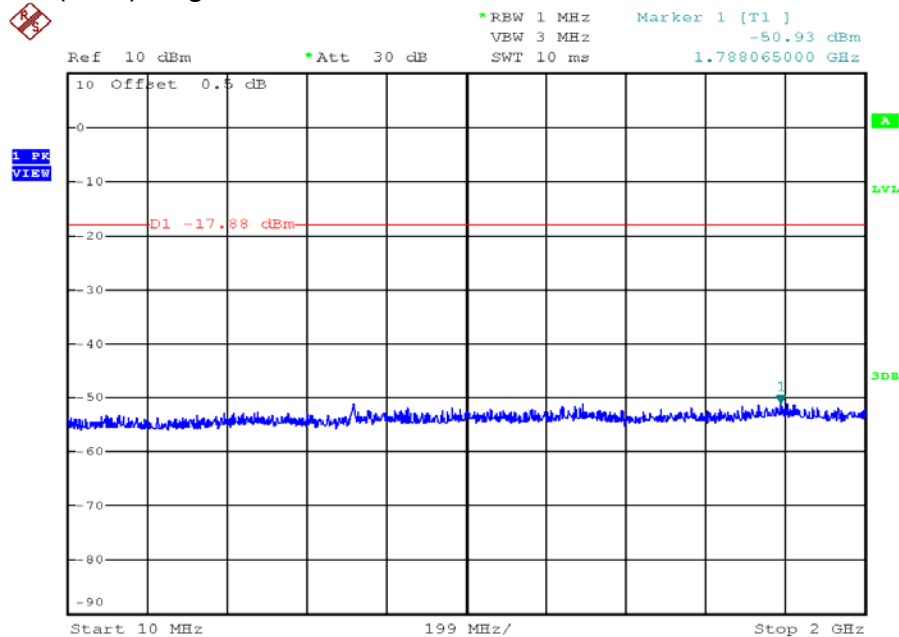


## Plots of out of band conducted emissions

802.11n(20M), Highest Channel, Plot A

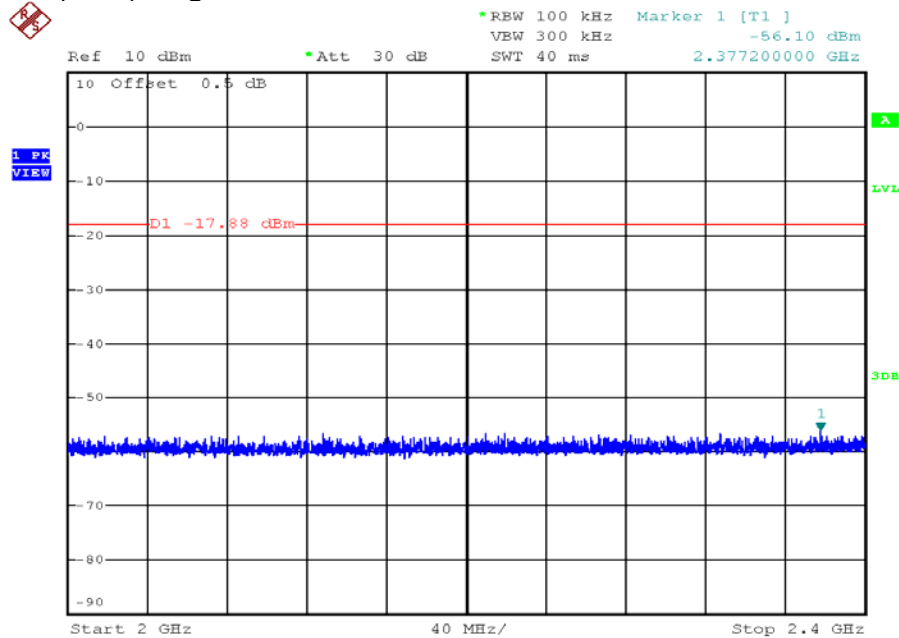


802.11n(20M), Highest Channel, Plot B

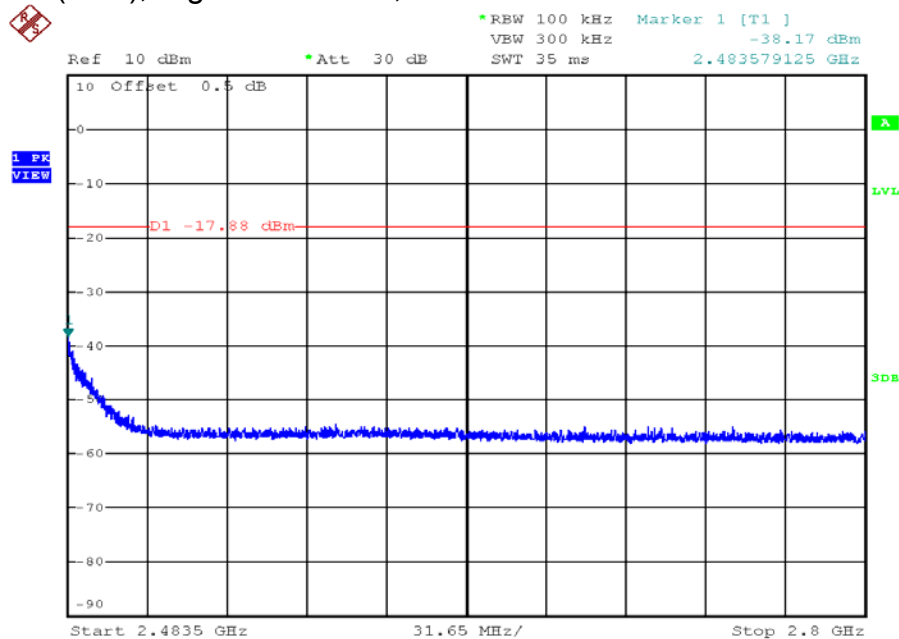


## Plots of out of band conducted emissions

802.11n(20M), Highest Channel, Plot C

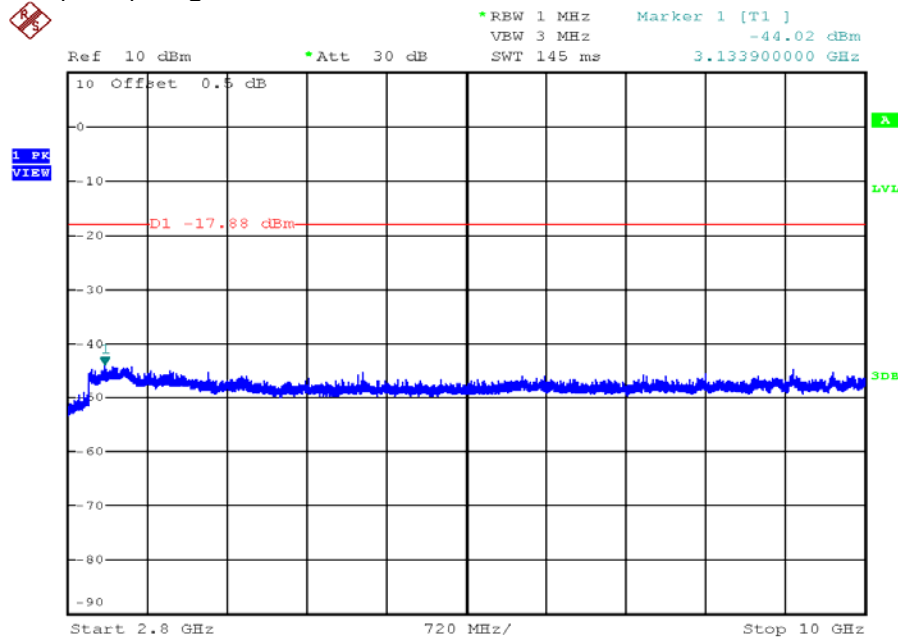


802.11n(20M), Highest Channel, Plot D

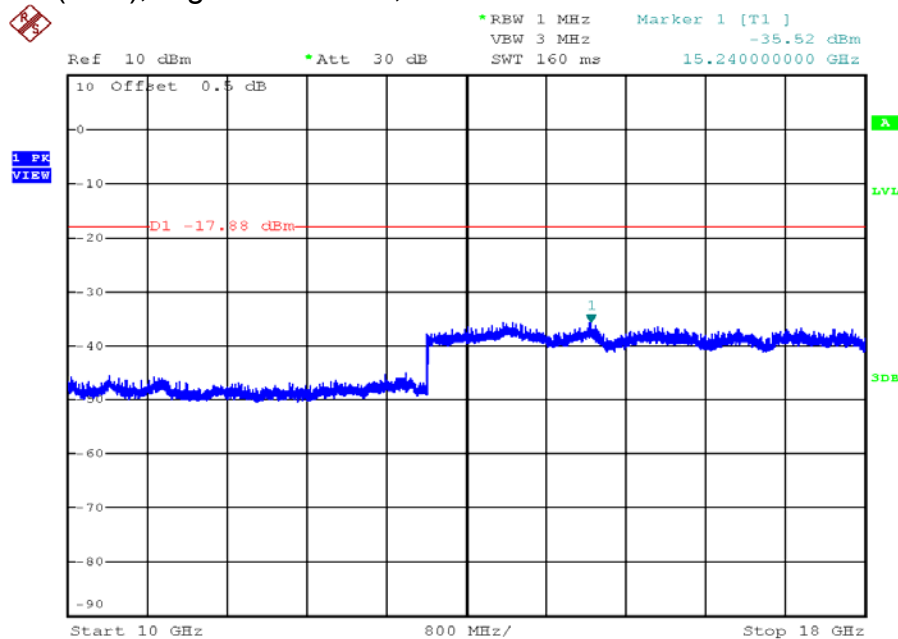


## Plots of out of band conducted emissions

802.11n(20M), Highest Channel, Plot E



802.11n(20M), Highest Channel, Plot F



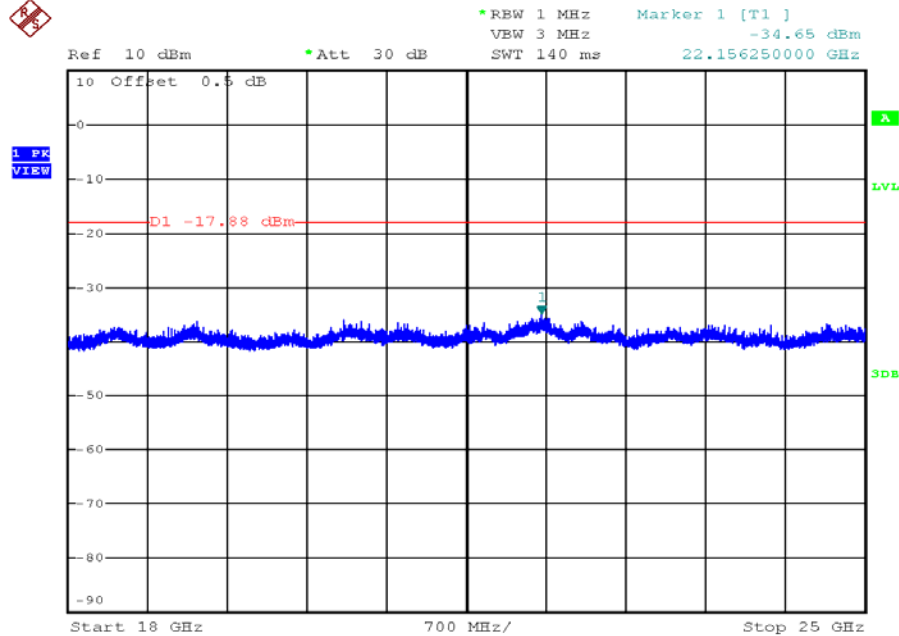
Issuing Laboratory:  
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## Plots of out of band conducted emissions

802.11n(20M), Highest Channel, Plot G





#### 4.5 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD + AV$$

Where

- FS = Field Strength in dB $\mu$ V/m
- RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V
- CF = Cable Attenuation Factor in dB
- AF = Antenna Factor in dB
- AG = Amplifier Gain in dB
- PD = Pulse Desensitization in dB
- AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD + AV$$

#### Example

Assume a receiver reading of 62.0 dB $\mu$ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29.0 dB is subtracted. The pulse desensitization factor of the spectrum analyzer is 0.0 dB, and the resultant average factor is -10.0 dB. The net field strength for comparison to the appropriate emission limit is 32.0 dB $\mu$ V/m. This value in dB $\mu$ V/m is converted to its corresponding level in  $\mu$ V/m.

RA = 62.0 dB $\mu$ V  
AF = 7.4 dB  
CF = 1.6 dB  
AG = 29.0 dB  
PD = 0.0 dB  
AV = -10 dB

$$FS = 62.0 + 7.4 + 1.6 - 29.0 + 0.0 + (-10.0) = 32.0 \text{ dB}\mu\text{V/m}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(32.0 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$$

Issuing Laboratory:  
**Intertek Testing Services Hong Kong Limited**

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#### 4.6 Transmitter Radiated Emissions in Restricted Bands and Spurious Emissions

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

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Intertek Testing Services Hong Kong Limited

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#### 4.6.1 Radiated Emission Configuration Photograph

Worst Case Restricted Band Radiated Emission  
at

4924.000 MHz

The worst case radiated emission configuration photographs are saved with filename:  
config photos.pdf

#### 4.6.2 Radiated Emission Data

The data in tables 1-10 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Passed by 4.7 dB margin compare with average limit

Mode: TX-Channel 01

Table 1  
IEEE 802.11b (DSSS, 11 Mbps)

**Radiated Emission Data**

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b><i>H</i></b>	<b><i>2390.000</i></b>	<b><i>50.1</i></b>	<b><i>33</i></b>	<b><i>29.4</i></b>	<b><i>46.5</i></b>	<b><i>54.0</i></b>	<b><i>-7.5</i></b>
<b><i>H</i></b>	<b><i>4824.000</i></b>	<b><i>45.6</i></b>	<b><i>33</i></b>	<b><i>34.9</i></b>	<b><i>47.5</i></b>	<b><i>54.0</i></b>	<b><i>-6.5</i></b>
<b><i>H</i></b>	<b><i>12060.000</i></b>	<b><i>37.7</i></b>	<b><i>33</i></b>	<b><i>40.5</i></b>	<b><i>45.2</i></b>	<b><i>54.0</i></b>	<b><i>-8.8</i></b>
<b><i>H</i></b>	<b><i>14472.000</i></b>	<b><i>37.6</i></b>	<b><i>33</i></b>	<b><i>40.0</i></b>	<b><i>44.6</i></b>	<b><i>54.0</i></b>	<b><i>-9.4</i></b>

Remark: Average measurement method is used according to ANSI C63.10.

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b><i>H</i></b>	<b><i>2390.000</i></b>	<b><i>63.4</i></b>	<b><i>33</i></b>	<b><i>29.4</i></b>	<b><i>59.8</i></b>	<b><i>74.0</i></b>	<b><i>-14.2</i></b>
<b><i>H</i></b>	<b><i>4824.000</i></b>	<b><i>54.8</i></b>	<b><i>33</i></b>	<b><i>34.9</i></b>	<b><i>56.7</i></b>	<b><i>74.0</i></b>	<b><i>-17.3</i></b>
<b><i>H</i></b>	<b><i>12060.000</i></b>	<b><i>43.5</i></b>	<b><i>33</i></b>	<b><i>40.5</i></b>	<b><i>51.0</i></b>	<b><i>74.0</i></b>	<b><i>-23.0</i></b>
<b><i>H</i></b>	<b><i>14472.000</i></b>	<b><i>43.5</i></b>	<b><i>33</i></b>	<b><i>40.0</i></b>	<b><i>50.5</i></b>	<b><i>74.0</i></b>	<b><i>-23.5</i></b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Mode: TX-Channel 06

Table 2  
IEEE 802.11b (DSSS, 11 Mbps)

**Radiated Emission Data**

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b><i>H</i></b>	<b><i>4874.000</i></b>	<b><i>47.0</i></b>	<b><i>33</i></b>	<b><i>34.9</i></b>	<b><i>48.9</i></b>	<b><i>54.0</i></b>	<b><i>-5.1</i></b>
<b><i>H</i></b>	<b><i>7311.000</i></b>	<b><i>41.9</i></b>	<b><i>33</i></b>	<b><i>37.9</i></b>	<b><i>46.8</i></b>	<b><i>54.0</i></b>	<b><i>-7.2</i></b>
<b><i>H</i></b>	<b><i>12185.000</i></b>	<b><i>37.8</i></b>	<b><i>33</i></b>	<b><i>40.5</i></b>	<b><i>45.3</i></b>	<b><i>54.0</i></b>	<b><i>-8.7</i></b>

Remark: Average measurement method is used according to ANSI C63.10.

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b><i>H</i></b>	<b><i>4874.000</i></b>	<b><i>55.0</i></b>	<b><i>33</i></b>	<b><i>34.9</i></b>	<b><i>56.9</i></b>	<b><i>74.0</i></b>	<b><i>-17.1</i></b>
<b><i>H</i></b>	<b><i>7311.000</i></b>	<b><i>47.3</i></b>	<b><i>33</i></b>	<b><i>37.9</i></b>	<b><i>52.2</i></b>	<b><i>74.0</i></b>	<b><i>-21.8</i></b>
<b><i>H</i></b>	<b><i>12185.000</i></b>	<b><i>43.6</i></b>	<b><i>33</i></b>	<b><i>40.5</i></b>	<b><i>51.1</i></b>	<b><i>74.0</i></b>	<b><i>-22.9</i></b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Mode: TX-Channel 11

Table 3  
IEEE 802.11b (DSSS, 11 Mbps)

**Radiated Emission Data**

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2483.500</b>	<b>50.4</b>	<b>33</b>	<b>29.4</b>	<b>46.8</b>	<b>54.0</b>	<b>-7.2</b>
<b>H</b>	<b>4924.000</b>	<b>46.7</b>	<b>33</b>	<b>34.9</b>	<b>48.6</b>	<b>54.0</b>	<b>-5.4</b>
<b>H</b>	<b>7386.000</b>	<b>41.4</b>	<b>33</b>	<b>37.9</b>	<b>46.3</b>	<b>54.0</b>	<b>-7.7</b>
<b>H</b>	<b>12310.000</b>	<b>35.7</b>	<b>33</b>	<b>40.5</b>	<b>43.2</b>	<b>54.0</b>	<b>-10.8</b>

Remark: Average measurement method is used according to ANSI C63.10.

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2483.500</b>	<b>63.2</b>	<b>33</b>	<b>29.4</b>	<b>59.6</b>	<b>74.0</b>	<b>-14.4</b>
<b>H</b>	<b>4924.000</b>	<b>55.0</b>	<b>33</b>	<b>34.9</b>	<b>56.9</b>	<b>74.0</b>	<b>-17.1</b>
<b>H</b>	<b>7386.000</b>	<b>47.1</b>	<b>33</b>	<b>37.9</b>	<b>52.0</b>	<b>74.0</b>	<b>-22.0</b>
<b>H</b>	<b>12310.000</b>	<b>43.8</b>	<b>33</b>	<b>40.5</b>	<b>51.3</b>	<b>74.0</b>	<b>-22.7</b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Mode: TX-Channel 01

Table 4  
IEEE 802.11g (OFDM, 54 Mbps)

**Radiated Emission Data**

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2390.000</b>	<b>50.2</b>	<b>33</b>	<b>29.4</b>	<b>46.6</b>	<b>54.0</b>	<b>-7.4</b>
<b>H</b>	<b>4824.000</b>	<b>45.6</b>	<b>33</b>	<b>34.9</b>	<b>47.5</b>	<b>54.0</b>	<b>-6.5</b>
<b>H</b>	<b>12060.000</b>	<b>37.7</b>	<b>33</b>	<b>40.5</b>	<b>45.2</b>	<b>54.0</b>	<b>-8.8</b>
<b>H</b>	<b>14472.000</b>	<b>37.6</b>	<b>33</b>	<b>40.0</b>	<b>44.6</b>	<b>54.0</b>	<b>-9.4</b>

Remark: Average measurement method is used according to ANSI C63.10.

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2390.000</b>	<b>63.3</b>	<b>33</b>	<b>29.4</b>	<b>59.7</b>	<b>74.0</b>	<b>-14.3</b>
<b>H</b>	<b>4824.000</b>	<b>53.8</b>	<b>33</b>	<b>34.9</b>	<b>55.7</b>	<b>74.0</b>	<b>-18.3</b>
<b>H</b>	<b>12060.000</b>	<b>43.5</b>	<b>33</b>	<b>40.5</b>	<b>51.0</b>	<b>74.0</b>	<b>-23.0</b>
<b>H</b>	<b>14472.000</b>	<b>43.5</b>	<b>33</b>	<b>40.0</b>	<b>50.5</b>	<b>74.0</b>	<b>-23.5</b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Mode: TX-Channel 06

Table 5  
IEEE 802.11g (OFDM, 54 Mbps)

**Radiated Emission Data**

Polari- zation	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b><i>H</i></b>	<b><i>4874.000</i></b>	<b><i>47.0</i></b>	<b><i>33</i></b>	<b><i>34.9</i></b>	<b><i>48.9</i></b>	<b><i>54.0</i></b>	<b><i>-5.1</i></b>
<b><i>H</i></b>	<b><i>7311.000</i></b>	<b><i>41.9</i></b>	<b><i>33</i></b>	<b><i>37.9</i></b>	<b><i>46.8</i></b>	<b><i>54.0</i></b>	<b><i>-7.2</i></b>
<b><i>H</i></b>	<b><i>12185.000</i></b>	<b><i>37.8</i></b>	<b><i>33</i></b>	<b><i>40.5</i></b>	<b><i>45.3</i></b>	<b><i>54.0</i></b>	<b><i>-8.7</i></b>

Remark: Average measurement method is used according to ANSI C63.10.

Polari- zation	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b><i>H</i></b>	<b><i>4874.000</i></b>	<b><i>54.0</i></b>	<b><i>33</i></b>	<b><i>34.9</i></b>	<b><i>55.9</i></b>	<b><i>74.0</i></b>	<b><i>-18.1</i></b>
<b><i>H</i></b>	<b><i>7311.000</i></b>	<b><i>47.3</i></b>	<b><i>33</i></b>	<b><i>37.9</i></b>	<b><i>52.2</i></b>	<b><i>74.0</i></b>	<b><i>-21.8</i></b>
<b><i>H</i></b>	<b><i>12185.000</i></b>	<b><i>43.6</i></b>	<b><i>33</i></b>	<b><i>40.5</i></b>	<b><i>51.1</i></b>	<b><i>74.0</i></b>	<b><i>-22.9</i></b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.



Mode: TX-Channel 11

Table 6  
IEEE 802.11g (OFDM, 54 Mbps)

**Radiated Emission Data**

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2483.500</b>	<b>50.1</b>	<b>33</b>	<b>29.4</b>	<b>46.5</b>	<b>54.0</b>	<b>-7.5</b>
<b>H</b>	<b>4924.000</b>	<b>47.1</b>	<b>33</b>	<b>34.9</b>	<b>49.0</b>	<b>54.0</b>	<b>-5.0</b>
<b>H</b>	<b>7386.000</b>	<b>41.4</b>	<b>33</b>	<b>37.9</b>	<b>46.3</b>	<b>54.0</b>	<b>-7.7</b>
<b>H</b>	<b>12310.000</b>	<b>37.7</b>	<b>33</b>	<b>40.5</b>	<b>45.2</b>	<b>54.0</b>	<b>-8.8</b>

Remark: Average measurement method is used according to ANSI C63.10.

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2483.500</b>	<b>63.1</b>	<b>33</b>	<b>29.4</b>	<b>59.5</b>	<b>74.0</b>	<b>-14.5</b>
<b>H</b>	<b>4924.000</b>	<b>53.0</b>	<b>33</b>	<b>34.9</b>	<b>54.9</b>	<b>74.0</b>	<b>-19.1</b>
<b>H</b>	<b>7386.000</b>	<b>47.1</b>	<b>33</b>	<b>37.9</b>	<b>52.0</b>	<b>74.0</b>	<b>-22.0</b>
<b>H</b>	<b>12310.000</b>	<b>43.8</b>	<b>33</b>	<b>40.5</b>	<b>51.3</b>	<b>74.0</b>	<b>-22.7</b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Mode: TX-Channel 01

Table 7  
IEEE 802.11n (20MHz) (OFDM, 28.9 Mbps)

**Radiated Emission Data**

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2390.000</b>	<b>50.1</b>	<b>33</b>	<b>29.4</b>	<b>46.5</b>	<b>54.0</b>	<b>-7.5</b>
<b>H</b>	<b>4824.000</b>	<b>45.6</b>	<b>33</b>	<b>34.9</b>	<b>47.5</b>	<b>54.0</b>	<b>-6.5</b>
<b>H</b>	<b>12060.000</b>	<b>37.7</b>	<b>33</b>	<b>40.5</b>	<b>45.2</b>	<b>54.0</b>	<b>-8.8</b>
<b>H</b>	<b>14472.000</b>	<b>37.6</b>	<b>33</b>	<b>40.0</b>	<b>44.6</b>	<b>54.0</b>	<b>-9.4</b>

Remark: Average measurement method is used according to ANSI C63.10.

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2390.000</b>	<b>63.1</b>	<b>33</b>	<b>29.4</b>	<b>59.5</b>	<b>74.0</b>	<b>-14.5</b>
<b>H</b>	<b>4824.000</b>	<b>53.7</b>	<b>33</b>	<b>34.9</b>	<b>55.6</b>	<b>74.0</b>	<b>-18.4</b>
<b>H</b>	<b>12060.000</b>	<b>43.5</b>	<b>33</b>	<b>40.5</b>	<b>51.0</b>	<b>74.0</b>	<b>-23.0</b>
<b>H</b>	<b>14472.000</b>	<b>43.5</b>	<b>33</b>	<b>40.0</b>	<b>50.5</b>	<b>74.0</b>	<b>-23.5</b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Mode: TX-Channel 06

Table 8  
IEEE 802.11n (20MHz) (OFDM, 28.9 Mbps)

**Radiated Emission Data**

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>4874.000</b>	<b>47.0</b>	<b>33</b>	<b>34.9</b>	<b>48.9</b>	<b>54.0</b>	<b>-5.1</b>
<b>H</b>	<b>7311.000</b>	<b>41.9</b>	<b>33</b>	<b>37.9</b>	<b>46.8</b>	<b>54.0</b>	<b>-7.2</b>
<b>H</b>	<b>12185.000</b>	<b>37.8</b>	<b>33</b>	<b>40.5</b>	<b>45.3</b>	<b>54.0</b>	<b>-8.7</b>

Remark: Average measurement method is used according to ANSI C63.10.

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>4874.000</b>	<b>54.0</b>	<b>33</b>	<b>34.9</b>	<b>55.9</b>	<b>74.0</b>	<b>-18.1</b>
<b>H</b>	<b>7311.000</b>	<b>47.3</b>	<b>33</b>	<b>37.9</b>	<b>52.2</b>	<b>74.0</b>	<b>-21.8</b>
<b>H</b>	<b>12185.000</b>	<b>43.6</b>	<b>33</b>	<b>40.5</b>	<b>51.1</b>	<b>74.0</b>	<b>-22.9</b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Mode: TX-Channel 11

Table 9  
IEEE 802.11n (20MHz) (OFDM, 28.9 Mbps)

**Radiated Emission Data**

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - average (dBuV/m)	Average Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2483.500</b>	<b>50.0</b>	<b>33</b>	<b>29.4</b>	<b>46.4</b>	<b>54.0</b>	<b>-7.6</b>
<b>H</b>	<b>4924.000</b>	<b>47.4</b>	<b>33</b>	<b>34.9</b>	<b>49.3</b>	<b>54.0</b>	<b>-4.7</b>
<b>H</b>	<b>7386.000</b>	<b>41.4</b>	<b>33</b>	<b>37.9</b>	<b>46.3</b>	<b>54.0</b>	<b>-7.7</b>
<b>H</b>	<b>12310.000</b>	<b>37.7</b>	<b>33</b>	<b>40.5</b>	<b>45.2</b>	<b>54.0</b>	<b>-8.8</b>

Remark: Average measurement method is used according to ANSI C63.10.

Polarization	Frequency	Reading (dBuV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBuV/m)	Peak Limit at 3m (dBuV/m)	Margin (dB)
<b>H</b>	<b>2483.500</b>	<b>63.1</b>	<b>33</b>	<b>29.4</b>	<b>59.5</b>	<b>74.0</b>	<b>-14.5</b>
<b>H</b>	<b>4924.000</b>	<b>53.0</b>	<b>33</b>	<b>34.9</b>	<b>54.9</b>	<b>74.0</b>	<b>-19.1</b>
<b>H</b>	<b>7386.000</b>	<b>47.1</b>	<b>33</b>	<b>37.9</b>	<b>52.0</b>	<b>74.0</b>	<b>-22.0</b>
<b>H</b>	<b>12310.000</b>	<b>43.8</b>	<b>33</b>	<b>40.5</b>	<b>51.3</b>	<b>74.0</b>	<b>-22.7</b>

Remark: Peak detector is used for the emission measurement.

NOTES:

1. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
2. Negative value in the margin column shows emission below limit.
3. Horn antenna is used for the emission over 1000MHz.
4. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Mode: Video On

Table 10

**Radiated Emission Data**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	48.000	38.9	16	11.0	33.9	40.0	-6.1
V	60.000	39.5	16	10.0	33.5	40.0	-6.5
<b>H</b>	<b>120.000</b>	<b>36.6</b>	<b>16</b>	<b>14.0</b>	<b>34.6</b>	<b>43.5</b>	<b>-8.9</b>
<b>H</b>	<b>168.000</b>	<b>33.9</b>	<b>16</b>	<b>18.0</b>	<b>35.9</b>	<b>43.5</b>	<b>-7.6</b>
<b>H</b>	<b>184.000</b>	<b>32.8</b>	<b>16</b>	<b>20.0</b>	<b>36.8</b>	<b>43.5</b>	<b>-6.7</b>
H	216.000	36.2	16	17.0	37.2	43.5	-6.3
H	263.000	32.8	16	21.0	37.8	46.0	-8.2
H	330.000	29.4	16	24.0	37.4	46.0	-8.6
H	660.000	23.4	16	29.0	36.4	46.0	-9.6

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

Issuing Laboratory:  
**Intertek Testing Services Hong Kong Limited**

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



#### 4.6.3 Transmitter Duty Cycle Calculation

Not applicable – No average factor is required.

Issuing Laboratory:  
Intertek Testing Services Hong Kong Limited

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#### 4.7 AC Power Line Conducted Emission

- Not applicable – EUT is only powered by battery for operation.
- EUT connects to AC power line. Emission Data is listed in following pages.
  
- Base Unit connects to AC power line and has transmission. Handset connects to AC power line but has no transmission. Emission Data of Base Unit is listed in following pages.

##### 4.7.1 AC Power Line Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration  
at

0.195 MHz

The worst case line conducted configuration photographs are attached in the Appendix and saved with filename: config photos.pdf

##### 4.7.2 AC Power Line Conducted Emission Data

The plot(s) and data in the following pages list the significant emission frequencies, the limit and the margin of compliance

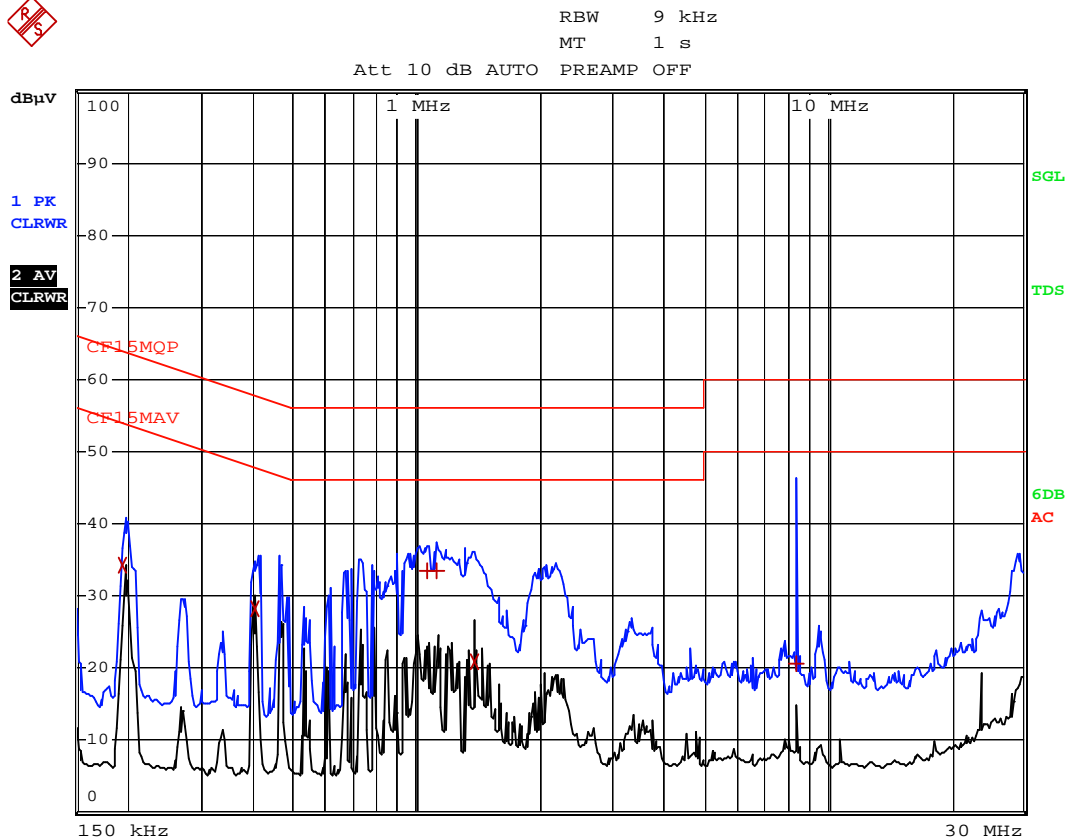
Passed by 19.63dB dB margin compare with average limit

Issuing Laboratory:  
Intertek Testing Services Hong Kong Limited

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Worst Case: WiFi Transmission with charging in docking unit





Issuing Laboratory:  
Intertek Testing Services Hong Kong Limited

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Worst Case: WiFi Transmission with charging in docking unit

EDIT PEAK LIST (Final Measurement Results)					
TRACE		FREQUENCY	LEVEL dB $\mu$ V		DELTA LIMIT dB
Trace1:	CF15MQP				
Trace2:	CF15MAV				
Trace3:	---				
2	CISPR Average	195 kHz	34.19	L1 gnd	-19.63
2	CISPR Average	402 kHz	28.17	L1 gnd	-19.64
1	Quasi Peak	1.059 MHz	33.57	N gnd	-22.42
1	Quasi Peak	1.1175 MHz	33.50	N gnd	-22.49
2	CISPR Average	1.383 MHz	20.81	N gnd	-25.18
1	Quasi Peak	8.3715 MHz	20.54	L1 gnd	-39.45

Issuing Laboratory:  
**Intertek Testing Services Hong Kong Limited**

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**EXHIBIT 5**  
**EQUIPMENT LIST**

Issuing Laboratory:  
Intertek Testing Services Hong Kong Limited

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## 5.0 Equipment List

### 1) Radiated Emissions Test

Equipment	EMI Test Receiver	Spectrum Analyzer	Biconical Antenna
Registration No.	EW-2666	EW-2188	EW-0571
Manufacturer	R&S	AGILENTTECH	EMCO
Model No.	ESCI7	E4407B	3104C
Calibration Date	Jun. 20, 2013	Nov. 5, 2012	Apr. 5, 2012
Calibration Due Date	Jun. 20, 2014	Nov. 5, 2013	Oct. 5, 2013

Equipment	Log Periodic Antenna	Digital Multimeter
Registration No.	EW-1042	EW-1237
Manufacturer	EMCO	FLUKE
Model No.	3148	179
Calibration Date	Apr. 25, 2012	Sep. 2, 2013
Calibration Due Date	Oct. 25, 2013	Oct. 1, 2014

### 2) Conducted Emissions Test

Equipment	EMI Test Receiver	LISN	Pulse Limiter
Registration No.	EW-2500	EW-0192	EW-0700
Manufacturer	R&S	R&S	R&S
Model No.	ESCI	ESH3-Z5	ESH3-Z2
Calibration Date	Mar. 22, 2013	May 15, 2013	Jul. 30, 2012
Calibration Due Date	Feb. 28, 2014	Apr. 15, 2014	Jan. 30, 2014

### 3) Conductive Measurement Test

Equipment	Spectrum Analyzer
Registration No.	EW-2466
Manufacturer	R&S
Model No.	FSP30
Calibration Date	Aug. 4, 2013
Calibration Due Date	Aug. 4, 2014

**END OF TEST REPORT**