



# FCC RF Test Report

**APPLICANT** : ZTE CORPORATION  
**EQUIPMENT** : WCDMA/LTE Multi-mode Digital  
Mobile Phone  
**BRAND NAME** : ZTE  
**MODEL NAME** : Z798BL  
**FCC ID** : SRQ-Z798BL  
**STANDARD** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : (DTS) Digital Transmission System

The product was received on Sep. 26, 2016 and testing was completed on Nov. 24, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

Prepared by: James Huang / Manager

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**SPORTON INTERNATIONAL (KUNSHAN) INC.**  
**No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China**



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### SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
		Conducted Spurious Emission		Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 1.99 dB at 2389.95 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 5.92 dB at 2.664 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-



# 1 General Description

## 1.1 Applicant

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

## 1.2 Manufacturer

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

## 1.3 Product Feature of Equipment Under Test

Product Feature	
<b>Equipment</b>	WCDMA/LTE Multi-mode Digital Mobile Phone
<b>Brand Name</b>	ZTE
<b>Model Name</b>	Z798BL
<b>FCC ID</b>	SRQ-Z798BL
<b>EUT supports Radios application</b>	GSM/GPRS/EGPRS/WCDMA/HSPA/ HSPA+(16QAM uplink is not supported)/LTE WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth v3.0 + EDR/Bluetooth v4.0 LE/Bluetooth v4.2 LE
<b>IMEI Code</b>	Conducted: 862574030003744/862574030003701 Radiation: 862574030004478/862574030004401 Conduction: 862574030006598/862574030006501
<b>HW Version</b>	Z798BLHVV1.0
<b>SW Version</b>	Z798BLV1.0.0B05
<b>EUT Stage</b>	Identical Prototype

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



### 1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2462 MHz
Maximum (Peak) Output Power to antenna	802.11b : 18.08 dBm (0.0643 W) 802.11g : 22.82 dBm (0.1914 W) 802.11n HT20 : 22.63 dBm (0.1832 W)
Antenna Type / Gain	IFA Antenna with gain -2.00 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

### 1.5 Modification of EUT

No modifications are made to the EUT during all test items.



### 1.6 Testing Location

<b>Test Site</b>	SPORTON INTERNATIONAL (KUNSHAN) INC.			
<b>Test Site Location</b>	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
<b>Test Site No.</b>	<b>Sporton Site No.</b>			<b>FCC Registration No.</b>
	TH01-KS	03CH03-KS	CO01-KS	306251

**Note:** The test site complies with ANSI C63.4 2014 requirement.

### 1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05
- ♦ ANSI C63.10-2013

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



## 2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases were recorded in this report.

### 2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437	-	-



## 2.2 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0

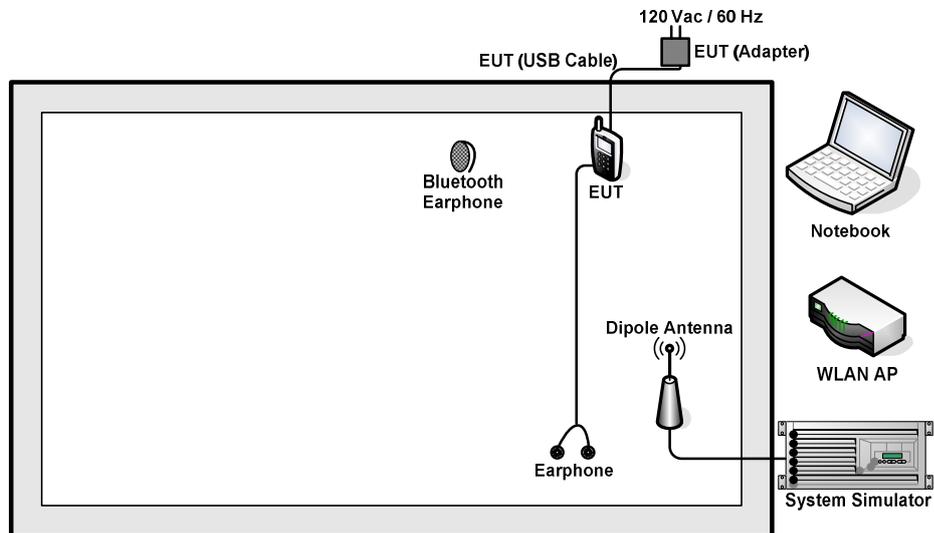
Test Cases	
<b>AC Conducted Emission</b>	Mode 1 :GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter 1) + Earphone + Battery 1 Mode 2 :GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter 2) + Earphone + Battery 2
<b>Remark:</b> The worst case of conducted emission is mode 2; only the test data of it was reported.	

## 2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





## 2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
3.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
4.	Notebook	Lenovo	G480	PRC4	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
5.	Earphone	Lenovo	LH102	N/A	N/A	Unshielded, 1.2 m

## 2.5 EUT Operation Test Setup

For WLAN function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the Notebook under large package sizes transmission.



## 2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss.

*Offset = RF cable loss.*

Following shows an offset computation example with cable loss 5.8 dB.

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\ &= 5.8 \text{ (dB)} \end{aligned}$$

### 3 Test Result

#### 3.1 6dB Bandwidth Measurement

##### 3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

##### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

##### 3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. Measure and record the results in the test report.

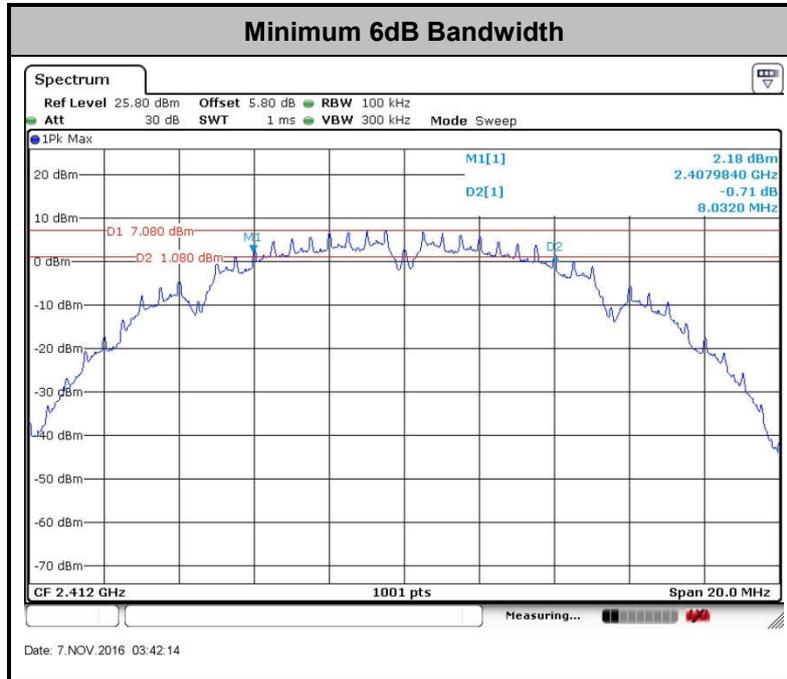
##### 3.1.4 Test Setup





### 3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

## 3.2 Output Power Measurement

### 3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

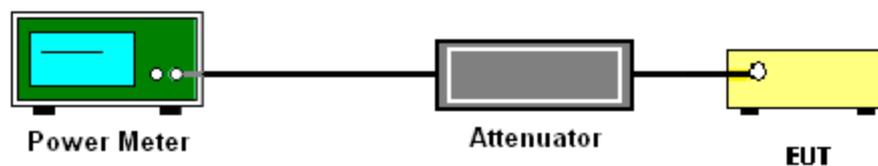
### 3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v03r05 section 9.1.2 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

### 3.2.4 Test Setup



### 3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

### 3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A.

### 3.3 Power Spectral Density Measurement

#### 3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

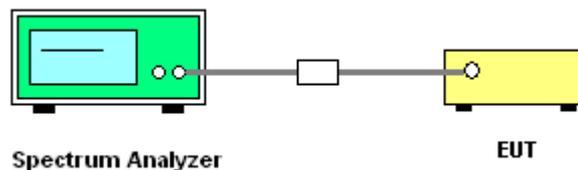
#### 3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

#### 3.3.3 Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

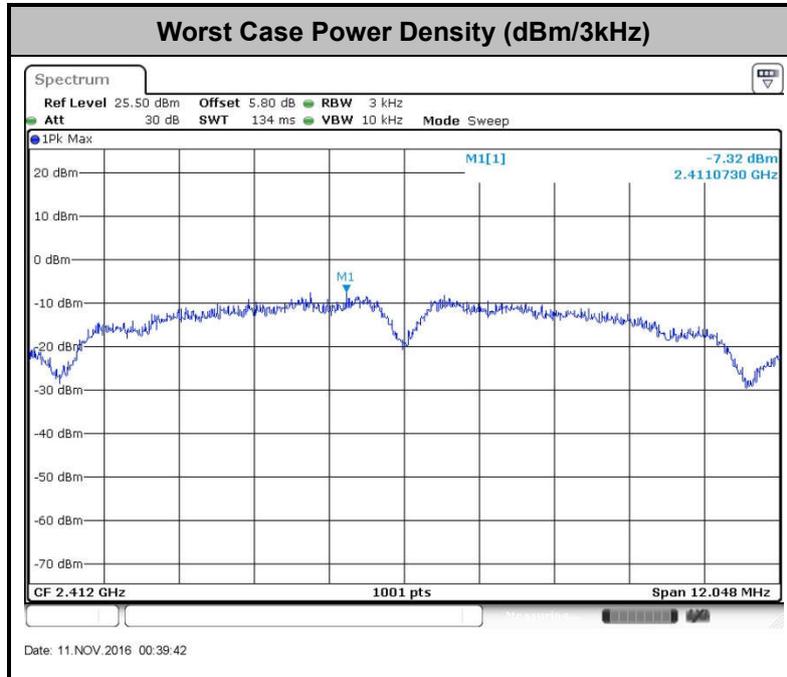
#### 3.3.4 Test Setup





### 3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



## 3.4 Conducted Band Edges and Spurious Emission Measurement

### 3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

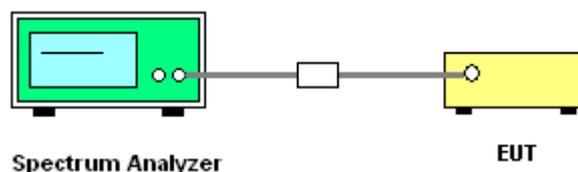
### 3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

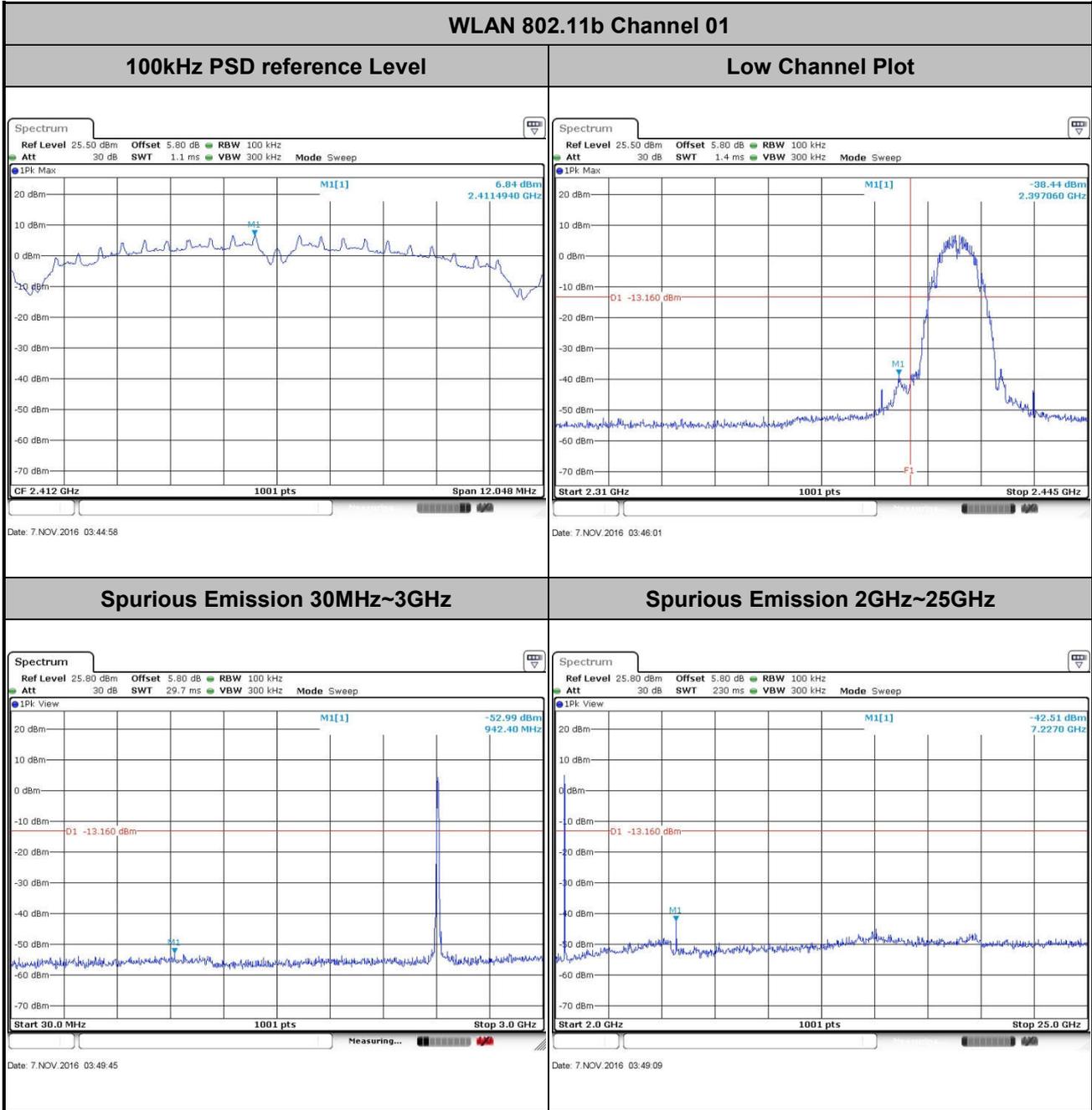
### 3.4.4 Test Setup





### 3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Mode :	802.11b	Temperature :	24~25°C
Test Band :	2.4GHz Low	Relative Humidity :	54~55%
Test Channel :	01	Test Engineer :	Ivan Zhang

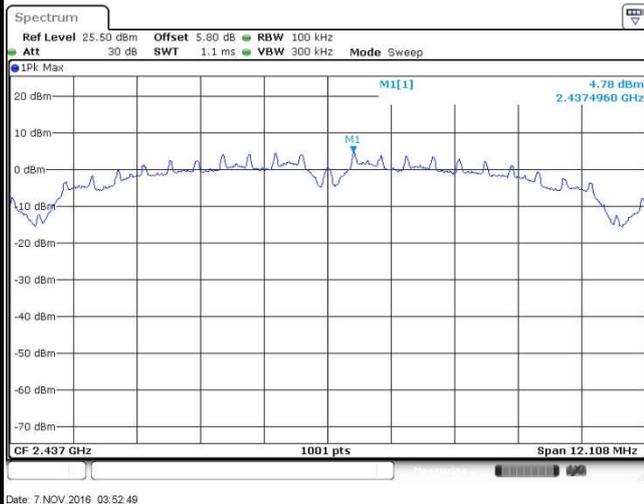




Test Mode :	802.11b	Temperature :	24~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	54~55%
Test Channel :	06	Test Engineer :	Ivan Zhang

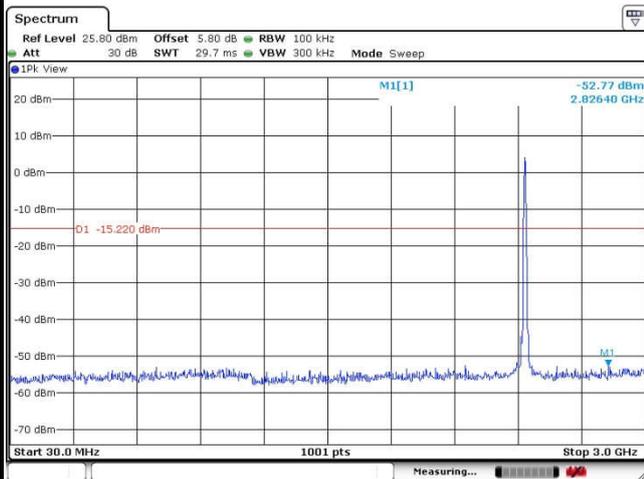
WLAN 802.11b Channel 06

100kHz PSD reference Level



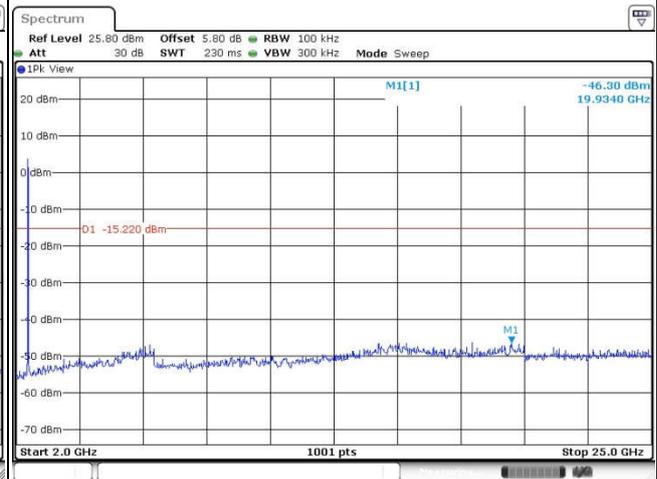
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Spurious Emission 30MHz~3GHz



Date: 7.NOV.2016 03:54:27

Spurious Emission 2GHz~25GHz



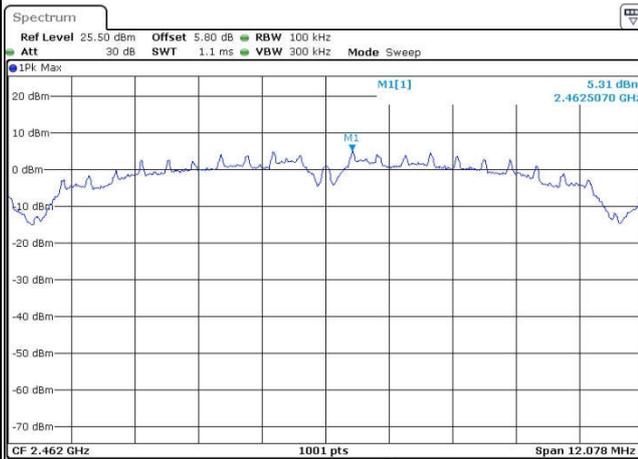
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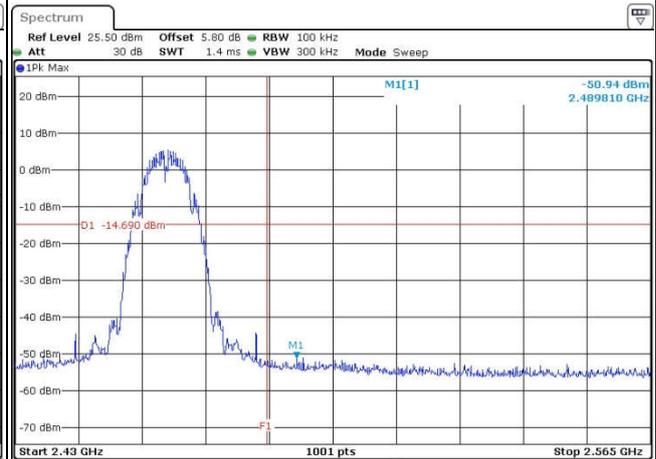
Test Mode :	802.11b	Temperature :	24~25°C
Test Band :	2.4GHz High	Relative Humidity :	54~55%
Test Channel :	11	Test Engineer :	Ivan Zhang

WLAN 802.11b Channel 11

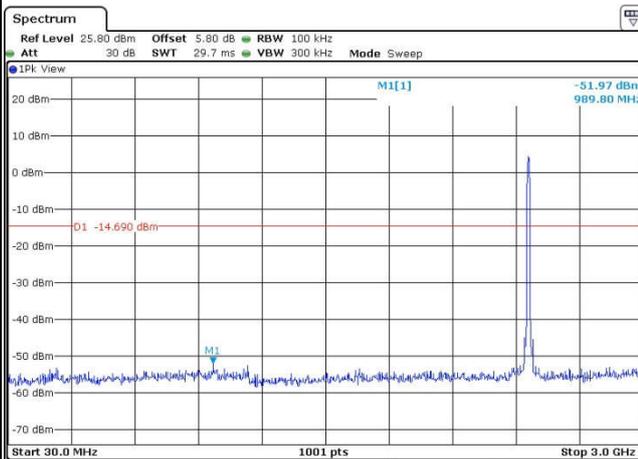
100kHz PSD reference Level



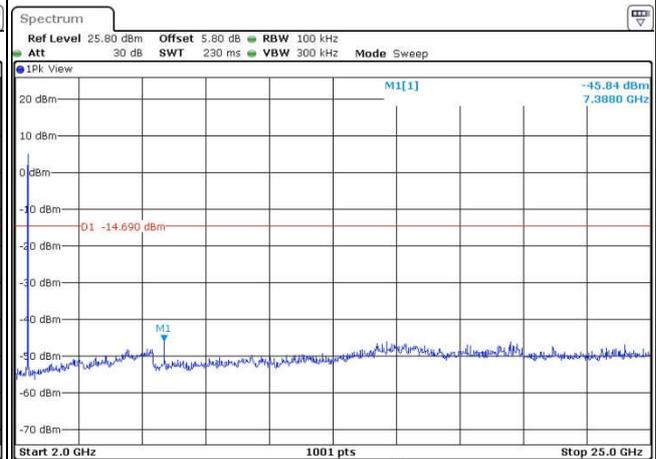
High Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

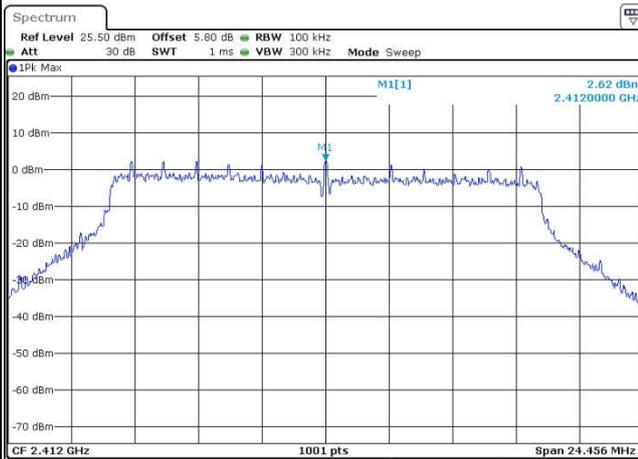




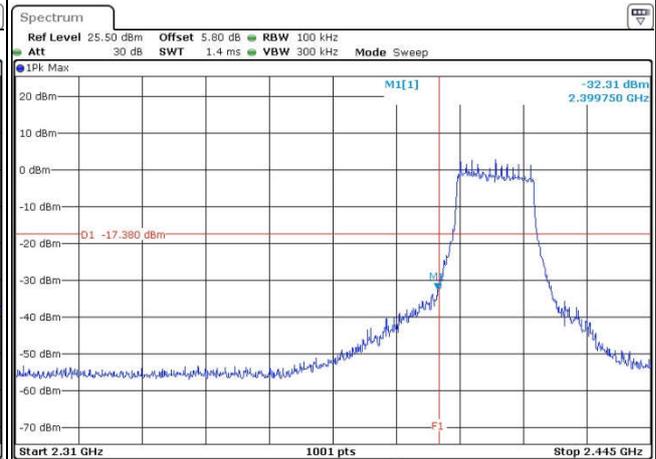
Test Mode :	802.11g	Temperature :	24~25°C
Test Band :	2.4GHz Low	Relative Humidity :	54~55%
Test Channel :	01	Test Engineer :	Ivan Zhang

WLAN 802.11g Channel 01

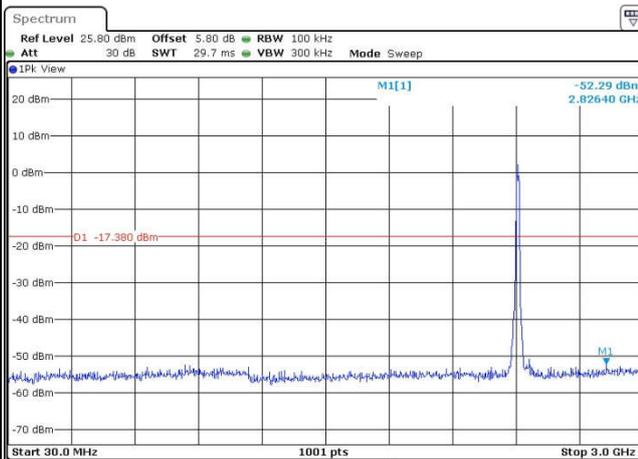
100kHz PSD reference Level



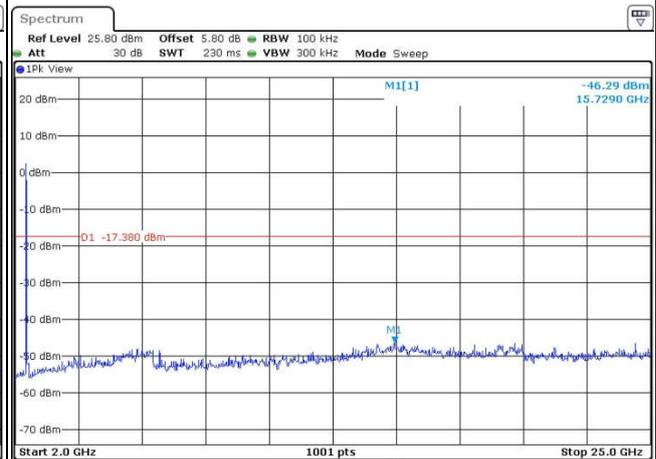
Low Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

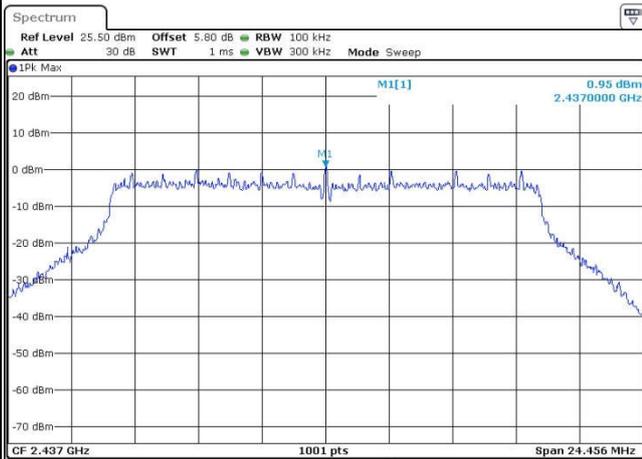




Test Mode :	802.11g	Temperature :	24~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	54~55%
Test Channel :	06	Test Engineer :	Ivan Zhang

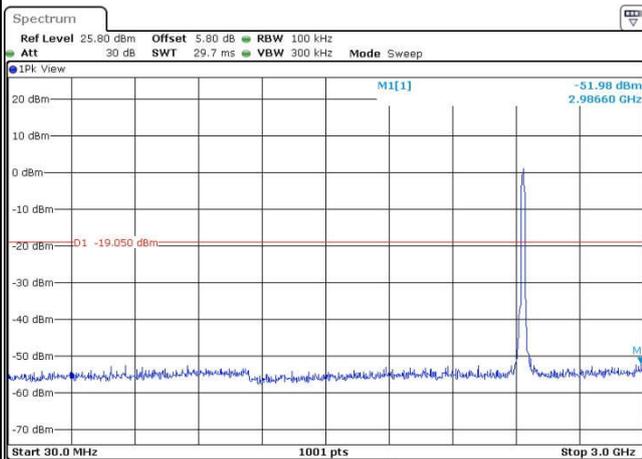
WLAN 802.11g Channel 06

100kHz PSD reference Level



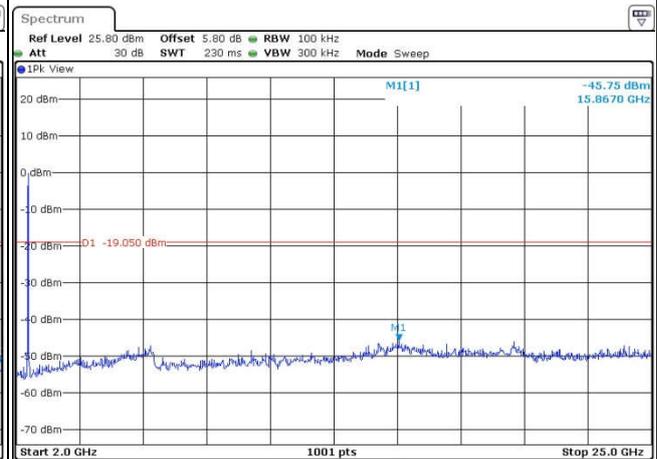
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Spurious Emission 30MHz~3GHz



Date: 7.NOV.2016 04:05:51

Spurious Emission 2GHz~25GHz



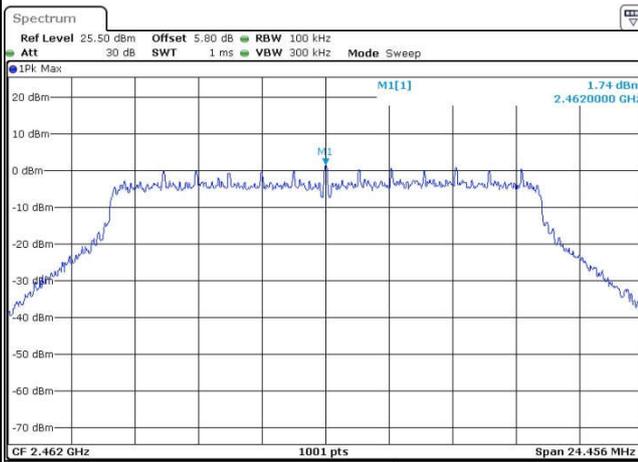
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Test Mode :	802.11g	Temperature :	24~25°C
Test Band :	2.4GHz High	Relative Humidity :	54~55%
Test Channel :	11	Test Engineer :	Ivan Zhang

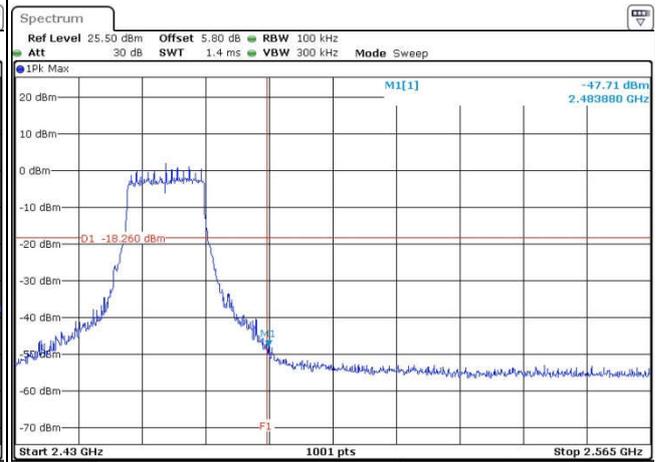
WLAN 802.11g Channel 11

100kHz PSD reference Level



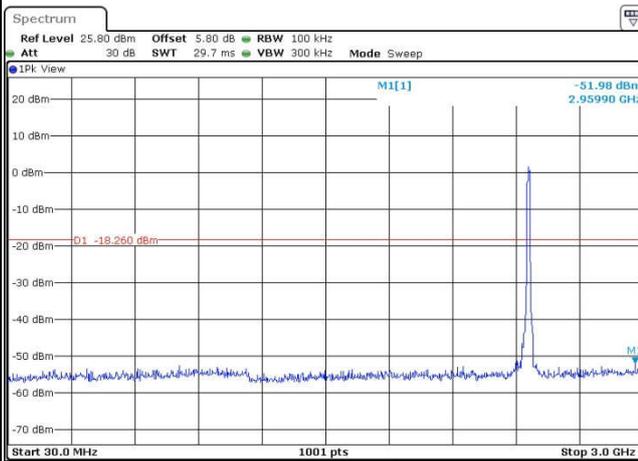
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High Channel Plot



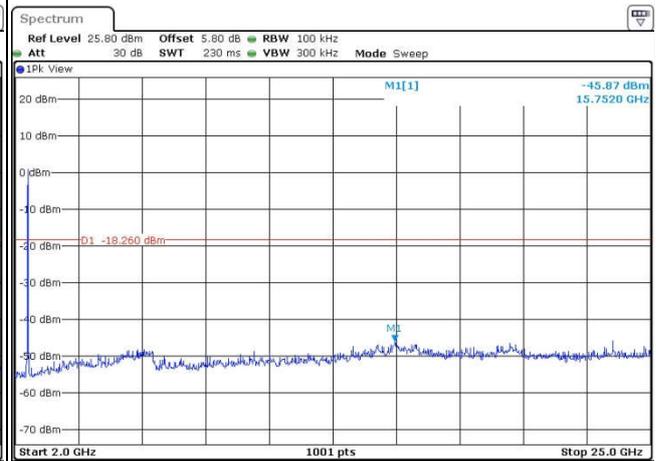
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Spurious Emission 30MHz~3GHz



Date: 7.NOV.2016 04:09:34

Spurious Emission 2GHz~25GHz



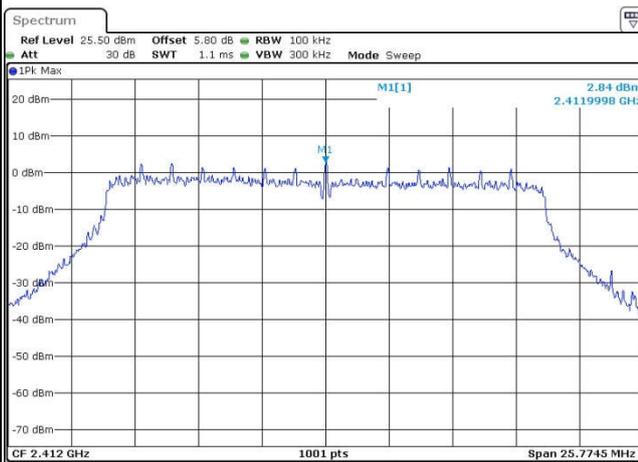
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Test Mode :	802.11n HT20	Temperature :	24~25°C
Test Band :	2.4GHz Low	Relative Humidity :	54~55%
Test Channel :	01	Test Engineer :	Ivan Zhang

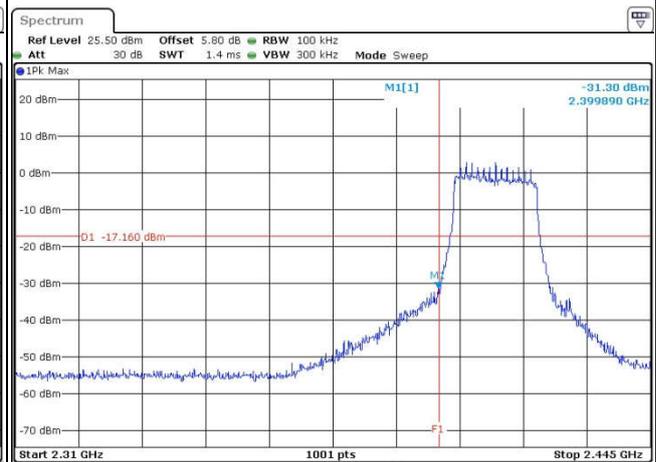
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



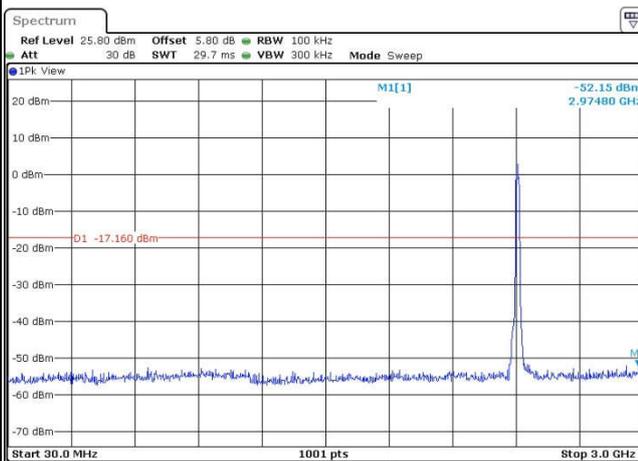
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Low Channel Plot



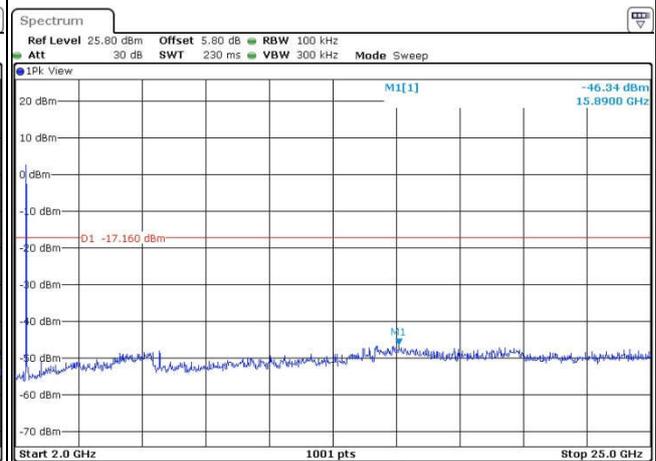
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Spurious Emission 30MHz~3GHz



Date: 7.NOV.2016 04:16:32

Spurious Emission 2GHz~25GHz



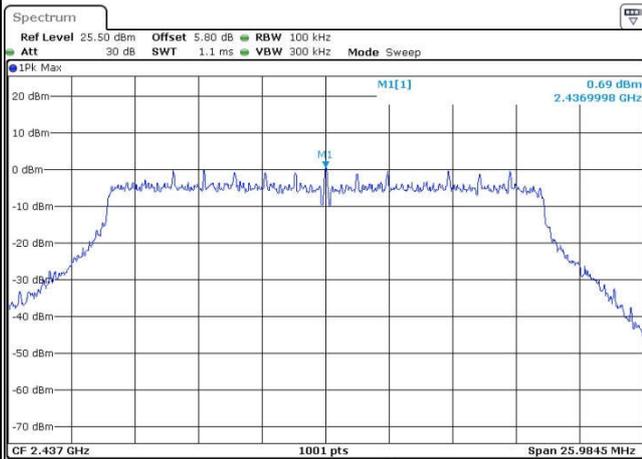
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Test Mode :	802.11n HT20	Temperature :	24~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	54~55%
Test Channel :	06	Test Engineer :	Ivan Zhang

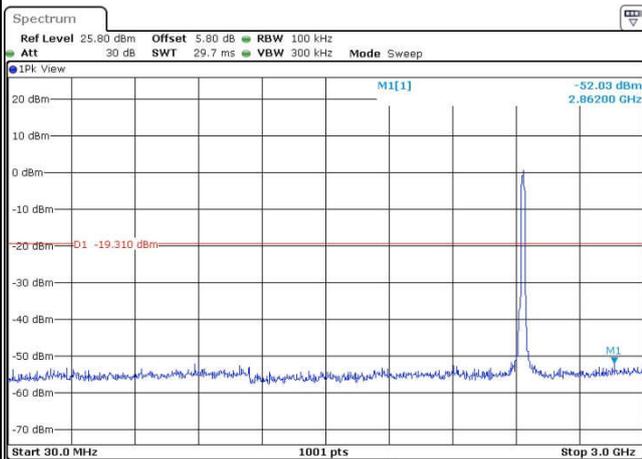
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



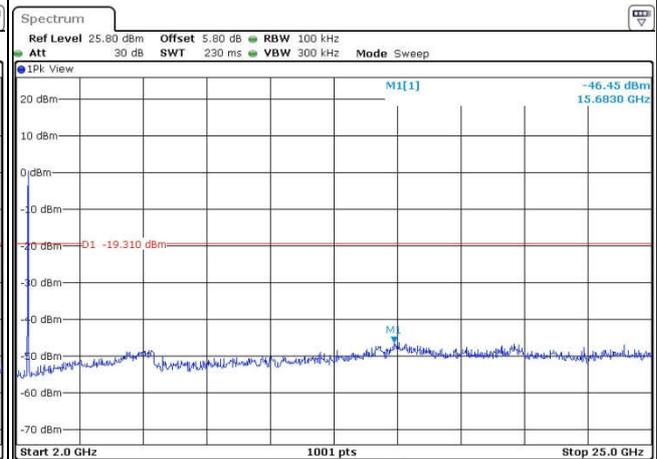
Date: 7.NOV.2016 04:18:47

Spurious Emission 30MHz~3GHz



Date: 7.NOV.2016 04:18:58

Spurious Emission 2GHz~25GHz



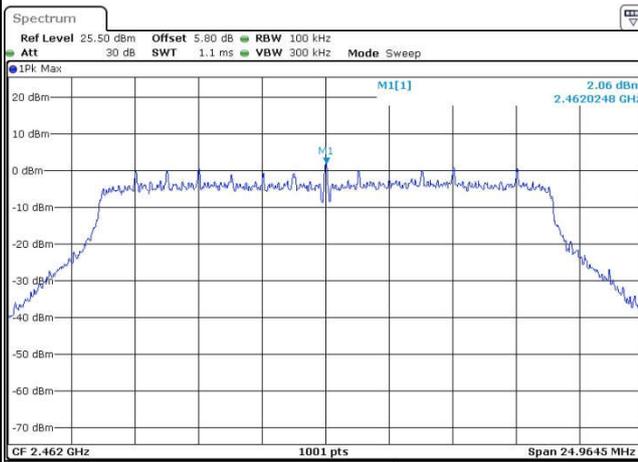
Date: 7.NOV.2016 04:19:06



Test Mode :	802.11n HT20	Temperature :	24~25°C
Test Band :	2.4GHz High	Relative Humidity :	54~55%
Test Channel :	11	Test Engineer :	Ivan Zhang

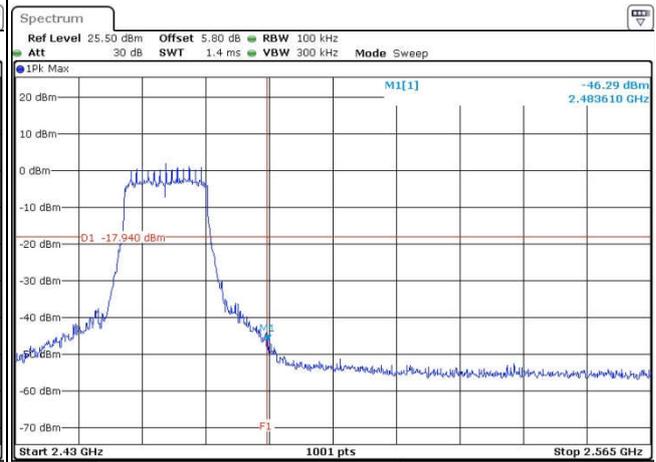
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



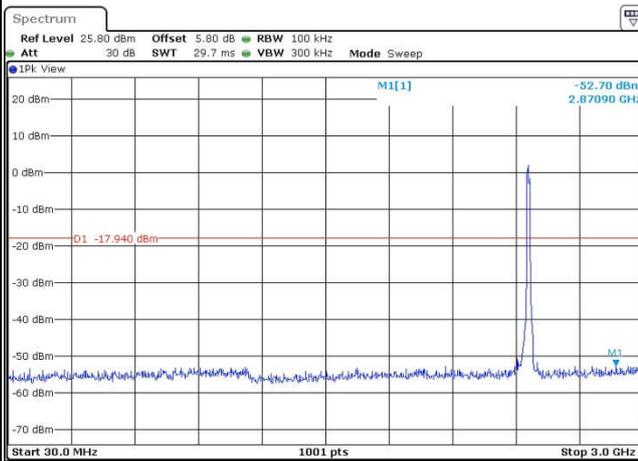
Date: 7.NOV.2016 04:21:26

High Channel Plot



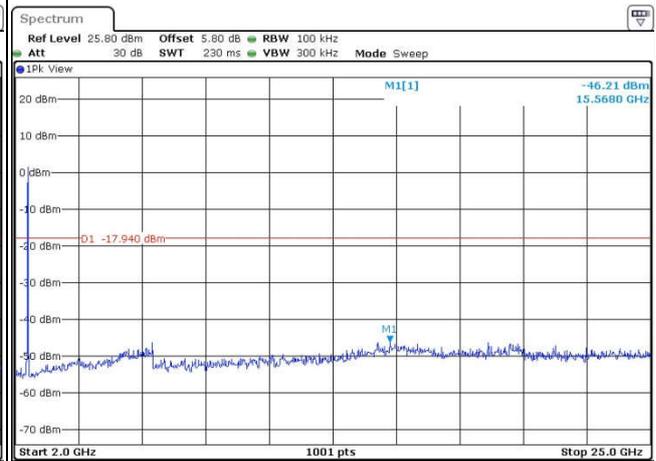
Date: 7.NOV.2016 04:21:35

Spurious Emission 30MHz~3GHz



Date: 7.NOV.2016 04:21:45

Spurious Emission 2GHz~25GHz



Date: 7.NOV.2016 04:21:54



### 3.5 Radiated Band Edges and Spurious Emission Measurement

#### 3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

#### 3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

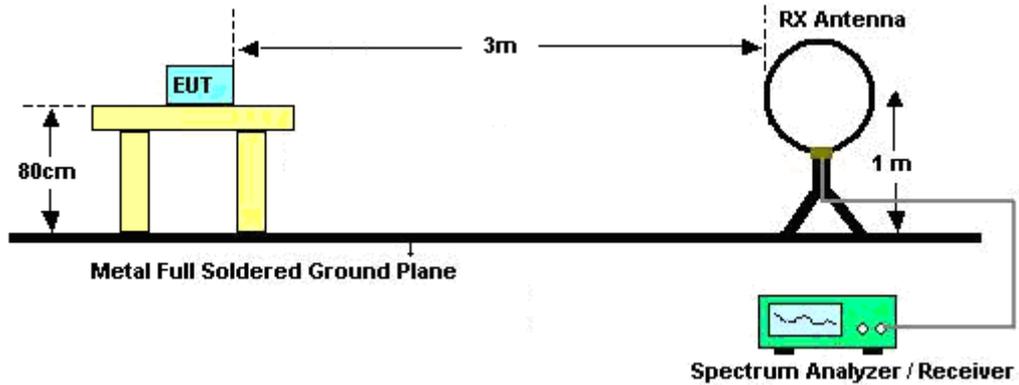


### 3.5.3 Test Procedures

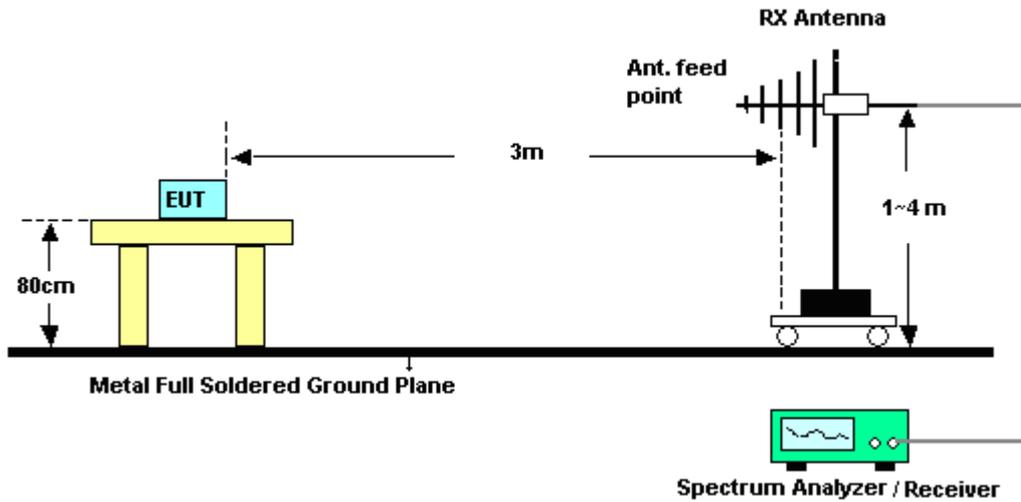
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Set RBW=100 kHz for  $f < 1$  GHz; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Set RBW = 1 MHz, VBW= 3MHz for  $f \geq 1$  GHz for peak measurement.  
For average measurement:
    - VBW = 10 Hz, when duty cycle is no less than 98 percent.
    - VBW  $\geq 1/T$ , when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

### 3.5.4 Test Setup

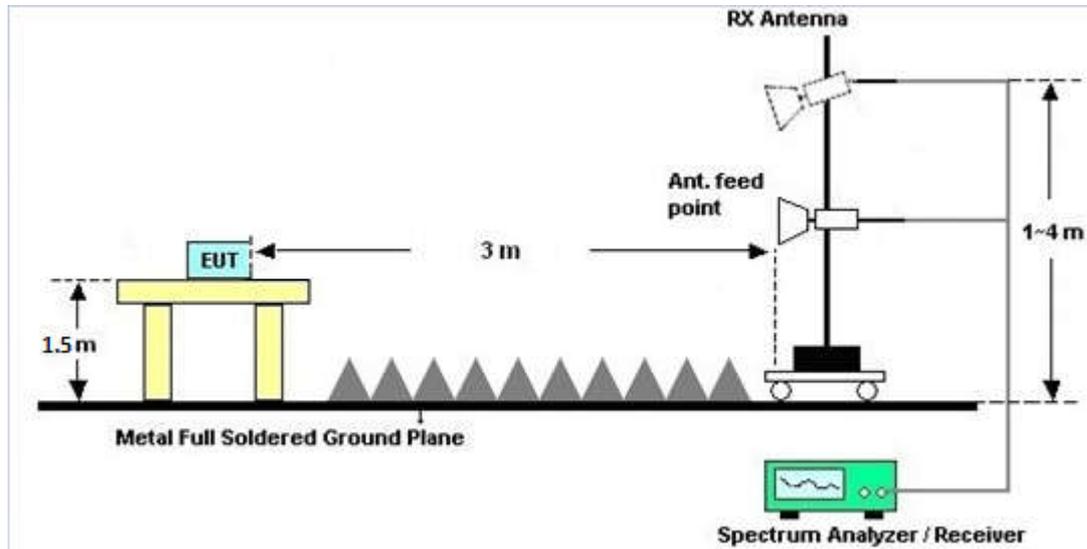
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



### 3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

### 3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B and C.

### 3.5.7 Duty Cycle

Please refer to Appendix D.

### 3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10<sup>th</sup> Harmonic)

Please refer to Appendix B and C.



### 3.6 AC Conducted Emission Measurement

#### 3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

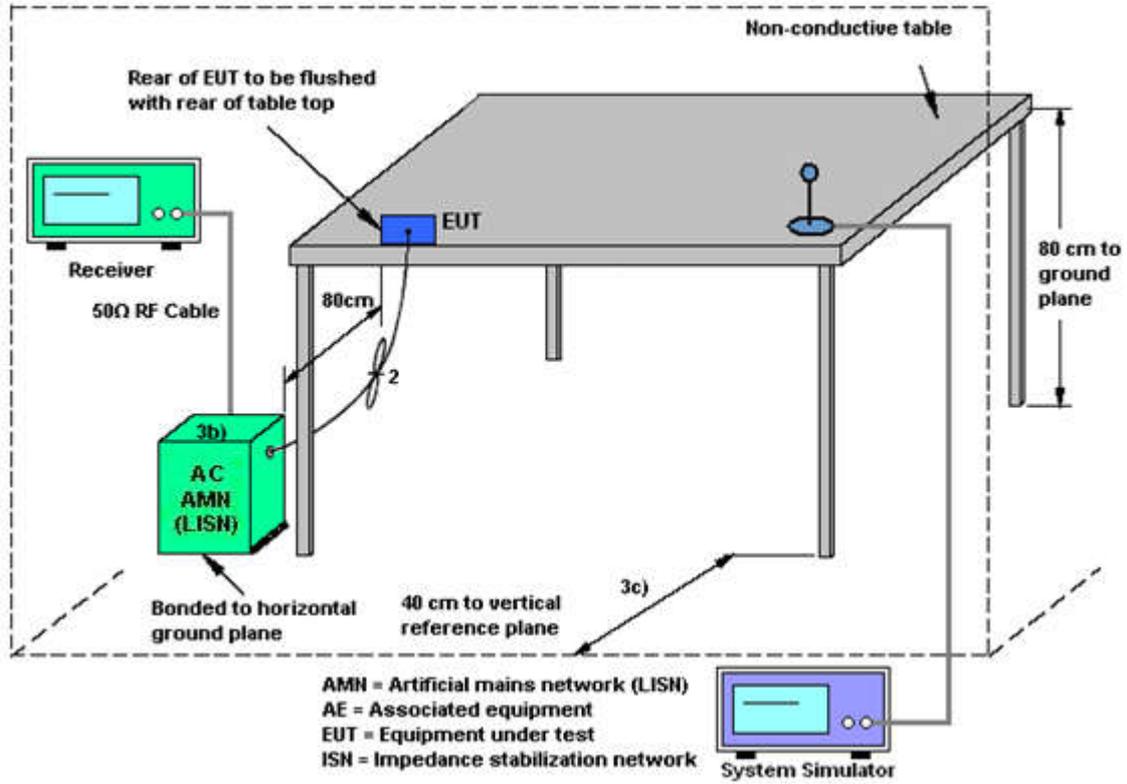
#### 3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

#### 3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

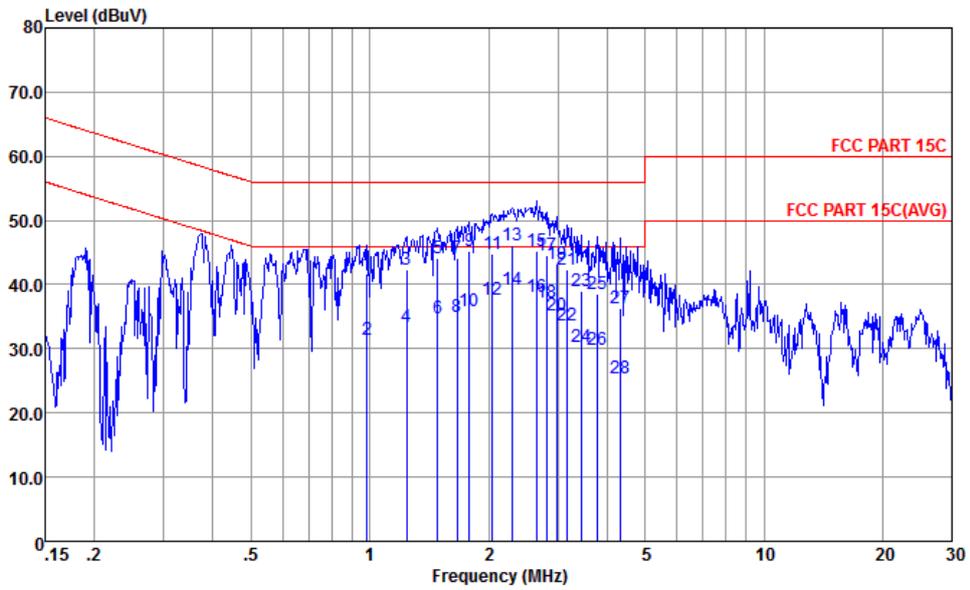
### 3.6.4 Test Setup





3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter 2) + Earphone + Battery 2		

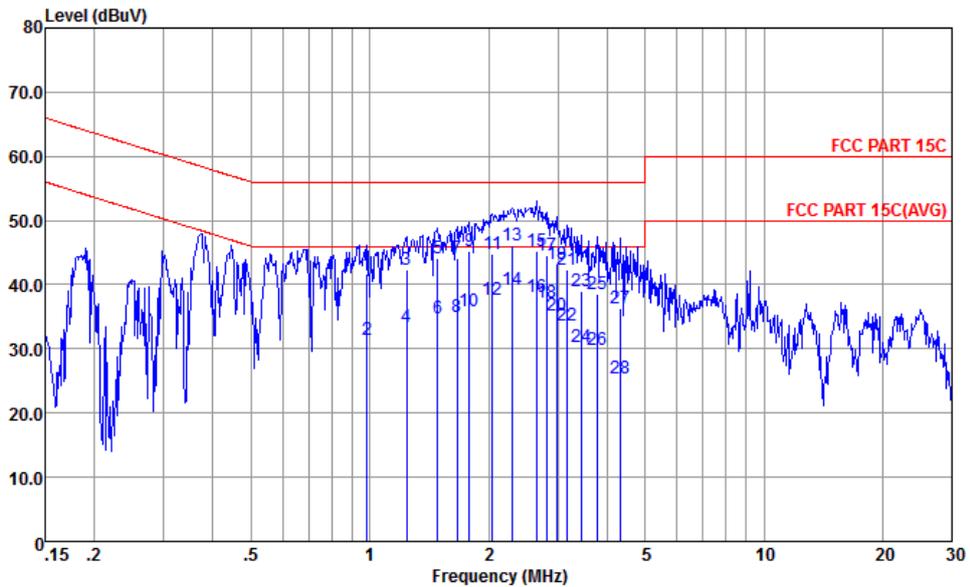


Site : CO01-KS  
 Condition : FCC PART 15C LISN-L-20151024 LINE  
 mode : Mode 2  
 IMEI : 862574030006598/01  
 : #16

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.984	41.64	-14.36	56.00	31.20	0.25	10.19	QP
2	0.984	31.34	-14.66	46.00	20.90	0.25	10.19	Average
3	1.242	42.32	-13.68	56.00	31.90	0.23	10.19	QP
4	1.242	33.32	-12.68	46.00	22.90	0.23	10.19	Average
5	1.487	44.20	-11.80	56.00	33.80	0.21	10.19	QP
6	1.487	34.80	-11.20	46.00	24.40	0.21	10.19	Average
7	1.662	44.19	-11.81	56.00	33.80	0.20	10.19	QP
8	1.662	34.99	-11.01	46.00	24.60	0.20	10.19	Average
9	1.790	45.28	-10.72	56.00	34.90	0.19	10.19	QP
10	1.790	35.98	-10.02	46.00	25.60	0.19	10.19	Average
11	2.044	44.87	-11.13	56.00	34.50	0.18	10.19	QP
12	2.044	37.77	-8.23	46.00	27.40	0.18	10.19	Average
13	2.297	46.18	-9.82	56.00	35.80	0.18	10.20	QP
14 *	2.297	39.28	-6.72	46.00	28.90	0.18	10.20	Average
15	2.650	45.29	-10.71	56.00	34.90	0.18	10.21	QP
16	2.650	38.19	-7.81	46.00	27.80	0.18	10.21	Average



Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter 2) + Earphone + Battery 2		

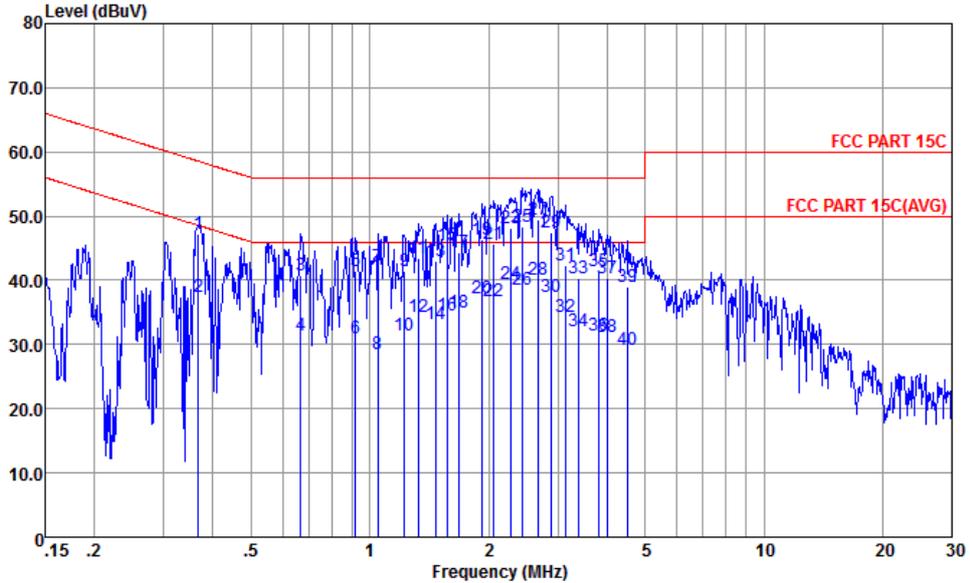


Site : CO01-KS  
 Condition : FCC PART 15C LISN-L-20151024 LINE  
 mode : Mode 2  
 IMEI : 862574030006598/01  
 : #16

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
17	2.824	44.60	-11.40	56.00	34.21	0.18	10.21	QP
18	2.824	37.30	-8.70	46.00	26.91	0.18	10.21	Average
19	2.978	43.20	-12.80	56.00	32.80	0.18	10.22	QP
20	2.978	35.30	-10.70	46.00	24.90	0.18	10.22	Average
21	3.173	42.31	-13.69	56.00	31.90	0.19	10.22	QP
22	3.173	33.61	-12.39	46.00	23.20	0.19	10.22	Average
23	3.436	38.91	-17.09	56.00	28.49	0.19	10.23	QP
24	3.436	30.31	-15.69	46.00	19.89	0.19	10.23	Average
25	3.779	38.62	-17.38	56.00	28.19	0.19	10.24	QP
26	3.779	29.92	-16.08	46.00	19.49	0.19	10.24	Average
27	4.315	36.33	-19.67	56.00	25.90	0.19	10.24	QP
28	4.315	25.33	-20.67	46.00	14.90	0.19	10.24	Average



Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter 2) + Earphone + Battery 2		



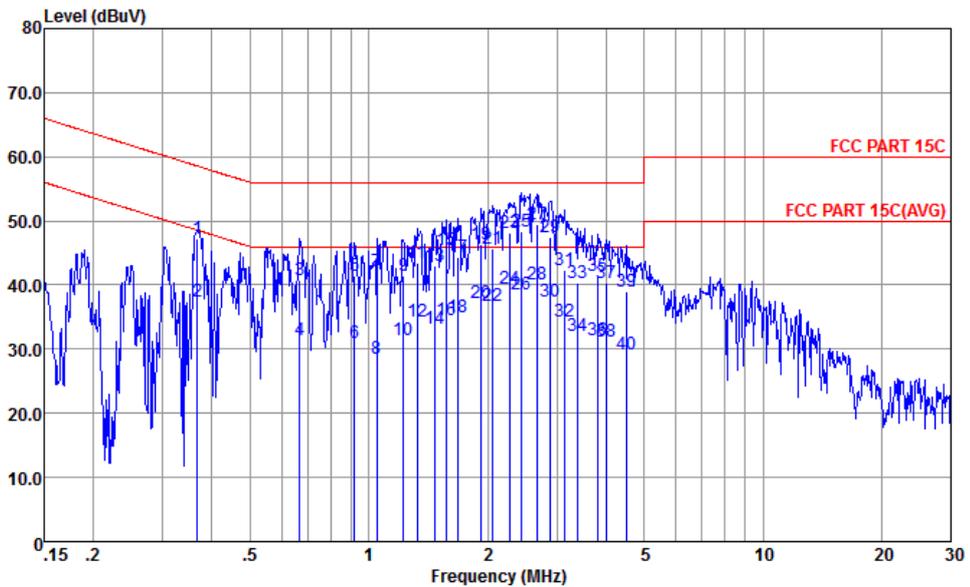
Site : CO01-KS  
 Condition : FCC PART 15C LISN-N-20151024 NEUTRAL

mode : Mode 2  
 IMEI : 862574030006598/01  
 : #16

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.367	47.23	-11.33	58.56	36.69	0.32	10.22	QP
2	0.367	37.43	-11.13	48.56	26.89	0.32	10.22	Average
3	0.668	40.72	-15.28	56.00	30.20	0.34	10.18	QP
4	0.668	31.42	-14.58	46.00	20.90	0.34	10.18	Average
5	0.918	41.35	-14.65	56.00	30.81	0.36	10.18	QP
6	0.918	30.95	-15.05	46.00	20.41	0.36	10.18	Average
7	1.049	42.16	-13.84	56.00	31.60	0.37	10.19	QP
8	1.049	28.46	-17.54	46.00	17.90	0.37	10.19	Average
9	1.223	41.46	-14.54	56.00	30.90	0.37	10.19	QP
10	1.223	31.36	-14.64	46.00	20.80	0.37	10.19	Average
11	1.324	43.36	-12.64	56.00	32.80	0.37	10.19	QP
12	1.324	34.26	-11.74	46.00	23.70	0.37	10.19	Average
13	1.472	43.06	-12.94	56.00	32.49	0.38	10.19	QP
14	1.472	33.26	-12.74	46.00	22.69	0.38	10.19	Average
15	1.568	45.36	-10.64	56.00	34.79	0.38	10.19	QP
16	1.568	34.46	-11.54	46.00	23.89	0.38	10.19	Average
17	1.689	44.37	-11.63	56.00	33.80	0.38	10.19	QP
18	1.689	35.07	-10.93	46.00	24.50	0.38	10.19	Average
19	1.918	46.37	-9.63	56.00	35.80	0.38	10.19	QP
20	1.918	37.27	-8.73	46.00	26.70	0.38	10.19	Average



Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Morris Li	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter 2) + Earphone + Battery 2		



Site : CO01-KS  
 Condition : FCC PART 15C LISN-N-20151024 NEUTRAL  
 mode : Mode 2  
 IMEI : 862574030006598/01  
 : #16

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
21	2.066	45.77	-10.23	56.00	35.20	0.38	10.19	QP
22	2.066	36.77	-9.23	46.00	26.20	0.38	10.19	Average
23	2.273	48.07	-7.93	56.00	37.49	0.38	10.20	QP
24	2.273	39.47	-6.53	46.00	28.89	0.38	10.20	Average
25	2.435	48.38	-7.62	56.00	37.80	0.38	10.20	QP
26	2.435	38.48	-7.52	46.00	27.90	0.38	10.20	Average
27	2.664	49.48	-6.52	56.00	38.90	0.37	10.21	QP
28 *	2.664	40.08	-5.92	46.00	29.50	0.37	10.21	Average
29	2.884	47.49	-8.51	56.00	36.91	0.37	10.21	QP
30	2.884	37.39	-8.61	46.00	26.81	0.37	10.21	Average
31	3.140	42.39	-13.61	56.00	31.80	0.37	10.22	QP
32	3.140	34.29	-11.71	46.00	23.70	0.37	10.22	Average
33	3.399	40.30	-15.70	56.00	29.70	0.37	10.23	QP
34	3.399	32.10	-13.90	46.00	21.50	0.37	10.23	Average
35	3.799	41.40	-14.60	56.00	30.79	0.37	10.24	QP
36	3.799	31.50	-14.50	46.00	20.89	0.37	10.24	Average
37	4.006	40.40	-15.60	56.00	29.80	0.36	10.24	QP
38	4.006	31.20	-14.80	46.00	20.60	0.36	10.24	Average
39	4.501	39.10	-16.90	56.00	28.50	0.36	10.24	QP
40	4.501	29.10	-16.90	46.00	18.50	0.36	10.24	Average



## **3.7 Antenna Requirements**

### **3.7.1 Standard Applicable**

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

### **3.7.2 Antenna Anti-Replacement Construction**

An embedded-in antenna design is used.

### **3.7.3 Antenna Gain**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



## 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 09, 2016	Nov. 07, 2016~ Nov. 11, 2016	Aug. 08, 2017	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 20, 2016	Nov. 07, 2016~ Nov. 11, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Nov. 07, 2016~ Nov. 11, 2016	Jan. 19, 2017	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Aug. 09, 2016	Nov. 24, 2016	Aug. 08, 2017	Radiation (03CH03-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Apr. 22, 2016	Nov. 24, 2016	Apr. 21, 2017	Radiation (03CH03-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 23, 2016	Nov. 24, 2016	Nov. 22, 2017	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 16, 2016	Nov. 24, 2016	Apr. 15, 2017	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 16, 2016	Nov. 24, 2016	Apr. 15, 2017	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Mar. 03, 2016	Nov. 24, 2016	Mar. 02, 2017	Radiation (03CH03-KS)
Amplifier	SONOMA	310N	187289	9kHz~1GHz	Aug. 09, 2016	Nov. 24, 2016	Aug. 08, 2017	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	1943529	1GHz~18GHz	Jan. 20, 2016	Nov. 24, 2016	Jan. 19, 2017	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 13, 2016	Nov. 24, 2016	Oct. 12, 2017	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Nov. 24, 2016	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Nov. 24, 2016	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Nov. 24, 2016	NCR	Radiation (03CH03-KS)
EMI Receiver	R&S	ESC17	100768	9kHz~7GHz;	Apr. 29, 2016	Nov. 15, 2016	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2016	Nov. 15, 2016	Oct. 12, 2017	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2016	Nov. 15, 2016	Oct. 12, 2017	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Nov. 15, 2016	Oct. 12, 2017	Conduction (CO01-KS)

NCR: No Calibration Required



## 5 Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.3dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.5dB
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### Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.5dB
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### Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.6dB
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## **Appendix A. Conducted Test Results**

**A1 - DTS Part**

Test Engineer:	Ivan Zhang	Temperature:	24~25	°C
Test Date:	2016/11/7~2016/11/11	Relative Humidity:	54~55	%

**TEST RESULTS DATA**  
**6dB and 99% Occupied Bandwidth**

2.4GHz Band								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	13.09	8.03	0.50	Pass
11b	1Mbps	1	6	2437	13.14	8.07	0.50	Pass
11b	1Mbps	1	11	2462	13.14	8.05	0.50	Pass
11g	6Mbps	1	1	2412	18.33	16.30	0.50	Pass
11g	6Mbps	1	6	2437	18.53	16.30	0.50	Pass
11g	6Mbps	1	11	2462	18.43	16.30	0.50	Pass
HT20	MCS0	1	1	2412	19.03	17.18	0.50	Pass
HT20	MCS0	1	6	2437	19.18	17.32	0.50	Pass
HT20	MCS0	1	11	2462	18.93	16.64	0.50	Pass

**TEST RESULTS DATA**  
**Peak Power Table**

2.4GHz Band										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
11b	1Mbps	1	1	2412	18.08	30.00	-2.00	16.08	36.00	Pass
11b	1Mbps	1	6	2437	17.96	30.00	-2.00	15.96	36.00	Pass
11b	1Mbps	1	11	2462	17.11	30.00	-2.00	15.11	36.00	Pass
11g	6Mbps	1	1	2412	22.82	30.00	-2.00	20.82	36.00	Pass
11g	6Mbps	1	6	2437	21.67	30.00	-2.00	19.67	36.00	Pass
11g	6Mbps	1	11	2462	21.47	30.00	-2.00	19.47	36.00	Pass
HT20	MCS0	1	1	2412	22.63	30.00	-2.00	20.63	36.00	Pass
HT20	MCS0	1	6	2437	22.12	30.00	-2.00	20.12	36.00	Pass
HT20	MCS0	1	11	2462	21.45	30.00	-2.00	19.45	36.00	Pass

**TEST RESULTS DATA**  
**Average Power Table**  
**(Reporting Only)**

2.4GHz Band						
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
11b	1Mbps	1	1	2412	0.11	15.69
11b	1Mbps	1	6	2437	0.11	13.64
11b	1Mbps	1	11	2462	0.11	14.44
11g	6Mbps	1	1	2412	0.60	14.28
11g	6Mbps	1	6	2437	0.60	12.09
11g	6Mbps	1	11	2462	0.60	12.67
HT20	MCS0	1	1	2412	0.62	14.04
HT20	MCS0	1	6	2437	0.62	12.29
HT20	MCS0	1	11	2462	0.62	12.57

**TEST RESULTS DATA**  
**Peak Power Density**

2.4GHz Band								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
11b	1Mbps	1	1	2412	-7.32	-2.00	8.00	Pass
11b	1Mbps	1	6	2437	-10.02	-2.00	8.00	Pass
11b	1Mbps	1	11	2462	-8.48	-2.00	8.00	Pass
11g	6Mbps	1	1	2412	-12.39	-2.00	8.00	Pass
11g	6Mbps	1	6	2437	-14.00	-2.00	8.00	Pass
11g	6Mbps	1	11	2462	-13.27	-2.00	8.00	Pass
HT20	MCS0	1	1	2412	-11.20	-2.00	8.00	Pass
HT20	MCS0	1	6	2437	-13.71	-2.00	8.00	Pass
HT20	MCS0	1	11	2462	-14.13	-2.00	8.00	Pass



## Appendix B. Radiated Spurious Emission

### 2.4GHz 2400~2483.5MHz

#### WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11b CH 01 2412MHz		2389.82	59.05	-14.95	74	63.6	27	5.47	37.02	147	347	P	H
		2389.95	51.75	-2.25	54	56.3	27	5.47	37.02	147	347	A	H
	*	2412	107.98	-	-	112.38	27.13	5.47	37	147	347	P	H
	*	2410	103.75	-	-	108.15	27.13	5.47	37	147	347	A	H
		2389.95	58.93	-15.07	74	63.48	27	5.47	37.02	302	63	P	V
		2389.95	52.01	-1.99	54	56.56	27	5.47	37.02	302	63	A	V
	*	2412	107.87	-	-	112.27	27.13	5.47	37	302	63	P	V
	*	2410	103.66	-	-	108.06	27.13	5.47	37	302	63	A	V
802.11b CH 06 2437MHz		2382.28	51.87	-22.13	74	56.49	26.95	5.45	37.02	121	341	P	H
		2389.82	40.6	-13.40	54	45.15	27	5.47	37.02	121	341	A	H
	*	2438	99.72	-	-	103.81	27.39	5.49	36.97	121	341	P	H
	*	2438	95.19	-	-	99.28	27.39	5.49	36.97	121	341	A	H
		2484.94	51.89	-22.11	74	55.68	27.64	5.51	36.94	121	341	P	H
		2493.34	41	-13.00	54	44.64	27.77	5.52	36.93	121	341	A	H
		2381.24	51.06	-22.94	74	55.68	26.95	5.45	37.02	295	62	P	V
		2389.82	40.62	-13.38	54	45.17	27	5.47	37.02	295	62	A	V
	*	2438	100.12	-	-	104.21	27.39	5.49	36.97	295	62	P	V
	*	2438	95.73	-	-	99.82	27.39	5.49	36.97	295	62	A	V
		2492.86	52.03	-21.97	74	55.67	27.77	5.52	36.93	295	62	P	V
	2492.44	40.87	-13.13	54	44.51	27.77	5.52	36.93	295	62	A	V	



802.11b CH 11 2462MHz	*	2462	103.48	-	-	107.43	27.51	5.5	36.96	123	342	P	H
	*	2462	99.32	-	-	103.27	27.51	5.5	36.96	123	342	A	H
		2490.28	52.35	-21.65	74	55.99	27.77	5.52	36.93	123	342	P	H
		2490.46	41.56	-12.44	54	45.2	27.77	5.52	36.93	123	342	A	H
	*	2462	103.31	-	-	107.26	27.51	5.5	36.96	317	57	P	V
	*	2462	99.14	-	-	103.09	27.51	5.5	36.96	317	57	A	V
		2488.42	52.22	-21.78	74	55.86	27.77	5.52	36.93	317	57	P	V
		2483.5	41.19	-12.81	54	44.98	27.64	5.51	36.94	317	57	A	V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> </ol>												



**2.4GHz 2400~2483.5MHz  
WIFI 802.11b (Harmonic @ 3m)**

WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB/m )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
802.11b CH 01 2412MHz		4824	41.8	-32.20	74	39.25	31.51	7.72	36.68	100	360	P	H
		4824	42.77	-31.23	74	40.22	31.51	7.72	36.68	100	360	P	V
802.11b CH 06 2437MHz		4872	43.07	-30.93	74	40.38	31.59	7.76	36.66	100	360	P	H
		7308	45.94	-28.06	74	38.84	34.03	9.76	36.69	100	360	P	H
		4872	42.27	-31.73	74	39.58	31.59	7.76	36.66	100	360	P	V
		7308	45.7	-28.30	74	38.6	34.03	9.76	36.69	100	360	P	V
802.11b CH 11 2462MHz		4926	43.13	-30.87	74	40.31	31.67	7.8	36.65	100	360	P	H
		7386	46.62	-27.38	74	39.25	34.29	9.86	36.78	100	360	P	H
		4926	43.25	-30.75	74	40.43	31.67	7.8	36.65	100	360	P	V
		7386	45.34	-28.66	74	37.97	34.29	9.86	36.78	100	360	P	V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**2.4GHz 2400~2483.5MHz  
WIFI 802.11g (Band Edge @ 3m)**

WIFI Ant. 2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB/m )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
802.11g CH 01 2412MHz		2389.95	63.12	-10.88	74	67.67	27	5.47	37.02	143	333	P	H
		2389.95	48.67	-5.33	54	53.22	27	5.47	37.02	143	333	A	H
	*	2406	102.35	-	-	106.75	27.13	5.47	37	143	333	P	H
	*	2404	94.59	-	-	98.99	27.13	5.47	37	143	333	A	H
		2389.04	55.86	-18.14	74	60.41	27	5.47	37.02	300	150	P	V
		2389.82	42.59	-11.41	54	47.14	27	5.47	37.02	300	150	A	V
	*	2406	96.02	-	-	100.42	27.13	5.47	37	300	150	P	V
	*	2404	88.36	-	-	92.76	27.13	5.47	37	300	150	A	V
802.11g CH 06 2437MHz		2384.49	52.9	-21.10	74	57.52	26.95	5.45	37.02	167	348	P	H
		2384.62	43.14	-10.86	54	47.76	26.95	5.45	37.02	167	348	A	H
	*	2438	100.83	-	-	104.92	27.39	5.49	36.97	167	348	P	H
	*	2436	92.19	-	-	96.44	27.26	5.48	36.99	167	348	A	H
		2493.04	52.5	-21.50	74	56.14	27.77	5.52	36.93	167	348	P	H
		2489.26	42.29	-11.71	54	45.93	27.77	5.52	36.93	167	348	A	H
		2384.88	52.3	-21.70	74	56.92	26.95	5.45	37.02	281	69	P	V
		2384.88	42.78	-11.22	54	47.4	26.95	5.45	37.02	281	69	A	V
	*	2444	98.51	-	-	102.6	27.39	5.49	36.97	281	69	P	V
	*	2438	90.95	-	-	95.04	27.39	5.49	36.97	281	69	A	V
		2489.86	52.32	-21.68	74	55.96	27.77	5.52	36.93	281	69	P	V
		2489.86	41.94	-12.06	54	45.58	27.77	5.52	36.93	281	69	A	V



802.11g CH 11 2462MHz	*	2458	99.72	-	-	103.67	27.51	5.5	36.96	105	220	P	H
	*	2462	91.76	-	-	95.71	27.51	5.5	36.96	105	220	A	H
		2484.04	59.48	-14.52	74	63.27	27.64	5.51	36.94	105	220	P	H
		2483.5	44.9	-9.10	54	48.69	27.64	5.51	36.94	105	220	A	H
	*	2462	93.89	-	-	97.84	27.51	5.5	36.96	100	163	P	V
	*	2462	86.05	-	-	90	27.51	5.5	36.96	100	163	A	V
		2483.5	56.04	-17.96	74	59.83	27.64	5.51	36.94	100	163	P	V
		2483.5	41.86	-12.14	54	45.65	27.64	5.51	36.94	100	163	A	V
<b>Remark</b>	<ol style="list-style-type: none"> <li>1. No other spurious found.</li> <li>2. All results are PASS against Peak and Average limit line.</li> </ol>												



2.4GHz 2400~2483.5MHz
WIFI 802.11g (Harmonic @ 3m)

Table with 14 columns: WIFI Ant. 1, Note, Frequency (MHz), Level (dBµV/m), Over Limit (dB), Limit Line (dBµV/m), Read Level (dBµV), Antenna Factor (dB/m), Cable Loss (dB), Preamp Factor (dB), Ant Pos (cm), Table Pos (deg), Peak Avg. (P/A), Pol. (H/V). Rows include data for CH 01 (2412MHz) and CH 06 (2437MHz).



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

Table with 14 columns: WIFI Ant. 2, Note, Frequency (MHz), Level (dBµV/m), Over Limit (dB), Limit Line (dBµV/m), Read Level (dBµV), Antenna Factor (dB/m), Cable Loss (dB), Preamp Factor (dB), Ant Pos (cm), Table Pos (deg), Peak Avg. (P/A), Pol. (H/V). Rows include data for 802.11n HT20 CH 01 (2412MHz) and 802.11n CH 06 (2437MHz).



802.11n HT20 CH 11 2462MHz	*	2456	99.5	-	-	103.45	27.51	5.5	36.96	323	334	P	H
	*	2462	91.59	-	-	95.54	27.51	5.5	36.96	323	334	A	H
		2483.5	63.88	-10.12	74	67.67	27.64	5.51	36.94	323	334	P	H
		2483.56	46.3	-7.70	54	50.09	27.64	5.51	36.94	323	334	A	H
	*	2456	101.23	-	-	105.18	27.51	5.5	36.96	100	29	P	V
	*	2462	93.81	-	-	97.76	27.51	5.5	36.96	100	29	A	V
		2484.94	66.2	-7.80	74	69.99	27.64	5.51	36.94	100	29	P	V
	2483.56	49.09	-4.91	54	52.88	27.64	5.51	36.94	100	29	A	V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: WIFI Ant. 1, Note, Frequency (MHz), Level (dBµV/m), Over Limit (dB), Limit Line (dBµV/m), Read Level (dBµV), Antenna Factor (dB/m), Cable Loss (dB), Preamp Factor (dB), Ant Pos (cm), Table Pos (deg), Peak Avg. (P/A), Pol. (H/V). Rows include test results for 802.11n HT20 CH 01 (2412MHz), CH 06 (2437MHz), and CH 11 (2462MHz). A Remark section at the bottom states: '1. No other spurious found. 2. All results are PASS against Peak and Average limit line.'



Emission below 1GHz
2.4GHz WIFI 802.11b (LF)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains 12 rows of test data for 2.4GHz WIFI 802.11b LF and a Remark section at the bottom.



Note symbol

*	<b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is <b>over limit</b> line.
P/A	<b>Peak</b> or <b>Average</b>
H/V	<b>Horizontal</b> or <b>Vertical</b>



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

- Level(dBμV/m) =  
Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
- Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 2390MHz:**

- Level(dBμV/m)  
= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)  
= 55.45 (dBμV/m)
- Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.45(dBμV/m) – 74(dBμV/m)  
= -18.55(dB)

**For Average Limit @ 2390MHz:**

- Level(dBμV/m)  
= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)  
= 43.54 (dBμV/m)
- Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 43.54(dBμV/m) – 54(dBμV/m)  
= -10.46(dB)

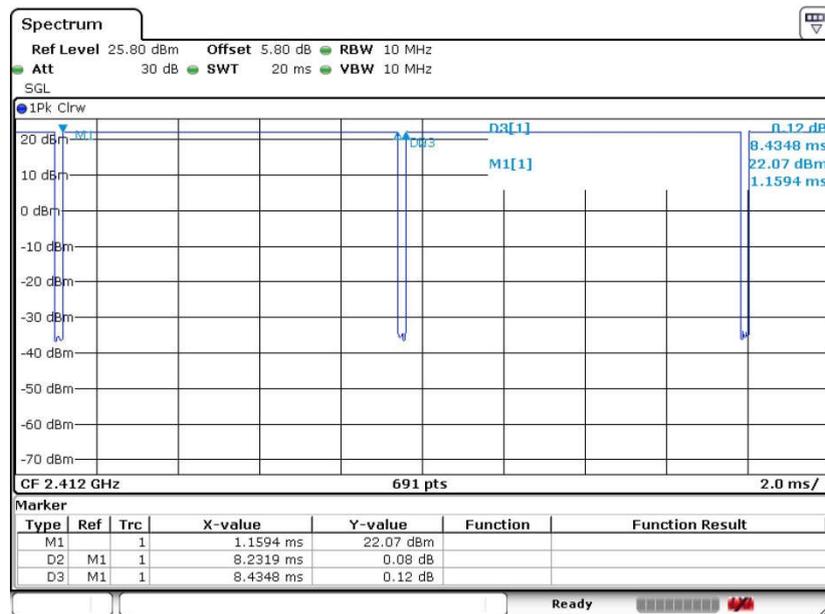
Both peak and average measured complies with the limit line, so test result is “PASS”.



### Appendix C. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11b	97.59	8.23	0.12	300Hz
802.11g	87.50	1.37	0.73	1kHz
802.11n HT20	86.76	1.28	1kHz	

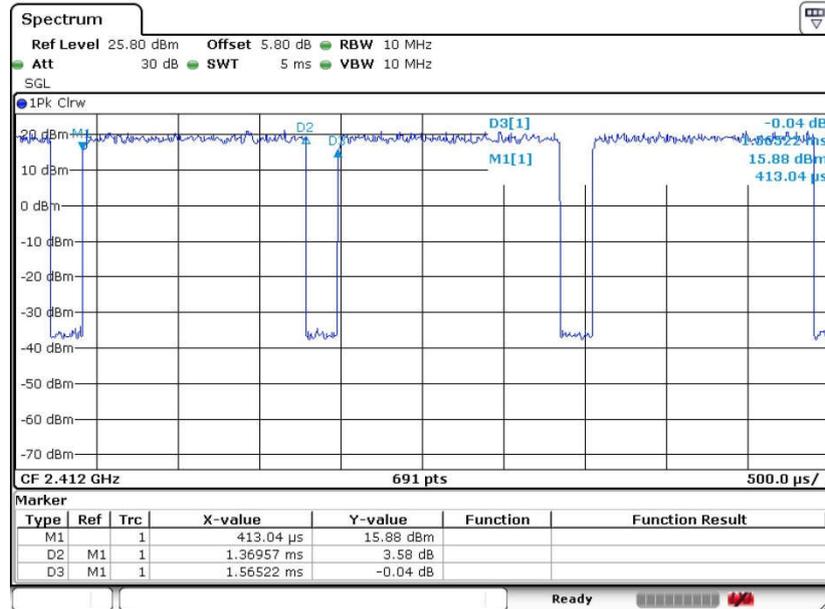
#### 802.11b



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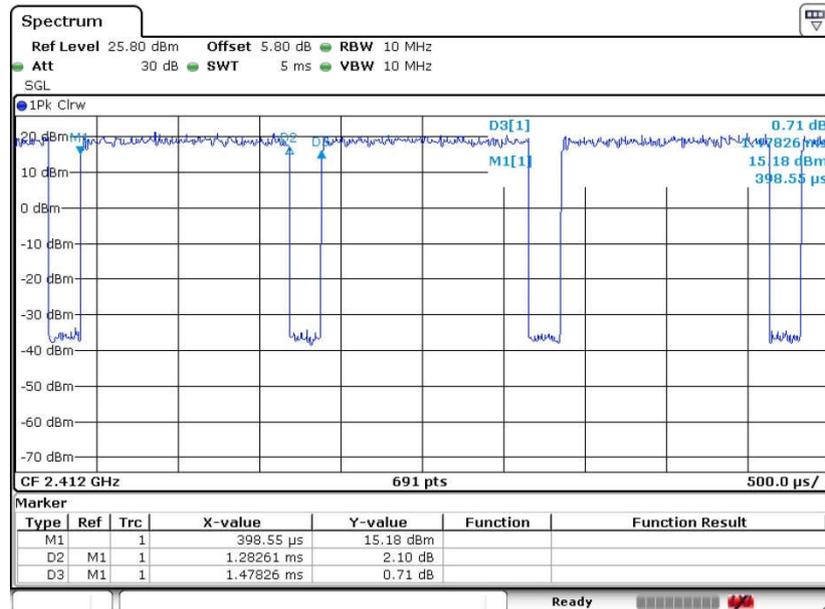


802.11g



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802.11n20



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