



FCC RF Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : LTE uFi
BRAND NAME : ZTE
MODEL NAME : MF985
FCC ID : SRQ-MF985
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Nov. 15, 2017 and testing was completed on Jan. 01, 2018. 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.

Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

***No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335
China***



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test.....	5
1.4 Product Specification of Equipment Under Test.....	6
1.5 Modification of EUT	6
1.6 Testing Location	7
1.7 Applicable Standards.....	7
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	8
2.1 Carrier Frequency and Channel	8
2.2 Test Mode.....	9
2.3 Connection Diagram of Test System.....	10
2.4 Support Unit used in test configuration and system	11
2.5 EUT Operation Test Setup	12
2.6 Measurement Results Explanation Example.....	12
3 TEST RESULT	13
3.1 6dB Bandwidth Measurement	13
3.2 Peak Output Power Measurement	15
3.3 Power Spectral Density Measurement	16
3.4 Conducted Band Edges and Spurious Emission Measurement	18
3.5 Radiated Band Edges and Spurious Emission Measurement	37
3.6 AC Conducted Emission Measurement.....	41
3.7 Antenna Requirements.....	45
4 LIST OF MEASURING EQUIPMENT	46
5 UNCERTAINTY OF EVALUATION	47
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. RADIATED SPURIOUS EMISSION	
APPENDIX C. DUTY CYCLE PLOTS	
APPENDIX D. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR7N1502A	Rev. 01	Initial issue of report	Jan. 10, 2018

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 0.49 dB at 2389.560 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 13.22 dB at 0.440 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	
Equipment	LTE uFi
Brand Name	ZTE
Model Name	MF985
FCC ID	SRQ-MF985
EUT supports Radios application	WCDMA/HSPA/HSPA+(16QAM uplink is not supported)/LTE/ WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80
IMEI Code	Conducted: N/A Conduction: 867358030002319 Radiation: N/A
HW Version	MF985HWV1.1
SW Version	MF985V1.3
EUT Stage	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	<Ant. 1> 802.11b : 18.05 dBm (0.0638 W) 802.11g : 19.72 dBm (0.0938 W) <Ant. 2> 802.11b : 17.75 dBm (0.0596 W) 802.11g : 19.68 dBm (0.0929 W) MIMO <Ant. 1 + 2> 802.11n HT20 : 22.91 dBm (0.1954 W) 802.11n HT40 : 23.54 dBm (0.2259 W)		
Antenna Type / Gain	<Ant 1> PIFA Antenna with gain 3.26 dBi <Ant 2> PIFA Antenna with gain 2.79 dBi		
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)		
Antenna Function for Transmitter		Ant. 1	Ant. 2
	802.11 b/g/n SISO	V	V
	802.11 n MIMO	V	V

Note:

1. MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.
2. For 802.11b/g SISO mode, we only test one antenna according to the max conducted power.
3. For 802.11n, we only test MIMO mode due to the MIMO power is higher than SISO power.

1.5 Modification of EUT

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



1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No. is CN5013.

Test Site	Sporton International (Kunshan) Inc.			
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL : +86-512-57900158 FAX : +86-512-57900958			
Test Site No.	Sporton Site No.			FCC Test Firm Registration No.
	TH01-KS	03CH03-KS	CO01-KS	630927

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 v04
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- 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.

Single Antenna

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps

MIMO Antenna

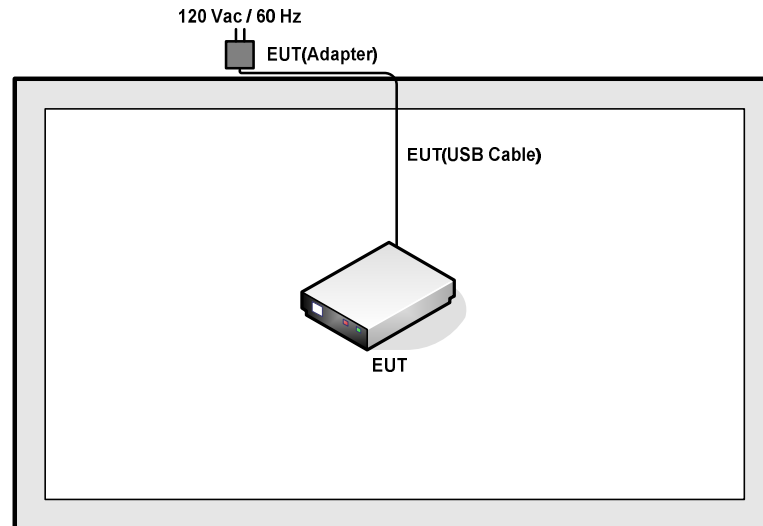
Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 :WCDMA Band V Idle + WLAN Link(2.4G) + USB Cable(Charging from Adapter)

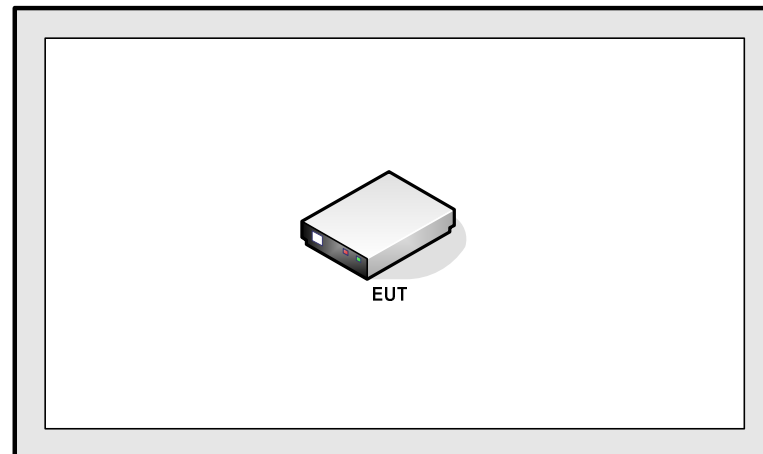
2.3 Connection Diagram of Test System

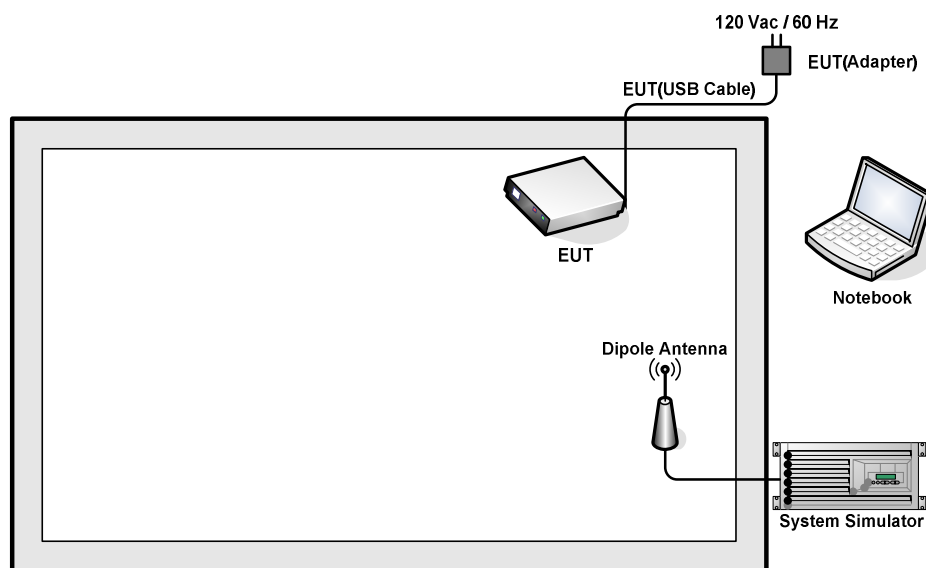
<WLAN Tx Mode>

802.11b/g for Ant 1 / 802.11n40 for Ant 1+2



802.11b/g for Ant 2 / 802.11n20 for Ant 1+2



<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.	Notebook	Lenovo	G40-80	PRC4	N/A	AC I/P: Unshielded, 1.8m DC O/P: Shielded, 1.8 m
3.	SD Card	Kingston	SDC4/4GB	N/A	N/A	Unshielded, 1.8 m



2.5 EUT Operation Test Setup

For WLAN RF test items, an 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 5.8dB.

Offset(dB) = RF cable loss(dB).

= 5.8 (dB)

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.

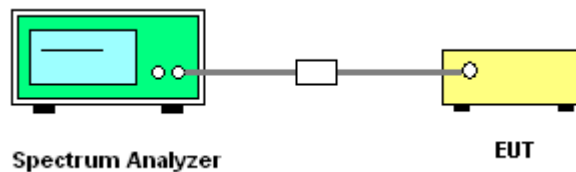
3.1.2 Measuring Instruments

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 v04.
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.

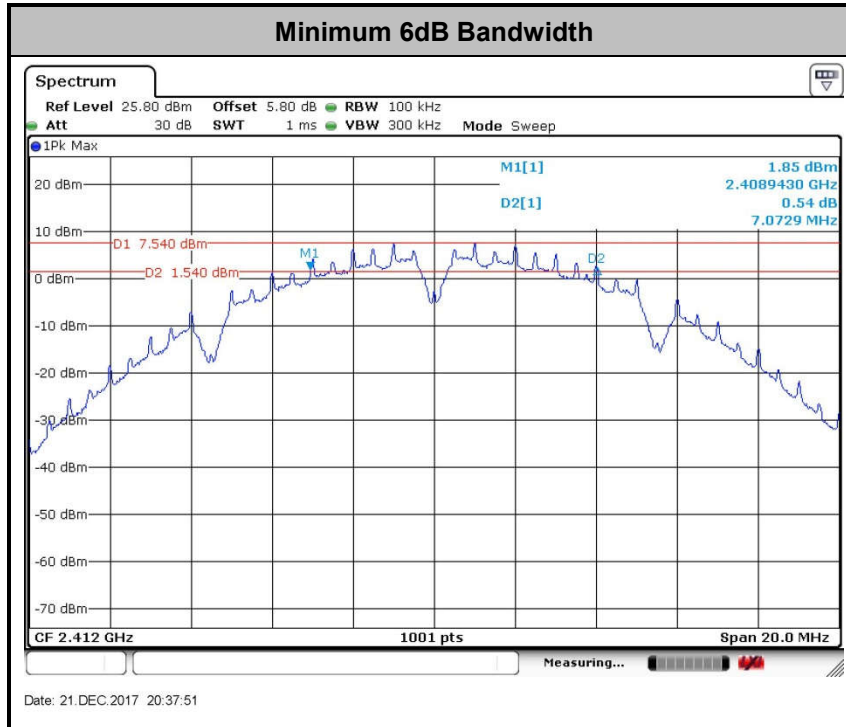
3.1.4 Test Setup





3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



3.2 Peak Output Power Measurement

3.2.1 Limit of Peak Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi is 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.

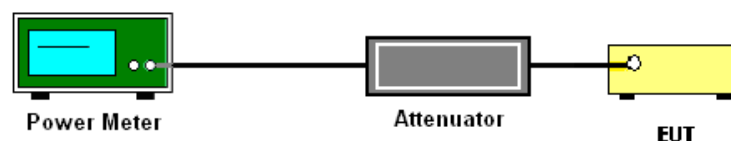
3.2.2 Measuring Instruments

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 v04 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.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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 v04.
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.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

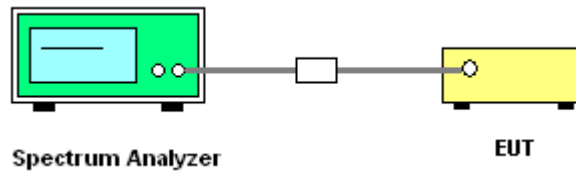
If measurements performed using method (2) plus $10 \log(N)$ exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

Method (1): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

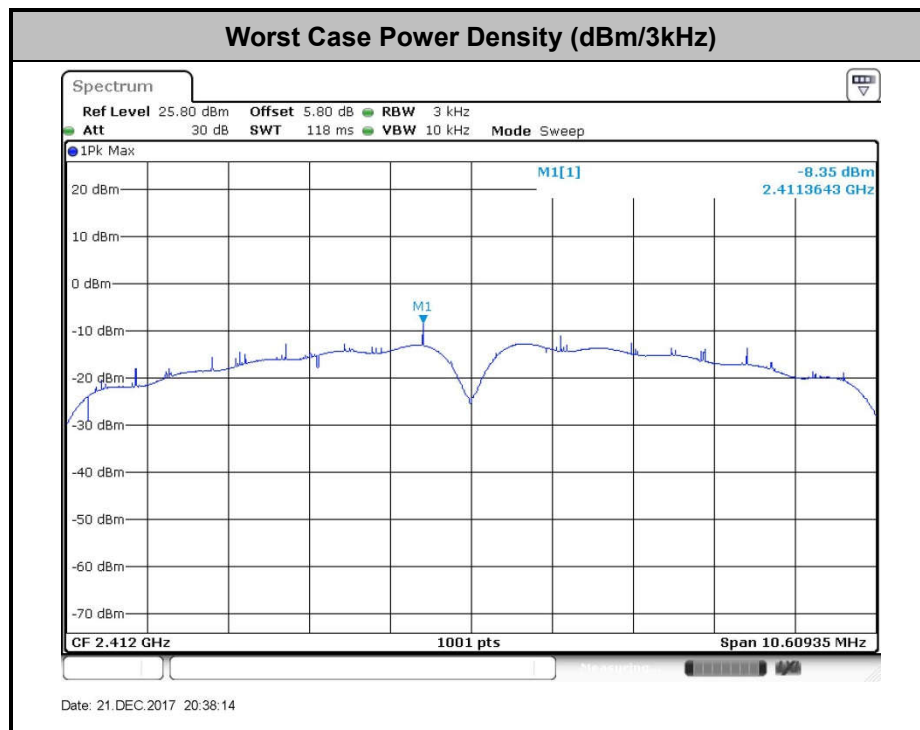
Method (2): Measure and add $10 \log(N)$ dB, where N is the number of outputs. (N=2)

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.

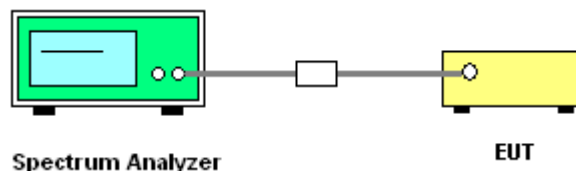
3.4.2 Measuring Instruments

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 v04.
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.
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

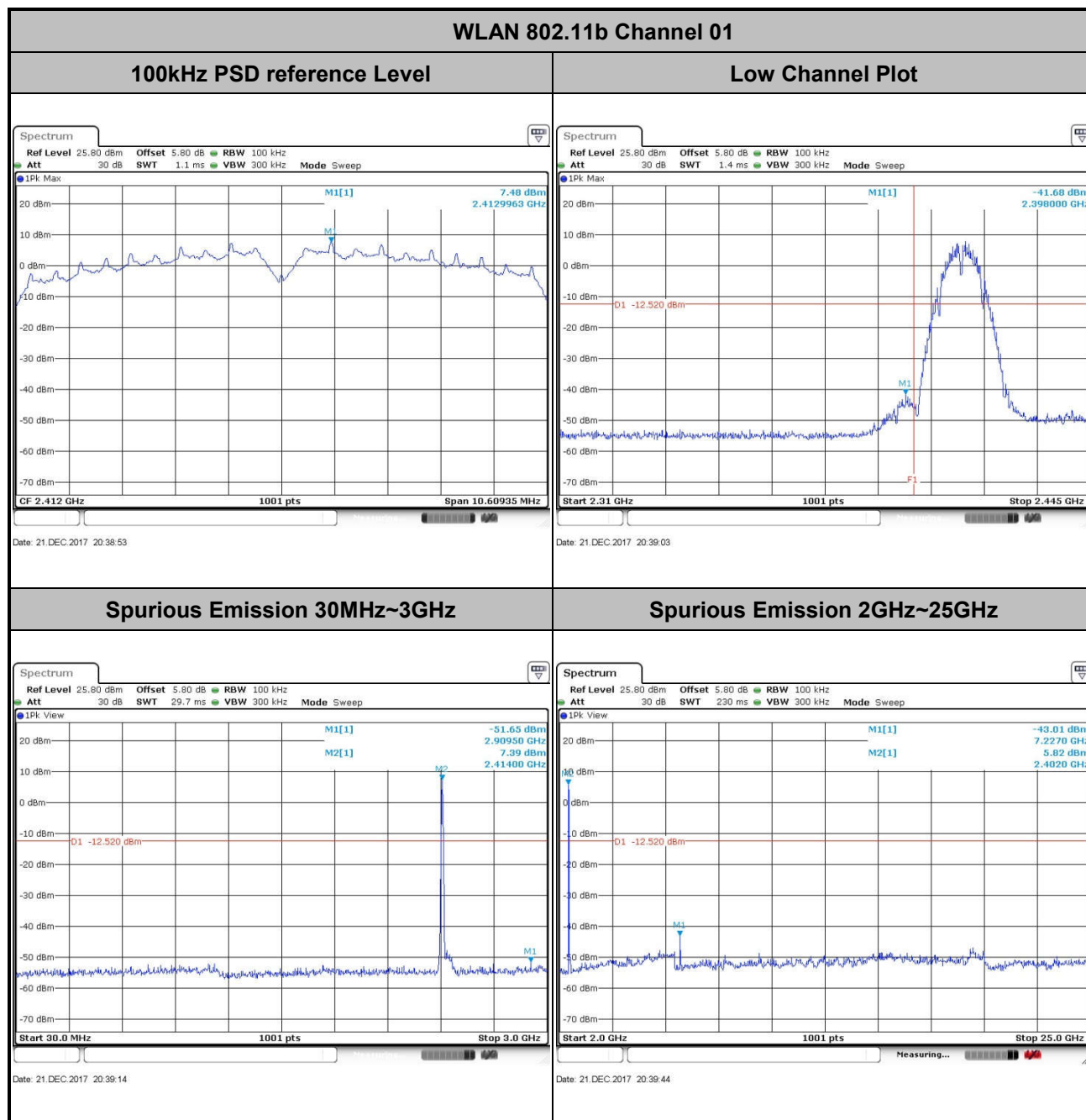




3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Number of TX = 1, Ant. 1 (Measured)

Number of TX	1	Ant. :	1
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~55%
Test Channel :	01	Test Engineer :	Silent Hai

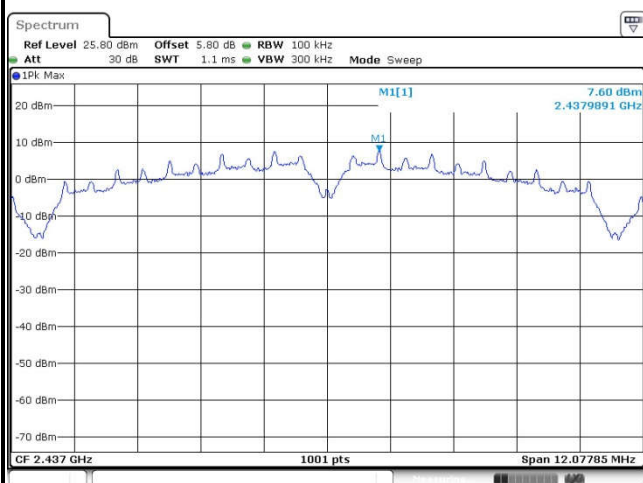




Number of TX :	1	Ant. :	1
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~55%
Test Channel :	06	Test Engineer :	Silent Hai

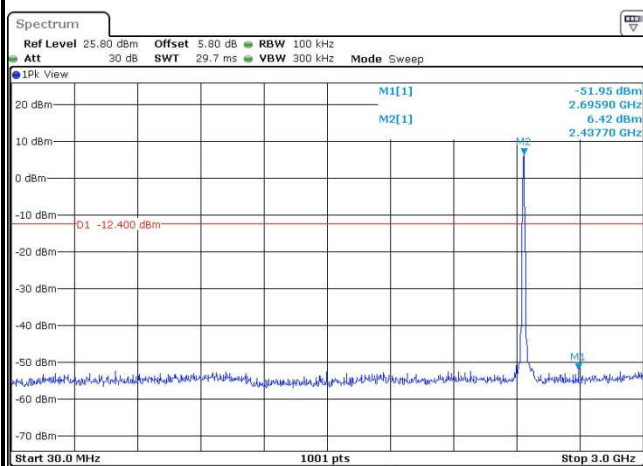
WLAN 802.11b Channel 06

100kHz PSD reference Level



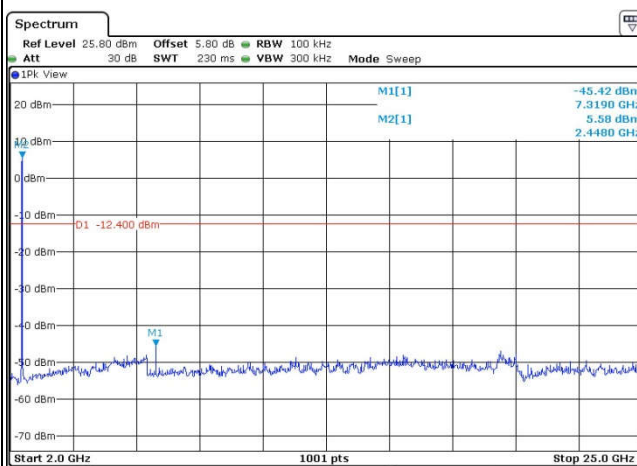
Date: 21 DEC 2017 20:29:06

Spurious Emission 30MHz~3GHz



Date: 21 DEC 2017 20:29:16

Spurious Emission 2GHz~25GHz



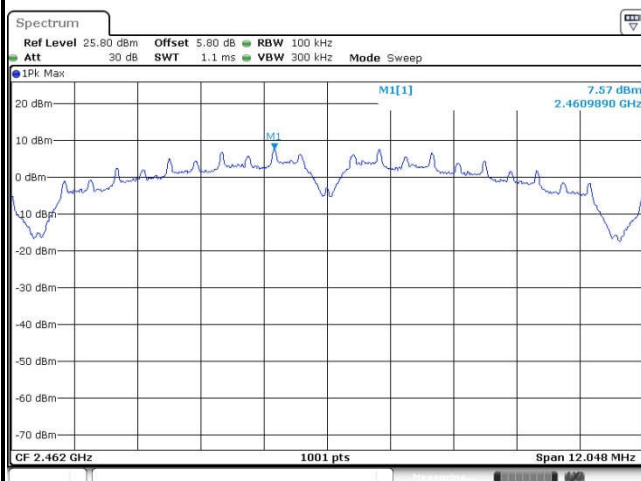
Date: 21 DEC 2017 20:29:43



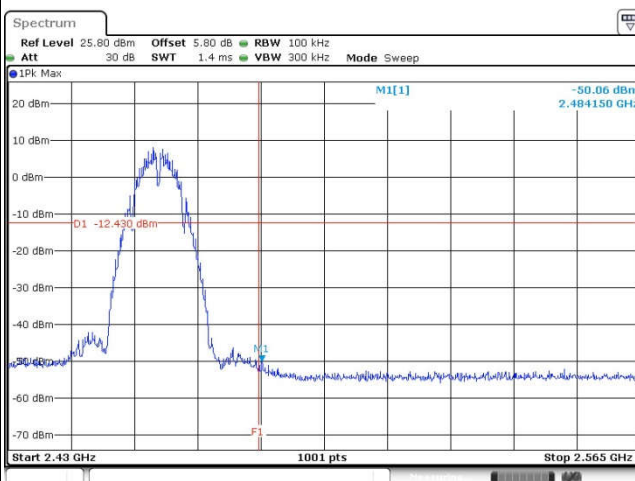
Number of TX :	1	Ant. :	1
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~55%
Test Channel :	11	Test Engineer :	Silent Hai

WLAN 802.11b Channel 11

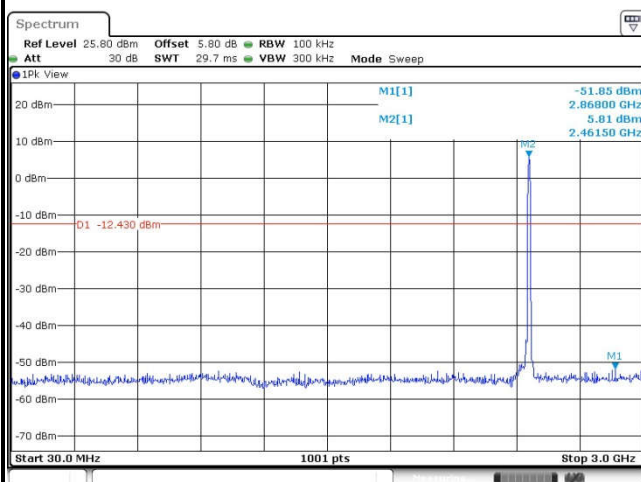
100kHz PSD reference Level



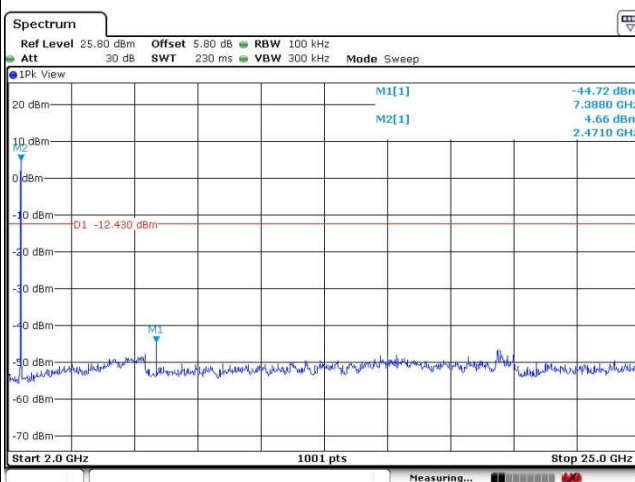
High Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

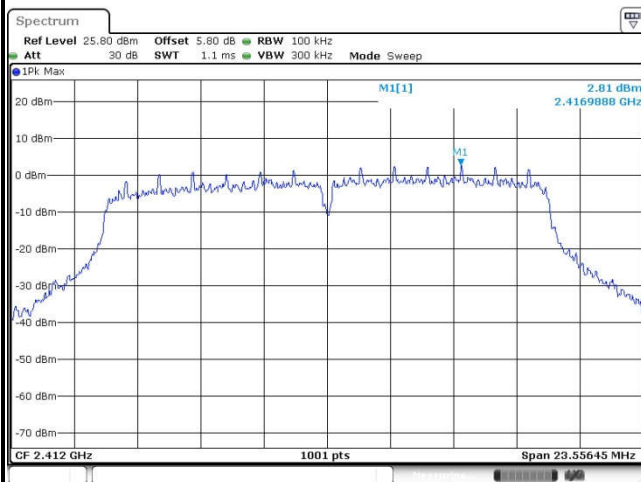




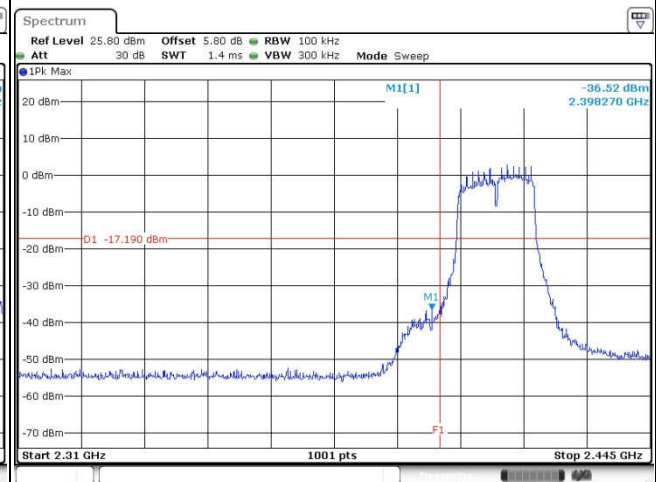
Number of TX :	1	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~55%
Test Channel :	01	Test Engineer :	Silent Hai

WLAN 802.11g Channel 01

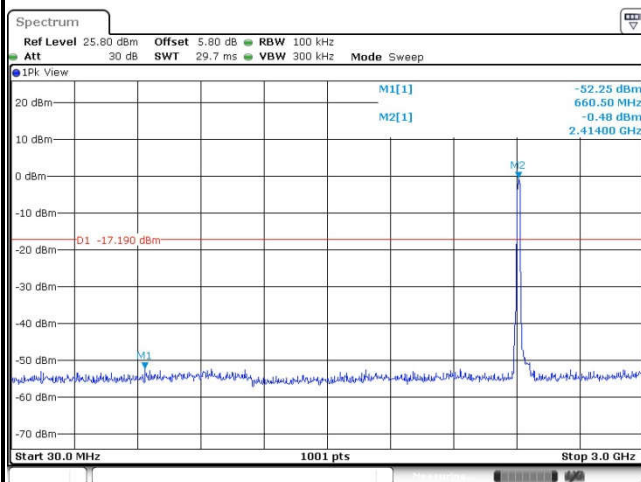
100kHz PSD reference Level



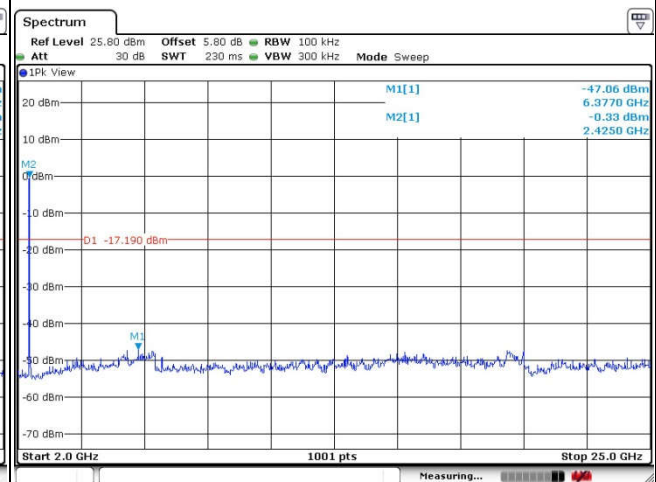
Low Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

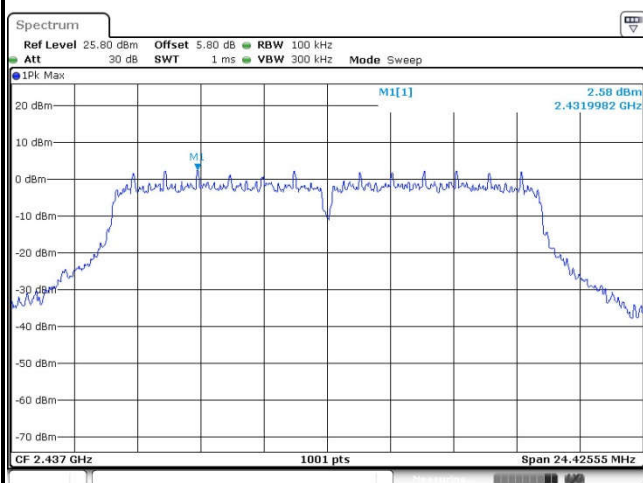




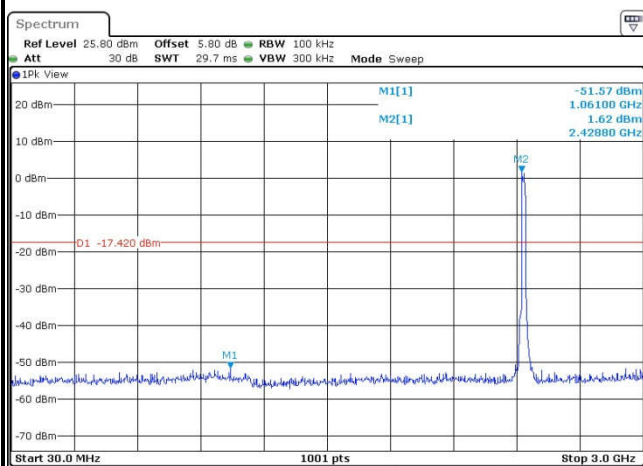
Number of TX :	1	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~55%
Test Channel :	06	Test Engineer :	Silent Hai

WLAN 802.11g Channel 06

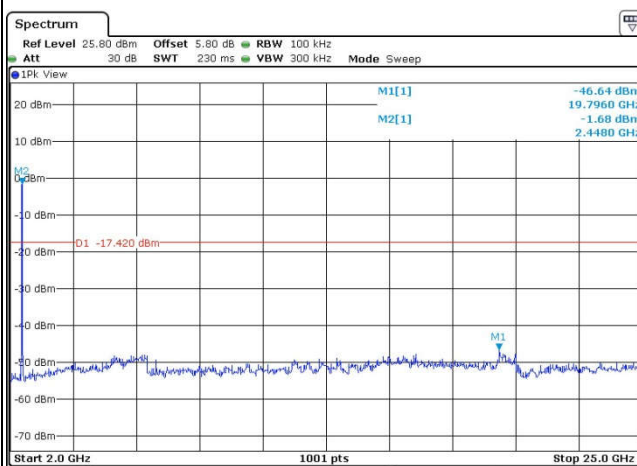
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

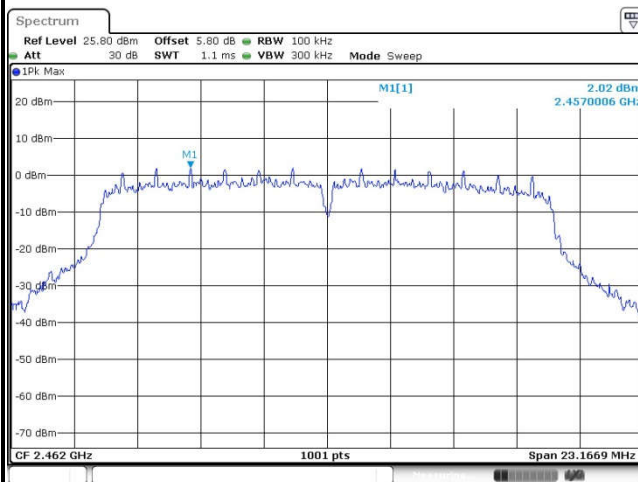




Number of TX :	1	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~55%
Test Channel :	11	Test Engineer :	Silent Hai

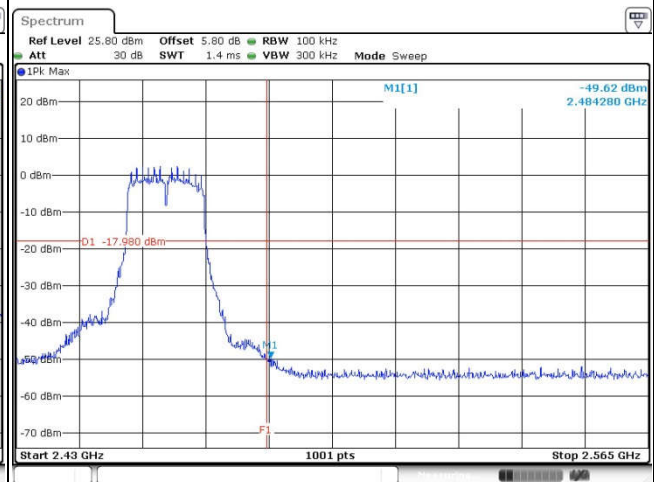
WLAN 802.11g Channel 11

100kHz PSD reference Level



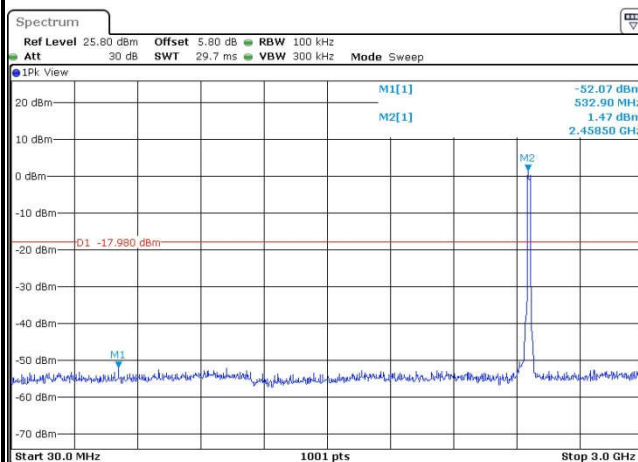
Date: 21 DEC 2017 21:08:43

High Channel Plot



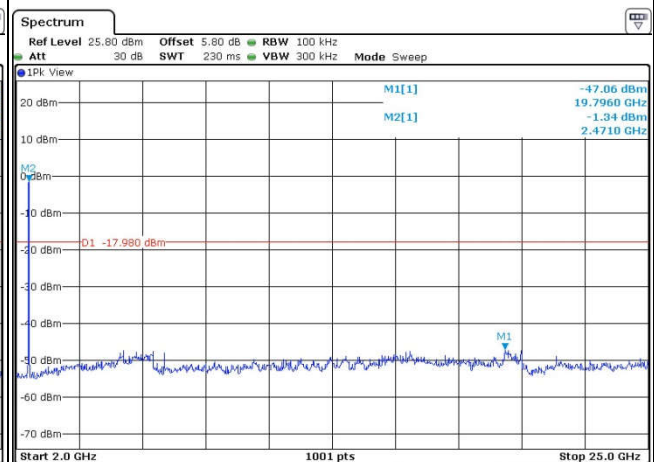
Date: 21 DEC 2017 21:09:00

Spurious Emission 30MHz~3GHz



Date: 21 DEC 2017 21:09:11

Spurious Emission 2GHz~25GHz

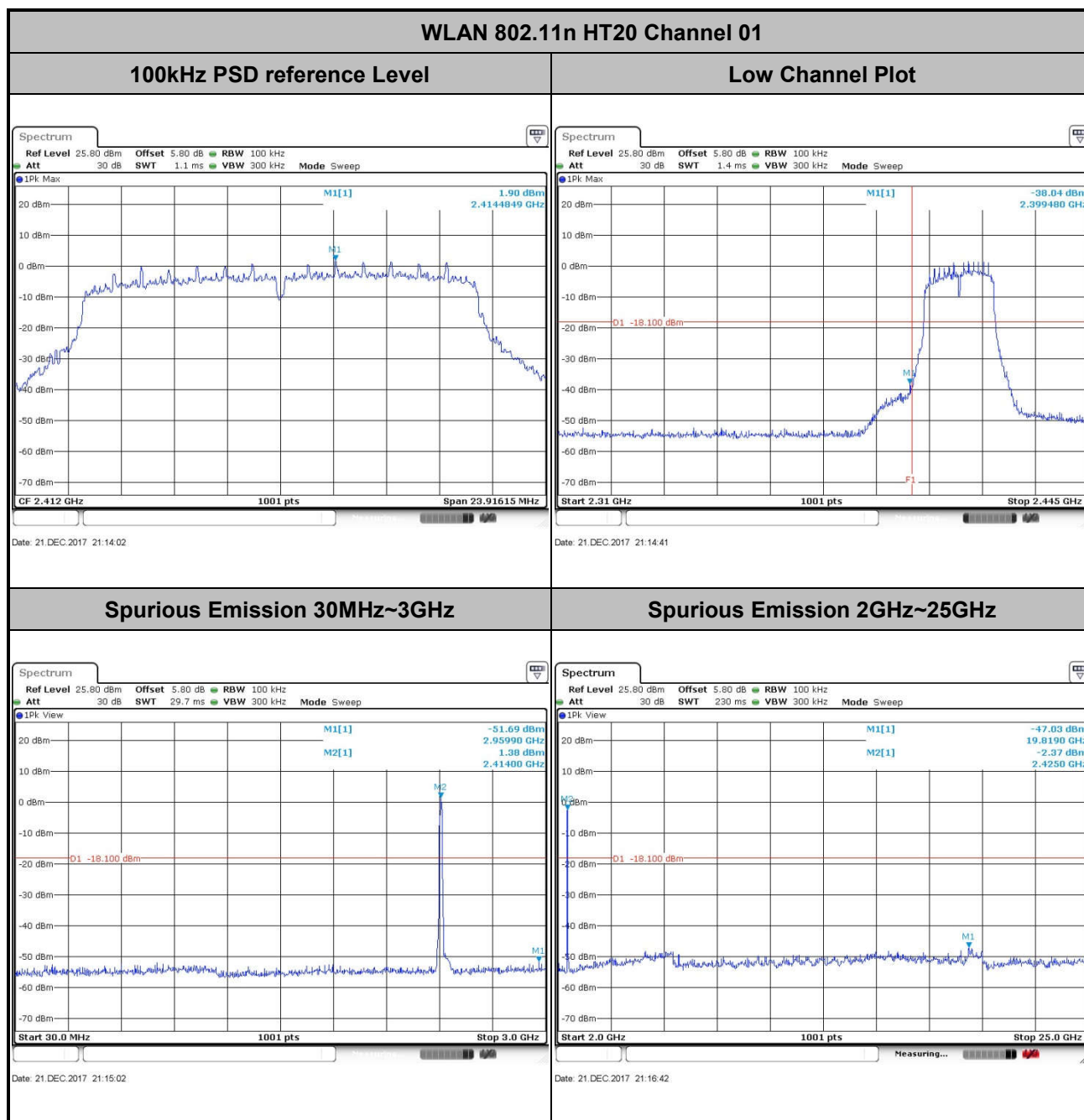


Date: 21 DEC 2017 21:10:02



Number of TX = 2, Ant. 1 (Measured)

Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~55%
Test Channel :	01	Test Engineer :	Silent Hai

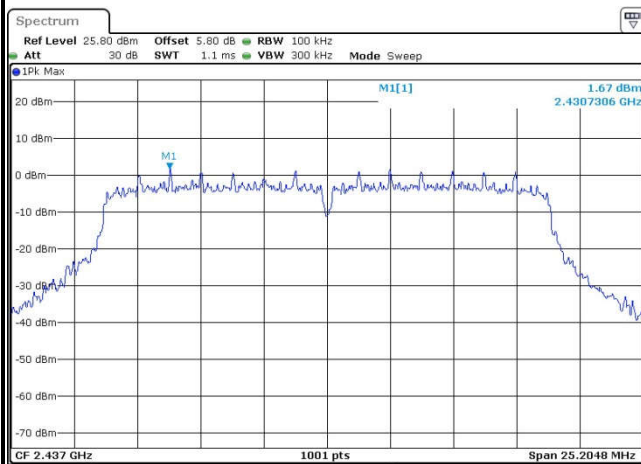




Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~55%
Test Channel :	06	Test Engineer :	Silent Hai

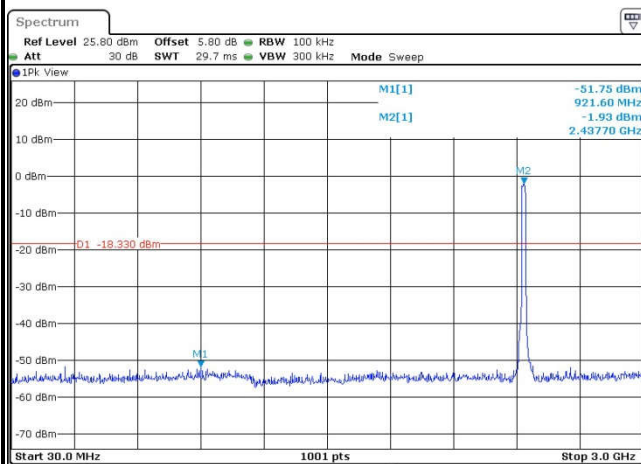
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



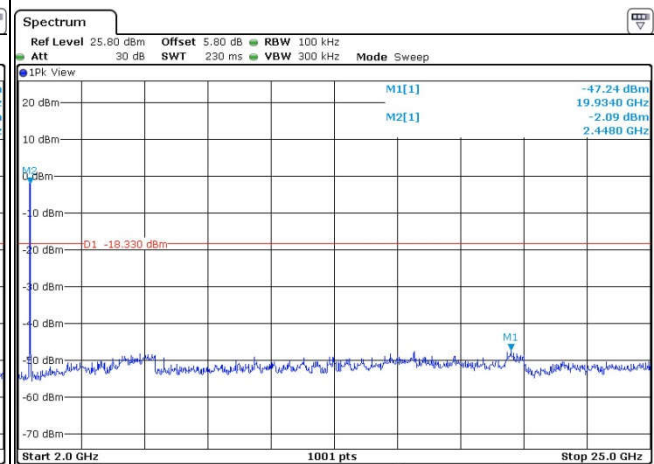
Date: 21 DEC 2017 21:24:18

Spurious Emission 30MHz~3GHz



Date: 21 DEC 2017 21:25:17

Spurious Emission 2GHz~25GHz



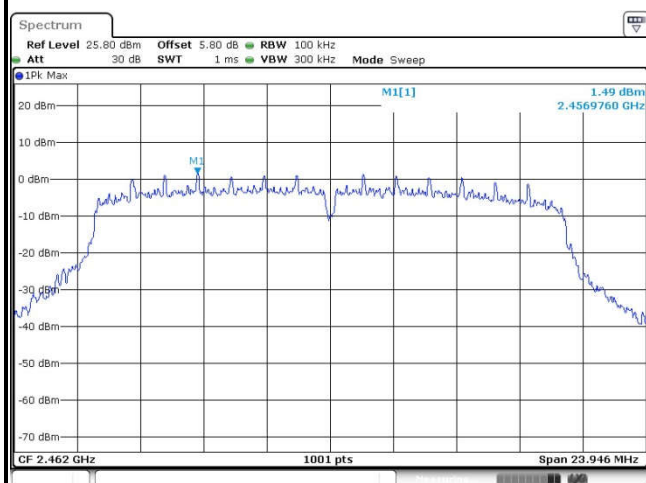
Date: 21 DEC 2017 21:25:50



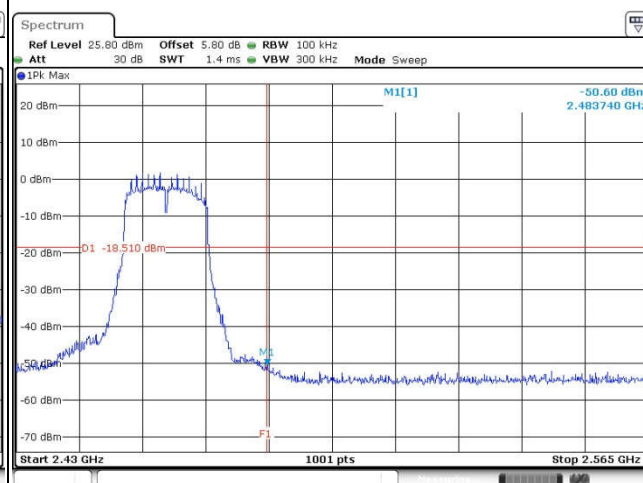
Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~55%
Test Channel :	11	Test Engineer :	Silent Hai

WLAN 802.11n HT20 Channel 11

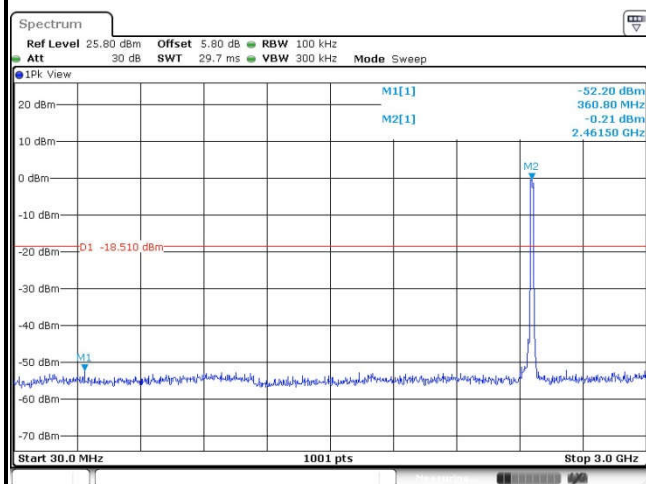
100kHz PSD reference Level



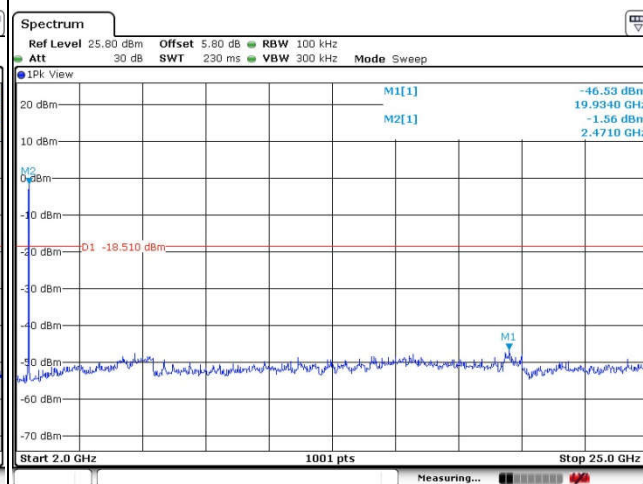
High Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

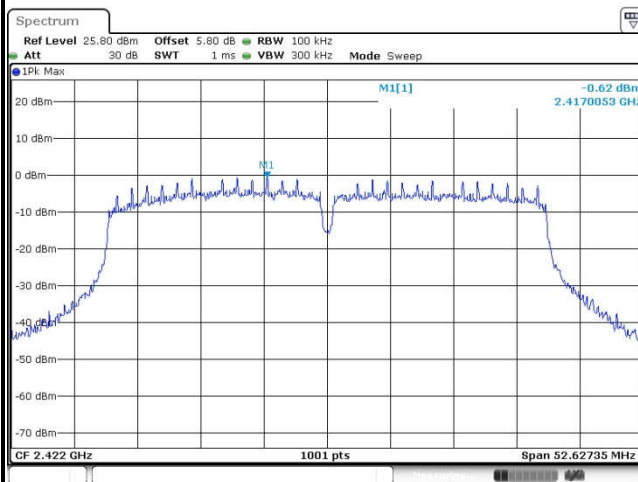




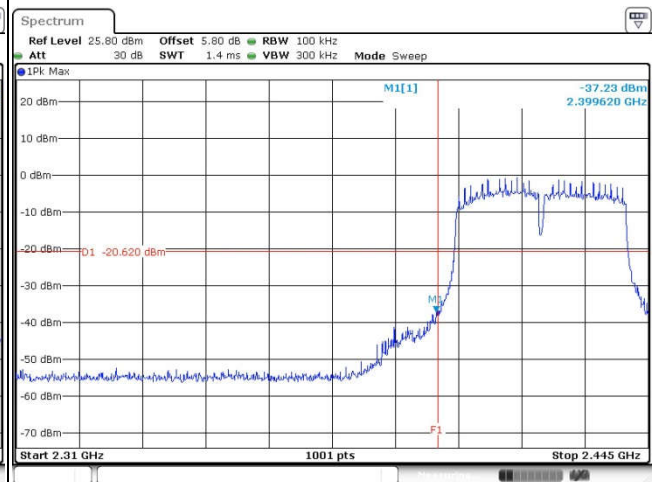
Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT40	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~55%
Test Channel :	03	Test Engineer :	Silent Hai

WLAN 802.11n HT40 Channel 03

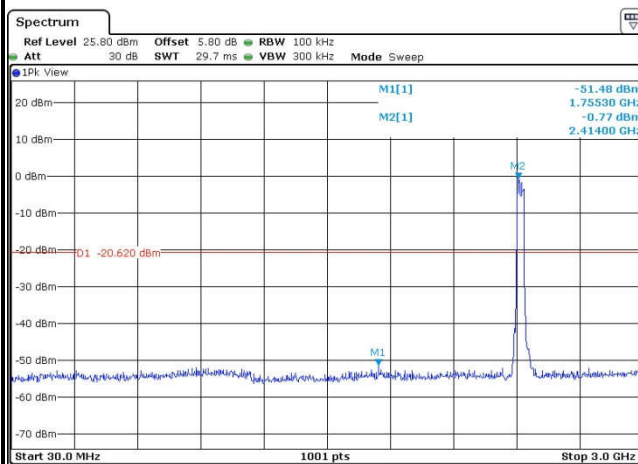
100kHz PSD reference Level



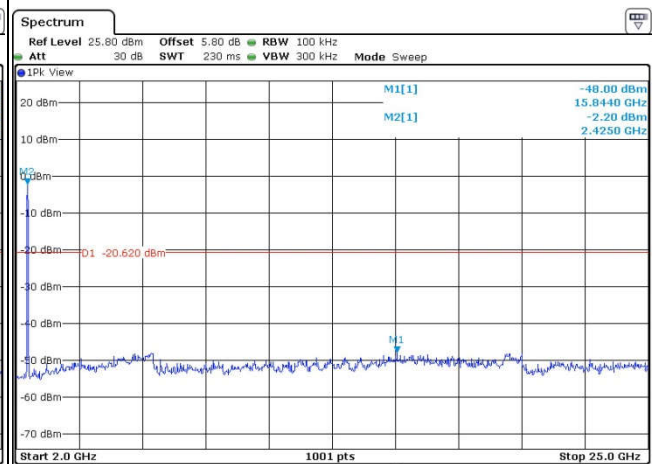
Low Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

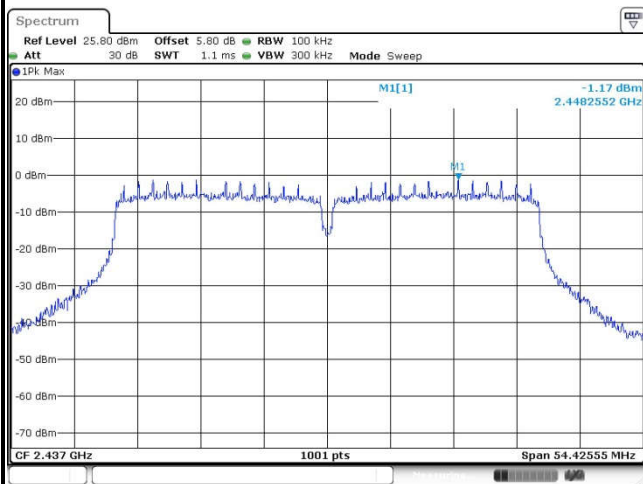




Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT40	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~55%
Test Channel :	06	Test Engineer :	Silent Hai

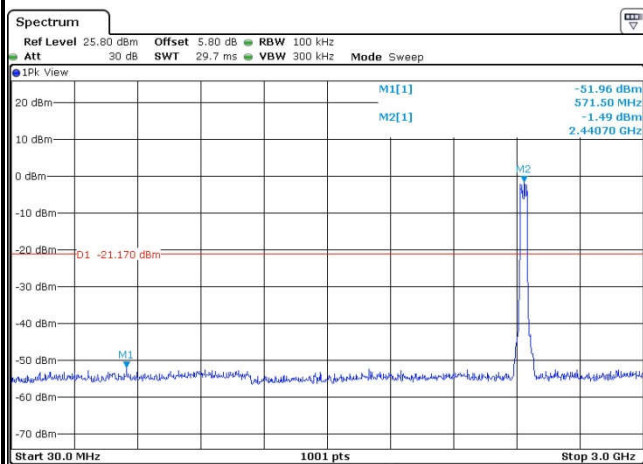
WLAN 802.11n HT40 Channel 06

100kHz PSD reference Level



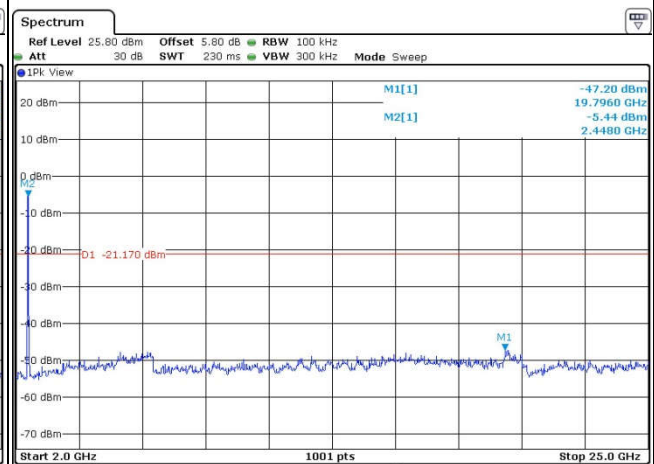
Date: 21 DEC 2017 21:46:43

Spurious Emission 30MHz~3GHz



Date: 21 DEC 2017 21:47:36

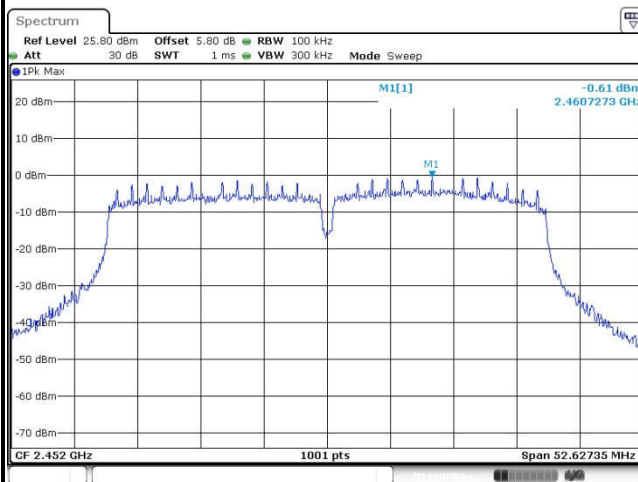
Spurious Emission 2GHz~25GHz



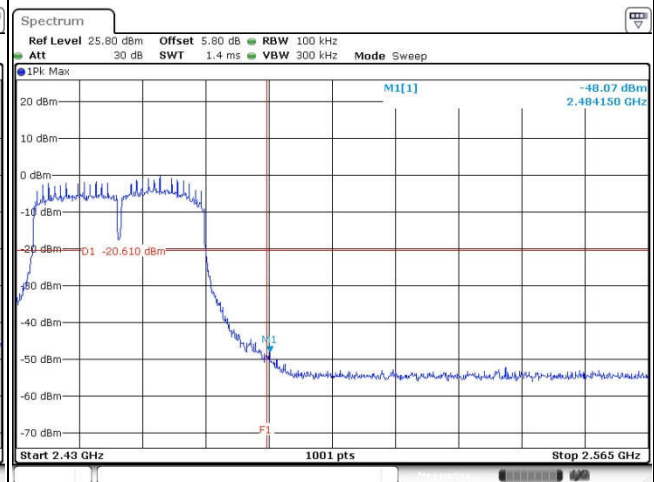
Date: 21 DEC 2017 21:48:21



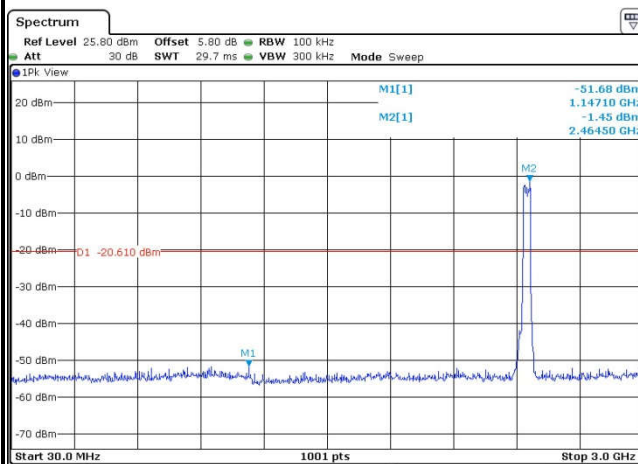
Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT40	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~55%
Test Channel :	09	Test Engineer :	Silent Hai

WLAN 802.11n HT40 Channel 09**100kHz PSD reference Level**

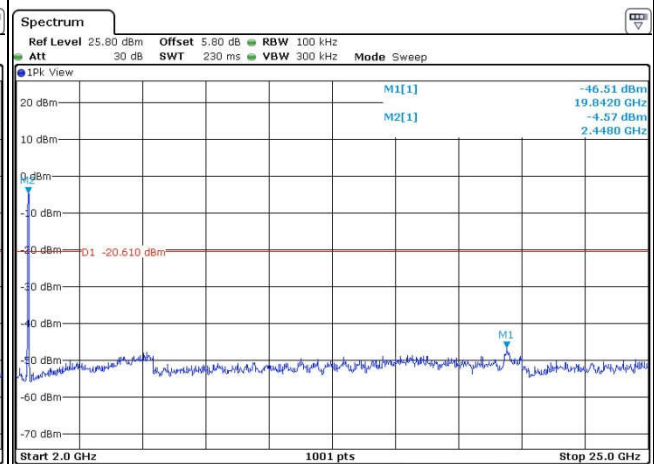
Date: 21 DEC 2017 21:53:46

High Channel Plot

Date: 21 DEC 2017 21:54:00

Spurious Emission 30MHz~3GHz

Date: 21 DEC 2017 21:55:59

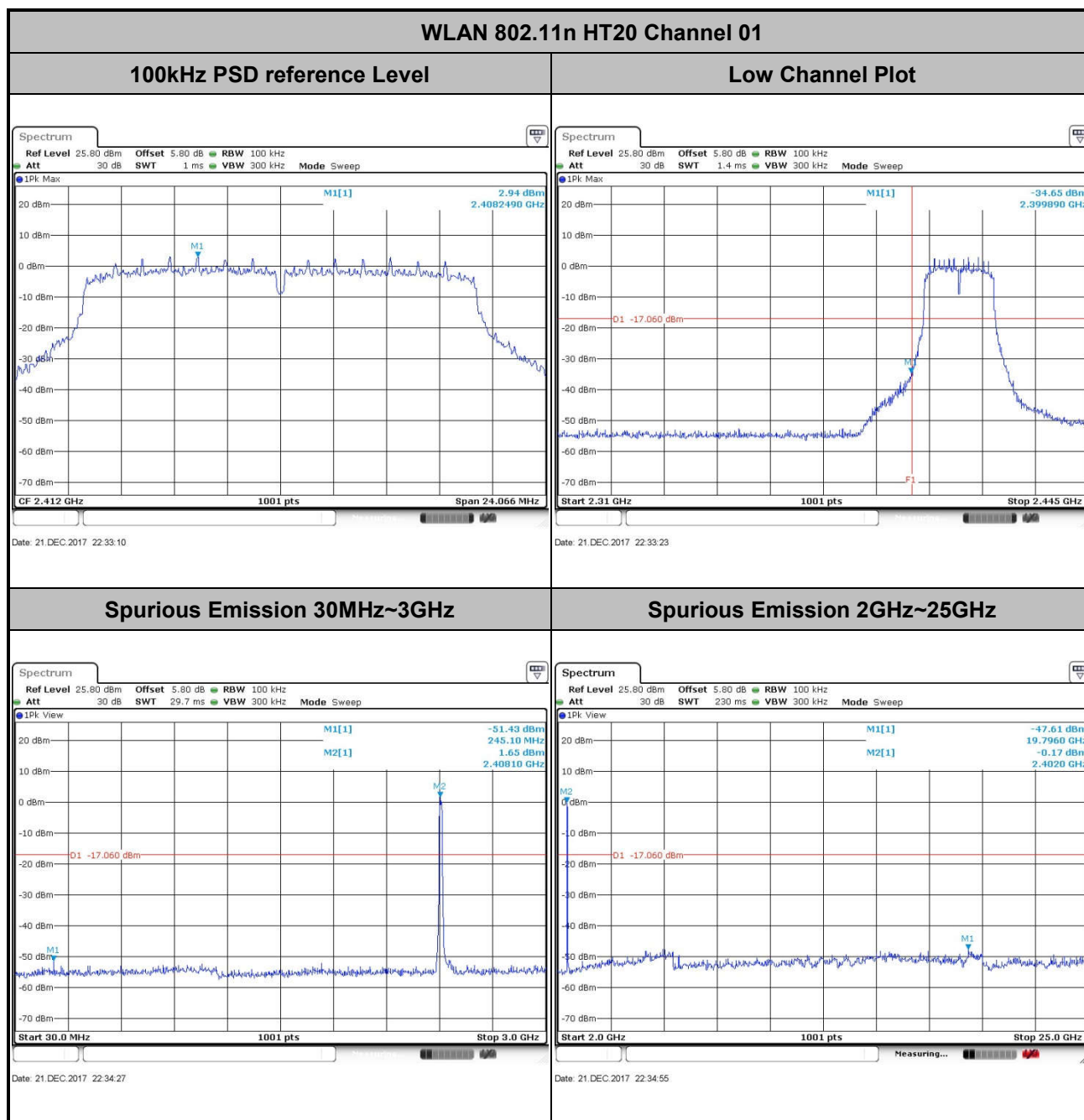
Spurious Emission 2GHz~25GHz

Date: 21 DEC 2017 21:56:22



Number of TX = 2, Ant. 2 (Measured)

Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~55%
Test Channel :	01	Test Engineer :	Silent Hai

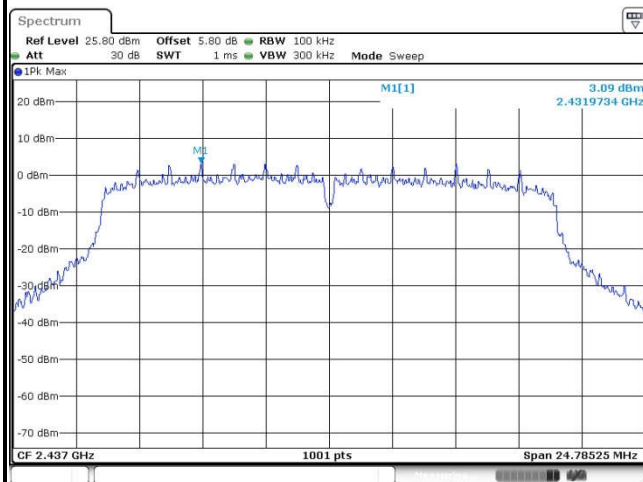




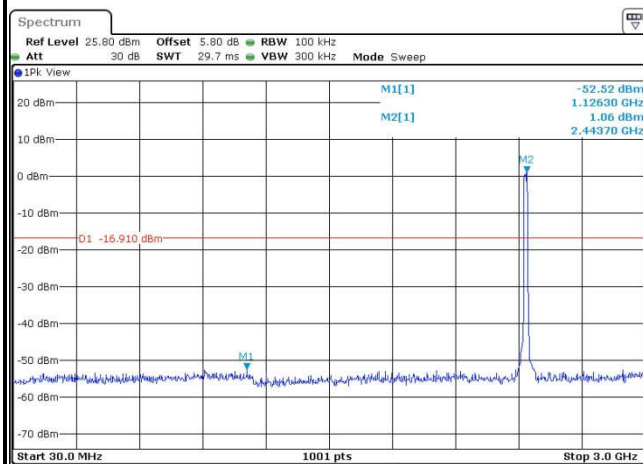
Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~55%
Test Channel :	06	Test Engineer :	Silent Hai

WLAN 802.11n HT20 Channel 06

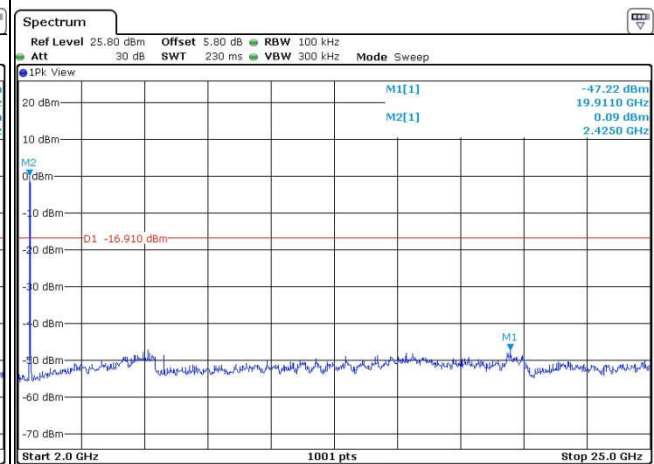
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

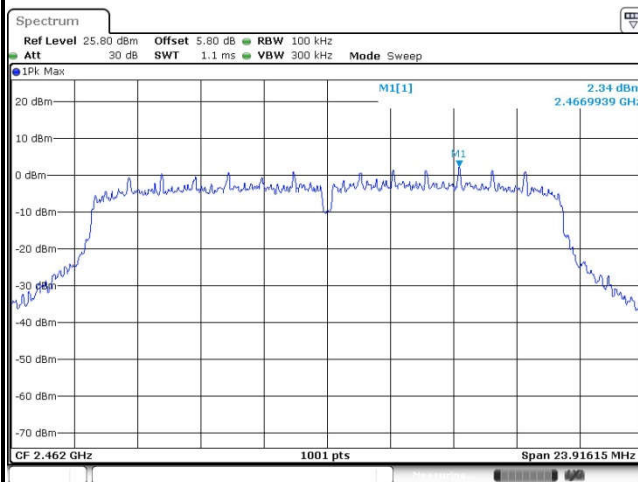




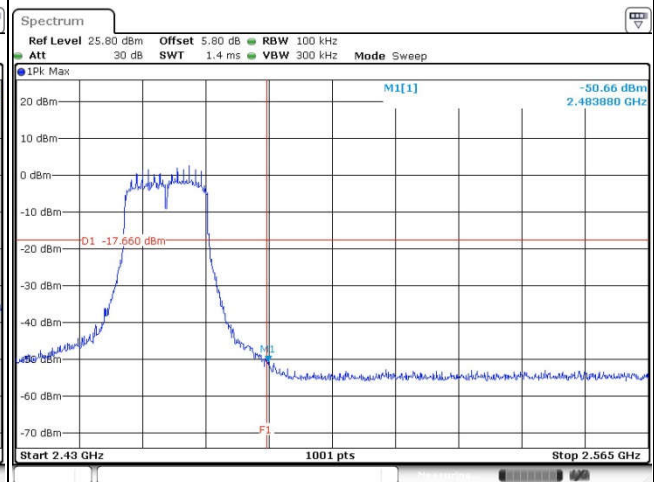
Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~55%
Test Channel :	11	Test Engineer :	Silent Hai

WLAN 802.11n HT20 Channel 11

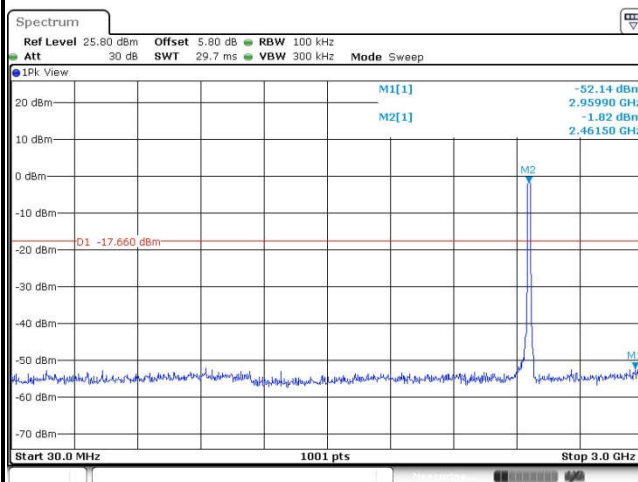
100kHz PSD reference Level



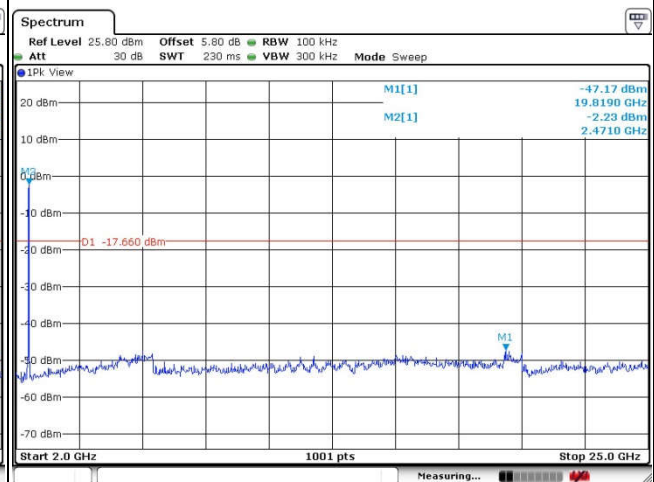
High Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

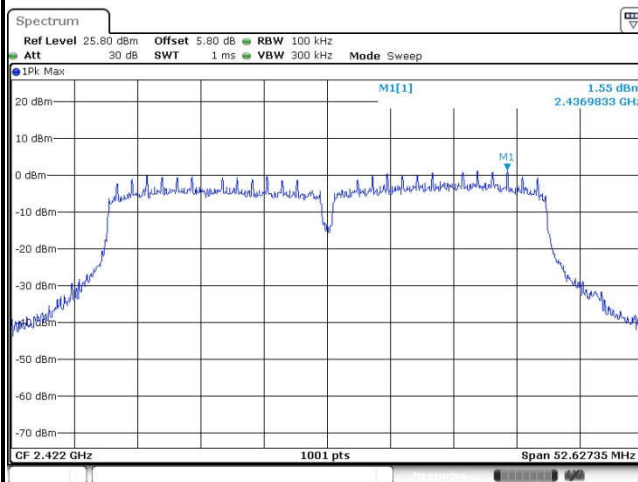




Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT40	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~55%
Test Channel :	03	Test Engineer :	Silent Hai

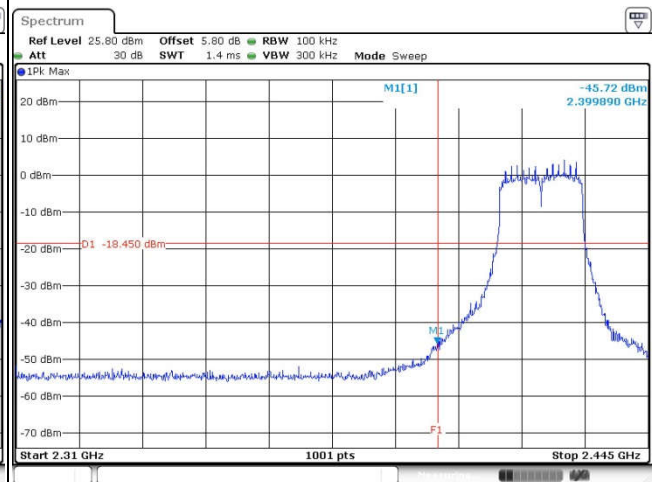
WLAN 802.11n HT40 Channel 03

100kHz PSD reference Level



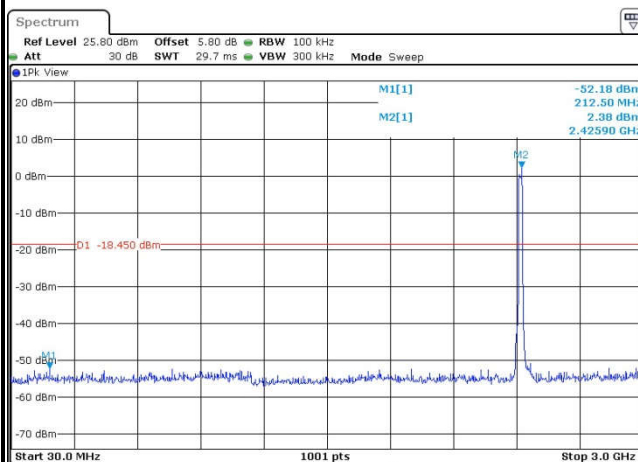
Date: 21 DEC 2017 22:10:17

Low Channel Plot



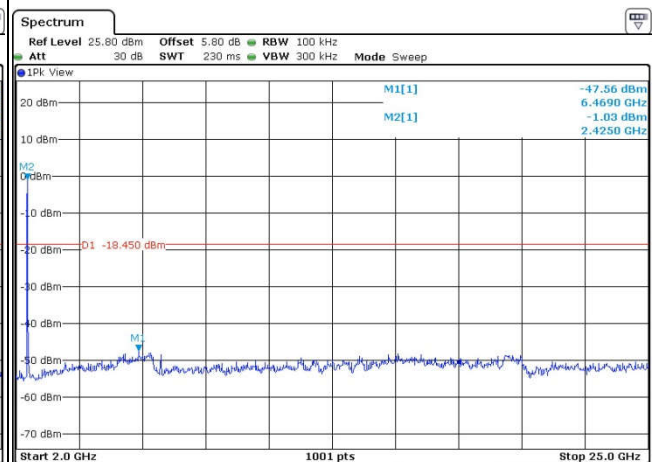
Date: 21 DEC 2017 23:16:51

Spurious Emission 30MHz~3GHz



Date: 21 DEC 2017 23:17:21

Spurious Emission 2GHz~25GHz



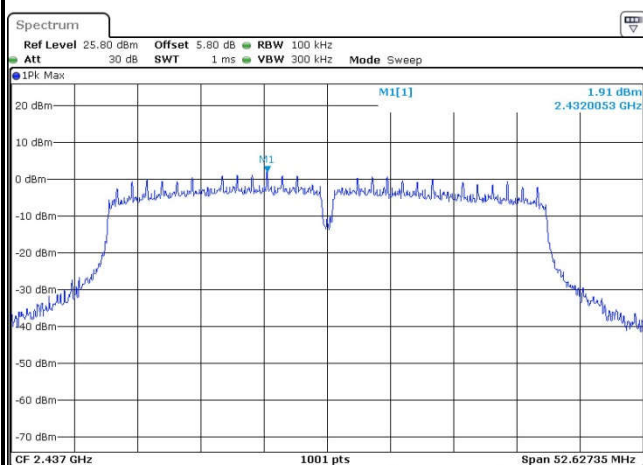
Date: 21 DEC 2017 23:18:04



Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT40	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~55%
Test Channel :	06	Test Engineer :	Silent Hai

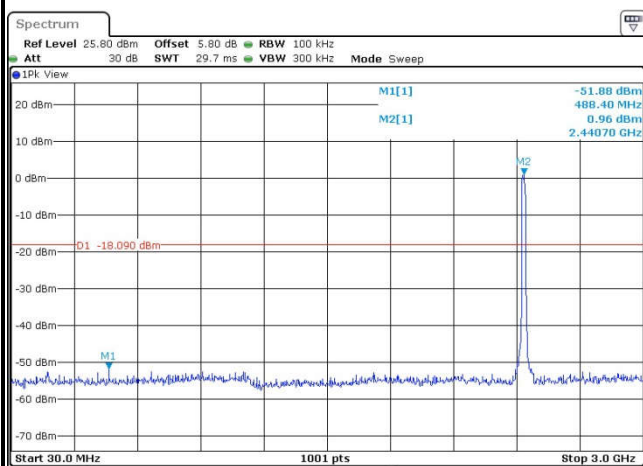
WLAN 802.11n HT40 Channel 06

100kHz PSD reference Level



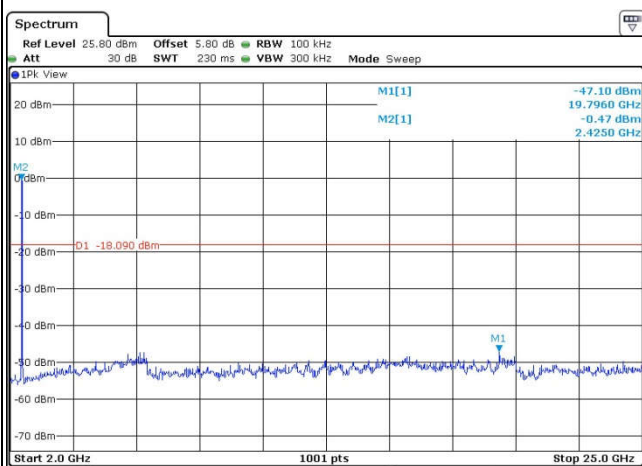
Date: 21 DEC 2017 22:09:03

Spurious Emission 30MHz~3GHz



Date: 21 DEC 2017 23:20:13

Spurious Emission 2GHz~25GHz



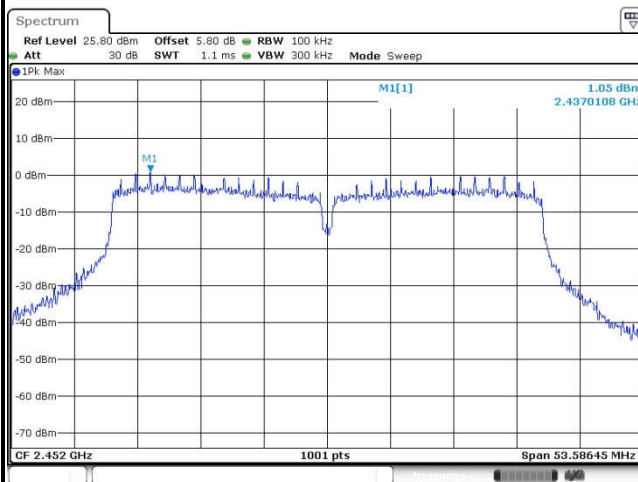
Date: 21 DEC 2017 23:21:18



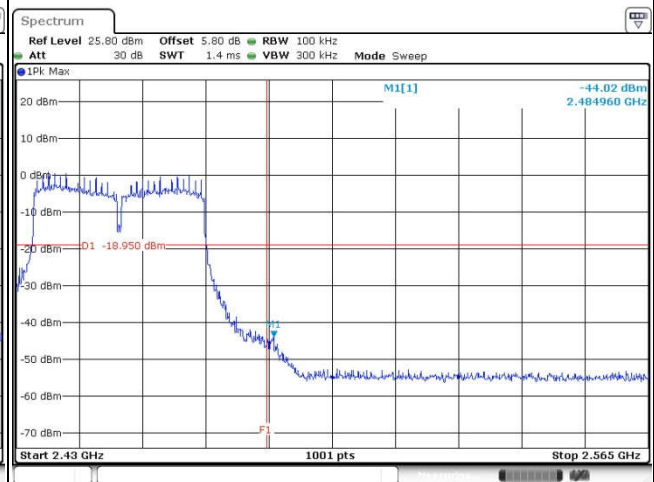
Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT40	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~55%
Test Channel :	09	Test Engineer :	Silent Hai

WLAN 802.11n HT40 Channel 09

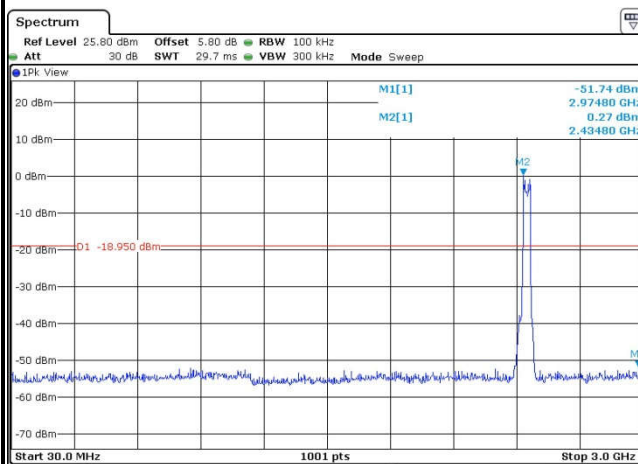
100kHz PSD reference Level



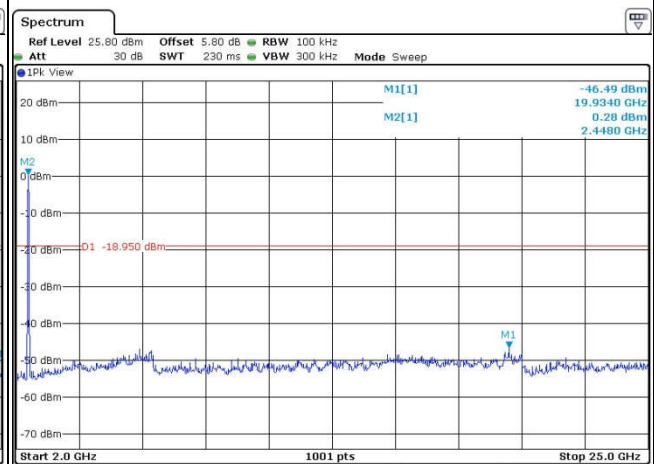
High Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz



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 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

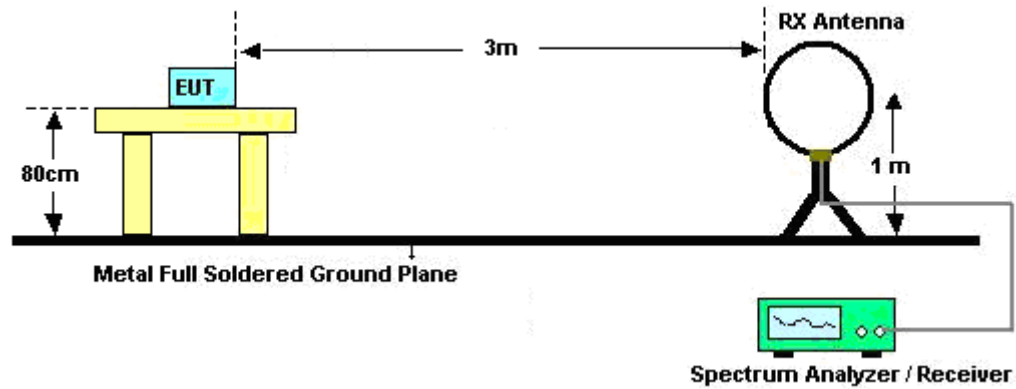
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test 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:

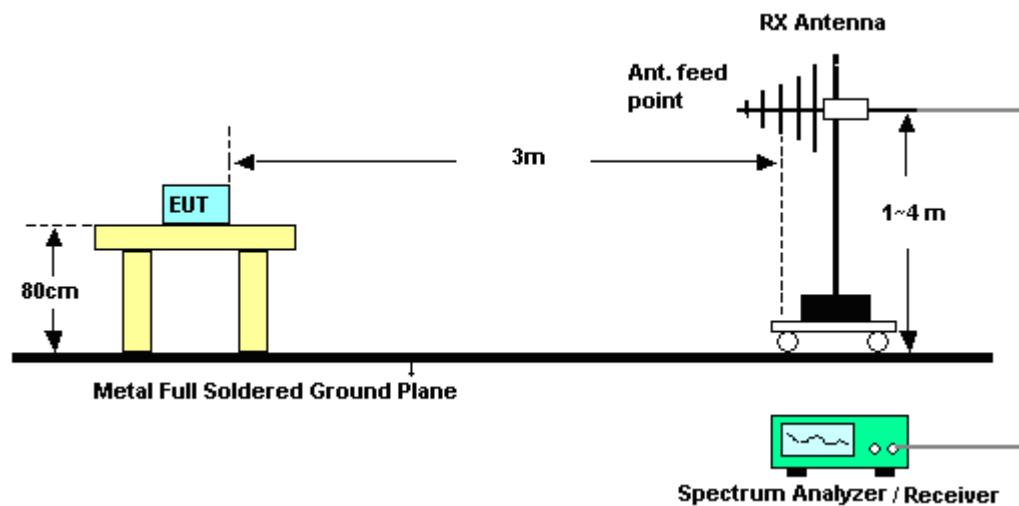
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

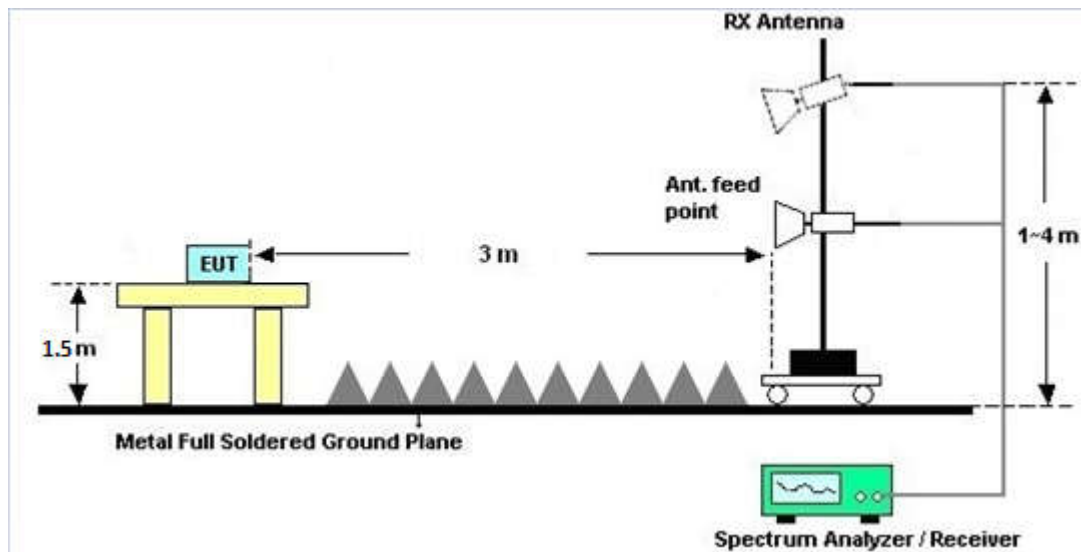
For radiated emissions below 30MHz



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 was not reported.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B.

3.5.7 Duty Cycle

Please refer to Appendix C.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B.

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 μ 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.

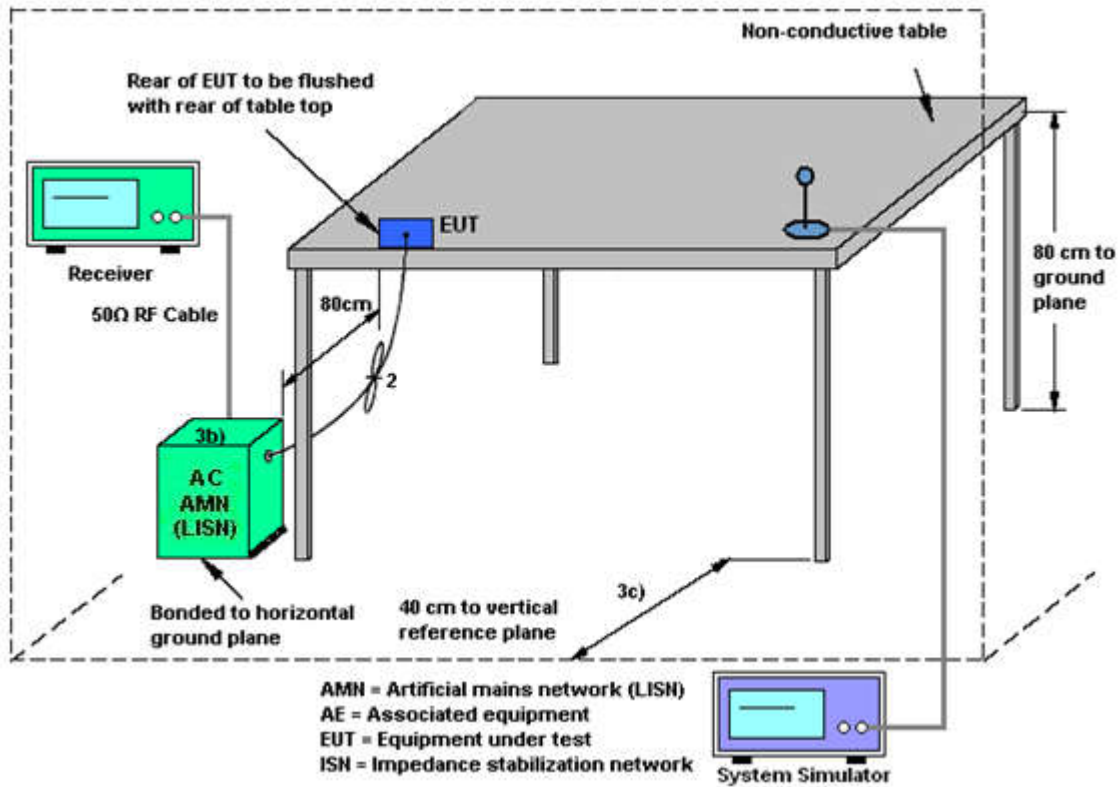
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

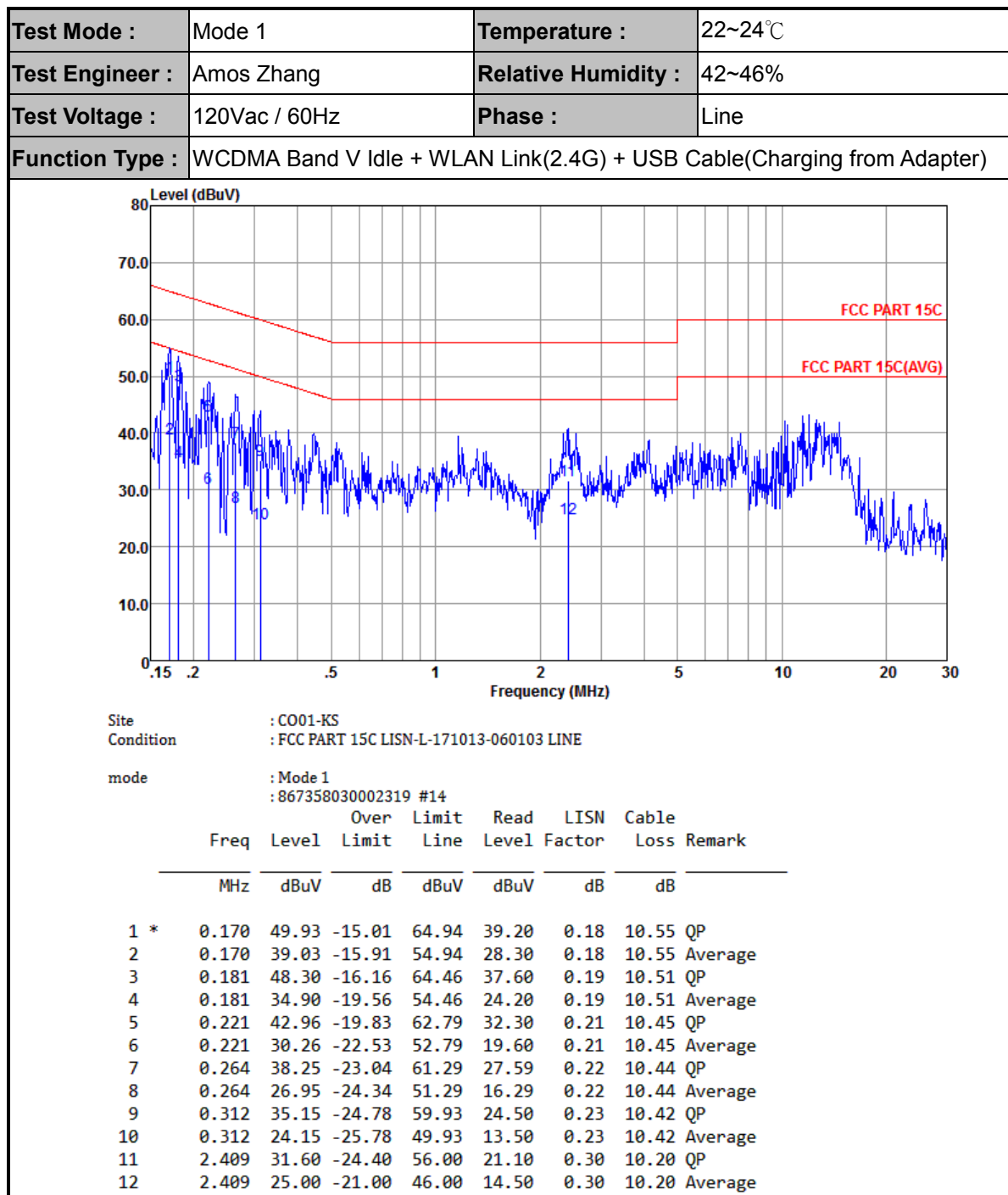
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other 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



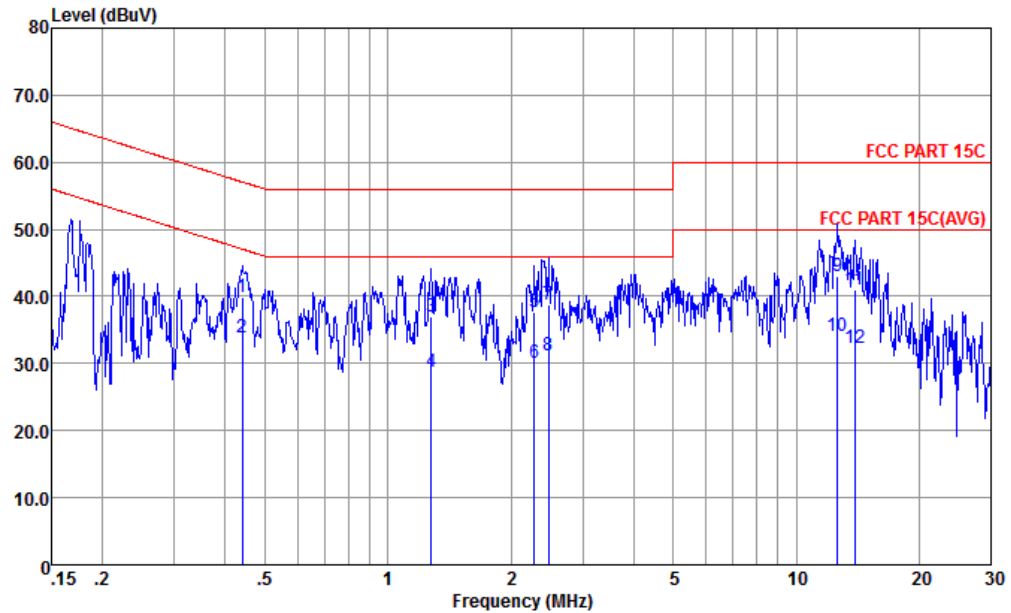


3.6.5 Test Result of AC Conducted Emission





Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Amos Zhang	Relative Humidity :	42~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band V Idle + WLAN Link(2.4G) + USB Cable(Charging from Adapter)		



Site : CO01-KS
Condition : FCC PART 15C LISN-N-171013-060103 NEUTRAL
mode : Mode 1
: 867358030002319 #14

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.440	39.95	-17.12	57.07	29.30	0.29	10.36	QP
2 *	0.440	33.85	-13.22	47.07	23.20	0.29	10.36	Average
3	1.276	37.06	-18.94	56.00	26.61	0.31	10.14	QP
4	1.276	28.76	-17.24	46.00	18.31	0.31	10.14	Average
5	2.285	37.73	-18.27	56.00	27.21	0.32	10.20	QP
6	2.285	30.13	-15.87	46.00	19.61	0.32	10.20	Average
7	2.474	38.72	-17.28	56.00	28.20	0.32	10.20	QP
8	2.474	31.12	-14.88	46.00	20.60	0.32	10.20	Average
9	12.649	42.93	-17.07	60.00	32.30	0.25	10.38	QP
10	12.649	34.13	-15.87	50.00	23.50	0.25	10.38	Average
11	13.915	40.92	-19.08	60.00	30.29	0.23	10.40	QP
12	13.915	32.22	-17.78	50.00	21.59	0.23	10.40	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 rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant. 1	Ant. 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
2.4 GHz	3.26	2.79	3.26	6.04	0.00	0.04

Power Limit Reduction = $DG(\text{Power}) - 6\text{dBi}$, (min = 0)

PSD Limit Reduction = $DG(\text{PSD}) - 6\text{dBi}$, (min = 0)



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. 08, 2017	Dec. 21, 2017	Aug. 07, 2018	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 19, 2017	Dec. 21, 2017	Jan. 19, 2018	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 19, 2017	Dec. 21, 2017	Jan. 19, 2018	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz; Max 30dBm	Oct. 19, 2017	Jan. 01, 2018	Oct. 18, 2018	Radiation (03CH03-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Apr. 18, 2017	Jan. 01, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 22, 2017	Jan. 01, 2018	Oct. 21, 2018	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 22, 2017	Jan. 01, 2018	Apr. 21, 2018	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 22, 2017	Jan. 01, 2018	Apr. 21, 2018	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 15, 2017	Jan. 01, 2018	Feb. 14, 2018	Radiation (03CH03-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1000MHz / 32 dB	Apr. 18, 2017	Jan. 01, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	2025788	1GHz~18GHz	Apr. 18, 2017	Jan. 01, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 12, 2017	Jan. 01, 2018	Oct. 11, 2018	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18GHz~40GHz	Oct. 12, 2017	Jan. 01, 2018	Oct. 11, 2018	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 01, 2018	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 01, 2018	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 01, 2018	NCR	Radiation (03CH03-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 20, 2017	Dec. 26, 2017	Apr. 19, 2018	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2017	Dec. 26, 2017	Oct. 12, 2018	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2017	Dec. 26, 2017	Oct. 12, 2018	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 12, 2017	Dec. 26, 2017	Oct. 11, 2018	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
---	-------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.6dB
---	-------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.5dB
---	-------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7dB
---	-------



Appendix A. Conducted Test Results

Report Number : FR7N1502A

Test Engineer:	Silent Hai	Temperature:	21~25	°C
Test Date:	2017/12/21	Relative Humidity:	51~55	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2		
11b	1Mbps	1	1	2412	12.49		7.07		0.50	Pass
11b	1Mbps	1	6	2437	12.94		8.05		0.50	Pass
11b	1Mbps	1	11	2462	12.54		8.03		0.50	Pass
11g	6Mbps	1	1	2412	16.83		15.70		0.50	Pass
11g	6Mbps	1	6	2437	17.18		16.28		0.50	Pass
11g	6Mbps	1	11	2462	16.88		15.44		0.50	Pass
HT20	MCS0	2	1	2412	17.83	18.03	15.94	16.04	0.50	Pass
HT20	MCS0	2	6	2437	18.13	17.98	16.80	16.52	0.50	Pass
HT20	MCS0	2	11	2462	17.83	18.03	15.96	15.94	0.50	Pass
HT40	MCS0	2	3	2422	36.16	36.16	35.08	35.08	0.50	Pass
HT40	MCS0	2	6	2437	36.66	36.16	36.28	35.08	0.50	Pass
HT40	MCS0	2	9	2452	36.16	36.46	35.08	35.72	0.50	Pass

TEST RESULTS DATA
Peak Output Power

2.4GHz Band																
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	18.05	17.75		30.00	30.00	3.26	2.79	21.31	20.54	36.00	36.00	Pass
11b	1Mbps	1	6	2437	17.83	17.65		30.00	30.00	3.26	2.79	21.09	20.44	36.00	36.00	Pass
11b	1Mbps	1	11	2462	17.80	17.70		30.00	30.00	3.26	2.79	21.06	20.49	36.00	36.00	Pass
11g	6Mbps	1	1	2412	19.55	19.68		30.00	30.00	3.26	2.79	22.81	22.47	36.00	36.00	Pass
11g	6Mbps	1	6	2437	19.72	19.51		30.00	30.00	3.26	2.79	22.98	22.30	36.00	36.00	Pass
11g	6Mbps	1	11	2462	19.49	19.57		30.00	30.00	3.26	2.79	22.75	22.36	36.00	36.00	Pass
HT20	MCS0	2	1	2412	18.73	20.71	22.84	30.00		3.26		26.10		36.00		Pass
HT20	MCS0	2	6	2437	18.81	20.77	22.91	30.00		3.26		26.17		36.00		Pass
HT20	MCS0	2	11	2462	19.14	19.00	22.08	30.00		3.26		25.34		36.00		Pass
HT40	MCS0	2	3	2422	19.63	21.22	23.51	30.00		3.26		26.77		36.00		Pass
HT40	MCS0	2	6	2437	19.13	21.58	23.54	30.00		3.26		26.80		36.00		Pass
HT40	MCS0	2	9	2452	19.44	19.83	22.65	30.00		3.26		25.91		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
11b	1Mbps	1	1	2412	0.00	0.00	15.18	15.04	
11b	1Mbps	1	6	2437	0.00	0.00	15.03	14.82	
11b	1Mbps	1	11	2462	0.00	0.00	14.98	14.99	
11g	6Mbps	1	1	2412	0.21	0.21	12.94	13.21	
11g	6Mbps	1	6	2437	0.21	0.21	13.02	13.14	
11g	6Mbps	1	11	2462	0.21	0.21	12.90	13.23	
HT20	MCS0	2	1	2412	0.22	0.22	11.93	13.17	15.61
HT20	MCS0	2	6	2437	0.22	0.22	11.97	13.21	15.65
HT20	MCS0	2	11	2462	0.22	0.22	11.83	11.98	14.92
HT40	MCS0	2	3	2422	0.44	0.44	12.09	14.11	16.23
HT40	MCS0	2	6	2437	0.44	0.44	11.97	14.19	16.23
HT40	MCS0	2	9	2452	0.44	0.44	11.56	12.55	15.09

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band												
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	-8.35		-	3.26	2.79	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-9.70			3.26	2.79	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-9.98			3.26	2.79	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-13.83			3.26	2.79	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-14.30			3.26	2.79	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-14.46			3.26	2.79	8.00	8.00	Pass
HT20	MCS0	2	1	2412	-14.71	-12.95	-9.94	6.04		7.96		Pass
HT20	MCS0	2	6	2437	-15.23	-12.61	-9.60	6.04		7.96		Pass
HT20	MCS0	2	11	2462	-14.45	-14.58	-11.44	6.04		7.96		Pass
HT40	MCS0	2	3	2422	-16.38	-15.00	-11.99	6.04		7.96		Pass
HT40	MCS0	2	6	2437	-16.98	-15.35	-12.34	6.04		7.96		Pass
HT40	MCS0	2	9	2452	-15.96	-14.98	-11.97	6.04		7.96		Pass

Measured power density (dBm) has offset with cable loss.



Appendix B. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2365.12	57.25	-16.75	74	55.13	31.25	7.52	36.65	307	61	P	H
		2389.56	46.35	-7.65	54	44.11	31.3	7.59	36.65	307	61	A	H
	*	2412	105.47	-	-	103.16	31.33	7.62	36.64	307	61	P	H
	*	2414	101.17	-	-	98.86	31.33	7.62	36.64	307	61	A	H
		2317.8	57.58	-16.42	74	55.63	31.19	7.44	36.68	327	32	P	V
		2389.69	46.21	-7.79	54	43.97	31.3	7.59	36.65	327	32	A	V
	*	2412	104.77	-	-	102.46	31.33	7.62	36.64	327	32	P	V
	*	2414	101.72	-	-	99.41	31.33	7.62	36.64	327	32	A	V
802.11b CH 06 2437MHz		2338.21	57.99	-16.01	74	55.97	31.22	7.48	36.68	244	92	P	H
		2389.95	46.33	-7.67	54	44.08	31.3	7.59	36.64	244	92	A	H
	*	2438	102.18	-	-	99.77	31.39	7.67	36.65	244	92	P	H
	*	2438	99.2	-	-	96.79	31.39	7.67	36.65	244	92	A	H
		2485.36	57.82	-16.18	74	55.34	31.44	7.72	36.68	244	92	P	H
		2492.56	46.38	-7.62	54	43.86	31.47	7.74	36.69	244	92	A	H
		2372.4	57.8	-16.2	74	55.63	31.27	7.55	36.65	306	49	P	V
		2389.95	46.38	-7.62	54	44.13	31.3	7.59	36.64	306	49	A	V
	*	2436	103.53	-	-	101.18	31.36	7.64	36.65	306	49	P	V
	*	2436	100.29	-	-	97.94	31.36	7.64	36.65	306	49	A	V
		2491.36	57.43	-16.57	74	54.9	31.47	7.74	36.68	306	49	P	V
		2484.16	46.39	-7.61	54	43.91	31.44	7.72	36.68	306	49	A	V



802.11b CH 11 2462MHz	*	2462	103.98	-	-	101.55	31.41	7.69	36.67	284	81	P	H
	*	2460	100.75	-	-	98.32	31.41	7.69	36.67	284	81	A	H
		2494.54	57.58	-16.42	74	55.06	31.47	7.74	36.69	284	81	P	H
		2483.56	46.55	-7.45	54	44.07	31.44	7.72	36.68	284	81	A	H
	*	2462	104.66	-	-	102.23	31.41	7.69	36.67	277	32	P	V
	*	2462	101.41	-	-	98.98	31.41	7.69	36.67	277	32	A	V
		2490.7	57.79	-16.21	74	55.26	31.47	7.74	36.68	277	32	P	V
		2484.1	46.46	-7.54	54	43.98	31.44	7.72	36.68	277	32	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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	38.98	-35.02	74	56.36	35.65	11.5	64.53	100	360	P	H
		4824	39.4	-34.6	74	56.78	35.65	11.5	64.53	100	0	P	V
802.11b CH 06 2437MHz		4872	40.09	-33.91	74	57.52	35.61	11.56	64.6	200	360	P	H
		7308	40.5	-33.5	74	55.64	35.89	13.98	65.01	200	360	P	H
		4872	39.13	-34.87	74	56.56	35.61	11.56	64.6	100	360	P	V
		7308	40.19	-33.81	74	55.33	35.89	13.98	65.01	100	360	P	V
802.11b CH 11 2462MHz		4926	39.14	-34.86	74	56.63	35.57	11.62	64.68	100	360	P	H
		7386	40.31	-33.69	74	55.45	35.94	13.97	65.05	100	360	P	H
		4926	40.92	-33.08	74	58.41	35.57	11.62	64.68	100	360	P	V
		7386	40.14	-33.86	74	55.28	35.94	13.97	65.05	100	360	P	V
Remark	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. 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)
802.11g CH 01 2412MHz		2389.69	57.86	-16.14	74	55.62	31.3	7.59	36.65	100	39	P	H
	!	2389.82	48.89	-5.11	54	46.64	31.3	7.59	36.64	100	39	A	H
	*	2416	105.13	-	-	102.83	31.33	7.62	36.65	100	39	P	H
	*	2414	97.24	-	-	94.93	31.33	7.62	36.64	100	39	A	H
		2389.69	58.32	-15.68	74	56.08	31.3	7.59	36.65	100	23	P	V
	!	2389.95	48.75	-5.25	54	46.5	31.3	7.59	36.64	100	23	A	V
	*	2416	105.07	-	-	102.77	31.33	7.62	36.65	100	23	P	V
	*	2414	97.14	-	-	94.83	31.33	7.62	36.64	100	23	A	V
802.11g CH 06 2437MHz		2353.29	57.79	-16.21	74	55.69	31.25	7.52	36.67	100	43	P	H
		2389.95	47.16	-6.84	54	44.91	31.3	7.59	36.64	100	43	A	H
	*	2444	104.49	-	-	102.1	31.39	7.67	36.67	100	43	P	H
	*	2444	96.49	-	-	94.1	31.39	7.67	36.67	100	43	A	H
		2494.24	57.66	-16.34	74	55.14	31.47	7.74	36.69	100	43	P	H
		2483.74	47.42	-6.58	54	44.94	31.44	7.72	36.68	100	43	A	H
		2387.74	57.48	-16.52	74	55.24	31.3	7.59	36.65	325	69	P	V
		2389.3	47.19	-6.81	54	44.95	31.3	7.59	36.65	325	69	A	V
	*	2444	105.89	-	-	103.5	31.39	7.67	36.67	325	69	P	V
	*	2444	97.58	-	-	95.19	31.39	7.67	36.67	325	69	A	V
		2485.36	58.12	-15.88	74	55.64	31.44	7.72	36.68	325	69	P	V
		2488.96	47.38	-6.62	54	44.85	31.47	7.74	36.68	325	69	A	V



802.11g CH 11 2462MHz	*	2456	105.83	-	-	103.4	31.41	7.69	36.67	100	36	P	H
	*	2456	98.19	-	-	95.76	31.41	7.69	36.67	100	36	A	H
		2484.04	58.37	-15.63	74	55.89	31.44	7.72	36.68	100	36	P	H
	!	2483.68	48.23	-5.77	54	45.75	31.44	7.72	36.68	100	36	A	H
	*	2456	105.69	-	-	103.26	31.41	7.69	36.67	312	122	P	V
	*	2456	97.73	-	-	95.3	31.41	7.69	36.67	312	122	A	V
		2487.76	57.92	-16.08	74	55.39	31.47	7.74	36.68	312	122	P	V
		2483.51	47.99	-6.01	54	45.51	31.44	7.72	36.68	312	122	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (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)
802.11g CH 01 2412MHz		4824	37.84	-36.16	74	55.22	35.65	11.5	64.53	100	0	P	H
		4824	36.98	-37.02	74	54.36	35.65	11.5	64.53	100	360	P	V
802.11g CH 06 2437MHz		4872	38.3	-35.7	74	55.73	35.61	11.56	64.6	100	0	P	H
		7308	39.12	-34.88	74	54.26	35.89	13.98	65.01	100	0	P	H
		4872	38.18	-35.82	74	55.61	35.61	11.56	64.6	100	360	P	V
		7308	38.04	-35.96	74	53.18	35.89	13.98	65.01	100	360	P	V
802.11g CH 11 2462MHz		4926	37.09	-36.91	74	54.58	35.57	11.62	64.68	100	360	P	H
		7386	37.73	-36.27	74	52.87	35.94	13.97	65.05	100	360	P	H
		4926	37.71	-36.29	74	55.2	35.57	11.62	64.68	100	360	P	V
		7386	37.96	-36.04	74	53.1	35.94	13.97	65.05	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

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 CH 11 2462MHz	*	2464	105.85	-	-	103.42	31.41	7.69	36.67	276	50	P	H
	*	2464	102.78	-	-	100.35	31.41	7.69	36.67	276	50	A	H
		2483.68	58.36	-15.64	74	55.88	31.44	7.72	36.68	276	50	P	H
		2483.51	47.03	-6.97	54	44.55	31.44	7.72	36.68	276	50	A	H
	*	2462	100.79	-	-	98.36	31.41	7.69	36.67	100	105	P	V
	*	2464	97.82	-	-	95.39	31.41	7.69	36.67	100	105	A	V
		2484.34	57.81	-16.19	74	55.33	31.44	7.72	36.68	100	105	P	V
		2483.51	46.63	-7.37	54	44.15	31.44	7.72	36.68	100	105	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 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)
802.11b CH 11 2462MHz		4926	41.7	-32.3	74	59.19	35.57	11.62	64.68	100	360	P	H
		7386	39.72	-34.28	74	54.86	35.94	13.97	65.05	100	360	P	H
		4926	40.97	-33.03	74	58.46	35.57	11.62	64.68	100	360	P	V
		7386	39.51	-34.49	74	54.65	35.94	13.97	65.05	100	360	P	V
Remark	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		2383.84	58.25	-15.75	74	56.08	31.27	7.55	36.65	321	46	P	H
	!	2389.3	48.09	-5.91	54	45.85	31.3	7.59	36.65	321	46	A	H
	*	2410	105.13	-	-	102.82	31.33	7.62	36.64	321	46	P	H
	*	2408	97.34	-	-	95.03	31.33	7.62	36.64	321	46	A	H
		2365.38	57.74	-16.26	74	55.62	31.25	7.52	36.65	100	71	P	V
		2389.95	47.3	-6.7	54	45.05	31.3	7.59	36.64	100	71	A	V
	*	2408	98.75	-	-	96.44	31.33	7.62	36.64	100	71	P	V
	*	2408	91.14	-	-	88.83	31.33	7.62	36.64	100	71	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 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		4824	39.49	-34.51	74	56.87	35.65	11.5	64.53	100	0	P	H
CH 01 2412MHz		4824	37.94	-36.06	74	55.32	35.65	11.5	64.53	100	360	P	V
Remark	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 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 01 2412MHz		2389.56	60.19	-13.81	74	57.95	31.3	7.59	36.65	335	33	P	H
	!	2389.69	49.43	-4.57	54	47.19	31.3	7.59	36.65	335	33	A	H
	*	2414	108.04	-	-	105.73	31.33	7.62	36.64	335	33	P	H
	*	2414	99.95	-	-	97.64	31.33	7.62	36.64	335	33	A	H
		2330.15	57.53	-16.47	74	55.58	31.19	7.44	36.68	304	64	P	V
		2389.82	47.97	-6.03	54	45.72	31.3	7.59	36.64	304	64	A	V
	*	2410	104.95	-	-	102.64	31.33	7.62	36.64	304	64	P	V
	*	2410	97	-	-	94.69	31.33	7.62	36.64	304	64	A	V
802.11n HT20 CH 06 2437MHz		2376.04	57.34	-16.66	74	55.17	31.27	7.55	36.65	306	41	P	H
		2389.3	47.55	-6.45	54	45.31	31.3	7.59	36.65	306	41	A	H
	*	2438	110.01	-	-	107.6	31.39	7.67	36.65	306	41	P	H
	*	2440	102.22	-	-	99.81	31.39	7.67	36.65	306	41	A	H
		2494.24	57.26	-16.74	74	54.74	31.47	7.74	36.69	306	41	P	H
		2485	47.29	-6.71	54	44.81	31.44	7.72	36.68	306	41	A	H
		2385.14	57.38	-16.62	74	55.21	31.27	7.55	36.65	348	85	P	V
		2389.82	47.12	-6.88	54	44.87	31.3	7.59	36.64	348	85	A	V
	*	2438	105.68	-	-	103.27	31.39	7.67	36.65	348	85	P	V
	*	2438	97.66	-	-	95.25	31.39	7.67	36.65	348	85	A	V
		2483.98	57.83	-16.17	74	55.35	31.44	7.72	36.68	348	85	P	V
		2487.46	47.23	-6.77	54	44.75	31.44	7.72	36.68	348	85	A	V



802.11n HT20 CH 11 2462MHz	*	2464	106.22	-	-	103.79	31.41	7.69	36.67	324	47	P	H
	*	2456	98.12	-	-	95.69	31.41	7.69	36.67	324	47	A	H
		2484.28	58.5	-15.5	74	56.02	31.44	7.72	36.68	324	47	P	H
	!	2483.68	48.55	-5.45	54	46.07	31.44	7.72	36.68	324	47	A	H
	*	2456	107.51	-	-	105.08	31.41	7.69	36.67	268	39	P	V
	*	2456	99.37	-	-	96.94	31.41	7.69	36.67	268	39	A	V
		2485	58.26	-15.74	74	55.78	31.44	7.72	36.68	268	39	P	V
	!	2483.51	48.41	-5.59	54	45.93	31.44	7.72	36.68	268	39	A	V
Remark	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)

WIFI Ant. 1+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)
802.11n HT20 CH 01 2412MHz		4824	40.94	-33.06	74	58.32	35.65	11.5	64.53	100	360	P	H
													V
		4824	38.32	-35.68	74	55.7	35.65	11.5	64.53	100	360	P	
802.11n HT20 CH 06 2437MHz		4872	38.32	-35.68	74	55.75	35.61	11.56	64.6	100	360	P	H
		7308	39.53	-34.47	74	54.67	35.89	13.98	65.01	100	360	P	H
		4872	38.1	-35.9	74	55.53	35.61	11.56	64.6	100	360	P	V
		7308	39.18	-34.82	74	54.32	35.89	13.98	65.01	100	360	P	V
802.11n HT20 CH 11 2462MHz		4926	41.81	-32.19	74	59.3	35.57	11.62	64.68	100	360	P	H
		7386	39.37	-34.63	74	54.51	35.94	13.97	65.05	100	360	P	H
		4926	39.15	-34.85	74	56.64	35.57	11.62	64.68	100	360	P	V
		7386	39.65	-34.35	74	54.79	35.94	13.97	65.05	100	360	P	V
Remark		1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+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)
802.11n HT40 CH 03 2422MHz		2388.91	66.9	-7.1	74	64.66	31.3	7.59	36.65	342	128	P	H
	!	2389.04	52.8	-1.2	54	50.56	31.3	7.59	36.65	342	128	A	H
	*	2436	105.64	-	-	103.29	31.36	7.64	36.65	342	128	P	H
	*	2434	98.03	-	-	95.68	31.36	7.64	36.65	342	128	A	H
		2497.66	59.94	-14.06	74	57.42	31.47	7.74	36.69	342	128	P	H
	!	2499.52	50.2	-3.8	54	47.68	31.47	7.74	36.69	342	128	A	H
	!	2389.69	68.43	-5.57	74	66.19	31.3	7.59	36.65	324	19	P	V
	!	2389.56	53.51	-0.49	54	51.27	31.3	7.59	36.65	324	19	A	V
	*	2410	105.66	-	-	103.35	31.33	7.62	36.64	324	19	P	V
	*	2410	98.07	-	-	95.76	31.33	7.62	36.64	324	19	A	V
		2487.76	58.21	-15.79	74	55.68	31.47	7.74	36.68	342	19	P	V
	!	2483.68	48.36	-5.64	54	45.88	31.44	7.72	36.68	342	19	A	V
802.11n HT40 CH 06 2437MHz		2389.56	63.75	-10.25	74	61.51	31.3	7.59	36.65	315	131	P	H
	!	2389.82	49.78	-4.22	54	47.53	31.3	7.59	36.64	315	131	A	H
	*	2440	106.17	-	-	103.76	31.39	7.67	36.65	315	131	P	H
	*	2440	98.25	-	-	95.84	31.39	7.67	36.65	315	131	A	H
		2484.4	59.03	-14.97	74	56.55	31.44	7.72	36.68	315	131	P	H
	!	2483.56	48.84	-5.16	54	46.36	31.44	7.72	36.68	315	131	A	H
		2389.82	62.21	-11.79	74	59.96	31.3	7.59	36.64	311	18	P	V
	!	2389.56	49.01	-4.99	54	46.77	31.3	7.59	36.65	311	18	A	V
	*	2446	106.18	-	-	103.79	31.39	7.67	36.67	311	18	P	V
	*	2444	98.48	-	-	96.09	31.39	7.67	36.67	311	18	A	V
		2485.3	58.51	-15.49	74	56.03	31.44	7.72	36.68	311	18	P	V
	!	2483.56	49.85	-4.15	54	47.37	31.44	7.72	36.68	311	18	A	V



802.11n HT40 CH 09 2452MHz		2388.39	63.55	-10.45	74	61.31	31.3	7.59	36.65	340	131	P	H
	!	2388.65	49.22	-4.78	54	46.98	31.3	7.59	36.65	340	131	A	H
	*	2438	105.4	-	-	102.99	31.39	7.67	36.65	340	131	P	H
	*	2436	97.73	-	-	95.38	31.36	7.64	36.65	340	131	A	H
		2485	61.6	-12.4	74	59.12	31.44	7.72	36.68	340	131	P	H
	!	2483.62	52.33	-1.67	54	49.85	31.44	7.72	36.68	340	131	A	H
		2389.95	62.53	-11.47	74	60.28	31.3	7.59	36.64	312	19	P	V
	!	2389.95	48.55	-5.45	54	46.3	31.3	7.59	36.64	312	19	A	V
	*	2440	105.41	-	-	103	31.39	7.67	36.65	312	19	P	V
	*	2440	97.87	-	-	95.46	31.39	7.67	36.65	312	19	A	V
		2485.24	61.31	-12.69	74	58.83	31.44	7.72	36.68	312	19	P	V
	!	2483.62	53.21	-0.79	54	50.73	31.44	7.72	36.68	312	19	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+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)
802.11n HT40 CH 03 2422MHz		4842	36.7	-37.3	74	54.1	35.63	11.52	64.55	100	360	P	H
		7266	40.38	-33.62	74	55.51	35.87	13.99	64.99	100	360	P	H
		4842	36.92	-37.08	74	54.32	35.63	11.52	64.55	100	360	P	V
		7266	39.28	-34.72	74	54.41	35.87	13.99	64.99	100	360	P	V
802.11n HT40 CH 06 2437MHz		4872	36.4	-37.6	74	53.83	35.61	11.56	64.6	100	360	P	H
		7308	39.5	-34.5	74	54.64	35.89	13.98	65.01	100	360	P	H
		4872	36.75	-37.25	74	54.18	35.61	11.56	64.6	100	360	P	V
		7308	39.57	-34.43	74	54.71	35.89	13.98	65.01	100	360	P	V
802.11n HT40 CH 09 2452MHz		4902	38.28	-35.72	74	55.75	35.58	11.6	64.65	100	360	P	H
		7356	39.32	-34.68	74	54.46	35.92	13.97	65.03	100	360	P	H
		4902	36.58	-37.42	74	54.05	35.58	11.6	64.65	100	360	P	V
		7356	39.2	-34.8	74	54.34	35.92	13.97	65.03	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n HT40 LF		30	25.94	-14.06	40	30.78	26.8	0.65	32.29	100	302	P	H
		59.1	22.9	-17.1	40	39.68	14.32	1.11	32.21	-	-	P	H
		86.26	25.7	-14.3	40	40.01	16.62	1.31	32.24	-	-	P	H
		192.96	27.46	-16.04	43.5	40.61	17.07	2.04	32.26	-	-	P	H
		341.37	22.91	-23.09	46	30.49	21.4	3.11	32.09	-	-	P	H
		787.57	27.95	-18.05	46	27.66	27.65	4.25	31.61	-	-	P	H
		37.76	34.16	-5.84	40	41.31	24.2	0.9	32.25	100	213	P	V
		47.46	29.93	-10.07	40	43.46	17.7	1.03	32.26	-	-	P	V
		80.44	26.91	-13.09	40	42.35	15.5	1.31	32.25	-	-	P	V
		110.51	25.67	-17.83	43.5	37.76	18.68	1.5	32.27	-	-	P	V
		323.91	25.27	-20.73	46	33.86	20.61	2.88	32.08	-	-	P	V
		459.71	24.82	-21.18	46	28.54	25	3.22	31.94	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is not under limit 6dB .
P/A	Peak or Average
H/V	H orizontal or V ertical



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

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. 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)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. 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)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

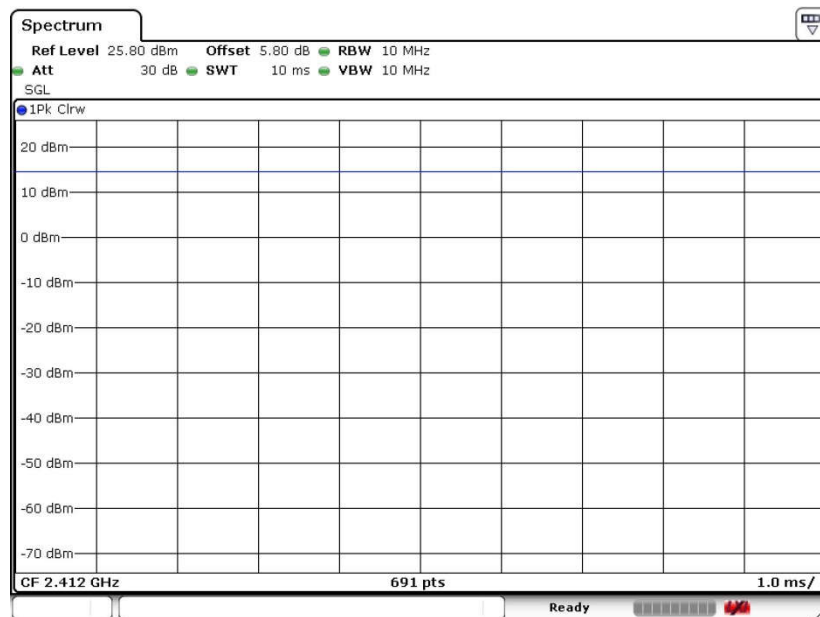
= -10.46(dB)

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

Appendix C. Duty Cycle Plots

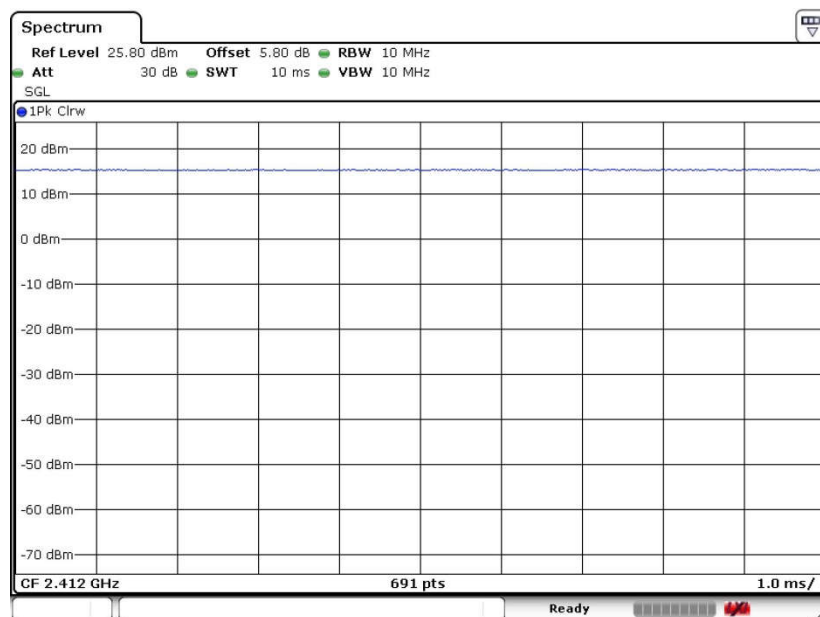
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11 b	100	-	-	10Hz
2	802.11 b	100	-	-	10Hz
1	802.11 g	95.28	2.051	0.488	1kHz
2	802.11 g	95.30	2.058	0.486	1kHz
1+2	802.11n HT20	95.00	1.928	0.519	1kHz
1+2	802.11n HT40	90.35	0.949	1.054	3kHz

802.11b Ant.1

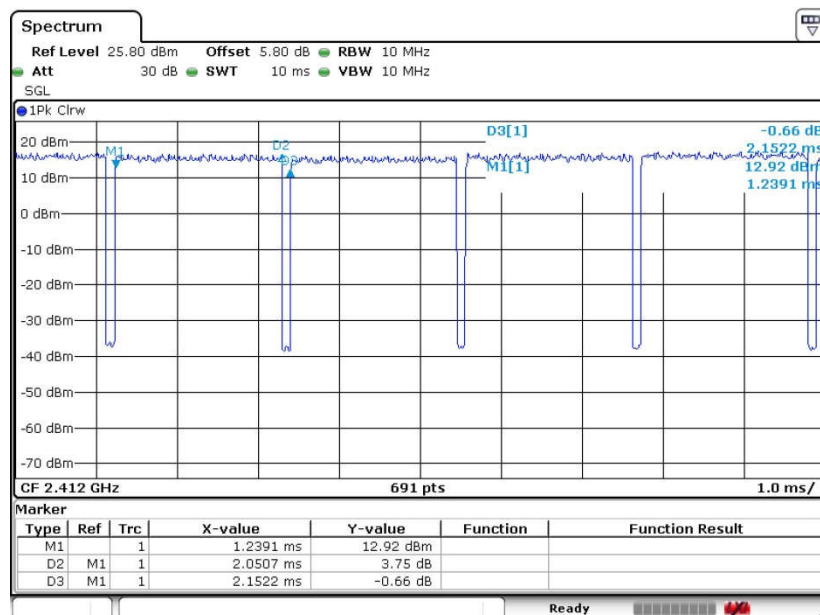




802.11b Ant.2

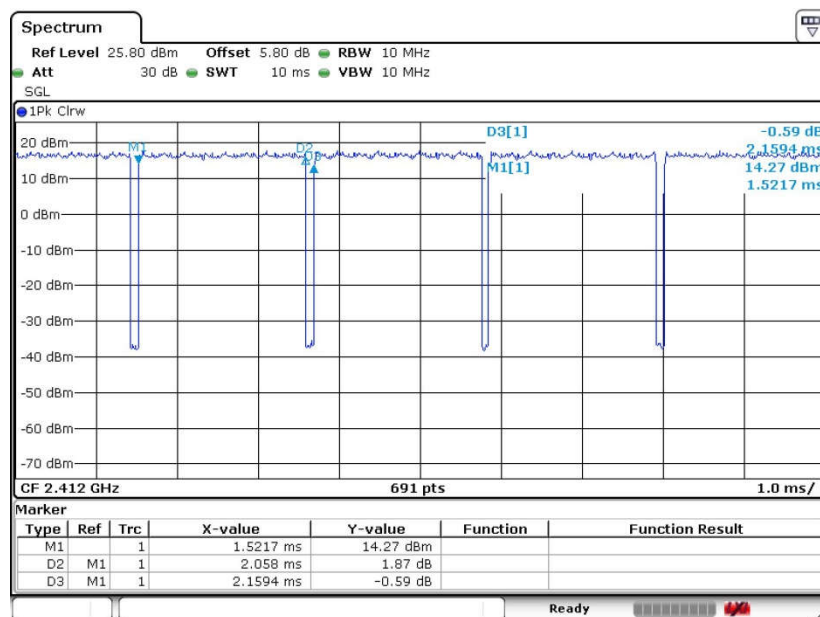


802.11g Ant.1

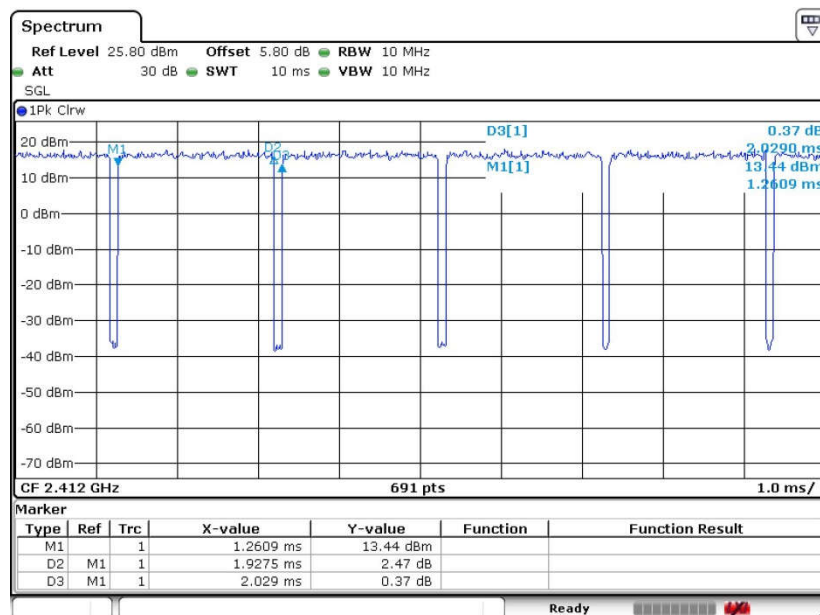




802.11g Ant.2



802.11n20 Ant.1+2





802.11n40 Ant.1+2

