




FCC RF Test Report

APPLICANT : Elo Touch Solutions, Inc.
EQUIPMENT : Handheld wireless data terminal
BRAND NAME : ELO or 
MODEL NAME : EMC0550C
FCC ID : RBWEMC0550C
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Oct. 19, 2020 and testing was completed on Nov. 24, 2020. 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.

Jason Jia

Reviewed by: Jason Jia / Supervisor

James Huang

Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of 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 Test Software..... 7

 1.8 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..... 9

 2.4 Support Unit used in test configuration and system 10

 2.5 EUT Operation Test Setup 10

 2.6 Measurement Results Explanation Example..... 10

3 TEST RESULT 11

 3.1 6dB and 99% Bandwidth Measurement 11

 3.2 Output Power Measurement..... 13

 3.3 Power Spectral Density Measurement 14

 3.4 Conducted Band Edges and Spurious Emission Measurement 16

 3.5 Radiated Band Edges and Spurious Emission Measurement 41

 3.6 AC Conducted Emission Measurement..... 45

 3.7 Antenna Requirements 47

4 LIST OF MEASURING EQUIPMENT 48

5 UNCERTAINTY OF EVALUATION 49

APPENDIX A. CONDUCTED TEST RESULTS

APPENDIX B. AC CONDUCTED EMISSION TEST RESULT

APPENDIX C. RADIATED SPURIOUS EMISSION

APPENDIX D. DUTY CYCLE PLOTS

APPENDIX E. SETUP PHOTOGRAPHS



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.1	-	99% Bandwidth	-	Pass	-
3.2	15.247(b)	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	Conducted Band Edges	≤ 20dBc	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 3.13 dB at 201.69 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 9.86 dB at 0.958 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Elo Touch Solutions, Inc.
670 N. McCarthy Blvd. Suite 100, Milpitas, CA 95035, United States

1.2 Manufacturer

Elo Touch Solutions, Inc.
670 N. McCarthy Blvd. Suite 100, Milpitas, CA 95035, United States

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Handheld wireless data terminal
Brand Name	ELO or
Model Name	EMC0550C
FCC ID	RBWEMC0550C
EUT supports Radios application	WCDMA/LTE/NFC/GNSS WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/VHT80+VHT80 Bluetooth BR/EDR/LE
IMEI Code	Conducted: N/A Conduction: 866834041596508 Radiation: 866834041613113
HW Version	A01
SW Version	5.0.120+p
EUT Stage	Production Unit

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	SISO <Ant. 1>: 802.11b : 18.77 dBm (0.0753 W) 802.11g : 17.17 dBm (0.0521 W) SISO <Ant. 2>: 802.11b : 18.96 dBm (0.0787 W) 802.11g : 17.40 dBm (0.0550 W) MIMO <Ant. 1+2>: 802.11n HT20 : 20.31 dBm (0.1074 W) 802.11n HT40 : 21.22 dBm (0.1324 W)									
99% Occupied Bandwidth	802.11b : 14.24MHz 802.11g : 17.83MHz 802.11n HT20 : 19.08MHz 802.11n HT40 : 36.76MHz									
Antenna Type / Gain	Ant. 1: PCB Antenna with gain 1.84 dBi Ant. 2: PCB Antenna with gain 3.14 dBi Tx Beamforming gain: 5.52dBi									
Antenna Function for Transmitter	<table border="1"> <thead> <tr> <th></th> <th>Ant. 1</th> <th>Ant. 2</th> </tr> </thead> <tbody> <tr> <td>802.11 b/g/n SISO</td> <td>V</td> <td>V</td> </tr> <tr> <td>802.11 n MIMO/Beamforming</td> <td>V</td> <td>V</td> </tr> </tbody> </table>		Ant. 1	Ant. 2	802.11 b/g/n SISO	V	V	802.11 n MIMO/Beamforming	V	V
	Ant. 1	Ant. 2								
802.11 b/g/n SISO	V	V								
802.11 n MIMO/Beamforming	V	V								
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)									

Note:

1. For WLAN SISO & MIMO mode for 802.11n mode, the whole testing has assessed only MIMO mode by referring to their higher conducted power.
2. 802.11n supports Tx beamforming mode, the power/EIRP of TX BF mode is lower than non-Tx BF mode, so only non-Tx BF test data show in the report.

1.5 Modification of EUT

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



1.6 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-KS 03CH05-KS TH01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH05-KS	AUDIX	E3	6.2009-8-24al
2.	CO01-KS	AUDIX	E3	6.2009-8-24

1.8 Applicable Standards

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

- 47 CFR Part 15 Subpart C §15.247
- FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- 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

- a. 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: conduction emission (150 kHz to 30 MHz), radiation 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 (X plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

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 modes are considering the modulation and worse data rates as below table.

Single Antenna

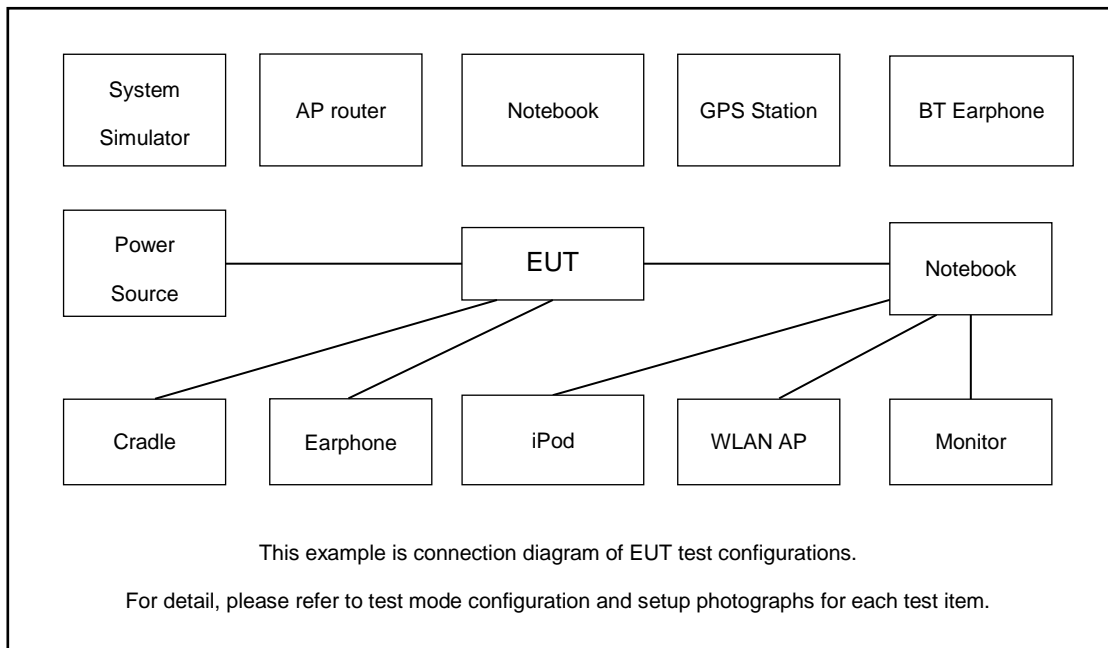
Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps

MIMO Antenna

Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : GSM 850 Idle + BT Link + WLAN Link(2.4G) + Adaptor
Remark: For Radiated Test Cases, The tests were performance with Adapter.	

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritus	MT8821C	N/A	N/A	Unshielded, 1.8m
2.	Vector Signal Generator	R&S	SMBV100A	258305	N/A	N/A
3.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded, 1.8m
4.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
6.	SD Card	Kingston	8GB	N/A	N/A	N/A

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 6.3 dB.

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

= 6.3 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

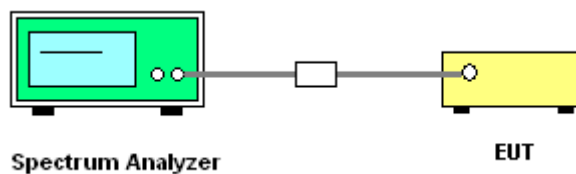
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.8
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. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

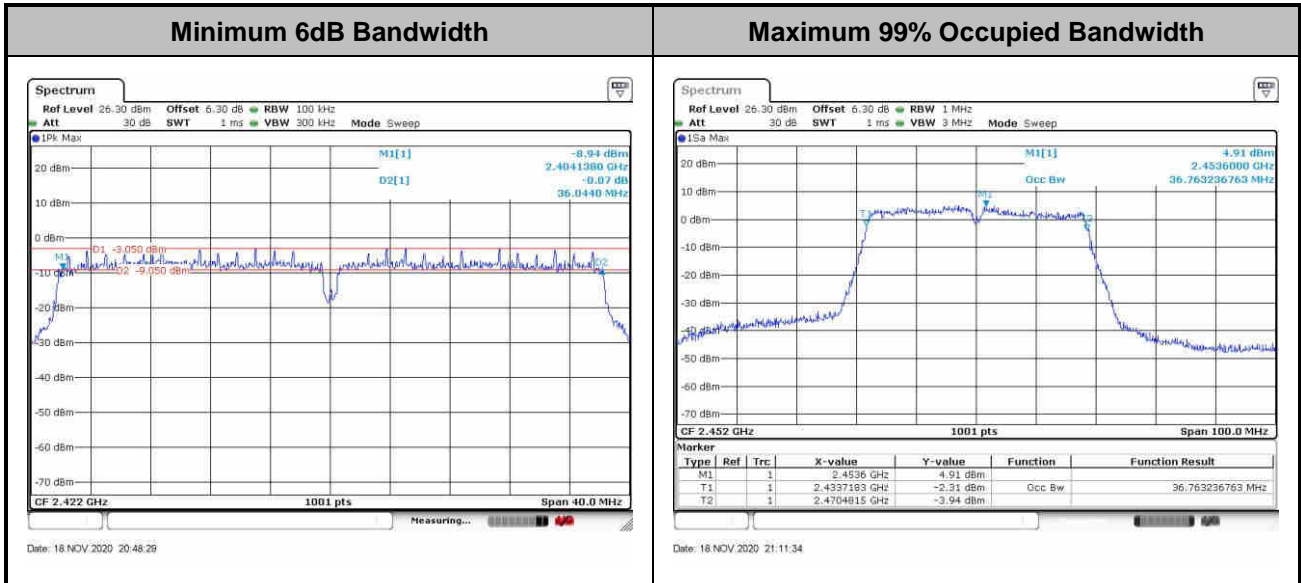
3.1.4 Test Setup





3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



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 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.

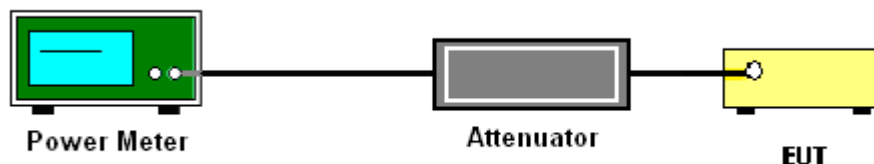
3.2.2 Measuring Instruments

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 ANSI C63.10-2013 clause 11.9.1.3 PKPM1 Peak power meter or ANSI C63.10-2013 clause 11.9.2.3.2 Method AVGPM-G 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 of ANSI C63.10-2013 clause 11.10.2 Method PKPSD.
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.

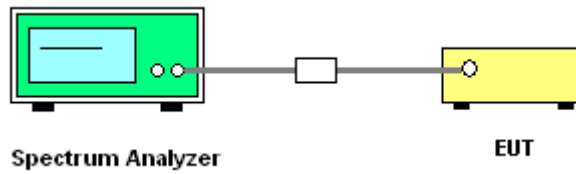
If measurements performed using method (2) plus $10 \log(N)$ exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

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.

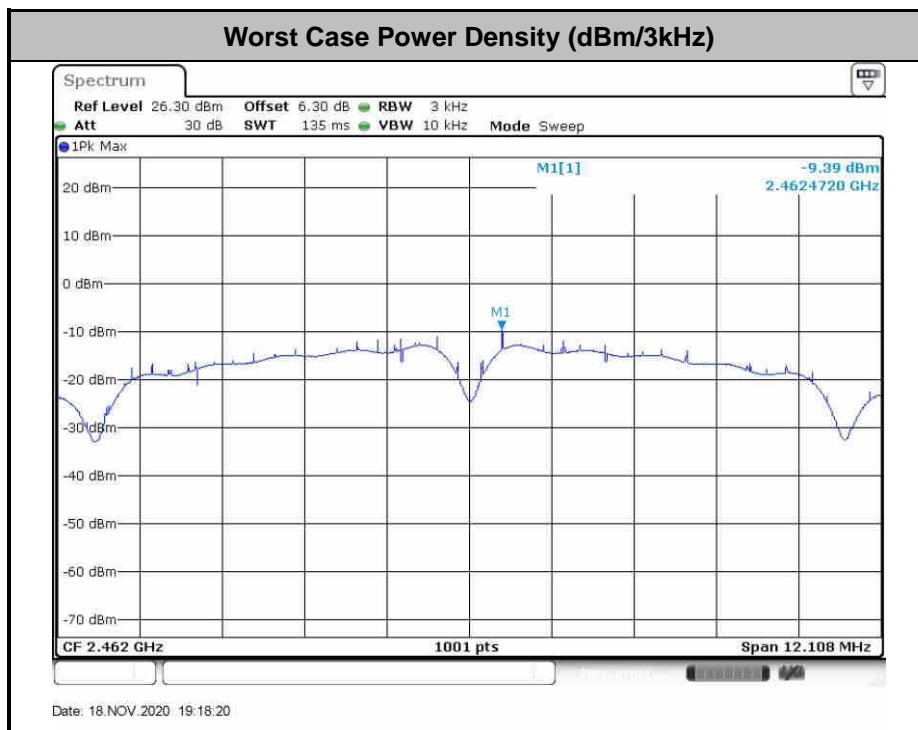
Method (2): Measure and add $10 \log(N)$ dB, where N is the number of outputs. (N=2)

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.

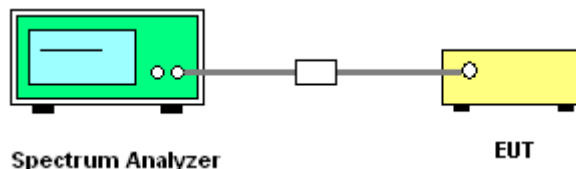
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.13
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



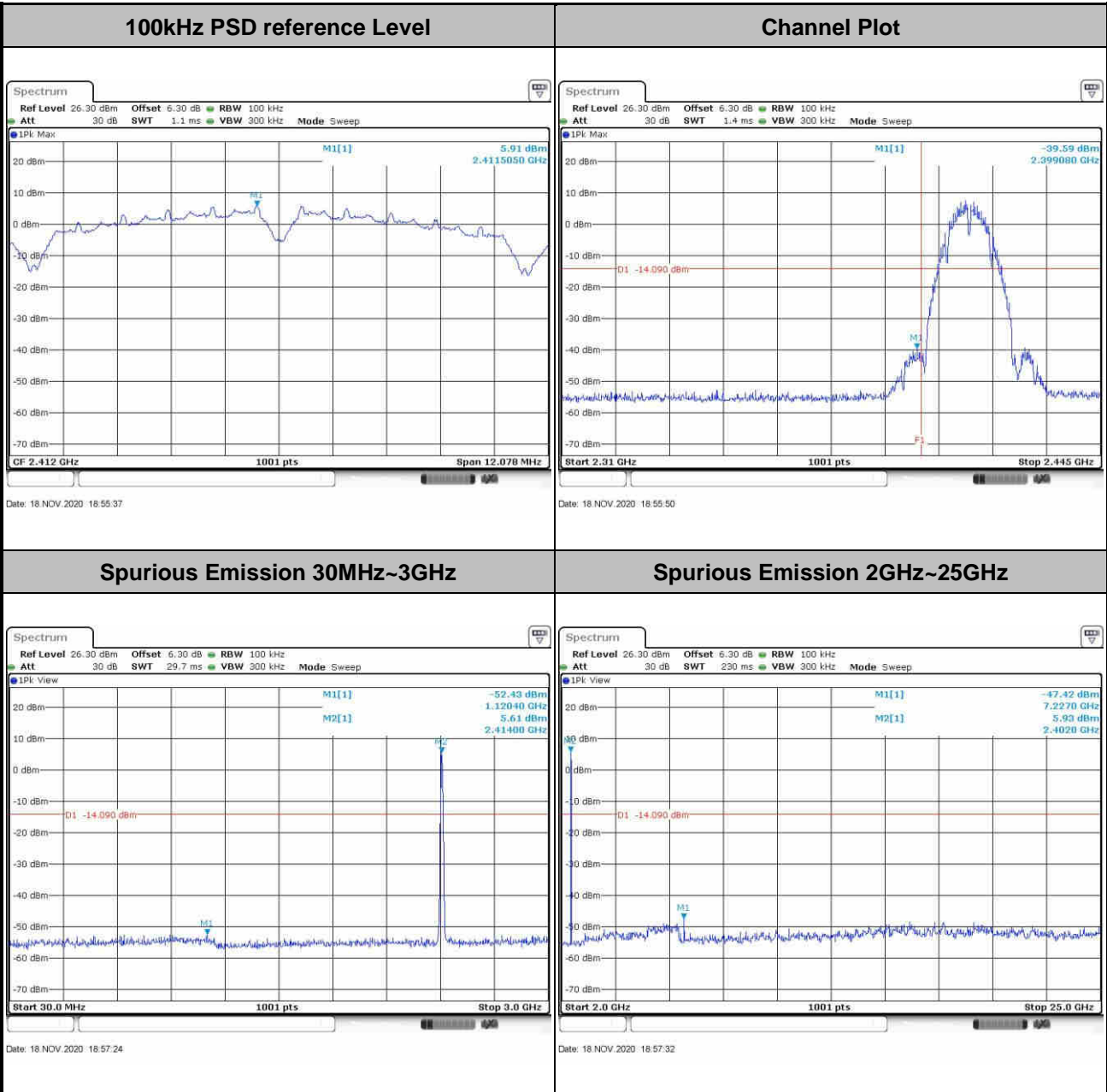


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Engineer : Albert Shi	Temperature : 0~40°C
	Relative Humidity : 51~54%

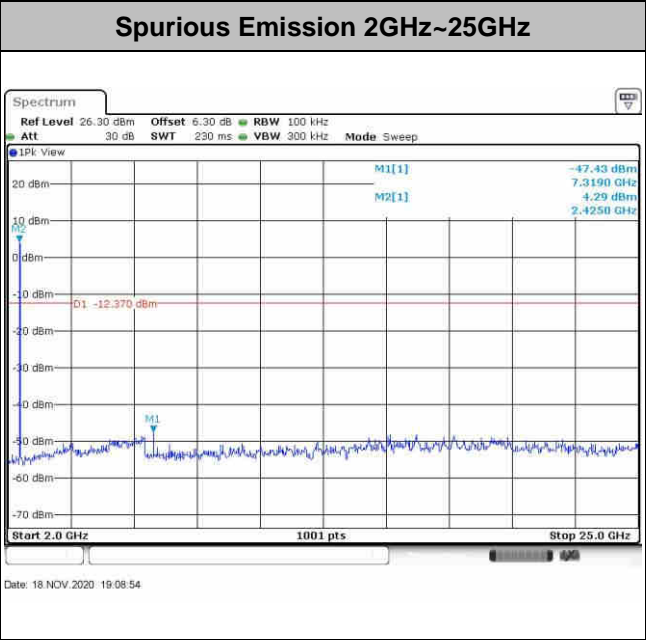
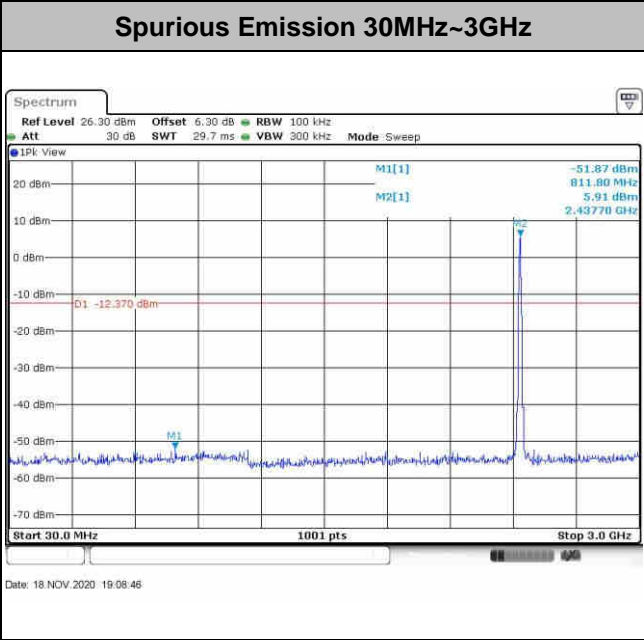
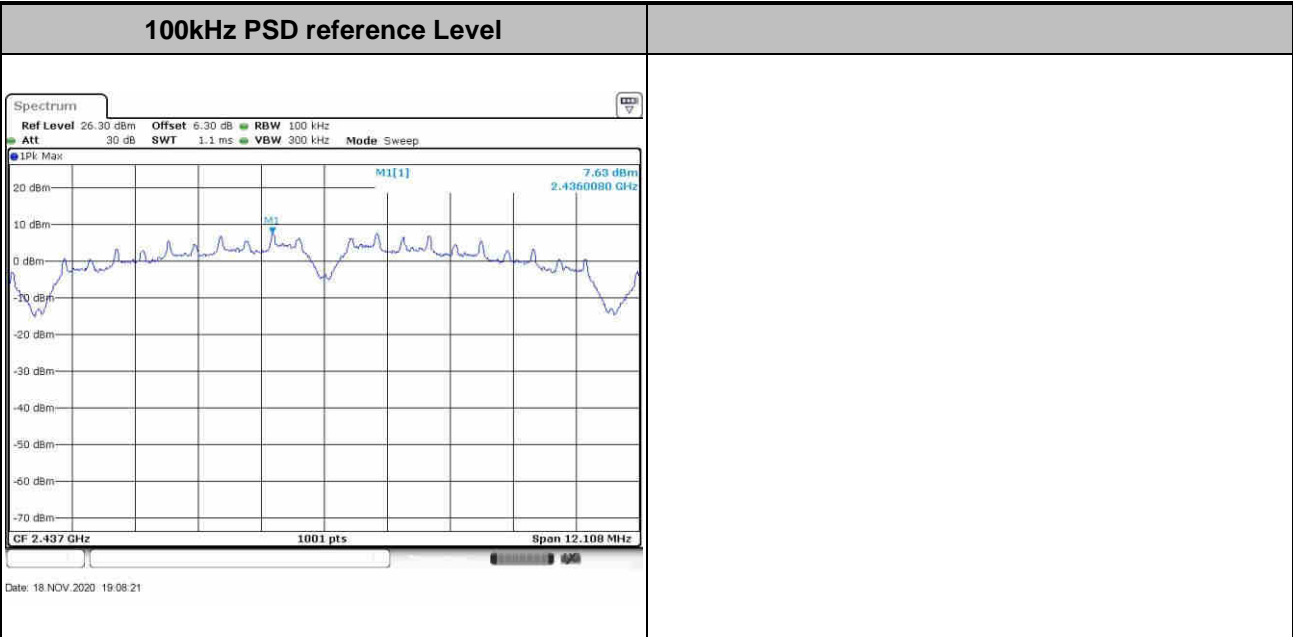
Number of TX = 1, Ant. 1 (Measured)

Test Mode : 802.11b	Test Channel : 01
---------------------	-------------------



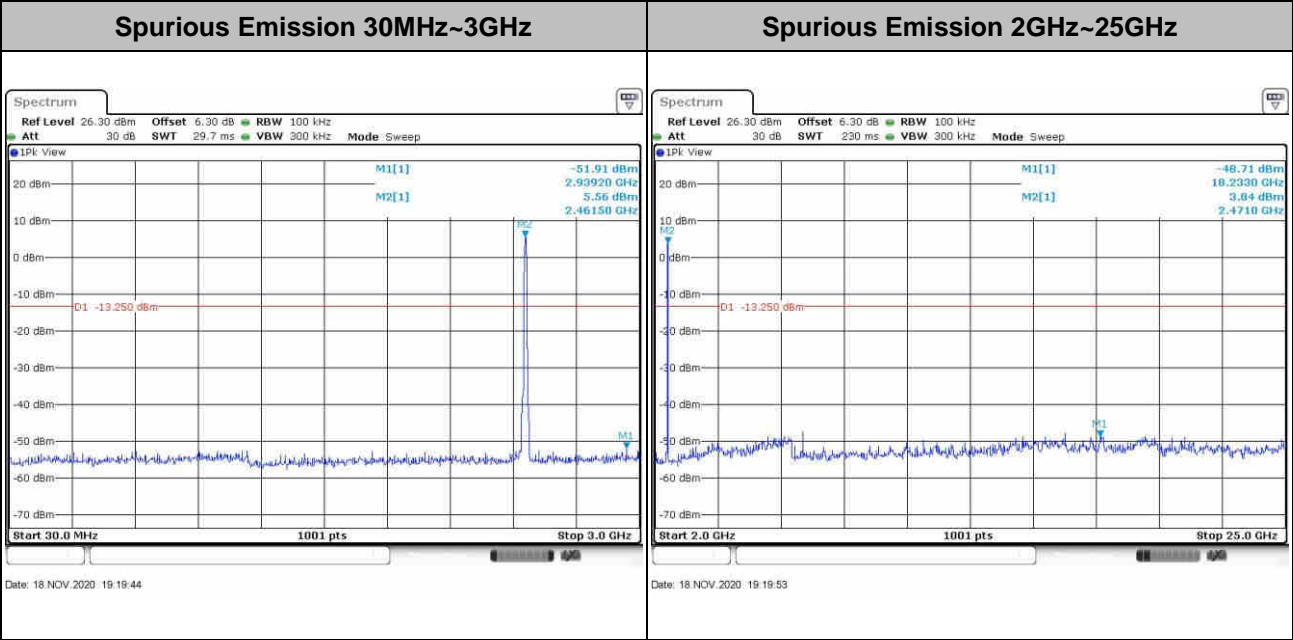
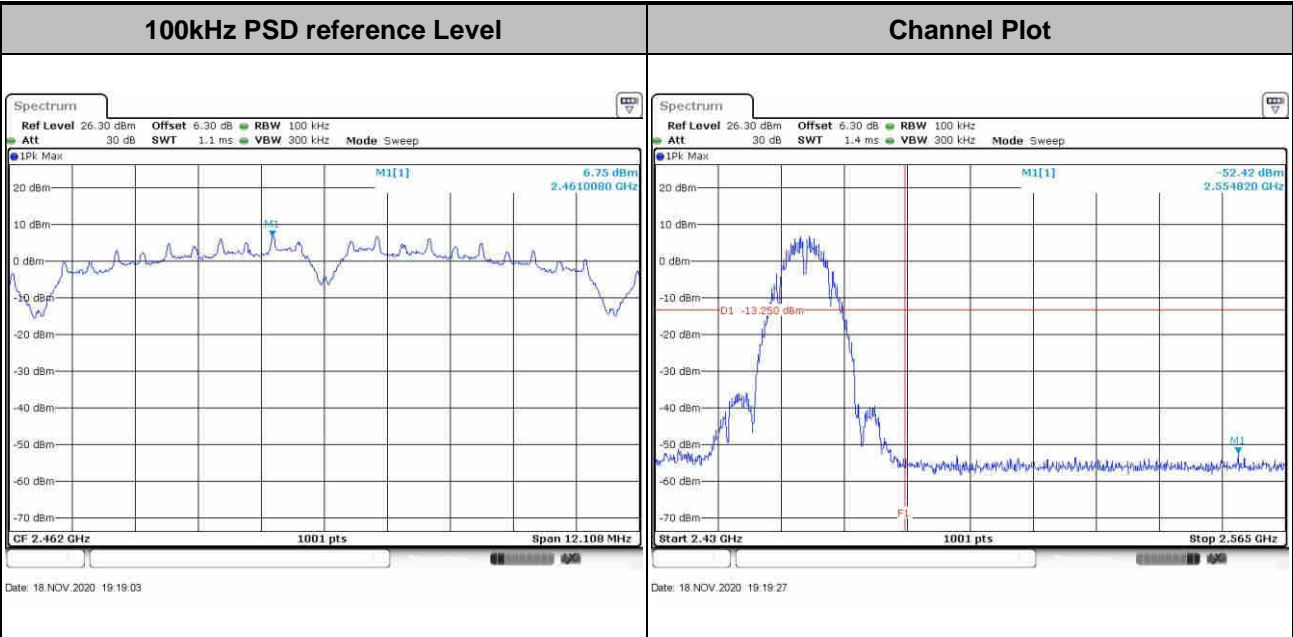


Test Mode :	802.11b	Test Channel :	06
-------------	---------	----------------	----





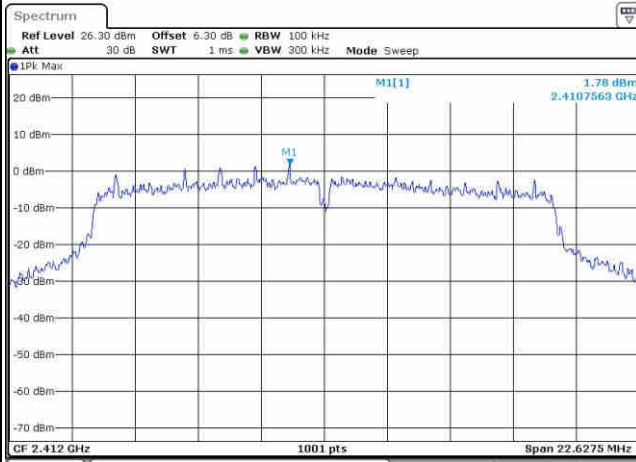
Test Mode :	802.11b	Test Channel :	11
-------------	---------	----------------	----





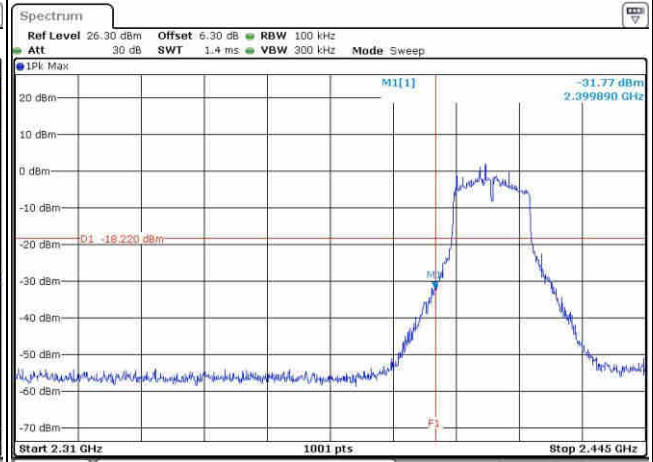
Test Mode : 802.11g Test Channel : 01

100kHz PSD reference Level



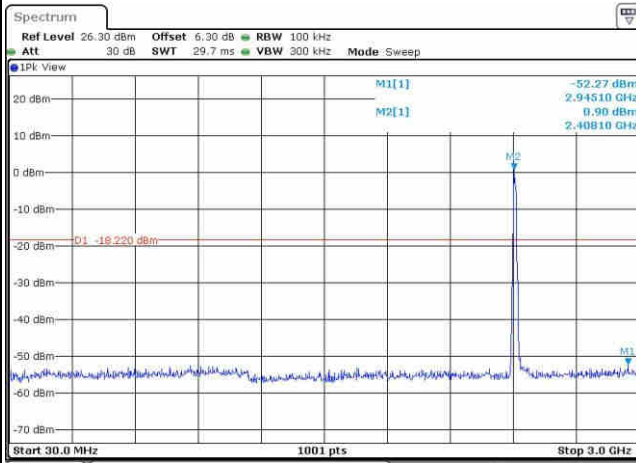
Date: 18 NOV 2020 19:30:06

Channel Plot



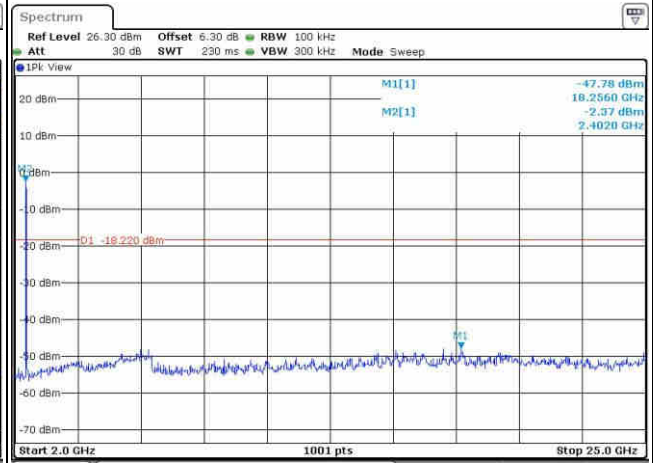
Date: 18 NOV 2020 19:30:45

Spurious Emission 30MHz~3GHz



Date: 18 NOV 2020 19:30:56

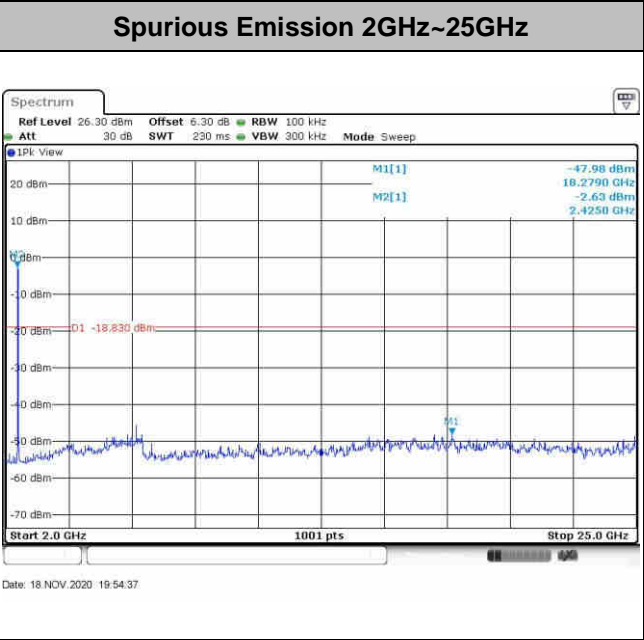
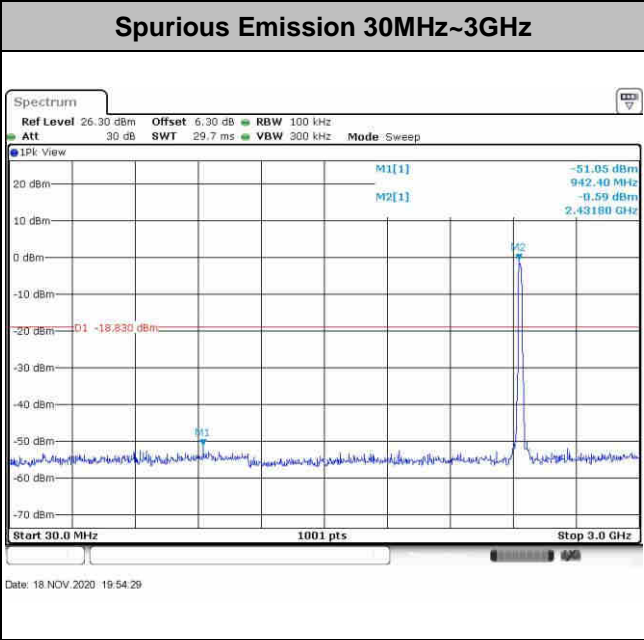
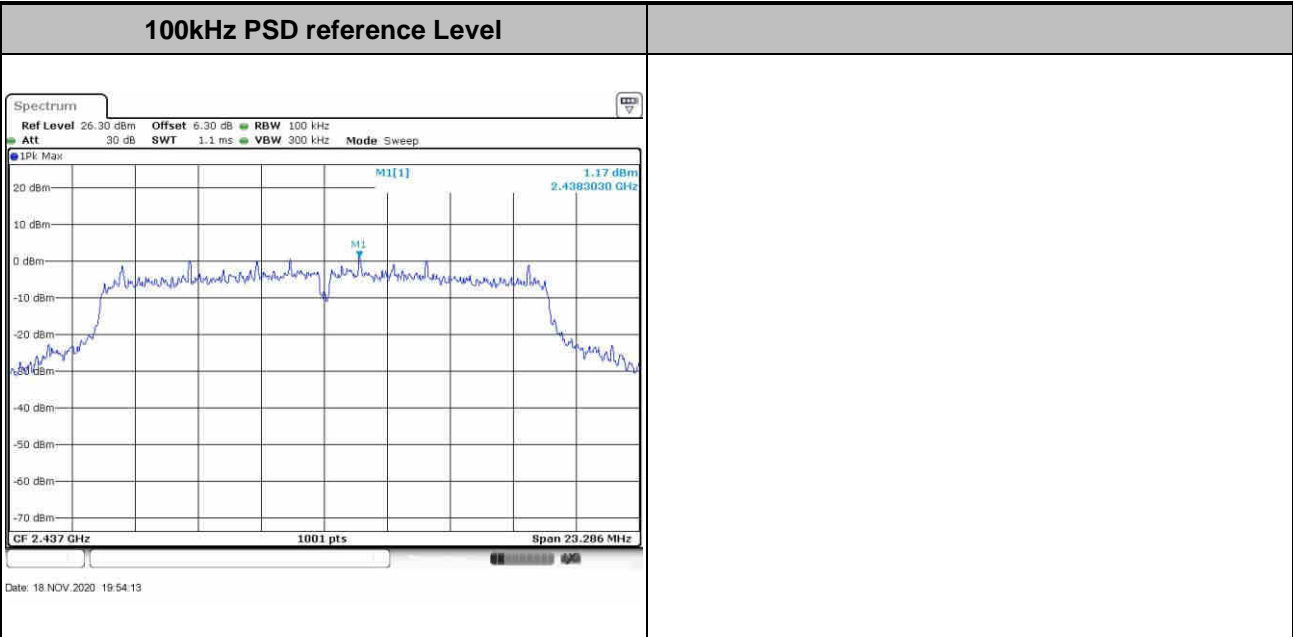
Spurious Emission 2GHz~25GHz



Date: 18 NOV 2020 19:31:05

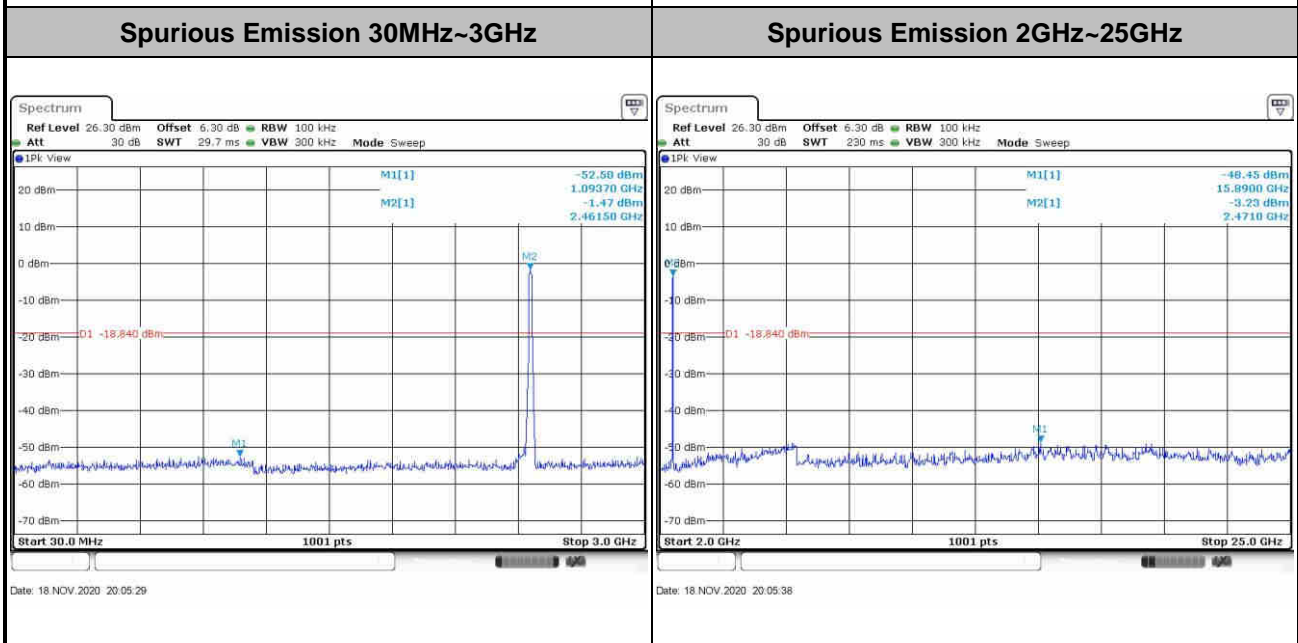
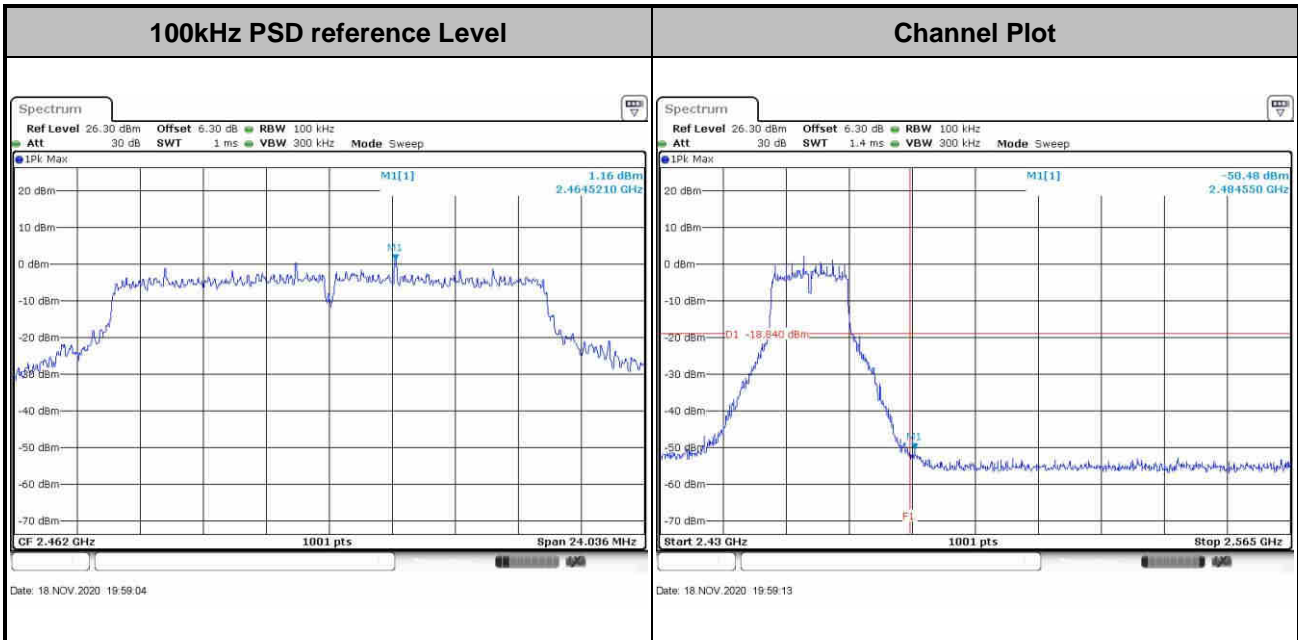


Test Mode :	802.11g	Test Channel :	06
-------------	---------	----------------	----





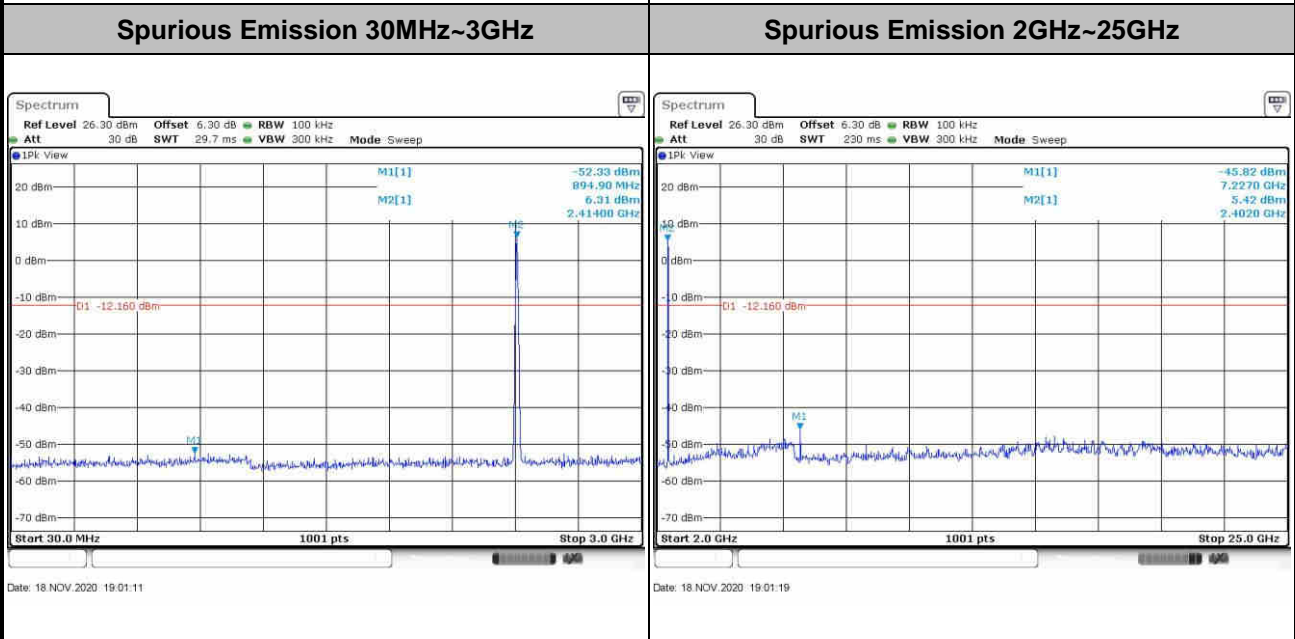
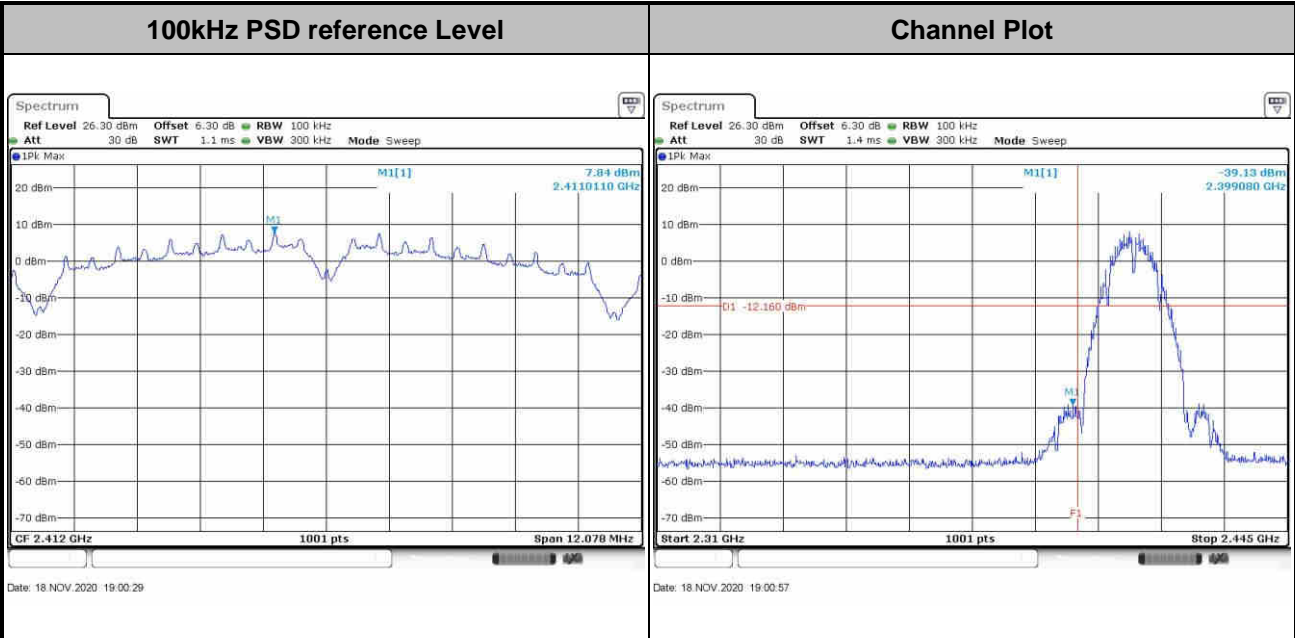
Test Mode :	802.11g	Test Channel :	11
-------------	---------	----------------	----





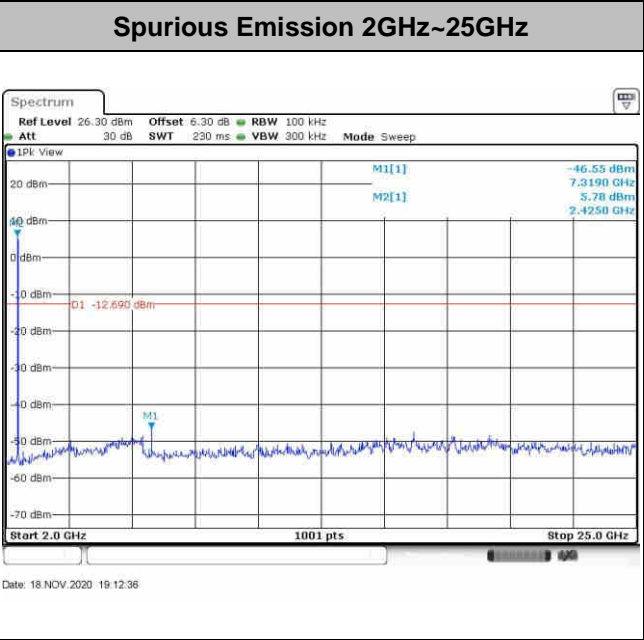
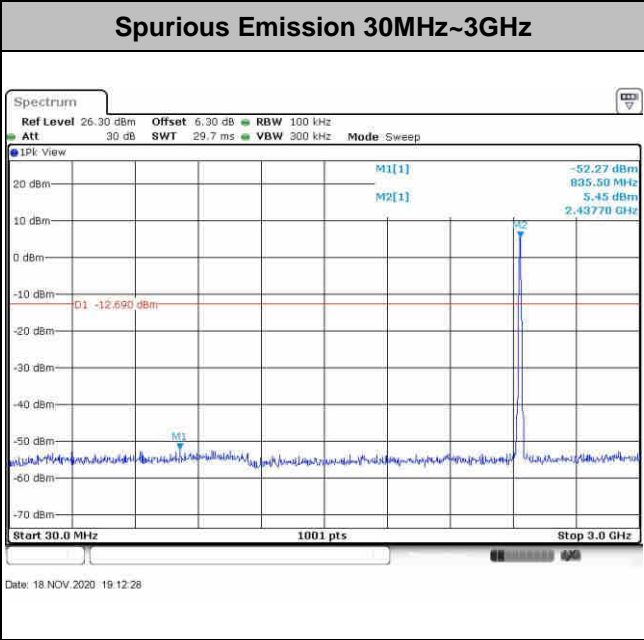
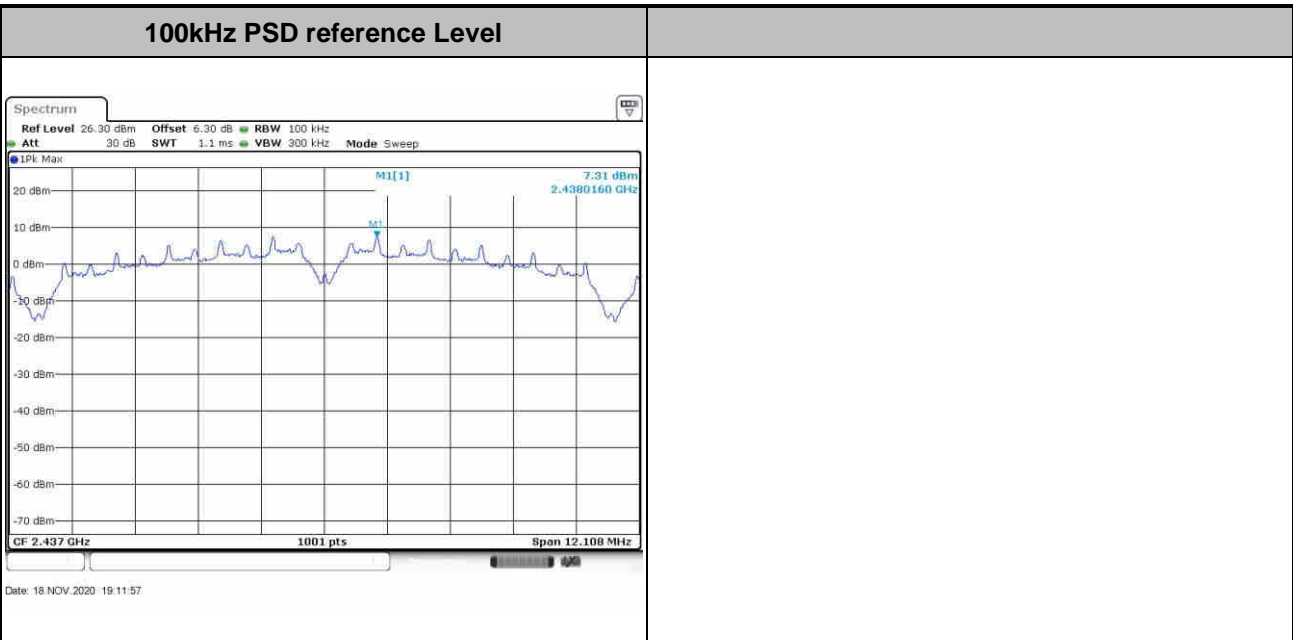
Number of TX = 1, Ant. 2 (Measured)

Test Mode :	802.11b	Test Channel :	01
-------------	---------	----------------	----



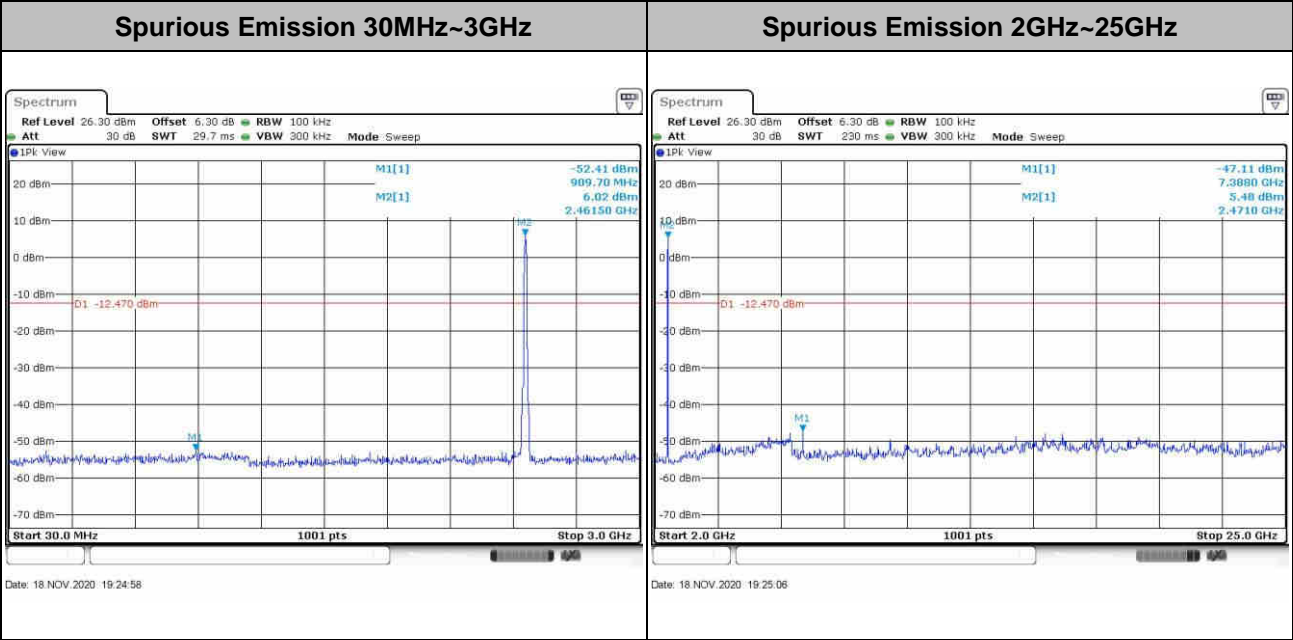
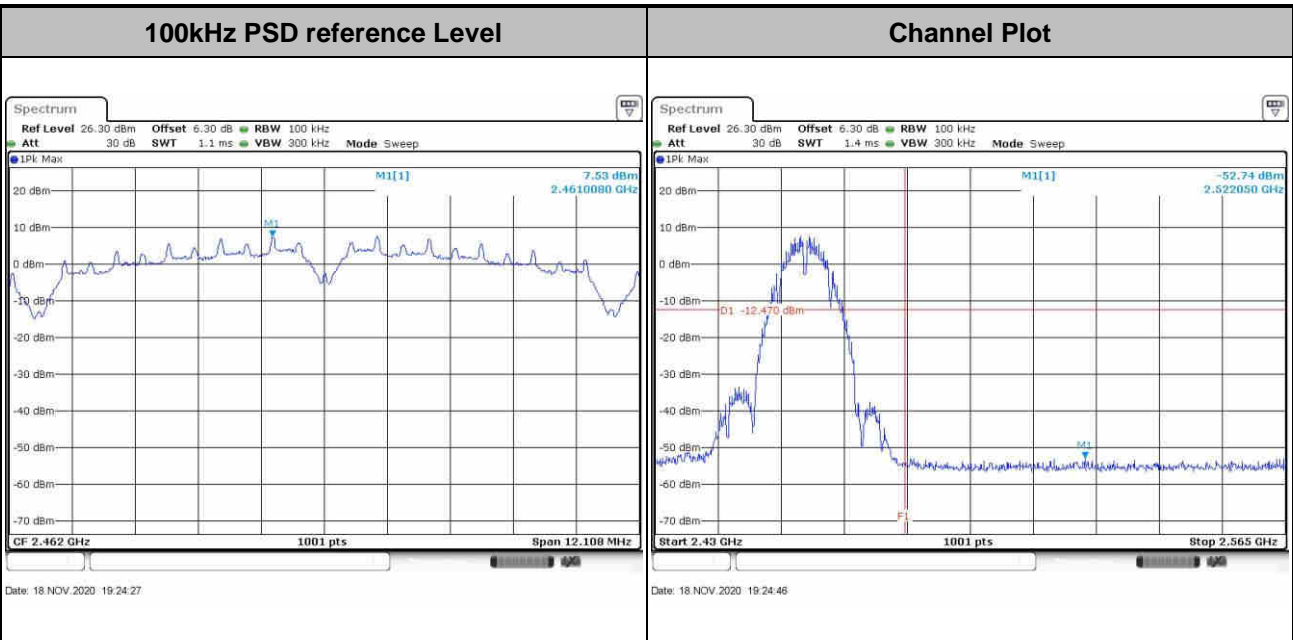


Test Mode :	802.11b	Test Channel :	06
-------------	---------	----------------	----



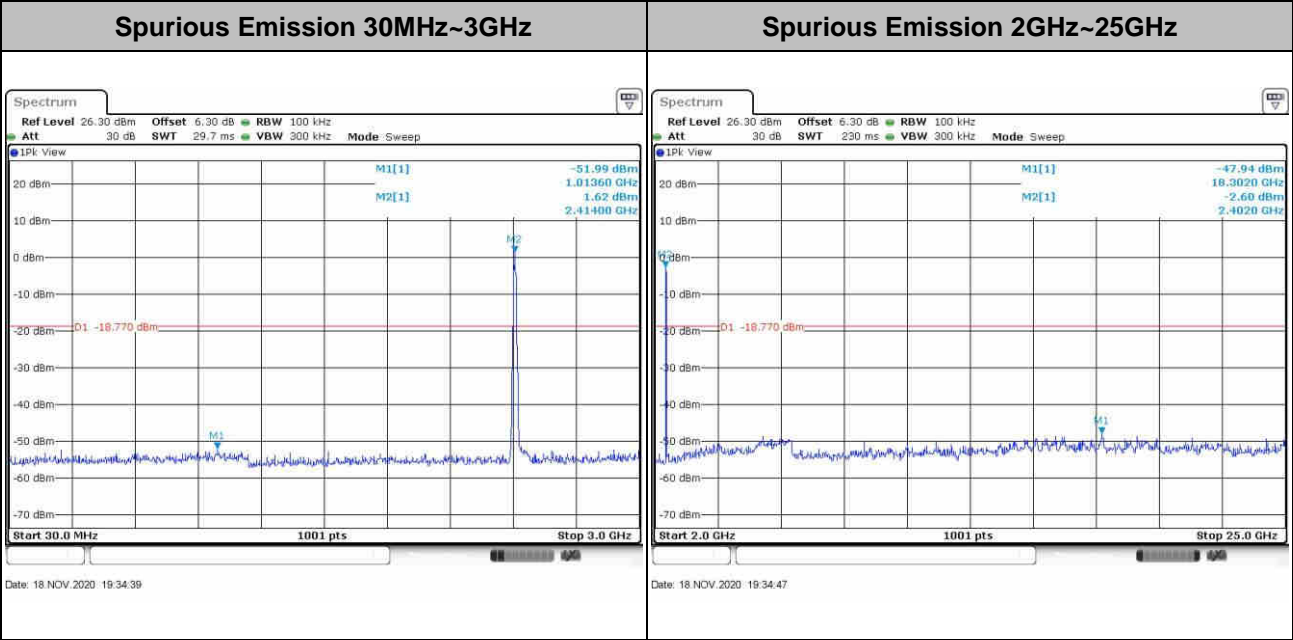
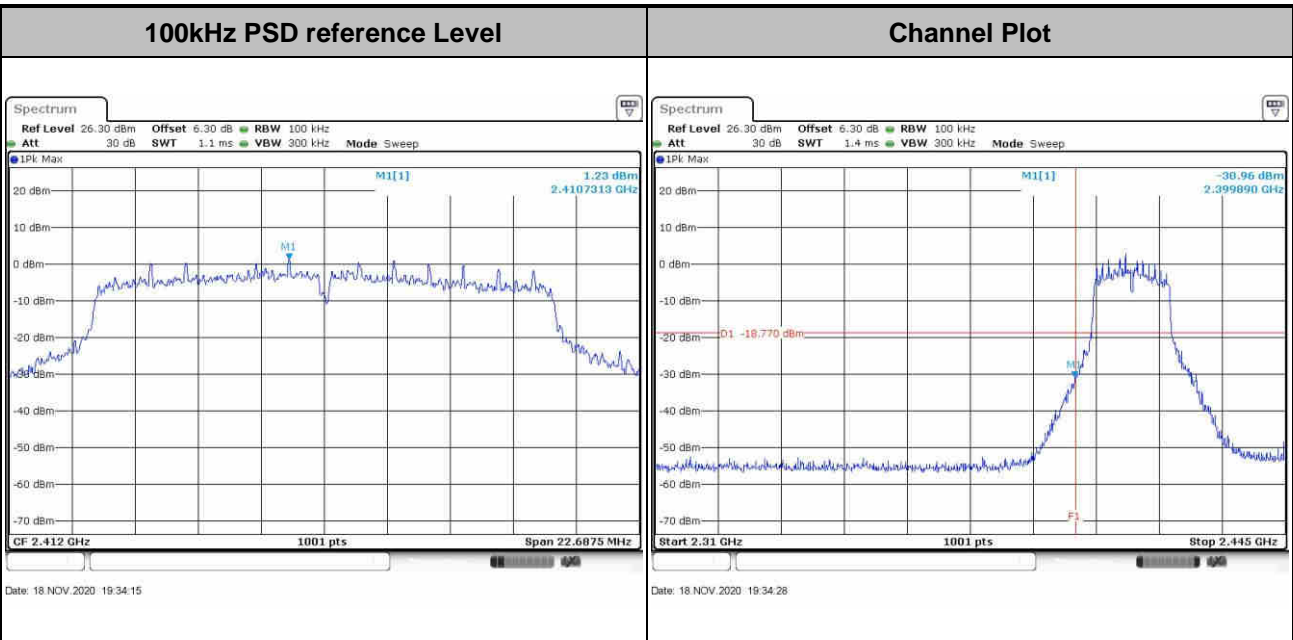


Test Mode :	802.11b	Test Channel :	11
-------------	---------	----------------	----



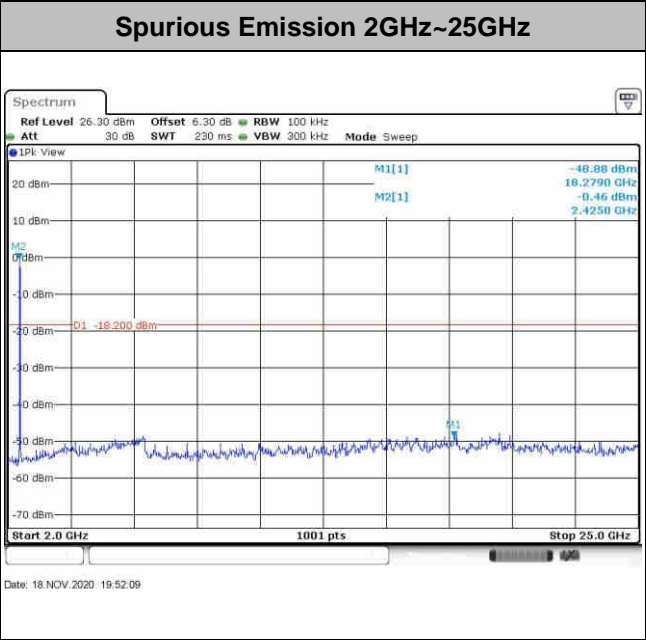
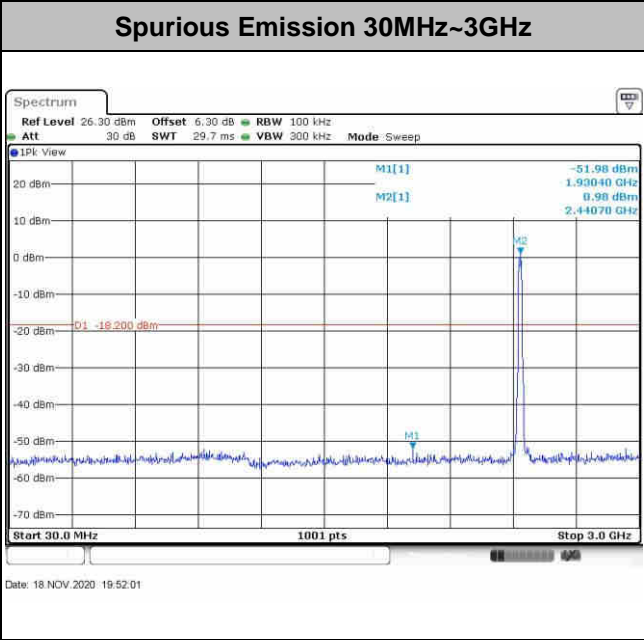
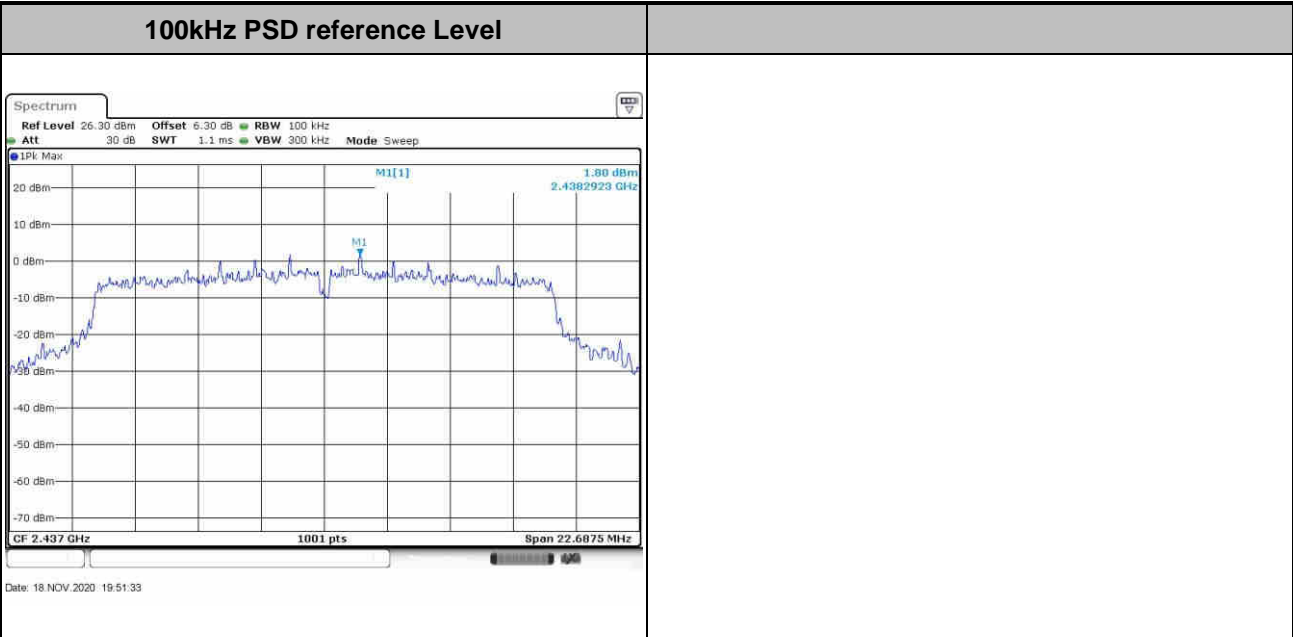


Test Mode : 802.11g Test Channel : 01



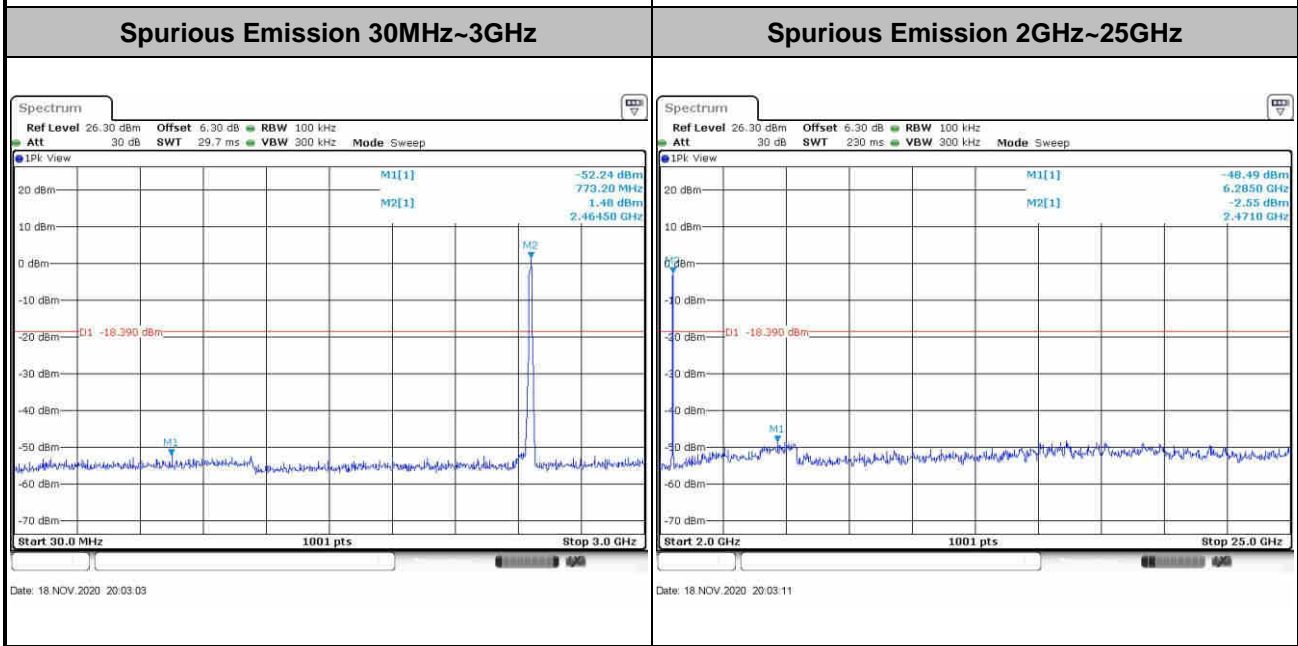
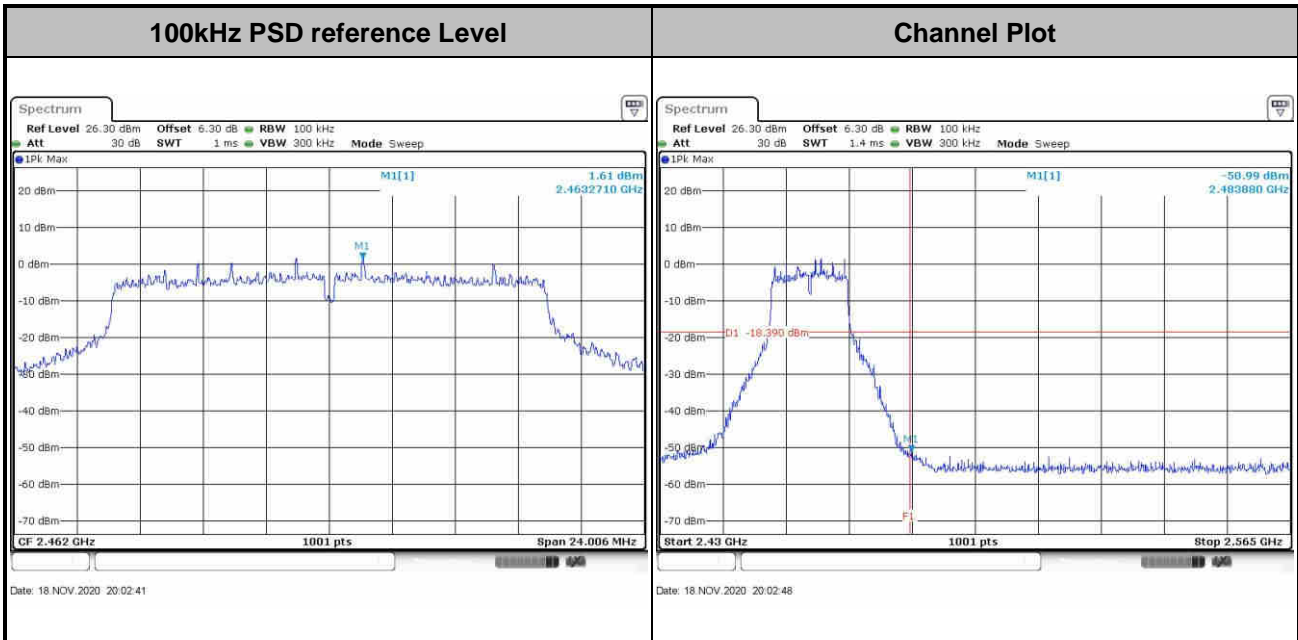


Test Mode :	802.11g	Test Channel :	06
-------------	---------	----------------	----





Test Mode :	802.11g	Test Channel :	11
-------------	---------	----------------	----

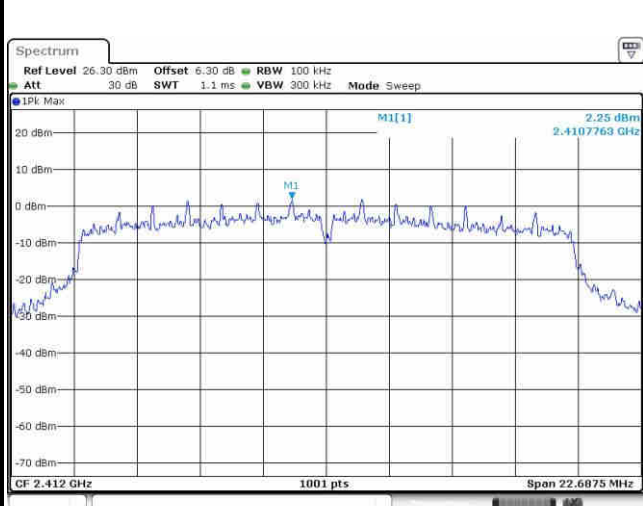




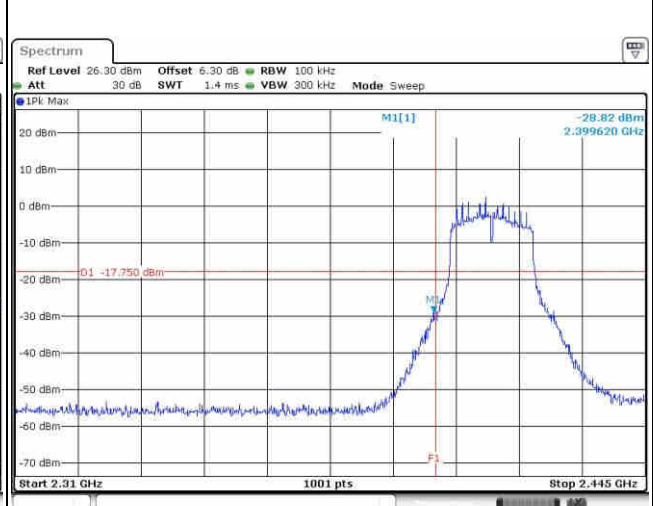
Number of TX = 2, Ant. 1 (Measured)

Test Mode :	802.11n HT20	Test Channel :	01
-------------	--------------	----------------	----

100kHz PSD reference Level	Channel Plot
-----------------------------------	---------------------

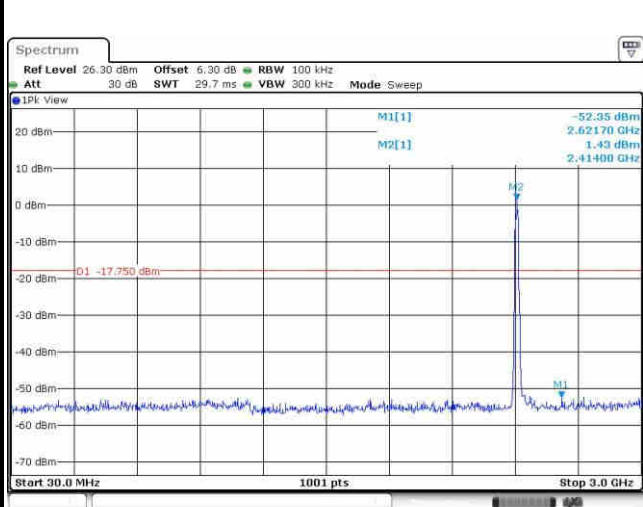


Date: 18 NOV. 2020 20:15:28



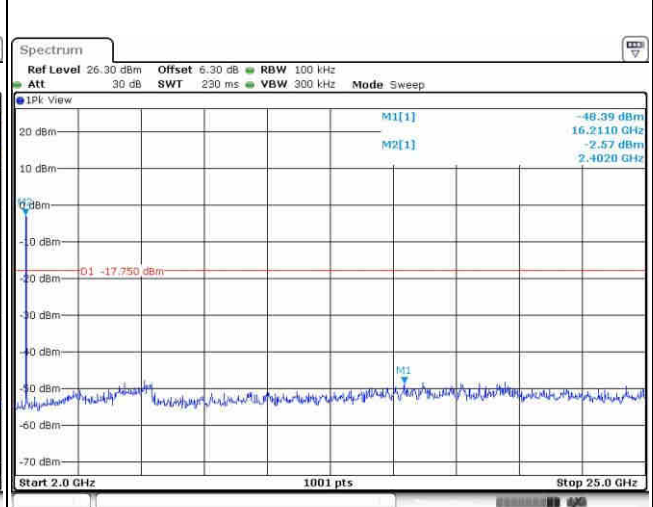
Date: 18 NOV. 2020 20:15:37

Spurious Emission 30MHz~3GHz



Date: 18 NOV. 2020 20:15:50

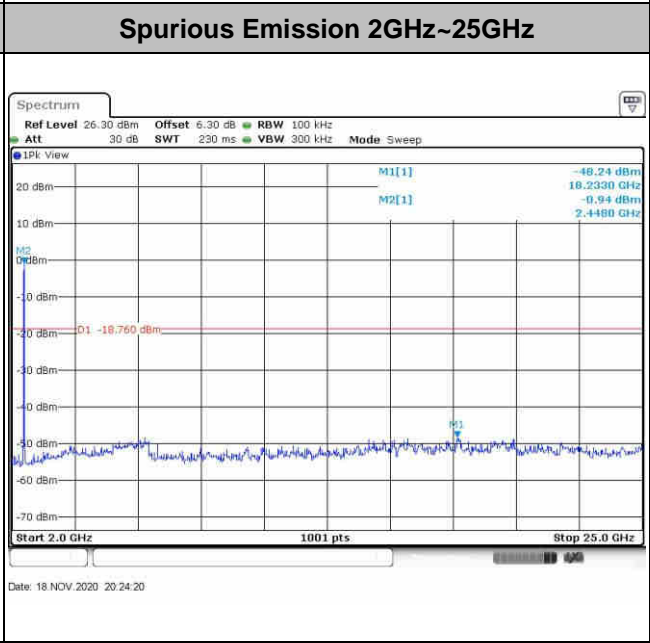
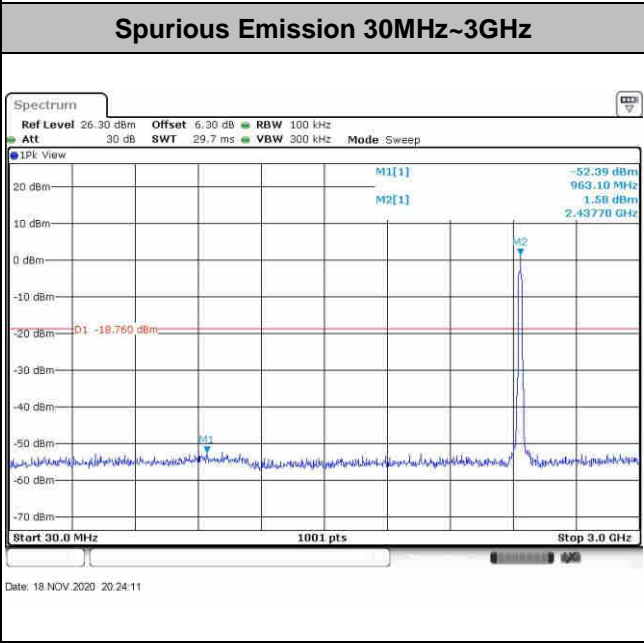
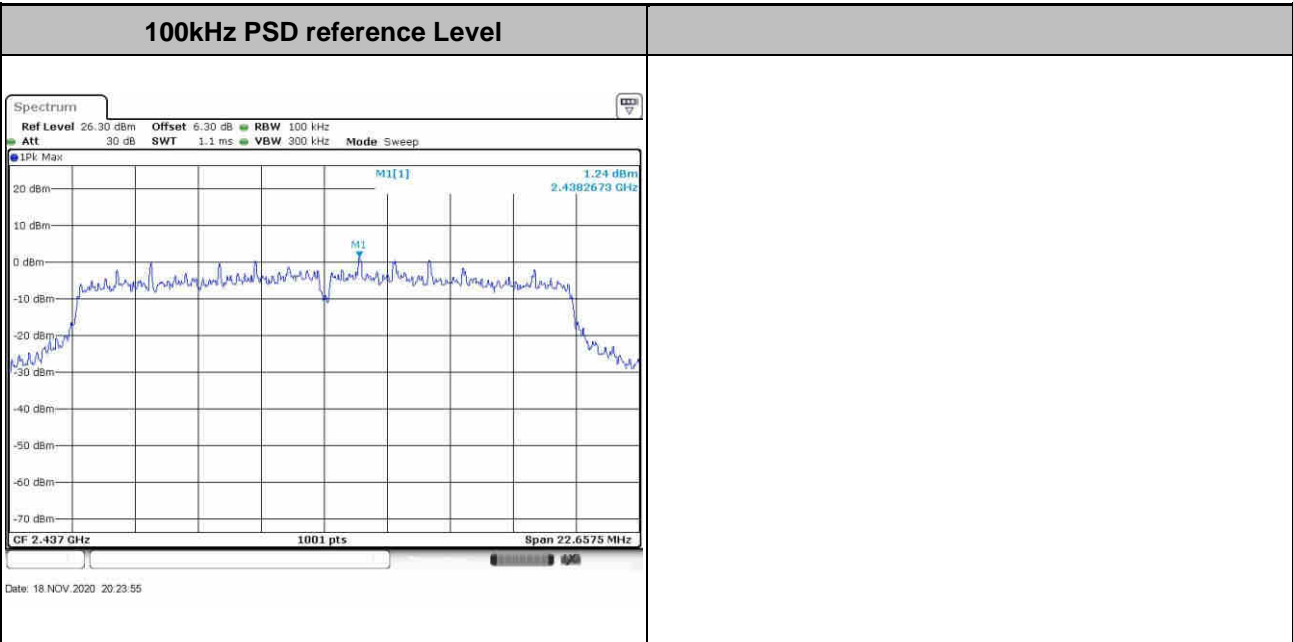
Spurious Emission 2GHz~25GHz



Date: 18 NOV. 2020 20:15:58

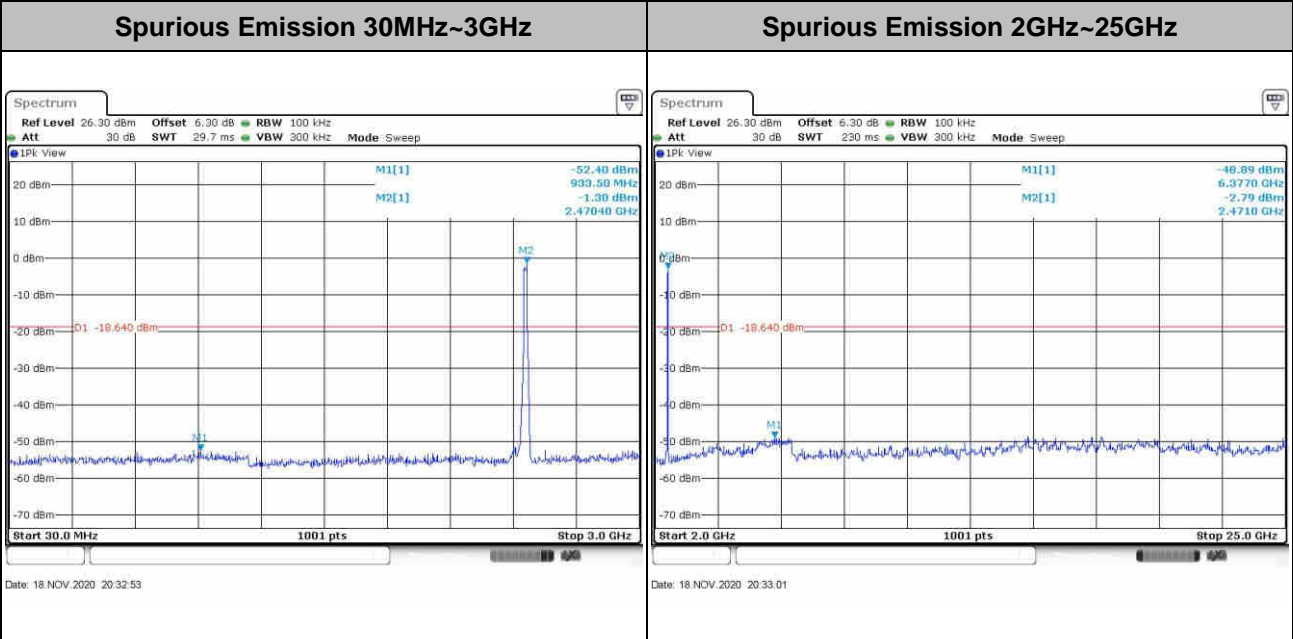
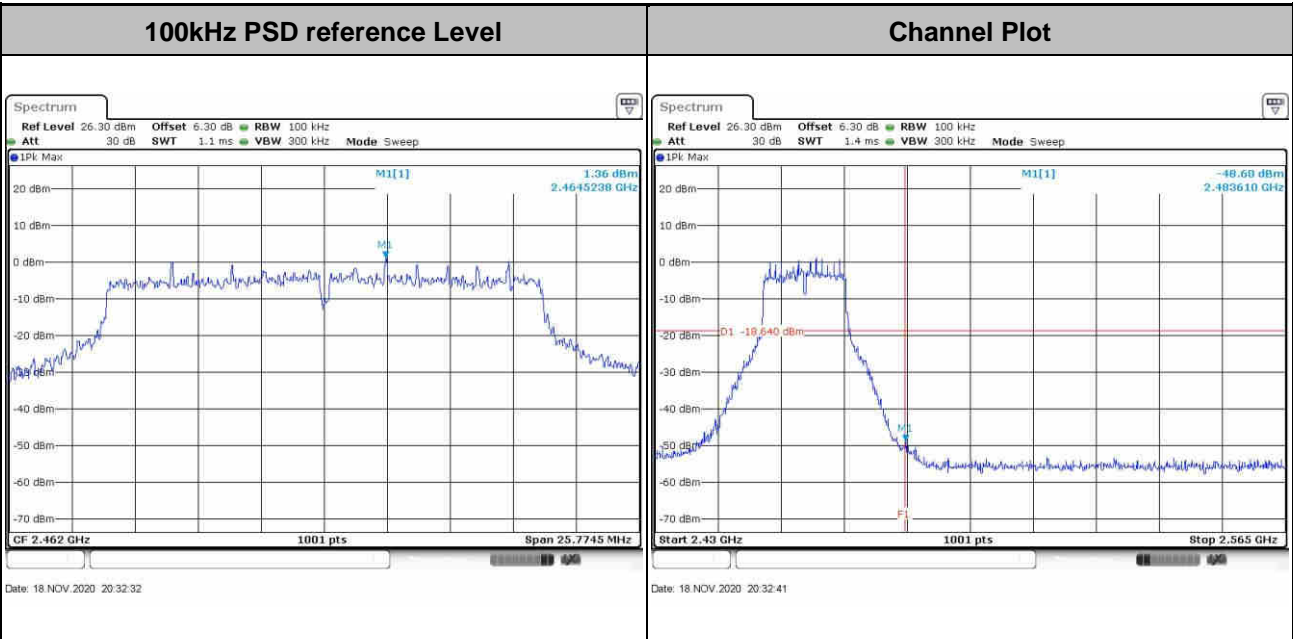


Test Mode :	802.11n HT20	Test Channel :	06
-------------	--------------	----------------	----



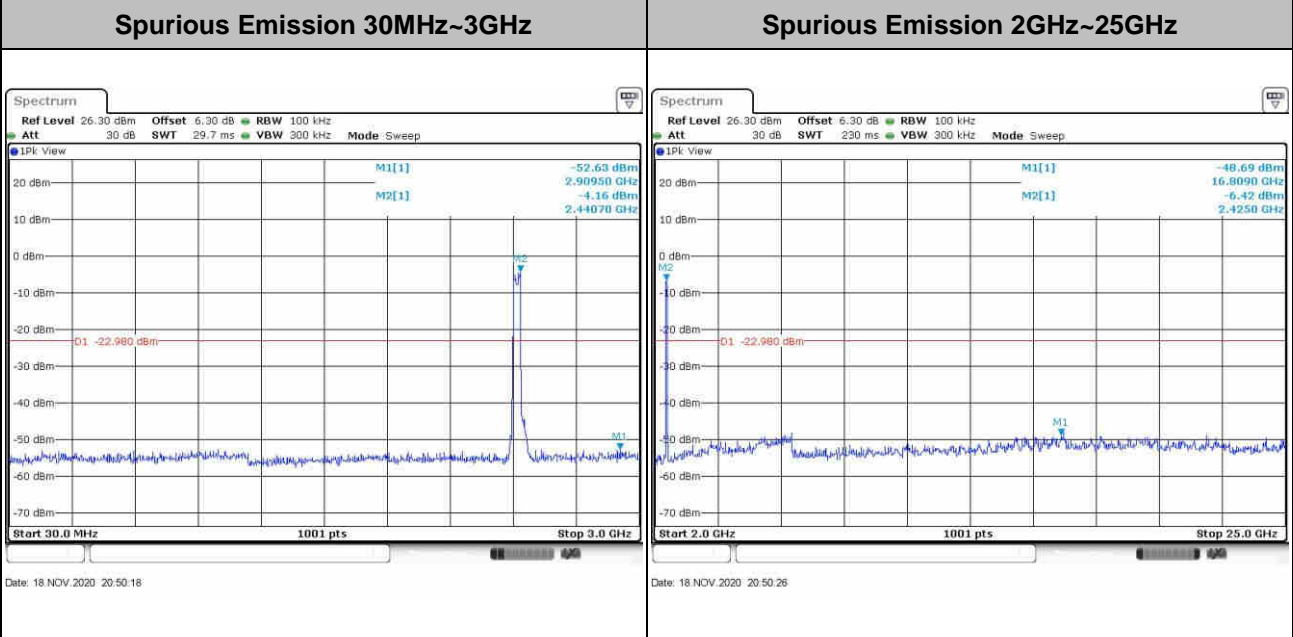
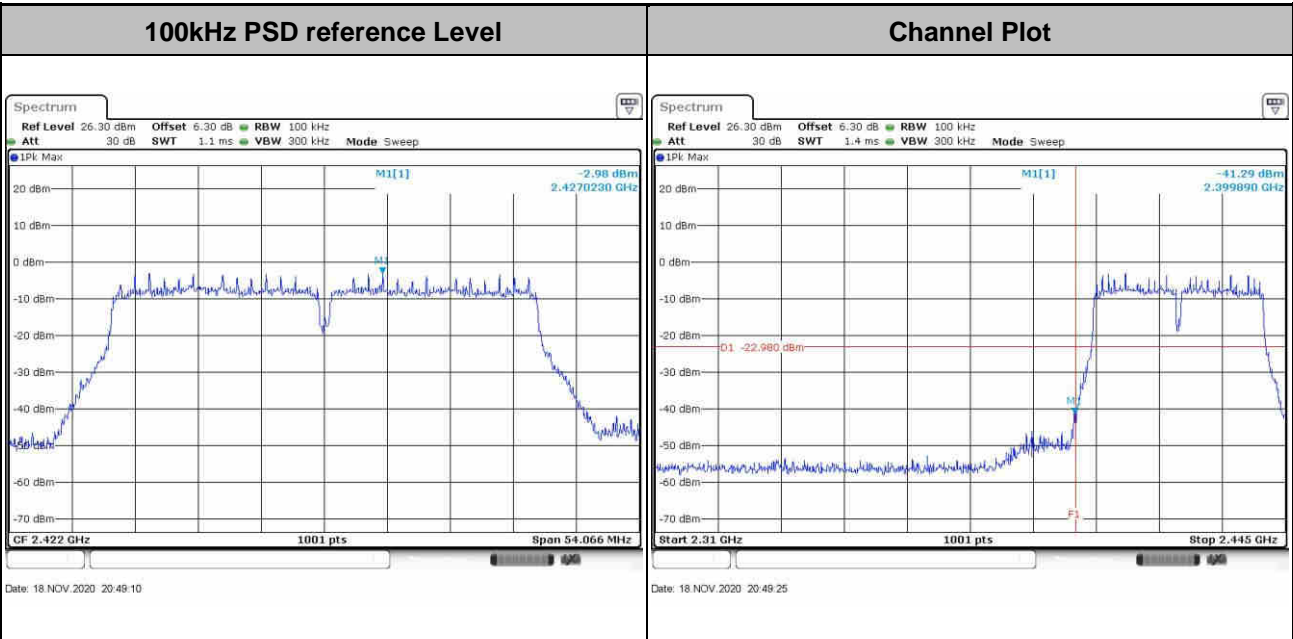


Test Mode : 802.11n HT20 Test Channel : 11





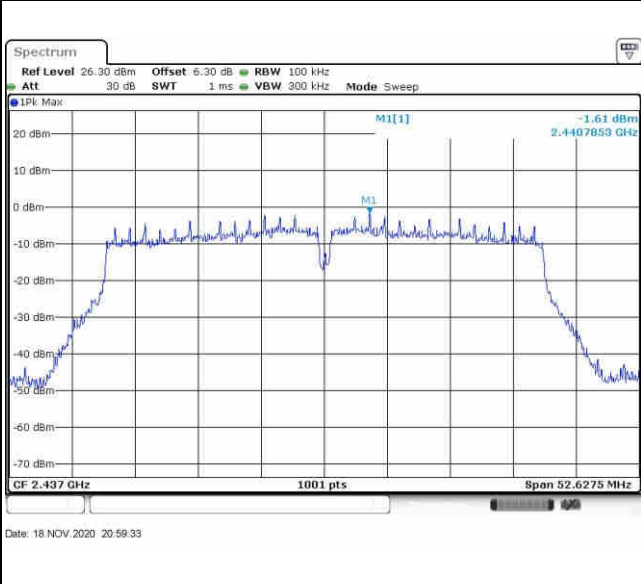
Test Mode : 802.11n HT40	Test Channel : 03
---------------------------------	--------------------------



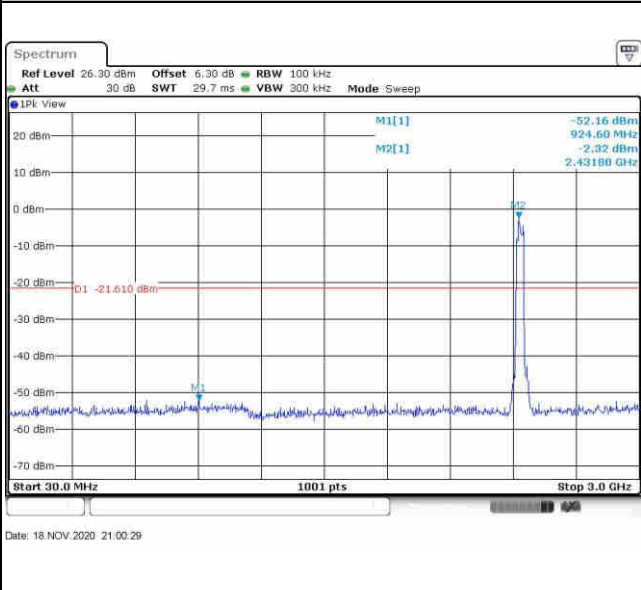


Test Mode :	802.11n HT40	Test Channel :	06
-------------	--------------	----------------	----

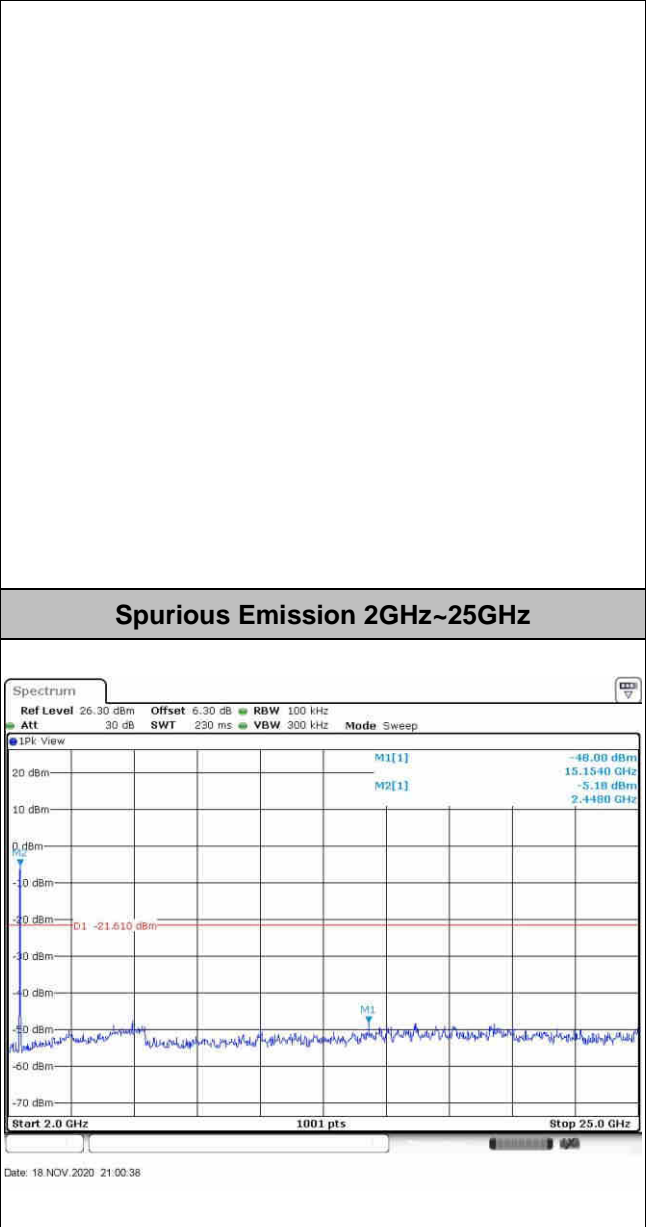
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

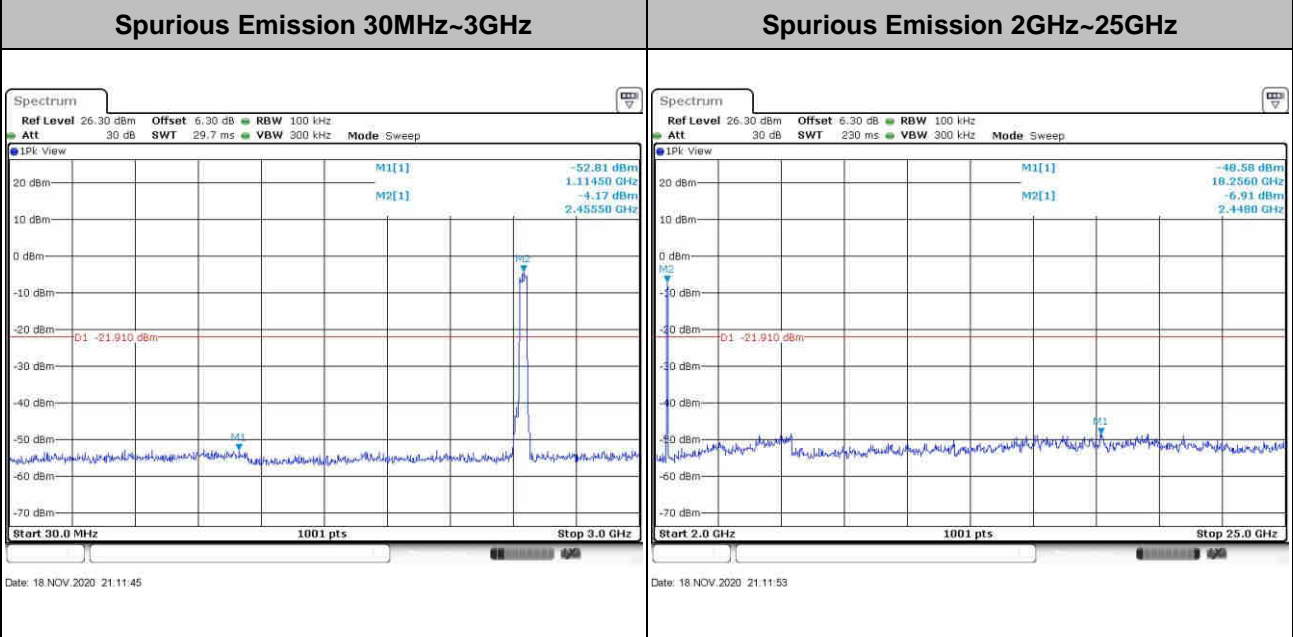
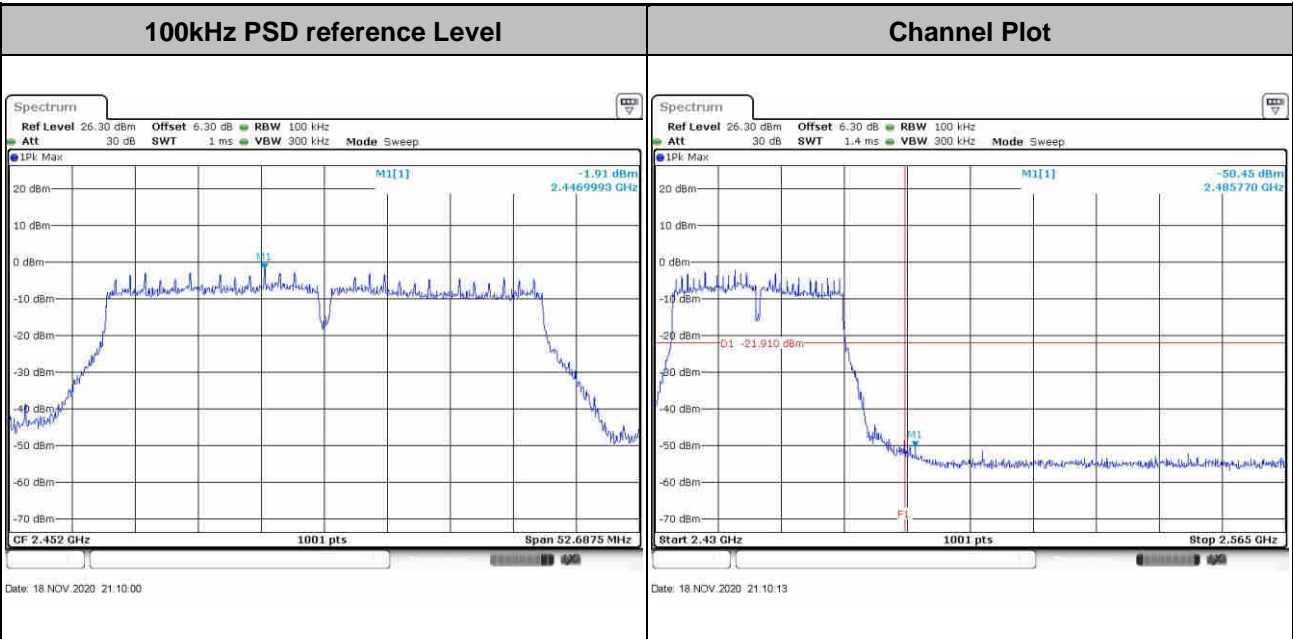


Spurious Emission 2GHz~25GHz





Test Mode : 802.11n HT40	Test Channel : 09
---------------------------------	--------------------------

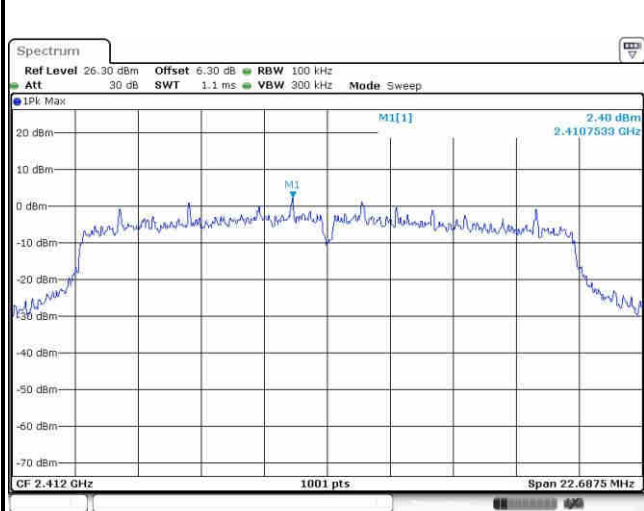




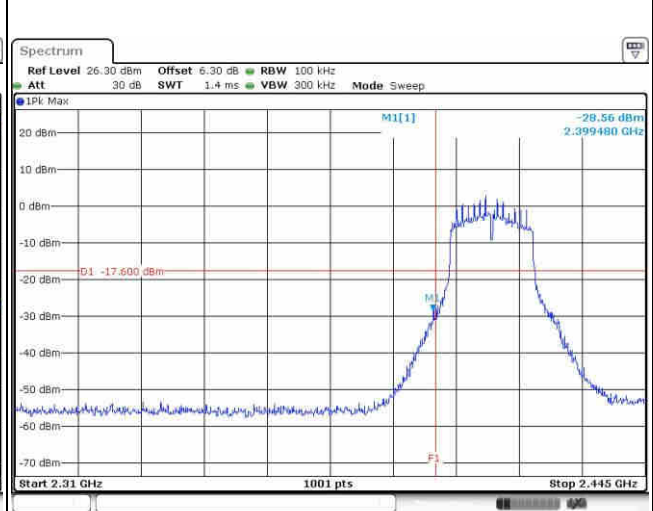
Number of TX = 2, Ant. 2 (Measured)

Test Mode :	802.11n HT20	Test Channel :	01
-------------	--------------	----------------	----

100kHz PSD reference Level	Channel Plot
-----------------------------------	---------------------

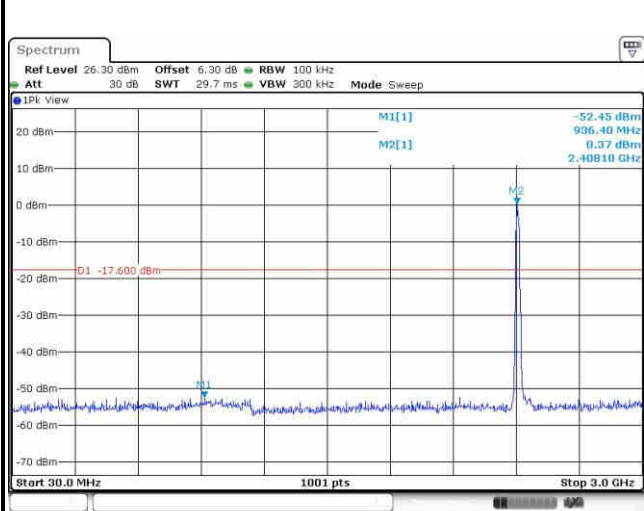


Date: 18 NOV. 2020 20:19:41



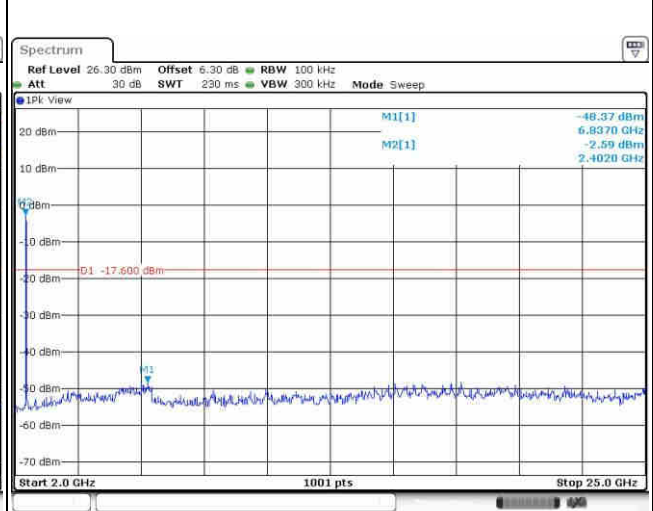
Date: 18 NOV. 2020 20:19:56

Spurious Emission 30MHz~3GHz



Date: 18 NOV. 2020 20:20:07

Spurious Emission 2GHz~25GHz

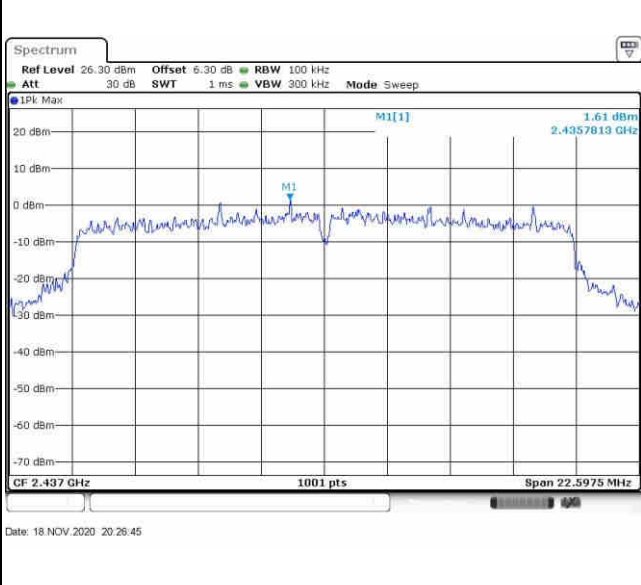


Date: 18 NOV. 2020 20:20:16

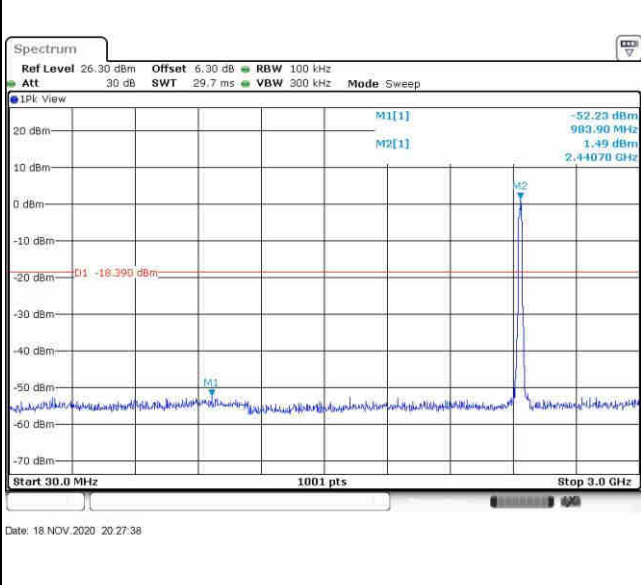


Test Mode :	802.11n HT20	Test Channel :	06
-------------	--------------	----------------	----

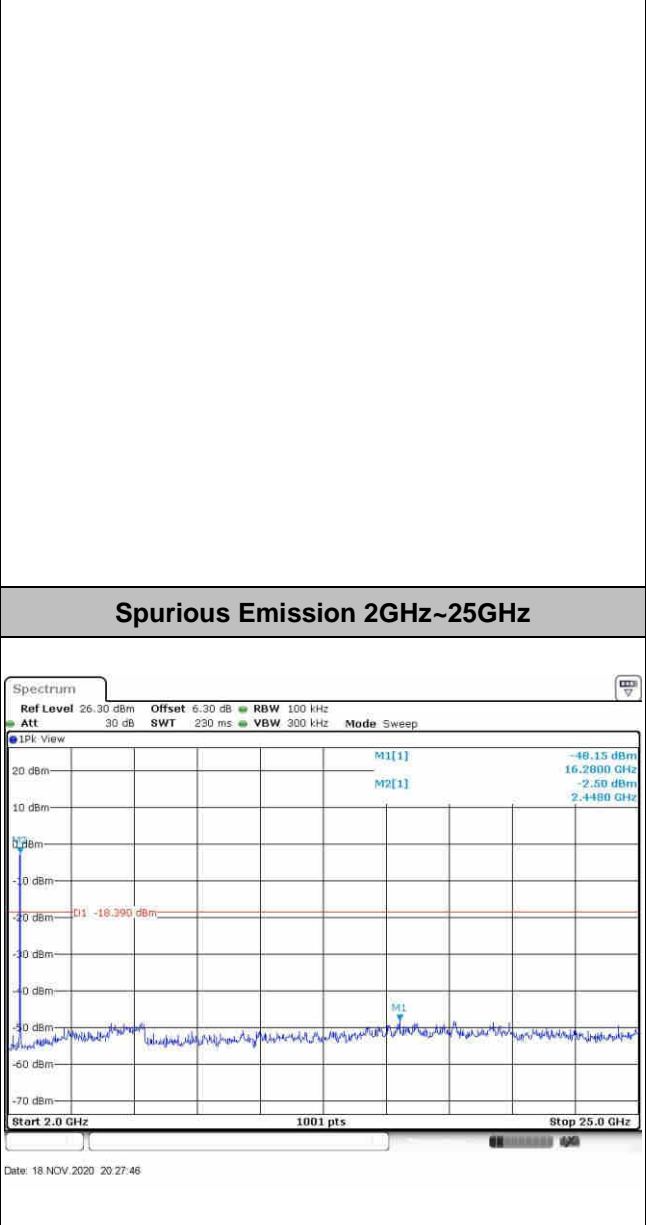
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

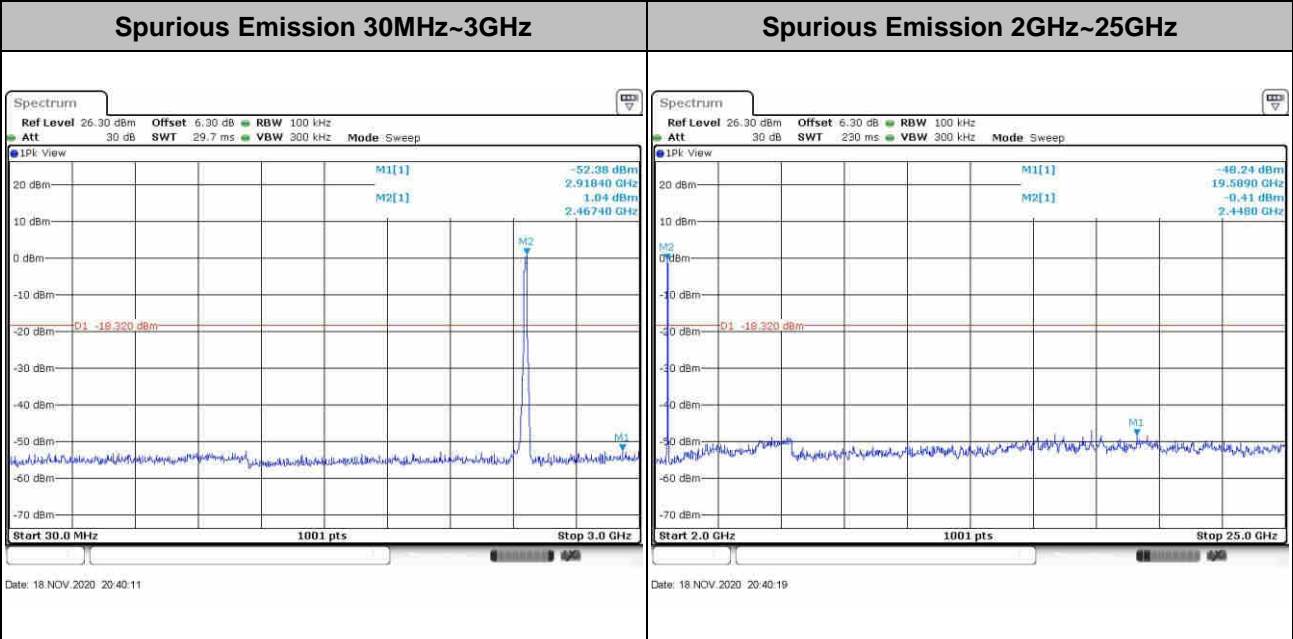
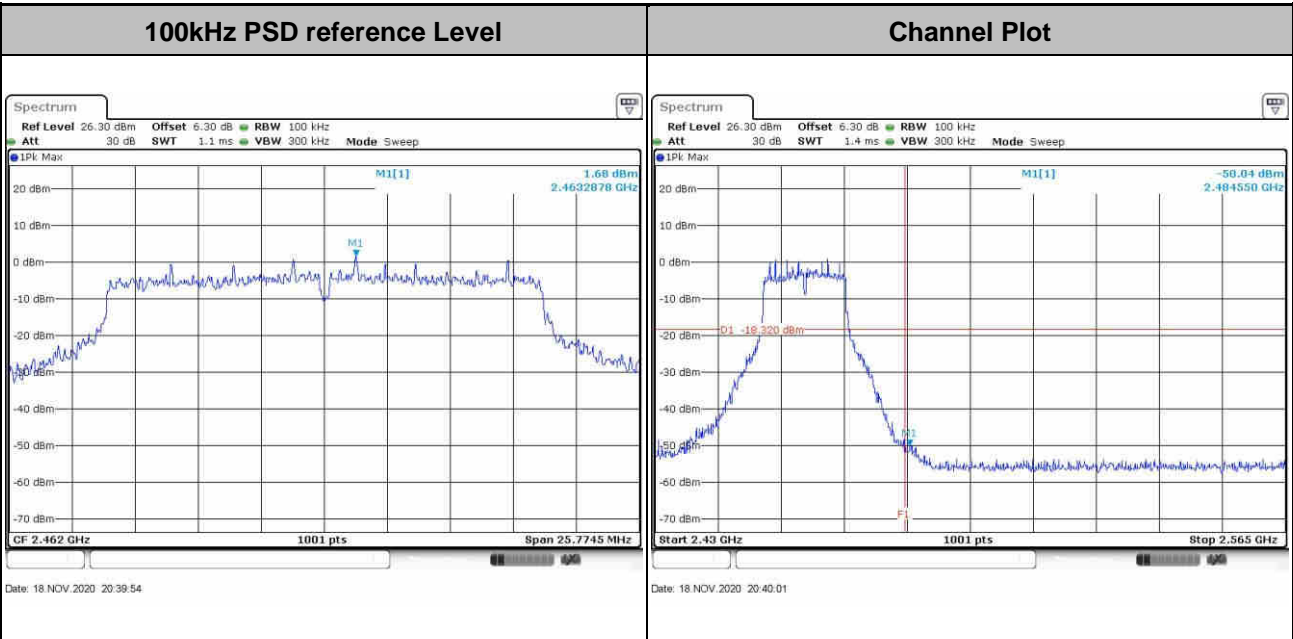


Spurious Emission 2GHz~25GHz





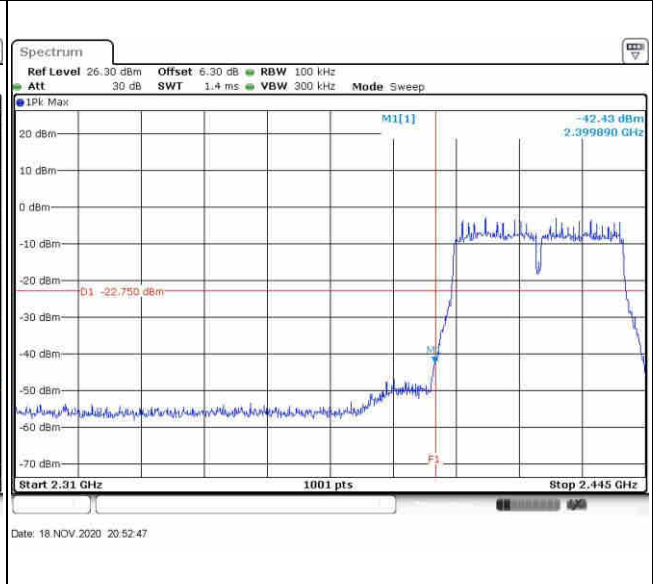
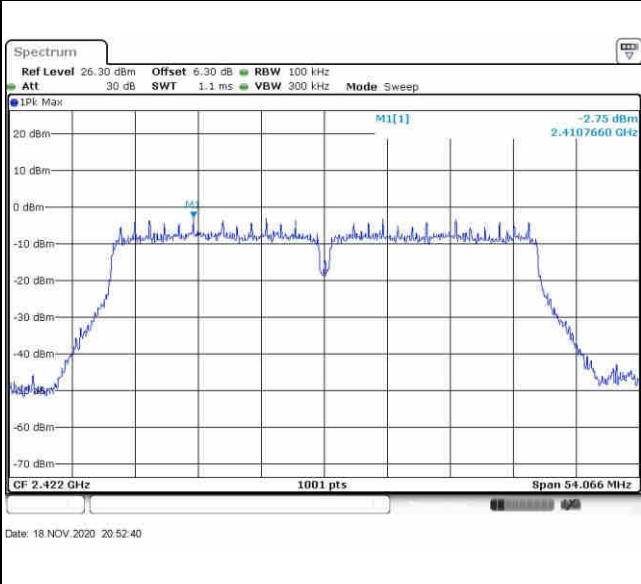
Test Mode :	802.11n HT20	Test Channel :	11
-------------	--------------	----------------	----



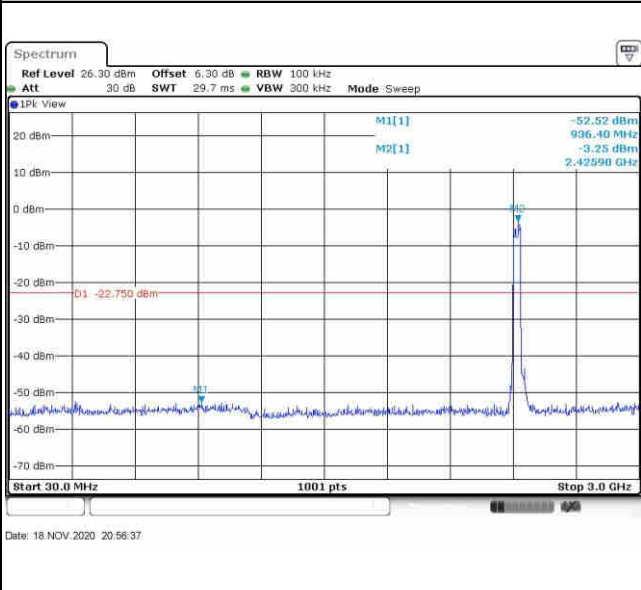


Test Mode : 802.11n HT40 Test Channel : 03

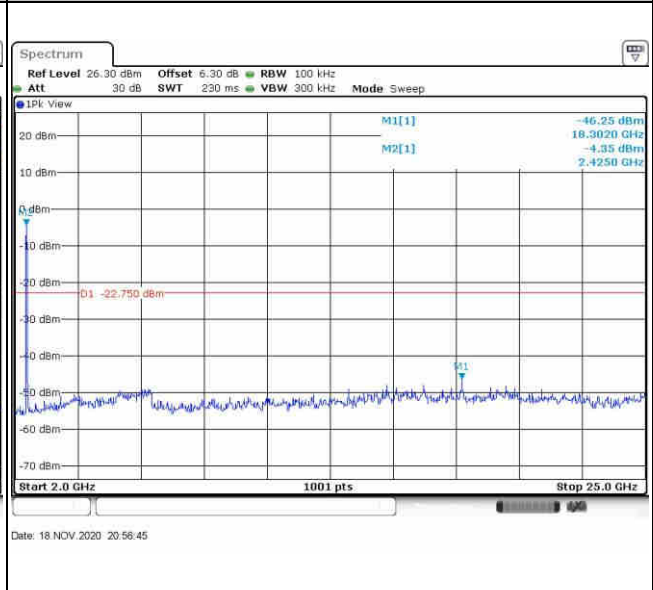
100kHz PSD reference Level Channel Plot



Spurious Emission 30MHz~3GHz



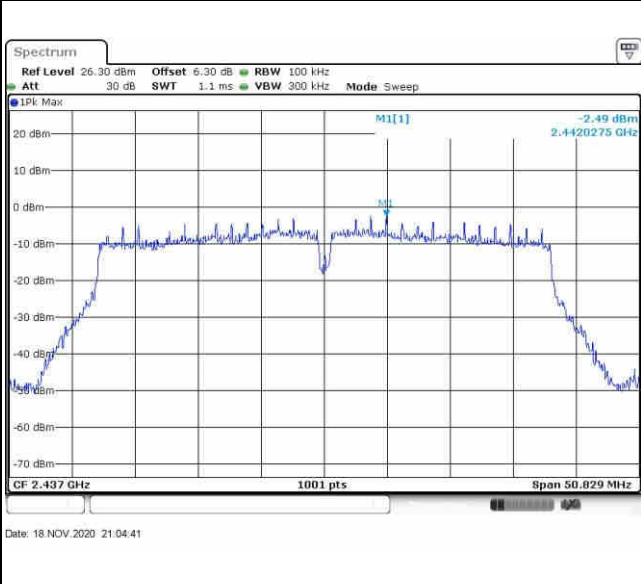
Spurious Emission 2GHz~25GHz



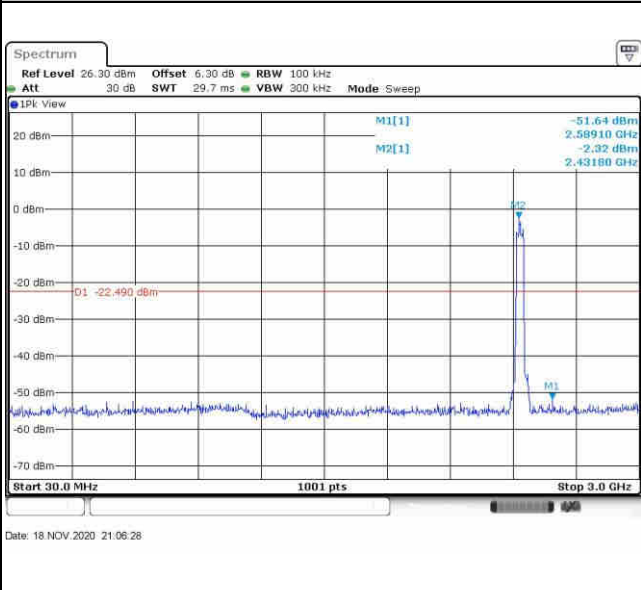


Test Mode :	802.11n HT40	Test Channel :	06
-------------	--------------	----------------	----

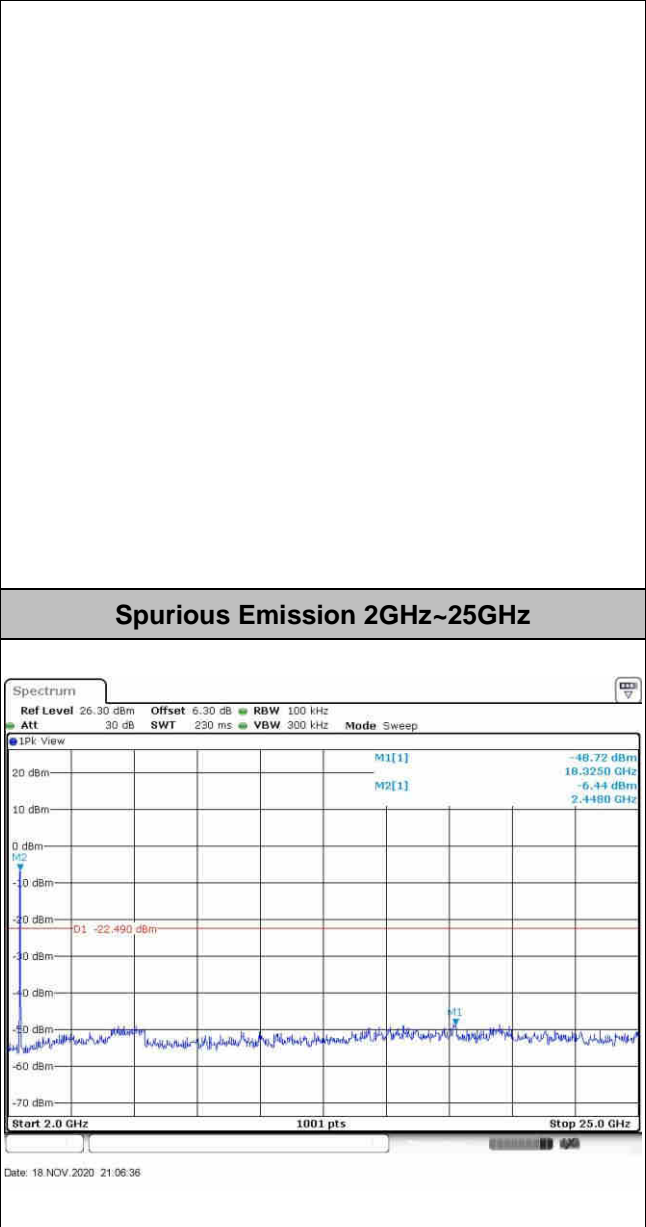
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

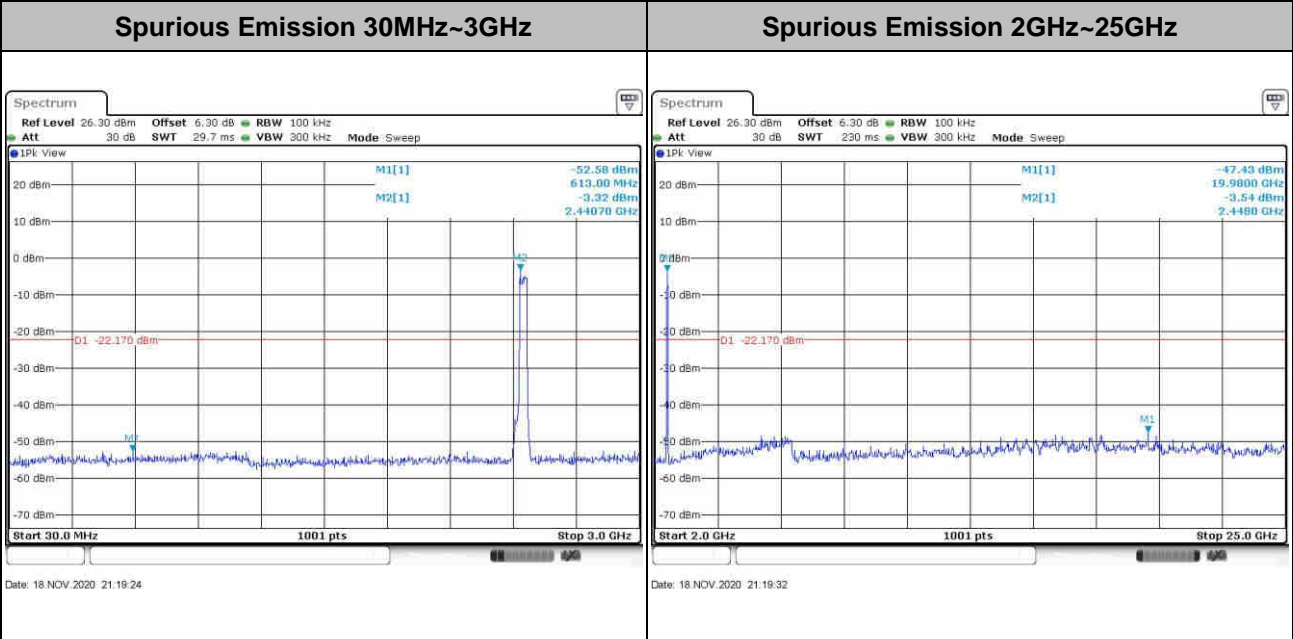
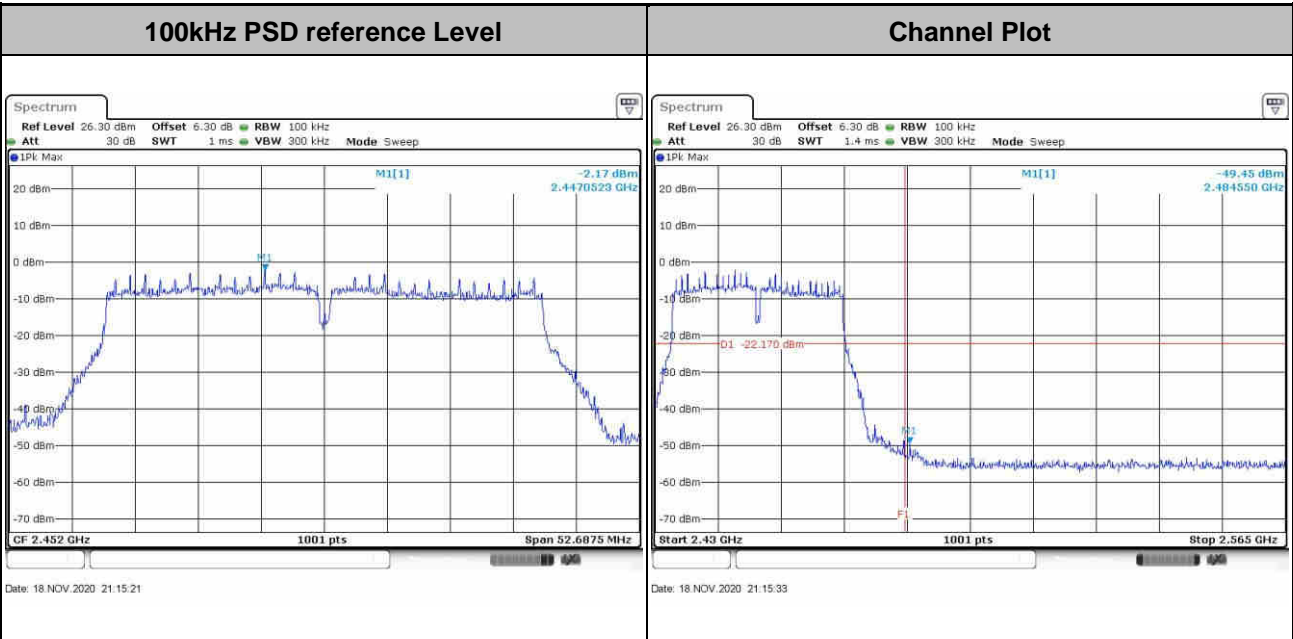


Spurious Emission 2GHz~25GHz





Test Mode :	802.11n HT40	Test Channel :	09
-------------	--------------	----------------	----





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

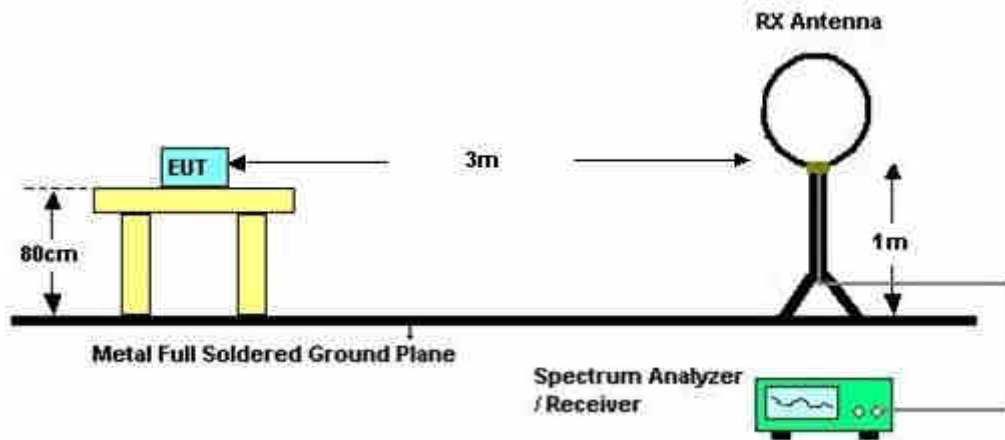
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better 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 testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than peak limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. 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:

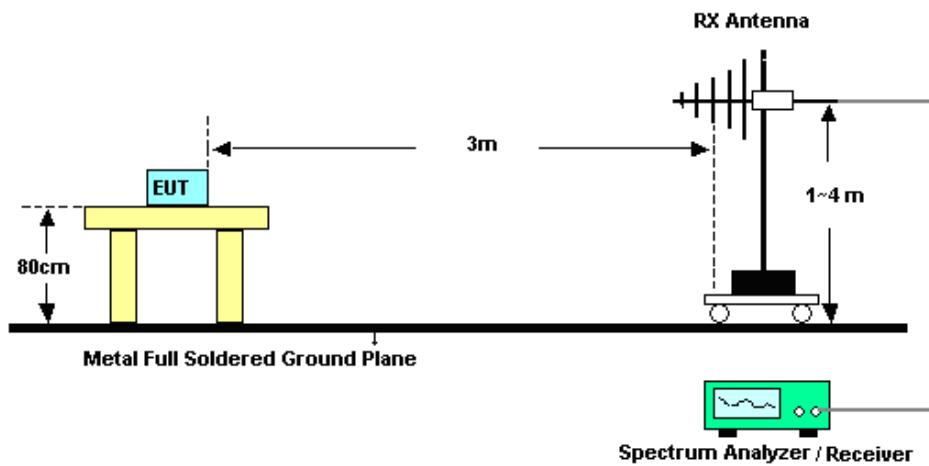
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

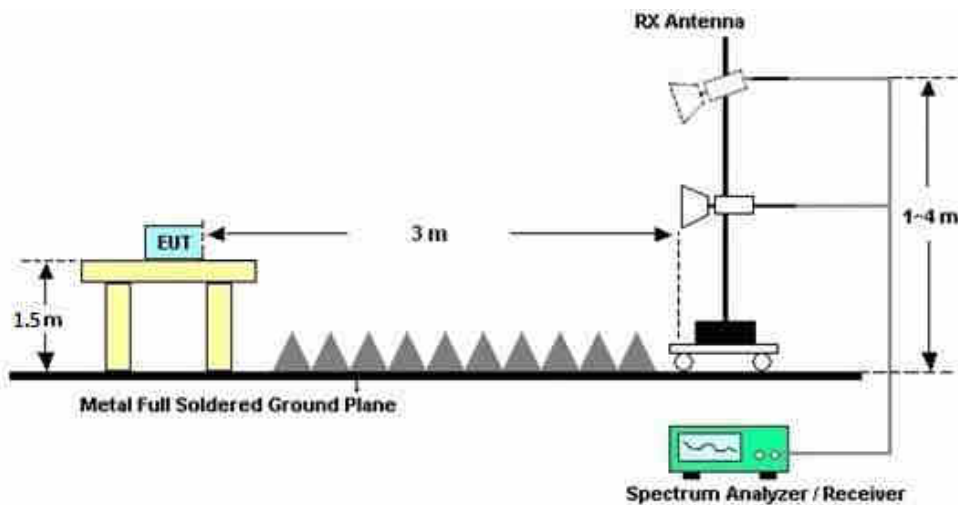
For radiated emissions below 30MHz



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.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.5.7 Duty Cycle

Please refer to Appendix D.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic or 40GHz, whichever is lower)

Please refer to Appendix 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 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.

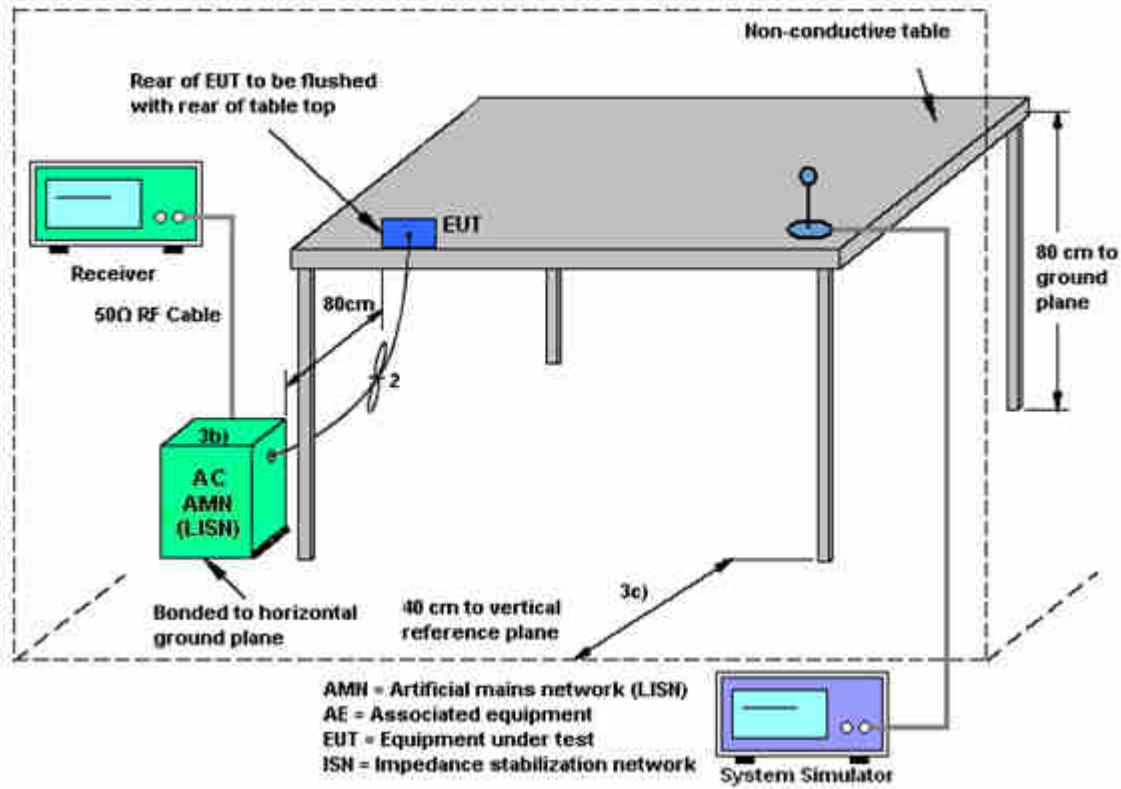
3.6.2 Measuring Instruments

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

Please refer to Appendix B.



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

<CDD Modes >

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.

<CDD Modes>						
			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 1 (dBi)	Ant. 2 (dBi)				
2.4 GHz	1.84	3.14	3.14	5.52	0.00	0.00

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

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	10Hz~30GHz	Apr. 14, 2020	Nov. 18, 2020	Apr. 13, 2021	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 15, 2020	Nov. 18, 2020	Jan. 14, 2021	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 08, 2020	Nov. 18, 2020	Jan. 07, 2021	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz;Max 30dBm	Oct. 17, 2020	Nov. 24, 2020	Oct. 16, 2021	Radiation (03CH05-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz,MAX 30dB	Apr. 15, 2020	Nov. 24, 2020	Apr. 14, 2021	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 01, 2020	Nov. 24, 2020	Oct. 31, 2021	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz~1GHz	May 30, 2020	Nov. 24, 2020	May 29, 2021	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 26, 2020	Nov. 24, 2020	Apr. 25, 2021	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 09, 2020	Nov. 24, 2020	Nov. 08, 2021	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	187289	9KHz~1GHz	Apr. 14, 2020	Nov. 24, 2020	Apr. 13, 2021	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 08, 2020	Nov. 24, 2020	Jan. 07, 2021	Radiation (03CH05-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2012228	1Ghz~18Ghz	Oct. 17, 2020	Nov. 24, 2020	Oct. 16, 2021	Radiation (03CH05-KS)
Amplifier	Keysight	83017A	MY53270316	500MHz~26.5GHz	Oct. 17, 2020	Nov. 24, 2020	Oct. 16, 2021	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Nov. 24, 2020	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Nov. 24, 2020	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Nov. 24, 2020	NCR	Radiation (03CH05-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 14, 2020	Nov. 05, 2020	Apr. 13, 2021	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 17, 2020	Nov. 05, 2020	Oct. 16, 2021	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Oct. 27, 2020	Nov. 05, 2020	Oct. 26, 2021	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 17, 2020	Nov. 05, 2020	Oct. 16, 2021	Conduction (CO01-KS)

NCR: No Calibration Required



5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.94dB
---	--------

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
---	-------

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
---	-------

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
---	-------



Appendix A. Conducted Test Results

Test Engineer:	Albert Shi	Temperature:	0-40	°C
Test Date:	2020/11/18	Relative Humidity:	51~54	%

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	2	1	2412	13.69	13.69	8.05	8.05	0.50	Pass
11b	1Mbps	2	6	2437	13.84	13.84	8.07	8.07	0.50	Pass
11b	1Mbps	2	11	2462	14.24	14.24	8.07	8.07	0.50	Pass
11g	6Mbps	2	1	2412	17.13	17.13	15.09	15.13	0.50	Pass
11g	6Mbps	2	6	2437	17.33	17.28	15.52	15.13	0.50	Pass
11g	6Mbps	2	11	2462	17.73	17.83	16.02	16.00	0.50	Pass
HT20	MCS0	2	1	2412	18.33	18.28	15.13	15.13	0.50	Pass
HT20	MCS0	2	6	2437	18.53	18.53	15.11	15.07	0.50	Pass
HT20	MCS0	2	11	2462	18.93	19.08	17.18	17.18	0.50	Pass
HT40	MCS0	2	3	2422	36.46	36.46	36.04	36.04	0.50	Pass
HT40	MCS0	2	6	2437	36.36	36.36	35.09	33.89	0.50	Pass
HT40	MCS0	2	9	2452	36.76	36.66	35.13	35.13	0.50	Pass

TEST RESULTS DATA
Peak Output Power

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
					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	18.62	18.74		30.00	30.00	1.84	3.14	20.46	21.88	36.00	36.00	Pass
11b	1Mbps	1	6	2437	18.77	18.61		30.00	30.00	1.84	3.14	20.61	21.75	36.00	36.00	Pass
11b	1Mbps	1	11	2462	18.75	18.96		30.00	30.00	1.84	3.14	20.59	22.10	36.00	36.00	Pass
11g	6Mbps	1	1	2412	17.16	16.86		30.00	30.00	1.84	3.14	19.00	20.00	36.00	36.00	Pass
11g	6Mbps	1	6	2437	17.17	17.40		30.00	30.00	1.84	3.14	19.01	20.54	36.00	36.00	Pass
11g	6Mbps	1	11	2462	17.14	17.35		30.00	30.00	1.84	3.14	18.98	20.49	36.00	36.00	Pass
HT20	MCS0	2	1	2412	17.48	17.04	20.28	30.00		3.14		23.42		36.00		Pass
HT20	MCS0	2	6	2437	17.02	17.52	20.29	30.00		3.14		23.43		36.00		Pass
HT20	MCS0	2	11	2462	17.17	17.42	20.31	30.00		3.14		23.45		36.00		Pass
HT40	MCS0	2	3	2422	17.77	17.87	20.83	30.00		3.14		23.97		36.00		Pass
HT40	MCS0	2	6	2437	17.88	17.99	20.95	30.00		3.14		24.09		36.00		Pass
HT40	MCS0	2	9	2452	17.96	18.44	21.22	30.00		3.14		24.36		36.00		Pass

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

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	Nrx	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	16.33	16.38	
11b	1Mbps	1	6	2437	0.00	0.00	16.41	16.28	
11b	1Mbps	1	11	2462	0.00	0.00	16.37	16.42	
11g	6Mbps	1	1	2412	0.09	0.08	12.22	12.10	
11g	6Mbps	1	6	2437	0.09	0.08	12.27	12.35	
11g	6Mbps	1	11	2462	0.09	0.08	12.18	12.26	
HT20	MCS0	2	1	2412	0.08	0.08	11.99	11.87	14.94
HT20	MCS0	2	6	2437	0.08	0.08	12.01	12.40	15.22
HT20	MCS0	2	11	2462	0.08	0.08	12.07	12.20	15.15
HT40	MCS0	2	3	2422	0.23	0.23	11.28	11.19	14.24
HT40	MCS0	2	6	2437	0.23	0.23	11.44	11.21	14.33
HT40	MCS0	2	9	2452	0.23	0.23	11.38	11.45	14.42

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

TEST RESULTS DATA
Peak Power Spectral Density

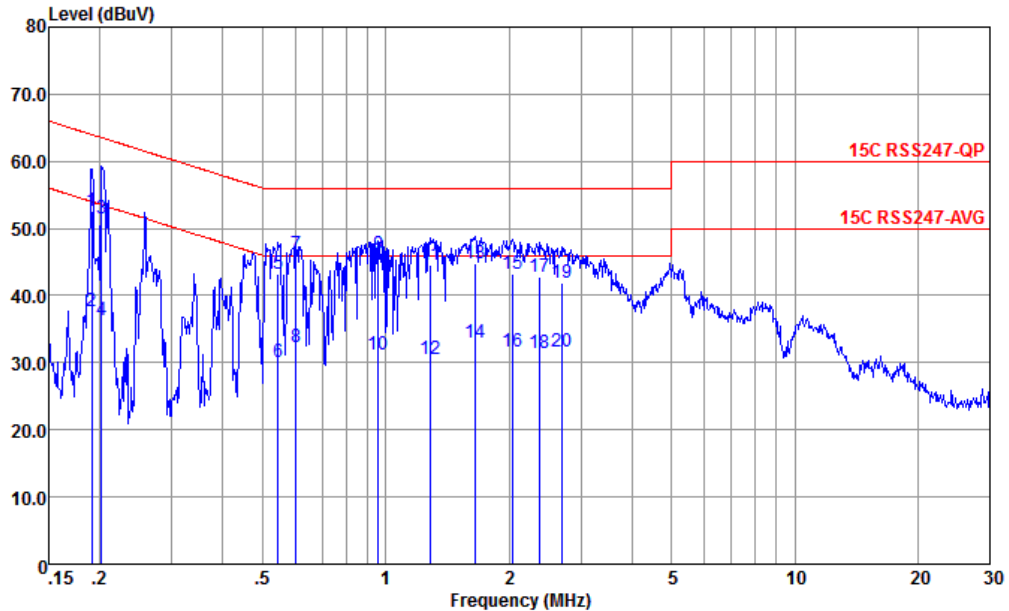
2.4GHz Band												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	-10.76	-10.41	-	1.84	3.14	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-10.79	-10.04		1.84	3.14	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-9.39	-10.35		1.84	3.14	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-16.41	-15.15		1.84	3.14	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-15.78	-16.37		1.84	3.14	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-15.39	-16.00		1.84	3.14	8.00	8.00	Pass
HT20	MCS0	2	1	2412	-16.22	-16.31	-13.21	5.52		8.00		Pass
HT20	MCS0	2	6	2437	-16.36	-15.57	-12.56	5.52		8.00		Pass
HT20	MCS0	2	11	2452	-15.56	-16.01	-12.55	5.52		8.00		Pass
HT40	MCS0	2	3	2422	-19.37	-19.67	-16.36	5.52		8.00		Pass
HT40	MCS0	2	6	2437	-19.45	-18.66	-15.65	5.52		8.00		Pass
HT40	MCS0	2	9	2452	-19.26	-19.54	-16.25	5.52		8.00		Pass

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



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line

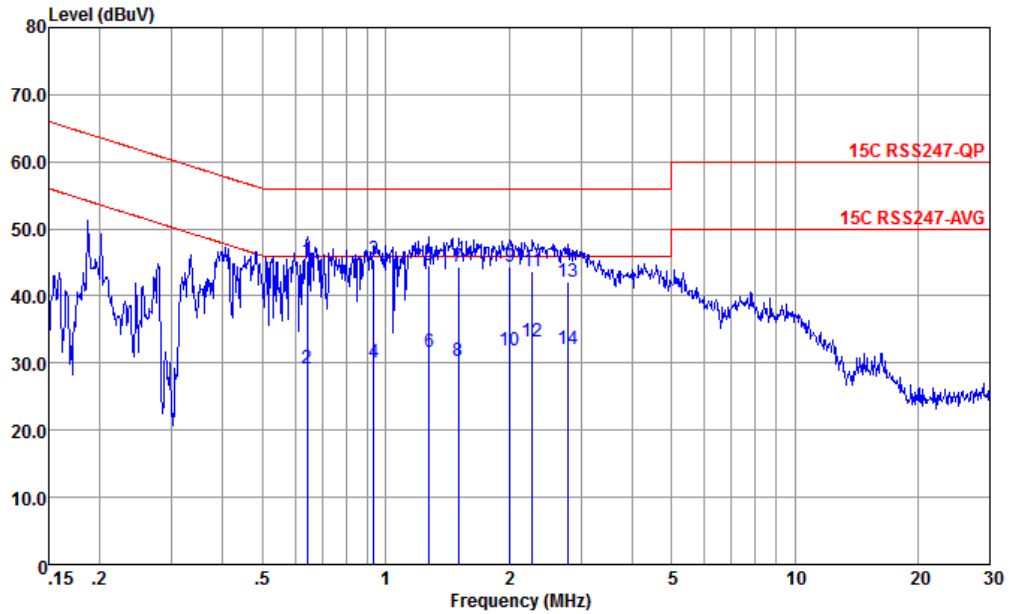


Site : CO01-KS
 Condition : 15C RSS247-QP TWO-LISN-CN02-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.191	52.52	-11.46	63.98	32.50	9.64	10.38	QP
2	0.191	37.62	-16.36	53.98	17.60	9.64	10.38	Average
3	0.202	51.51	-12.03	63.54	31.51	9.64	10.36	QP
4	0.202	36.31	-17.23	53.54	16.31	9.64	10.36	Average
5	0.546	43.19	-12.81	56.00	23.30	9.65	10.24	QP
6	0.546	30.09	-15.91	46.00	10.20	9.65	10.24	Average
7	0.604	46.09	-9.91	56.00	26.19	9.66	10.24	QP
8	0.604	32.39	-13.61	46.00	12.49	9.66	10.24	Average
9 *	0.958	46.14	-9.86	56.00	26.20	9.70	10.24	QP
10	0.958	31.14	-14.86	46.00	11.20	9.70	10.24	Average
11	1.289	44.52	-11.48	56.00	24.50	9.79	10.23	QP
12	1.289	30.62	-15.38	46.00	10.60	9.79	10.23	Average
13	1.654	44.70	-11.30	56.00	24.60	9.87	10.23	QP
14	1.654	33.00	-13.00	46.00	12.90	9.87	10.23	Average
15	2.044	43.27	-12.73	56.00	23.10	9.94	10.23	QP
16	2.044	31.67	-14.33	46.00	11.50	9.94	10.23	Average
17	2.371	42.82	-13.18	56.00	22.60	9.99	10.23	QP
18	2.371	31.32	-14.68	46.00	11.10	9.99	10.23	Average
19	2.692	41.87	-14.13	56.00	21.60	10.03	10.24	QP
20	2.692	31.57	-14.43	46.00	11.30	10.03	10.24	Average



Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Site : CO01-KS
 Condition : 15C RSS247-QP TWO-LISN-CN02-N NEUTRAL
 Project : (FR) 072709-01

	Freq	Level	Limit	Line	Level	LISN	Cable	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.644	45.16	-10.84	56.00	25.19	9.73	10.24	QP
2	0.644	29.26	-16.74	46.00	9.29	9.73	10.24	Average
3 *	0.933	45.45	-10.55	56.00	25.50	9.71	10.24	QP
4	0.933	30.15	-15.85	46.00	10.20	9.71	10.24	Average
5	1.276	44.52	-11.48	56.00	24.50	9.79	10.23	QP
6	1.276	31.62	-14.38	46.00	11.60	9.79	10.23	Average
7	1.503	44.37	-11.63	56.00	24.30	9.84	10.23	QP
8	1.503	30.37	-15.63	46.00	10.30	9.84	10.23	Average
9	2.012	44.46	-11.54	56.00	24.30	9.93	10.23	QP
10	2.012	31.96	-14.04	46.00	11.80	9.93	10.23	Average
11	2.285	43.71	-12.29	56.00	23.50	9.98	10.23	QP
12	2.285	33.11	-12.89	46.00	12.90	9.98	10.23	Average
13	2.779	42.18	-13.82	56.00	21.89	10.05	10.24	QP
14	2.779	32.18	-13.82	46.00	11.89	10.05	10.24	Average

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



Appendix C. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b Ant 1 (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		2380.07	56.08	-17.92	74	48.11	32.15	7.47	31.65	129	105	P	H
		2389.95	44.86	-9.14	54	36.81	32.2	7.5	31.65	129	105	A	H
	*	2412	105	-	-	96.94	32.18	7.53	31.65	129	105	P	H
	*	2410	101.67	-	-	93.61	32.18	7.53	31.65	129	105	A	H
		2362.91	56.3	-17.7	74	48.41	32.11	7.44	31.66	100	119	P	V
		2389.3	44.72	-9.28	54	36.67	32.2	7.5	31.65	100	119	A	V
	*	2412	100.72	-	-	92.66	32.18	7.53	31.65	100	119	P	V
	*	2410	97.36	-	-	89.3	32.18	7.53	31.65	100	119	A	V
802.11b CH 11 2462MHz		2494.24	56.59	-17.41	74	48.38	32.1	7.67	31.56	100	238	P	H
		2483.5	45.06	-8.94	54	36.88	32.12	7.64	31.58	100	238	A	H
	*	2462	103.14	-	-	95	32.13	7.61	31.6	100	238	P	H
	*	2460	99.72	-	-	91.58	32.13	7.61	31.6	100	238	A	H
		2494.3	56.33	-17.67	74	48.12	32.1	7.67	31.56	159	314	P	V
		2489.32	44.94	-9.06	54	36.75	32.1	7.67	31.58	159	314	A	V
	*	2462	98.36	-	-	90.22	32.13	7.61	31.6	159	314	P	V
	*	2460	95.02	-	-	86.88	32.13	7.61	31.6	159	314	A	V
Remark	<p>1. No other spurious found.</p> <p>2. All results are PASS against Peak and Average limit line.</p>												



2.4GHz 2400~2483.5MHz
WIFI 802.11b Ant 1 (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	43.61	-30.39	74	58.54	34.31	10.8	60.04	300	0	P	H
		4824	42.2	-31.8	74	57.13	34.31	10.8	60.04	300	360	P	V
802.11b CH 06 2437MHz		4872	45.02	-28.98	74	59.84	34.34	10.87	60.03	300	0	P	H
		7308	42.29	-31.71	74	53.48	35.94	13.38	60.51	300	0	P	H
		4872	42.31	-31.69	74	57.13	34.34	10.87	60.03	300	360	P	V
		7308	44.47	-29.53	74	55.66	35.94	13.38	60.51	300	360	P	V
802.11b CH 11 2462MHz		4926	46.38	-27.62	74	61.1	34.36	10.94	60.02	300	0	P	H
		7386	42.53	-31.47	74	53.68	35.92	13.46	60.53	300	0	P	H
		4926	44.81	-29.19	74	59.53	34.36	10.94	60.02	300	360	P	V
		7386	42.61	-31.39	74	53.76	35.92	13.46	60.53	300	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 Ant 1 (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		2351.34	56.24	-17.76	74	48.44	32.06	7.41	31.67	129	106	P	H
		2389.95	45.09	-8.91	54	37.04	32.2	7.5	31.65	129	106	A	H
	*	2416	103.2	-	-	95.12	32.18	7.53	31.63	129	106	P	H
	*	2412	95.13	-	-	87.07	32.18	7.53	31.65	129	106	A	H
		2342.11	56.13	-17.87	74	48.33	32.06	7.41	31.67	100	116	P	V
		2389.82	44.75	-9.25	54	36.7	32.2	7.5	31.65	100	116	A	V
	*	2414	97.82	-	-	89.76	32.18	7.53	31.65	100	116	P	V
	*	2414	89.82	-	-	81.76	32.18	7.53	31.65	100	116	A	V
802.11g CH 11 2462MHz		2485.18	55.96	-18.04	74	47.78	32.12	7.64	31.58	157	246	P	H
		2483.5	45.22	-8.78	54	37.04	32.12	7.64	31.58	157	246	A	H
	*	2460	100.92	-	-	92.78	32.13	7.61	31.6	157	246	P	H
	*	2460	92.66	-	-	84.52	32.13	7.61	31.6	157	246	A	H
		2491.42	56.23	-17.77	74	48.04	32.1	7.67	31.58	107	294	P	V
		2485.96	45	-9	54	36.82	32.12	7.64	31.58	107	294	A	V
	*	2458	97.72	-	-	89.58	32.13	7.61	31.6	107	294	P	V
	*	2454	89.89	-	-	81.75	32.13	7.61	31.6	107	294	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 Ant 1 (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	41.08	-32.92	74	56.01	34.31	10.8	60.04	300	0	P	H
		4824	41.57	-32.43	74	56.5	34.31	10.8	60.04	300	360	P	V
802.11g CH 06 2437MHz		4872	41.21	-32.79	74	56.03	34.34	10.87	60.03	300	0	P	H
		7308	43.2	-30.8	74	54.39	35.94	13.38	60.51	300	0	P	H
		4872	41.42	-32.58	74	56.24	34.34	10.87	60.03	300	360	P	V
		7308	42.82	-31.18	74	54.01	35.94	13.38	60.51	300	360	P	V
802.11g CH 11 2462MHz		4926	40.86	-33.14	74	55.58	34.36	10.94	60.02	300	0	P	H
		7386	43.34	-30.66	74	54.49	35.92	13.46	60.53	300	0	P	H
		4926	41.12	-32.88	74	55.84	34.36	10.94	60.02	300	360	P	V
		7386	43.23	-30.77	74	54.38	35.92	13.46	60.53	300	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 Ant 2 (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 802.11b CH 01 (2412MHz) and 802.11b CH 11 (2462MHz).

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 Ant 2 (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 01 2412MHz		4824	48.75	-25.25	74	63.68	34.31	10.8	60.04	300	0	P	H
		4824	46.92	-27.08	74	61.85	34.31	10.8	60.04	300	360	P	V
802.11b CH 06 2437MHz		4872	45.39	-28.61	74	60.21	34.34	10.87	60.03	300	0	P	H
		7308	42.51	-31.49	74	53.7	35.94	13.38	60.51	300	0	P	H
		4872	43.44	-30.56	74	58.26	34.34	10.87	60.03	300	360	P	V
		7308	42.28	-31.72	74	53.47	35.94	13.38	60.51	300	360	P	V
802.11b CH 11 2462MHz		4926	49.13	-24.87	74	63.85	34.36	10.94	60.02	300	0	P	H
		7386	43.32	-30.68	74	54.47	35.92	13.46	60.53	300	0	P	H
		4926	46.03	-27.97	74	60.75	34.36	10.94	60.02	300	360	P	V
		7386	43.94	-30.06	74	55.09	35.92	13.46	60.53	300	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 Ant 2 (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	57.87	-16.13	74	49.82	32.2	7.5	31.65	157	51	P	H
		2389.95	47.21	-6.79	54	39.16	32.2	7.5	31.65	157	51	A	H
	*	2410	105.03	-	-	96.97	32.18	7.53	31.65	157	51	P	H
	*	2412	97.1	-	-	89.04	32.18	7.53	31.65	157	51	A	H
		2389.82	56.23	-17.77	74	48.18	32.2	7.5	31.65	388	129	P	V
		2389.95	46.37	-7.63	54	38.32	32.2	7.5	31.65	388	129	A	V
	*	2412	105.24	-	-	97.18	32.18	7.53	31.65	388	129	P	V
	*	2412	97.15	-	-	89.09	32.18	7.53	31.65	388	129	A	V
802.11g CH 11 2462MHz		2485.48	56.19	-17.81	74	48.01	32.12	7.64	31.58	157	47	P	H
		2483.5	45.61	-8.39	54	37.43	32.12	7.64	31.58	157	47	A	H
	*	2464	106.81	-	-	98.67	32.13	7.61	31.6	157	47	P	H
	*	2464	98.64	-	-	90.5	32.13	7.61	31.6	157	47	A	H
		2485.18	55.82	-18.18	74	47.64	32.12	7.64	31.58	374	137	P	V
		2483.5	45.45	-8.55	54	37.27	32.12	7.64	31.58	374	137	A	V
	*	2464	104.52	-	-	96.38	32.13	7.61	31.6	374	137	P	V
	*	2462	96.65	-	-	88.51	32.13	7.61	31.6	374	137	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 Ant 2 (Harmonic @ 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 test data for CH 01 (2412MHz) and CH 06 (2437MHz) and CH 11 (2462MHz).

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 Ant 1+2 (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 HT20 CH 01 2412MHz		2389.82	58.76	-15.24	74	50.71	32.2	7.5	31.65	109	106	P	H
		2389.95	47.86	-6.14	54	39.81	32.2	7.5	31.65	109	106	A	H
	*	2410	107.35	-	-	99.29	32.18	7.53	31.65	109	106	P	H
	*	2410	99.22	-	-	91.16	32.18	7.53	31.65	109	106	A	H
		2383.84	56.53	-17.47	74	48.56	32.15	7.47	31.65	342	174	P	V
		2389.95	45.84	-8.16	54	37.79	32.2	7.5	31.65	342	174	A	V
	*	2412	104.43	-	-	96.37	32.18	7.53	31.65	342	174	P	V
	*	2410	96.11	-	-	88.05	32.18	7.53	31.65	342	174	A	V
802.11n HT20 CH 11 2462MHz		2495.68	56.58	-17.42	74	48.37	32.1	7.67	31.56	148	237	P	H
		2483.5	45.66	-8.34	54	37.48	32.12	7.64	31.58	148	237	A	H
	*	2464	107.72	-	-	99.58	32.13	7.61	31.6	148	237	P	H
	*	2464	99.39	-	-	91.25	32.13	7.61	31.6	148	237	A	H
		2491.54	56.25	-17.75	74	48.04	32.1	7.67	31.56	376	152	P	V
		2483.5	45.37	-8.63	54	37.19	32.12	7.64	31.58	376	152	A	V
	*	2464	104.17	-	-	96.03	32.13	7.61	31.6	376	152	P	V
	*	2454	95.49	-	-	87.35	32.13	7.61	31.6	376	152	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 Ant 1+2 (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	42.37	-31.63	74	57.3	34.31	10.8	60.04	100	360	P	H
		4824	40.8	-33.2	74	55.73	34.31	10.8	60.04	100	360	P	V
802.11n HT20 CH 06 2437MHz		4872	42.23	-31.77	74	57.05	34.34	10.87	60.03	100	360	P	H
		7308	43.13	-30.87	74	54.32	35.94	13.38	60.51	100	360	P	H
		4872	40.48	-33.52	74	55.3	34.34	10.87	60.03	100	360	P	V
		7308	42.56	-31.44	74	53.75	35.94	13.38	60.51	100	360	P	V
802.11n HT20 CH 11 2462MHz		4926	42.85	-31.15	74	57.57	34.36	10.94	60.02	100	360	P	H
		7386	42.74	-31.26	74	53.89	35.92	13.46	60.53	100	360	P	H
		4926	40.99	-33.01	74	55.71	34.36	10.94	60.02	100	360	P	V
		7386	42.7	-31.3	74	53.85	35.92	13.46	60.53	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 HT40 Ant 1+2 (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		2389.69	59.65	-14.35	74	51.6	32.2	7.5	31.65	101	235	P	H
		2389.82	50.35	-3.65	54	42.3	32.2	7.5	31.65	101	235	A	H
		2495.14	56.55	-17.45	74	48.34	32.1	7.67	31.56	101	235	P	H
		2483.92	46.06	-7.94	54	37.88	32.12	7.64	31.58	101	235	A	H
	*	2436	103.91	-	-	95.79	32.17	7.56	31.61	101	235	P	H
	*	2434	96.38	-	-	88.28	32.17	7.56	31.63	101	235	A	H
		2389.95	57.45	-16.55	74	49.4	32.2	7.5	31.65	346	149	P	V
		2389.69	49.24	-4.76	54	41.19	32.2	7.5	31.65	346	149	A	V
		2495.74	56.49	-17.51	74	48.28	32.1	7.67	31.56	346	149	P	V
		2494.24	45.85	-8.15	54	37.64	32.1	7.67	31.56	346	149	A	V
	*	2424	101.49	-	-	93.39	32.17	7.56	31.63	346	149	P	V
	*	2424	93.34	-	-	85.24	32.17	7.56	31.63	346	149	A	V
802.11n HT40 CH 09 2452MHz		2351.6	56.13	-17.87	74	48.25	32.11	7.44	31.67	128	102	P	H
		2389.95	45.77	-8.23	54	37.72	32.2	7.5	31.65	128	102	A	H
		2483.98	57.02	-16.98	74	48.84	32.12	7.64	31.58	128	102	P	H
		2483.74	46.61	-7.39	54	38.43	32.12	7.64	31.58	128	102	A	H
	*	2448	105.12	-	-	97	32.15	7.58	31.61	128	102	P	H
	*	2448	96.83	-	-	88.71	32.15	7.58	31.61	128	102	A	H
		2388.39	56.2	-17.8	74	48.15	32.2	7.5	31.65	384	149	P	V
		2389.17	45.67	-8.33	54	37.62	32.2	7.5	31.65	384	149	A	V
		2484.22	56.73	-17.27	74	48.55	32.12	7.64	31.58	384	149	P	V
		2483.62	46.07	-7.93	54	37.89	32.12	7.64	31.58	384	149	A	V
	*	2454	102.05	-	-	93.91	32.13	7.61	31.6	384	149	P	V
	*	2454	93.71	-	-	85.57	32.13	7.61	31.6	384	149	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 Ant 1+2 (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		4842	42.12	-31.88	74	57.01	34.32	10.82	60.03	100	360	P	H
HT40		7266	43.01	-30.99	74	54.23	35.94	13.35	60.51	100	360	P	H
CH 03		4842	41.33	-32.67	74	56.22	34.32	10.82	60.03	100	360	P	V
2422MHz		7266	42.44	-31.56	74	53.66	35.94	13.35	60.51	100	360	P	V
802.11n		4872	41.16	-32.84	74	55.98	34.34	10.87	60.03	100	360	P	H
HT40		7308	42.41	-31.59	74	53.6	35.94	13.38	60.51	100	360	P	H
CH 06		4872	40.83	-33.17	74	55.65	34.34	10.87	60.03	100	360	P	V
2437MHz		7308	42.94	-31.06	74	54.13	35.94	13.38	60.51	100	360	P	V
802.11n		4902	40.87	-33.13	74	55.63	34.35	10.91	60.02	300	0	P	H
HT40		7356	42.83	-31.17	74	53.99	35.93	13.43	60.52	300	0	P	H
CH 09		4902	40.43	-33.57	74	55.19	34.35	10.91	60.02	300	360	P	V
2452MHz		7356	43.01	-30.99	74	54.17	35.93	13.43	60.52	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

5GHz WIFI 802.11n HT40 (LF @ 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)
5GHz 802.11n HT40 LF		90.14	30.73	-12.77	43.5	46.58	14.8	1.65	32.3	-	-	P	H
		127.97	30.71	-12.79	43.5	43.28	17.6	1.97	32.14	-	-	P	H
		173.56	35.8	-7.7	43.5	50.13	15.48	2.29	32.1	-	-	P	H
		201.69	40.37	-3.13	43.5	54.87	15.12	2.48	32.1	200	0	P	H
		238.55	38.13	-7.87	46	50.22	17.39	2.7	32.18	-	-	P	H
		300.63	32.5	-13.5	46	42.16	19.41	3.03	32.1	-	-	P	H
		32.91	32.49	-7.51	40	40.29	23.51	0.89	32.2	-	-	P	V
		48.43	33.31	-6.69	40	48.93	15.38	1.2	32.2	100	0	P	V
		62.98	29.83	-10.17	40	48.49	12.08	1.36	32.1	-	-	P	V
		110.51	27.77	-15.73	43.5	41.07	17.05	1.83	32.18	-	-	P	V
		202.66	36.49	-7.01	43.5	50.97	15.13	2.49	32.1	-	-	P	V
	300.63	24.83	-21.17	46	34.49	19.41	3.03	32.1	-	-	P	V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



For Co-location:

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 Ant 1+2& WCDMA 850 (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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 03 2422MHz		2388.91	60.68	-13.32	74	52.63	32.2	7.5	31.65	290	96	P	H
		2389.95	50.86	-3.14	54	42.81	32.2	7.5	31.65	290	96	A	H
		2486.5	56.62	-17.38	74	48.44	32.12	7.64	31.58	290	96	P	H
		2484.16	46.02	-7.98	54	37.84	32.12	7.64	31.58	290	96	A	H
	*	2426	104.44	---	---	96.34	32.17	7.56	31.63	290	96	P	H
	*	2426	96.14	---	---	88.04	32.17	7.56	31.63	290	96	A	H
		2389.56	56.74	-17.26	74	48.69	32.2	7.5	31.65	384	165	P	V
		2389.56	47.54	-6.46	54	39.49	32.2	7.5	31.65	384	165	A	V
		2500	56.82	-17.18	74	48.61	32.1	7.67	31.56	384	165	P	V
		2495.5	45.78	-8.22	54	37.57	32.1	7.67	31.56	384	165	A	V
	*	2436	100.25	---	---	92.13	32.17	7.56	31.61	384	165	P	V
*	2434	92.33	---	---	84.23	32.17	7.56	31.63	384	165	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 Ant 1+2&WCDMA 850 (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		4842	41.93	-32.07	74	56.82	34.32	10.82	60.03	300	0	P	H
HT40		7266	43	-31	74	54.22	35.94	13.35	60.51	300	0	P	H
CH 03		4842	41.64	-32.36	74	56.53	34.32	10.82	60.03	300	360	P	V
2422MHz		7266	42.91	-31.09	74	54.13	35.94	13.35	60.51	300	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

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 over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



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.	
1		(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)

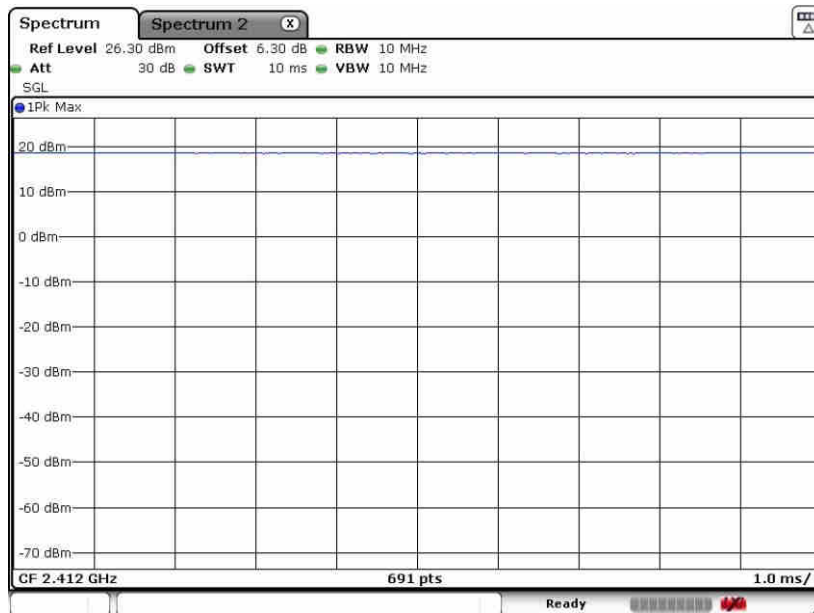
Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Duty Cycle Plots

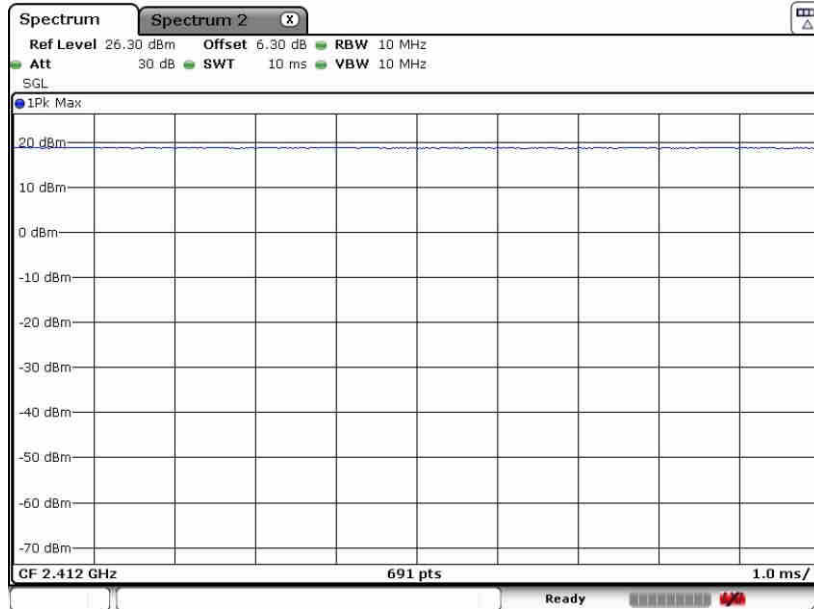
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11b	100	-	-	10Hz
2	802.11b	100	-	-	10Hz
1	802.11g	97.94	2.0652	0.4842	0.51kHz
2	802.11g	98.28	-	-	10Hz
1+2	802.11n HT20	98.16	-	-	10Hz
1+2	802.11n HT40	94.93	0.9493	1.0534	1.1kHz

802.11b – Ant. 1

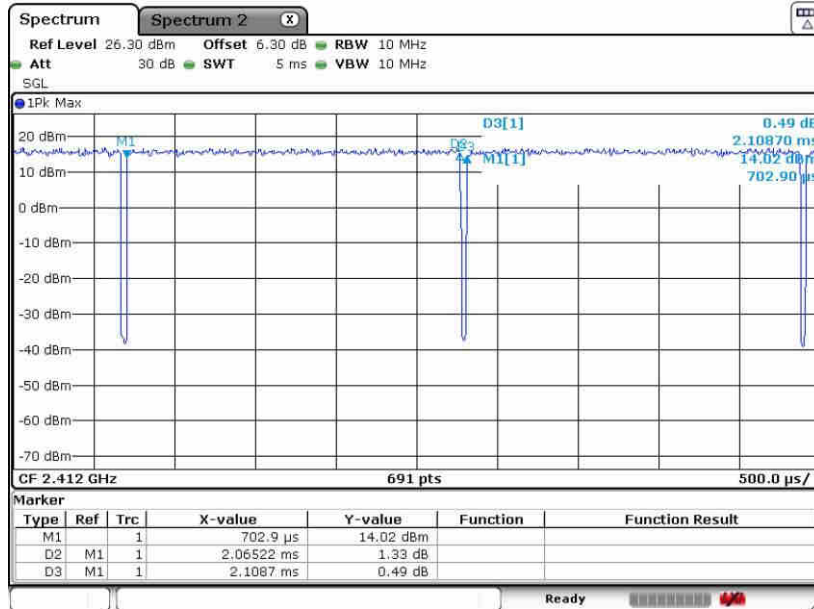




802.11b – Ant. 2

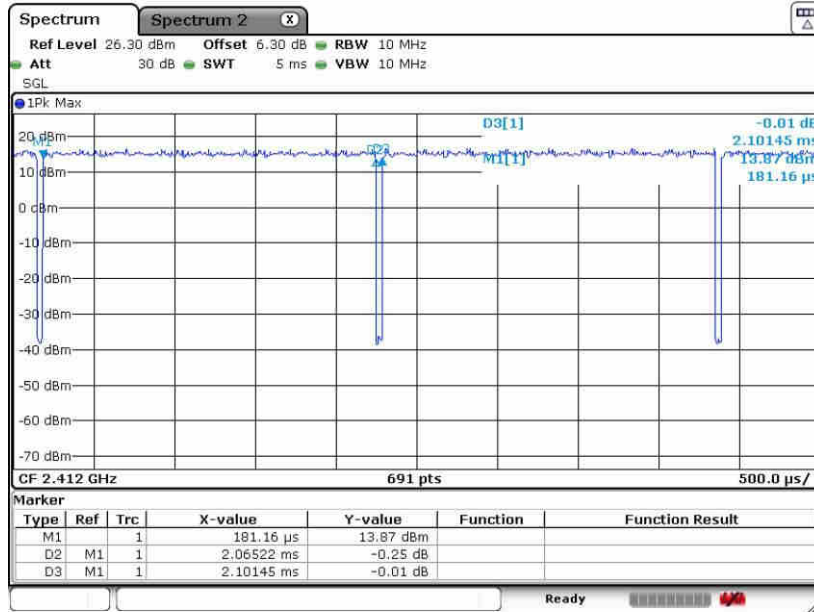


802.11g – Ant. 1

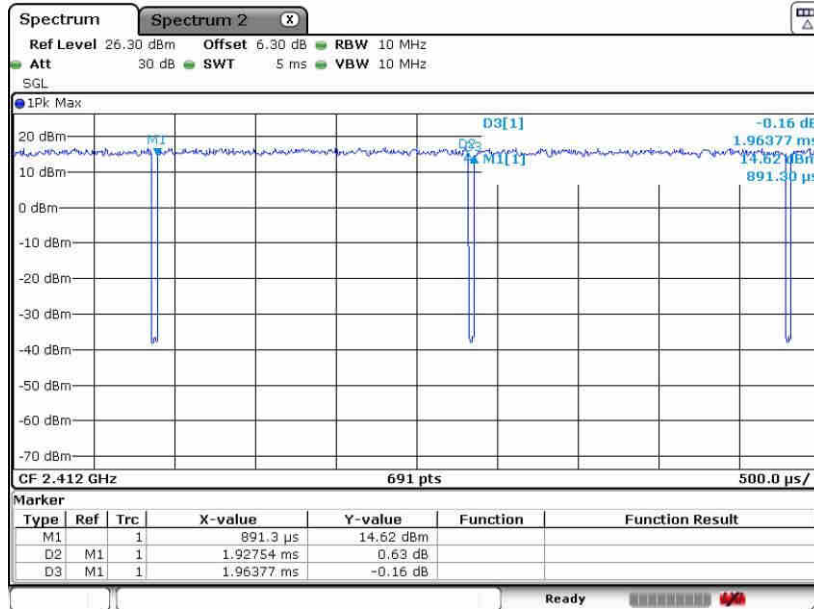




802.11g – Ant. 2



802.11n HT20 – Ant. 1+2





802.11n HT40 – Ant. 1+2

