



FCC RADIO TEST REPORT

FCC ID : A4RG454V
Equipment : Wireless Device
Model Name : G454V
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, California, 94043 USA
Standard : FCC Part 15 Subpart C §15.247

The product was received on Oct. 06, 2021 and testing was performed from Oct. 08, 2021 to Nov. 05, 2021. We, Sporton International Inc. Wensan Laboratory, 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 from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



Table of Contents

History of this test report..... 3

Summary of Test Result..... 4

1 General Description 5

 1.1 Product Feature of Equipment Under Test..... 5

 1.2 Product Specification of Equipment Under Test..... 6

 1.3 Modification of EUT 6

 1.4 Testing Location 7

 1.5 Applicable Standards..... 7

2 Test Configuration of Equipment Under Test 8

 2.1 Carrier Frequency and Channel 8

 2.2 Test Mode..... 8

 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 11

 2.6 Measurement Results Explanation Example..... 11

3 Test Result 12

 3.1 6dB and 99% Bandwidth Measurement 12

 3.2 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 45

 3.6 AC Conducted Emission Measurement..... 50

 3.7 Antenna Requirements 52

4 List of Measuring Equipment..... 53

5 Uncertainty of Evaluation 55

Appendix A. Conducted Test Results

Appendix B. AC Conducted Emission Test Result

Appendix C. Radiated Spurious Emission

Appendix D. Radiated Spurious Emission Plots

Appendix E. Duty Cycle Plots



History of this test report

Report No.	Version	Description	Issue Date
FR142340-05C	01	Initial issue of report	Nov. 17, 2021
FR142340-05C	02	Revise summary remark	Nov. 23, 2021



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)	Power Output Measurement	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges	Pass	-
		Conducted Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	1.95 dB under the limit at 2483.520 MHz
3.6	15.207	AC Conducted Emission	Pass	9.55 dB under the limit at 0.213 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	Pass	-

Remark: The FR142340-05C report reuses AC Conducted Emission test data from the FD142340-04 report.

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 product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Avis Chuang

Report Producer: Clio Lo



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Wireless Device
Model Name	G454V
FCC ID	A4RG454V
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE

Remark: The above EUT's information was declared by manufacturer.

EUT Information List	
S/N	Performed Test Item
1923105GN017RP	Conducted Measurement
1923105GN017WJ	Radiated Spurious Emission
1923105GN0180U	Conducted Emission

1.2 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2462 MHz
Maximum Output Power	<Ant. 1> 802.11b : 16.90 dBm (0.0490 W) 802.11g : 16.80 dBm (0.0479 W) 802.11n HT20 : 16.80 dBm (0.0479 W) <Ant. 2> 802.11b : 16.90 dBm (0.0490 W) 802.11g : 16.80 dBm (0.0479 W) 802.11n HT20 : 16.80 dBm (0.0479 W)
99% Occupied Bandwidth	<Ant. 1> 802.11b : 13.79 MHz 802.11g : 18.03 MHz 802.11n HT20 : 18.23 MHz <Ant. 2> 802.11b : 13.79 MHz 802.11g : 18.03 MHz 802.11n HT20 : 18.28 MHz
Antenna Type / Gain	<Ant. 1> PCB PIFA Antenna with gain 3.03 dBi <Ant. 2> PCB PIFA Antenna with gain 2.73 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

Remark: The above EUT's information is declared by manufacturer. Please refer to Comments and Explanations in report summary.

1.3 Modification of EUT

No modifications made to the EUT during the testing.



1.4 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. CO05-HY (TAF Code: 1190)
Remark	The AC Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

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

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY, 03CH12-HY

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

FCC designation No.: TW1190 and TW3786

1.5 Applicable Standards

According to the specifications declared by 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 v05r02
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.



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, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find X plane for Ant. 1 and Z plane for Ant. 2 as worst plane.
- 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

The final test modes consider the modulation and the worst data rates as shown in the table below.

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



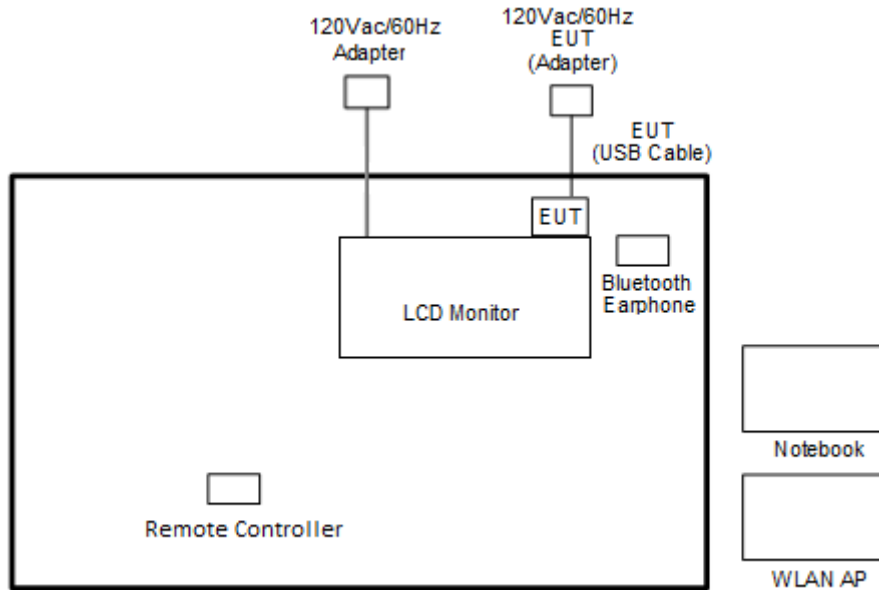
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (2.4GHz) Link + Bluetooth Link (Bluetooth Earphone) + Controller Link + Video Streaming (1080p, 60Hz, 4:2:2, 12bits) + USB Cable 1 (Charging from AC Adapter (Salcomp))
Remark: For Radiated Test Cases, the tests were performed with USB Cable 2.	

Ch. #	2400-2483.5 MHz		
	802.11b	802.11g	802.11n HT20
Low	01	01	01
	-	02	02
Middle	06	06	06
High	-	10	10
	11	11	11

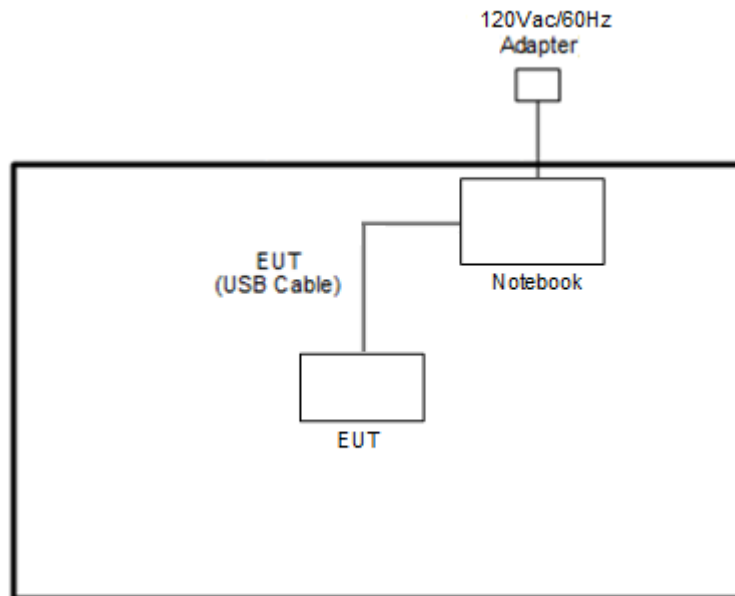
Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8m
3.	Notebook	Dell	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	LCD Monitor	Sharp	LC-50UA6800T	N/A	N/A	N/A
5.	Remote controller	N/A	N/A	N/A	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, utility "CMD V10.0.18362.1256" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

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 and attenuator factor 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 and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10 dB attenuator.

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\ &= 4.2 + 10 = 14.2 \text{ (dB)} \end{aligned}$$

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

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to 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) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) $\geq 3 * RBW$.
6. Measure and record the results in the test report.

3.1.4 Test Setup

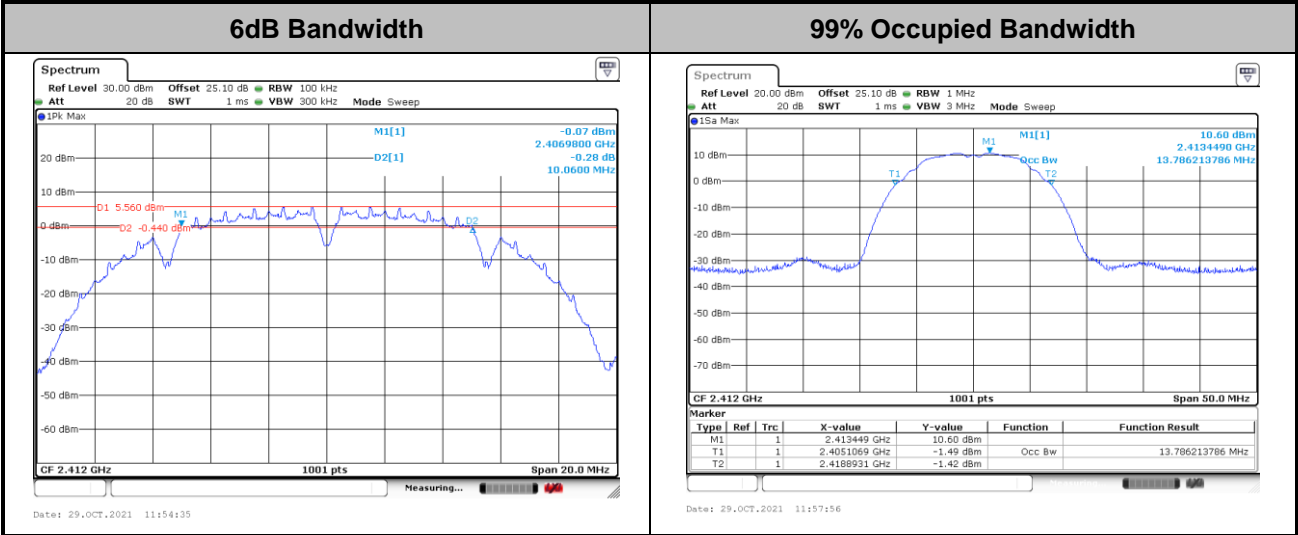




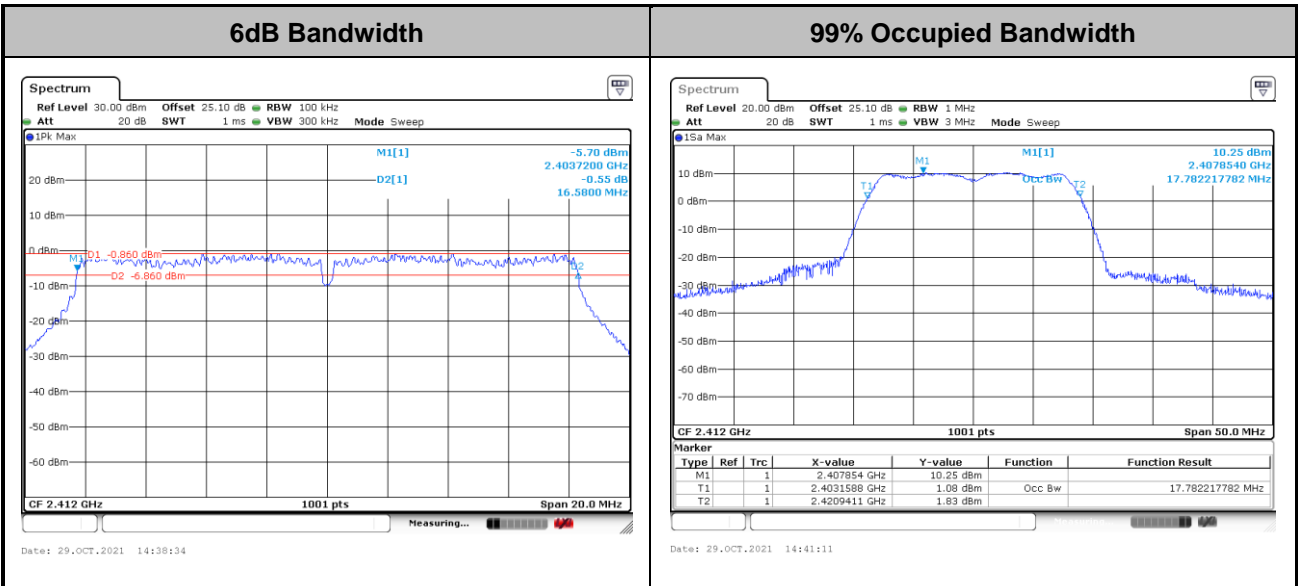
3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.

<802.11b>

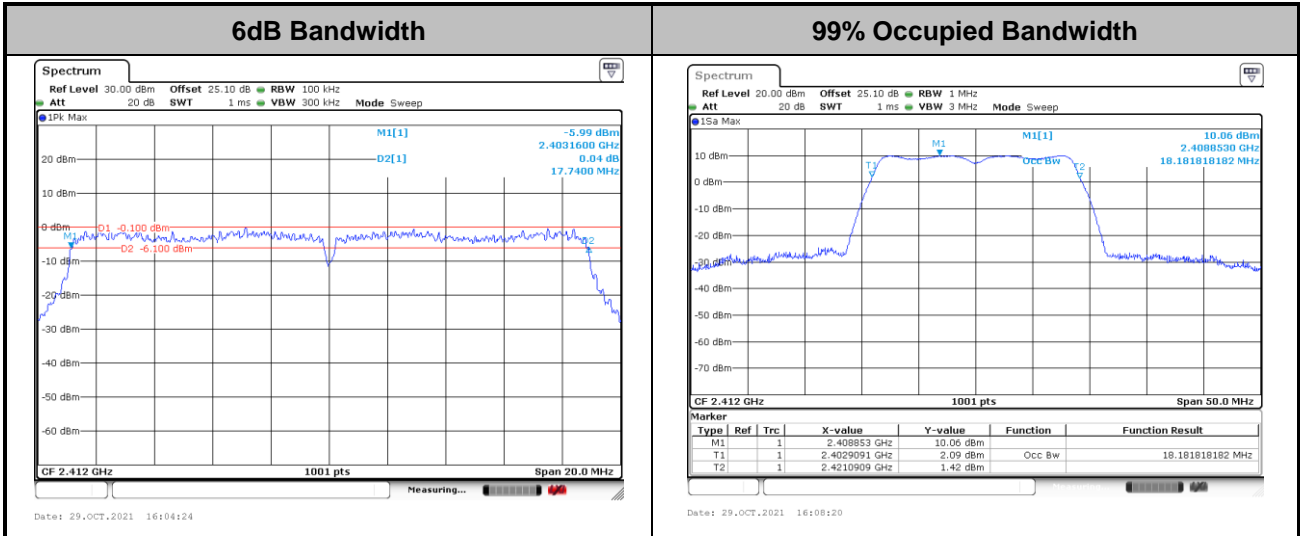


<802.11g>





<802.11n HT20>



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 2400-2483.5 MHz, the limit for output power is 30 dBm. If transmitting antenna with directional gain greater than 6 dBi 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 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

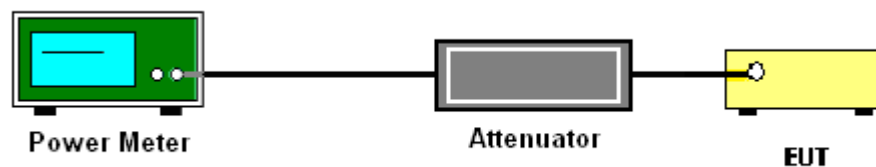
3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

1. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
2. The RF output of EUT is connected to the power meter by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Average Output Power

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 8 dBm in any 3 kHz band at any time interval of continuous transmission.

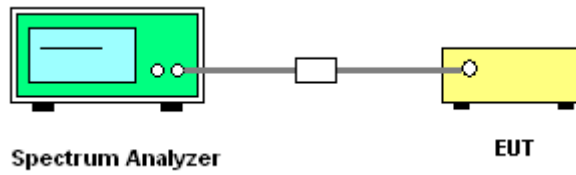
3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.3.3 Test Procedures

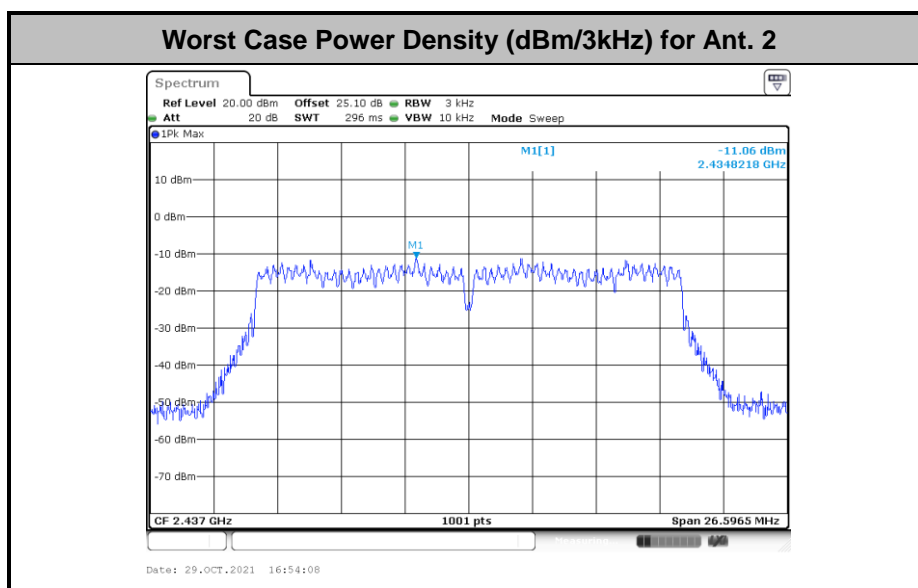
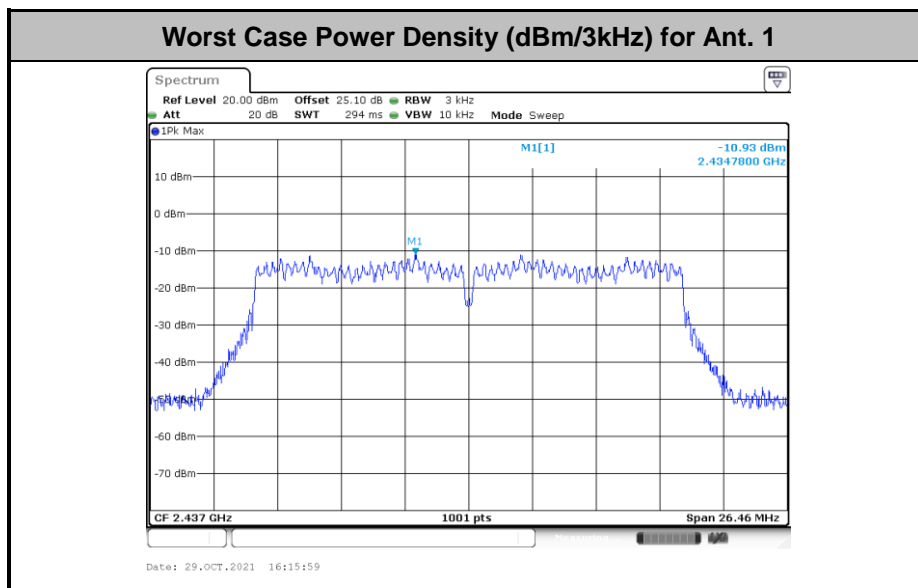
1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

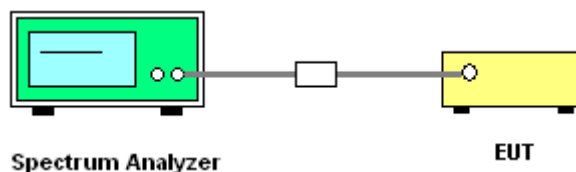
3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.4.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to 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

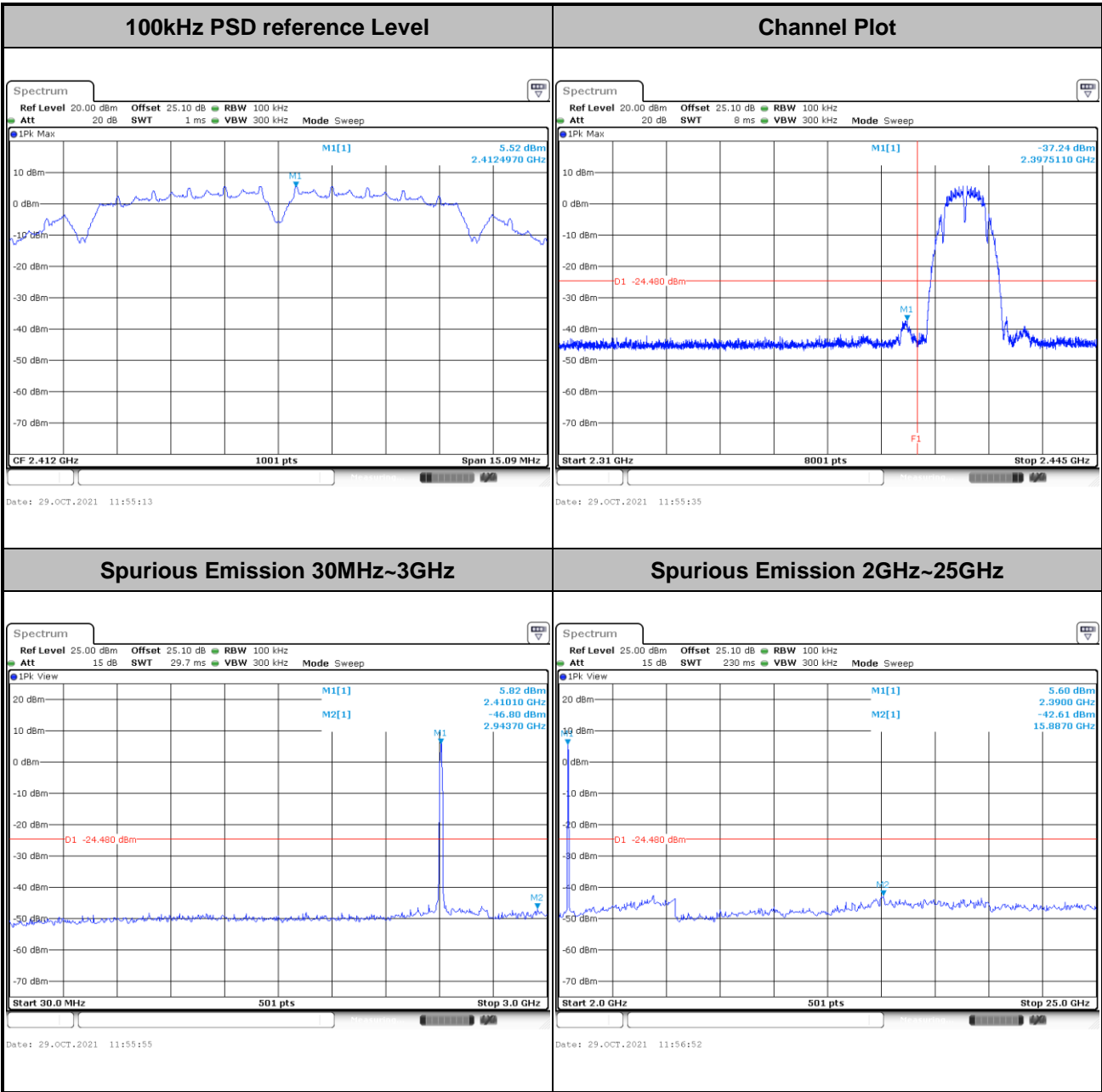




3.4.5 Test Result of Conducted Band Edges and Spurious Emission

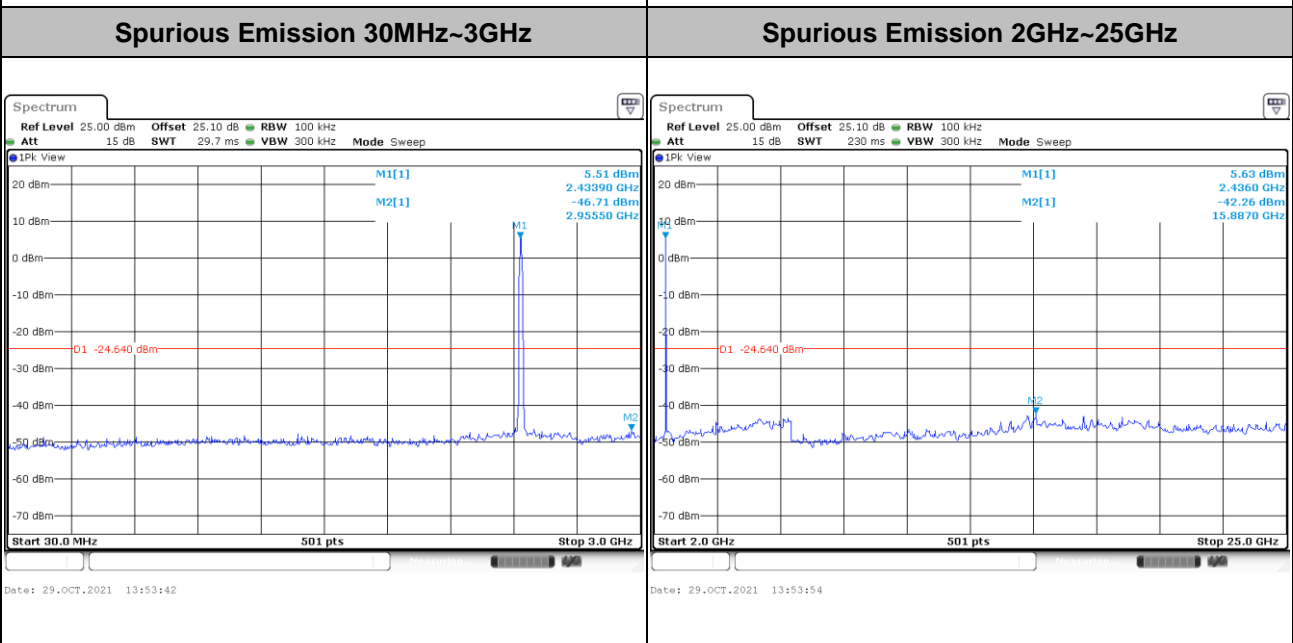
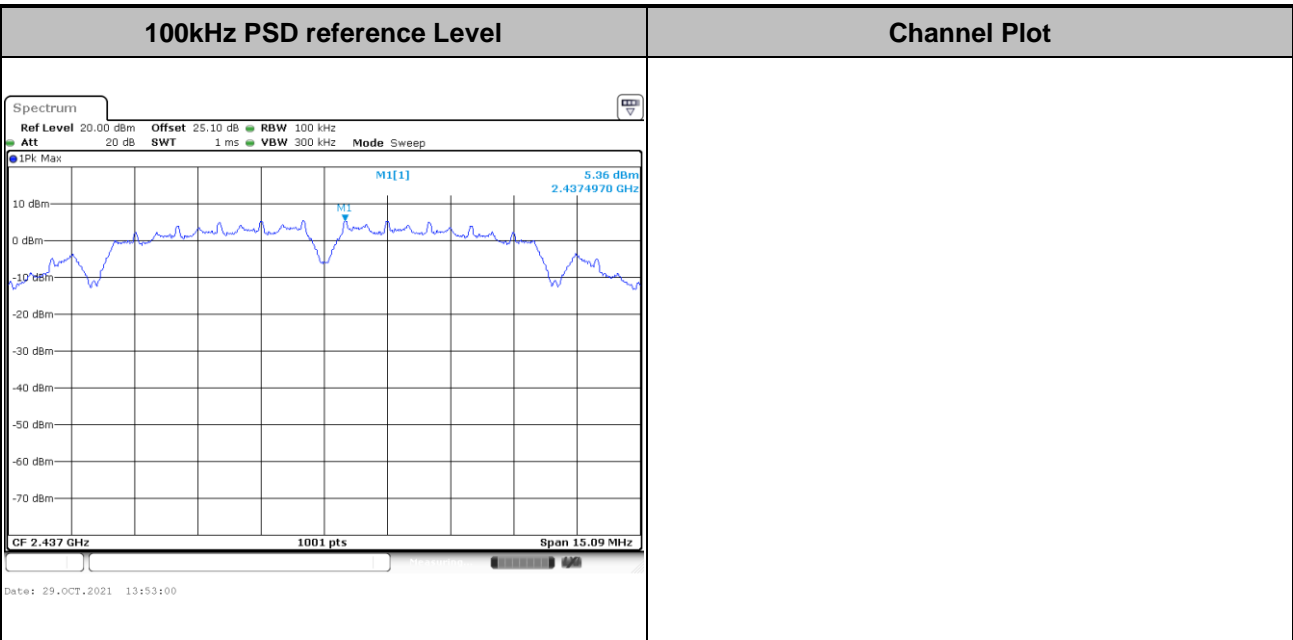
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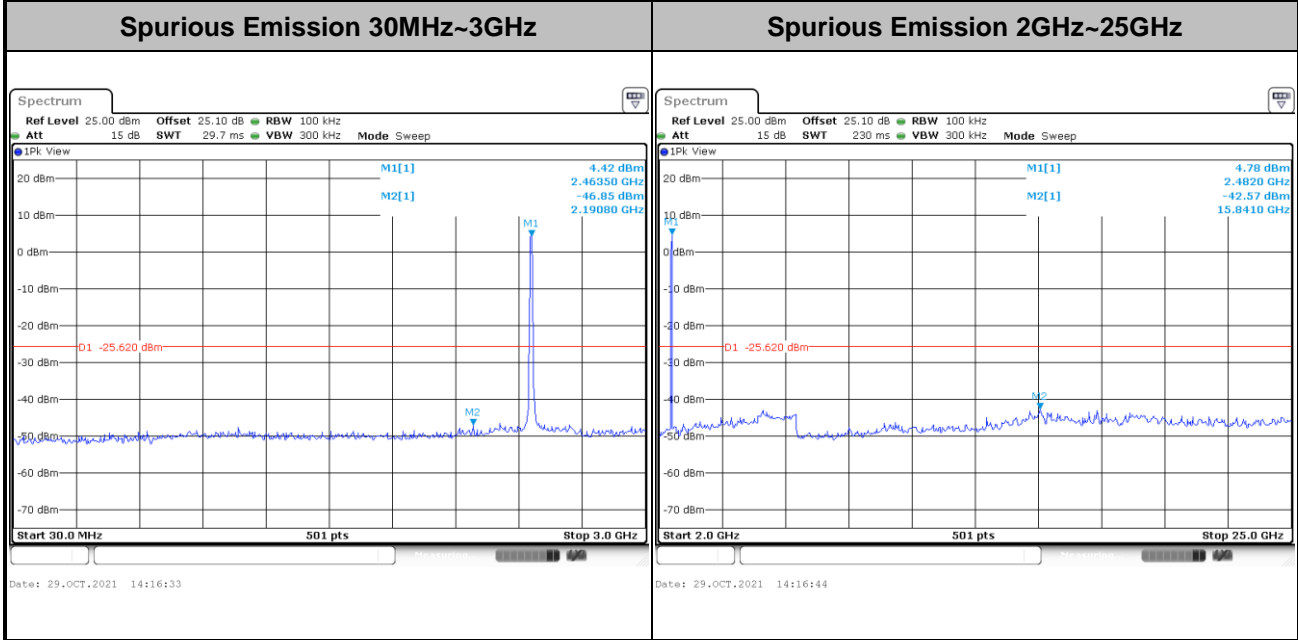
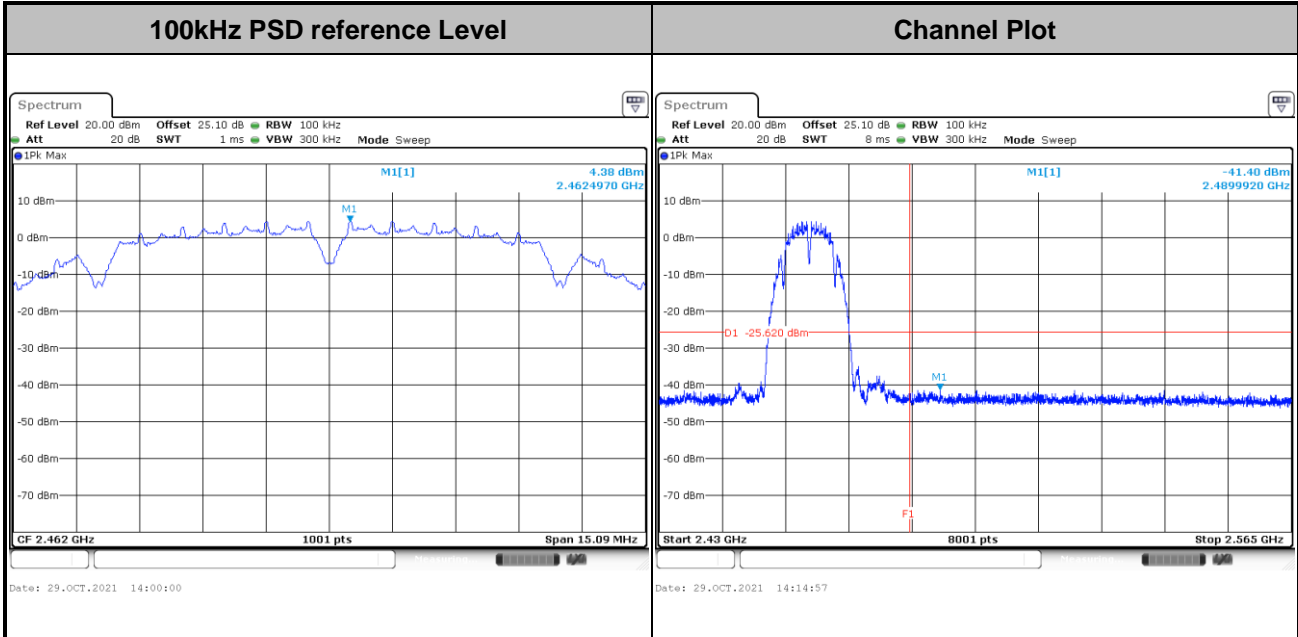


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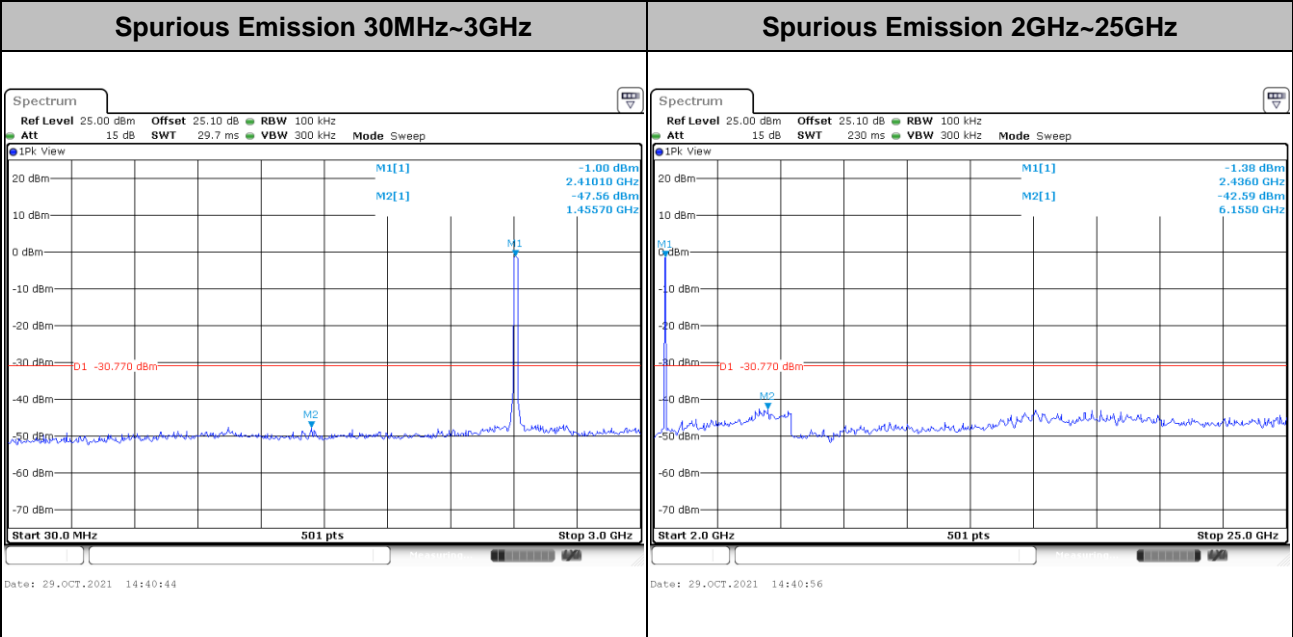
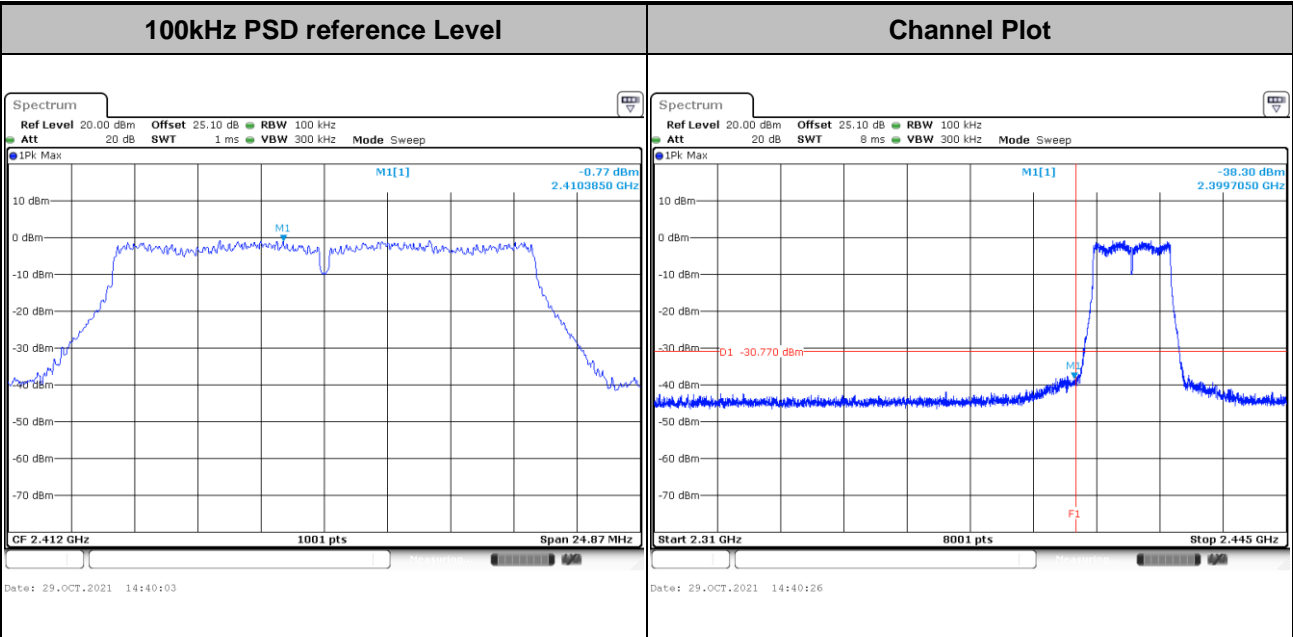


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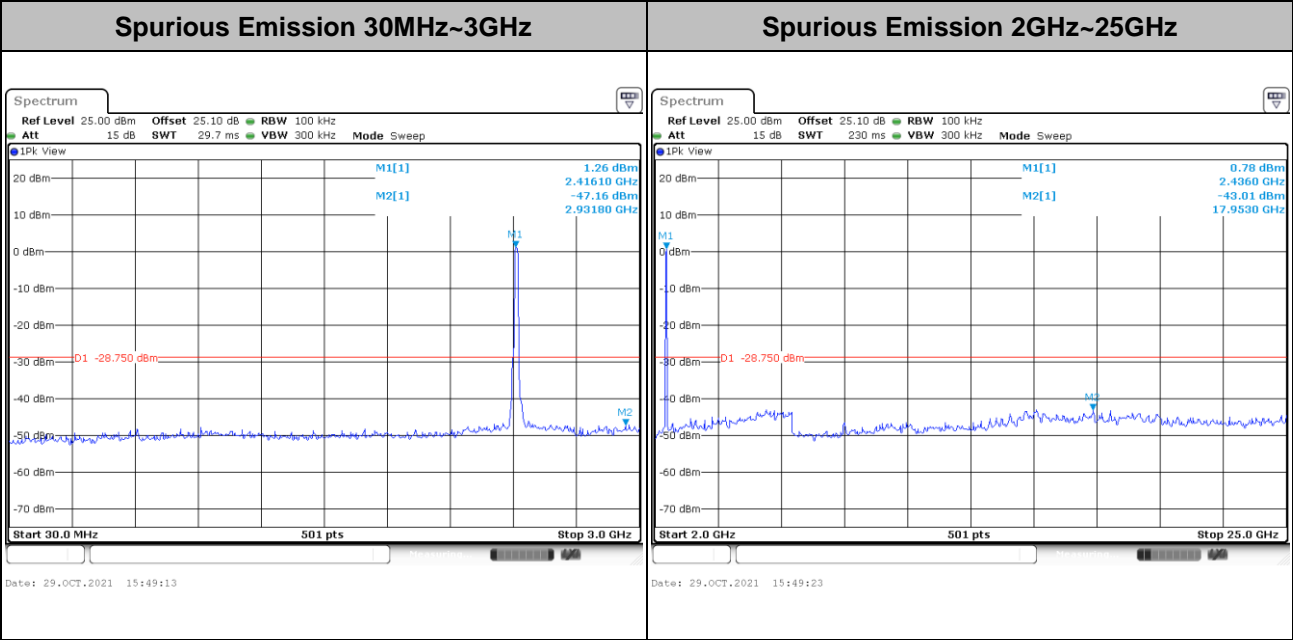
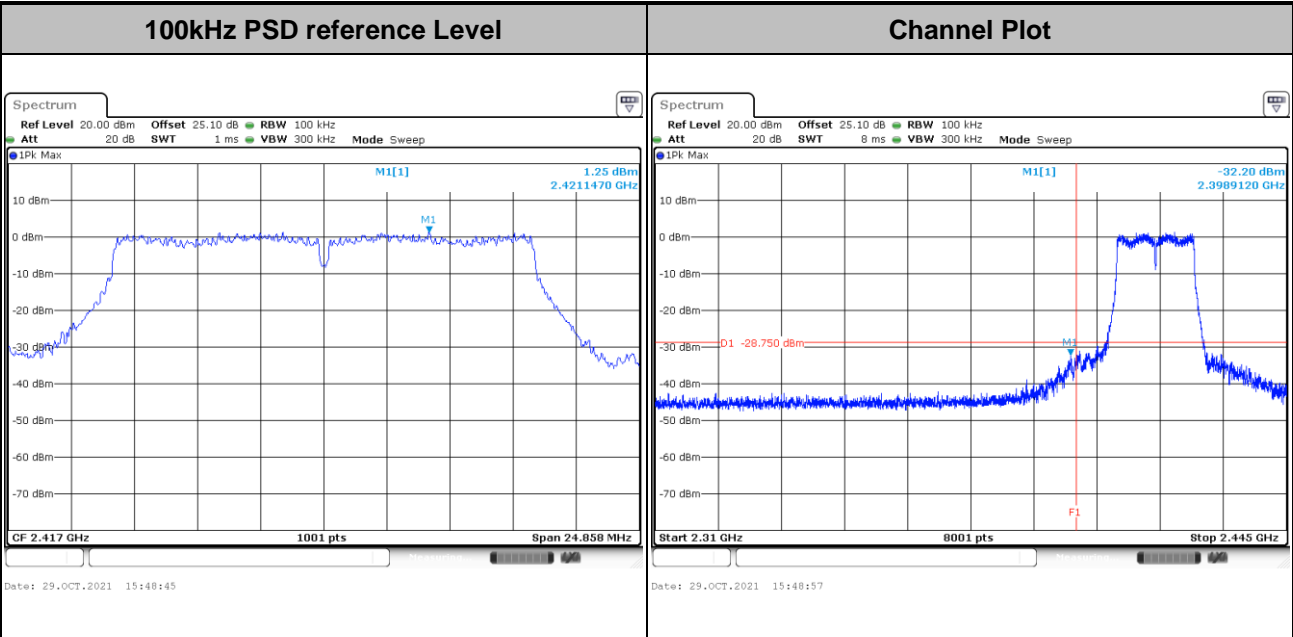


Test Mode : 802.11g Test Channel : 01



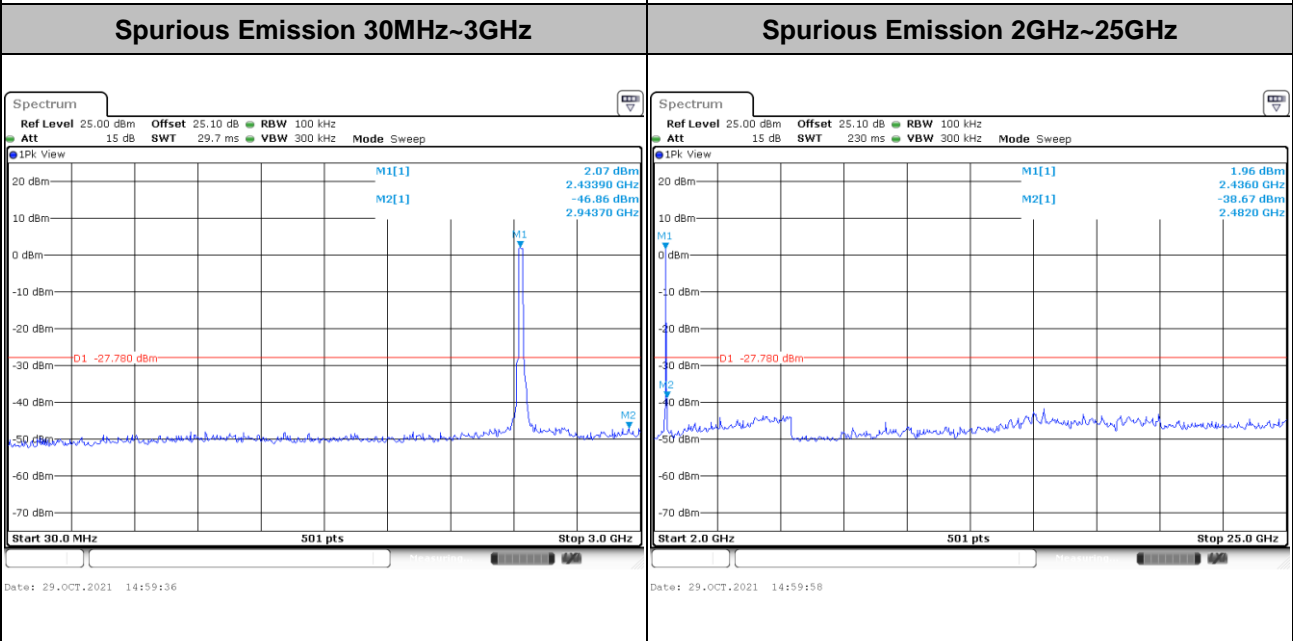
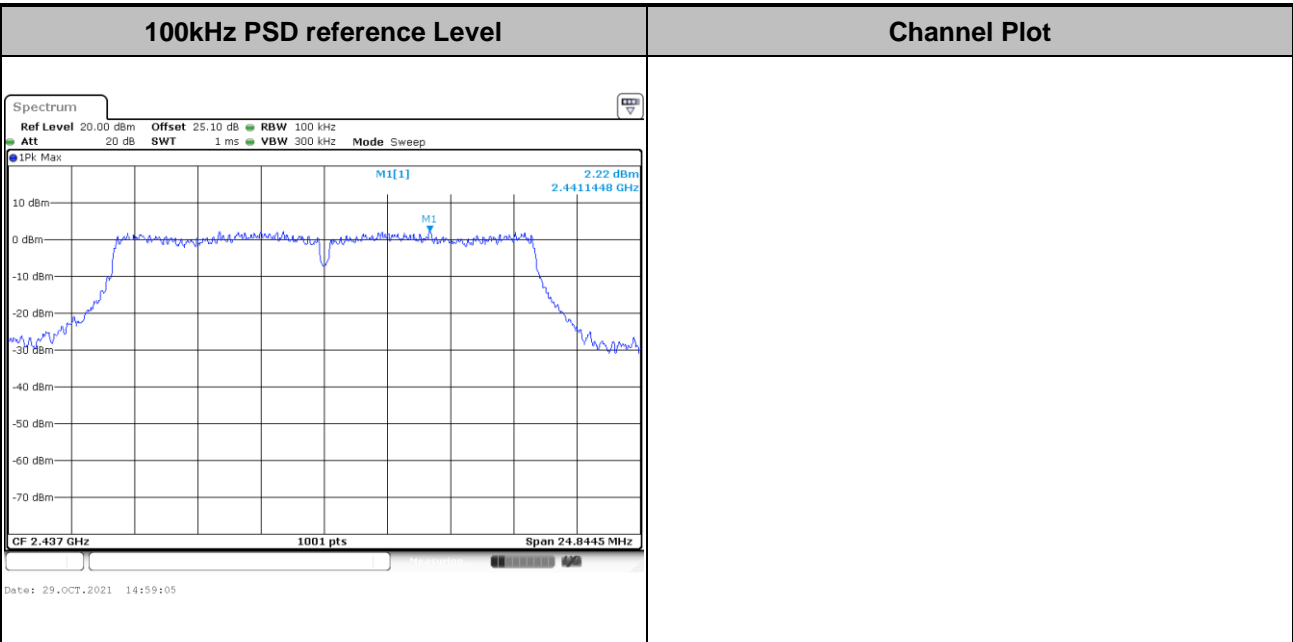


Test Mode : 802.11g Test Channel : 02



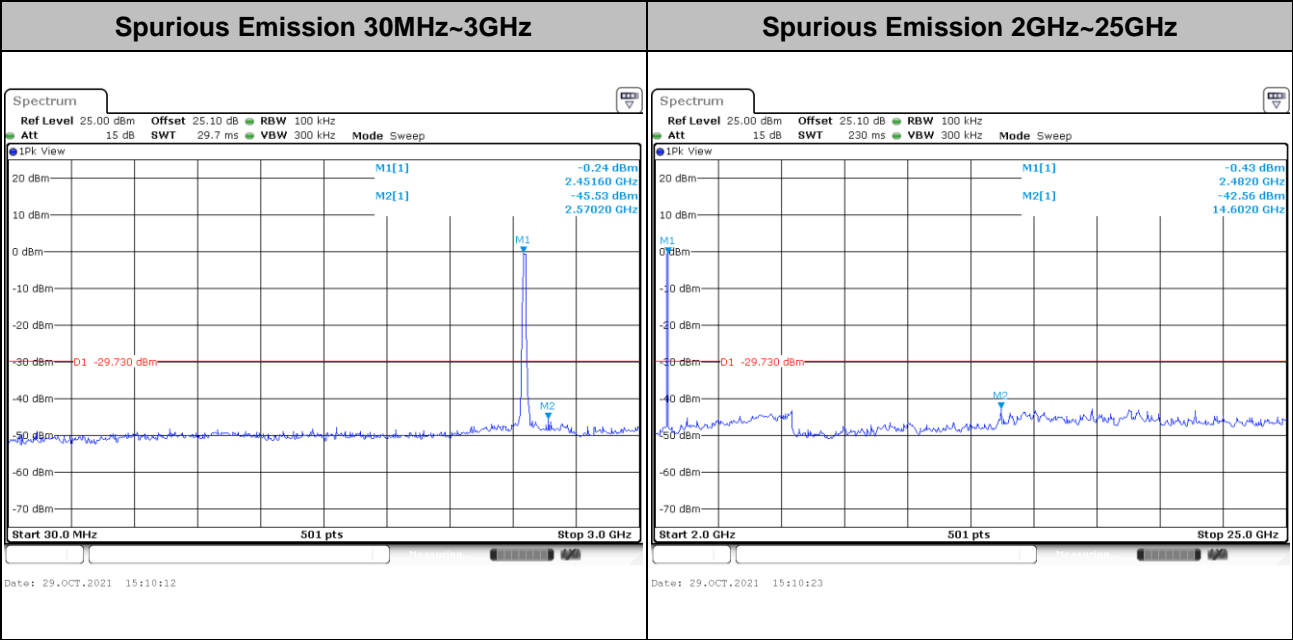
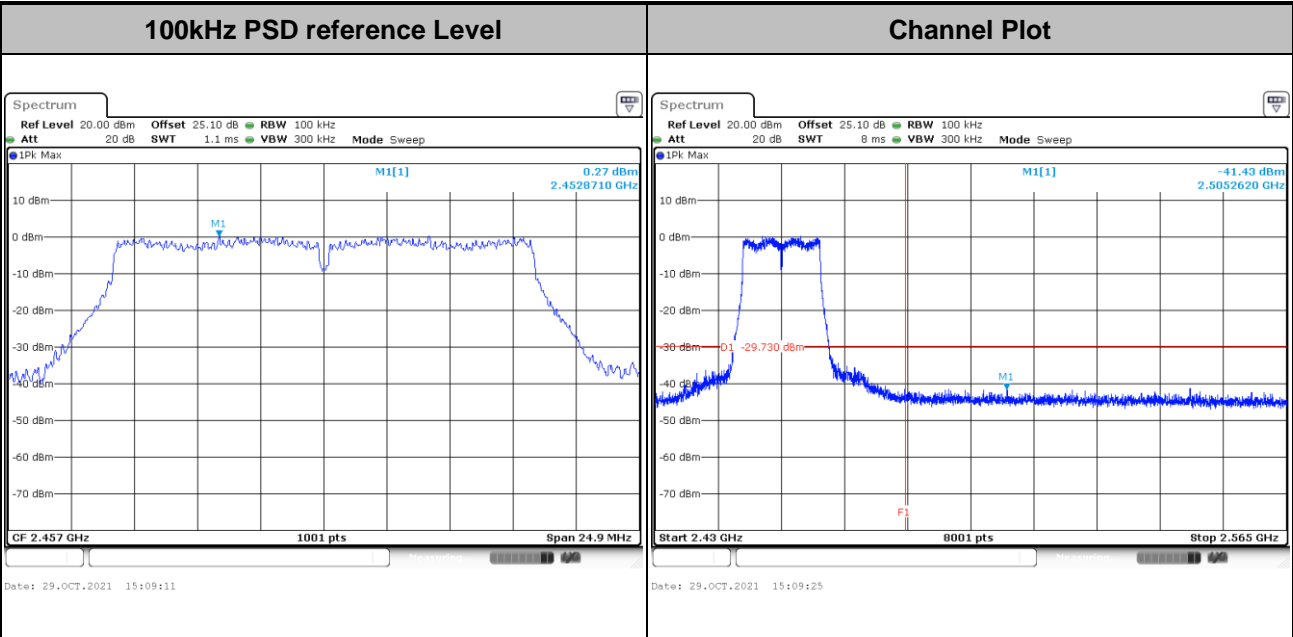


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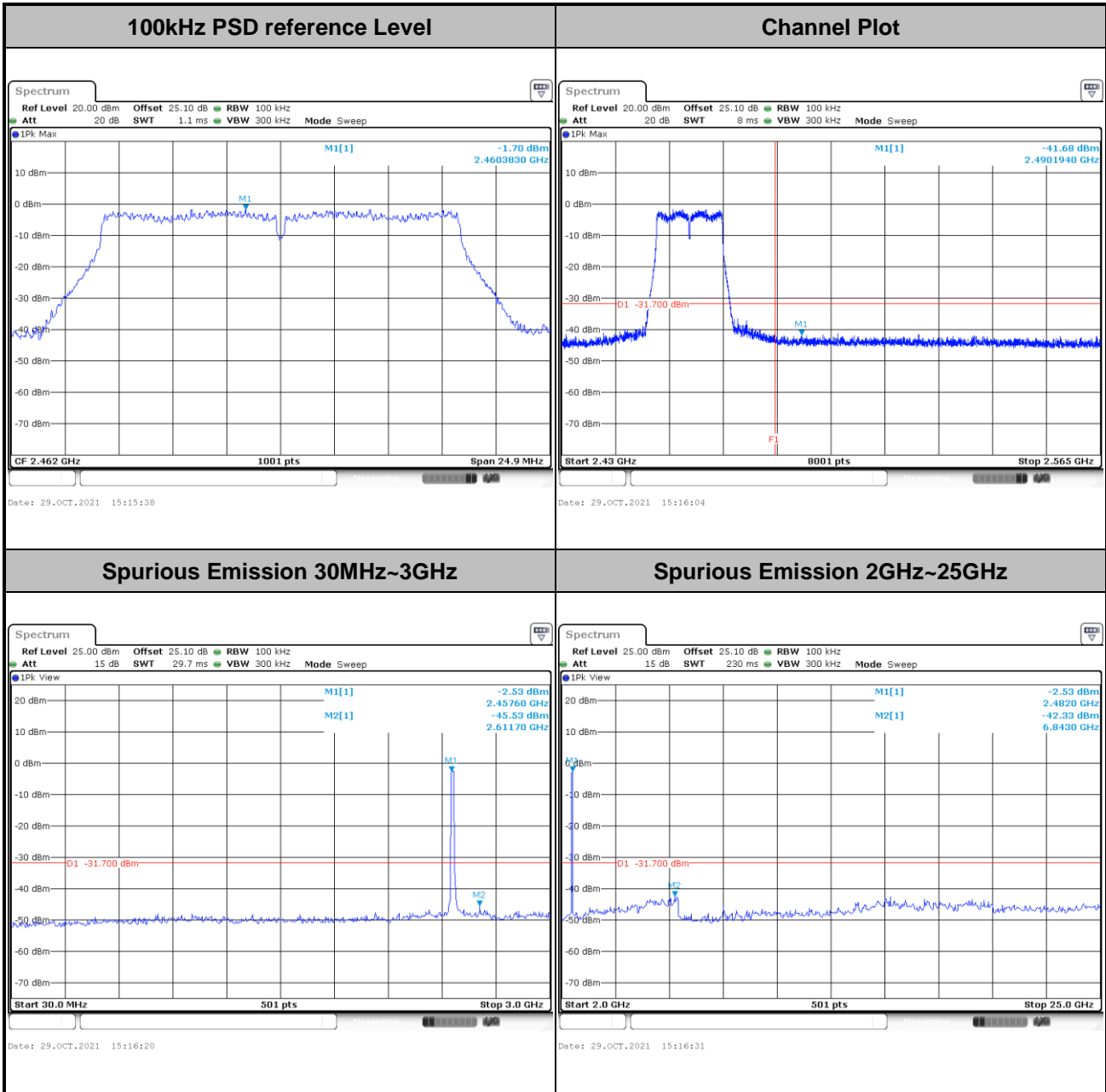


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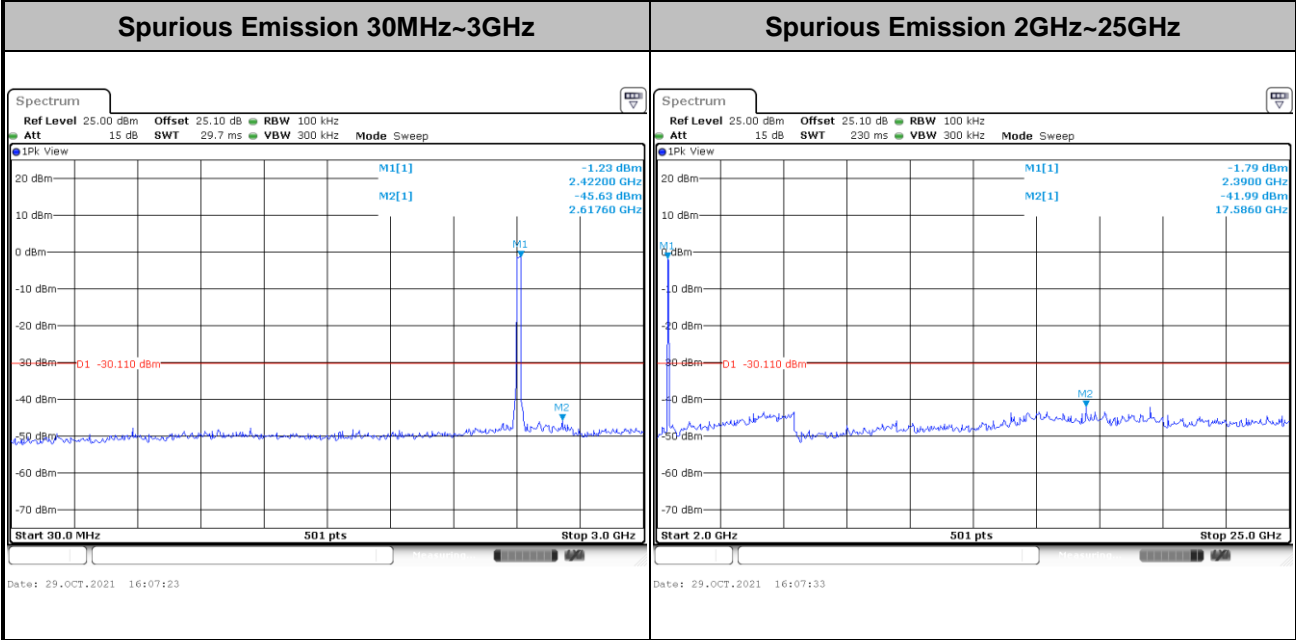
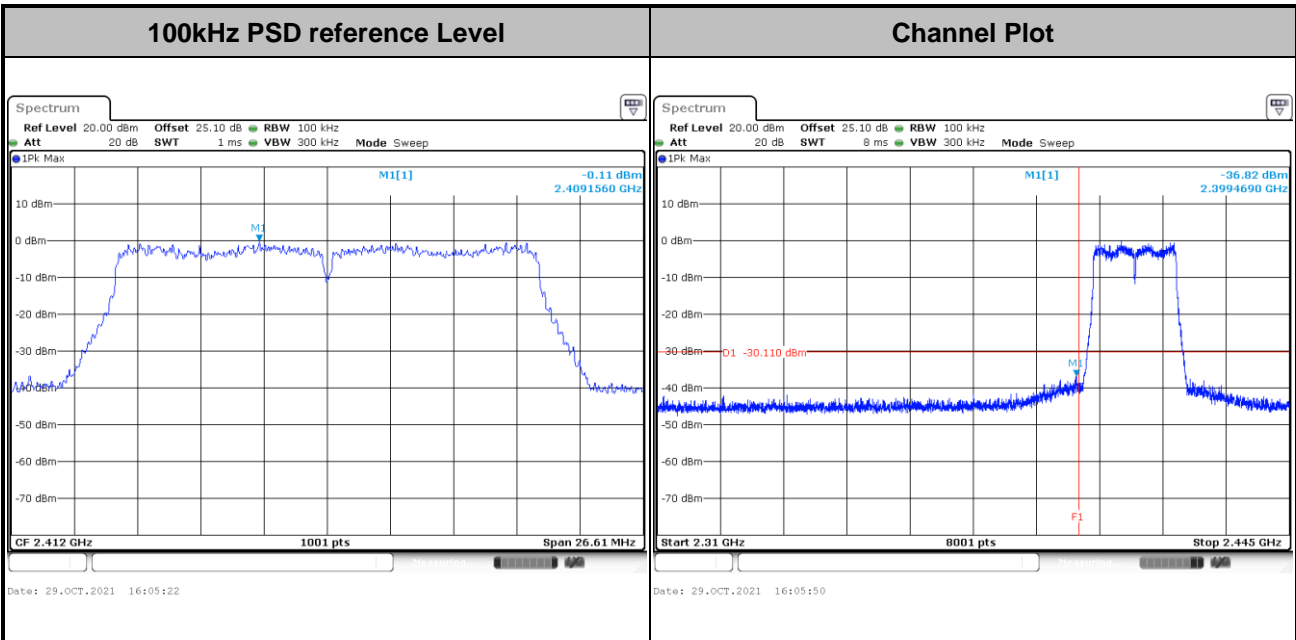


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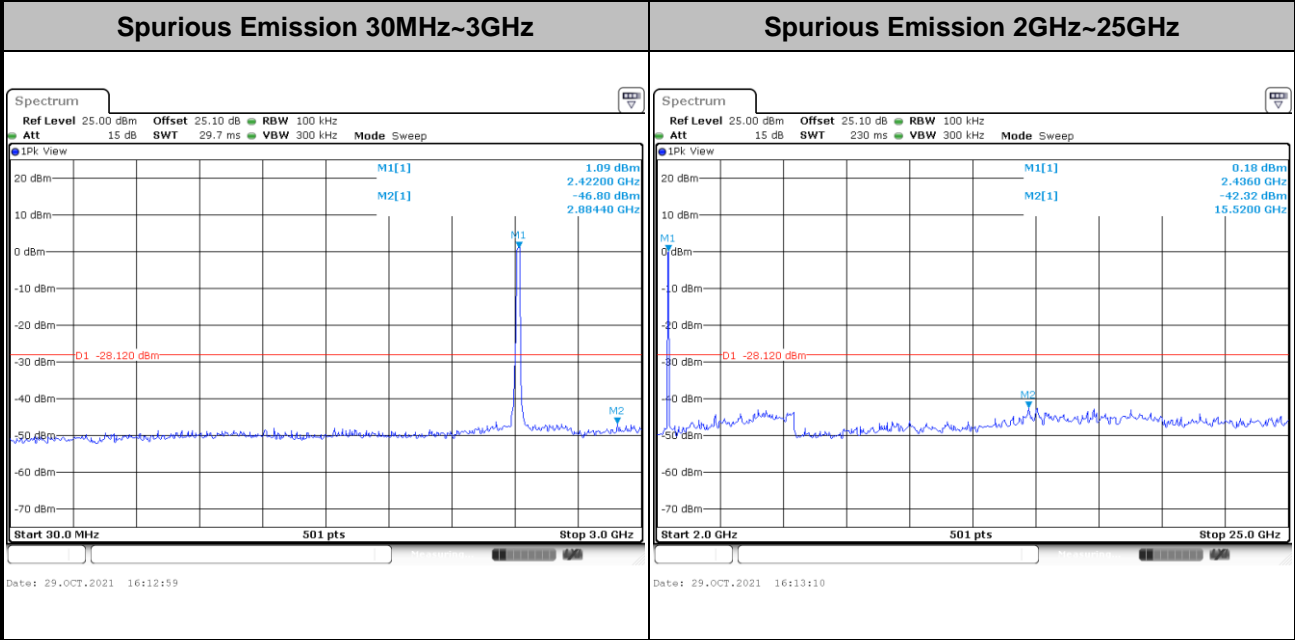
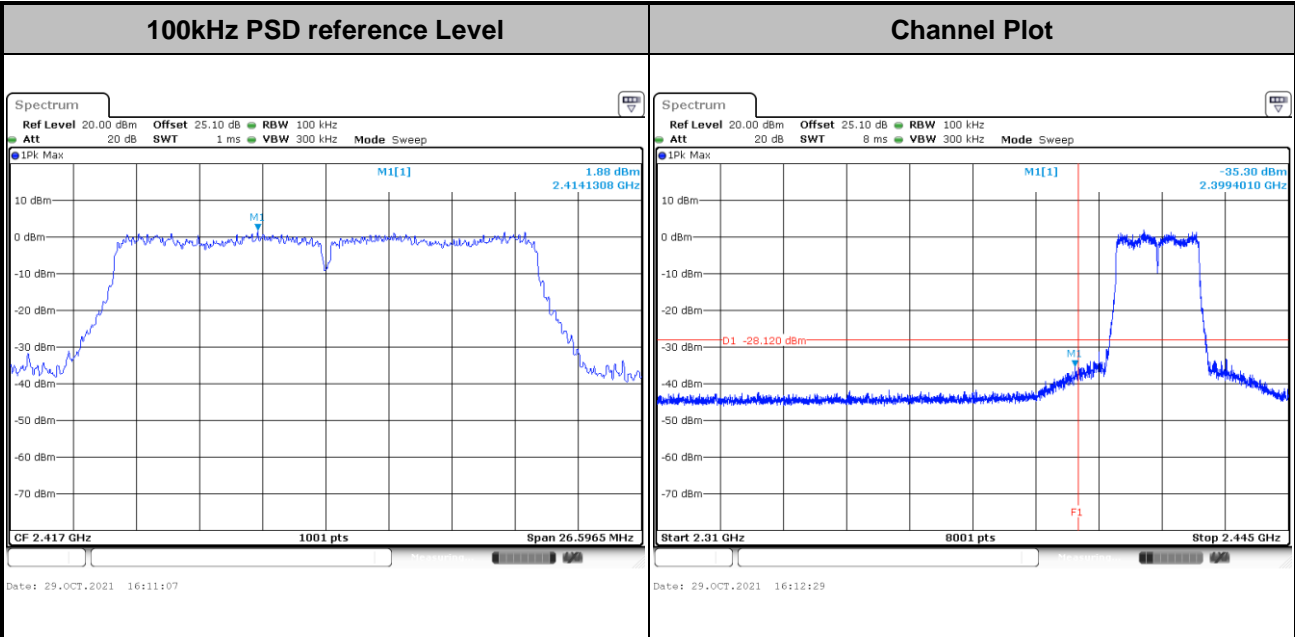


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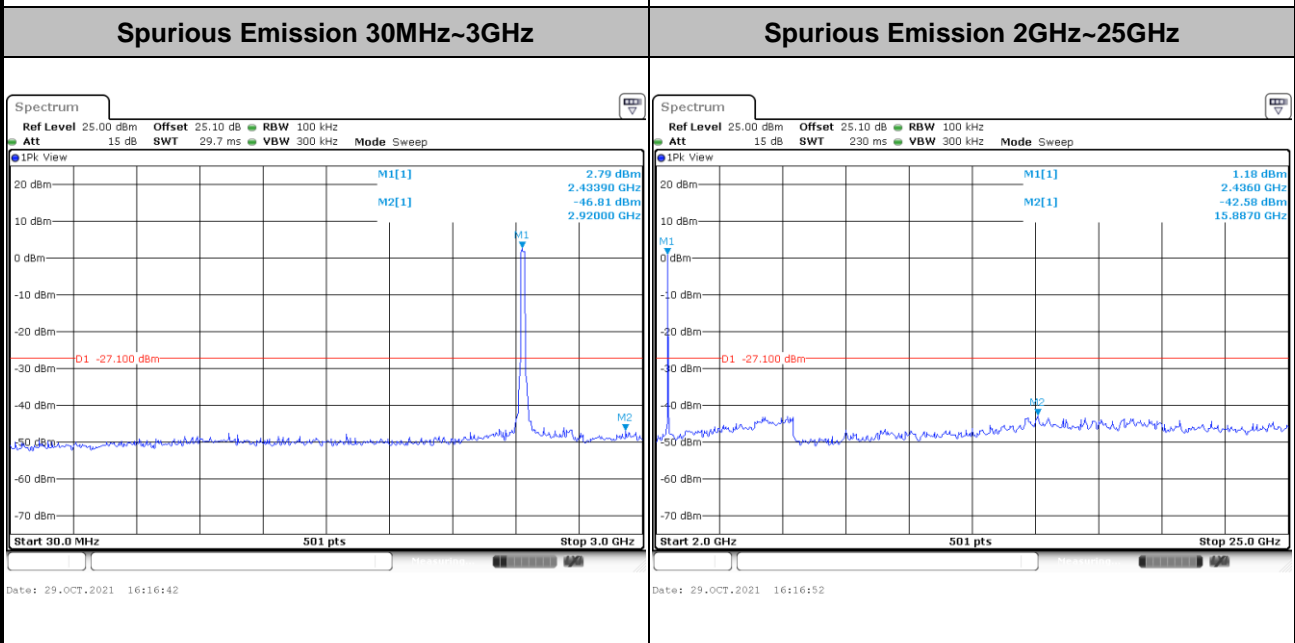
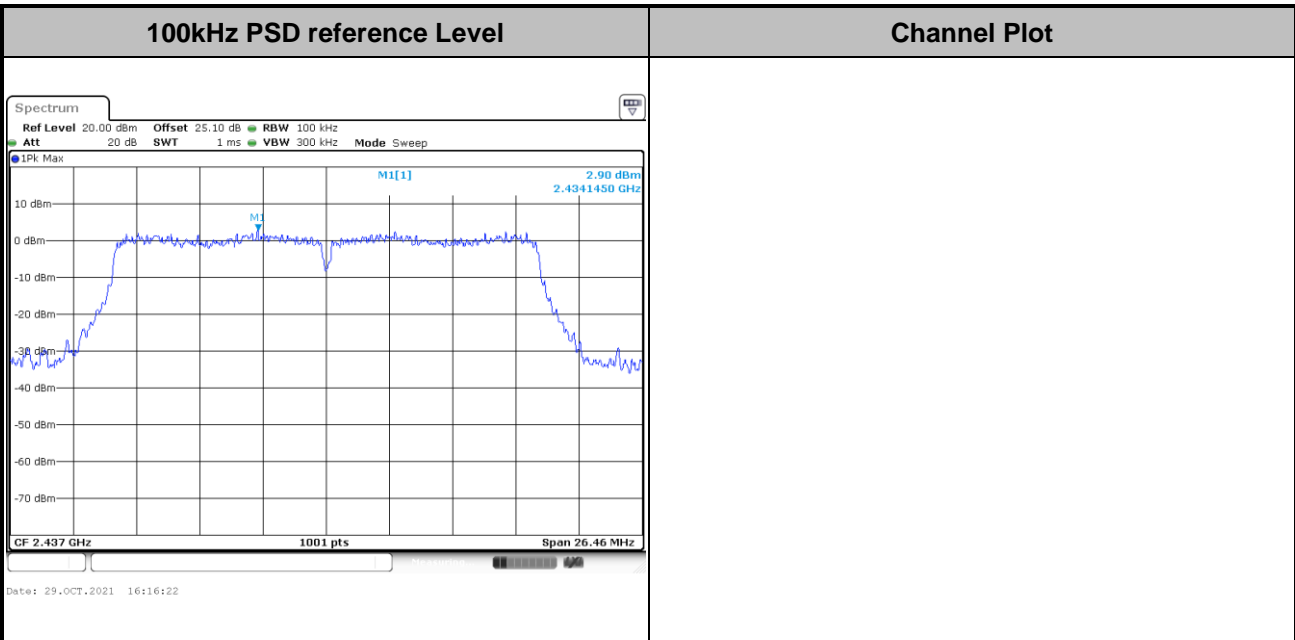


Test Mode : 802.11n HT20 Test Channel : 02



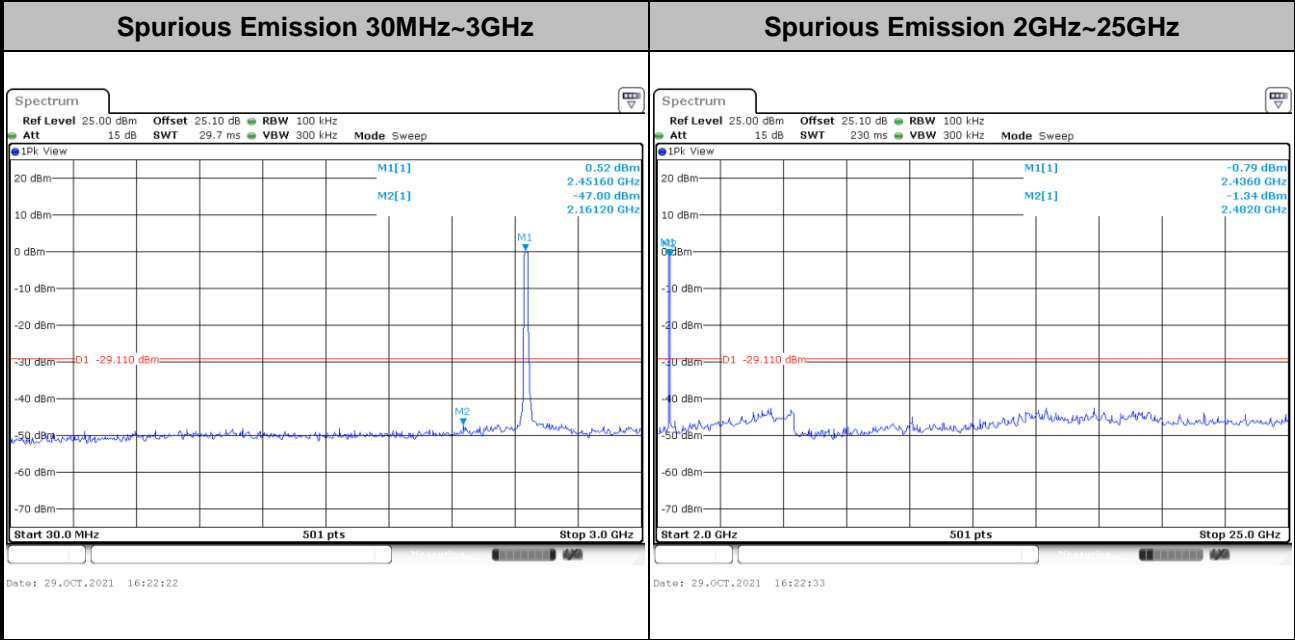
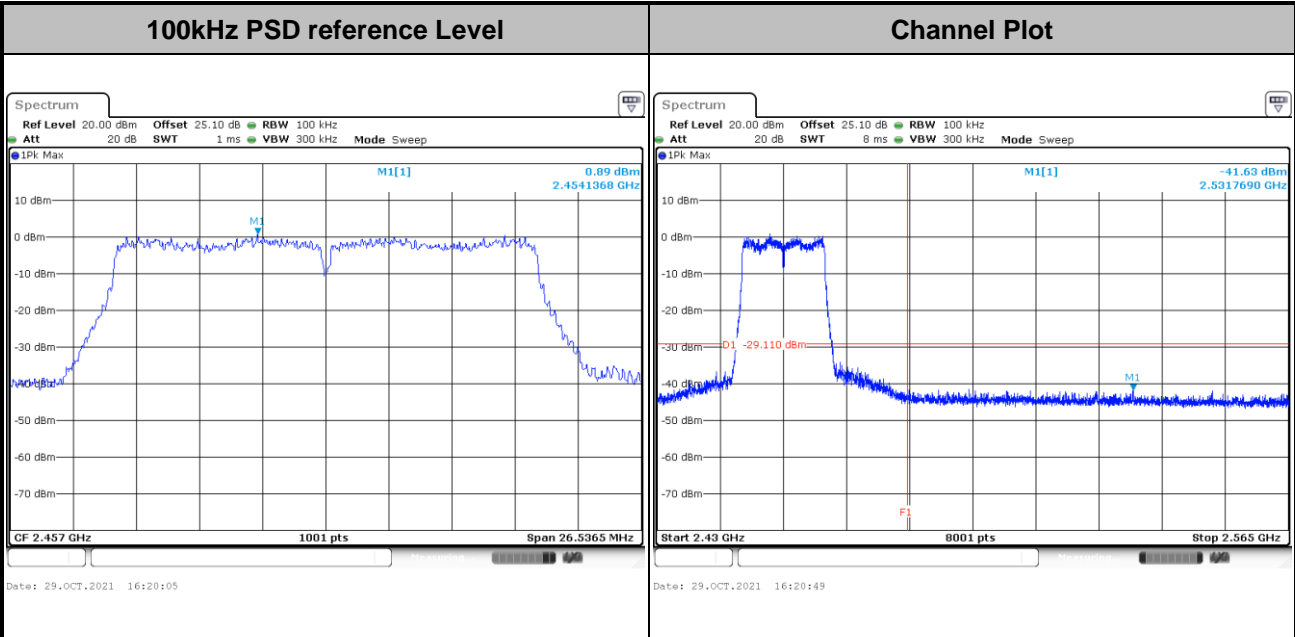


Test Mode :	802.11n HT20	Test Channel :	06
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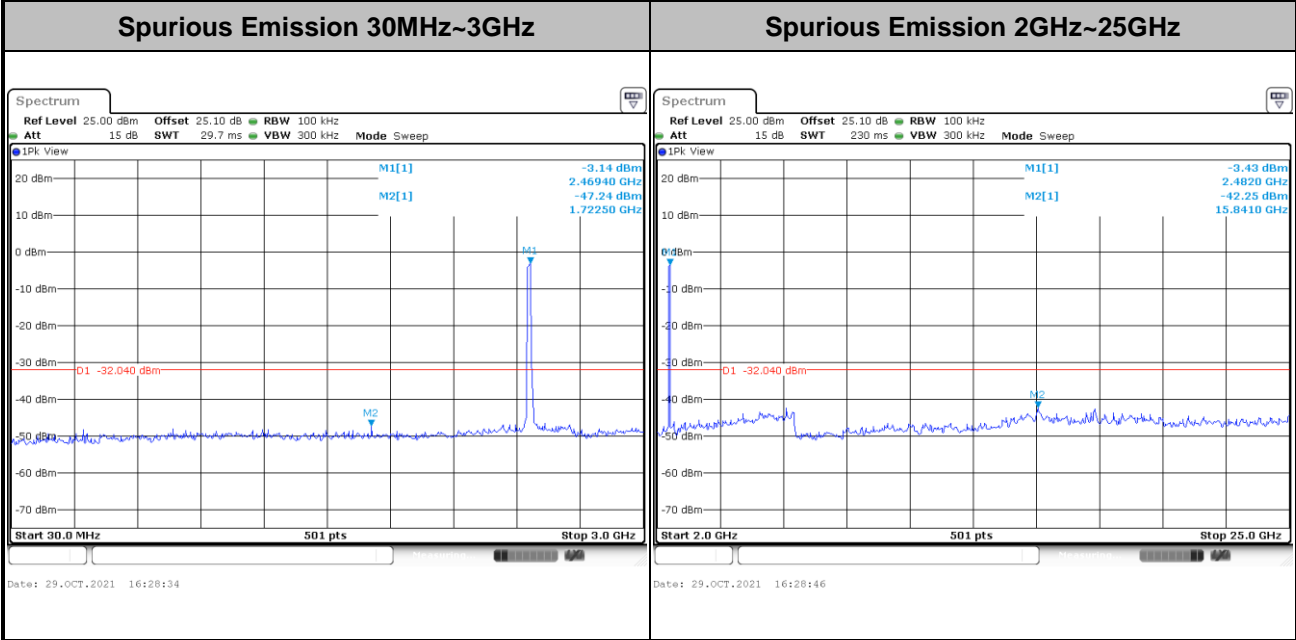
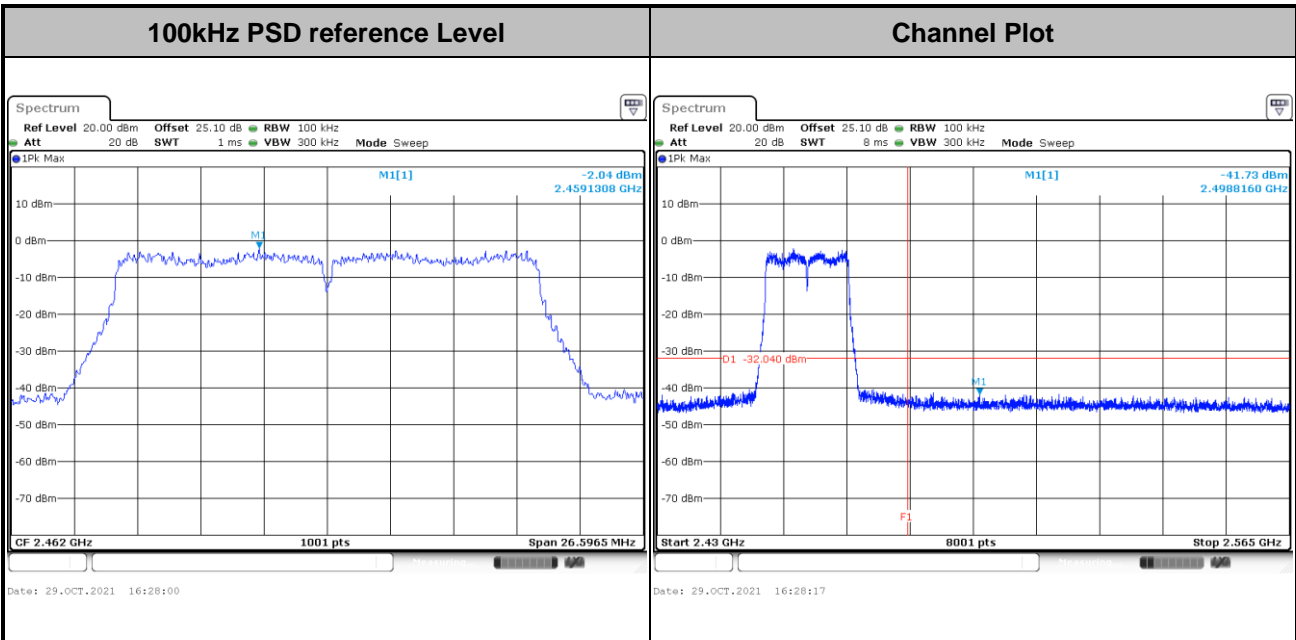


Test Mode :	802.11n HT20	Test Channel :	10
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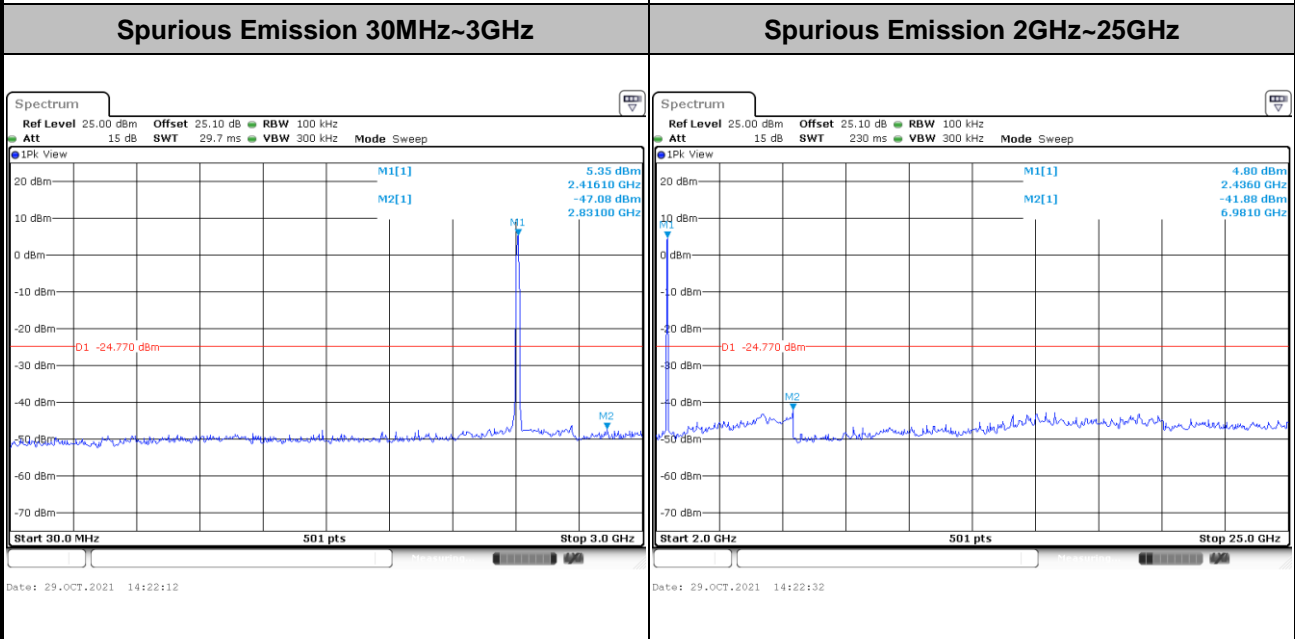
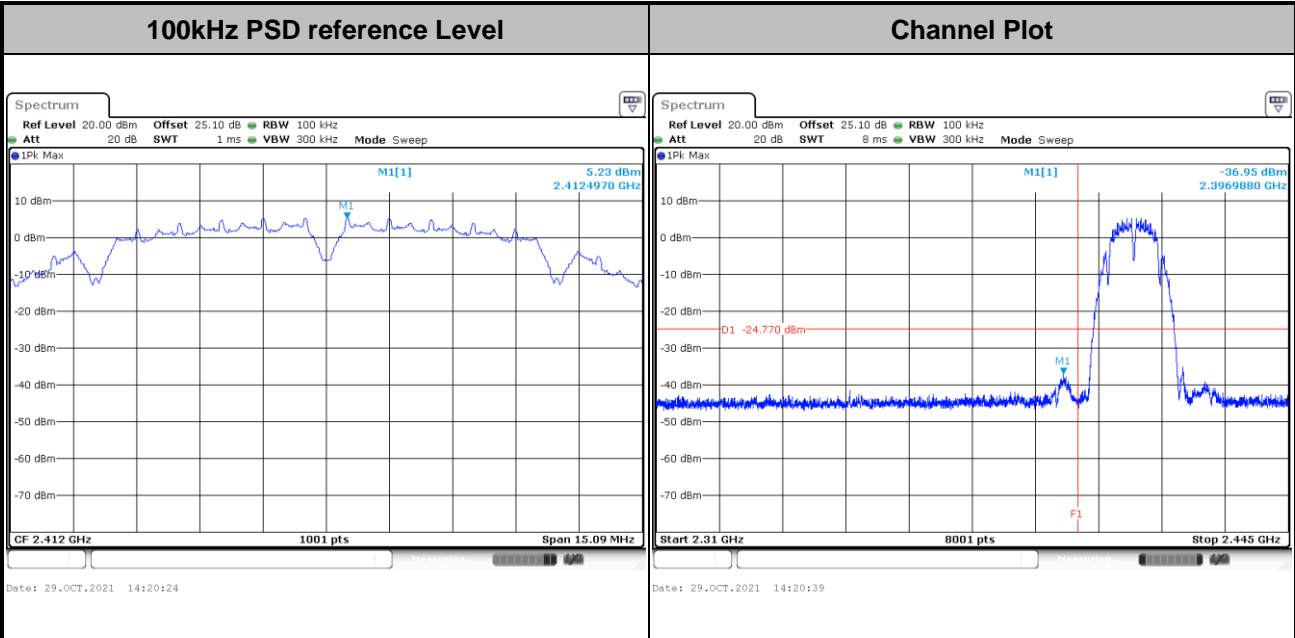
Test Mode :	802.11n HT20	Test Channel :	11
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Number of TX = 1, Ant. 2 (Measured)

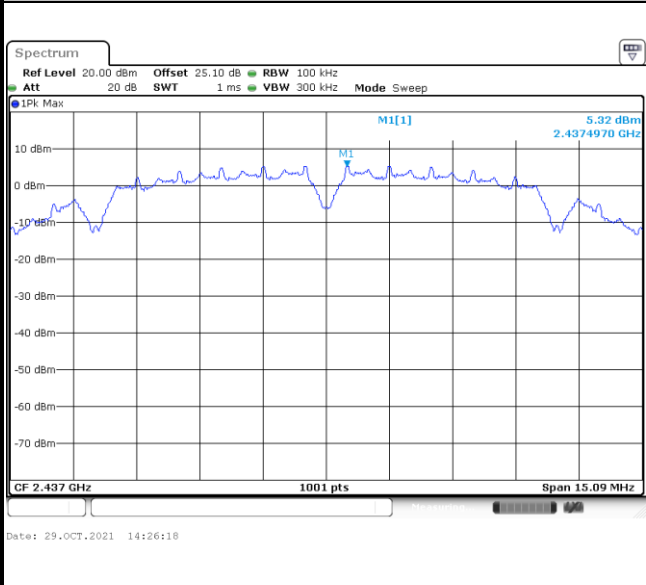
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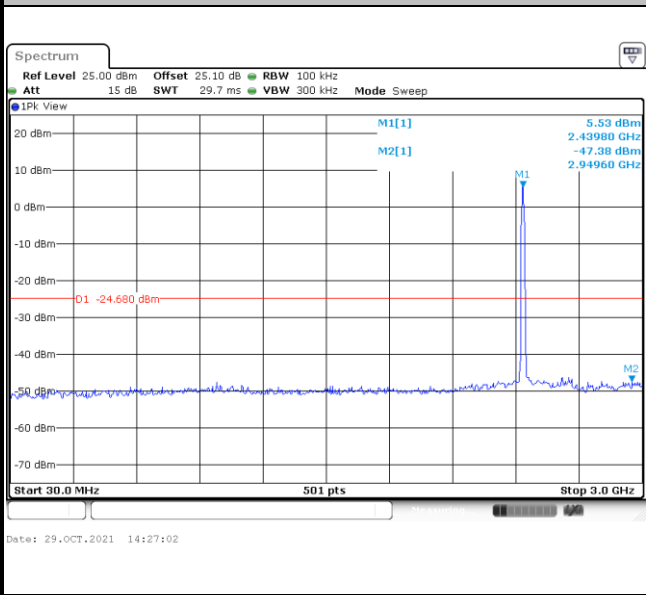


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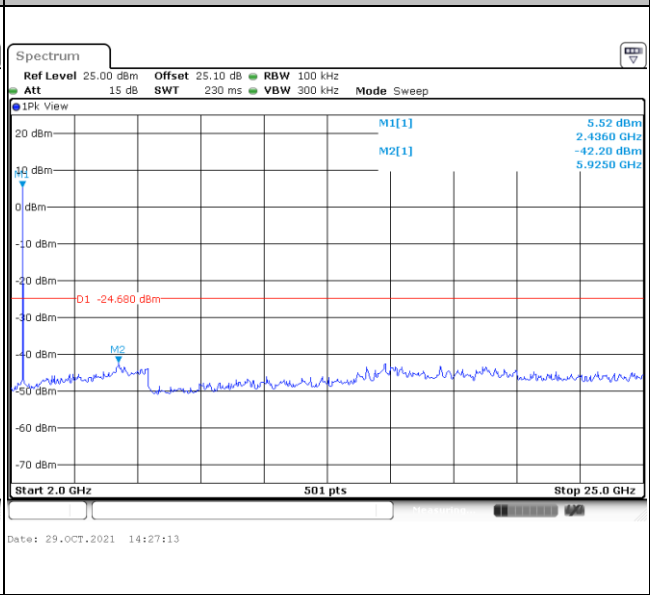
100kHz PSD reference Level	Channel Plot
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Spurious Emission 30MHz~3GHz

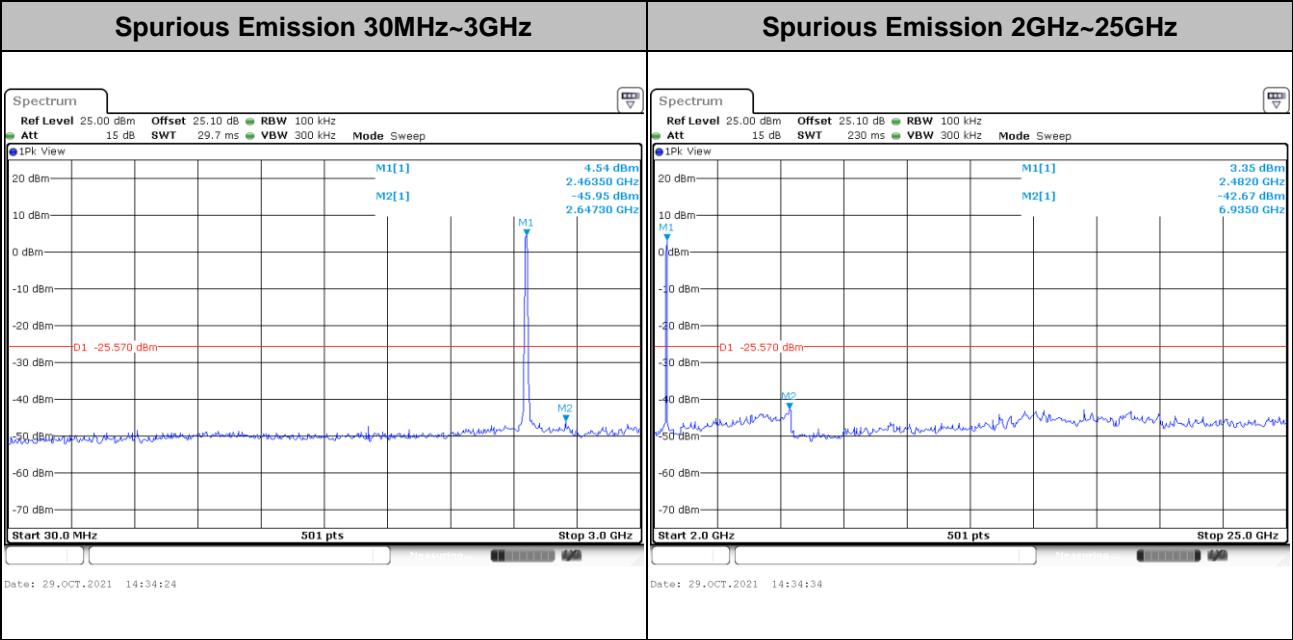
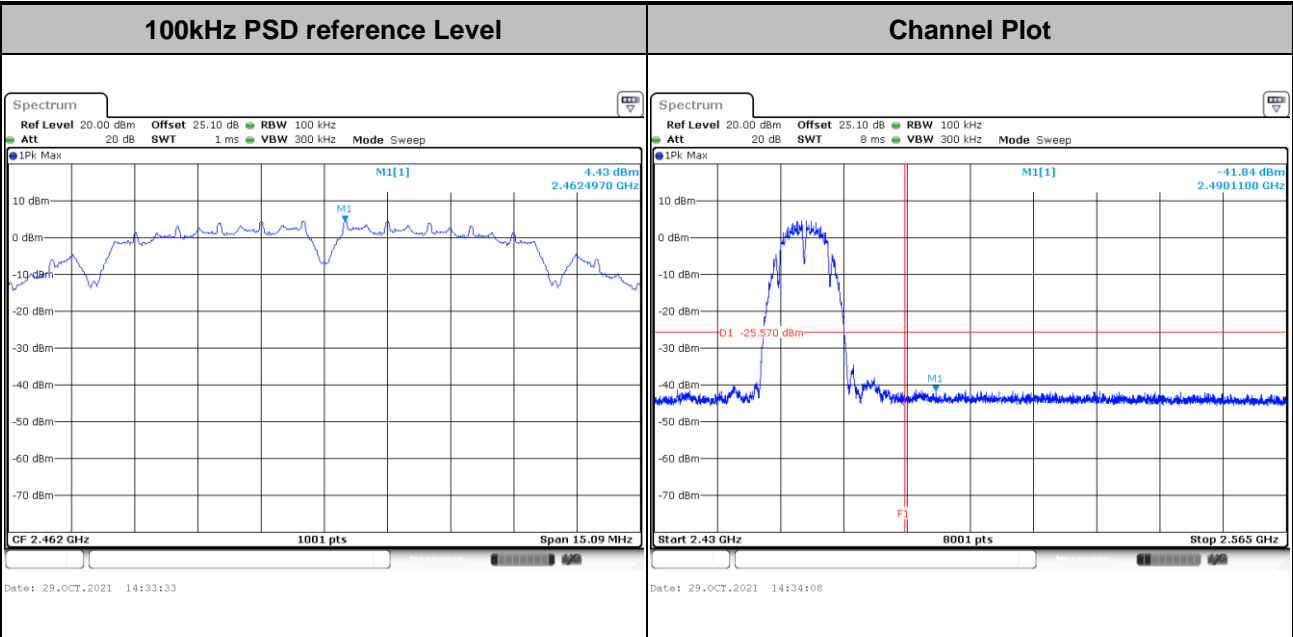


Spurious Emission 2GHz~25GHz



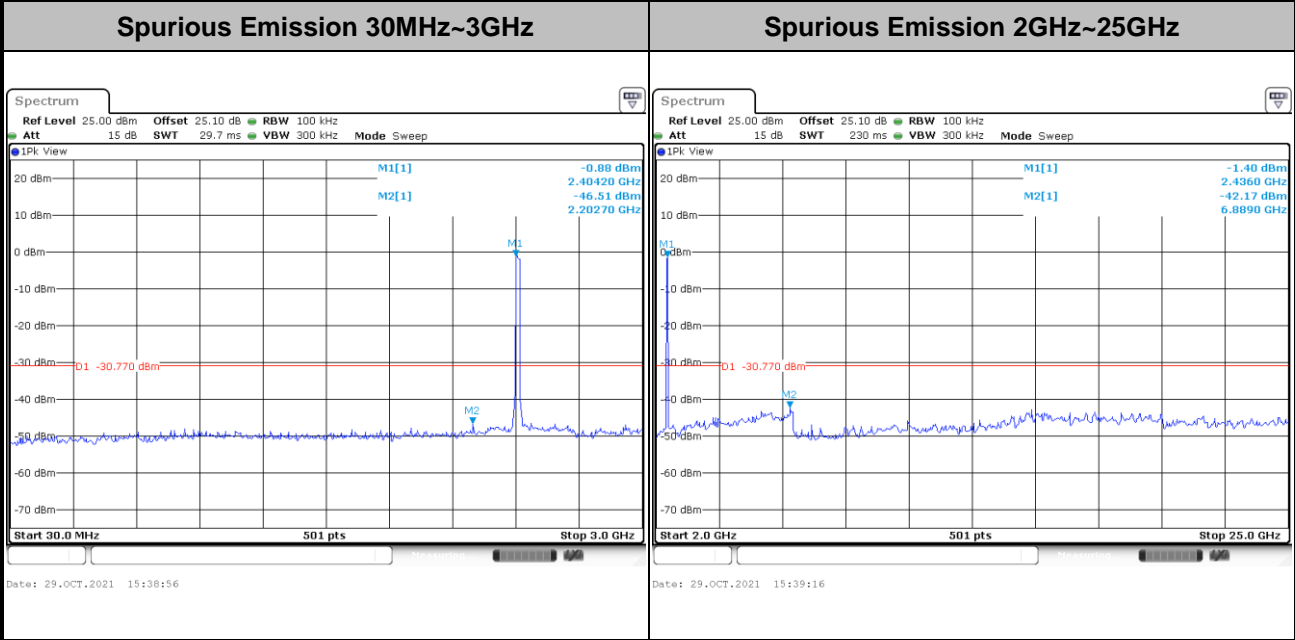
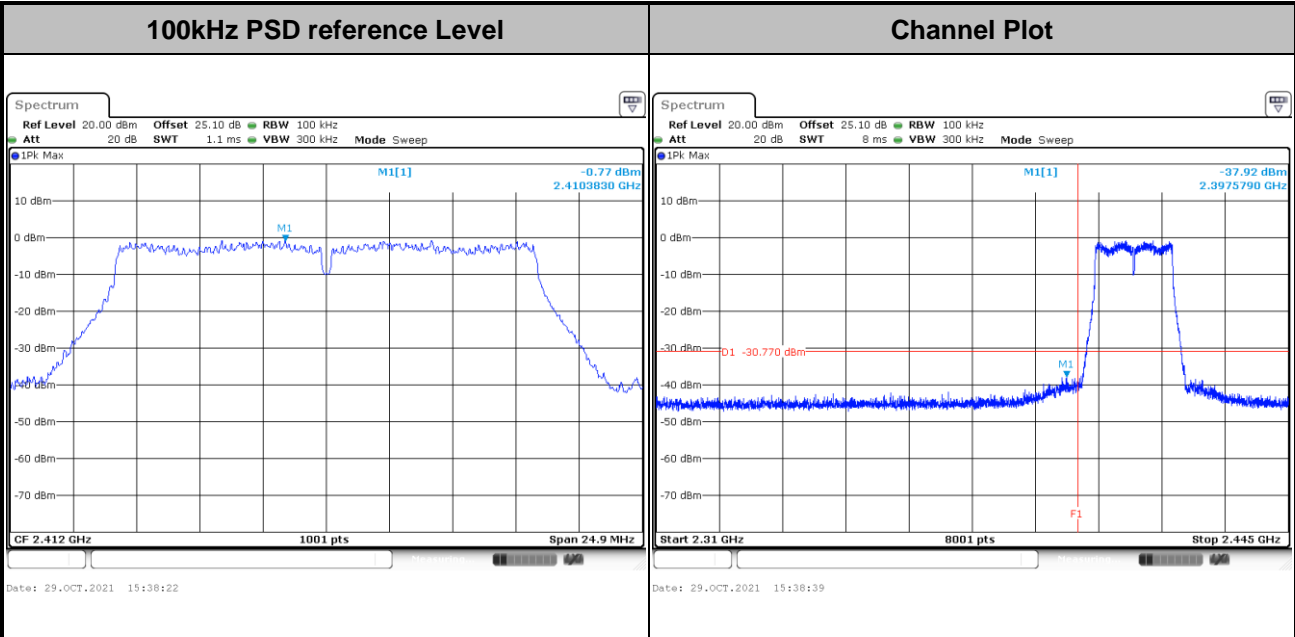


Test Mode :	802.11b	Test Channel :	11
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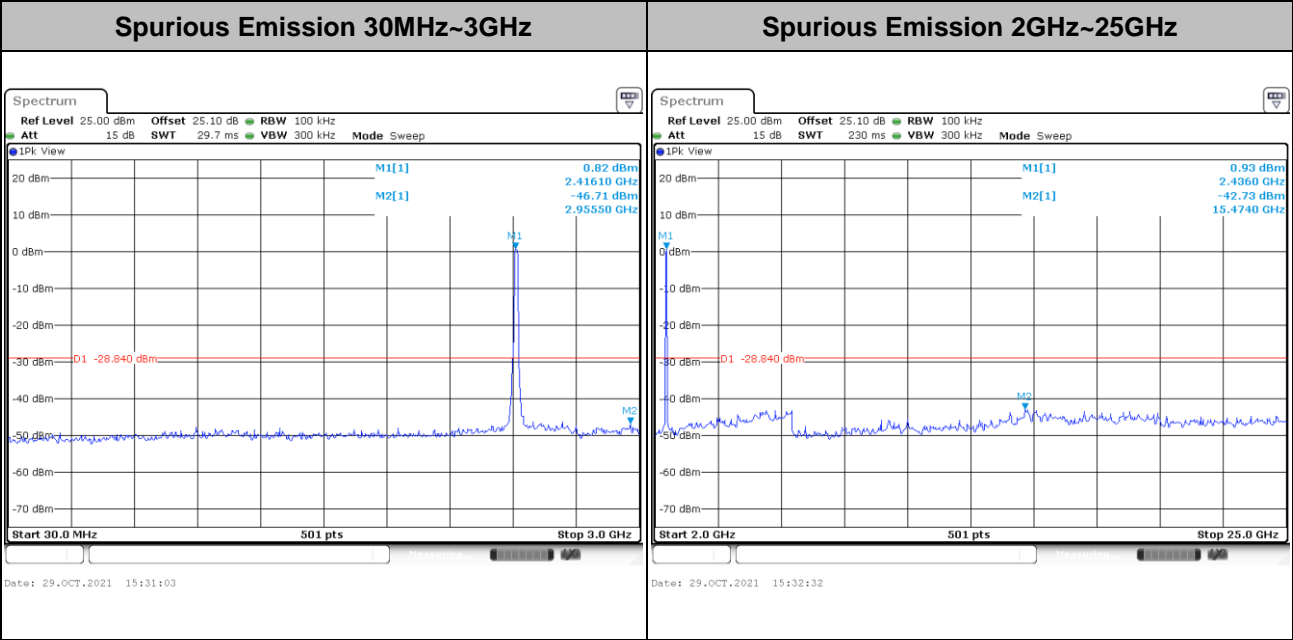
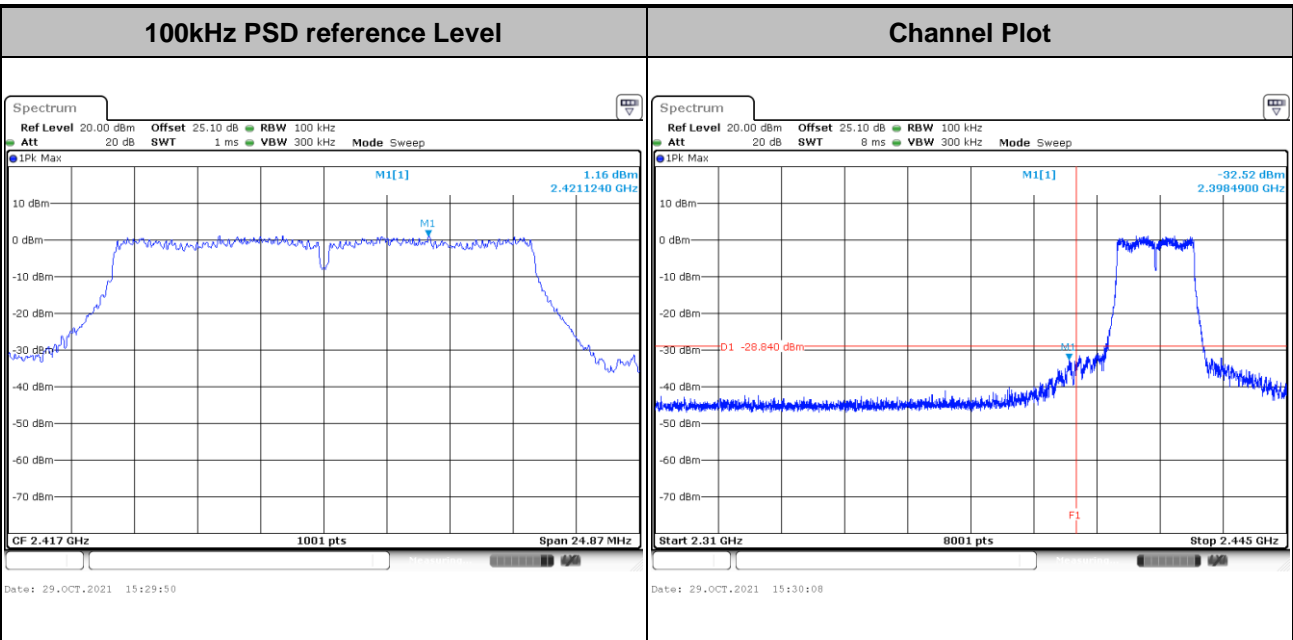


Test Mode : 802.11g Test Channel : 01





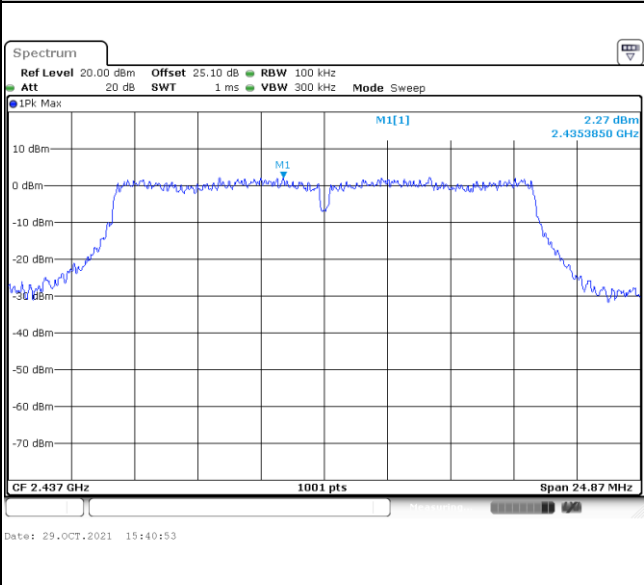
Test Mode :	802.11g	Test Channel :	02
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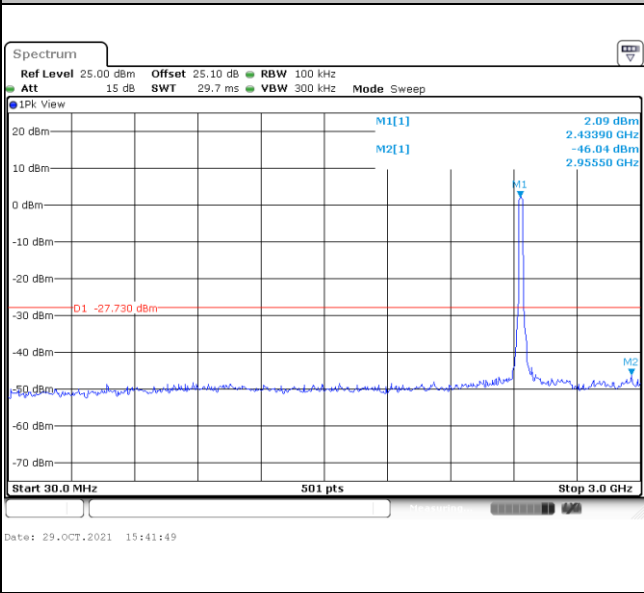


Test Mode :	802.11g	Test Channel :	06
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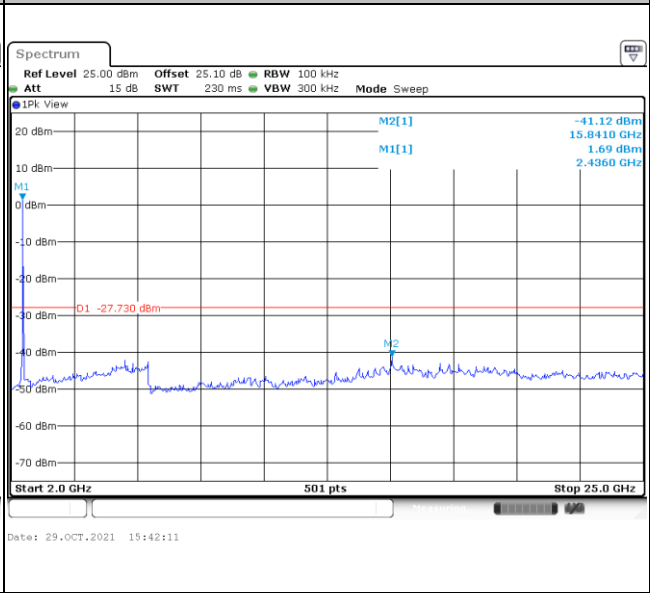
100kHz PSD reference Level	Channel Plot
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Spurious Emission 30MHz~3GHz

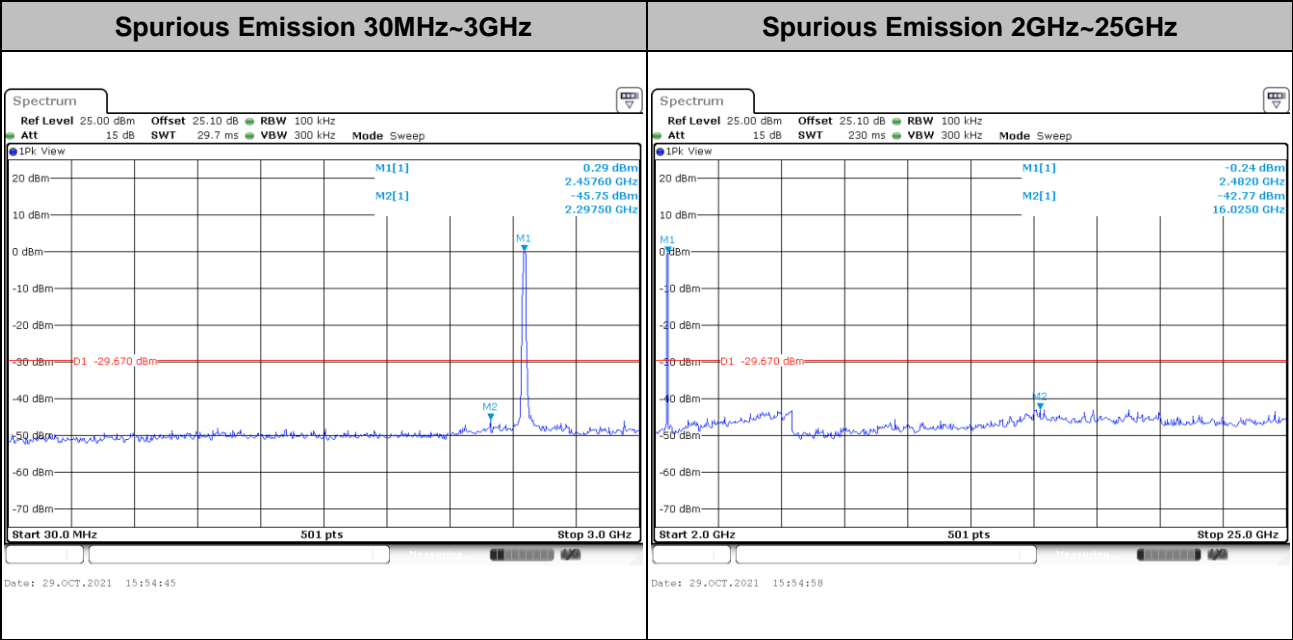
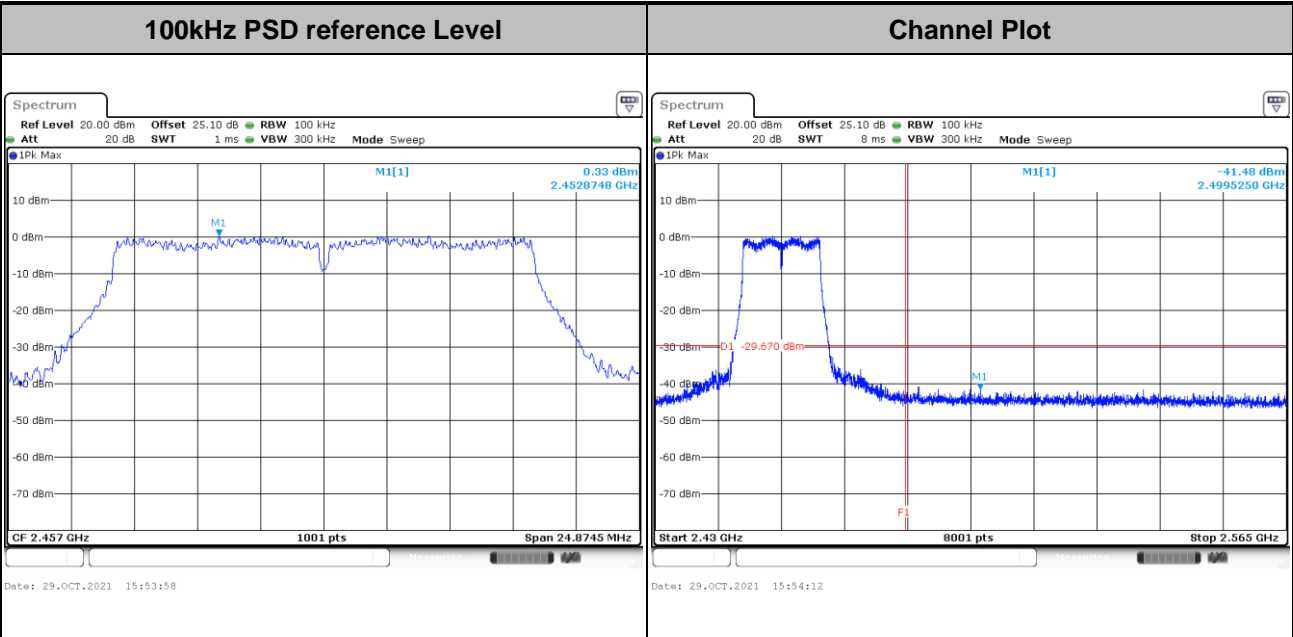


Spurious Emission 2GHz~25GHz



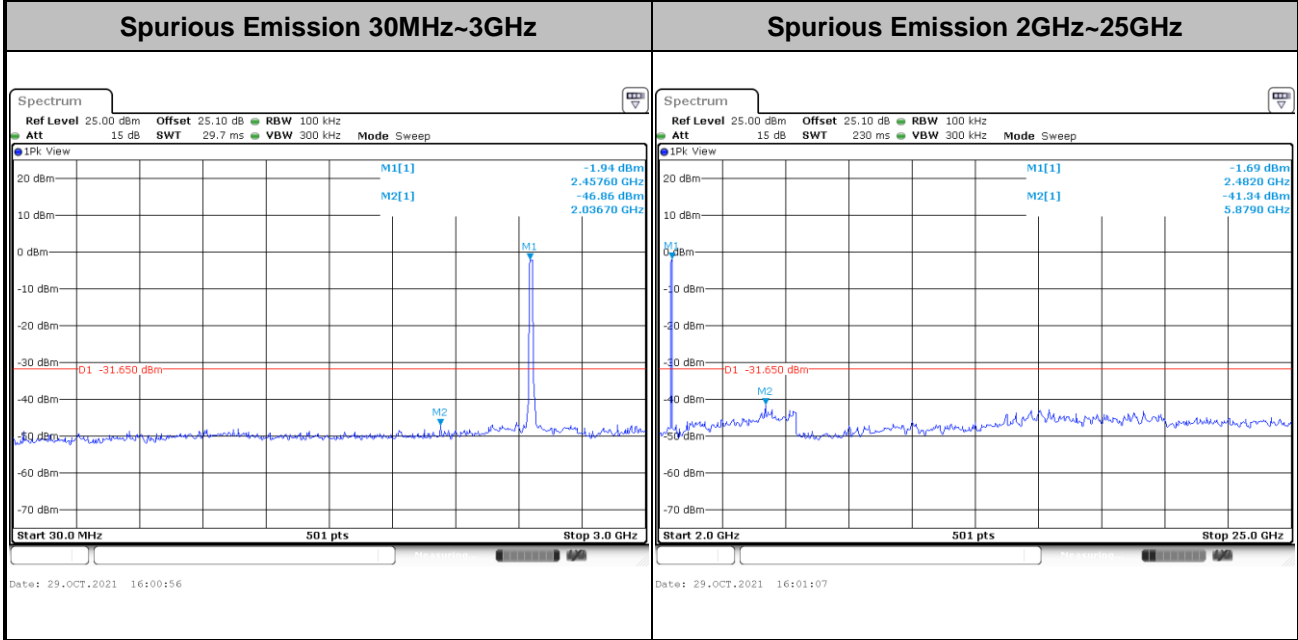
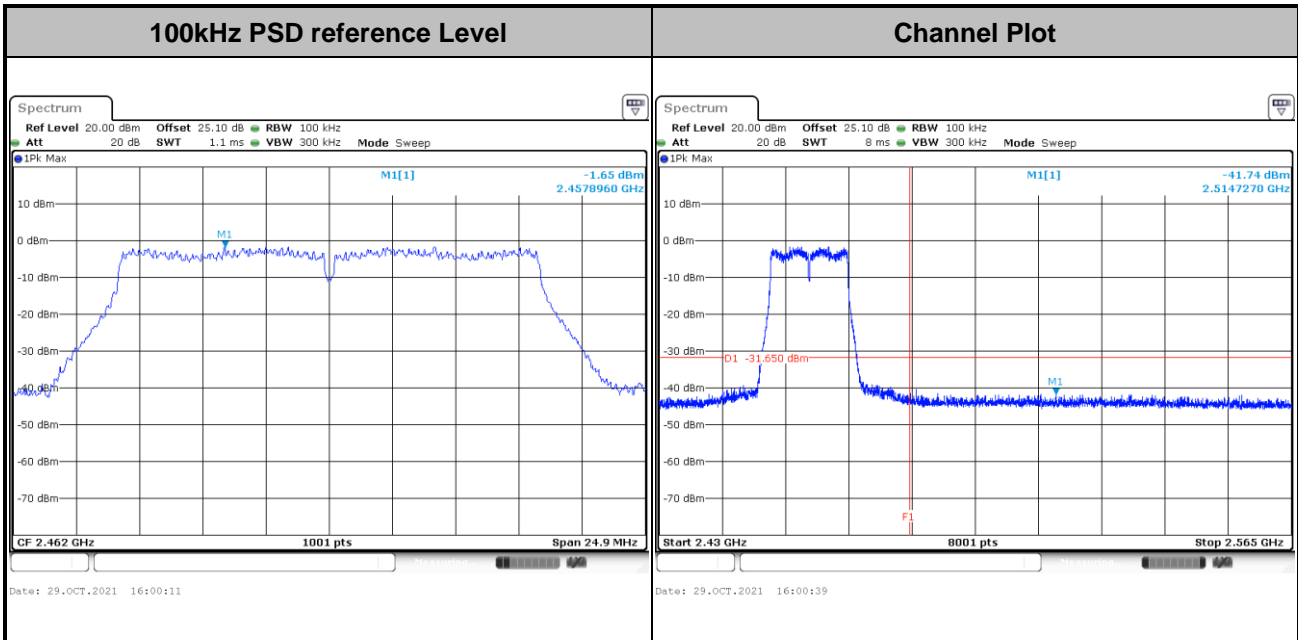


Test Mode :	802.11g	Test Channel :	10
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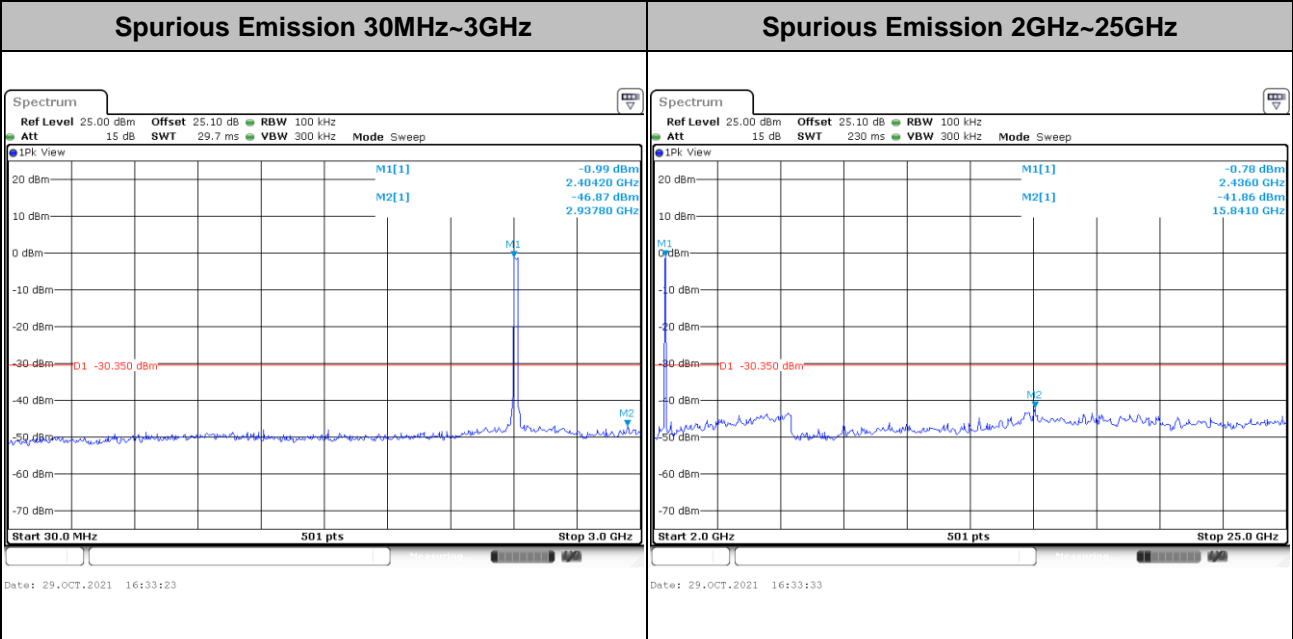
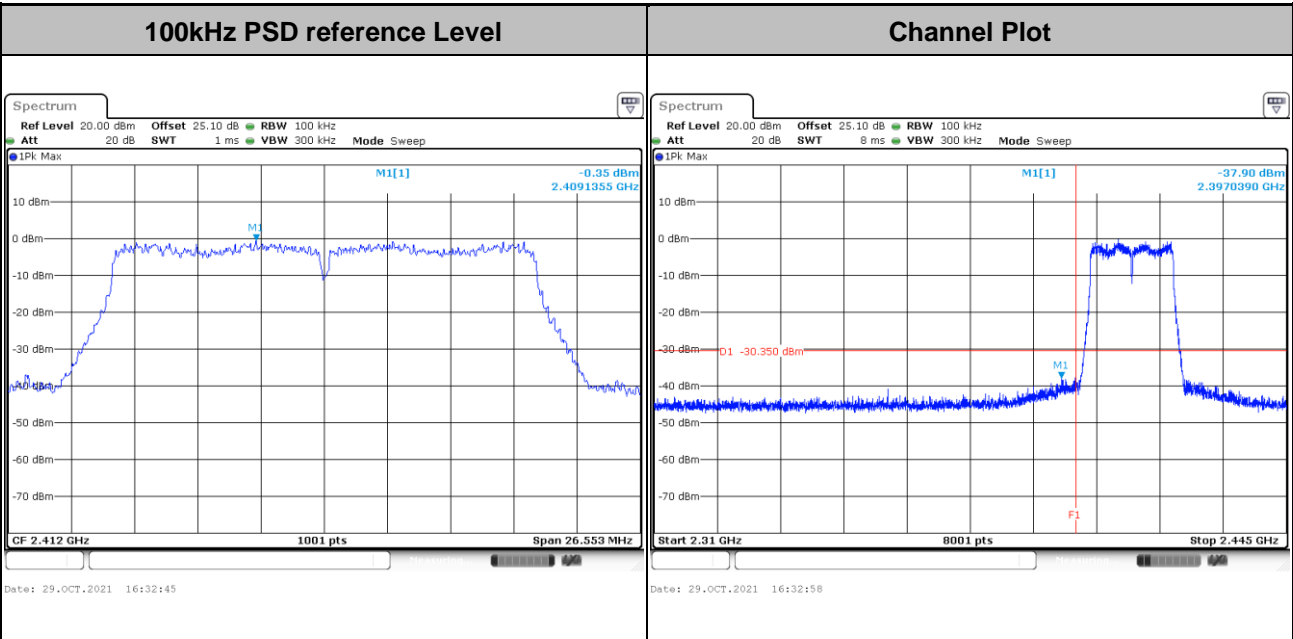


Test Mode :	802.11g	Test Channel :	11
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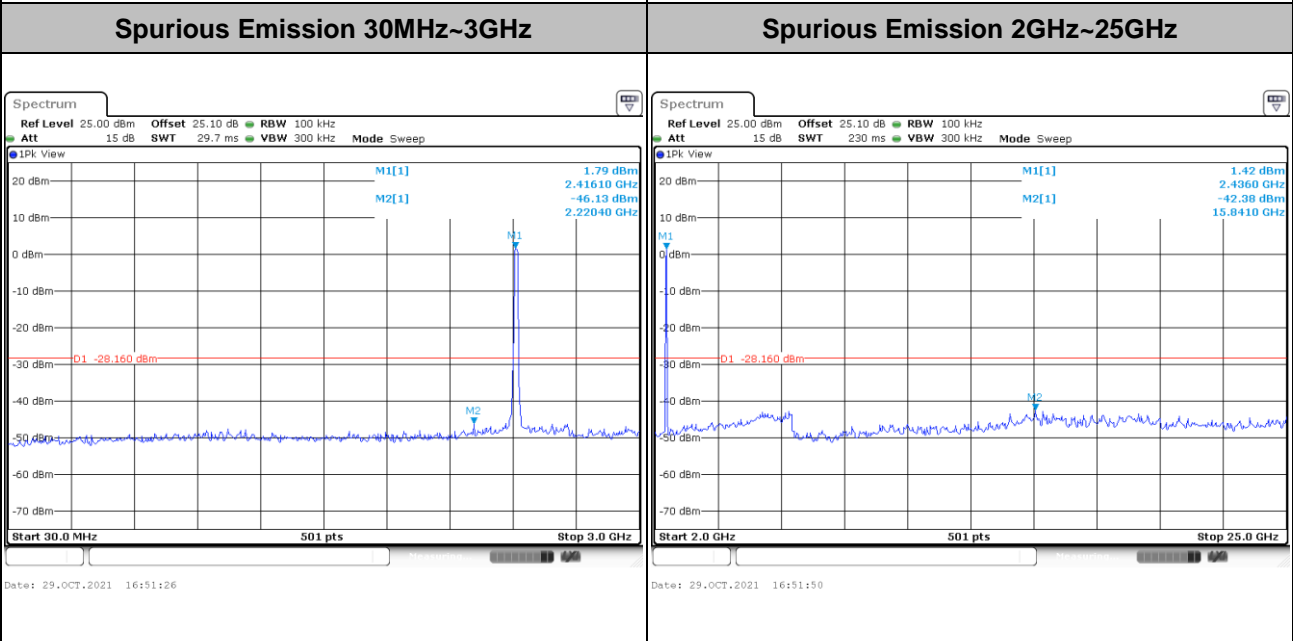
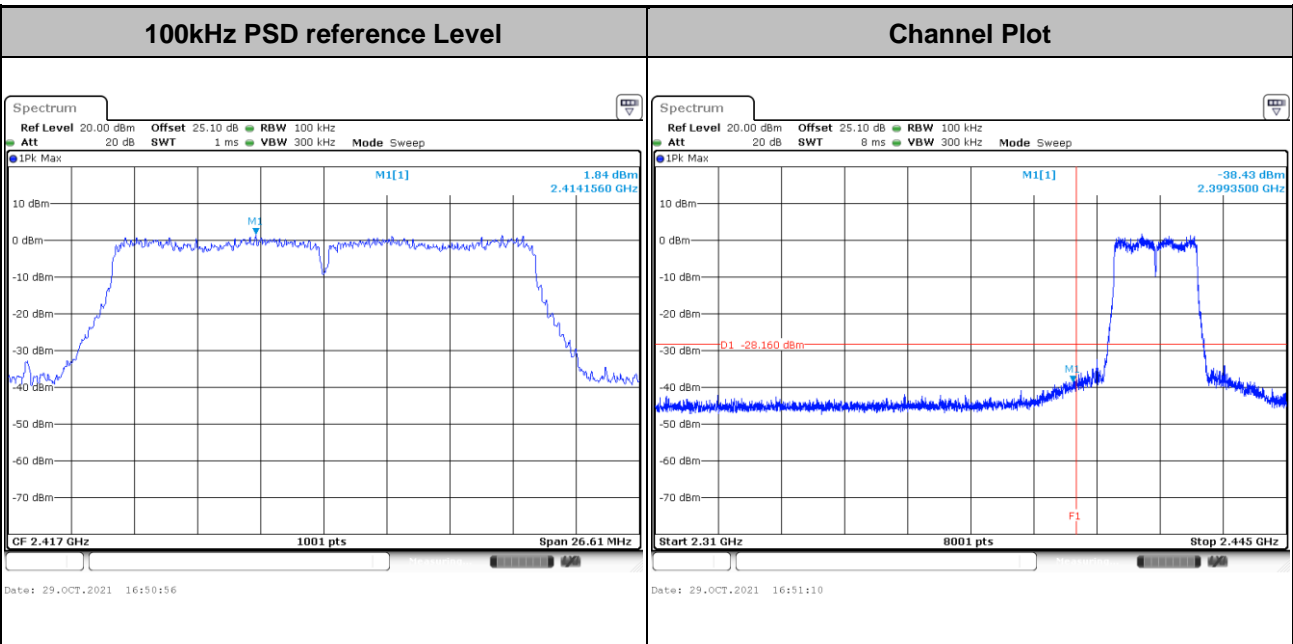


Test Mode :	802.11n HT20	Test Channel :	01
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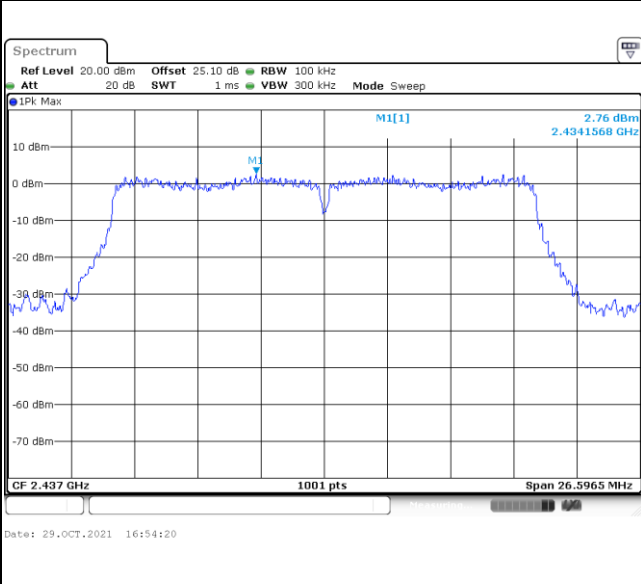
Test Mode : 802.11n HT20	Test Channel : 02
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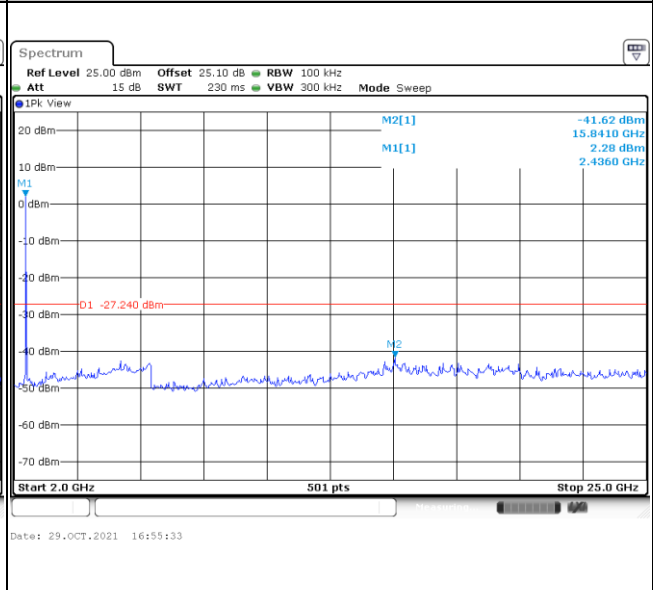
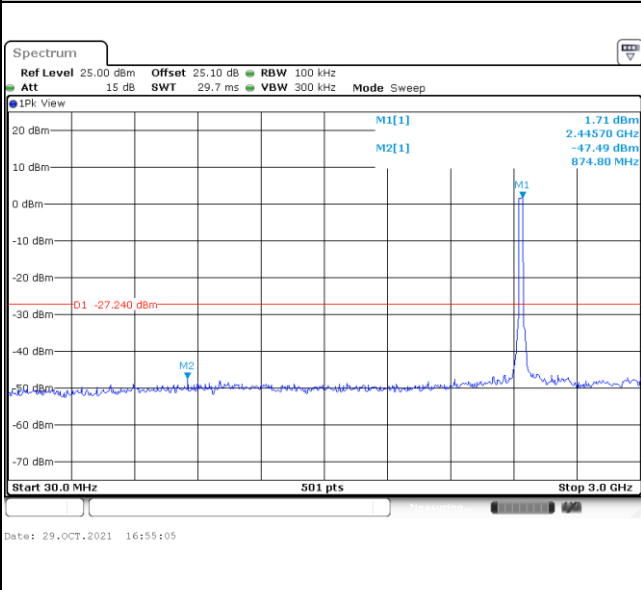


Test Mode :	802.11n HT20	Test Channel :	06
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100kHz PSD reference Level	Channel Plot
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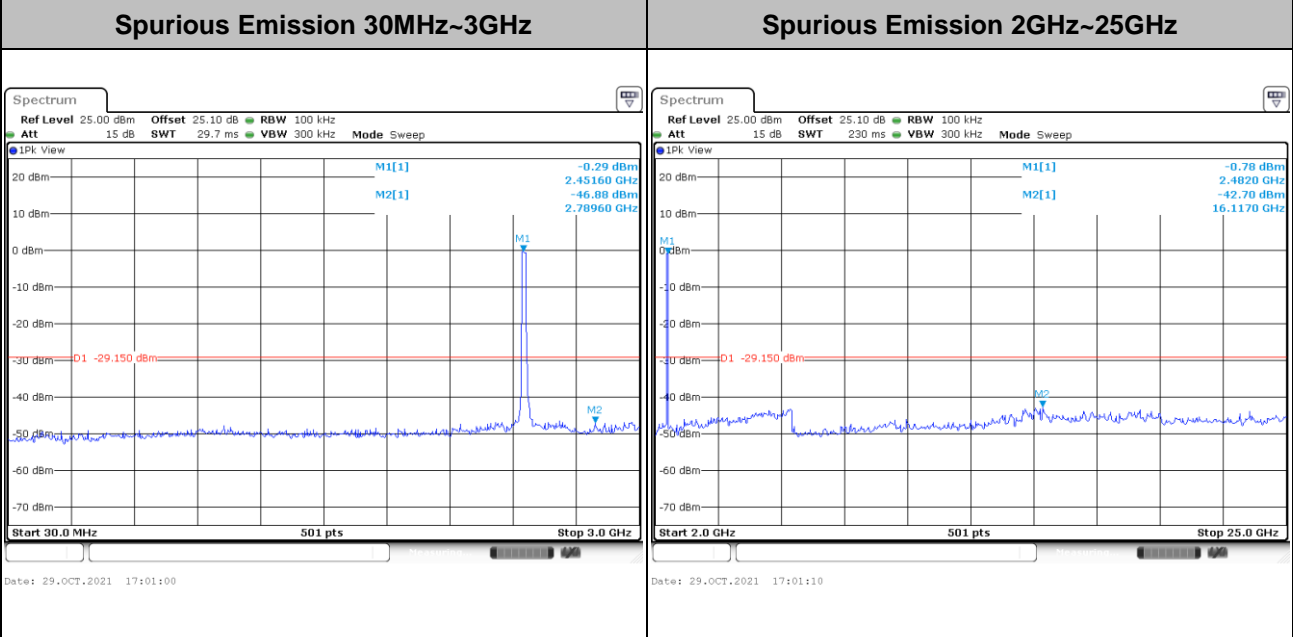
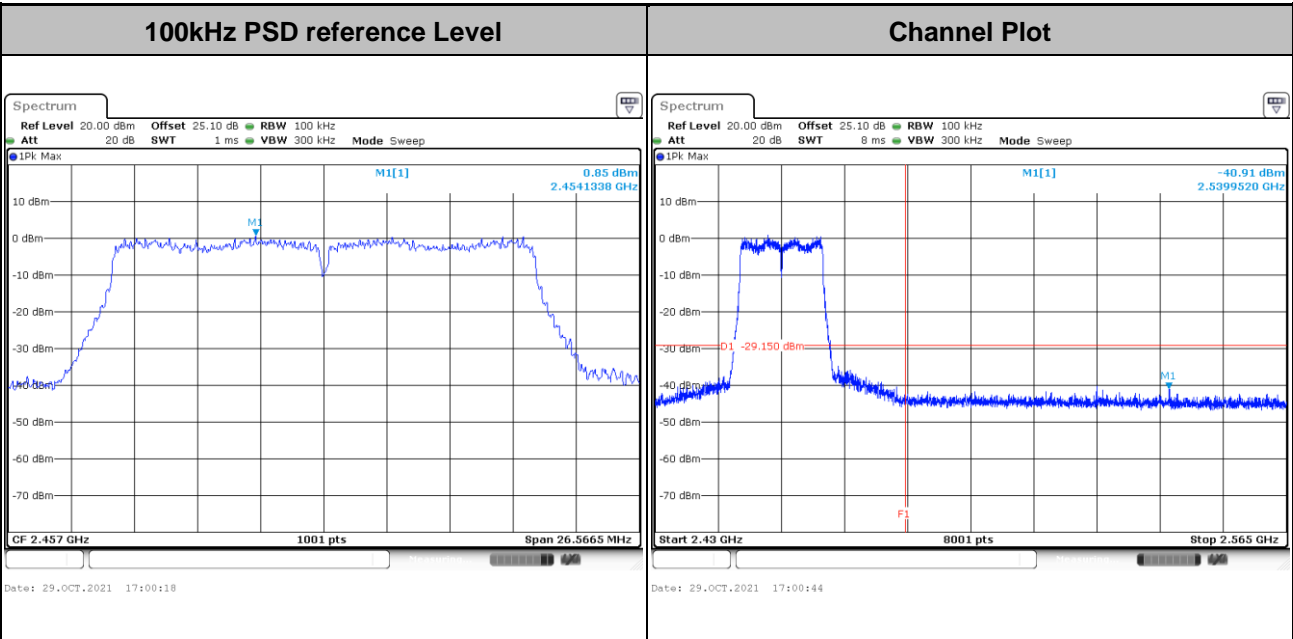


Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
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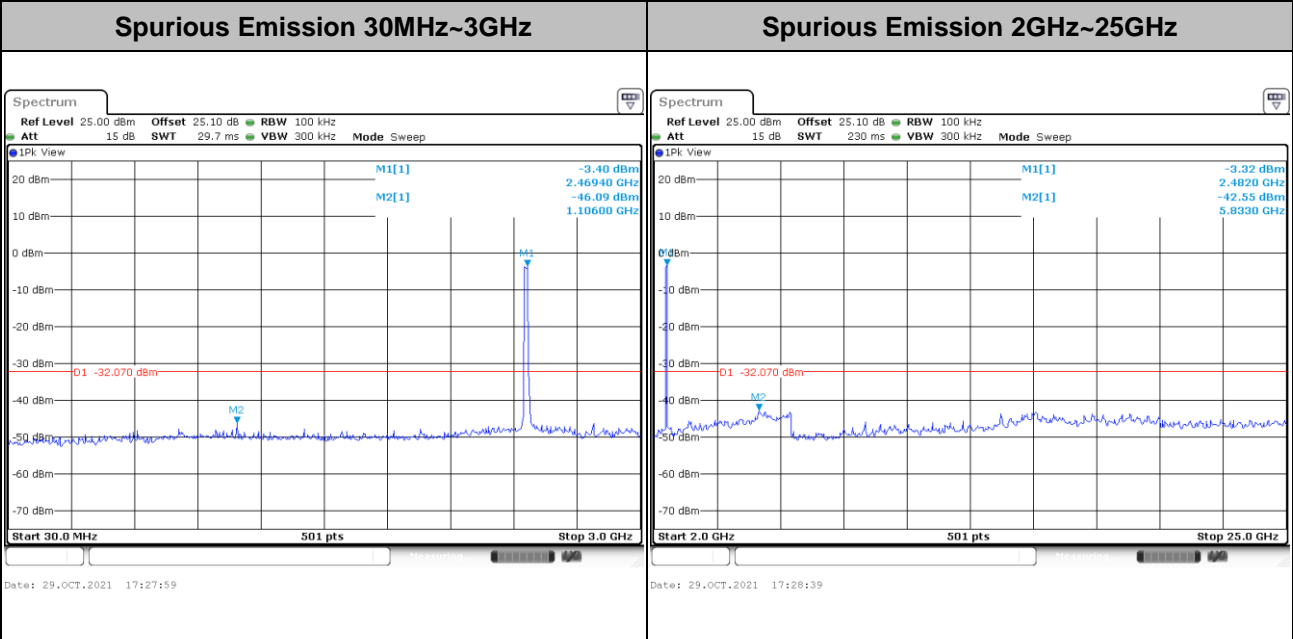
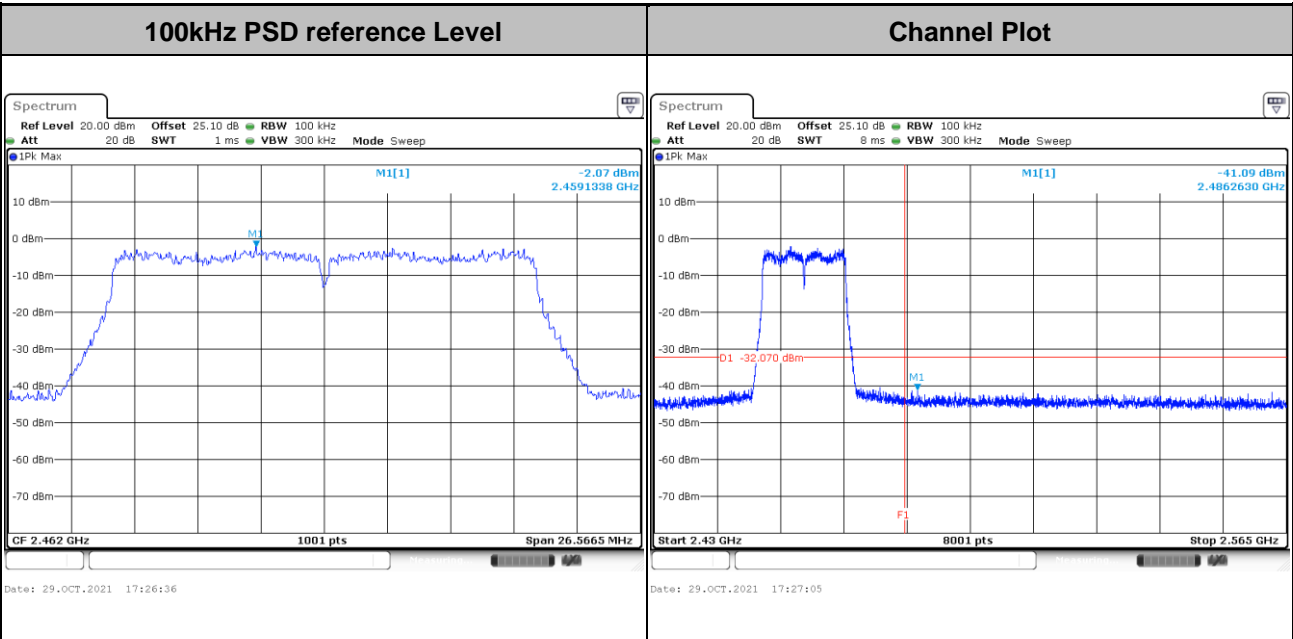


Test Mode : 802.11n HT20	Test Channel : 10
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Test Mode :	802.11n HT20	Test Channel :	11
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3.5 Radiated Band Edges and Spurious Emission Measurement

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 is 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

Please refer to the measuring equipment list in this test report.

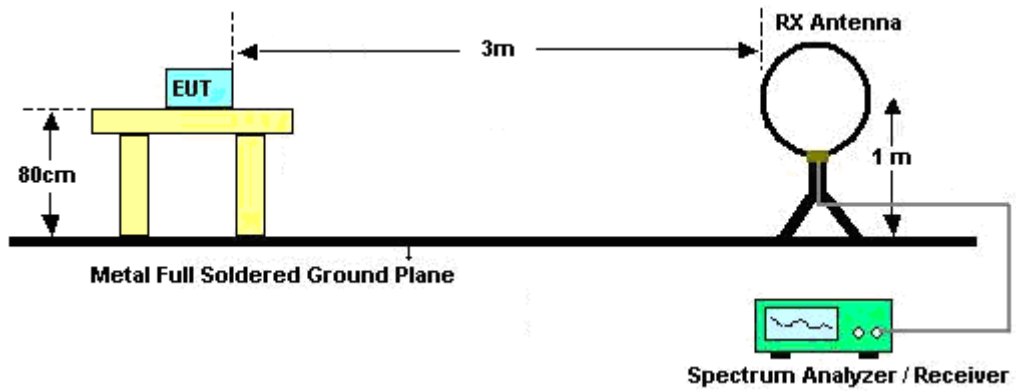


3.5.3 Test Procedures

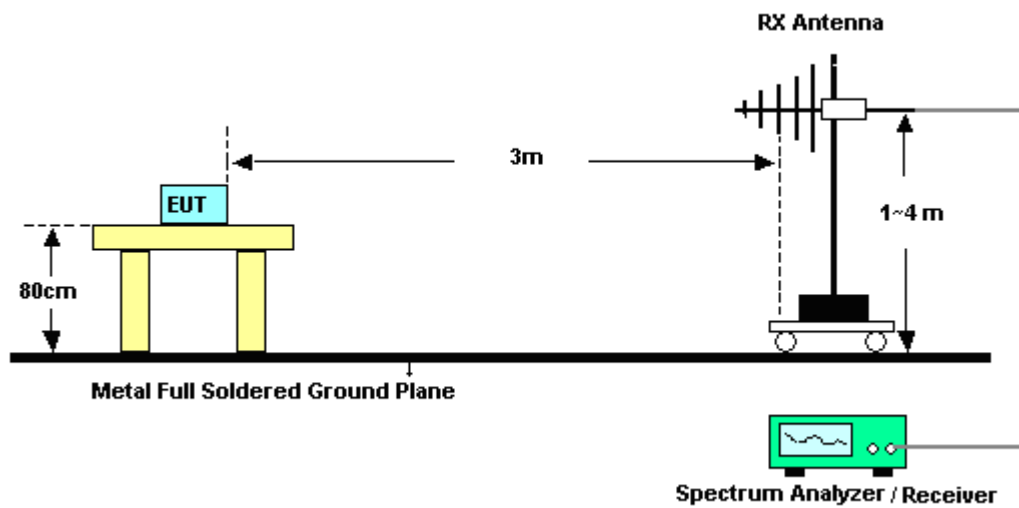
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
4. The EUT is set 3 meters away from the interference receiving antenna, which is mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-“.
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-“.
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, $VBW = 3$ MHz 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

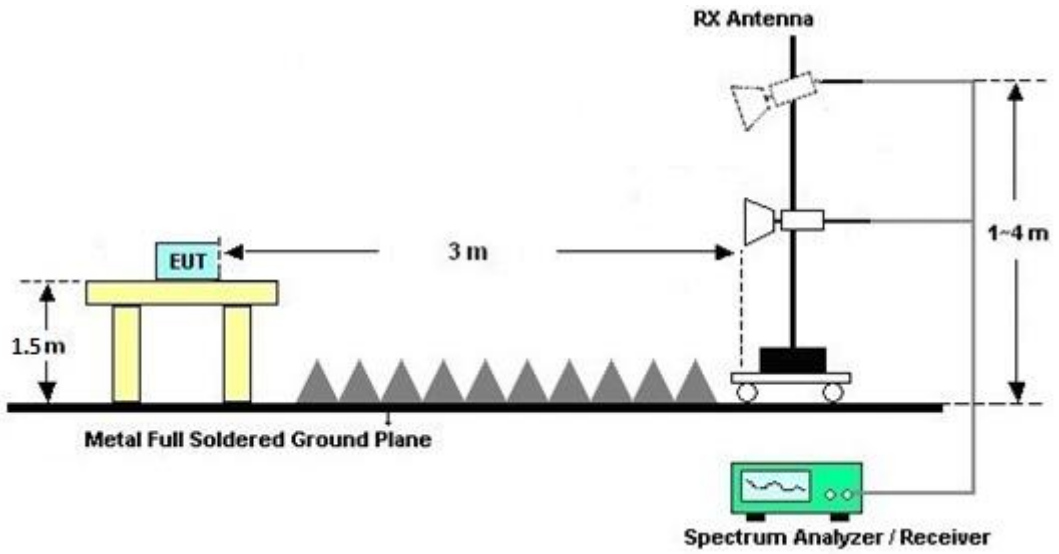
For radiated emissions below 30MHz



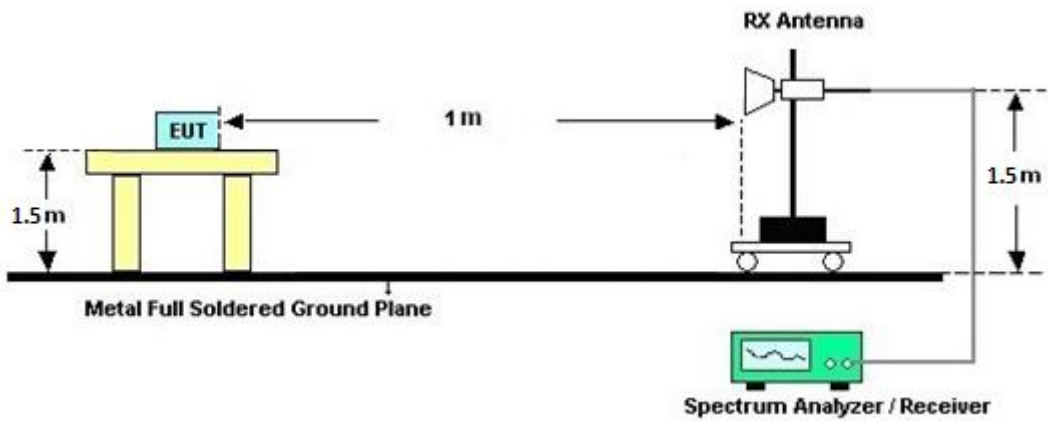
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





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

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result comes out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

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.

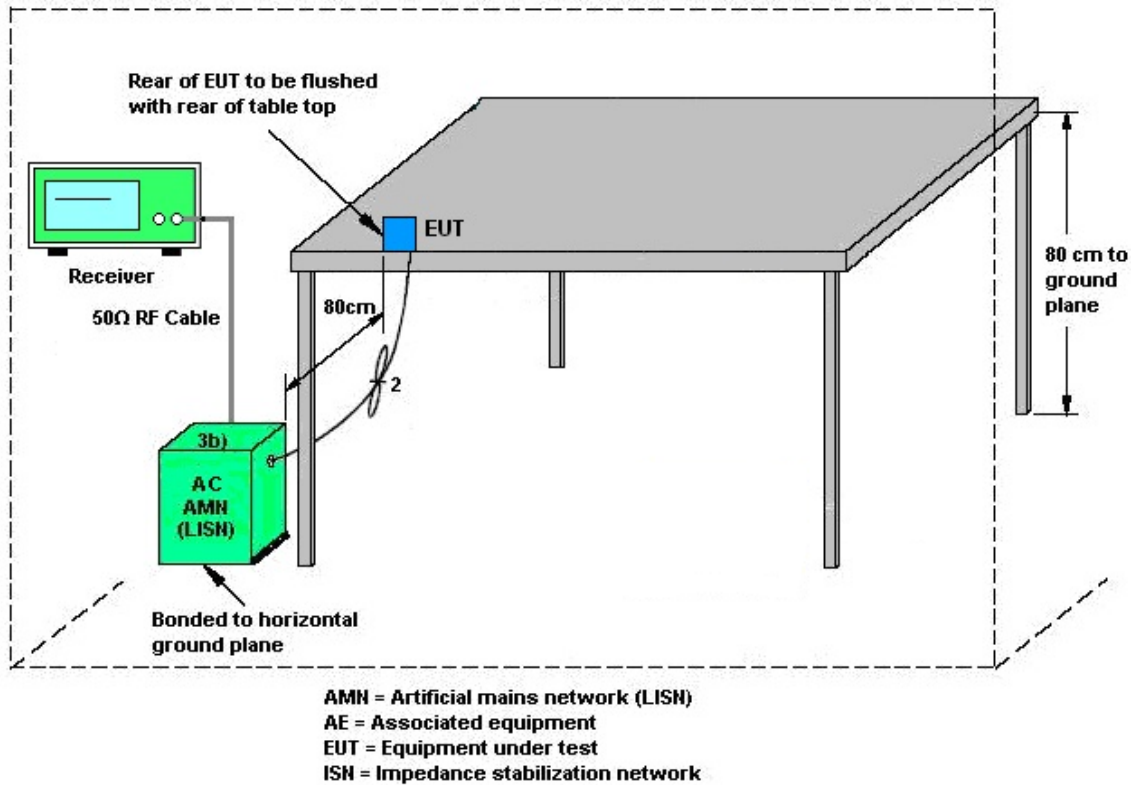
3.6.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.6.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is 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 shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
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 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. 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

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



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 04, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Jan. 03, 2022	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	41912 & 05	30MHz~1GHz	Oct. 08, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Oct. 07, 2022	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1328	1GHz~18GHz	Nov. 23, 2020	Oct. 12, 2021 ~ Nov. 05, 2021	Nov. 22, 2021	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	00993	18GHz~40GHz	Nov. 19, 2020	Oct. 12, 2021 ~ Nov. 05, 2021	Nov. 18, 2021	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 24, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Mar. 23, 2022	Radiation (03CH12-HY)
Preamplifier	Keysight	8449B	3008A02375	1GHz~26.5GHz	May 25, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	May 24, 2022	Radiation (03CH12-HY)
Preamplifier	Jet-Power	JPA0118-55-303K	1710001800054002	1GHz~18GHz	Jun. 16, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Jun. 15, 2022	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 11, 2020	Oct. 12, 2021 ~ Nov. 05, 2021	Dec. 10, 2021	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Jan. 15, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Jan. 14, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WLKS1200-12SS	SN2	1.2GHz Low Pass Filter	Mar. 17, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Mar. 16, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN2	3GHz High Pass Filter	Jul. 12, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Jul. 11, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40ST	SN2	6.75GHz High Pass Filter	Mar. 17, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Mar. 16, 2022	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 11, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Mar. 10, 2022	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 11, 2020	Oct. 12, 2021 ~ Nov. 05, 2021	Dec. 10, 2021	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Feb. 22, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Feb. 21, 2022	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz~40GHz	Feb. 22, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Feb. 21, 2022	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP140349	N/A	Sep. 30, 2021	Oct. 12, 2021 ~ Nov. 05, 2021	Sep. 29, 2022	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Oct. 12, 2021 ~ Nov. 05, 2021	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Oct. 12, 2021 ~ Nov. 05, 2021	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Oct. 12, 2021 ~ Nov. 05, 2021	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Oct. 12, 2021 ~ Nov. 05, 2021	N/A	Radiation (03CH12-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Oct. 12, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Oct. 12, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Oct. 12, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 01, 2020	Oct. 12, 2021	Nov. 30, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Oct. 12, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Oct. 12, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	00691	N/A	Jul. 28, 2021	Oct. 12, 2021	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Oct. 12, 2021	Dec. 30, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 01, 2021	Oct. 08, 2021 ~ Oct. 30, 2021	Feb. 28, 2022	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO12	10MHz~6GHz	Dec. 16, 2020	Oct. 08, 2021 ~ Oct. 30, 2021	Dec. 15, 2021	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101565	10Hz ~ 40GHz	Nov. 13, 2020	Oct. 08, 2021 ~ Oct. 30, 2021	Nov. 12, 2021	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW200302	N/A	Mar. 17, 2021	Oct. 08, 2021 ~ Oct. 30, 2021	Mar. 16, 2022	Conducted (TH05-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	6.3 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.9 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Mina Liu	Temperature:	21~25	°C
Test Date:	2021/10/8~2021/10/30	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band Single Antenna										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant1	Ant2	Ant1	Ant2		
11b	1Mbps	1	1	2412	13.79	13.79	10.06	10.06	0.50	Pass
11b	1Mbps	1	6	2437	13.79	13.79	10.06	10.06	0.50	Pass
11b	1Mbps	1	11	2462	13.79	13.79	10.06	10.06	0.50	Pass
11g	6Mbps	1	1	2412	17.78	17.68	16.58	16.60	0.50	Pass
11g	6Mbps	1	2	2417	17.83	17.83	16.57	16.58	0.50	Pass
11g	6Mbps	1	6	2437	18.03	18.03	16.56	16.58	0.50	Pass
11g	6Mbps	1	10	2457	17.78	17.78	16.60	16.58	0.50	Pass
11g	6Mbps	1	11	2462	17.78	17.73	16.60	16.60	0.50	Pass
HT20	MCS0	1	1	2412	18.18	18.18	17.74	17.70	0.50	Pass
HT20	MCS0	1	2	2417	18.18	18.18	17.73	17.74	0.50	Pass
HT20	MCS0	1	6	2437	18.23	18.28	17.64	17.73	0.50	Pass
HT20	MCS0	1	10	2457	18.13	18.18	17.69	17.71	0.50	Pass
HT20	MCS0	1	11	2462	18.13	18.18	17.73	17.71	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band Single Antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	1	1	2412	16.90	16.90		30.00	30.00	3.03	2.73	19.93	19.63	36.00	36.00	Pass
11b	1Mbps	1	6	2437	16.90	16.80		30.00	30.00	3.03	2.73	19.93	19.53	36.00	36.00	Pass
11b	1Mbps	1	11	2462	15.90	15.90		30.00	30.00	3.03	2.73	18.93	18.63	36.00	36.00	Pass
11g	6Mbps	1	1	2412	14.00	14.10		30.00	30.00	3.03	2.73	17.03	16.83	36.00	36.00	Pass
11g	6Mbps	1	2	2417	15.80	15.80		30.00	30.00	3.03	2.73	18.83	18.53	36.00	36.00	Pass
11g	6Mbps	1	6	2437	16.80	16.80		30.00	30.00	3.03	2.73	19.83	19.53	36.00	36.00	Pass
11g	6Mbps	1	10	2457	14.80	14.80		30.00	30.00	3.03	2.73	17.83	17.53	36.00	36.00	Pass
11g	6Mbps	1	11	2462	12.90	13.10		30.00	30.00	3.03	2.73	15.93	15.83	36.00	36.00	Pass
HT20	MCS0	1	1	2412	14.10	14.20		30.00	30.00	3.03	2.73	17.13	16.93	36.00	36.00	Pass
HT20	MCS0	1	2	2417	15.90	15.90		30.00	30.00	3.03	2.73	18.93	18.63	36.00	36.00	Pass
HT20	MCS0	1	6	2437	16.80	16.80		30.00	30.00	3.03	2.73	19.83	19.53	36.00	36.00	Pass
HT20	MCS0	1	10	2457	14.90	14.90		30.00	30.00	3.03	2.73	17.93	17.63	36.00	36.00	Pass
HT20	MCS0	1	11	2462	11.90	12.10		30.00	30.00	3.03	2.73	14.93	14.83	36.00	36.00	Pass

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

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band Single Antenna												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant1	Ant2	Worse + 3.01	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	1	1	2412	-12.75	-13.07		3.03	2.73	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-12.95	-12.97		3.03	2.73	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-13.89	-13.85		3.03	2.73	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-14.14	-14.14		3.03	2.73	8.00	8.00	Pass
11g	6Mbps	1	2	2417	-12.36	-12.19		3.03	2.73	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-11.08	-11.15		3.03	2.73	8.00	8.00	Pass
11g	6Mbps	1	10	2457	-13.02	-13.07		3.03	2.73	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-15.07	-14.99		3.03	2.73	8.00	8.00	Pass
HT20	MCS0	1	1	2412	-13.87	-14.00		3.03	2.73	8.00	8.00	Pass
HT20	MCS0	1	2	2417	-12.01	-11.99		3.03	2.73	8.00	8.00	Pass
HT20	MCS0	1	6	2437	-10.93	-11.06		3.03	2.73	8.00	8.00	Pass
HT20	MCS0	1	10	2457	-12.92	-12.87		3.03	2.73	8.00	8.00	Pass
HT20	MCS0	1	11	2462	-15.94	-15.88		3.03	2.73	8.00	8.00	Pass



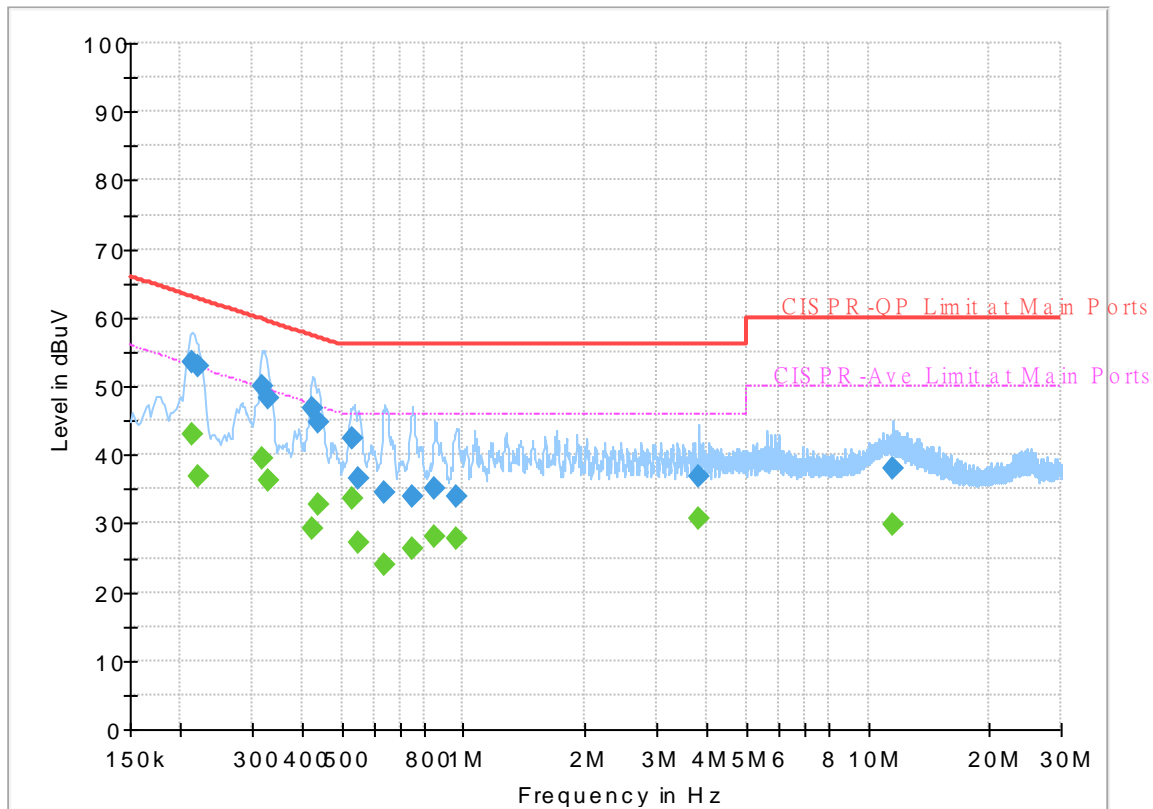
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	Temperature :	23~26°C
		Relative Humidity :	45~55%

EUT Information

Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



Final_Result

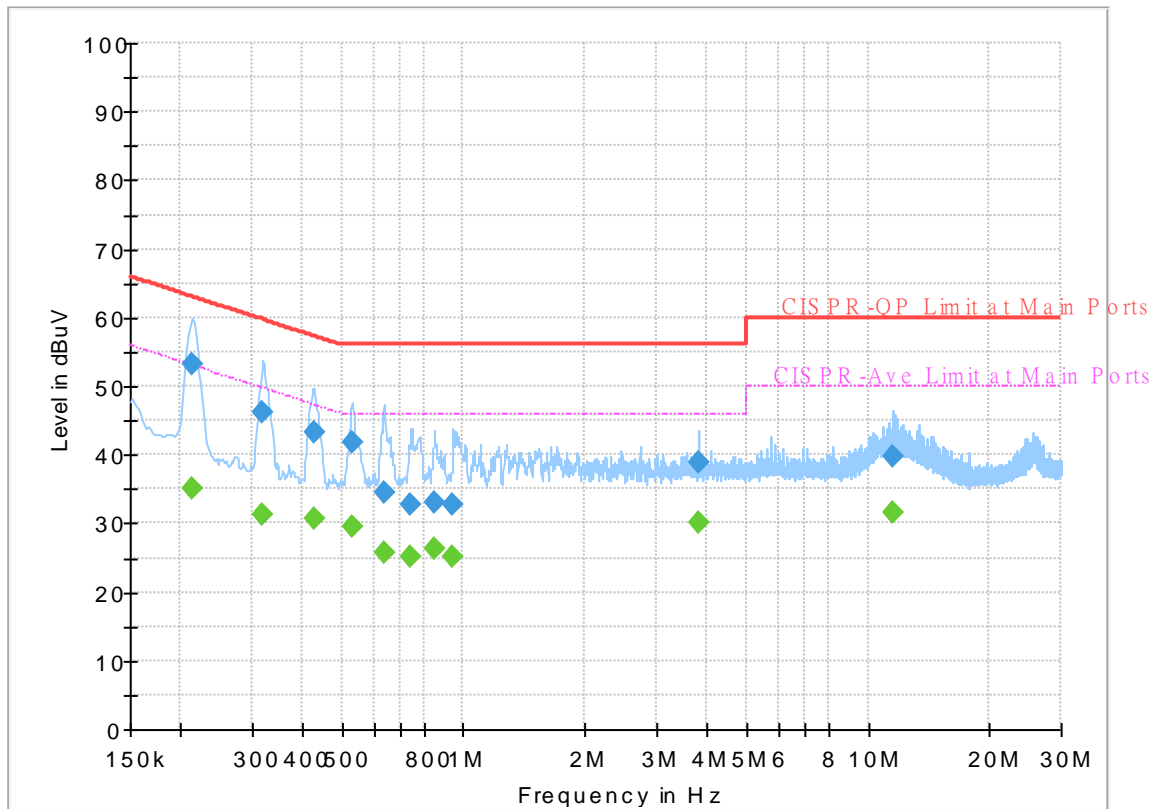
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.213000	---	42.87	53.09	10.22	L1	OFF	19.7
0.213000	53.54	---	63.09	9.55	L1	OFF	19.7
0.219750	---	36.83	52.83	16.00	L1	OFF	19.7
0.219750	53.00	---	62.83	9.83	L1	OFF	19.7
0.318750	---	39.54	49.74	10.20	L1	OFF	19.7
0.318750	50.02	---	59.74	9.72	L1	OFF	19.7
0.330000	---	36.24	49.45	13.21	L1	OFF	19.7
0.330000	48.16	---	59.45	11.29	L1	OFF	19.7
0.424500	---	29.23	47.36	18.13	L1	OFF	19.7
0.424500	46.66	---	57.36	10.70	L1	OFF	19.7
0.438000	---	32.88	47.10	14.22	L1	OFF	19.7
0.438000	44.74	---	57.10	12.36	L1	OFF	19.7
0.532500	---	33.77	46.00	12.23	L1	OFF	19.8
0.532500	42.36	---	56.00	13.64	L1	OFF	19.8
0.550500	---	27.15	46.00	18.85	L1	OFF	19.9
0.550500	36.59	---	56.00	19.41	L1	OFF	19.9
0.640500	---	24.02	46.00	21.98	L1	OFF	19.9
0.640500	34.47	---	56.00	21.53	L1	OFF	19.9
0.748500	---	26.31	46.00	19.69	L1	OFF	20.0
0.748500	33.79	---	56.00	22.21	L1	OFF	20.0
0.847500	---	28.03	46.00	17.97	L1	OFF	20.1

0.847500	34.97	---	56.00	21.03	L1	OFF	20.1
0.955500	---	27.80	46.00	18.20	L1	OFF	20.2
0.955500	34.06	---	56.00	21.94	L1	OFF	20.2
3.819750	---	30.76	46.00	15.24	L1	OFF	20.0
3.819750	36.72	---	56.00	19.28	L1	OFF	20.0
11.460750	---	29.95	50.00	20.05	L1	OFF	20.2
11.460750	38.03	---	60.00	21.97	L1	OFF	20.2

EUT Information

Test Voltage : 120Vac/60Hz
Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.213000	---	34.98	53.09	18.11	N	OFF	19.7
0.213000	53.18	---	63.09	9.91	N	OFF	19.7
0.318750	---	31.24	49.74	18.50	N	OFF	19.7
0.318750	46.15	---	59.74	13.59	N	OFF	19.7
0.426750	---	30.72	47.32	16.60	N	OFF	19.7
0.426750	43.19	---	57.32	14.13	N	OFF	19.7
0.530250	---	29.60	46.00	16.40	N	OFF	19.8
0.530250	41.80	---	56.00	14.20	N	OFF	19.8
0.636000	---	25.88	46.00	20.12	N	OFF	19.9
0.636000	34.49	---	56.00	21.51	N	OFF	19.9
0.741750	---	25.29	46.00	20.71	N	OFF	20.0
0.741750	32.81	---	56.00	23.19	N	OFF	20.0
0.847500	---	26.18	46.00	19.82	N	OFF	20.1
0.847500	32.94	---	56.00	23.06	N	OFF	20.1
0.942000	---	25.23	46.00	20.77	N	OFF	20.2
0.942000	32.80	---	56.00	23.20	N	OFF	20.2
3.819750	---	30.19	46.00	15.81	N	OFF	20.0
3.819750	38.81	---	56.00	17.19	N	OFF	20.0
11.458500	---	31.70	50.00	18.30	N	OFF	20.2
11.458500	39.83	---	60.00	20.17	N	OFF	20.2



Appendix C. Radiated Spurious Emission

Test Engineer :	Jack Cheng , Lance Chiang and Chuan Chu	Temperature :	23.8~26.2°C
		Relative Humidity :	56.5~68.6%

**2.4GHz 2400~2483.5MHz
WIFI 802.11b (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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11b CH 01 2412MHz		2386.02	58.12	-15.88	74	47.23	27.7	16.74	33.55	303	61	P	H	
		2387.07	48.84	-5.16	54	37.95	27.7	16.74	33.55	303	61	A	H	
	*	2412	110.23	-	-	99.34	27.68	16.78	33.57	303	61	P	H	
	*	2412	107.14	-	-	96.25	27.68	16.78	33.57	303	61	A	H	
													H	
													H	
			2383.08	56	-18	74	45.12	27.7	16.73	33.55	302	90	P	V
			2387.175	45.68	-8.32	54	34.79	27.7	16.74	33.55	302	90	A	V
	*		2412	104.86	-	-	93.97	27.68	16.78	33.57	302	90	P	V
	*		2412	101.88	-	-	90.99	27.68	16.78	33.57	302	90	A	V
													V	
													V	
802.11b CH 06 2437MHz		2366.98	55.53	-18.47	74	44.66	27.7	16.71	33.54	300	62	P	H	
		2348.22	45.93	-8.07	54	35.08	27.7	16.68	33.53	300	62	A	H	
	*	2437	110.46	-	-	99.6	27.63	16.81	33.58	300	62	P	H	
	*	2437	107.38	-	-	96.52	27.63	16.81	33.58	300	62	A	H	
			2498.81	56.14	-17.86	74	45.47	27.4	16.89	33.62	300	62	P	H
			2498.25	45.43	-8.57	54	34.75	27.41	16.89	33.62	300	62	A	H
			2371.74	56.15	-17.85	74	45.28	27.7	16.72	33.55	297	89	P	V
			2348.22	44.51	-9.49	54	33.66	27.7	16.68	33.53	297	89	A	V
	*		2437	105.2	-	-	94.34	27.63	16.81	33.58	297	89	P	V
	*		2437	102.19	-	-	91.33	27.63	16.81	33.58	297	89	A	V
			2489.29	55.11	-18.89	74	44.4	27.44	16.88	33.61	297	89	P	V
			2483.69	44.6	-9.4	54	33.87	27.47	16.87	33.61	297	89	A	V



802.11b CH 11 2462MHz	*	2462	109.59	-	-	98.8	27.55	16.84	33.6	287	73	P	H
	*	2462	106.62	-	-	95.83	27.55	16.84	33.6	287	73	A	H
		2486.56	57.69	-16.31	74	46.98	27.45	16.87	33.61	287	73	P	H
		2486.68	49.8	-4.2	54	39.09	27.45	16.87	33.61	287	73	A	H
													H
													H
	*	2462	105.08	-	-	94.29	27.55	16.84	33.6	301	87	P	V
	*	2462	102.1	-	-	91.31	27.55	16.84	33.6	301	87	A	V
		2483.6	55.84	-18.16	74	45.11	27.47	16.87	33.61	301	87	P	V
		2486.64	47.15	-6.85	54	36.44	27.45	16.87	33.61	301	87	A	V
													V
													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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11b CH 01 2412MHz		4824	51.38	-22.62	74	68.64	31	11.5	59.76	280	50	P	H	
		4824	49.98	-4.02	54	67.24	31	11.5	59.76	280	50	A	H	
		17970	58.11	-15.89	74	44.87	49.53	20.79	57.08	100	86	P	H	
		17970	49.01	-4.99	54	35.77	49.53	20.79	57.08	100	86	A	H	
													H	
													H	
			4824	46.01	-27.99	74	63.27	31	11.5	59.76	-	-	P	V
			17970	56.86	-17.14	74	43.62	49.53	20.79	57.08	100	33	P	V
			17970	48.85	-5.15	54	35.61	49.53	20.79	57.08	100	33	A	V
														V
														V
	802.11b CH 06 2437MHz		4874	47.03	-26.97	74	64.47	31	11.33	59.77	-	-	P	H
		7311	43.99	-30.01	74	54.54	36.28	13.26	60.09	-	-	P	H	
		17985	57.13	-16.87	74	43.41	49.97	20.79	57.04	100	80	P	H	
		17985	49.4	-4.6	54	35.68	49.97	20.79	57.04	100	80	A	H	
													H	
													H	
			4874	43.86	-30.14	74	61.3	31	11.33	59.77	-	-	P	V
			7311	44.08	-29.92	74	54.63	36.28	13.26	60.09	-	-	P	V
			17940	57.36	-16.64	74	45.09	48.66	20.77	57.16	100	38	P	V
			17940	49.15	-4.85	54	36.88	48.66	20.77	57.16	100	38	A	V
														V
														V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11b CH 11 2462MHz		4924	42.42	-31.58	74	59.92	31.1	11.18	59.78	-	-	P	H	
		7386	43.53	-30.47	74	54.04	36.2	13.3	60.01	-	-	P	H	
		17955	57.23	-16.77	74	44.47	49.1	20.78	57.12	100	54	P	H	
		17955	48.47	-5.53	54	35.71	49.1	20.78	57.12	100	54	A	H	
													H	
													H	
			4924	39.8	-34.2	74	57.3	31.1	11.18	59.78	-	-	P	V
			7386	43.63	-30.37	74	54.14	36.2	13.3	60.01	-	-	P	V
			17970	58.12	-15.88	74	44.88	49.53	20.79	57.08	100	85	P	V
			17970	50.09	-3.91	54	36.85	49.53	20.79	57.08	100	85	A	V
														V
														V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 													



**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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11g CH 01 2412MHz		2389.59	63.64	-10.36	74	52.76	27.7	16.74	33.56	294	60	P	H	
		2390	49.74	-4.26	54	38.85	27.7	16.75	33.56	294	60	A	H	
	*	2412	110.01	-	-	99.12	27.68	16.78	33.57	294	60	P	H	
	*	2412	101.88	-	-	90.99	27.68	16.78	33.57	294	60	A	H	
													H	
														H
			2389.485	56.09	-17.91	74	45.21	27.7	16.74	33.56	358	95	P	V
			2390	45.32	-8.68	54	34.43	27.7	16.75	33.56	358	95	A	V
	*		2412	103.35	-	-	92.46	27.68	16.78	33.57	358	95	P	V
	*		2412	95.65	-	-	84.76	27.68	16.78	33.57	358	95	A	V
														V
														V
802.11g CH 06 2437MHz		2389.66	61.27	-12.73	74	50.39	27.7	16.74	33.56	298	62	P	H	
		2389.94	47.1	-6.9	54	36.22	27.7	16.74	33.56	298	62	A	H	
	*	2437	112.48	-	-	101.62	27.63	16.81	33.58	298	62	P	H	
	*	2437	104.9	-	-	94.04	27.63	16.81	33.58	298	62	A	H	
			2483.83	66.4	-7.6	74	55.68	27.46	16.87	33.61	298	62	P	H
			2483.5	48.84	-5.16	54	38.11	27.47	16.87	33.61	298	62	A	H
			2389.66	57.92	-16.08	74	47.04	27.7	16.74	33.56	294	103	P	V
			2389.94	45.35	-8.65	54	34.47	27.7	16.74	33.56	294	103	A	V
	*		2437	108.17	-	-	97.31	27.63	16.81	33.58	294	103	P	V
	*		2437	100.5	-	-	89.64	27.63	16.81	33.58	294	103	A	V
			2484.04	64.45	-9.55	74	53.73	27.46	16.87	33.61	294	103	P	V
			2483.5	46.9	-7.1	54	36.17	27.47	16.87	33.61	294	103	A	V



802.11g CH 11 2462MHz	*	2462	109.68	-	-	98.89	27.55	16.84	33.6	317	63	P	H
	*	2462	101.52	-	-	90.73	27.55	16.84	33.6	317	63	A	H
		2483.76	65.73	-8.27	74	55.01	27.46	16.87	33.61	317	63	P	H
		2483.52	51.69	-2.31	54	40.96	27.47	16.87	33.61	317	63	A	H
													H
													H
	*	2462	103.27	-	-	92.48	27.55	16.84	33.6	397	92	P	V
	*	2462	95.86	-	-	85.07	27.55	16.84	33.6	397	92	A	V
		2483.56	60.3	-13.7	74	49.57	27.47	16.87	33.61	397	92	P	V
		2483.52	47.2	-6.8	54	36.47	27.47	16.87	33.61	397	92	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11g CH 02 2417MHz		2388.82	67.46	-6.54	74	56.58	27.7	16.74	33.56	100	105	P	H	
		2389.94	49.43	-4.57	54	38.55	27.7	16.74	33.56	100	105	A	H	
		2417	110.23	-	-	99.35	27.67	16.78	33.57	100	105	P	H	
		2417	102.54	-	-	91.66	27.67	16.78	33.57	100	105	A	H	
													H	
													H	
			2388.54	66.63	-7.37	74	55.75	27.7	16.74	33.56	305	2	P	V
			2389.94	48.94	-5.06	54	38.06	27.7	16.74	33.56	305	2	A	V
			2417	109.28	-	-	98.4	27.67	16.78	33.57	305	2	P	V
			2417	101.7	-	-	90.82	27.67	16.78	33.57	305	2	A	V
													V	
													V	
802.11g CH 10 2457MHz		2457	108.98	-	-	98.18	27.57	16.83	33.6	100	260	P	H	
		2457	101.4	-	-	90.6	27.57	16.83	33.6	100	260	A	H	
		2483.86	65.36	-8.64	74	54.64	27.46	16.87	33.61	100	260	P	H	
		2483.62	48.18	-5.82	54	37.45	27.47	16.87	33.61	100	260	A	H	
													H	
													H	
			2457	108.61	-	-	97.81	27.57	16.83	33.6	296	360	P	V
			2457	101.08	-	-	90.28	27.57	16.83	33.6	296	360	A	V
			2484.1	64.21	-9.79	74	53.49	27.46	16.87	33.61	296	360	P	V
			2483.5	47.57	-6.43	54	36.84	27.47	16.87	33.61	296	360	A	V
													V	
													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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11g CH 01 2412MHz		4824	42.91	-31.09	74	60.17	31	11.5	59.76	-	-	P	H	
		17985	58.99	-15.01	74	45.27	49.97	20.79	57.04	100	38	P	H	
		17985	48.61	-5.39	54	34.89	49.97	20.79	57.04	100	38	A	H	
													H	
													H	
													H	
			4824	41.87	-32.13	74	59.13	31	11.5	59.76	-	-	P	V
			17985	60.19	-13.81	74	46.47	49.97	20.79	57.04	100	88	P	V
			17985	48.55	-5.45	54	34.83	49.97	20.79	57.04	100	88	A	V
													V	
													V	
	802.11g CH 06 2437MHz		4874	47.9	-26.1	74	65.34	31	11.33	59.77	-	-	P	H
		7311	45.51	-28.49	74	56.06	36.28	13.26	60.09	-	-	P	H	
		18000	58.72	-15.28	74	44.52	50.4	20.8	57	100	24	P	H	
		18000	48.48	-5.52	54	34.28	50.4	20.8	57	100	24	A	H	
													H	
													H	
			4874	45.08	-28.92	74	62.52	31	11.33	59.77	-	-	P	V
			7311	44.77	-29.23	74	55.32	36.28	13.26	60.09	-	-	P	V
			18000	59.55	-14.45	74	45.35	50.4	20.8	57	100	153	P	V
			18000	48.32	-5.68	54	34.12	50.4	20.8	57	100	153	A	V
													V	
													V	



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11g CH 11 2462MHz		4924	40.01	-33.99	74	57.51	31.1	11.18	59.78	-	-	P	H	
		7386	44.84	-29.16	74	55.35	36.2	13.3	60.01	-	-	P	H	
		18000	59.78	-14.22	74	45.58	50.4	20.8	57	100	17	P	H	
		18000	48.38	-5.62	54	34.18	50.4	20.8	57	100	17	A	H	
													H	
													H	
			4924	40.46	-33.54	74	57.96	31.1	11.18	59.78	-	-	P	V
			7386	44.97	-29.03	74	55.48	36.2	13.3	60.01	-	-	P	V
			18000	59.82	-14.18	74	45.62	50.4	20.8	57	100	214	P	V
			18000	48.41	-5.59	54	34.21	50.4	20.8	57	100	214	A	V
														V
														V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 													



**2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11n HT20 CH 01 2412MHz		2389.905	67.77	-6.23	74	56.89	27.7	16.74	33.56	294	62	P	H	
		2390	51.92	-2.08	54	41.03	27.7	16.75	33.56	294	62	A	H	
	*	2412	109.59	-	-	98.7	27.68	16.78	33.57	294	62	P	H	
	*	2412	101.98	-	-	91.09	27.68	16.78	33.57	294	62	A	H	
													H	
													H	
			2389.905	62.17	-11.83	74	51.29	27.7	16.74	33.56	294	37	P	V
			2390	47.53	-6.47	54	36.64	27.7	16.75	33.56	294	37	A	V
		*	2412	104.45	-	-	93.56	27.68	16.78	33.57	294	37	P	V
		*	2412	96.88	-	-	85.99	27.68	16.78	33.57	294	37	A	V
													V	
													V	
802.11n HT20 CH 06 2437MHz		2389.8	61.29	-12.71	74	50.41	27.7	16.74	33.56	294	76	P	H	
		2389.94	46.46	-7.54	54	35.58	27.7	16.74	33.56	294	76	A	H	
		*	2437	112.4	-	-	101.54	27.63	16.81	33.58	294	76	P	H
		*	2437	104.95	-	-	94.09	27.63	16.81	33.58	294	76	A	H
			2484.18	64.8	-9.2	74	54.08	27.46	16.87	33.61	294	76	P	H
			2483.69	48.94	-5.06	54	38.21	27.47	16.87	33.61	294	76	A	H
			2388.68	57.12	-16.88	74	46.24	27.7	16.74	33.56	297	102	P	V
			2389.94	45.29	-8.71	54	34.41	27.7	16.74	33.56	297	102	A	V
		*	2437	108.1	-	-	97.24	27.63	16.81	33.58	297	102	P	V
		*	2437	100.31	-	-	89.45	27.63	16.81	33.58	297	102	A	V
		2484.39	62.02	-11.98	74	51.3	27.46	16.87	33.61	297	102	P	V	
		2483.76	46.5	-7.5	54	35.78	27.46	16.87	33.61	297	102	A	V	



802.11n HT20 CH 11 2462MHz	*	2462	109.53	-	-	98.74	27.55	16.84	33.6	149	12	P	H
	*	2462	101.8	-	-	91.01	27.55	16.84	33.6	149	12	A	H
		2483.8	66.17	-7.83	74	55.45	27.46	16.87	33.61	149	12	P	H
		2483.52	52.05	-1.95	54	41.32	27.47	16.87	33.61	149	12	A	H
													H
													H
	*	2462	105.11	-	-	94.32	27.55	16.84	33.6	303	85	P	V
	*	2462	97.44	-	-	86.65	27.55	16.84	33.6	303	85	A	V
		2483.68	62.28	-11.72	74	51.55	27.47	16.87	33.61	303	85	P	V
		2483.52	48.51	-5.49	54	37.78	27.47	16.87	33.61	303	85	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11n HT20 CH 02 2417MHz		2389.8	63.57	-10.43	74	52.69	27.7	16.74	33.56	103	94	P	H	
		2389.52	48.34	-5.66	54	37.46	27.7	16.74	33.56	103	94	A	H	
		2417	109.45	-	-	98.57	27.67	16.78	33.57	103	94	P	H	
		2417	101.79	-	-	90.91	27.67	16.78	33.57	103	94	A	H	
													H	
													H	
														V
														V
														V
														V
802.11n HT20 CH 10 2457MHz		2457	110.85	-	-	100.05	27.57	16.83	33.6	119	16	P	H	
		2457	103.08	-	-	92.28	27.57	16.83	33.6	119	16	A	H	
		2485.6	62.45	-11.55	74	51.73	27.46	16.87	33.61	119	16	P	H	
		2483.5	49.56	-4.44	54	38.83	27.47	16.87	33.61	119	16	A	H	
													H	
													H	
														V
														V
														V
														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	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path 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	44.81	-29.19	74	62.07	31	11.5	59.76	-	-	P	H	
		18000	59.1	-14.9	74	44.9	50.4	20.8	57	100	38	P	H	
		18000	48.49	-5.51	54	34.29	50.4	20.8	57	100	38	A	H	
													H	
													H	
													H	
														H
														H
														H
														H
802.11n HT20 CH 06 2437MHz		4874	46.64	-27.36	74	64.08	31	11.33	59.77	-	-	P	H	
		7311	45.45	-28.55	74	56	36.28	13.26	60.09	-	-	P	H	
		17985	59.24	-14.76	74	45.52	49.97	20.79	57.04	100	58	P	H	
		17985	48.83	-5.17	54	35.11	49.97	20.79	57.04	100	58	A	H	
													H	
													H	
														H
														H
														H
														H



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11n HT20 CH 11 2462MHz		4924	40.02	-33.98	74	57.52	31.1	11.18	59.78	-	-	P	H	
		7386	45.29	-28.71	74	55.8	36.2	13.3	60.01	-	-	P	H	
		17985	59.54	-14.46	74	45.82	49.97	20.79	57.04	100	25	P	H	
		17985	47.95	-6.05	54	34.23	49.97	20.79	57.04	100	25	A	H	
													H	
													H	
			4924	40.06	-33.94	74	57.56	31.1	11.18	59.78	-	-	P	V
			7386	45.03	-28.97	74	55.54	36.2	13.3	60.01	-	-	P	V
			17970	59.58	-14.42	74	46.34	49.53	20.79	57.08	100	312	P	V
			17970	48.32	-5.68	54	35.08	49.53	20.79	57.08	100	312	A	V
													V	
													V	
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 													



**Emission above 18GHz
2.4GHz WIFI 802.11n HT20 (SHF)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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)	
2.4GHz 802.11n HT20 SHF		39494	47	-27	74	39.57	43.4	19.23	55.2	-	-	P	H	
													H	
													H	
													H	
			39802	47.03	-26.97	74	39.36	43.22	19.23	54.78	-	-	P	V
														V
														V
Remark	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.													



Emission below 1GHz

2.4GHz WIFI 802.11n HT20 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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)
2.4GHz 802.11n HT20 LF		61.04	27.72	-12.28	40	44.34	11.89	1.15	29.66	-	-	P	H
		208.48	34.4	-9.1	43.5	46.55	15.2	2.13	29.48	-	-	P	H
		665.35	36.29	-9.71	46	34.54	26.6	3.84	28.69	-	-	P	H
		778.84	33.55	-12.45	46	29.49	28.4	4.19	28.53	-	-	P	H
		897.18	37.01	-8.99	46	31.8	28.84	4.57	28.2	-	-	P	H
		953.44	36.19	-9.81	46	28.67	30.97	4.68	28.13	-	-	P	H
		30.97	26.18	-13.82	40	30.19	24.81	0.82	29.64	-	-	P	V
		212.36	28	-15.5	43.5	40.27	15.06	2.15	29.48	-	-	P	V
		380.17	31.58	-14.42	46	36.82	21.11	2.87	29.22	-	-	P	V
		481.05	32	-14	46	34.15	23.62	3.26	29.03	-	-	P	V
		756.53	33.36	-12.64	46	29.4	28.4	4.15	28.59	-	-	P	V
	897.18	36.43	-9.57	46	31.22	28.84	4.57	28.2	-	-	P	V	
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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 01 2412MHz		2387.28	57.59	-16.41	74	46.7	27.7	16.74	33.55	123	3	P	H	
		2387.175	49.54	-4.46	54	38.65	27.7	16.74	33.55	123	3	A	H	
	*	2412	109.77	-	-	98.88	27.68	16.78	33.57	123	3	P	H	
	*	2412	106.76	-	-	95.87	27.68	16.78	33.57	123	3	A	H	
													H	
													H	
			2387.07	57.96	-16.04	74	47.07	27.7	16.74	33.55	101	93	P	V
			2387.07	49.26	-4.74	54	38.37	27.7	16.74	33.55	101	93	A	V
	*		2412	109.65	-	-	98.76	27.68	16.78	33.57	101	93	P	V
	*		2412	106.65	-	-	95.76	27.68	16.78	33.57	101	93	A	V
													V	
													V	
802.11b CH 06 2437MHz		2387	56.2	-17.8	74	45.31	27.7	16.74	33.55	149	3	P	H	
		2348.22	46.37	-7.63	54	35.52	27.7	16.68	33.53	149	3	A	H	
	*	2437	110.25	-	-	99.39	27.63	16.81	33.58	149	3	P	H	
	*	2437	107.13	-	-	96.27	27.63	16.81	33.58	149	3	A	H	
			2489.29	56.73	-17.27	74	46.02	27.44	16.88	33.61	149	3	P	H
			2500	45.73	-8.27	54	35.06	27.4	16.89	33.62	149	3	A	H
			2323.44	55.91	-18.09	74	45.03	27.75	16.65	33.52	100	93	P	V
			2378.18	45.49	-8.51	54	34.61	27.7	16.73	33.55	100	93	A	V
	*		2437	109.52	-	-	98.66	27.63	16.81	33.58	100	93	P	V
	*		2437	106.38	-	-	95.52	27.63	16.81	33.58	100	93	A	V
			2486.77	56.3	-17.7	74	45.59	27.45	16.87	33.61	100	93	P	V
			2486	46.04	-7.96	54	35.32	27.46	16.87	33.61	100	93	A	V



802.11b CH 11 2462MHz	*	2462	109.69	-	-	98.9	27.55	16.84	33.6	147	3	P	H
	*	2462	106.59	-	-	95.8	27.55	16.84	33.6	147	3	A	H
		2486.76	58.24	-15.76	74	47.53	27.45	16.87	33.61	147	3	P	H
		2486.28	48.72	-5.28	54	38.01	27.45	16.87	33.61	147	3	A	H
													H
													H
	*	2462	109.28	-	-	98.49	27.55	16.84	33.6	100	92	P	V
	*	2462	106.23	-	-	95.44	27.55	16.84	33.6	100	92	A	V
		2486.52	57.51	-16.49	74	46.8	27.45	16.87	33.61	100	92	P	V
		2486.56	49.25	-4.75	54	38.54	27.45	16.87	33.61	100	92	A	V
													V
													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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11b CH 01 2412MHz		4824	47.03	-26.97	74	64.29	31	11.5	59.76	-	-	P	H	
		17970	57.41	-16.59	74	44.17	49.53	20.79	57.08	100	44	P	H	
		17970	48.36	-5.64	54	35.12	49.53	20.79	57.08	100	44	A	H	
													H	
													H	
													H	
			4824	50.92	-23.08	74	68.18	31	11.5	59.76	100	85	P	V
			4824	49.05	-4.95	54	66.31	31	11.5	59.76	100	85	A	V
			17955	57.87	-16.13	74	45.11	49.1	20.78	57.12	100	95	P	V
			17955	48.52	-5.48	54	35.76	49.1	20.78	57.12	100	95	A	V
													V	
													V	
802.11b CH 06 2437MHz		4874	43.65	-30.35	74	61.09	31	11.33	59.77	-	-	P	H	
		7311	45.03	-28.97	74	55.58	36.28	13.26	60.09	-	-	P	H	
		17955	57.27	-16.73	74	44.51	49.1	20.78	57.12	100	98	P	H	
		17955	48.56	-5.44	54	35.8	49.1	20.78	57.12	100	98	A	H	
													H	
													H	
			4874	46.65	-27.35	74	64.09	31	11.33	59.77	-	-	P	V
			7311	43.32	-30.68	74	53.87	36.28	13.26	60.09	-	-	P	V
			17985	57.67	-16.33	74	43.95	49.97	20.79	57.04	100	55	P	V
			17985	48.95	-5.05	54	35.23	49.97	20.79	57.04	100	55	A	V
													V	
													V	



WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11b CH 11 2462MHz		4924	42.06	-31.94	74	59.56	31.1	11.18	59.78	-	-	P	H	
		7311	45.11	-28.89	74	55.66	36.28	13.26	60.09	-	-	P	H	
		17955	56.67	-17.33	74	43.91	49.1	20.78	57.12	100	85	P	H	
		17955	47.42	-6.58	54	34.66	49.1	20.78	57.12	100	85	A	H	
													H	
													H	
			4924	43.17	-30.83	74	60.67	31.1	11.18	59.78	-	-	P	V
			7311	44.65	-29.35	74	55.2	36.28	13.26	60.09	-	-	P	V
			17955	57.31	-16.69	74	44.55	49.1	20.78	57.12	100	92	P	V
			17955	48.42	-5.58	54	35.66	49.1	20.78	57.12	100	92	A	V
														V
														V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 													



**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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11g CH 01 2412MHz		2389.275	62.78	-11.22	74	51.9	27.7	16.74	33.56	179	4	P	H	
		2390	49.07	-4.93	54	38.18	27.7	16.75	33.56	179	4	A	H	
	*	2412	108.84	-	-	97.95	27.68	16.78	33.57	179	4	P	H	
	*	2412	100.68	-	-	89.79	27.68	16.78	33.57	179	4	A	H	
													H	
													H	
			2389.275	63.16	-10.84	74	52.28	27.7	16.74	33.56	100	274	P	V
			2390	49.56	-4.44	54	38.67	27.7	16.75	33.56	100	274	A	V
	*		2412	108.15	-	-	97.26	27.68	16.78	33.57	100	274	P	V
	*		2412	100.73	-	-	89.84	27.68	16.78	33.57	100	274	A	V
													V	
													V	
802.11g CH 06 2437MHz		2379.3	59.95	-14.05	74	49.07	27.7	16.73	33.55	142	3	P	H	
		2389.94	46.74	-7.26	54	35.86	27.7	16.74	33.56	142	3	A	H	
	*	2437	112.47	-	-	101.61	27.63	16.81	33.58	142	3	P	H	
	*	2437	104.94	-	-	94.08	27.63	16.81	33.58	142	3	A	H	
			2483.76	65.74	-8.26	74	55.02	27.46	16.87	33.61	142	3	P	H
			2483.55	48.72	-5.28	54	37.99	27.47	16.87	33.61	142	3	A	H
			2382.1	61.71	-12.29	74	50.83	27.7	16.73	33.55	100	93	P	V
			2389.94	46.53	-7.47	54	35.65	27.7	16.74	33.56	100	93	A	V
	*		2437	111.94	-	-	101.08	27.63	16.81	33.58	100	93	P	V
	*		2437	104.16	-	-	93.3	27.63	16.81	33.58	100	93	A	V
			2484.18	66.06	-7.94	74	55.34	27.46	16.87	33.61	100	93	P	V
			2483.52	48.83	-5.17	54	38.1	27.47	16.87	33.61	100	93	A	V



802.11g CH 11 2462MHz	*	2462	108.11	-	-	97.32	27.55	16.84	33.6	149	2	P	H
	*	2462	100.49	-	-	89.7	27.55	16.84	33.6	149	2	A	H
		2483.72	63.2	-10.8	74	52.47	27.47	16.87	33.61	149	2	P	H
		2483.52	49.68	-4.32	54	38.95	27.47	16.87	33.61	149	2	A	H
													H
													H
	*	2462	107.97	-	-	97.18	27.55	16.84	33.6	104	302	P	V
	*	2462	100.26	-	-	89.47	27.55	16.84	33.6	104	302	A	V
		2483.64	62.12	-11.88	74	51.39	27.47	16.87	33.61	104	302	P	V
		2483.52	49.3	-4.7	54	38.57	27.47	16.87	33.61	104	302	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11g CH 02 2417MHz		2388.82	68.59	-5.41	74	57.71	27.7	16.74	33.56	123	357	P	H	
		2389.94	49.76	-4.24	54	38.88	27.7	16.74	33.56	123	357	A	H	
		2417	111.37	-	-	100.49	27.67	16.78	33.57	123	357	P	H	
		2417	103.71	-	-	92.83	27.67	16.78	33.57	123	357	A	H	
													H	
														H
			2388.68	68.61	-5.39	74	57.73	27.7	16.74	33.56	119	316	P	V
			2389.94	49.5	-4.5	54	38.62	27.7	16.74	33.56	119	316	A	V
			2417	110.3	-	-	99.42	27.67	16.78	33.57	119	316	P	V
			2417	102.59	-	-	91.71	27.67	16.78	33.57	119	316	A	V
														V
														V
802.11g CH 10 2457MHz		2457	110.74	-	-	99.94	27.57	16.83	33.6	146	354	P	H	
		2457	103.02	-	-	92.22	27.57	16.83	33.6	146	354	A	H	
		2484.22	65.64	-8.36	74	54.92	27.46	16.87	33.61	146	354	P	H	
		2483.5	49.02	-4.98	54	38.29	27.47	16.87	33.61	146	354	A	H	
														H
														H
			2457	110.49	-	-	99.69	27.57	16.83	33.6	198	89	P	V
			2457	103.03	-	-	92.23	27.57	16.83	33.6	198	89	A	V
			2484.16	65.73	-8.27	74	55.01	27.46	16.87	33.61	198	89	P	V
			2483.5	48.58	-5.42	54	37.85	27.47	16.87	33.61	198	89	A	V
														V
														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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11g CH 01 2412MHz		4824	40.62	-33.38	74	57.88	31	11.5	59.76	-	-	P	H	
		17985	59.44	-14.56	74	45.72	49.97	20.79	57.04	100	22	P	H	
		17985	48.93	-5.07	54	35.21	49.97	20.79	57.04	100	22	A	H	
													H	
													H	
													H	
														H
														H
														H
														H
														H
														H
802.11g CH 06 2437MHz		4874	41.27	-32.73	74	58.71	31	11.33	59.77	-	-	P	H	
		7311	46.03	-27.97	74	56.58	36.28	13.26	60.09	-	-	P	H	
		17970	59.81	-14.19	74	46.57	49.53	20.79	57.08	100	21	P	H	
		17970	48.65	-5.35	54	35.41	49.53	20.79	57.08	100	21	A	H	
													H	
													H	
														H
														H
														H
														H
														H
														H