



RADIO TEST REPORT

FCC ID

: N82-KOHLER048

Equipment

: Kohler H2Wise

Brand Name

: Kohler

Model Name : K-33603-NA

Applicant

: Kohler Co.

444 Highland Dr, Kohler, WI 53044

Manufacturer : Kohler Co.

444 Highland Dr, Kohler, WI 53044

Standard

: 47 CFR FCC Part 15.247

The product was received on Jan. 08, 2021, and testing was started from Jan. 11, 2021 and completed on May 21, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown 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 Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

TEL: 886-3-656-9065 FAX: 886-3-656-9085

Report Template No.: CB-A10_10 Ver1.3

Page Number

: 1 of 29

Issued Date

: Jul. 12, 2021

Report Version : 01

Table of Contents

Report No.: FR022708-02

Histo	ory of this test report	3
Sumr	mary of Test Result	4
1	General Description	5
1.1	Information	5
1.2	Applicable Standards	7
1.3	Testing Location Information	7
1.4	Measurement Uncertainty	8
2	Test Configuration of EUT	9
2.1	Test Channel Mode	9
2.2	The Worst Case Measurement Configuration	
2.3	EUT Operation during Test	
2.4	Accessories	11
2.5	Support Equipment	11
2.6	Test Setup Diagram	12
3	Transmitter Test Result	15
3.1	AC Power-line Conducted Emissions	15
3.2	DTS Bandwidth	17
3.3	Maximum Conducted Output Power	18
3.4	Power Spectral Density	21
3.5	Emissions in Non-restricted Frequency Bands	23
3.6	Emissions in Restricted Frequency Bands	24
4	Test Equipment and Calibration Data	28
Арре	endix A. Test Results of AC Power-line Conducted Emissions	
Appe	endix B. Test Results of DTS Bandwidth	
Appe	endix C. Test Results of Maximum Conducted Output Power	
Арре	endix D. Test Results of Power Spectral Density	
Арре	endix E. Test Results of Emissions in Non-restricted Frequency Bands	

Photographs of EUT v01

Appendix G. Test Photos

TEL: 886-3-656-9065 Page Number : 2 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

Report Template No.: CB-A10_10 Ver1.3 Report Version : 01

Appendix F. Test Results of Emissions in Restricted Frequency Bands

History of this test report

Report No. : FR022708-02

Report No.	Version	Description	Issued Date
FR022708-02	01	Initial issue of report	Jul. 12, 2021

TEL: 886-3-656-9065 Page Number : 3 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

Summary of Test Result

Report No.: FR022708-02

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5 15.247(d) Emissions in Non-restricted Frequency Bands		PASS	-	
3.6	15.247(d)	Emissions in Restricted Frequency Bands PASS -		-
Note: Refe	erence to Spor	ton Project No.: 022708-01.	·	

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:

- 1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
- 2. 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.

Reviewed by: Sam Chen Report Producer: Wendy Pan

TEL: 886-3-656-9065 Page Number : 4 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40)	2422-2452	3-9 [7]

Report No.: FR022708-02

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	1TX
2.4-2.4835GHz	802.11n HT20	20	1TX
2.4-2.4835GHz	802.11n HT40	40	1TX

Note:

- ◆ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- · BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	ARISTOTLE	RFA-AP821A-70B-84	PIFA Antenna	I-PEX	2.6

Note: The above information was declared by manufacturer.

For 2.4GHz WLAN function

For IEEE 802.11b/g/n mode (1TX, 1RX):

Only Port 1 can be used as transmitting/receiving antenna.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT20	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT40	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

Note:

• DC is Duty Cycle.

DCF is Duty Cycle Factor.

TEL: 886-3-656-9065 Page Number : 5 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter or Host System				
Beamforming Function	☐ With beamforming ☐ Without beamforming			Without beamforming	
Function	☑ Point-to-multipoint ☐ Point-to-point		Point-to-point		
Test Software Version	Tera Term Version 4.75				

Report No.: FR022708-02

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Table for LED board and Transition board Information

Tuna		LED board	Trar	sition board
Type Brand		Model	Brand	Model
1	CHENSOURCE	PHYCBE02 Rev 4_Led board	CHENSOURCE	PHYCBE03 Rev 06
2	Zinwell	ZIO-P002 LED board	Zinwell	ZIO-P002 Transition board

Table for Combination of EUT

EUT	LED board	Transition board
1	Type 1	Type 1
2	Type 2	Type 2

Note1: The above information was declared by manufacturer.

Note2: From the above, EUT 1 has selected to execute all test items and EUT 2 has selected to execute the AC Power-line Conducted Emissions, Emissions in Restricted Frequency Bands below 1GHz test.

TEL: 886-3-656-9065 Page Number : 6 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

1.2 Applicable Standards

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

Report No.: FR022708-02

- 47 CFR FCC Part 15
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF.

- FCC KDB 558074 D01 v05r02
- FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location Information

Test Lab.: Sporton International Inc. Hsinchu Laboratory

Hsinchu ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

(TAF: 3787) TEL: 886-3-656-9065 FAX: 886-3-656-9085

Test site Designation No. TW3787 with FCC.

Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH01-CB	Lucke Hsieh	13.8-14.1 / 57-62	Jan. 13, 2021
Radiated (Below 1GHz / Mode 1)	03CH05-CB	Kevin Huang	20.8-22 / 55-58	Jan. 28, 2021~ Feb. 22, 2021
Radiated (Below 1GHz / Mode 2)	03CH05-CB	Ryo Fan	21.6-22.8 / 55-58	May 20, 2021
Radiated (Above 1GHz)	03CH04-CB	Brian Sun	22.2-22.6 / 63-65	Jan. 11, 2021~ Jan. 12, 2021
AC Conduction (Mode 1)	CO02-CB	Wei Li	22~23 / 56~58	Feb. 24, 2021
AC Conduction (Mode 2)	CO02-CB	Zack Kuo	22~24 / 56~59	May 21, 2021

TEL: 886-3-656-9065 Page Number : 7 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Report No.: FR022708-02

For other test items:

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.8 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.0 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.9 dB	Confidence levels of 95%
Conducted Emission	2.8 dB	Confidence levels of 95%
Output Power Measurement	1.4 dB	Confidence levels of 95%
Power Density Measurement	2.8 dB	Confidence levels of 95%
Bandwidth Measurement	0.4%	Confidence levels of 95%

For AC power-line conducted emissions and Emissions in Restricted Frequency Bands test mode 2:

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.5 dB	Confidence levels of 95%

TEL: 886-3-656-9065 Page Number : 8 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	36
2437MHz	36
2462MHz	40
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	31
2417MHz	40
2437MHz	40
2457MHz	38
2462MHz	33
802.11n HT20_Nss1,(MCS0)_1TX	-
2412MHz	31
2417MHz	40
2437MHz	40
2457MHz	39
2462MHz	31
802.11n HT40_Nss1,(MCS0)_1TX	-
2422MHz	22
2427MHz	25
2437MHz	29
2447MHz	22
2452MHz	19

Report No.: FR022708-02

TEL: 886-3-656-9065 Page Number : 9 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests		
Tests Item	Tests Item AC power-line conducted emissions	
Condition AC power-line conducted measurement for line and neutral		
Operating Mode Normal Link		
1	Normal Link-EUT 1 + Adapter	
2 Normal Link-EUT 2 + Adapter		
For operating mode 1 is the worst case and it was record in this test report.		

Report No.: FR022708-02

The Worst Case Mode for Following Conformance Tests		
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands	
Test Condition	Conducted measurement at transmit chains	
1	EUT 1	

Th	e Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands	
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.	
Normal Link		
Operating Mode < 1GHz	The EUT was performed at Y axis and Z axis position, and the worst case was found at Z axis. So the measurement will follow this same test configuration.	
1	Normal Link-EUT 1 at Z-axis + Adapter	
2	Normal Link-EUT 2 at Z-axis + Adapter	
For operating mode 2 is the	e worst case and it was record in this test report.	
Operating Mode > 1GHz CTX		
	at X axis, Y axis and Z axis position. The worst case was found at Z axis for onic, so it was selected to perform test and its test result was written in the report.	
1	EUT 1 at Z-axis for bandedge / EUT 1 at Y-axis for harmonic	

 TEL: 886-3-656-9065
 Page Number
 : 10 of 29

 FAX: 886-3-656-9085
 Issued Date
 : Jul. 12, 2021

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

		Accessories	
Equipment Name	Brand Name	Model Name	Rating
Adapter	KOHLER	WCA002dqPHY	Input:100-240VAC, 0.5A, 50-60Hz Output: DC 5V/2.4A
Sensor	Brand Name	Model Name	Remark
Phyn Smart Water Assistant Sensor Fittings	KOHLER	PHYCBC03	Shielded, 1.2m

Report No.: FR022708-02

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
Α	2.4G NB	DELL	E6430	N/A

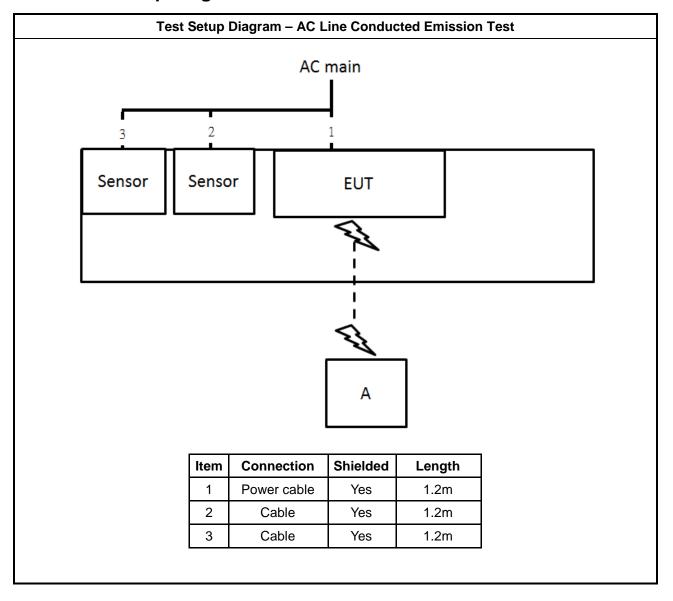
For Radiated and RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
Α	2.4G NB	DELL	E4300	N/A

TEL: 886-3-656-9065 Page Number : 11 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

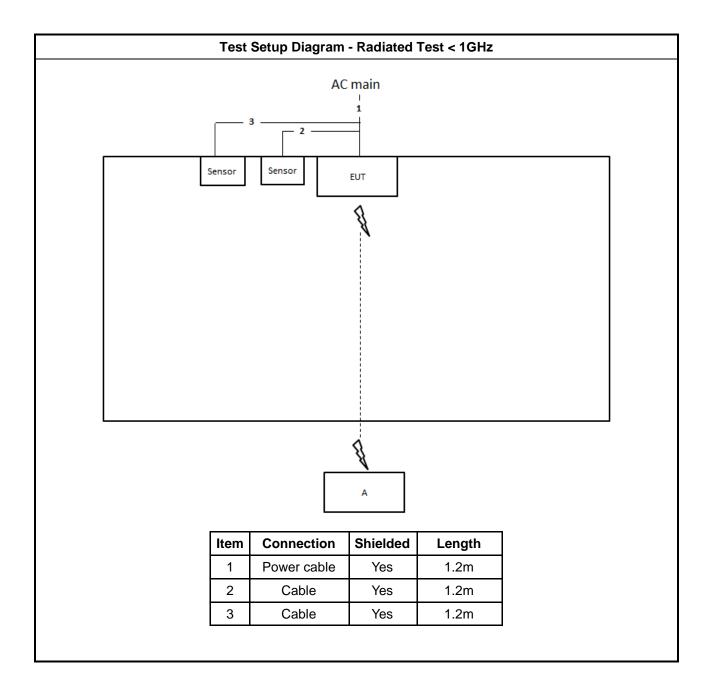
RADIO TEST REPORT Report No. : FR022708-02

2.6 Test Setup Diagram

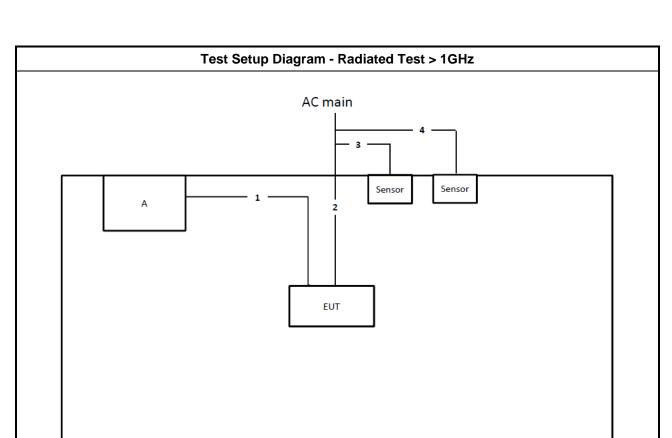


TEL: 886-3-656-9065 Page Number : 12 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

Report No.: FR022708-02



TEL: 886-3-656-9065 Page Number : 13 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021



Report No. : FR022708-02

Item	Connection	Shielded	Length
1	Console cable	No	0.2m
2	Power cable	Yes	1.2m
3	Cable	Yes	1.2m
4	Cable	Yes	1.2m

TEL: 886-3-656-9065 Page Number : 14 of 29 FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

Report No.: FR022708-02

3.1.2 Measuring Instruments

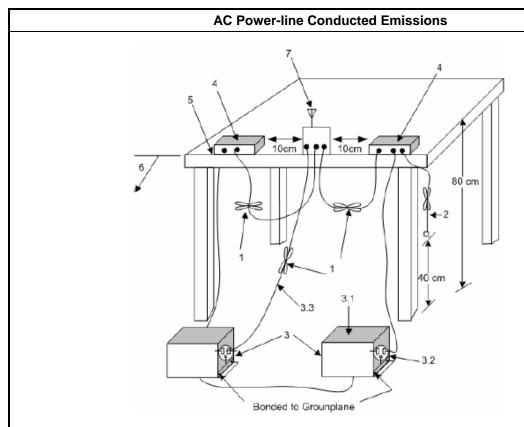
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

TEL: 886-3-656-9065 Page Number : 15 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3.1.4 Test Setup



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.

Report No.: FR022708-02

- 2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
- 3.1—All other equipment powered from additional LISN(s).
- 3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
- 3.3—LISN at least 80 cm from nearest part of EUT chassis.
- 4—Non-EUT components of EUT system being tested.
- 5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
- 6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
- 7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- b. Margin = -Limit + Level

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

TEL: 886-3-656-9065 Page Number : 16 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
■ 6 dB bandwidth ≥ 500 kHz.

Report No.: FR022708-02

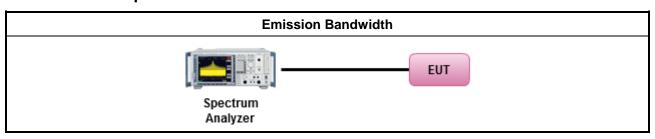
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

	Test Method									
•	For the emission bandwidth shall be measured using one of the options below:									
		Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.								
		Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.								
		Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.								

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

TEL: 886-3-656-9065 Page Number : 17 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit

- If G_{TX} ≤ 6 dBi, then P_{Out} ≤ 30 dBm (1 W)
- Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)$ dBm
- Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3$ dBm
- Smart antenna system (SAS):
 - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3$ dBm
 - Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3$ dBm
 - Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3 + 8$ dB dBm

Report No.: FR022708-02

 \mathbf{P}_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, \mathbf{G}_{TX} = the maximum transmitting antenna directional gain in dBi.

3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

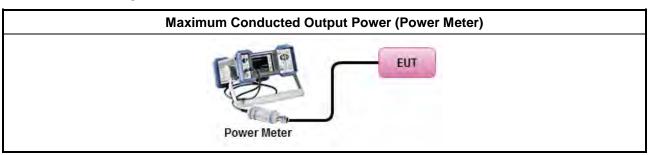
TEL: 886-3-656-9065 Page Number: 18 of 29
FAX: 886-3-656-9085 Issued Date: Jul. 12, 2021

3.3.3 Test Procedures

		Test Method
•	Max	imum Peak Conducted Output Power
		Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
		Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
•	Max	imum Conducted Output Power
	[duty	/ cycle ≥ 98% or external video / power trigger]
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
	duty	cycle < 98% and average over on/off periods with duty factor
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
	Mea	surement using a power meter (PM)
		Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
	\boxtimes	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
•	For	conducted measurement.
	•	If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	•	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

Report No. : FR022708-02

3.3.4 Test Setup



TEL: 886-3-656-9065 Page Number : 19 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3.3.5 Test Result of Maximum Conducted Output Power

Report No. : FR022708-02

Refer as Appendix C

TEL: 886-3-656-9065 Page Number : 20 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit ■ Power Spectral Density (PSD) ≤ 8 dBm/3kHz

Report No.: FR022708-02

3.4.2 Measuring Instruments

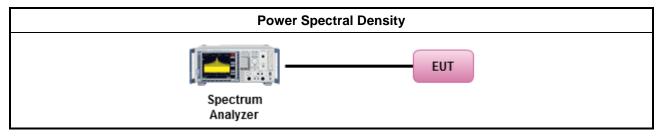
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

			Test Method					
•	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).							
	\boxtimes	Refe	er as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.					
•	For	condu	ucted measurement.					
	•	If Th	e EUT supports multiple transmit chains using options given below:					
			Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.					
			Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,					
			Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.					

TEL: 886-3-656-9065 Page Number : 21 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3.4.4 Test Setup



Report No. : FR022708-02

3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

TEL: 886-3-656-9065 Page Number : 22 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit					
RF output power procedure	Limit (dBc)				
Peak output power procedure	20				
Average output power procedure	30				

Report No.: FR022708-02

- Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.
- Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

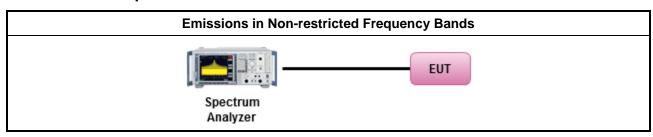
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

	Test Method
•	Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

TEL: 886-3-656-9065 Page Number : 23 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit								
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)					
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300					
0.490~1.705	24000/F(kHz)	33.8 - 23	30					
1.705~30.0	30	29	30					
30~88	100	40	3					
88~216	150	43.5	3					
216~960	200	46	3					
Above 960	500	54	3					

Report No.: FR022708-02

- Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
- Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT
- Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

TEL: 886-3-656-9065 Page Number : 24 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

3.6.3 Test Procedures

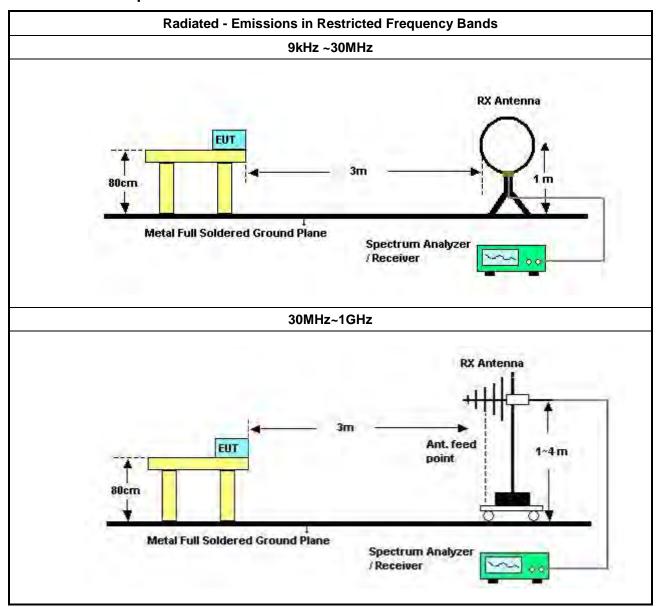
		Test Method					
•	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].						
•	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.						
•	For the transmitter unwanted emissions shall be measured using following options below:						
	•	Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.					
		Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle ≥98%).					
		Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).					
		☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥1/T).					
		☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.					
		Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.					
		Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.					
•	For	the transmitter band-edge emissions shall be measured using following options below:					
	•	Refer as FCC KDB 558074 clause 8.7 & C63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.					
	•	Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.					
	•	Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).					
	•	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB					
	•	For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.					

Report No. : FR022708-02

TEL: 886-3-656-9065 Page Number : 25 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021



Test Setup 3.6.4



Report No.: FR022708-02

: 26 of 29 TEL: 886-3-656-9065 Page Number FAX: 886-3-656-9085 : Jul. 12, 2021 Issued Date

Above 1GHz

Spectrum Analyzer

Report No.: FR022708-02

3.6.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

TEL: 886-3-656-9065 Page Number : 27 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021

4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Dec. 04, 2020	Dec. 03, 2021	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 20, 2020	Nov. 19, 2021	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Mar. 10, 2020	Mar. 09, 2021	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 05, 2021	May 04, 2022	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 20, 2020	Oct. 19, 2021	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Mar. 19, 2020	Mar. 18, 2021	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Mar. 18, 2021	Mar. 17, 2022	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz~1 GHz	Aug. 10, 2020	Aug. 09, 2021	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 27, 2020	Mar. 26, 2021	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 26, 2021	Mar. 25, 2022	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 28, 2020	Apr. 27, 2021	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 27, 2021	Apr. 26, 2022	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Nov. 10, 2020	Nov. 09, 2021	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 13, 2020	May 12, 2021	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESR7	102171	9kHz ~ 26GHz	Jul. 01, 2020	Jun. 30, 2021	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)

Report No.: FR022708-02

 TEL: 886-3-656-9065
 Page Number
 : 28 of 29

 FAX: 886-3-656-9085
 Issued Date
 : Jul. 12, 2021

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH04-CB	1GHz ~18GHz 3m	Feb. 26, 2020	Feb. 25, 2021	Radiation (03CH04-CB)
Horn Antenna	ETS · Lindgren	3115	00143147	750MHz~18GHz	Oct. 23, 2020	Oct. 22, 2021	Radiation (03CH04-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Jul. 14, 2020	Jul. 13, 2021	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH04-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	May 12, 2020	May 11, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+67	1GHz - 18GHz	Nov. 05, 2020	Nov. 04, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 05, 2020	May 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 07, 2020	Feb. 06, 2021	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 07, 2020	Feb. 06, 2021	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

Report No. : FR022708-02

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.

TEL: 886-3-656-9065 Page Number : 29 of 29
FAX: 886-3-656-9085 Issued Date : Jul. 12, 2021



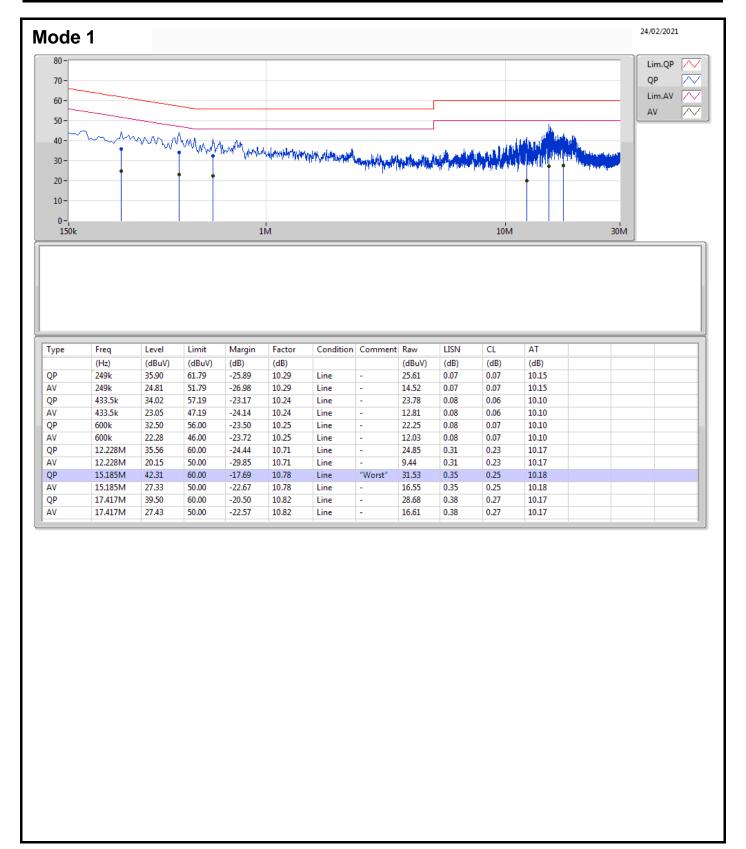
Conducted Emissions at Powerline

Appendix A

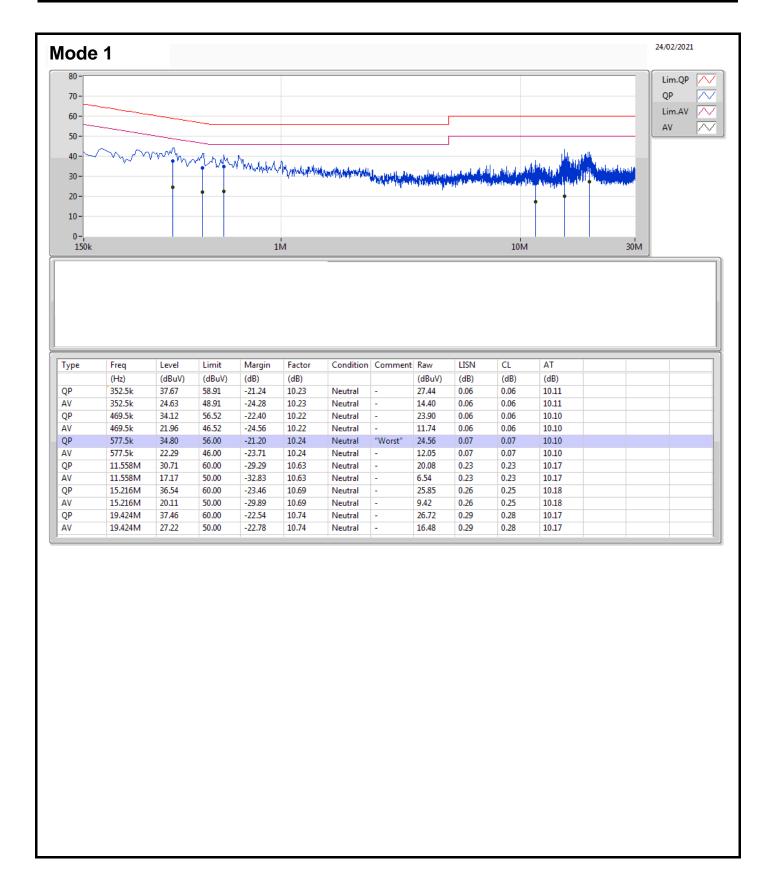
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	15.185M	42.31	60.00	-17.69	Line











Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	10.05M	15.542M	15M5G1D	9.525M	14.918M
802.11g_Nss1,(6Mbps)_1TX	16.325M	18.891M	18M9D1D	16.3M	16.617M
802.11n HT20_Nss1,(MCS0)_1TX	17.525M	19.64M	19M6D1D	17.3M	17.641M
802.11n HT40_Nss1,(MCS0)_1TX	36.05M	36.332M	36M3D1D	35.4M	35.982M

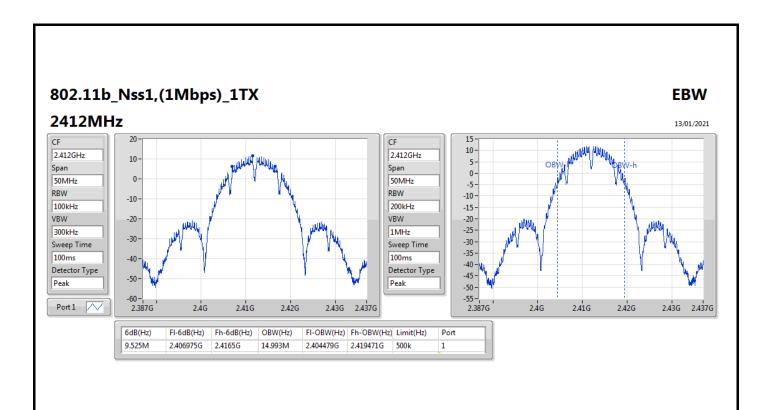
Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth; Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth;

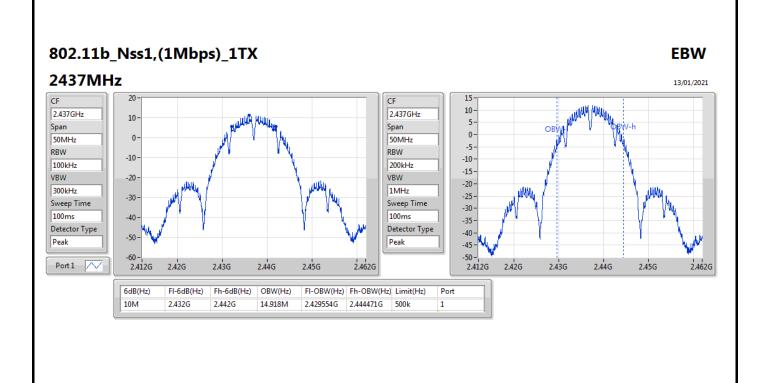


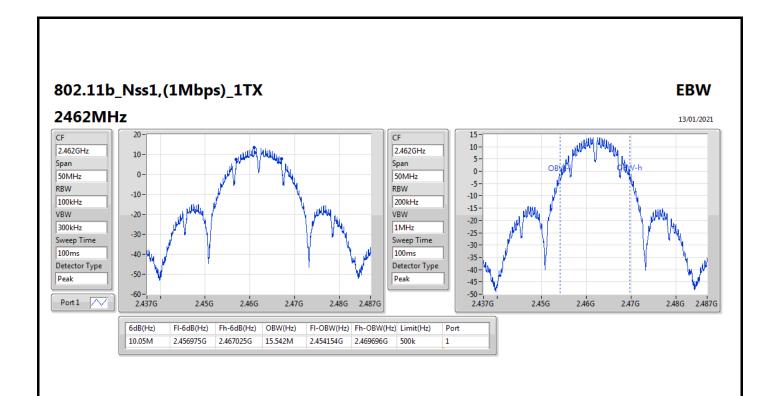
Result

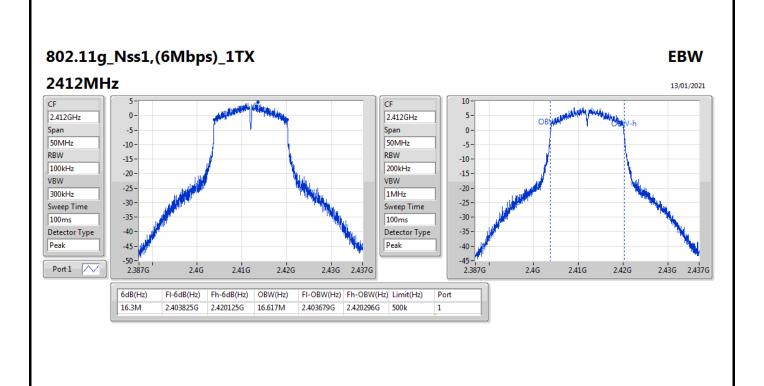
Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	9.525M	14.993M
2437MHz	Pass	500k	10M	14.918M
2462MHz	Pass	500k	10.05M	15.542M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.3M	16.617M
2437MHz	Pass	500k	16.3M	18.891M
2462MHz	Pass	500k	16.325M	16.642M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	17.525M	17.691M
2437MHz	Pass	500k	17.525M	19.64M
2462MHz	Pass	500k	17.3M	17.641M
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz	Pass	500k	36.05M	36.182M
2437MHz	Pass	500k	35.4M	36.332M
2452MHz	Pass	500k	35.6M	35.982M

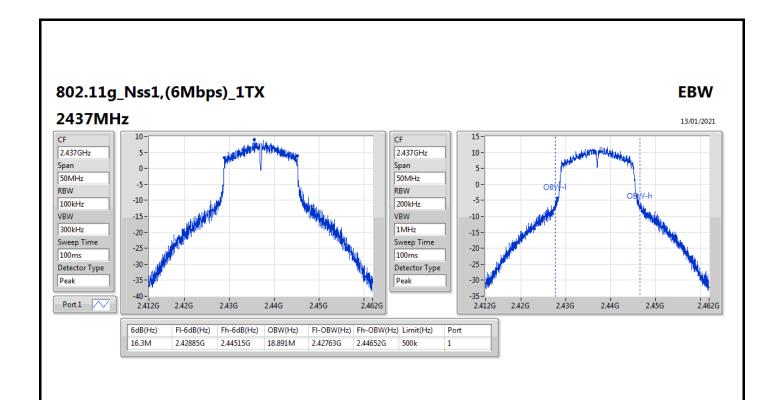
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

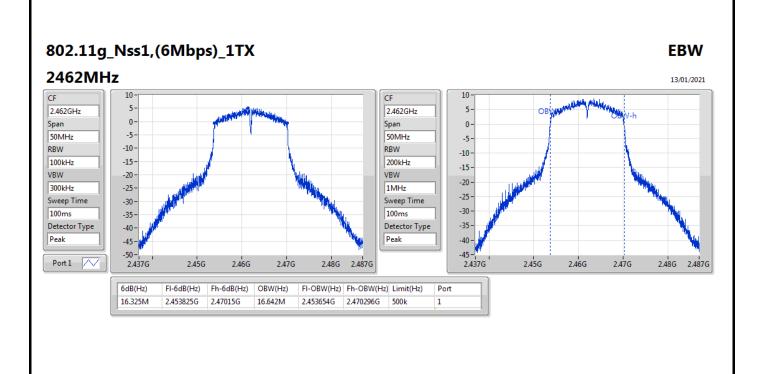


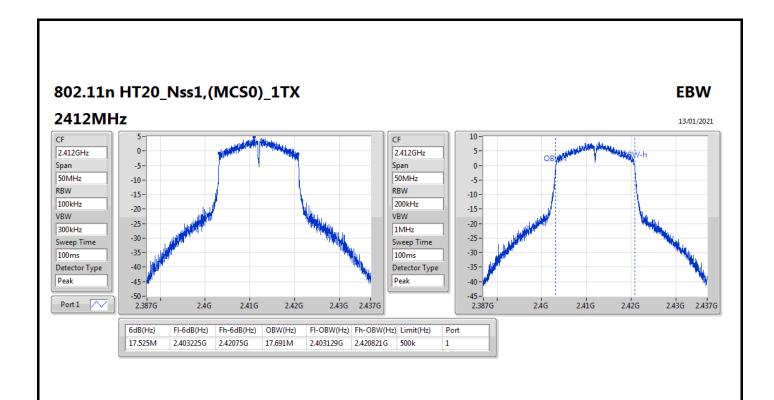


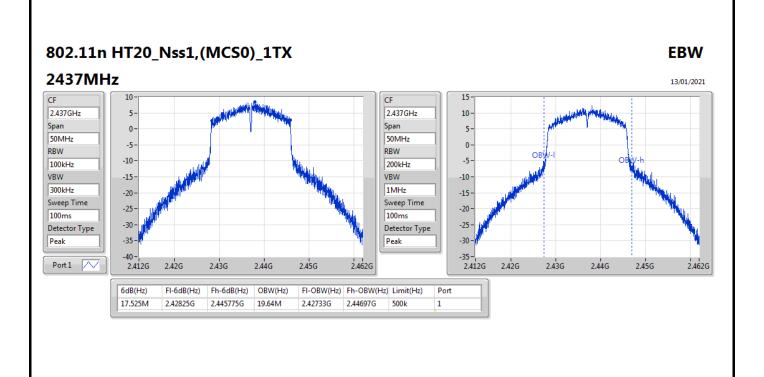


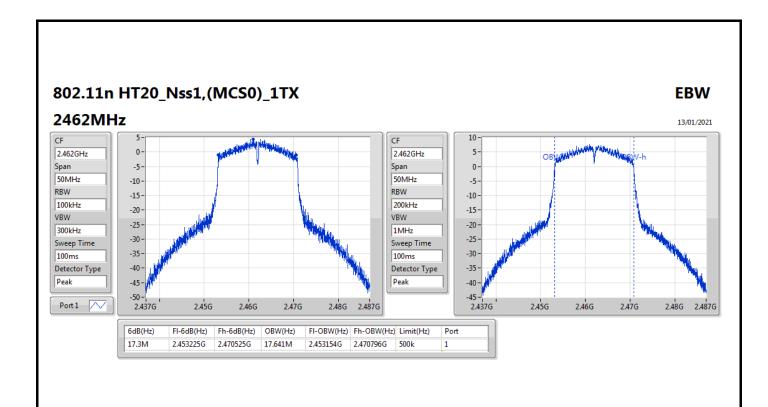


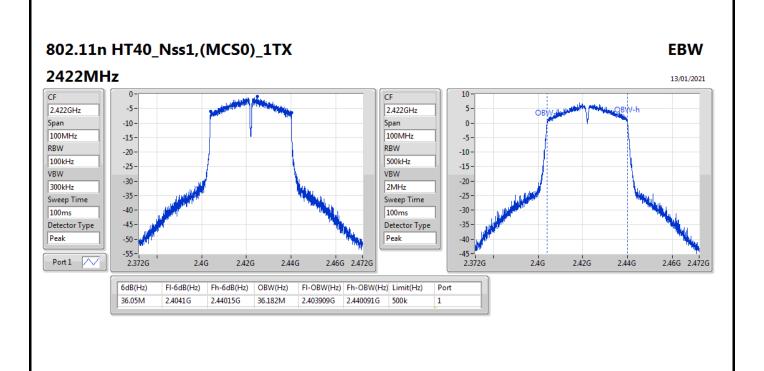




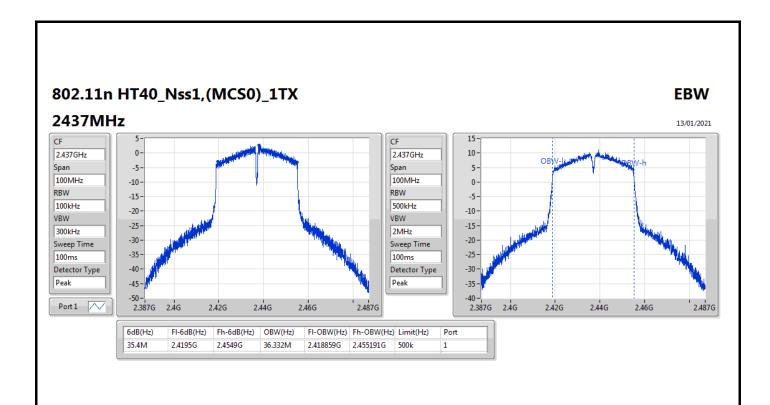


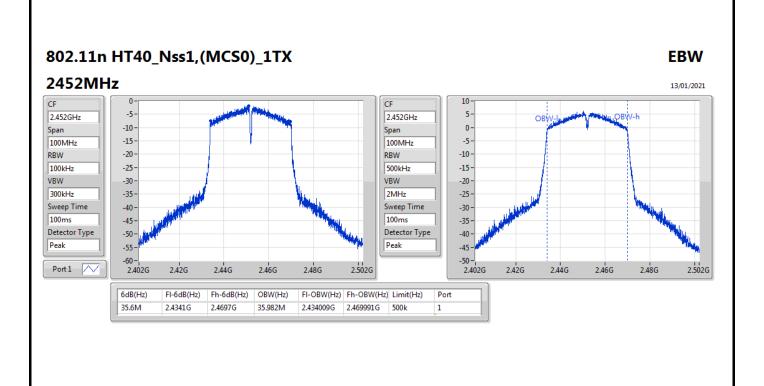






SPORTON LAB







Average Power Appendix C

Mode	Total Power	Total Power		
	(dBm)	(W)		
2.4-2.4835GHz	-	-		
802.11b_Nss1,(1Mbps)_1TX	22.75	0.18836		
802.11g_Nss1,(6Mbps)_1TX	21.34	0.13614		
802.11n HT20_Nss1,(MCS0)_1TX	21.27	0.13397		
802.11n HT40_Nss1,(MCS0)_1TX	18.59	0.07228		

Average Power Appendix C

Result

Mode	Result	DG	Port 1	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.60	20.69	20.69	30.00
2437MHz	Pass	2.60	20.73	20.73	30.00
2462MHz	Pass	2.60	22.75	22.75	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.60	17.40	17.40	30.00
2417MHz	Pass	2.60	21.33	21.33	30.00
2437MHz	Pass	2.60	21.34	21.34	30.00
2457MHz	Pass	2.60	20.71	20.71	30.00
2462MHz	Pass	2.60	18.33	18.33	30.00
802.11n HT20_Nss1,(MCS0)_1TX	=	-	-	-	-
2412MHz	Pass	2.60	17.66	17.66	30.00
2417MHz	Pass	2.60	21.26	21.26	30.00
2437MHz	Pass	2.60	21.27	21.27	30.00
2457MHz	Pass	2.60	20.96	20.96	30.00
2462MHz	Pass	2.60	17.40	17.40	30.00
802.11n HT40_Nss1,(MCS0)_1TX	=	-	-	-	-
2422MHz	Pass	2.60	15.18	15.18	30.00
2427MHz	Pass	2.60	16.63	16.63	30.00
2437MHz	Pass	2.60	18.59	18.59	30.00
2447MHz	Pass	2.60	15.38	15.38	30.00
2452MHz	Pass	2.60	14.18	14.18	30.00

DG = Directional Gain; **Port X** = Port X output power



Summary

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	·
802.11b_Nss1,(1Mbps)_1TX	-1.18
802.11g_Nss1,(6Mbps)_1TX	-4.18
802.11n HT20_Nss1,(MCS0)_1TX	-3.79
802.11n HT40_Nss1,(MCS0)_1TX	-9.09

RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

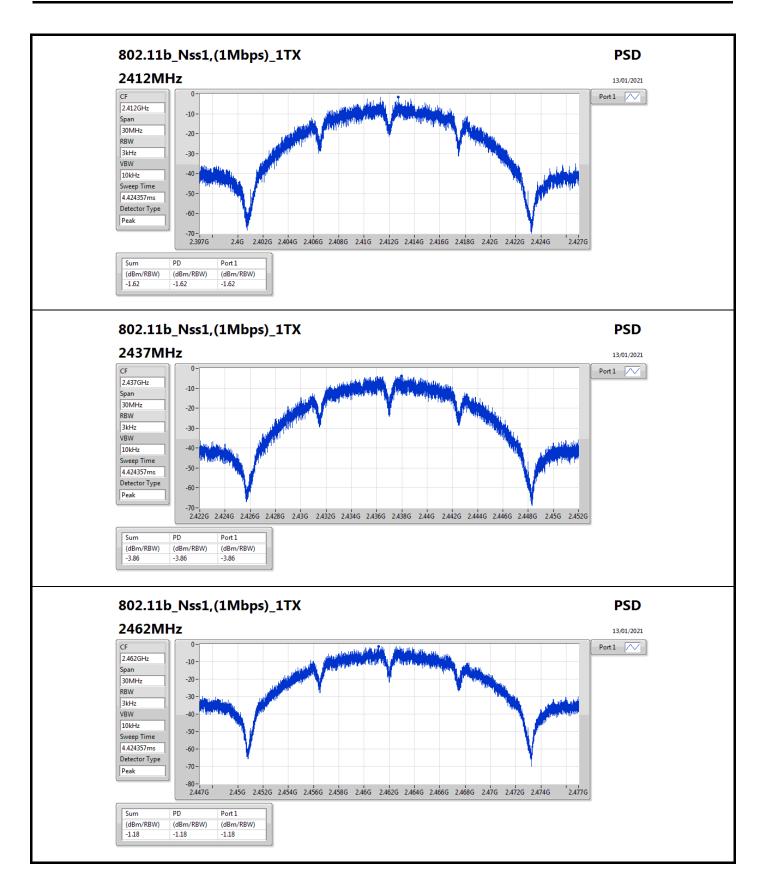


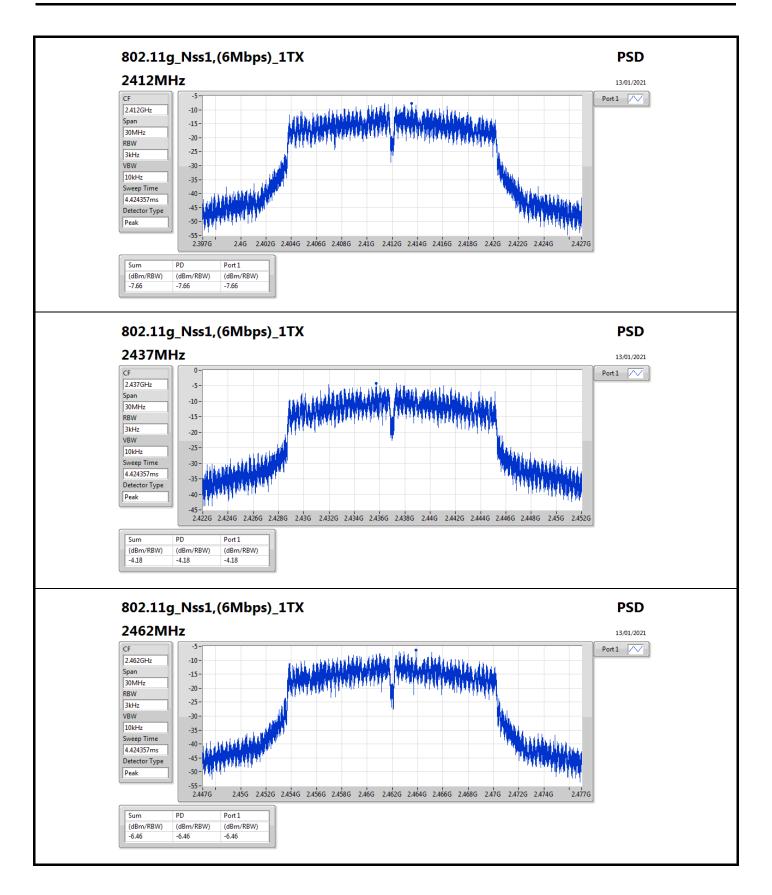
Appendix D **PSD**

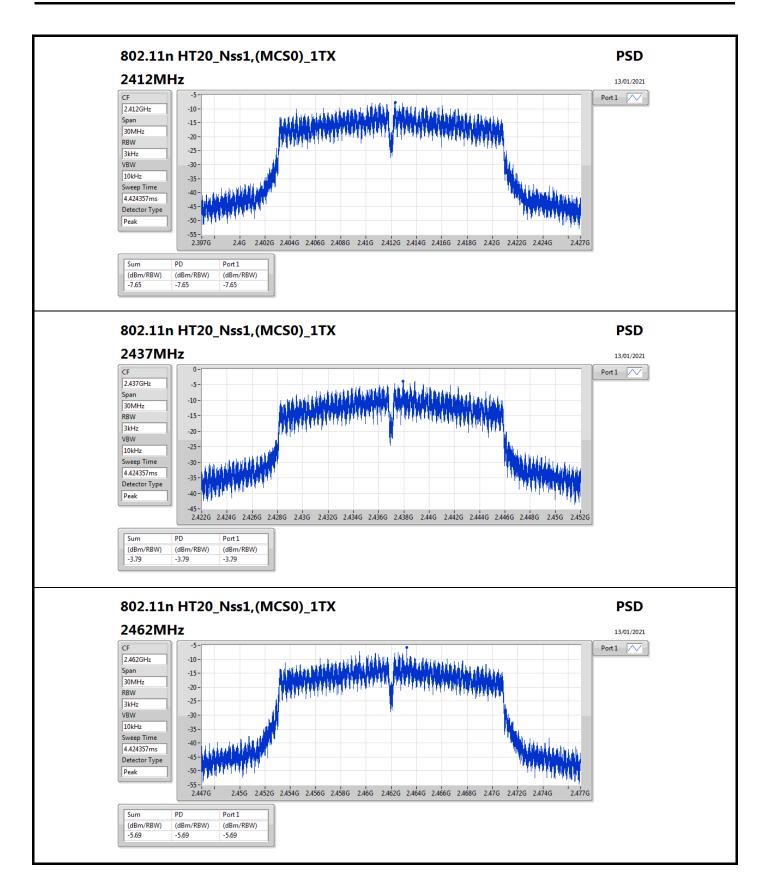
Result

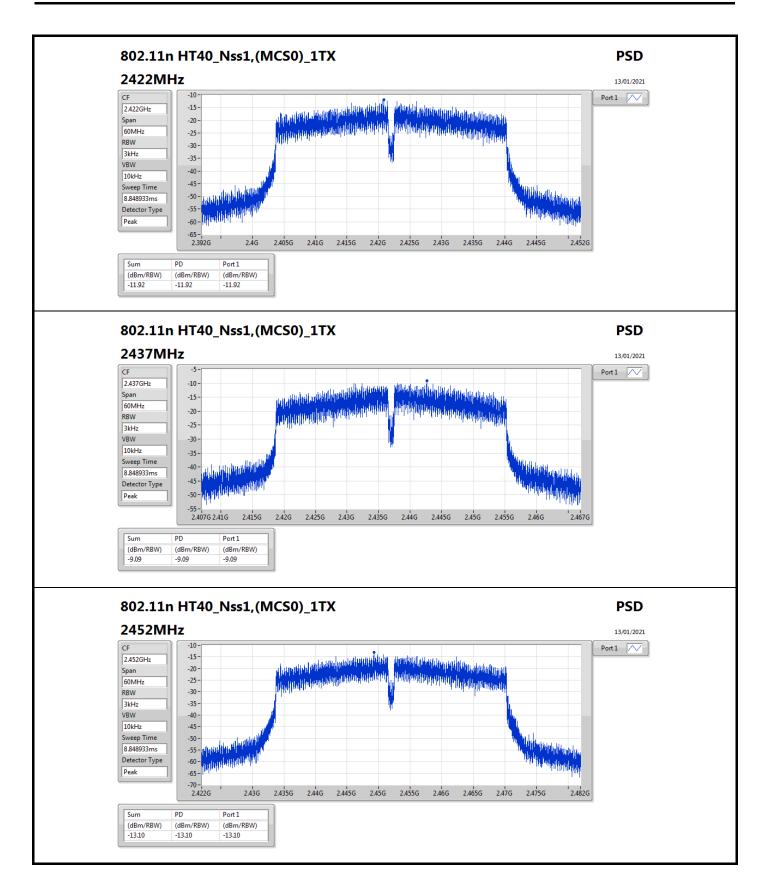
Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.60	-1.62	-1.62	8.00
2437MHz	Pass	2.60	-3.86	-3.86	8.00
2462MHz	Pass	2.60	-1.18	-1.18	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.60	-7.66	-7.66	8.00
2437MHz	Pass	2.60	-4.18	-4.18	8.00
2462MHz	Pass	2.60	-6.46	-6.46	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	2.60	-7.65	-7.65	8.00
2437MHz	Pass	2.60	-3.79	-3.79	8.00
2462MHz	Pass	2.60	-5.69	-5.69	8.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	2.60	-11.92	-11.92	8.00
2437MHz	Pass	2.60	-9.09	-9.09	8.00
2452MHz	Pass	2.60	-13.10	-13.10	8.00

DG = Directional Gain; **RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band; **PD** = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;











CSE(Non-restricted Band)

Appendix E

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	2.46254G	12.94	-17.06	1.92779G	-54.11	2.39802G	-21.15	2.4G	-27.81	2.496G	-49.94	16.54041G	-46.98	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.43574G	8.69	-21.31	2.30117G	-53.63	2.39918G	-21.86	2.4G	-25.54	2.50054G	-48.91	17.66985G	-47.06	1
802.11n HT20_Nss1,(MCS0)_1TX	Pass	2.43599G	8.53	-21.47	2.30321G	-52.91	2.39978G	-21.61	2.4G	-24.21	2.48506G	-49.61	16.20326G	-46.85	1
802.11n HT40_Nss1,(MCS0)_1TX	Pass	2.43849G	2.62	-27.38	743.62M	-54.10	2.39992G	-30.95	2.4G	-33.05	2.48442G	-41.37	16.36756G	-46.98	1



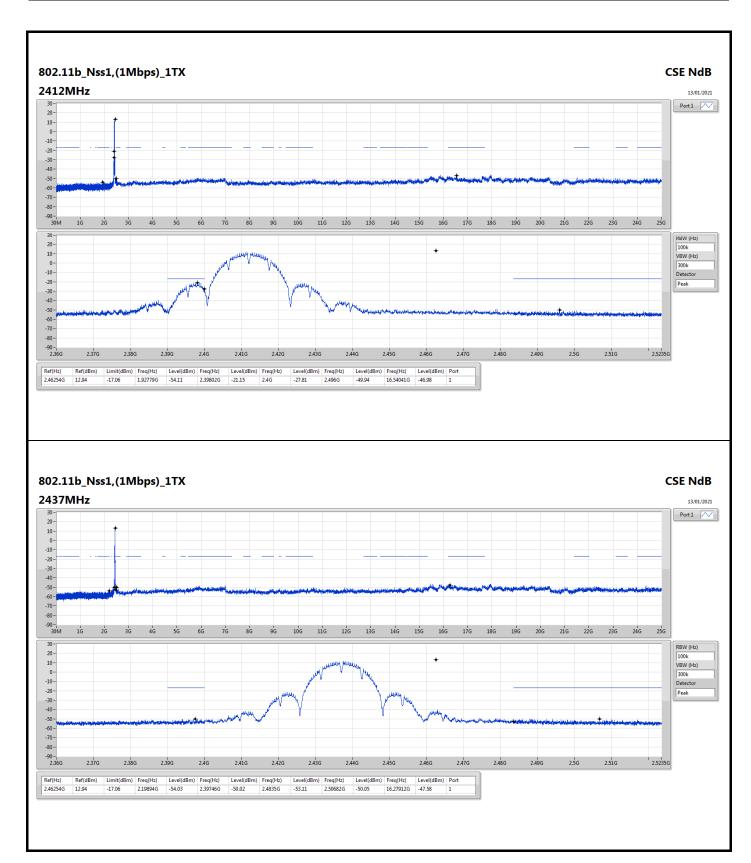
CSE(Non-restricted Band)

Appendix E

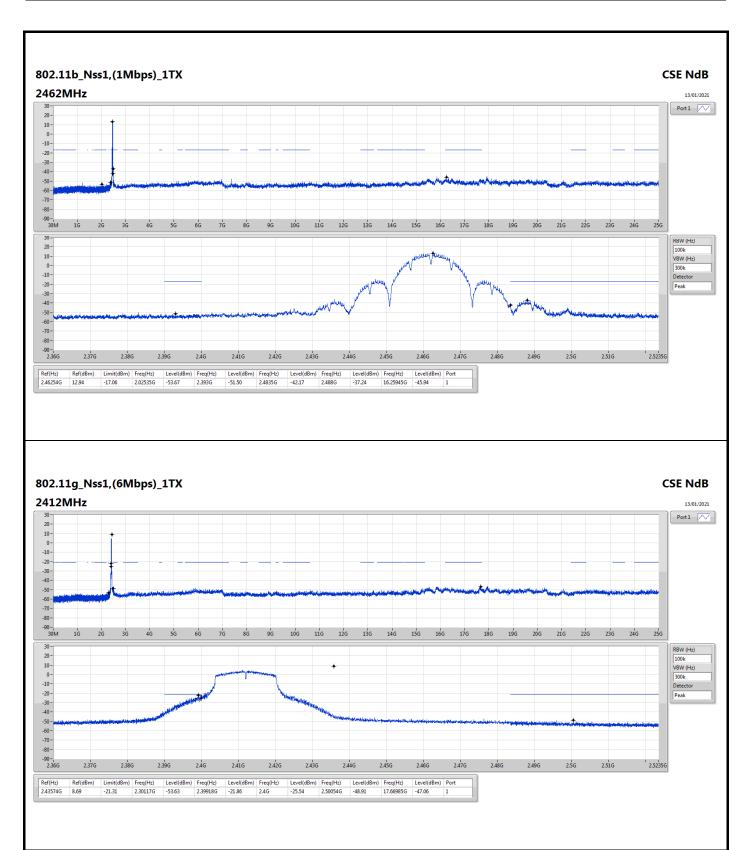
Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.46254G	12.94	-17.06	1.92779G	-54.11	2.39802G	-21.15	2.4G	-27.81	2.496G	-49.94	16.54041G	-46.98	1
2437MHz	Pass	2.46254G	12.94	-17.06	2.19894G	-54.03	2.39746G	-50.02	2.4835G	-53.11	2.50682G	-50.05	16.27912G	-47.58	1
2462MHz	Pass	2.46254G	12.94	-17.06	2.02535G	-53.67	2.393G	-51.50	2.4835G	-42.17	2.488G	-37.24	16.25945G	-45.94	1
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43574G	8.69	-21.31	2.30117G	-53.63	2.39918G	-21.86	2.4G	-25.54	2.50054G	-48.91	17.66985G	-47.06	1
2437MHz	Pass	2.43574G	8.69	-21.31	479.98M	-53.03	2.39916G	-46.45	2.4G	-48.83	2.48496G	-46.55	17.61366G	-46.95	1
2462MHz	Pass	2.43574G	8.69	-21.31	2.05361G	-54.40	2.39424G	-49.03	2.4835G	-39.81	2.4836G	-37.08	16.26507G	-46.78	1
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43599G	8.53	-21.47	2.30321G	-52.91	2.39978G	-21.61	2.4G	-24.21	2.48506G	-49.61	16.20326G	-46.85	1
2437MHz	Pass	2.43599G	8.53	-21.47	900.55M	-54.04	2.39916G	-45.06	2.4G	-45.02	2.48634G	-47.10	17.61366G	-46.96	1
2462MHz	Pass	2.43599G	8.53	-21.47	812.01M	-54.13	2.39522G	-49.78	2.4835G	-37.37	2.4835G	-38.02	16.32126G	-47.14	1
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.43849G	2.62	-27.38	479.99M	-53.92	2.39852G	-31.75	2.4G	-33.79	2.48542G	-50.32	16.48815G	-46.25	1
2437MHz	Pass	2.43849G	2.62	-27.38	743.62M	-54.10	2.39992G	-30.95	2.4G	-33.05	2.48442G	-41.37	16.36756G	-46.98	1
2452MHz	Pass	2.43849G	2.62	-27.38	889.04M	-53.30	2.39664G	-52.20	2.4835G	-41.57	2.48386G	-39.49	16.26659G	-46.26	1

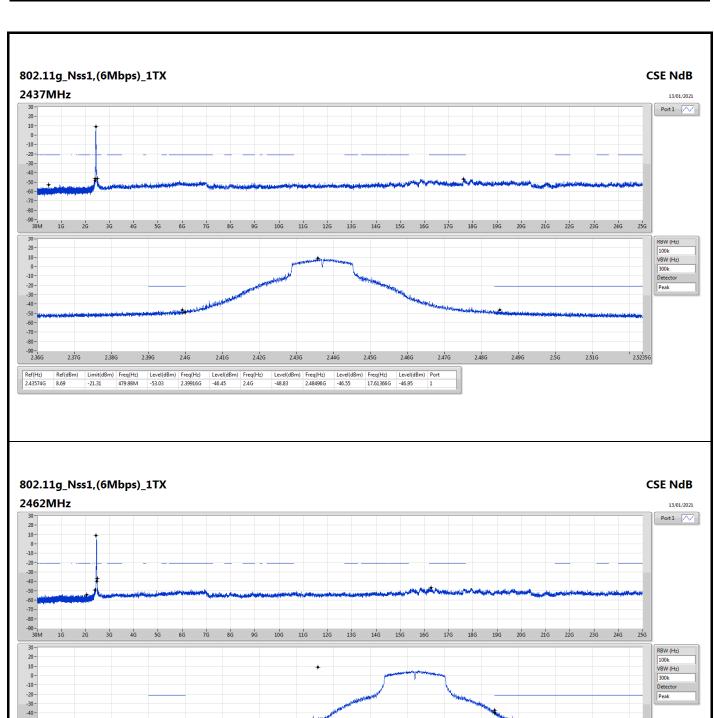












2.4G

2.41G

2.42G

2.43G

2.44G

2.45G

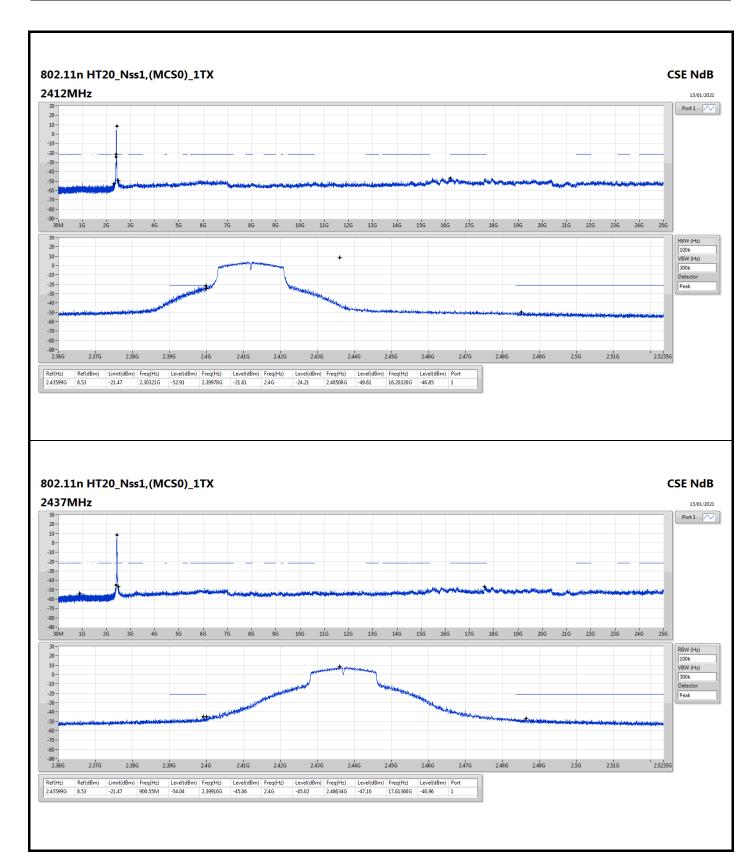
2.46G

2.47G

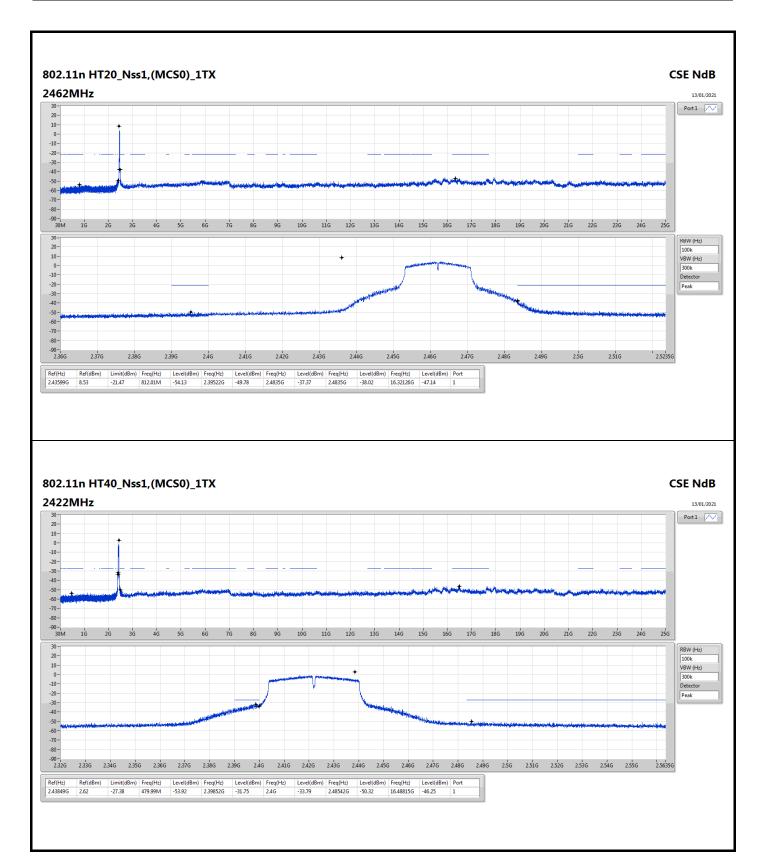
2.48G

-70 -

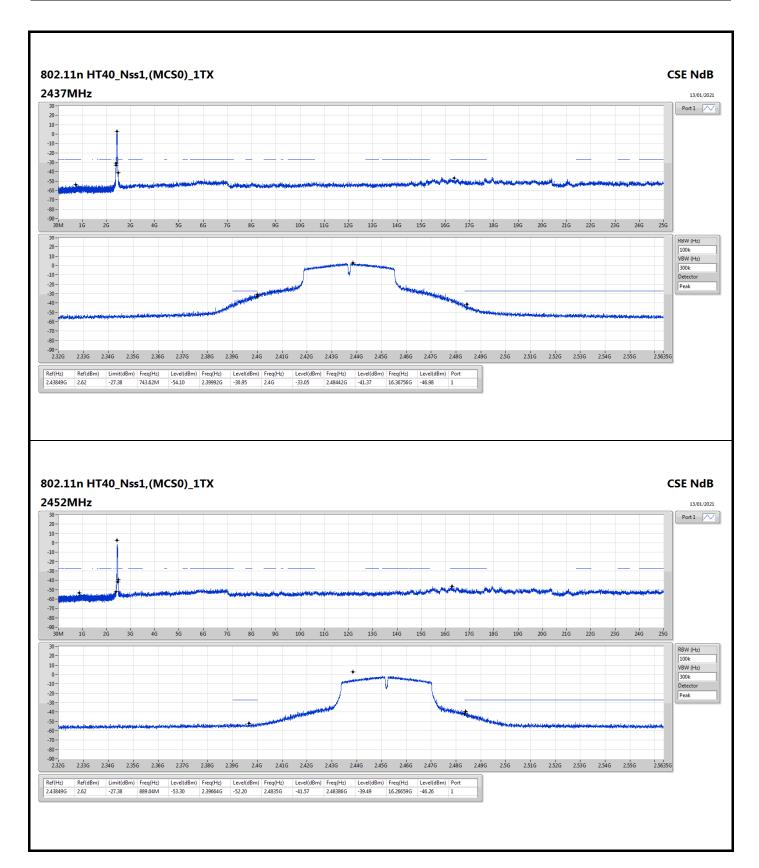












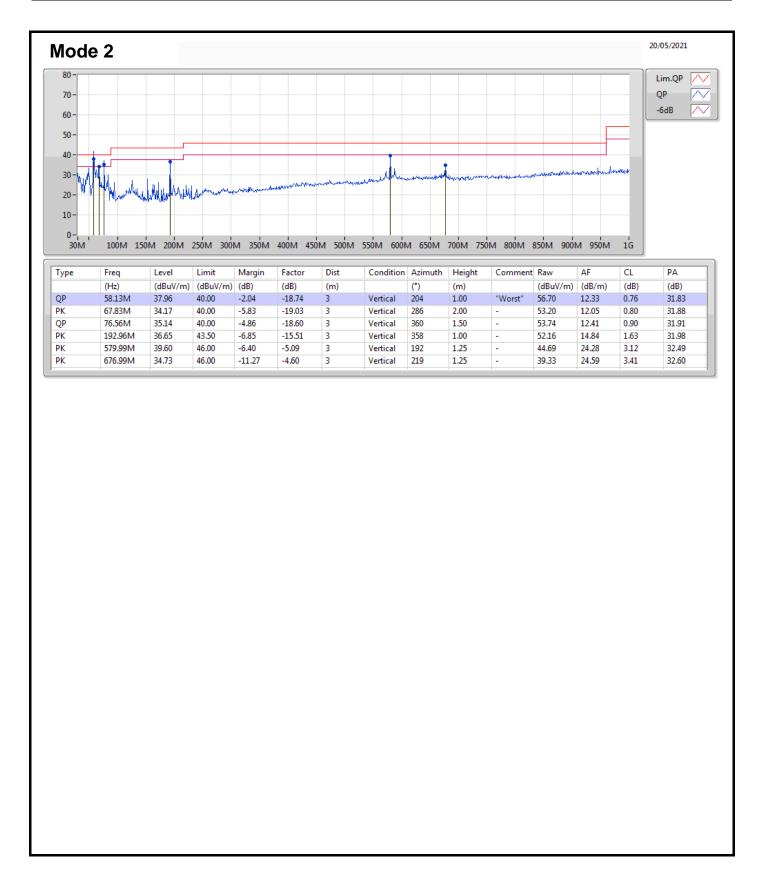


Radiated Emissions below 1GHz

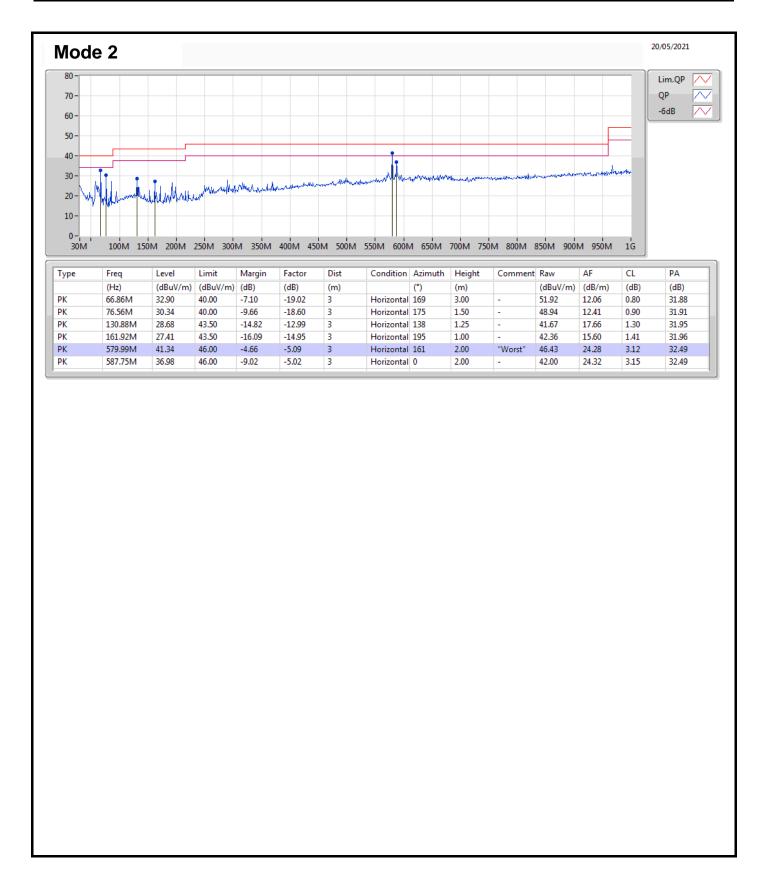
Appendix F.1

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	QP	58.13M	37.96	40.00	-2.04	Vertical











RSE TX above 1GHz

Appendix F.2

Page No. : 1 of 61

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	•	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	4.87395G	53.99	54.00	-0.01	3	Horizontal	229	2.01	-
802.11g_Nss1,(6Mbps)_1TX	Pass	PK	2.4854G	73.96	74.00	-0.04	3	Horizontal	93	1.01	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	2.39G	53.88	54.00	-0.12	3	Horizontal	90	1.01	-
802.11n HT40_Nss1,(MCS0)_1TX	Pass	AV	2.4835G	53.94	54.00	-0.06	3	Horizontal	97	1.00	-



