





FCC Test Report

FCC ID : 2AEUPBHAJB001

Equipment : Video Doorbell Elite

Brand Name : RING

Model Name : Video Doorbell Elite

Applicant : Ring LLC

1523 26th St, Santa Monica, CA 90404, USA

: Chicony Electronics Co.,Ltd. Manufacturer

No.69, Sec. 2, Guangfu Rd., Sanchong Dist.

New Taipei City 241 Taiwan

Standard : 47 CFR FCC Part 15.407

The product was received on Oct. 29, 2019, and testing was started from Nov. 01, 2019 and completed on Nov. 01, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

FCC ID: 2AEUPBHAJB001

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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APPENDIX A. TEST RESULTS OF EMISSION BANDWIDTH

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APPENDIX D. TEST RESULTS OF UNWANTED EMISSIONS

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PHOTOGRAPHS OF EUT V01

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History of this test report

Report No.	Version	Description	Issued Date
FR740630-02AN	01	Initial issue of report	Nov. 28, 2019

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Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
-	15.207	AC Power-line Conducted Emissions	Not Required	-
3.1	15.407(a)	Emission Bandwidth	PASS	-
3.2	15.407(a)	Maximum Conducted Output Power	PASS	-
3.3	15.407(a)	Peak Power Spectral Density	PASS	-
3.4	15.407(b)	Unwanted Emissions	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and explanations:

None

Reviewed by: Sam Tsai

FCC ID: 2AEUPBHAJB001

Report Producer: Ann Hou

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General Description

1.1 Information

RF General Information 1.1.1

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5250-5350	a, n (HT20)	5260-5320	52-64 [4]
5470-5725		5500-5700	100-140 [11]
5250-5350	n (HT40)	5310	62 [1]
5470-5725		5510-5670	102-134 [5]

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11a	20	1TX
5.25-5.35GHz	802.11n HT20	20	1TX
5.25-5.35GHz	802.11n HT40	40	1TX
5.47-5.725GHz	802.11a	20	1TX
5.47-5.725GHz	802.11n HT20	20	1TX
5.47-5.725GHz	802.11n HT40	40	1TX

Note:

- 11a, 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.	Brand	Model Name	Antenna Type	Connector
1	-	-	PIFA Antenna	I-PEX

		Gain	(dBi)			
Ant.	UNI	I-2A		UNII-2C		
	5250MHz	5350MHz	5470MHz	5600MHz	5725MHz	
1	0.82	1.43	1.62	2.58	2.49	

Note 1: The EUT has one antenna.

For 5GHz function:

For IEEE 802.11 a/n mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive simultaneously.

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1.1.3 EUT Information

	Operational Condition						
EU	Γ Power Type	Fro	om PoE				
	Γ Function		Outdoor AP		Indoor AP		
EU	runction		Fixed P2P AP	\boxtimes	Outdoor Client		
Bea	mforming Function		With beamforming	\boxtimes	Without beamforming		
TPO	Function		With TPC Function	\boxtimes	Without TPC Function		
Weather Band			With 5600~5650MHz		Without 5600~5650MHz		
			Type of EUT				
\boxtimes	Stand-alone						
	Combined (EUT whe	re the	e radio part is fully integrated wit	thin anoth	er device)		
	Combined Equipmen	t - Br	and Name / Model No.:				
	Plug-in radio (EUT intended for a variety of host systems)						
	Host System - Brand Name / Model No.:						
	Other:						

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1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.94	0.27	1.431m	1k
802.11n HT20	0.932	0.31	1.339m	1k
802.11n HT40	0.903	0.44	944.688u	3k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR740630-01AN Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
UNII-2A and UNII-2C were	added All

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1.2 **Testing Applied Standards**

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

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- KDB 789033 D02 v02r01
- KDB 414788 D01 v01r01

Testing Location Information 1.3

	Testing Location							
\boxtimes	HWA YA ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)							
	TEL: 886-3-327-3456 FAX: 886-3-327-0973							
				Test site Designation	on No.	TV	/1190 with FCC.	
	JHUBEI	ADD	:	No.8, Ln. 724, Bo'ai St.	, Zhub	ei (City, Hsinchu County, Taiwan (R.O.C.)	
	TEL: 886-3-656-9065 FAX: 886-3-656-9085							
	Test site Designation No. TW0006 with FCC.							

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH06-HY	Gary Wang	23.5~26.6°C / 65~69%	01/Nov/2019
Radiated	03CH02-HY	Lego Lin	22.1~23.2°C / 51.6~52.5%	01/Nov/2019

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)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

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Test Configuration of EUT 2

Test Condition 2.1

Condition Item	Abbreviation/Remark	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

Test Channel Mode 2.2

Test Software	CMD
rest Software	CIVID

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_1TX	-
5260MHz	88
5300MHz	88
5320MHz	88
5500MHz	74
5580MHz	77
5700MHz	55
802.11n HT20_Nss1,(MCS0)_1TX	-
5260MHz	88
5300MHz	88
5320MHz	88
5500MHz	72
5580MHz	73
5700MHz	58
802.11n HT40_Nss1,(MCS0)_1TX	-
5270MHz	88
5310MHz	55
5510MHz	60
5550MHz	88
5670MHz	71

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The Worst Case Measurement Configuration 2.3

The Worst Case Mode for Following Conformance Tests	
Tests Item Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density	
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests		
Tests Item Unwanted Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EU regardless of spatial multiplexing MIMO configuration), the radiated test shou be performed with highest antenna gain of each antenna type.	
1	Transformer mode	
Operating Mode > 1GHz	СТХ	
	Y Plane	
Orthogonal Planes of EUT		

2.4 **Support Equipment**

	Support Equipment – RF Conducted			
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC

	Support Equipment – Radiated Emission			
No.	Equipment	Brand Name	Model Name	FCC ID
1	Adapter for PoE	DVE	DSA-18CB-12 FCA	-
2	PoE	ring	PSE3101DCG	-

Note: Support equipment No.1 and 2 was provided by customer.

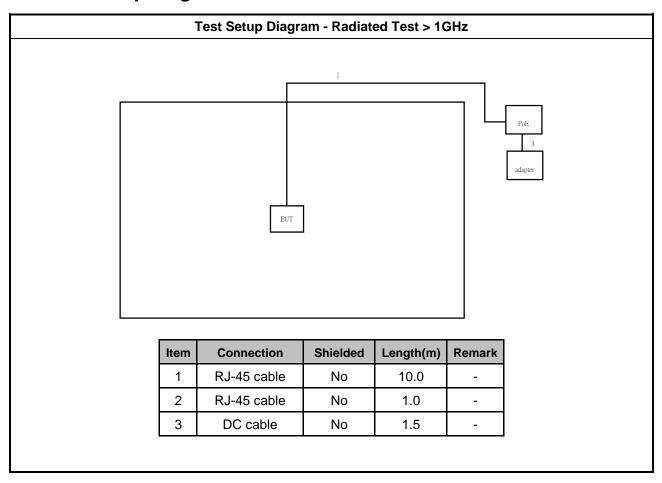
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2.5 Test Setup Diagram

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3 **Transmitter Test Result**

Emission Bandwidth 3.1

Emission Bandwidth Limit 3.1.1

Emission Bandwidth Limit	
UNII Devices	
For the 5.15-5.25 GHz band, N/A	
For the 5.25-5.35 GHz band, N/A	
For the 5.47-5.725 GHz band, N/A	
☐ For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.	

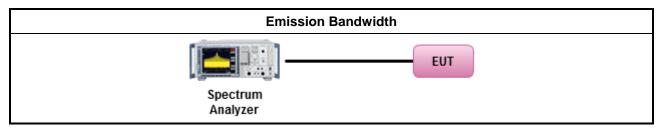
3.1.2 Measuring Instruments

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

Test Procedures 3.1.3

	Test Method
•	For the emission bandwidth shall be measured using one of the options below:
	Refer as KDB 789033, clause C for EBW and clause D for OBW measurement.
	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
	Refer as IC RSS-Gen, clause 6.7 for bandwidth testing.

Test Setup 3.1.4



3.1.5 **Test Result of Emission Bandwidth**

Refer as Appendix A

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3.2 Maximum Conducted Output Power

3.2.1 Maximum Conducted Output Power Limit

	Maximum Conducted Output Power Limit		
UNI	UNII Devices		
	For the 5.15-5.25 GHz band:		
	Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 - (G_{TX} - 6). e.i.r.p. at any elevation angle above 30 degrees \leq 125mW [21dBm]		
	Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$		
	Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$.		
	• Mobile or Portable Client: the maximum conducted output power (P _{Out}) shall not exceed the lesser of 250 mW. If G _{TX} > 6 dBi, then P _{Out} = 24 - (G _{TX} - 6).		
	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.		
	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.		
	For the 5.725-5.85 GHz band:		
	Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$.		
	 Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. 		
	 Pout = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi. 		

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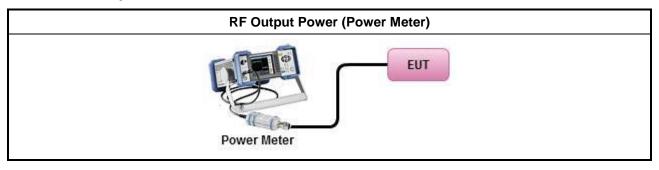
3.2.2 **Measuring Instruments**

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

3.2.3 **Test Procedures**

	Test Method
•	Maximum Conducted Output Power
	Duty cycle ≥ 98%
	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
	Duty cycle < 98%
	Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
	Refer as KDB 789033, clause E Method PM (using an RF average power meter).
•	For conducted measurement.
	If the EUT supports multiple transmit chains using options given below: Refer as 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

3.2.4 **Test Setup**



Test Result of Maximum Conducted Output Power 3.2.5

Refer as Appendix B

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3.3 **Peak Power Spectral Density**

Peak Power Spectral Density Limit 3.3.1

	Peak Power Spectral Density Limit
UNI	II Devices
	For the 5.15-5.25 GHz band:
	Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$.
	 Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6)
\boxtimes	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= 11 – ($G_{TX} - 6$).
\boxtimes	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= 11 – $(G_{TX} - 6)$.
	For the 5.725-5.85 GHz band:
	Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) \leq 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then PPSD= $30 - (G_{TX} - 6)$.
	Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPS	SD = peak power spectral density that he same method as used to determine the conducted output

power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.

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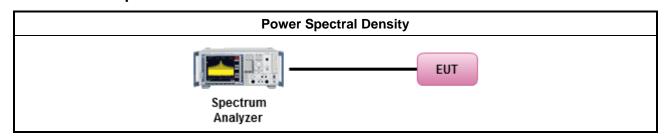
3.3.2 **Measuring Instruments**

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

3.3.3 **Test Procedures**

		Test Method						
•	outp func	k power spectral density procedures that the same method as used to determine the conducted out power shall be used to determine the peak power spectral density and use the peak search ction on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density I be measured using below options:						
		Refer as KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth						
	Duty	y cycle ≥ 98%						
		Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).						
	Duty cycle < 98%							
	\boxtimes	Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)						
•	For	conducted measurement.						
	•	If the EUT supports multiple transmit chains using options given below:						
		• Measure and sum the spectra across the outputs. Refer as 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.						
	•	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $ PPSD_{total} = PPSD_1 + PPSD_2 + + PPSD_n \\ (calculated in linear unit [mW] and transfer to log unit [dBm]) \\ EIRP_{total} = PPSD_{total} + DG $						

3.3.4 Test Setup



Test Result of Peak Power Spectral Density 3.3.5

Refer as Appendix C

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3.4 **Unwanted Emissions**

3.4.1 **Transmitter Radiated Unwanted Emissions Limit**

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz 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					

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

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.

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Un-restricted band emissions above 1GHz Limit						
Operating Band	Limit					
5.15 - 5.25 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]					
5.25 - 5.35 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]					
5.47 - 5.725 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]					
5.725 - 5.85 GHz	5.650-5700 GHz: e.i.r.p27 ~ 10 dBm [68.2 ~ 105.2 dBuV/m@3m] 5.700-5720 GHz: e.i.r.p. 10 ~ 15.6 dBm [105.2 ~ 110.8 dBuV/m@3m] 5.720-5725 GHz: e.i.r.p. 15.6 ~ 27 dBm [110.8 ~ 122.2 dBuV/m@3m] 5.850-5.855 GHz: e.i.r.p. 27 ~ 15.6 dBm [122.2 ~ 110.8 dBuV/m@3m] 5.855-5.875 GHz: e.i.r.p. 15.6 ~ 10 dBm [110.8 ~ 105.2 dBuV/m@3m] 5.875-5.925 GHz: e.i.r.p. 10 ~ -27 dBm [105.2 ~ 68.2dBuV/m@3m] Other un-restricted band: e.i.r.p27 dBm [68.2 dBuV/m@3m]					

Note 1: 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).

3.4.2 Measuring Instruments

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

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3.4.3 Test Procedures

Test Method

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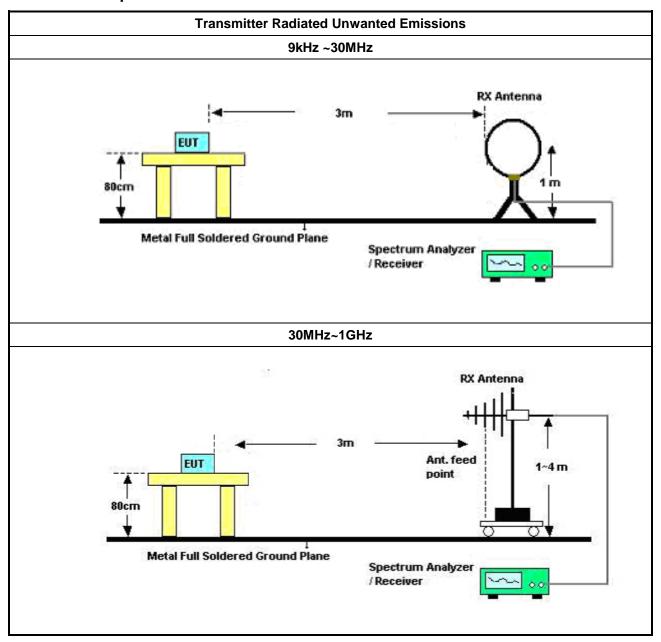
- Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. 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).
- The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
- For the transmitter unwanted emissions shall be measured using following options below:
 - Refer as KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
 - Refer as KDB 789033, clause G)1) for unwanted emissions into restricted bands.
 - Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.
 - Refer as KDB 789033, clause G)5) (ANSI C63.10, clause 4.1.4.2.2), measurement procedure peak limit.
- For radiated measurement.
 - Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
 - Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
 - Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
- The any unwanted emissions level shall not exceed the fundamental emission level.
- All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

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3.4.4 Test Setup



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Report Version

: 01

Report Template No.: HE1-D1 Ver2.4 FCC ID: 2AEUPBHAJB001

Above 1GHz

Spectrum Analyzer

Above 1GHz

Report No.: FR740630-02AN

3.4.5 Transmitter Unwanted Emissions (Below 30MHz)

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

3.4.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix D

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Test Equipment and Calibration Data 3.5

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	13/Mar/2019	12/Mar/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	19/Feb/2019	18/Feb/2020
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	19/Feb/2019	18/Feb/2020
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz~18G	11/Jan/2019	10/Jan/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz ~18G	11/Jan/2019	10/Jan/2020
Cable 0.5m	HUBER	MY10714/4	RF Cable – 05	30MHz~18G	11/Jan/2019	10/Jan/2020

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	29/Aug/2019	28/Aug/2020
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz 3m	29/Aug/2019	28/Aug/2020
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	02/Jul/2019	01/Jul/2020
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	16/Oct/2019	15/Oct/2020
Spectrum Analyzer	Rohde & Schwarz	FSP40	100593	9KHz - 40GHz	27/Dec/2018	26/Dec/2019
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz ~ 1GHz	26/Mar/2019	25/Mar/2020
RF Cable-high 6m	SUHNER	SUCOFLEX104	10567868 / SN805193/4	1GHz~40GHz	9/Apr/2019	8/Apr/2020
RF Cable-high 7m	SUHNER	SUCOFLEX104	10567868 / SN805192/4	1GHz~40GHz	9/Apr/2019	8/Apr/2020
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112D / MTJ6102-05	2678 / 001	30MHz ~ 2GHz	06/Jul/2019	05/Jul/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz ~ 40GHz	22/Mar2019	21/Mar/2020
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	05/Aug/2019	04/Aug/2020
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	15/Mar/2019	14/Mar/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 01543	1GHz ~ 18GHz	03/Jun/2019	02/Jun/2020

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Appendix A **EBW**

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	40.11M	18.531M	18M5D1D	39.48M	17.601M
802.11n HT20_Nss1,(MCS0)_1TX	40.83M	18.351M	18M4D1D	39.99M	18.141M
802.11n HT40_Nss1,(MCS0)_1TX	85.32M	37.361M	37M4D1D	68.7M	36.042M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	39.87M	18.531M	18M5D1D	18.87M	16.372M
802.11n HT20_Nss1,(MCS0)_1TX	40.47M	18.651M	18M7D1D	19.71M	17.541M
802.11n HT40_Nss1,(MCS0)_1TX	80.7M	36.822M	36M8D1D	65.76M	36.102M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth;

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EBW Appendix A

Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5260MHz	Pass	Inf	39.48M	17.601M
5300MHz	Pass	Inf	40.11M	17.841M
5320MHz	Pass	Inf	40.05M	18.531M
5500MHz	Pass	Inf	39.42M	18.531M
5580MHz	Pass	Inf	39.87M	18.501M
5700MHz	Pass	Inf	18.87M	16.372M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
5260MHz	Pass	Inf	40.83M	18.291M
5300MHz	Pass	Inf	39.99M	18.141M
5320MHz	Pass	Inf	40.74M	18.351M
5500MHz	Pass	Inf	39.21M	17.901M
5580MHz	Pass	Inf	40.47M	18.651M
5700MHz	Pass	Inf	19.71M	17.541M
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-
5270MHz	Pass	Inf	85.32M	37.361M
5310MHz	Pass	Inf	68.7M	36.042M
5510MHz	Pass	Inf	65.76M	36.102M
5550MHz	Pass	Inf	77.4M	36.642M
5670MHz	Pass	Inf	80.7M	36.822M

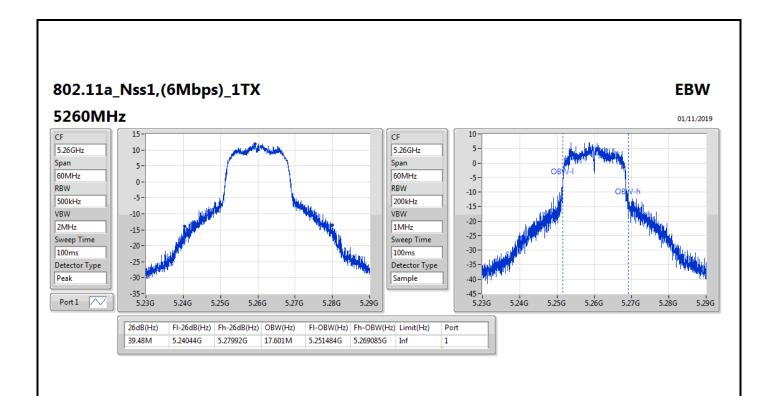
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth;

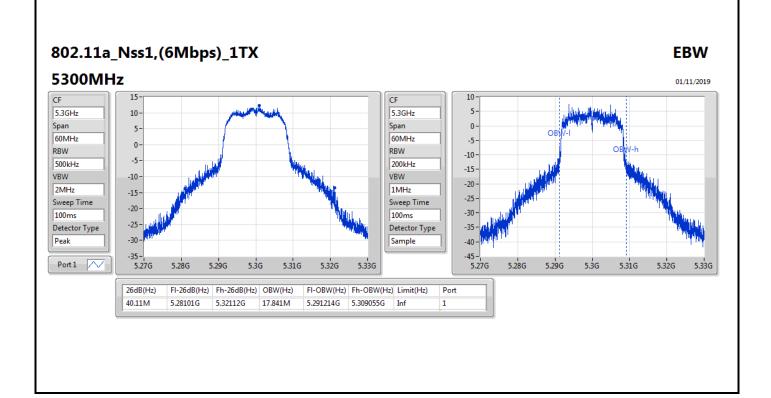
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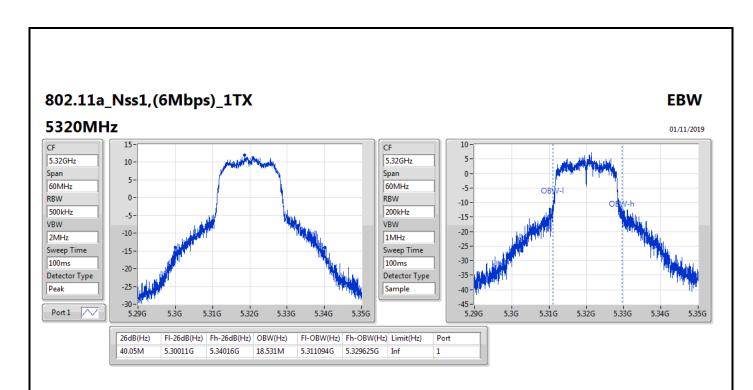
Appendix A

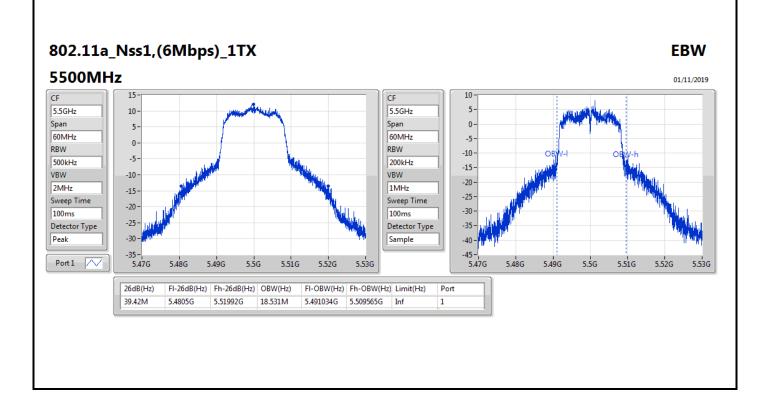




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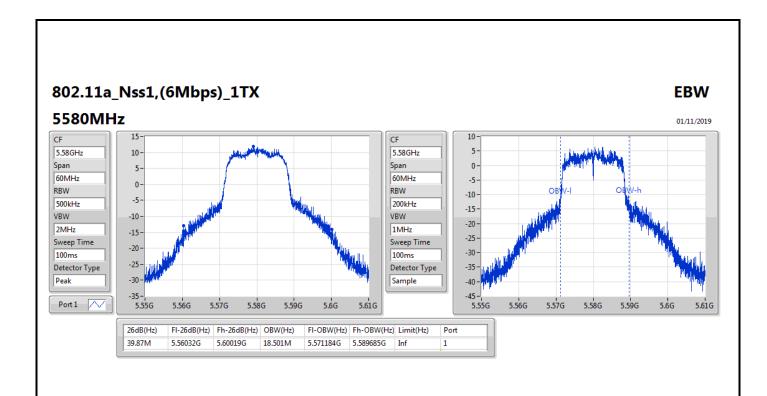
Appendix A

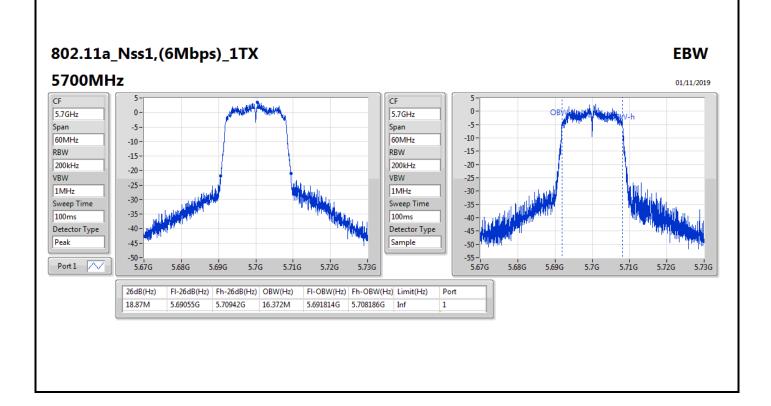




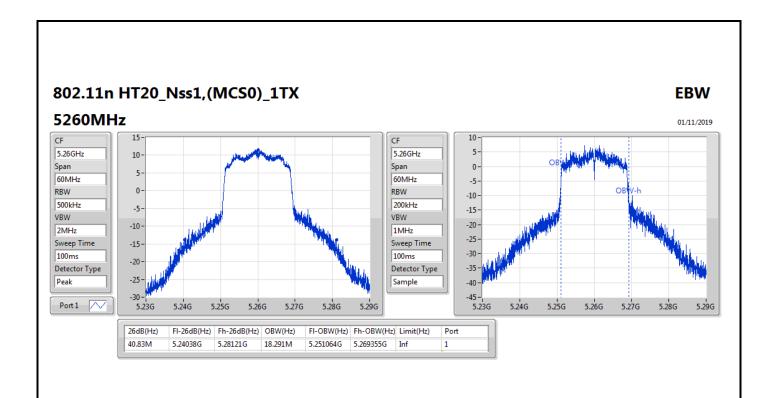
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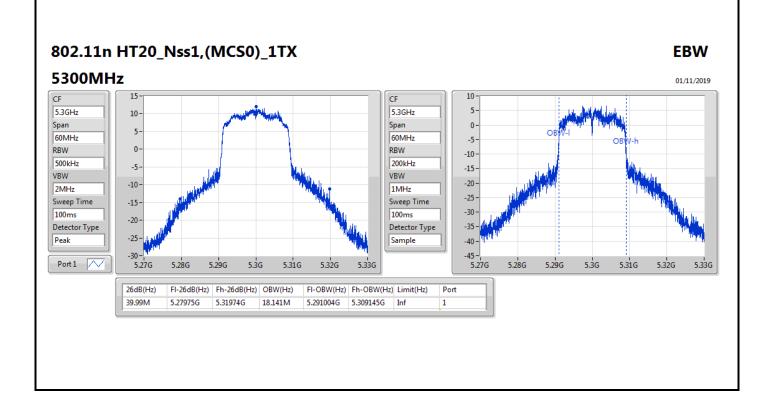
Appendix A



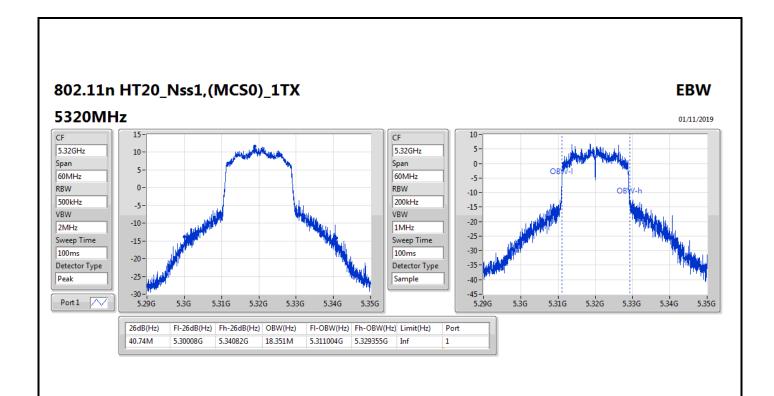


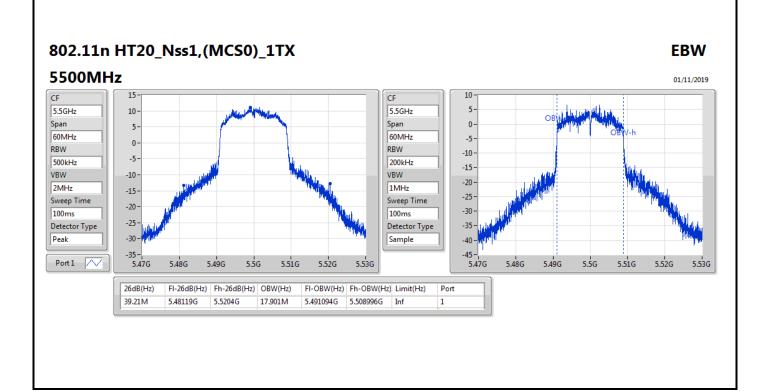




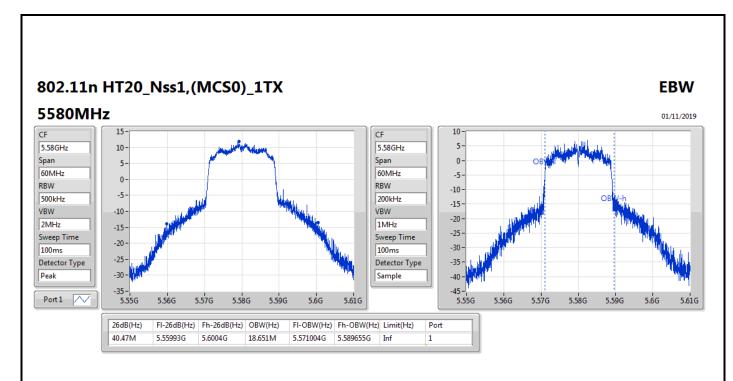


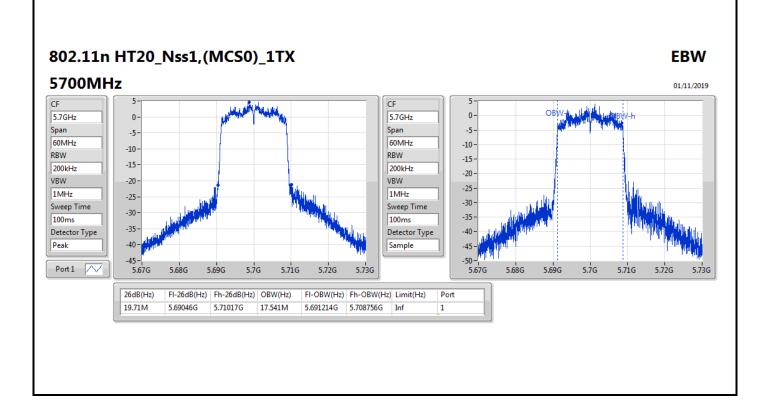




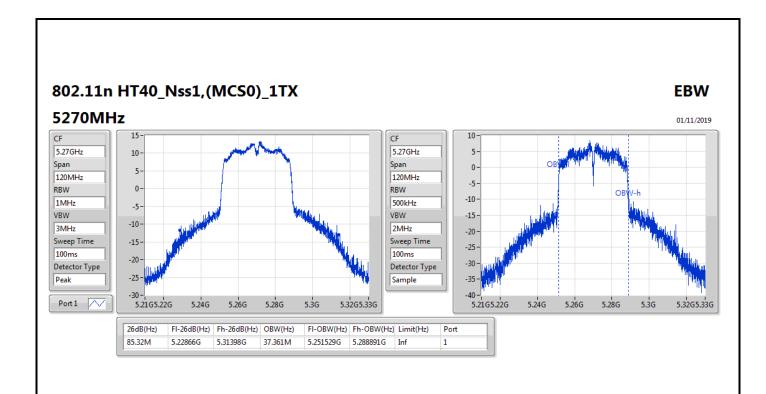


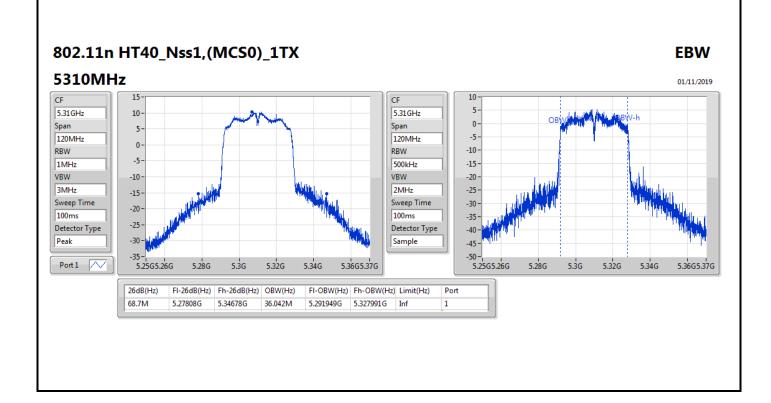
Appendix A **EBW**



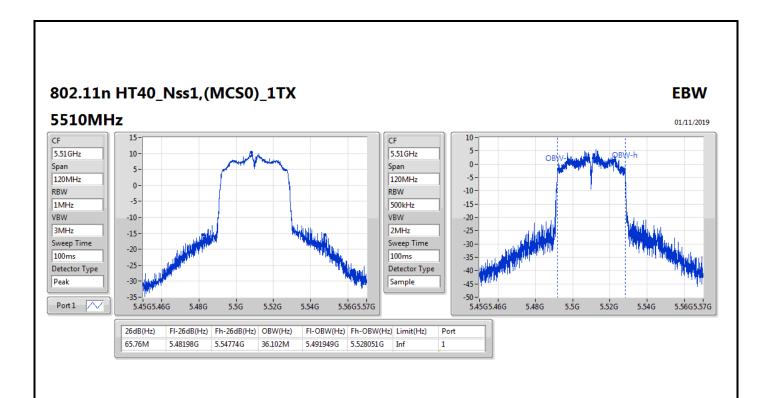


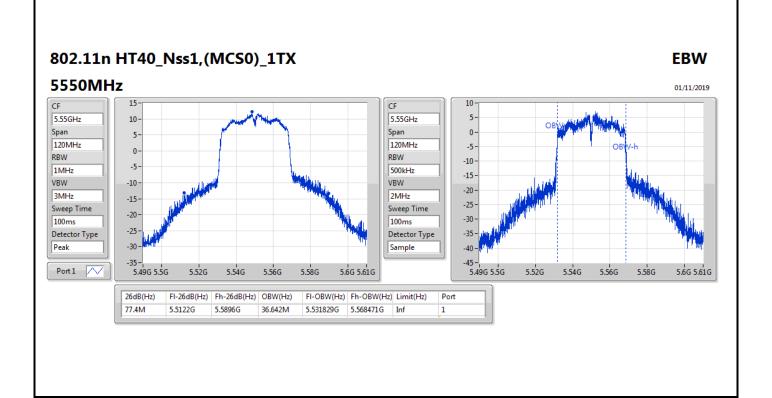




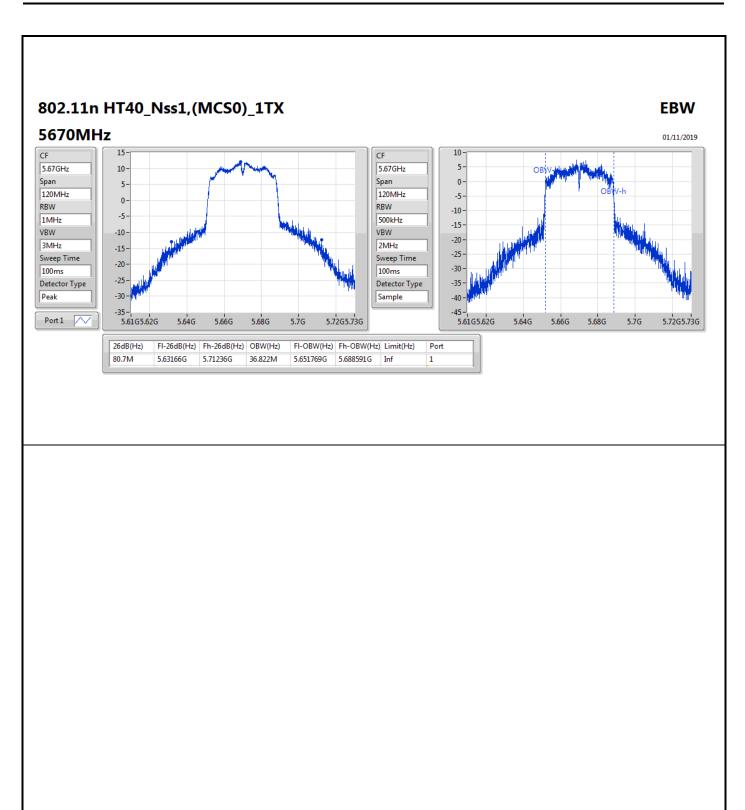














Average Power Appendix B

Summary

Mode	Total Power	Total Power	EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
5.25-5.35GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	17.84	0.06081	19.27	0.08453
802.11n HT20_Nss1,(MCS0)_1TX	17.72	0.05916	19.08	0.08091
802.11n HT40_Nss1,(MCS0)_1TX	18.05	0.06383	18.87	0.07709
5.47-5.725GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	17.50	0.05623	20.08	0.10186
802.11n HT20_Nss1,(MCS0)_1TX	17.27	0.05333	19.85	0.09661
802.11n HT40_Nss1,(MCS0)_1TX	17.22	0.05272	19.71	0.09354

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Average Power Appendix B

Result

Mode	Result	DG	Port 1	Total Power	Power Limit	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
5260MHz	Pass	0.82	17.84	17.84	23.98	18.66	26.99
5300MHz	Pass	1.43	17.84	17.84	23.98	19.27	26.99
5320MHz	Pass	1.43	17.73	17.73	23.98	19.16	26.99
5500MHz	Pass	1.62	17.53	17.53	23.98	19.15	26.99
5580MHz	Pass	2.58	17.50	17.50	23.98	20.08	26.99
5700MHz	Pass	2.49	13.64	13.64	23.76	16.13	26.99
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5260MHz	Pass	0.82	17.72	17.72	23.98	18.54	26.99
5300MHz	Pass	1.43	17.65	17.65	23.98	19.08	26.99
5320MHz	Pass	1.43	17.58	17.58	23.98	19.01	26.99
5500MHz	Pass	1.62	17.11	17.11	23.98	18.73	26.99
5580MHz	Pass	2.58	17.27	17.27	23.98	19.85	26.99
5700MHz	Pass	2.49	14.21	14.21	23.95	16.70	26.99
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5270MHz	Pass	0.82	18.05	18.05	23.98	18.87	26.99
5310MHz	Pass	1.43	15.47	15.47	23.98	16.90	26.99
5510MHz	Pass	1.62	15.06	15.06	23.98	16.68	26.99
5550MHz	Pass	2.58	16.81	16.81	23.98	19.39	26.99
5670MHz	Pass	2.49	17.22	17.22	23.98	19.71	26.99

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

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PSD Appendix C

Summary

Mode	PD	EIRP PD
	(dBm/RBW)	(dBm/RBW)
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_1TX	5.60	7.00
802.11n HT20_Nss1,(MCS0)_1TX	5.29	6.69
802.11n HT40_Nss1,(MCS0)_1TX	2.93	3.75
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_1TX	5.27	7.85
802.11n HT20_Nss1,(MCS0)_1TX	5.03	7.61
802.11n HT40_Nss1,(MCS0)_1TX	2.11	4.60

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

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Appendix C **PSD**

Result

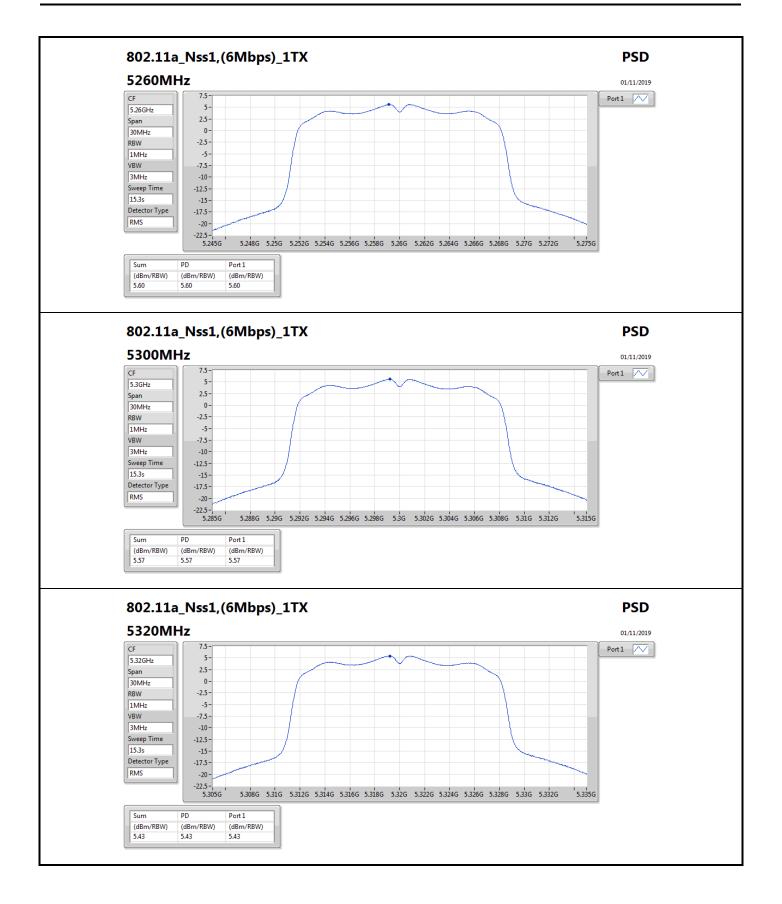
Mode	Result	DG	Port 1	PD	PD Limit	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a_Nss1,(6Mbps)_1TX	=	-	-	-	-	-	-
5260MHz	Pass	0.82	5.60	5.60	11.00	6.42	17.00
5300MHz	Pass	1.43	5.57	5.57	11.00	7.00	17.00
5320MHz	Pass	1.43	5.43	5.43	11.00	6.86	17.00
5500MHz	Pass	1.62	5.24	5.24	11.00	6.86	17.00
5580MHz	Pass	2.58	5.27	5.27	11.00	7.85	17.00
5700MHz	Pass	2.49	1.36	1.36	11.00	3.85	17.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5260MHz	Pass	0.82	5.29	5.29	11.00	6.11	17.00
5300MHz	Pass	1.43	5.26	5.26	11.00	6.69	17.00
5320MHz	Pass	1.43	5.16	5.16	11.00	6.59	17.00
5500MHz	Pass	1.62	4.62	4.62	11.00	6.24	17.00
5580MHz	Pass	2.58	5.03	5.03	11.00	7.61	17.00
5700MHz	Pass	2.49	1.82	1.82	11.00	4.31	17.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5270MHz	Pass	0.82	2.93	2.93	11.00	3.75	17.00
5310MHz	Pass	1.43	0.41	0.41	11.00	1.84	17.00
5510MHz	Pass	1.62	-0.09	-0.09	11.00	1.53	17.00
5550MHz	Pass	2.58	1.72	1.72	11.00	4.30	17.00
5670MHz	Pass	2.49	2.11	2.11	11.00	4.60	17.00

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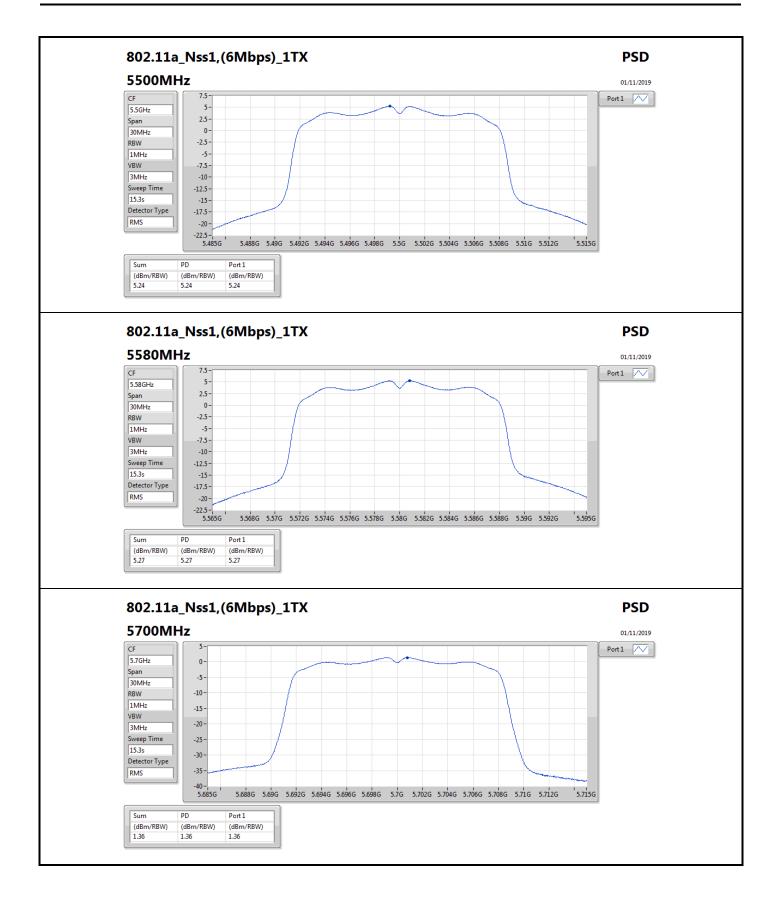
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DG = Directional Gain; **RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band; **PD** = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

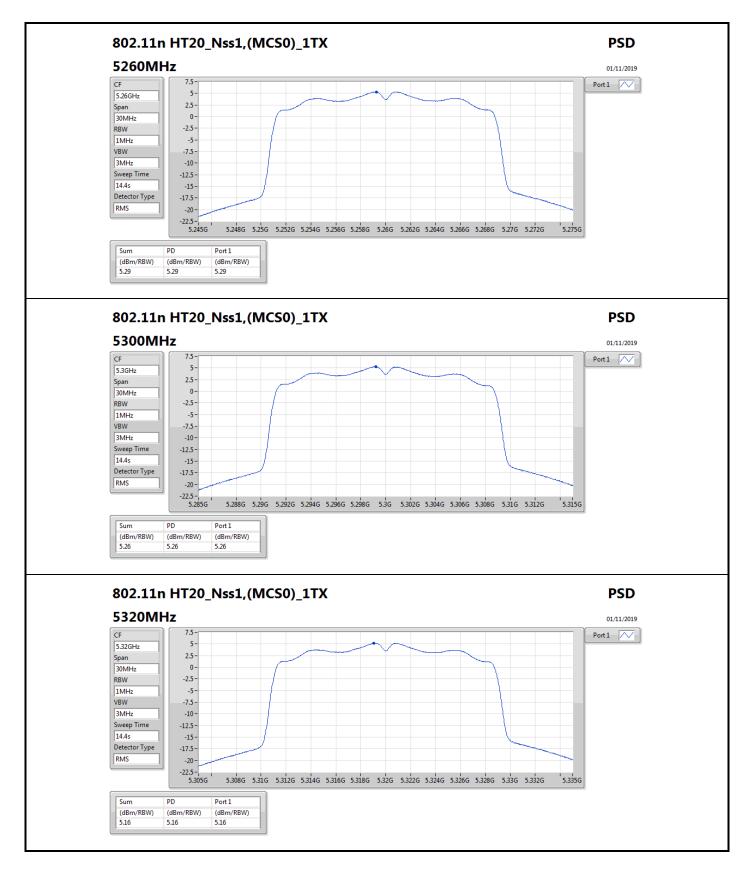
PSD



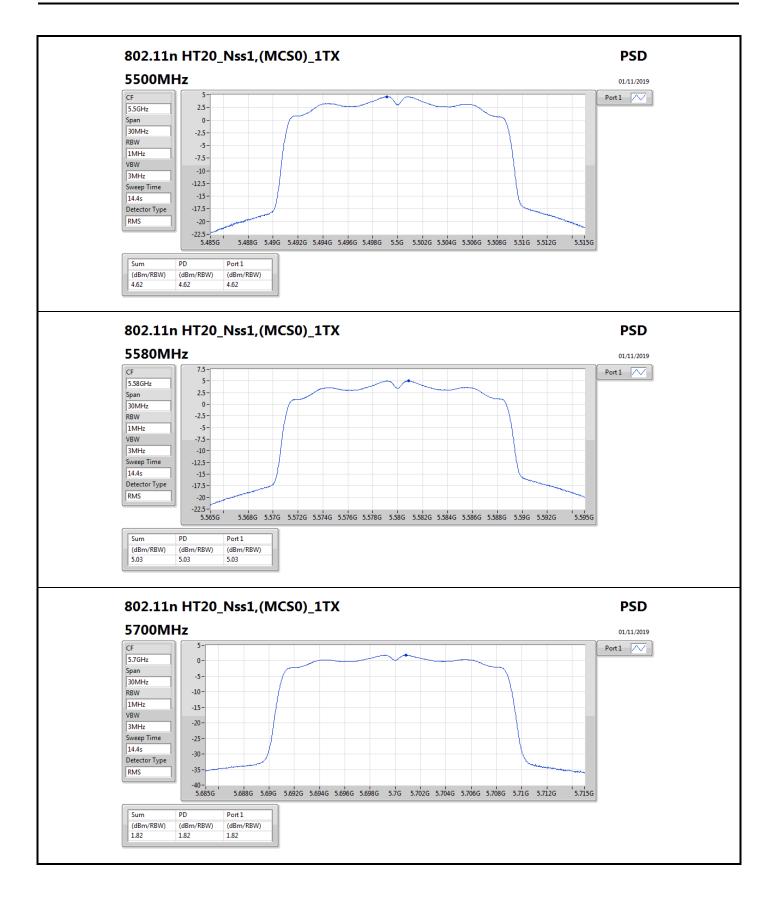




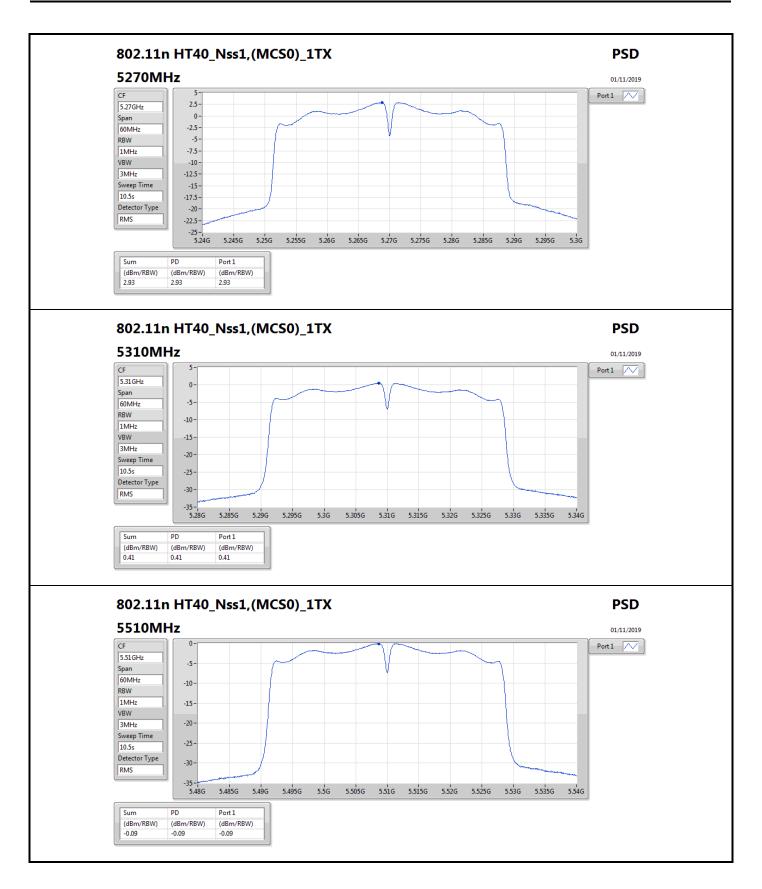




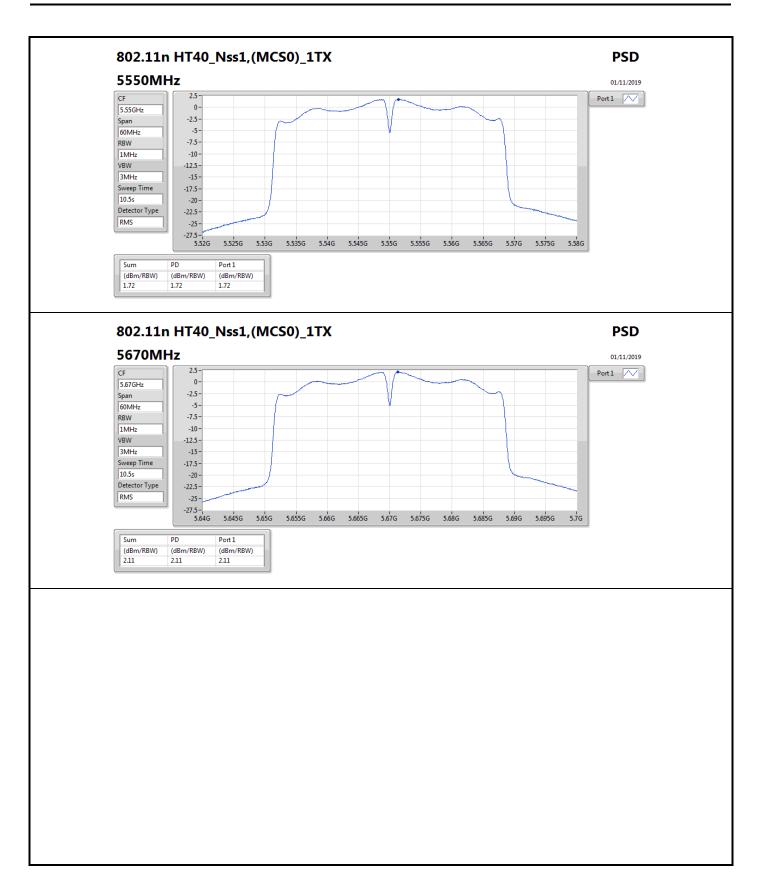




Appendix C **PSD**



PSD





RSE TX above 1GHz Appendix D

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5.25-5.35GHz	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	Pass	AV	5.35G	51.79	54.00	-2.21	3	Horizontal	346	1.02	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	5.35G	52.36	54.00	-1.64	3	Horizontal	337	1.00	-
802.11n HT40_Nss1,(MCS0)_1TX	Pass	AV	5.3516G	53.68	54.00	-0.32	3	Vertical	6	1.00	-
5.47-5.725GHz	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	Pass	PK	5.4698G	67.98	68.20	-0.22	3	Vertical	14	1.01	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	PK	5.4692G	67.86	68.20	-0.34	3	Vertical	9	1.00	-
802.11n HT40_Nss1,(MCS0)_1TX	Pass	PK	5.7264G	67.87	68.20	-0.33	3	Horizontal	172	3.00	-

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Appendix D



Result

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	AV	5.1262G	48.60	54.00	-5.40	3	Vertical	273	1.49	-
5260MHz	Pass	AV	5.2606G	90.23	Inf	-Inf	3	Vertical	273	1.49	-
5260MHz	Pass	AV	5.368G	47.22	54.00	-6.78	3	Vertical	273	1.49	-
5260MHz	Pass	PK	5.1172G	61.79	74.00	-12.21	3	Vertical	273	1.49	-
5260MHz	Pass	PK	5.26G	99.95	Inf	-Inf	3	Vertical	273	1.49	-
5260MHz	Pass	PK	5.3776G	59.50	74.00	-14.50	3	Vertical	273	1.49	-
5260MHz	Pass	AV	5.1274G	48.68	54.00	-5.32	3	Horizontal	337	1.50	-
5260MHz	Pass	AV	5.2606G	90.93	Inf	-Inf	3	Horizontal	337	1.50	-
5260MHz	Pass	AV	5.4052G	47.28	54.00	-6.72	3	Horizontal	337	1.50	-
5260MHz	Pass	PK	5.1388G	61.18	74.00	-12.82	3	Horizontal	337	1.50	-
5260MHz	Pass	PK	5.26G	100.53	Inf	-Inf	3	Horizontal	337	1.50	-
5260MHz	Pass	PK	5.3854G	59.93	74.00	-14.07	3	Horizontal	337	1.50	-
5260MHz	Pass	PK	10.52612G	59.97	68.20	-8.23	3	Vertical	292	1.50	-
5260MHz	Pass	PK	10.51956G	60.21	68.20	-7.99	3	Horizontal	116	1.50	-
5300MHz	Pass	AV	5.3004G	90.84	Inf	-Inf	3	Vertical	264	1.50	-
5300MHz	Pass	AV	5.3568G	47.85	54.00	-6.15	3	Vertical	264	1.50	-
5300MHz	Pass	PK	5.2988G	100.03	Inf	-Inf	3	Vertical	264	1.50	-
5300MHz	Pass	PK	5.3512G	61.31	74.00	-12.69	3	Vertical	264	1.50	-
5300MHz	Pass	AV	5.2992G	92.30	Inf	-Inf	3	Horizontal	353	1.00	-
5300MHz	Pass	AV	5.3544G	47.97	54.00	-6.03	3	Horizontal	353	1.00	-
5300MHz	Pass	PK	5.2992G	101.27	Inf	-Inf	3	Horizontal	353	1.00	-
5300MHz	Pass	PK	5.3528G	61.71	74.00	-12.29	3	Horizontal	353	1.00	-
5300MHz	Pass	PK	10.5919G	59.53	68.20	-8.67	3	Vertical	280	1.12	-
5300MHz	Pass	PK	10.59598G	59.72	68.20	-8.48	3	Horizontal	229	1.50	-
5320MHz	Pass	AV	5.319G	91.51	Inf	-Inf	3	Vertical	8	1.50	-
5320MHz	Pass	AV	5.3508G	51.54	54.00	-2.46	3	Vertical	8	1.50	-
5320MHz	Pass	PK	5.3184G	101.07	Inf	-Inf	3	Vertical	8	1.50	-
5320MHz	Pass	PK	5.3526G	66.86	74.00	-7.14	3	Vertical	8	1.50	-
5320MHz	Pass	AV	5.3212G	92.54	Inf	-Inf	3	Horizontal	346	1.02	-
5320MHz	Pass	AV	5.35G	51.79	54.00	-2.21	3	Horizontal	346	1.02	-
5320MHz	Pass	PK	5.3196G	101.74	Inf	-Inf	3	Horizontal	346	1.02	-
5320MHz	Pass	PK	5.35G	67.09	74.00	-6.91	3	Horizontal	346	1.02	-
5320MHz	Pass	AV	10.6385G	47.32	54.00	-6.68	3	Vertical	211	2.27	-
5320MHz	Pass	PK	10.62602G	60.08	74.00	-13.92	3	Vertical	211	2.27	-
5320MHz	Pass	AV	10.64096G	47.06	54.00	-6.94	3	Horizontal	237	2.14	-
5320MHz	Pass	PK	10.64324G	60.42	74.00	-13.58	3	Horizontal	237	2.14	-
5500MHz	Pass	AV	5.4586G	51.17	54.00	-2.83	3	Vertical	14	1.01	-
5500MHz	Pass	AV	5.5008G	97.01	Inf	-Inf	3	Vertical	14	1.01	-
5500MHz	Pass	PK	5.4558G	66.21	74.00	-7.79	3	Vertical	14	1.01	-
5500MHz	Pass	PK	5.4698G	67.98	68.20	-0.22	3	Vertical	14	1.01	-
5500MHz	Pass	PK	5.4996G	106.33	Inf	-Inf	3	Vertical	14	1.01	-
5500MHz	Pass	AV	5.4548G	49.70	54.00	-4.30	3	Horizontal	123	2.58	-
5500MHz	Pass	AV	5.5006G	93.01	Inf	-Inf	3	Horizontal	123	2.58	-
5500MHz	Pass	PK	5.457G	64.35	74.00	-9.65	3	Horizontal	123	2.58	-
5500MHz	Pass	PK	5.4664G	64.26	68.20	-3.94	3	Horizontal	123	2.58	-
5500MHz	Pass	PK	5.499G	102.49	Inf	-Inf	3	Horizontal	123	2.58	-
5500MHz	Pass	AV	11.00714G	48.01	54.00	-5.99	3	Vertical	28	1.50	-

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Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
inode	Result	Туре	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)	Condition	(°)	(m)	Comments
5500MHz	Pass	PK	11.00444G	,	,	-12.88	3	Vertical			
5500MHz	Pass	AV	11.00444G	61.12 48.15	74.00 54.00	-5.85	3	Horizontal	28 85	1.50 1.50	-
5500MHz	Pass	PK	10.98974G	61.20	74.00	-12.80	3	Horizontal	85	1.50	-
						-	3				-
5580MHz	Pass	AV	5.4486G	47.47	54.00	-6.53		Vertical	17	1.01	-
5580MHz	Pass	AV	5.5806G	99.25	Inf	-Inf	3	Vertical	17	1.01	-
5580MHz	Pass	PK	5.466G	59.61	68.20	-8.59	3	Vertical	17	1.01	-
5580MHz	Pass	PK	5.5806G	108.26	Inf	-Inf	3	Vertical	17	1.01	-
5580MHz	Pass	PK	5.7294G	60.30	68.20	-7.90	3	Vertical	17	1.01	-
5580MHz	Pass	AV	5.4594G	47.30	54.00	-6.70	3	Horizontal	187	2.57	-
5580MHz	Pass	AV	5.5794G	96.95	Inf	-Inf	3	Horizontal	187	2.57	-
5580MHz	Pass	PK	5.4684G	59.84	68.20	-8.36	3	Horizontal	187	2.57	-
5580MHz	Pass	PK	5.5806G	106.18	Inf	-Inf	3	Horizontal	187	2.57	-
5580MHz	Pass	PK	5.7252G	59.89	68.20	-8.31	3	Horizontal	187	2.57	-
5580MHz	Pass	AV	11.16426G	48.45	54.00	-5.55	3	Vertical	253	2.90	-
5580MHz	Pass	PK	11.16342G	60.60	74.00	-13.40	3	Vertical	253	2.90	-
5580MHz	Pass	AV	11.1582G	48.18	54.00	-5.82	3	Horizontal	351	1.50	-
5580MHz	Pass	PK	11.15484G	60.84	74.00	-13.16	3	Horizontal	351	1.50	-
5700MHz	Pass	AV	5.7008G	95.31	Inf	-Inf	3	Vertical	21	1.01	-
5700MHz	Pass	PK	5.7002G	104.47	Inf	-Inf	3	Vertical	21	1.01	-
5700MHz	Pass	PK	5.726G	67.63	68.20	-0.57	3	Vertical	21	1.01	-
5700MHz	Pass	AV	5.7008G	93.02	Inf	-Inf	3	Horizontal	173	3.00	-
5700MHz	Pass	PK	5.7006G	102.64	Inf	-Inf	3	Horizontal	173	3.00	-
5700MHz	Pass	PK	5.7258G	66.85	68.20	-1.35	3	Horizontal	173	3.00	-
5700MHz	Pass	AV	11.39436G	47.42	54.00	-6.58	3	Vertical	5	1.61	-
5700MHz	Pass	PK	11.39808G	61.02	74.00	-12.98	3	Vertical	5	1.61	-
5700MHz	Pass	AV	11.39556G	47.53	54.00	-6.47	3	Horizontal	120	2.75	-
5700MHz	Pass	PK	11.41008G	60.97	74.00	-13.03	3	Horizontal	120	2.75	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	AV	5.1124G	48.40	54.00	-5.60	3	Vertical	273	1.58	-
5260MHz	Pass	AV	5.2606G	91.32	Inf	-Inf	3	Vertical	273	1.58	-
5260MHz	Pass	AV	5.4064G	47.04	54.00	-6.96	3	Vertical	273	1.58	-
5260MHz	Pass	PK	5.1496G	60.65	74.00	-13.35	3	Vertical	273	1.58	-
5260MHz	Pass	PK	5.2594G	100.98	Inf	-Inf	3	Vertical	273	1.58	-
5260MHz	Pass	PK	5.356G	59.38	74.00	-14.62	3	Vertical	273	1.58	-
5260MHz	Pass	AV	5.1106G	48.56	54.00	-5.44	3	Horizontal	349	1.00	-
5260MHz	Pass	AV	5.2594G	92.66	Inf	-Inf	3	Horizontal	349	1.00	-
5260MHz	Pass	AV	5.4082G	47.19	54.00	-6.81	3	Horizontal	349	1.00	-
5260MHz	Pass	PK	5.1136G	60.13	74.00	-13.87	3	Horizontal	349	1.00	-
5260MHz	Pass	PK	5.26G	102.82	Inf	-Inf	3	Horizontal	349	1.00	-
5260MHz	Pass	PK	5.3662G	59.67	74.00	-14.33	3	Horizontal	349	1.00	-
5260MHz	Pass	PK	10.5347G	59.41	68.20	-8.79	3	Vertical	123	1.64	-
5260MHz	Pass	PK	10.51406G	59.77	68.20	-8.43	3	Horizontal	33	1.00	-
5300MHz	Pass	AV	5.3004G	89.80	Inf	-Inf	3	Vertical	271	1.50	-
5300MHz	Pass	AV	5.3544G	48.32	54.00	-5.68	3	Vertical	271	1.50	-
5300MHz	Pass	PK	5.3048G	99.50	Inf	-Inf	3	Vertical	271	1.50	-
5300MHz	Pass	PK	5.3532G	60.93	74.00	-13.07	3	Vertical	271	1.50	-
5300MHz	Pass	AV	5.2988G	91.66	Inf	-Inf	3	Horizontal	347	1.00	-
5300MHz	Pass	AV	5.35G	48.23	54.00	-5.77	3	Horizontal	347	1.00	-
5300MHz	Pass	PK	5.3G	101.37	Inf	-Inf	3	Horizontal	347	1.00	-

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RSE TX above 1GHz

Appendix D

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5300MHz	Pass	PK	5.352G	62.25	74.00	-11.75	3	Horizontal	347	1.00	-
5300MHz	Pass	PK	10.59604G	60.40	68.20	-7.80	3	Vertical	304	1.50	-
5300MHz	Pass	PK	10.58938G	60.16	68.20	-8.04	3	Horizontal	151	1.50	-
5320MHz	Pass	AV	5.3206G	91.20	Inf	-Inf	3	Vertical	274	1.50	-
5320MHz	Pass	AV	5.3506G	52.14	54.00	-1.86	3	Vertical	274	1.50	-
5320MHz	Pass	PK	5.3216G	100.17	Inf	-Inf	3	Vertical	274	1.50	-
5320MHz	Pass	PK	5.3502G	65.10	74.00	-8.90	3	Vertical	274	1.50	-
5320MHz	Pass	AV	5.3192G	91.91	Inf	-Inf	3	Horizontal	337	1.00	-
5320MHz	Pass	AV	5.35G	52.36	54.00	-1.64	3	Horizontal	337	1.00	-
5320MHz	Pass	PK	5.3204G	100.96	Inf	-Inf	3	Horizontal	337	1.00	-
5320MHz	Pass	PK	5.3504G	66.80	74.00	-7.20	3	Horizontal	337	1.00	-
5320MHz	Pass	AV	10.64888G	47.10	54.00	-6.90	3	Vertical	9	1.18	-
5320MHz	Pass	PK	10.6361G	60.14	74.00	-13.86	3	Vertical	9	1.18	-
5320MHz	Pass	AV	10.63724G	47.39	54.00	-6.61	3	Horizontal	359	2.56	-
5320MHz	Pass	PK	10.64486G	61.04	74.00	-12.96	3	Horizontal	359	2.56	-
5500MHz	Pass	AV	5.4584G	51.34	54.00	-2.66	3	Vertical	9	1.00	-
5500MHz	Pass	AV	5.499G	96.31	Inf	-Inf	3	Vertical	9	1.00	-
5500MHz	Pass	PK	5.4692G	67.86	68.20	-0.34	3	Vertical	9	1.00	-
5500MHz	Pass	PK	5.4994G	105.60	Inf	-Inf	3	Vertical	9	1.00	-
5500MHz	Pass	AV	5.4572G	49.65	54.00	-4.35	3	Horizontal	107	3.00	-
5500MHz	Pass	AV	5.4994G	92.58	Inf	-Inf	3	Horizontal	107	3.00	-
5500MHz	Pass	PK	5.4698G	65.83	68.20	-2.37	3	Horizontal	107	3.00	-
5500MHz	Pass	PK	5.5012G	101.34	Inf	-Inf	3	Horizontal	107	3.00	-
5500MHz	Pass	PK	11.01224G	60.99	74.00	-13.01	3	Vertical	71	1.50	-
5500MHz	Pass	AV	11.01404G	48.29	54.00	-5.71	3	Vertical	71	1.50	-
5500MHz	Pass	AV	11.015G	48.22	54.00	-5.78	3	Vertical	37	1.50	-
5500MHz	Pass	PK	11.00786G	60.64	74.00	-13.36	3	Vertical	37	1.50	-
5580MHz	Pass	AV	5.4486G	47.45	54.00	-6.55	3	Vertical	10	1.01	-
5580MHz	Pass	AV	5.5806G	98.22	Inf	-Inf	3	Vertical	10	1.01	-
5580MHz	Pass	PK	5.4618G	59.14	68.20	-9.06	3	Vertical	10	1.01	-
5580MHz	Pass	PK	5.58G	108.27	Inf	-Inf	3	Vertical	10	1.01	-
5580MHz	Pass	PK	5.7294G	60.44	68.20	-7.76	3	Vertical	10	1.01	-
5580MHz	Pass	AV	5.4318G	47.28	54.00	-6.72	3	Horizontal	188	2.43	-
5580MHz	Pass	AV	5.5806G	95.77	Inf	-Inf	3	Horizontal	188	2.43	-
5580MHz	Pass	PK	5.4684G	59.41	68.20	-8.79	3	Horizontal	188	2.43	-
5580MHz	Pass	PK	5.58G	105.27	Inf	-Inf	3	Horizontal	188	2.43	-
5580MHz	Pass	PK	5.7258G	60.09	68.20	-8.11	3	Horizontal	188	2.43	-
5580MHz	Pass	AV	11.16066G	48.38	54.00	-5.62	3	Vertical	241	2.92	-
5580MHz	Pass	PK	11.1525G	62.25	74.00	-11.75	3	Vertical	241	2.92	-
5580MHz	Pass	AV	11.1591G	48.35	54.00	-5.65	3	Horizontal	0	1.96	-
5580MHz	Pass	PK	11.15868G	61.27	74.00	-12.73	3	Horizontal	0	1.96	-
5700MHz	Pass	AV	5.7008G	94.79	Inf	-Inf	3	Vertical	24	1.01	-
5700MHz	Pass	PK	5.702G	103.61	Inf	-Inf	3	Vertical	24	1.01	-
5700MHz	Pass	PK	5.7256G	67.85	68.20	-0.35	3	Vertical	24	1.01	-
5700MHz	Pass	AV	5.6996G	94.03	Inf	-Inf	3	Horizontal	171	3.00	-
5700MHz	Pass	PK	5.7G	103.39	Inf	-Inf	3	Horizontal	171	3.00	-
5700MHz	Pass	PK	5.726G	66.91	68.20	-1.29	3	Horizontal	171	3.00	-
5700MHz	Pass	AV	11.41134G	47.72	54.00	-6.28	3	Vertical	0	1.48	-
5700MHz	Pass	PK	11.39568G	60.33	74.00	-13.67	3	Vertical	0	1.48	-
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Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5700MHz	Pass	AV	11.4096G	47.45	54.00	-6.55	3	Horizontal	257	1.50	-
5700MHz	Pass	PK	11.39058G	60.65	74.00	-13.35	3	Horizontal	257	1.50	-
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	AV	5.268G	90.00	Inf	-Inf	3	Vertical	282	2.38	-
5270MHz	Pass	AV	5.3588G	48.44	54.00	-5.56	3	Vertical	282	2.38	-
5270MHz	Pass	PK	5.2716G	98.92	Inf	-Inf	3	Vertical	282	2.38	-
5270MHz	Pass	PK	5.3532G	60.11	74.00	-13.89	3	Vertical	282	2.38	-
5270MHz	Pass	AV	5.2716G	90.60	Inf	-Inf	3	Horizontal	351	1.00	-
5270MHz	Pass	AV	5.3524G	48.10	54.00	-5.90	3	Horizontal	351	1.00	-
5270MHz	Pass	PK	5.2716G	98.89	Inf	-Inf	3	Horizontal	351	1.00	-
5270MHz	Pass	PK	5.3516G	59.41	74.00	-14.59	3	Horizontal	351	1.00	-
5270MHz	Pass	PK	10.534G	59.57	68.20	-8.63	3	Vertical	55	1.50	-
5270MHz	Pass	PK	10.53454G	59.93	68.20	-8.27	3	Horizontal	82	2.83	-
5310MHz	Pass	AV	5.3124G	88.23	Inf	-Inf	3	Vertical	6	1.00	-
5310MHz	Pass	AV	5.3516G	53.68	54.00	-0.32	3	Vertical	6	1.00	-
5310MHz	Pass	PK	5.3116G	97.11	Inf	-Inf	3	Vertical	6	1.00	-
5310MHz	Pass	PK	5.352G	70.41	74.00	-3.59	3	Vertical	6	1.00	-
5310MHz	Pass	AV	5.3112G	88.71	Inf	-Inf	3	Horizontal	336	1.00	-
5310MHz	Pass	AV	5.3504G	53.36	54.00	-0.64	3	Horizontal	336	1.00	-
5310MHz	Pass	PK	5.3112G	97.04	Inf	-Inf	3	Horizontal	336	1.00	-
5310MHz	Pass	PK	5.3516G	68.70	74.00	-5.30	3	Horizontal	336	1.00	-
5310MHz	Pass	AV	10.61718G	47.59	54.00	-6.41	3	Vertical	72	2.43	-
5310MHz	Pass	PK	10.62234G	59.71	74.00	-14.29	3	Vertical	72	2.43	-
5310MHz	Pass	AV	10.6218G	47.67	54.00	-6.33	3	Horizontal	131	1.50	-
5310MHz	Pass	PK	10.61346G	59.86	74.00	-14.14	3	Horizontal	131	1.50	-
5510MHz	Pass	AV	5.46G	50.36	54.00	-3.64	3	Vertical	16	1.50	-
5510MHz	Pass	AV	5.5116G	90.62	Inf	-Inf	3	Vertical	16	1.50	-
5510MHz	Pass	PK	5.4692G	67.62	68.20	-0.58	3	Vertical	16	1.50	-
5510MHz	Pass	PK	5.5116G	99.88	Inf	-Inf	3	Vertical	16	1.50	-
5510MHz	Pass	AV	5.4584G	49.98	54.00	-4.02	3	Horizontal	184	2.63	-
5510MHz	Pass	AV	5.5116G	90.76	Inf	-Inf	3	Horizontal	184	2.63	-
5510MHz	Pass	PK	5.4688G	66.82	68.20	-1.38	3	Horizontal	184	2.63	-
5510MHz	Pass	PK	5.5084G	99.76	Inf	-Inf	3	Horizontal	184	2.63	-
5510MHz	Pass	AV	11.02864G	48.74	54.00	-5.26	3	Vertical	0	1.95	-
5510MHz	Pass	PK	11.00938G	61.32	74.00	-12.68	3	Vertical	0	1.95	-
5510MHz	Pass	AV	11.02774G	48.73	54.00	-5.27	3	Horizontal	4	1.50	-
5510MHz	Pass	PK	11.00722G	61.33	74.00	-12.67	3	Horizontal	4	1.50	-
5550MHz	Pass	AV	5.4596G	49.11	54.00	-4.89	3	Vertical	13	1.01	-
5550MHz	Pass	AV	5.5512G	95.00	Inf	-Inf	3	Vertical	13	1.01	-
5550MHz	Pass	PK	5.4664G	61.05	68.20	-7.15	3	Vertical	13	1.01	-
5550MHz	Pass	PK	5.5516G	104.08	Inf	-Inf	3	Vertical	13	1.01	-
5550MHz	Pass	AV	5.4536G	48.81	54.00	-5.19	3	Horizontal	184	2.59	-
5550MHz	Pass	AV	5.548G	92.66	Inf	-Inf	3	Horizontal	184	2.59	-
5550MHz	Pass	PK	5.468G	60.56	68.20	-7.64	3	Horizontal	184	2.59	-
5550MHz	Pass	PK	5.5516G	101.77	Inf	-Inf	3	Horizontal	184	2.59	-
5550MHz	Pass	AV	11.09052G	48.99	54.00	-5.01	3	Vertical	150	2.63	-
5550MHz	Pass	PK	11.08758G	61.25	74.00	-12.75	3	Vertical	150	2.63	-
5550MHz	Pass	AV	11.09772G	48.97	54.00	-5.03	3	Horizontal	237	1.33	-
5550MHz	Pass	PK	11.1147G	61.06	74.00	-12.94	3	Horizontal	237	1.33	-
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RSE TX above 1GHz

Appendix D

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5670MHz	Pass	AV	5.6718G	95.90	Inf	-Inf	3	Vertical	17	1.02	-
5670MHz	Pass	PK	5.6724G	105.28	Inf	-Inf	3	Vertical	17	1.02	-
5670MHz	Pass	PK	5.7264G	67.62	68.20	-0.58	3	Vertical	17	1.02	-
5670MHz	Pass	AV	5.6688G	95.79	Inf	-Inf	3	Horizontal	172	3.00	-
5670MHz	Pass	PK	5.673G	104.63	Inf	-Inf	3	Horizontal	172	3.00	-
5670MHz	Pass	PK	5.7264G	67.87	68.20	-0.33	3	Horizontal	172	3.00	-
5670MHz	Pass	AV	11.34408G	48.30	54.00	-5.70	3	Vertical	61	2.91	-
5670MHz	Pass	PK	11.33742G	59.89	74.00	-14.11	3	Vertical	61	2.91	-
5670MHz	Pass	AV	11.34G	48.32	54.00	-5.68	3	Horizontal	1	1.99	-
5670MHz	Pass	PK	11.33832G	60.23	74.00	-13.77	3	Horizontal	1	1.99	-

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