





# **FCC Test Report**

FCC ID : 2AEUPBHASC051

Equipment : Stick Up Cam Wired

**Brand Name** : RING

**Model Name** : Stick Up Cam Wired

**Applicant** : Ring LLC

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

Manufacturer : Chicony Electronics Co.,Ltd.

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 Jun. 01, 2018, and testing was started from Oct. 27, 2019 and completed on Nov. 06, 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: 2AEUPBHASC051

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

APPENDIX B. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER

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APPENDIX D. TEST RESULTS OF UNWANTED EMISSIONS

**APPENDIX E. TEST PHOTOS** 

**PHOTOGRAPHS OF EUT V01** 

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# History of this test report

Report No.	Version	Description	Issued Date
FR852814-05AN	01	Initial issue of report	Nov. 29, 2019

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**Summary of Test Result** 

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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

Report Producer: Debby Hung

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# 1 General Description

# 1.1 Information

# 1.1.1 RF General Information

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)	5270-5310	54-62 [2]
5470-5725		5510-5670	102-134 [5]

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

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# 1.1.2 Antenna Information

Ant.	Port	Brand	Brand Model Name		Connector
1	1	-	Orion Wifi Antenna	PIFA Antenna	Fixed on board

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2	.4G	5	G	E	ЗТ
Frequency (MHz)	Gain (dBi)	Frequency (MHz)	Gain (dBi)	Frequency (MHz)	Gain (dBi)
2412	0.94	5180	2.68	2402	0.94
2417	0.94	5200	2.68	2440	0.69
2422	0.94	5240	2.77	2480	0.10
2427	0.69	5190	2.68	-	-
2432	0.69	5230	2.77	-	-
2437	0.69	5250	2.85	-	-
2442	0.69	5350	2.96	-	-
2447	2447 0.69		3.08	-	-
2452	0.69	5600	3.26	-	-
2457	0.69	5725	2.96	-	-
2462	0.69	5745	3.12	-	-
-	-	5785	2.65	-	-
-	-	5825	1.67	-	-
-	-	5755	3.12	-	-
-	-	5795	2.65	-	-

For 2.4 GHz function:

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

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

For 5 GHz function:

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

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

For Bluetooth function:

For Bluetooth mode (1TX/1RX)

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

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# 1.1.3 EUT Information

	Operational Condition						
EU	Γ Power Type	Fro	From Battery / Transformer				
E115	Γ Function	Outdoor			Indoor		
	runction		Fixed P2P	$\boxtimes$	Client		
Bea	mforming Function		With beamforming	$\boxtimes$	Without beamforming		
TPO	TPC Function		With TPC Function	$\boxtimes$	Without TPC Function		
Wea	ather Band	$\boxtimes$	With 5600~5650MHz		Without 5600~5650MHz		
			Type of EUT				
$\boxtimes$	Stand-alone						
	Combined (EUT where the radio part is fully integrated within another device)						
	Combined Equipment - Brand Name / Model No.:						
	Plug-in radio (EUT intended for a variety of host systems)						
Host System - Brand Name / Model No.:							
	Other:						

# 1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.937	0.28	1.432m	1k
802.11n HT20	0.935	0.29	1.34m	1k
802.11n HT40	0.909	0.41	946.844u	3k

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

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1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR852814-02AN

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

# 1.3 Testing Location Information

	Testing Location								
$\boxtimes$	HWA YA	ADD	:	No. 52, Huaya 1st Rd.,	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 No. TW1190 with FCC.								
	☐ JHUBEI ADD : No.8, Ln. 724, Bo'ai St., Zhubei 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	TH01-HY	Barry Hsiao	25.1~25.4°C / 57~67%	28/Oct/2019~06/Nov/2019
Radiated	03CH02-HY	Lego Lin	22.2~25.6°C / 52.8~55.4%	27/Oct/2019

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# 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	DOS
---------------	-----

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_1TX	-
5260MHz	88
5300MHz	88
5320MHz	64
5500MHz	76
5580MHz	75
5700MHz	61
802.11n HT20_Nss1,(MCS0)_1TX	-
5260MHz	88
5300MHz	88
5320MHz	61
5500MHz	74
5580MHz	74
5700MHz	63
802.11n HT40_Nss1,(MCS0)_1TX	-
5270MHz	88
5310MHz	52
5510MHz	60
5550MHz	88
5670MHz	88

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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 EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.	
1	USB mode	
Operating Mode > 1GHz	CTX	
X Plane		
Orthogonal Planes of EUT		

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# 2.4 Accessories and Support Equipment

Accessories Information				
Indoor Adapter	Brand Name	DEE VAN ENTERPRISE	Model Name	DSA-15CAB-05 050250
indoor Adapter	Power Rating	I/P: 100-240V ~ 0.5A MA	X 50-60Hz; O/	P: 5V===2.5A
USB Cable	Brand Name - Model Name -		-	
USB Cable	Power Rating	2.45 meter, non-shielded	cable, w/o ferr	ite core
	Brand Name	ring	Model Name	DSA-15PFL-05 FUS 050250
Outdoor Adapter	Power Rating	I/P: 100-240V ~ 0.5A MAX 50-60Hz; O/P: 5V === 2.5A		
Outdoor Adapter	DC Power Cord	2.45 meter, non-shielded cable, w/o ferrite core		
	AC Power Cord	4.53 meter, non-shielded	cable, w/o ferr	ite core

Reminder: Regarding to more detail and other information, please refer to user manual.

	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.	No. Equipment Brand Name Model Name FCC ID			
1	Adapter for NB	DELL	LA90PM111	DoC
2	Notebook	DELL	E4300	DoC

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

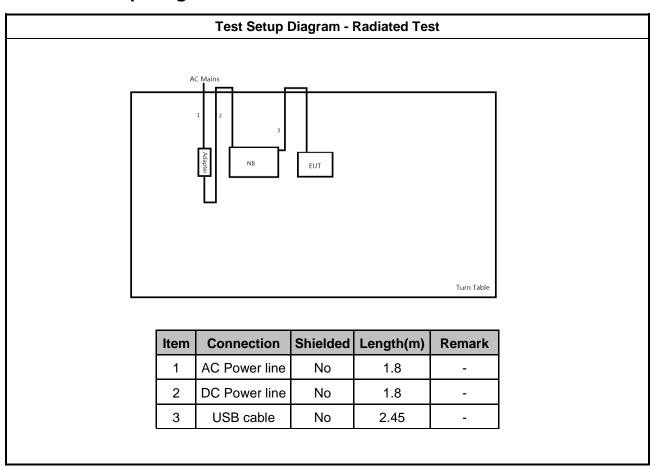
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# 2.5 Test Setup Diagram

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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.		

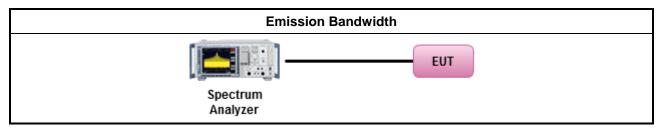
# 3.1.2 Measuring Instruments

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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### **Maximum Conducted Output Power** 3.2

#### 3.2.1 **Maximum Conducted Output Power Limit**

	Maximum Conducted Output Power Limit
UN	II 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 <sub>Out</sub> ) shall not exceed the lesser of 250 mW. If G <sub>TX</sub> > 6 dBi, then P <sub>Out</sub> = 24 - (G <sub>TX</sub> - 6).
$\boxtimes$	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 $P_{Out} = 24 - (G_{TX} - 6)$ .
$\boxtimes$	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 $P_{Out} = 30 - (G_{TX} - 6)$ .
	<ul> <li>Point-to-point systems (P2P): the maximum conducted output power (P<sub>Out</sub>) shall not exceed the lesser of 1 W.</li> </ul>
	t = maximum conducted output power in dBm, = the maximum transmitting antenna directional gain in dBi.

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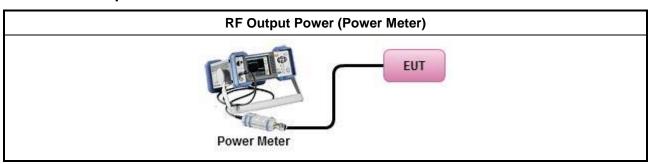
#### 3.2.2 **Measuring Instruments**

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 <sub>total</sub> = P <sub>1</sub> + P <sub>2</sub> + + P <sub>n</sub> (calculated in linear unit [mW] and transfer to log unit [dBm])  EIRP <sub>total</sub> = P <sub>total</sub> + 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						
UN	UNII 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. $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$ .						
	Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. $G_{TX} > 6$ 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 $P_{Out} = 17 - (G_{TX} - 23)$ .						
	<ul> <li>Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G<sub>TX</sub> &gt; 6 dB then PPSD= 11 - (G<sub>TX</sub> - 6)</li> </ul>						
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq$ 11 dBm/MHz. If $G_{TX} > 6$ dB then PPSD= 11 – $(G_{TX} - 6)$ .						
	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) $\leq$ 11 dBm/MHz. If $G_{TX} > 6$ dB 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. $G_{TX} > 6$ dBi, then PPSD= $30 - (G_{TX} - 6)$ .						
	<ul> <li>Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.</li> </ul>						
PP:	SD = peak power spectral density that he same method as used to determine the conducted output						

PPSD = 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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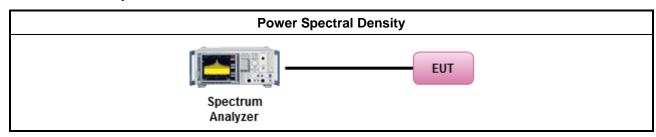
#### 3.3.2 **Measuring Instruments**

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

#### 3.3.3 **Test Procedures**

	Test Method							
•	Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall 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 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)							
•	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 powe spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyze 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 bir 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 <sub>total</sub> = PPSD <sub>1</sub> + PPSD <sub>2</sub> + + PPSD <sub>n</sub> (calculated in linear unit [mW] and transfer to log unit [dBm])  EIRP <sub>total</sub> = PPSD <sub>total</sub> + DG							

#### Test Setup 3.3.4



#### **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)	Frequency Range (MHz) Field Strength (uV/m) Field Strength (dBuV/ı							
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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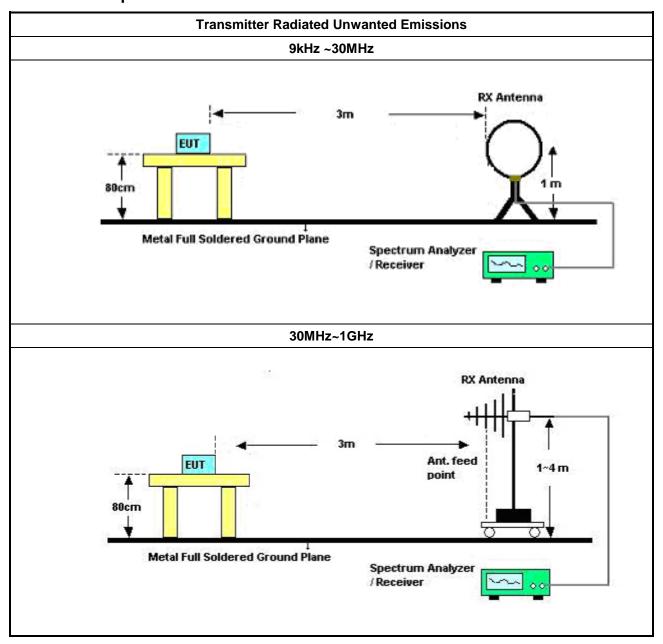
- Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, 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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Above 1GHz

BUT

3M & 1M

1.5M

Max 30cm

Spectrum Analyzer

Report No.: FR852814-05AN

# 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
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP- SD	MAA1112-007	-20 ~ 100℃	21/May/2019	20/May/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	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz	22/Apr/2019	21/Apr/2020
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	13/Jun/2019	12/Jun/2020
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz ~ 26.5GHz	04/Sep/2019	03/Sep/2020
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	07/Aug/2019	06/Aug/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	22/May/2019	21/May/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	22/Mar/2019	21/Mar/2020
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	05/Aug/2019	04/Aug/2020
LF-CABLE-2019 0218	Jye Bao	RG142	CB028	9kHz ~ 1GHz	18/Feb/2019	17/Feb/2020
RF Cable-high	HUBER+SUHNER	SUCOFLEX104	SN 556626/4 + 556627	1GHz ~ 40GHz	13/Mar/2019	12/Mar/2020

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Appendix A **EBW Result** 

**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	39.75M	17.961M	18M0D1D	38.19M	16.882M
802.11n HT20_Nss1,(MCS0)_1TX	41.76M	19.01M	19M0D1D	38.31M	17.691M
802.11n HT40_Nss1,(MCS0)_1TX	81.54M	36.642M	36M6D1D	63.3M	36.042M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	40.2M	19.16M	19M2D1D	22.95M	16.372M
802.11n HT20_Nss1,(MCS0)_1TX	42.48M	18.651M	18M7D1D	24M	17.541M
802.11n HT40_Nss1,(MCS0)_1TX	84.6M	37.481M	37M5D1D	55.74M	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 99% occupied bandwidth;
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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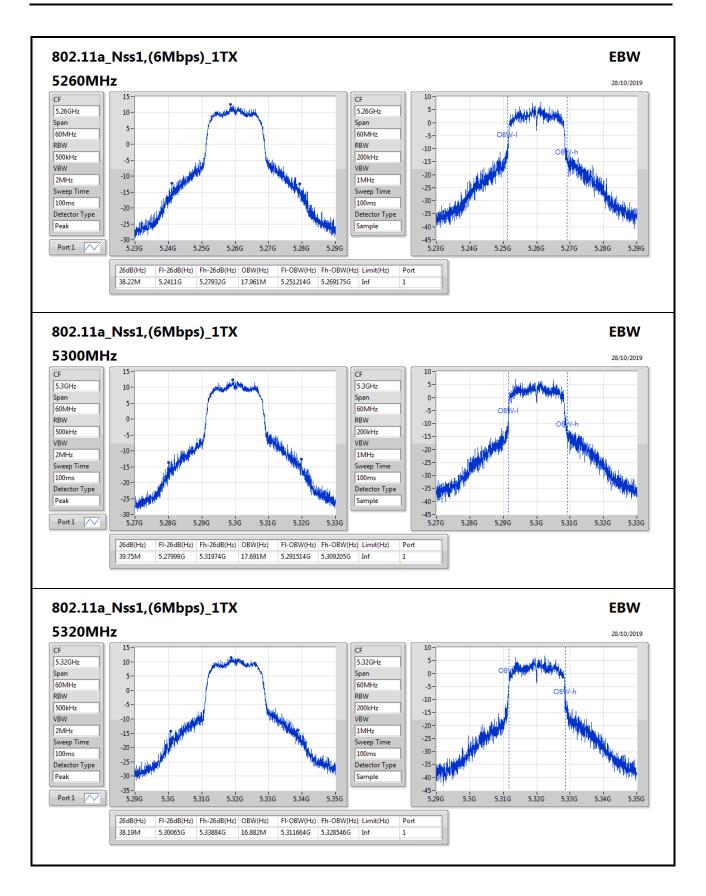
EBW Result Appendix A

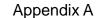
### Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5260MHz	Pass	Inf	38.22M	17.961M
5300MHz	Pass	Inf	39.75M	17.691M
5320MHz	Pass	Inf	38.19M	16.882M
5500MHz	Pass	Inf	40.2M	19.16M
5580MHz	Pass	Inf	40.14M	19.1M
5700MHz	Pass	Inf	22.95M	16.372M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
5260MHz	Pass	Inf	41.76M	18.381M
5300MHz	Pass	Inf	41.76M	19.01M
5320MHz	Pass	Inf	38.31M	17.691M
5500MHz	Pass	Inf	41.73M	18.261M
5580MHz	Pass	Inf	42.48M	18.651M
5700MHz	Pass	Inf	24M	17.541M
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-
5270MHz	Pass	Inf	81.54M	36.642M
5310MHz	Pass	Inf	63.3M	36.042M
5510MHz	Pass	Inf	55.74M	36.102M
5550MHz	Pass	Inf	78.9M	36.762M
5670MHz	Pass	Inf	84.6M	37.481M

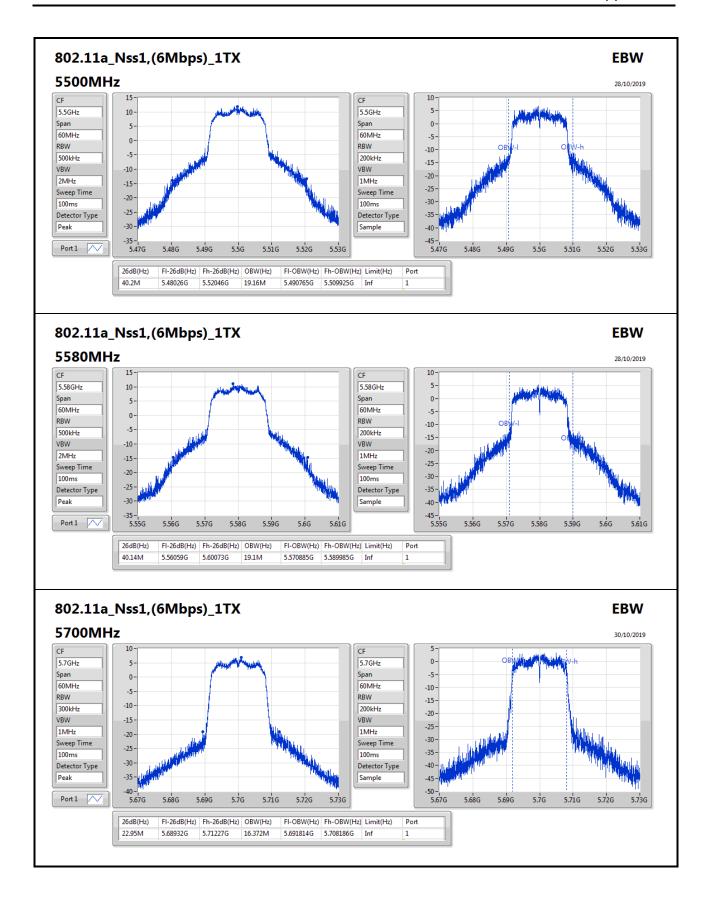
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth;





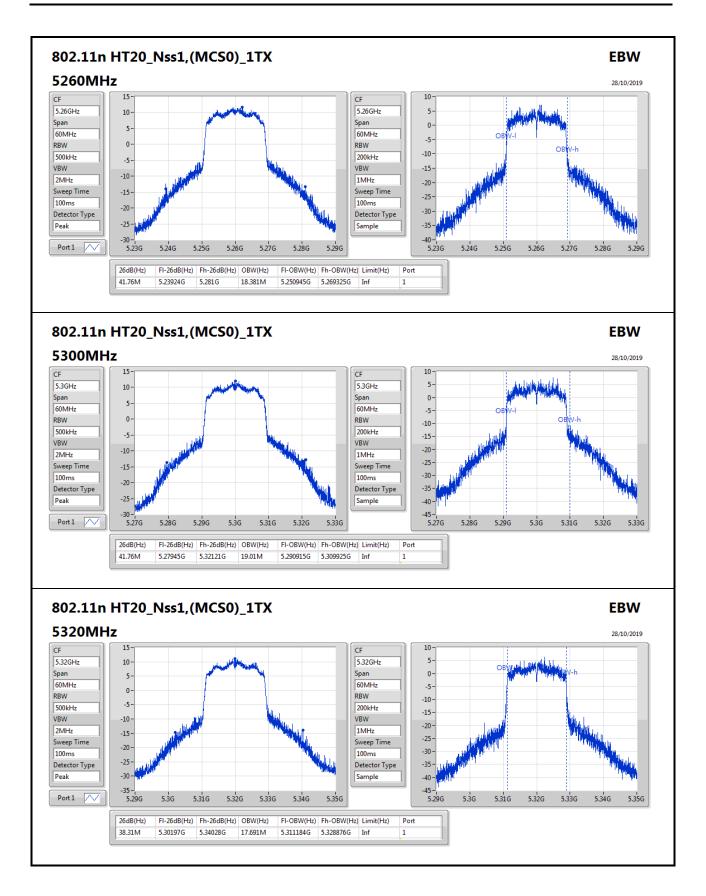




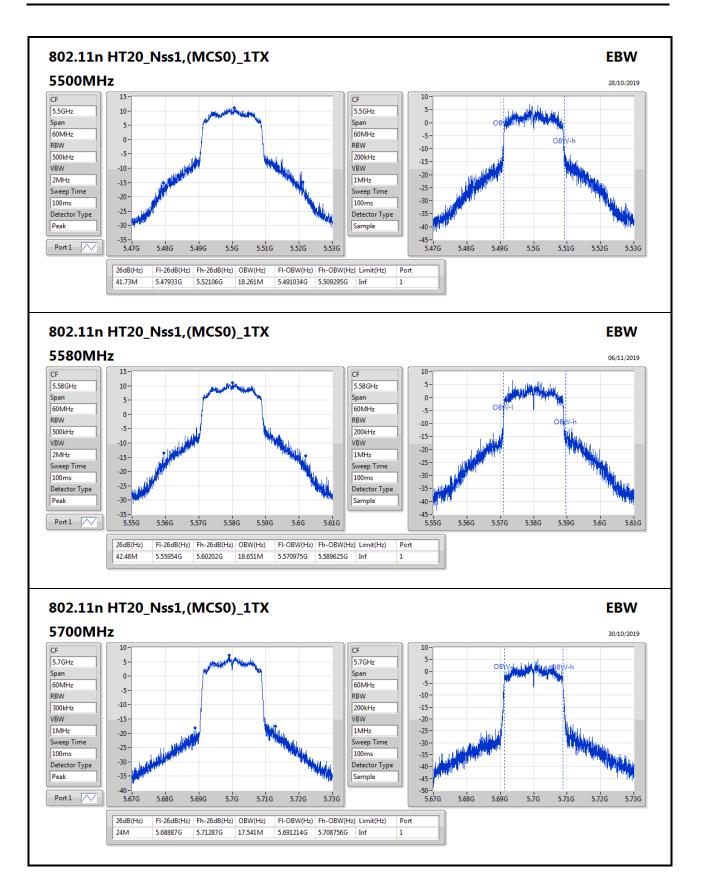


Appendix A

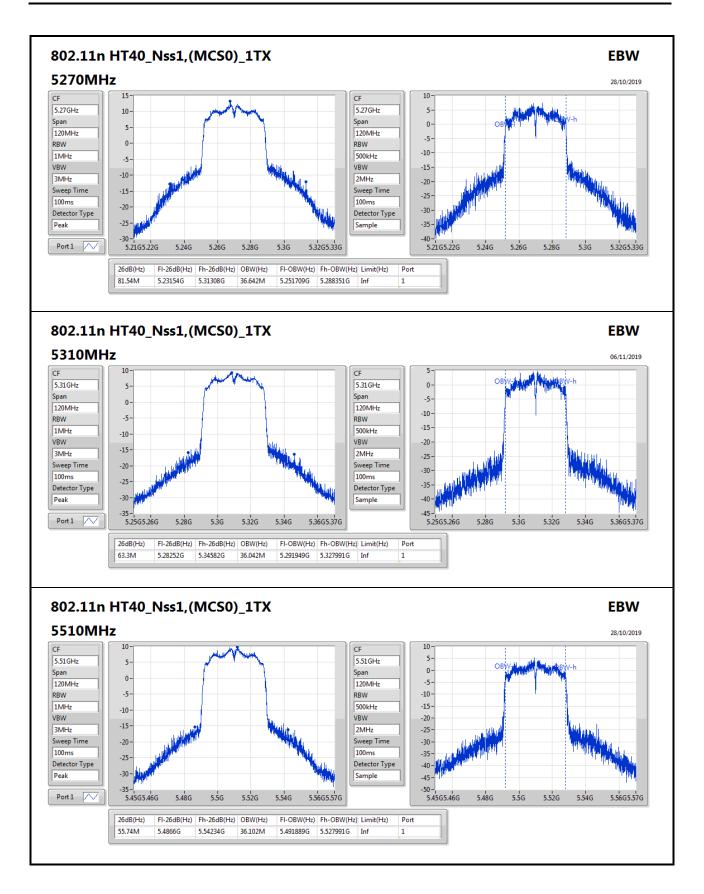




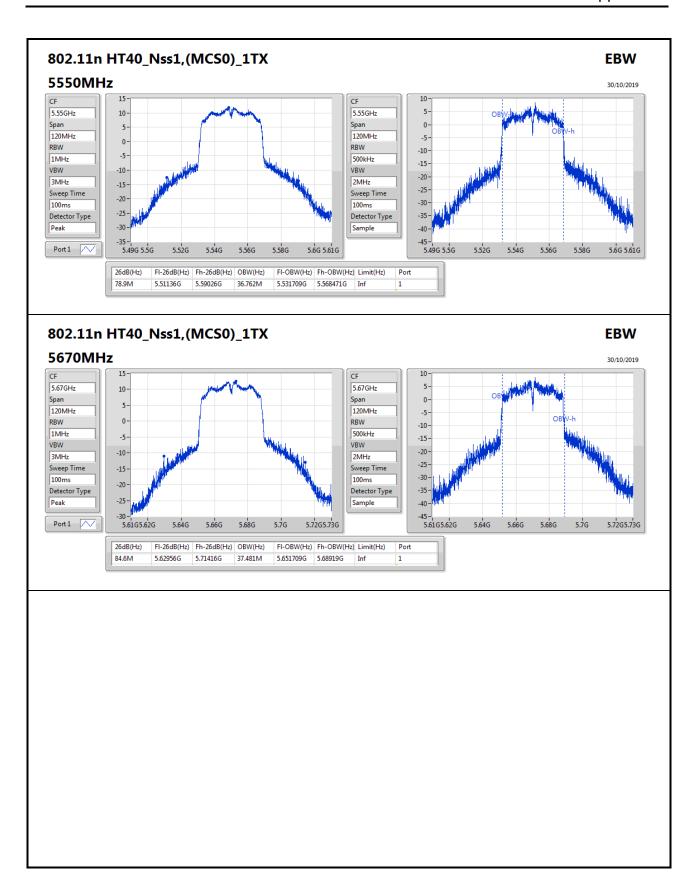








EBW Result Appendix A





Power Result Appendix B

Summary

Mode	Total Power Total Power		EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
5.25-5.35GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	17.51	0.05636	20.47	0.11143
802.11n HT20_Nss1,(MCS0)_1TX	17.43	0.05534	20.39	0.10940
802.11n HT40_Nss1,(MCS0)_1TX	16.98	0.04989	19.83	0.09616
5.47-5.725GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	17.31	0.05383	20.39	0.10940
802.11n HT20_Nss1,(MCS0)_1TX	17.29	0.05358	20.55	0.11350
802.11n HT40_Nss1,(MCS0)_1TX	16.99	0.05000	19.95	0.09886



Power Result 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	2.85	17.45	17.45	23.98	20.30	26.99
5300MHz	Pass	2.96	17.51	17.51	23.98	20.47	26.99
5320MHz	Pass	2.96	16.97	16.97	23.98	19.93	26.99
5500MHz	Pass	3.08	17.31	17.31	23.98	20.39	26.99
5580MHz	Pass	3.26	16.25	16.25	23.98	19.51	26.99
5700MHz	Pass	2.96	14.40	14.40	23.98	17.36	26.99
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5260MHz	Pass	2.85	17.38	17.38	23.98	20.23	26.99
5300MHz	Pass	2.96	17.43	17.43	23.98	20.39	26.99
5320MHz	Pass	2.96	16.36	16.36	23.98	19.32	26.99
5500MHz	Pass	3.08	16.81	16.81	23.98	19.89	26.99
5580MHz	Pass	3.26	17.29	17.29	23.98	20.55	26.99
5700MHz	Pass	2.96	14.56	14.56	23.98	17.52	26.99
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5270MHz	Pass	2.85	16.98	16.98	23.98	19.83	26.99
5310MHz	Pass	2.96	15.06	15.06	23.98	18.02	26.99
5510MHz	Pass	3.08	14.73	14.73	23.98	17.81	26.99
5550MHz	Pass	3.26	16.52	16.52	23.98	19.78	26.99
5670MHz	Pass	2.96	16.99	16.99	23.98	19.95	26.99

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

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PSD Result Appendix C

**Summary** 

Mode	PD	EIRP PD
	(dBm/RBW)	(dBm/RBW)
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_1TX	5.64	8.60
802.11n HT20_Nss1,(MCS0)_1TX	5.35	8.29
802.11n HT40_Nss1,(MCS0)_1TX	2.26	5.11
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_1TX	5.37	8.45
802.11n HT20_Nss1,(MCS0)_1TX	4.70	7.78
802.11n HT40_Nss1,(MCS0)_1TX	2.70	5.66

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



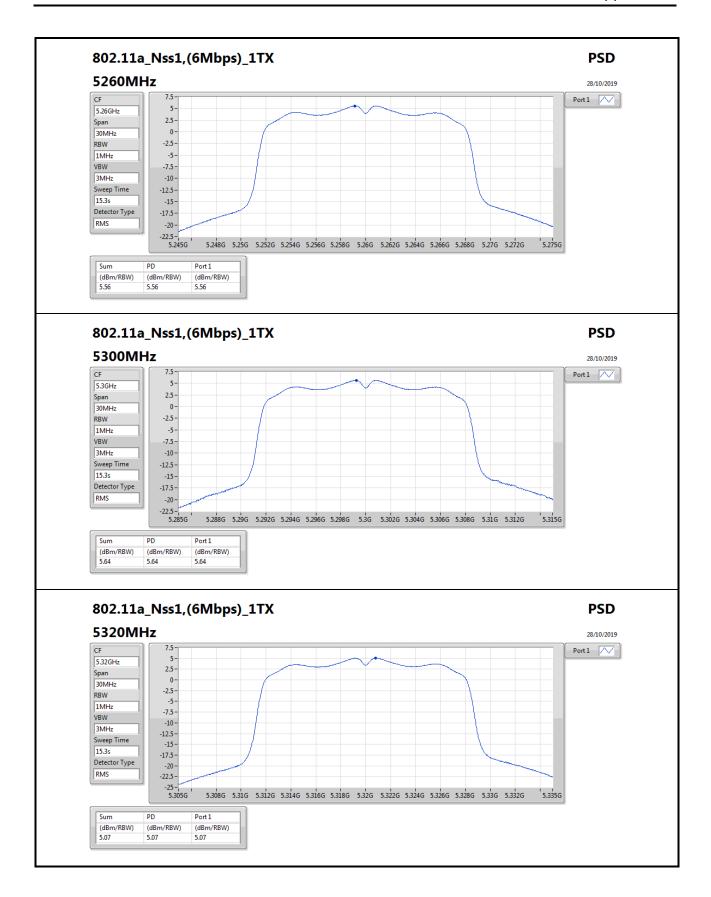
Appendix C **PSD Result** 

### Result

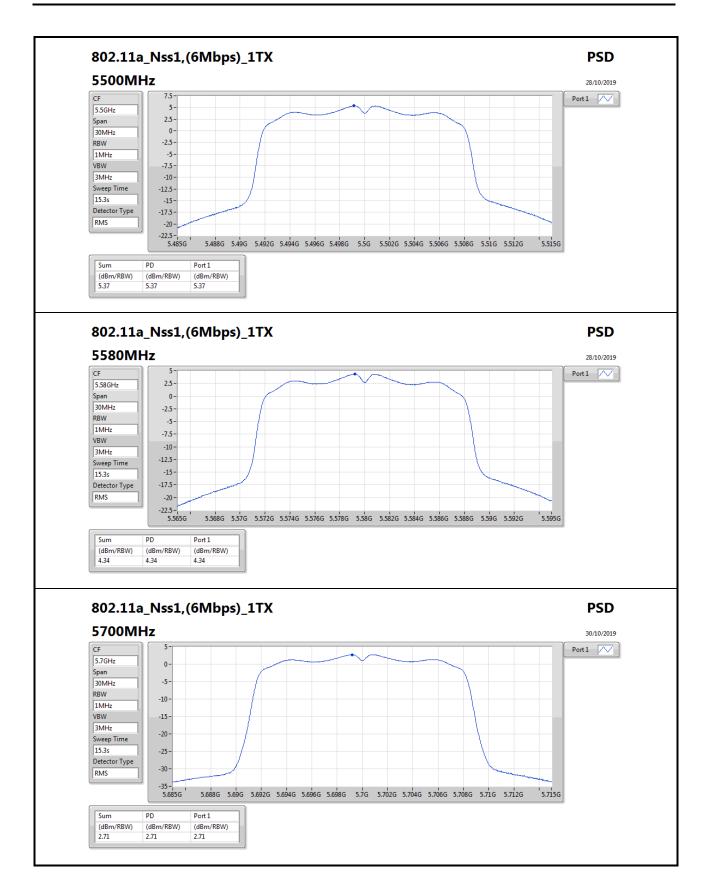
Mode	Result	DG	Port 1	PD	PD Limit	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
5260MHz	Pass	2.85	5.56	5.56	11.00	8.41	17.00
5300MHz	Pass	2.96	5.64	5.64	11.00	8.60	17.00
5320MHz	Pass	2.96	5.07	5.07	11.00	8.03	17.00
5500MHz	Pass	3.08	5.37	5.37	11.00	8.45	17.00
5580MHz	Pass	3.26	4.34	4.34	11.00	7.60	17.00
5700MHz	Pass	2.96	2.71	2.71	11.00	5.67	17.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5260MHz	Pass	2.85	5.35	5.35	11.00	8.20	17.00
5300MHz	Pass	2.96	5.33	5.33	11.00	8.29	17.00
5320MHz	Pass	2.96	4.32	4.32	11.00	7.28	17.00
5500MHz	Pass	3.08	4.70	4.70	11.00	7.78	17.00
5580MHz	Pass	3.26	3.89	3.89	11.00	7.15	17.00
5700MHz	Pass	2.96	2.81	2.81	11.00	5.77	17.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5270MHz	Pass	2.85	2.26	2.26	11.00	5.11	17.00
5310MHz	Pass	2.96	-0.44	-0.44	11.00	2.52	17.00
5510MHz	Pass	3.08	-0.34	-0.34	11.00	2.74	17.00
5550MHz	Pass	3.26	2.09	2.09	11.00	5.35	17.00
5670MHz	Pass	2.96	2.70	2.70	11.00	5.66	17.00

DG = Directional Gain; RBW = 500kHz 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 Xpower density;

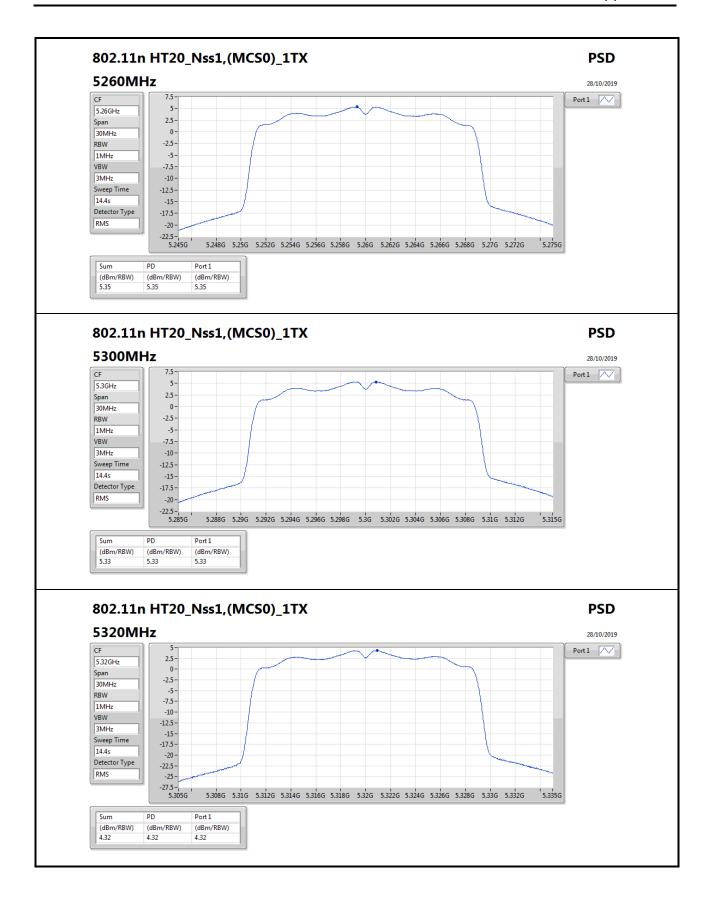




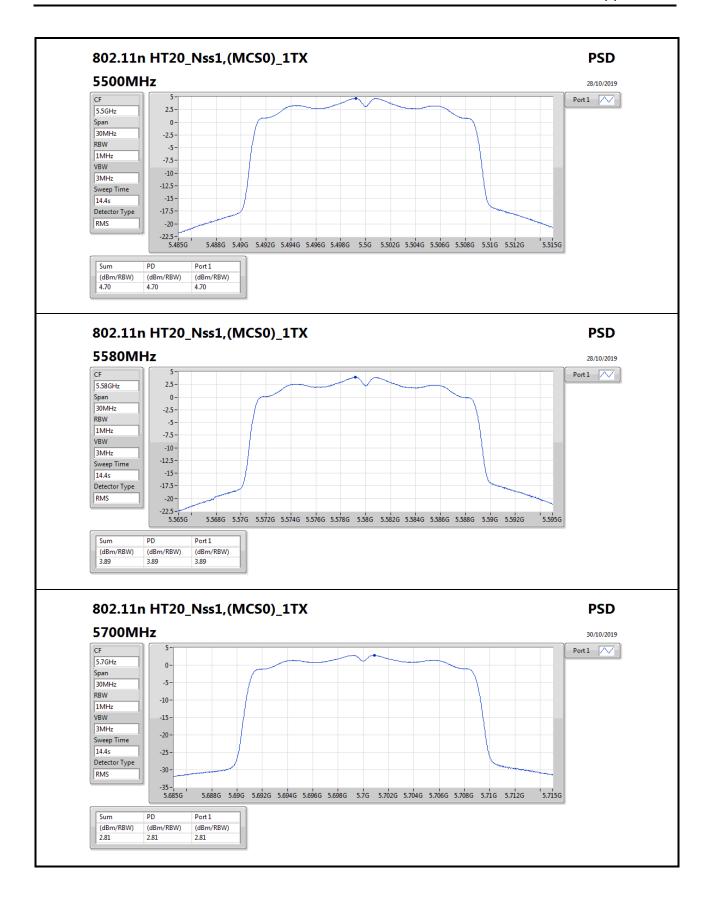




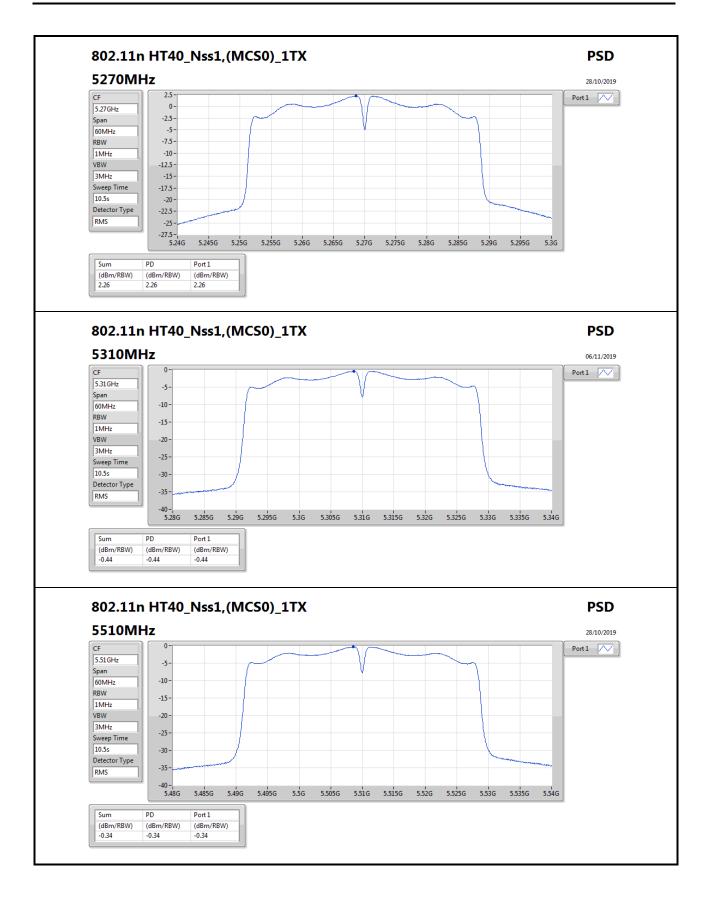




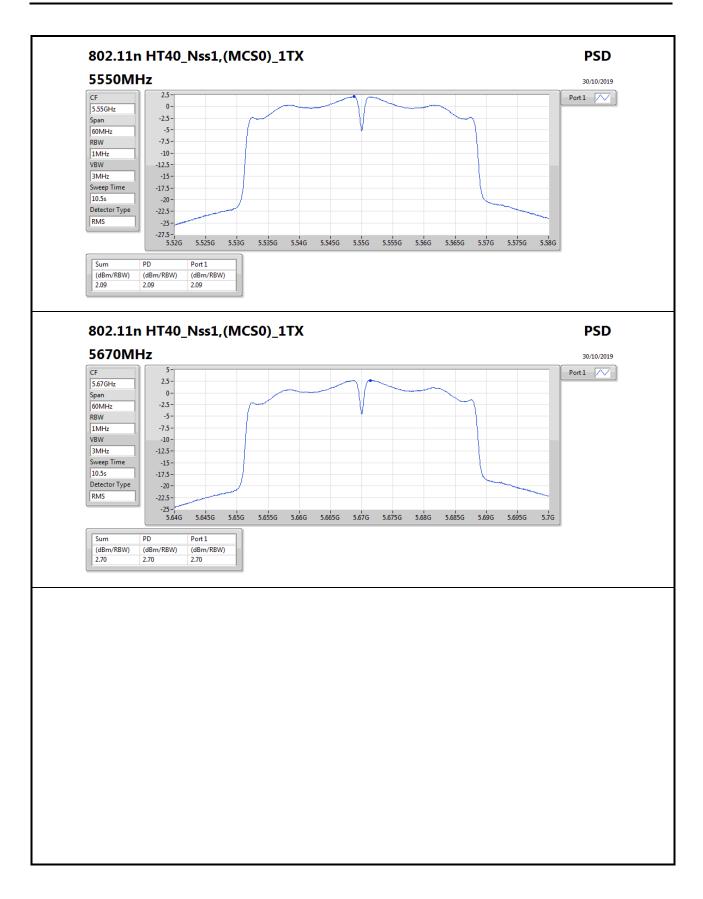














# Appendix D

**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	53.91	54.00	-0.09	3	Horizontal	142	2.71	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	5.35G	53.55	54.00	-0.45	3	Horizontal	136	1.00	-
802.11n HT40_Nss1,(MCS0)_1TX	Pass	AV	5.35G	53.70	54.00	-0.30	3	Horizontal	126	1.00	-
5.47-5.725GHz	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	Pass	PK	5.7256G	68.00	68.20	-0.20	3	Horizontal	97	1.00	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	PK	5.7256G	67.85	68.20	-0.35	3	Horizontal	142	1.00	-
802.11n HT40_Nss1,(MCS0)_1TX	Pass	PK	5.4684G	67.90	68.20	-0.30	3	Horizontal	149	1.00	-





### 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	5.1136G	48.45	54.00	-5.55	3	Vertical	10	1.00	
5260MHz	Pass	AV	5.2606G	94.99	Inf	-Inf	3	Vertical	10	1.00	_
5260MHz	Pass	AV	5.389G	47.32	54.00	-6.68	3	Vertical	10	1.00	_
5260MHz	Pass	PK	5.1184G	61.18	74.00	-12.82	3	Vertical	10	1.00	_
5260MHz	Pass	PK	5.2612G	104.10	Inf	-Inf	3	Vertical	10	1.00	_
5260MHz	Pass	PK	5.359G	59.05	74.00	-14.95	3	Vertical	10	1.00	_
5260MHz	Pass	AV	5.1208G	48.95	54.00	-5.05	3	Horizontal	133	1.00	_
5260MHz	Pass	AV	5.2606G	97.64	Inf	-Inf	3	Horizontal	133	1.00	_
5260MHz	Pass	AV	5.4094G	47.06	54.00	-6.94	3	Horizontal	133	1.00	_
5260MHz	Pass	PK	5.134G	60.57	74.00	-13.43	3	Horizontal	133	1.00	-
5260MHz	Pass	PK	5.2588G	106.93	Inf	-Inf	3	Horizontal	133	1.00	-
5260MHz	Pass	PK	5.3686G	59.44	74.00	-14.56	3	Horizontal	133	1.00	-
5260MHz	Pass	PK	10.5179G	60.13	68.20	-8.07	3	Vertical	23	1.51	_
5260MHz	Pass	PK	10.5209G	60.80	68.20	-7.40	3	Horizontal	202	1.22	_
5300MHz	Pass	AV	5.2992G	93.72	Inf	-Inf	3	Vertical	37	1.01	_
5300MHz	Pass	AV	5.3508G	49.09	54.00	-4.91	3	Vertical	37	1.01	_
5300MHz	Pass	PK	5.3012G	102.75	Inf	-Inf	3	Vertical	37	1.01	_
5300MHz	Pass	PK	5.3528G	63.07	74.00	-10.93	3	Vertical	37	1.01	_
5300MHz	Pass	AV	5.3008G	97.37	Inf	-Inf	3	Horizontal	133	1.00	_
5300MHz	Pass	AV	5.35G	50.35	54.00	-3.65	3	Horizontal	133	1.00	_
5300MHz	Pass	PK	5.2984G	106.51	Inf	-Inf	3	Horizontal	133	1.00	-
5300MHz	Pass	PK	5.3636G	63.81	74.00	-10.19	3	Horizontal	133	1.00	-
5300MHz	Pass	PK	10.59796G	59.84	68.20	-8.36	3	Vertical	197	2.16	_
5300MHz	Pass	PK	10.597G	60.45	68.20	-7.75	3	Horizontal	46	1.00	_
5320MHz	Pass	AV	5.3206G	94.10	Inf	-Inf	3	Vertical	81	1.02	-
5320MHz	Pass	AV	5.35G	52.80	54.00	-1.20	3	Vertical	81	1.02	-
5320MHz	Pass	PK	5.3208G	103.20	Inf	-Inf	3	Vertical	81	1.02	-
5320MHz	Pass	PK	5.35G	68.73	74.00	-5.27	3	Vertical	81	1.02	-
5320MHz	Pass	AV	5.3188G	95.56	Inf	-Inf	3	Horizontal	142	2.71	-
5320MHz	Pass	AV	5.35G	53.91	54.00	-0.09	3	Horizontal	142	2.71	-
5320MHz	Pass	PK	5.3188G	105.29	Inf	-Inf	3	Horizontal	142	2.71	-
5320MHz	Pass	PK	5.3506G	68.56	74.00	-5.44	3	Horizontal	142	2.71	-
5320MHz	Pass	AV	10.64606G	47.11	54.00	-6.89	3	Vertical	0	1.40	-
5320MHz	Pass	PK	10.64528G	59.68	74.00	-14.32	3	Vertical	0	1.40	-
5320MHz	Pass	AV	10.62902G	47.03	54.00	-6.97	3	Horizontal	192	1.50	-
5320MHz	Pass	PK	10.65056G	60.26	74.00	-13.74	3	Horizontal	192	1.50	-
5500MHz	Pass	AV	5.4594G	50.35	54.00	-3.65	3	Vertical	82	1.00	-
5500MHz	Pass	AV	5.4992G	96.16	Inf	-Inf	3	Vertical	82	1.00	-
5500MHz	Pass	PK	5.4692G	66.48	68.20	-1.72	3	Vertical	82	1.00	-
5500MHz	Pass	PK	5.5012G	105.99	Inf	-Inf	3	Vertical	82	1.00	-
5500MHz	Pass	AV	5.4598G	50.70	54.00	-3.30	3	Horizontal	141	1.00	-
5500MHz	Pass	AV	5.5006G	95.55	Inf	-Inf	3	Horizontal	141	1.00	-
5500MHz	Pass	PK	5.4682G	66.62	68.20	-1.58	3	Horizontal	141	1.00	-
5500MHz	Pass	PK	5.4988G	104.97	Inf	-Inf	3	Horizontal	141	1.00	-
5500MHz	Pass	AV	10.99922G	48.37	54.00	-5.63	3	Vertical	0	2.40	-
5500MHz	Pass	PK	11.00786G	61.30	74.00	-12.70	3	Vertical	0	2.40	-
5500MHz	Pass	AV	11.00894G	48.18	54.00	-5.82	3	Horizontal	14	1.40	-

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# Appendix D

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5500MHz	Pass	PK	11.00966G	61.45	74.00	-12.55	3	Horizontal	14	1.40	-
5580MHz	Pass	AV	5.4396G	47.25	54.00	-6.75	3	Vertical	42	1.01	-
5580MHz	Pass	AV	5.5806G	96.25	Inf	-Inf	3	Vertical	42	1.01	-
5580MHz	Pass	PK	5.4678G	59.34	68.20	-8.86	3	Vertical	42	1.01	-
5580MHz	Pass	PK	5.5788G	105.22	Inf	-Inf	3	Vertical	42	1.01	-
5580MHz	Pass	PK	5.7264G	60.11	68.20	-8.09	3	Vertical	42	1.01	-
5580MHz	Pass	AV	5.46G	47.41	54.00	-6.59	3	Horizontal	146	1.01	-
5580MHz	Pass	AV	5.5806G	97.36	Inf	-Inf	3	Horizontal	146	1.01	-
5580MHz	Pass	PK	5.4642G	59.54	68.20	-8.66	3	Horizontal	146	1.01	-
5580MHz	Pass	PK	5.5806G	106.33	Inf	-Inf	3	Horizontal	146	1.01	-
5580MHz	Pass	PK	5.727G	59.42	68.20	-8.78	3	Horizontal	146	1.01	-
5580MHz	Pass	AV	11.15682G	48.37	54.00	-5.63	3	Vertical	23	1.89	-
5580MHz	Pass	PK	11.16768G	61.05	74.00	-12.95	3	Vertical	23	1.89	-
5580MHz	Pass	AV	11.16066G	48.51	54.00	-5.49	3	Horizontal	48	2.16	-
5580MHz	Pass	PK	11.17056G	61.33	74.00	-12.67	3	Horizontal	48	2.16	-
5700MHz	Pass	AV	5.7008G	92.13	Inf	-Inf	3	Vertical	28	1.00	-
5700MHz	Pass	PK	5.7012G	101.22	Inf	-Inf	3	Vertical	28	1.00	-
5700MHz	Pass	PK	5.7252G	65.67	68.20	-2.53	3	Vertical	28	1.00	-
5700MHz	Pass	AV	5.7004G	94.54	Inf	-Inf	3	Horizontal	97	1.00	-
5700MHz	Pass	PK	5.7008G	103.53	Inf	-Inf	3	Horizontal	97	1.00	-
5700MHz	Pass	PK	5.7256G	68.00	68.20	-0.20	3	Horizontal	97	1.00	-
5700MHz	Pass	AV	11.40564G	47.35	54.00	-6.65	3	Vertical	360	2.28	-
5700MHz	Pass	PK	11.3937G	60.19	74.00	-13.81	3	Vertical	360	2.28	-
5700MHz	Pass	AV	11.40474G	47.24	54.00	-6.76	3	Horizontal	161	1.80	-
5700MHz	Pass	PK	11.41422G	60.22	74.00	-13.78	3	Horizontal	161	1.80	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	AV	5.1118G	48.41	54.00	-5.59	3	Vertical	12	1.00	-
5260MHz	Pass	AV	5.2606G	93.86	Inf	-Inf	3	Vertical	12	1.00	-
5260MHz	Pass	AV	5.407G	47.31	54.00	-6.69	3	Vertical	12	1.00	-
5260MHz	Pass	PK	5.122G	60.63	74.00	-13.37	3	Vertical	12	1.00	-
5260MHz	Pass	PK	5.2612G	102.46	Inf	-Inf	3	Vertical	12	1.00	-
5260MHz	Pass	PK	5.4076G	59.15	74.00	-14.85	3	Vertical	12	1.00	-
5260MHz	Pass	AV	5.1214G	48.46	54.00	-5.54	3	Horizontal	136	1.00	-
5260MHz	Pass	AV	5.2612G	96.78	Inf	-Inf	3	Horizontal	136	1.00	-
5260MHz	Pass	AV	5.41G	47.15	54.00	-6.85	3	Horizontal	136	1.00	-
5260MHz	Pass	PK	5.1154G	61.51	74.00	-12.49	3	Horizontal	136	1.00	-
5260MHz	Pass	PK	5.2606G	105.66	Inf	-Inf	3	Horizontal	136	1.00	-
5260MHz	Pass	PK	5.3794G	59.99	74.00	-14.01	3	Horizontal	136	1.00	-
5260MHz	Pass	PK	10.51352G	60.64	68.20	-7.56	3	Vertical	350	1.01	-
5260MHz	Pass	PK	10.52606G	61.06	68.20	-7.14	3	Horizontal	349	2.48	-
5300MHz	Pass	AV	5.3012G	93.27	Inf	-Inf	3	Vertical	12	1.02	-
5300MHz	Pass	AV	5.352G	48.90	54.00	-5.10	3	Vertical	12	1.02	-
5300MHz	Pass	PK	5.3012G	102.92	Inf	-Inf	3	Vertical	12	1.02	-
5300MHz	Pass	PK	5.358G	60.88	74.00	-13.12	3	Vertical	12	1.02	-
5300MHz	Pass	AV	5.3004G	96.84	Inf	-Inf	3	Horizontal	144	1.00	-
5300MHz	Pass	AV	5.35G	50.83	54.00	-3.17	3	Horizontal	144	1.00	-
5300MHz	Pass	PK	5.2988G	106.28	Inf	-Inf	3	Horizontal	144	1.00	-
5300MHz	Pass	PK	5.35G	63.54	74.00	-10.46	3	Horizontal	144	1.00	-
5300MHz	Pass	AV	10.60186G	47.94	54.00	-6.06	3	Vertical	349	1.17	-
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# Appendix D

Mada	Desult	Tuma	F===	Laval	Limit	Maurin	Diet	Canditian	A = i 4 h	Haimhá	Commonto
Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5300MHz	Pass	PK	10.60852G	60.35	74.00	-13.65	3	Vertical	349	1.17	-
5300MHz	Pass	AV	10.60318G	47.38	54.00	-6.62	3	Horizontal	351	1.03	-
5300MHz	Pass	PK	10.61302G	58.26	74.00	-15.74	3	Horizontal	351	1.03	-
5320MHz	Pass	AV	5.3206G	93.08	Inf	-Inf	3	Vertical	80	1.00	-
5320MHz	Pass	AV	5.3504G	52.38	54.00	-1.62	3	Vertical	80	1.00	-
5320MHz	Pass	PK	5.3184G	101.97	Inf	-Inf	3	Vertical	80	1.00	-
5320MHz	Pass	PK	5.3508G	66.33	74.00	-7.67	3	Vertical	80	1.00	-
5320MHz	Pass	AV	5.321G	95.74	Inf	-Inf	3	Horizontal	136	1.00	-
5320MHz	Pass	AV	5.35G	53.55	54.00	-0.45	3	Horizontal	136	1.00	-
5320MHz	Pass	PK	5.3184G	104.96	Inf	-Inf	3	Horizontal	136	1.00	-
5320MHz	Pass	PK	5.3518G	68.90	74.00	-5.10	3	Horizontal	136	1.00	-
5320MHz	Pass	AV	10.63688G	47.32	54.00	-6.68	3	Vertical	350	1.14	-
5320MHz	Pass	PK	10.64102G	60.39	74.00	-13.61	3	Vertical	350	1.14	-
5320MHz	Pass	AV	10.63796G	47.17	54.00	-6.83	3	Horizontal	344	1.00	-
5320MHz	Pass	PK	10.63742G	59.44	74.00	-14.56	3	Horizontal	344	1.00	-
5500MHz	Pass	AV	5.46G	51.76	54.00	-2.24	3	Vertical	73	1.00	-
5500MHz	Pass	AV	5.499G	96.28	Inf	-Inf	3	Vertical	73	1.00	-
5500MHz	Pass	PK	5.468G	67.55	68.20	-0.65	3	Vertical	73	1.00	-
5500MHz	Pass	PK	5.4986G	105.78	Inf	-Inf	3	Vertical	73	1.00	-
5500MHz	Pass	AV	5.4596G	52.15	54.00	-1.85	3	Horizontal	146	1.00	-
5500MHz	Pass	AV	5.5004G	96.01	Inf	-Inf	3	Horizontal	146	1.00	-
5500MHz	Pass	PK	5.4674G	67.43	68.20	-0.77	3	Horizontal	146	1.00	-
5500MHz	Pass	PK	5.4986G	105.09	Inf	-Inf	3	Horizontal	146	1.00	-
5500MHz	Pass	AV	11.01296G	48.12	54.00	-5.88	3	Vertical	54	2.07	-
5500MHz	Pass	PK	10.98506G	60.89	74.00	-13.11	3	Vertical	54	2.07	-
5500MHz	Pass	AV	11.00576G	48.43	54.00	-5.57	3	Horizontal	91	2.40	-
5500MHz	Pass	PK	10.99658G	60.88	74.00	-13.12	3	Horizontal	91	2.40	-
5580MHz	Pass	AV	5.457G	47.39	54.00	-6.61	3	Vertical	45	1.00	-
5580MHz	Pass	AV	5.5812G	96.18	Inf	-Inf	3	Vertical	45	1.00	-
5580MHz	Pass	PK	5.466G	59.09	68.20	-9.11	3	Vertical	45	1.00	-
5580MHz	Pass	PK	5.5806G	105.64	Inf	-Inf	3	Vertical	45	1.00	-
5580MHz	Pass	PK	5.727G	59.80	68.20	-8.40	3	Vertical	45	1.00	-
5580MHz	Pass	AV	5.4504G	47.36	54.00	-6.64	3	Horizontal	25	2.62	-
5580MHz	Pass	AV	5.5806G	91.95	Inf	-Inf	3	Horizontal	25	2.62	_
5580MHz	Pass	PK	5.4636G	59.34	68.20	-8.86	3	Horizontal	25	2.62	_
5580MHz	Pass	PK	5.5812G	100.95	Inf	-Inf	3	Horizontal	25	2.62	_
5580MHz	Pass	PK	5.7288G	59.64	68.20	-8.56	3	Horizontal	25	2.62	_
5580MHz	Pass	AV	11.15358G	48.01	54.00	-5.99	3	Vertical	359	1.45	_
5580MHz	Pass	PK	11.15664G	60.51	74.00	-13.49	3	Vertical	359	1.45	-
5580MHz	Pass	AV	11.15004G	48.55	54.00	-5.45	3	Horizontal	45	1.45	
5580MHz	Pass	PK	11.16384G	61.37	74.00	-12.63	3	Horizontal	45	1.96	-
											-
5700MHz	Pass	AV	5.6992G	92.38	Inf	-Inf	3	Vertical	37	1.00	-
5700MHz	Pass	PK	5.6976G	102.37	Inf	-Inf	3	Vertical	37	1.00	-
5700MHz	Pass	PK	5.7256G	66.98	68.20	-1.22	3	Vertical	37	1.00	-
5700MHz	Pass	AV	5.7008G	93.79	Inf	-Inf	3	Horizontal	142	1.00	-
5700MHz	Pass	PK	5.7012G	102.31	Inf	-Inf	3	Horizontal	142	1.00	-
5700MHz	Pass	PK	5.7256G	67.85	68.20	-0.35	3	Horizontal	142	1.00	-
5700MHz	Pass	AV	11.3946G	47.24	54.00	-6.76	3	Vertical	307	1.00	-
5700MHz	Pass	PK	11.38926G	59.62	74.00	-14.38	3	Vertical	307	1.00	-

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# Appendix D

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
Mode	Result	Турс	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)	Condition	(°)	(m)	Comments
5700MIL	Dana	A\/						Harimantal			
5700MHz 5700MHz	Pass	AV PK	11.40552G 11.3907G	47.14 60.11	54.00 74.00	-6.86 -13.89	3	Horizontal	272 272	1.55 1.55	-
	Pass	FK	11.39076	00.11	74.00	-13.09	3	Horizontal	212	1.55	-
802.11n HT40_Nss1,(MCS0)_1TX	Pess	AV		- 02.06	- Inf	- Inf	3	- \/antion!	7	255	-
5270MHz	Pass		5.2688G	93.26	Inf	-Inf		Vertical		2.55	-
5270MHz	Pass	AV	5.3504G	49.33	54.00	-4.67	3	Vertical	7	2.55	-
5270MHz	Pass	PK	5.2668G	101.24	Inf	-Inf	3	Vertical	7	2.55	-
5270MHz	Pass	PK	5.3512G	60.18	74.00	-13.82	3	Vertical	7	2.55	-
5270MHz	Pass	AV	5.2716G	93.49	Inf	-Inf	3	Horizontal	131	3.00	-
5270MHz	Pass	AV	5.3512G	49.25	54.00	-4.75	3	Horizontal	131	3.00	-
5270MHz	Pass	PK	5.272G	102.08	Inf	-Inf	3	Horizontal	131	3.00	-
5270MHz	Pass	PK	5.3528G	61.23	74.00	-12.77	3	Horizontal	131	3.00	-
5270MHz	Pass	PK	10.52662G	61.27	68.20	-6.93	3	Vertical	97	3.00	-
5270MHz	Pass	PK	10.52584G	62.55	68.20	-5.65	3	Horizontal	291	1.50	-
5310MHz	Pass	AV	5.3088G	87.08	Inf	-Inf	3	Vertical	20	1.00	-
5310MHz	Pass	AV	5.35G	50.98	54.00	-3.02	3	Vertical	20	1.00	-
5310MHz	Pass	PK	5.308G	95.48	Inf	-Inf	3	Vertical	20	1.00	-
5310MHz	Pass	PK	5.3508G	66.54	74.00	-7.46	3	Vertical	20	1.00	-
5310MHz	Pass	AV	5.3088G	91.37	Inf	-Inf	3	Horizontal	126	1.00	-
5310MHz	Pass	AV	5.35G	53.70	54.00	-0.30	3	Horizontal	126	1.00	-
5310MHz	Pass	PK	5.3088G	100.58	Inf	-Inf	3	Horizontal	126	1.00	-
5310MHz	Pass	PK	5.3536G	69.21	74.00	-4.79	3	Horizontal	126	1.00	-
5310MHz	Pass	AV	10.62648G	47.64	54.00	-6.36	3	Vertical	0	1.77	-
5310MHz	Pass	PK	10.62522G	59.93	74.00	-14.07	3	Vertical	0	1.77	-
5310MHz	Pass	AV	10.61094G	47.59	54.00	-6.41	3	Horizontal	185	1.50	-
5310MHz	Pass	PK	10.62252G	59.08	74.00	-14.92	3	Horizontal	185	1.50	-
5510MHz	Pass	AV	5.4592G	50.46	54.00	-3.54	3	Vertical	45	1.00	-
5510MHz	Pass	AV	5.5112G	90.22	Inf	-Inf	3	Vertical	45	1.00	-
5510MHz	Pass	PK	5.4696G	66.35	68.20	-1.85	3	Vertical	45	1.00	-
5510MHz	Pass	PK	5.512G	98.68	Inf	-Inf	3	Vertical	45	1.00	-
5510MHz	Pass	AV	5.4592G	50.92	54.00	-3.08	3	Horizontal	149	1.00	-
5510MHz	Pass	AV	5.5088G	91.54	Inf	-Inf	3	Horizontal	149	1.00	-
5510MHz	Pass	PK	5.4684G	67.90	68.20	-0.30	3	Horizontal	149	1.00	-
5510MHz	Pass	PK	5.5132G	99.94	Inf	-Inf	3	Horizontal	149	1.00	-
5510MHz	Pass	AV	11.03206G	48.75	54.00	-5.25	3	Vertical	359	1.23	-
5510MHz	Pass	PK	11.0284G	60.81	74.00	-13.19	3	Vertical	359	1.23	-
5510MHz	Pass	AV	11.02888G	48.87	54.00	-5.13	3	Horizontal	3	2.48	-
5510MHz	Pass	PK	11.01526G	60.89	74.00	-13.11	3	Horizontal	3	2.48	-
5550MHz	Pass	AV	5.45G	48.96	54.00	-5.04	3	Vertical	44	1.00	-
5550MHz	Pass	AV	5.5512G	93.63	Inf	-Inf	3	Vertical	44	1.00	-
5550MHz	Pass	PK	5.4608G	61.08	68.20	-7.12	3	Vertical	44	1.00	-
5550MHz	Pass	PK	5.548G	102.51	Inf	-Inf	3	Vertical	44	1.00	-
5550MHz	Pass	AV	5.46G	49.35	54.00	-4.65	3	Horizontal	150	1.04	-
5550MHz	Pass	AV	5.5488G	94.59	Inf	-Inf	3	Horizontal	150	1.04	-
5550MHz	Pass	PK	5.4644G	61.55	68.20	-6.65	3	Horizontal	150	1.04	-
5550MHz	Pass	PK	5.5516G	103.64	Inf	-Inf	3	Horizontal	150	1.04	-
5550MHz	Pass	AV	11.10324G	48.76	54.00	-5.24	3	Vertical	239	1.50	-
5550MHz	Pass	PK	11.11368G	60.69	74.00	-13.31	3	Vertical	239	1.50	-
5550MHz	Pass	AV	11.11452G	48.74	54.00	-5.26	3	Horizontal	350	1.36	-
5550MHz	Pass	PK	11.10918G	60.79	74.00	-13.21	3	Horizontal	350	1.36	-

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# 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	5.6688G	92.88	Inf	-Inf	3	Vertical	33	1.01	-
5670MHz	Pass	PK	5.6718G	101.94	Inf	-Inf	3	Vertical	33	1.01	-
5670MHz	Pass	PK	5.7312G	67.40	68.20	-0.80	3	Vertical	33	1.01	-
5670MHz	Pass	AV	5.6688G	94.41	Inf	-Inf	3	Horizontal	149	1.01	-
5670MHz	Pass	PK	5.6688G	102.21	Inf	-Inf	3	Horizontal	149	1.01	-
5670MHz	Pass	PK	5.7258G	67.52	68.20	-0.68	3	Horizontal	149	1.01	-
5670MHz	Pass	AV	11.34196G	48.41	54.00	-5.59	3	Vertical	20	1.50	-
5670MHz	Pass	PK	11.34209G	59.82	74.00	-14.18	3	Vertical	20	1.50	-
5670MHz	Pass	AV	11.34162G	48.06	54.00	-5.94	3	Horizontal	272	1.58	-
5670MHz	Pass	PK	11.34171G	60.32	74.00	-13.68	3	Horizontal	272	1.58	-

