



Report No.: FR952303AC



FCC Test Report

FCC ID : 2AEUPBHAIC001

Equipment : Indoor Cam

Brand Name : RING

Model Name : 5UM4E5

Applicant : Ring LLC

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

Manufacturer : Chicony Electronics (Dong Guan) Co.,Ltd.

San Zhong Guan Li Qu, Qingxi Town, Dongguan City Guangdong 523651 China

Standard : 47 CFR FCC Part 15.247

The product was received on May 30, 2019, and testing was started from Jun. 20, 2019 and completed on Jun. 26, 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 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

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

TEL: 886-3-3273456 Page Number : 1 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01



FCC Test Report

Table of Contents

HIST	ORY OF THIS TEST REPORT	3
SUM	MARY OF TEST RESULT	4
1	GENERAL DESCRIPTION	5
1.1	Information	5
1.2	Testing Applied Standards	7
1.3	Testing Location Information	7
1.4	Measurement Uncertainty	7
2	TEST CONFIGURATION OF EUT	8
2.1	Test Condition	8
2.2	Test Channel Mode	8
2.3	The Worst Case Measurement Configuration	9
2.4	Accessories and Support Equipment	10
2.5	Test Setup Diagram	11
3	TRANSMITTER TEST RESULT	12
3.1	AC Power-line Conducted Emissions	12
3.2	DTS Bandwidth	
3.3	Maximum Conducted Output Power	14
3.4	Power Spectral Density	
3.5	Emissions in Non-restricted Frequency Bands	
3.6	Emissions in Restricted Frequency Bands	18
4	TEST EQUIPMENT AND CALIBRATION DATA	21
APP	ENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APP	ENDIX B. TEST RESULTS OF DTS BANDWIDTH	
APP	ENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APP	ENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY	
APP	ENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	
APP	ENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS	
APPE	ENDIX G. TEST PHOTOS	
PHO.	TOGRAPHS OF EUT V01	

TEL: 886-3-3273456 FAX: 886-3-3270973

Report Template No.: HE1-C8 Ver3.5

FCC ID: 2AEUPBHAIC001

Page Number : 2 of 21
Issued Date : Jul. 04, 2019

Report No.: FR952303AC

Report Version : 01

History of this test report

Report No.: FR952303AC

: 01

Report No.	Version	Description	Issued Date
FR952303AC	01	Initial issue of report	Jul. 04, 2019

TEL: 886-3-3273456 Page Number : 3 of 21 FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version FCC ID: 2AEUPBHAIC001

Summary of Test Result

Report No.: FR952303AC

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
3.1	15.207	AC Power-line Conducted Emissions	PASS	FCC 15.207
3.2	15.247(a)	DTS Bandwidth	PASS	≥500kHz
3.3	15.247(b)	Maximum Conducted Output Power	PASS	Power [dBm]: 30
3.4	15.247(e)	Power Spectral Density	PASS	PSD [dBm/3kHz]: 8
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: > 30 dBc
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

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: Jackson Tsai

Report Producer: Ann Hou

TEL: 886-3-3273456 Page Number : 4 of 21 FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01

FCC Test Report Report No.: FR952303AC

General Description 1

Information 1.1

1.1.1 **RF General Information**

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

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

Note:

- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g and HT20 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	WIESON	-	Dipole	I-PEX	

			Gain (dBi)						
Ant.	Port	2.4G (2412MHz)	2.4G (2417MHz)	2.4G (2437MHz)	2.4G (2457MHz)	2.4G (2462MHz)	вт		
1	1	2.33	2.47	2.47	3.04	3.10	3.10		

Note 1: The EUT has one antenna.

For 2.4GHz function:

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

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

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

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

TEL: 886-3-3273456 : 5 of 21 Page Number : Jul. 04, 2019 FAX: 886-3-3270973 Issued Date

Report Version : 01

Report Template No.: HE1-C8 Ver3.5



FCC Test Report

1.1.3 EUT Information

	Operational Condition						
EU	Γ Power Τ	уре	Fro	m AC Adapter			
EU	Γ Function	1		Point-to-multipo	int [\boxtimes	Point-to-point
Bea	amforming	Function		With beamformi	ng [\boxtimes	Without beamforming
				-	Гуре о	f EU	т
\boxtimes	Stand-alo	ne					
	Combined	d (EUT where	e the	radio part is fully	/ integra	atec	within another device)
	Combined	d Equipment	- Bra	and Name / Mode	el No.:		
	Plug-in radio (EUT intended for a variety of host systems)						
	Host System - Brand Name / Model No.:						
	Other:						

Report No.: FR952303AC

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.99	0.04	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.936	0.29	1.434m	1k
802.11n HT20	0.932	0.31	1.341m	1k

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

TEL: 886-3-3273456 Page Number : 6 of 21 FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Version

: 01

Report Template No.: HE1-C8 Ver3.5 FCC ID: 2AEUPBHAIC001

1.2 Testing Applied Standards

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

Report No.: FR952303AC

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- KDB 558074 D01 v05r02

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	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	Dexter	26.2~26.6°C / 53~55%	21/Jun/2019~ 26/Jun/2019
Radiated	03CH01-HY	Edward	24.3~28.1°C / 63.9~67.2%	20/Jun/2019~ 25/Jun/2019
AC Conduction	CO04-HY	Jeff	21.2~23.9°C / 56.2~59.1%	21/Jun/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%

TEL: 886-3-3273456 Page Number : 7 of 21 FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01



2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software	DoS
---------------	-----

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	74
2417MHz	74
2437MHz	75
2457MHz	75
2462MHz	75
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	69
2417MHz	69
2437MHz	70
2457MHz	70
2462MHz	64
802.11n HT20_Nss1,(MCS0)_1TX	-
2412MHz	70
2417MHz	70
2437MHz	70
2457MHz	70
2462MHz	60

TEL: 886-3-3273456 Page Number FAX: 886-3-3270973 Issued Date

Report Template No.: HE1-C8 Ver3.5

FCC ID: 2AEUPBHAIC001

Issued Date : Jul. 04, 2019

: 8 of 21

Report No.: FR952303AC

Report Version : 01

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests		
Tests Item AC power-line conducted emissions		
Condition	AC power-line conducted measurement for line and neutral	
Operating Mode	СТХ	
1	Adapter mode	

Report No.: FR952303AC

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

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	perating Mode < 1GHz CTX		
1	Adapter mode		
Operating Mode > 1GHz CTX			
	Y Plane		
Orthogonal Planes of EUT			
Worst Planes of EUT	V		

TEL: 886-3-3273456 Page Number : 9 of 21 FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01



FCC Test Report

2.4 Accessories and Support Equipment

Accessories				
A O A 114	Brand Name	ring	Model Name	DSA-12PFU-05 FUS 050200
AC Adapter 1 (US Plug)	Power Rating	/P: 100-240Vac, 0.5A, O/P: 5Vdc, 2A		
(OO i lug)	Power Cord	1.95 meter, non-shielded cable, w/o ferrite core		
	Brand Name	ring	Model Name	DSA-12PFU-05 FCA 050200
AC Adapter 1 (EU Plug)	Power Rating	I/P: 100-240Vac, 0.5A	, O/P: 5Vdc, 2A	
(LOTiug)	Power Cord	1.98 meter, non-shield	ded cable, w/o fer	rite core

Report No.: FR952303AC

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

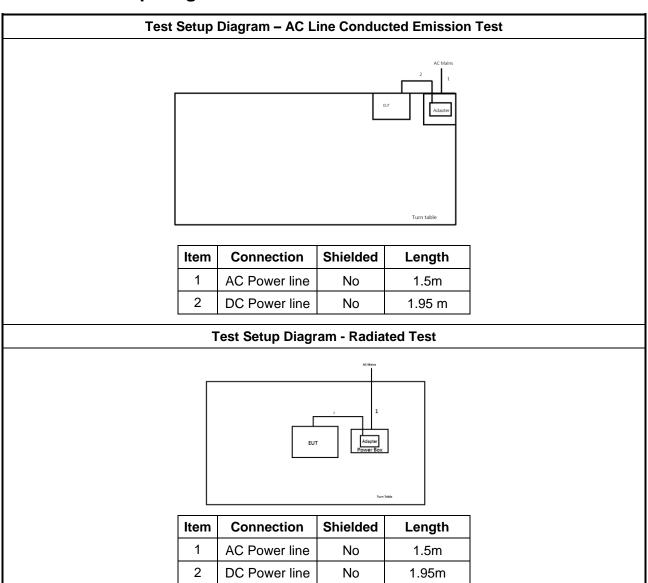
Support Equipment - RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for Notebook	DELL	HA65NM130	DoC
3	AC Power Source	GW	APS-9102	N/A

TEL: 886-3-3273456 Page Number : 10 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01 FCC ID: 2AEUPBHAIC001



2.5 Test Setup Diagram



TEL: 886-3-3273456 FAX: 886-3-3270973

Report Template No.: HE1-C8 Ver3.5

FCC ID: 2AEUPBHAIC001

Page Number : 11 of 21
Issued Date : Jul. 04, 2019

Report No.: FR952303AC

Report Version : 01



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC POWE	er-line Conducted Emissions L	
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Report No.: FR952303AC

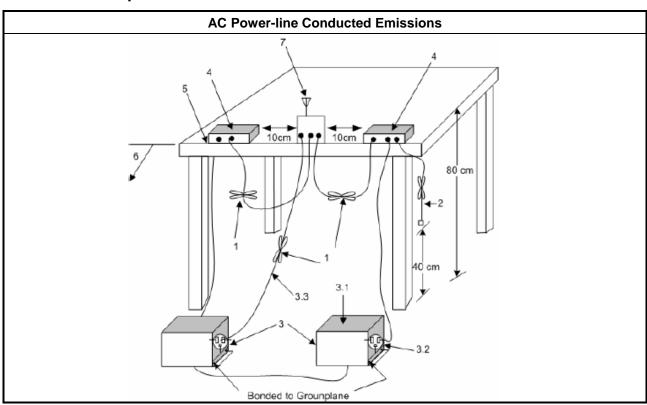
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

TEL: 886-3-3273456 Page Number : 12 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01

FCC Test Report

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

Report No.: FR952303AC

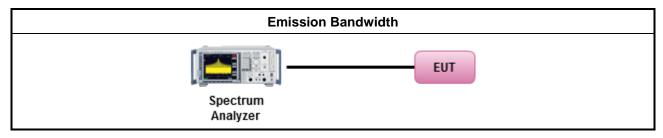
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

	Test Method
•	For the emission bandwidth shall be measured using one of the options below:
	Refer as KDB 558074. clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
	Refer as RSS-Gen, clause 6.7 for for occupied bandwidth testing.
	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

TEL: 886-3-3273456 Page Number : 13 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maxi	Maximum Conducted Output Power Limit								
	•	If $G_{TX} \le 6$ dBi, then $P_{Out} \le 30$ dBm (1 W)							
	■ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm								
	■ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm								
	•	Smart antenna system (SAS):							
		- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm							
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm								
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8dB$ dBm								
e.i.r.	p. P	ower Limit:							
•	2400	0-2483.5 MHz Band							
	•	Point-to-multipoint systems (P2M): P _{eirp} ≤ 36 dBm (4 W)							
	•	Point-to-point systems (P2P): $P_{eirp} \le MAX(36, [P_{Out} + G_{TX}]) dBm$							
	•	Smart antenna system (SAS)							
		- Single beam: $P_{eirp} \le MAX(36, P_{Out} + G_{TX}) dBm$							
		- Overlap beam: $P_{eirp} \le MAX(36, P_{Out} + G_{TX}) dBm$							
	- Aggregate power on all beams: P _{eirp} ≤ MAX(36, [P _{Out} + G _{TX} + 8]) dBm								
		aximum peak conducted output power or maximum conducted output power in dBm, maximum transmitting antenna directional gain in dBi.							

Report No.: FR952303AC

3.3.2 Measuring Instruments

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

TEL: 886-3-3273456 Page Number : 14 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

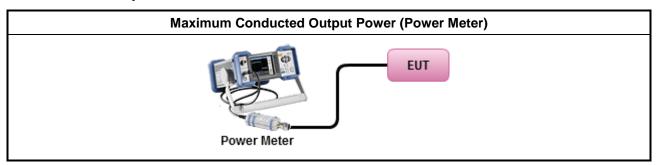
Report Template No.: HE1-C8 Ver3.5 Report Version : 01

3.3.3 Test Procedures

	Test Method
•	Maximum Peak Conducted Output Power
	☐ Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
•	Maximum Average Conducted Output Power
	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a 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

Report No.: FR952303AC

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

TEL: 886-3-3273456 Page Number : 15 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit

Report No.: FR952303AC

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

3.4.2 Measuring Instruments

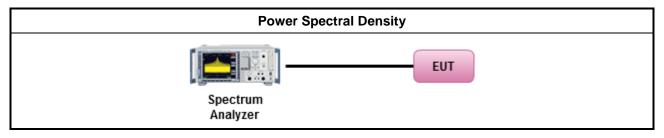
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method

- Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
 - Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Method PKPSD.
- 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.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

TEL: 886-3-3273456 Page Number : 16 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

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

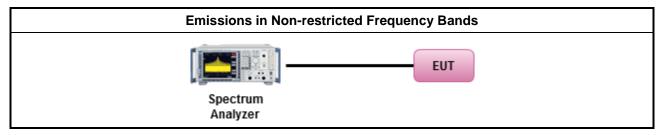
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

	Test Method
•	Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

TEL: 886-3-3273456 Page Number : 17 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 FCC ID: 2AEUPBHAIC001

Report Version : 01

Report No.: FR952303AC

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

Report No.: FR952303AC

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

3.6.2 Measuring Instruments

FCC ID: 2AEUPBHAIC001

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

TEL: 886-3-3273456 Page Number : 18 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version : 01

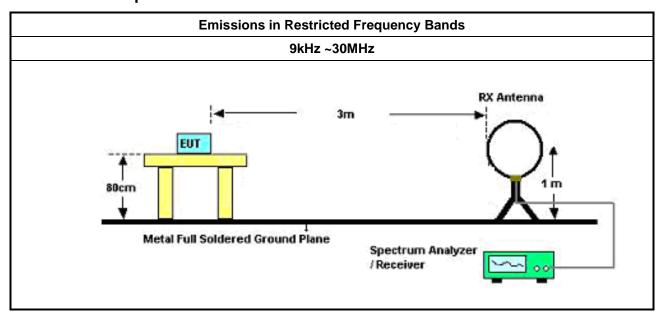
3.6.3 Test Procedures

Test Method

Report No.: FR952303AC

- The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
- Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
- For the transmitter unwanted emissions shall be measured using following options below:
 - Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
- For the transmitter band-edge emissions shall be measured using following options below:
 - Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
 - Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
 - Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
- Use the following spectrum analyzer settings:
 - Set RBW=100 kHz for f < 1 GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
 - Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement. For average measurement, refer as 1.1.4.

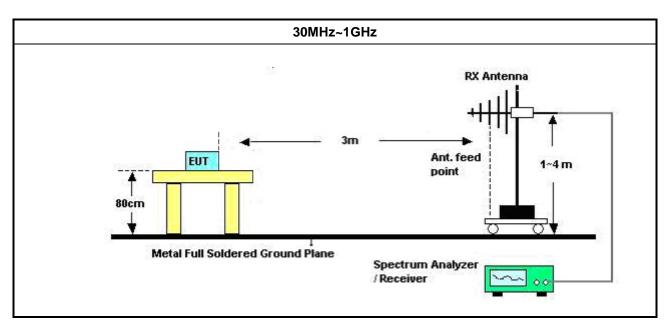
3.6.4 Test Setup



TEL: 886-3-3273456 Page Number : 19 of 21
FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

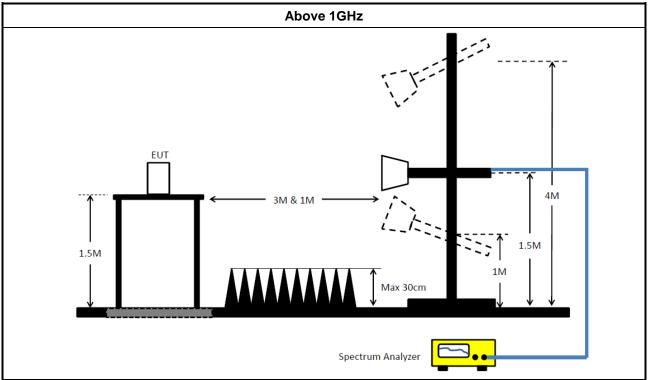
Report Template No.: HE1-C8 Ver3.5 Report Version : 01





Report No.: FR952303AC

: 01



3.6.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

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

3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

FCC ID: 2AEUPBHAIC001

TEL: 886-3-3273456 Page Number : 20 of 21 FAX: 886-3-3270973 Issued Date : Jul. 04, 2019

Report Template No.: HE1-C8 Ver3.5 Report Version



4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	08/Nov/2018	07/Nov/2019
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	17/Sep/2018	16/Sep/2019
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBE CK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2018	11/Oct/2019

NCR : Non-Calibration Require

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
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz ~18G	10/Jan/2019	09/Jan/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz ~18G	10/Jan/2019	09/Jan/2020
Cable 0.5m	HUBER	MY39470/4	RF Cable - 29	30MHz ~18G	10/Jan/2019	09/Jan/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz ~ 40GHz	12/Nov/2018	10/Nov/2020

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	Riken	SAC-3M	03CH01-HY	30MHz ~ 1GHz 3m	11/Jan/2019	10/Jan/2020
3m Semi Anechoic Chamber	Riken	SAC-3M	03CH01-HY	1GHz ~ 18GHz 3m	09/Jan/2019	08/Jan/2020
PreAmplifier	COM-POWER	PA-103	161050	1 MHz ~ 1.0GHz	24/Jul/2018	23/Jul/2019
Microwave Preamplifier	Agilent	8449B	3008A02602	1GHz ~ 26.5GHz	27/Mar/2019	26/Mar/2020
Spectrum Analyzer	R&S	FSV40	101407	10Hz ~ 40GHz	16/Aug/2018	15/Aug/2019
RF Cable-R03m	Jye Bao	RG142	CB019	9kHz ~ 1GHz	14/Dec/2018	13/Dce/2019
RF Cable-high	SUHNER	SUCOFLEX 104	SN805196/4+M Y39495	1 GHz ~ 18 GHz	13/Mar/2019	12/Mar/2020
Bilog Antenna & 5db Attenuator	SCHAFFNER/MTJ	CBL6112D / MTJ6102-05	2678 / 001	30MHz ~ 2GHz	07/Jul/2018	06/Jul/2019
EMI Test Receiver	R&S	ESU-26	100422	20Hz ~ 26.5GHz	25/Oct/2018	24/Oct/2019
Loop Antenna	TESEQ	HLA 6120	31244	9k ~ 30MHz	15/Mar/2019	14/Mar/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170339	18GHz ~ 40GHz	19/Apr/2019	18/Apr/2020
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D-1130	1GHz ~ 18GHz	26/Oct/2018	25/Oct/2019

TEL: 886-3-3273456 FAX: 886-3-3270973

Report Template No.: HE1-C8 Ver3.5

FCC ID: 2AEUPBHAIC001

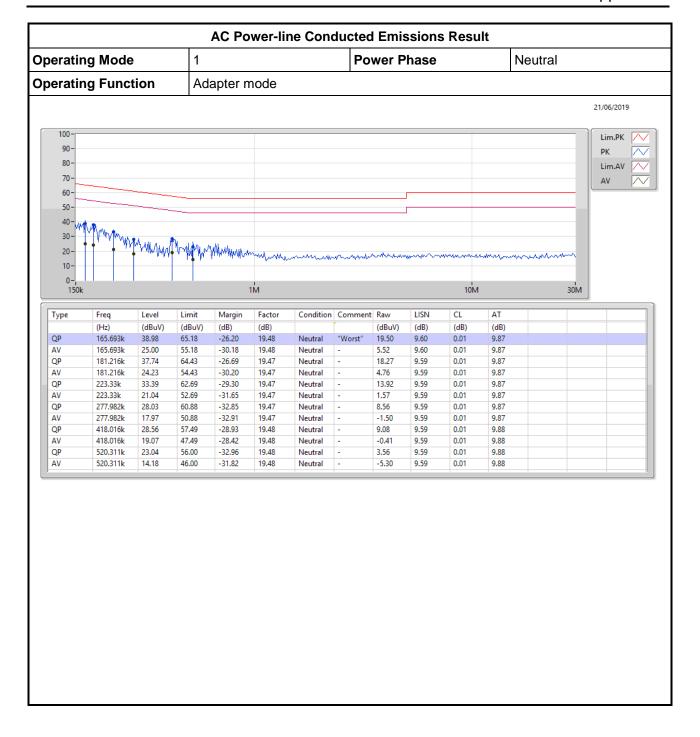
Page Number : 21 of 21 Issued Date : Jul. 04, 2019

Report No.: FR952303AC

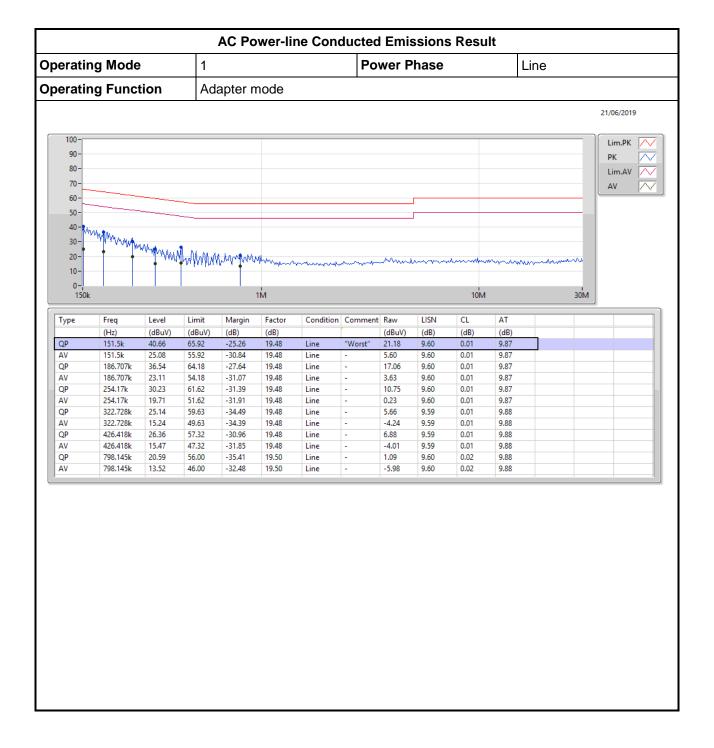
Report Version : 01



AC Power-line Conducted Emissions









Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	9.025M	14.018M	14M0G1D	8.525M	13.793M
802.11g_Nss1,(6Mbps)_1TX	15.325M	16.342M	16M3D1D	15.075M	16.317M
802.11n HT20_Nss1,(MCS0)_1TX	15.075M	17.516M	17M5D1D	15.05M	16.317M

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

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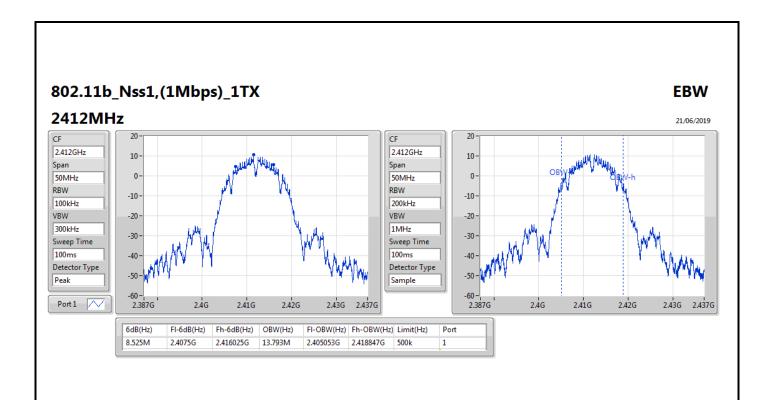


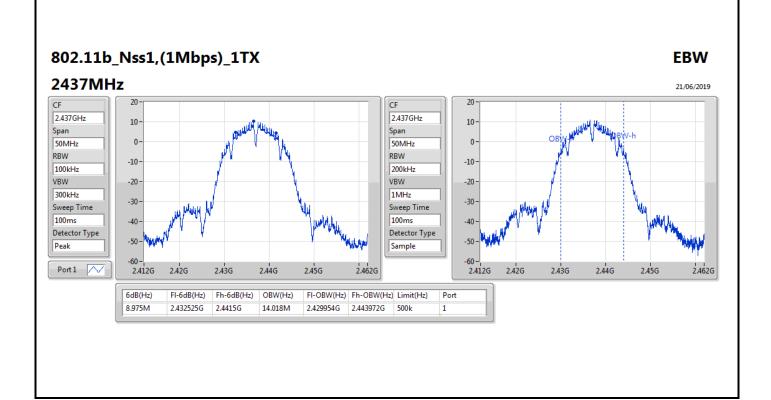
Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	8.525M	13.793M
2437MHz	Pass	500k	8.975M	14.018M
2462MHz	Pass	500k	9.025M	14.018M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	15.075M	16.342M
2437MHz	Pass	500k	15.325M	16.317M
2462MHz	Pass	500k	15.075M	16.317M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	15.075M	17.516M
2437MHz	Pass	500k	15.05M	17.516M
2462MHz	Pass	500k	15.05M	16.317M

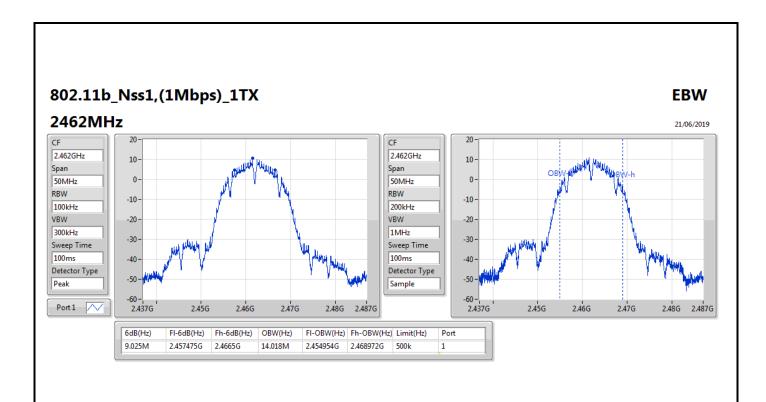
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

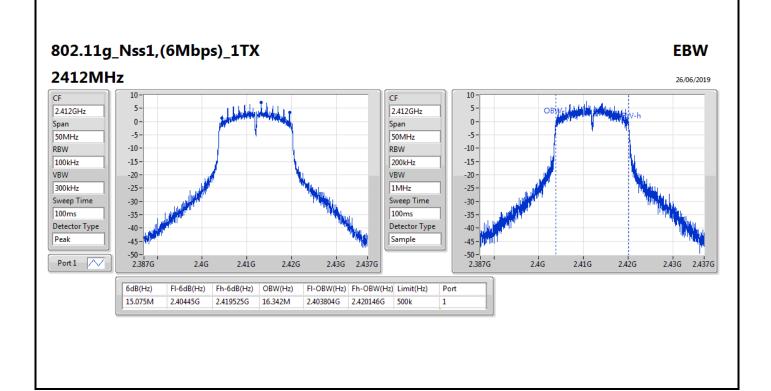
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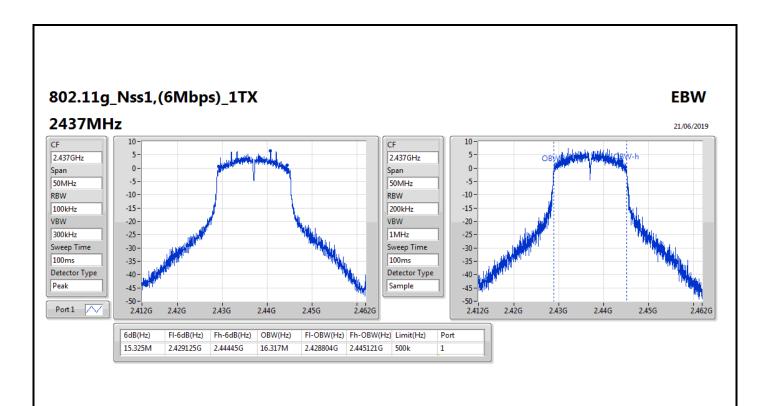


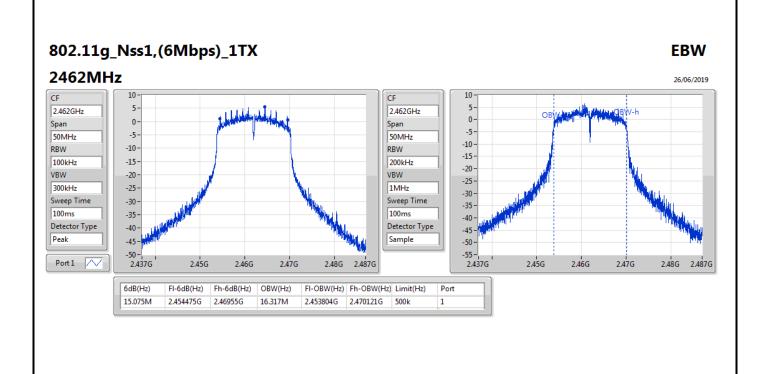


SPORTON INTERNATIONAL INC. Page No. : B3 of B7



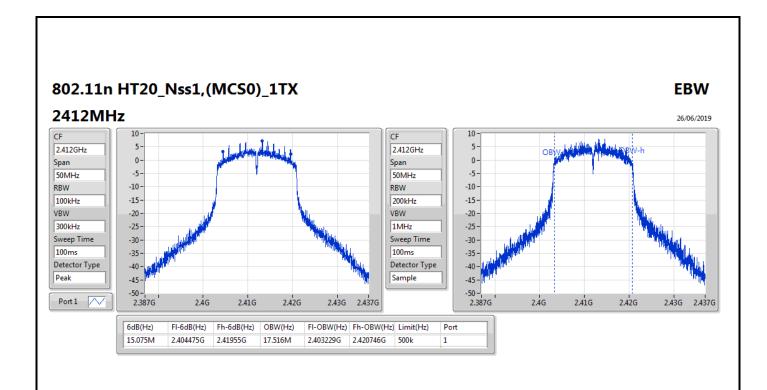


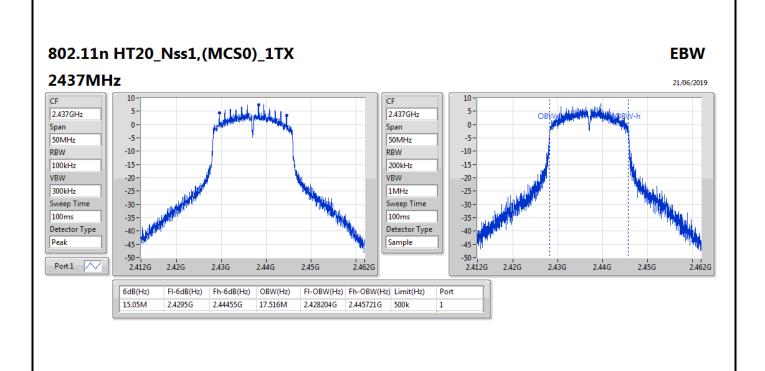




SPORTON INTERNATIONAL INC. Page No. : B5 of B7

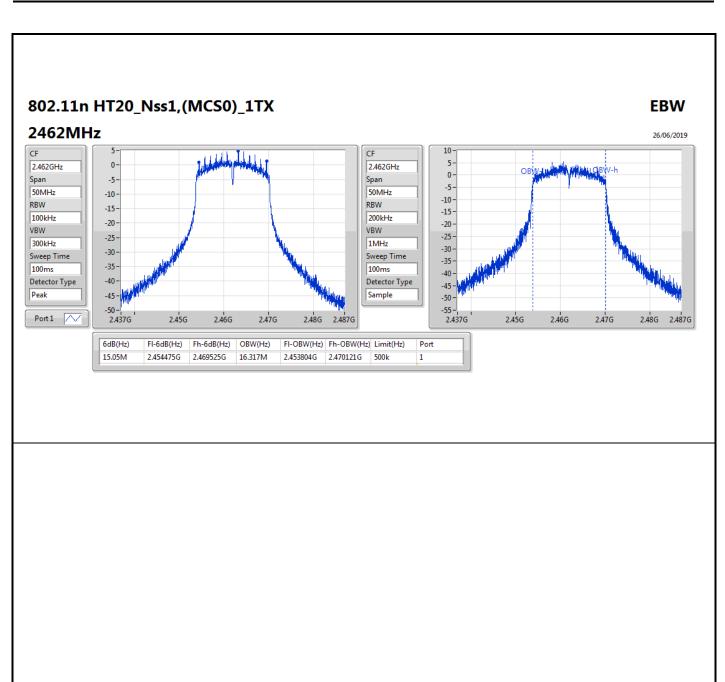
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SPORTON INTERNATIONAL INC. Page No. : B6 of B7

952303





Average Power Appendix B

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	18.99	0.07925
802.11g_Nss1,(6Mbps)_1TX	17.96	0.06252
802.11n HT20_Nss1,(MCS0)_1TX	17.99	0.06295

Average Power Appendix B

Result

Mode	Result	DG	Port 1	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.33	18.74	18.74	30.00
2417MHz	Pass	2.47	18.65	18.65	30.00
2437MHz	Pass	2.47	18.89	18.89	30.00
2457MHz	Pass	3.04	18.99	18.99	30.00
2462MHz	Pass	3.10	18.95	18.95	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.33	17.82	17.82	30.00
2417MHz	Pass	2.47	17.66	17.66	30.00
2437MHz	Pass	2.47	17.96	17.96	30.00
2457MHz	Pass	3.04	17.95	17.95	30.00
2462MHz	Pass	3.10	16.31	16.31	30.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	2.33	17.80	17.80	30.00
2417MHz	Pass	2.47	17.99	17.99	30.00
2437MHz	Pass	2.47	17.93	17.93	30.00
2457MHz	Pass	3.04	17.75	17.75	30.00
2462MHz	Pass	3.10	15.41	15.41	30.00

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



PSD Appendix D

Summary

Mode	PD		
	(dBm/RBW)		
2.4-2.4835GHz	-		
802.11b_Nss1,(1Mbps)_1TX	-3.74		
802.11g_Nss1,(6Mbps)_1TX	-7.51		
802.11n HT20_Nss1,(MCS0)_1TX	-7.94		

RBW=3 kHz.

952303



Appendix D **PSD**

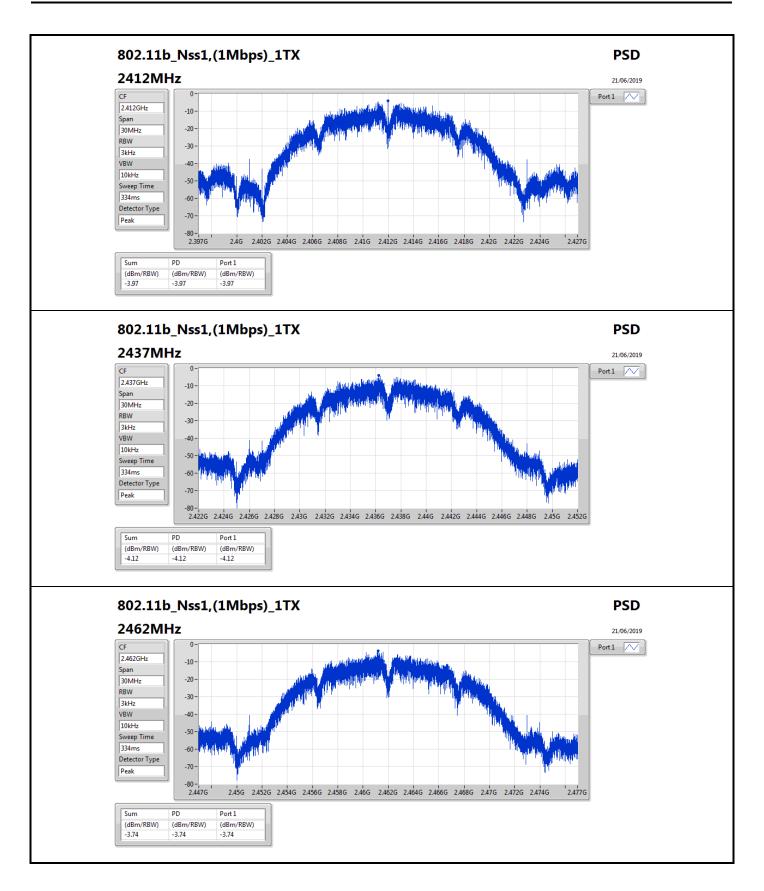
Result

Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.33	-3.97	-3.97	8.00
2437MHz	Pass	2.47	-4.12	-4.12	8.00
2462MHz	Pass	3.10	-3.74	-3.74	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.33	-7.92	-7.92	8.00
2437MHz	Pass	2.47	-7.51	-7.51	8.00
2462MHz	Pass	3.10	-8.22	-8.22	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	2.33	-8.89	-8.89	8.00
2437MHz	Pass	2.47	-7.94	-7.94	8.00
2462MHz	Pass	3.10	-10.54	-10.54	8.00

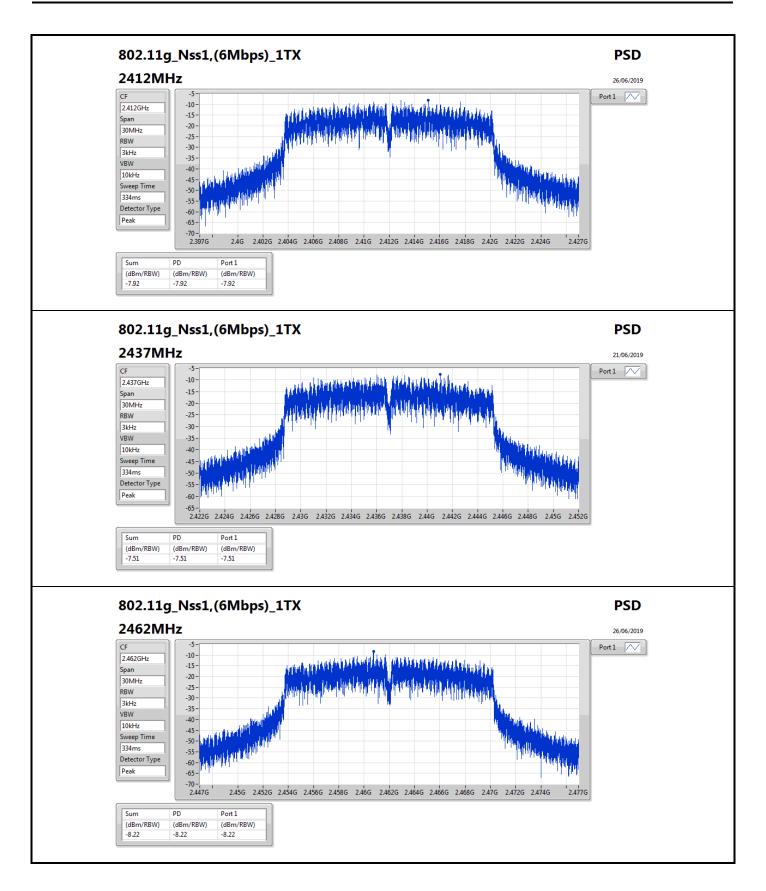
952303

DG = Directional Gain; RBW=3 kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;

PSD Appendix D

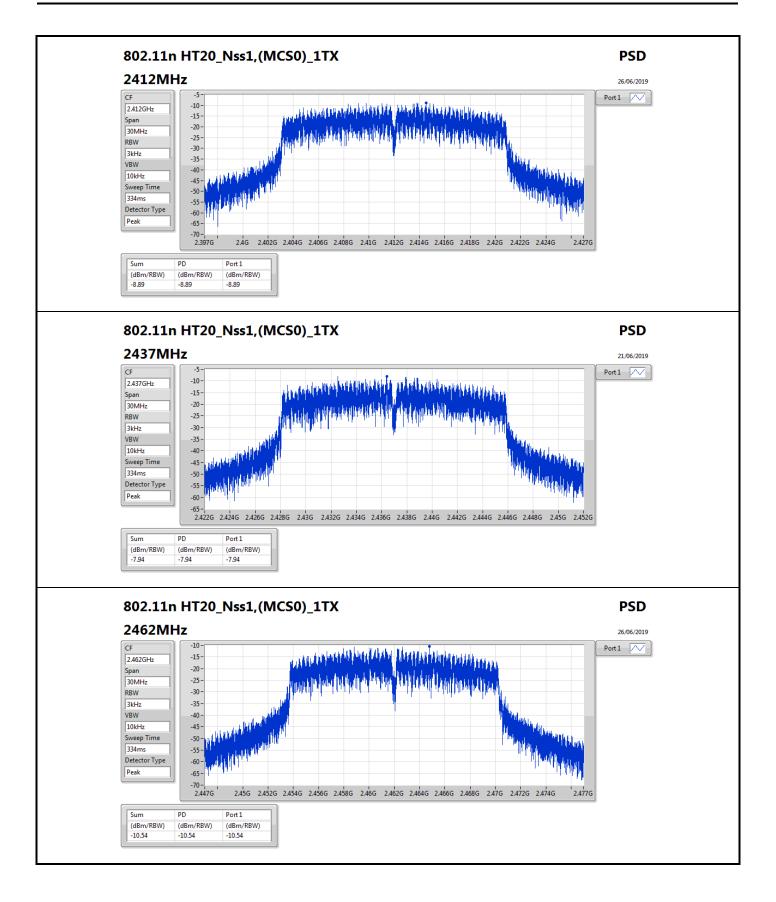


PSD Appendix D



SPORTON INTERNATIONAL INC. Page No. : D4 of D5

PSD Appendix D



SPORTON INTERNATIONAL INC. Page No. : D5 of D5



CSE(Non-restricted Band)

Appendix E

Summary

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	2.4615G	10.62	-19.38	2.19078G	-52.93	2.39952G	-22.63	2.48728G	-50.93	16.62469G	-40.94	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.4395G	7.15	-22.85	818.41M	-54.33	2.39984G	-23.19	2.488G	-51.89	16.93937G	-42.02	1
802.11n HT20_Nss1,(MCS0)_1TX	Pass	2.4395G	6.90	-23.10	885.11M	-54.28	2.39976G	-23.41	2.49244G	-51.72	16.40274G	-41.39	1

SPORTON INTERNATIONAL INC. Page No. : E1 of E7



CSE(Non-restricted Band)

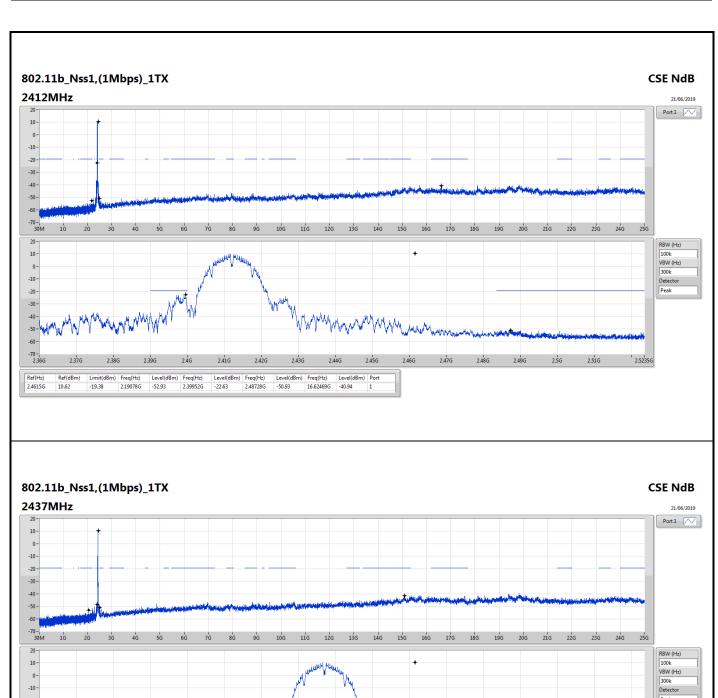
Appendix E

Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.4615G	10.62	-19.38	2.19078G	-52.93	2.39952G	-22.63	2.48728G	-50.93	16.62469G	-40.94	1
2437MHz	Pass	2.4615G	10.62	-19.38	2.06438G	-53.09	2.39802G	-48.43	2.51278G	-50.87	15.09629G	-41.57	1
2462MHz	Pass	2.4615G	10.62	-19.38	2.30961G	-53.10	2.39034G	-50.56	2.49G	-46.38	16.64436G	-40.92	1
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.4395G	7.15	-22.85	818.41M	-54.33	2.39984G	-23.19	2.488G	-51.89	16.93937G	-42.02	1
2437MHz	Pass	2.4395G	7.15	-22.85	679.49M	-55.00	2.39854G	-46.79	2.48724G	-50.81	16.43926G	-40.71	1
2462MHz	Pass	2.4395G	7.15	-22.85	2.30845G	-54.61	2.3992G	-51.91	2.48352G	-42.21	16.93937G	-42.23	1
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.4395G	6.90	-23.10	885.11M	-54.28	2.39976G	-23.41	2.49244G	-51.72	16.40274G	-41.39	1
2437MHz	Pass	2.4395G	6.90	-23.10	2.1069G	-54.62	2.39702G	-46.55	2.48352G	-49.98	16.27069G	-41.23	1
2462MHz	Pass	2.4395G	6.90	-23.10	2.3067G	-53.56	2.39358G	-51.81	2.48382G	-43.18	16.23697G	-42.30	1



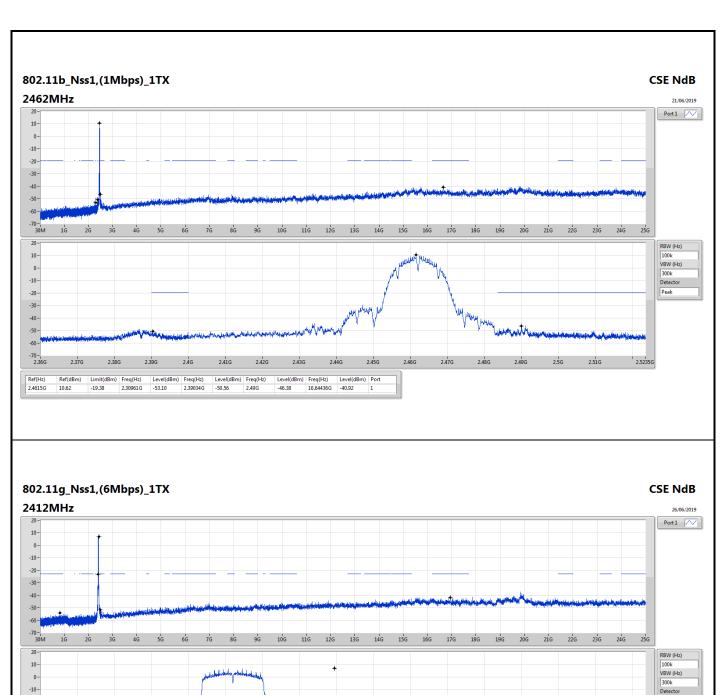
-30 ·



2.45G



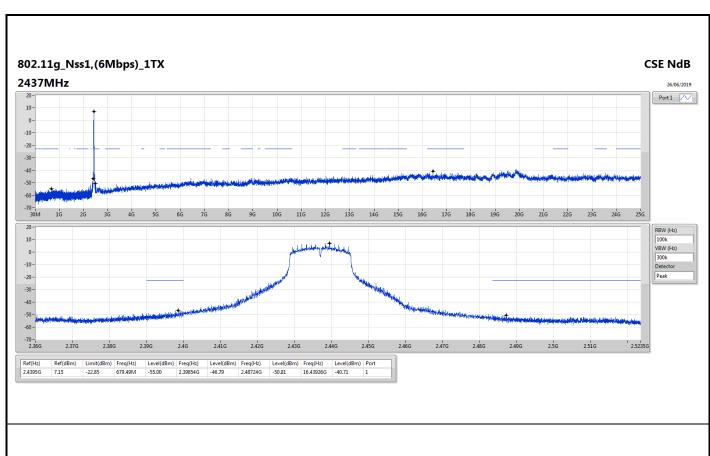
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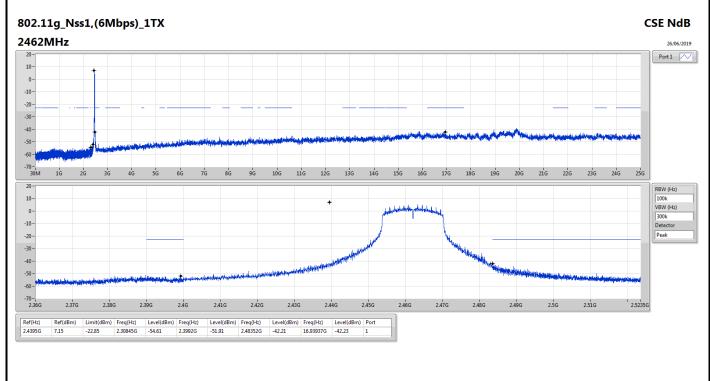


Level(dBm) Freq(Hz) Level(dBm) Port -51.89 16.93937G -42.02 1

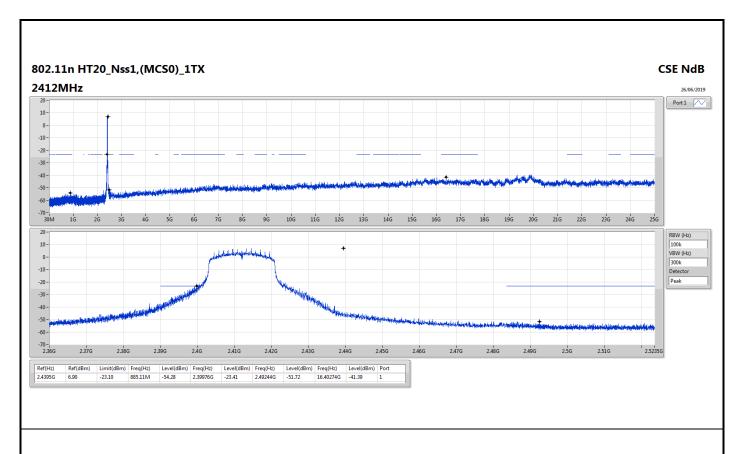
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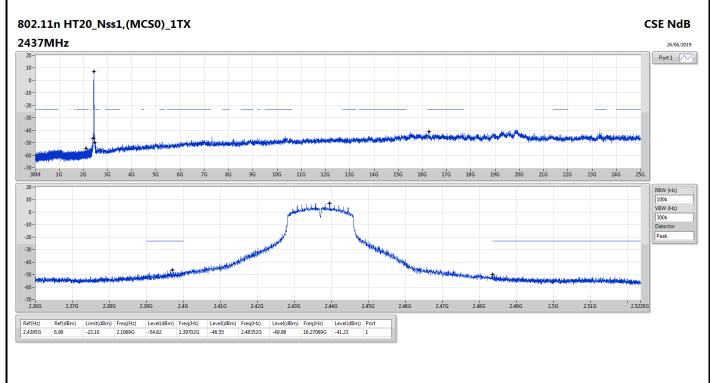




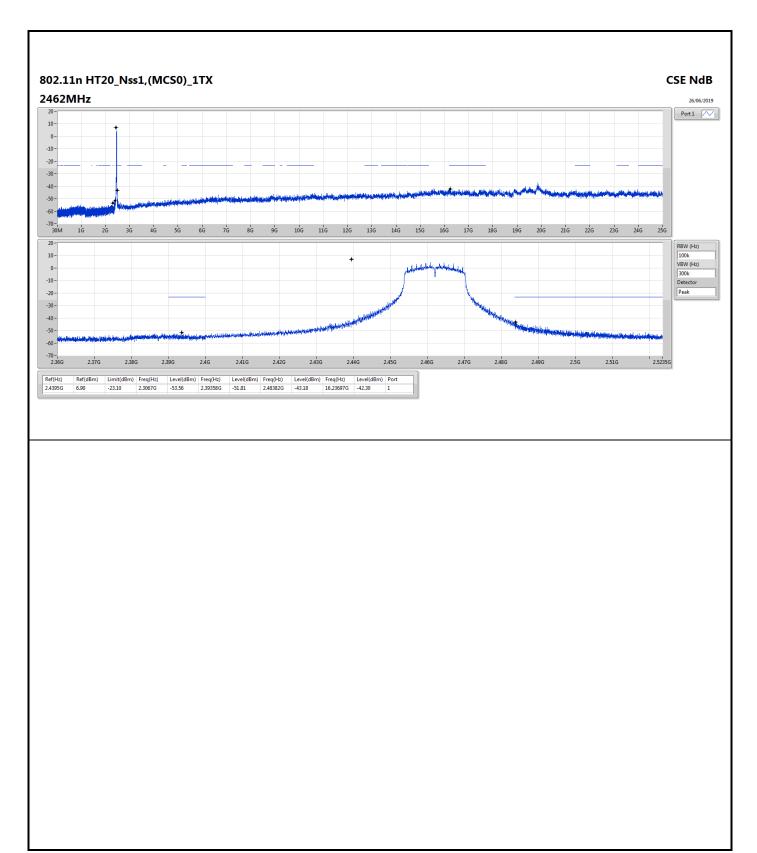














RSE TX below 1GHz Result

Appendix F.1

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-		-	-	-	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	PK	697.36M	40.39	46.00	-5.61	-3.91	3	Vertical	0	2.00	-

SPORTON INTERNATIONAL INC. Page No. : F1 of F4



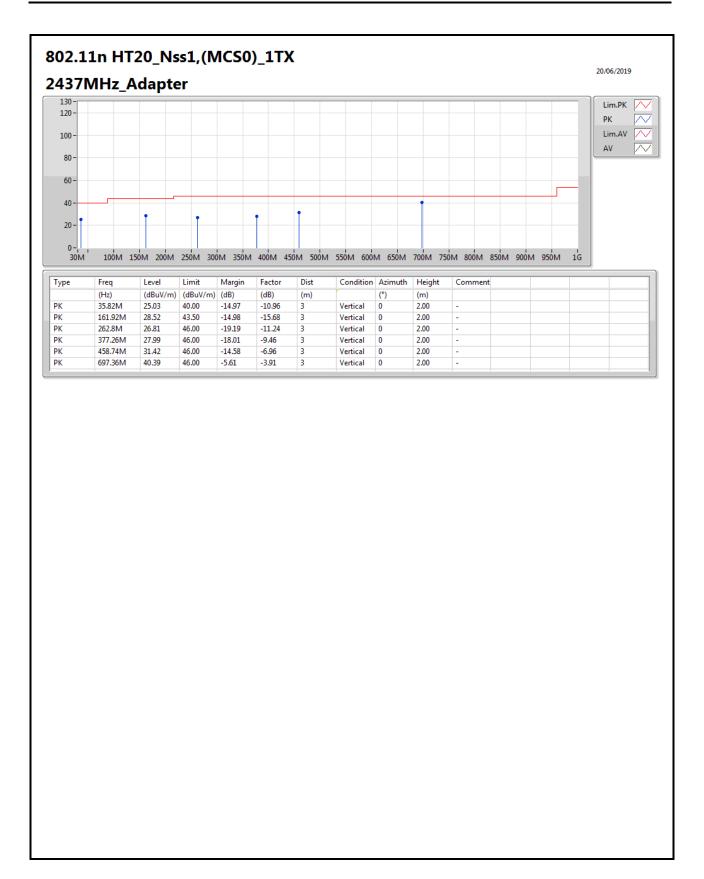
RSE TX below 1GHz Result

Appendix F.1

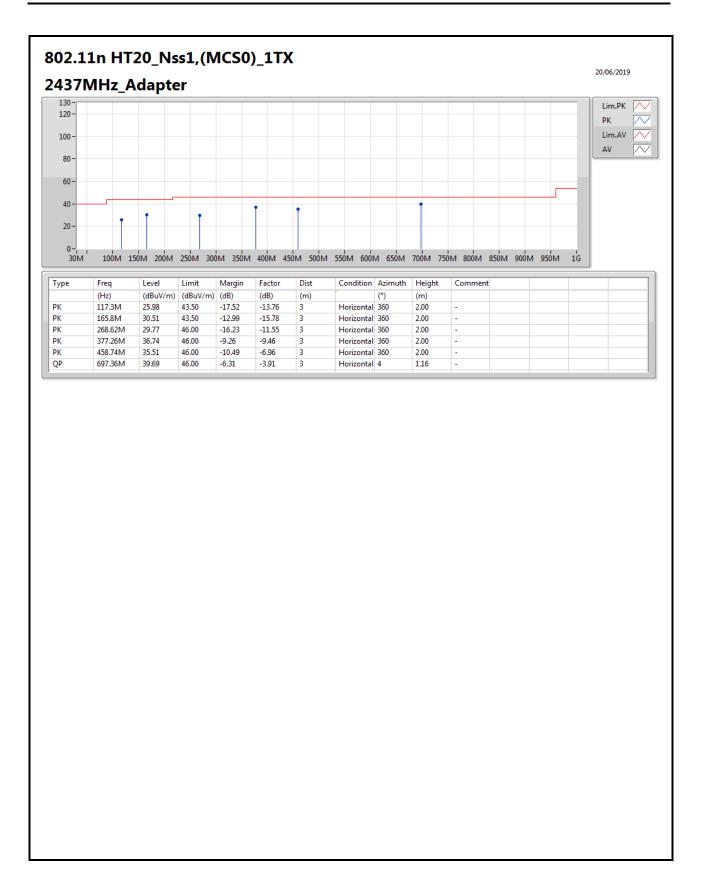
Result

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2437MHz_Adapter	Pass	PK	35.82M	25.03	40.00	-14.97	-10.96	3	Vertical	0	2.00	-
2437MHz_Adapter	Pass	PK	161.92M	28.52	43.50	-14.98	-15.68	3	Vertical	0	2.00	-
2437MHz_Adapter	Pass	PK	262.8M	26.81	46.00	-19.19	-11.24	3	Vertical	0	2.00	-
2437MHz_Adapter	Pass	PK	377.26M	27.99	46.00	-18.01	-9.46	3	Vertical	0	2.00	-
2437MHz_Adapter	Pass	PK	458.74M	31.42	46.00	-14.58	-6.96	3	Vertical	0	2.00	-
2437MHz_Adapter	Pass	PK	697.36M	40.39	46.00	-5.61	-3.91	3	Vertical	0	2.00	-
2437MHz_Adapter	Pass	PK	117.3M	25.98	43.50	-17.52	-13.76	3	Horizontal	360	2.00	-
2437MHz_Adapter	Pass	PK	165.8M	30.51	43.50	-12.99	-15.78	3	Horizontal	360	2.00	-
2437MHz_Adapter	Pass	PK	268.62M	29.77	46.00	-16.23	-11.55	3	Horizontal	360	2.00	-
2437MHz_Adapter	Pass	PK	377.26M	36.74	46.00	-9.26	-9.46	3	Horizontal	360	2.00	-
2437MHz_Adapter	Pass	PK	458.74M	35.51	46.00	-10.49	-6.96	3	Horizontal	360	2.00	-
2437MHz_Adapter	Pass	QP	697.36M	39.69	46.00	-6.31	-3.91	3	Horizontal	4	1.16	-











RSE TX above 1GHz

Appendix F.2

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	2.3886G	50.96	54.00	-3.04	30.95	3	Vertical	311	1.04	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.39G	50.89	54.00	-3.11	31.56	3	Vertical	340	1.03	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	2.4835G	50.85	54.00	-3.15	31.58	3	Vertical	360	1.10	-

Result

esult												
Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.3828G	50.29	54.00	-3.71	30.93	3	Vertical	311	1.53	-
2412MHz	Pass	AV	2.4128G	107.76	Inf	-Inf	31.04	3	Vertical	311	1.53	-
2412MHz	Pass	PK	2.3828G	60.58	74.00	-13.42	30.93	3	Vertical	311	1.53	-
2412MHz	Pass	PK	2.4128G	109.99	Inf	-Inf	31.04	3	Vertical	311	1.53	-
2412MHz	Pass	AV	2.3882G	48.54	54.00	-5.46	30.95	3	Horizontal	175	2.15	-
2412MHz	Pass	AV	2.4128G	105.77	Inf	-Inf	31.04	3	Horizontal	175	2.15	-
2412MHz	Pass	PK	2.3848G	59.79	74.00	-14.21	30.94	3	Horizontal	175	2.15	-
2412MHz	Pass	PK	2.4128G	108.18	Inf	-Inf	31.04	3	Horizontal	175	2.15	-
2412MHz	Pass	AV	4.82394G	38.02	54.00	-15.98	1.66	3	Vertical	13	2.51	-
2412MHz	Pass	PK	4.82418G	46.51	74.00	-27.49	1.66	3	Vertical	13	2.51	-
2412MHz	Pass	AV	4.82394G	39.08	54.00	-14.92	1.66	3	Horizontal	150	1.52	-
2412MHz	Pass	PK	4.82412G	47.01	74.00	-26.99	1.66	3	Horizontal	150	1.52	-
2417MHz	Pass	AV	2.3876G	49.37	54.00	-4.63	30.95	3	Vertical	312	1.19	-
2417MHz	Pass	AV	2.4162G	107.62	Inf	-Inf	31.05	3	Vertical	312	1.19	-
2417MHz	Pass	PK	2.3888G	60.65	74.00	-13.35	30.95	3	Vertical	312	1.19	-
2417MHz	Pass	PK	2.4162G	109.98	Inf	-Inf	31.05	3	Vertical	312	1.19	_
2417MHz	Pass	AV	2.3876G	48.75	54.00	-5.25	30.95	3	Horizontal	174	1.80	_
2417MHz	Pass	AV	2.4162G	105.47	Inf	-Inf	31.05	3	Horizontal	174	1.80	_
2417MHz	Pass	PK	2.3874G	60.14	74.00	-13.86	30.94	3	Horizontal	174	1.80	
2417MHz	Pass	PK	2.4162G	107.81	Inf	-Inf	31.05	3	Horizontal	174	1.80	
2437MHz	Pass	AV	2.4102G 2.3886G	50.96	54.00	-3.04	30.95	3	Vertical	311	1.04	
2437MHz	Pass	AV	2.4378G	112.12	Inf	-5.04 -Inf	31.13	3	Vertical	311	1.04	
2437MHz	Pass	AV	2.4376G 2.4854G	50.51		-3.49		3			1.04	
					54.00		31.31		Vertical	311		-
2437MHz	Pass	PK	2.3886G	62.52	74.00	-11.48	30.95	3	Vertical	311	1.04	-
2437MHz	Pass	PK	2.4374G	114.53	Inf	-Inf	31.12	3	Vertical	311	1.04	-
2437MHz	Pass	PK	2.4854G	60.86	74.00	-13.14	31.31	3	Vertical	311	1.04	-
2437MHz	Pass	AV	2.389G	50.95	54.00	-3.05	30.95	3	Horizontal	176	2.41	-
2437MHz	Pass	AV	2.4362G	109.93	Inf	-Inf	31.12	3	Horizontal	176	2.41	-
2437MHz	Pass	AV	2.485G	48.14	54.00	-5.86	31.31	3	Horizontal	176	2.41	-
2437MHz	Pass	PK	2.3898G	61.47	74.00	-12.53	30.95	3	Horizontal	176	2.41	-
2437MHz	Pass	PK	2.4362G	112.31	Inf	-Inf	31.12	3	Horizontal	176	2.41	-
2437MHz	Pass	PK	2.489G	59.03	74.00	-14.97	31.32	3	Horizontal	176	2.41	-
2437MHz	Pass	AV	4.874G	44.59	54.00	-9.41	1.79	3	Vertical	357	2.50	-
2437MHz	Pass	AV	7.3101G	50.85	54.00	-3.15	7.46	3	Vertical	335	2.17	-
2437MHz	Pass	PK	4.87393G	49.52	74.00	-24.48	1.79	3	Vertical	357	2.50	-
2437MHz	Pass	PK	7.31004G	57.69	74.00	-16.31	7.46	3	Vertical	335	2.17	-
2437MHz	Pass	AV	4.87397G	36.77	54.00	-17.23	1.79	3	Horizontal	91	2.10	-
2437MHz	Pass	AV	7.3101G	49.01	54.00	-4.99	7.46	3	Horizontal	306	2.47	-
2437MHz	Pass	PK	4.87406G	46.59	74.00	-27.41	1.79	3	Horizontal	91	2.10	-
2437MHz	Pass	PK	7.31094G	55.82	74.00	-18.18	7.47	3	Horizontal	306	2.47	-
2457MHz	Pass	AV	2.4562G	109.06	Inf	-Inf	31.20	3	Vertical	309	1.28	
2457MHz	Pass	AV	2.4862G	50.88	54.00	-3.12	31.31	3	Vertical	309	1.28	-
2457MHz	Pass	PK	2.456G	111.68	Inf	-Inf	31.20	3	Vertical	309	1.28	-
2457MHz	Pass	PK	2.4836G	61.56	74.00	-12.44	31.30	3	Vertical	309	1.28	-
2457MHz	Pass	AV	2.4562G	105.71	Inf	-Inf	31.20	3	Horizontal	176	1.72	-
2457MHz	Pass	AV	2.4858G	48.85	54.00	-5.15	31.31	3	Horizontal	176	1.72	-
2457MHz	Pass	PK	2.456G	108.07	Inf	-Inf	31.20	3	Horizontal	176	1.72	-
			•		•	•					•	



RSE TX above 1GHz Appendix F.2

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2457MHz	Pass	PK	2.4838G	59.94	74.00	-14.06	31.30	3	Horizontal	176	1.72	-
2462MHz	Pass	AV	2.4626G	108.54	Inf	-Inf	31.23	3	Vertical	333	1.00	-
2462MHz	Pass	AV	2.4876G	50.71	54.00	-3.29	31.32	3	Vertical	333	1.00	-
2462MHz	Pass	PK	2.4612G	111.19	Inf	-Inf	31.22	3	Vertical	333	1.00	-
2462MHz	Pass	PK	2.4932G	60.99	74.00	-13.01	31.33	3	Vertical	333	1.00	-
2462MHz	Pass	AV	2.4612G	104.37	Inf	-Inf	31.22	3	Horizontal	176	2.11	-
2462MHz	Pass	AV	2.4876G	47.89	54.00	-6.11	31.32	3	Horizontal	176	2.11	-
2462MHz	Pass	PK	2.4612G	106.76	Inf	-Inf	31.22	3	Horizontal	176	2.11	-
2462MHz	Pass	PK	2.485G	60.08	74.00	-13.92	31.31	3	Horizontal	176	2.11	-
2462MHz	Pass	AV	4.924G	37.15	54.00	-16.85	1.92	3	Vertical	360	2.30	-
2462MHz	Pass	AV	7.3851G	44.62	54.00	-9.38	7.65	3	Vertical	328	2.08	-
2462MHz	Pass	PK	4.92388G	45.48	74.00	-28.52	1.92	3	Vertical	360	2.30	-
2462MHz	Pass	PK	7.38708G	53.36	74.00	-20.64	7.66	3	Vertical	328	2.08	-
2462MHz	Pass	AV	4.924G	37.31	54.00	-16.69	1.92	3	Horizontal	167	1.07	-
2462MHz	Pass	AV	7.38676G	41.02	54.00	-12.98	7.66	3	Horizontal	205	1.94	_
2462MHz	Pass	PK	4.92406G	46.15	74.00	-27.85	1.92	3	Horizontal	167	1.07	_
2462MHz	Pass	PK	7.38504G	51.69	74.00	-22.31	7.65	3	Horizontal	205	1.94	_
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.39G	50.66	54.00	-3.34	31.56	3	Vertical	342	1.03	-
2412MHz	Pass	AV	2.4132G	98.71	Inf	-5.54 -Inf	31.54	3	Vertical	342	1.03	
2412MHz	Pass	PK	2.4132G 2.389G	64.66	74.00	-9.34	31.54	3	Vertical	342	1.03	-
2412MHz		PK				-9.54 -Inf		3		342	1.03	
2412MHz	Pass		2.412G	109.27	Inf		31.54	3	Vertical			-
	Pass	AV	2.39G	48.04	54.00	-5.96	31.56		Horizontal	189	1.01	-
2412MHz	Pass	AV	2.4136G	94.14	Inf	-Inf	31.54	3	Horizontal	189	1.01	-
2412MHz	Pass	PK	2.39G	62.87	74.00	-11.13	31.56	3	Horizontal	189	1.01	-
2412MHz	Pass	PK	2.41G	104.16	Inf	-Inf	31.54	3	Horizontal	189	1.01	-
2412MHz	Pass	AV	4.82664G	30.63	54.00	-23.37	-3.92	3	Vertical	326	1.50	-
2412MHz	Pass	PK	4.82404G	42.87	74.00	-31.13	-3.93	3	Vertical	326	1.50	-
2412MHz	Pass	AV	4.8246G	30.49	54.00	-23.51	-3.93	3	Horizontal	16	1.20	-
2412MHz	Pass	PK	4.82646G	43.10	74.00	-30.90	-3.92	3	Horizontal	16	1.20	-
2417MHz	Pass	AV	2.39G	50.89	54.00	-3.11	31.56	3	Vertical	340	1.03	-
2417MHz	Pass	AV	2.4184G	102.08	Inf	-Inf	31.54	3	Vertical	340	1.03	-
2417MHz	Pass	PK	2.3896G	68.52	74.00	-5.48	31.56	3	Vertical	340	1.03	-
2417MHz	Pass	PK	2.4172G	112.63	Inf	-Inf	31.54	3	Vertical	340	1.03	-
2417MHz	Pass	AV	2.3884G	47.23	54.00	-6.77	31.57	3	Horizontal	188	1.28	-
2417MHz	Pass	AV	2.4158G	97.07	Inf	-Inf	31.54	3	Horizontal	188	1.28	-
2417MHz	Pass	PK	2.3894G	62.26	74.00	-11.74	31.56	3	Horizontal	188	1.28	-
2417MHz	Pass	PK	2.4168G	106.92	Inf	-Inf	31.54	3	Horizontal	188	1.28	-
2437MHz	Pass	AV	2.3882G	48.54	54.00	-5.46	30.95	3	Vertical	312	1.02	-
2437MHz	Pass	AV	2.4382G	106.60	Inf	-Inf	31.13	3	Vertical	312	1.02	-
2437MHz	Pass	AV	2.4842G	49.08	54.00	-4.92	31.31	3	Vertical	312	1.02	-
2437MHz	Pass	PK	2.3898G	59.98	74.00	-14.02	30.95	3	Vertical	312	1.02	-
2437MHz	Pass	PK	2.4418G	115.71	Inf	-Inf	31.15	3	Vertical	312	1.02	-
2437MHz	Pass	PK	2.485G	63.41	74.00	-10.59	31.31	3	Vertical	312	1.02	-
2437MHz	Pass	AV	2.3898G	48.54	54.00	-5.46	30.95	3	Horizontal	176	2.40	-
2437MHz	Pass	AV	2.4378G	104.26	Inf	-Inf	31.13	3	Horizontal	176	2.40	-
2437MHz	Pass	AV	2.4838G	48.13	54.00	-5.87	31.30	3	Horizontal	176	2.40	-
2437MHz	Pass	PK	2.3878G	60.43	74.00	-13.57	30.95	3	Horizontal	176	2.40	-
2437MHz	Pass	PK	2.4354G	113.20	Inf	-Inf	31.12	3	Horizontal	176	2.40	-



RSE TX above 1GHz Appendix F.2

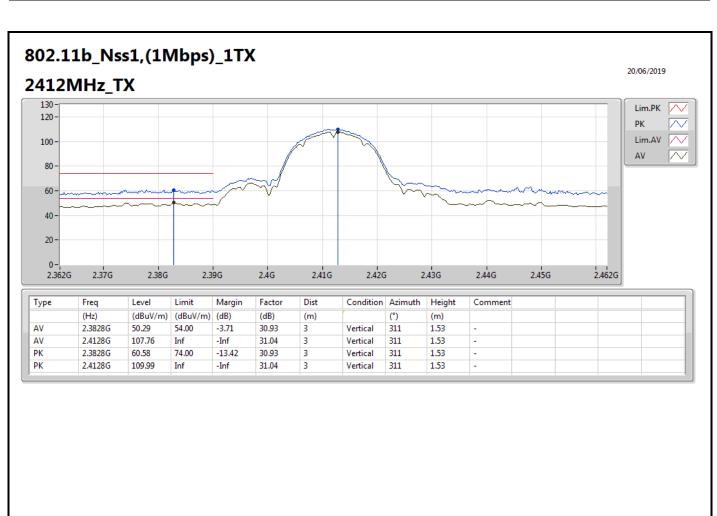
	1	1	ı	1	1	1	ı		ı	1	1	
Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2437MHz	Pass	PK	2.4946G	59.39	74.00	-14.61	31.34	3	Horizontal	176	2.40	-
2437MHz	Pass	AV	4.87434G	32.71	54.00	-21.29	1.79	3	Vertical	345	2.37	-
2437MHz	Pass	AV	7.31328G	43.75	54.00	-10.25	7.48	3	Vertical	320	2.18	-
2437MHz	Pass	PK	4.87489G	45.17	74.00	-28.83	1.79	3	Vertical	345	2.37	-
2437MHz	Pass	PK	7.3122G	56.27	74.00	-17.73	7.47	3	Vertical	320	2.18	-
2437MHz	Pass	AV	4.8833G	32.00	54.00	-22.00	1.82	3	Horizontal	193	1.15	-
2437MHz	Pass	AV	7.31094G	42.49	54.00	-11.51	7.47	3	Horizontal	294	2.06	-
2437MHz	Pass	PK	4.86044G	44.30	74.00	-29.70	1.76	3	Horizontal	193	1.15	-
2437MHz	Pass	PK	7.31298G	54.95	74.00	-19.05	7.48	3	Horizontal	294	2.06	-
2457MHz	Pass	AV	2.4558G	100.55	Inf	-Inf	31.56	3	Vertical	339	1.02	-
2457MHz	Pass	AV	2.4838G	50.65	54.00	-3.35	31.58	3	Vertical	339	1.02	-
2457MHz	Pass	PK	2.457G	111.04	Inf	-Inf	31.56	3	Vertical	339	1.02	-
2457MHz	Pass	PK	2.4862G	66.57	74.00	-7.43	31.57	3	Vertical	339	1.02	-
2457MHz	Pass	AV	2.456G	95.61	Inf	-Inf	31.56	3	Horizontal	191	1.85	-
2457MHz	Pass	AV	2.4835G	46.03	54.00	-7.97	31.58	3	Horizontal	191	1.85	-
2457MHz	Pass	PK	2.4556G	105.25	Inf	-Inf	31.56	3	Horizontal	191	1.85	-
2457MHz	Pass	PK	2.4836G	61.17	74.00	-12.83	31.58	3	Horizontal	191	1.85	
2462MHz	Pass	AV	2.4626G	97.13	Inf	-Inf	31.57	3	Vertical	340	1.10	-
2462MHz	Pass	AV	2.4835G	50.17	54.00	-3.83	31.58	3	Vertical	340	1.10	-
2462MHz	Pass	PK	2.4634G	106.75	Inf	-Inf	31.57	3	Vertical	340	1.10	-
2462MHz	Pass	PK	2.4835G	65.43	74.00	-8.57	31.58	3	Vertical	340	1.10	-
2462MHz	Pass	AV	2.4608G	91.76	Inf	-Inf	31.56	3	Horizontal	190	1.84	-
2462MHz	Pass	AV	2.4835G	46.07	54.00	-7.93	31.58	3	Horizontal	190	1.84	-
2462MHz	Pass	PK	2.4596G	102.60	Inf	-Inf	31.56	3	Horizontal	190	1.84	-
2462MHz	Pass	PK	2.4835G	58.62	74.00	-15.38	31.58	3	Horizontal	190	1.84	-
2462MHz	Pass	AV	4.9242G	30.10	54.00	-23.90	-3.79	3	Vertical	359	1.33	_
2462MHz	Pass	AV	7.38114G	36.94	54.00	-17.06	1.39	3	Vertical	354	2.33	-
2462MHz	Pass	PK	4.9246G	42.63	74.00	-31.37	-3.79	3	Vertical	359	1.33	_
2462MHz	Pass	PK	7.39038G	49.58	74.00	-24.42	1.38	3	Vertical	354	2.33	
2462MHz	Pass	AV	4.92436G	29.79	54.00	-24.21	-3.79	3	Horizontal	338	2.10	_
2462MHz	Pass	AV	7.38216G	35.96	54.00	-18.04	1.39	3	Horizontal	242	1.62	-
2462MHz	Pass	PK	4.92406G	42.41	74.00	-31.59	-3.79	3	Horizontal	338	2.10	-
2462MHz	Pass	PK	7.39176G	48.86	74.00	-25.14		3	Horizontal	242	1.62	-
							1.38					-
802.11n HT20_Nss1,(MCS0)_1TX 2412MHz	- Pass	- AV	2.39G	50.78	54.00	-3.22	31.56	3	- Vertical	343	1.02	-
2412MHz												-
2412MHz 2412MHz	Pass Pass	AV PK	2.4136G 2.3896G	97.61 65.74	Inf 74.00	-Inf -8.26	31.54 31.56	3	Vertical	343 343	1.02	-
									Vertical			
2412MHz	Pass	PK	2.415G	107.34	Inf E4.00	-Inf	31.55	3	Vertical	343	1.02	-
2412MHz	Pass	AV	2.39G	48.53	54.00	-5.47	31.56	3	Horizontal	191	1.02	-
2412MHz	Pass	AV	2.4134G	93.59	Inf	-Inf	31.54	3	Horizontal	191	1.02	-
2412MHz	Pass	PK	2.39G	62.82	74.00	-11.18	31.56	3	Horizontal	191	1.02	-
2412MHz	Pass	PK AV	2.4108G	103.90	Inf	-Inf	31.54	3	Horizontal	191	1.02	-
2412MHz	Pass	AV	4.8245G	30.56	54.00	-23.44	-3.93	3	Vertical	306	1.38	-
2412MHz	Pass	PK	4.82088G	43.29	74.00	-30.71	-3.93	3	Vertical	306	1.38	-
2412MHz	Pass	AV	4.82402G	30.67	54.00	-23.33	-3.93	3	Horizontal	234	1.09	-
2412MHz	Pass	PK	4.82214G	43.38	74.00	-30.62	-3.93	3	Horizontal	234	1.09	-
2417MHz	Pass	AV	2.39G	50.52	54.00	-3.48	31.56	3	Vertical	353	1.01	-
2417MHz	Pass	AV	2.4178G	101.27	Inf	-Inf	31.54	3	Vertical	353	1.01	-
2417MHz	Pass	PK	2.3862G	66.03	74.00	-7.97	31.57	3	Vertical	353	1.01	-



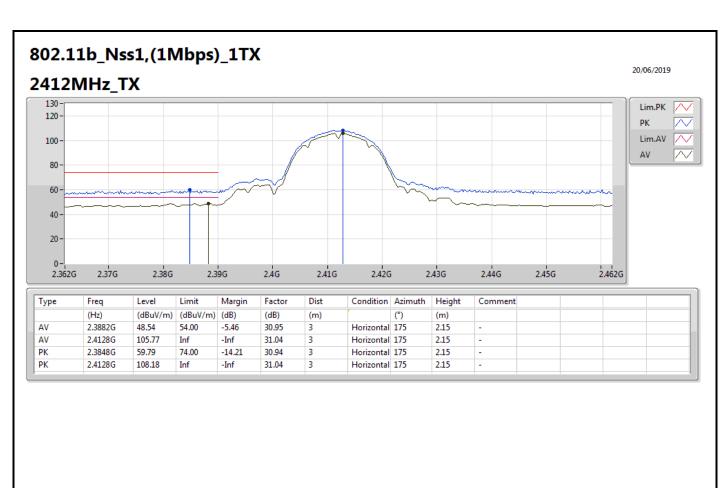
RSE TX above 1GHz Appendix F.2

M. J.	D It	T	F	Local	1.114	Manada	Factor	Di-4	0	A = !4!-	11-1-64	
Mode	Result	Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	_		(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2417MHz	Pass	PK	2.4182G	111.24	Inf	-Inf	31.54	3	Vertical	353	1.01	-
2417MHz	Pass	AV	2.39G	48.20	54.00	-5.80	31.56	3	Horizontal	190	1.98	-
2417MHz	Pass	AV	2.4184G	97.06	Inf	-Inf	31.54	3	Horizontal	190	1.98	-
2417MHz	Pass	PK	2.3896G	65.31	74.00	-8.69	31.56	3	Horizontal	190	1.98	-
2417MHz	Pass	PK	2.4152G	106.68	Inf	-Inf	31.54	3	Horizontal	190	1.98	-
2437MHz	Pass	AV	2.3886G	48.54	54.00	-5.46	30.95	3	Vertical	310	1.03	-
2437MHz	Pass	AV	2.439G	106.32	Inf	-Inf	31.14	3	Vertical	310	1.03	-
2437MHz	Pass	AV	2.4835G	49.50	54.00	-4.50	31.30	3	Vertical	310	1.03	-
2437MHz	Pass	PK	2.3886G	60.04	74.00	-13.96	30.95	3	Vertical	310	1.03	-
2437MHz	Pass	PK	2.4386G	115.31	Inf	-Inf	31.13	3	Vertical	310	1.03	-
2437MHz	Pass	PK	2.4842G	62.88	74.00	-11.12	31.31	3	Vertical	310	1.03	-
2437MHz	Pass	AV	2.3898G	48.54	54.00	-5.46	30.95	3	Horizontal	178	2.41	-
2437MHz	Pass	AV	2.4358G	103.83	Inf	-Inf	31.12	3	Horizontal	178	2.41	-
2437MHz	Pass	AV	2.4842G	48.14	54.00	-5.86	31.31	3	Horizontal	178	2.41	-
2437MHz	Pass	PK	2.3874G	61.31	74.00	-12.69	30.94	3	Horizontal	178	2.41	-
2437MHz	Pass	PK	2.4342G	113.24	Inf	-Inf	31.12	3	Horizontal	178	2.41	-
2437MHz	Pass	PK	2.4835G	59.68	74.00	-14.32	31.30	3	Horizontal	178	2.41	-
2437MHz	Pass	AV	4.87004G	33.00	54.00	-21.00	1.79	3	Vertical	10	2.28	-
2437MHz	Pass	AV	7.30686G	44.19	54.00	-9.81	7.46	3	Vertical	330	2.11	-
2437MHz	Pass	PK	4.87376G	46.07	74.00	-27.93	1.79	3	Vertical	10	2.28	-
2437MHz	Pass	PK	7.30662G	56.71	74.00	-17.29	7.46	3	Vertical	330	2.11	-
2437MHz	Pass	AV	4.88162G	32.06	54.00	-21.94	1.82	3	Horizontal	139	1.66	-
2437MHz	Pass	AV	7.31106G	42.21	54.00	-11.79	7.47	3	Horizontal	291	2.07	-
2437MHz	Pass	PK	4.8653G	44.43	74.00	-29.57	1.77	3	Horizontal	139	1.66	-
2437MHz	Pass	PK	7.30302G	54.34	74.00	-19.66	7.45	3	Horizontal	291	2.07	-
2457MHz	Pass	AV	2.4582G	100.18	Inf	-Inf	31.56	3	Vertical	338	1.10	-
2457MHz	Pass	AV	2.4836G	50.51	54.00	-3.49	31.58	3	Vertical	338	1.10	-
2457MHz	Pass	PK	2.4592G	109.81	Inf	-Inf	31.56	3	Vertical	338	1.10	-
2457MHz	Pass	PK	2.484G	66.39	74.00	-7.61	31.58	3	Vertical	338	1.10	-
2457MHz	Pass	AV	2.4552G	90.21	Inf	-Inf	31.55	3	Horizontal	348	1.97	-
2457MHz	Pass	AV	2.4835G	44.99	54.00	-9.01	31.58	3	Horizontal	348	1.97	_
2457MHz	Pass	PK	2.4554G	100.19	Inf	-Inf	31.55	3	Horizontal	348	1.97	_
2457MHz	Pass	PK	2.4836G	57.92	74.00	-16.08	31.58	3	Horizontal	348	1.97	_
2462MHz	Pass	AV	2.4628G	96.27	Inf	-Inf	31.57	3	Vertical	360	1.10	_
2462MHz	Pass	AV	2.4835G	50.85	54.00	-3.15	31.58	3	Vertical	360	1.10	-
2462MHz	Pass	PK	2.46G	107.03	Inf	-Inf	31.56	3	Vertical	360	1.10	-
2462MHz	Pass	PK	2.4835G	66.79	74.00	-7.21	31.58	3	Vertical	360	1.10	-
2462MHz	Pass	AV	2.46G	90.67	Inf	-Inf	31.56	3	Horizontal	190	1.87	_
2462MHz	Pass	AV	2.4835G	45.83	54.00	-8.17	31.58	3	Horizontal	190	1.87	-
2462MHz	Pass	PK	2.4635G 2.461G	100.76	Inf	-0.17 -Inf	31.56	3	Horizontal	190	1.87	-
2462MHz	Pass	PK	2.488G	57.70	74.00	-16.30	31.57	3	Horizontal	190	1.87	-
							-					-
2462MHz	Pass	AV	4.91752G	29.68	54.00	-24.32	-3.81	3	Vertical	24	1.37	-
2462MHz	Pass	AV	7.38258G	36.08	54.00	-17.92	1.39	3	Vertical	10	1.68	-
2462MHz	Pass	PK	4.91272G	42.86	74.00	-31.14	-3.84	3	Vertical	24	1.37	-
2462MHz	Pass	PK	7.39704G	49.00	74.00	-25.00	1.38	3	Vertical	10	1.68	-
2462MHz	Pass	AV	4.92028G	29.80	54.00	-24.20	-3.80	3	Horizontal	51	2.14	-
2462MHz	Pass	AV	7.38564G	36.04	54.00	-17.96	1.38	3	Horizontal	133	133	-
2462MHz	Pass	PK	4.91914G	42.33	74.00	-31.67	-3.80	3	Horizontal	51	2.14	-
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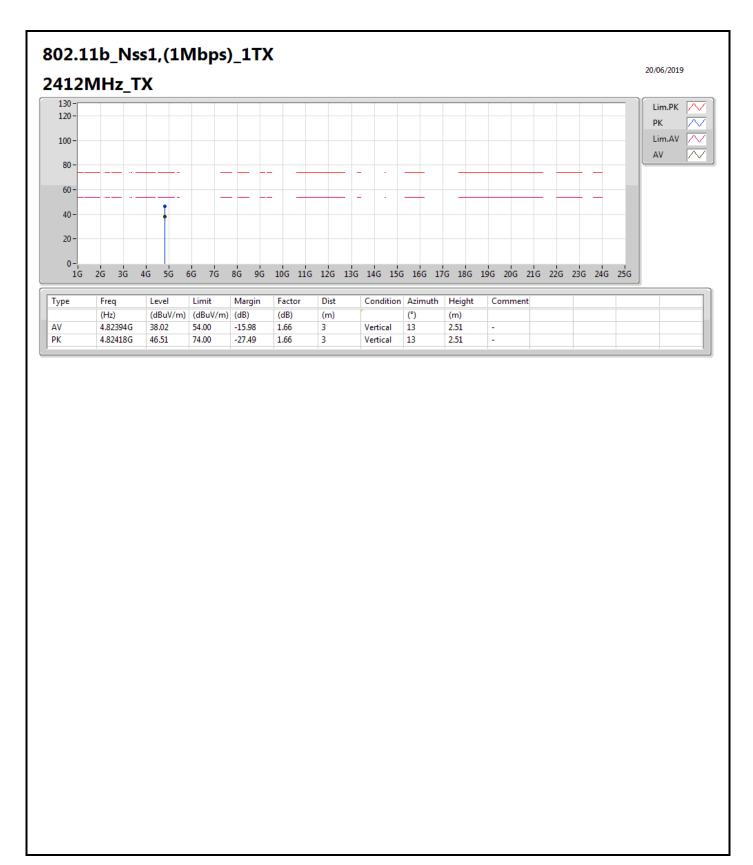






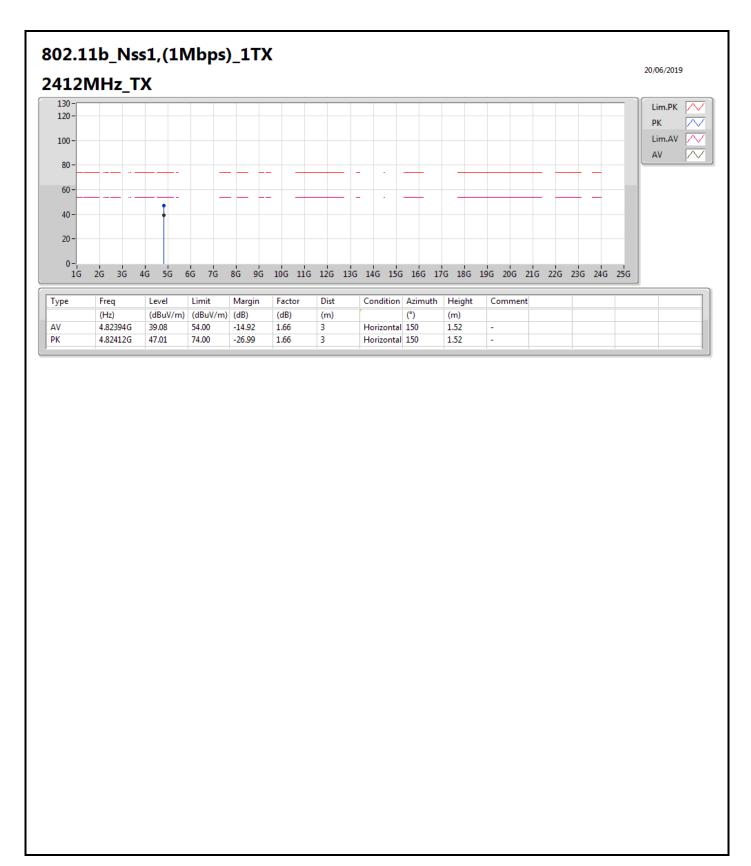




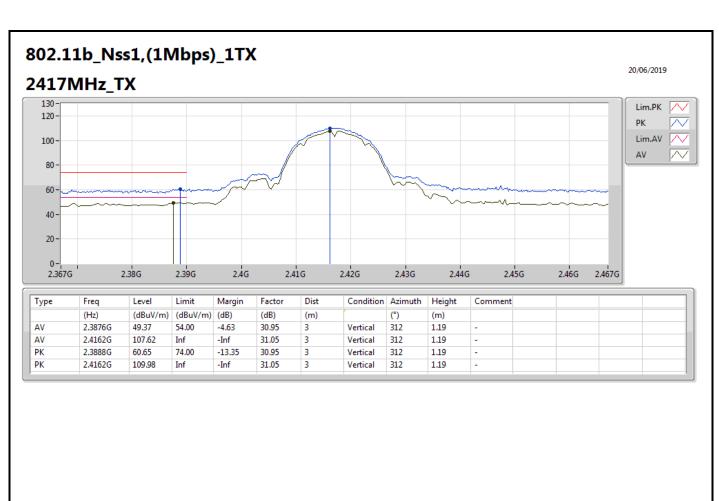


SPORTON INTERNATIONAL INC. Page No. : F8 of F53

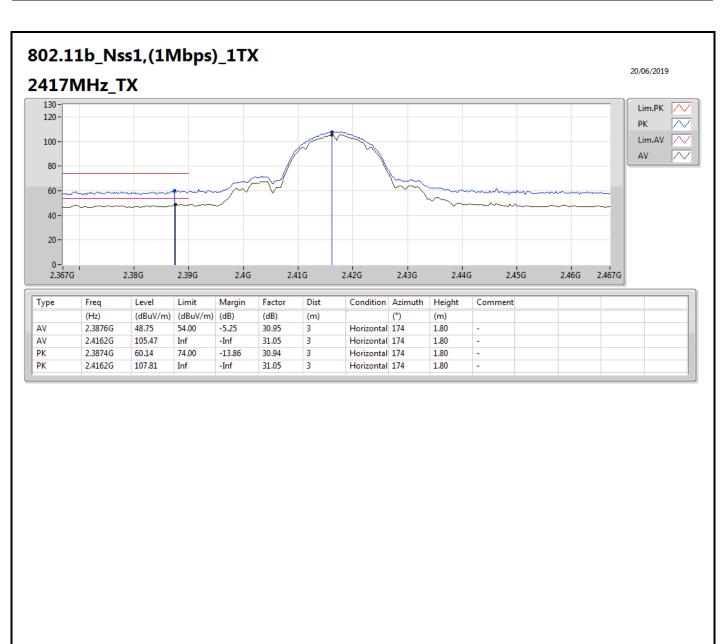




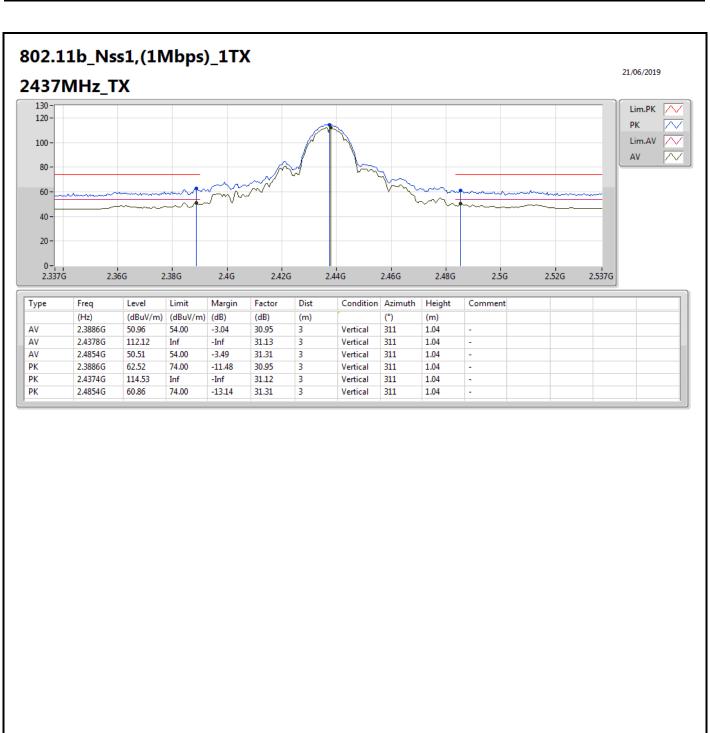




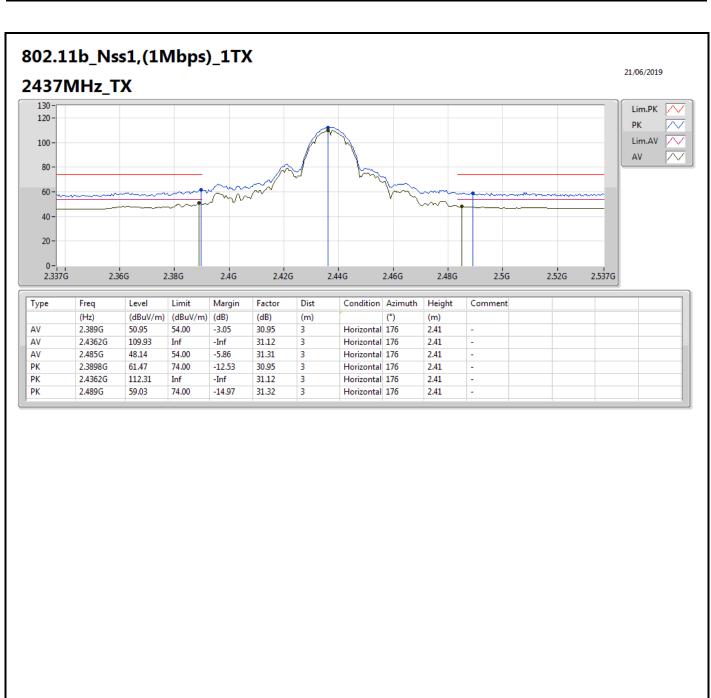




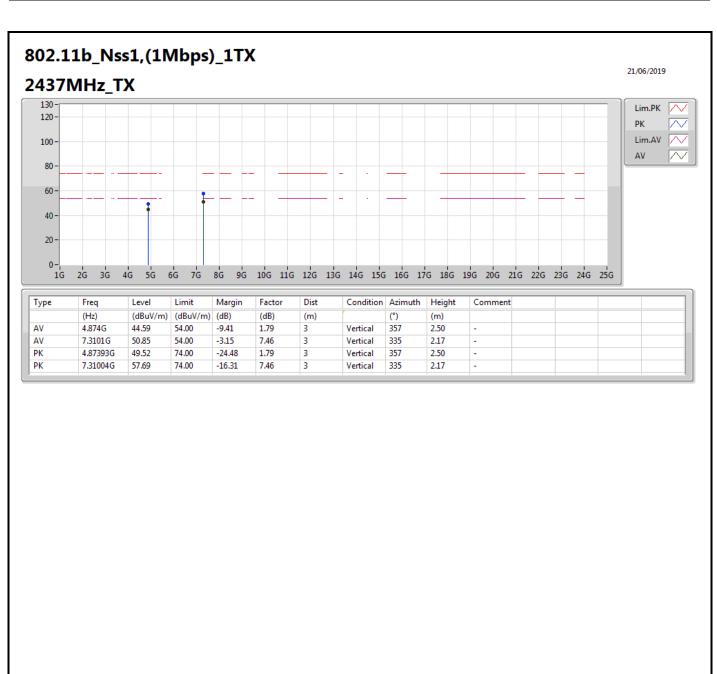




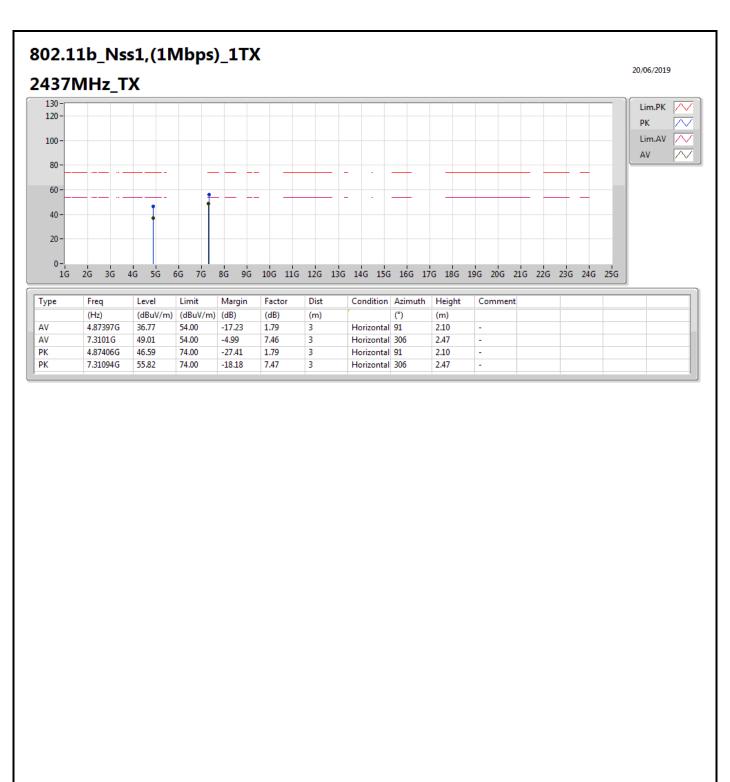




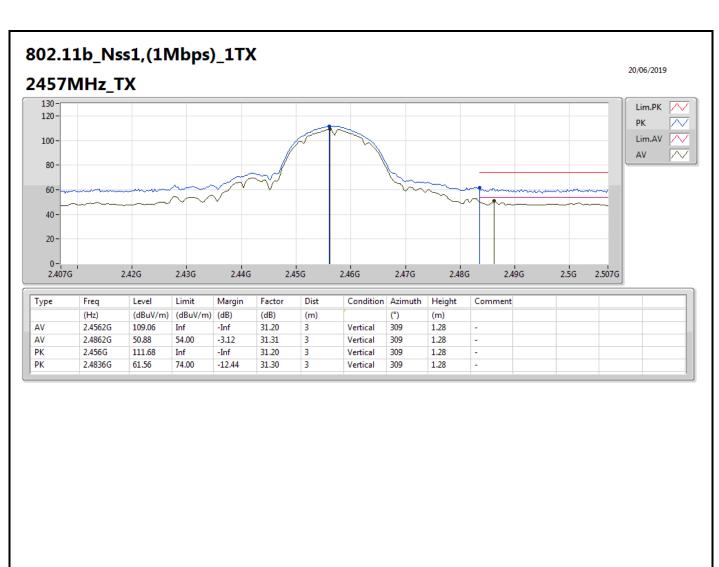




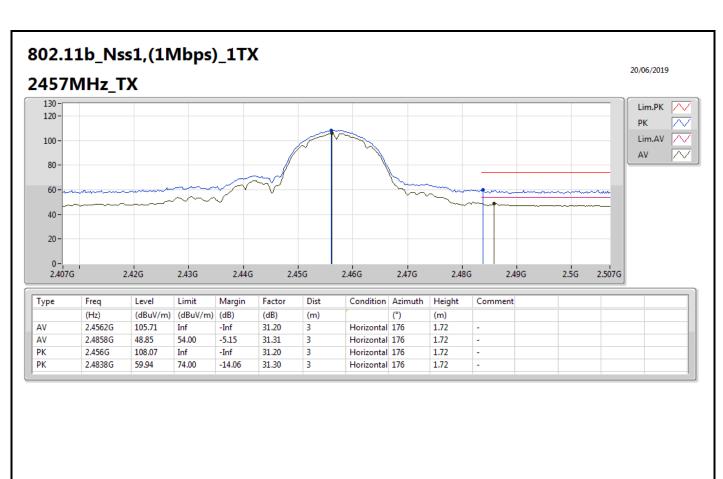




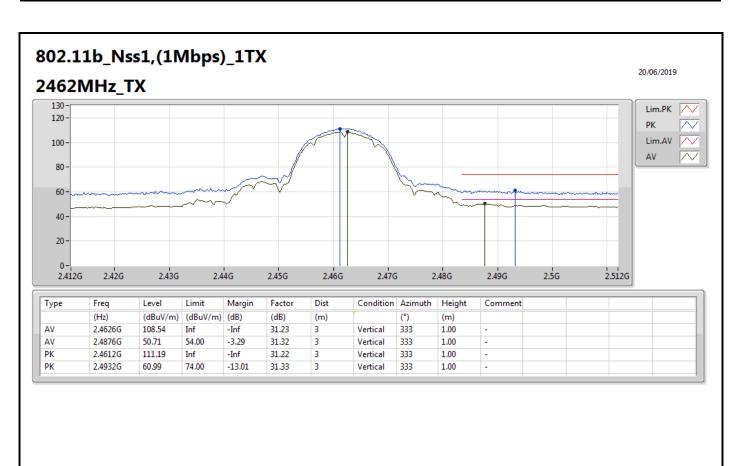




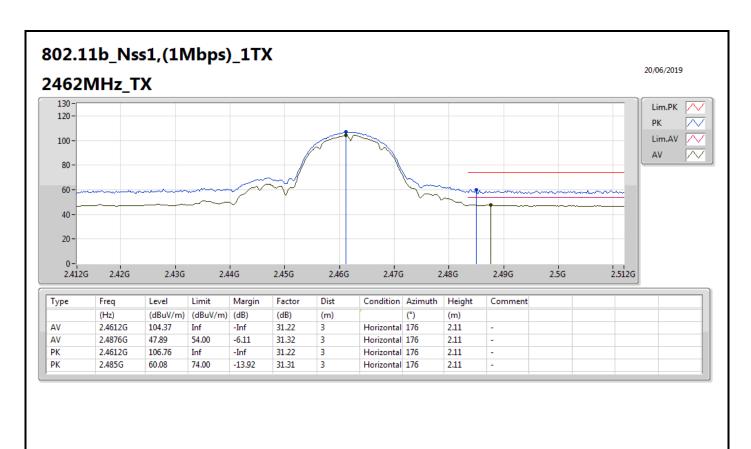




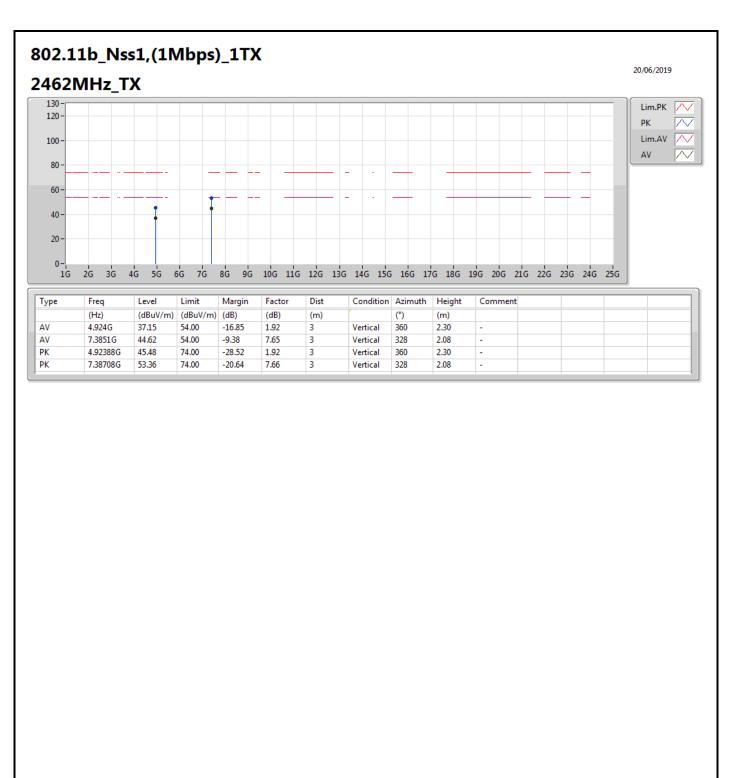




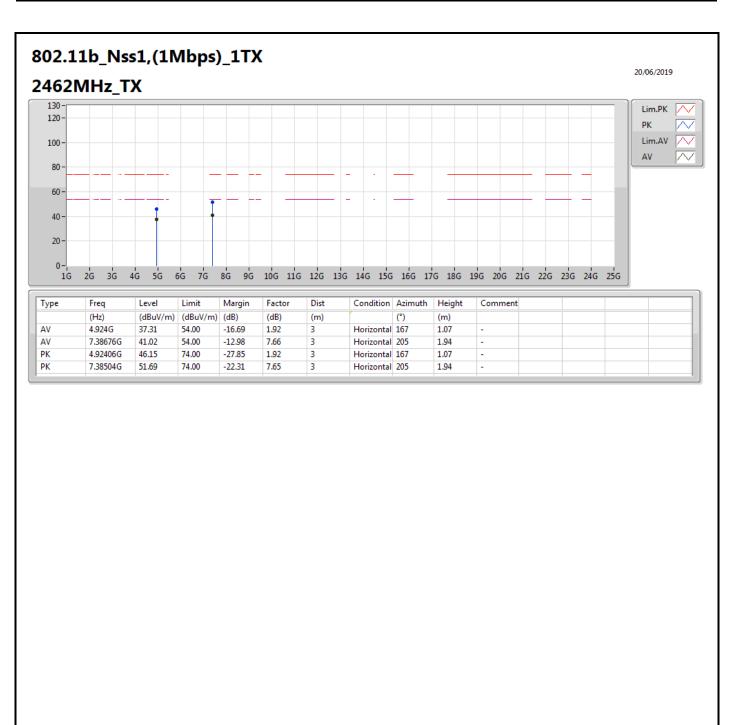




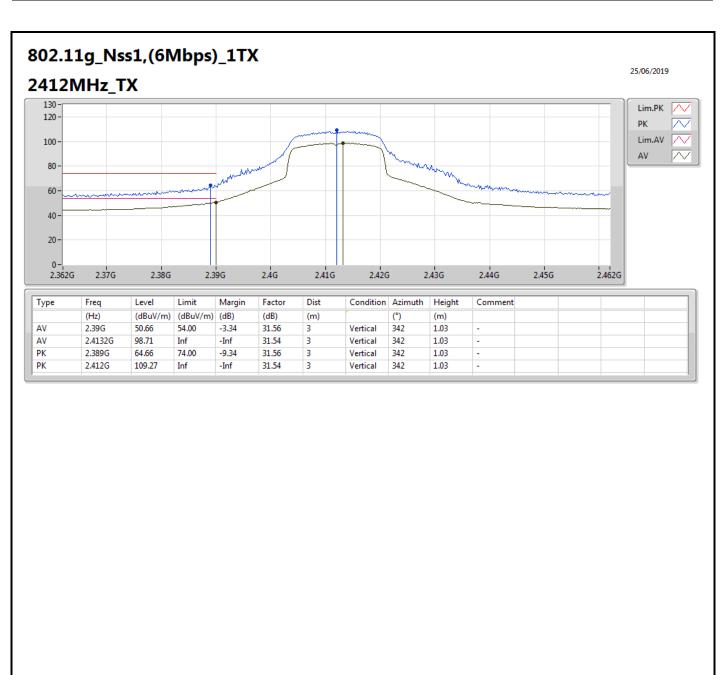




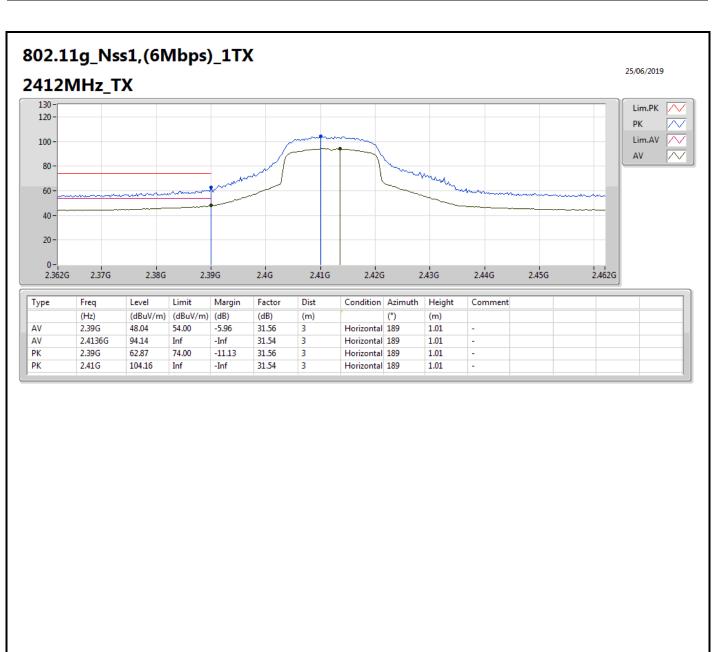




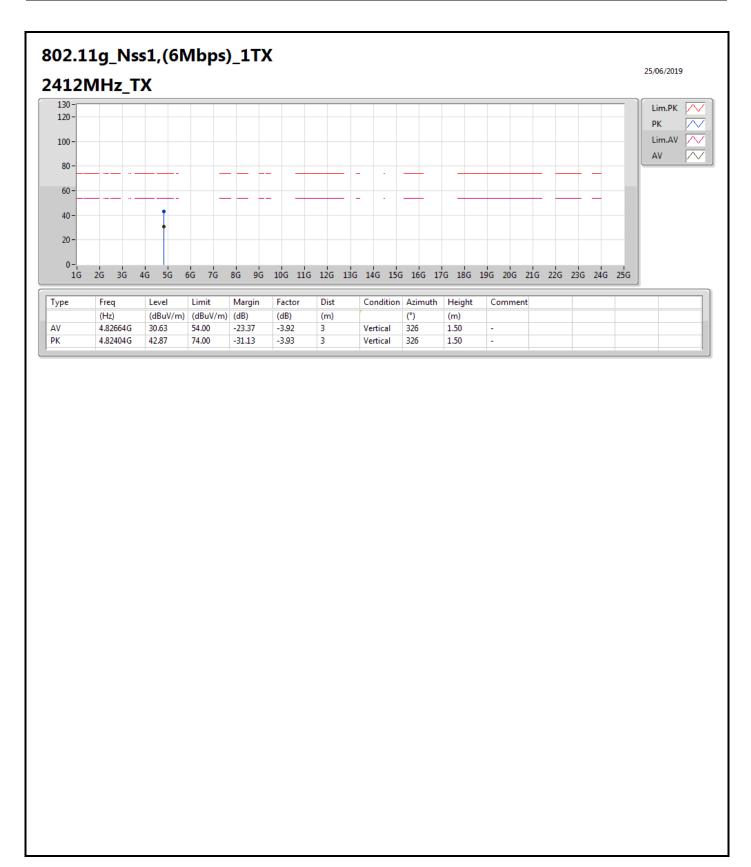




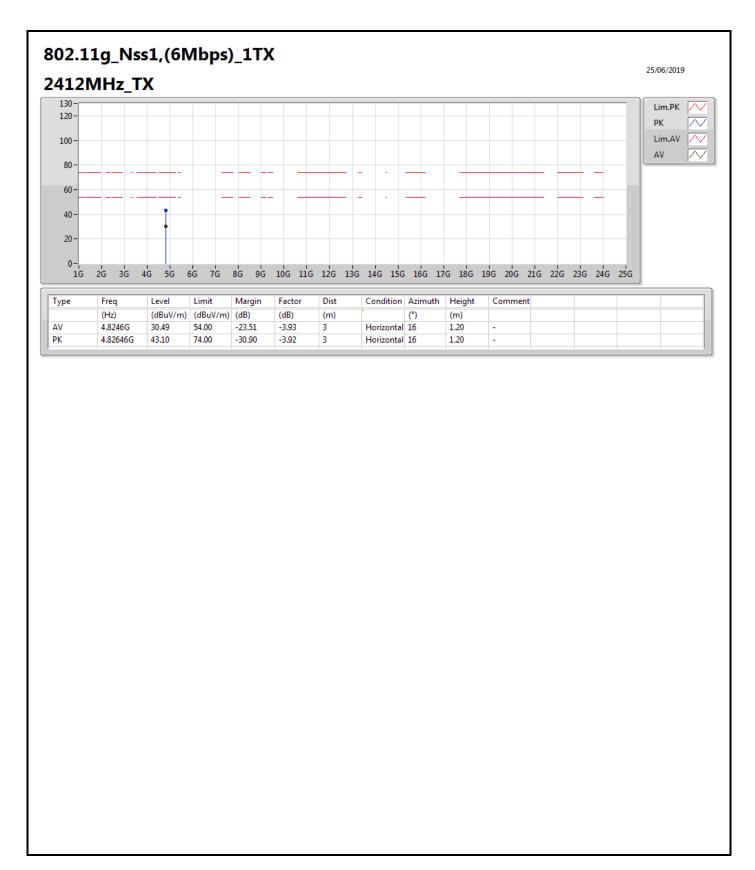




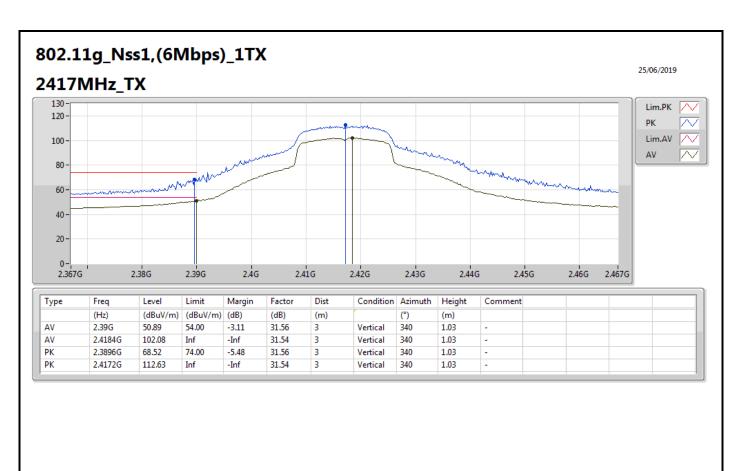




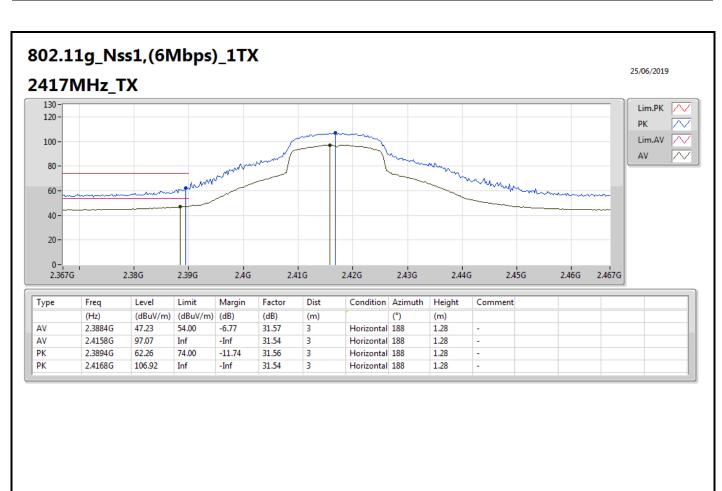




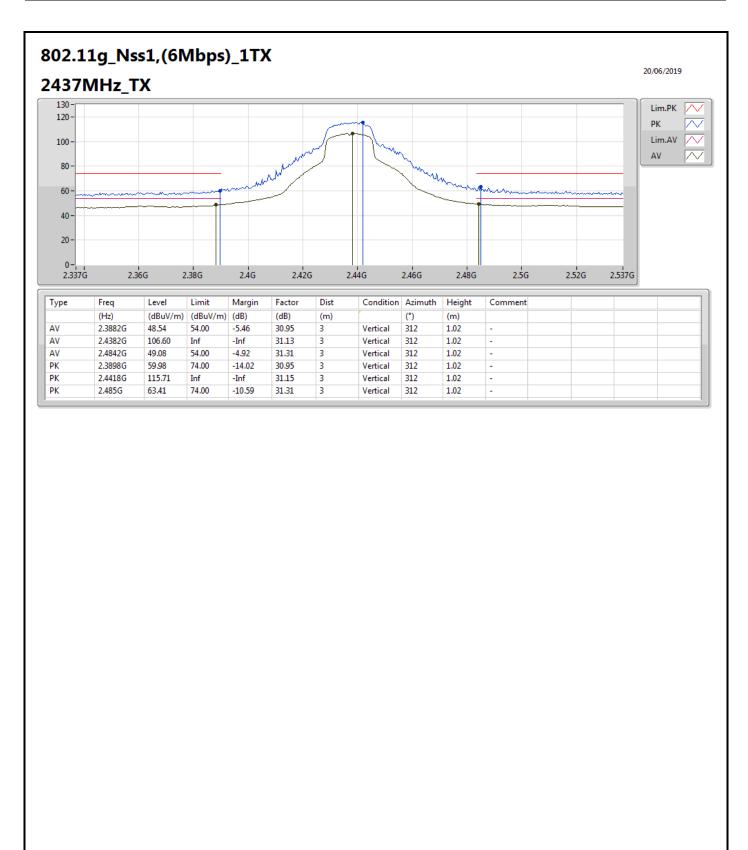




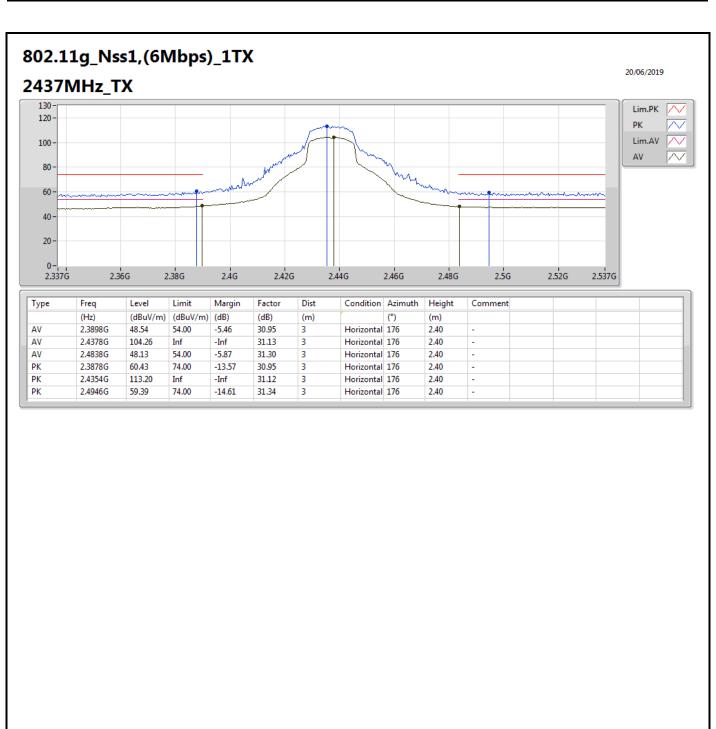




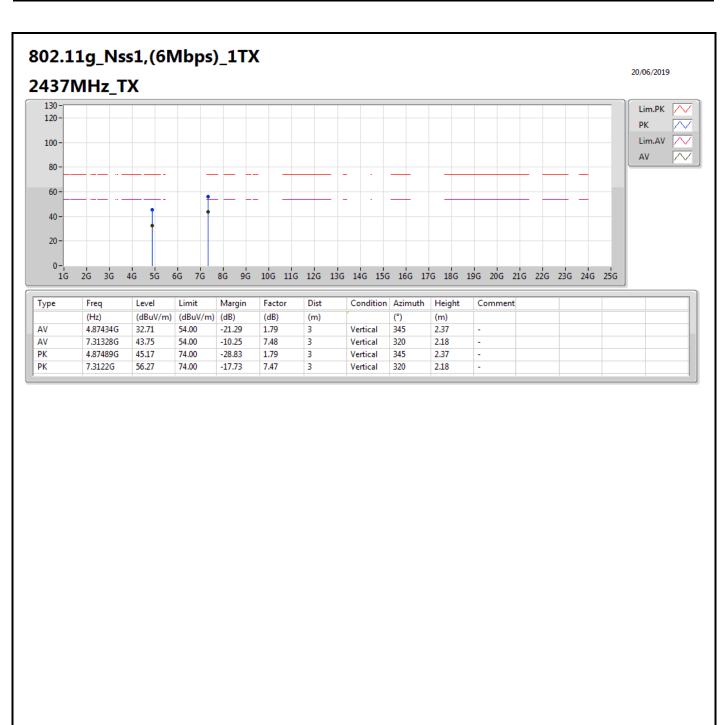




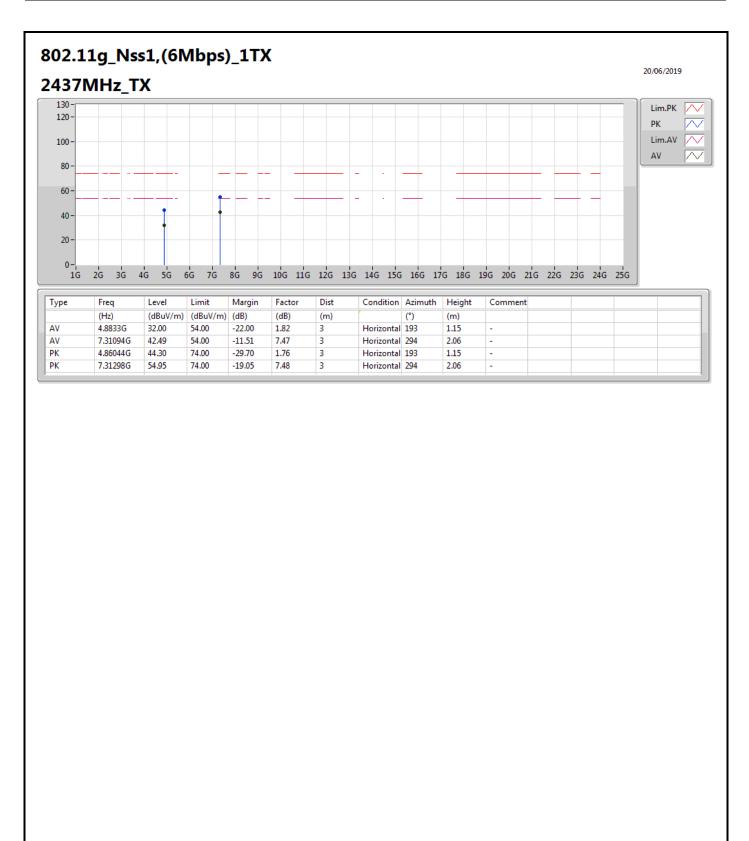




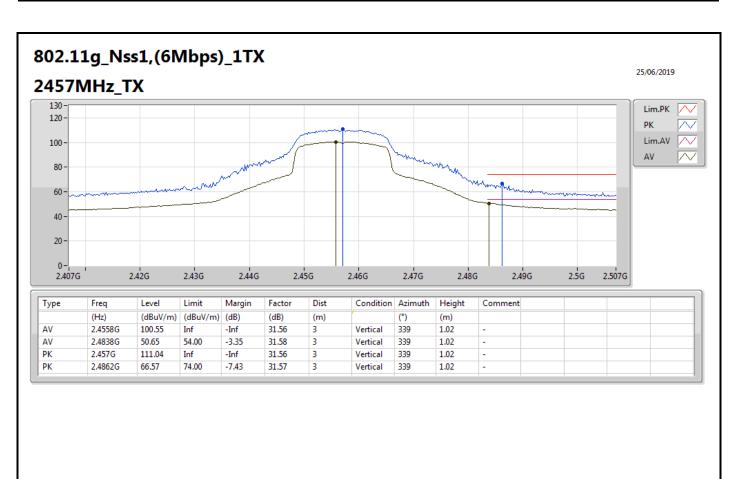




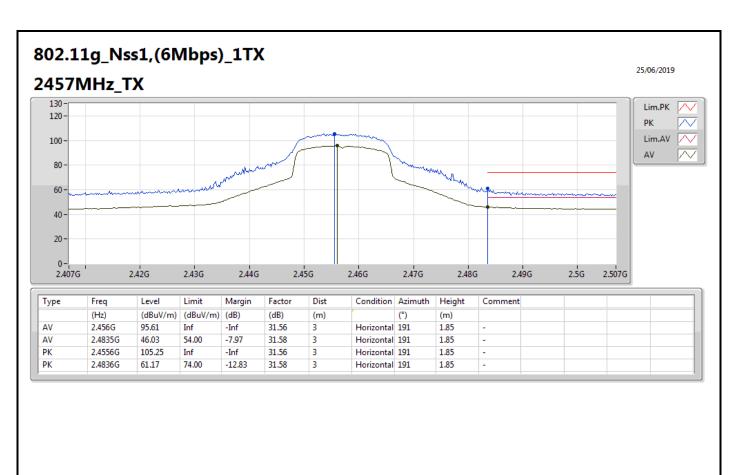




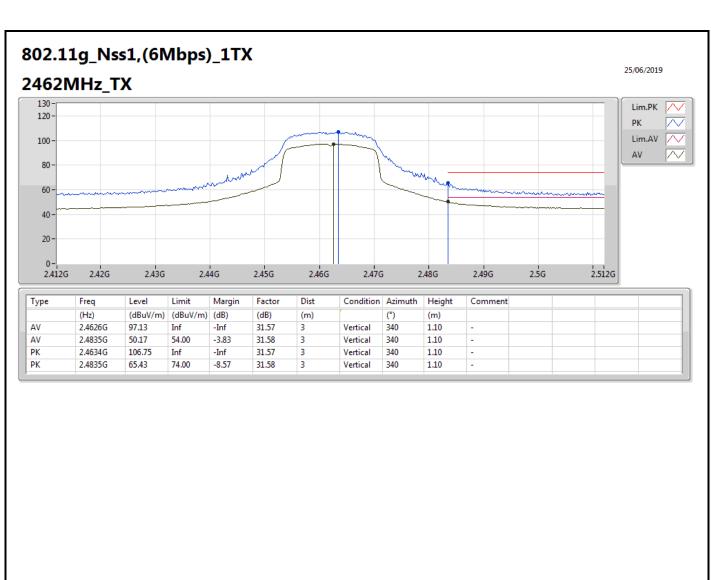




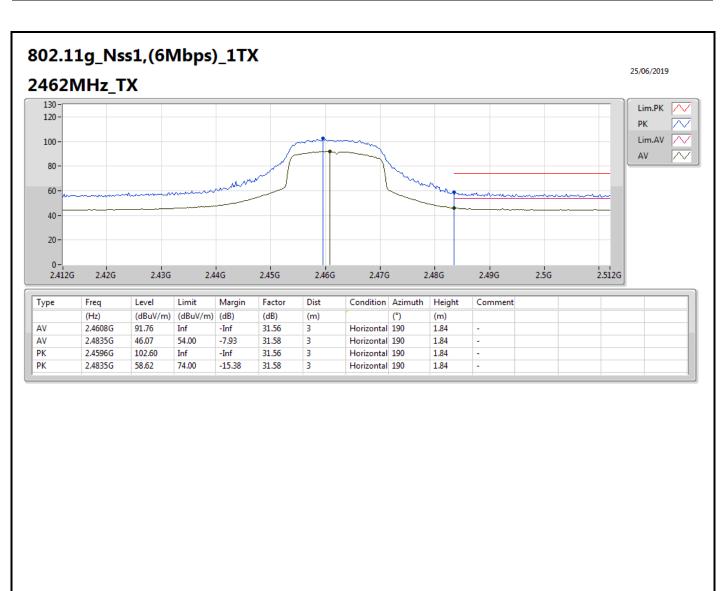




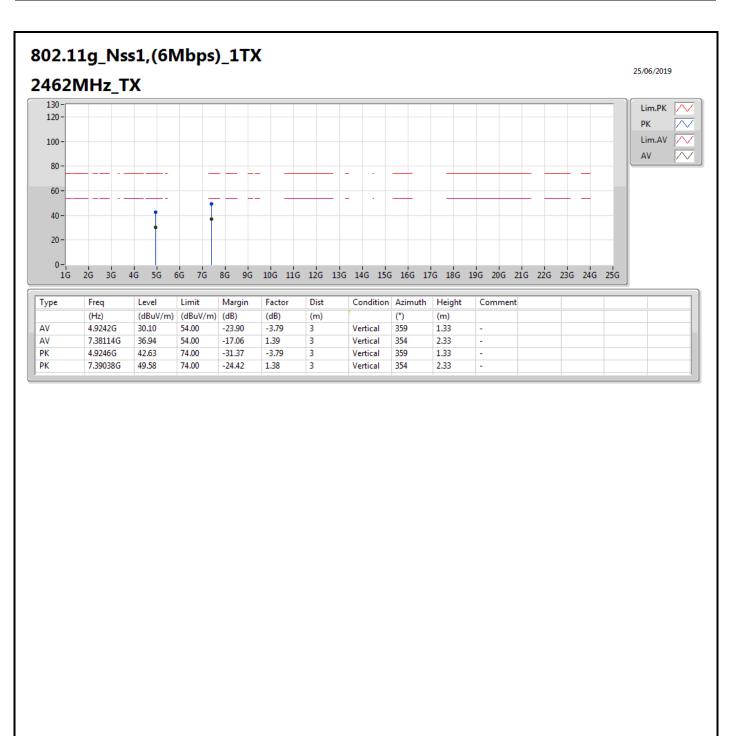






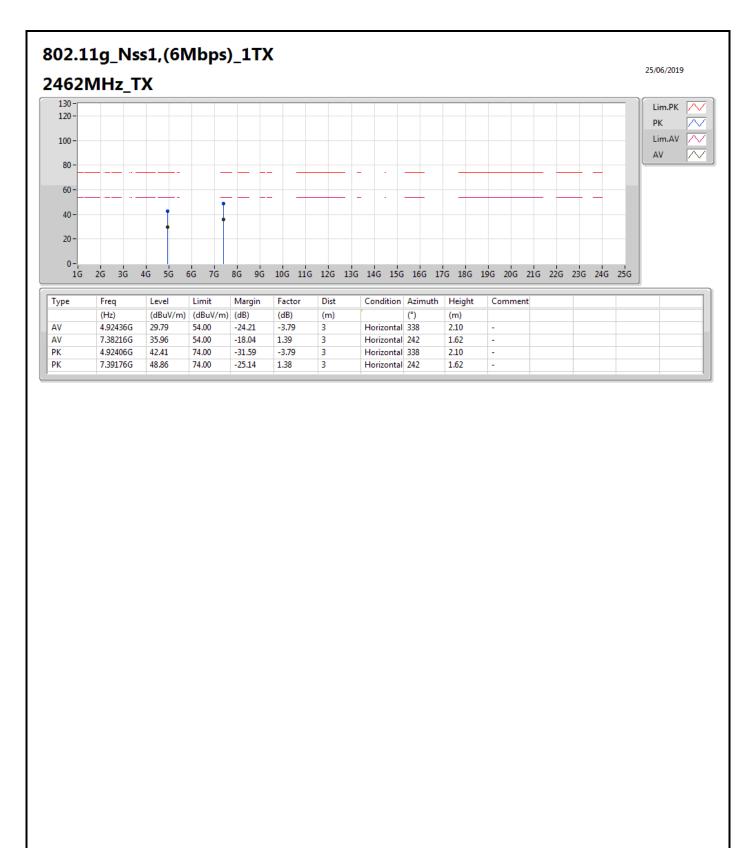




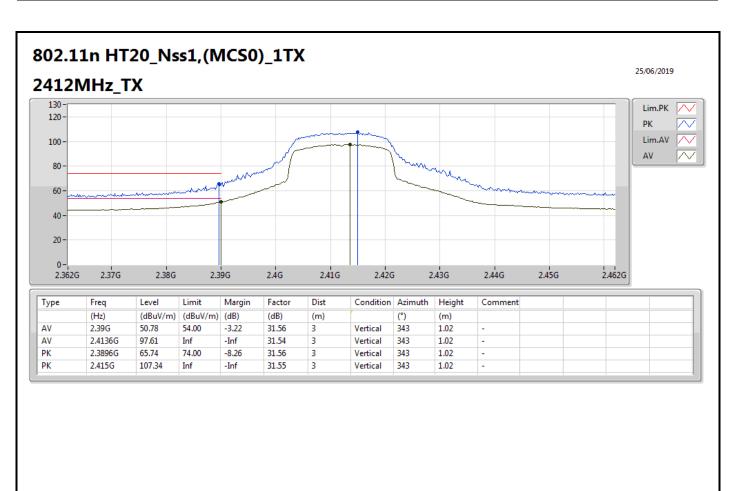


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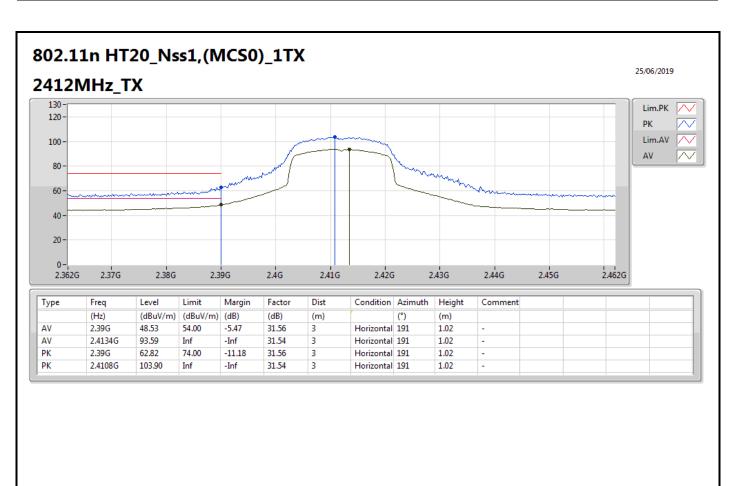












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