

Report No. : FR792934AA

Project No: CB10702198

FCC Test Report

Equipment : Home Wi-Fi Solution Kit

Brand Name : AirTies

Model No. : Air 4930

FCC ID : Z3WAIR4930

Standard : 47 CFR FCC Part 15.247 Operating Band : 2400 MHz – 2483.5 MHz

Function : Point-to-multipoint; Point-to-point

Applicant : AirTies Wireless Networks

Mithat Uluunlu Sokak No. 23 Esentepe, Sisli Istanbul,

34394 Turkey

Manufacturer : AirTies Wireless Networks

Mithat Uluunlu Sokak No. 23 Esentepe, Sisli Istanbul,

34394 Turkey

The product sample received on Sep. 29, 2017 and completely tested on Feb. 22, 2018. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

Cliff Chang

SPORTON INTERNATIONAL INC.







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Summary of Test Result

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

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Revision History

Report No.	Version	Description	Issued Date
FR792934AA	Rev. 01	Initial issue of report	Mar. 05, 2018
FR792934AA	Rev. 02	Adding the below 30MHz test resut.	Mar. 07, 2018

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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
2400-2483.5	b, g, n (HT20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40)	2422-2452	3-9 [7]

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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	2TX
2.4-2.4835GHz	802.11n HT40	40	2TX

Note:

- 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

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1.1.2 Antenna Information

Ant.	Brand	Model No.	Туре	Connector		Gain (dBi)		Rem	ark	
AIII.	Біапи	wiodei No.	Type	туре	Connector	2.4GHz	5GHz Band 1	5GHz Band 4	2.4GHz	5GHz
1	Airties	Airties#1	Printed	N/A	1.7	1.5	3	Port 1	Port 1	
2	Airties	Airties#1	Printed	N/A	-	1.5	3	-	Port 2	
3	Airties	Airties#1	Printed	N/A	-	1.5	3	-	Port 3	
4	Airties	Airties#1	Printed	N/A	1.7	1.5	3	Port 2	Port 4	

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Note: 1. The EUT has four antennas.

2. For WLAN 2.4GHz:

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

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

For IEEE 802.11n mode (2TX/2RX):

Ant. 1(Port 1) and Ant. 4(Port 4) can be used as transmitting/receiving antenna.

Ant. 1(Port 1)and Ant. 4(Port 4) could transmit/receive simultaneously.

3. For WLAN 5GHz:

For IEEE 802.11a/n/ac mode (4TX/4RX):

Ant. 1(Port 1), Ant. 2(Port 2), Ant. 3(Port 3) and Ant. 4(Port 4)can be used as transmitting/receiving antenna.

Ant. 1(Port 1), Ant. 2(Port 2), Ant. 3(Port 3) and Ant. 4(Port 4)could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.998	0.009	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.987	0.057	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT20	0.985	0.066	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT40	0.968	0.141	5.928m	300

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter				
Beamforming Function	\boxtimes	With beamforming for IEEE 802.11n/ac in 5GHz Without beamforming			
Test Software Version	Mtool_3.0.0.2				

Note: This device supports AP and Mesh mode.

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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:

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- 47 CFR FCC Part 15
- ANSI C63.10-2013
- FCC KDB 558074 D01 v04
- FCC KDB 662911 D01 v02r01
- FCC KDB 412172 D01 v01r01

1.3 Testing Location Information

	Testing Location						
	HWA YA ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.						
		TEL	:	886-3-327-3456 FAX : 886-3-318-0055			
\boxtimes	JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.			
		TEL	:	886-3-656-9065 FAX : 886-3-656-9085			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Serway Li / Owen Hsu	20C / 56%	Oct. 13, 2017~Feb. 22, 2018
Radiated above 1GHz	03CH01-CB	Zero Chen / Cola Fan	22°C / 54%	Oct. 11, 2017~Feb. 14, 2018
Radiated below 1GHz	000101-05	Benson Su	22 07 0470	Oct. 11, 2017-1 Cb. 14, 2010
AC Conduction	CO01-CB	GN Hou	23°C / 62%	Oct. 12, 2017

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

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)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74 x10 ⁻⁸	Confidence levels of 95%

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2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	69
2417MHz	72
2422MHz	76
2427MHz	79
2432MHz	81
2437MHz	82
2442MHz	81
2447MHz	80
2452MHz	76
2457MHz	70
2462MHz	64
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	52
2417MHz	56
2422MHz	64
2427MHz	68
2432MHz	74
2437MHz	78
2442MHz	73
2447MHz	70
2452MHz	66
2457MHz	60
2462MHz	51
802.11n HT20_Nss1,(MCS0)_2TX	-
2412MHz	45
2417MHz	55
2422MHz	64
2427MHz	68
2432MHz	74
2437MHz	75
2442MHz	70
2447MHz	65
2452MHz	62
2457MHz	54
2462MHz	43
802.11n HT40_Nss1,(MCS0)_2TX	-
2422MHz	39

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Mode	Power Setting
2427MHz	34
2432MHz	41
2437MHz	50
2442MHz	44
2447MHz	39
2452MHz	37

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2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests			
Tests Item AC power-line conducted emissions			
Condition	Condition AC power-line conducted measurement for line and neutral		
Operating Mode	Operating Mode Normal Link		

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Th	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			
Operating Mode	СТХ		

Th	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	Normal Link		
Operating Mode > 1GHz	CTX		

The Worst Case Mode for Following Conformance Tests				
Tests Item Simultaneous Transmission Analysis - Radiated Emission Co-location				
Test Condition	Test Condition Radiated measurement			
Operating Mode	Operating Mode Normal Link			
1 WLAN 2.4GHz + WLAN 5GHz				
Refer to Appendix G for Radiated Emission Co-location.				

The Worst Case Mode for Following Conformance Tests					
Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation					
Operating Mode	Operating Mode				
1 WLAN 2.4GHz + WLAN 5GHz					
Refer to Sporton Test Report No.: FA792934 for Co-location RF Exposure Evaluation.					

Note: The EUT can only be used at standing position.

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2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

I	Accessories				
Ī	No. Equipment Brand Model Name Name		Rating		
	1	Adapter	MOSO	MSA-C1000CS12.0-12A-US	INPUT: 100-240V, 50/60Hz 0.5A max OUTPUT: 12V, 1A

2.5 Support Equipment

For Test Site No: CO01-CB

	Support Equipment				
No.	No. Equipment Brand Name Model Name FCC ID				
1	NB*3	DELL	E6430	DoC	

For Test Site No: 03CH01-CB (below 1GHz)

	Support Equipment				
No.	No. Equipment Brand Name Model Name FCC ID				
1	NB*3	DELL	E4300	DoC	

For Test Site No: 03CH01-CB (above 1GHz)

	Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID					
1	NB	DELL	E4300	DoC		

For Test Site No: TH01-CB

	Support Equipment						
No.	No. Equipment Brand Name Model Name FCC ID						
1	1 NB DELL E4300 DoC						

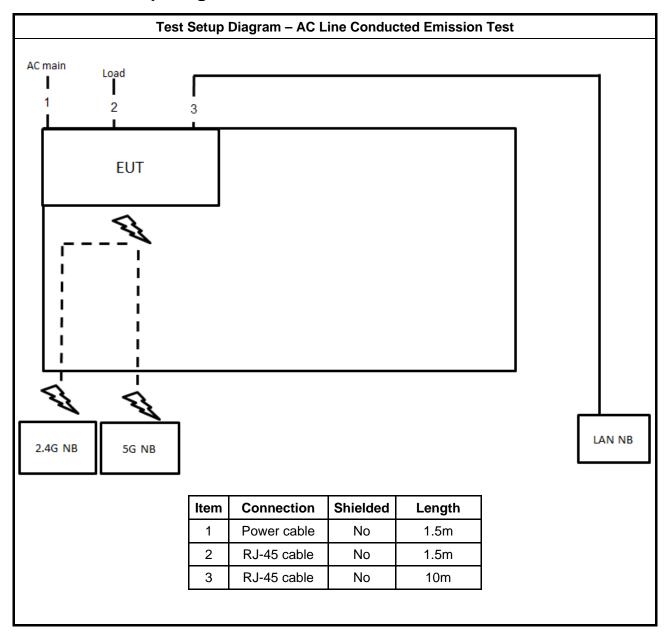
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2.6 Test Setup Diagram



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Test Setup Diagram - Radiated Test < 1GHz

AC MAIN

Load

2 3

EUT

LAN NB

2.4G NB

5G NB

Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	1.5m
3	RJ-45 cable	No	1.5m

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Test Setup Diagram - Radiated Test > 1GHz AC MAIN EUT LAN NB Item Connection Shielded Length 1 RJ-45 cable No 10m 2 Power cable No 1.5m

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3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

Frequency Emission (MHz) Quasi-Peak Average					
66 - 56 *	56 - 46 *				
56	46				
60	50				
	66 - 56 * 56				

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3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

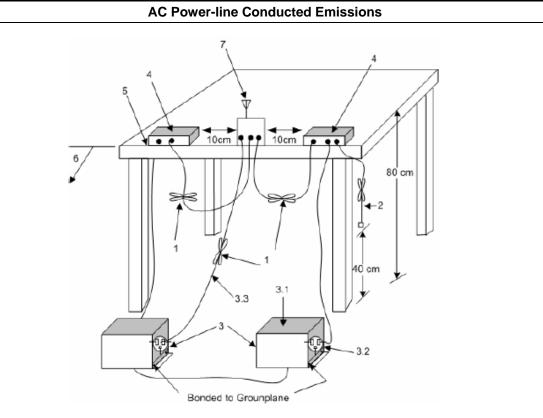
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3.1.4 Test Setup



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- 1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
- 2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
- 3.1—All other equipment powered from additional LISN(s).
- 3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
- 3.3—LISN at least 80 cm from nearest part of EUT chassis.
- 4—Non-EUT components of EUT system being tested.
- 5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
- 6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
- 7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

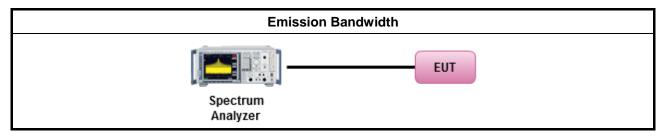
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

	Test Method					
•	■ For the emission bandwidth shall be measured using one of the options below:					
	Refer as FCC KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.					
	Refer as FCC KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.					
	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.					

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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 $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm $P_{Out} =$ maximum peak conducted output power or maximum conducted output power in dBm, $G_{TX} =$ the maximum transmitting antenna directional gain in dBi.

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

	Test Method			
•	Maximum Peak Conducted Output Power			
	Refer as FCC KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).			
	☐ Refer as FCC KDB 558074, clause 9.1.2 Option 2 (peak power meter for VBW ≥ DTS BW)			
•	Maximum Conducted Output Power			
	[duty cycle ≥ 98% or external video / power trigger]			
	Refer as FCC KDB 558074, clause 9.2.2.2 Method AVGSA-1 (spectral trace averaging).			
	Refer as FCC KDB 558074, clause 9.2.2.3 Method AVGSA-1 Alt. (slow sweep speed)			
	duty cycle < 98% and average over on/off periods with duty factor			
Refer as FCC KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging				
	Refer as FCC KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)			
	RF power meter and average over on/off periods with duty factor or gated trigger			
	Refer as FCC KDB 558074, clause 9.2.3 Method AVGPM-G (using an RF average power meter).			
	Refer as FCC KDB 558074, clause 9.1.2 PKPM1 Peak power meter method.			
•	For conducted measurement.			
	If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.			
	■ If multiple transmit chains, EIRP calculation could be following as methods: P _{total} = P ₁ + P ₂ + + P _n (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP _{total} = P _{total} + DG			

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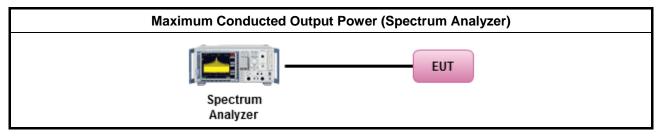
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3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

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3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

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3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

		Test Method					
-	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).						
	\boxtimes	Refer as FCC KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).					
	[dut	cycle ≥ 98% or external video / power trigger]					
		Refer as FCC KDB 558074, clause 10.3 Method AVGPSD-1 (spectral trace averaging).					
		Refer as FCC KDB 558074, clause 10.4 Method AVGPSD-2 (slow sweep speed)					
	duty	cycle < 98% and average over on/off periods with duty factor					
		Refer as FCC KDB 558074, clause 10.5 Method AVGPSD-1 Alt (spectral trace averaging).					
		Refer as FCC KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)					
•	For	conducted measurement.					
	•	If The EUT supports multiple transmit chains using options given below:					
		Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911 In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.					
		Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,					
		Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.					

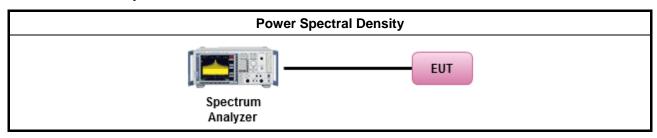
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3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

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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		

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

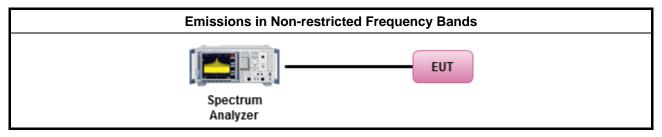
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method	
 Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands. 	

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

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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			

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

3.6.2 Measuring Instruments

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

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3.6.3 Test Procedures

		Test Method						
•	The	average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].						
		r as ANSI C63.10, clause 6.9.2.2 band-edge testing shall be performed at the lowest frequency nel and highest frequency channel within the allowed operating band.						
•	For t	he transmitter unwanted emissions shall be measured using following options below:						
	■ Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.							
		☐ Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle ≥98%)						
		Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).						
		Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW≥1/T).						
		☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.						
		Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.						
		Refer as FCC KDB 558074, clause 12.2.4 measurement procedure peak limit.						
•	For t	he transmitter band-edge emissions shall be measured using following options below:						
	•	Refer as FCC KDB 558074 clause 13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.						
	 Refer as FCC KDB 558074, clause 13.2 (ANSI C63.10, clause 6.9.3) for marker-delta method band-edge measurements. 							
	•	Refer as FCC KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).						
•	For o	conducted and cabinet radiation measurement, refer as FCC KDB 558074, clause 12.2.2.						
	•	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB						
	•	For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.						

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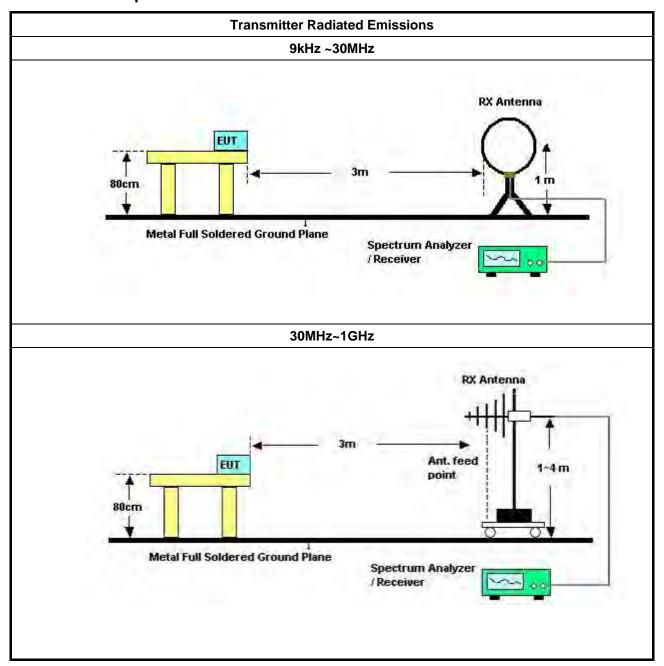
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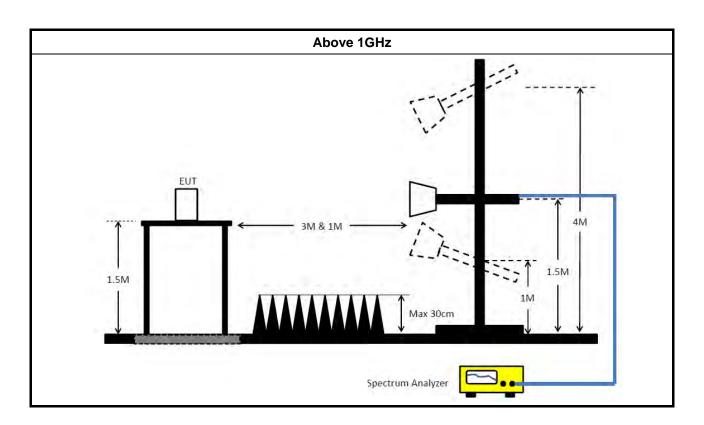


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3.6.4 Test Setup



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3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

Refer as Appendix F

3.6.6 Test Result of Transmitter Radiated Unwanted Emissions

Refer as Appendix F

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4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 23, 2017	Jan. 22, 2018	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50- 16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Dec. 13, 2017	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	Dec. 20, 2017	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	May 22, 2018	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Mar. 15, 2018*	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2017	Aug. 29, 2018	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Nov. 09, 2017	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 20, 2017	Nov. 19, 2018	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 05, 2017	Jul. 04, 2018	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2017	May 01, 2018	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Jan. 15, 2018	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 09, 2018	Jan. 08, 2019	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 10, 2017	Jul. 09, 2018	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Nov. 21, 2017	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 23, 2017	Nov. 22, 2018	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	May 05, 2018	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)

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FCC Test Report

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Dec. 25, 2017	Conducted (TH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 21, 2017	Dec. 20, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Nov. 21, 2017	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 20, 2017	Nov. 19, 2018	Conducted (TH01-CB)

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

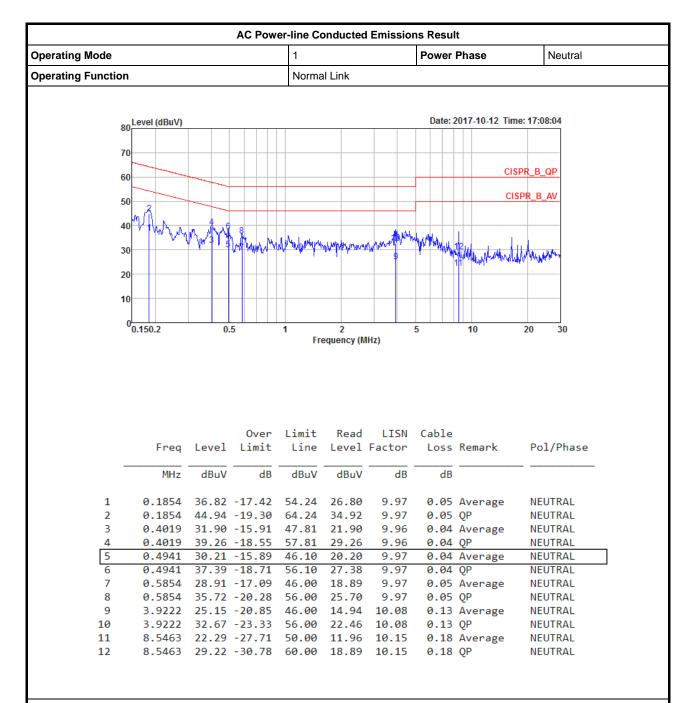
N.C.R. means Non-Calibration required.

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[&]quot;*" Calibration Interval of instruments listed above is two years.

AC Power-line Conducted Emissions Result

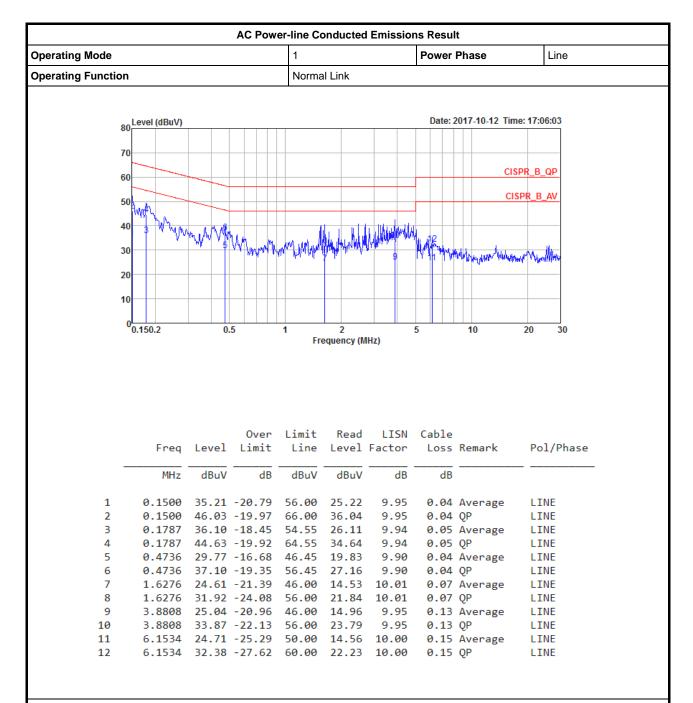


Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)



AC Power-line Conducted Emissions Result



Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)



EBW Result Appendix B

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	9M	12.544M	12M5G1D	8.05M	10.12M
802.11g_Nss1,(6Mbps)_1TX	14.975M	16.692M	16M7D1D	14.4M	16.342M
802.11n HT20_Nss1,(MCS0)_2TX	17.25M	17.616M	17M6D1D	14.325M	17.441M
802.11n HT40_Nss1,(MCS0)_2TX	36.3M	36.282M	36M3D1D	31.3M	36.132M

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

Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-
2412MHz	Pass	500k	8.075M	10.12M		
2437MHz	Pass	500k	9M	12.544M		
2462MHz	Pass	500k	8.05M	10.12M		
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-
2412MHz	Pass	500k	14.8M	16.342M		
2437MHz	Pass	500k	14.975M	16.692M		
2462MHz	Pass	500k	14.4M	16.342M		
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	15M	17.441M	16.675M	17.466M
2437MHz	Pass	500k	14.325M	17.616M	15.05M	17.541M
2462MHz	Pass	500k	14.975M	17.441M	17.25M	17.491M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	31.3M	36.132M	35.1M	36.132M
2437MHz	Pass	500k	35M	36.232M	36.3M	36.282M
2452MHz	Pass	500k	35.1M	36.132M	35.05M	36.132M

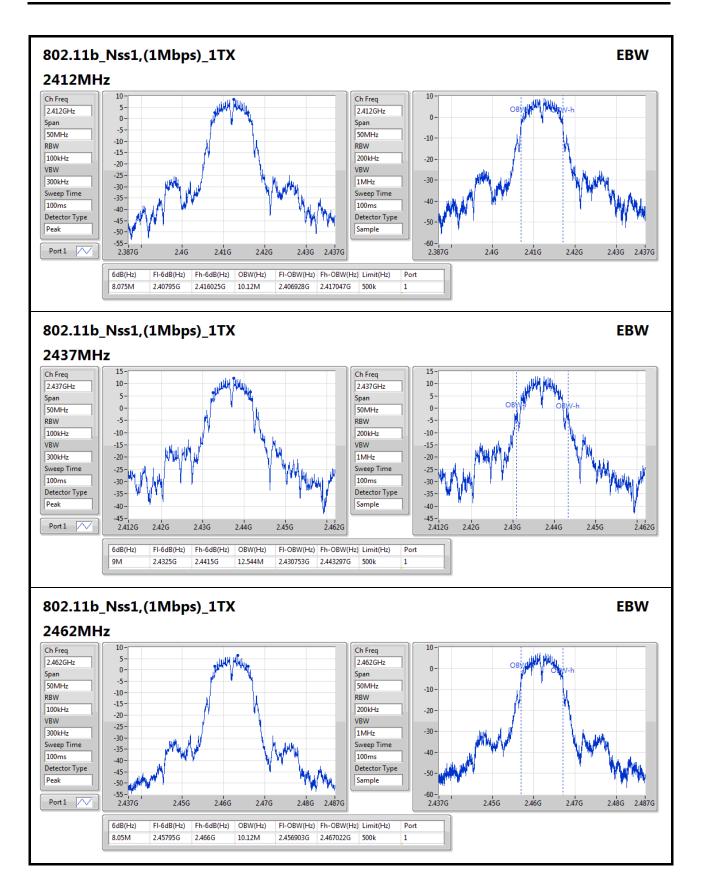
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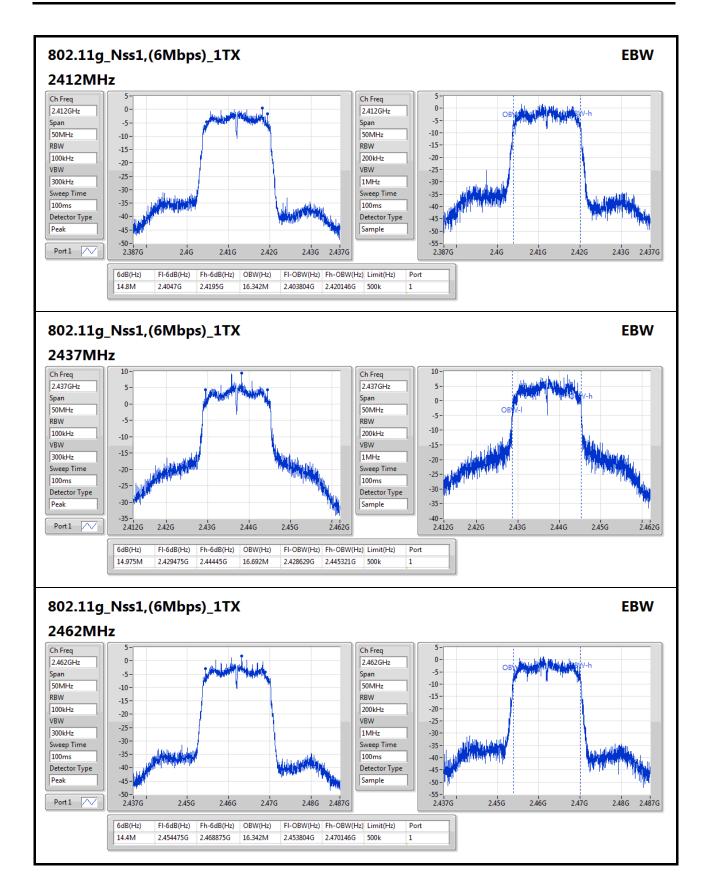
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

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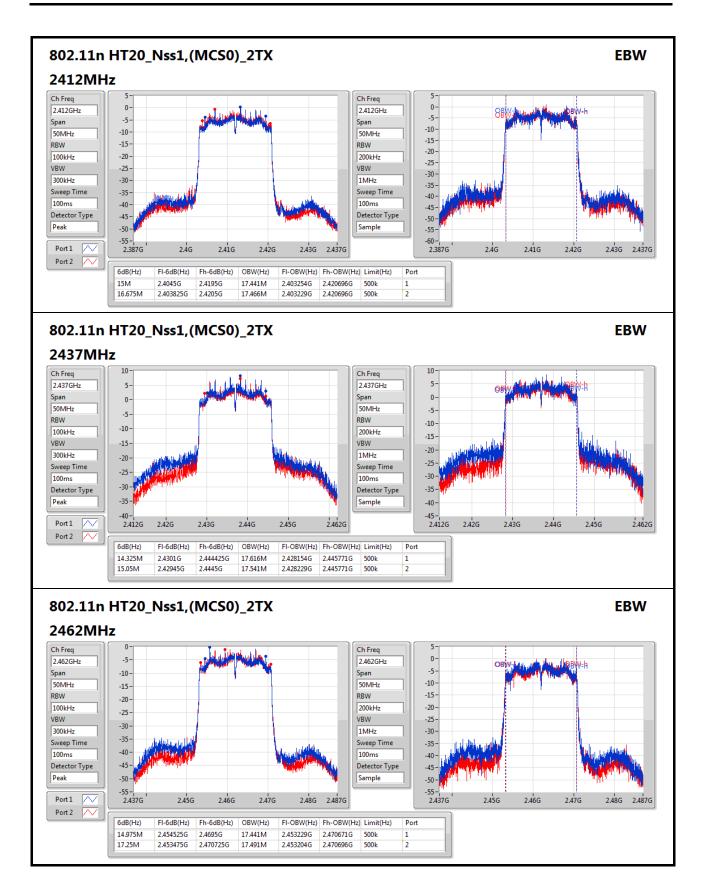
Appendix B EBW Result



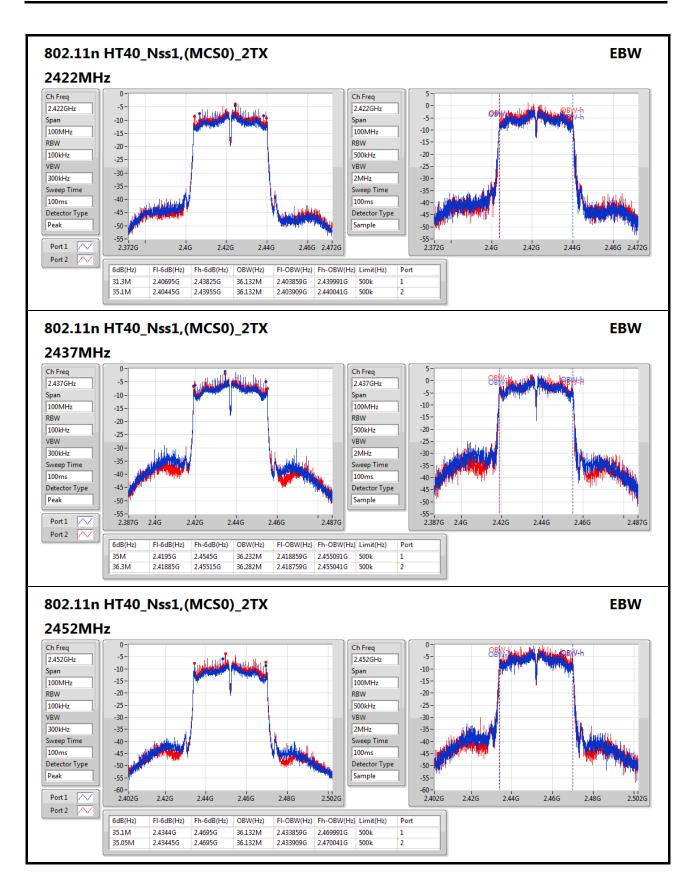














AV Power Result Appendix C

Summary

Mode	Total Power	Total Power		
	(dBm)	(W)		
2.4-2.4835GHz	-	-		
802.11b_Nss1,(1Mbps)_1TX	21.63	0.14555		
802.11g_Nss1,(6Mbps)_1TX	19.73	0.09397		
802.11n HT20_Nss1,(MCS0)_2TX	21.88	0.15417		
802.11n HT40_Nss1,(MCS0)_2TX	15.45	0.03508		

Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-
2412MHz	Pass	1.70	17.54		17.54	30.00
2417MHz	Pass	1.70	18.67		18.67	30.00
2422MHz	Pass	1.70	20.33		20.33	30.00
2427MHz	Pass	1.70	21.36		21.36	30.00
2432MHz	Pass	1.70	21.48		21.48	30.00
2437MHz	Pass	1.70	21.63		21.63	30.00
2442MHz	Pass	1.70	21.57		21.57	30.00
2447MHz	Pass	1.70	21.41		21.41	30.00
2452MHz	Pass	1.70	20.27		20.27	30.00
2457MHz	Pass	1.70	18.83		18.83	30.00
2462MHz	Pass	1.70	16.31		16.31	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-
2412MHz	Pass	1.70	12.97		12.97	30.00
2417MHz	Pass	1.70	14.27		14.27	30.00
2422MHz	Pass	1.70	16.15		16.15	30.00
2427MHz	Pass	1.70	17.41		17.41	30.00
2432MHz	Pass	1.70	18.69		18.69	30.00
2437MHz	Pass	1.70	19.73		19.73	30.00
2442MHz	Pass	1.70	18.37		18.37	30.00
2447MHz	Pass	1.70	18.25		18.25	30.00
2452MHz	Pass	1.70	16.97		16.97	30.00
2457MHz	Pass	1.70	15.52		15.52	30.00
2462MHz	Pass	1.70	12.72		12.72	30.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	1.70	11.48	11.71	14.61	30.00
2417MHz	Pass	1.70	14.89	14.12	17.53	30.00
2422MHz	Pass	1.70	16.88	16.04	19.49	30.00
2427MHz	Pass	1.70	17.83	17.27	20.57	30.00
2432MHz	Pass	1.70	19.04	18.69	21.88	30.00
2437MHz	Pass	1.70	18.96	18.55	21.77	30.00
2442MHz	Pass	1.70	18.43	17.98	21.22	30.00
2447MHz	Pass	1.70	16.83	16.39	19.63	30.00
2452MHz	Pass	1.70	16.45	15.91	19.20	30.00
2457MHz	Pass	1.70	14.14	13.92	17.04	30.00
2462MHz	Pass	1.70	11.25	11.32	14.30	30.00

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AV Power Result Appendix C

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
802.11n HT40_Nss1,(MCS0)_2TX	-	•	-	•	•	-
2422MHz	Pass	1.70	9.52	10.36	12.97	30.00
2427MHz	Pass	1.70	9.15	8.44	11.82	30.00
2432MHz	Pass	1.70	12.19	10.63	14.49	30.00
2437MHz	Pass	1.70	12.19	12.67	15.45	30.00
2442MHz	Pass	1.70	11.53	11.57	14.56	30.00
2447MHz		1.70	11.49	10.21	13.91	30.00
2452MHz	Pass	1.70	8.87	9.64	12.28	30.00

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

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PSD Result Appendix D

Summary

Mode	PD					
	(dBm/RBW)					
2.4-2.4835GHz	·					
802.11b_Nss1,(1Mbps)_1TX	-1.69					
802.11g_Nss1,(6Mbps)_1TX	-5.52					
802.11n HT20_Nss1,(MCS0)_2TX	-5.02					
802.11n HT40_Nss1,(MCS0)_2TX	-12.69					

RBW=3kHz.

Result

Mode	Result	DG	Port 1	Port 2	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-
2412MHz	Pass	1.70	-4.61		-4.61	8.00
2437MHz	Pass	1.70	-1.69		-1.69	8.00
2462MHz	Pass	1.70	-6.41		-6.41	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-
2412MHz	Pass	1.70	-11.80		-11.80	8.00
2437MHz	Pass	1.70	-5.52		-5.52	8.00
2462MHz	Pass	1.70	-12.78		-12.78	8.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.71	-13.79	-13.12	-12.29	8.00
2437MHz	Pass	4.71	-6.06	-6.31	-5.02	8.00
2462MHz	Pass	4.71	-14.25	-13.75	-12.59	8.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	4.71	-19.13	-18.03	-16.46	8.00
2437MHz	Pass	4.71	-15.06	-14.77	-12.69	8.00
2452MHz	Pass	4.71	-18.93	-18.27	-17.03	8.00

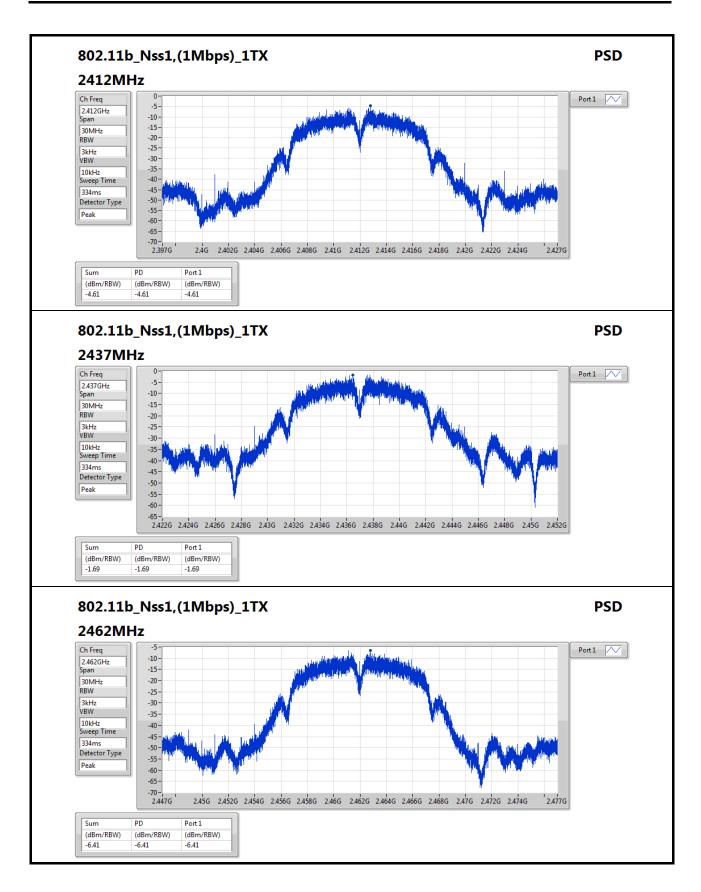
DG = Directional Gain; RBW=3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;

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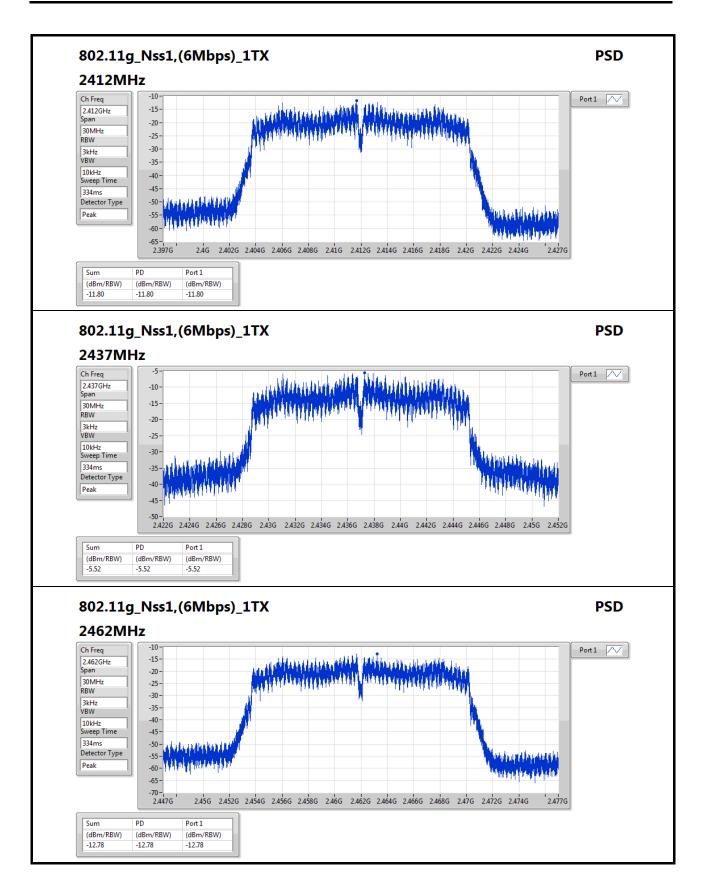
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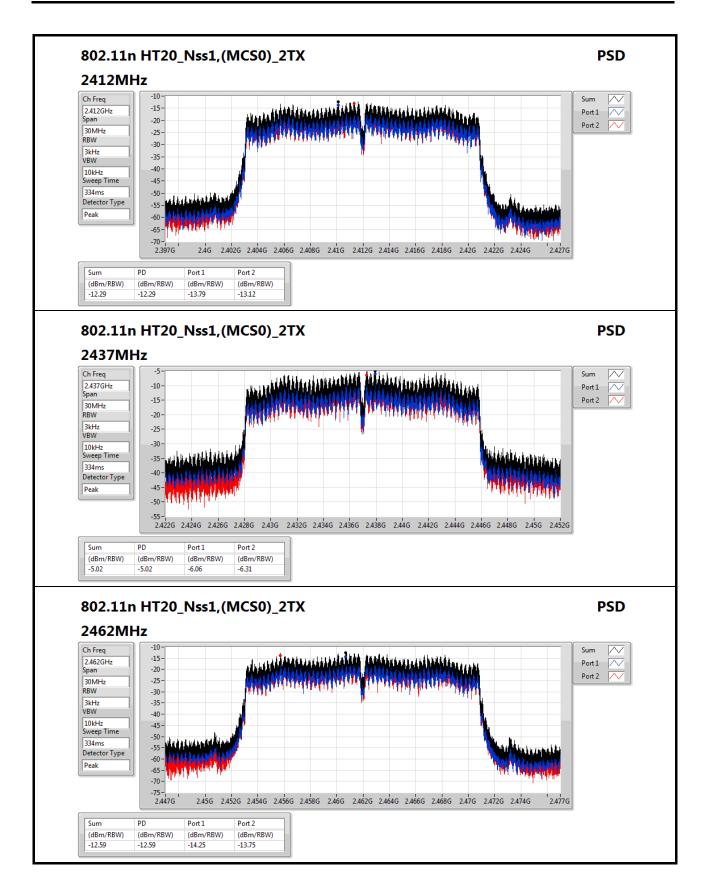
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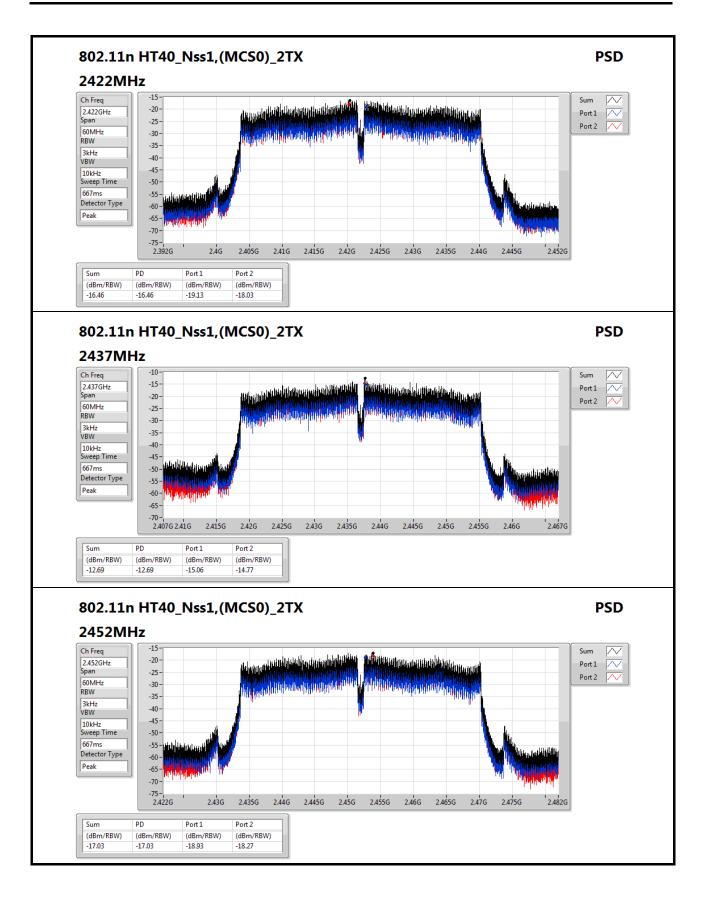
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CSE Non-restricted Band Result

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	2.437909G	12.24	-17.76	2.309905G	-58.27	2.398G	-25.98	2.49294G	-54.23	3.214652G	-42.15	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.43674G	5.84	-24.16	712.69M	-61.74	2.39752G	-32.94	2.4907G	-56.40	-56.40 3.214652G -44.22		1
802.11n HT20_Nss1,(MCS0)_2TX	Pass	2.438243G	7.21	-22.79	413.285M	-54.78	2.3996G	-35.74	2.48542G	-41.45	3.248367G	-43.57	1
802.11n HT40_Nss1,(MCS0)_2TX	Pass	2.439579G	-1.26	-31.26	885.315M	-62.42	2.39968G	-34.14	2.48398G	-45.37	3.247813G	-46.99	1

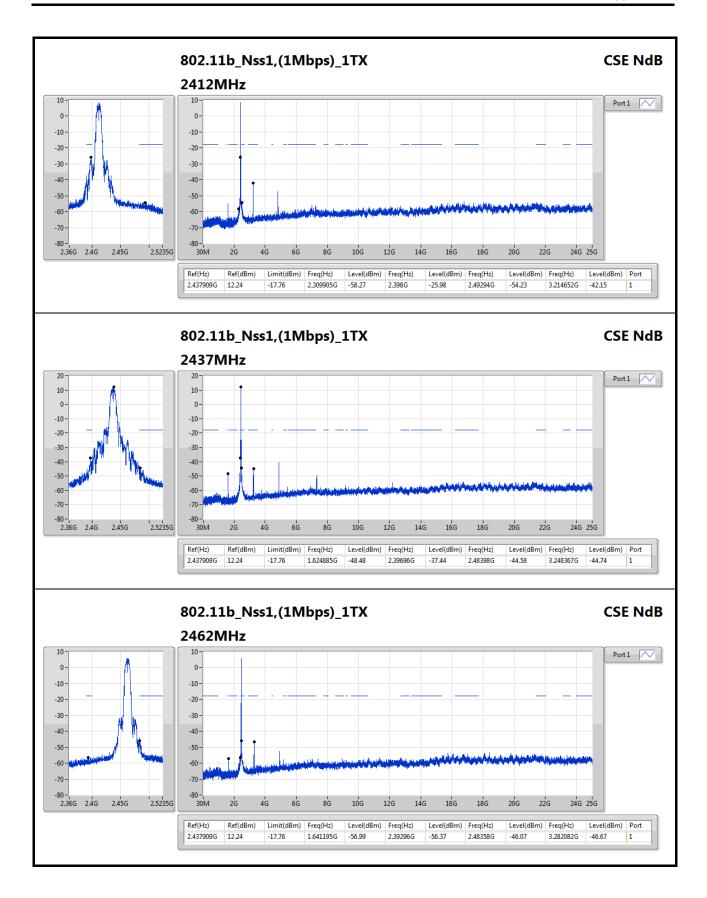
Result

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	2.437909G	12.24	-17.76	2.309905G	-58.27	2.398G	-25.98	2.49294G	-54.23	3.214652G	-42.15	1
2437MHz	Pass	2.437909G	12.24	-17.76	1.624885G	-48.48	2.39696G	-37.44	2.48398G	-44.58	3.248367G	-44.74	1
2462MHz	Pass	2.437909G	12.24	-17.76	1.641195G	-56.99	2.39296G	-56.37	2.48358G	-46.07	3.282082G	-46.67	1
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43674G	5.84	-24.16	712.69M	-61.74	2.39752G	-32.94	2.4907G	-56.40	3.214652G	-44.22	1
2437MHz	Pass	2.43674G	5.84	-24.16	2.30874G	-58.92	2.39888G	-33.02	2.48382G	-37.25	3.248367G	-43.33	1
2462MHz	Pass	2.43674G	5.84	-24.16	382.995M	-60.28	2.39224G	-56.36	2.48414G	-41.59	3.282082G	-48.15	1
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.438243G	7.21	-22.79	2.30175G	-61.54	2.39288G	-35.98	2.4923G	-57.20	3.214652G	-44.91	1
2412MHz	Pass	2.438243G	7.21	-22.79	2.307575G	-62.01	2.39672G	-35.81	2.4907G	-56.15	24.811759G	-53.30	2
2437MHz	Pass	2.438243G	7.21	-22.79	413.285M	-54.78	2.3996G	-35.74	2.48542G	-41.45	3.248367G	-43.57	1
2437MHz	Pass	2.438243G	7.21	-22.79	2.30641G	-60.16	2.39792G	-38.73	2.4839G	-44.66	17.394514G	-54.03	2
2462MHz	Pass	2.438243G	7.21	-22.79	2.30408G	-63.14	2.3976G	-58.33	2.48454G	-43.11	3.282082G	-48.52	1
2462MHz	Pass	2.438243G	7.21	-22.79	925.885M	-62.89	2.39728G	-56.62	2.48382G	-44.60	16.753934G	-54.04	2
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.439579G	-1.26	-31.26	921.955M	-62.60	2.3992G	-38.91	2.48382G	-56.03	3.228181G	-46.83	1
2422MHz	Pass	2.439579G	-1.26	-31.26	2.309695G	-60.38	2.39984G	-38.64	2.48478G	-56.43	16.353534G	-53.28	2
2437MHz	Pass	2.439579G	-1.26	-31.26	885.315M	-62.42	2.39968G	-34.14	2.48398G	-45.37	3.247813G	-46.99	1
2437MHz	Pass	2.439579G	-1.26	-31.26	875.01M	-61.89	2.39584G	-35.23	2.48382G	-45.97	21.785971G	-54.24	2
2452MHz	Pass	2.439579G	-1.26	-31.26	842.95M	-62.29	2.39856G	-55.80	2.48942G	-43.21	3.267445G	-49.21	1
2452MHz	Pass	2.439579G	-1.26	-31.26	683.795M	-61.79	2.39824G	-56.33	2.49006G	-44.24	16.748977G	-54.46	2

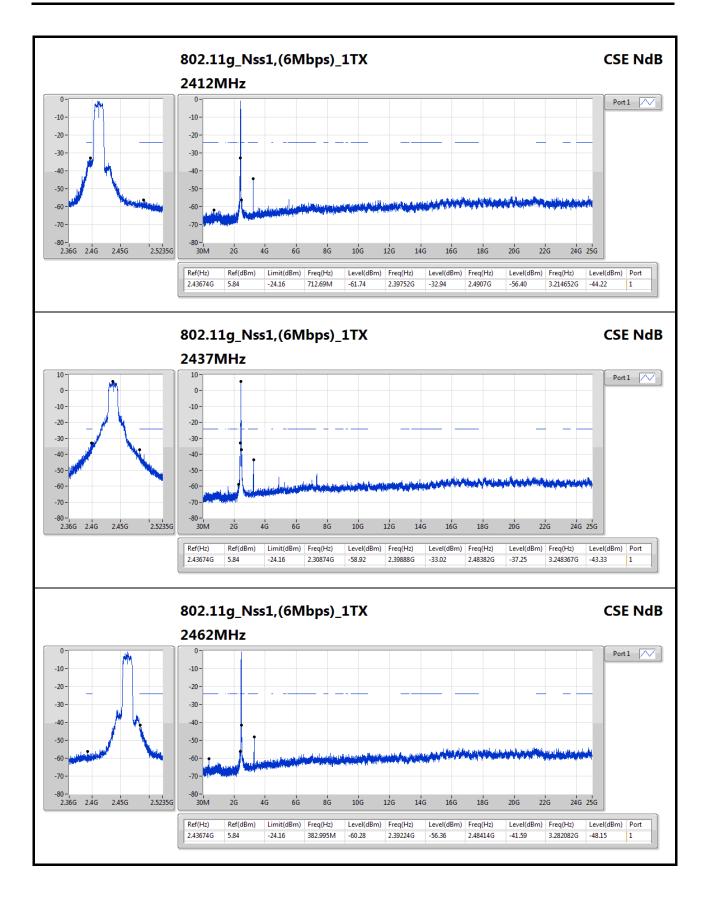
SPORTON INTERNATIONAL INC.

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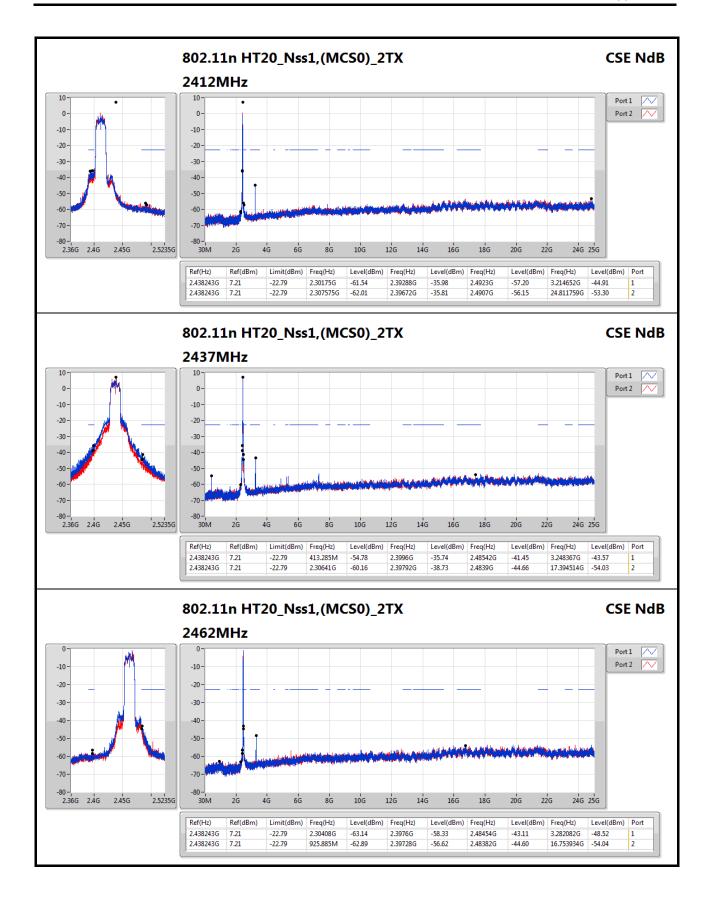




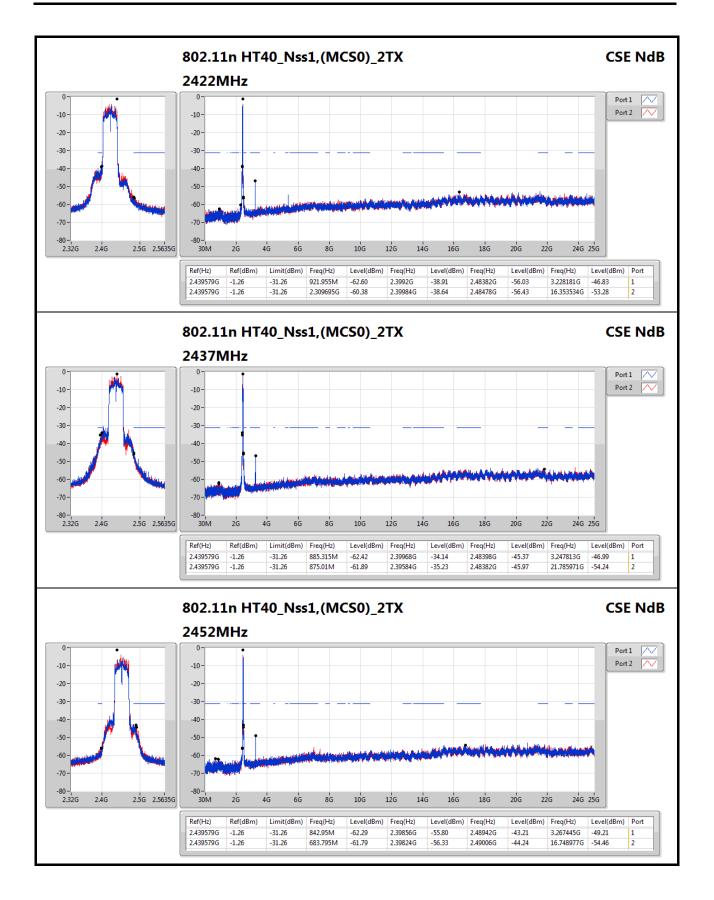




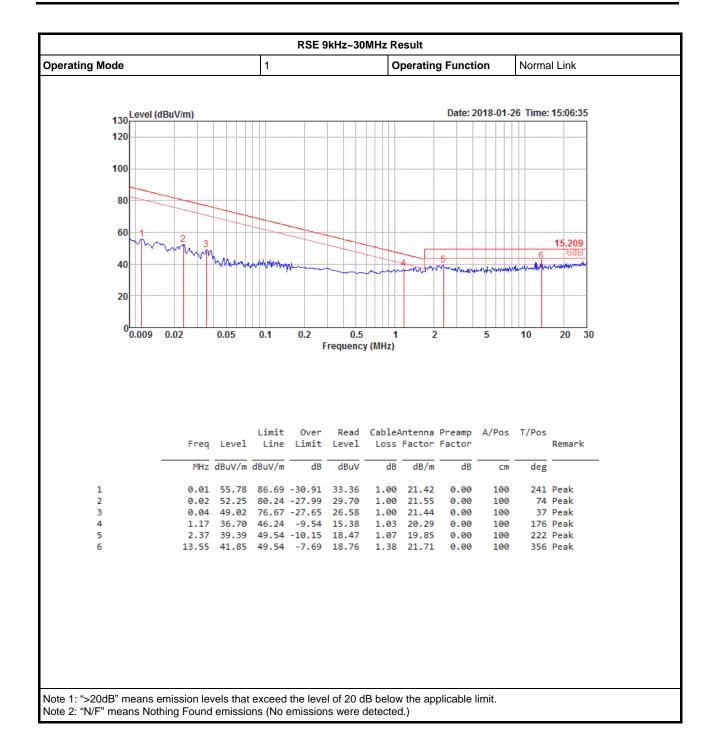




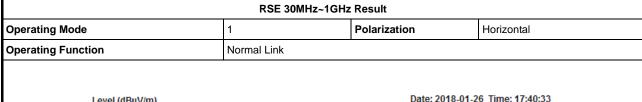


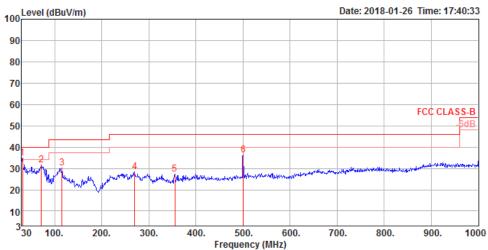






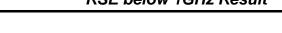
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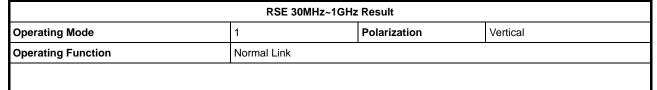


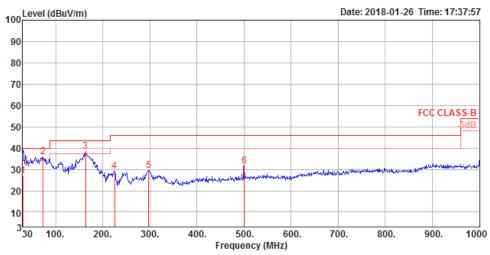


	Freq	Level						Preamp Factor		T/Pos	Remark	Pol/Phase
		dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	——dB		deg		
1			40.00						200	·	Peak	HORIZONTAL
2			40.00						200		Peak	HORIZONTAL
3 4			43.50 46.00					32.37	300 125		Peak Peak	HORIZONTAL HORIZONTAL
5			46.00			1.53			125		Peak	HORIZONTAL
6	500.45	36.34	46.00	-9.66	41.91	2.94	23.82	32.33	100	197	Peak	HORIZONTAL

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)







	Freq	Level		Over Limit						T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.97	26.85	40.00	-13.15	33.29	0.98	25.01	32.43	100	200	QP	VERTICAL
2	73.65	35.85	40.00	-4.15	54.50	0.86	12.89	32.40	100	173	Peak	VERTICAL
3	163.86	38.30	43.50	-5.20	53.22	1.10	16.31	32.33	100	194	Peak	VERTICAL
4	224.97	29.26	46.00	-16.74	42.60	2.18	16.78	32.30	100	325	Peak	VERTICAL
5	297.72	29.62	46.00	-16.38	39.63	2.62	19.64	32.27	200	158	Peak	VERTICAL
6	500.45	31.58	46.00	-14.42	37.15	2.94	23.82	32.33	150	148	Peak	VERTICAL

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

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RSE TX above 1GHz Result

Appendix F.2

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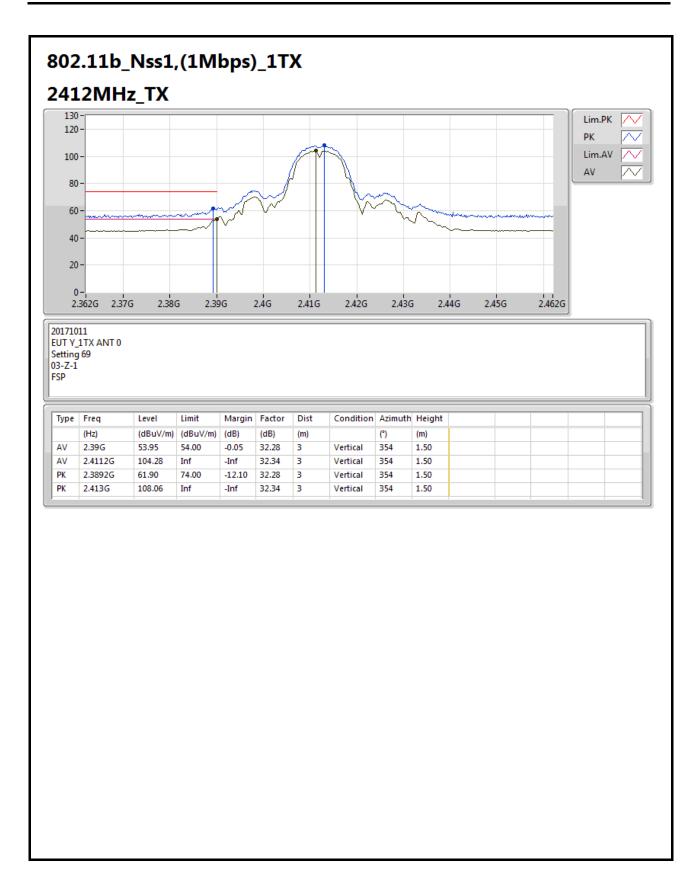
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
802.11n HT40_Nss1,(MCS0)_2TX	Pass	AV	2.3896G	53.99	54.00	-0.01	32.12	3	Vertical	354	1.30	-

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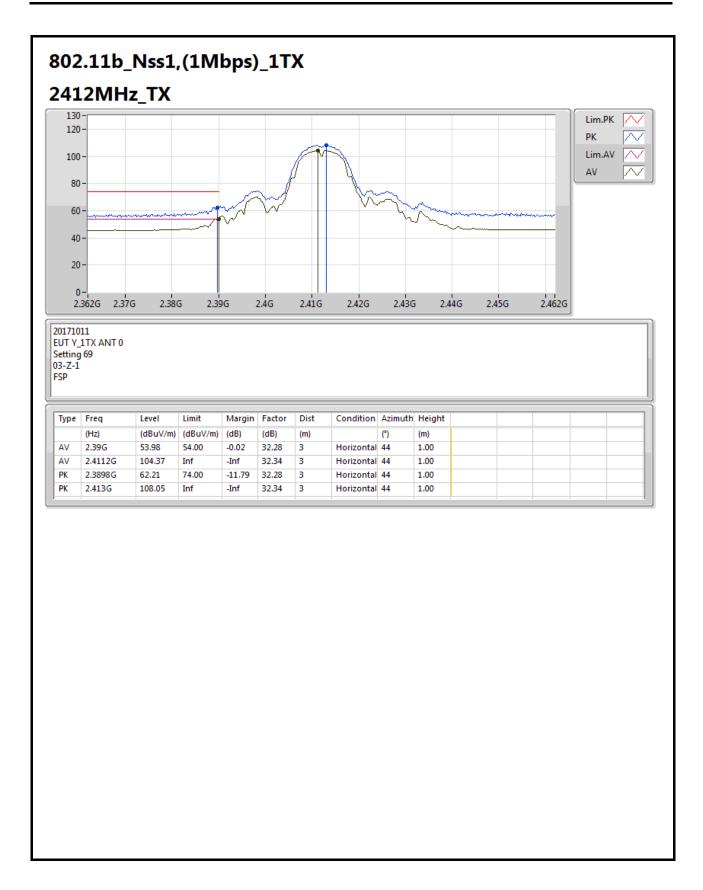
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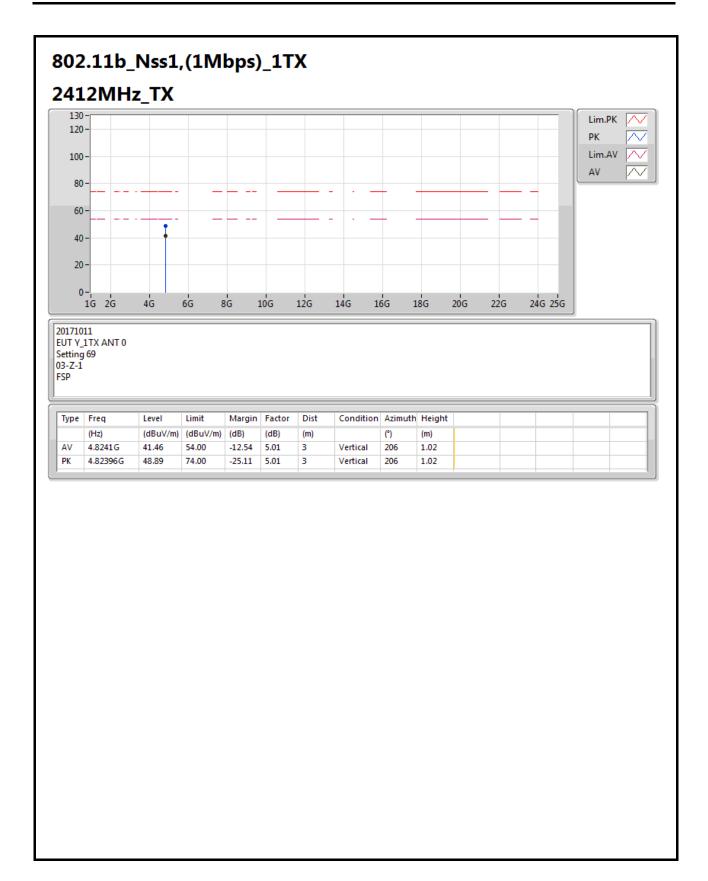


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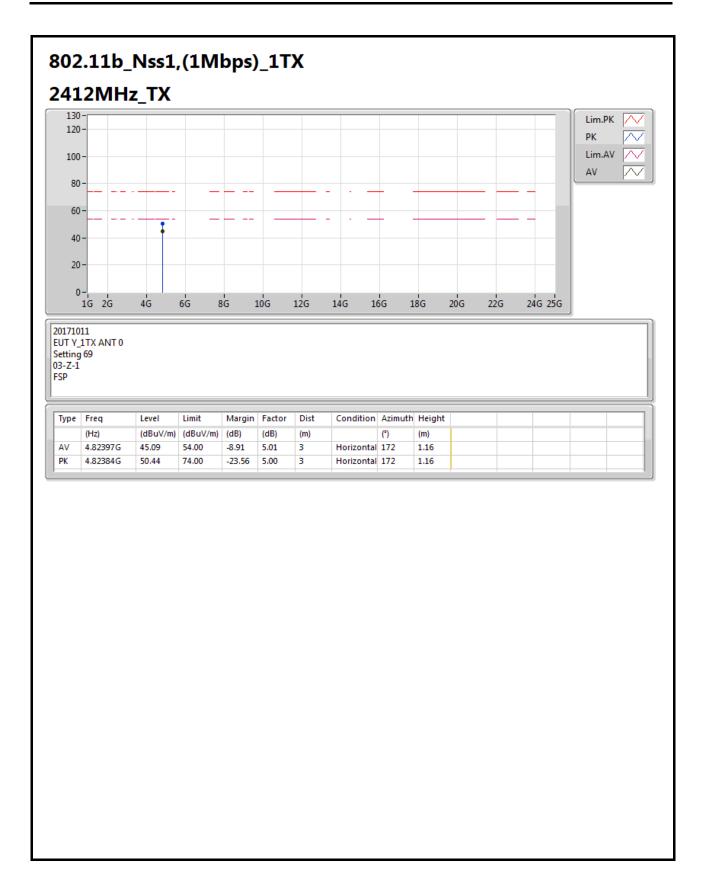






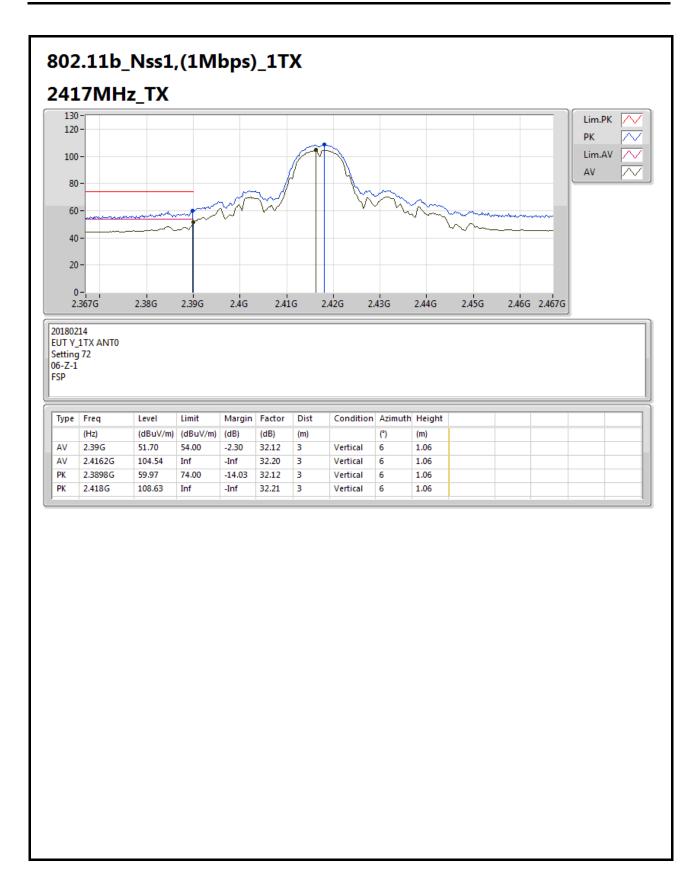






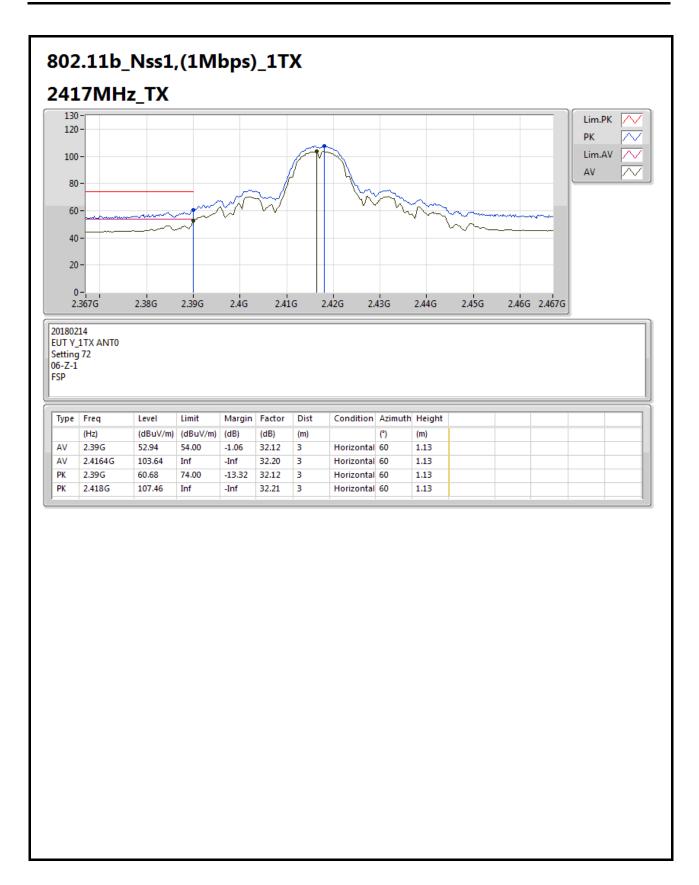
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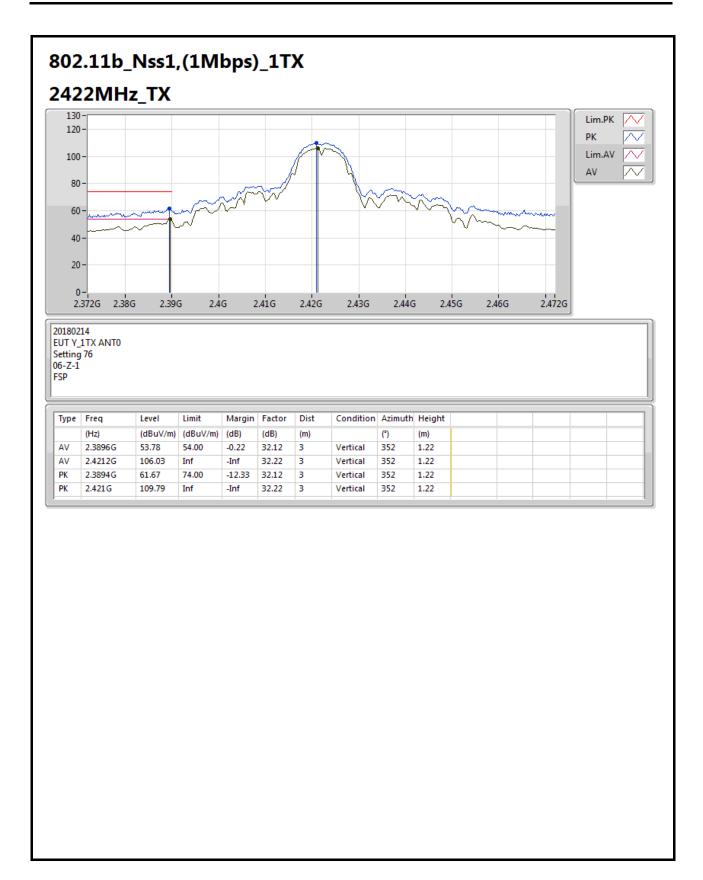
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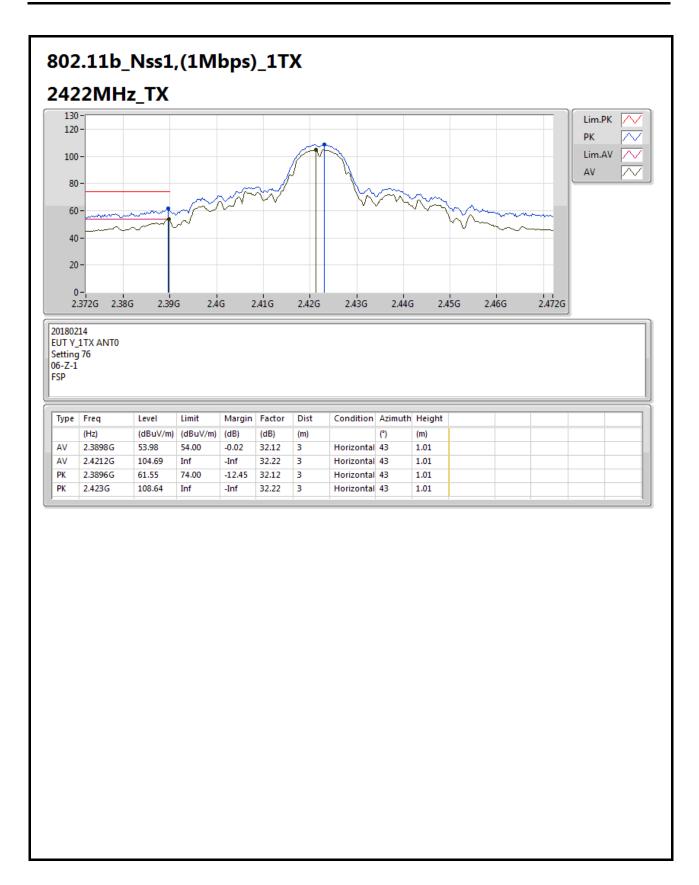
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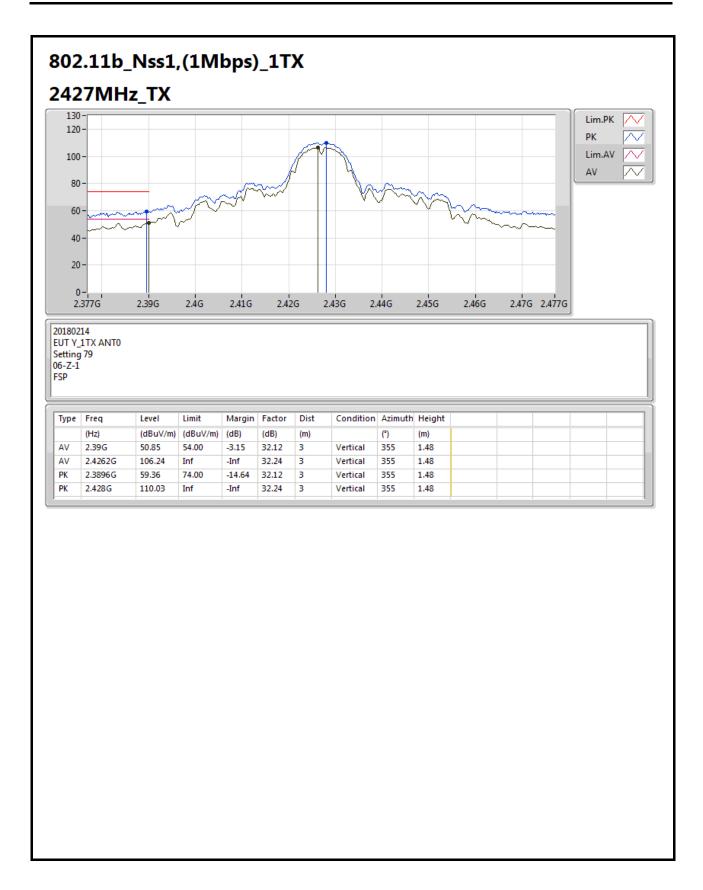


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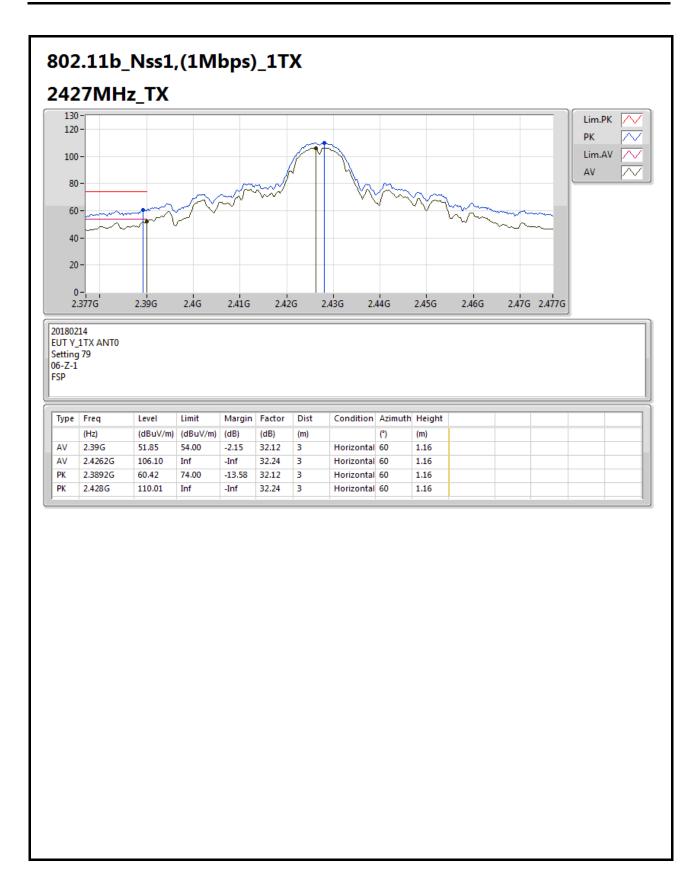






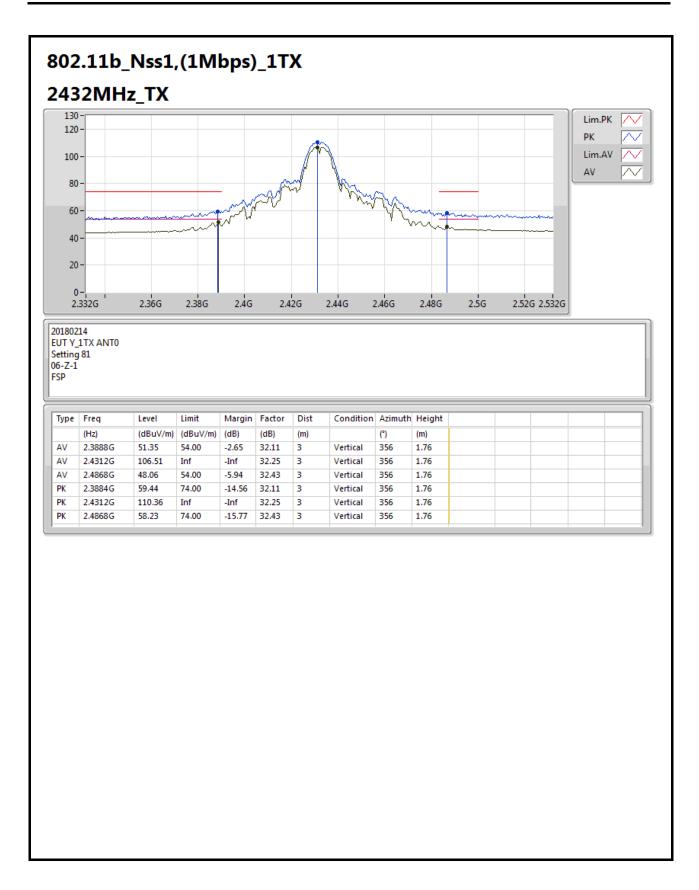
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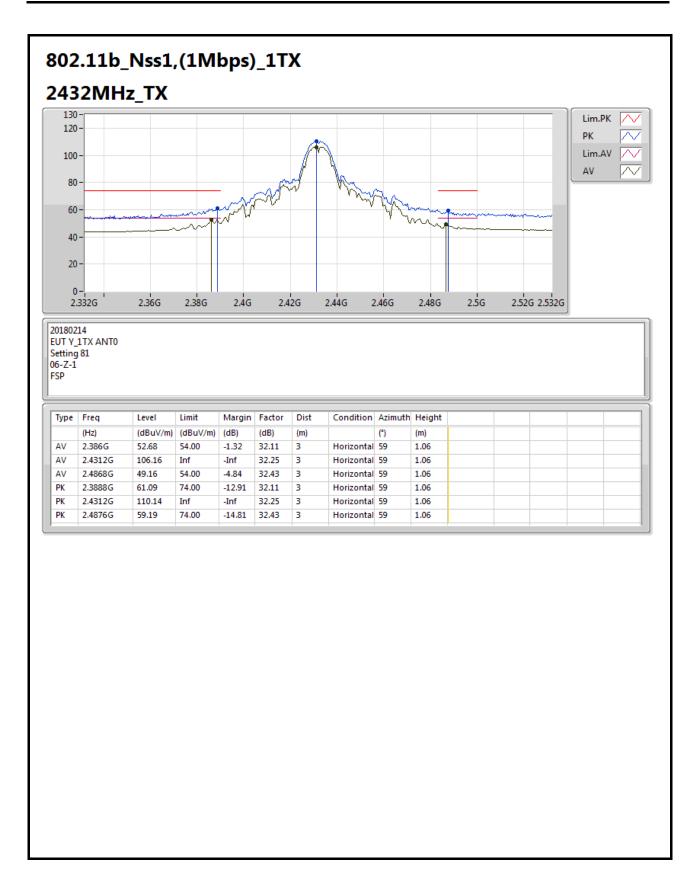
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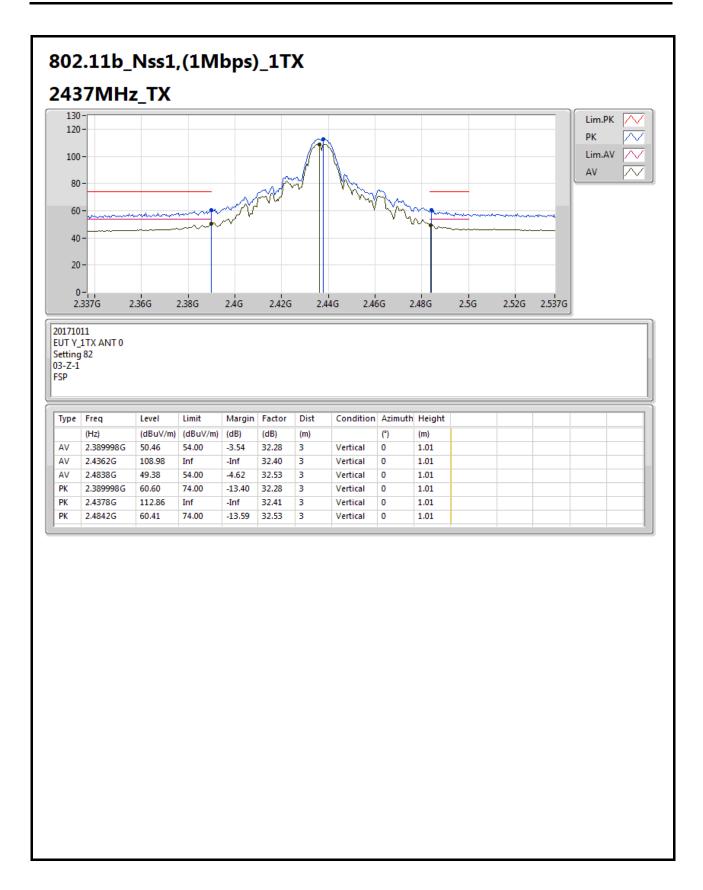
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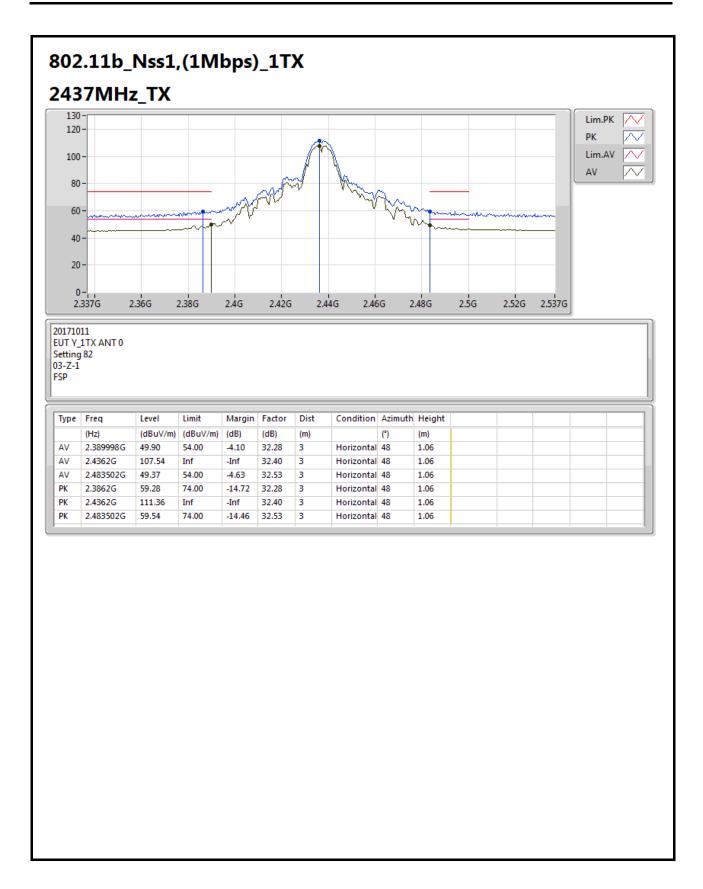


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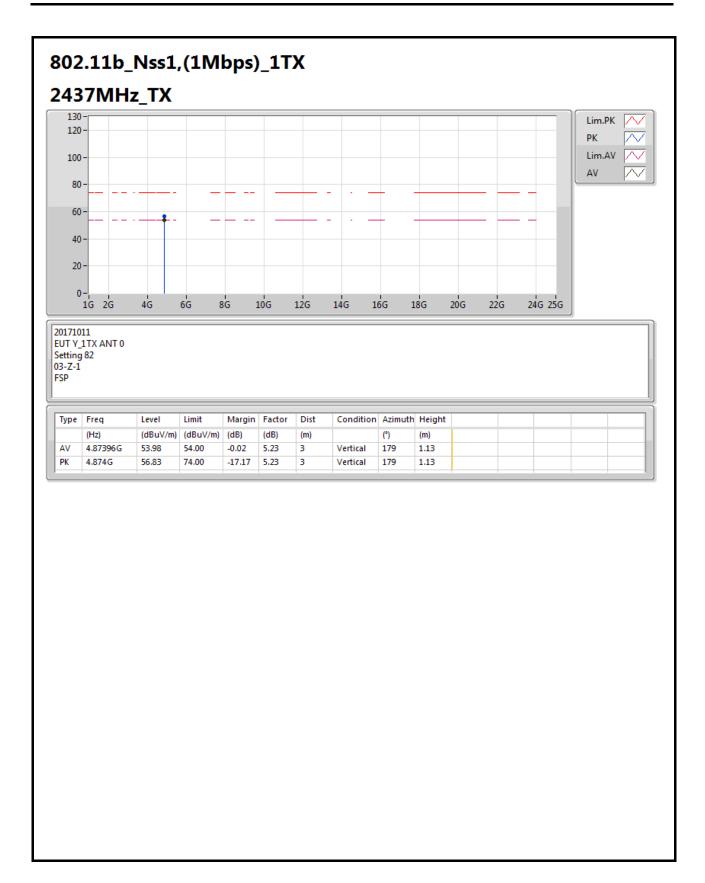




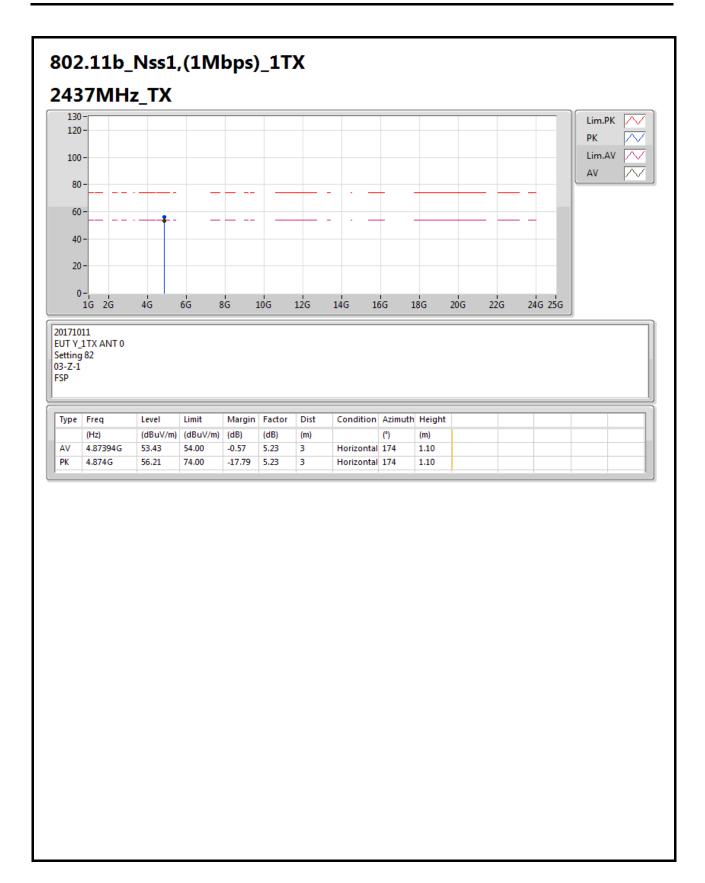




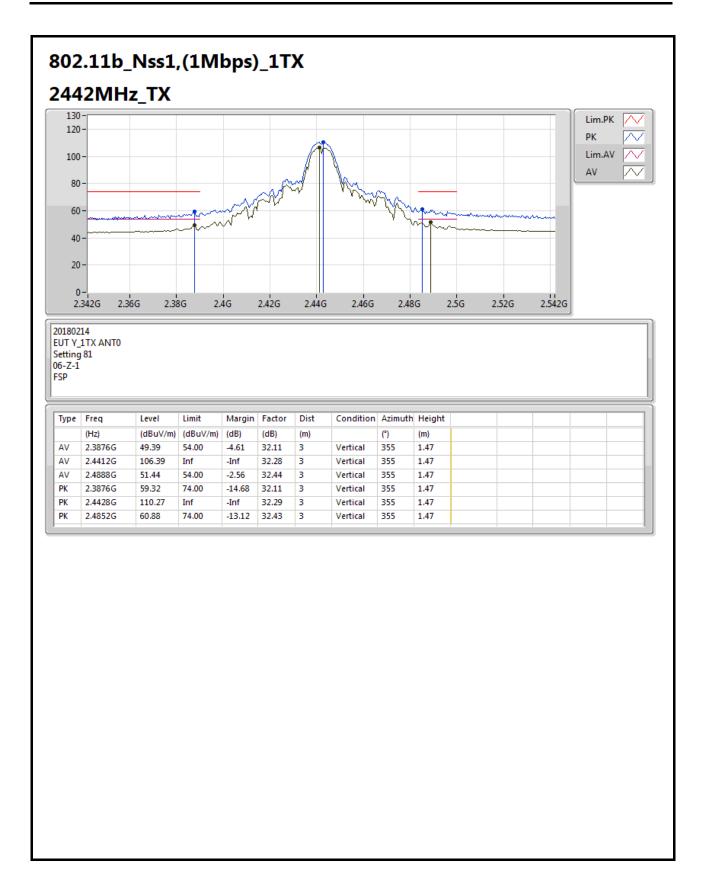




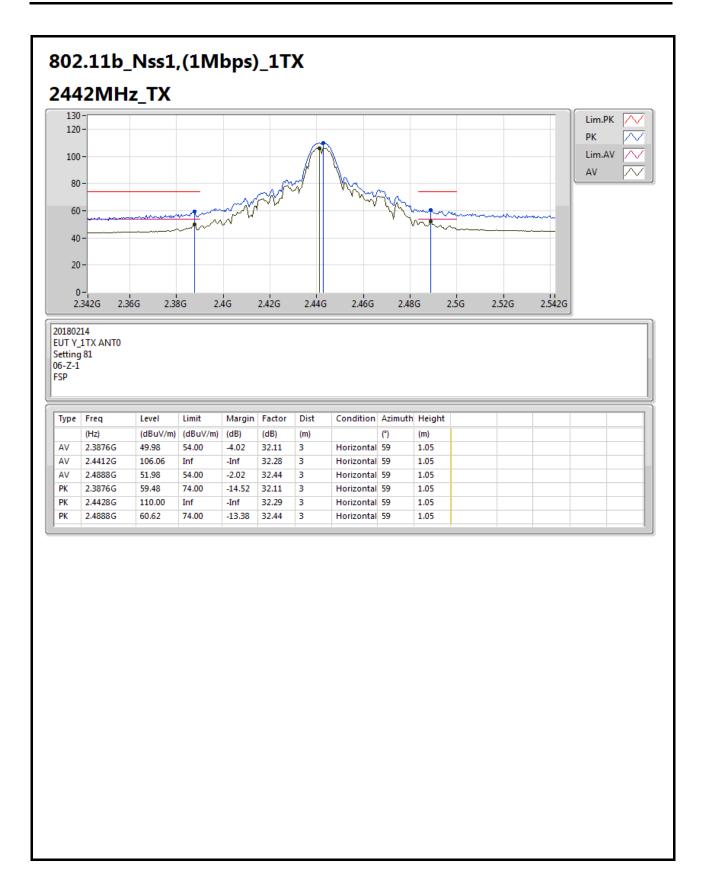




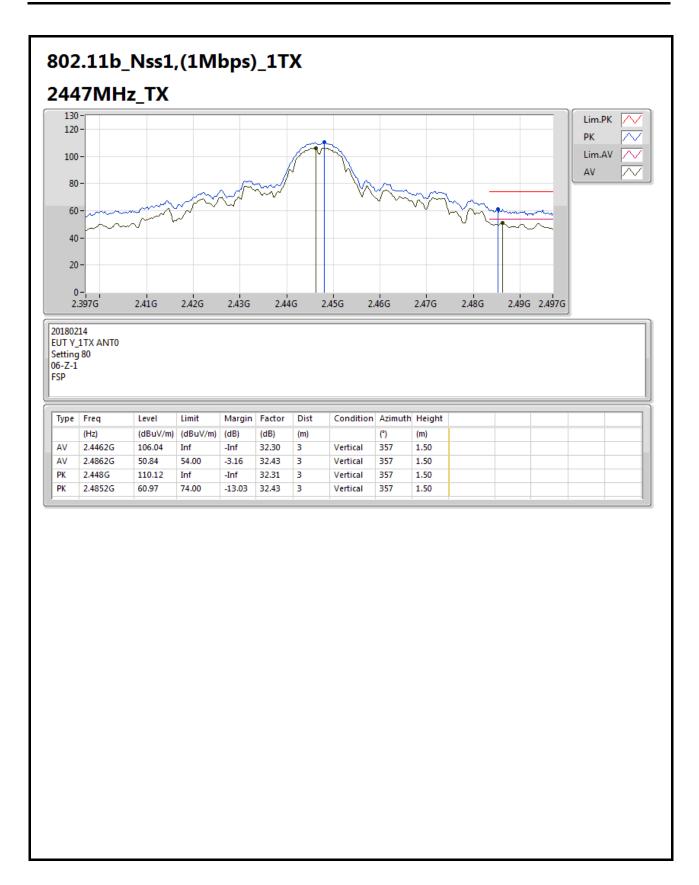






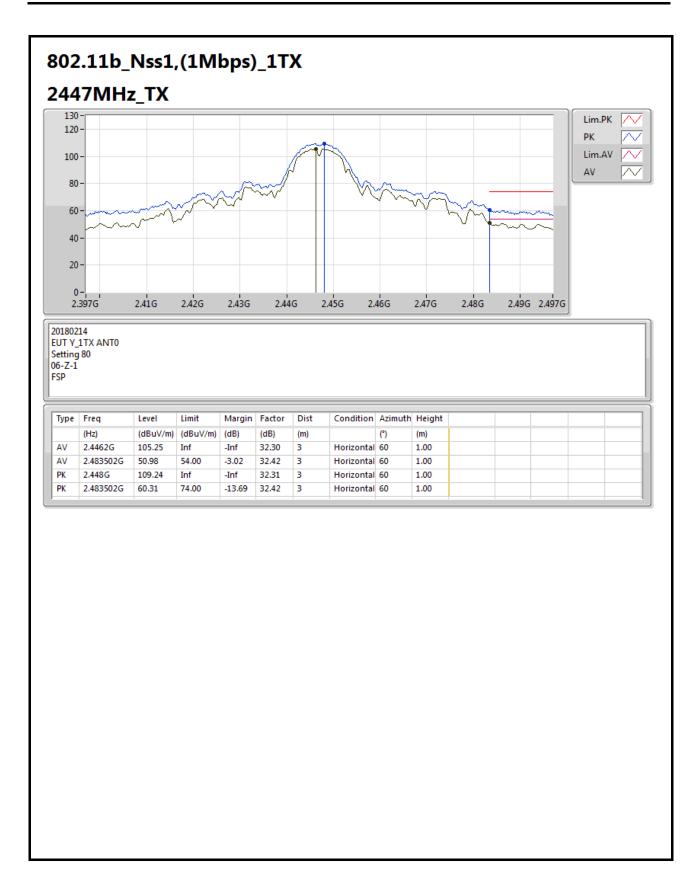




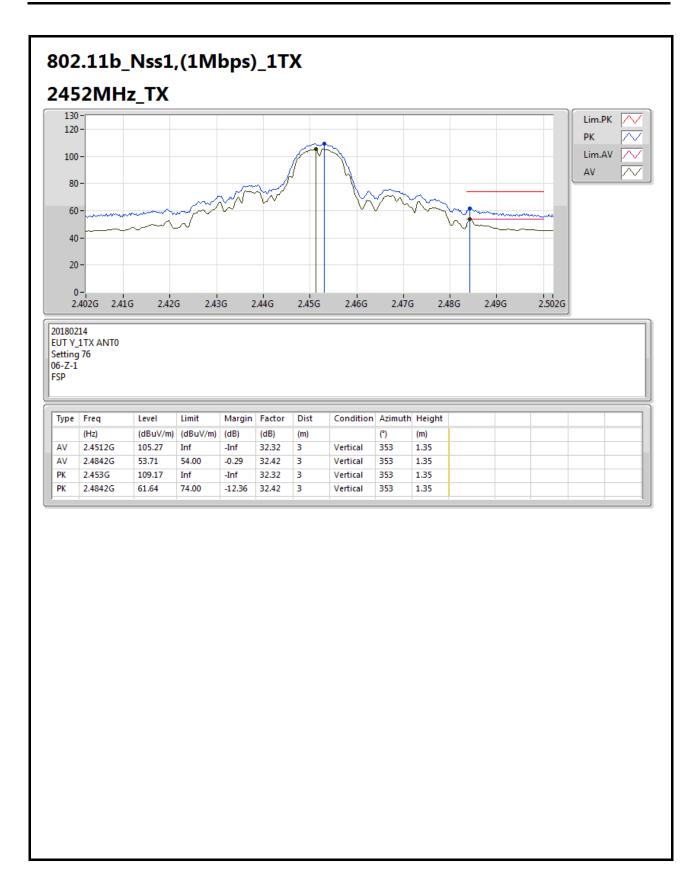


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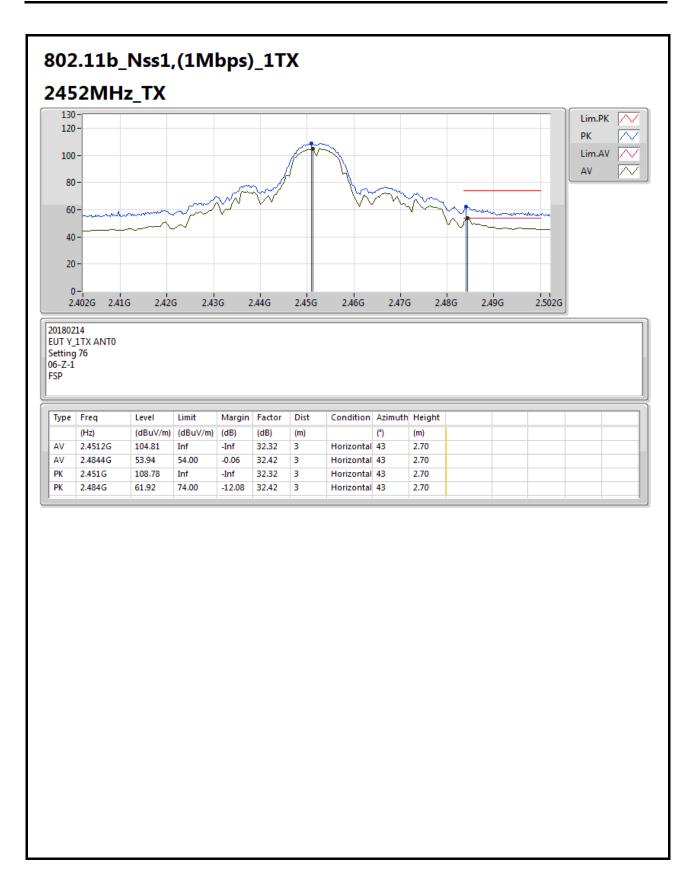




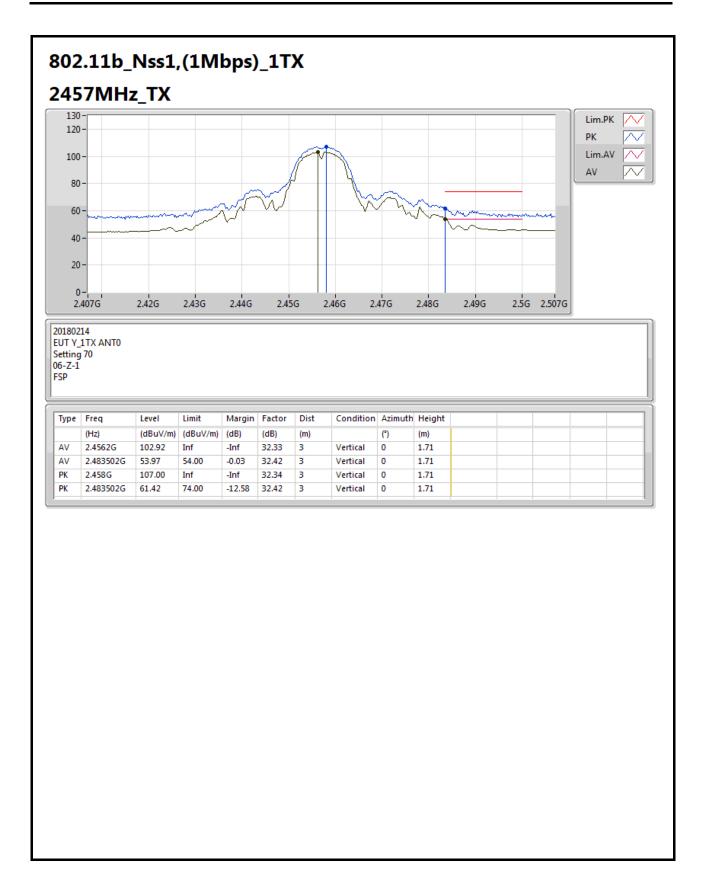




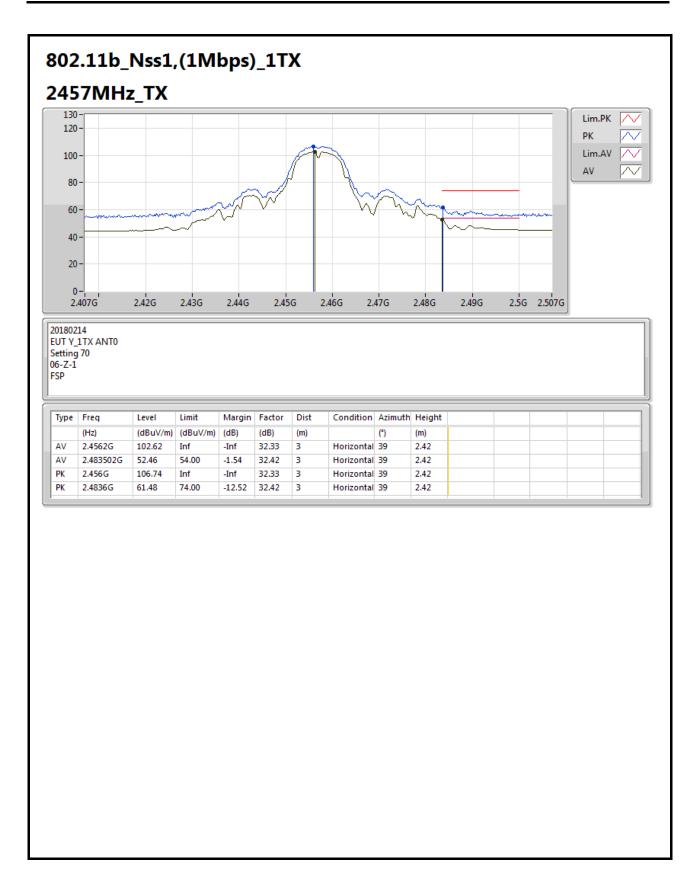




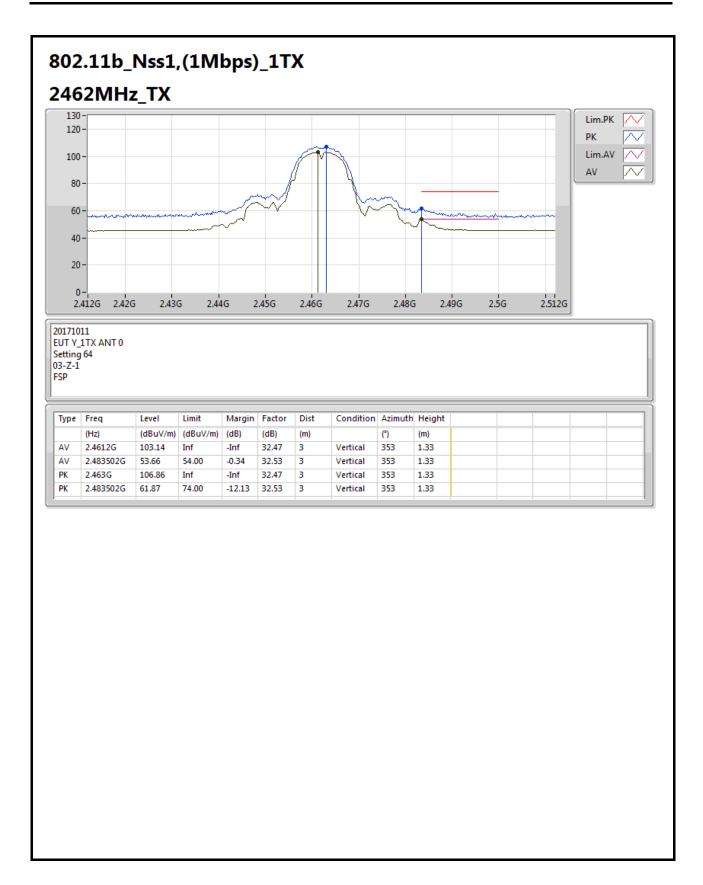




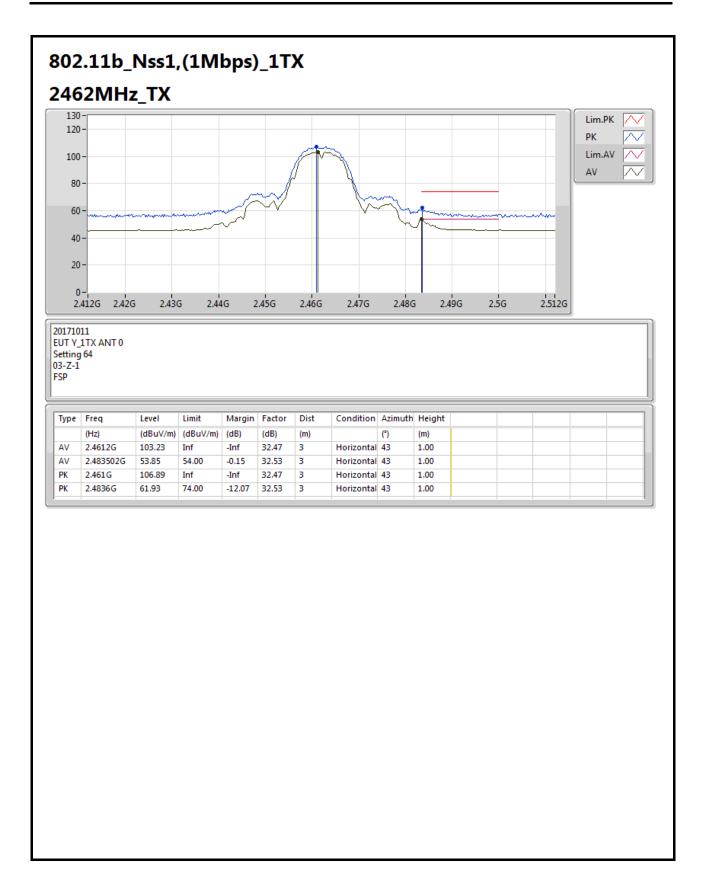






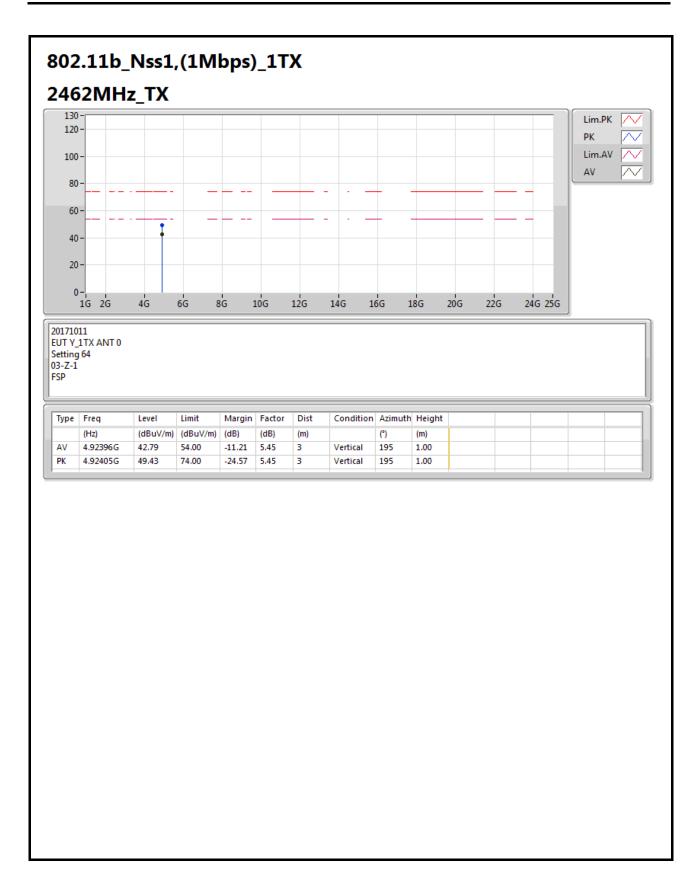






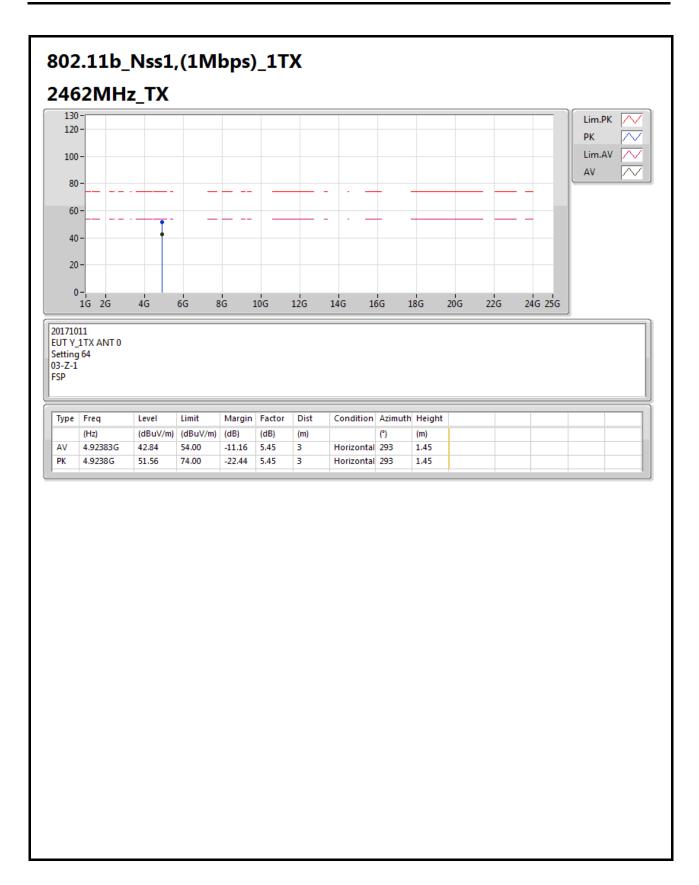
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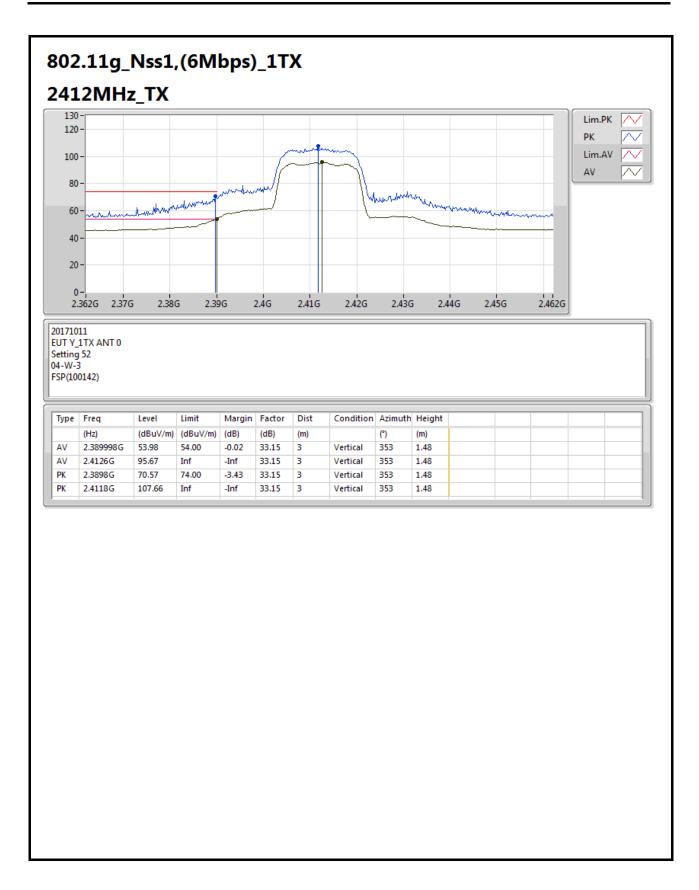
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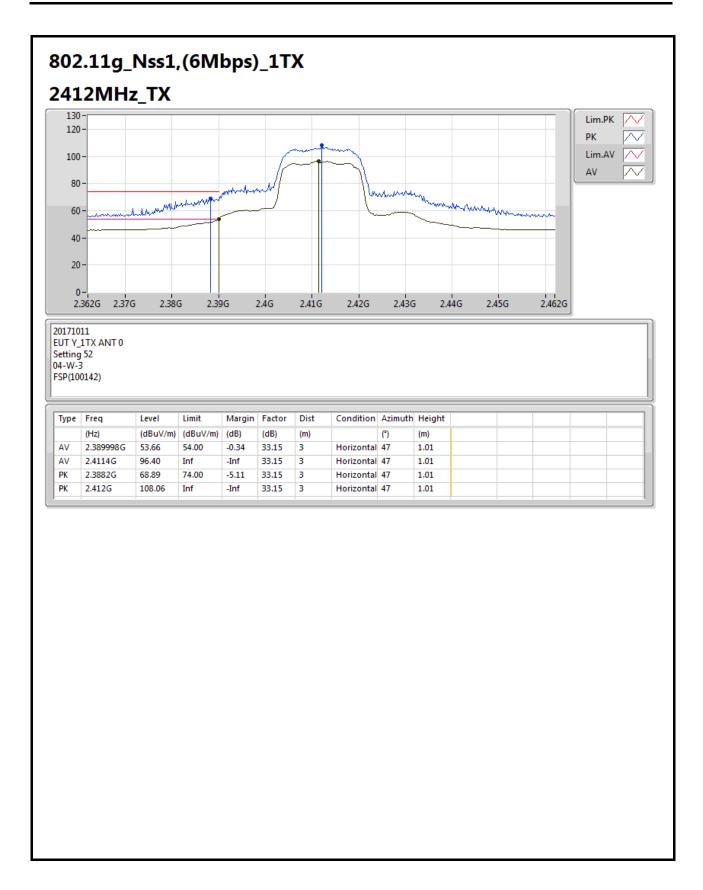
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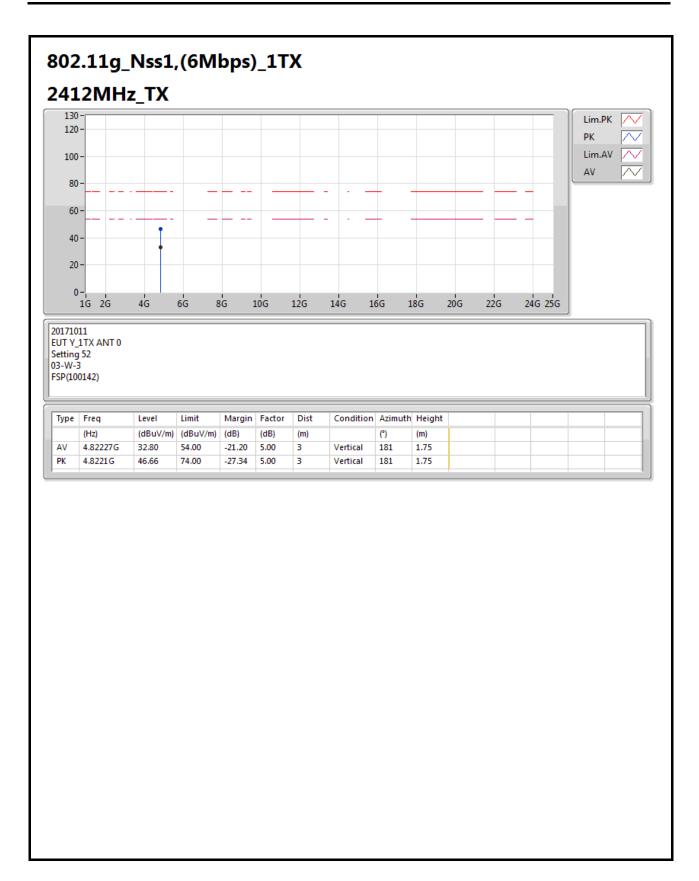


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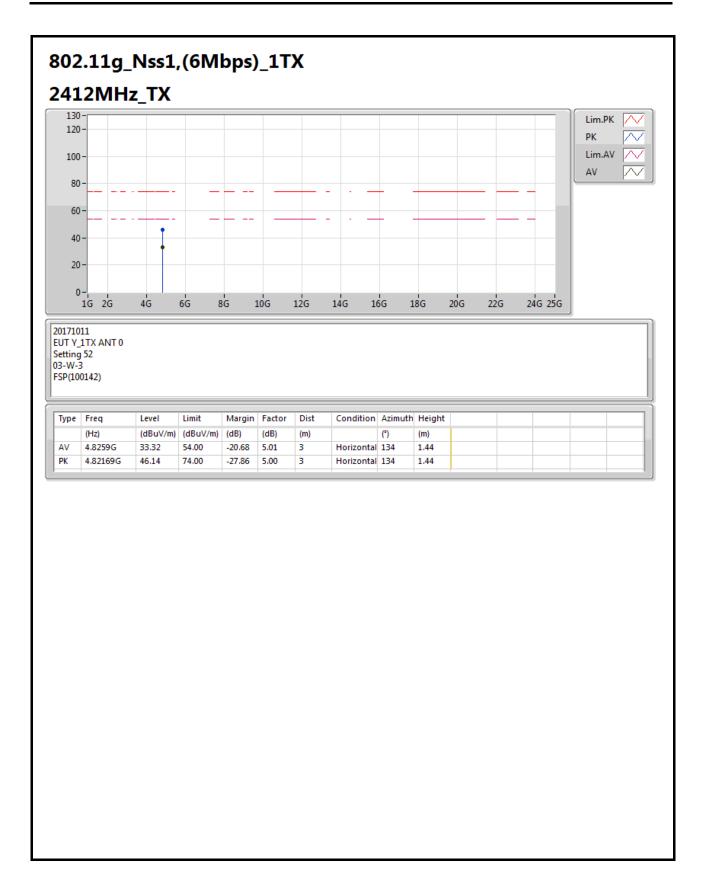






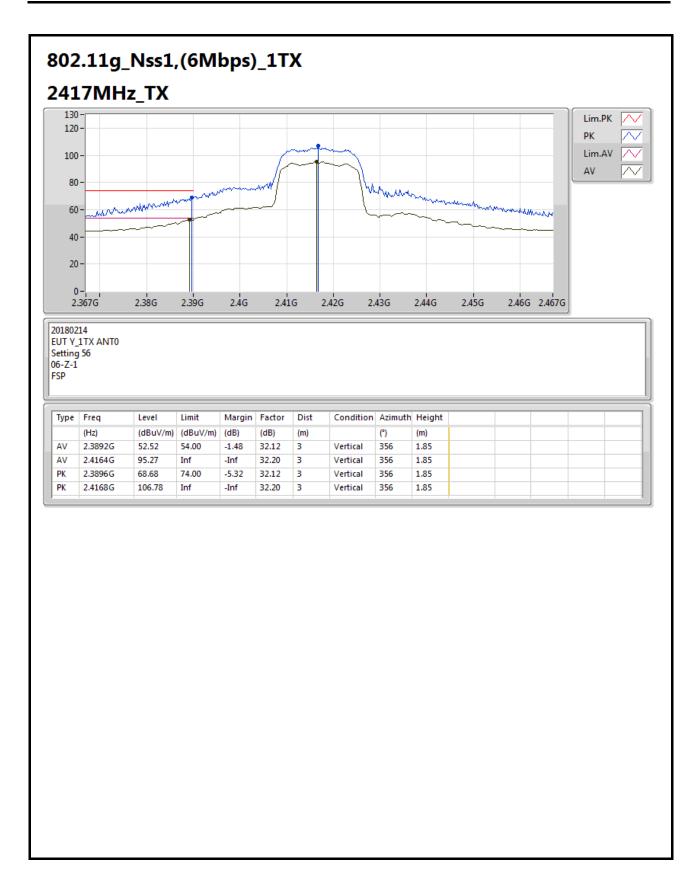
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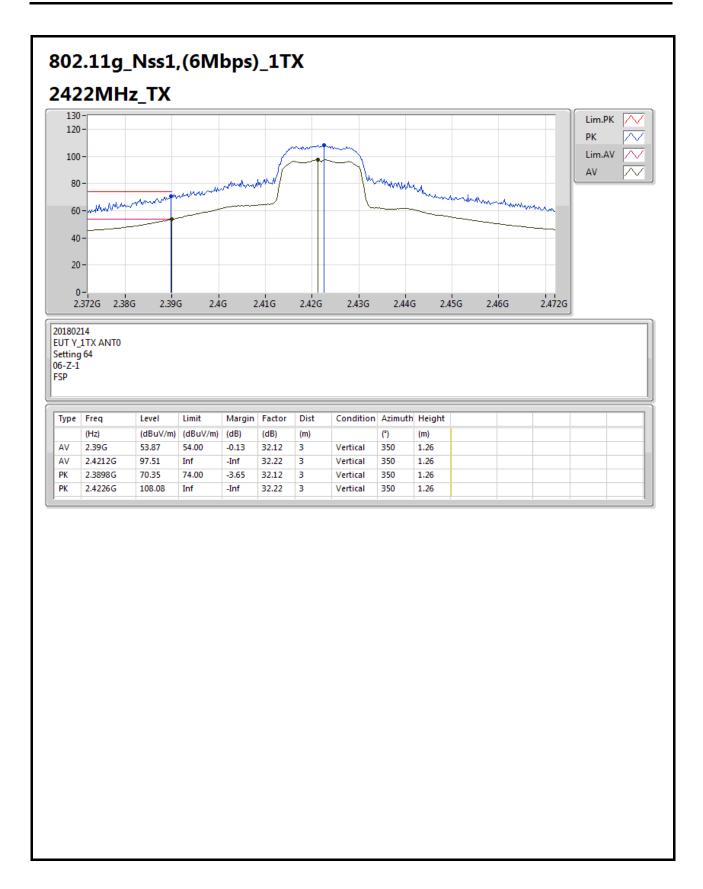






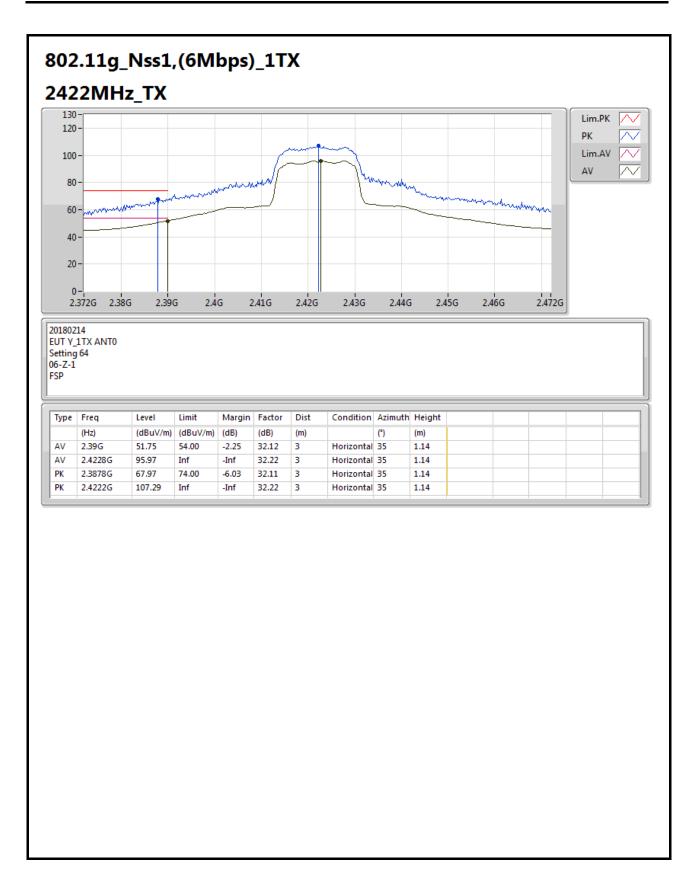




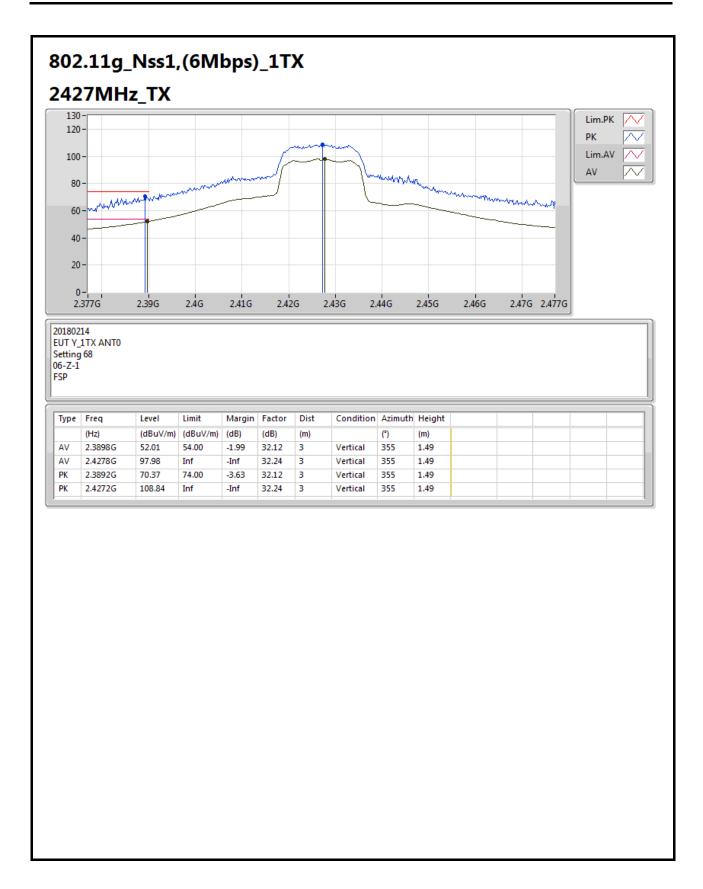


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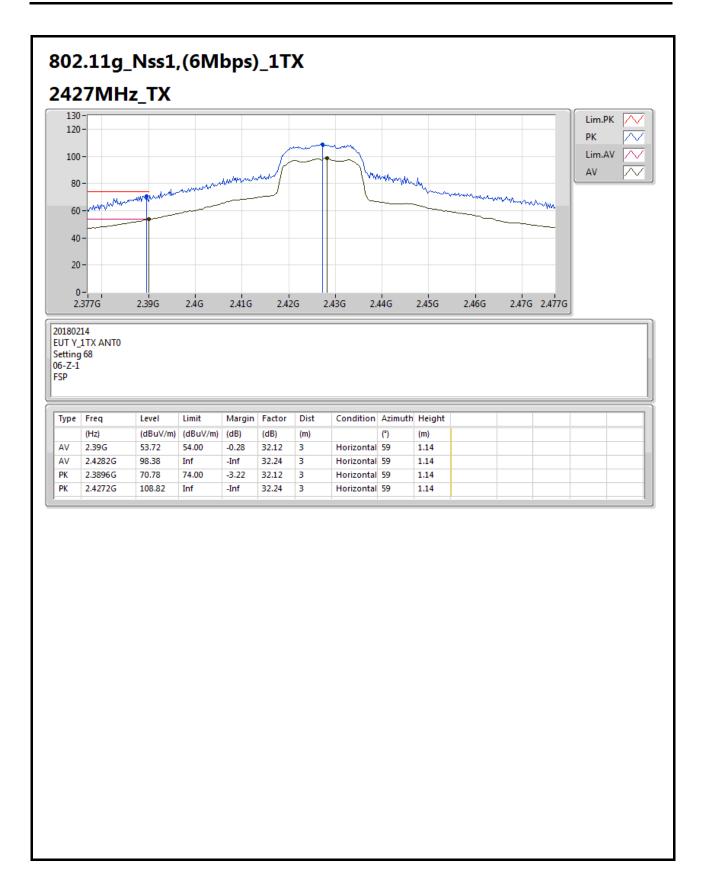






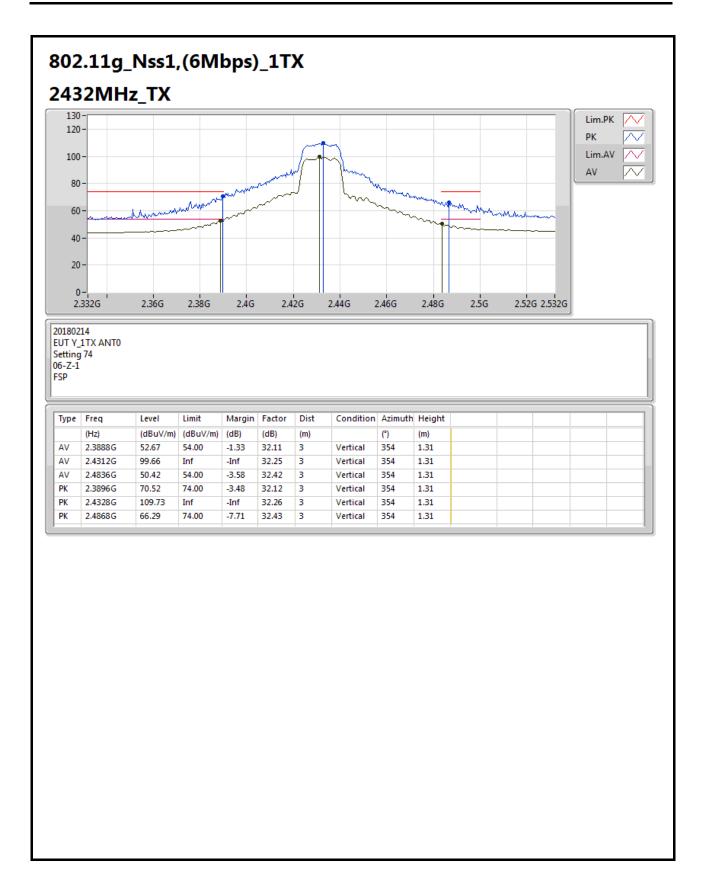
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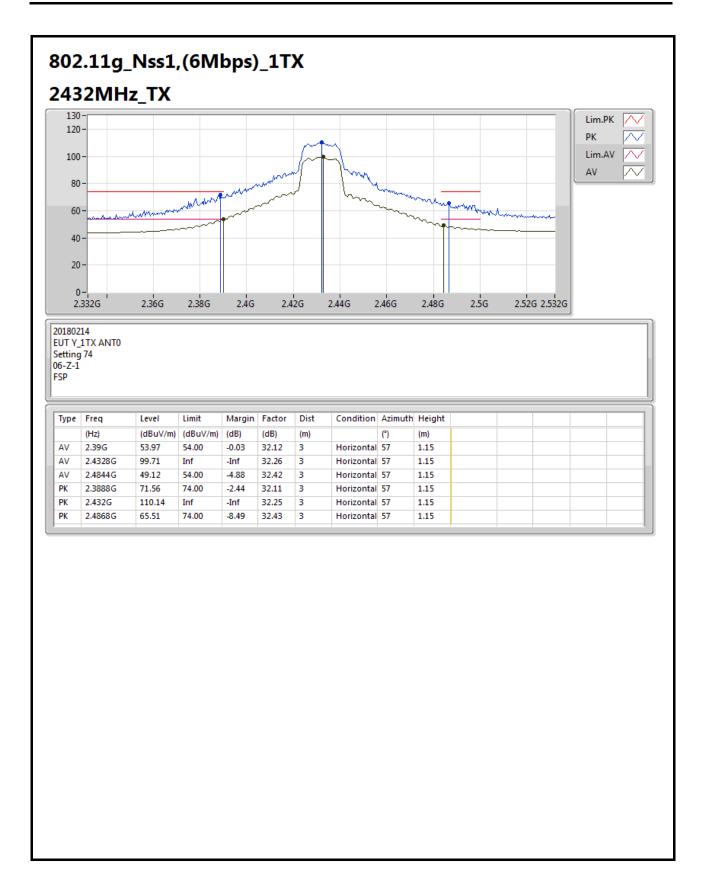
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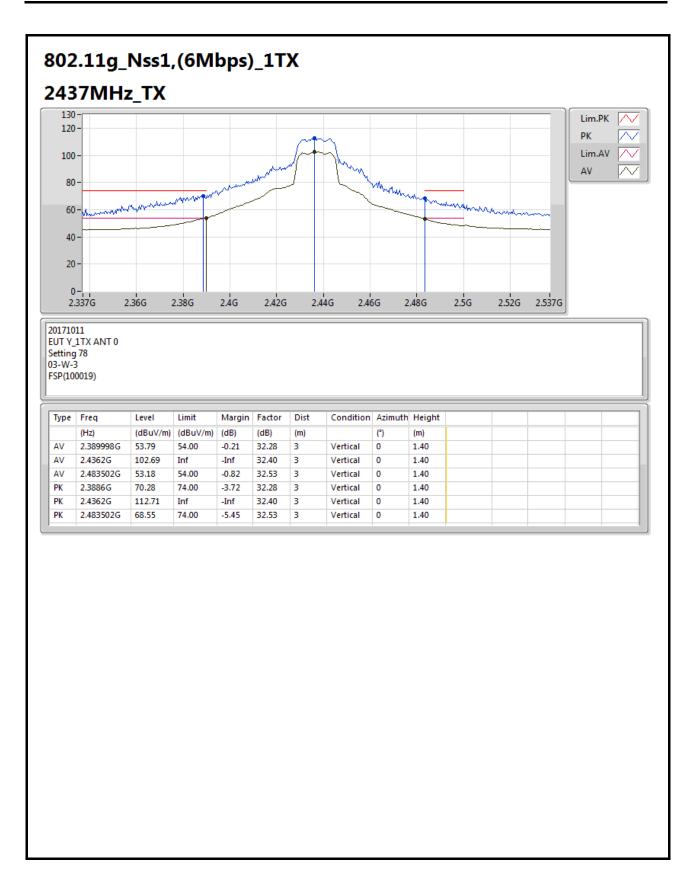
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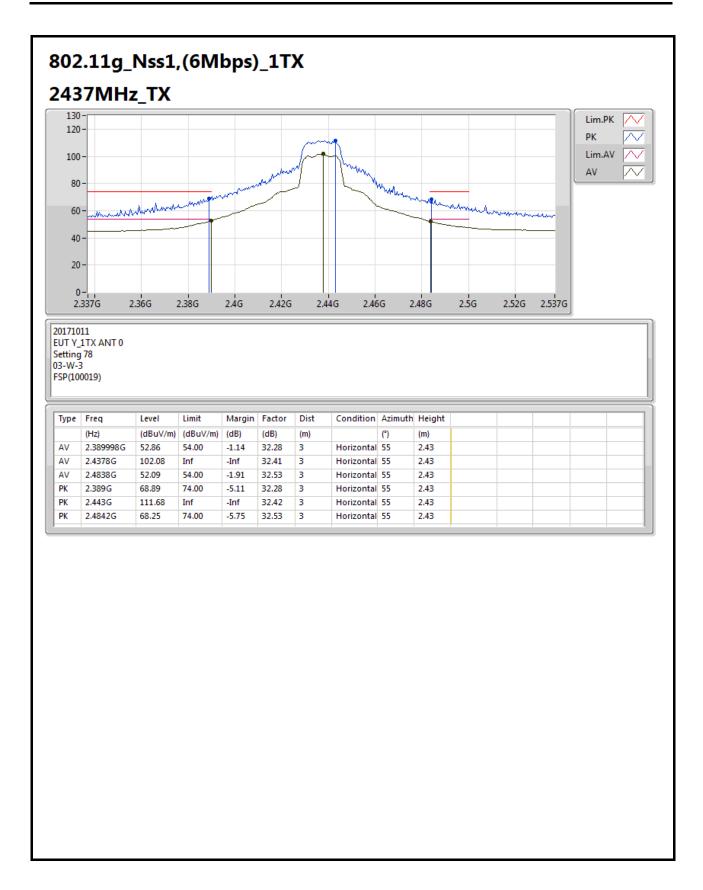


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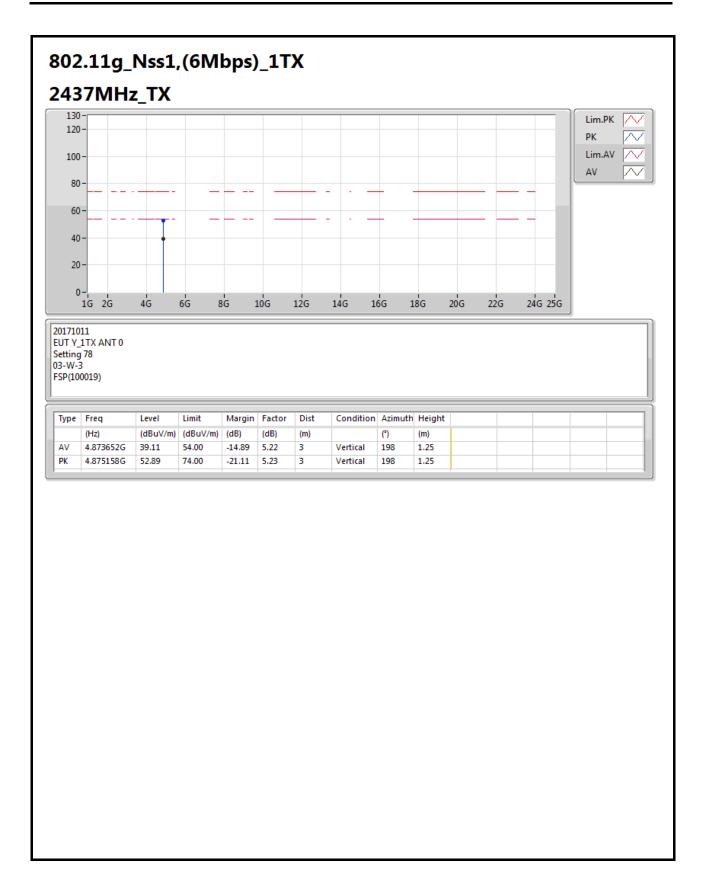




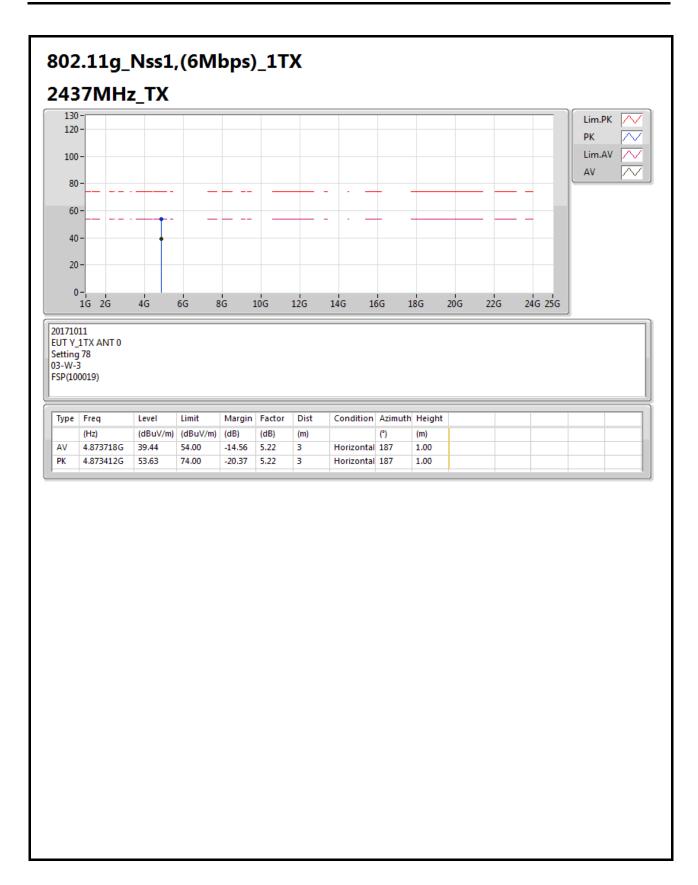


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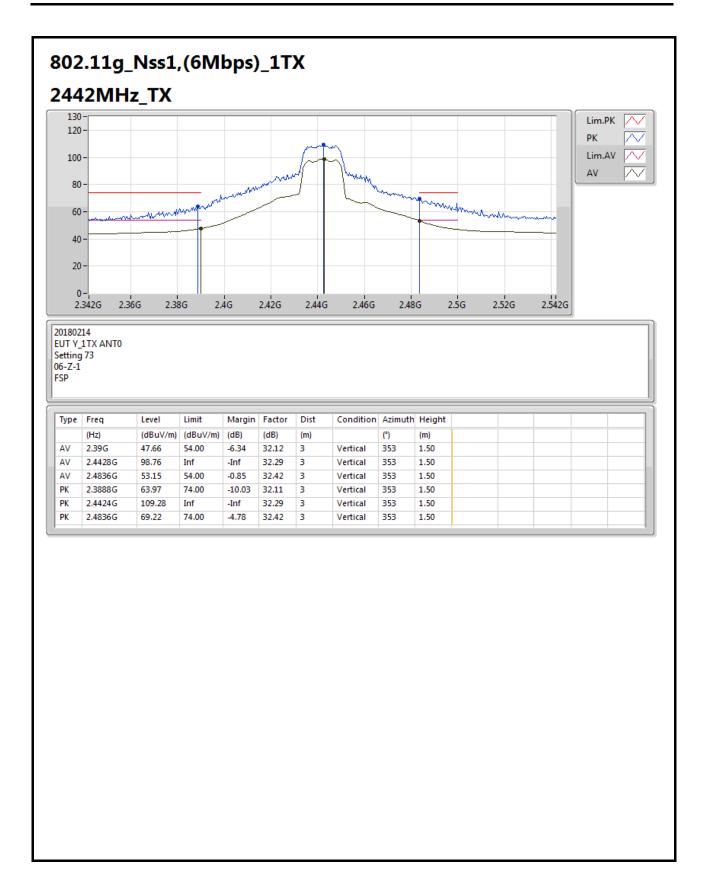






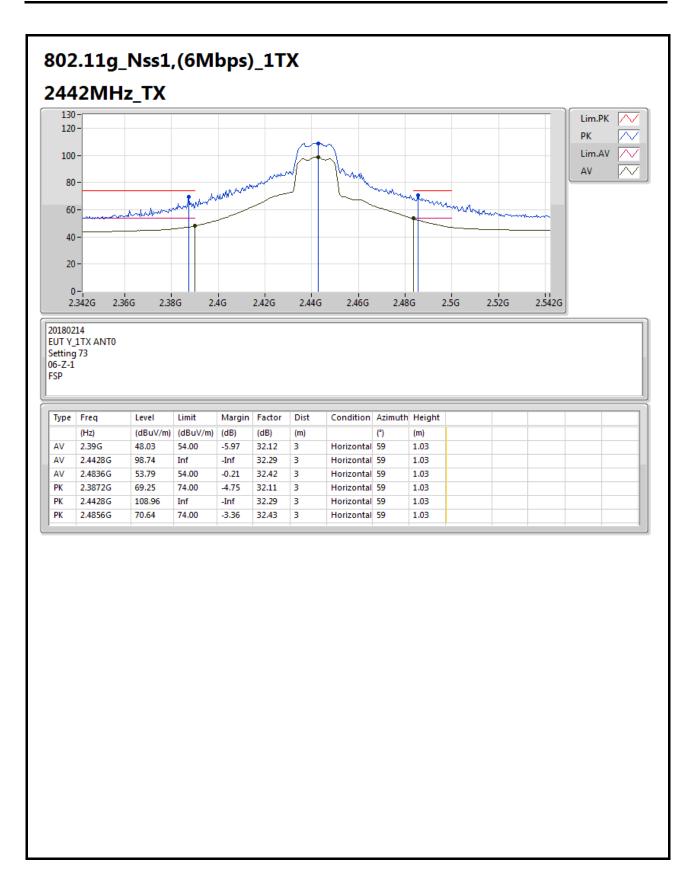
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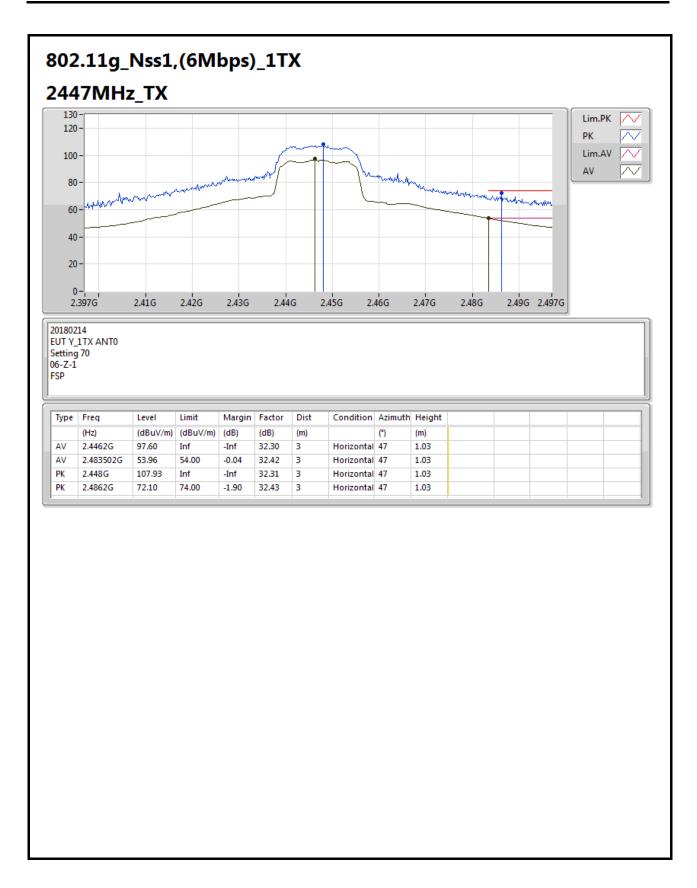
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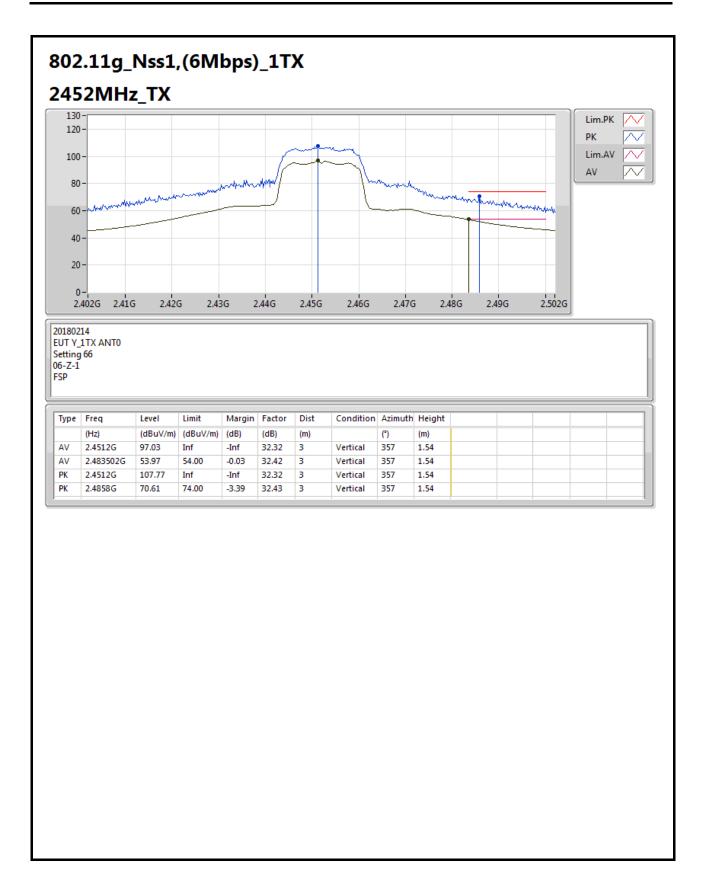
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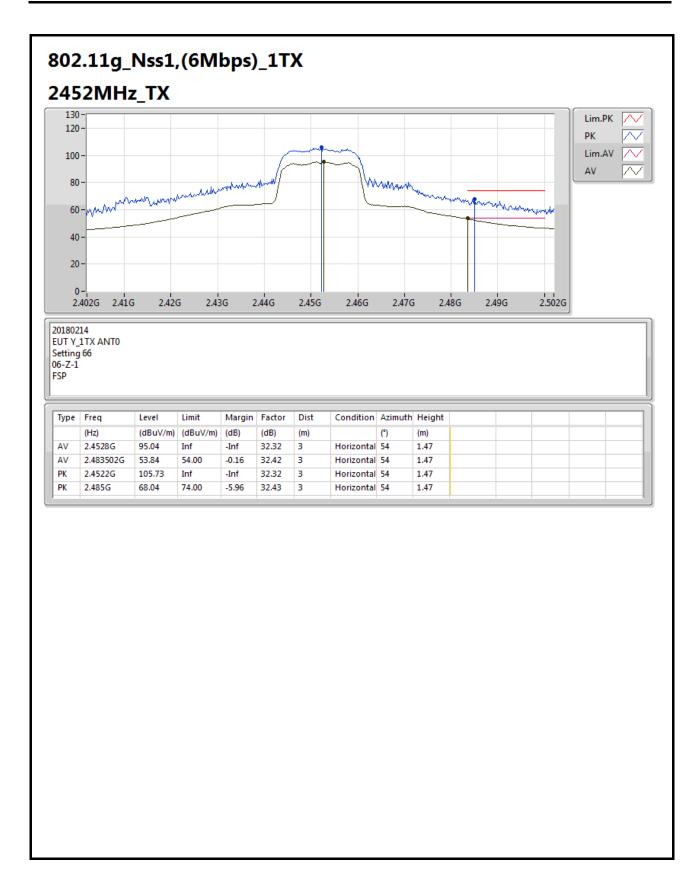
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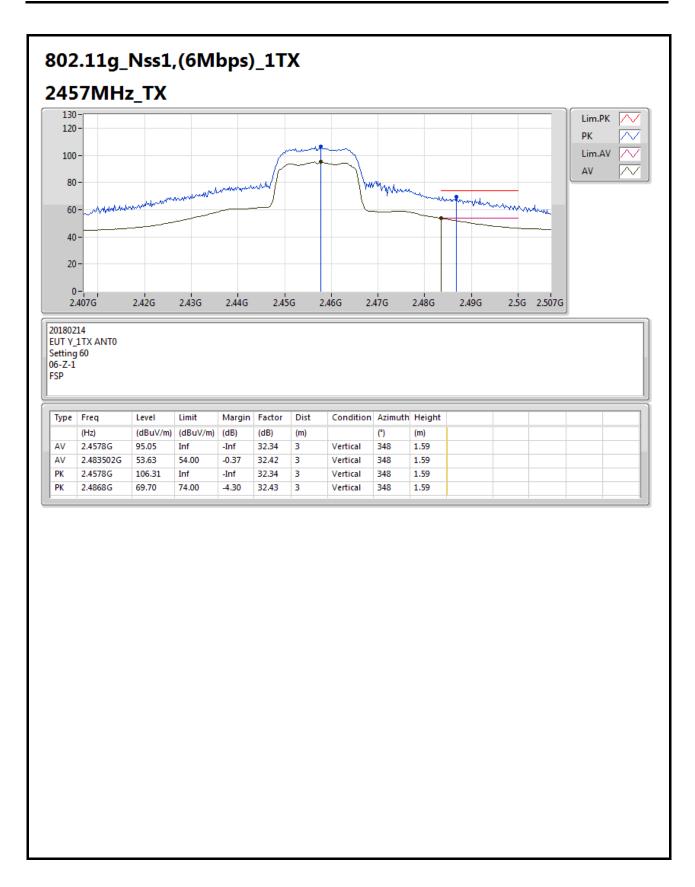
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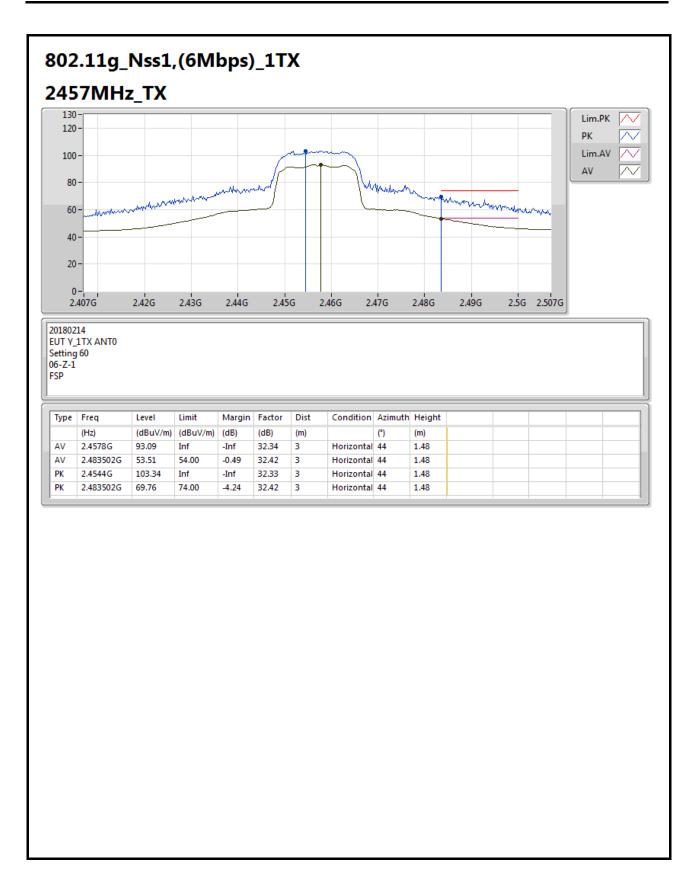
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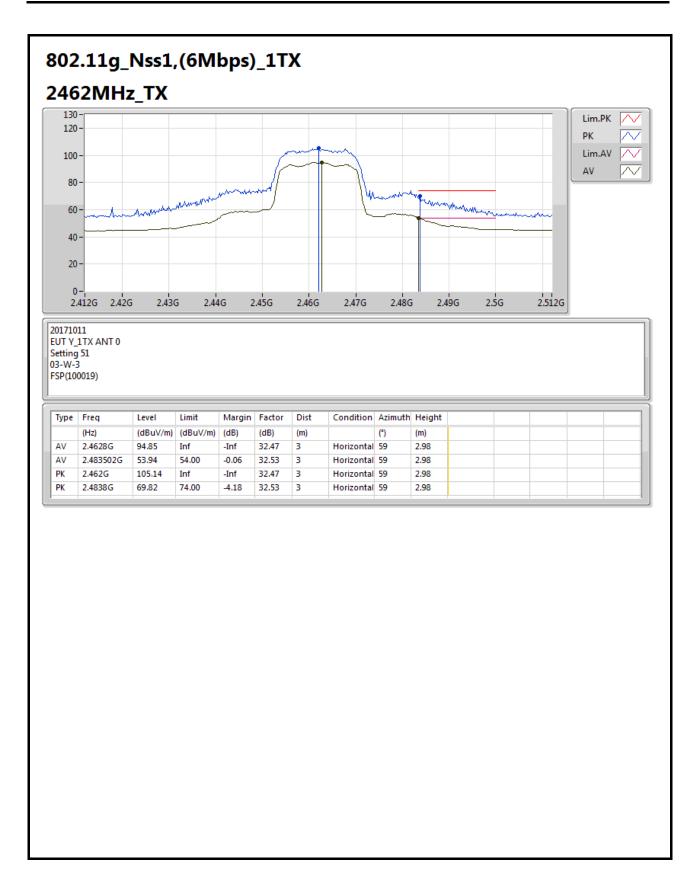






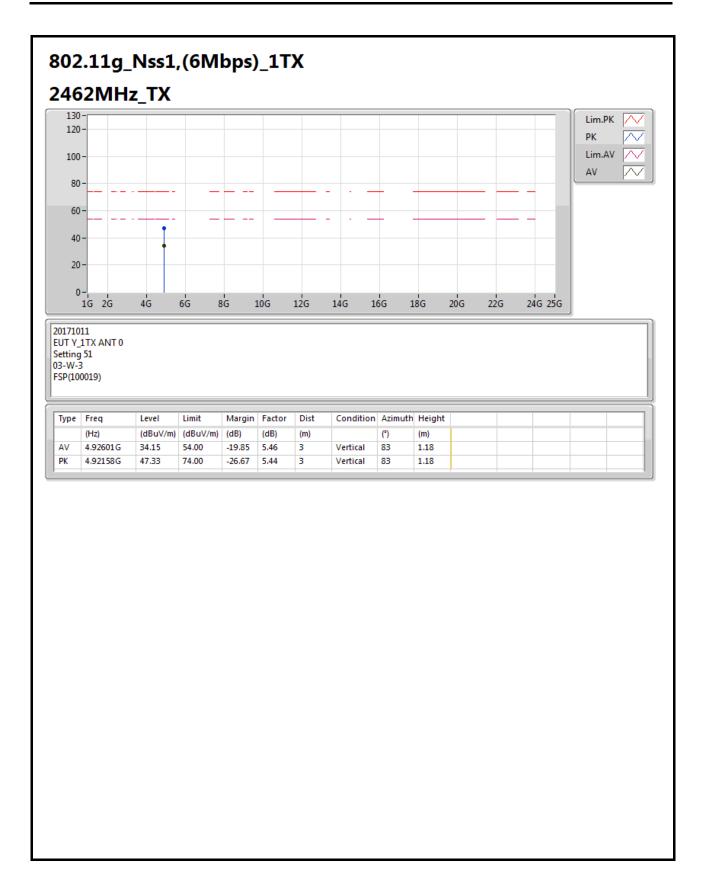
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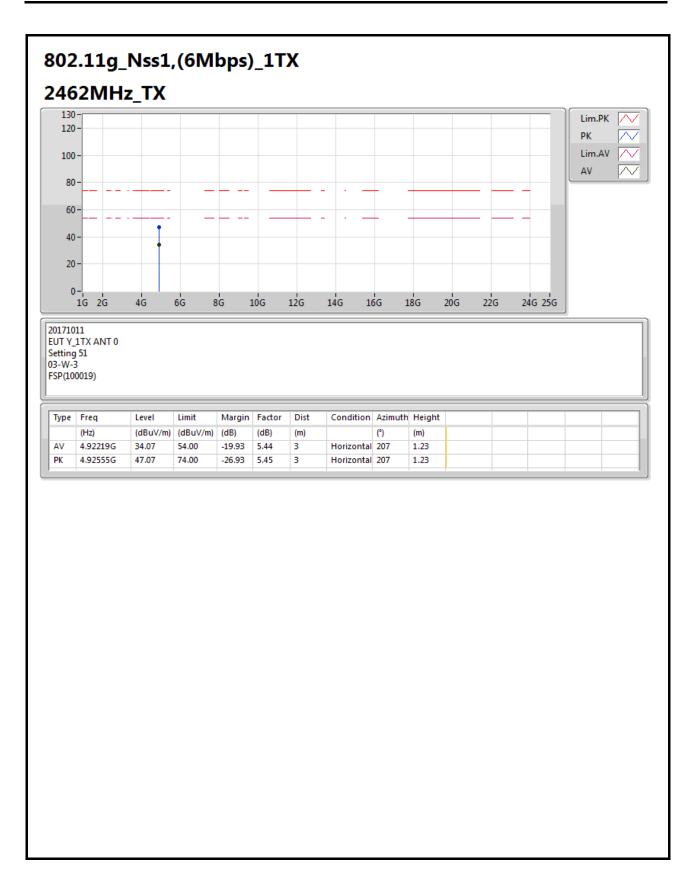


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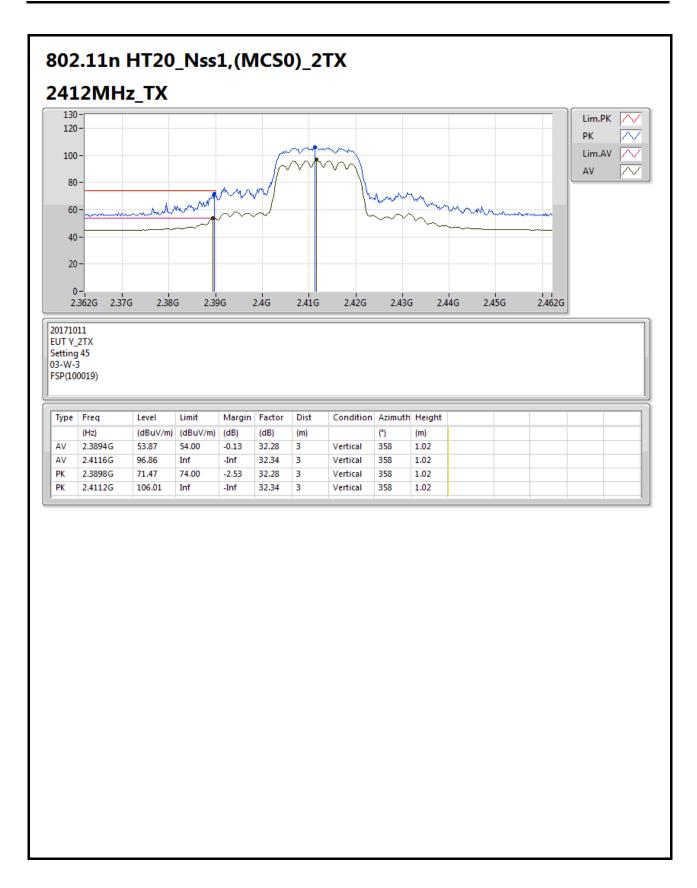






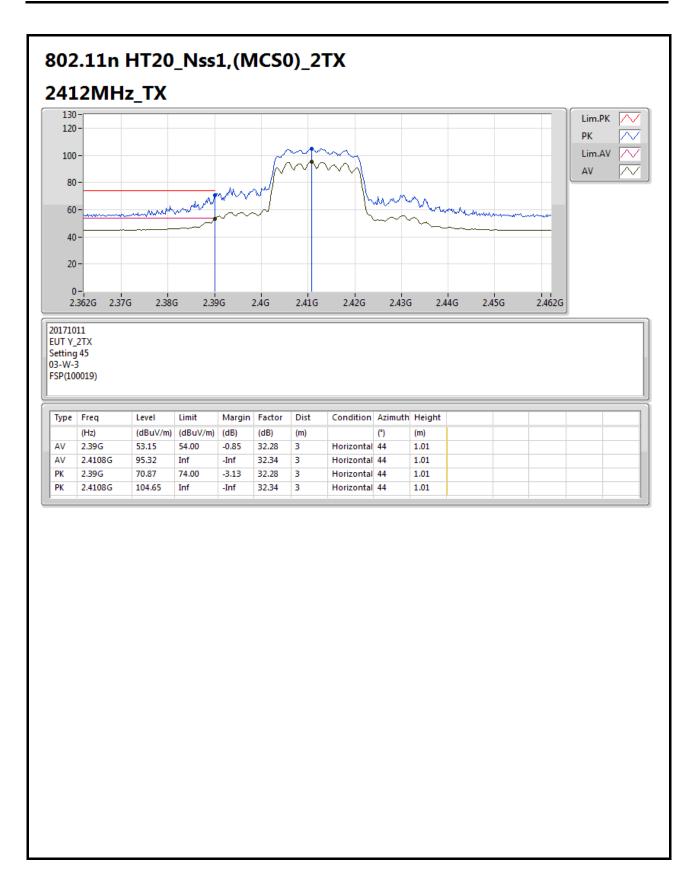




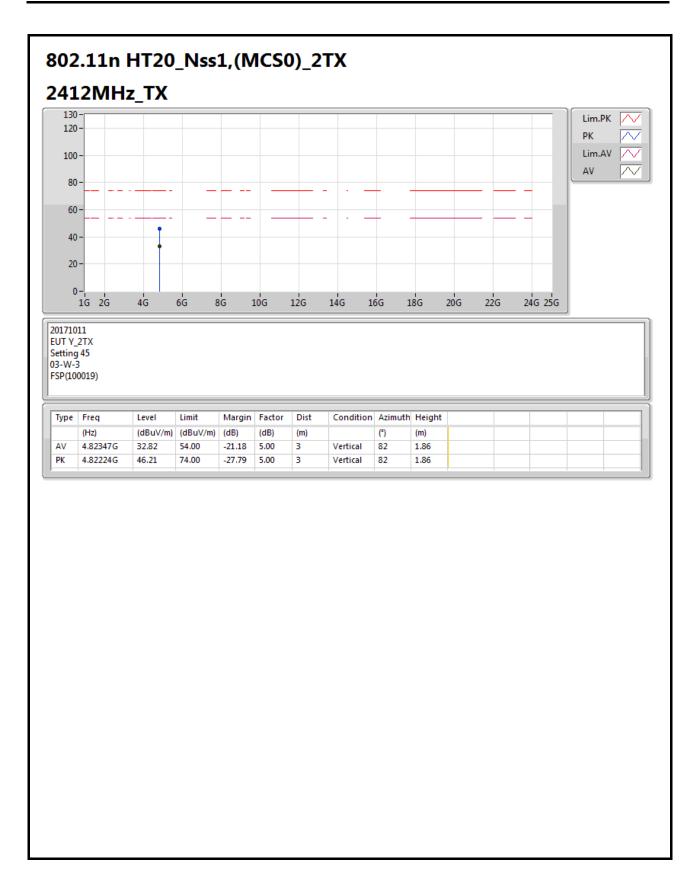


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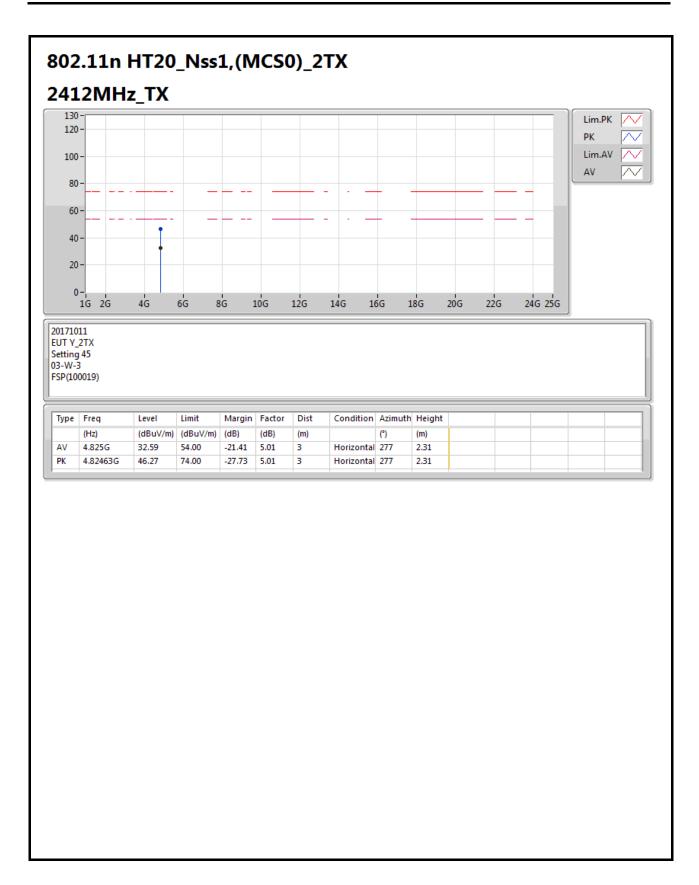




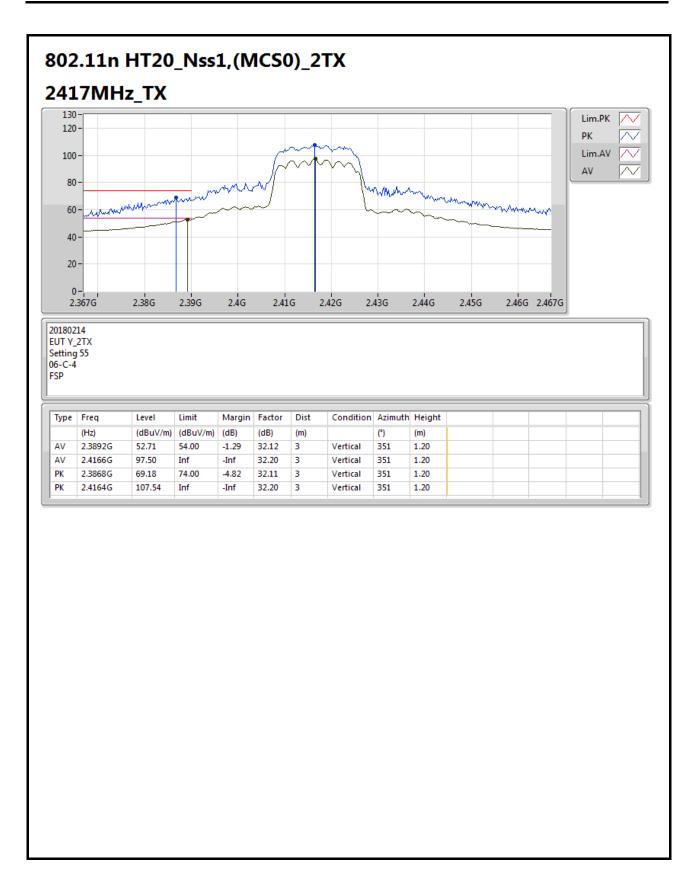


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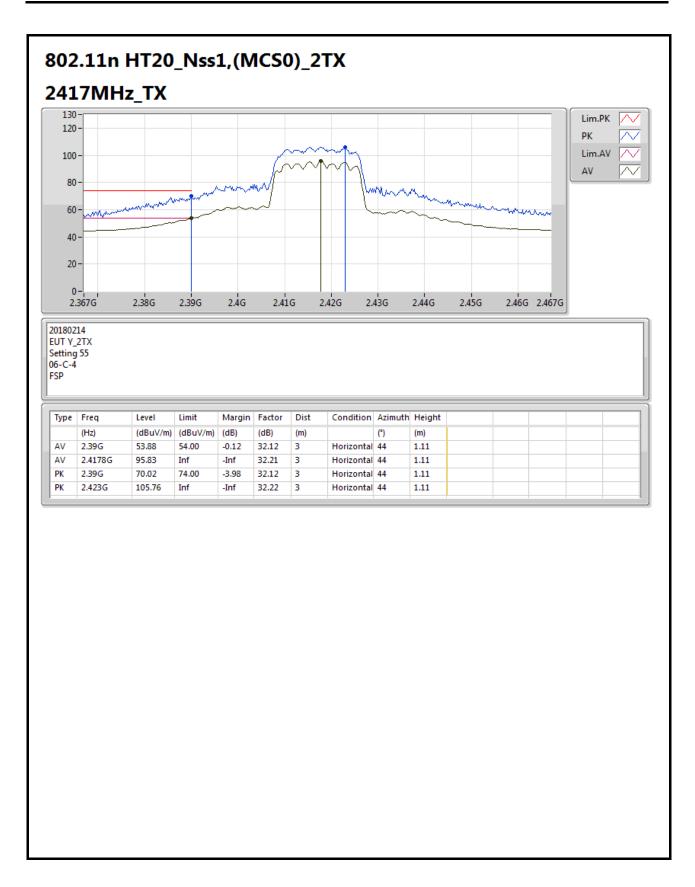




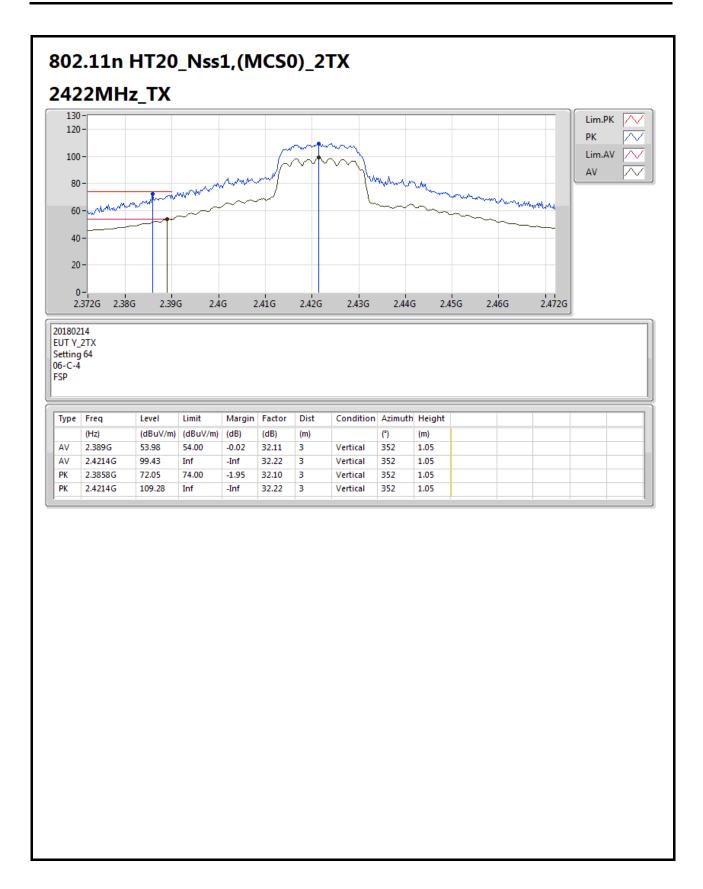




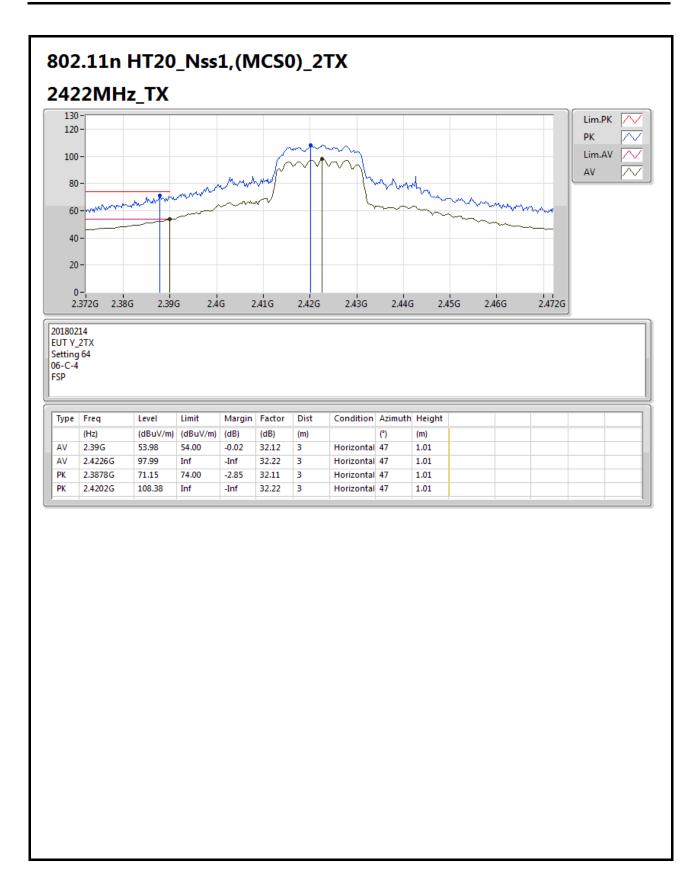






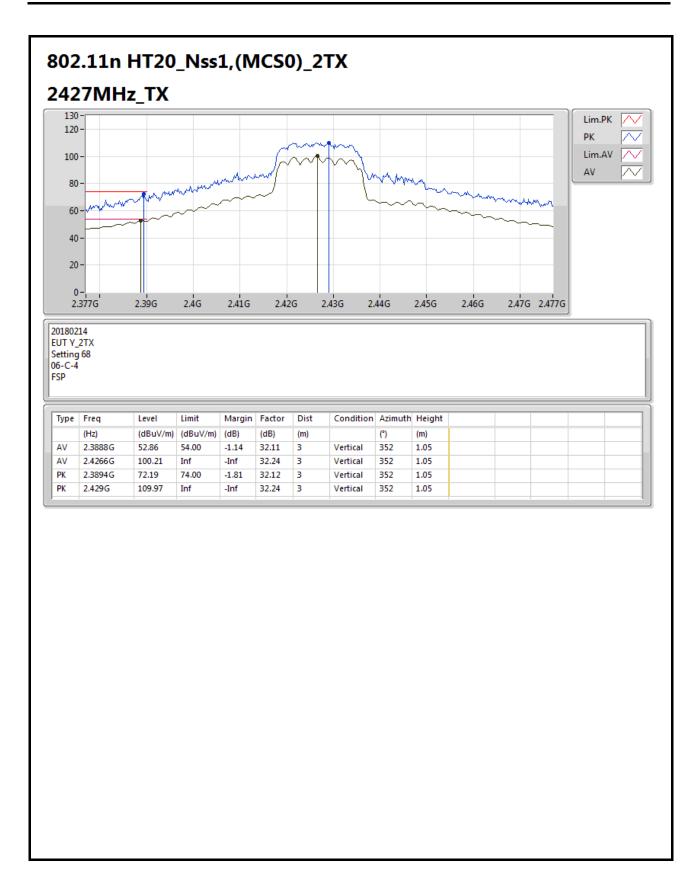




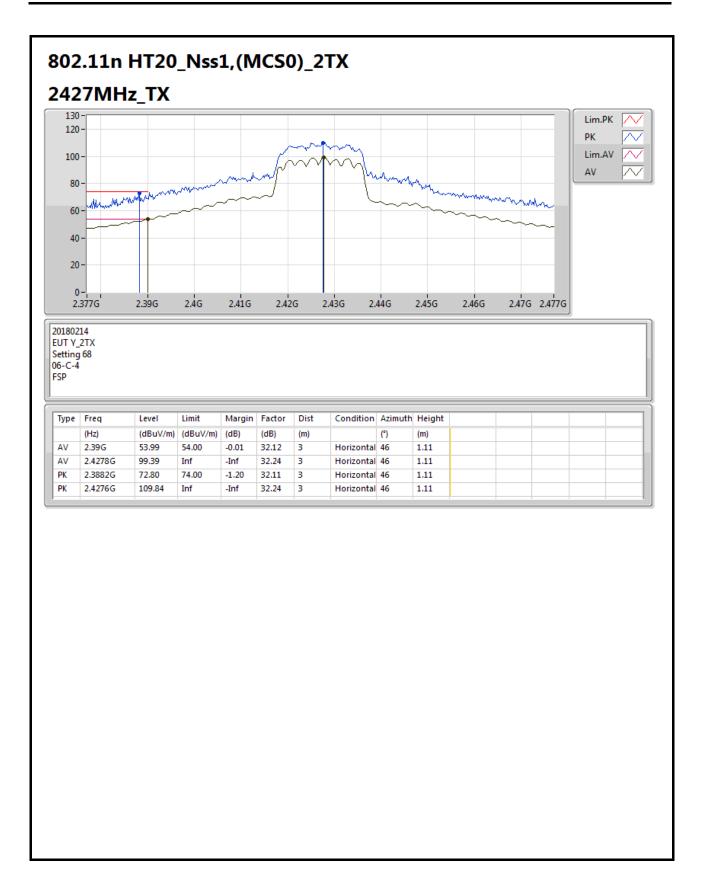


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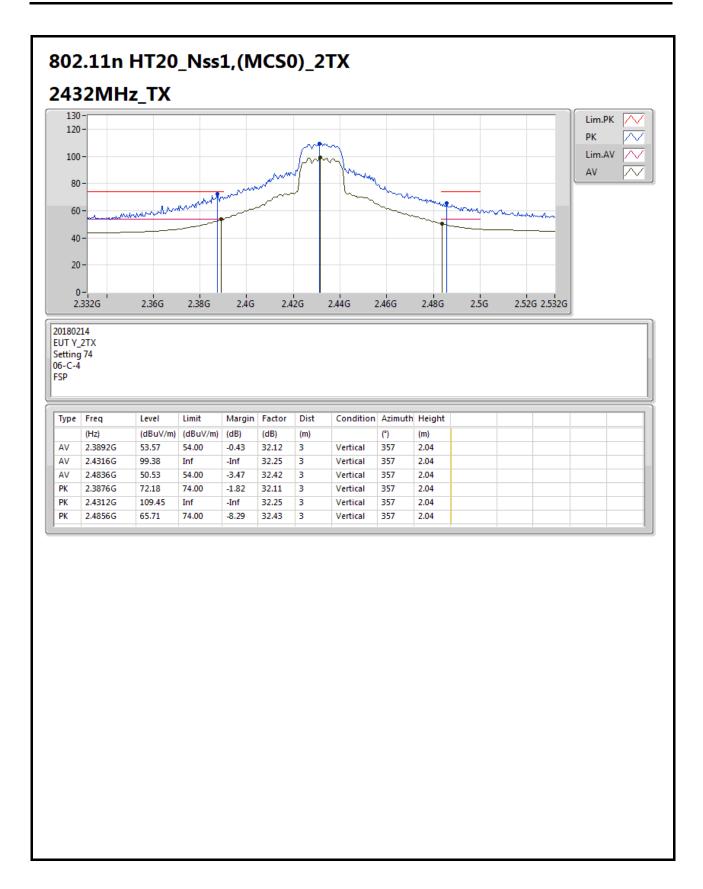




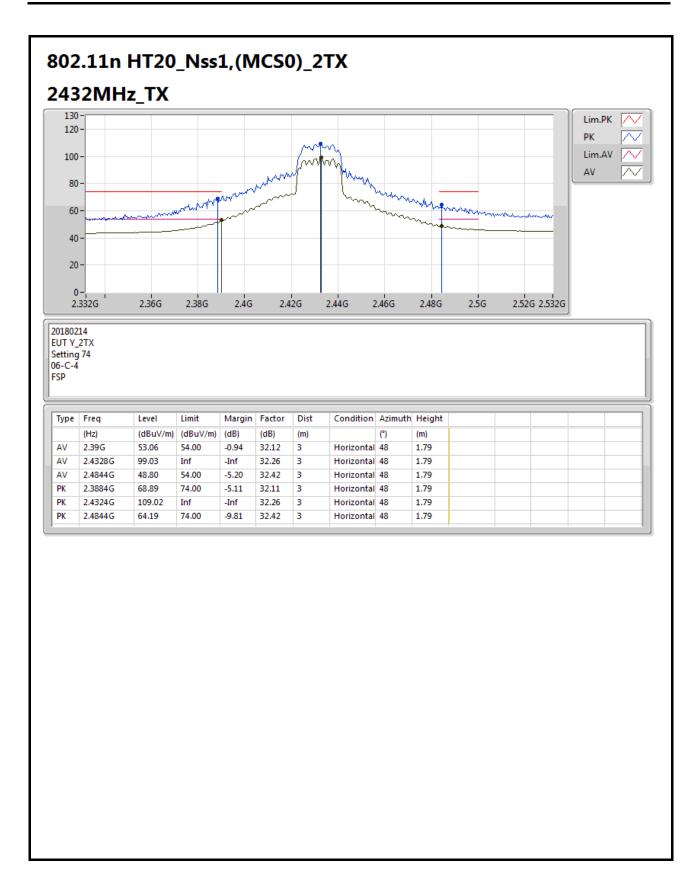




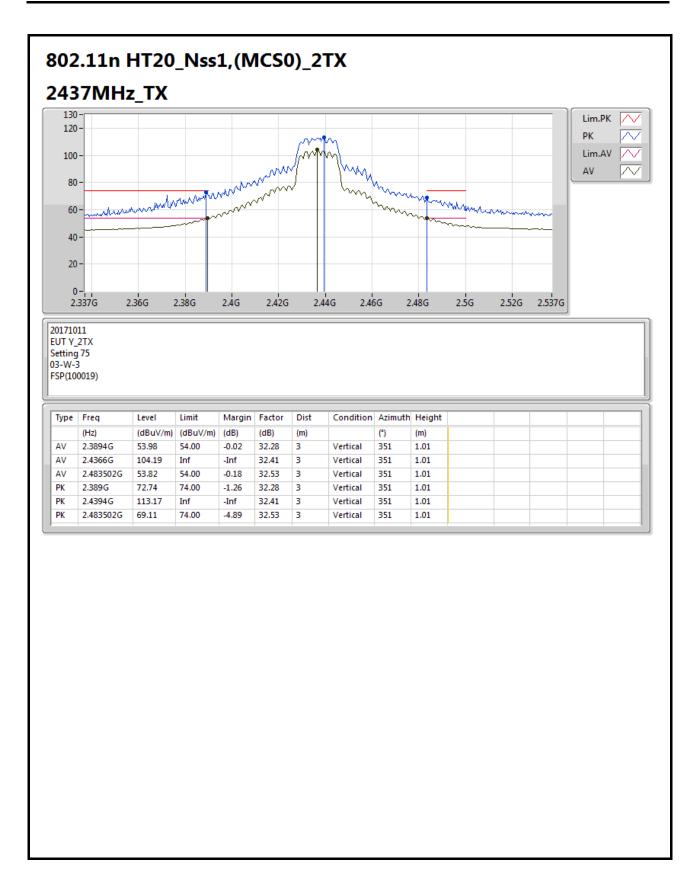






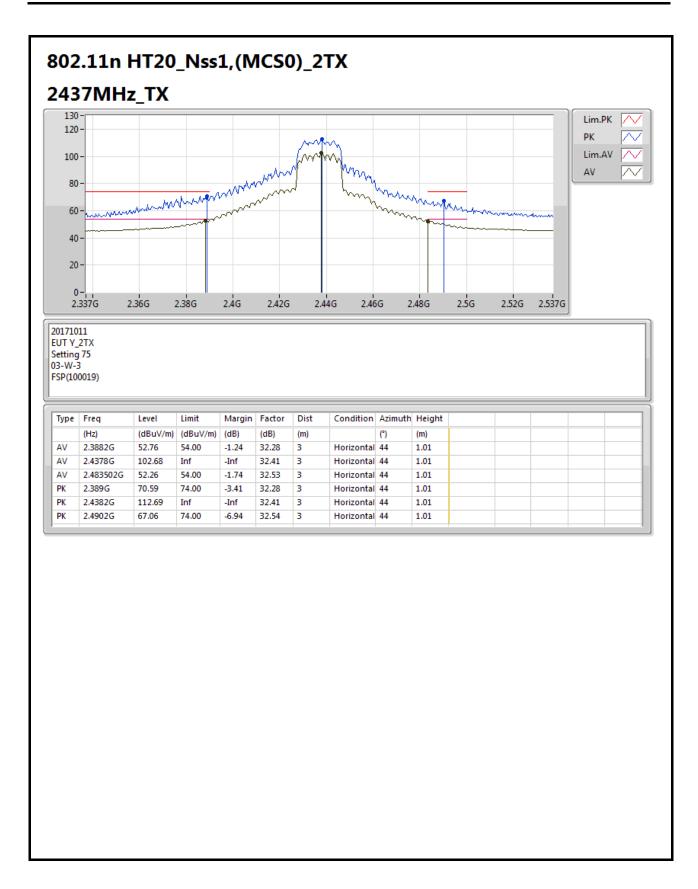




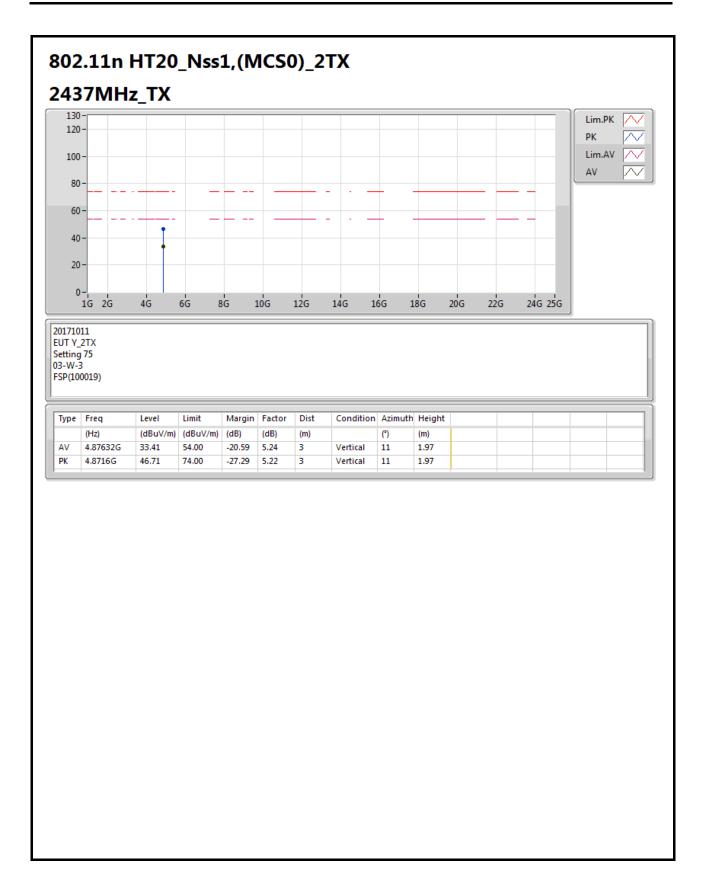


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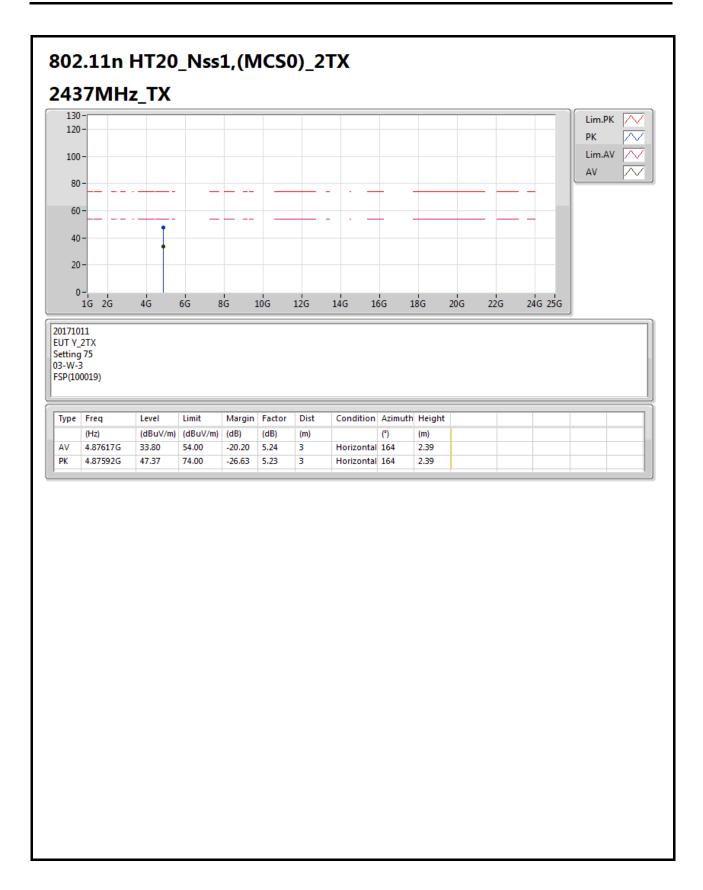




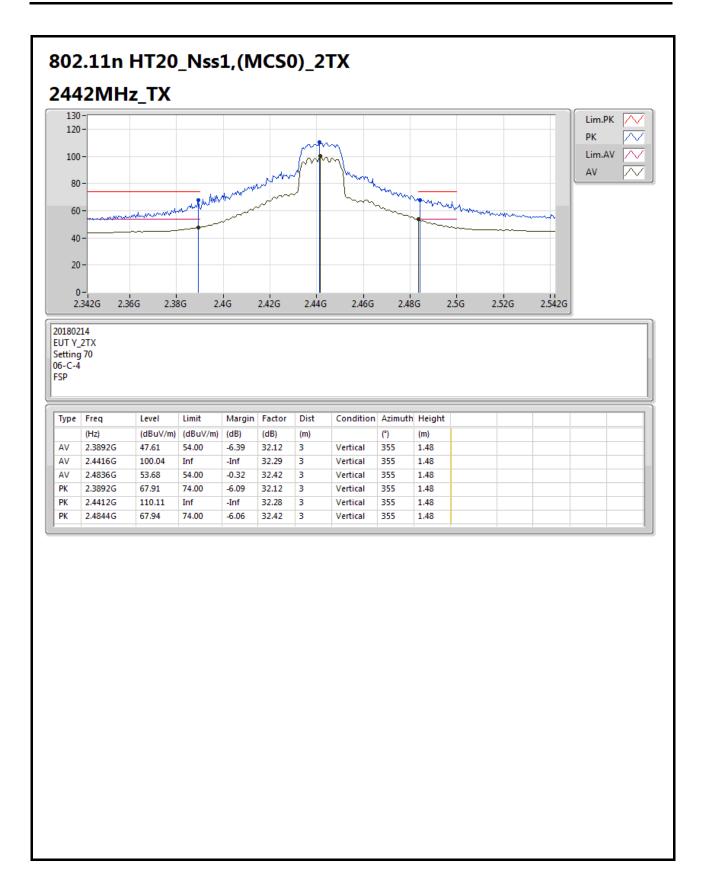


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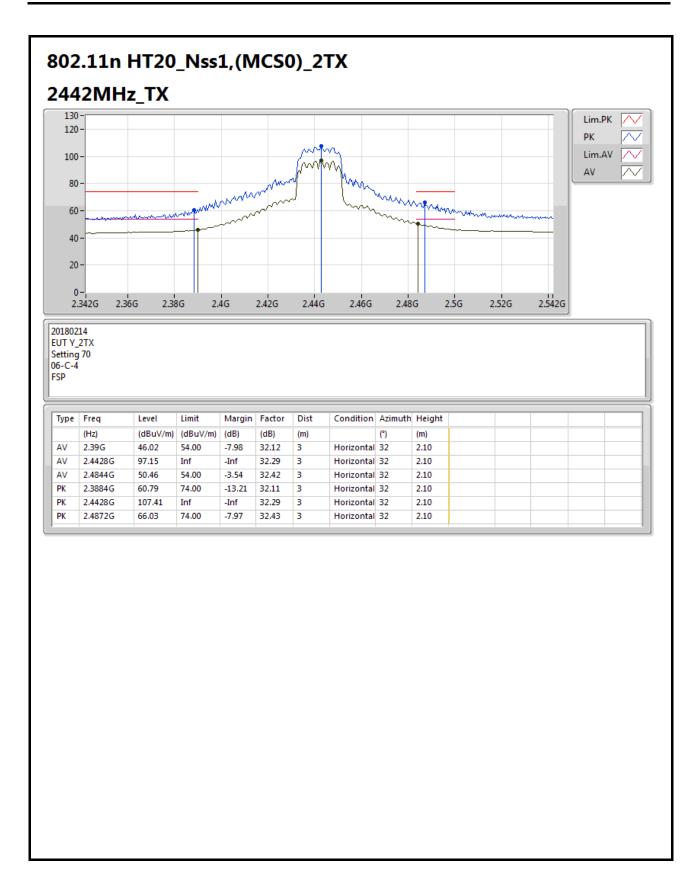






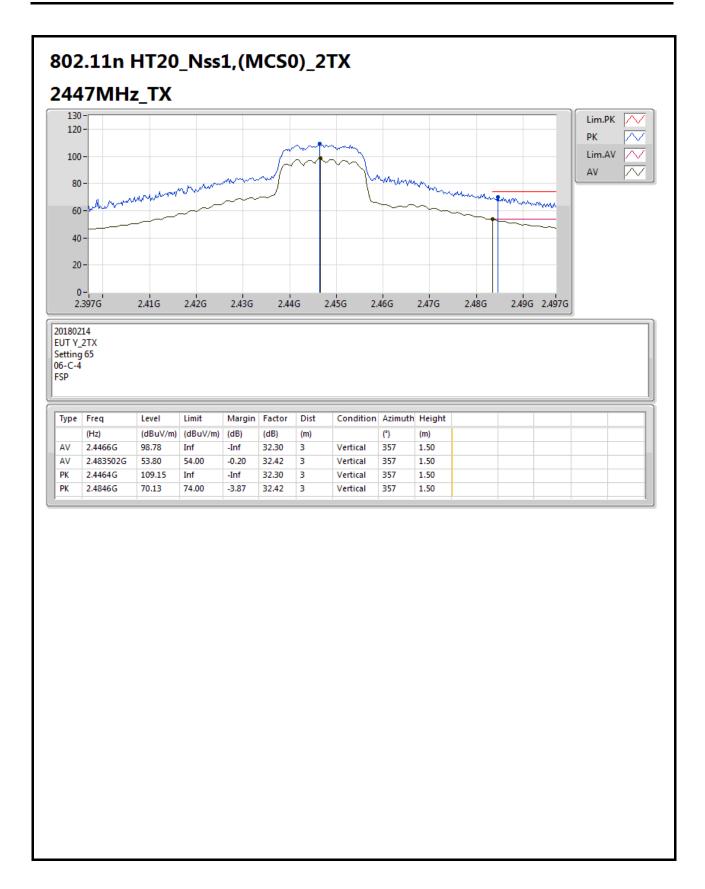




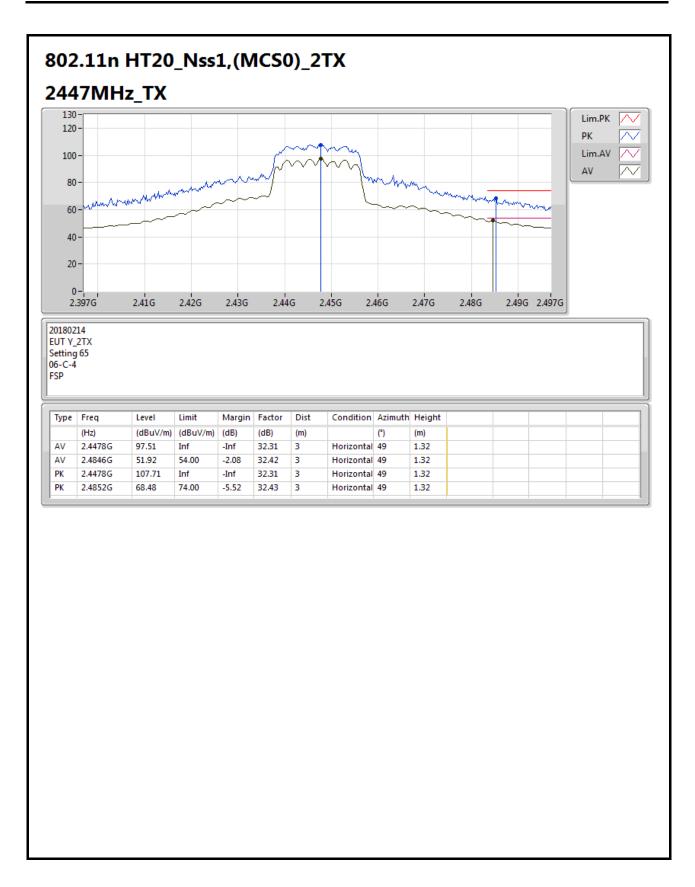


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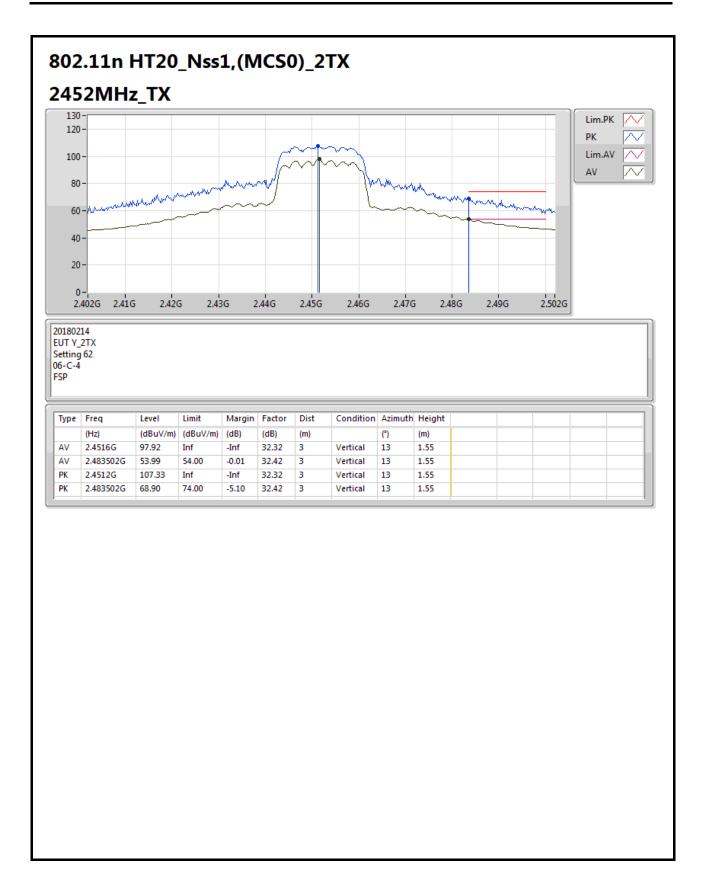




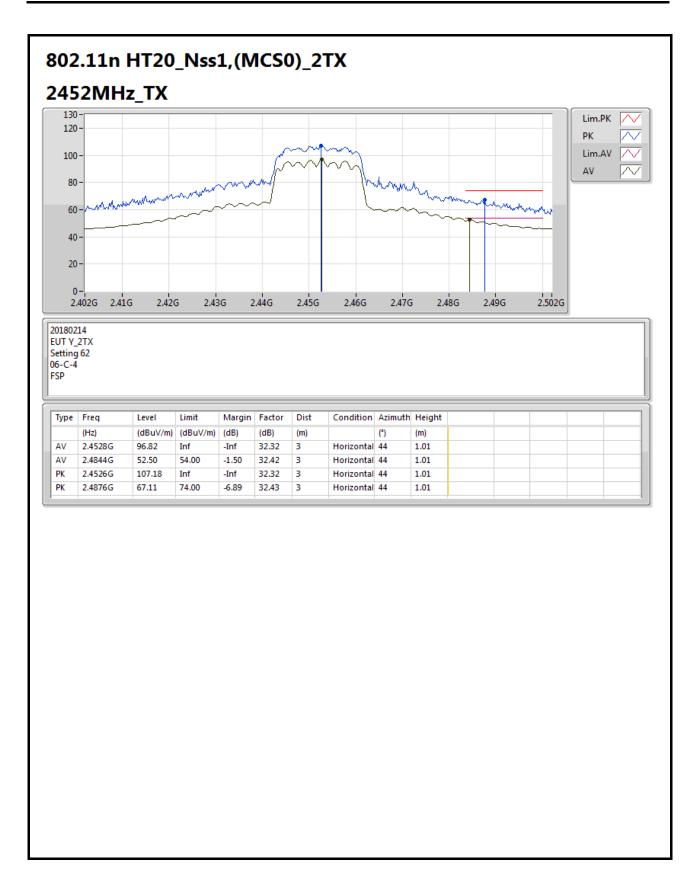


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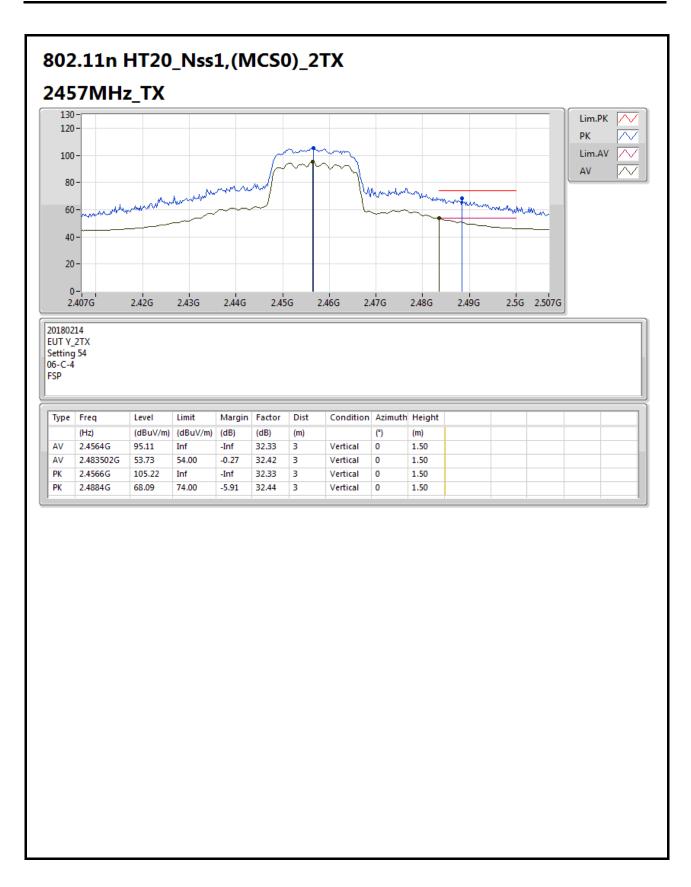






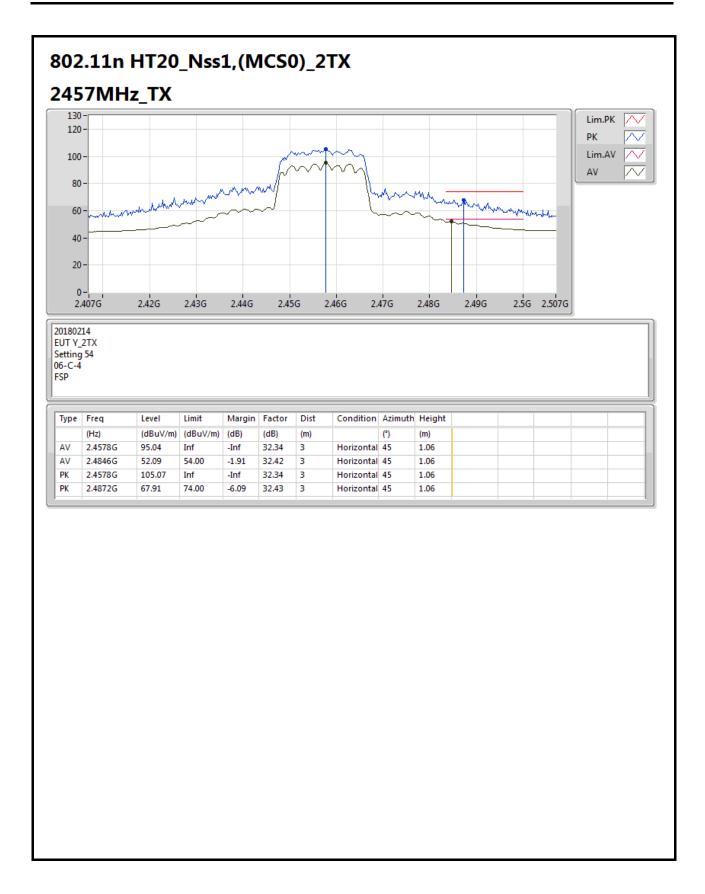
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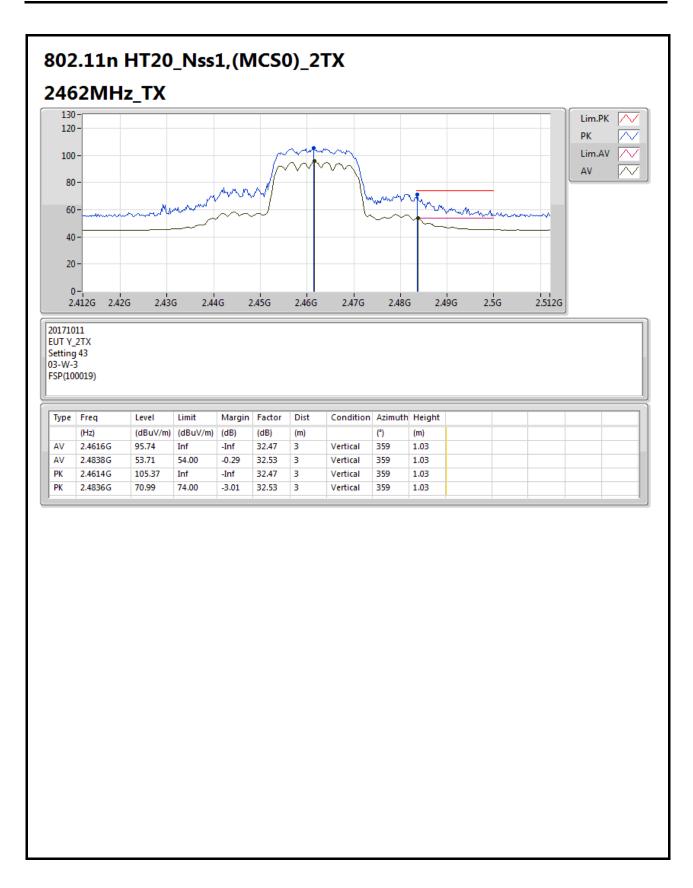
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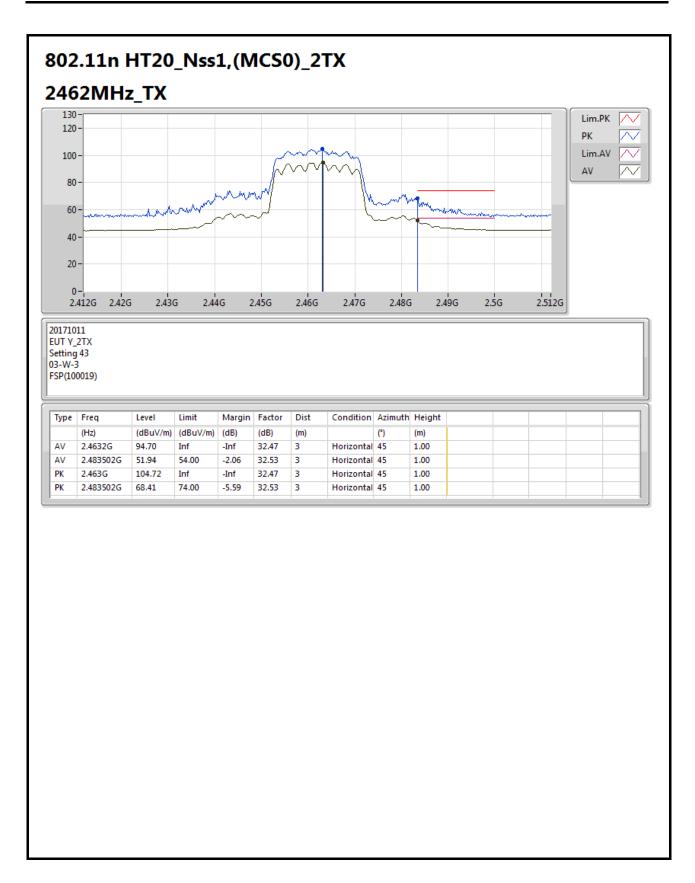
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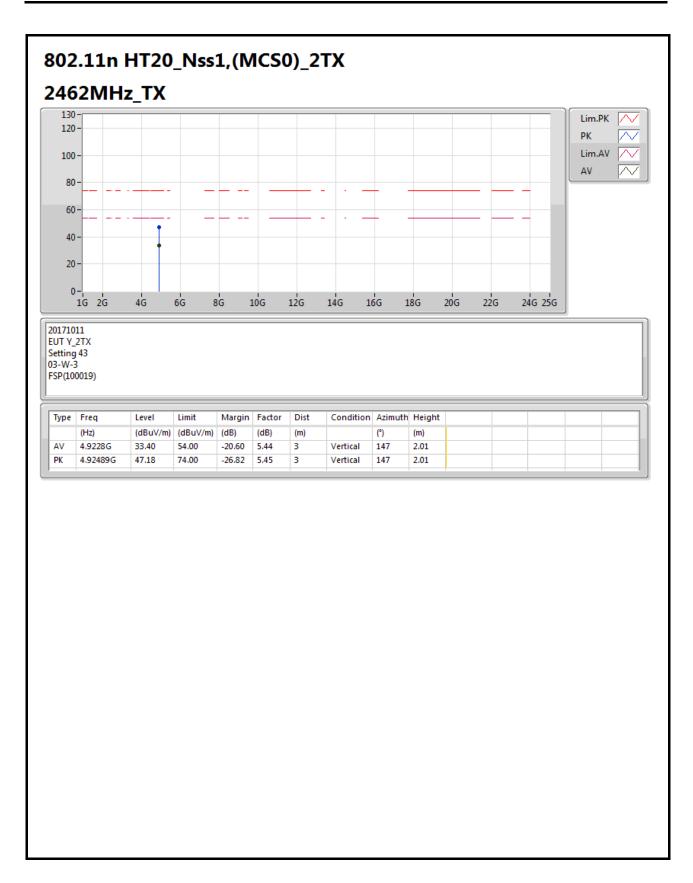


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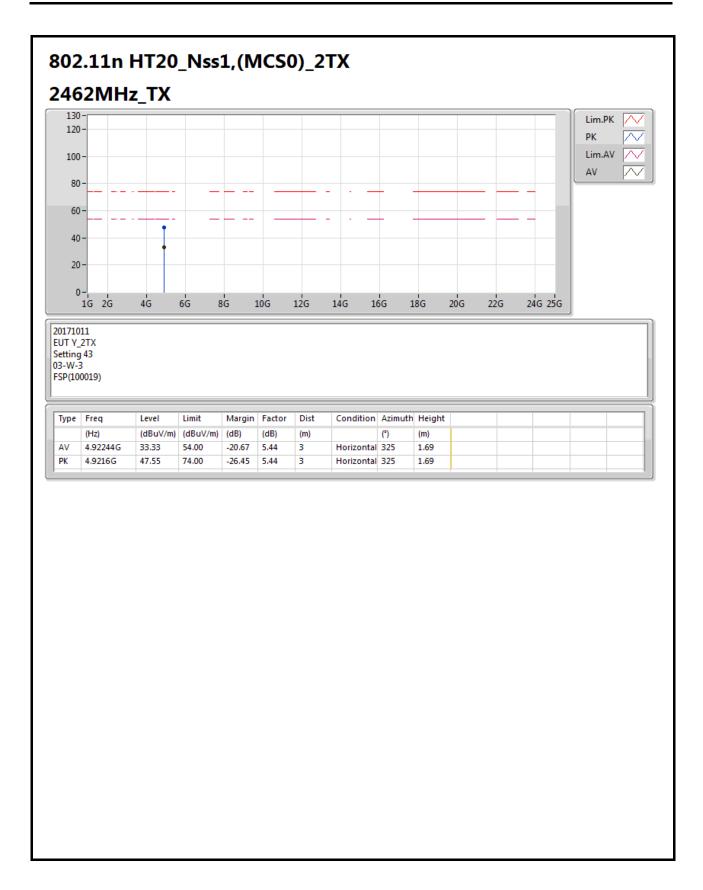




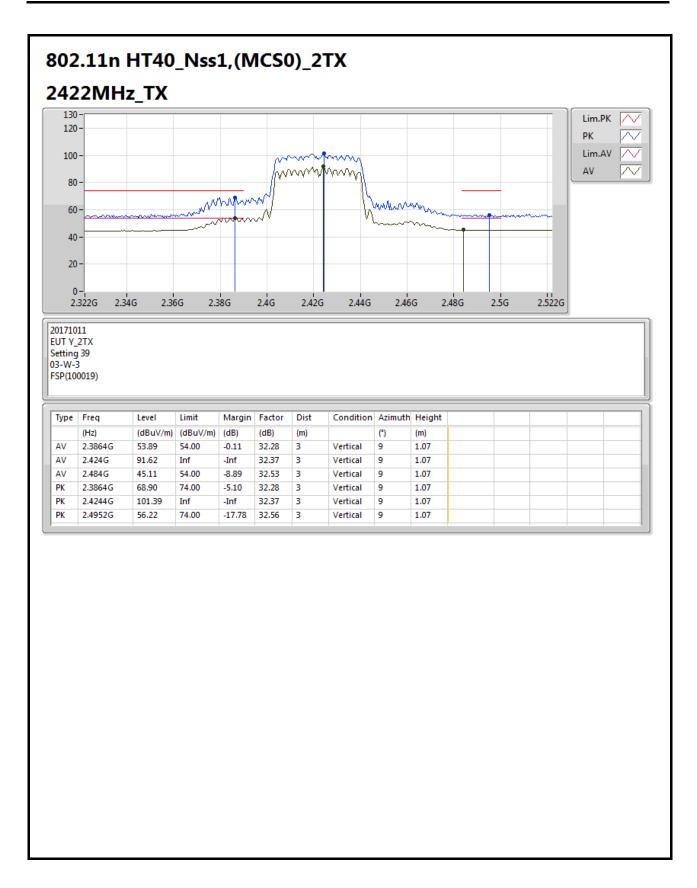


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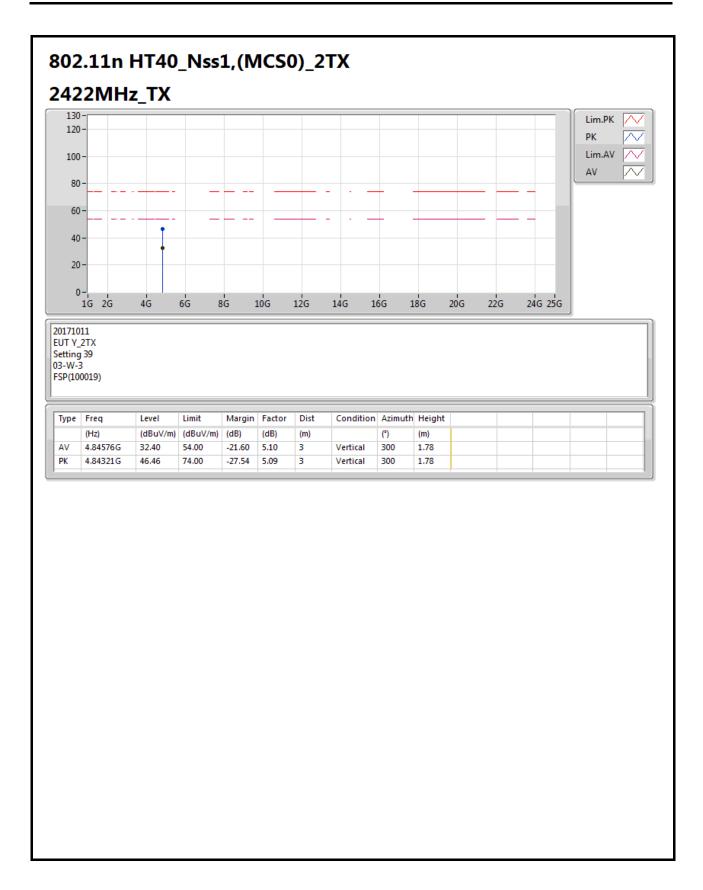


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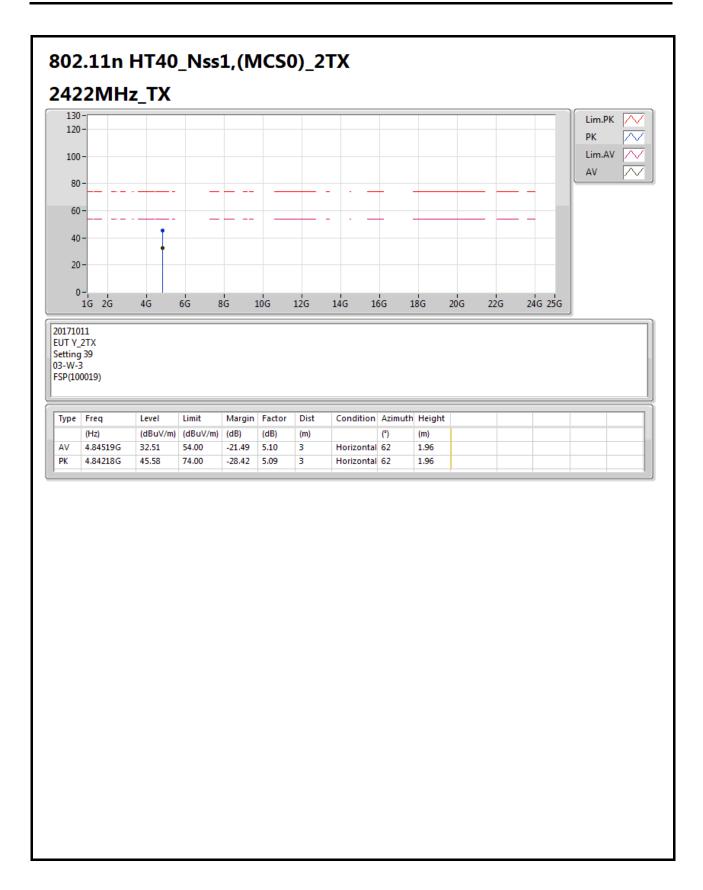






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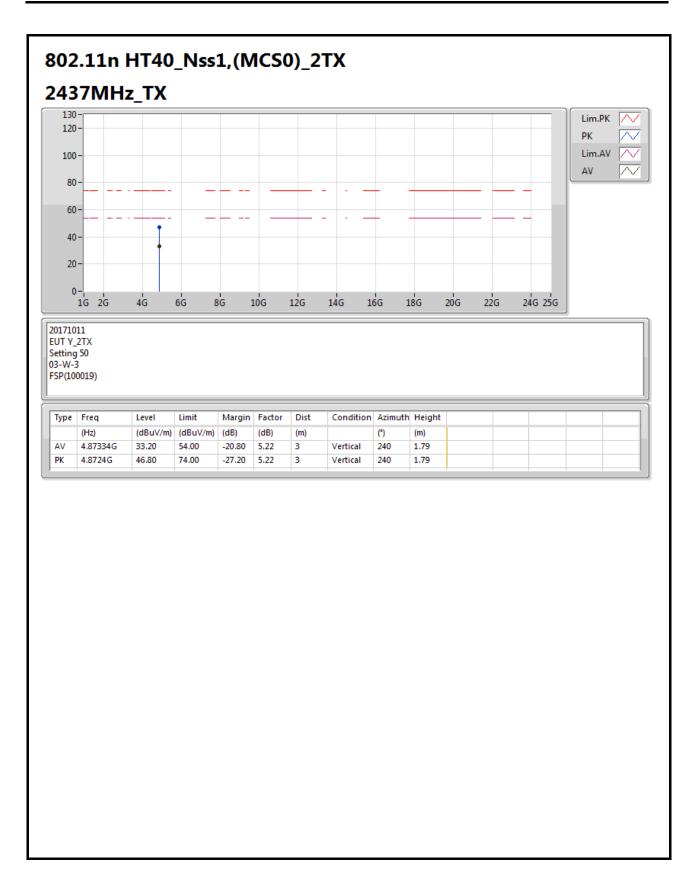
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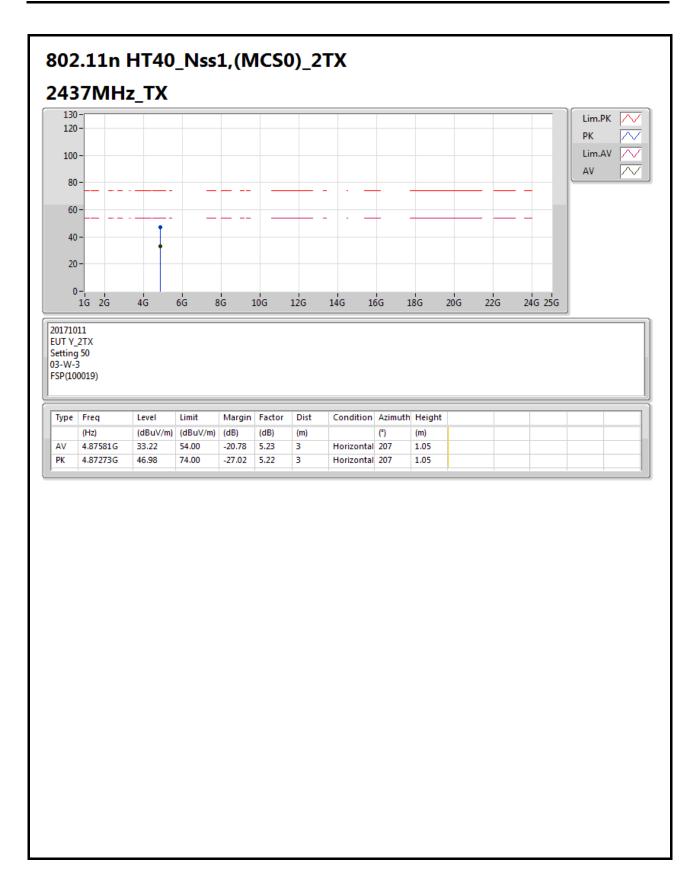
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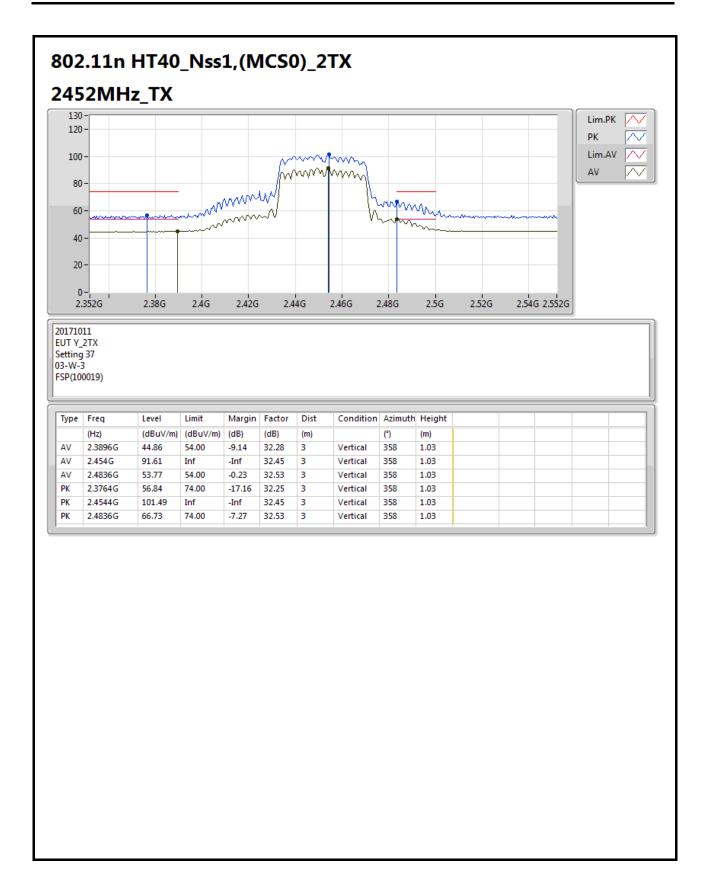
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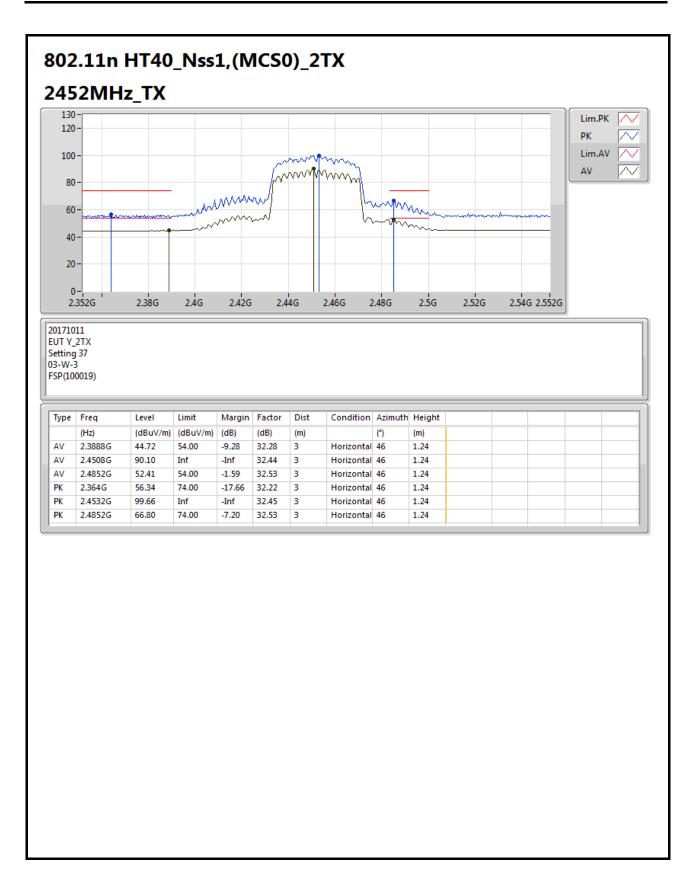
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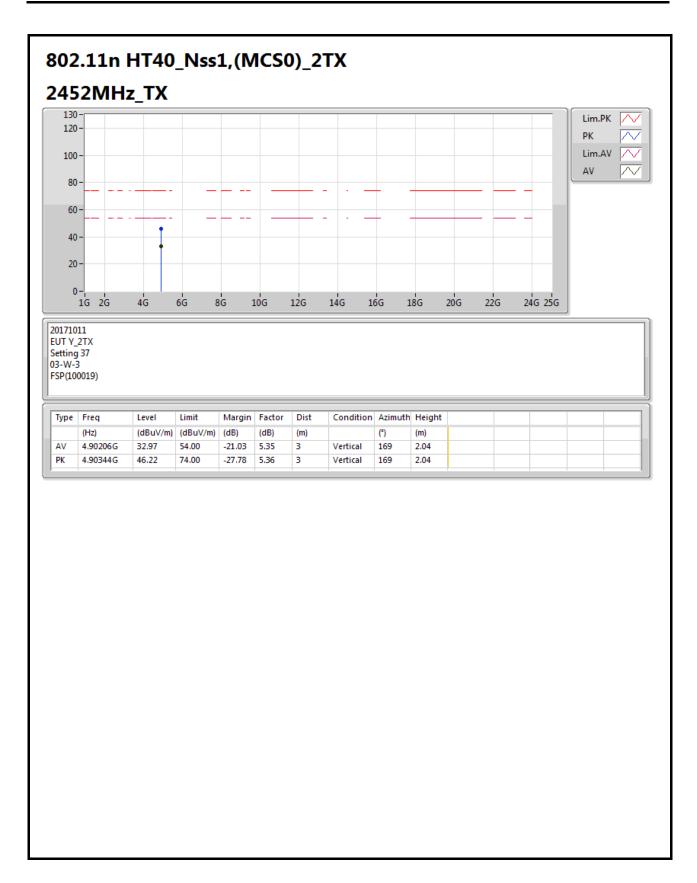
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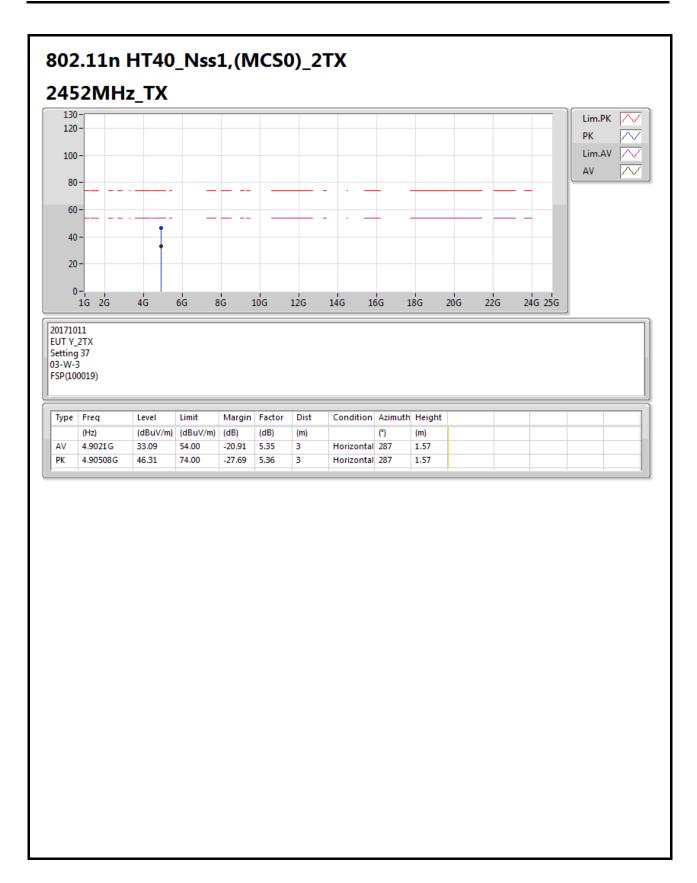
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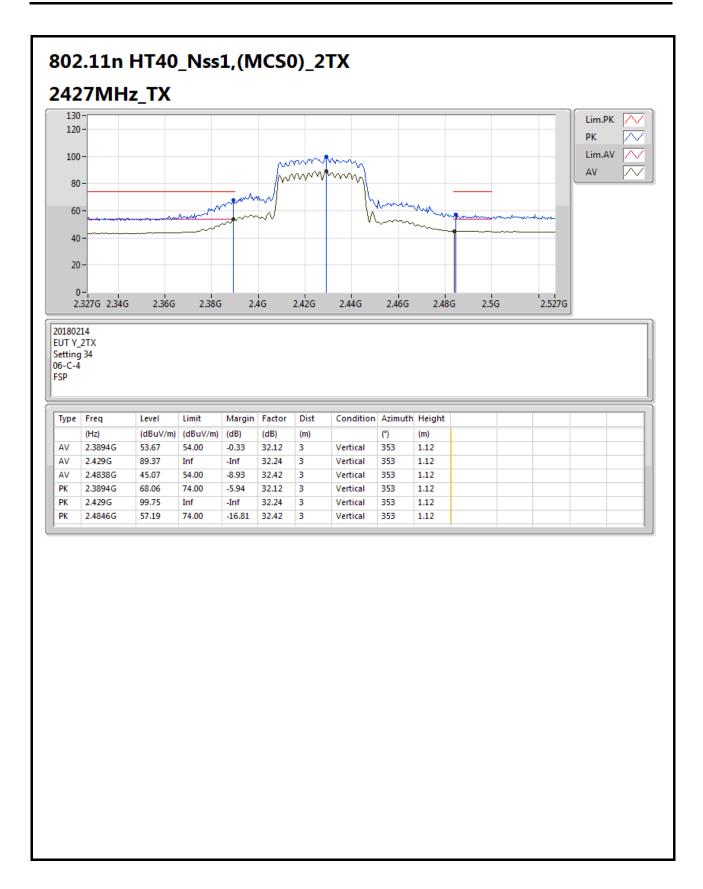
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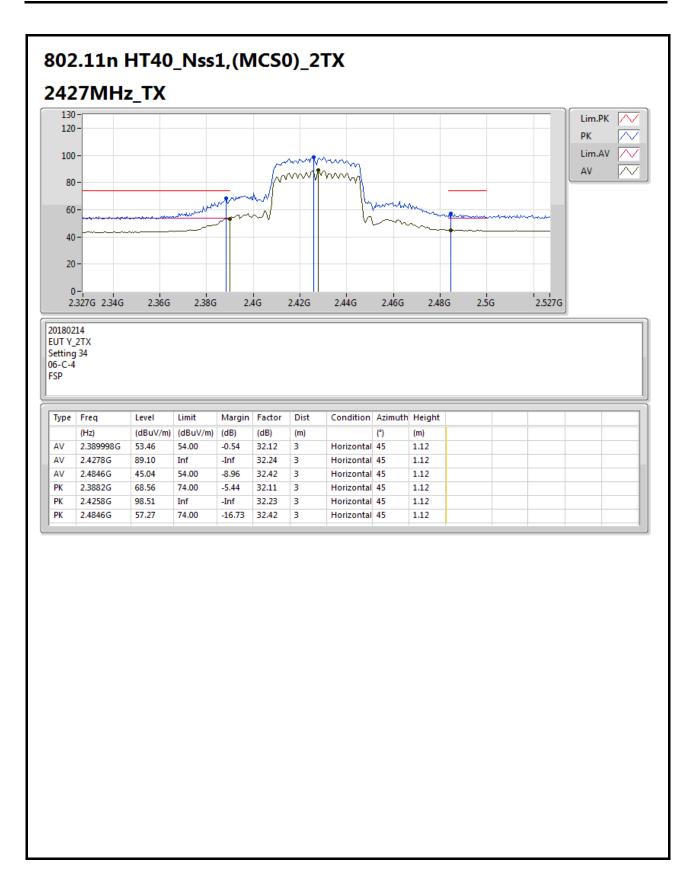


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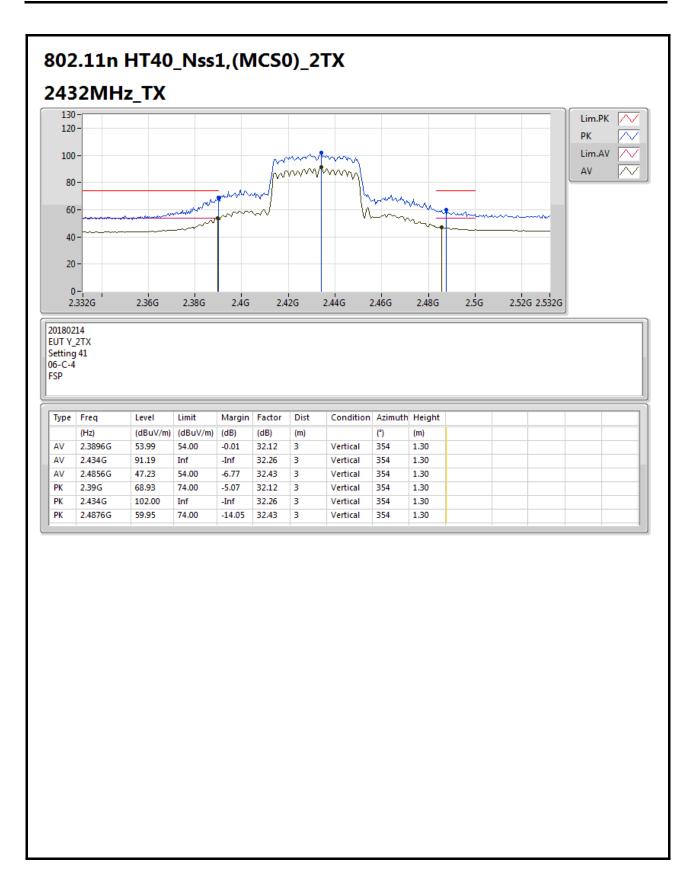






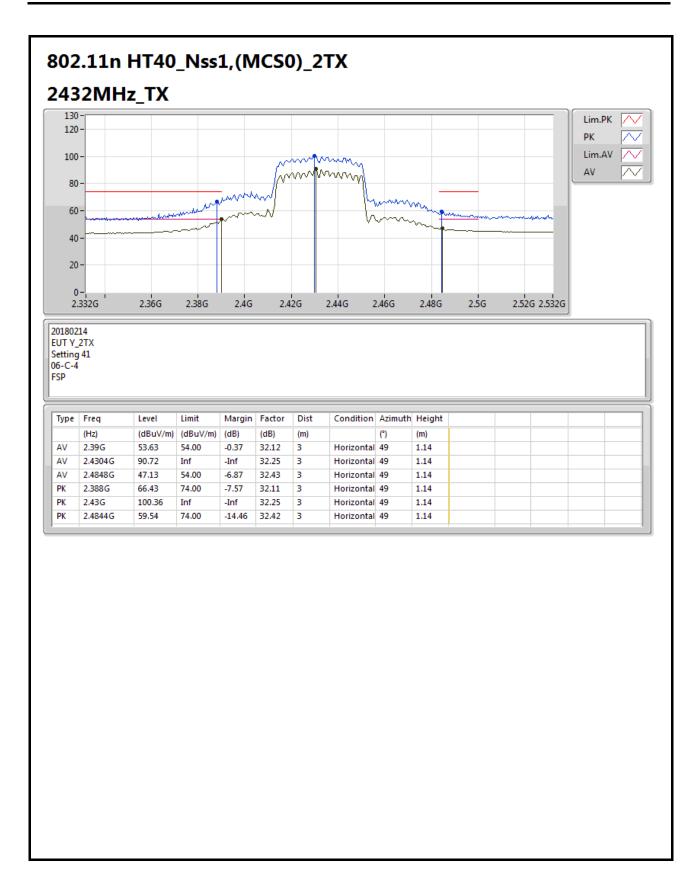
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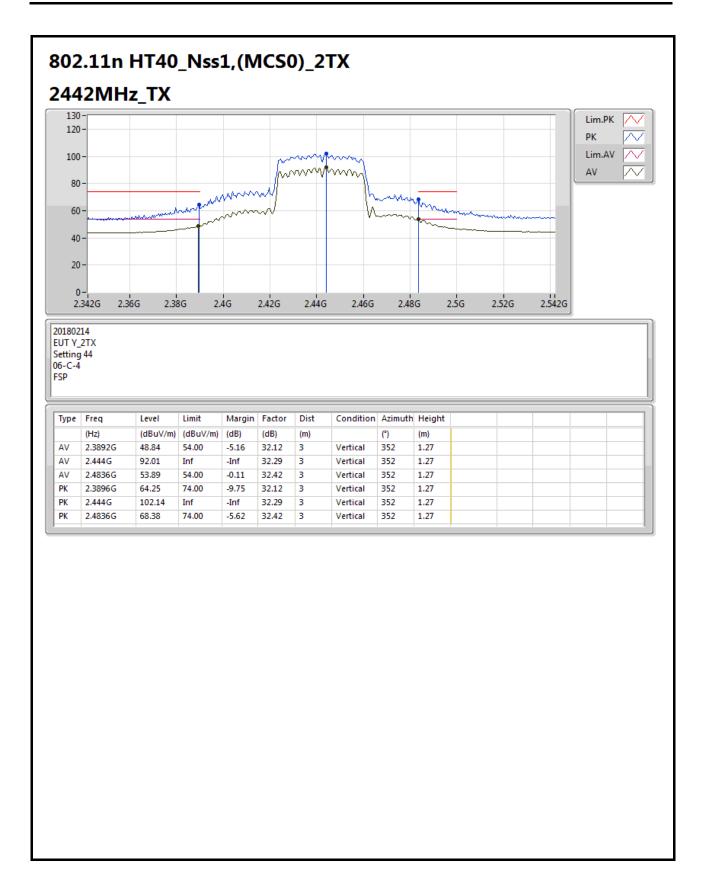
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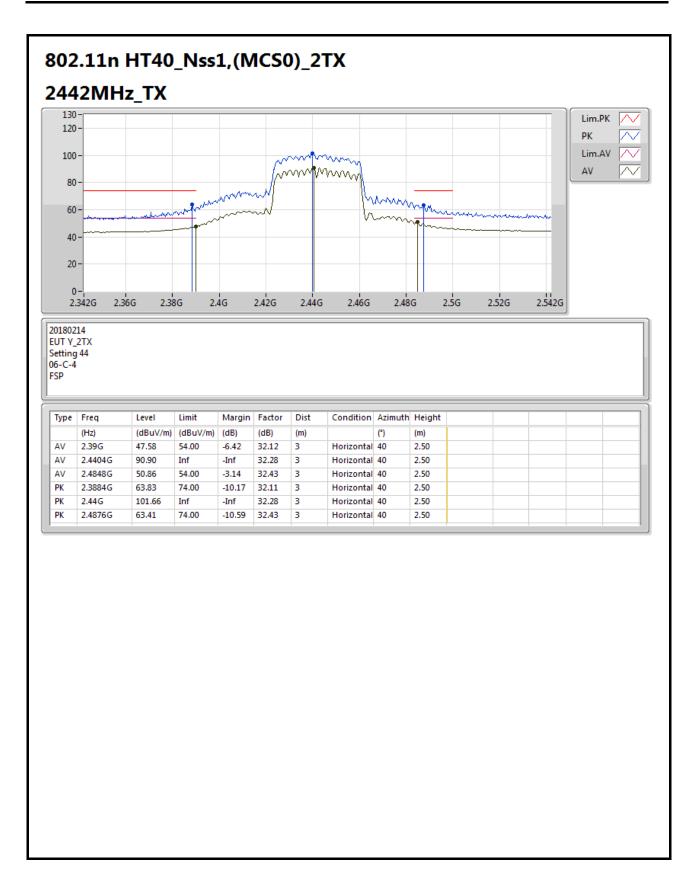
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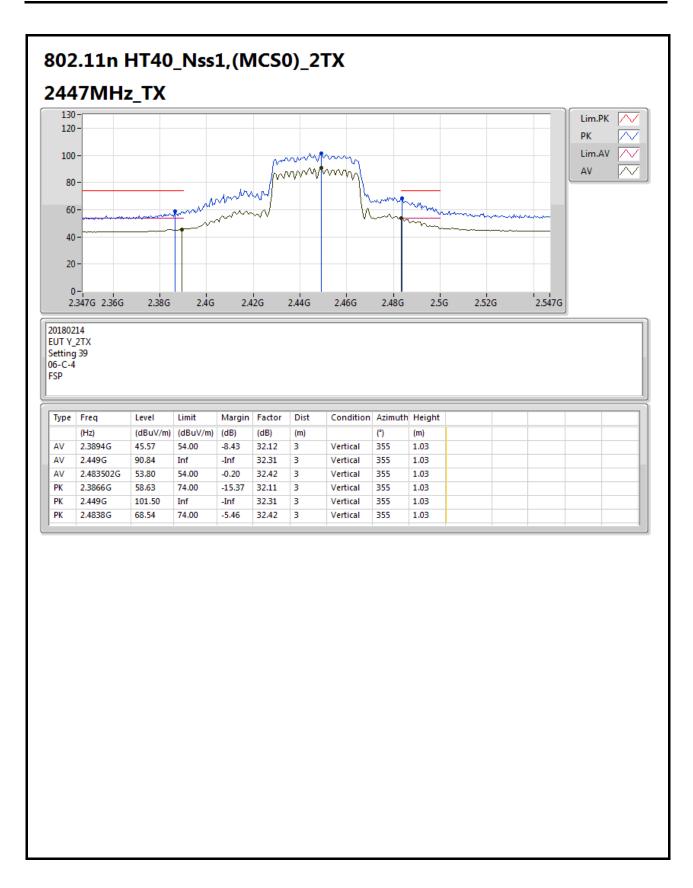


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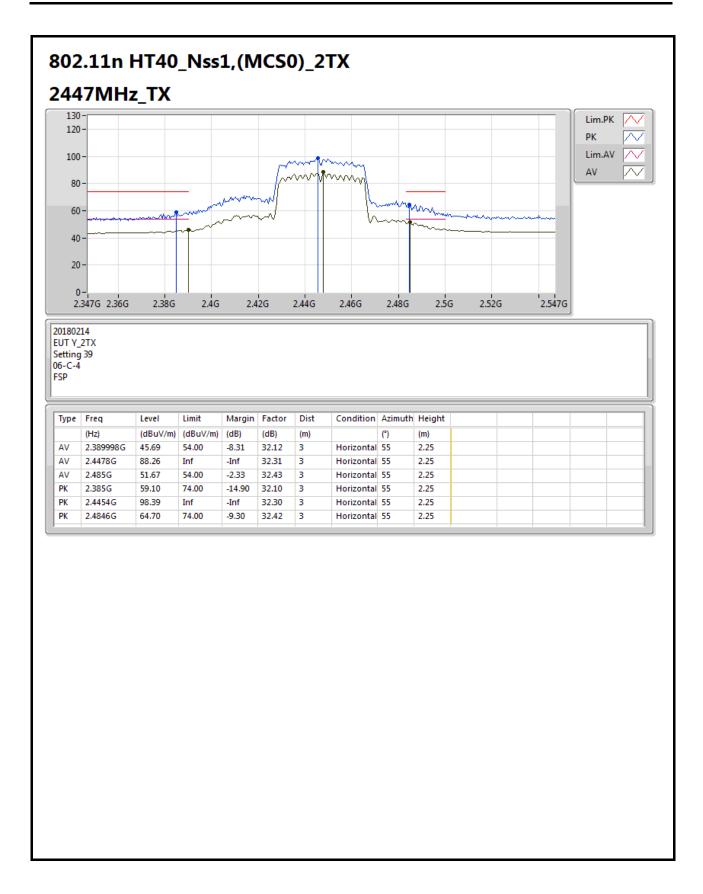






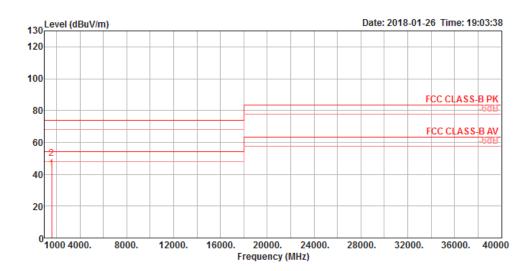
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RSE Co-location Result						
Operating Mode	1	Polarization	Horizontal			
Operating Function	Normal Link					

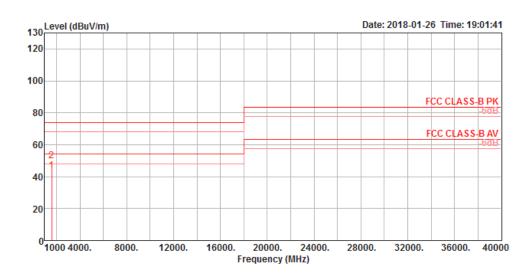


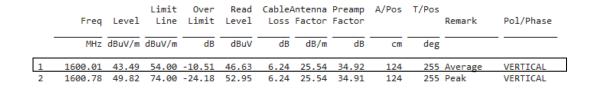
	Freq	Level		Over Limit							Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1600.03	43.16	54.00	-10.84	46.30	6.24	25.54	34.92	143	78	Average	HORIZONTAL
2	1600.62	49.87	74.00	-24.13	53.00	6.24	25.54	34.91	143	78	Peak	HORIZONTAL

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RSE Co-location Result						
Operating Mode	1	Polarization	Vertical			
Operating Function	Normal Link					





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