

Report No.: FR801215AA



FCC RADIO TEST REPORT

FCC ID : TE7RE220

Equipment : AC750 Wi-Fi Range Extender

Brand Name : tp-link

Model Name : RE200, RE220

Applicant : TP-Link Technologies Co., Ltd.

Building 24 (floors 1,3,4,5) and 28 (floors1-4), Central Science and Technology Park, Nanshan

Shenzhen, 518057 China

Manufacturer : TP-Link Technologies Co., Ltd.

Building 24 (floors 1,3,4,5) and 28 (floors1-4), Central Science and Technology Park, Nanshan

Shenzhen, 518057 China

Standard: 47 CFR FCC Part 15.247

The product was received on Oct. 15, 2018, and testing was started from Oct. 22, 2018 and completed on Dec. 18, 2018. 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: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

TEL: 886-3-656-9065

FAX: 886-3-656-9085

Report Template No.: CB Ver1.0

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Issued Date : Dec. 26, 2018

Report Version : 01

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Photographs of EUT v01

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History of this test report

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Report No.	Version	Description	Issued Date
FR8O1215AA	01	Initial issue of report	Dec. 26, 2018

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Summary of Test Result

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

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:

The EUT supports AP mode and Extender mode.

For customer's request, only Extender mode was selected and recorded in this report.

Reviewed by: Sam Chen Report Producer: Cindy Peng

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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	2TX
2.4-2.4835GHz	802.11g	20	2TX
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.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
1	1	TP-LINK	-	Printed Antenna	N/A	1.95	WLAN 2.4GHz
2	2	TP-LINK	-	Printed Antenna	N/A	1.96	WLAN 2.4GHz
3	1	TP-LINK	-	Printed Antenna	I-PEX	2.98	WLAN 5GHz

Note: The EUT has three antennas.

Ant. 1 and Ant. 2 supports 2.4GHz WLAN function, and Ant. 3 supports 5GHz WLAN function.

For WLAN 2.4GHz function (2TX/2RX):

Port 1 and Port 2 could transmit/receive simultaneously.

For WLAN 5GHz function (1TX/1RX):

Only Port 1 could transmit/receive.

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1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.987	0.057 n/a (DC>=0.98)		n/a (DC>=0.98)
802.11g	0.936	0.287	1.399m	1k
802.11n HT20	0.922	0.353	1.299m	1k
802.11n HT40	0.865	0.63	636.875u	3k

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N I	ata:	
IV	oie:	

- DC is Duty Cycle.
- DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	Internal power supply				
Beamforming Function		With beamforming	\boxtimes	Without beamforming	
Function				Point-to-point	
Test Software Version		7603 QA V0.0.0.70			

1.1.5 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Description
RE200	
RE220	There is nothing different of two models, just for different marketing use.

From the above models, model: RE220 was selected as representative model for the test and its data was recorded in this report.

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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 v05
- FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

	Testing Location							
	HWA YA ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)							
		TEL	:	886-3-327-3456 FAX : 886-3-327-0973				
\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	Eason Chen	20°C / 60%	Oct. 25, 2018~Dec. 04, 2018
Radiated below 1GHz	03CH01-CB	Cola Fan	23°C / 55%	Oct. 22, 2018~Dec. 18, 2018
Radiated above 1GHz	03CH01-CB	Paul Chen	22°C / 54%	Oct. 22, 2018~Dec. 03, 2018
AC Conduction	CO02-CB	Rick Yeh	24°C / 52%	Oct. 25, 2018

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

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1.4 Measurement Uncertainty

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

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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)_2TX	-
2412MHz	1E
2437MHz	1E
2462MHz	1B
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	18
2417MHz	1F
2422MHz	23
2437MHz	23
2452MHz	23
2457MHz	1E
2462MHz	19
802.11n HT20_Nss1,(MCS0)_2TX	-
2412MHz	16
2417MHz	1E
2422MHz	23
2437MHz	23
2452MHz	23
2457MHz	1E
2462MHz	15
802.11n HT40_Nss1,(MCS0)_2TX	-
2422MHz	12
2427MHz	14
2432MHz	17
2437MHz	19
2442MHz	17
2447MHz	13
2452MHz	10

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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	AC power-line conducted measurement for line and neutral	
Operating Mode	Normal Link	
1	Normal Link - Extender mode	

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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

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 regardless of spatial multiplexing MIMO configuration), the radiated test sh be performed with highest antenna gain of each antenna type.				
Operating Mode < 1GHz	Normal Link			
1	Normal Link - EUT in Z axis - Extender mode			
2	Normal Link - EUT in Y axis - Extender mode			
For operating mode 1 is th	For operating mode 1 is the worst case and it was record in this test report.			
Operating Mode > 1GHz CTX				
1	CTX - EUT in Z axis			
2 CTX - EUT in Y axis				
For Radiated Emission: Mode 2 has been evaluated to be the worst case after evaluating. Consequently, measurement will follow this same test mode.				
For Band Edge: Mode 1 has been evaluated to be the worst case after evaluating. Consequently, measurement will follow this same test mode.				

The Worst Case Mode for Following Conformance Tests		
Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation		
Operating Mode		
1	WLAN 2.4GHz + WLAN 5GHz	
Refer to Sporton Test Report No.: FA8O1215 for Co-location RF Exposure Evaluation.		

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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

N/A

2.5 Support Equipment

For Test Site No: CO02-CB

1 01 1	COL CITC INC. COUL OB			
	Support Equipment			
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E6430	N/A
2	NB	DELL	E6430	N/A
3	NB	DELL	E6430	N/A
4	AP Router	ASUS	RP-N53	MSQ-RPN53

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

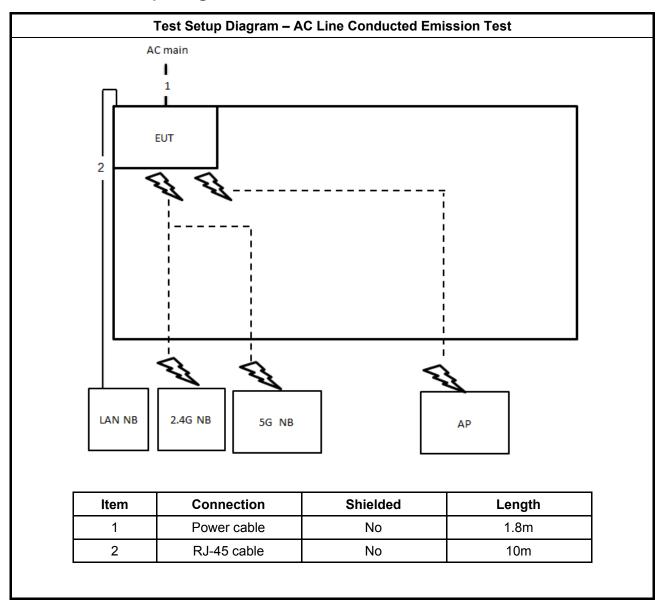
	Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID	
1	NB	DELL	E4300	N/A	
2	NB	DELL	E4300	N/A	
3	NB	DELL	E4300	N/A	
4	WLAN AP	NETGEAR	WNDR3300v2	PY309300116	

For Test Site No: 03CH01-CB (above 1GHz) and TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	N/A

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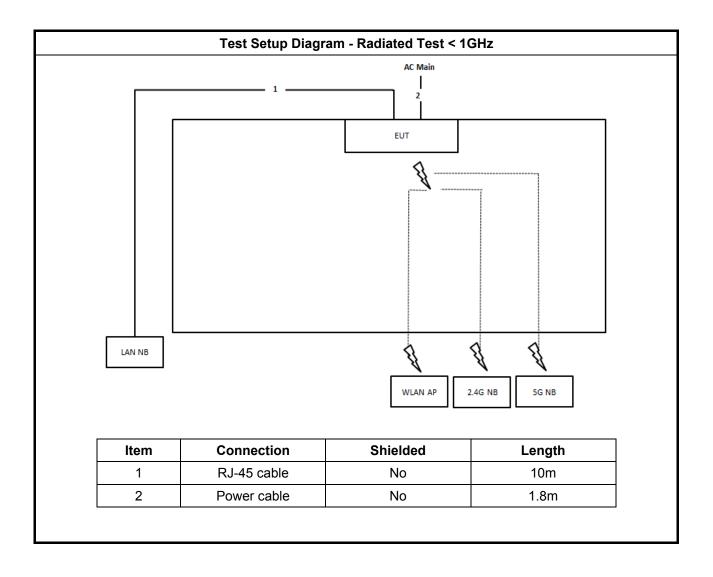
2.6 Test Setup Diagram



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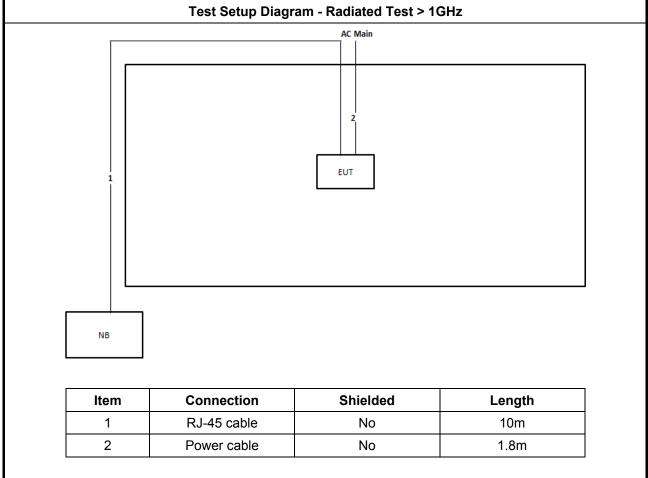
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Test Setup Diagram - Radiated Test > 1GHz



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

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3.1.2 Measuring Instruments

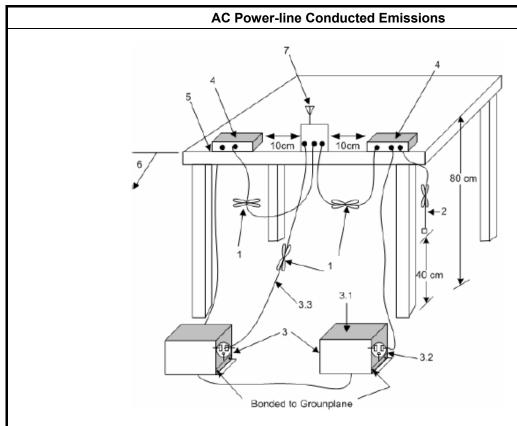
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

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3.1.4 Test Setup



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

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- 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.

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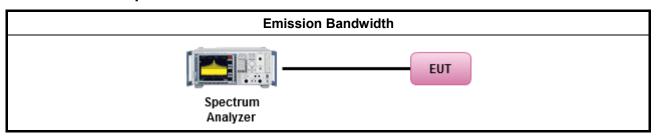
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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

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

3.3.2 Measuring Instruments

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

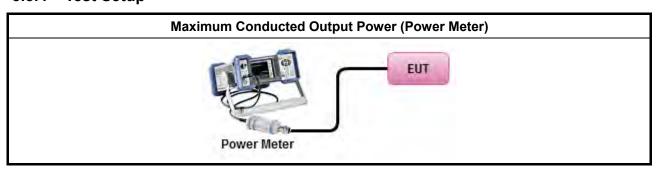
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3.3.3 Test Procedures

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

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3.3.4 Test Setup



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3.3.5 Test Result of Maximum Conducted Output Power

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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

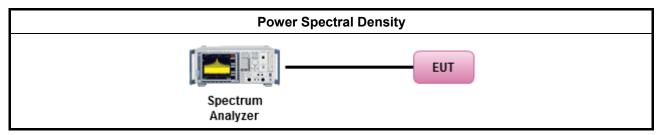
		Test Method							
•	Peak power spectral density procedures that the same method as used to determine the conduct output power. If maximum peak conducted output power was measured to demonstrate compliance the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximu conducted output power was measured to demonstrate compliance to the output power limit, then of the average PSD procedures shall be used, as applicable based on the following criteria (the pe PSD procedure is also an acceptable option).								
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.2 Method PKPSD.							
	[dut	y cycle ≥ 98% or external video / power trigger]							
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPSD-1.							
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPSD-2.							
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPSD-3.							
	duty	cycle < 98% and average over on/off periods with duty factor							
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPSD-1A. (alternative).							
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-2A. (alternative)							
		Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.8 Method AVGPSD-3A. (alternative)							
•	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,							

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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.

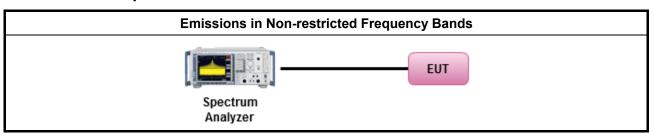
3.5.2 Measuring Instruments

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 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

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

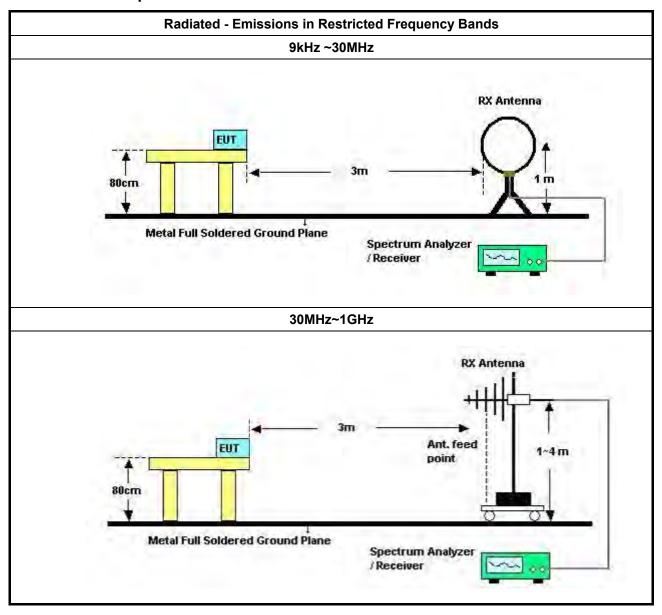
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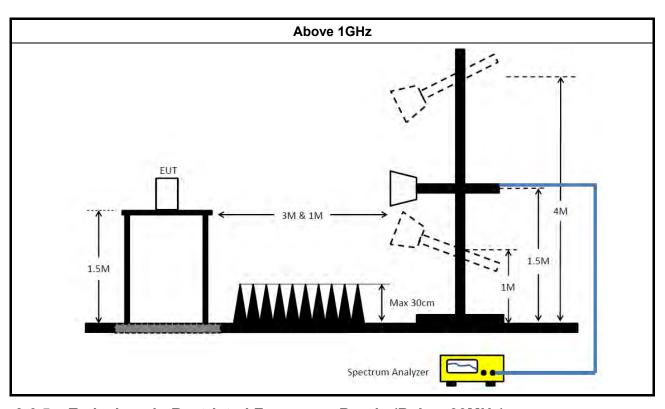
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3.6.4 Test Setup



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3.6.5 Emissions in Restricted Frequency Bands (Below 30MHz)

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

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

3.6.6 Test Result of Emissions in Restricted Frequency Bands

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
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 24, 2017	Nov. 23, 2018	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 13, 2017	Nov. 12, 2018	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 17, 2018	Jan. 16, 2019	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Nov. 10, 2017	Nov. 09, 2018	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2018	Mar. 15, 2019	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 27, 2018	Aug. 26, 2019	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 20, 2017	Nov. 19, 2018	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 13, 2018	Nov. 12, 2019	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2018	May 01, 2019	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- HG	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH01-CB)
Spectrum analy zer	R&S	FSP40	100080	9kHz~40GHz	Oct. 03, 2018	Oct. 02, 2019	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-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. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 20, 2017	Nov. 19, 2018	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 05, 2018	Nov. 04, 2019	Conducted (TH01-CB)

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

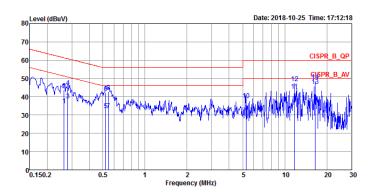
N.C.R. means Non-Calibration required.

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AC Power-line Conducted Emissions Result

AC Power-line Conducted Emissions Result							
Operating Mode	1	Line					
Operating Function Normal Link							

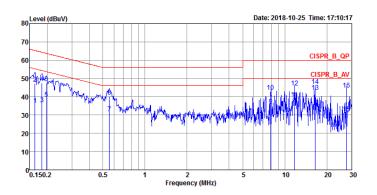


			0ver	Limit	Read	LISN	Cable		
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.2644	35.56	-15.73	51.29	25.38	10.16	0.02	Average	LINE
2	0.2644	43.75	-17.54	61.29	33.57	10.16	0.02	QP	LINE
3	0.2803	38.13	-12.68	50.81	27.95	10.16	0.02	Average	LINE
4	0.2803	45.49	-15.32	60.81	35.31	10.16	0.02	QP	LINE
5	0.5238	32.82	-13.18	46.00	22.63	10.16	0.03	Average	LINE
6	0.5238	42.28	-13.72	56.00	32.09	10.16	0.03	QP	LINE
7	0.5493	32.75	-13.25	46.00	22.56	10.16	0.03	Average	LINE
8	0.5493	42.69	-13.31	56.00	32.50	10.16	0.03	QP	LINE
9	5.2973	31.59	-18.41	50.00	21.27	10.25	0.07	Average	LINE
10	5.2973	38.39	-21.61	60.00	28.07	10.25	0.07	QP	LINE
11	11.7586	43.38	-6.62	50.00	32.96	10.34	0.08	Average	LINE
12	11.7586	47.39	-12.61	60.00	36.97	10.34	0.08	QP	LINE
13	16.4636	45.94	-4.06	50.00	35.45	10.38	0.11	Average	LINE
14	16.4636	48.80	-11.20	60.00	38.31	10.38	0.11	QP	LINE

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

AC Power-line Conducted Emissions Result									
Operating Mode 1 Power Phase Neutral									
Operating Function	Operating Function Normal Link								



			0ver	Limit	Read	LISN	Cable		
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		_
1	0.1633	35.70	-19.60	55.30	25.52	10.17	0.01	Average	NEUTRAL
2	0.1633	47.11	-18.19	65.30	36.93	10.17	0.01	QP	NEUTRAL
3	0.1835	35.98	-18.35	54.33	25.80	10.17	0.01	Average	NEUTRAL
4	0.1835	47.44	-16.89	64.33	37.26	10.17	0.01	QP	NEUTRAL
5	0.1976	38.83	-14.88	53.71	28.65	10.17	0.01	Average	NEUTRAL
6	0.1976	47.49	-16.22	63.71	37.31	10.17	0.01	QP	NEUTRAL
7	0.5552	31.08	-14.92	46.00	20.88	10.17	0.03	Average	NEUTRAL
8	0.5552	40.15	-15.85	56.00	29.95	10.17	0.03	QP	NEUTRAL
9	7.9233	34.98	-15.02	50.00	24.62	10.29	0.07	Average	NEUTRAL
10	7.9233	42.93	-17.07	60.00	32.57	10.29	0.07	QP	NEUTRAL
11	11.7446	38.93	-11.07	50.00	28.51	10.34	0.08	Average	NEUTRAL
12	11.7446	45.03	-14.97	60.00	34.61	10.34	0.08	QP	NEUTRAL
13	16.4646	42.76	-7.24	50.00	32.27	10.38	0.11	Average	NEUTRAL
14	16.4646	46.04	-13.96	60.00	35.55	10.38	0.11	QP	NEUTRAL
15	27.5426	30.99	-19.01	50.00	20.28	10.49	0.22	Average	NEUTRAL
16	27.5426	43.85	-16.15	60.00	33.14	10.49	0.22	QP	NEUTRAL

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)_2TX	10.05M	14.943M	14M9G1D	10M	14.318M
802.11g_Nss1,(6Mbps)_2TX	15.1M	20.79M	20M8D1D	14.35M	16.342M
802.11n HT20_Nss1,(MCS0)_2TX	15.65M	21.689M	21M7D1D	13.8M	17.516M
802.11n HT40_Nss1,(MCS0)_2TX	35.05M	36.132M	36M1D1D	33.8M	35.732M

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;

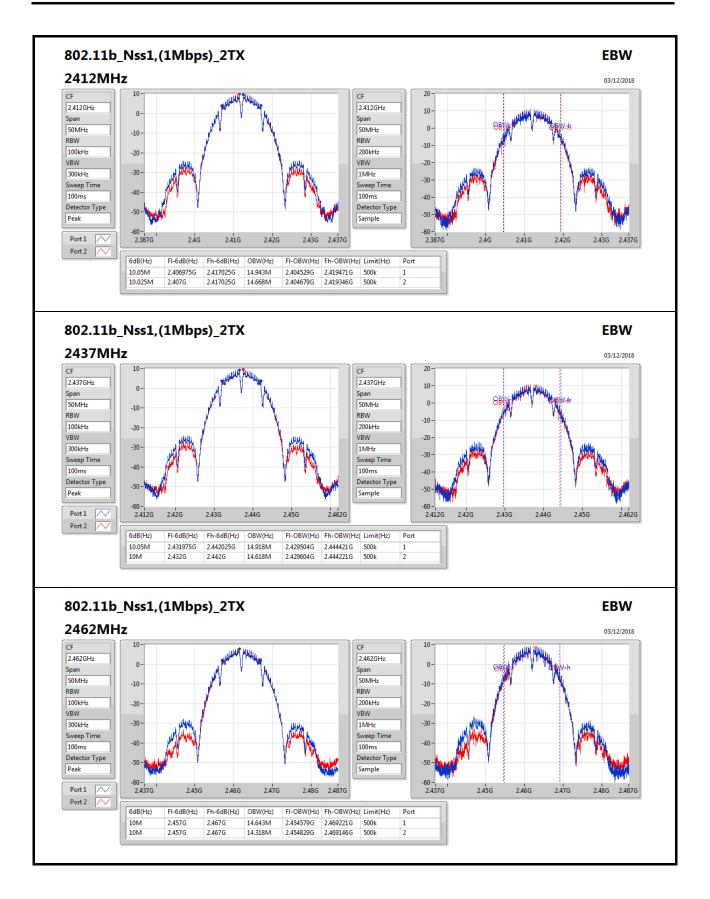
Result

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)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	10.05M	14.943M	10.025M	14.668M
2437MHz	Pass	500k	10.05M	14.918M	10M	14.618M
2462MHz	Pass	500k	10M	14.643M	10M	14.318M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	15.025M	16.342M	14.35M	16.342M
2437MHz	Pass	500k	15.1M	20.79M	15.025M	17.966M
2462MHz	Pass	500k	15.025M	16.442M	15.05M	16.367M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	14.975M	17.541M	15.65M	17.516M
2437MHz	Pass	500k	15.075M	21.689M	14.775M	19.065M
2462MHz	Pass	500k	13.8M	17.541M	15.1M	17.541M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	33.85M	35.832M	35.05M	35.882M
2437MHz	Pass	500k	34.95M	35.932M	35M	36.132M
2452MHz	Pass	500k	33.8M	35.732M	33.85M	35.882M

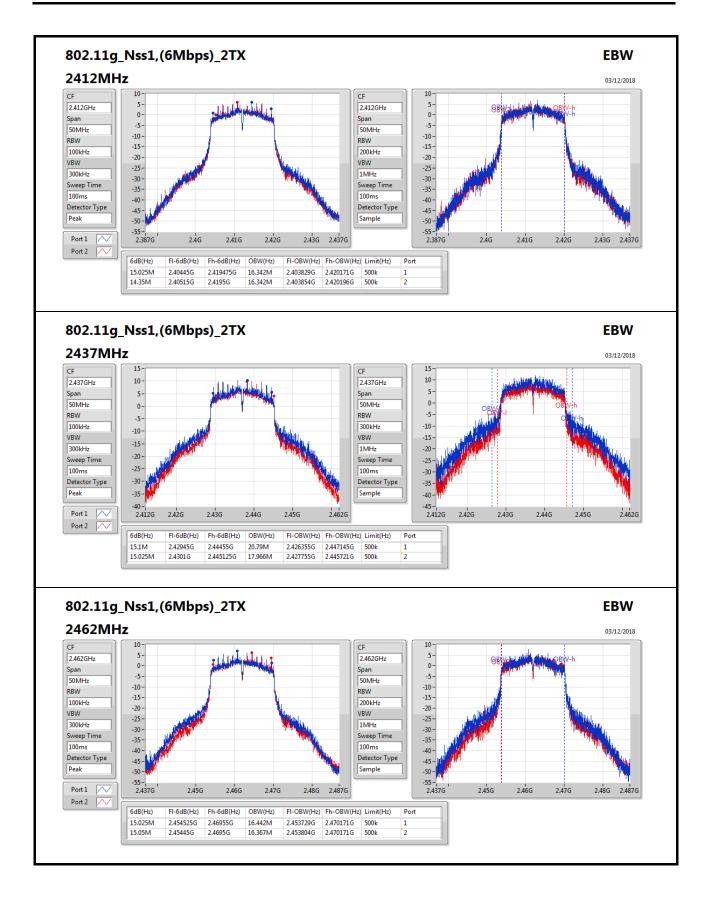
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Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

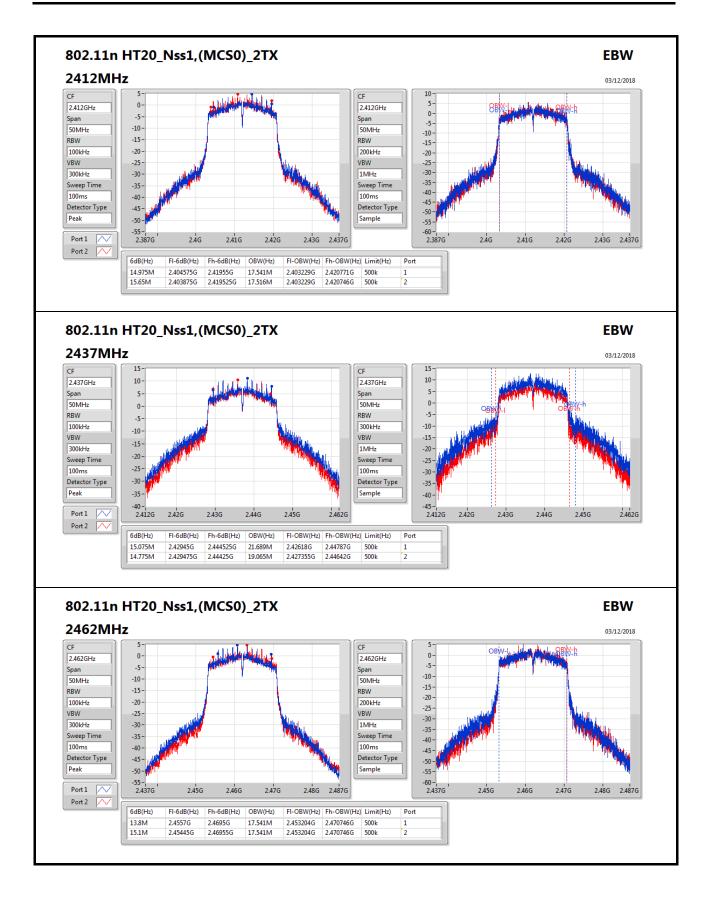




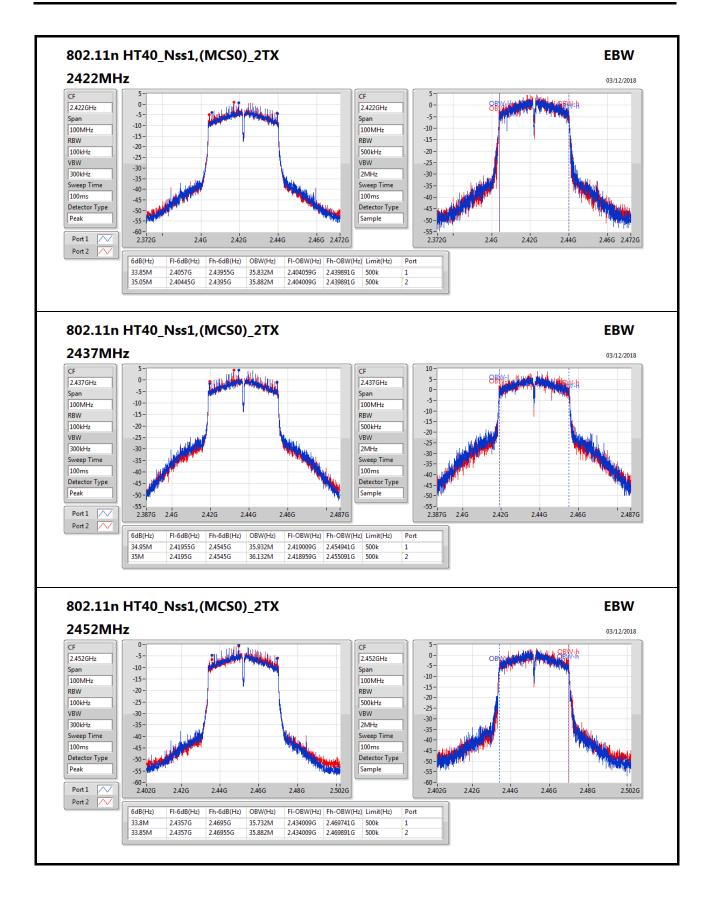














Appendix C **AV Power Result**

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	23.22	0.20989
802.11g_Nss1,(6Mbps)_2TX	24.55	0.28510
802.11n HT20_Nss1,(MCS0)_2TX	24.49	0.28119
802.11n HT40_Nss1,(MCS0)_2TX	20.36	0.10864

Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	1.96	20.11	20.23	23.18	30.00
2437MHz	Pass	1.96	20.24	20.18	23.22	30.00
2462MHz	Pass	1.96	18.93	17.72	21.38	30.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	1.96	16.94	17.02	19.99	30.00
2417MHz	Pass	1.96	20.16	20.06	23.12	30.00
2422MHz	Pass	1.96	21.55	21.22	24.40	30.00
2437MHz	Pass	1.96	21.59	21.49	24.55	30.00
2452MHz	Pass	1.96	21.35	21.26	24.32	30.00
2457MHz	Pass	1.96	19.41	19.48	22.46	30.00
2462MHz	Pass	1.96	17.21	17.27	20.25	30.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	1.96	15.97	16.09	19.04	30.00
2417MHz	Pass	1.96	19.48	19.62	22.56	30.00
2422MHz	Pass	1.96	21.47	21.25	24.37	30.00
2437MHz	Pass	1.96	21.56	21.39	24.49	30.00
2452MHz	Pass	1.96	21.03	21.10	24.08	30.00
2457MHz	Pass	1.96	19.12	19.51	22.33	30.00
2462MHz	Pass	1.96	15.06	15.40	18.24	30.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	1.96	14.15	14.10	17.14	30.00
2427MHz	Pass	1.96	15.04	14.97	18.02	30.00
2432MHz	Pass	1.96	16.47	16.44	19.47	30.00
2437MHz	Pass	1.96	17.32	17.38	20.36	30.00
2442MHz	Pass	1.96	16.41	16.39	19.41	30.00
2447MHz	Pass	1.96	14.34	14.53	17.45	30.00
2452MHz	Pass	1.96	12.98	12.92	15.96	30.00

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DG = Directional Gain; Port X = Port X output power Note : Conducted average output power is for reference only



PSD Result Appendix D

Summary

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	
802.11b_Nss1,(1Mbps)_2TX	-9.12
802.11g_Nss1,(6Mbps)_2TX	-4.11
802.11n HT20_Nss1,(MCS0)_2TX	-3.45
802.11n HT40_Nss1,(MCS0)_2TX	-9.45

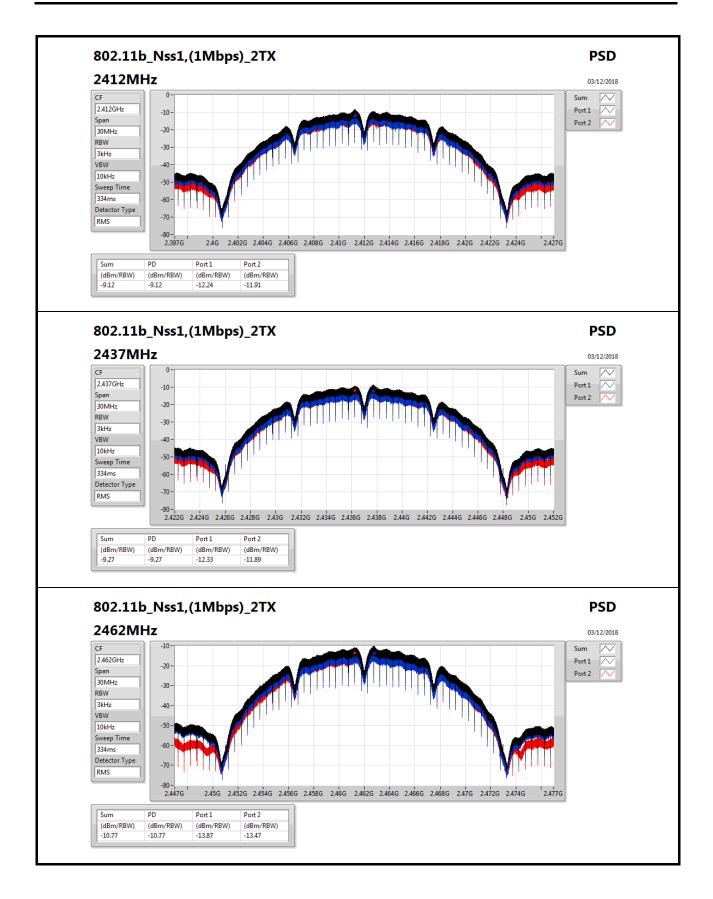
RBW=3kHz.

Result

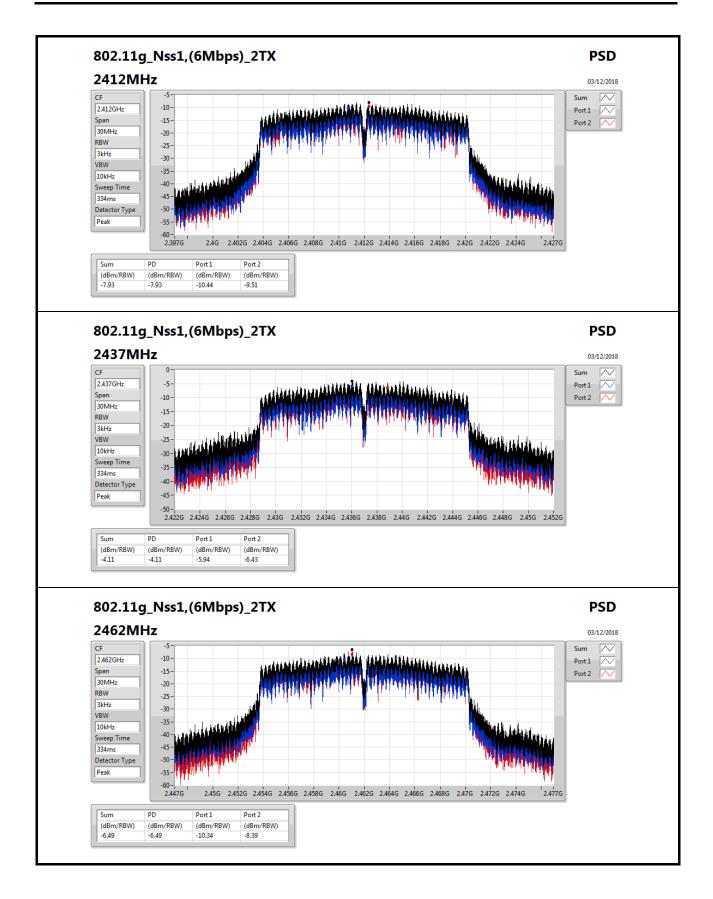
Mode	Result	DG	Port 1	Port 2	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.97	-12.24	-11.91	-9.12	8.00
2437MHz	Pass	4.97	-12.33	-11.89	-9.27	8.00
2462MHz	Pass	4.97	-13.87	-13.47	-10.77	8.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.97	-10.44	-9.51	-7.93	8.00
2437MHz	Pass	4.97	-5.94	-6.43	-4.11	8.00
2462MHz	Pass	4.97	-10.34	-8.39	-6.49	8.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.97	-10.95	-11.17	-8.98	8.00
2437MHz	Pass	4.97	-5.66	-6.08	-3.45	8.00
2462MHz	Pass	4.97	-12.01	-11.19	-10.04	8.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	4.97	-15.24	-14.46	-12.80	8.00
2437MHz	Pass	4.97	-12.23	-12.43	-9.45	8.00
2452MHz	Pass	4.97	-16.28	-16.43	-13.73	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 Xpower density;

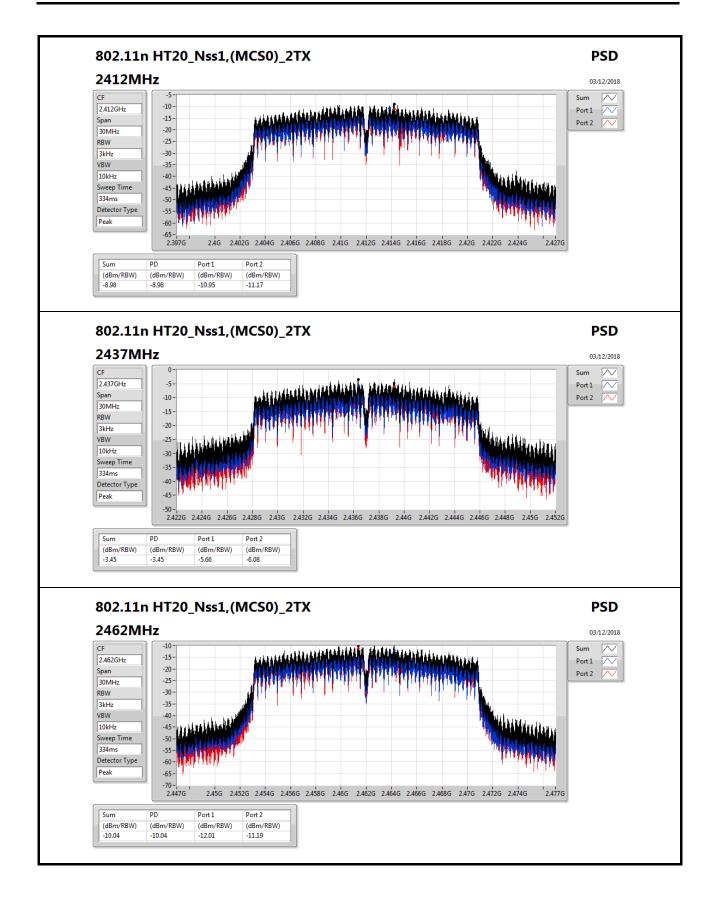




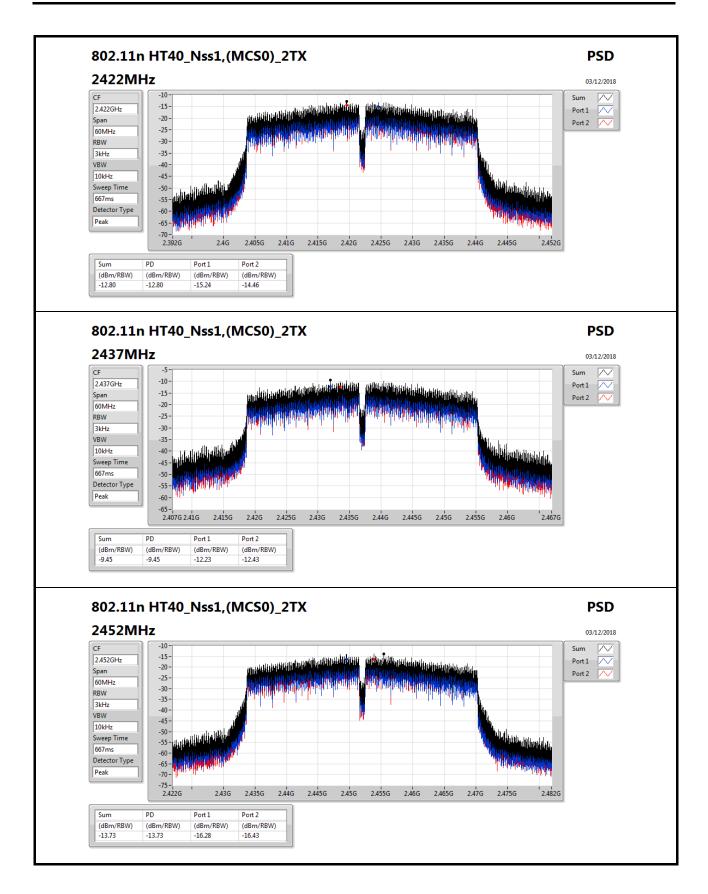














CSE Non-restricted Band Result

Appendix E

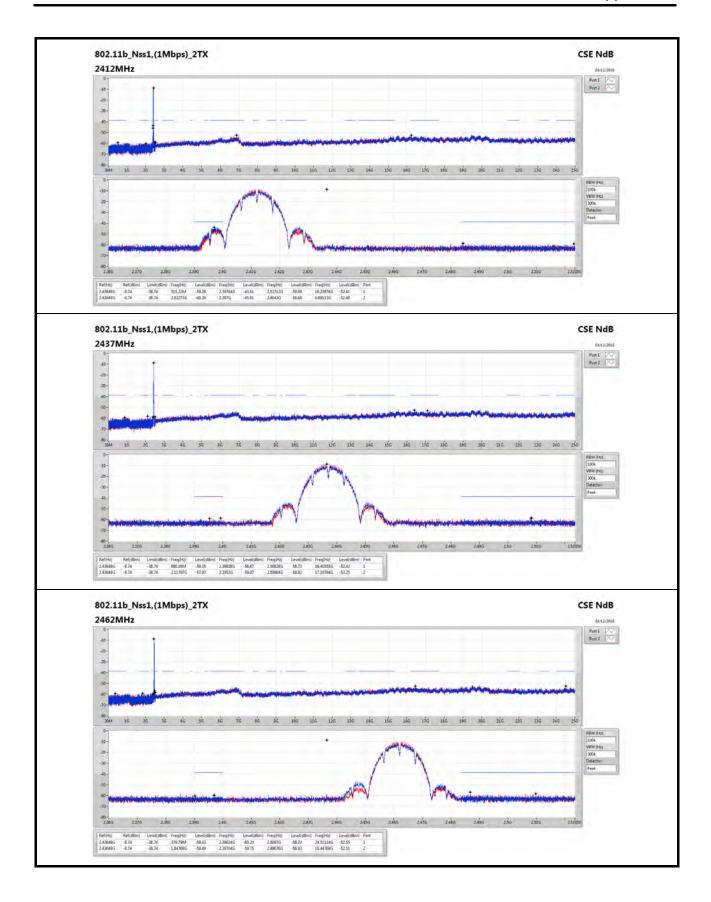
Summary

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)_2TX	Pass	2.43649G	-8.74	-38.74	515.22M	-59.29	2.39704G	-43.81	2.52312G	-59.09	16.23978G	-52.41	1
802.11g_Nss1,(6Mbps)_2TX Pass 2.44		2.44204G	-9.94	-39.94	648.03M	-59.66	2.39984G	-43.20	2.52312G	-58.40	16.82417G	-51.82	1
802.11n HT20_Nss1,(MCS0)_2TX Pass		2.43449G	-8.60	-38.60	186.98M	-59.65	2.3999G	-44.77	2.4946G	-58.52	15.26768G	-52.67	1
802.11n HT40_Nss1,(MCS0)_2TX	Pass	2.43444G	-14.36	-44.36	676.07M	-59.44	2.39944G	-51.48	2.56074G	-59.20	15.09148G	-52.80	1

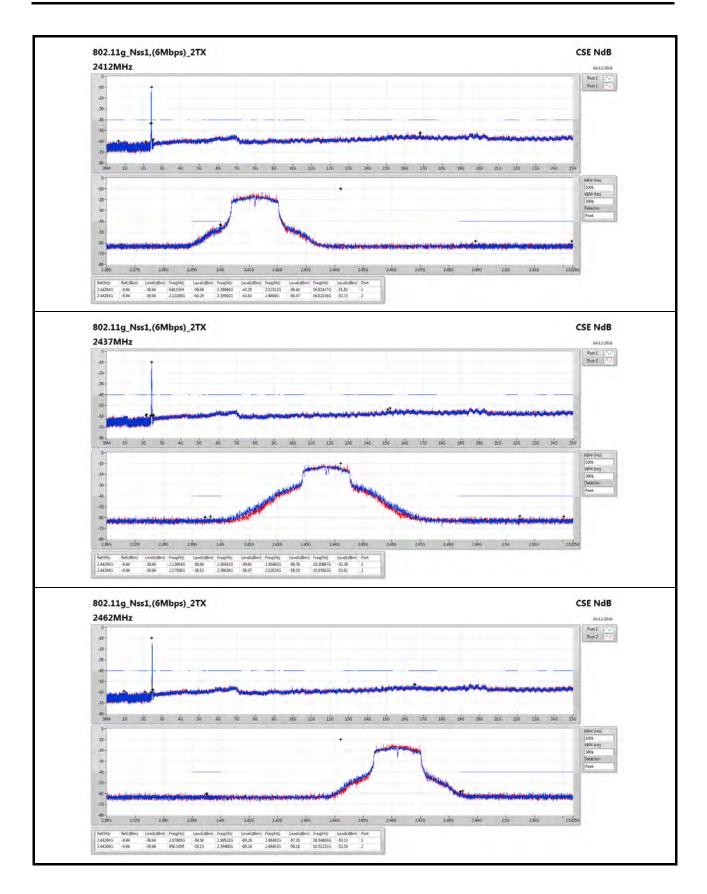
Result

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)_2TX	-	-	-		-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43649G	-8.74	-38.74	515.22M	-59.29	2.39704G	-43.81	2.52312G	-59.09	16.23978G	-52.41	1
2412MHz	Pass	2.43649G	-8.74	-38.74	2.02273G	-60.30	2.397G	-45.81	2.4843G	-58.68	6.88113G	-52.49	2
2437MHz	Pass	2.43649G	-8.74	-38.74	880.16M	-59.35	2.39928G	-58.67	2.50828G	-58.73	16.40555G	-52.42	1
2437MHz	Pass	2.43649G	-8.74	-38.74	2.11797G	-57.97	2.3953G	-59.07	2.50804G	-58.82	17.10794G	-53.25	2
2462MHz	Pass	2.43649G	-8.74	-38.74	379.79M	-59.43	2.39024G	-60.20	2.5097G	-58.33	24.51114G	-52.55	1
2462MHz	Pass	2.43649G	-8.74	-38.74	1.84769G	-59.49	2.39704G	-59.75	2.48676G	-56.93	16.44769G	-52.51	2
802.11g_Nss1,(6Mbps)_2TX	-	-	-		-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.44204G	-9.94	-39.94	648.03M	-59.66	2.39984G	-43.20	2.52312G	-58.40	16.82417G	-51.82	1
2412MHz	Pass	2.44204G	-9.94	-39.94	2.11186G	-60.25	2.39992G	-43.63	2.4894G	-58.47	16.82136G	-52.73	2
2437MHz	Pass	2.44204G	-9.94	-39.94	2.12904G	-58.94	2.39452G	-59.61	2.50492G	-58.76	15.20867G	-52.38	1
2437MHz	Pass	2.44204G	-9.94	-39.94	2.17506G	-58.53	2.39638G	-58.97	2.52024G	-59.19	15.07663G	-53.61	2
2462MHz	Pass	2.44204G	-9.94	-39.94	2.07865G	-59.54	2.39522G	-60.28	2.48482G	-57.35	16.54603G	-53.13	1
2462MHz	Pass	2.44204G	-9.94	-39.94	956.18M	-59.15	2.39486G	-60.34	2.48402G	-58.16	16.51231G	-52.55	2
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43449G	-8.60	-38.60	186.98M	-59.65	2.3999G	-44.77	2.4946G	-58.52	15.26768G	-52.67	1
2412MHz	Pass	2.43449G	-8.60	-38.60	1.78478G	-59.23	2.39978G	-44.90	2.50076G	-57.74	24.85671G	-53.20	2
2437MHz	Pass	2.43449G	-8.60	-38.60	2.07254G	-59.58	2.39696G	-57.77	2.4848G	-58.45	17.42261G	-52.77	1
2437MHz	Pass	2.43449G	-8.60	-38.60	1.62226G	-58.19	2.39928G	-59.14	2.48358G	-58.38	24.44652G	-52.87	2
2462MHz	Pass	2.43449G	-8.60	-38.60	1.64498G	-59.57	2.39248G	-59.77	2.48356G	-58.68	24.79771G	-53.23	1
2462MHz	Pass	2.43449G	-8.60	-38.60	877.83M	-59.37	2.39102G	-58.89	2.48374G	-58.15	6.69289G	-53.50	2
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-		-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.43444G	-14.36	-44.36	148.22M	-59.49	2.39892G	-54.84	2.49966G	-59.06	24.74478G	-52.28	1
2422MHz	Pass	2.43444G	-14.36	-44.36	2.18804G	-59.08	2.39856G	-53.95	2.49086G	-59.14	24.48677G	-52.73	2
2437MHz	Pass	2.43444G	-14.36	-44.36	676.07M	-59.44	2.39944G	-51.48	2.56074G	-59.20	15.09148G	-52.80	1
2437MHz	Pass	2.43444G	-14.36	-44.36	2.10073G	-58.93	2.39984G	-52.70	2.55726G	-59.08	6.9919G	-53.41	2
2452MHz	Pass	2.43444G	-14.36	-44.36	1.93757G	-59.78	2.39908G	-60.55	2.48986G	-58.72	17.58754G	-53.02	1
2452MHz	Pass	2.43444G	-14.36	-44.36	2.14739G	-59.20	2.39244G	-59.51	2.48446G	-56.46	16.42645G	-52.78	2

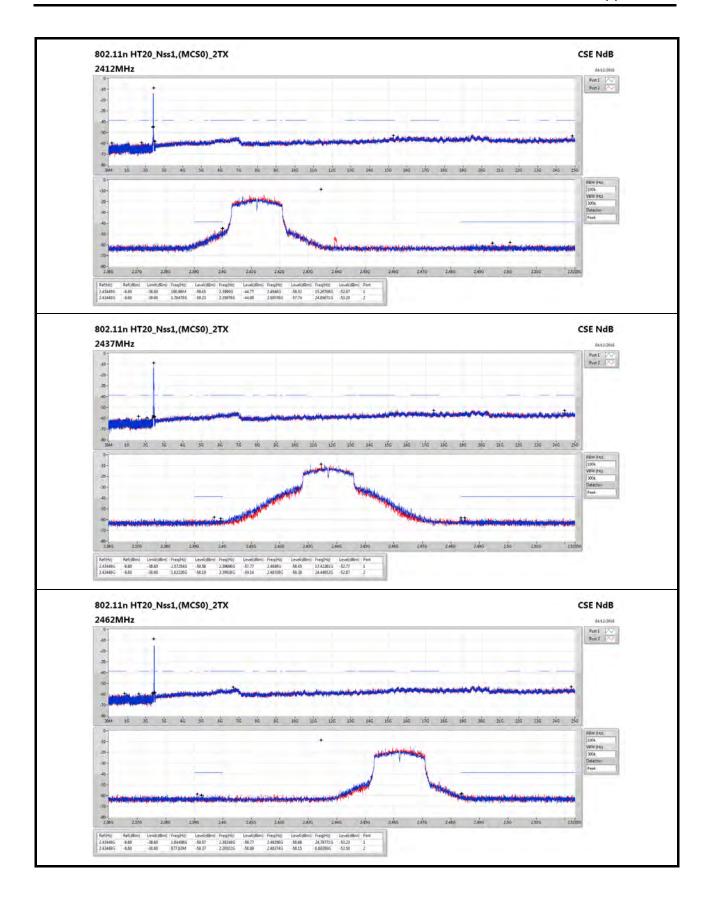




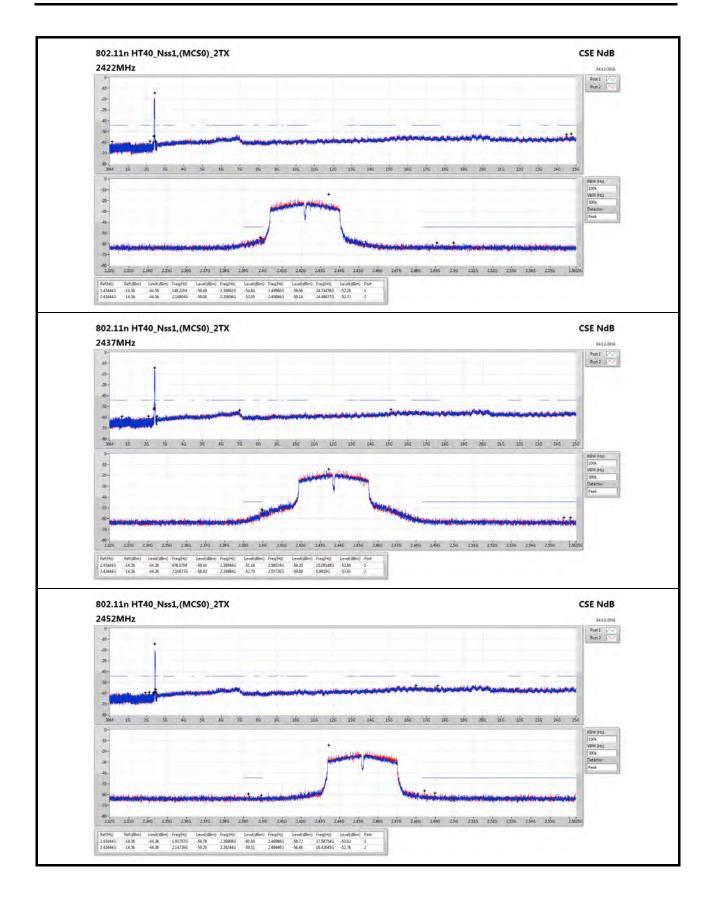






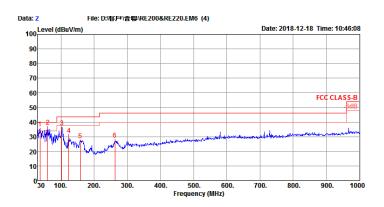








RSE below 1GHz Result											
Operating Mode	1 Polarization Vertical										
Operating Function	Normal Link										

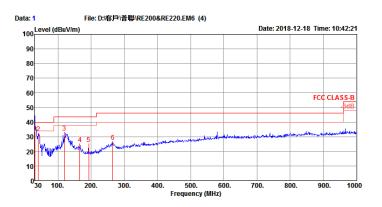


	Freq	Level		Over Limit					A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	36.79	35.76	40.00	-4.24	47.46	0.58	20.14	32.42	100	94	Peak	VERTICAL
2	60.07	36.85	40.00	-3.15	56.06	0.83	12.37	32.41	125	104	Peak	VERTICAL
3	102.75	36.53	43.50	-6.97	50.64	1.07	17.19	32.37	100	193	Peak	VERTICAL
4	124.09	31.21	43.50	-12.29	44.30	1.14	18.12	32.35	300	115	Peak	VERTICAL
5	159.01	27.74	43.50	-15.76	42.71	1.29	16.06	32.32	125	79	Peak	VERTICAL
6	262.80	27.93	46.00	-18.07	39.62	1.68	18.90	32.27	300	51	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.)



RSE below 1GHz Result												
Operating Mode	1	Polarization Horizontal										
Operating Function	Normal Link											



	Freq	Level	Limit Line	Over Limit				Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.00	33.76	40.00	-6.24	41.60	0.49	24.10	32.43	100	153	QP	HORIZONTAL
2	40.67	32.59	40.00	-7.41	46.49	0.62	17.90	32.42	100	37	Peak	HORIZONTAL
3	119.24	32.90	43.50	-10.60	45.83	1.12	18.30	32.35	200	349	Peak	HORIZONTAL
4	165.80	25.09	43.50	-18.41	40.24	1.33	15.84	32.32	125	171	Peak	HORIZONTAL
5	192.96	24.94	43.50	-18.56	40.70	1.45	15.09	32.30	100	126	Peak	HORIZONTAL
6	264.74	26.41	46.00	-19.59	38.12	1.69	18.87	32.27	125	360	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.)



RSE TX above 1GHz Result

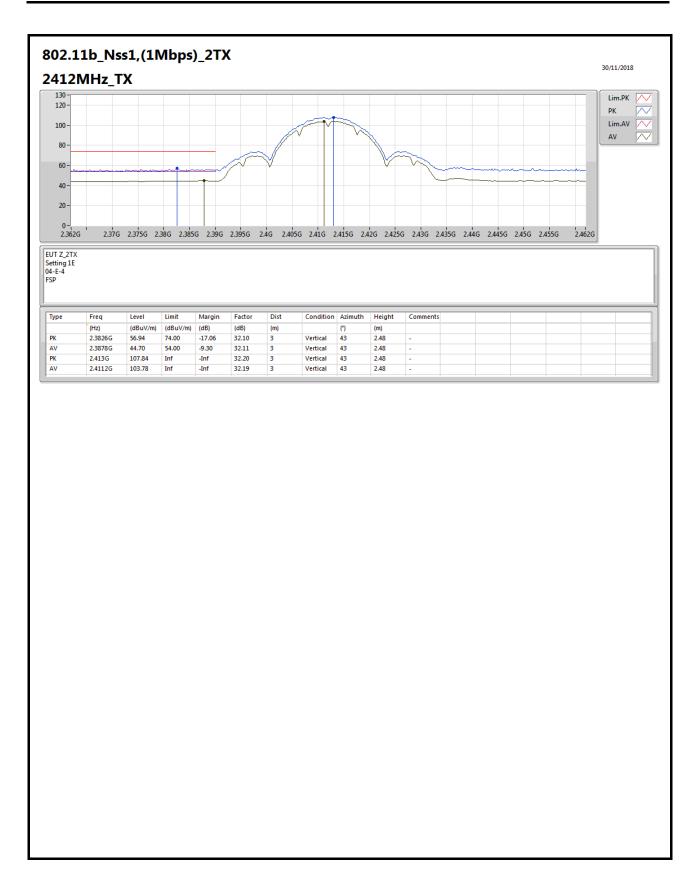
Appendix F.2

Summary

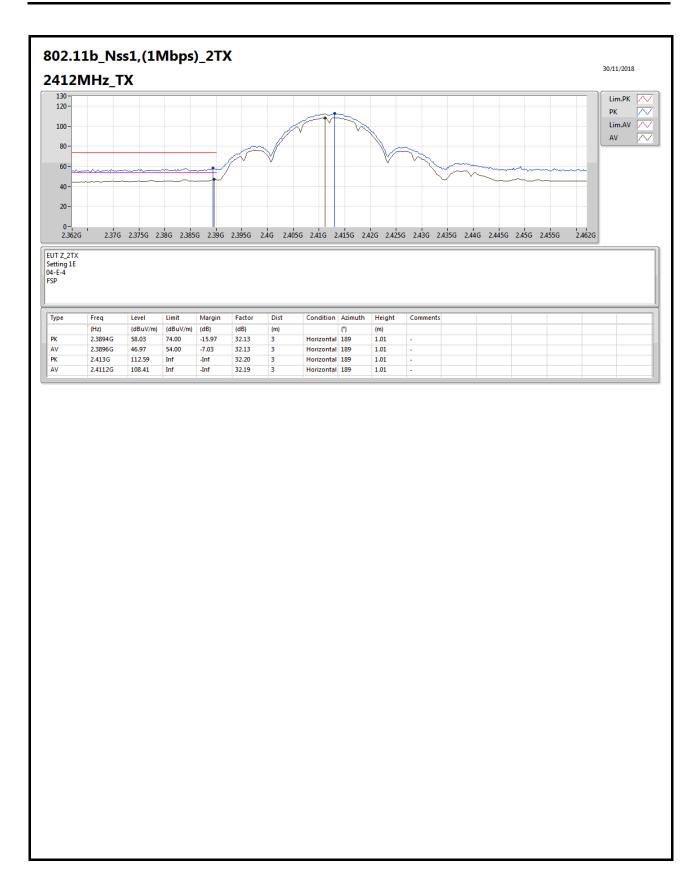
Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(*)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	AV	4.874G	53.99	54.00	-0.01	6.71	3	Vertical	230	2.05	-

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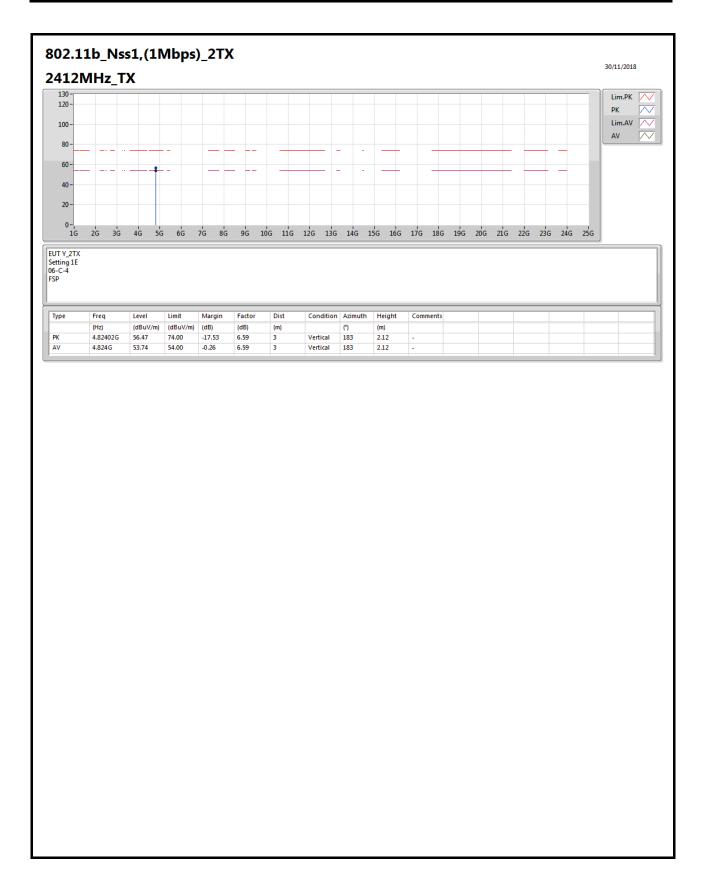




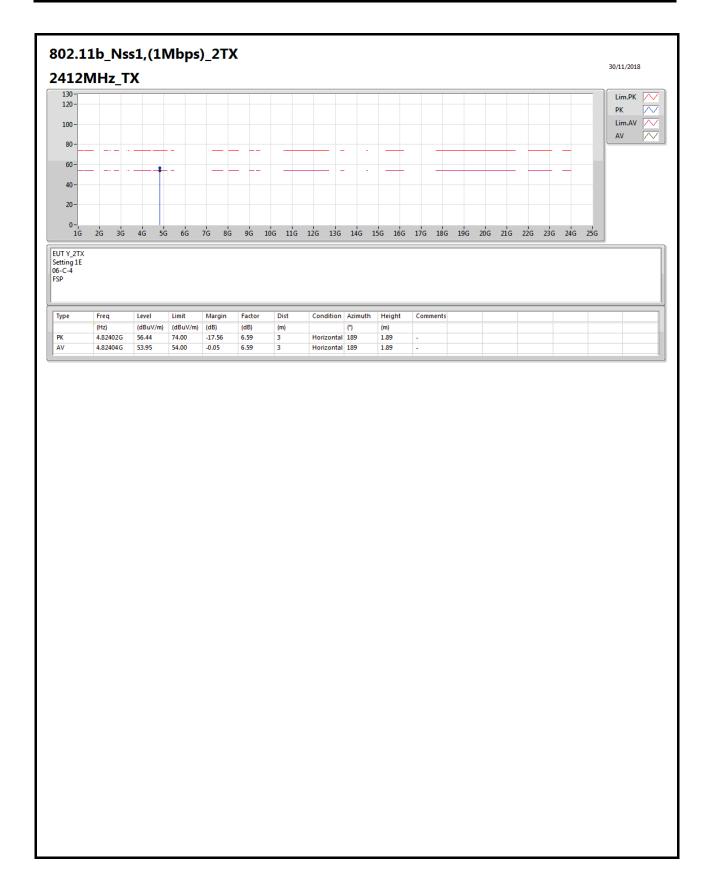




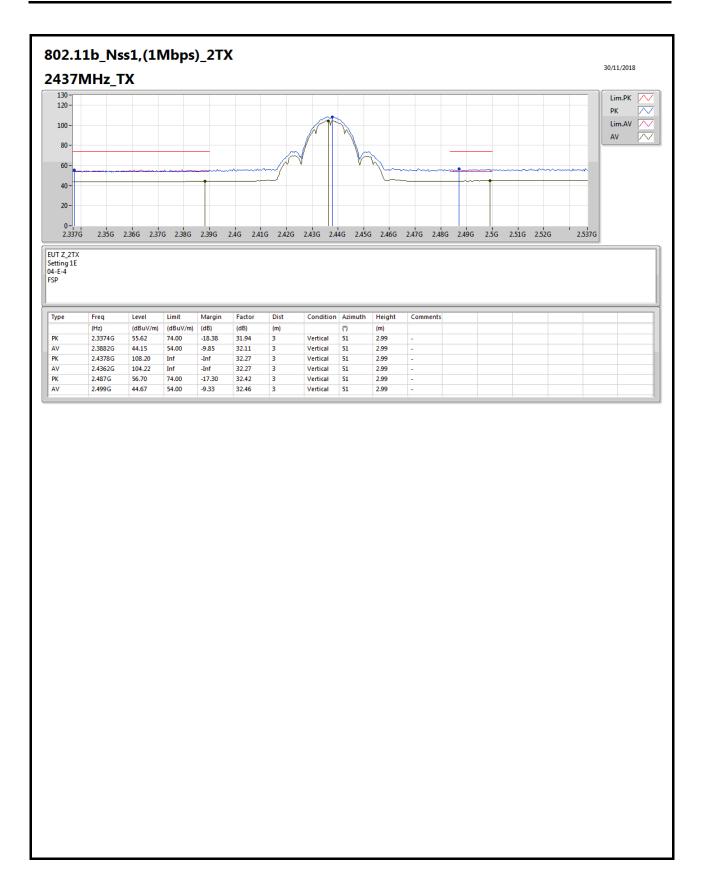




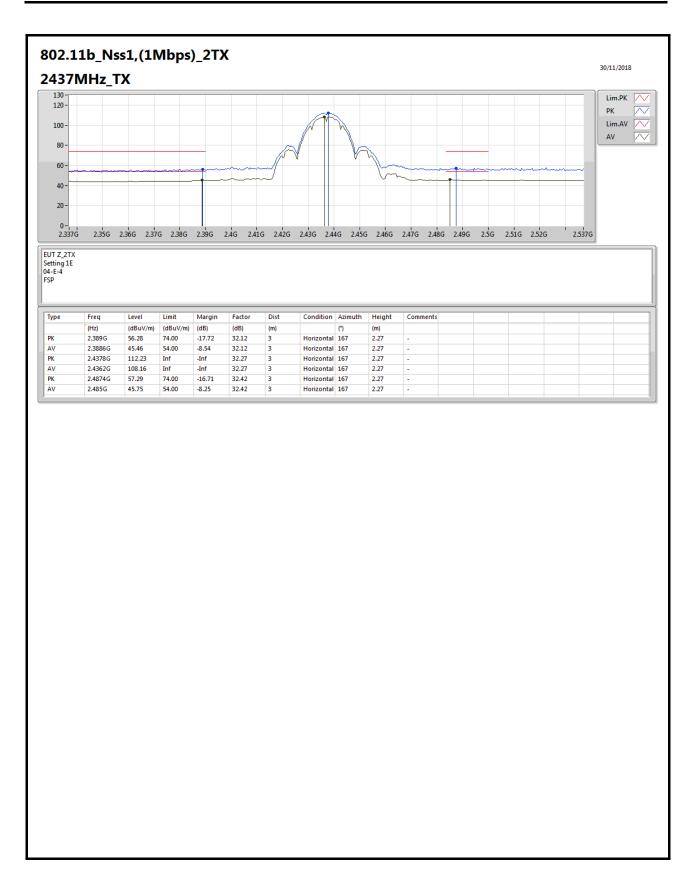




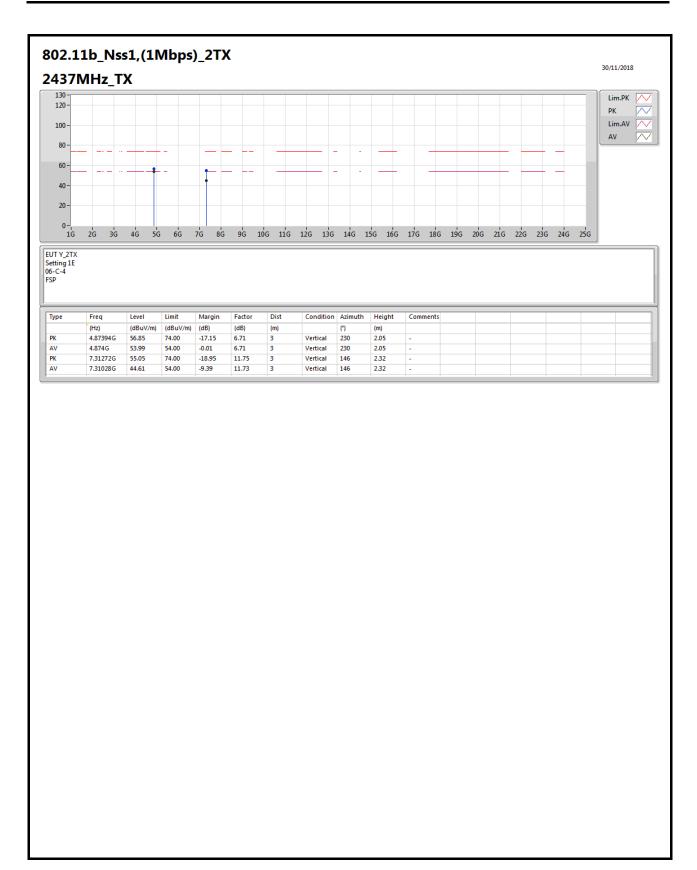






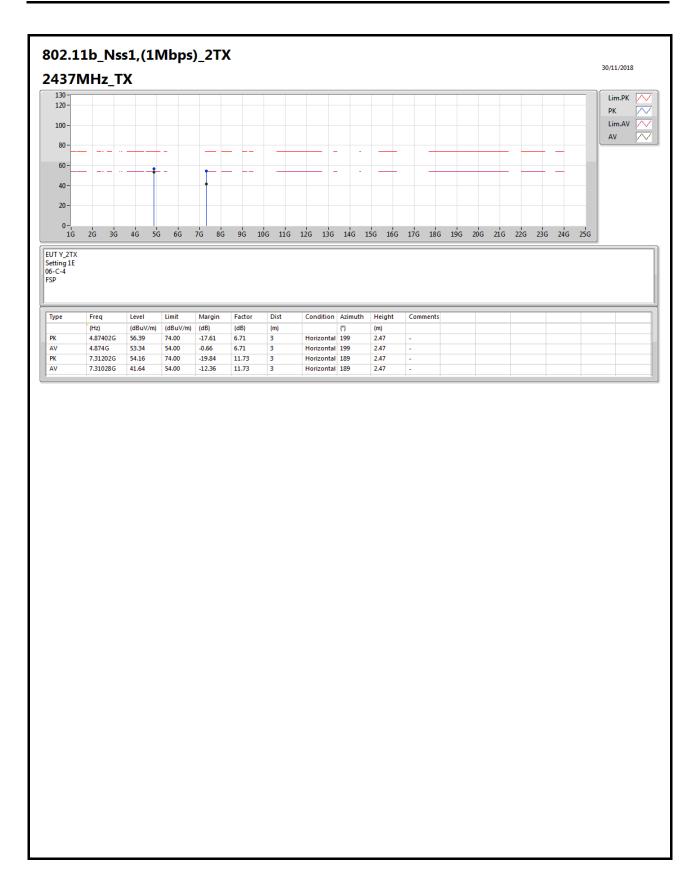






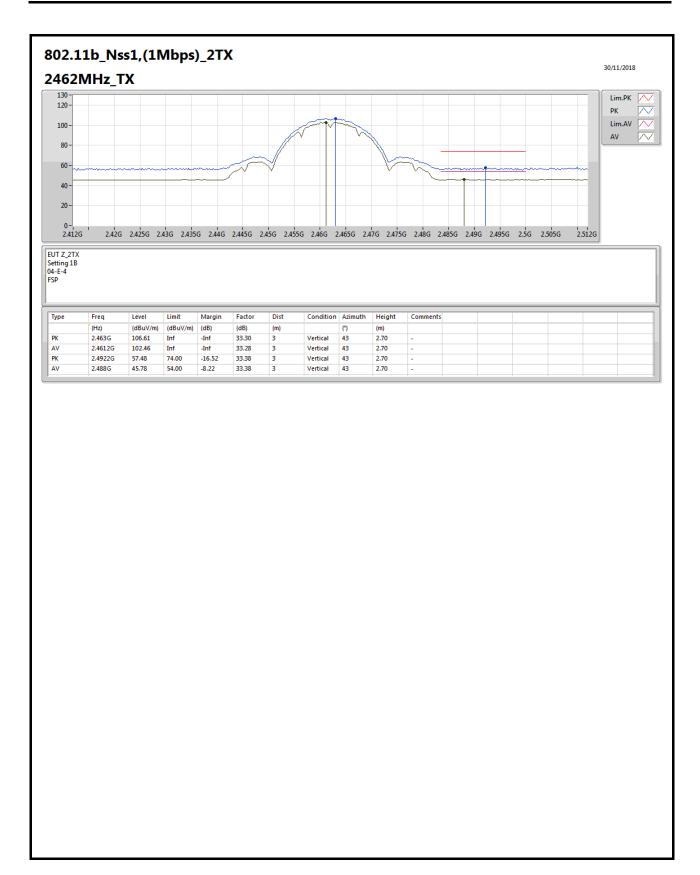
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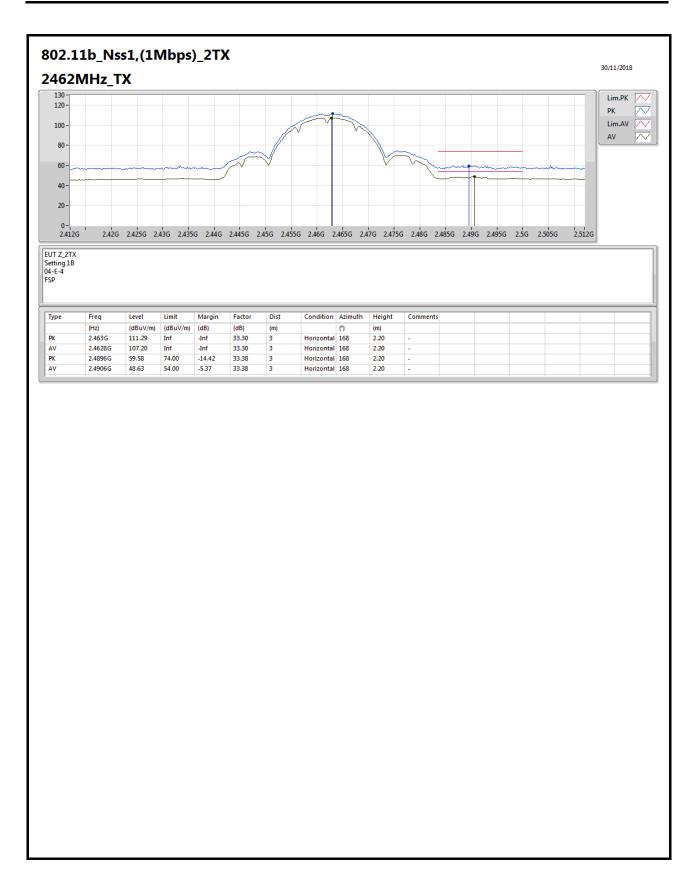


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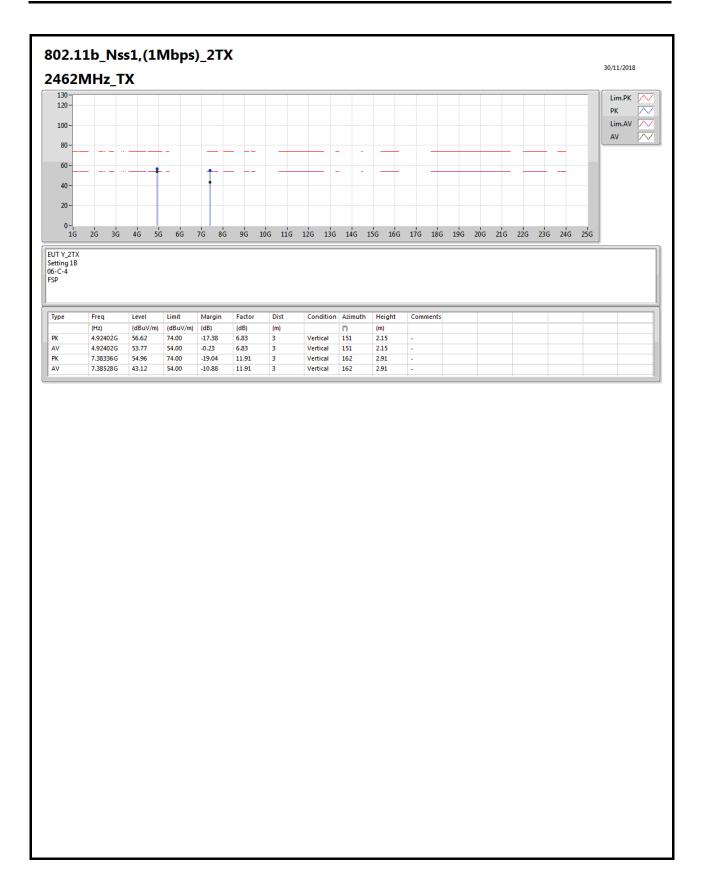




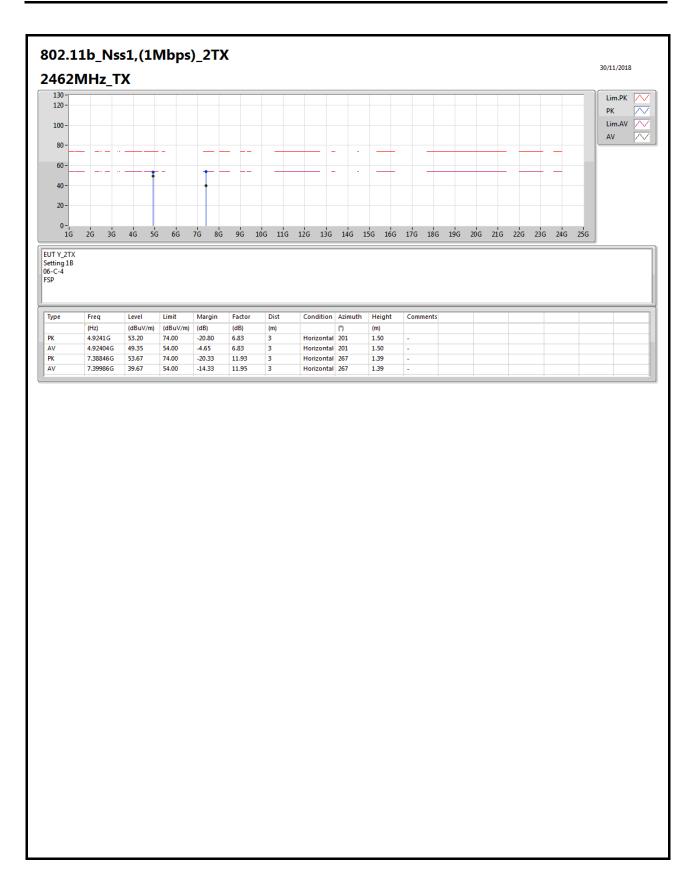




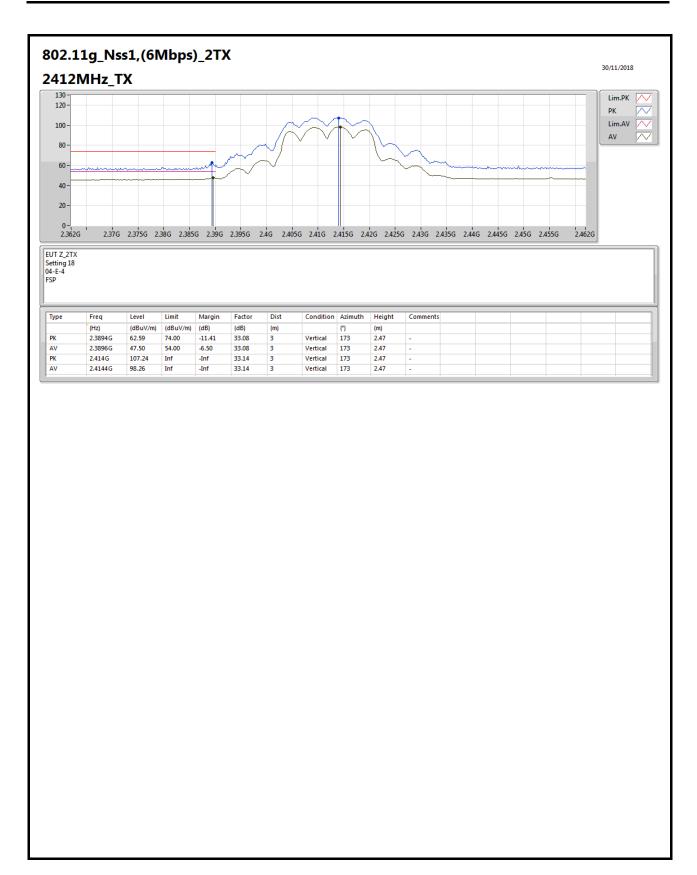




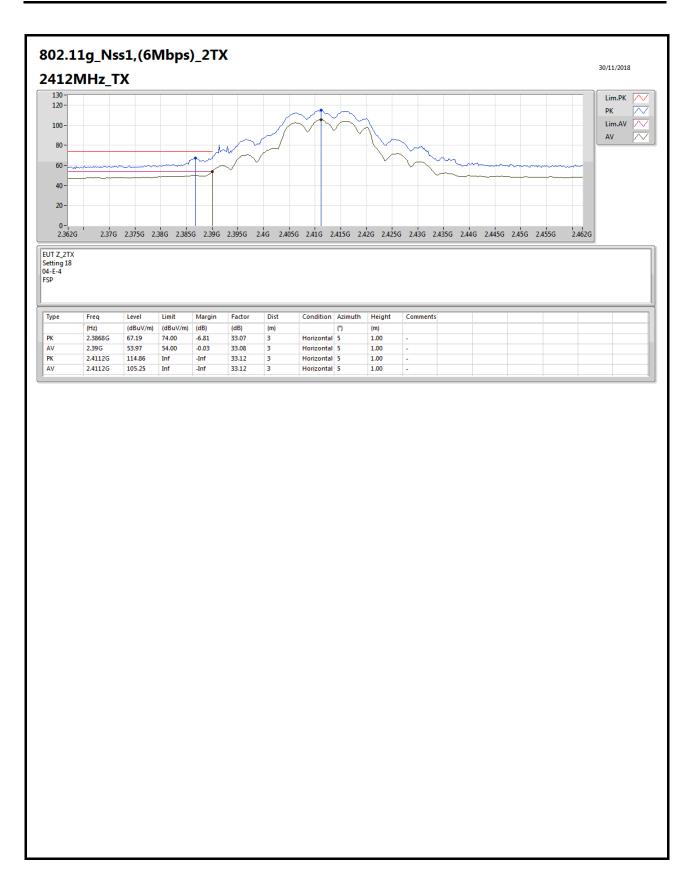






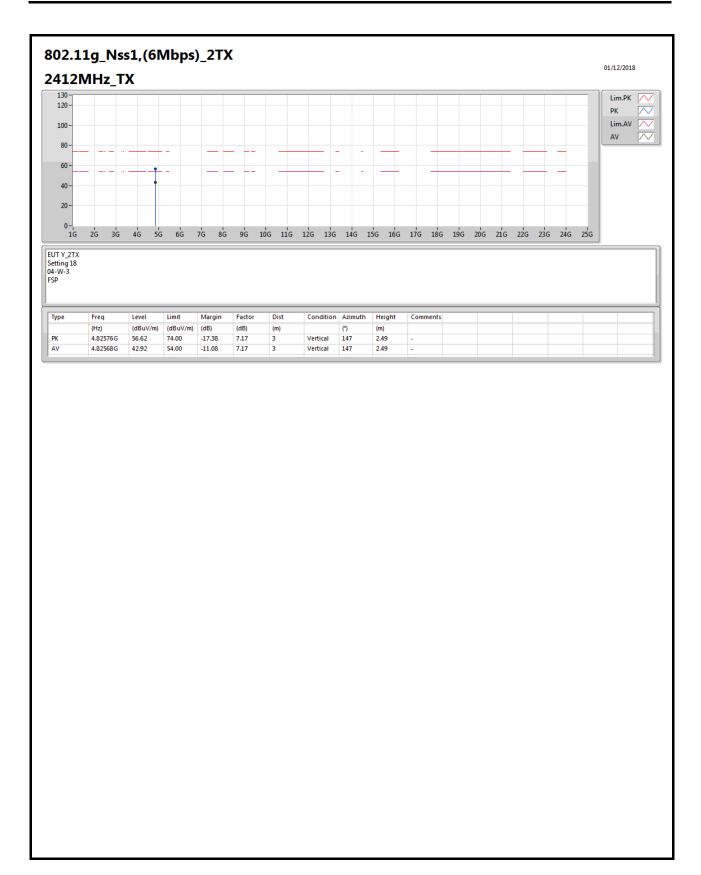






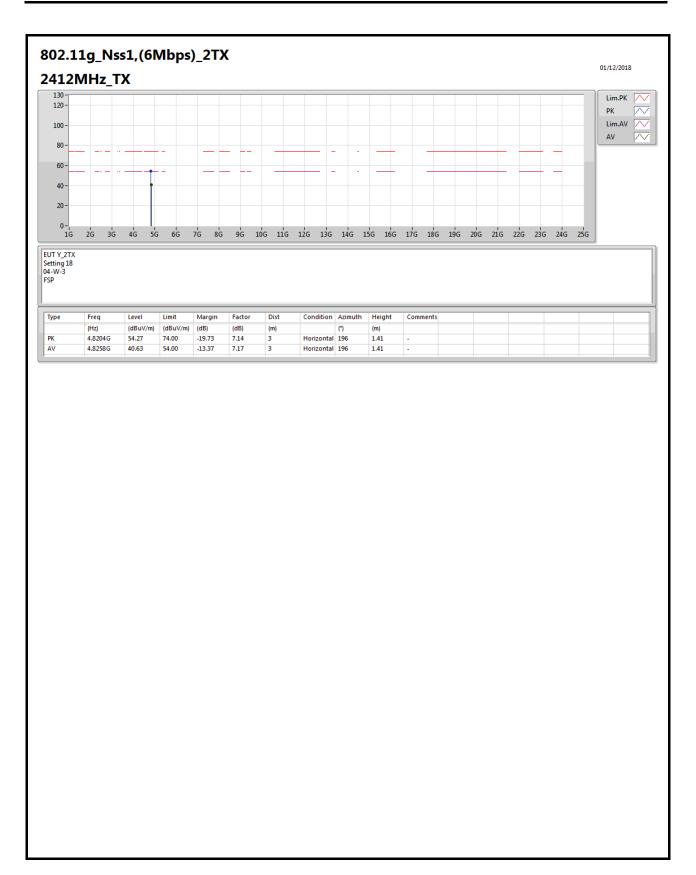
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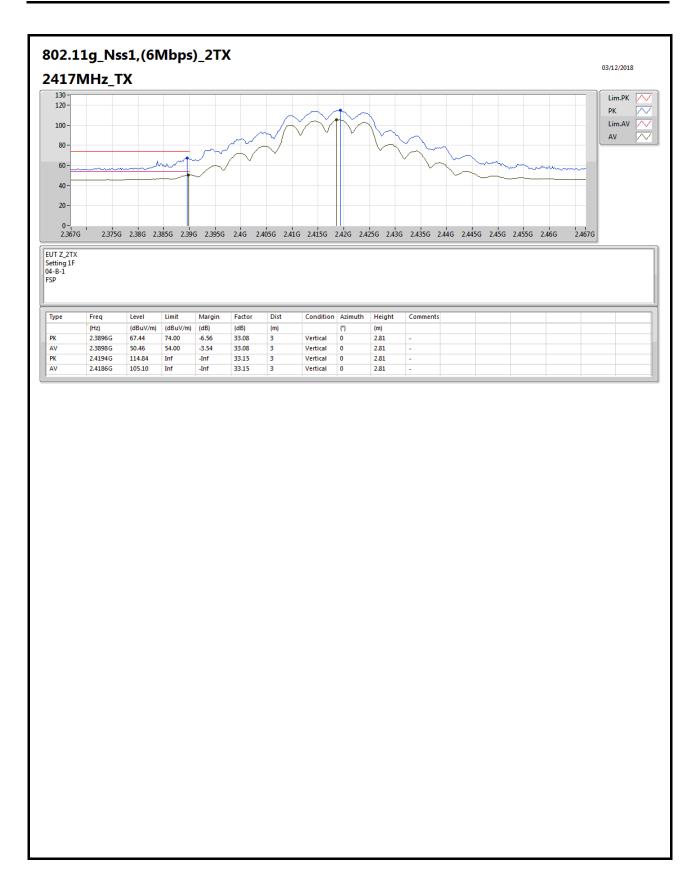


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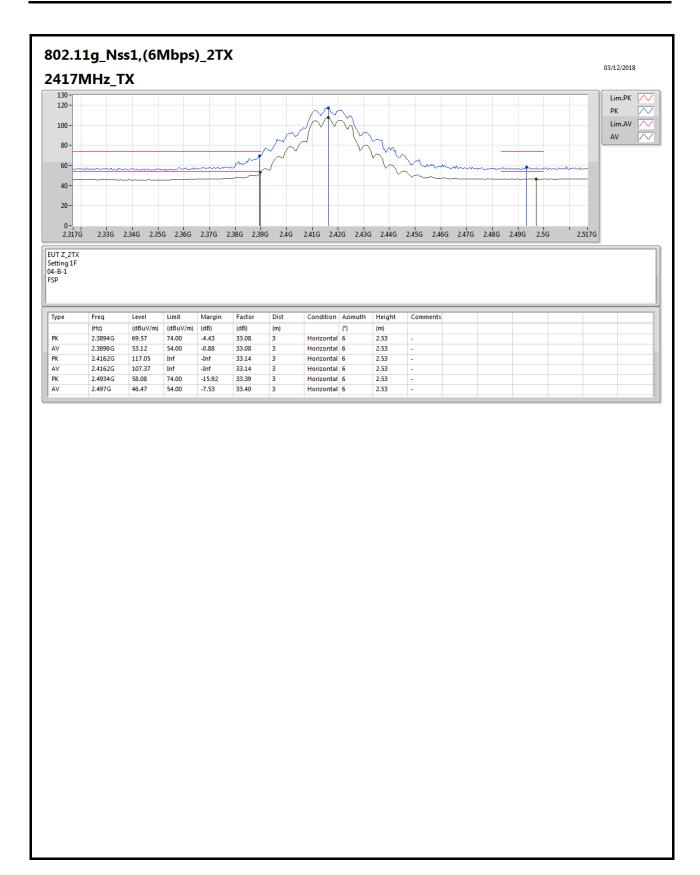






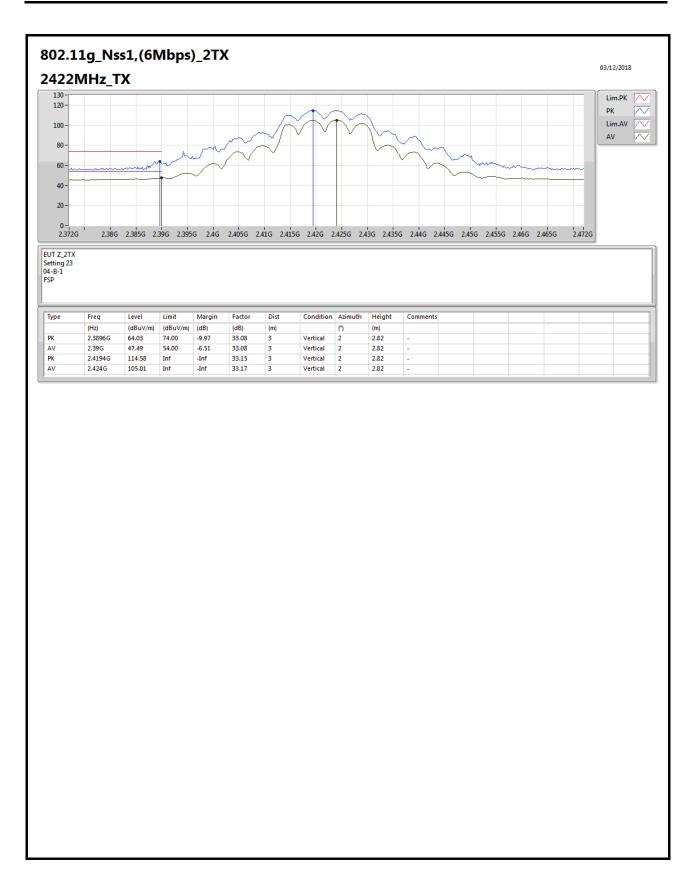
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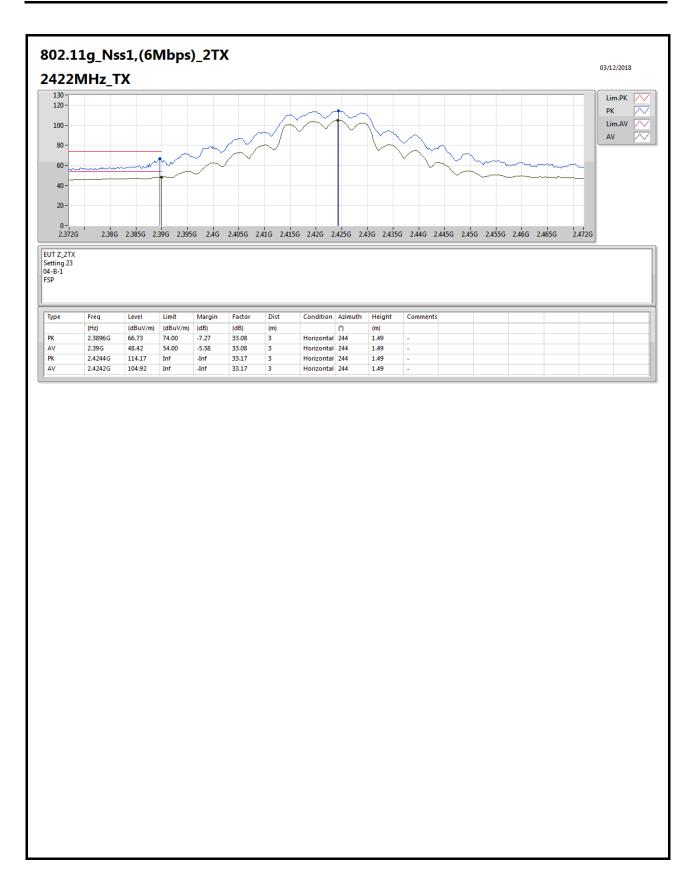


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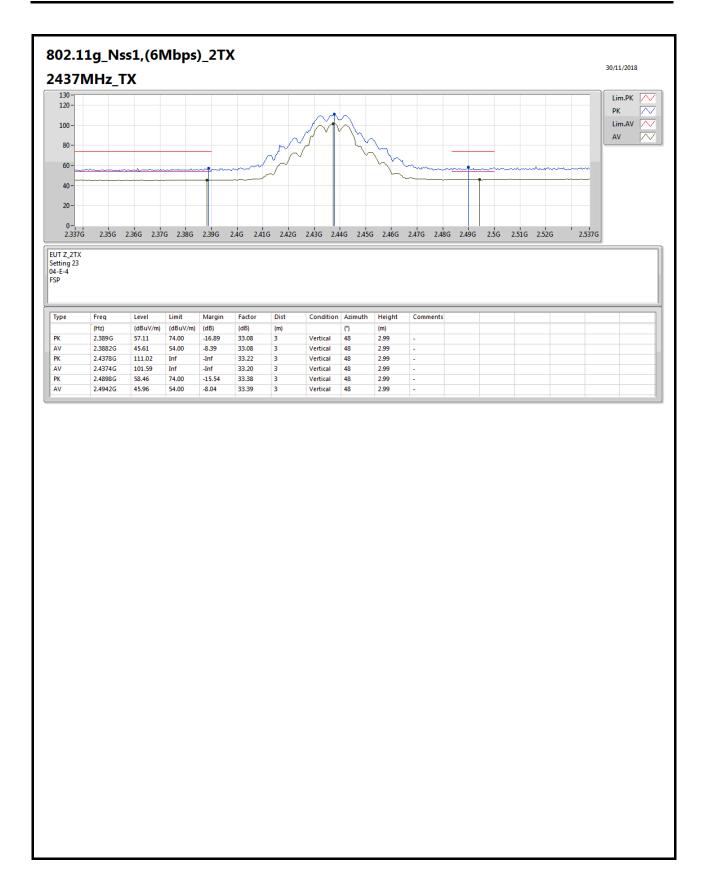






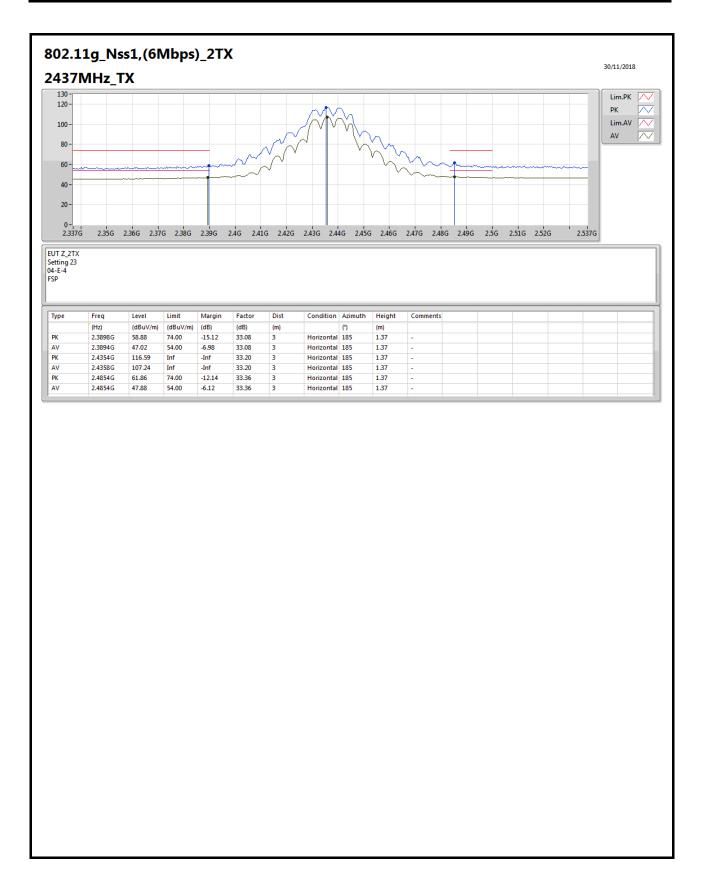




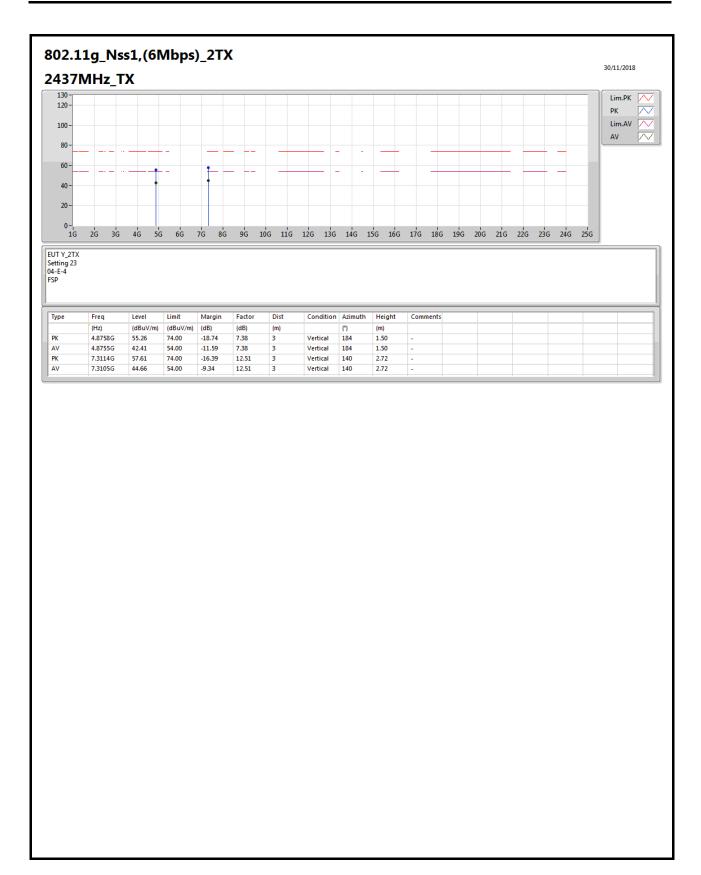


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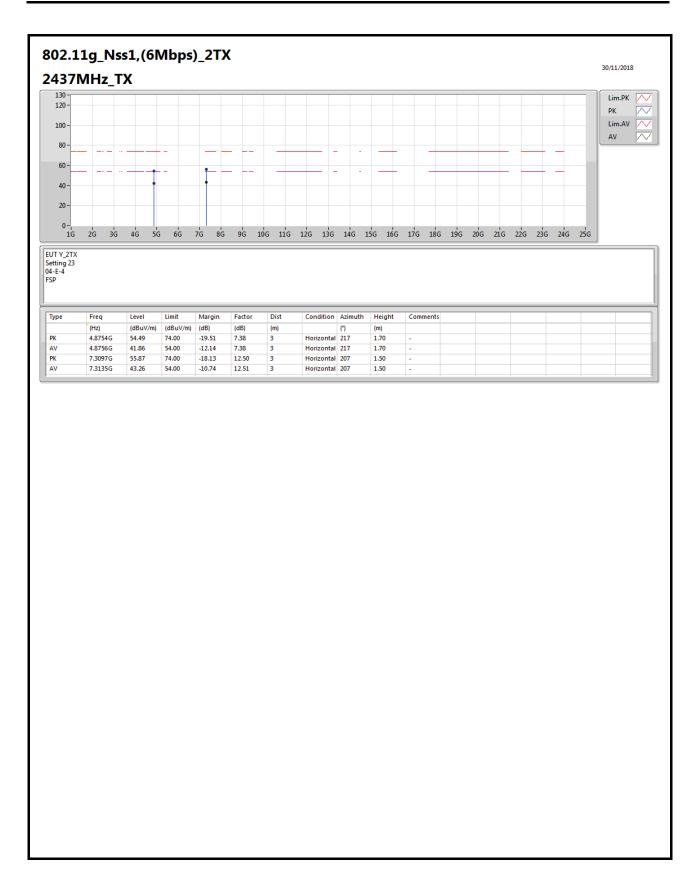






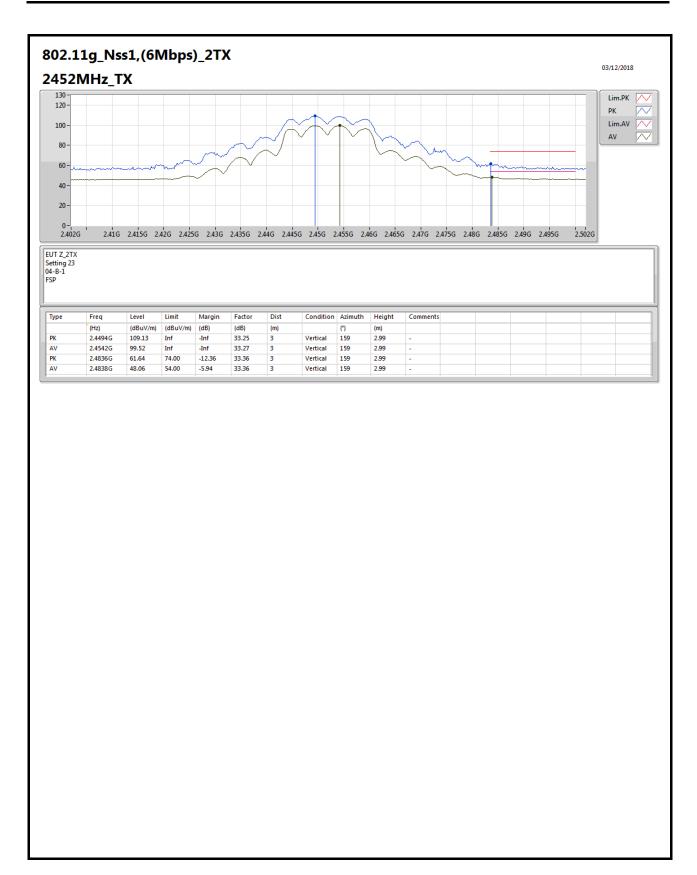
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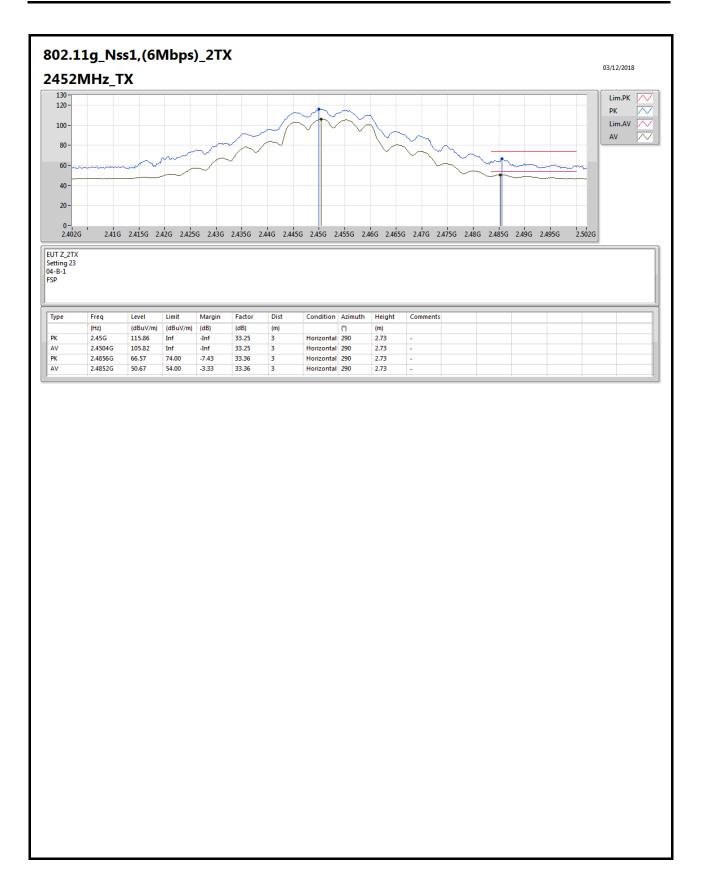


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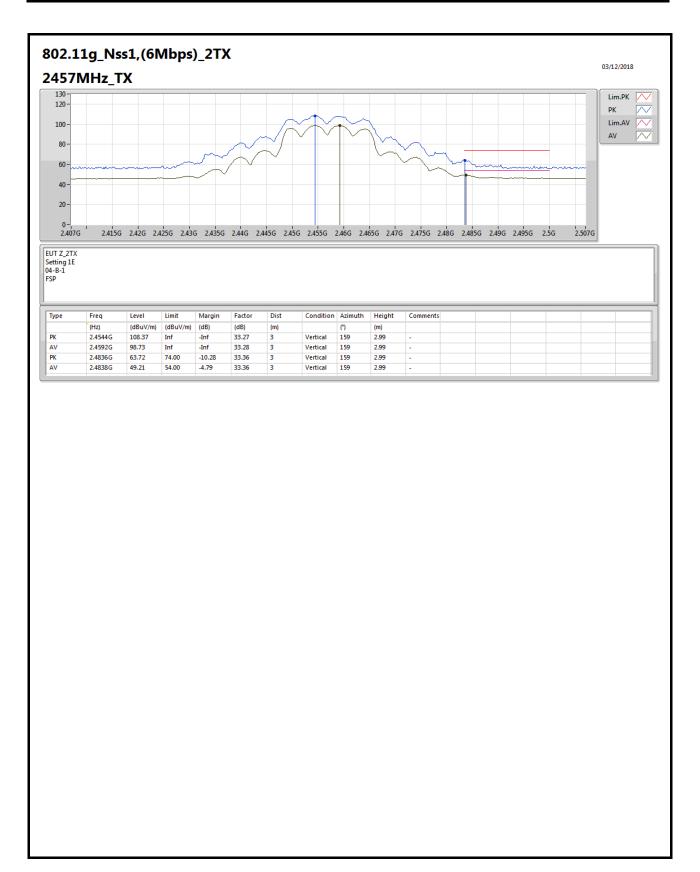




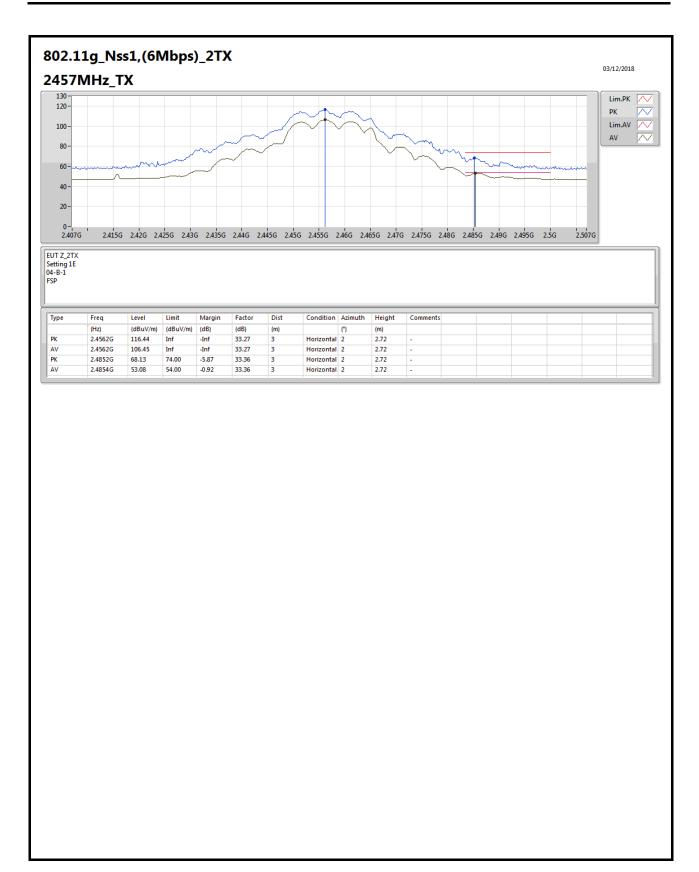




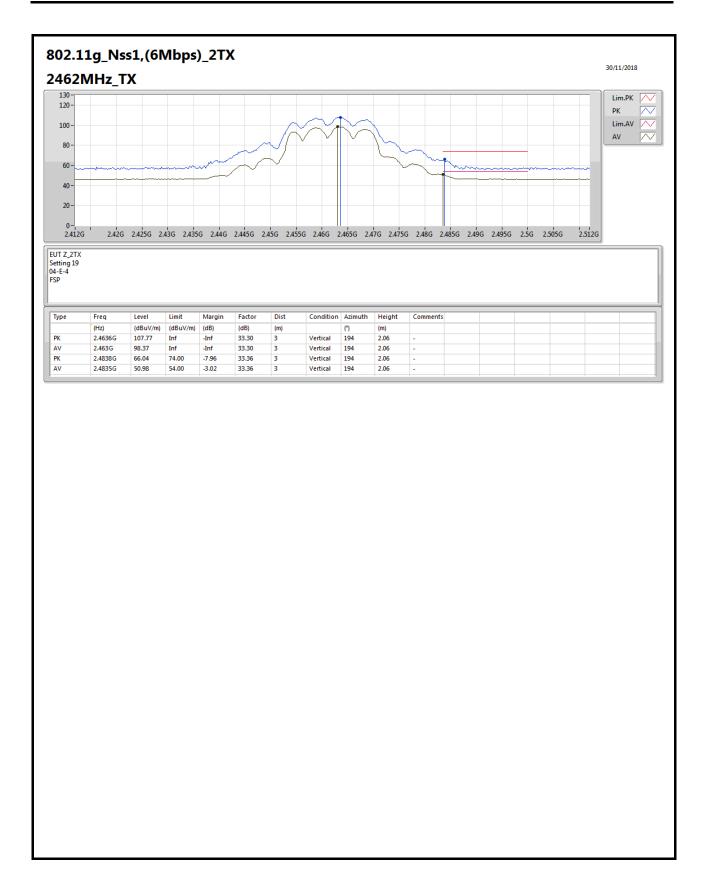






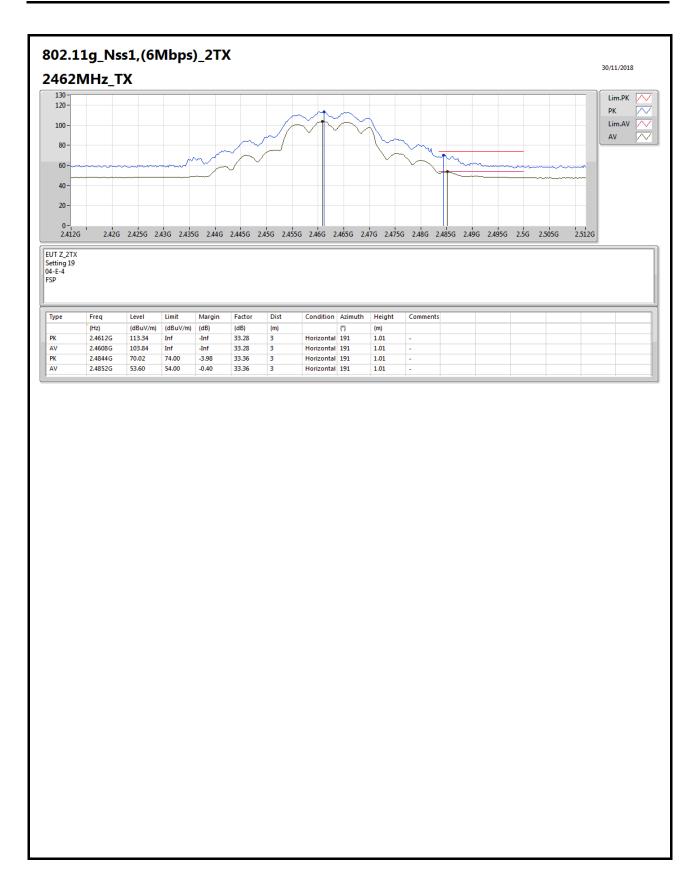




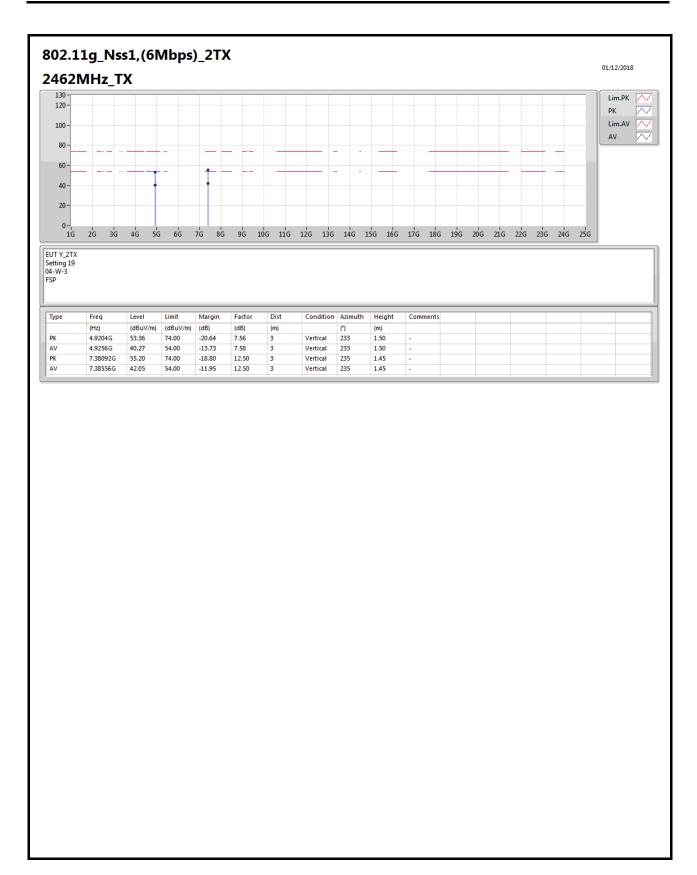


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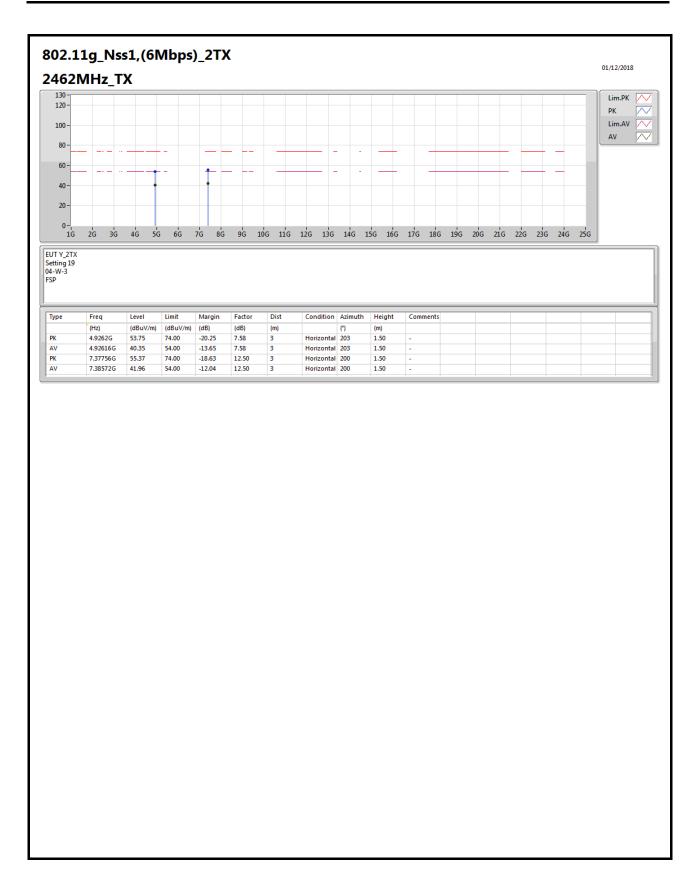




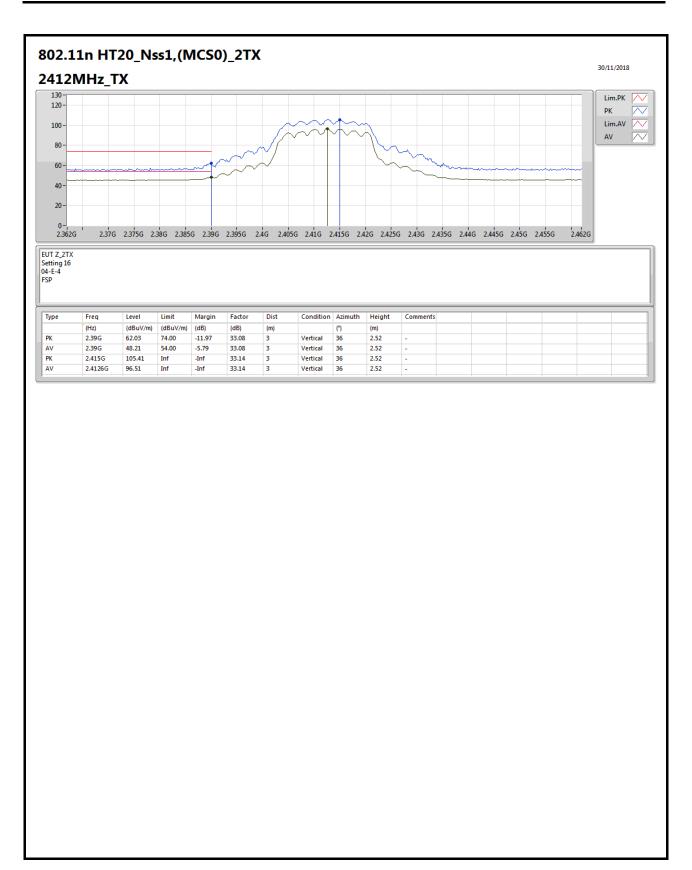


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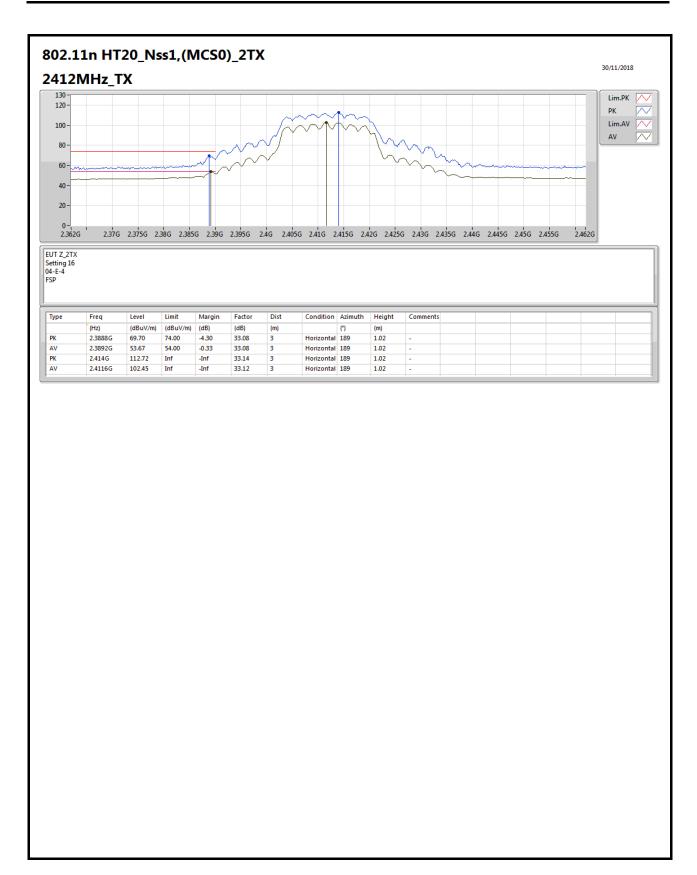




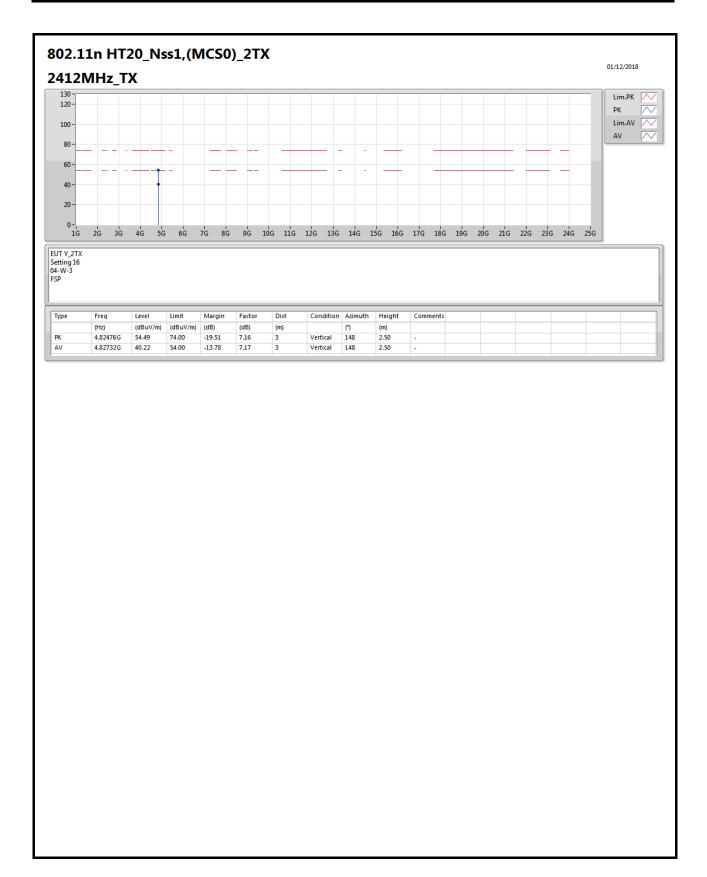






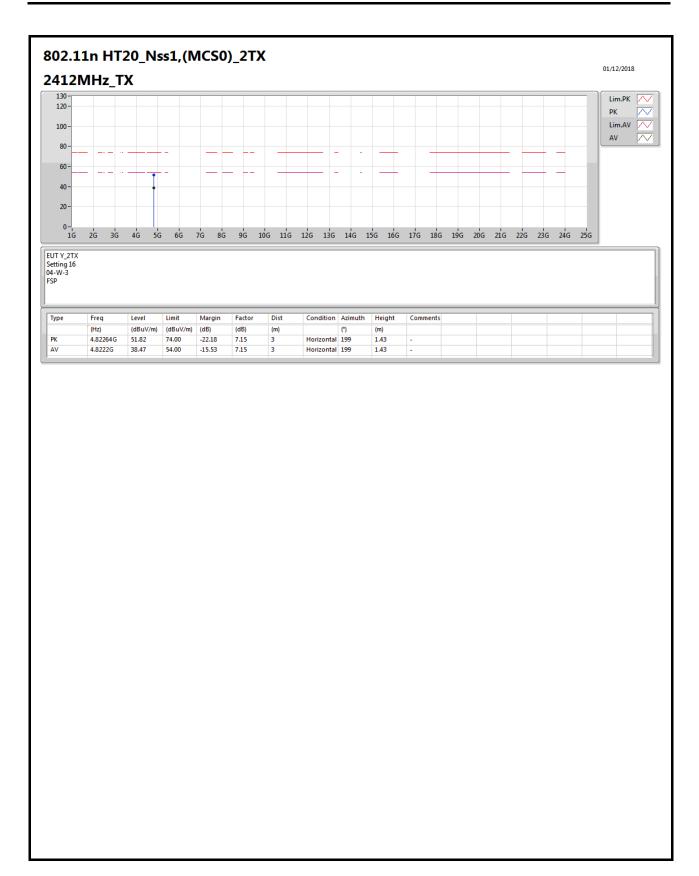






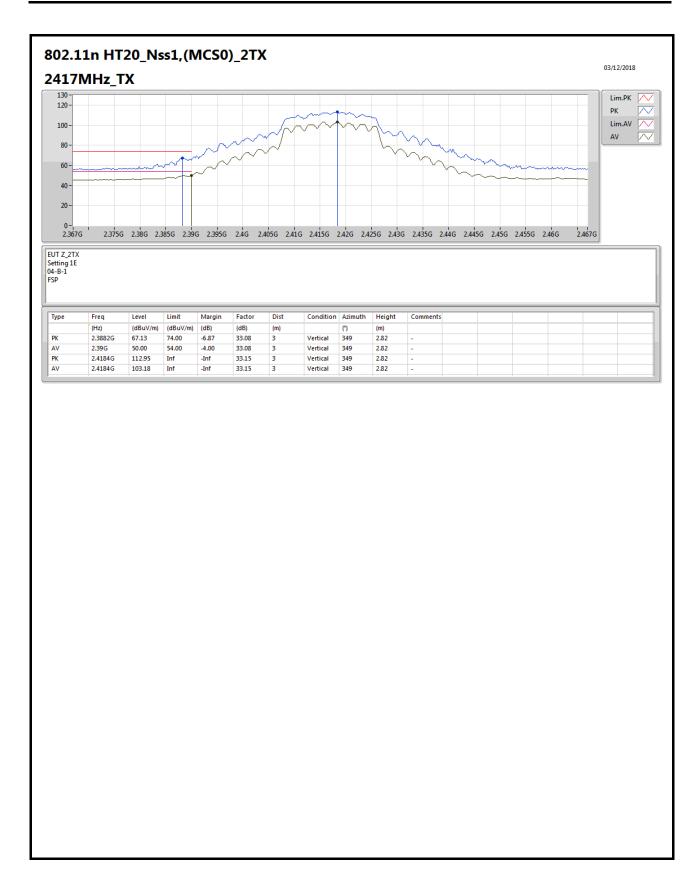
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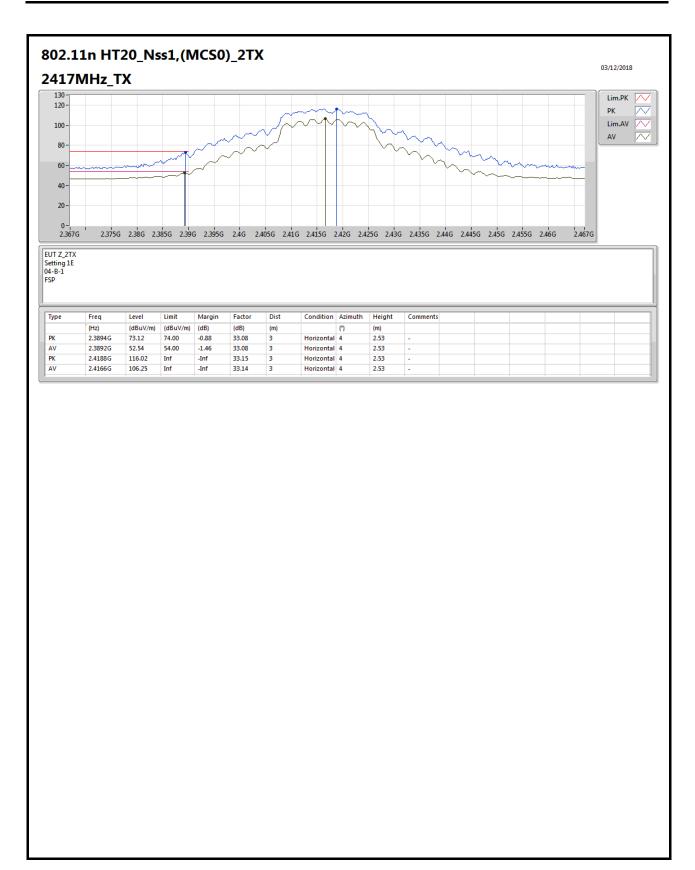


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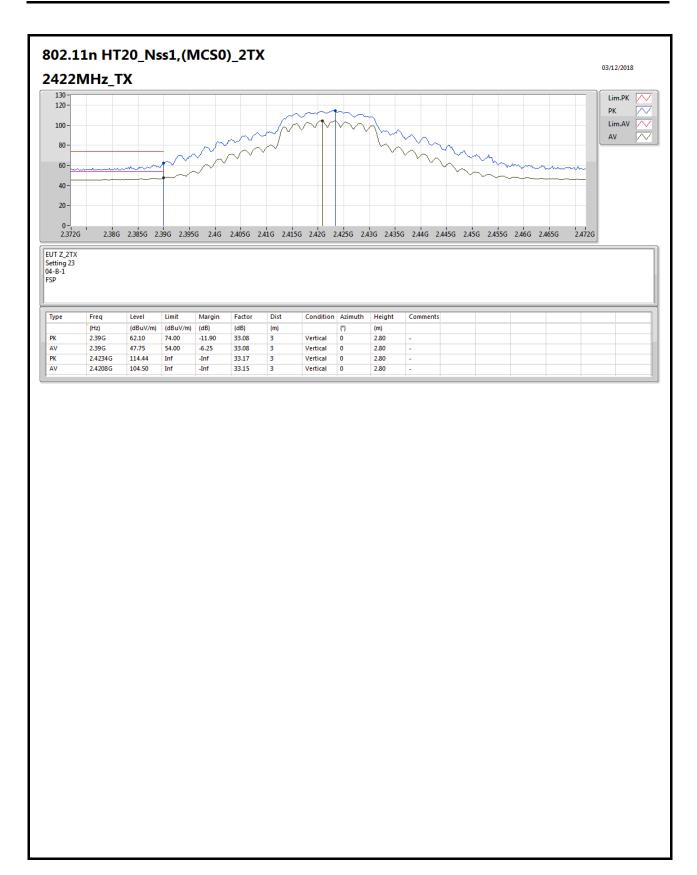




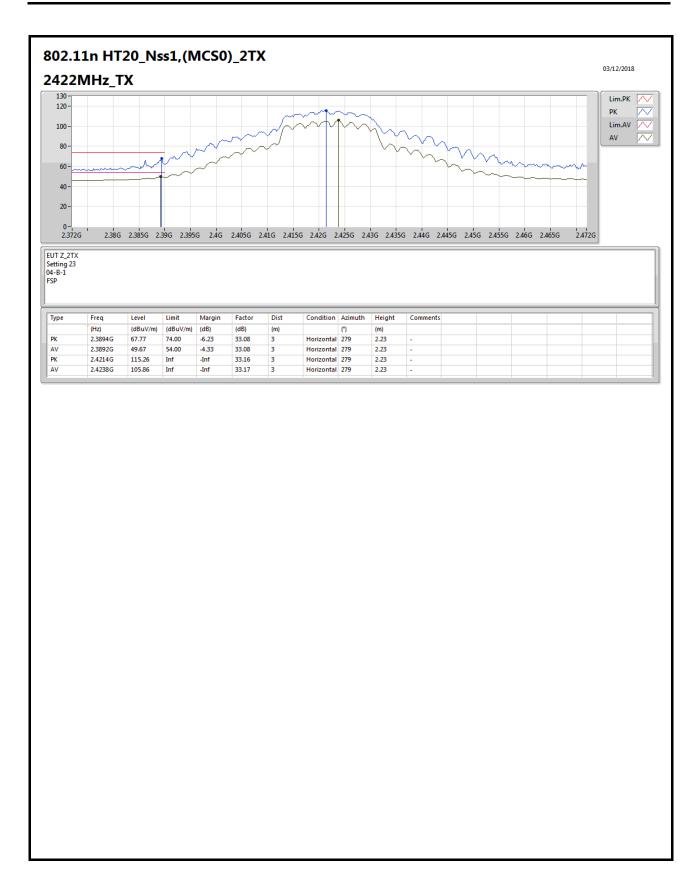




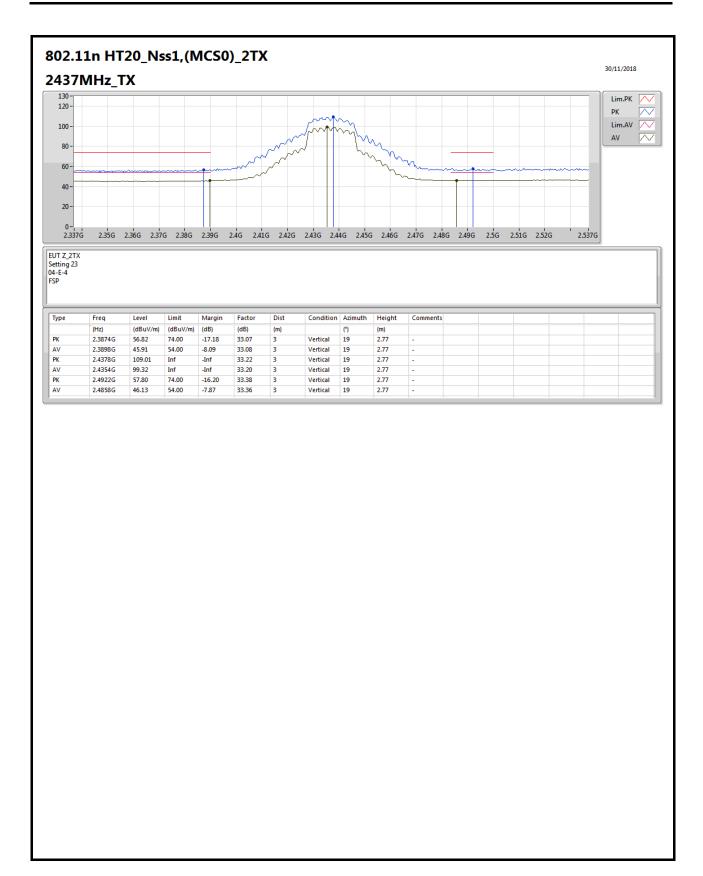




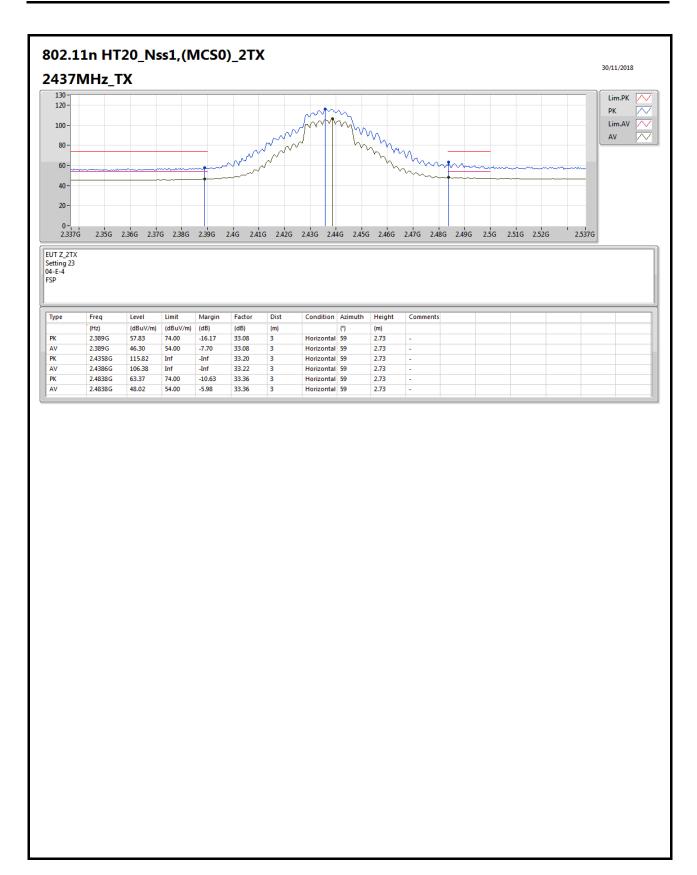




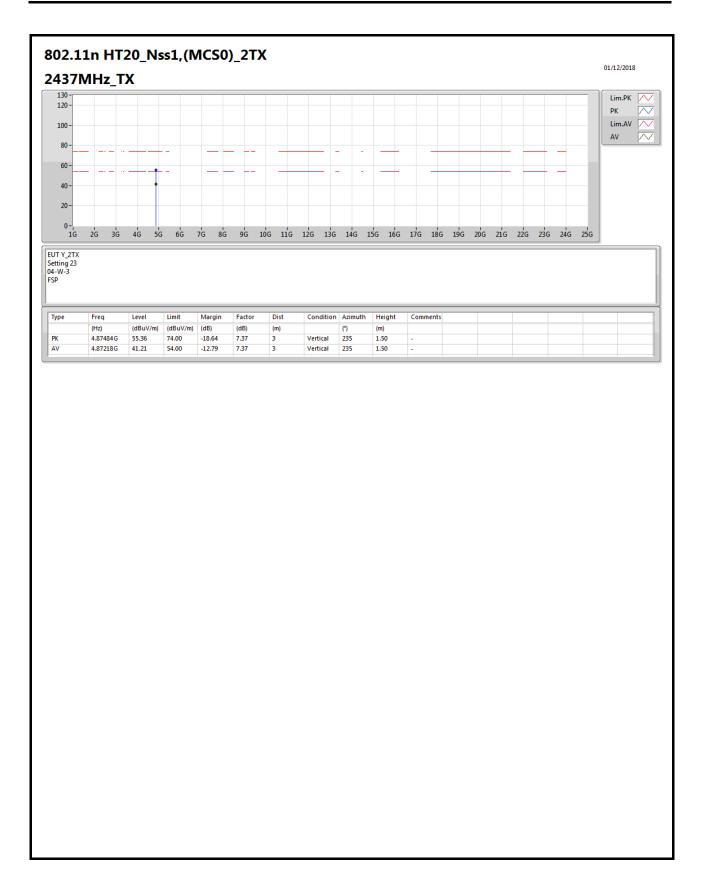




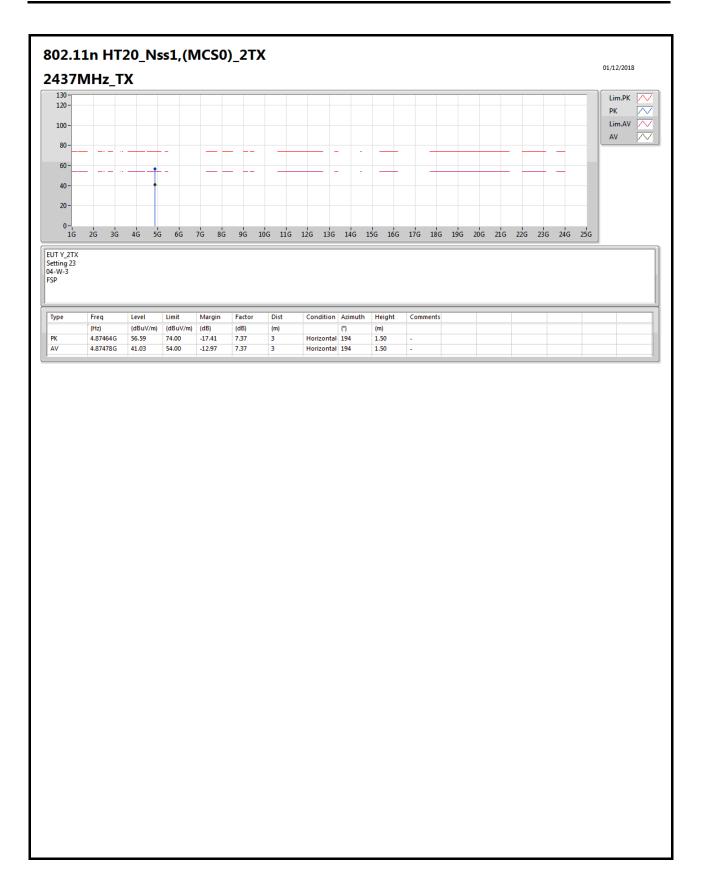




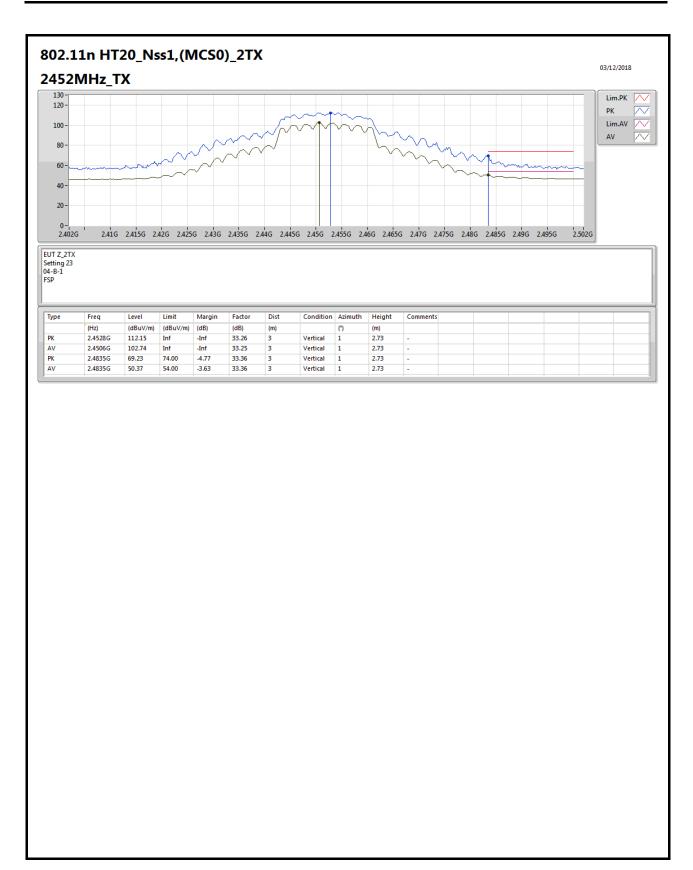




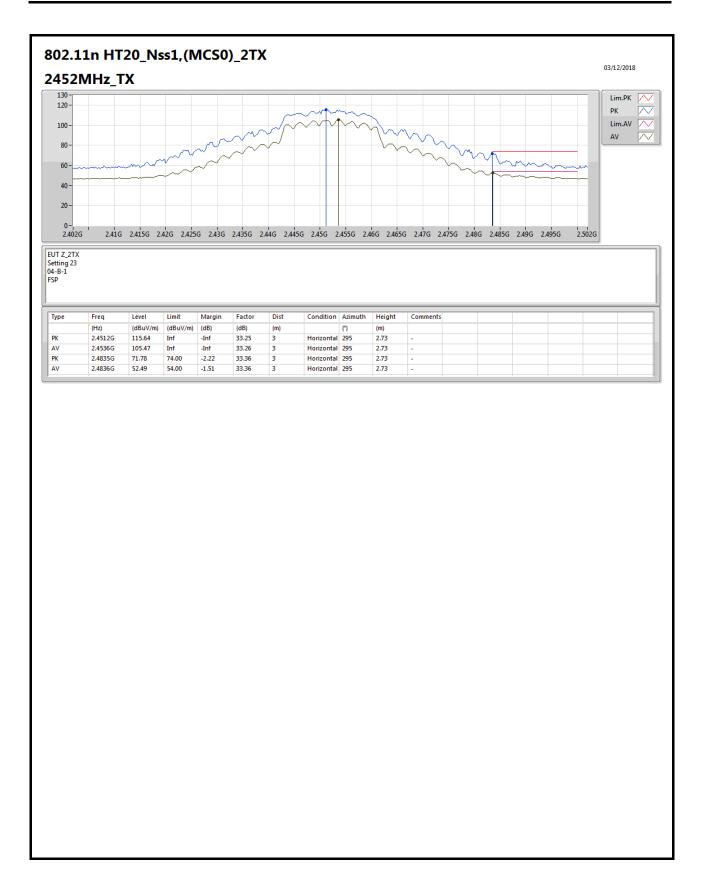




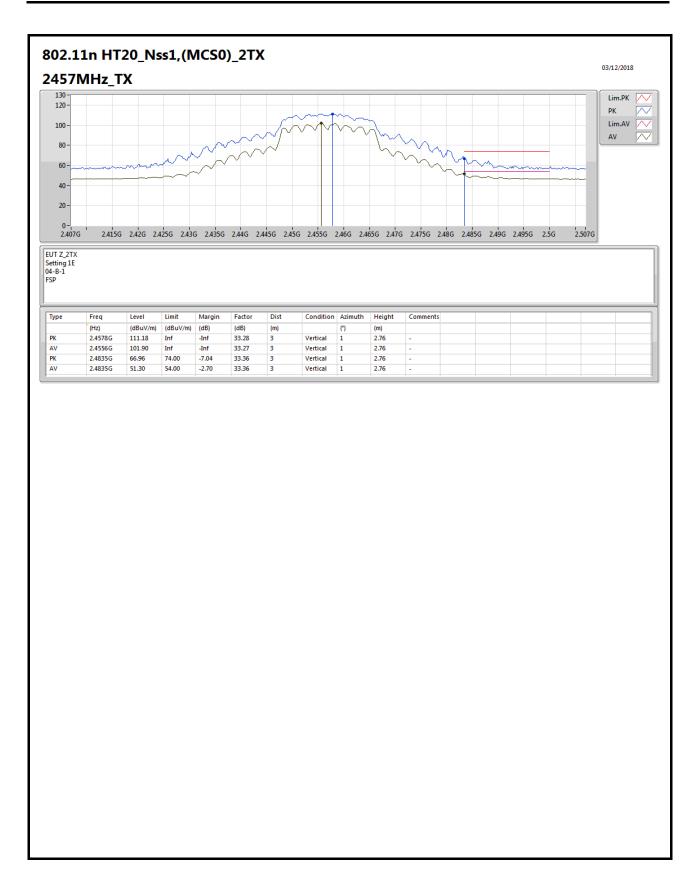




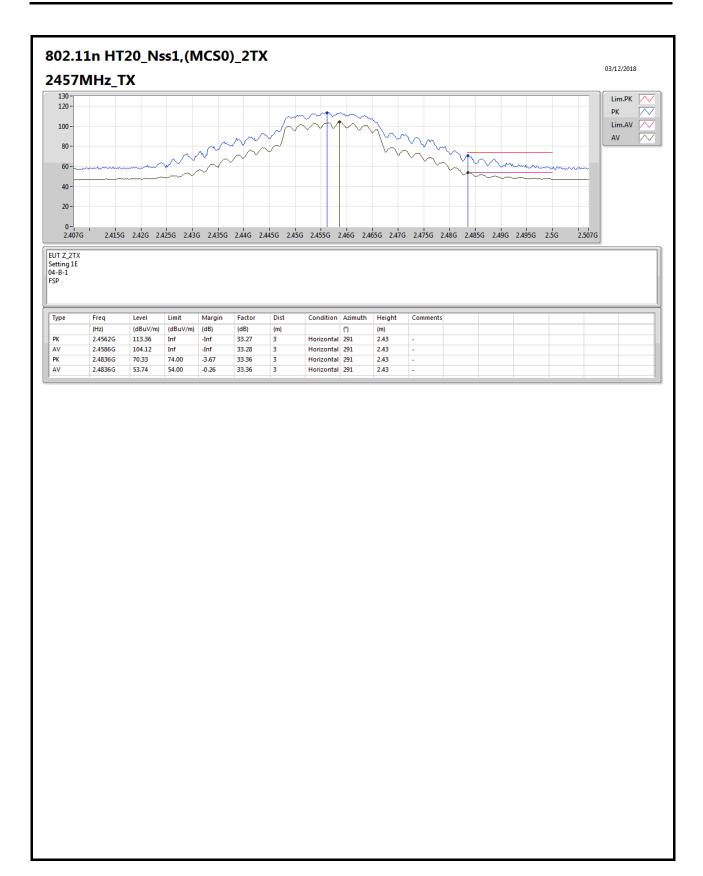




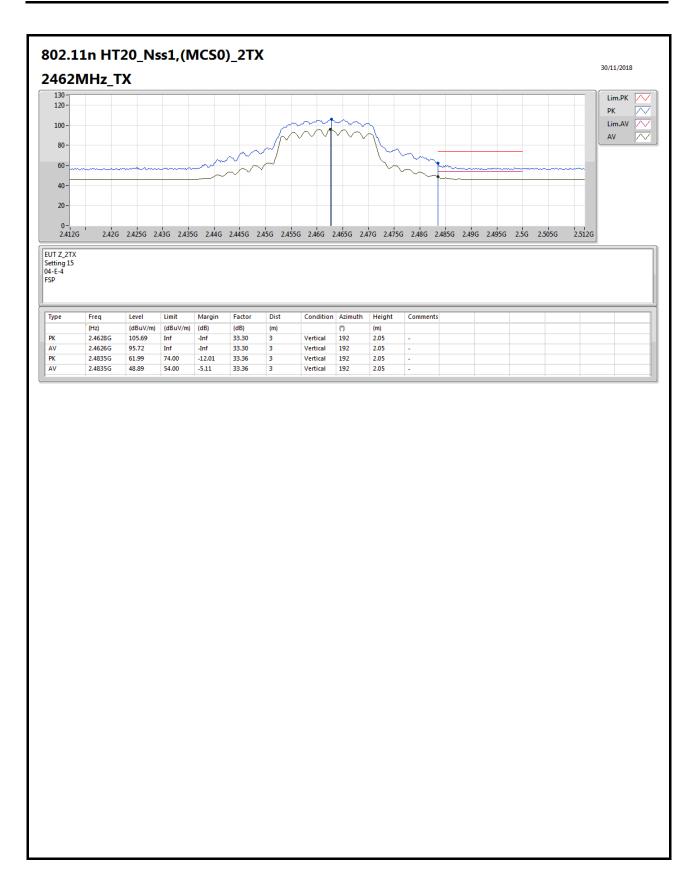






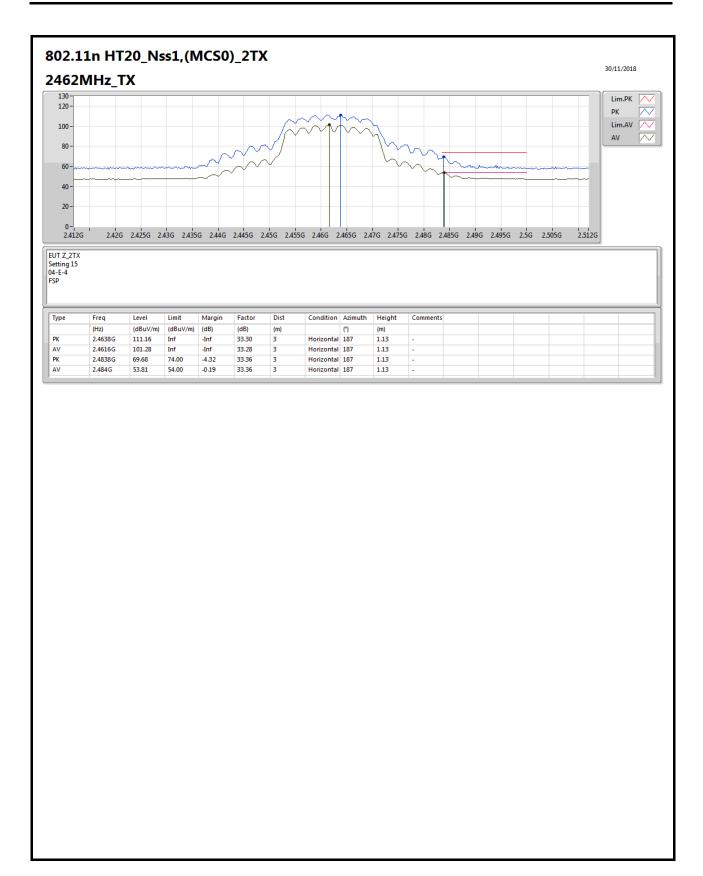




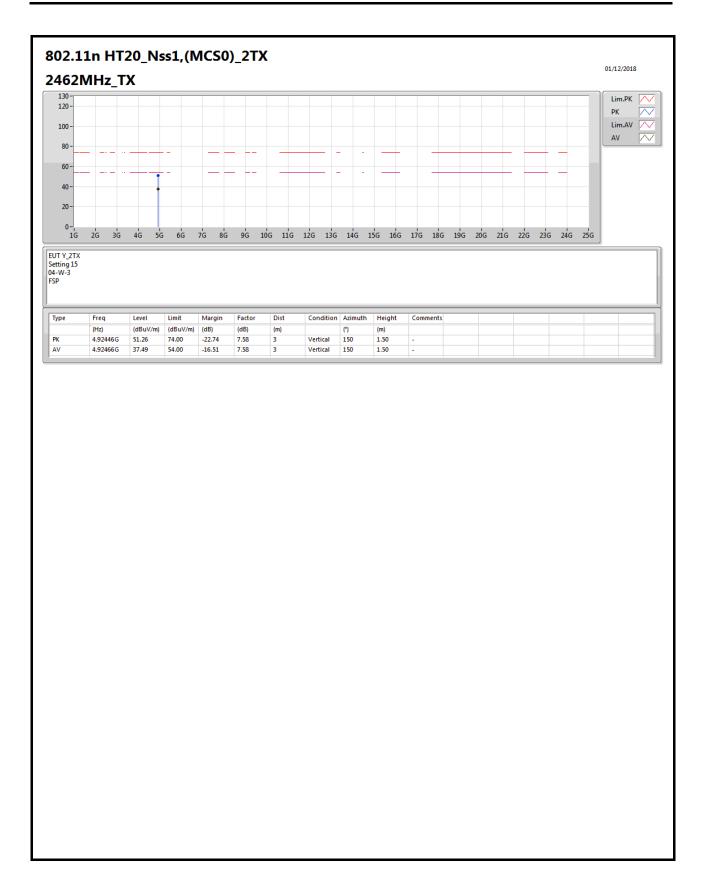


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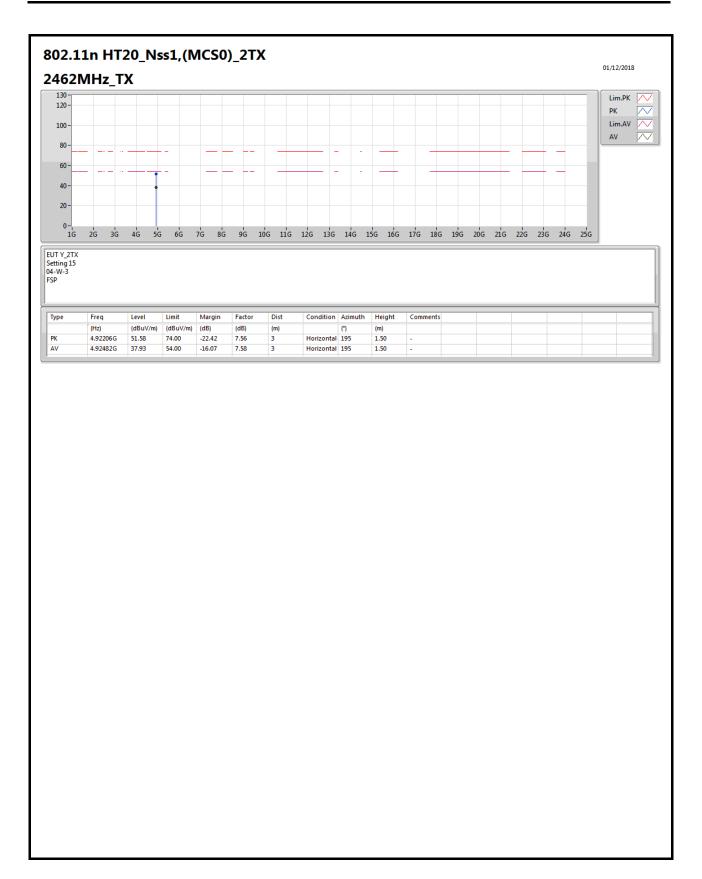




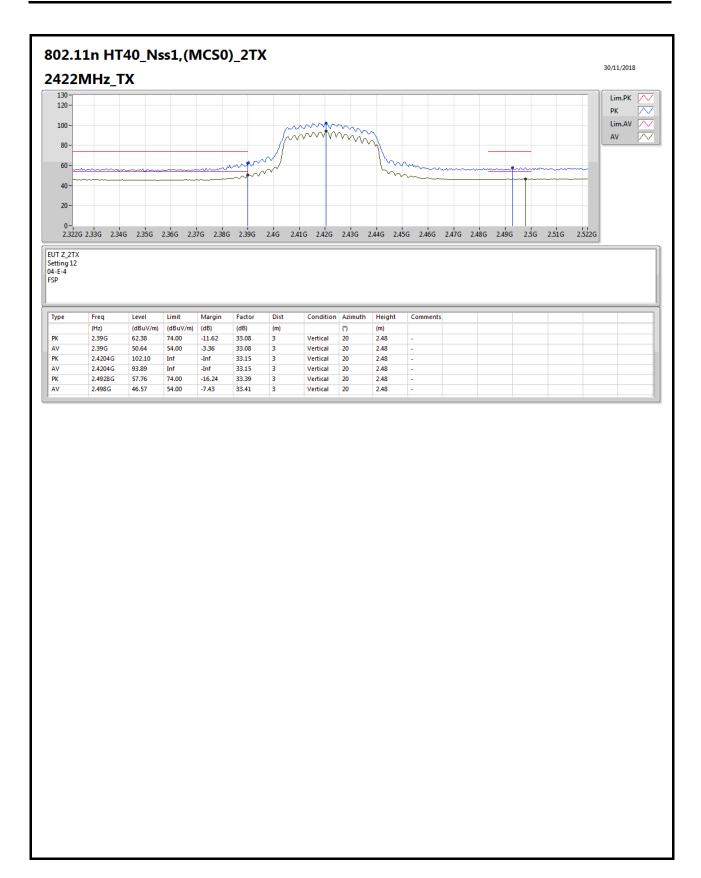






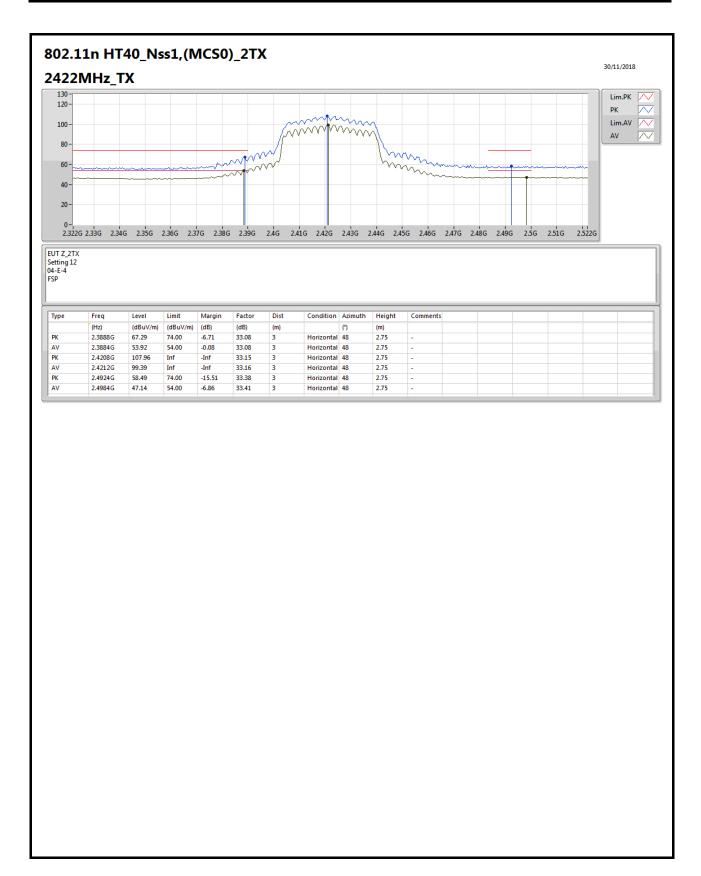






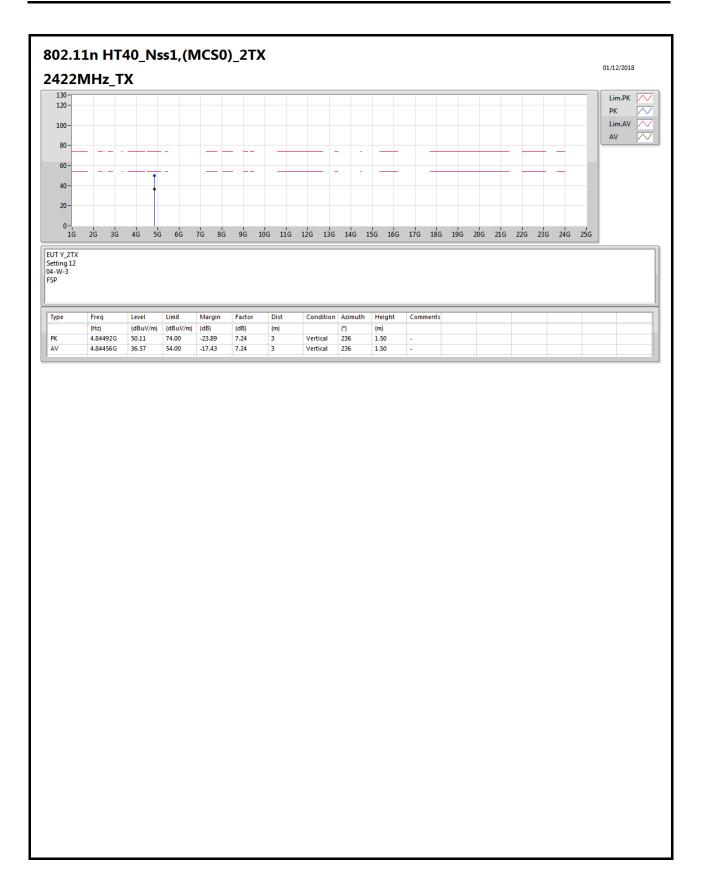
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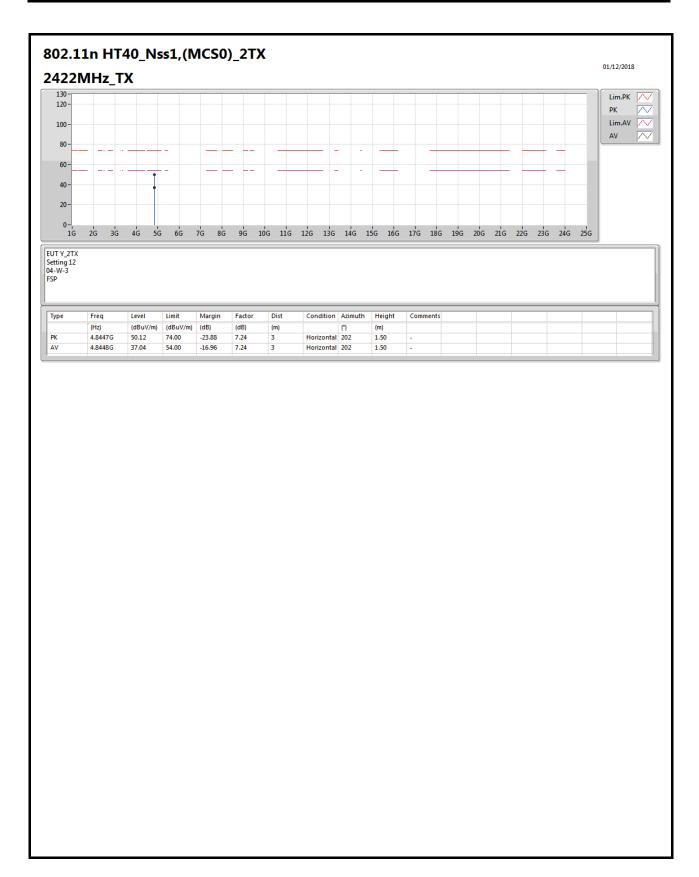


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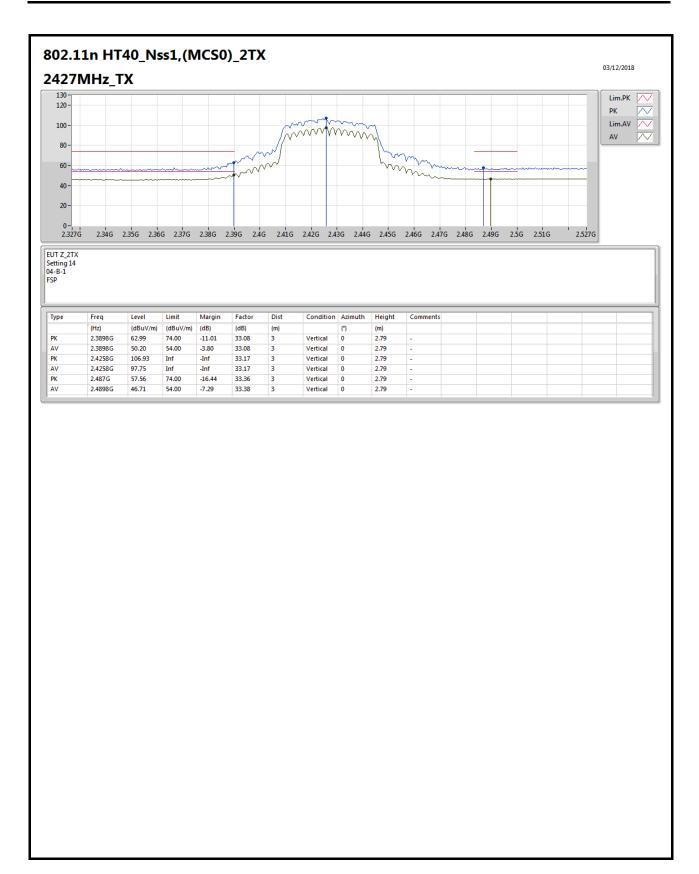




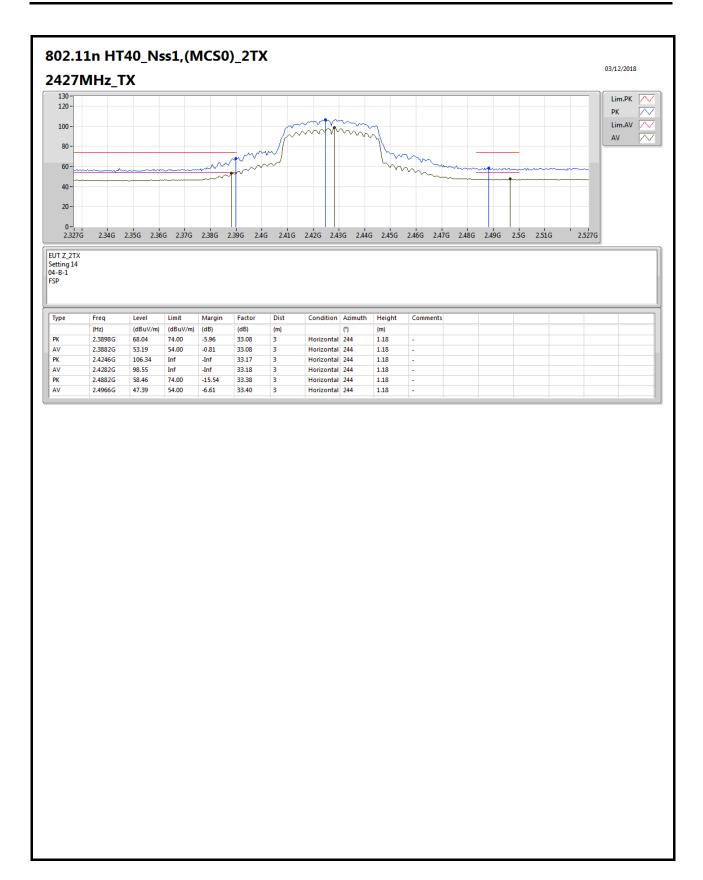


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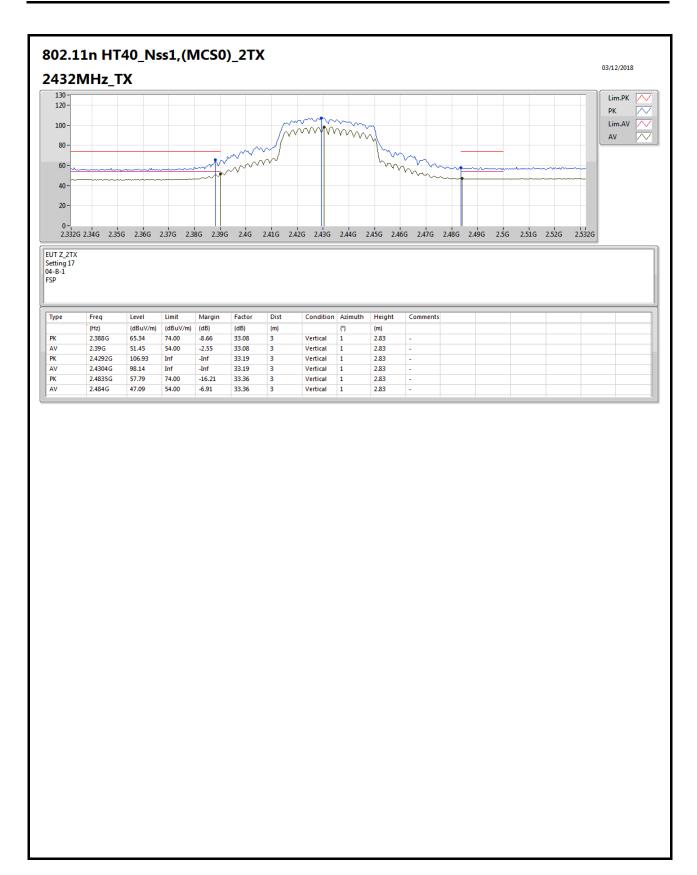






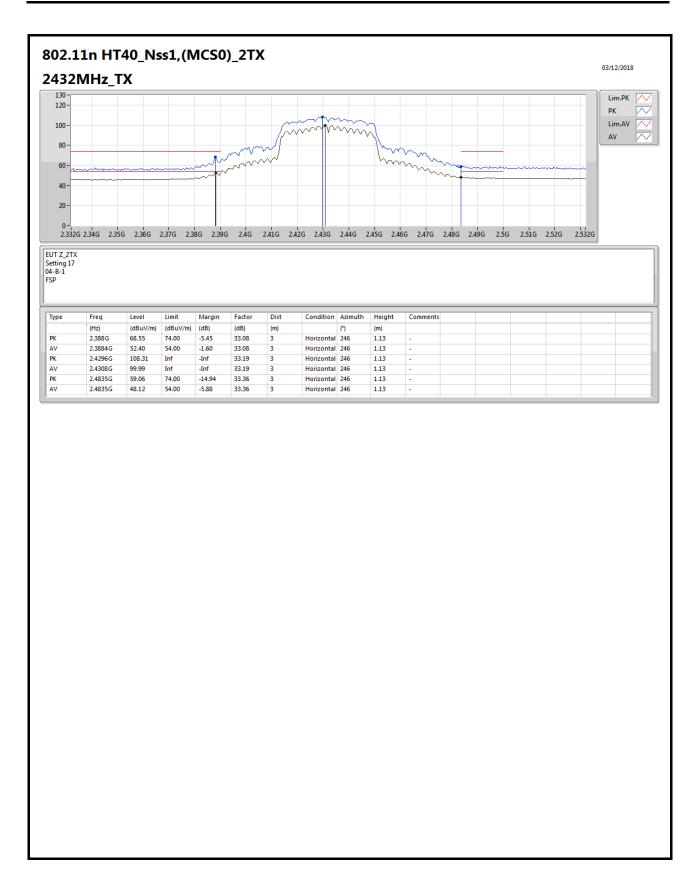




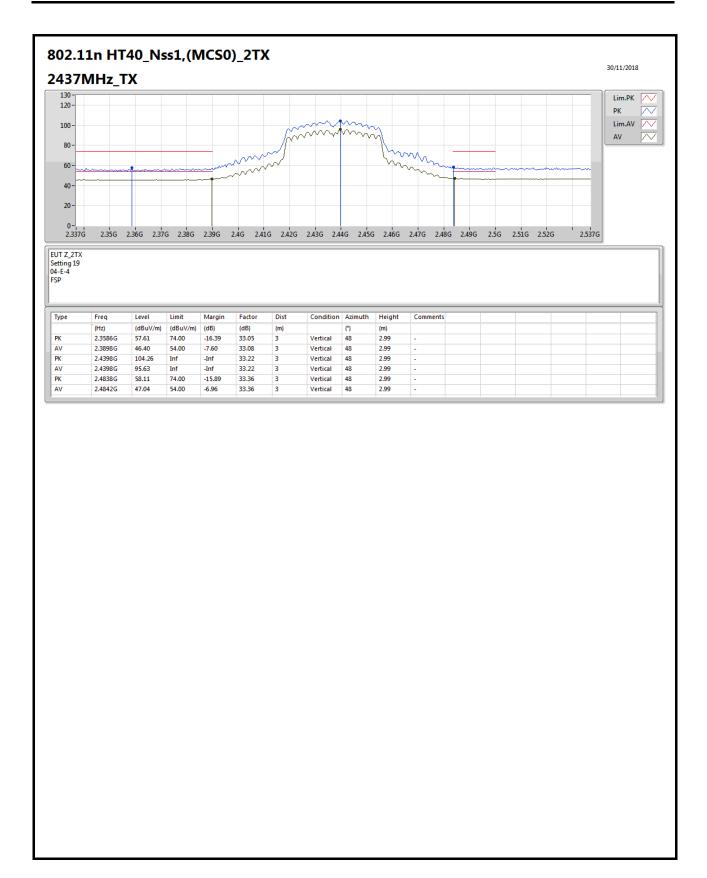


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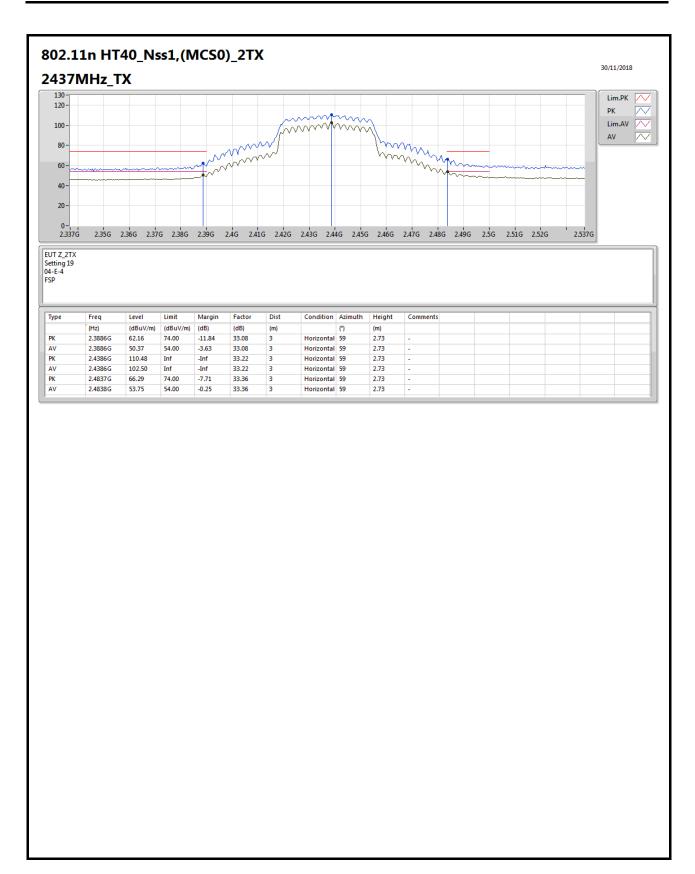




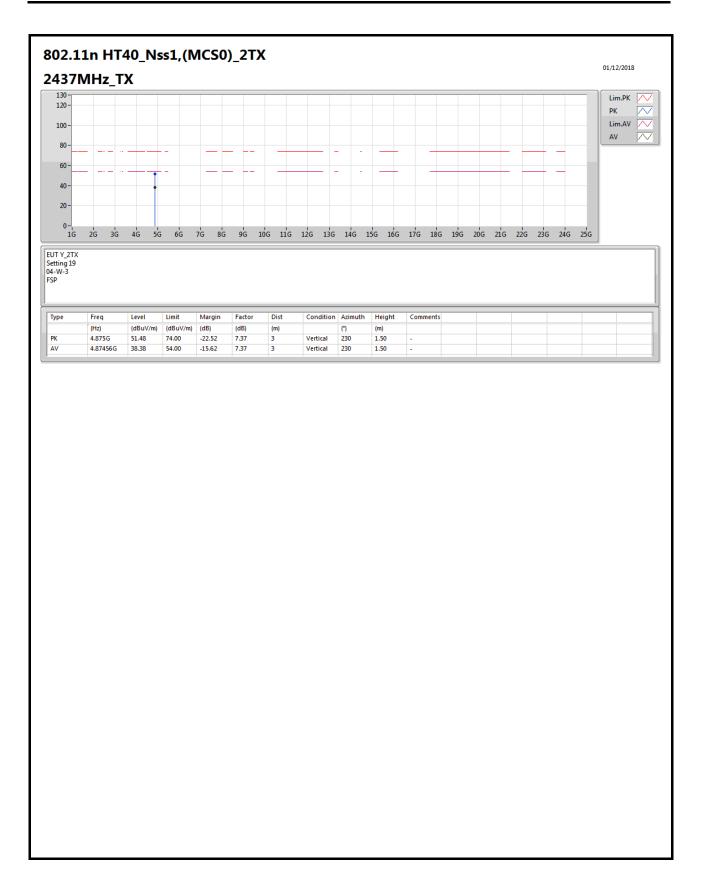


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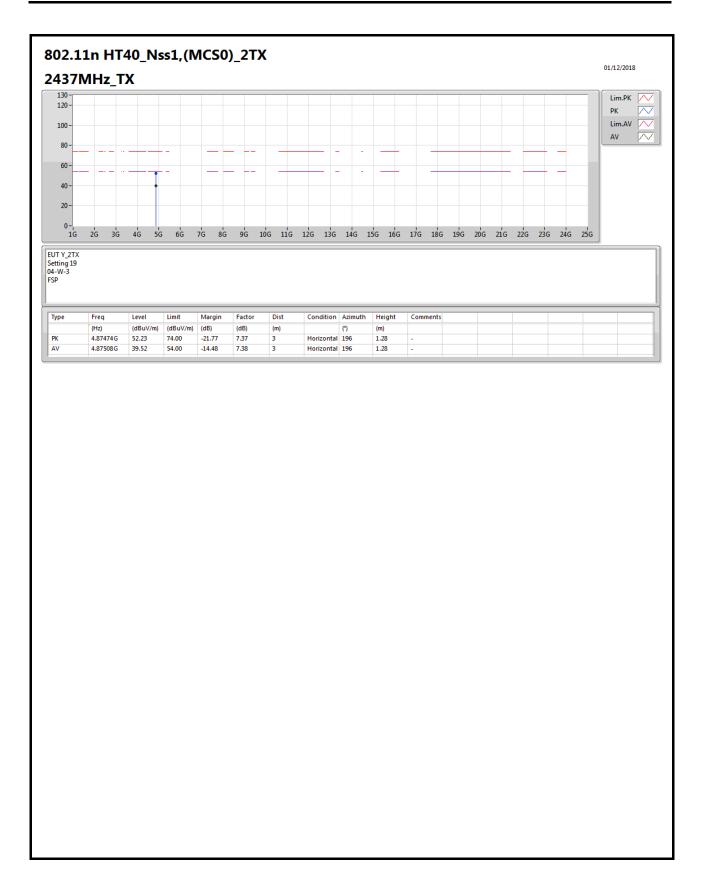




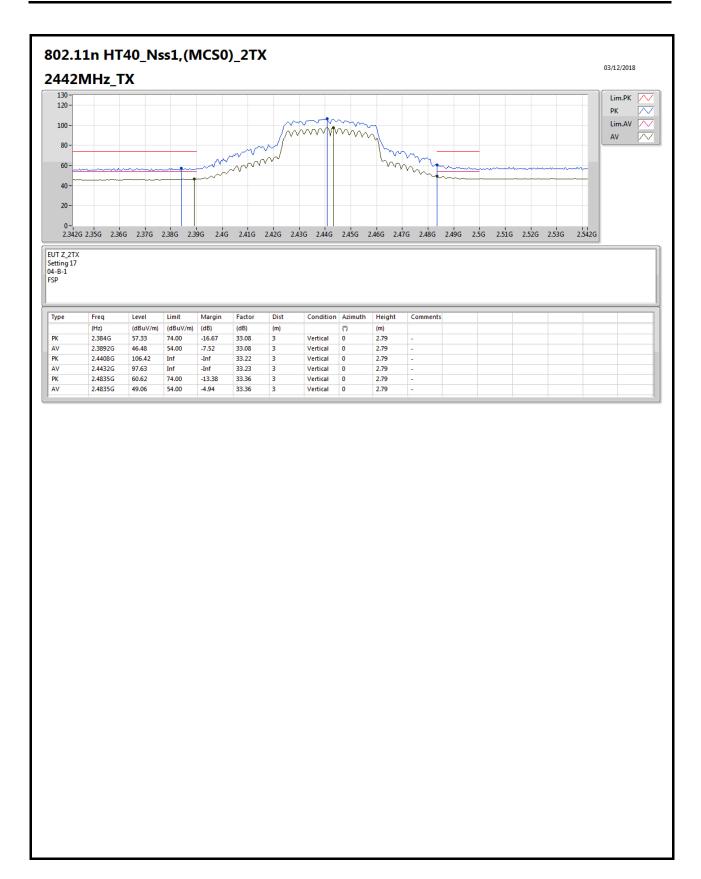






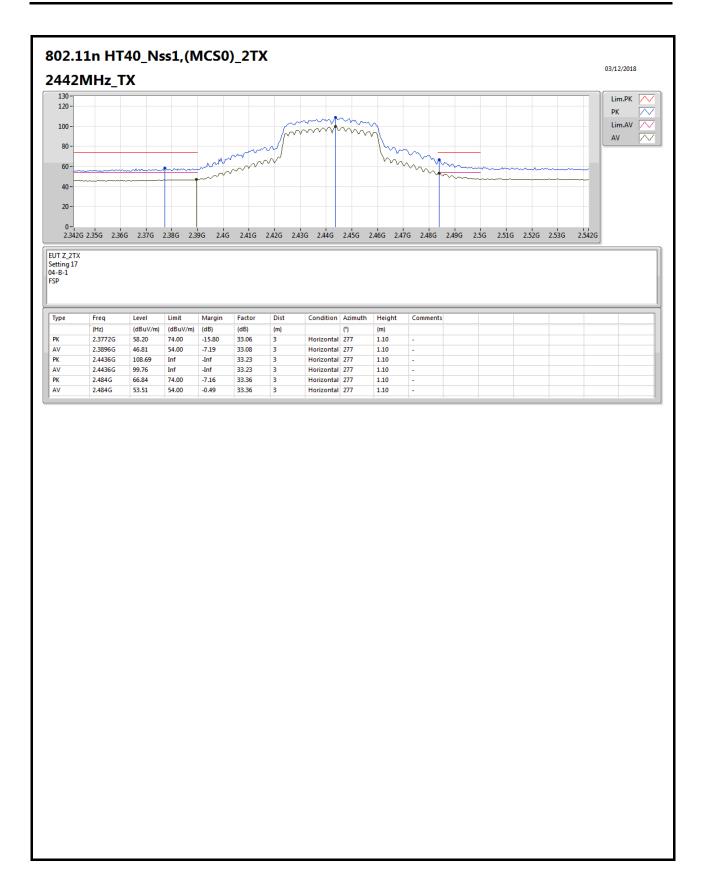




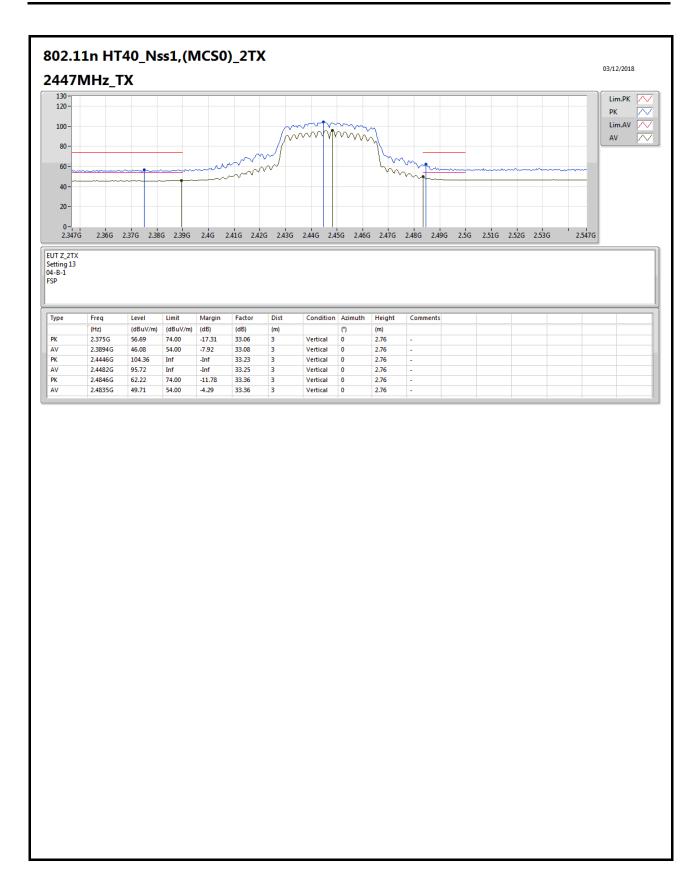


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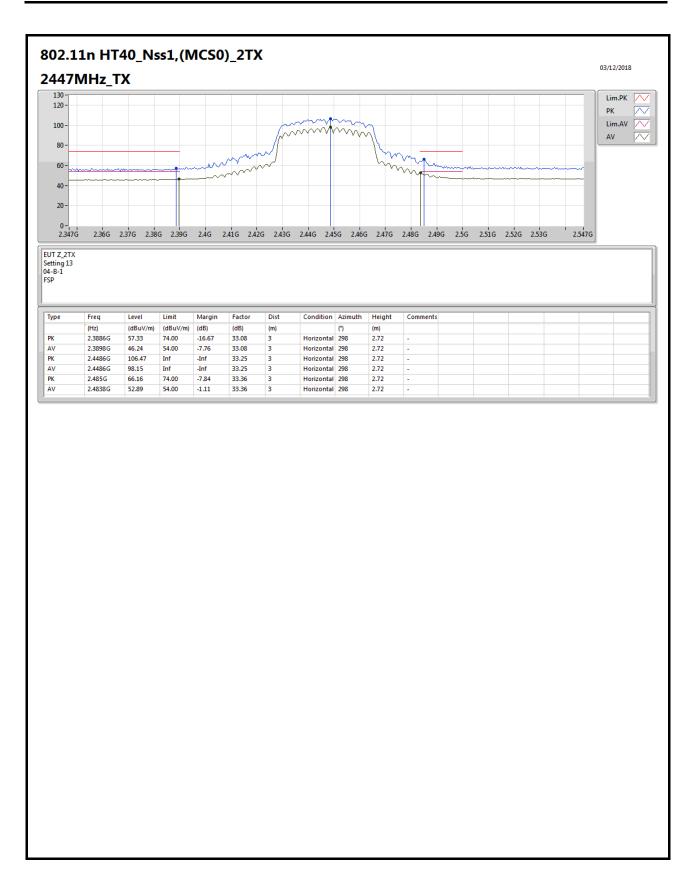






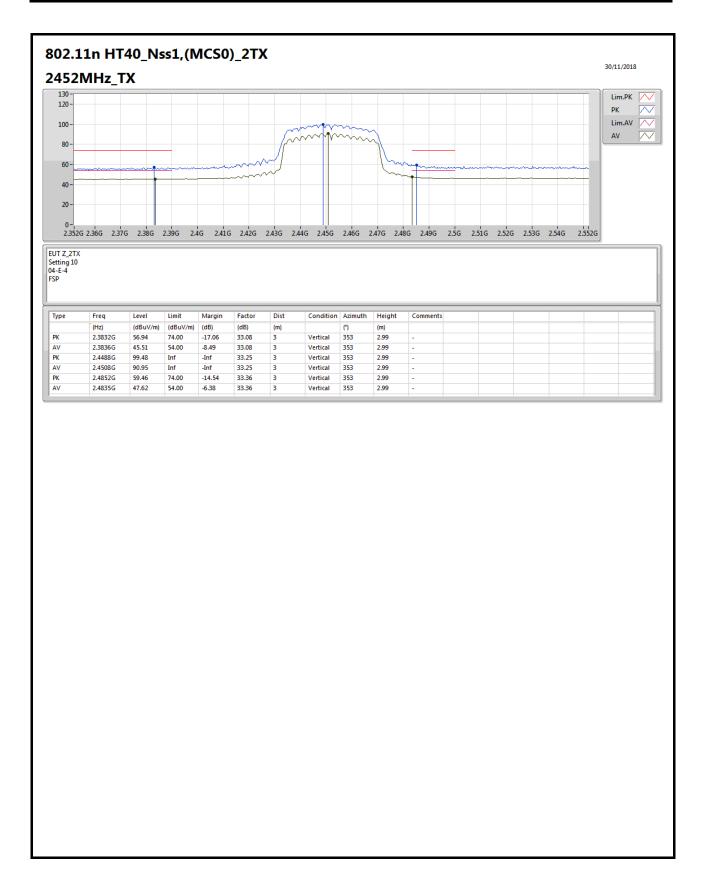
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