

Project No: CB10612252

FCC Test Report

Equipment : 802.11 bgn Wireless module

Brand Name : REALTEK

Model No. : RTL8710BN

FCC ID : TX2-RTL8710BN

Standard : 47 CFR FCC Part 15.247

Operating Band : 2400 MHz - 2483.5 MHz

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

Applicant : Realtek Semiconductor Corp.

No. 2, Innovation Road II, Hsinchu Science Park,

Hsinchu 300, Taiwan

Manufacturer : Realtek Semiconductor Corp.

No. 2, Innovation Road II, Hsinchu Science Park,

Hsinchu 300, Taiwan

The product sample received on Nov. 15, 2017 and completely tested on Dec. 20, 2017. 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.







FCC Test Report

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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
FR7N0117	Rev. 01	Initial issue of report	Dec. 26, 2017

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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)	2412-2472	1-13 [13]
2400-2483.5	n (HT40)	2422-2462	3-11 [9]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	1TX
2.4-2.4835GHz	802.11n HT20	20	1TX
2.4-2.4835GHz	802.11n HT40	40	1TX

Note:

- 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.	Brand	Model Name (P/N)	Antenna Type	Connector	Gain (dBi)
1	REALTEK	Ameba-AM0001	Printed Antenna	N/A	2.9
2	JOYMAX	TWF-614XMPXX-500	Dipole Antenna	I-PEX	3.0
3	LYNwave	ALA110-222050-300010	PIFA Antenna	I-PEX	3.5

Note: The EUT has three type antennas.

For conducted test, only the highest antenna gain (PIFA Ant.) has been tested and recorded in the test report.

For radiated test, all antennas has been tested and recorded in the test report.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT20	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT40	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

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1.1.4 EUT Operational Condition

EUT Power Type	From host system	
Beamforming Function	☐ With beamforming ☑ Without beamform	ing
Test Software Version	UI_mptool	

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1.2 Testing Applied Standards

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

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

1.3 Testing Location Information

	Testing Location					
	HWA YA	ADD	:	o. 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	Stim Sung	22°C / 54%	Dec. 18, 2017 ~ Dec. 20, 2017
Radiated	03CH01-CB	Jeff Wu, Nyle Chang, Justin Lin	22°C / 54%	Dec. 14, 2017 ~ Dec. 19, 2017
AC Conduction	CO01-CB	Wei Li	25°C / 63%	Dec. 14, 2017

Test site Designation No. TW0006 with FCC.

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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Test site registered number IC 4086D with Industry Canada.



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	36
2437MHz	36
2462MHz	36
2467MHz	36
2472MHz	22
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	43
2437MHz	43
2462MHz	43
2467MHz	43
2472MHz	38
802.11n HT20_Nss1,(MCS0)_1TX	-
2412MHz	43
2437MHz	43
2462MHz	43
2467MHz	43
2472MHz	37
802.11n HT40_Nss1,(MCS0)_1TX	-
2422MHz	43
2437MHz	43
2452MHz	43
2457MHz	43
2462MHz	43

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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 CTX		
		1
2	EUT + Ant.2	
3	EUT + Ant.3	
For operating mode 2 is the worst case and it was record in this test report.		

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
1	EUT + Ant.3

Th	e 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.		
position for Radiated emiss	The EUT was performed for printed antenna, dipole antenna and PIFA antenna at X axis, Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found for printed antenna at X axis, dipole antenna and PIFA antenna at Y axis. So the measurement will follow this same test configuration.		
Operating Mode < 1GHz CTX			
1	EUT in X aixs + Ant.1		
2	EUT in Y axis + Ant.2		
3	EUT in Y axis + Ant.3		
For operating mode 3 is th	For operating mode 3 is the worst case and it was record in this test report.		
The EUT was performed for printed antenna, dipole antenna and PIFA antenna at X axis, Y axis and Z axis position, and the worst case was found for printed antenna at X axis, dipole antenna and PIFA antenna at Y axis. So the measurement will follow this same test configuration.			
Operating Mode > 1GHz	стх		
1	EUT in X aixs + Ant.1		
2	EUT in Y axis + Ant.2		
3	EUT in Y axis + Ant.3		

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2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A

2.5 Support Equipment

For Test Site No: CO01-CB

	TO TEST ORD NO. OCCUPAN			
	Support Equipment			
No.	lo. Equipment Brand Name Model Name FCC ID			
1	Earphone	SHYARO CHI	MIC-04	N/A
2	Mouse	Logitech	M-U0026	DoC
3	NB	DELL	E6430	DoC
4	Fixture	RTL	AMEBAZ_DEV01_1V0	N/A

For Test Site No: TH01-CB and 03CH01-CB

10116	Tor lest site No. Thor-CD and oschor-CD			
	Support Equipment			
No.	No. Equipment Brand Name Model Name FCC ID			
1	Notebook	DELL	E4300	DoC
2	Fixture	RTL	AMEBAZ_DEV01_1V0	N/A

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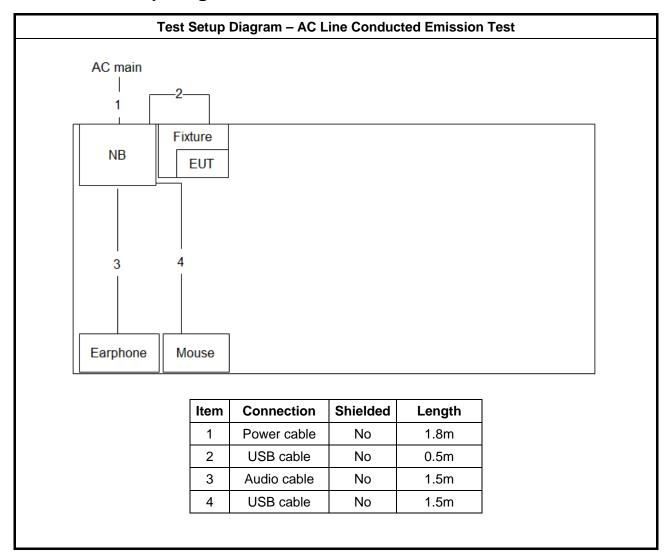
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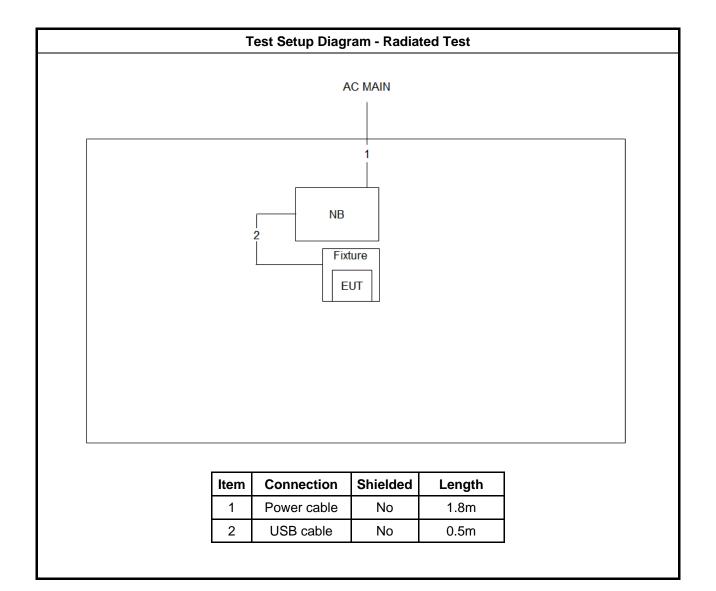


2.6 Test Setup Diagram



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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
Refer as ANSI C63	3.10-2013, clause 6.2 for AC power-line conducted emissions.

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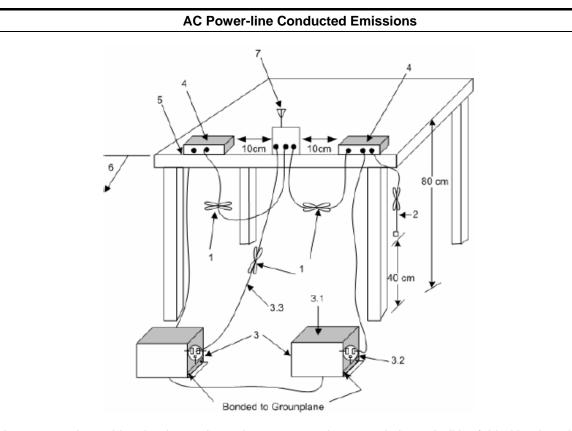
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3.1.4 Test Setup



- 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.
- 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.	

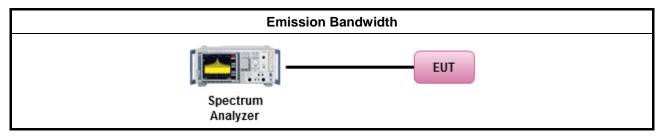
3.2.2 Measuring Instruments

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

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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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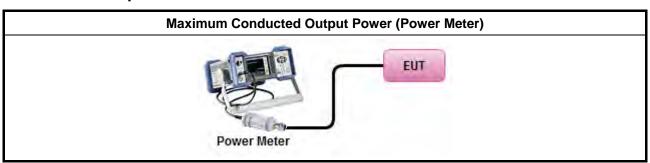
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3.3.3 Test Procedures

	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				

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
-	outp the con- of th	k power spectral density procedures that the same method as used to determine the conducted out power. If maximum peak conducted output power was measured to demonstrate compliance to output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum ducted output power was measured to demonstrate compliance to the output power limit, then one e average PSD procedures shall be used, as applicable based on the following criteria (the peak 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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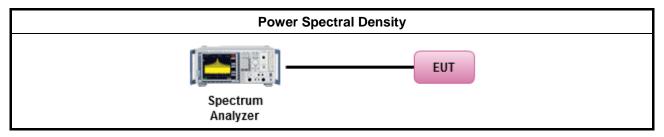
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3.4.4 Test Setup



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.

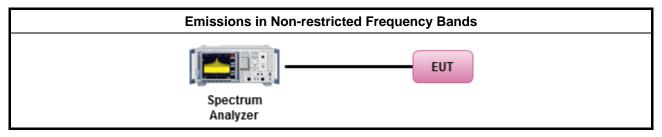
3.5.2 Measuring Instruments

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].	
•	Refer as ANSI C63.10, clause 6.9.2.2 band-edge testing shall be performed at the lowest frequenchannel and highest frequency channel within the allowed operating band.	ency
•	For the 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 ≥989)	%)
	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.	ıe.
	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 the 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 radio measurements, emissions within 2 MHz of the authorized band edge may be measured using 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. 	l for
	 Refer as FCC KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using band power and summing the spectral levels (i.e., 1 MHz). 	the
•	For 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, the resulting in apparent failures to satisfy the out-of-band limits even if the device is actu compliant. In such cases, compliance may be demonstrated by performing radiated tests are the frequencies at which the apparent failures occurred.	ually

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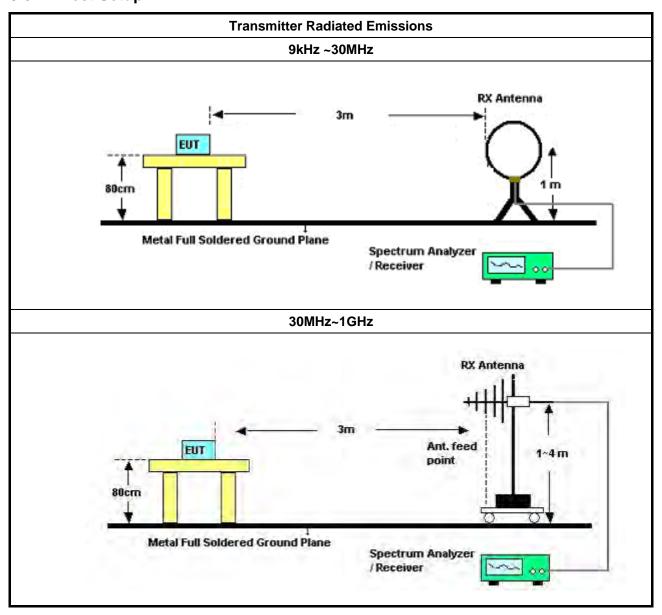
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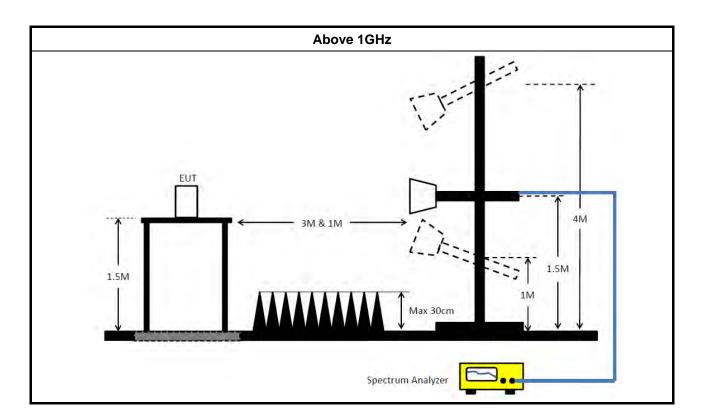


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3.6.4 Test Setup



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3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

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

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. 20, 2017	Dec. 19, 2018	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)
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)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Mar. 15, 2018*	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	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. 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)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Dec. 25, 2017	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 02, 2017	Jun. 01, 2018	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-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. 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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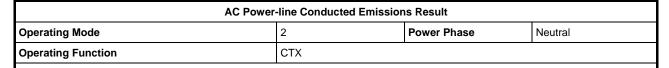
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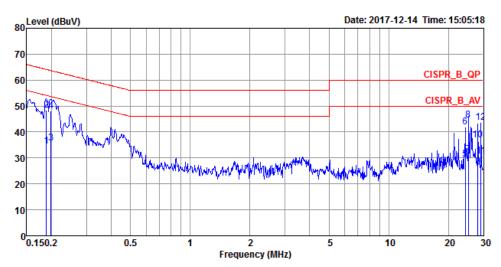
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[&]quot;*" Calibration Interval of instruments listed above is two years.



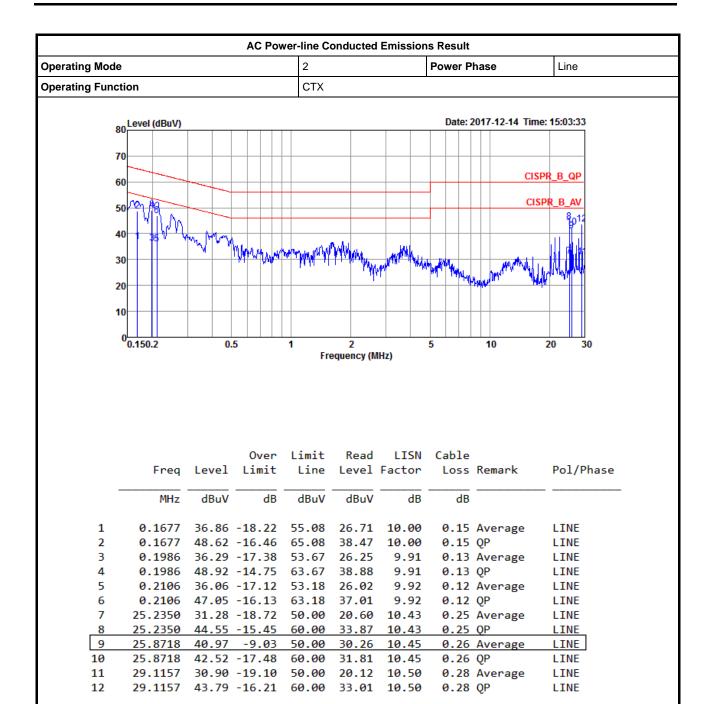




			0ver	Limit	Read	LISN	Cable		
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1884	34.51	-19.60	54.11	24.36	10.01	0.14	Average	NEUTRAL
2	0.1884	48.40	-15.71	64.11	38.25	10.01	0.14	QP	NEUTRAL
3	0.1986	35.73	-17.94	53.67	25.59	10.01	0.13	Average	NEUTRAL
4	0.1986	47.98	-15.69	63.67	37.84	10.01	0.13	QP	NEUTRAL
5	24.2672	29.45	-20.55	50.00	18.77	10.44	0.24	Average	NEUTRAL
6	24.2672	41.86	-18.14	60.00	31.18	10.44	0.24	QP	NEUTRAL
7	25.2346	31.41	-18.59	50.00	20.69	10.47	0.25	Average	NEUTRAL
8	25.2346	44.47	-15.53	60.00	33.75	10.47	0.25	QP	NEUTRAL
9	28.1562	26.62	-23.38	50.00	15.80	10.54	0.28	Average	NEUTRAL
10	28.1562	36.78	-23.22	60.00	25.96	10.54	0.28	OP	NEUTRAL
11	29.1227	30.79	-19.21	50.00	19.95	10.56	0.28	Average	NEUTRAL
12	29.1227	43.75	-16.25	60.00	32.91	10.56	0.28	_	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.)

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	10.05M	14.918M	14M9G1D	10.025M	14.768M
802.11g_Nss1,(6Mbps)_1TX	16.55M	16.542M	16M5D1D	16.475M	16.417M
802.11n HT20_Nss1,(MCS0)_1TX	17.775M	17.716M	17M7D1D	17.6M	17.541M
802.11n HT40_Nss1,(MCS0)_1TX	36.35M	35.932M	35M9D1D	36.35M	35.832M

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;

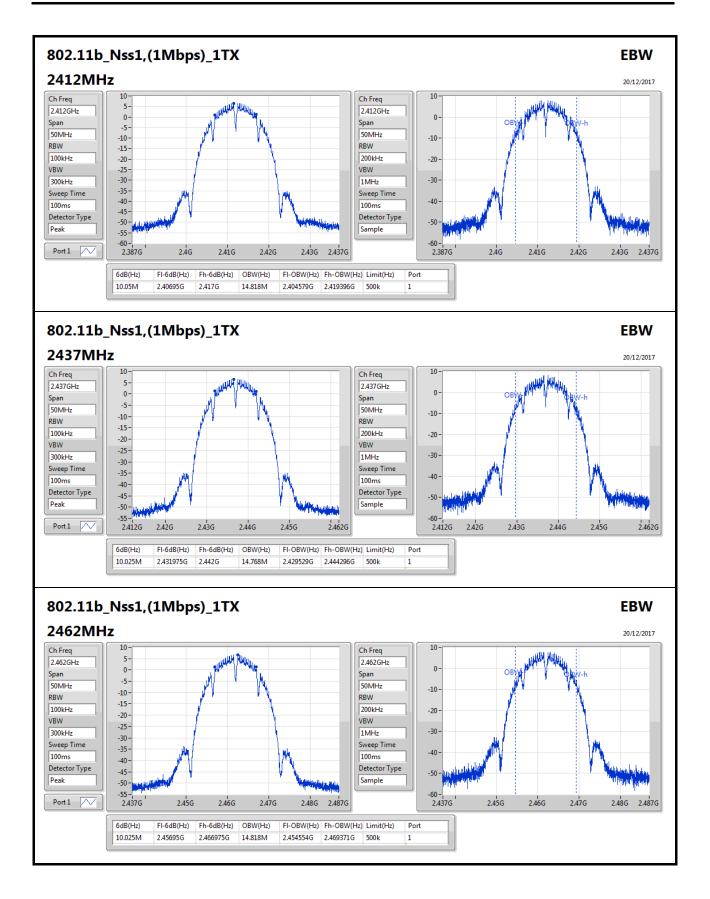
Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	10.05M	14.818M
2437MHz	Pass	500k	10.025M	14.768M
2462MHz	Pass	500k	10.025M	14.818M
2467MHz	Pass	500k	10.05M	14.893M
2472MHz	Pass	500k	10.05M	14.918M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.5M	16.517M
2437MHz	Pass	500k	16.475M	16.492M
2462MHz	Pass	500k	16.525M	16.492M
2467MHz	Pass	500k	16.55M	16.542M
2472MHz	Pass	500k	16.525M	16.417M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	17.775M	17.666M
2437MHz	Pass	500k	17.75M	17.691M
2462MHz	Pass	500k	17.75M	17.691M
2467MHz	Pass	500k	17.775M	17.716M
2472MHz	Pass	500k	17.6M	17.541M
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz	Pass	500k	36.35M	35.882M
2437MHz	Pass	500k	36.35M	35.882M
2452MHz	Pass	500k	36.35M	35.832M
2457MHz	Pass	500k	36.35M	35.882M
2462MHz	Pass	500k	36.35M	35.932M

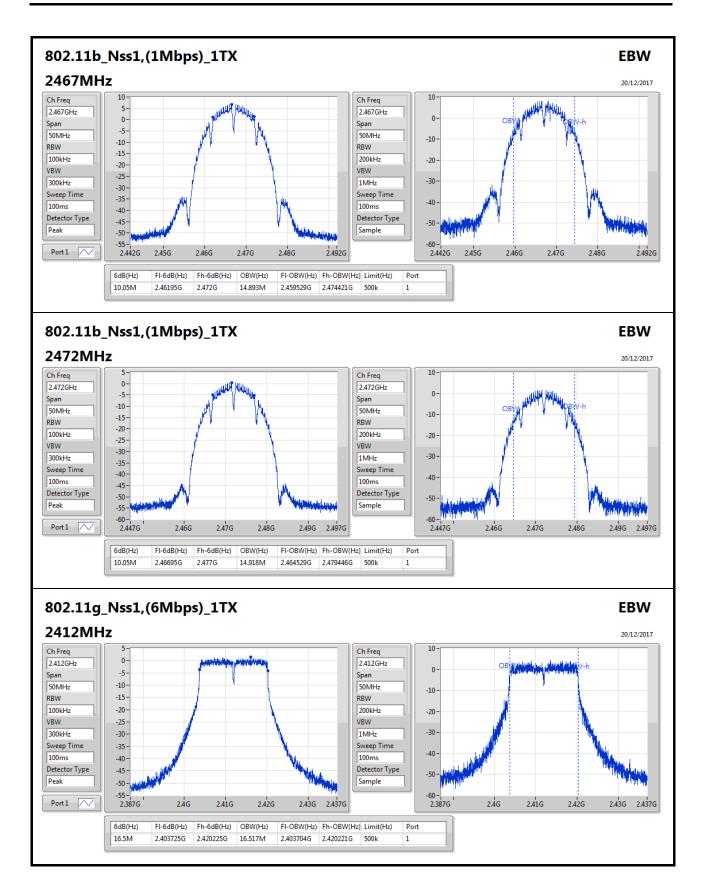
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

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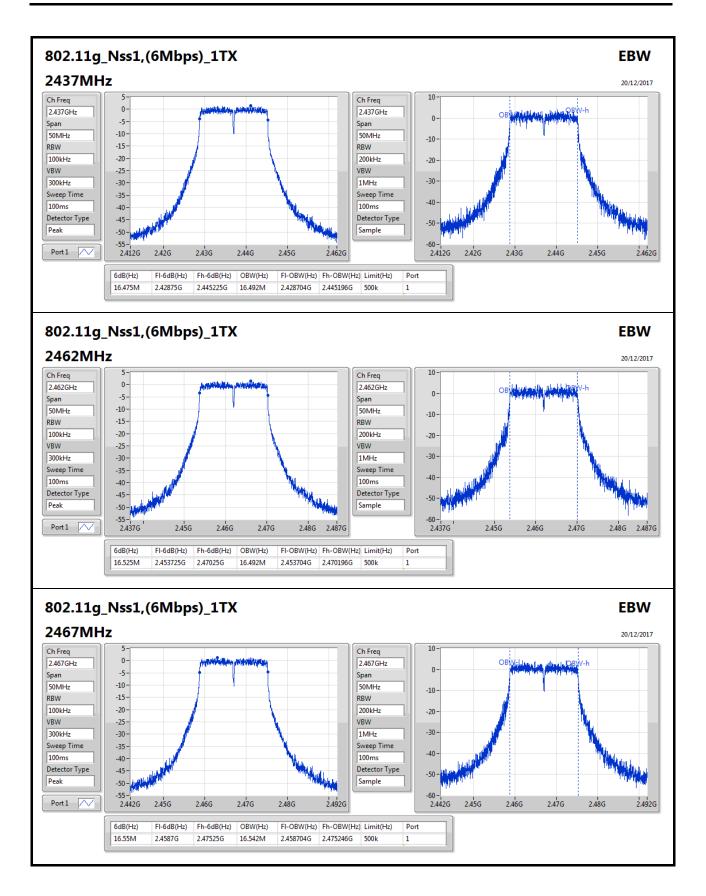




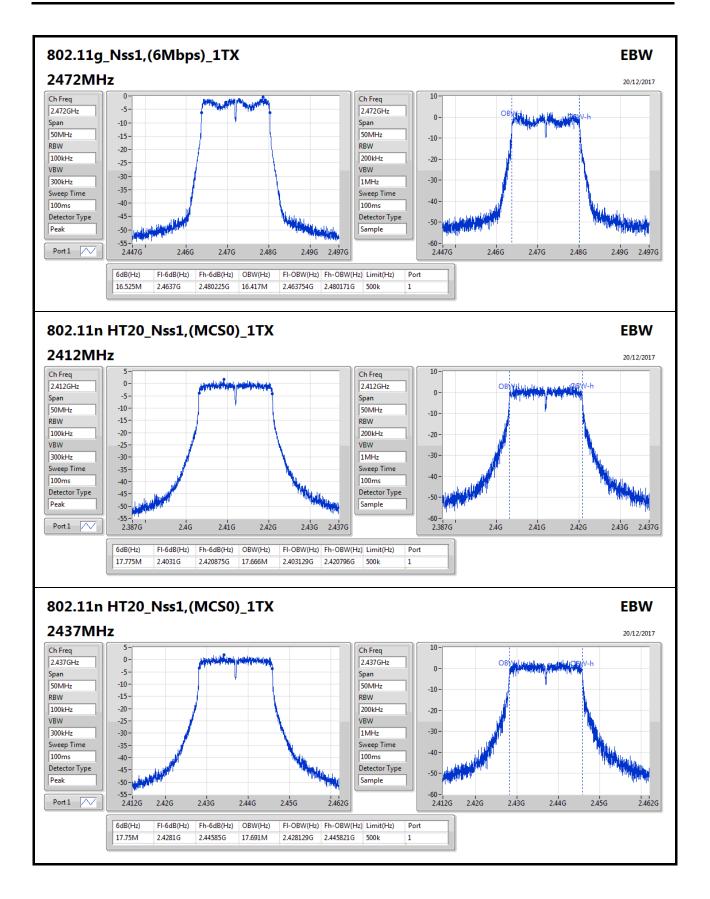








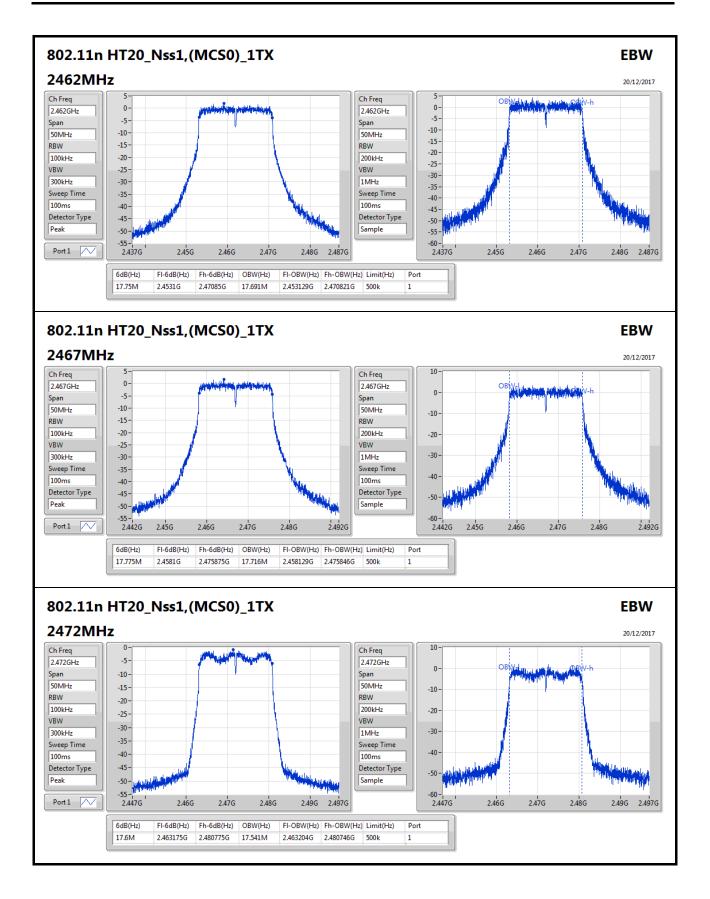




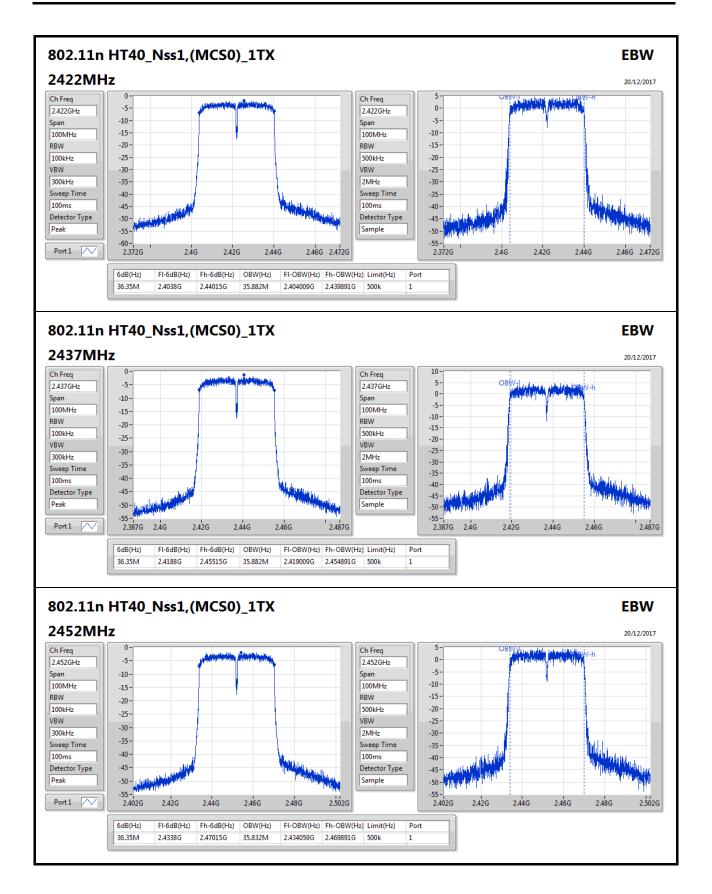
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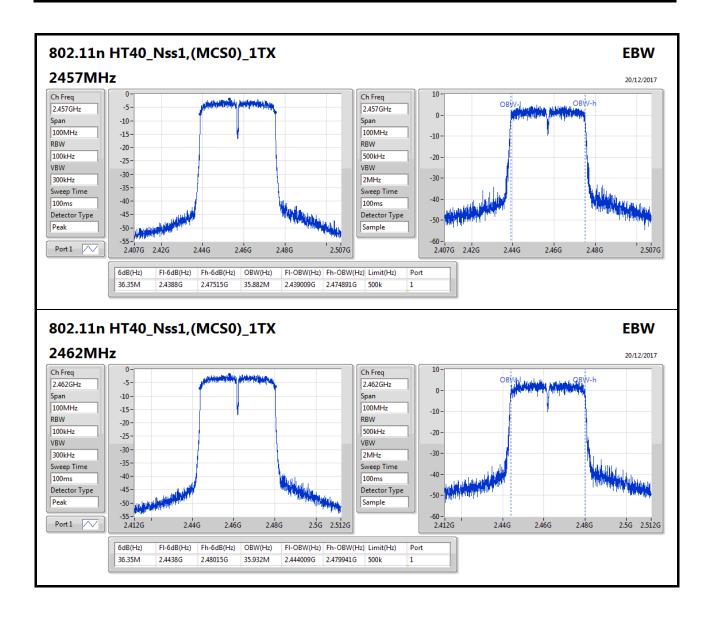




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AV Power Result Appendix C

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	17.28	0.05346
802.11g_Nss1,(6Mbps)_1TX	16.26	0.04227
802.11n HT20_Nss1,(MCS0)_1TX	16.27	0.04236
802.11n HT40_Nss1,(MCS0)_1TX	16.31	0.04276

Result

Mode	Result	DG	Port 1	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.50	17.21	17.21	30.00
2437MHz	Pass	3.50	17.28	17.28	30.00
2462MHz	Pass	3.50	17.11	17.11	30.00
2467MHz	Pass	3.50	17.26	17.26	30.00
2472MHz	Pass	3.50	10.70	10.70	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.50	16.11	16.11	30.00
2437MHz	Pass	3.50	16.26	16.26	30.00
2462MHz	Pass	3.50	16.09	16.09	30.00
2467MHz	Pass	3.50	16.20	16.20	30.00
2472MHz	Pass	3.50	14.03	14.03	30.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	3.50	16.27	16.27	30.00
2437MHz	Pass	3.50	16.19	16.19	30.00
2462MHz	Pass	3.50	16.22	16.22	30.00
2467MHz	Pass	3.50	16.27	16.27	30.00
2472MHz	Pass	3.50	13.28	13.28	30.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	3.50	16.17	16.17	30.00
2437MHz	Pass	3.50	16.22	16.22	30.00
2452MHz	Pass	3.50	16.15	16.15	30.00
2457MHz	Pass	3.50	16.26	16.26	30.00
2462MHz	Pass	3.50	16.31	16.31	30.00

Page No.

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



PSD Result Appendix D

Summary

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	·
802.11b_Nss1,(1Mbps)_1TX	-13.36
802.11g_Nss1,(6Mbps)_1TX	-12.87
802.11n HT20_Nss1,(MCS0)_1TX	-11.90
802.11n HT40_Nss1,(MCS0)_1TX	-12.54

RBW=3kHz.

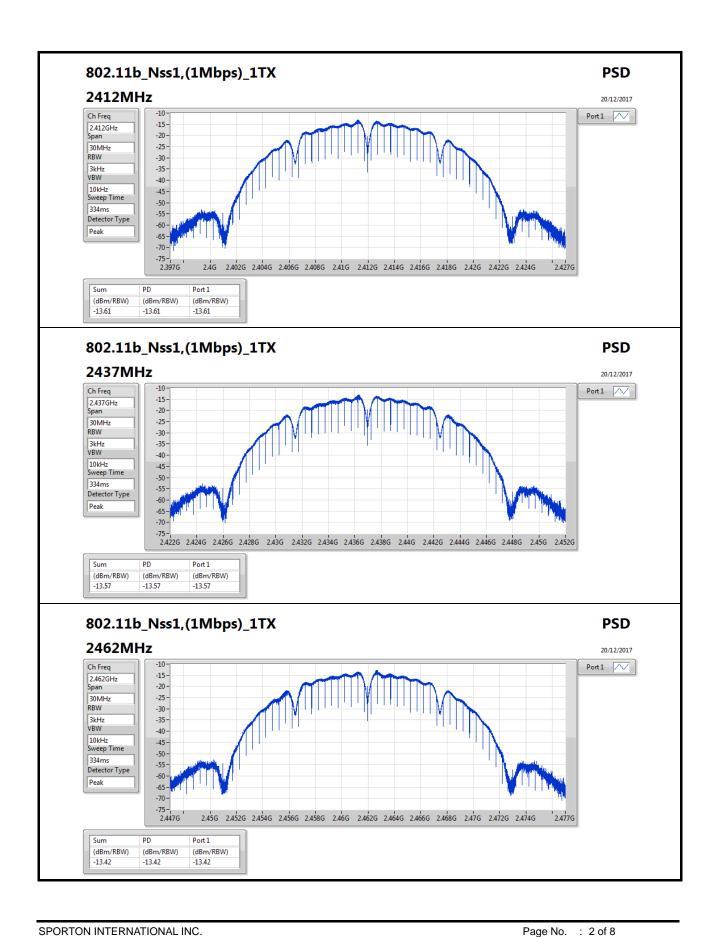
Result

Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.50	-13.61	-13.61	8.00
2437MHz	Pass	3.50	-13.57	-13.57	8.00
2462MHz	Pass	3.50	-13.42	-13.42	8.00
2467MHz	Pass	3.50	-13.36	-13.36	8.00
2472MHz	Pass	3.50	-19.74	-19.74	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.50	-13.31	-13.31	8.00
2437MHz	Pass	3.50	-12.99	-12.99	8.00
2462MHz	Pass	3.50	-12.87	-12.87	8.00
2467MHz	Pass	3.50	-12.97	-12.97	8.00
2472MHz	Pass	3.50	-14.82	-14.82	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	3.50	-12.88	-12.88	8.00
2437MHz	Pass	3.50	-11.90	-11.90	8.00
2462MHz	Pass	3.50	-12.26	-12.26	8.00
2467MHz	Pass	3.50	-12.78	-12.78	8.00
2472MHz	Pass	3.50	-14.11	-14.11	8.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	3.50	-14.57	-14.57	8.00
2437MHz	Pass	3.50	-13.25	-13.25	8.00
2452MHz	Pass	3.50	-14.64	-14.64	8.00
2457MHz	Pass	3.50	-13.30	-13.30	8.00
2462MHz	Pass	3.50	-12.54	-12.54	8.00

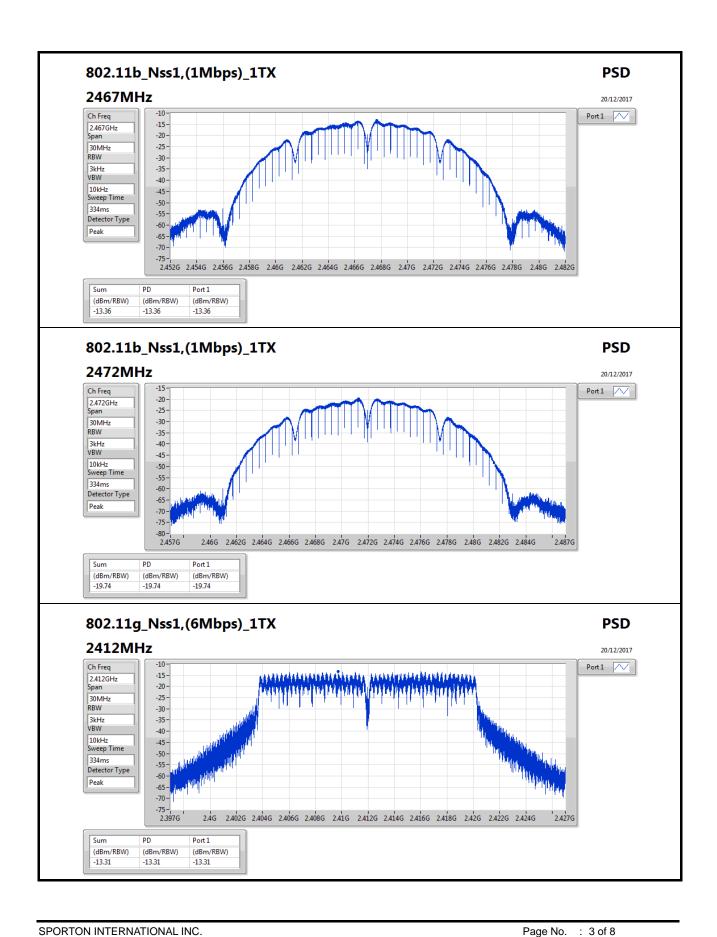
DG = Directional Gain; RBW=3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;

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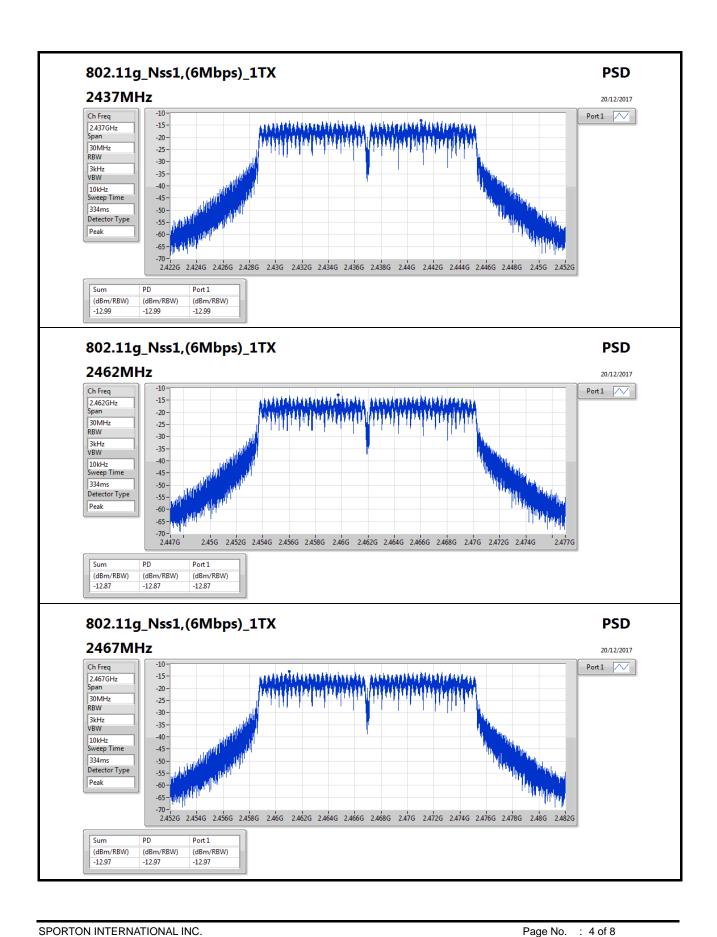




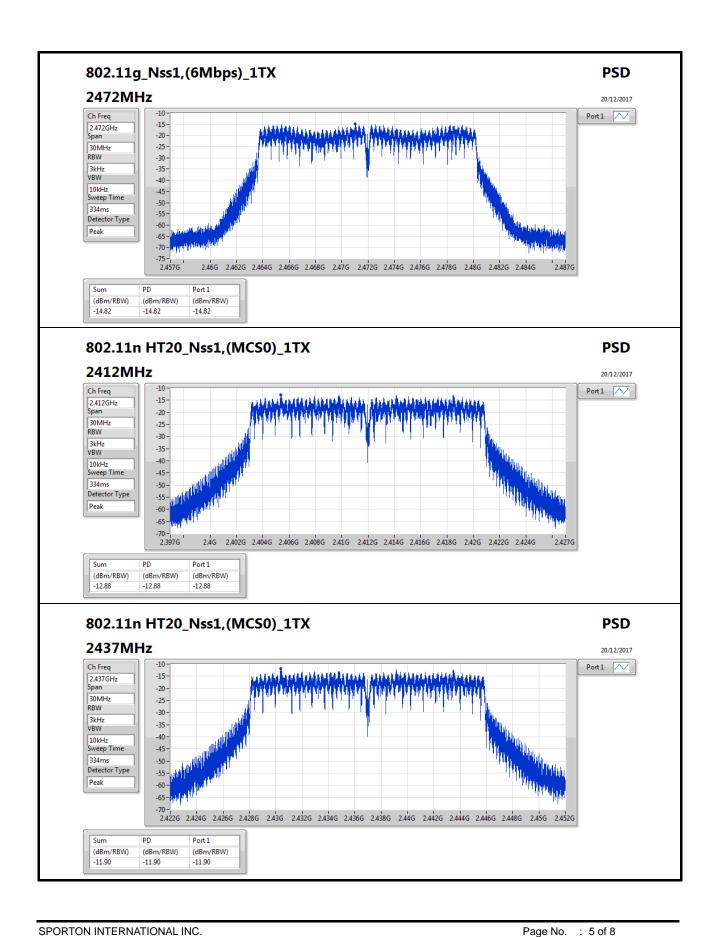




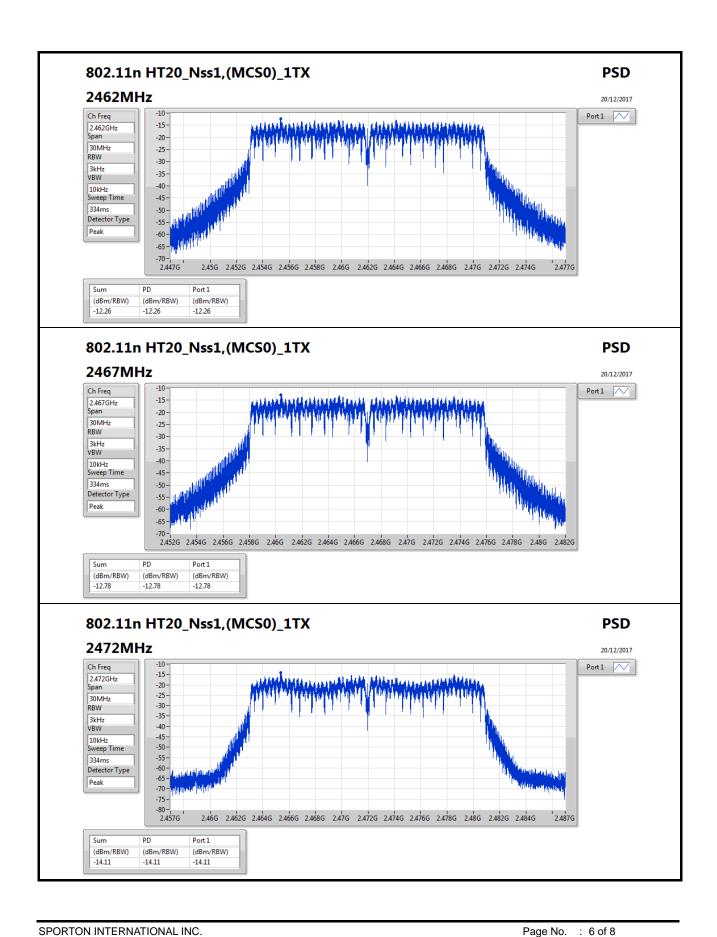






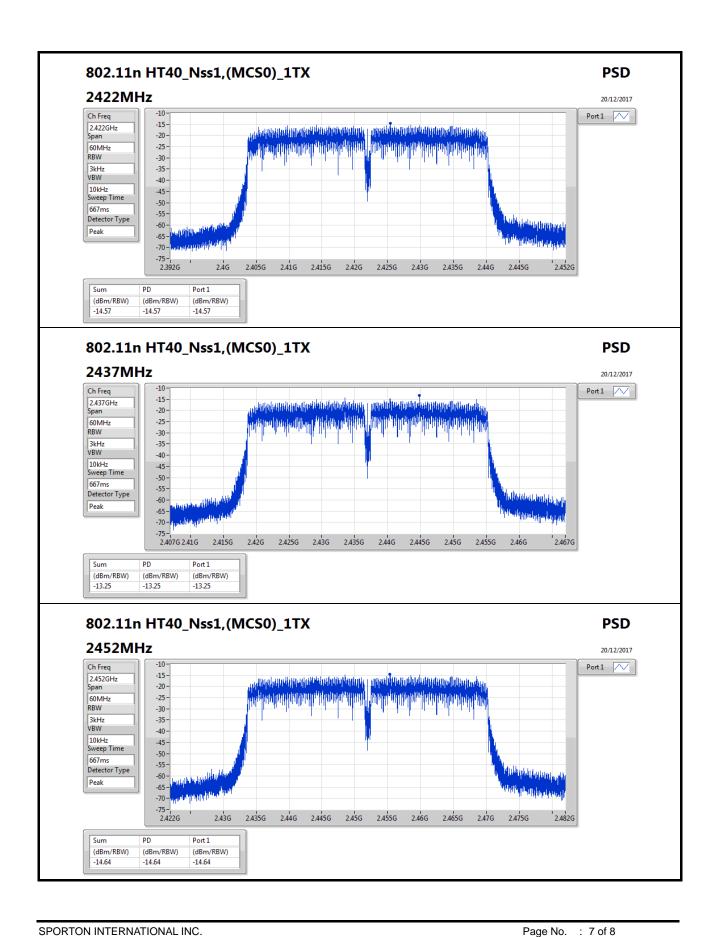






Appendix D

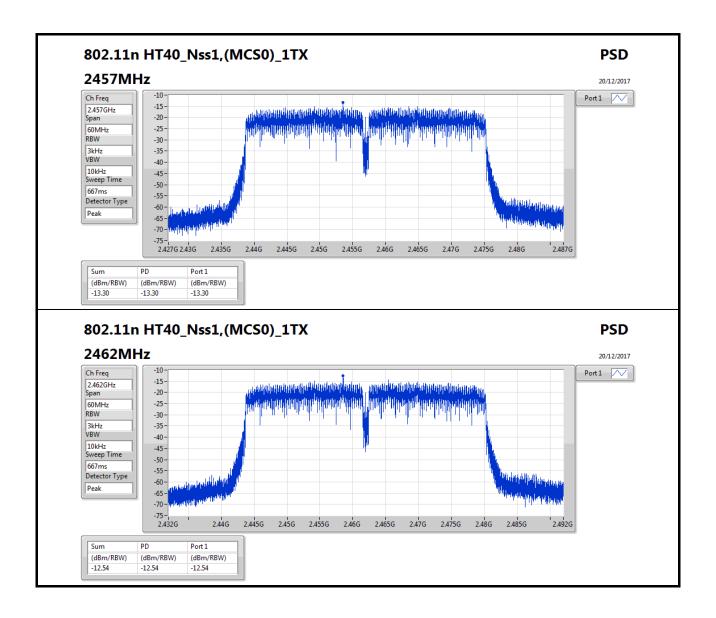






Appendix D







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	2.437408G	6.64	-23.36	2.30175G	-55.77	2.39952G	-34.91	2.52078G	-51.67	7.235136G	-41.07	1
802.11g_Nss1,(6Mbps)_1TX		2.441082G	1.64	-28.36	2.307575G	-55.54	2.39992G	-30.22	2.49198G	-52.38	7.237946G	-45.02	1
802.11n HT20_Nss1,(MCS0)_1TX		2.411356G	1.20	-28.80	2.30874G	-55.07	2.39984G	-31.36	2.5051G	-52.64	7.229517G	-46.29	1
802.11n HT40_Nss1,(MCS0)_1TX	Pass	2.457281G	-2.08	-32.08	2.309695G	-55.49	2.39984G	-53.52	2.48846G	-41.12	21.752317G	-54.59	1

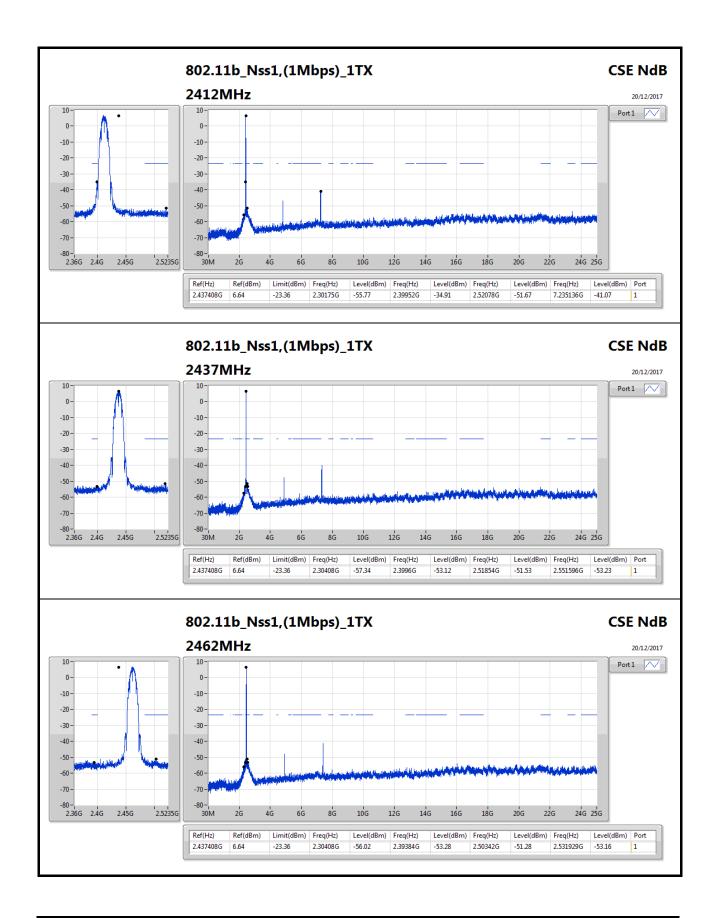
Result

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	2.437408G	6.64	-23.36	2.30175G	-55.77	2.39952G	-34.91	2.52078G	-51.67	7.235136G	-41.07	1
2437MHz	Pass	2.437408G	6.64	-23.36	2.30408G	-57.34	2.3996G	-53.12	2.51854G	-51.53	2.551596G	-53.23	1
2462MHz	Pass	2.437408G	6.64	-23.36	2.30408G	-56.02	2.39384G	-53.28	2.50342G	-51.28	2.531929G	-53.16	1
2467MHz	Pass	2.437408G	6.64	-23.36	2.302915G	-57.45	2.39384G	-53.29	2.48478G	-48.70	21.718431G	-53.84	1
2472MHz	Pass	2.437408G	6.64	-23.36	2.30175G	-61.12	2.39472G	-56.35	2.48446G	-44.80	16.725838G	-52.93	1
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.441082G	1.64	-28.36	2.307575G	-55.54	2.39992G	-30.22	2.49198G	-52.38	7.237946G	-45.02	1
2437MHz	Pass	2.441082G	1.64	-28.36	2.307575G	-57.46	2.3956G	-53.21	2.51694G	-52.95	2.548786G	-54.34	1
2462MHz	Pass	2.441082G	1.64	-28.36	2.30874G	-58.15	2.39552G	-54.24	2.48478G	-48.81	21.552667G	-53.96	1
2467MHz	Pass	2.441082G	1.64	-28.36	2.307575G	-57.28	2.39312G	-52.58	2.48478G	-41.92	16.346548G	-53.90	1
2472MHz	Pass	2.441082G	1.64	-28.36	2.30641G	-58.30	2.39616G	-53.80	2.48358G	-44.90	21.524571G	-54.15	1
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	•	-	-	-	-
2412MHz	Pass	2.411356G	1.20	-28.80	2.30874G	-55.07	2.39984G	-31.36	2.5051G	-52.64	7.229517G	-46.29	1
2437MHz	Pass	2.433233G	1.20	-28.80	2.30641G	-56.58	2.3964G	-53.42	2.51694G	-52.27	24.820188G	-54.06	1
2462MHz	Pass	2.456613G	1.20	-28.80	2.30874G	-57.75	2.39072G	-53.48	2.48366G	-47.79	21.462761G	-53.87	1
2467MHz	Pass	2.464128G	1.20	-28.80	2.300585G	-57.09	2.39248G	-52.55	2.4839G	-39.79	2.548786G	-53.78	1
2472MHz	Pass	2.472645G	1.20	-28.80	2.30641G	-58.36	2.39176G	-53.44	2.4839G	-45.39	24.797712G	-54.44	1
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.428724G	-2.08	-32.08	2.307405G	-57.92	2.39696G	-42.67	2.49646G	-53.23	7.249924G	-50.32	1
2437MHz	Pass	2.44175G	-2.08	-32.08	2.30168G	-57.76	2.39952G	-50.00	2.48478G	-49.59	24.750394G	-53.51	1
2452MHz	Pass	2.444255G	-2.08	-32.08	2.302825G	-57.77	2.3912G	-51.99	2.48574G	-45.11	16.763G	-54.25	1
2457MHz	Pass	2.452271G	-2.08	-32.08	2.305115G	-57.47	2.39232G	-53.02	2.48798G	-43.09	16.768609G	-54.19	1
2462MHz	Pass	2.457281G	-2.08	-32.08	2.309695G	-55.49	2.39984G	-53.52	2.48846G	-41.12	21.752317G	-54.59	1

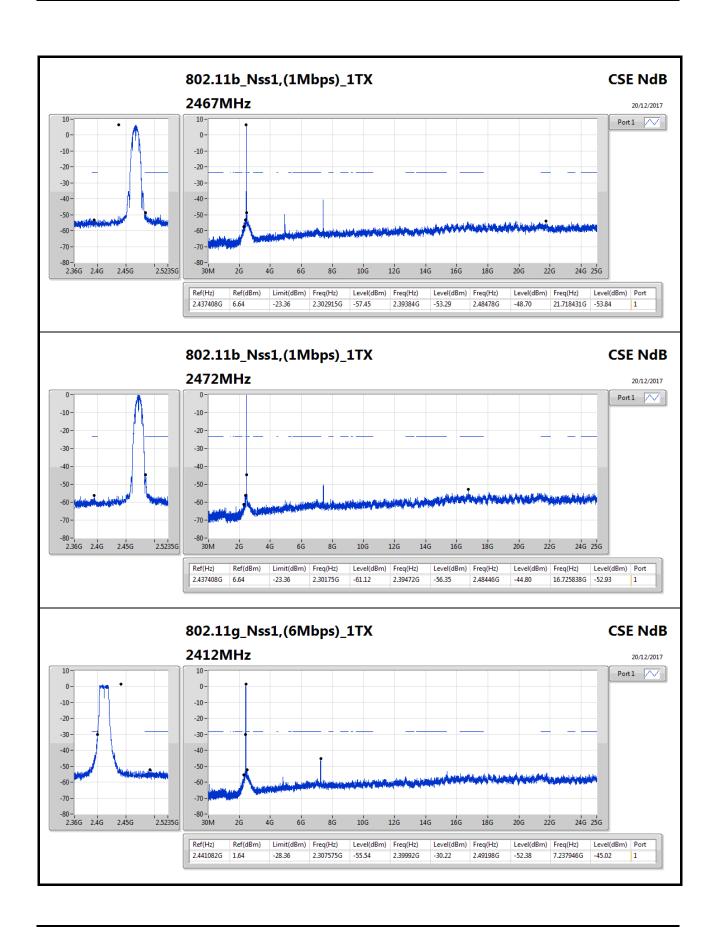
Page No.

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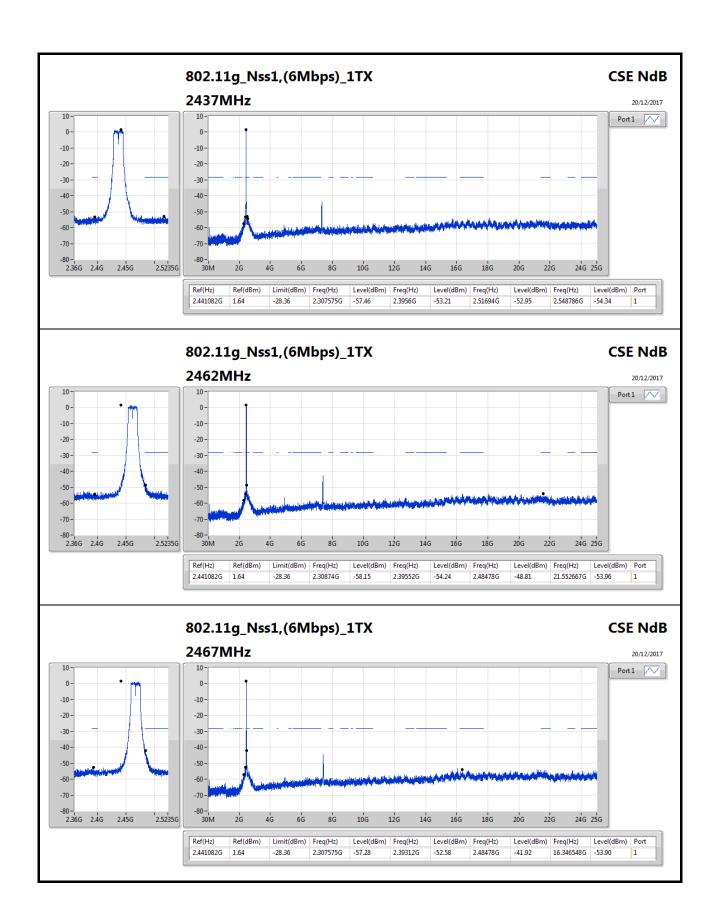






TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No.

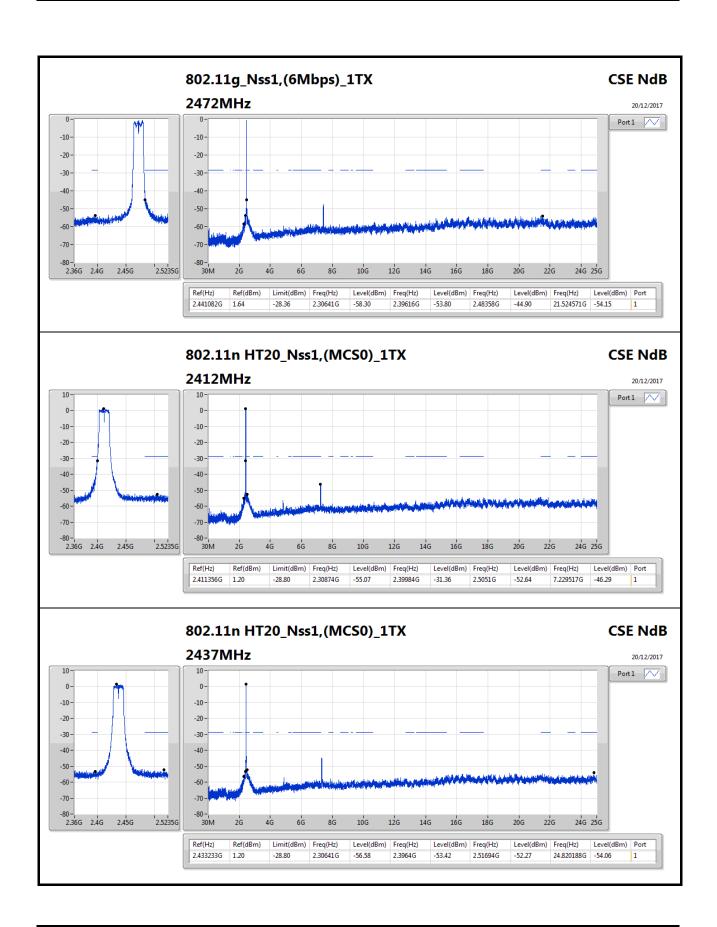




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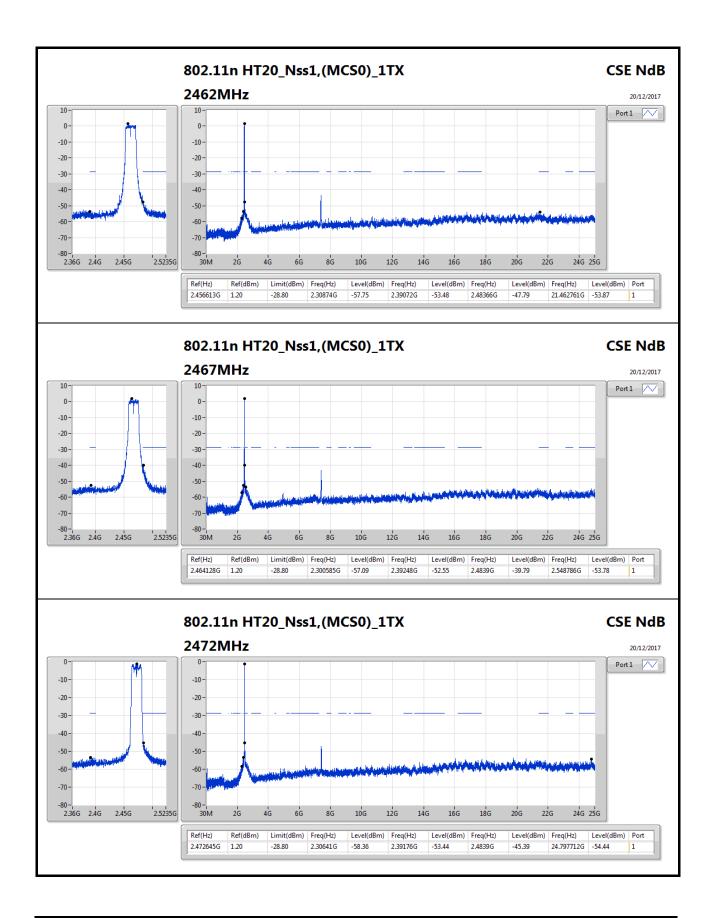




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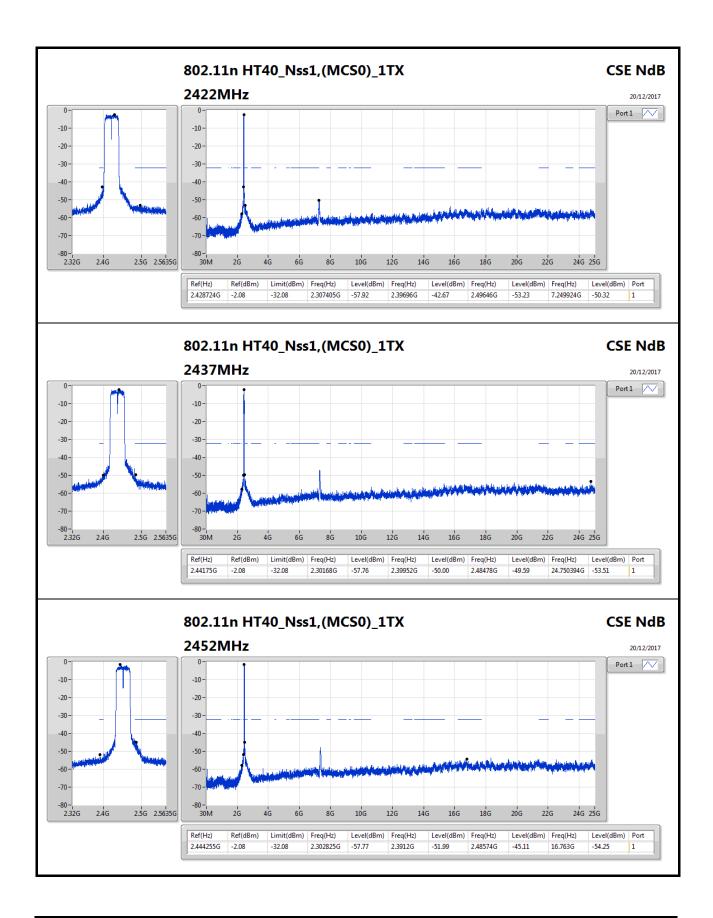




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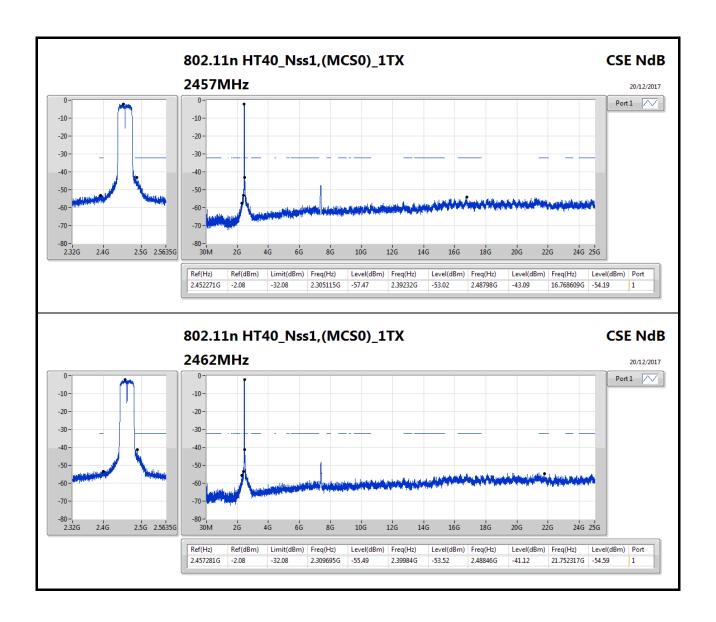




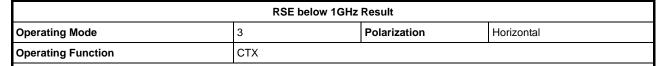
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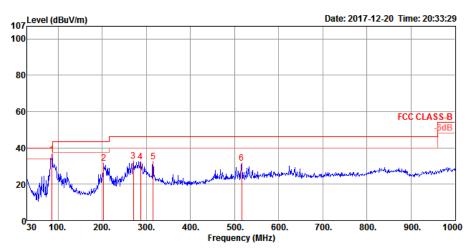
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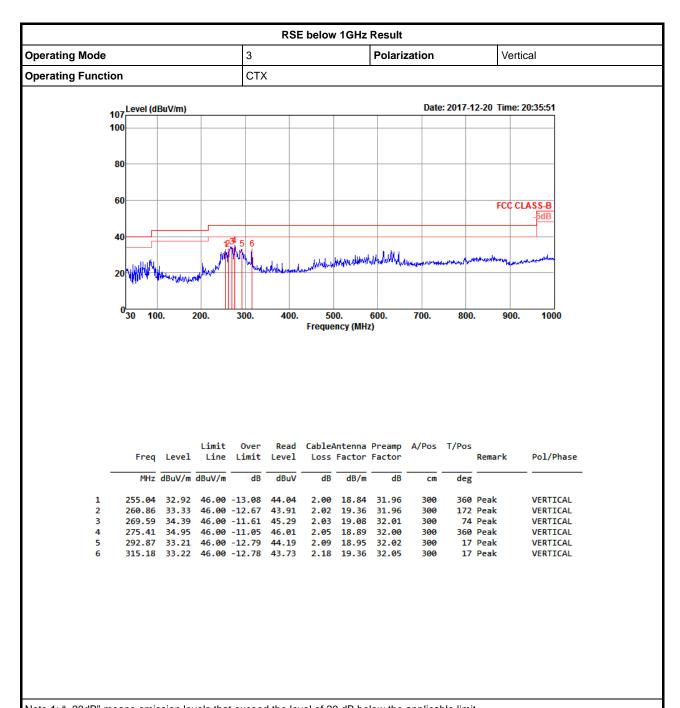




	Freq	Level		Over Limit						T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	86.26	36.26	40.00	-3.74	53.06	1.13	13.92	31.85	200	95	Peak	HORIZONTAL
2	203.63	31.77	43.50	-11.73	46.69	1.77	15.24	31.93	200	87	Peak	HORIZONTAL
3	270.56	32.85	46.00	-13.15	43.77	2.04	19.05	32.01	200	0	Peak	HORIZONTAL
4	287.05	32.26	46.00	-13.74	43.35	2.07	18.85	32.01	200	5	Peak	HORIZONTAL
5	315.18	32.18	46.00	-13.82	42.69	2.18	19.36	32.05	200	87	Peak	HORIZONTAL
6	515.97	31.68	46.00	-14.32	37.74	2.80	23.45	32.31	200	45	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.)





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 / Ant.1

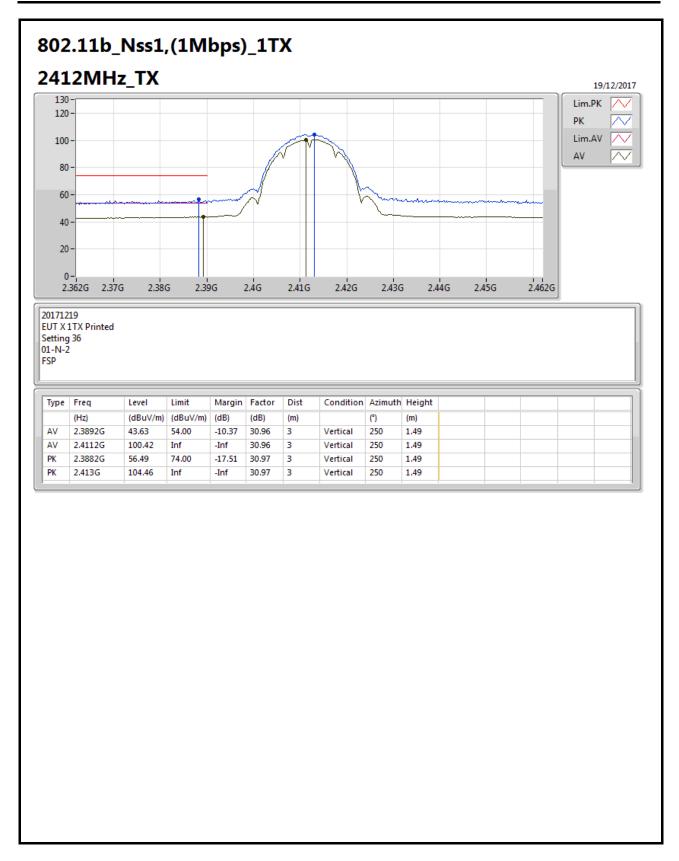
Appendix F.2

Summary

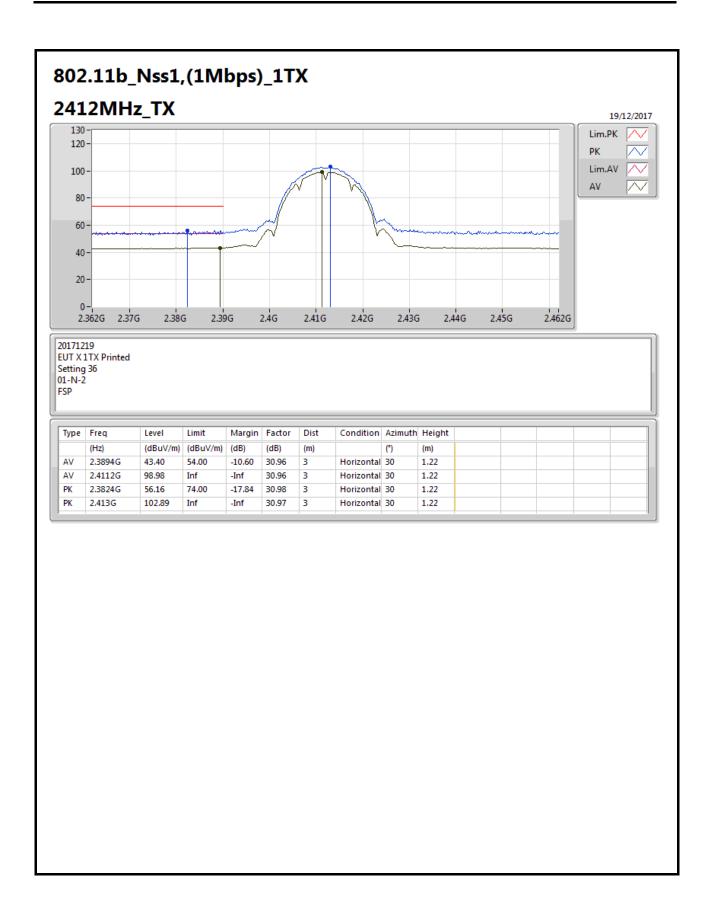
Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	2.4844G	51.90	54.00	-2.10	31.17	3	Vertical	248	1.37	-

SPORTON INTERNATIONAL INC.

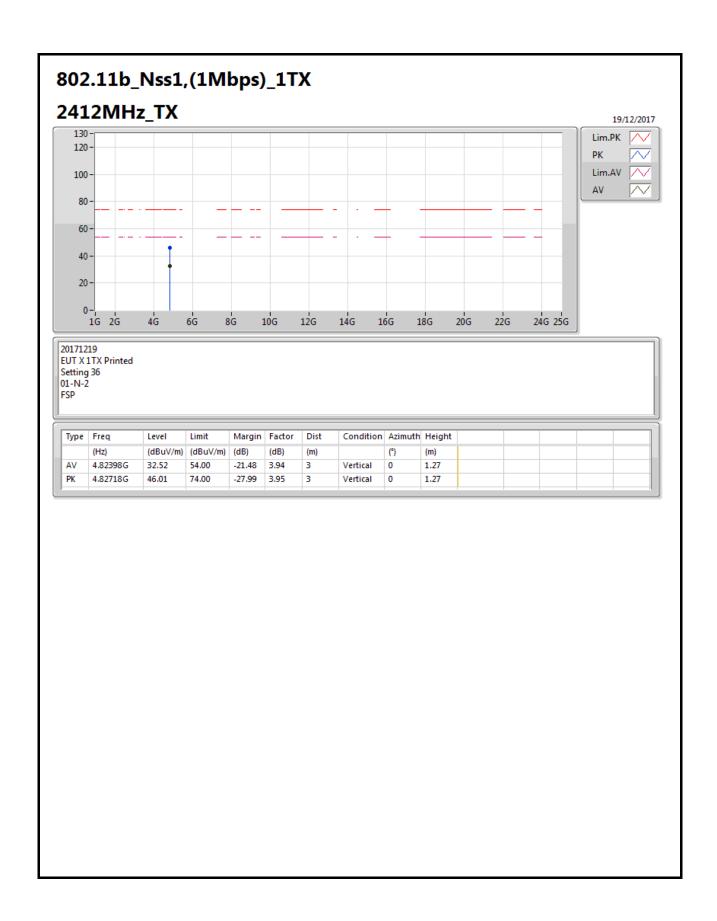




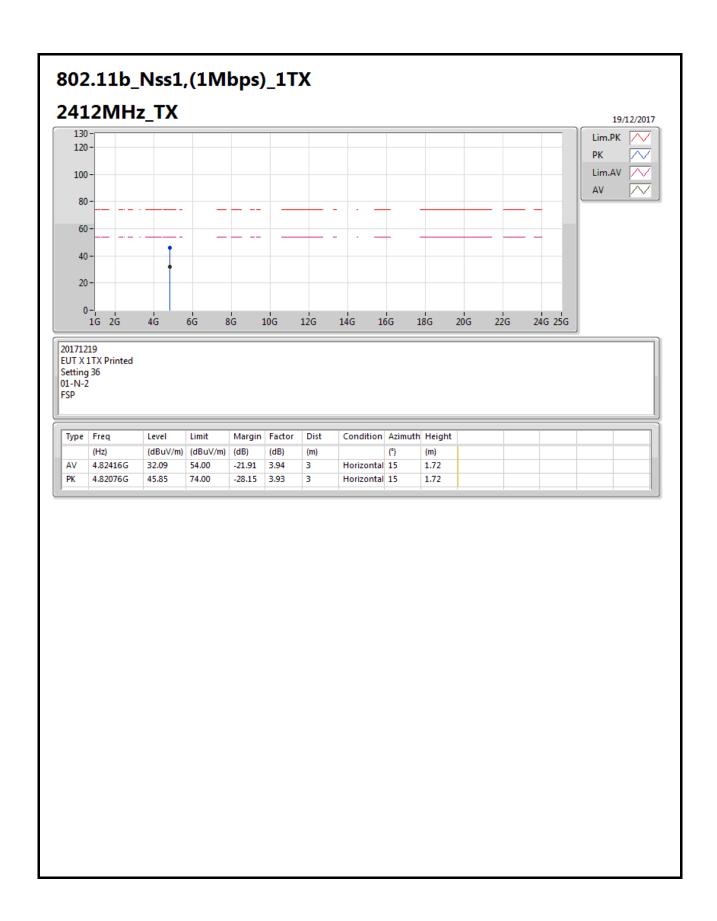




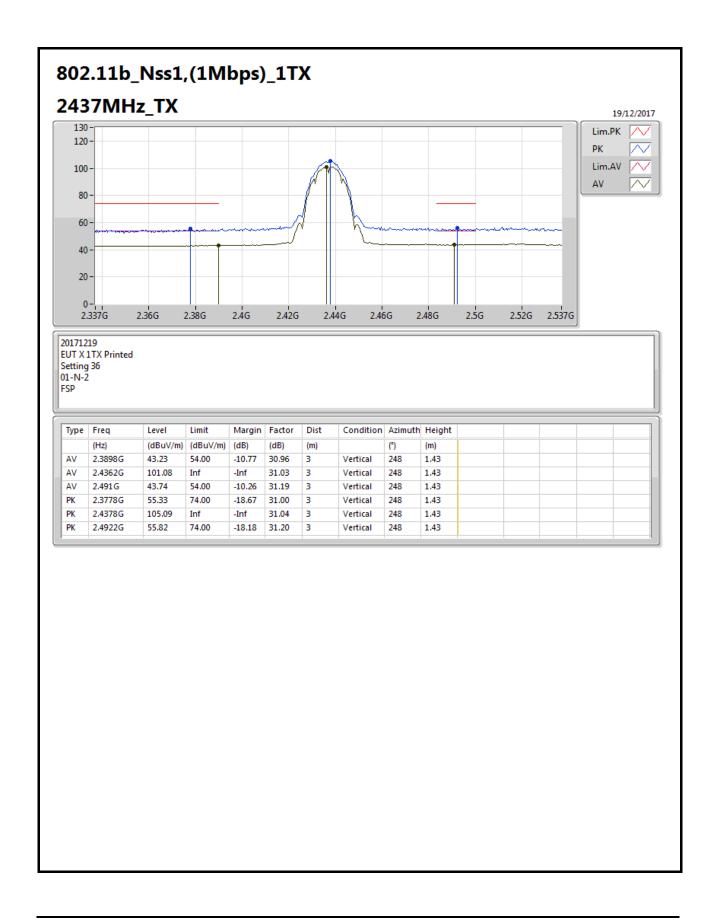




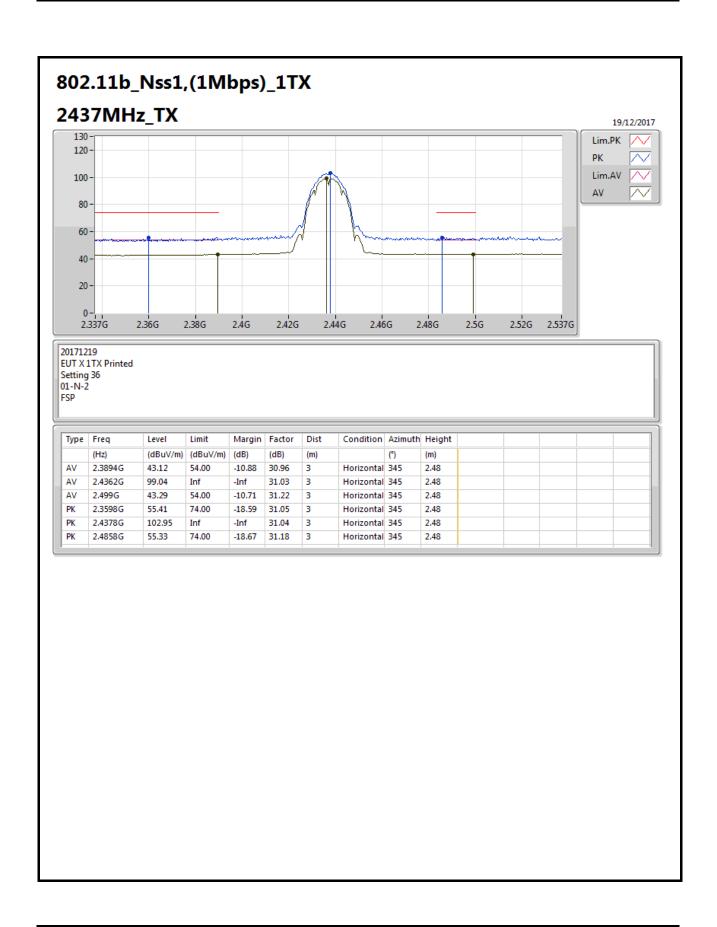




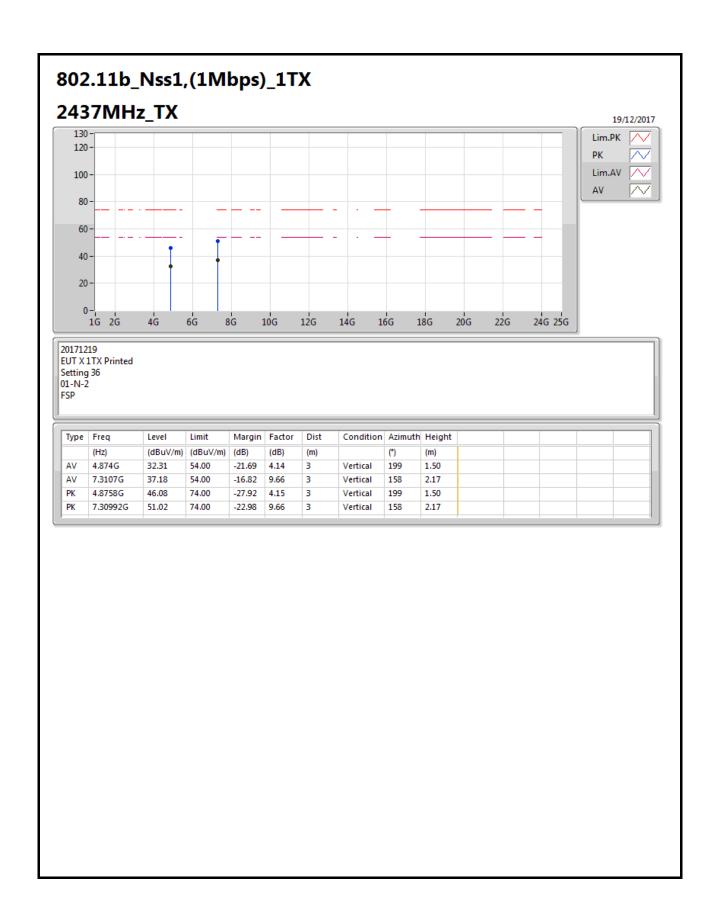




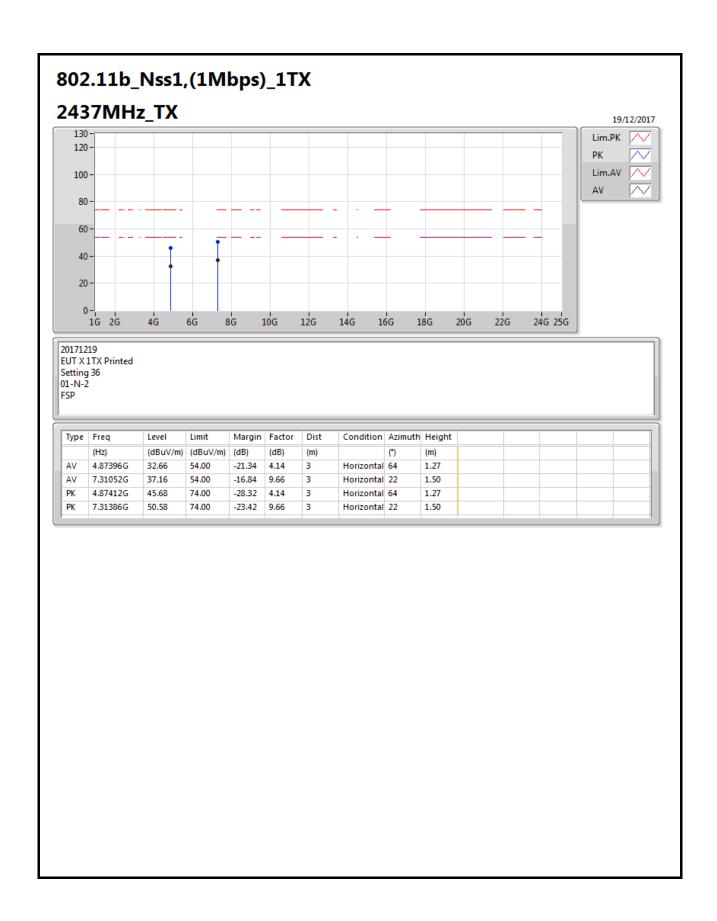




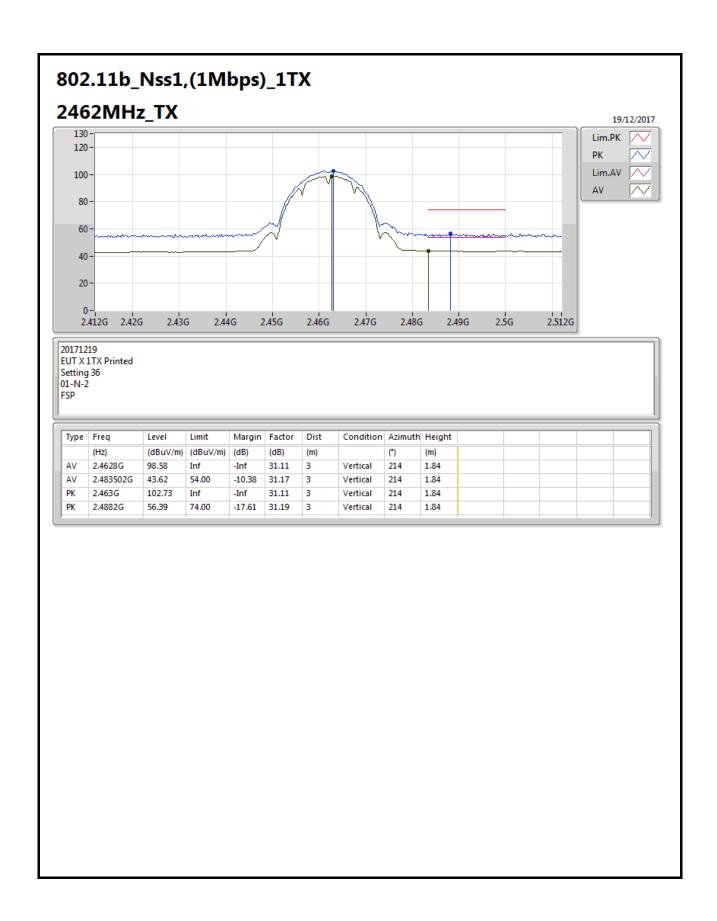








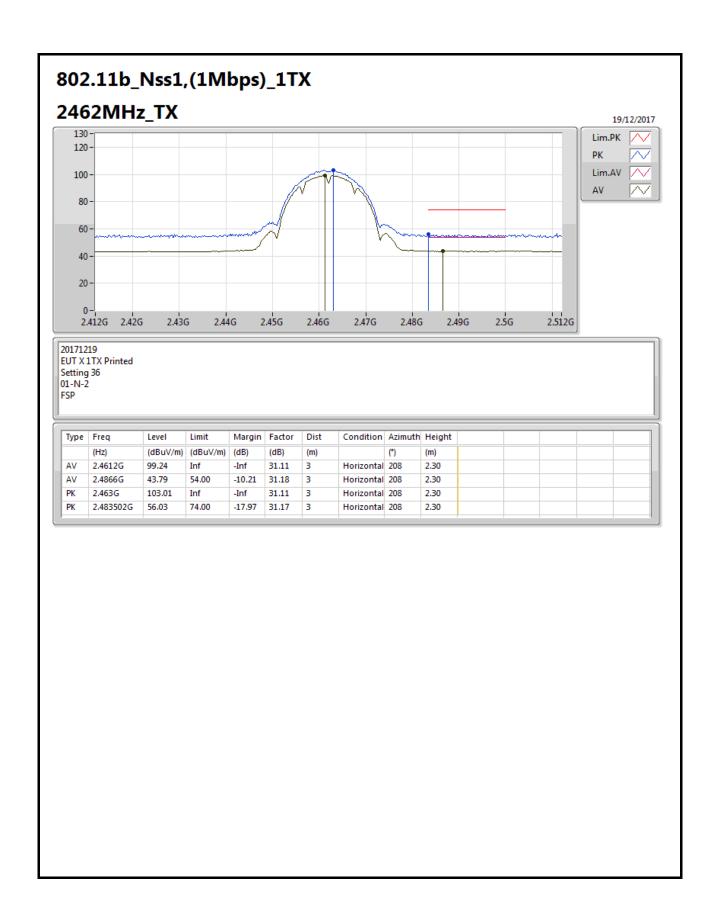




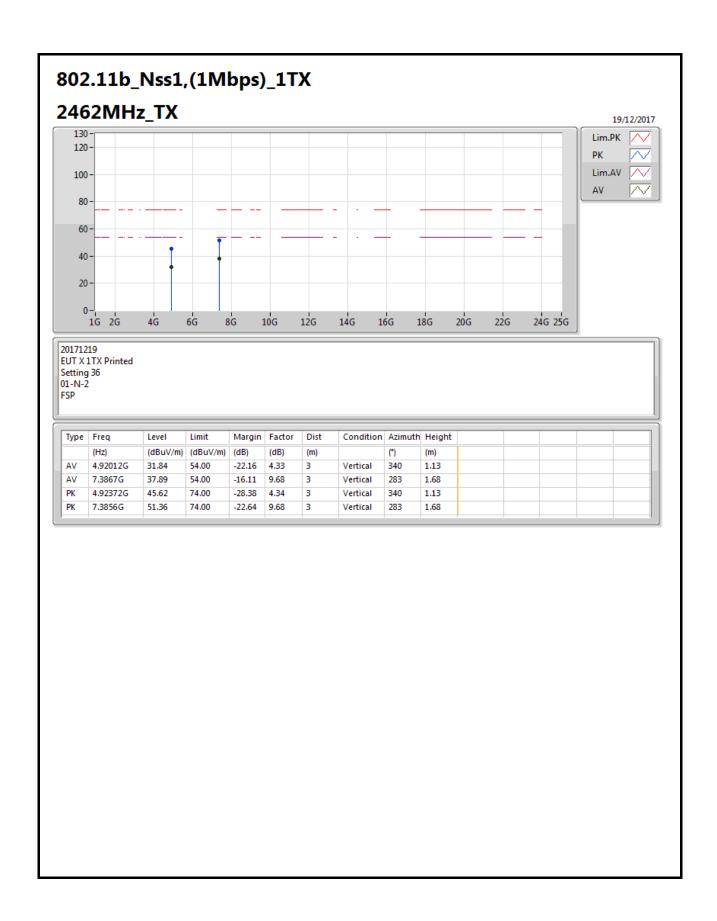
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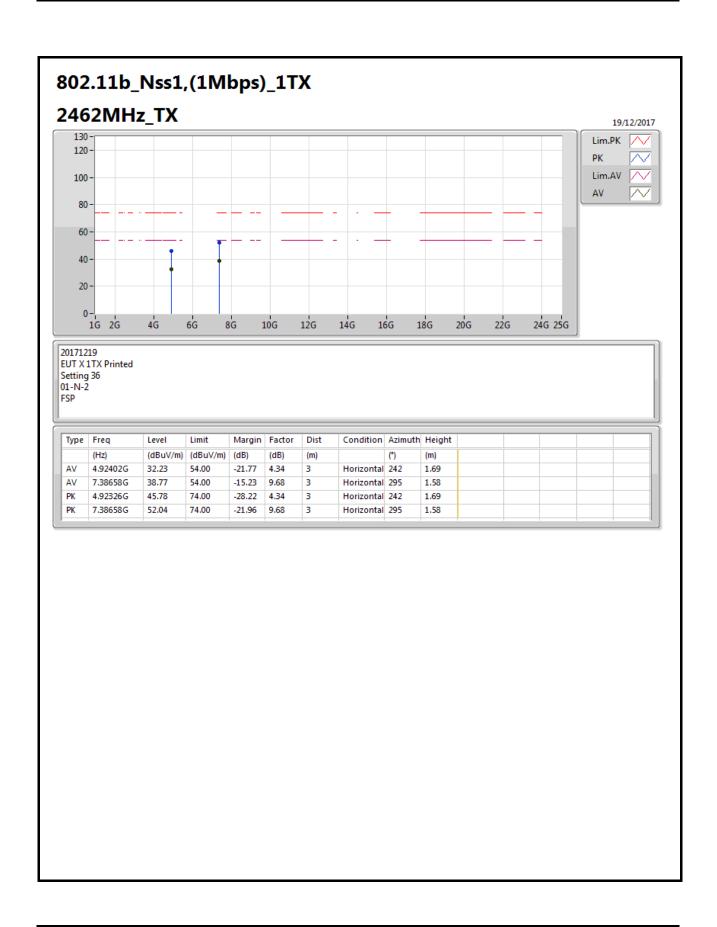




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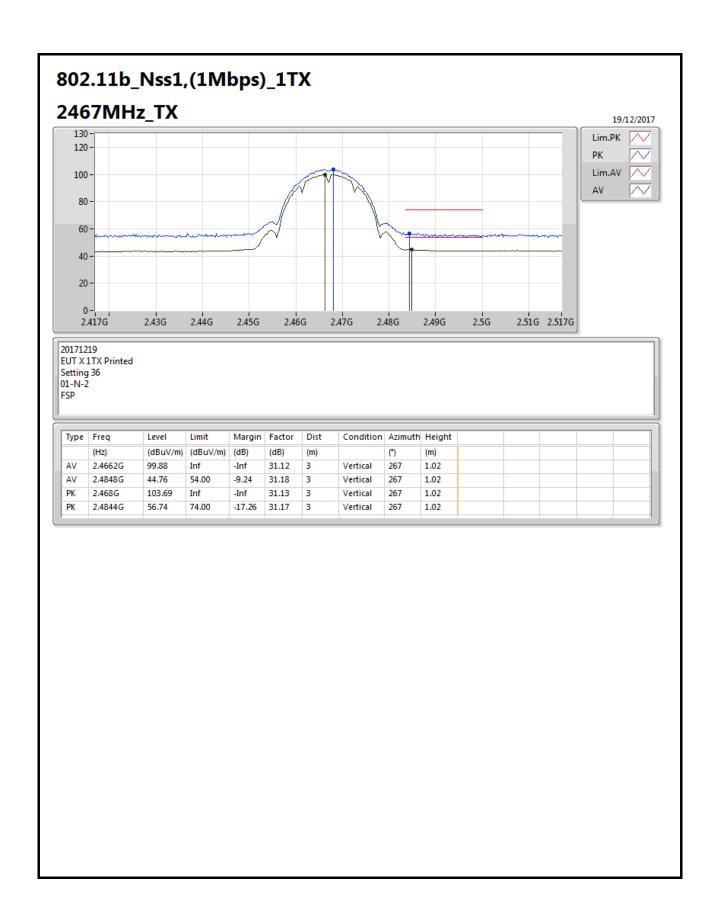
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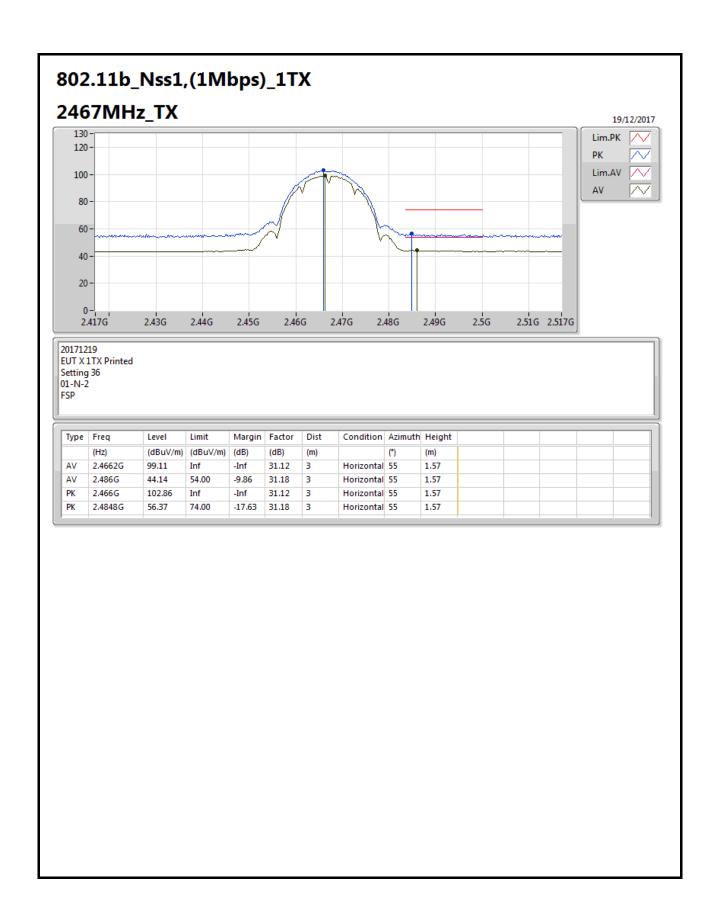


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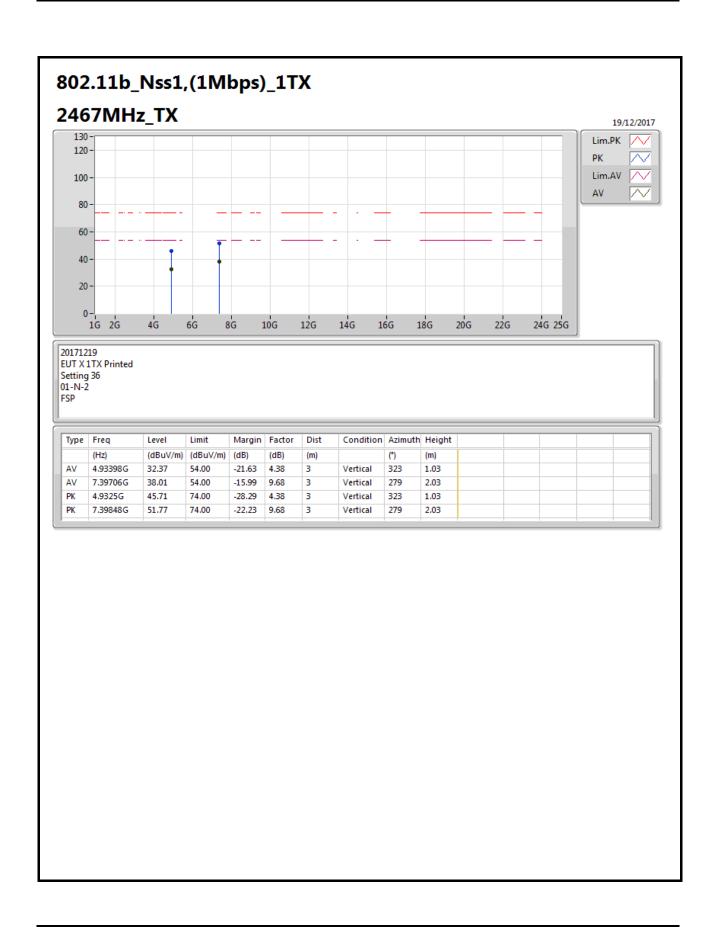




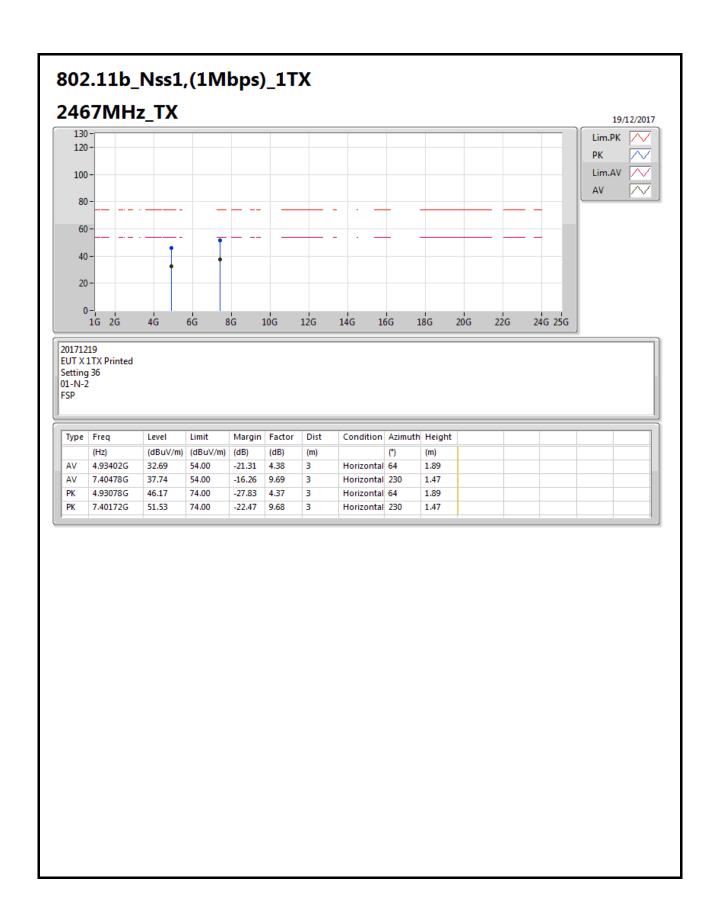




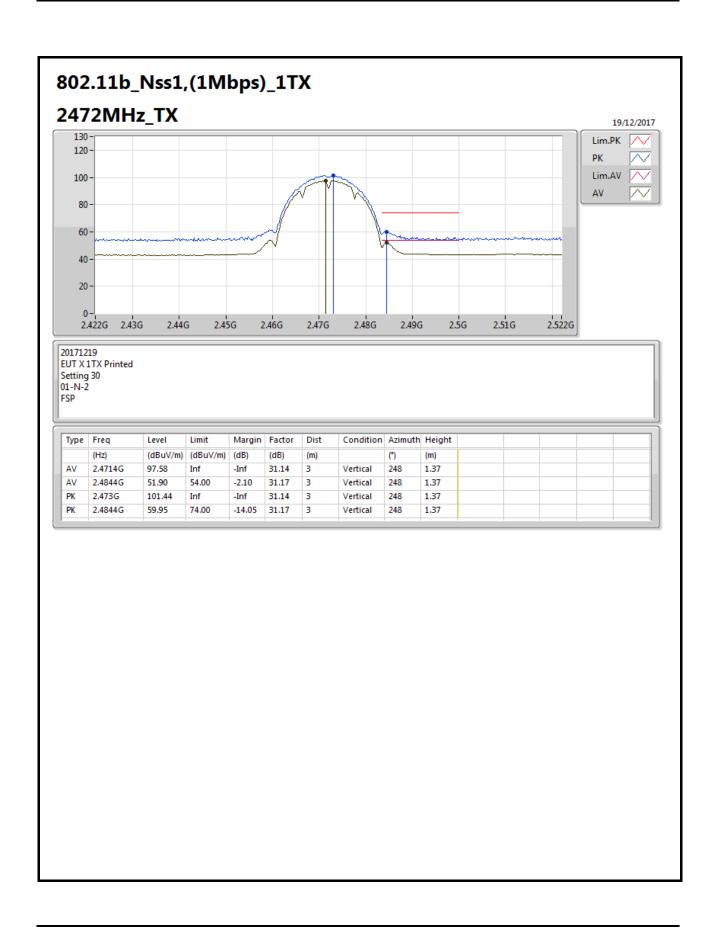




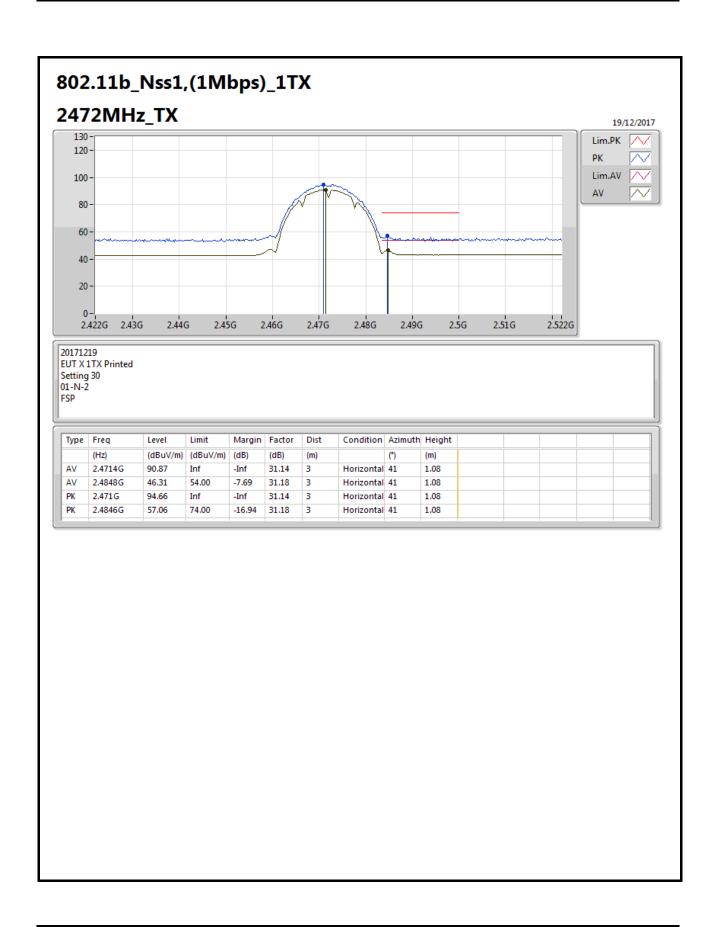




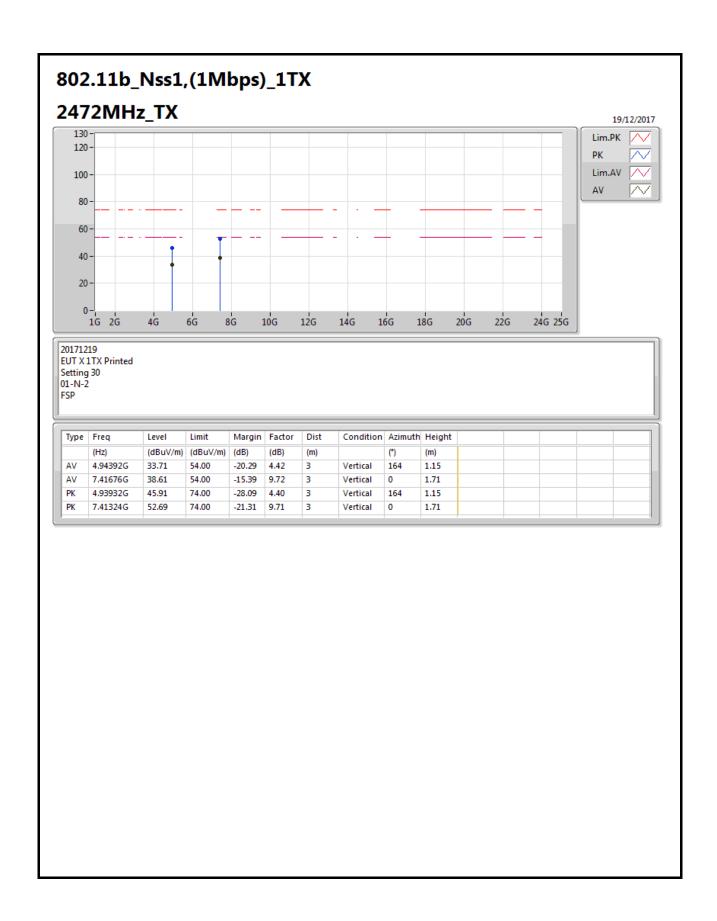




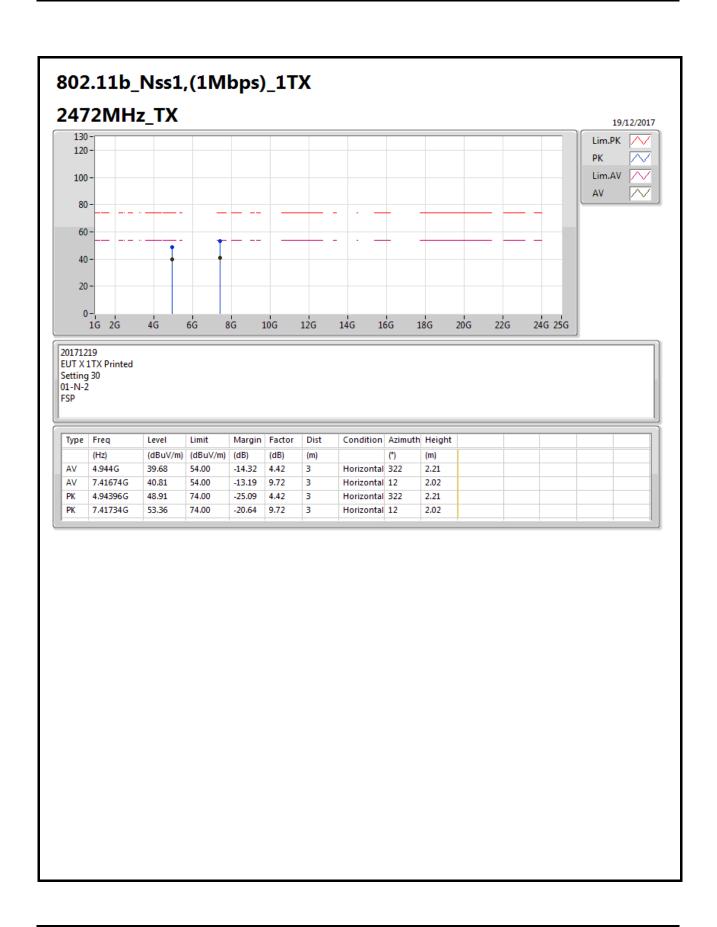




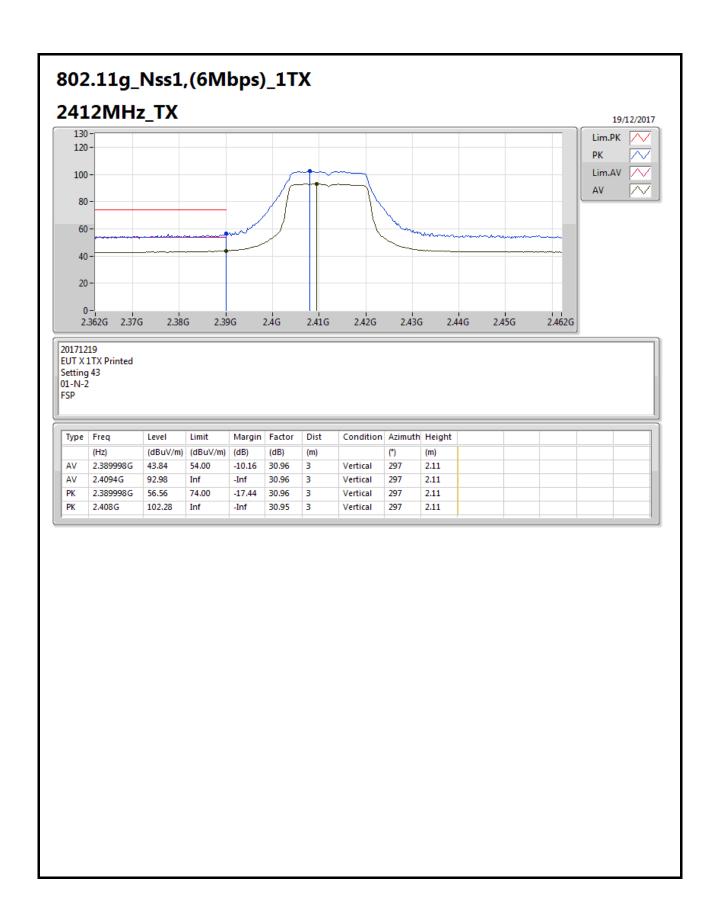




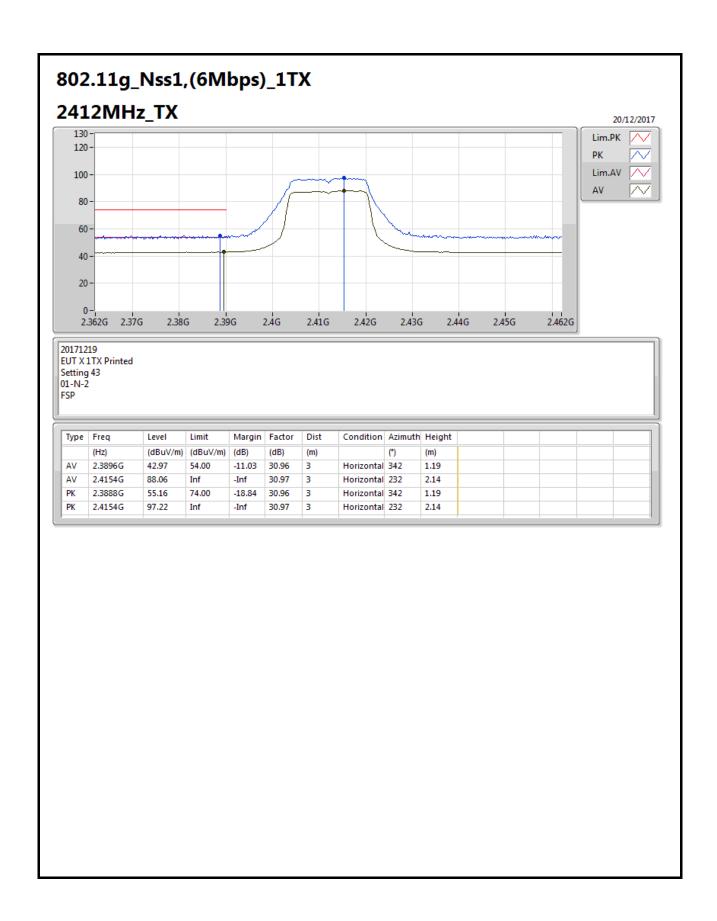




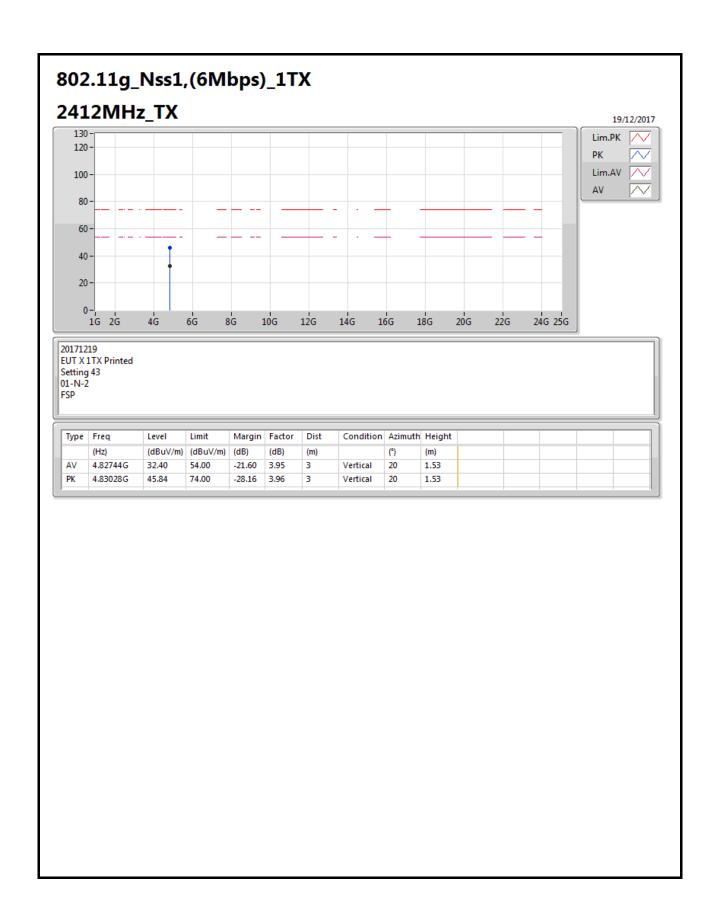






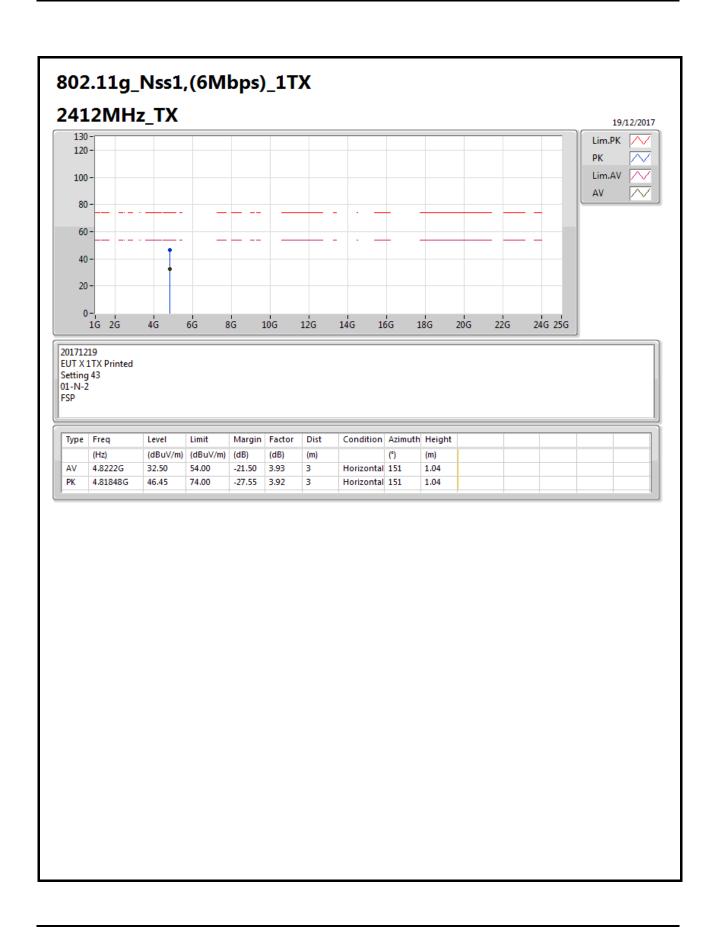






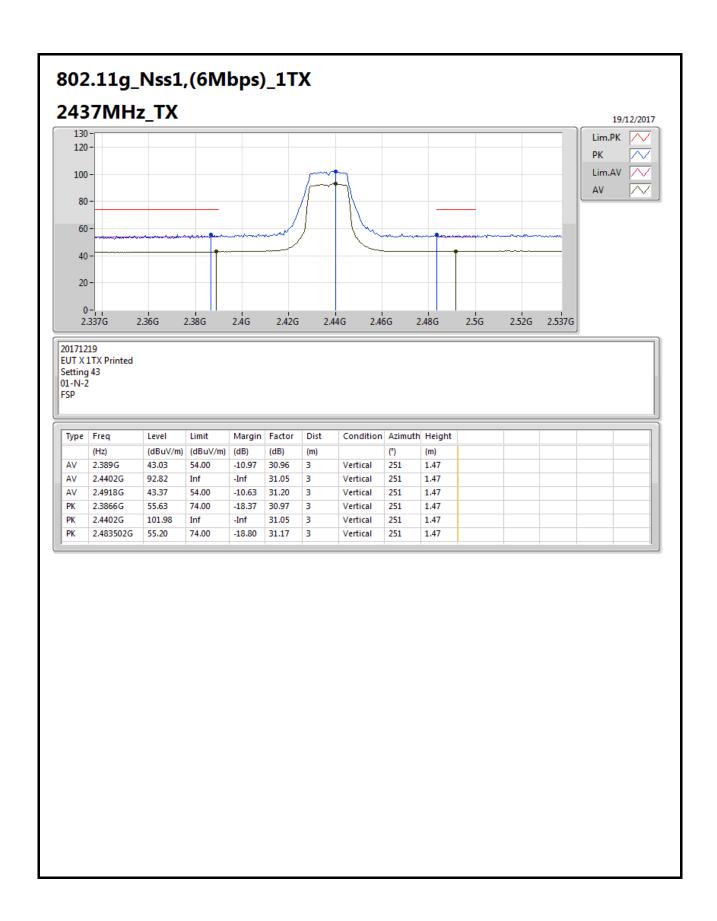
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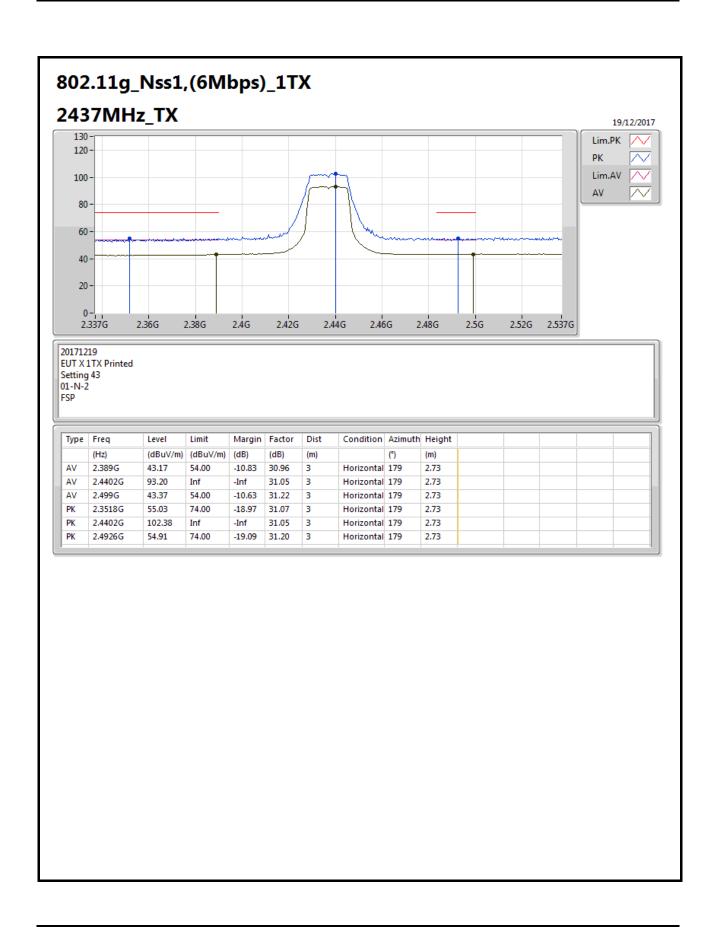


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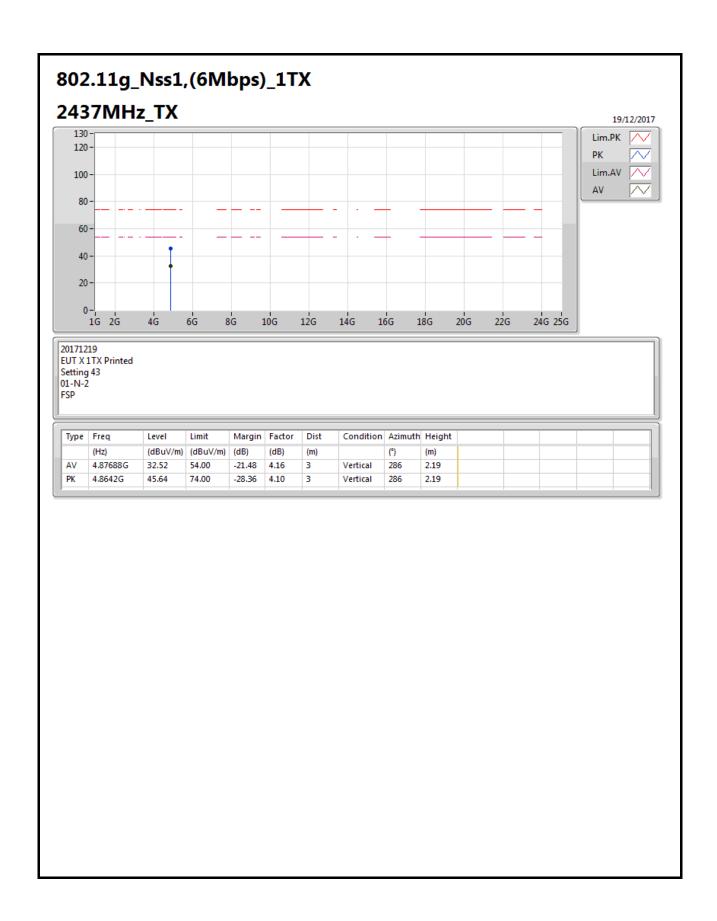






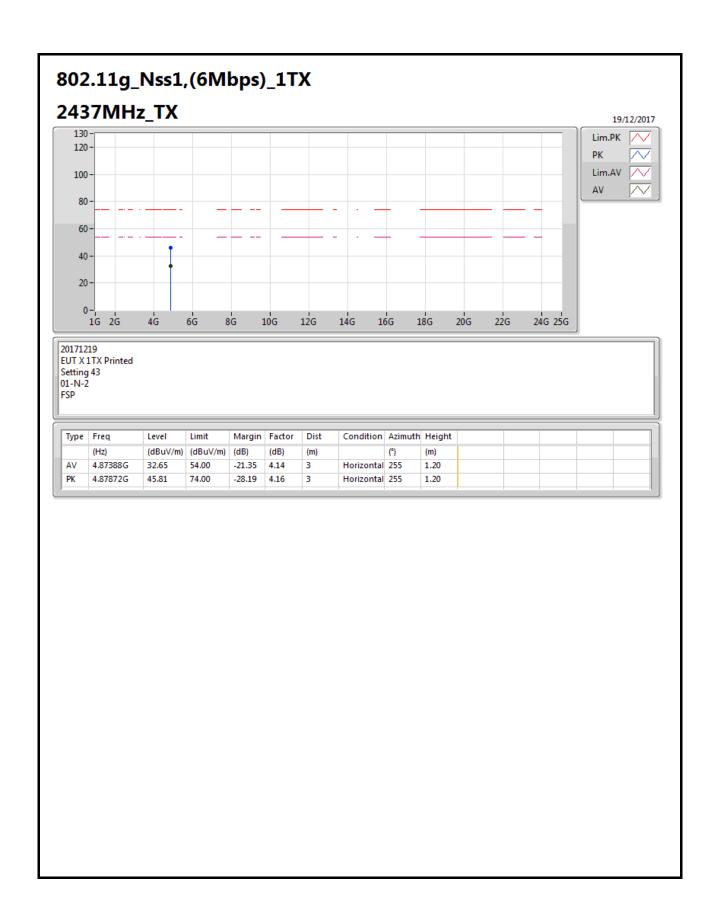




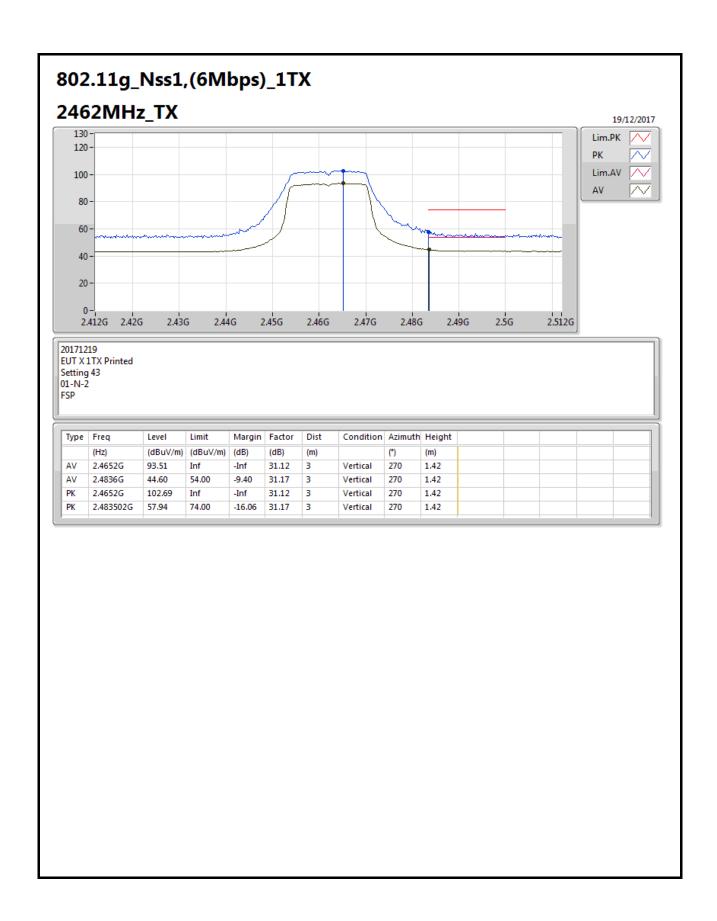


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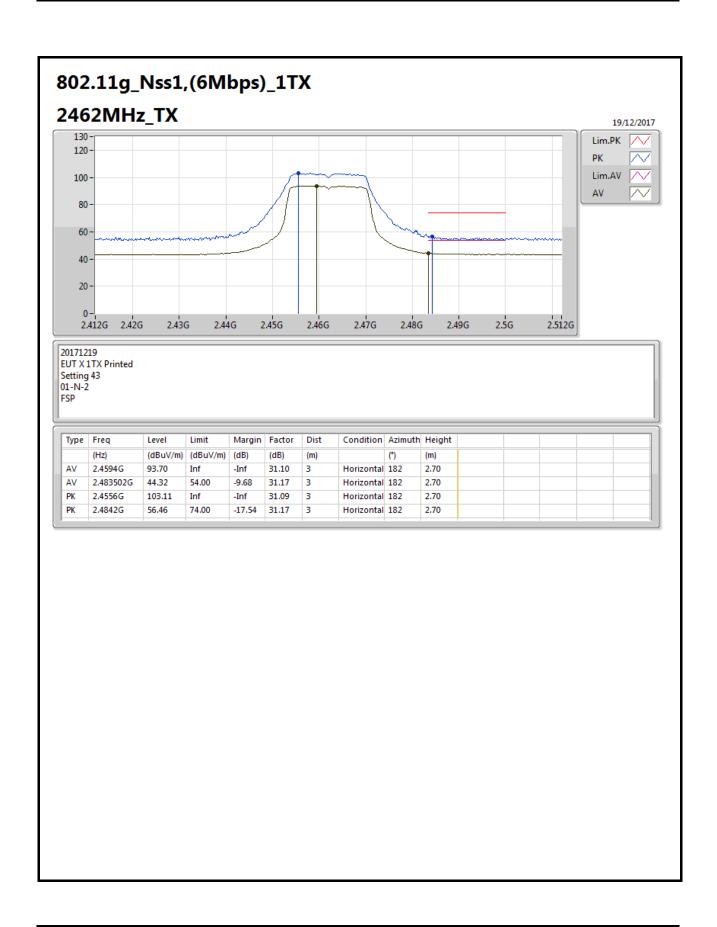






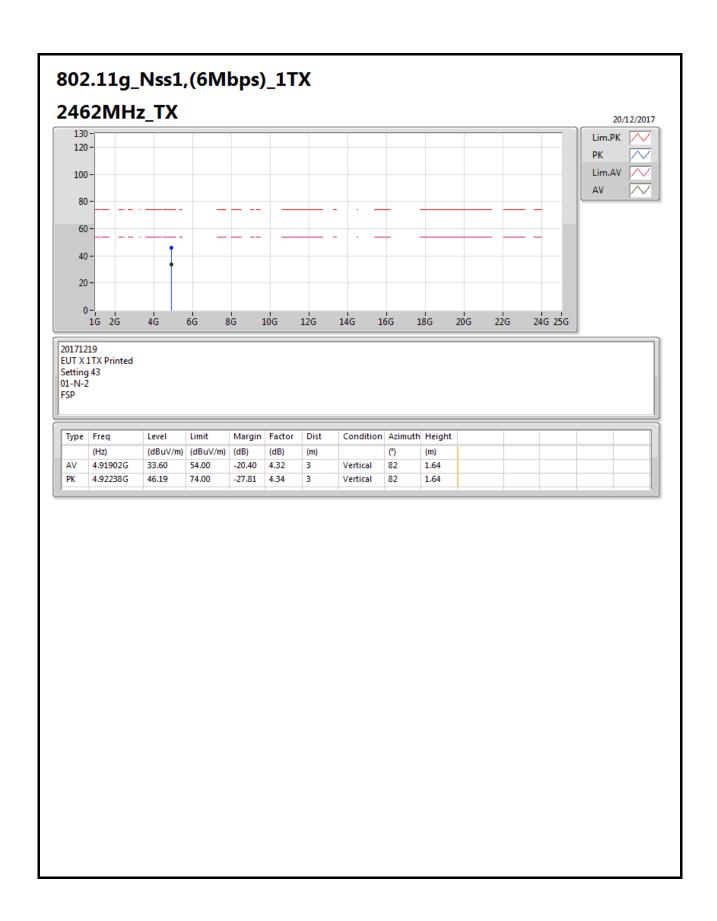
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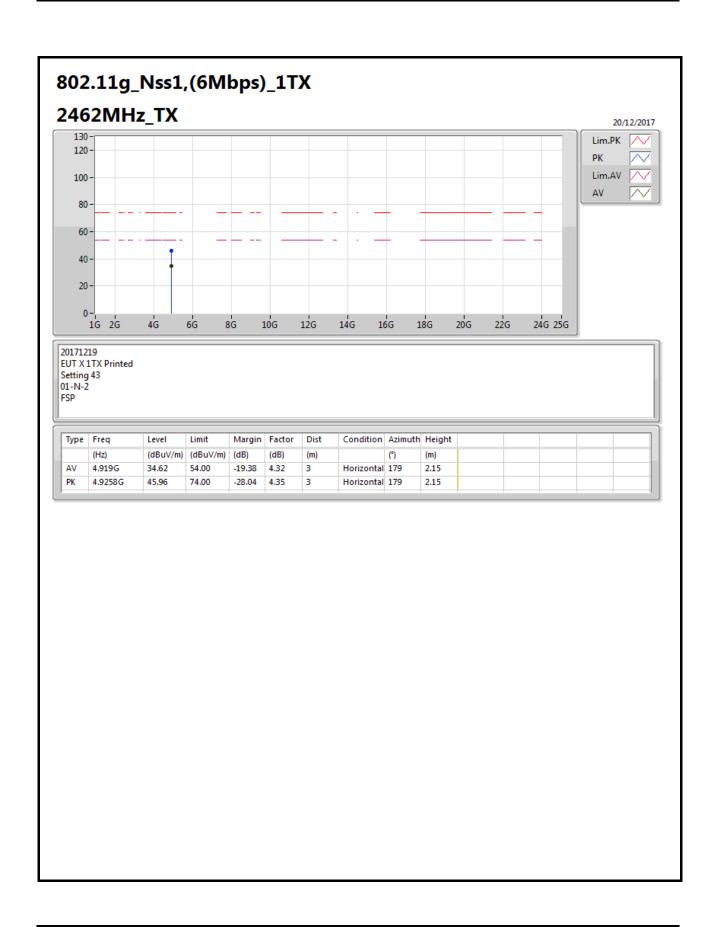


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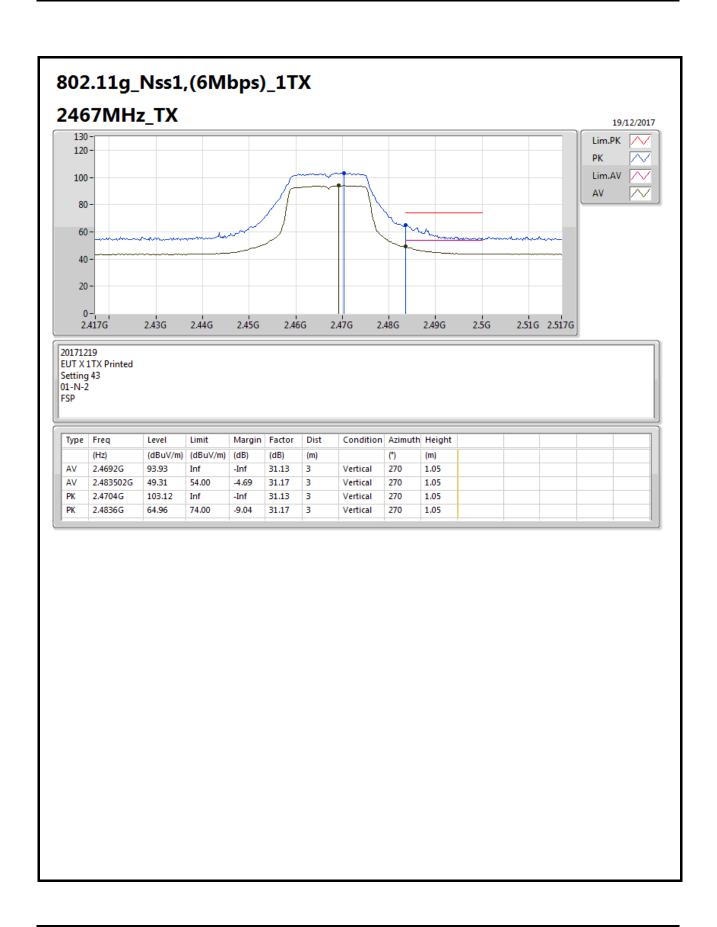




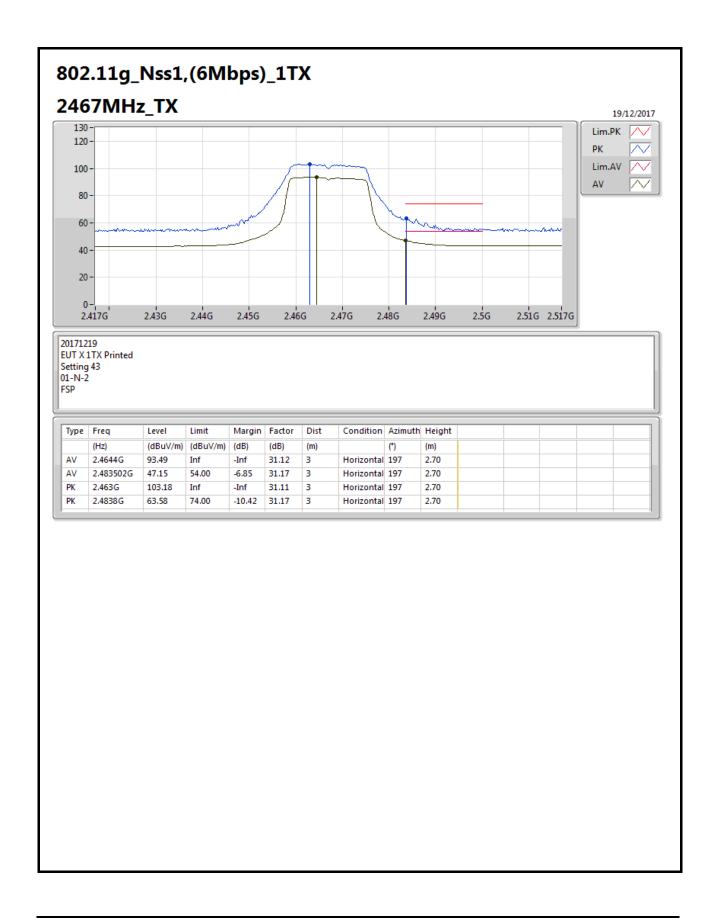


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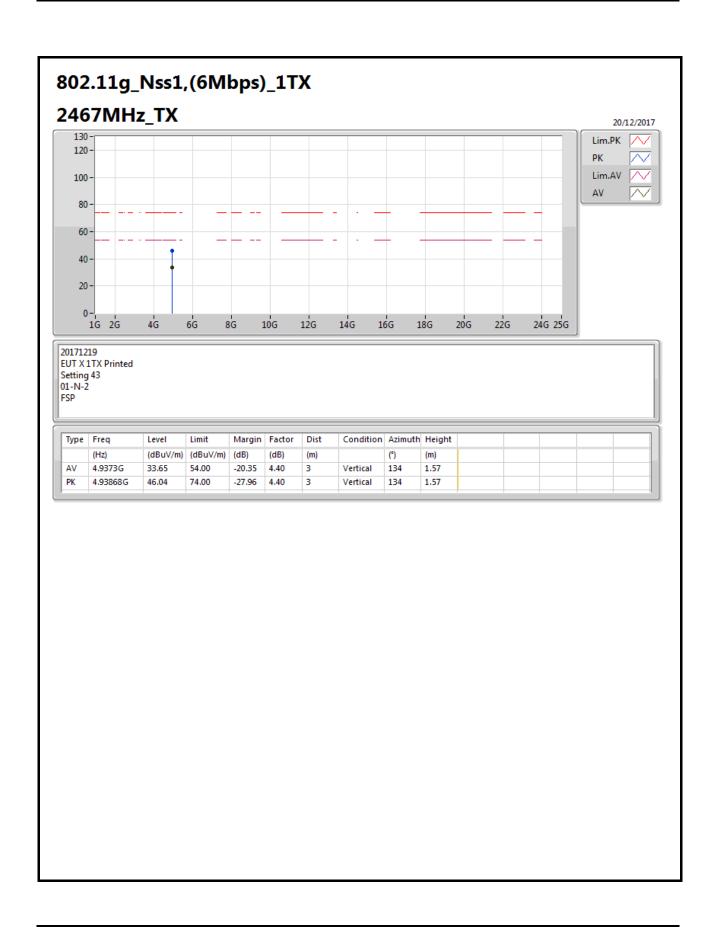






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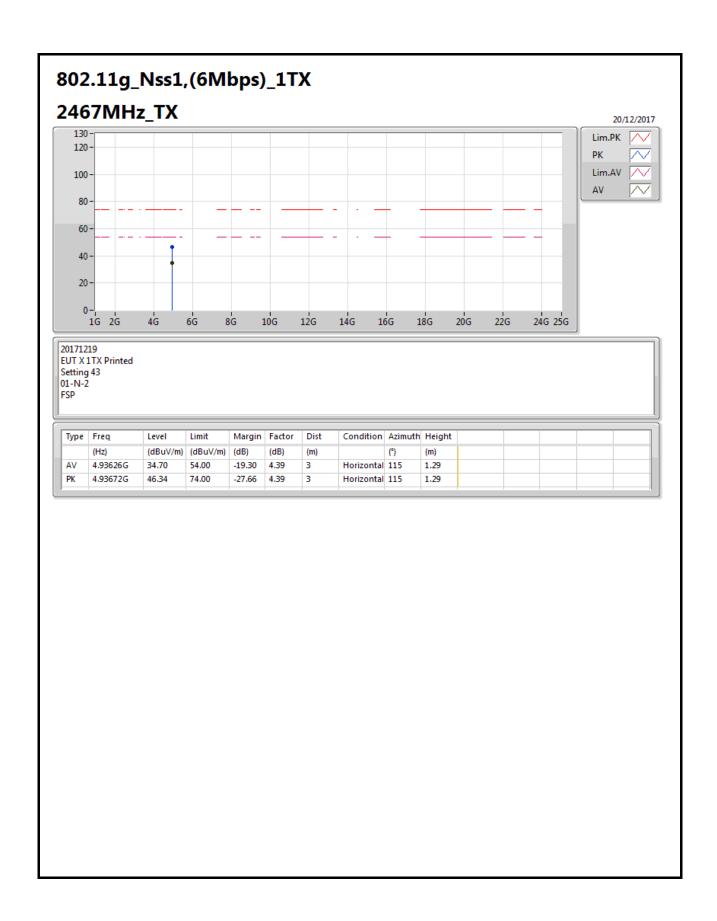




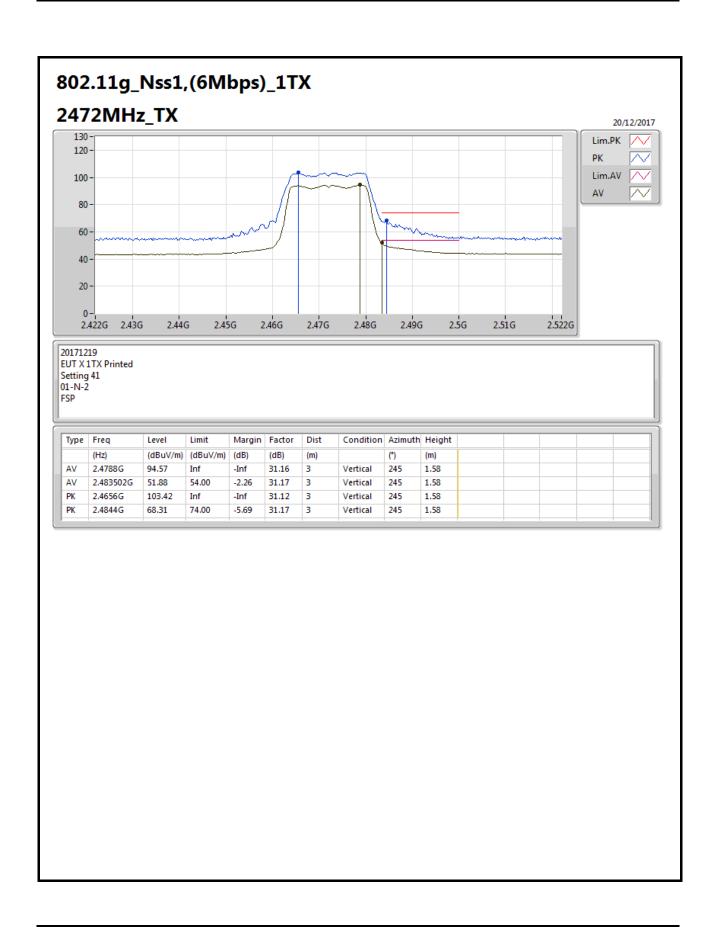
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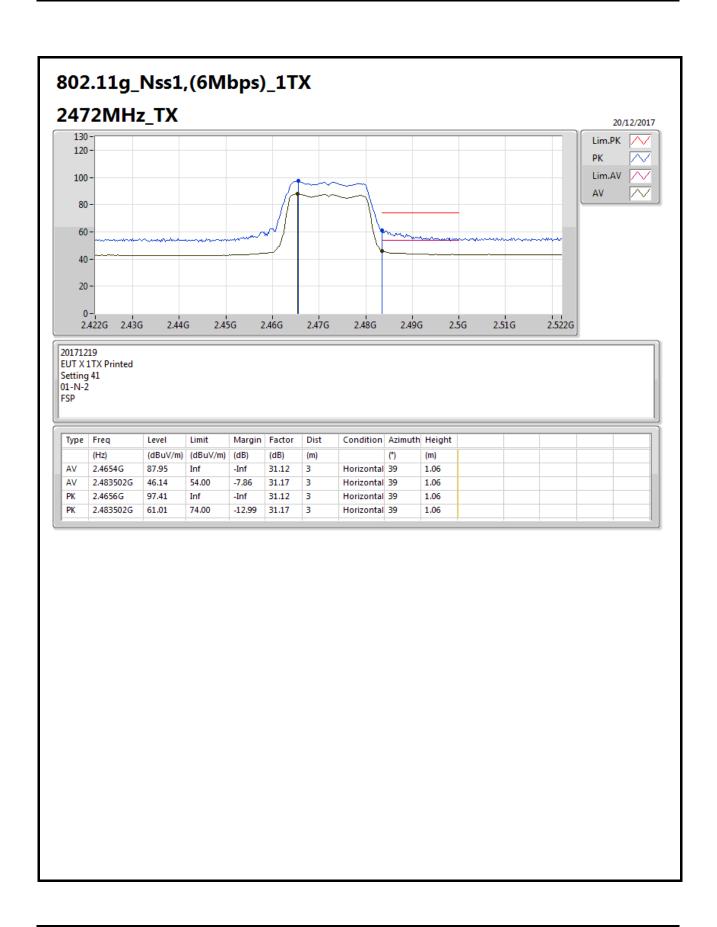




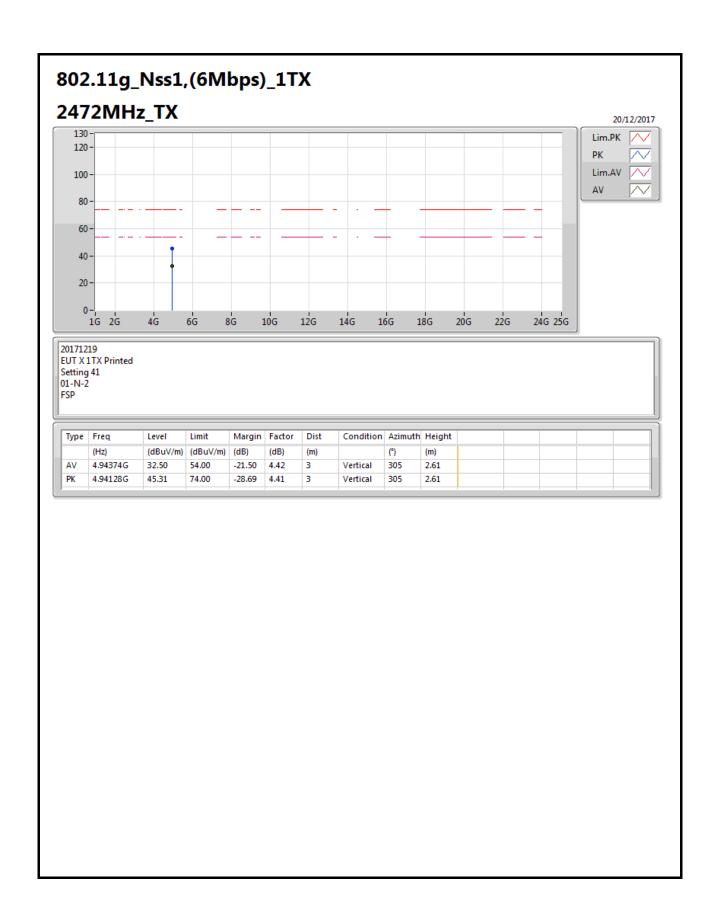




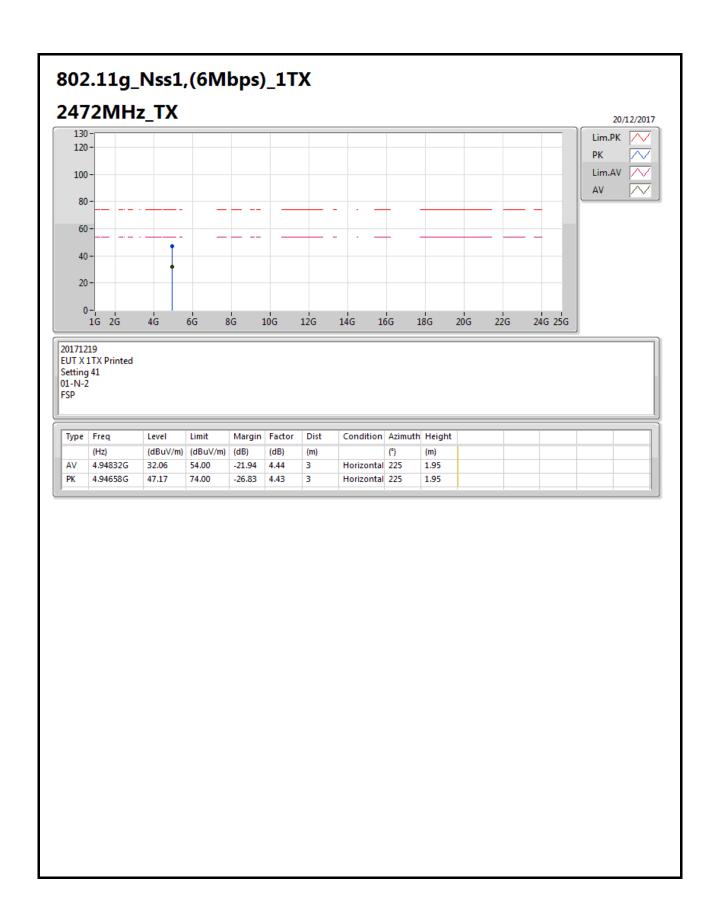




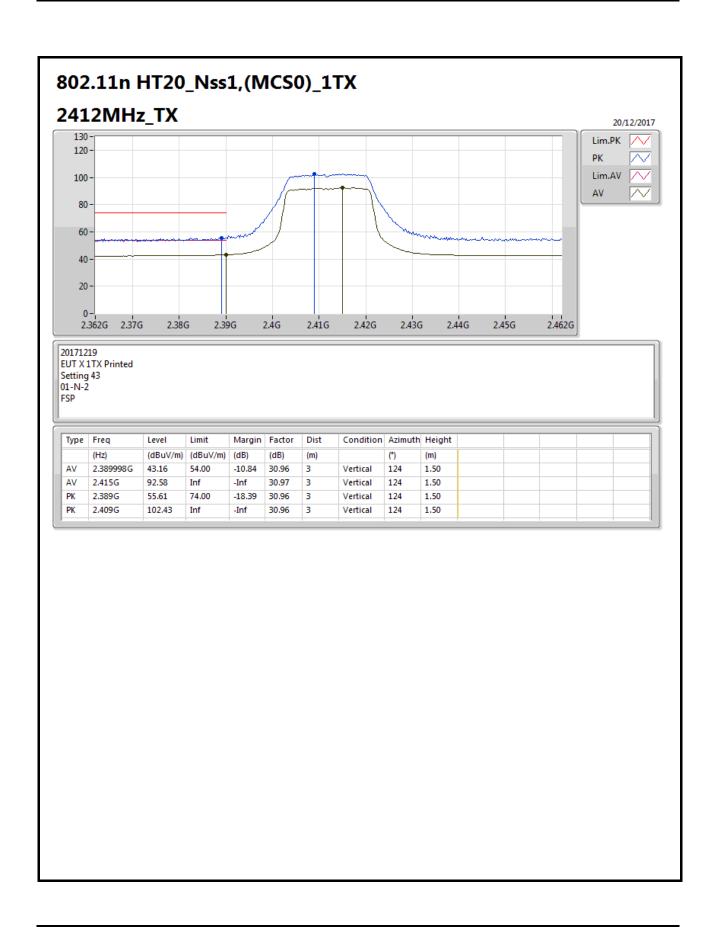




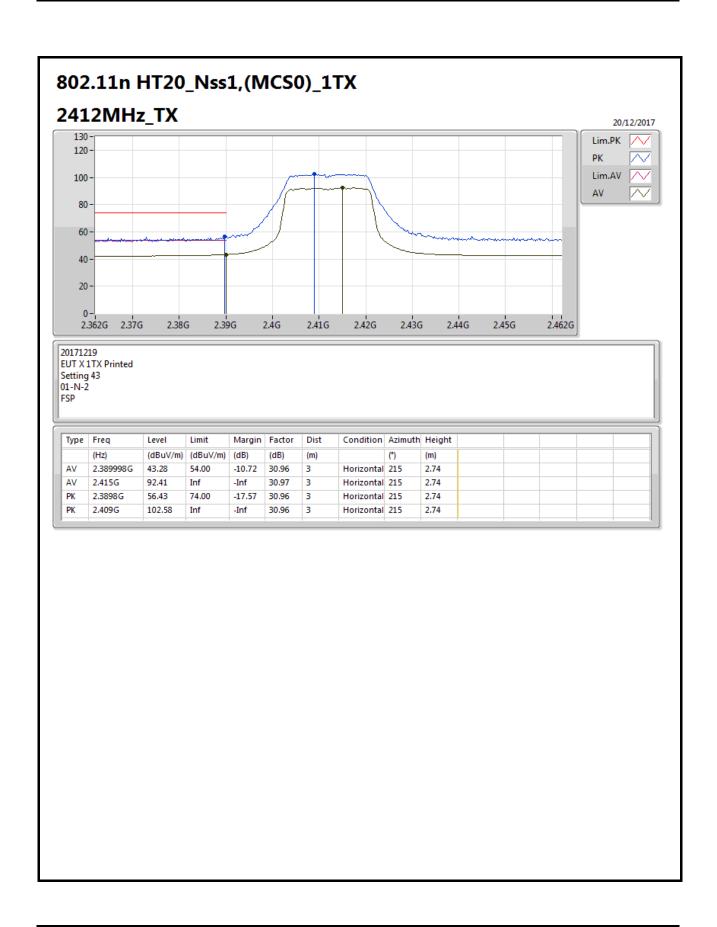




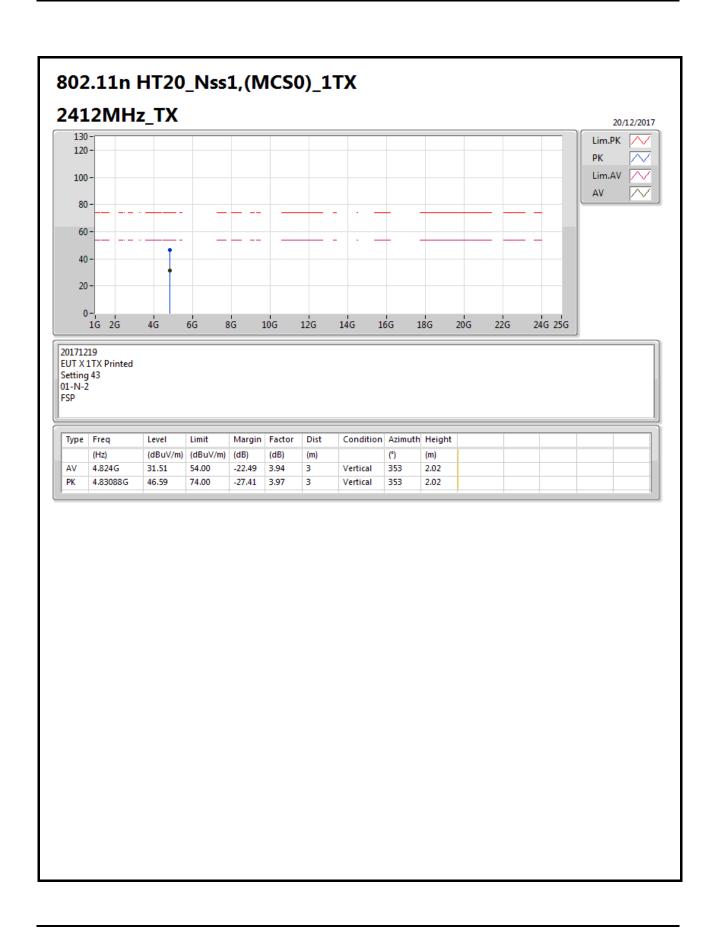






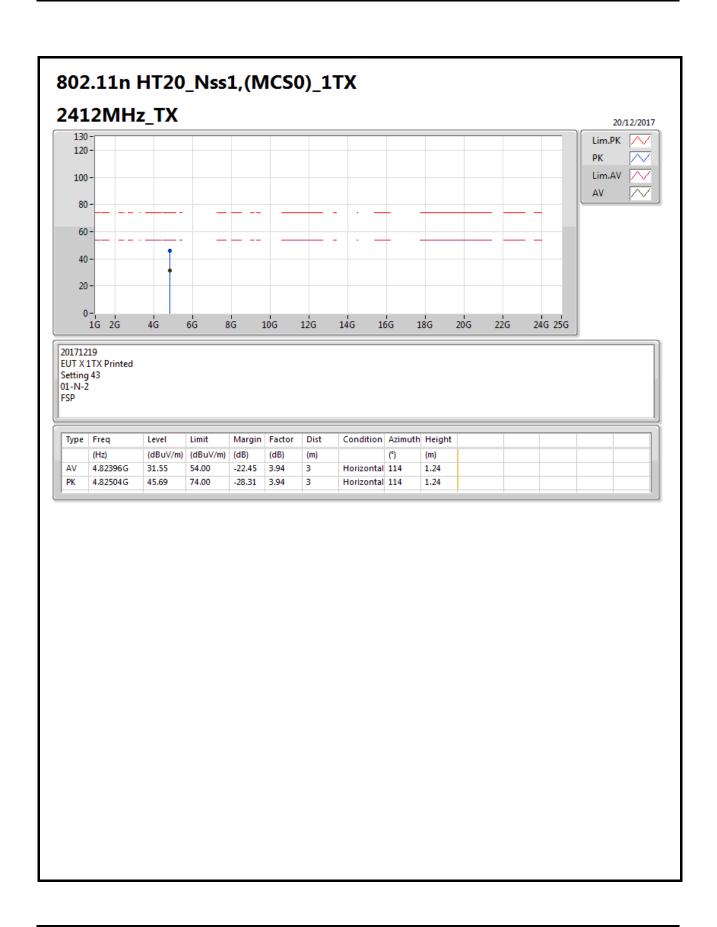




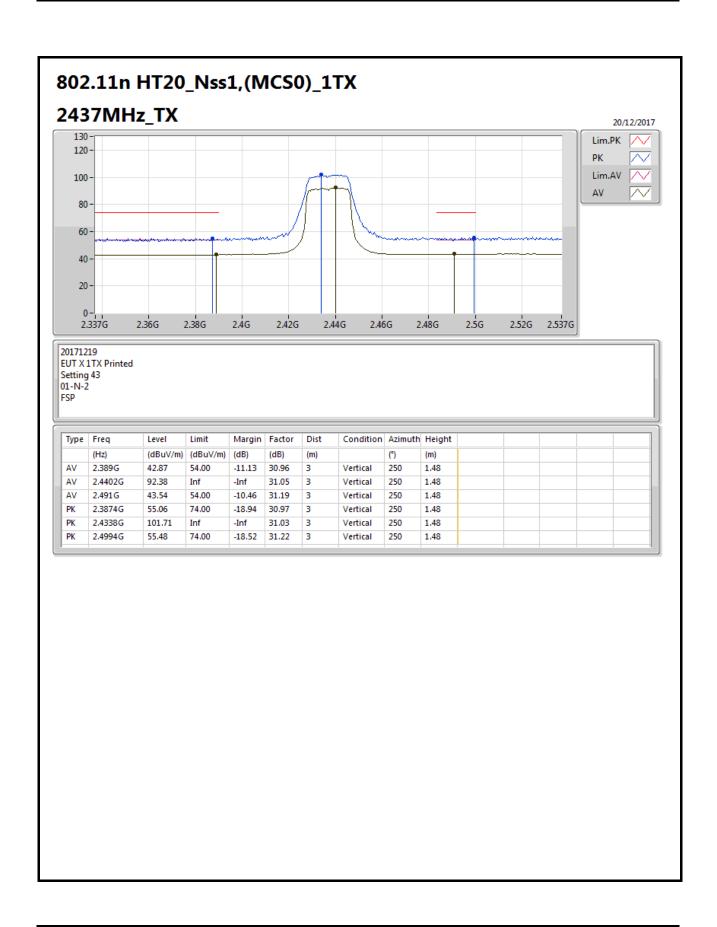


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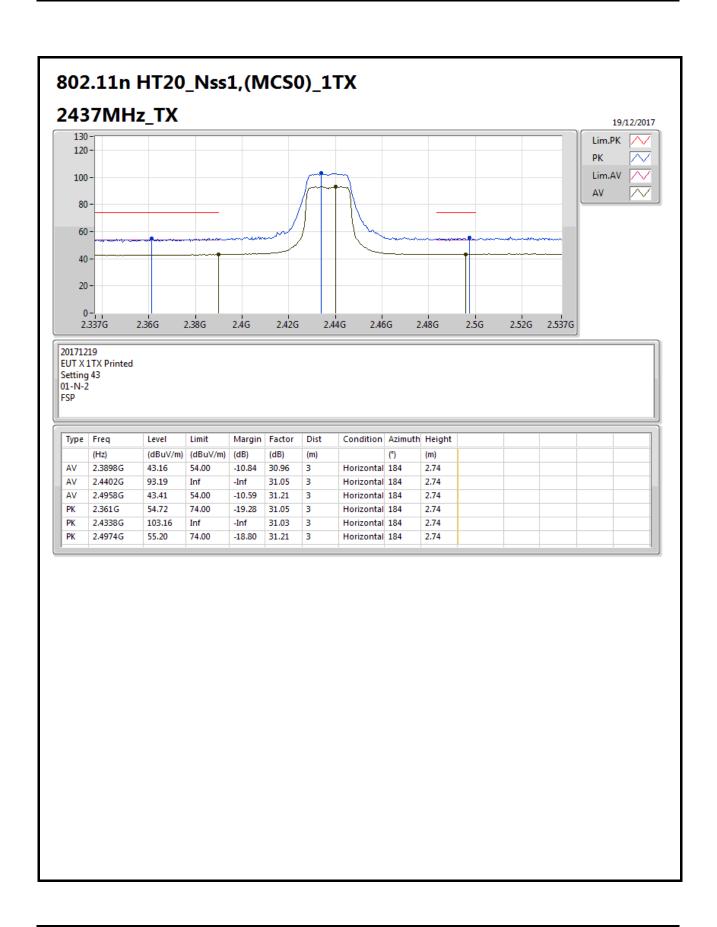




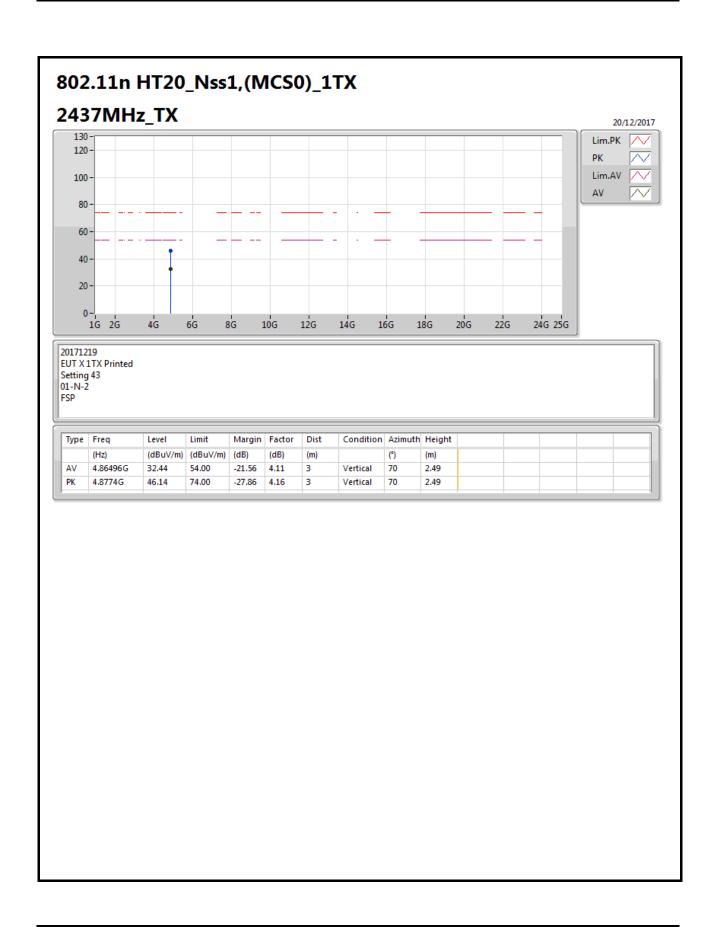




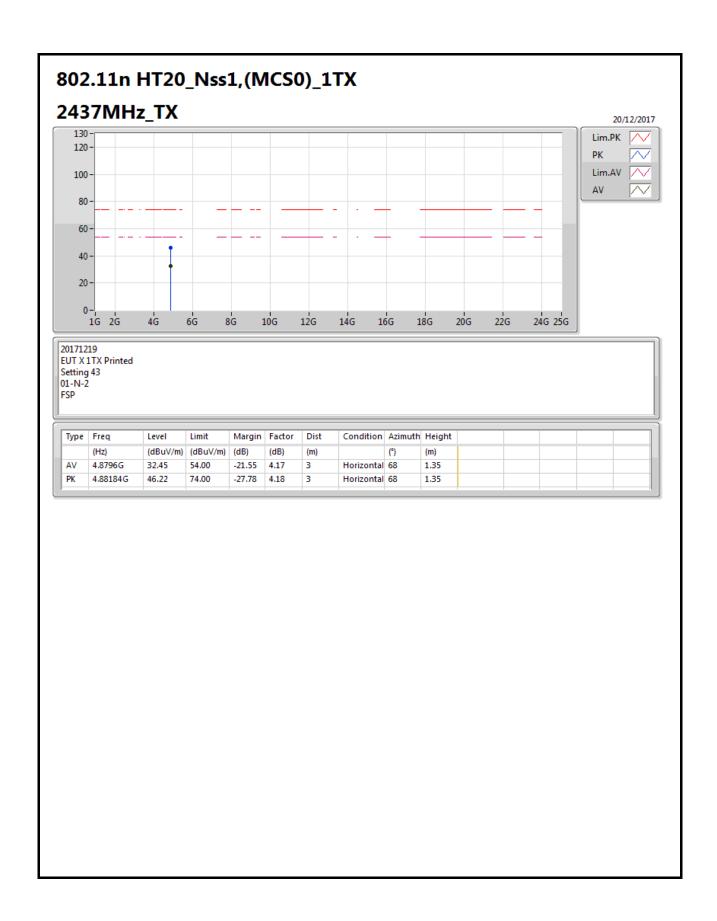




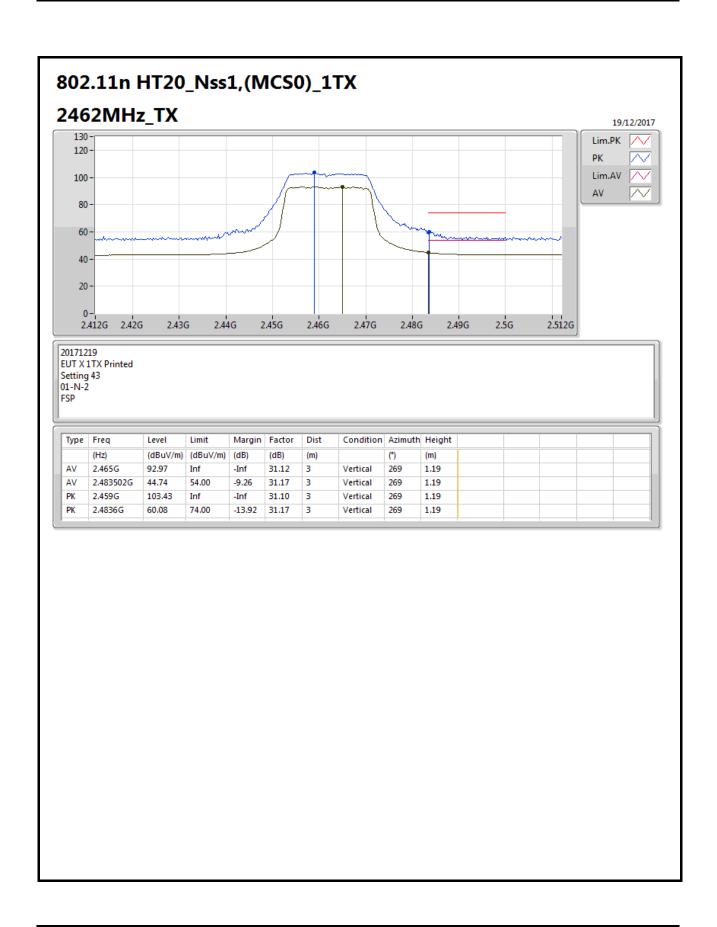




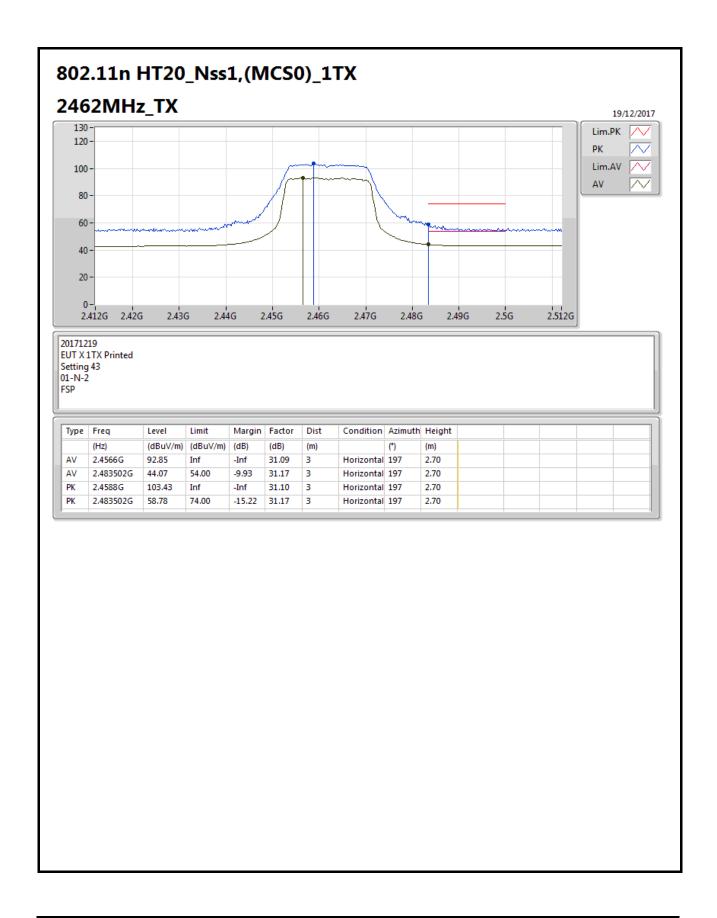




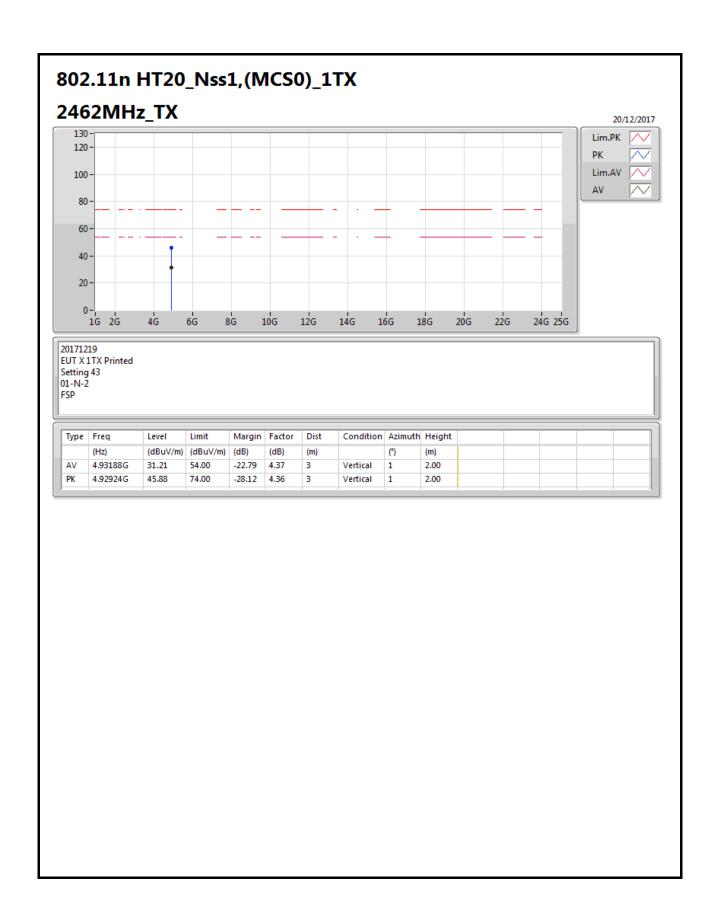




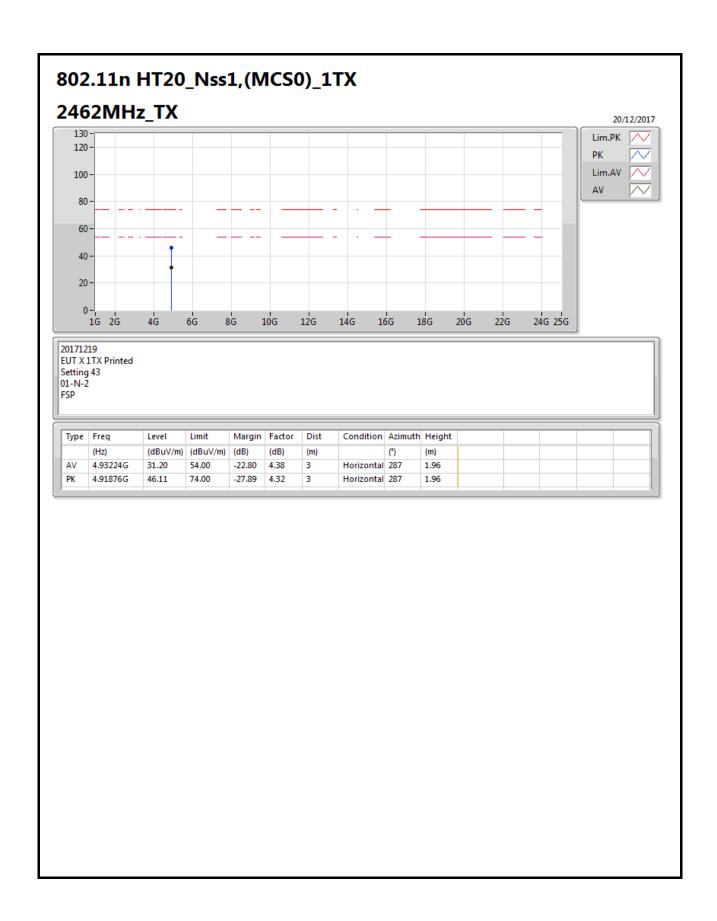




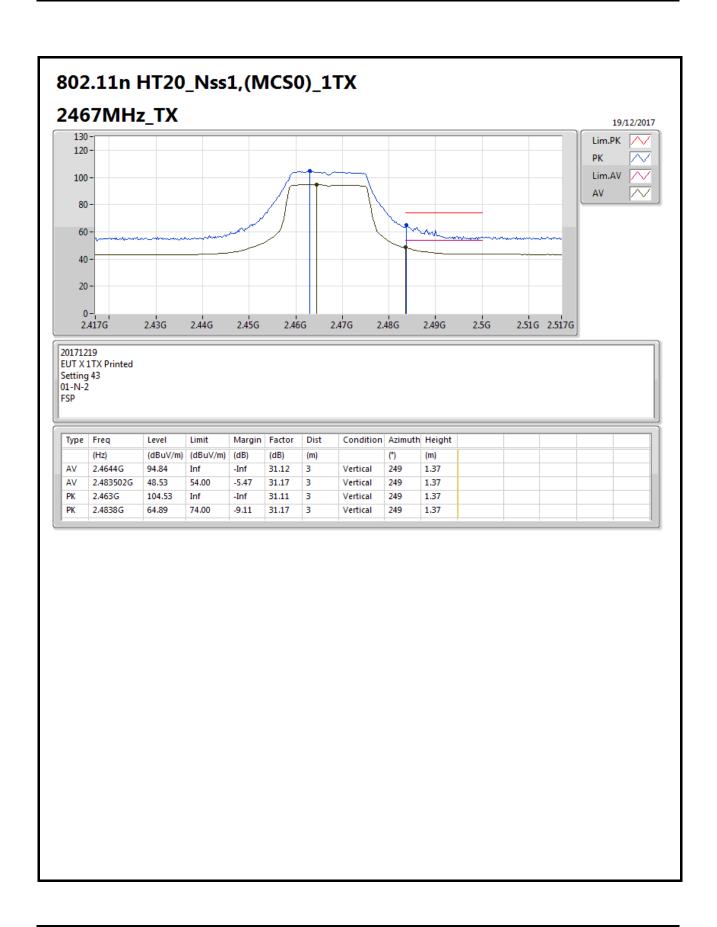




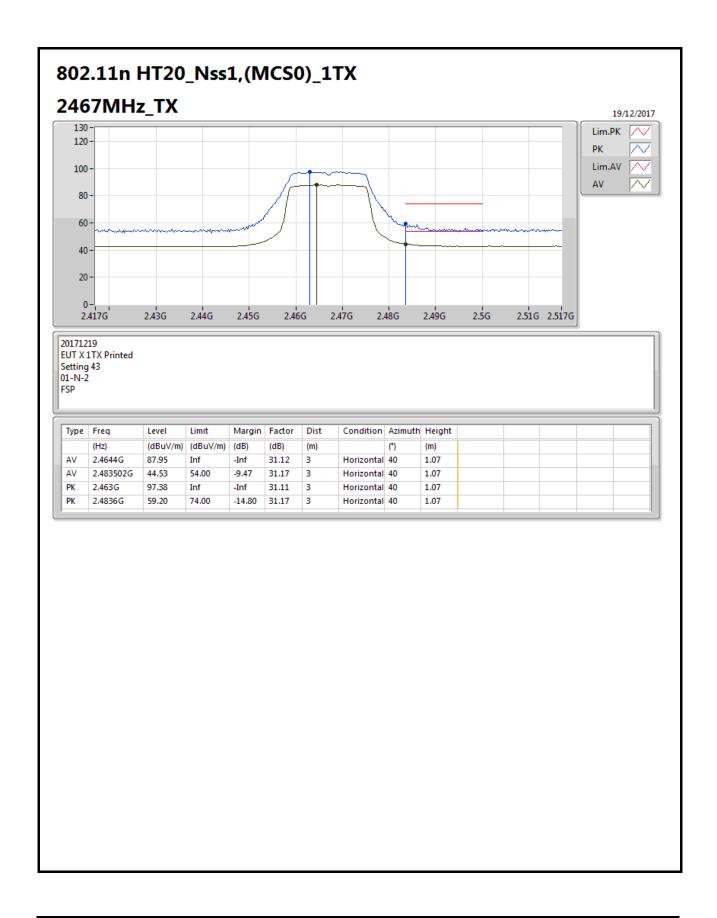








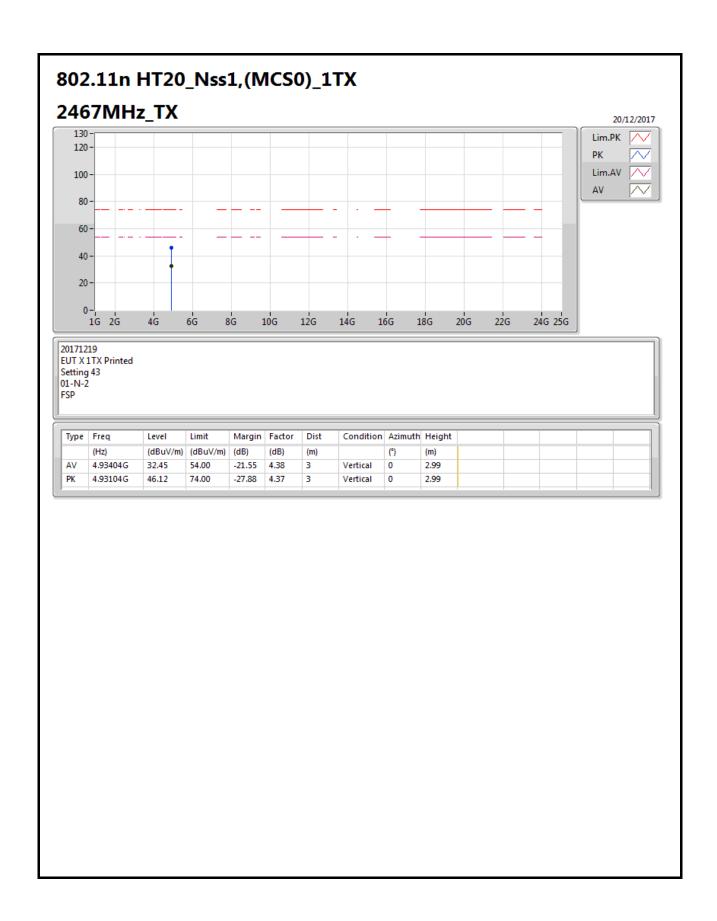




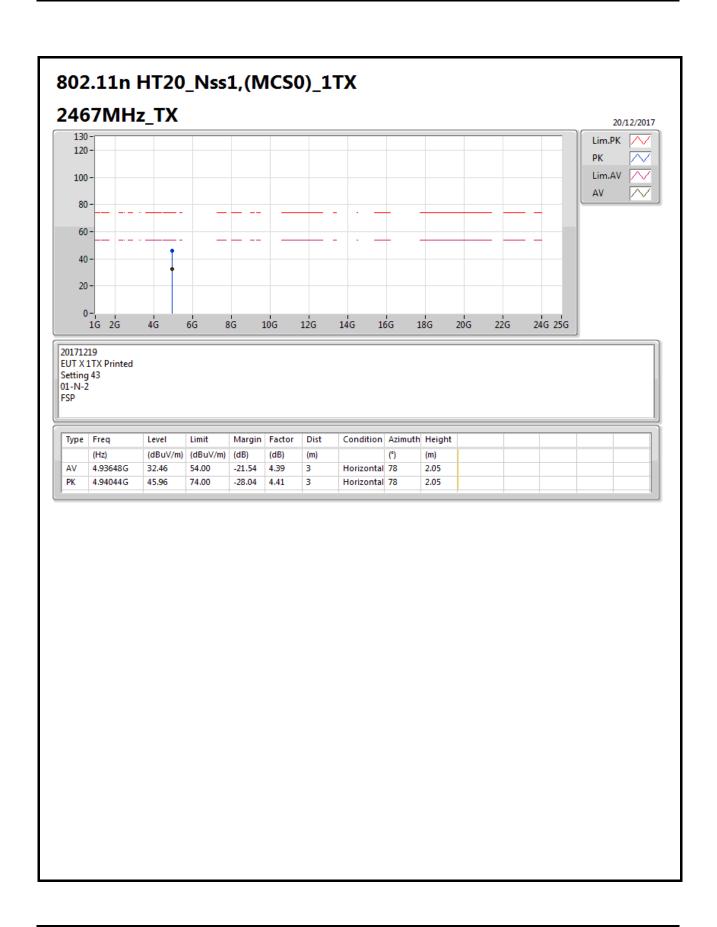
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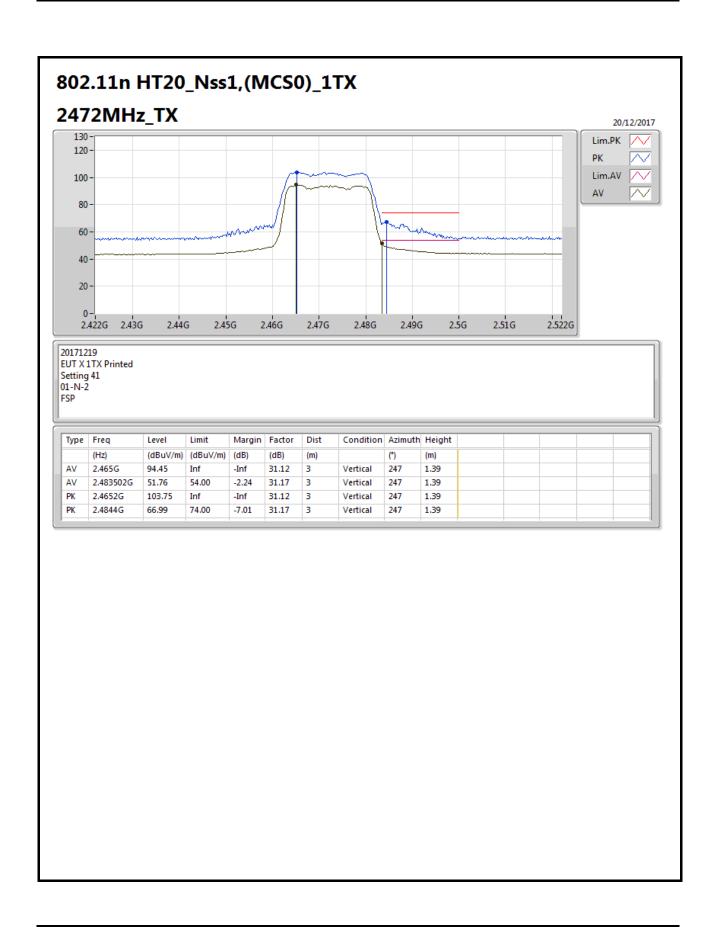




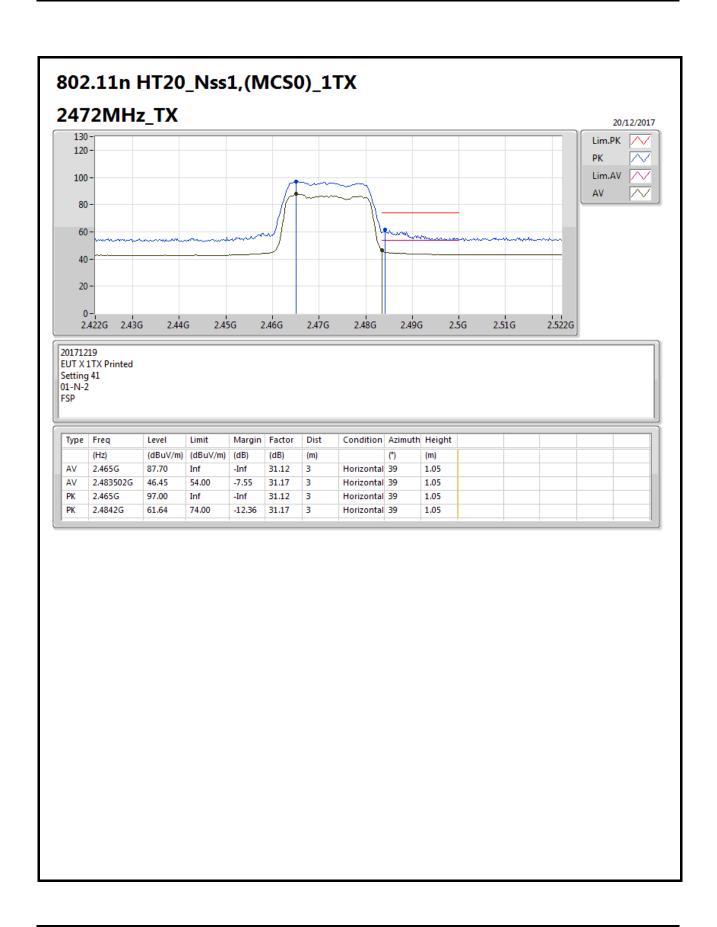




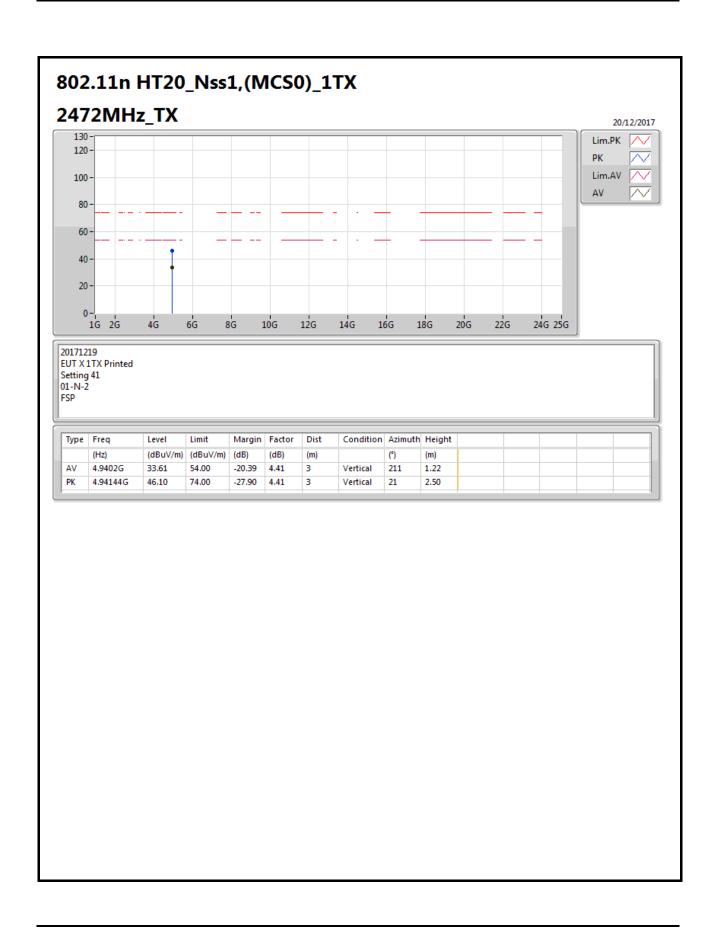








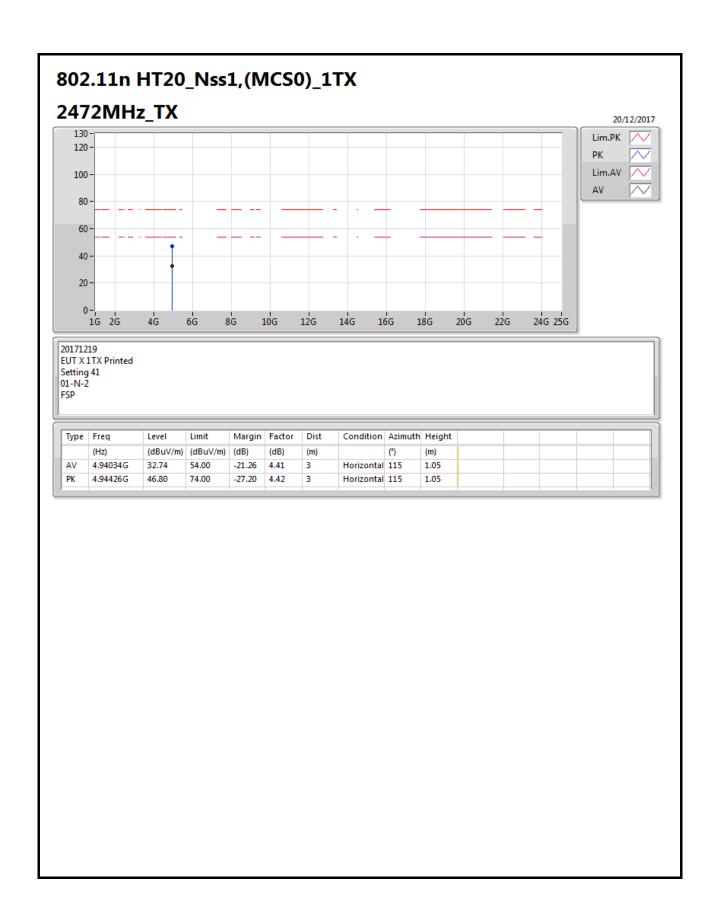




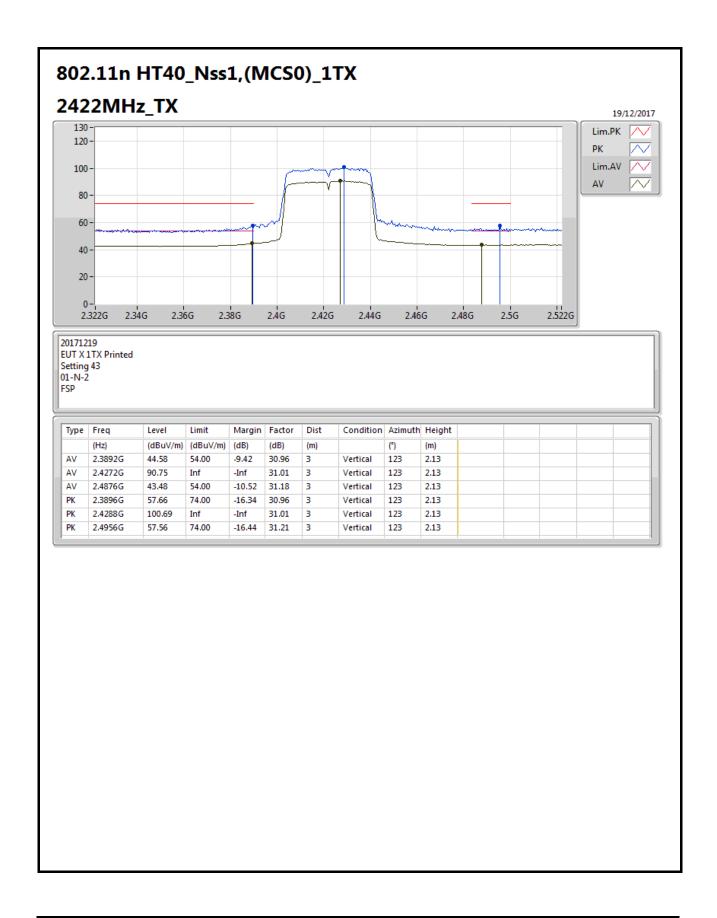
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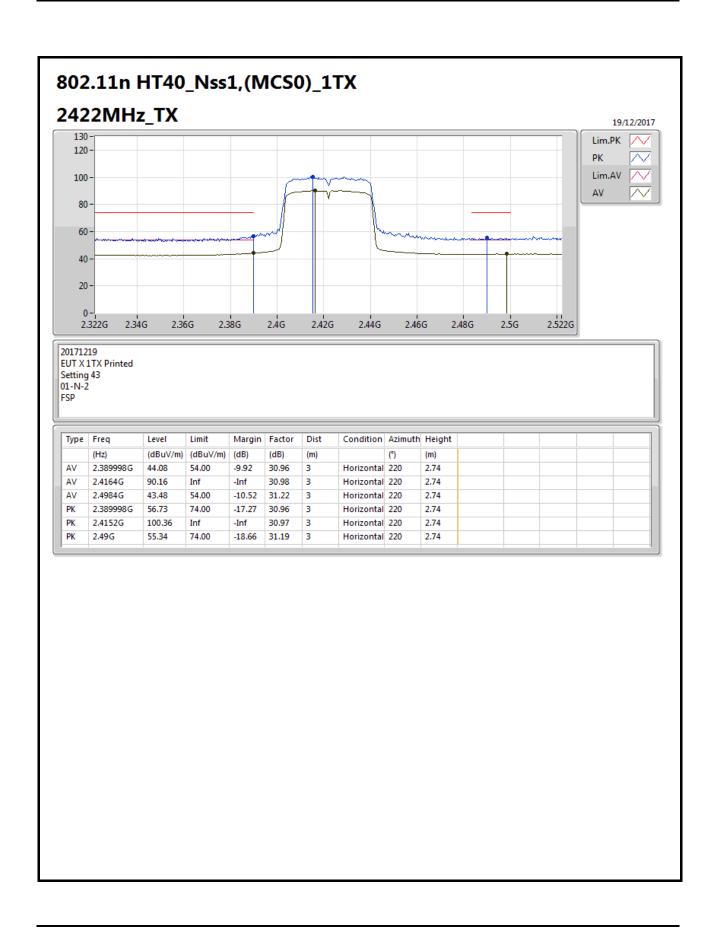




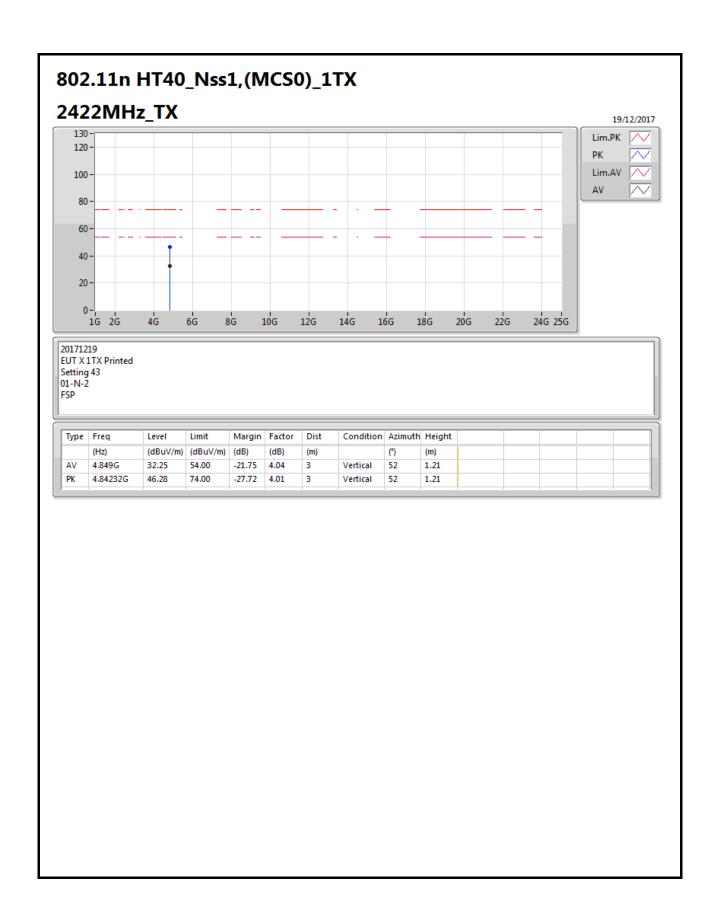




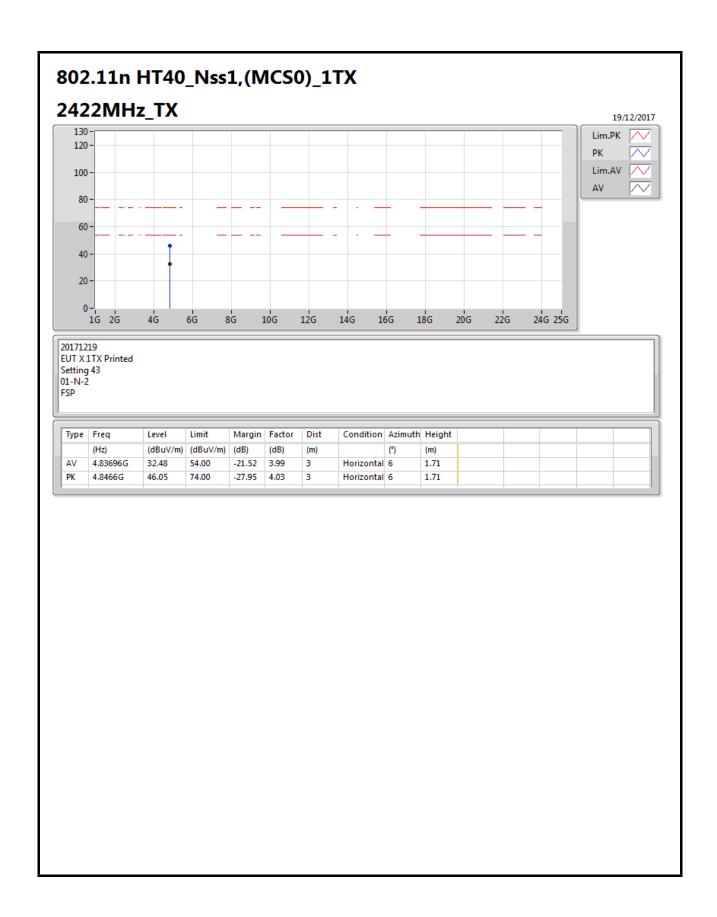




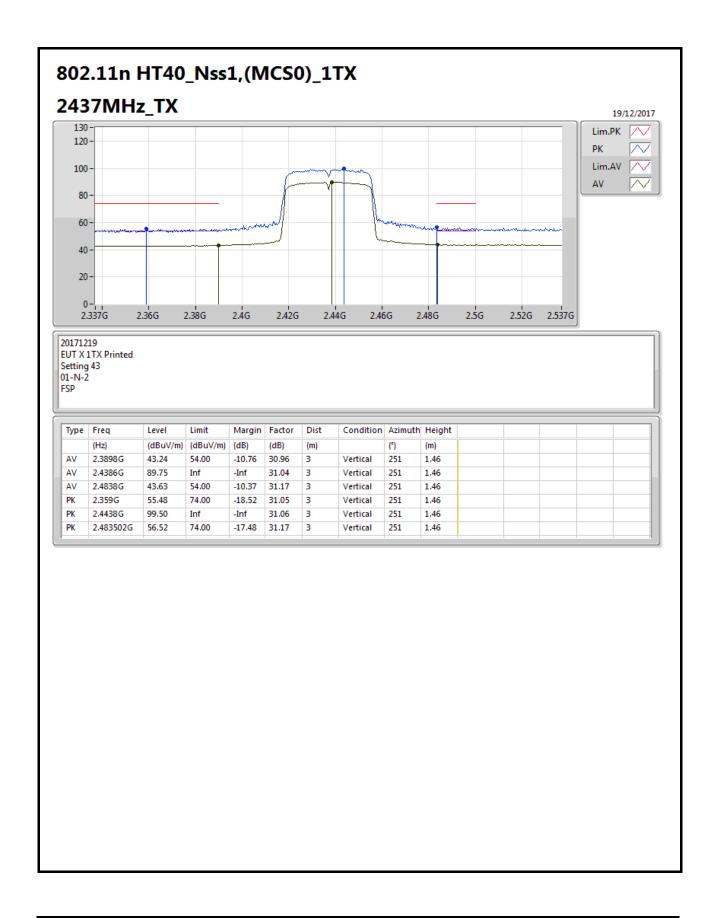




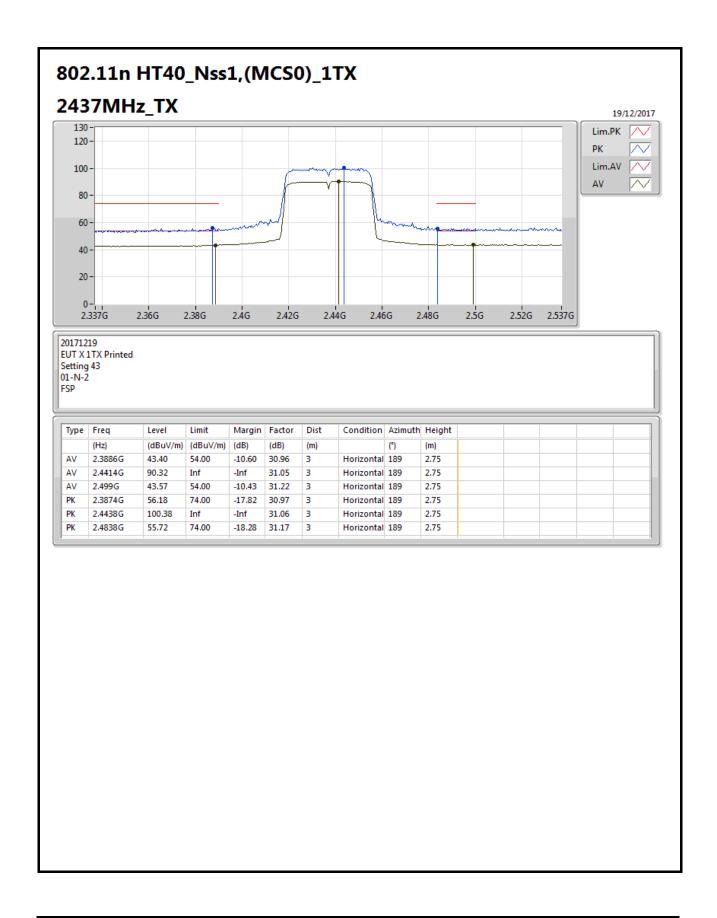




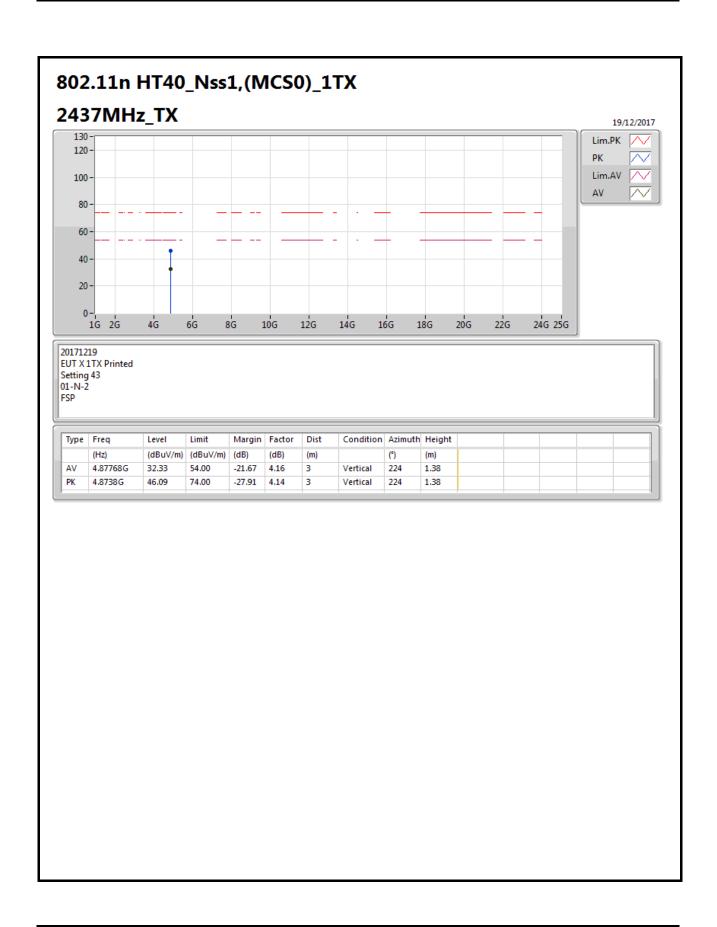




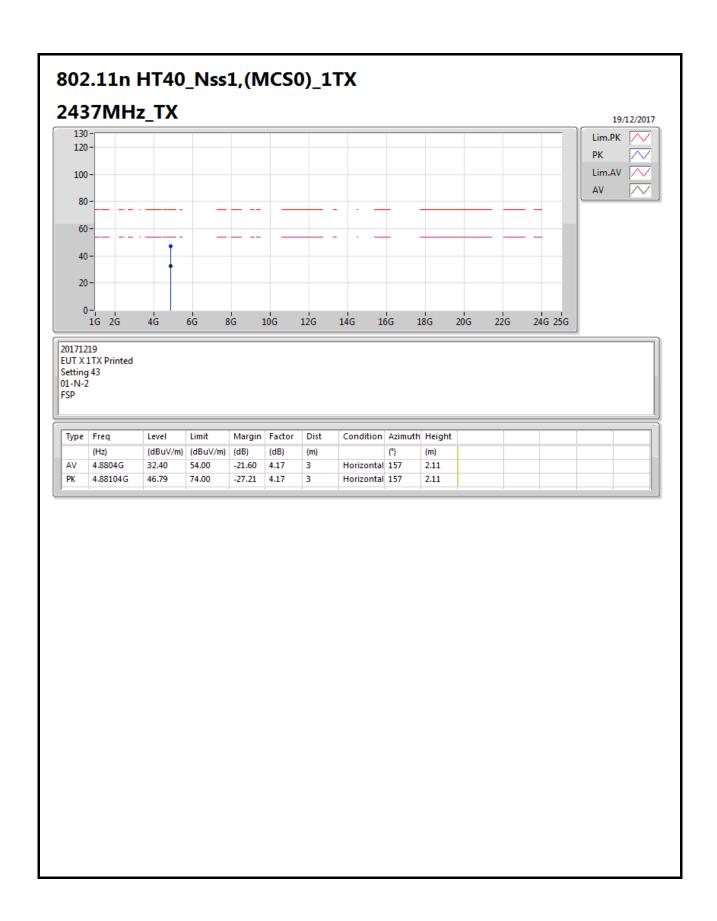




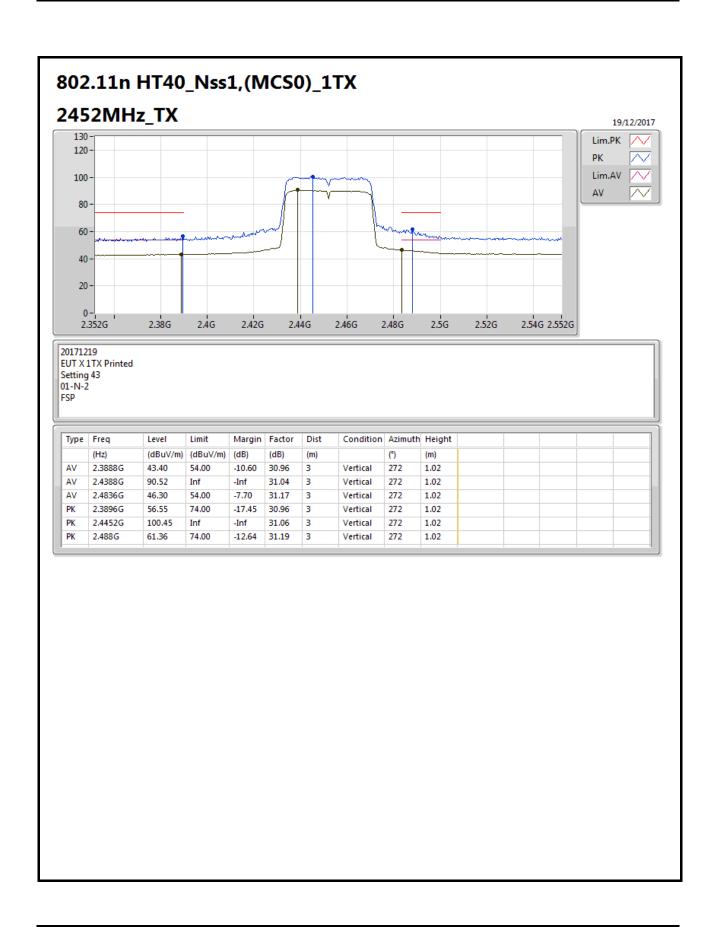




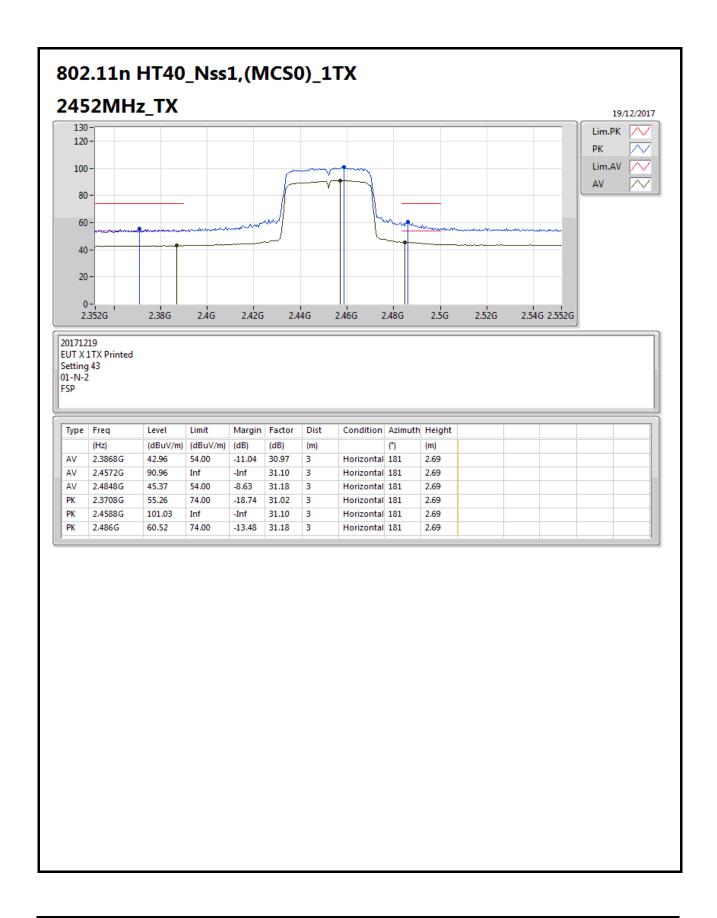




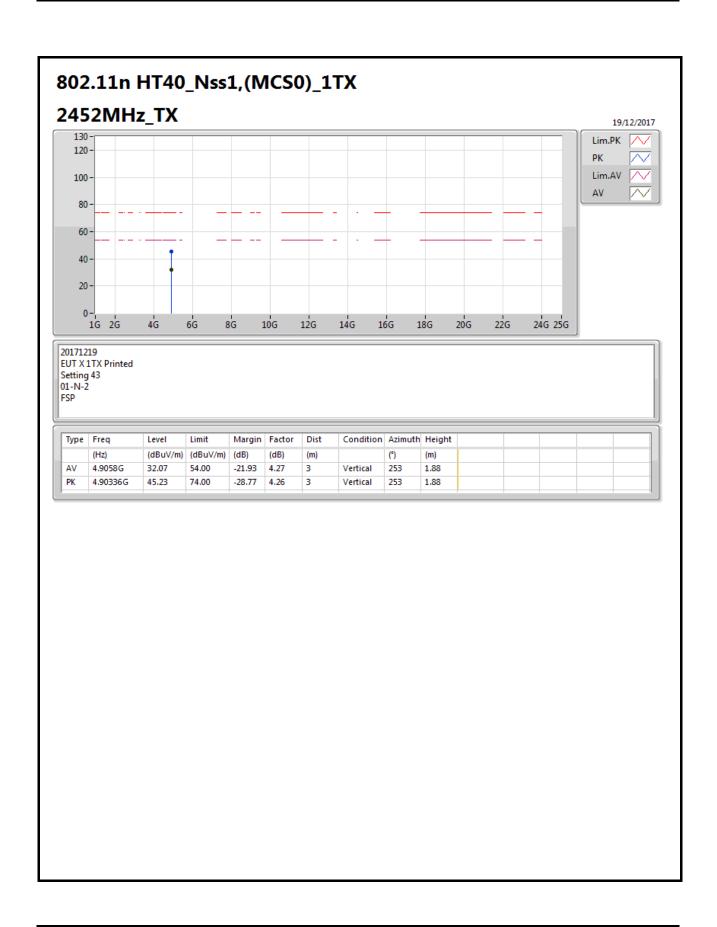








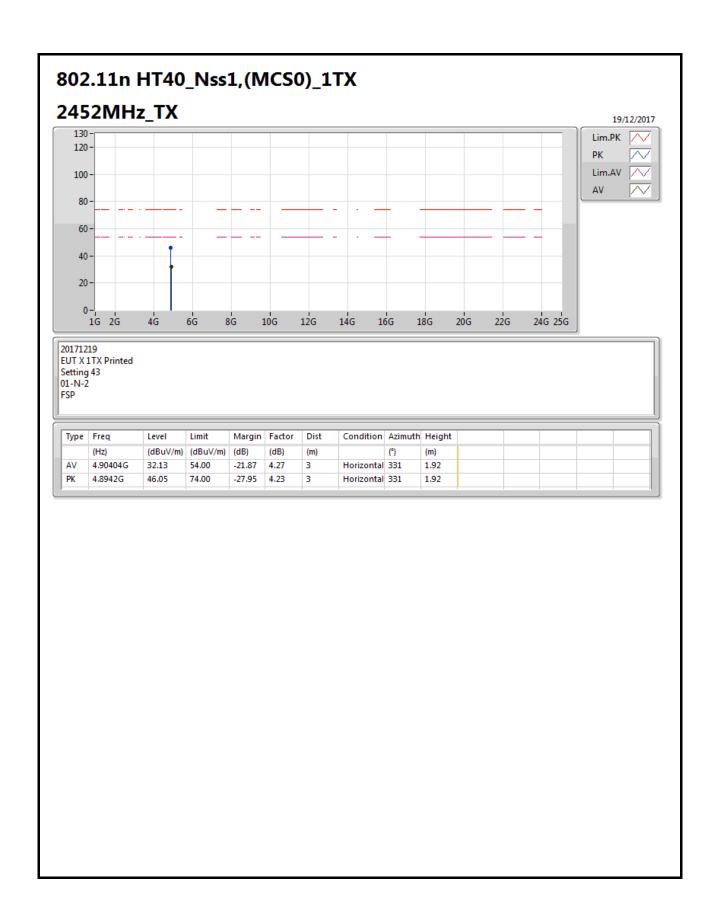




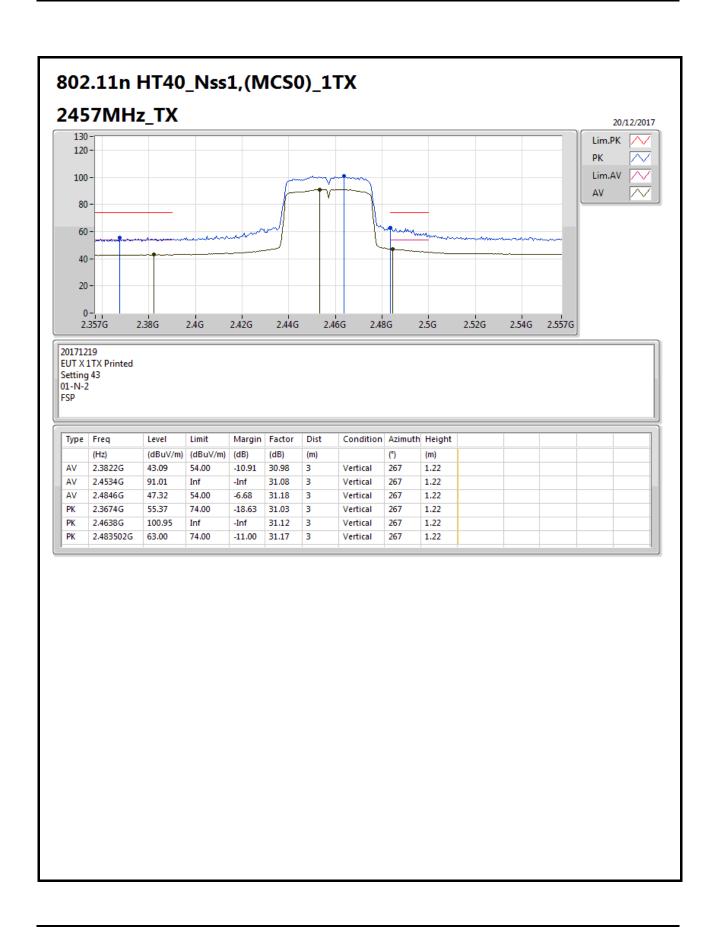
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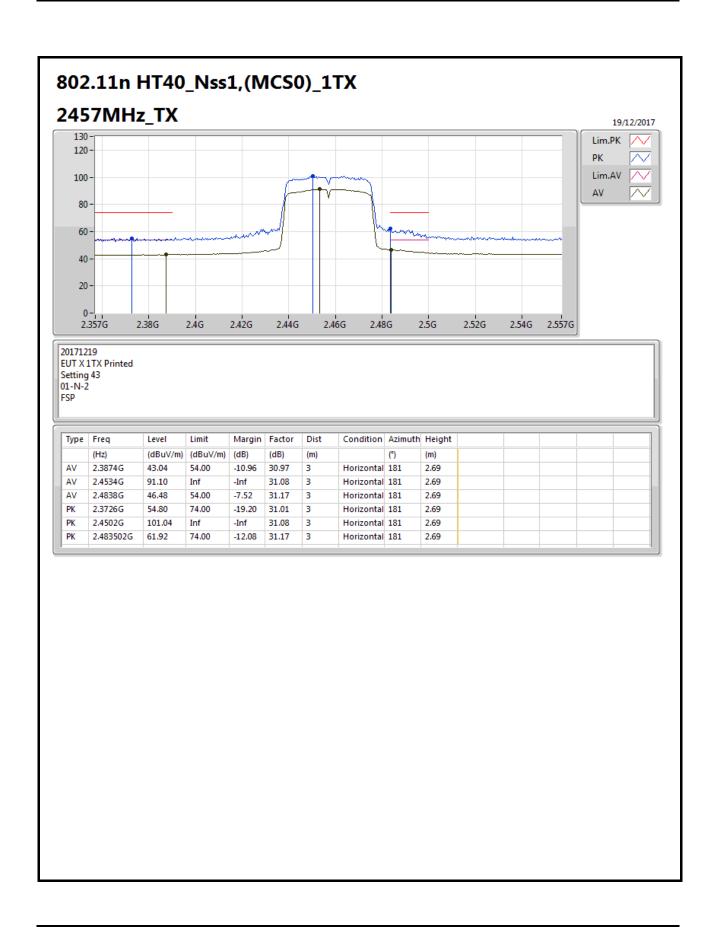




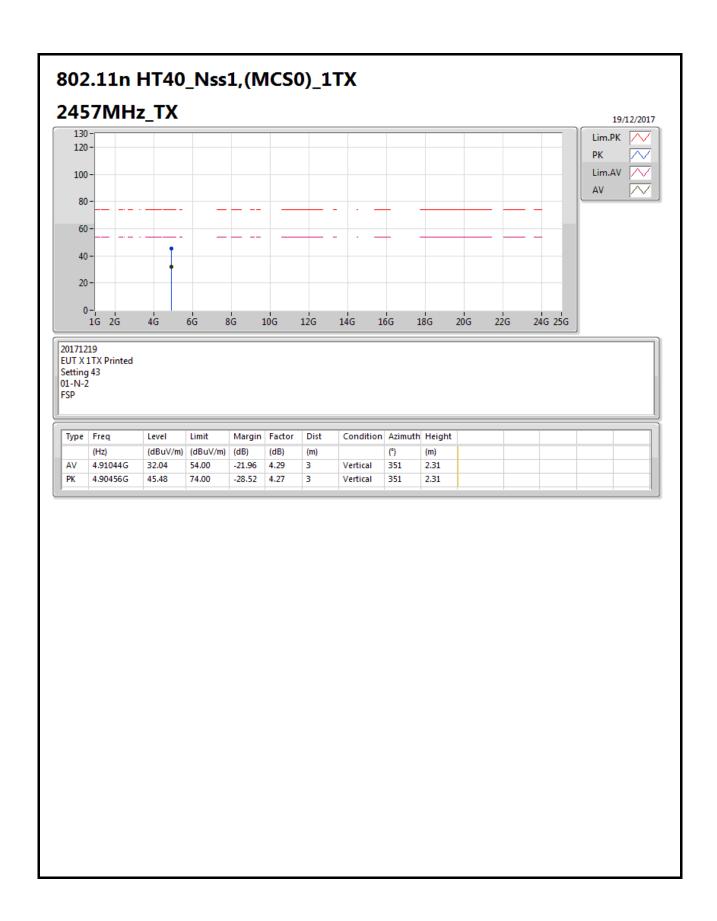








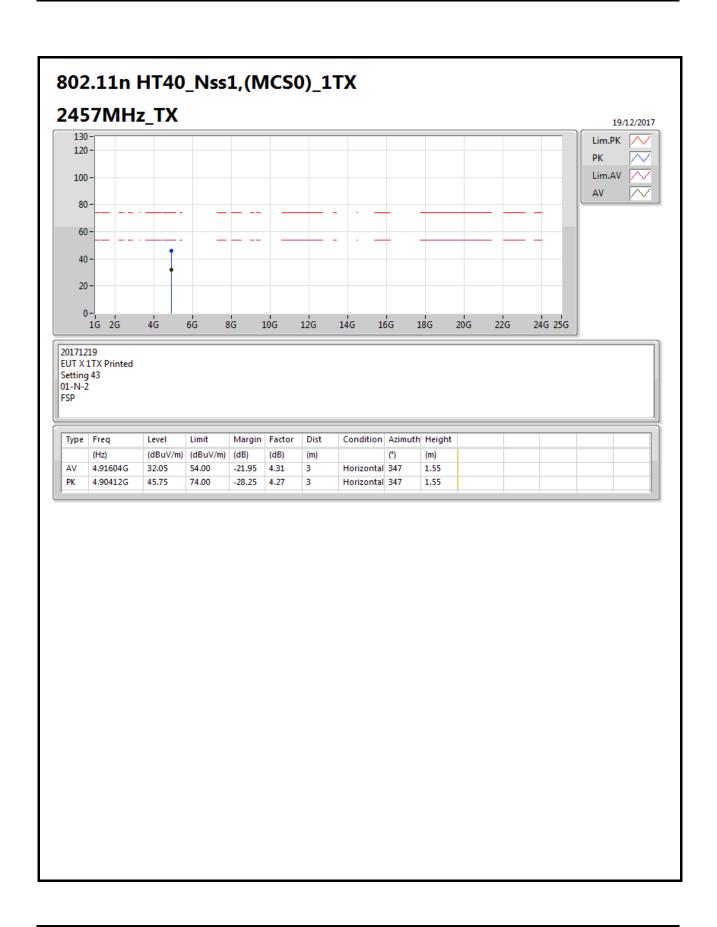




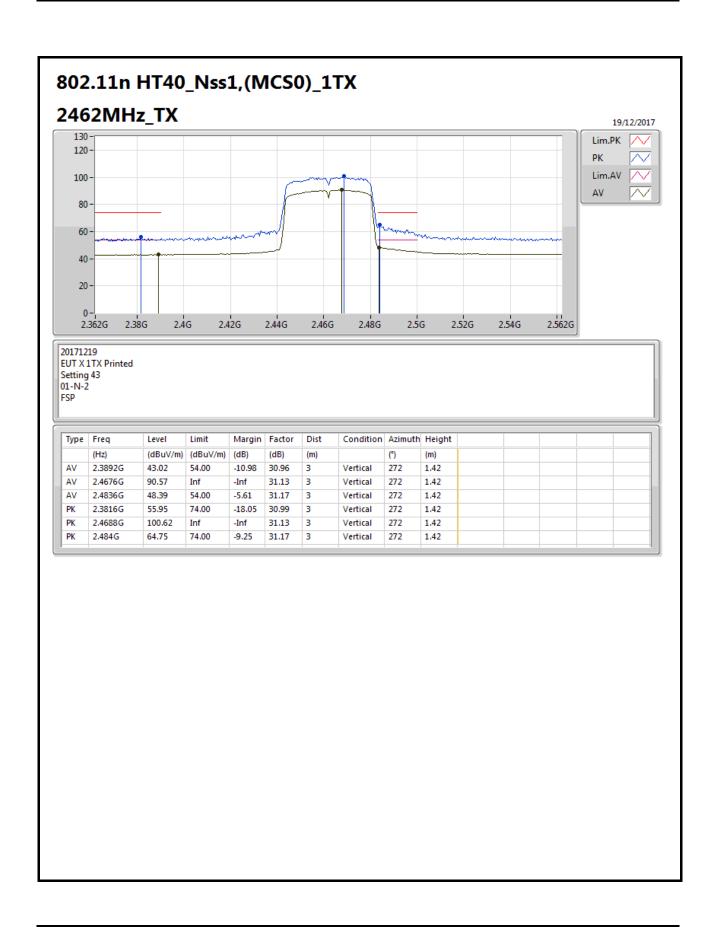
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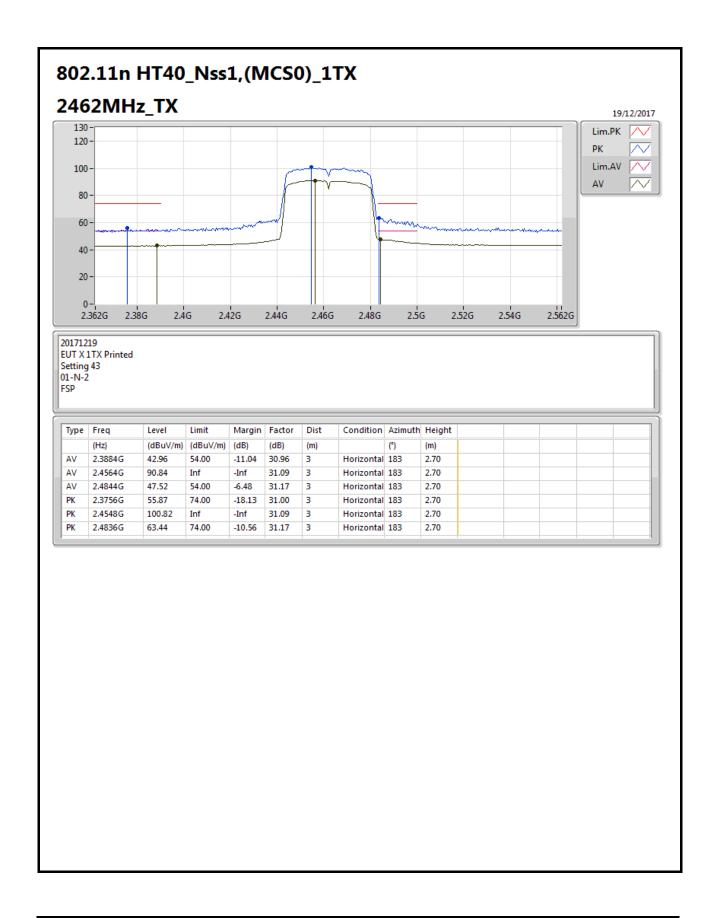




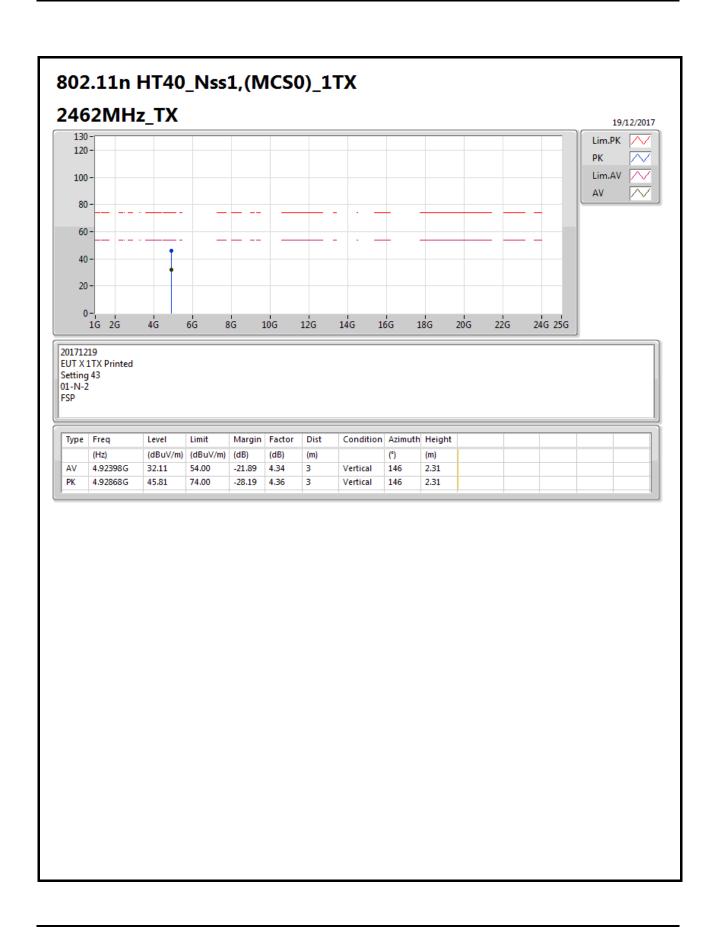




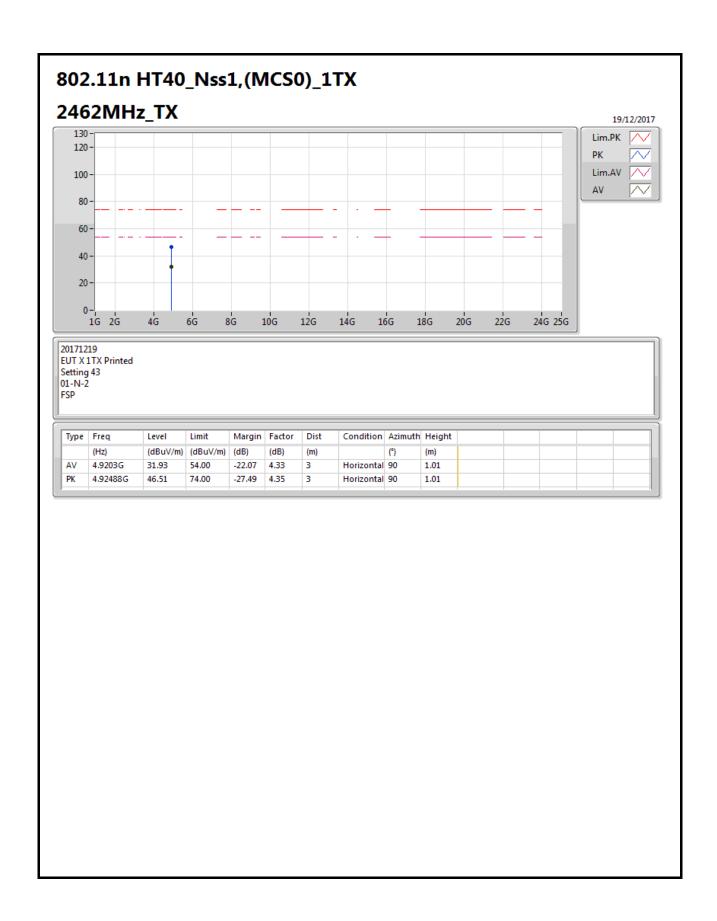














RSE TX above 1GHz Result / Ant. 2

Appendix F.2

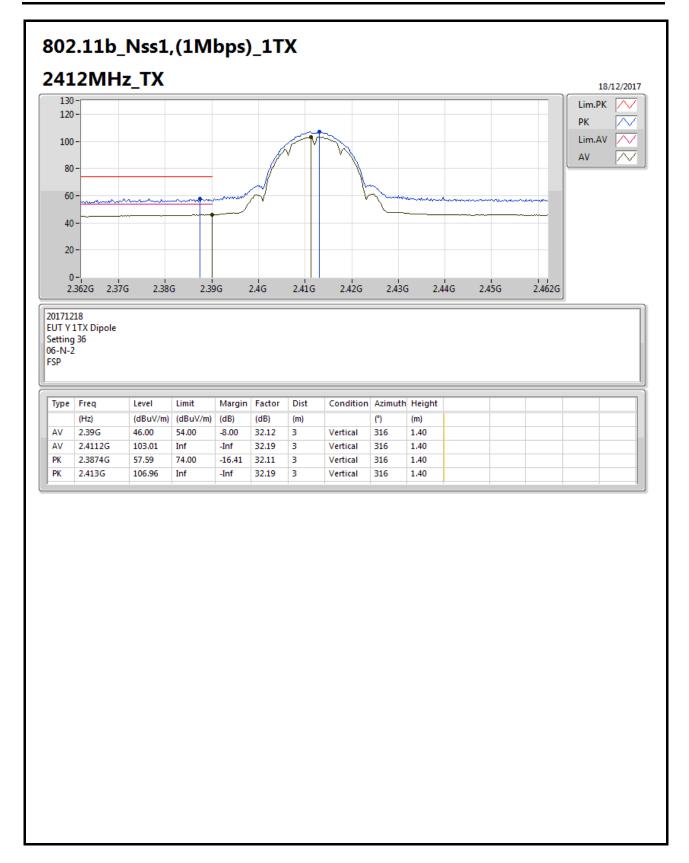
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Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-		-	-	-	-	-	-	-	-	-	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.483502G	51.82	54.00	-2.18	32.42	3	Vertical	227	2.51	-

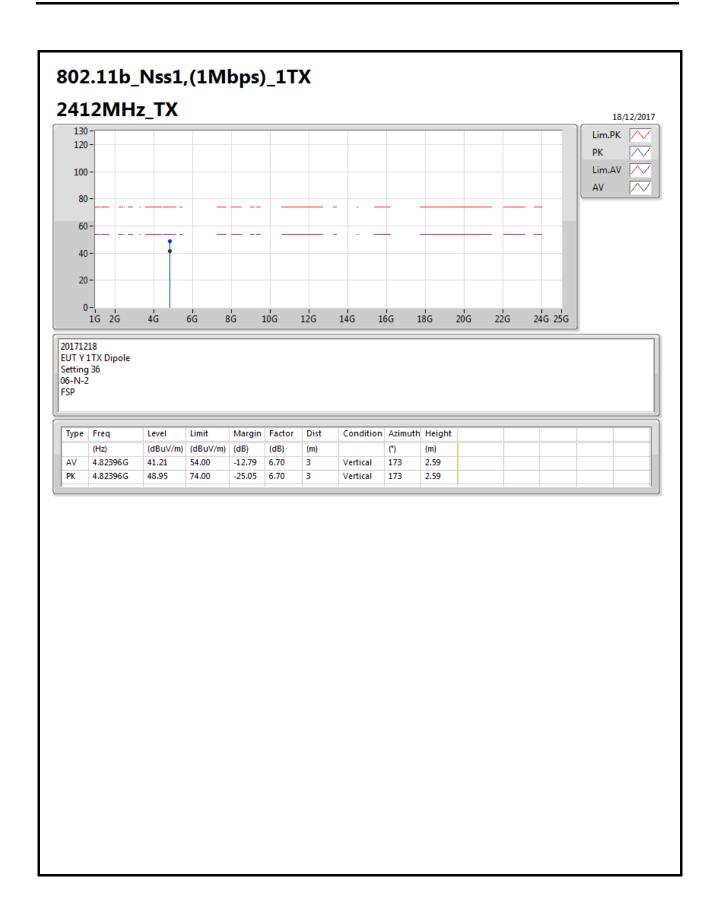
SPORTON INTERNATIONAL INC.





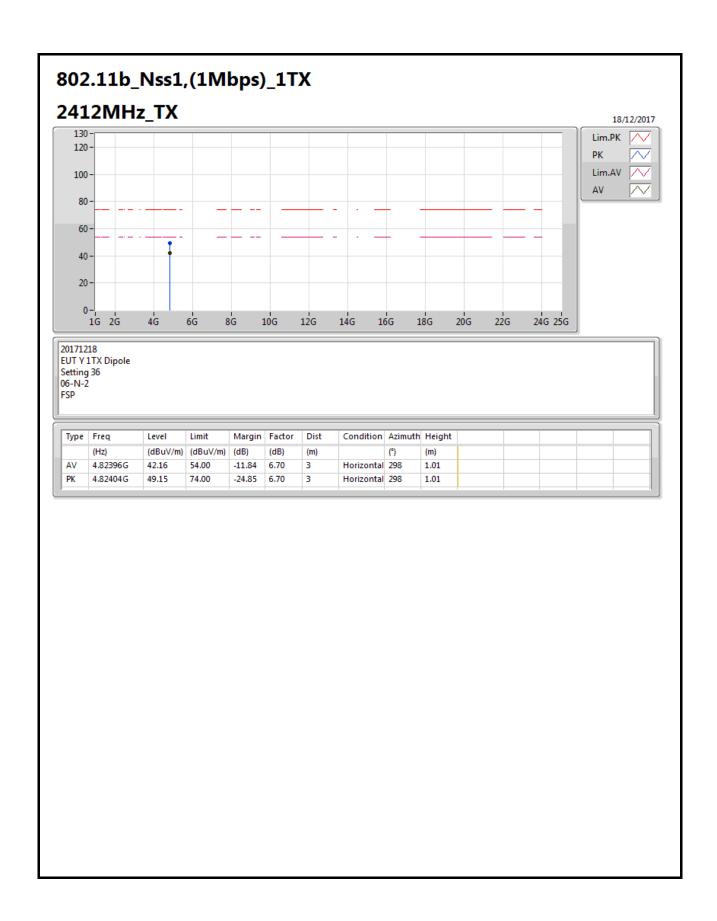
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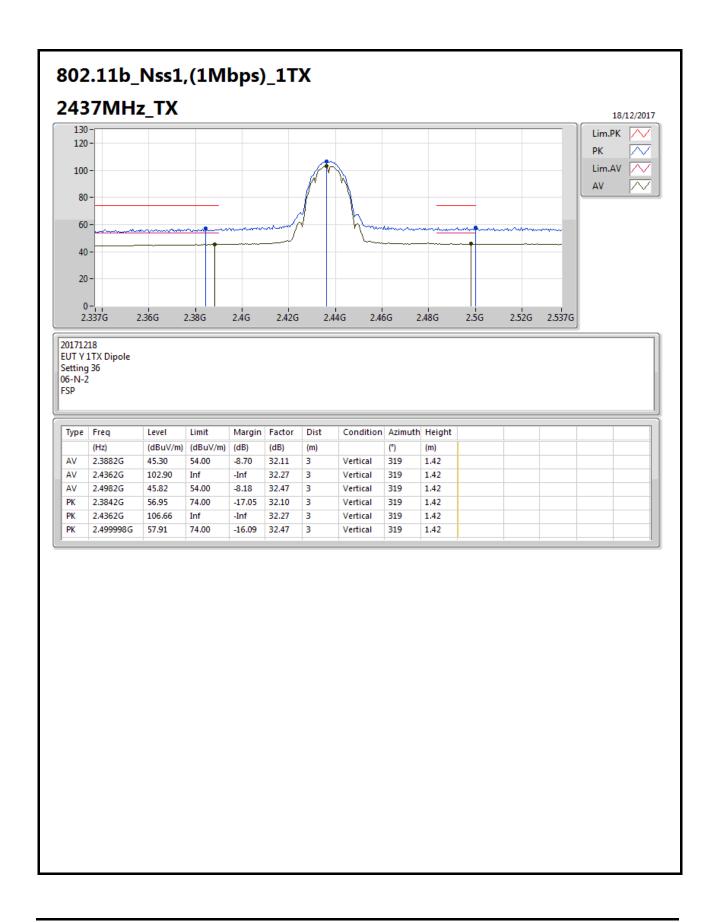
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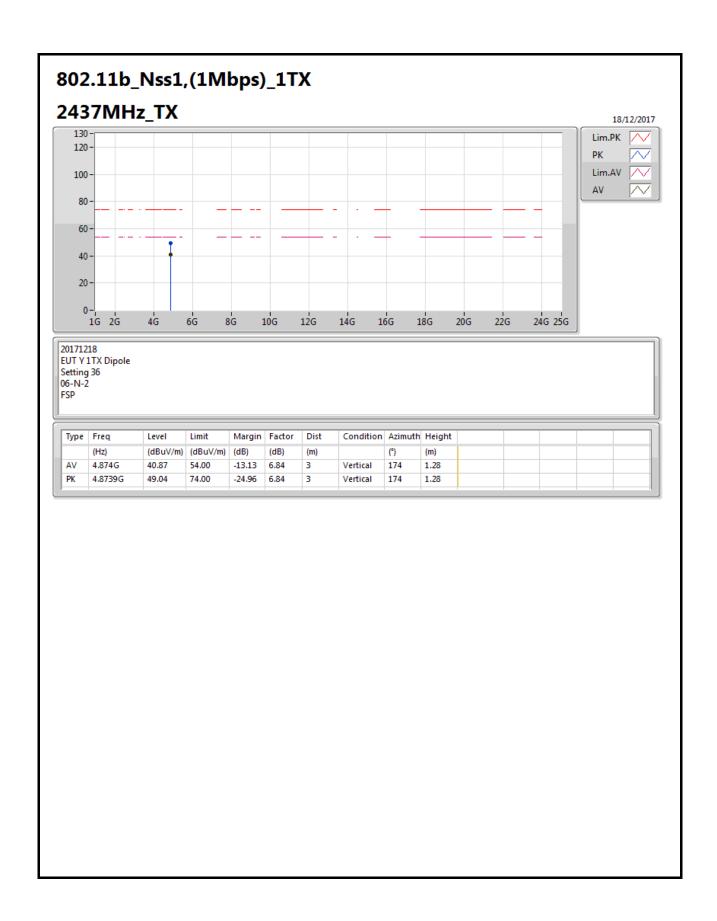
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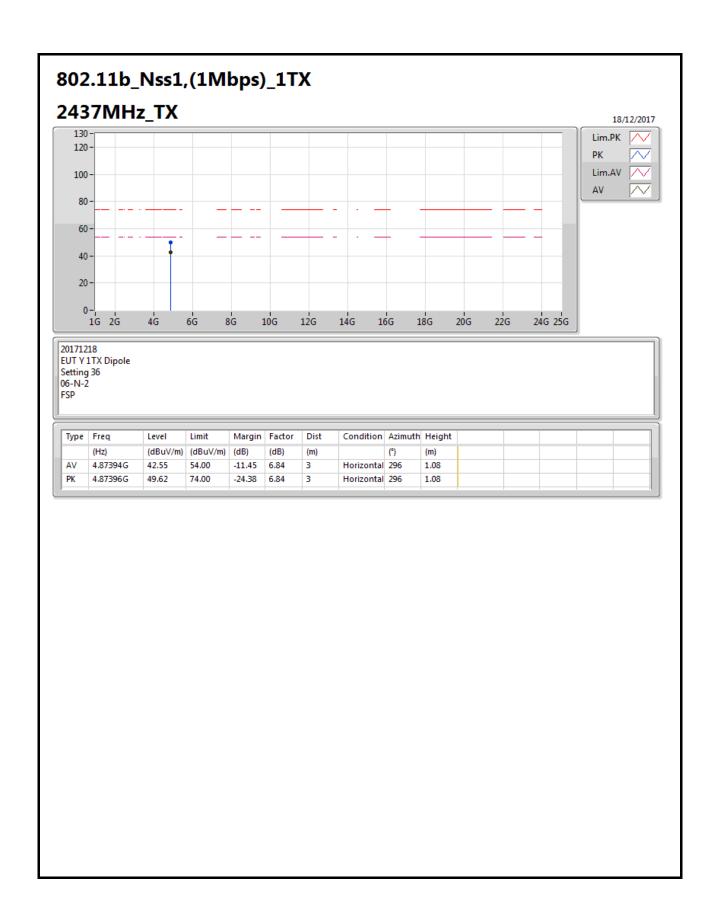
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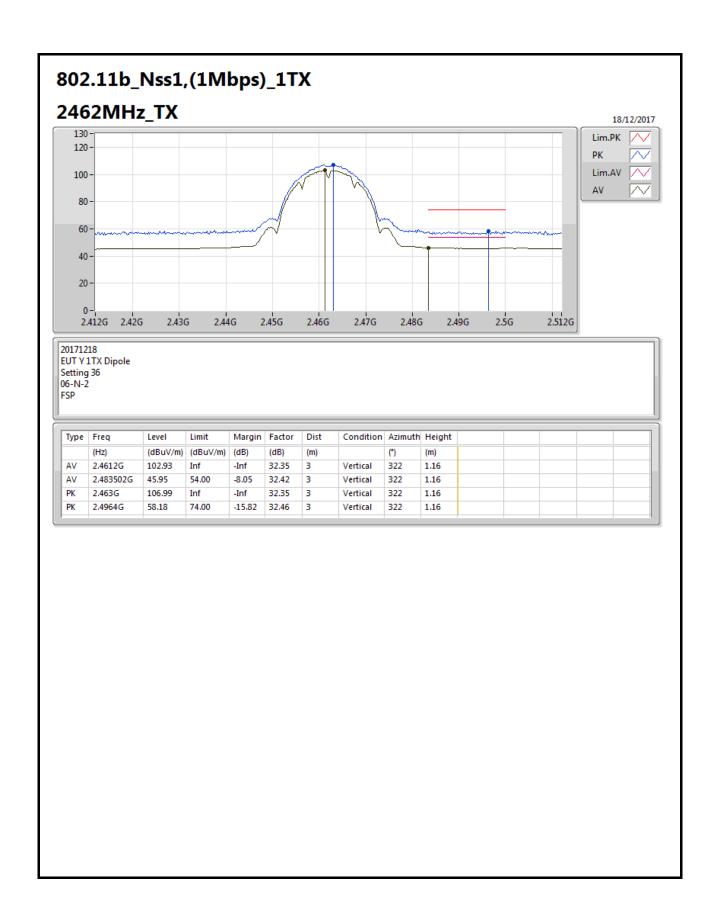
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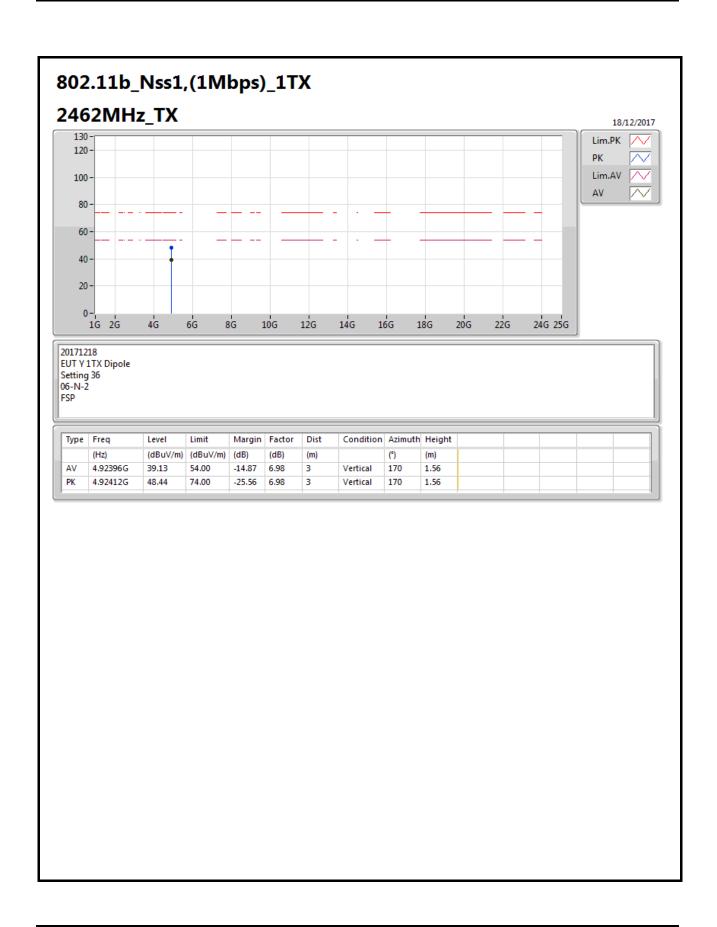
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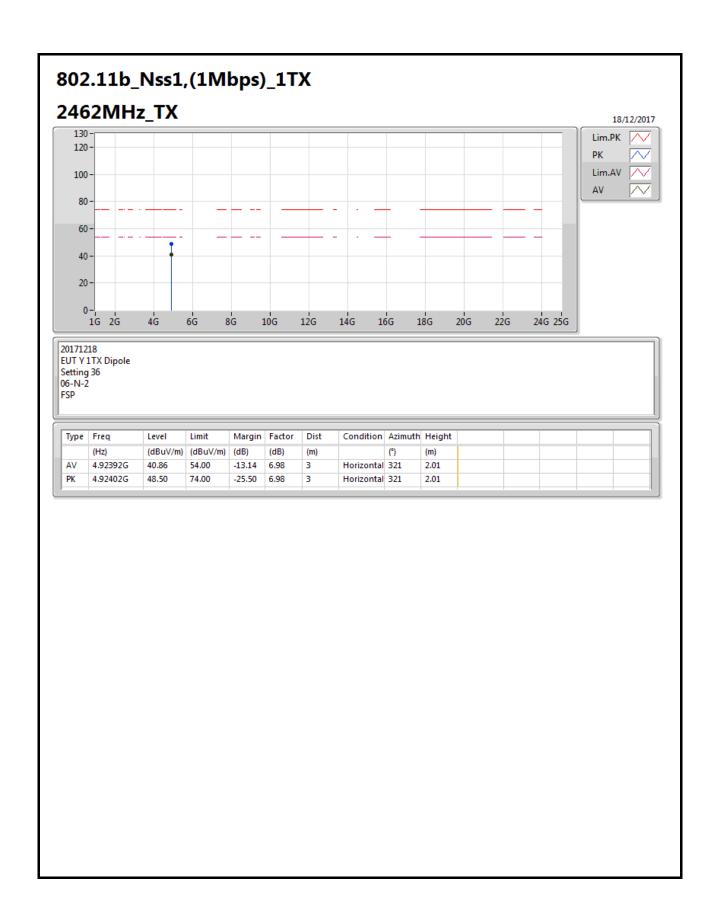
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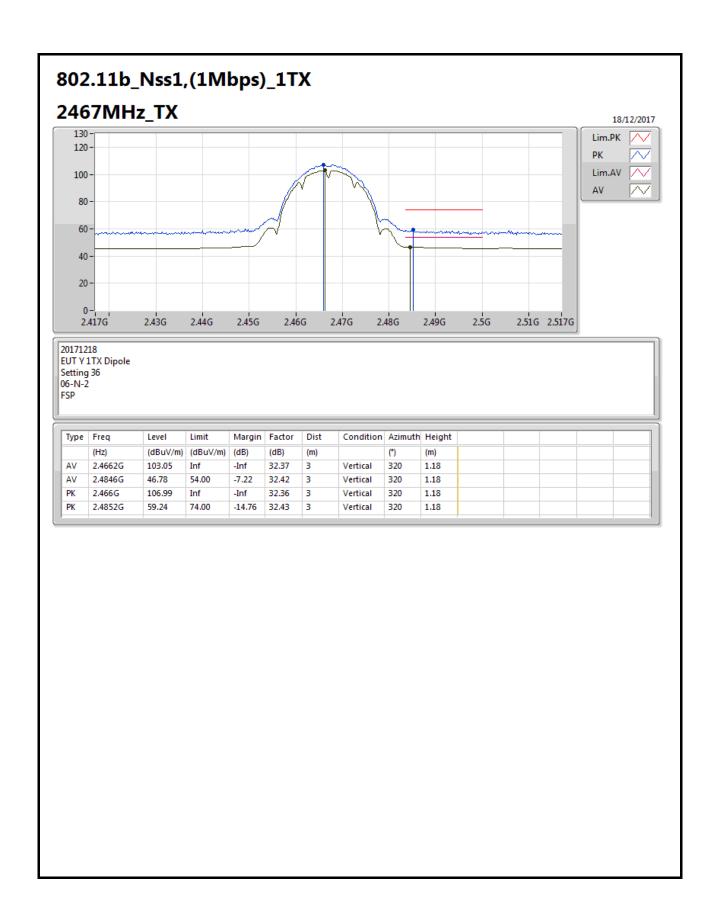


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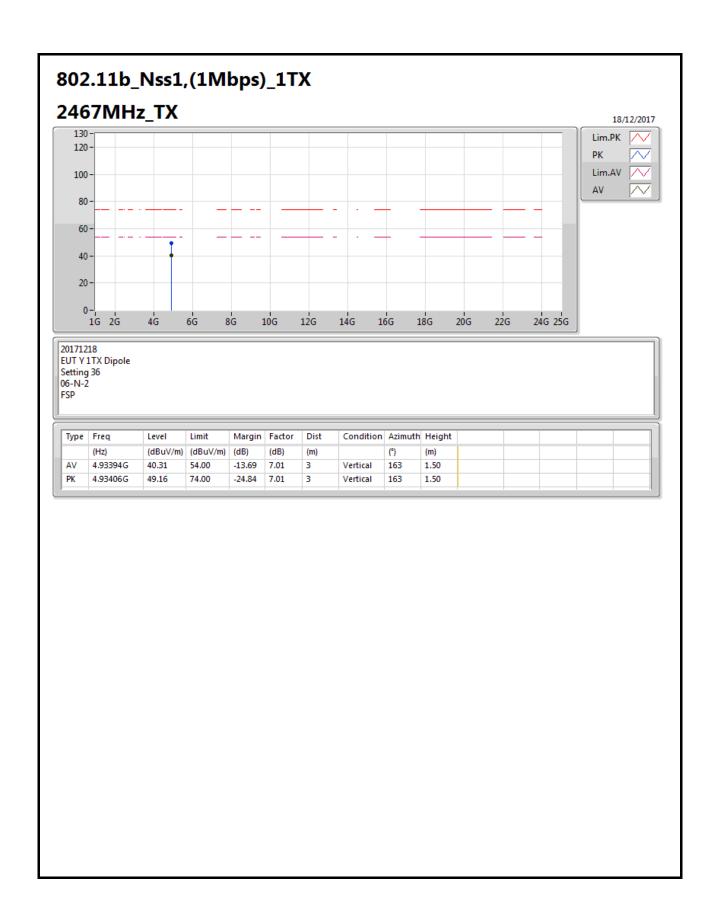






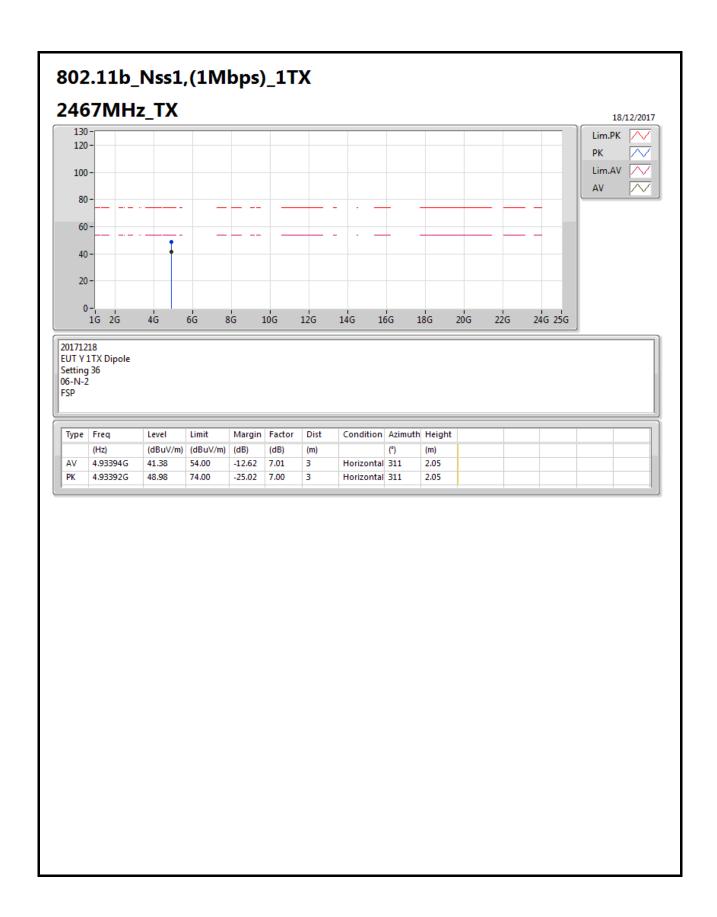
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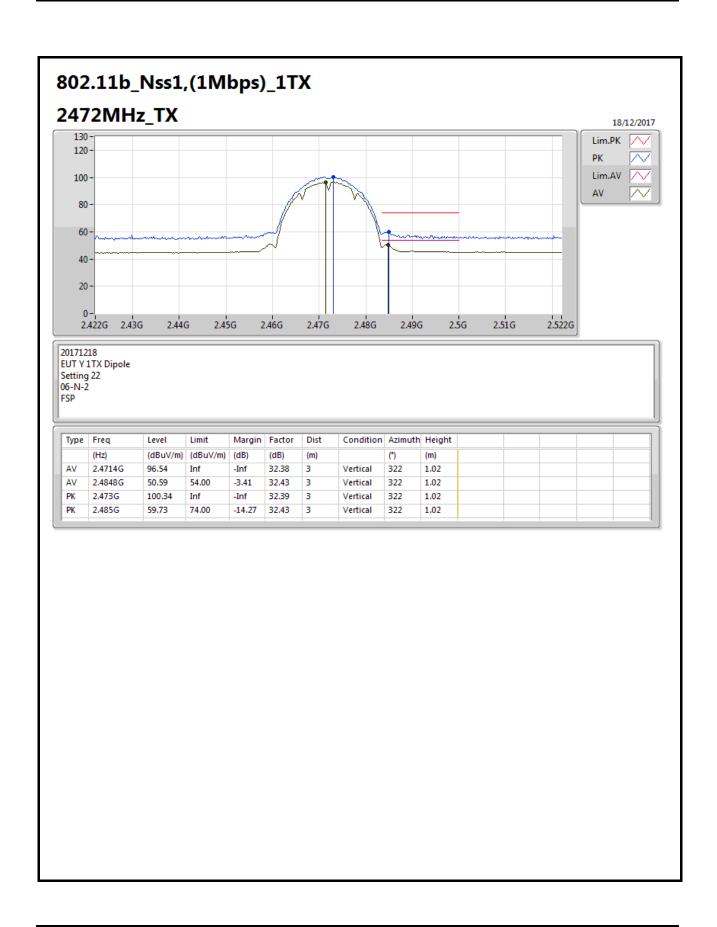
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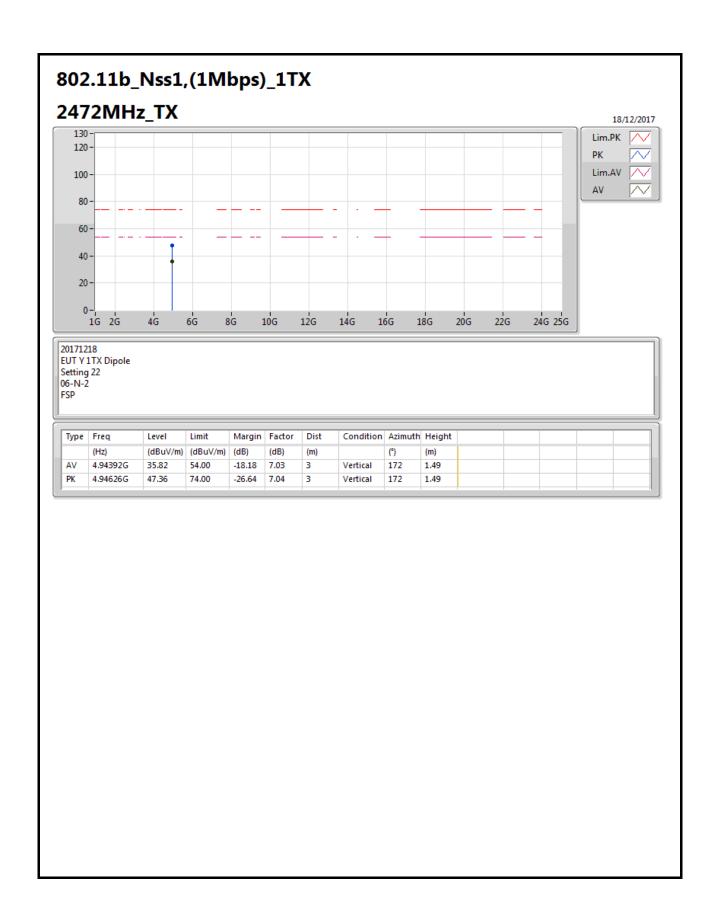
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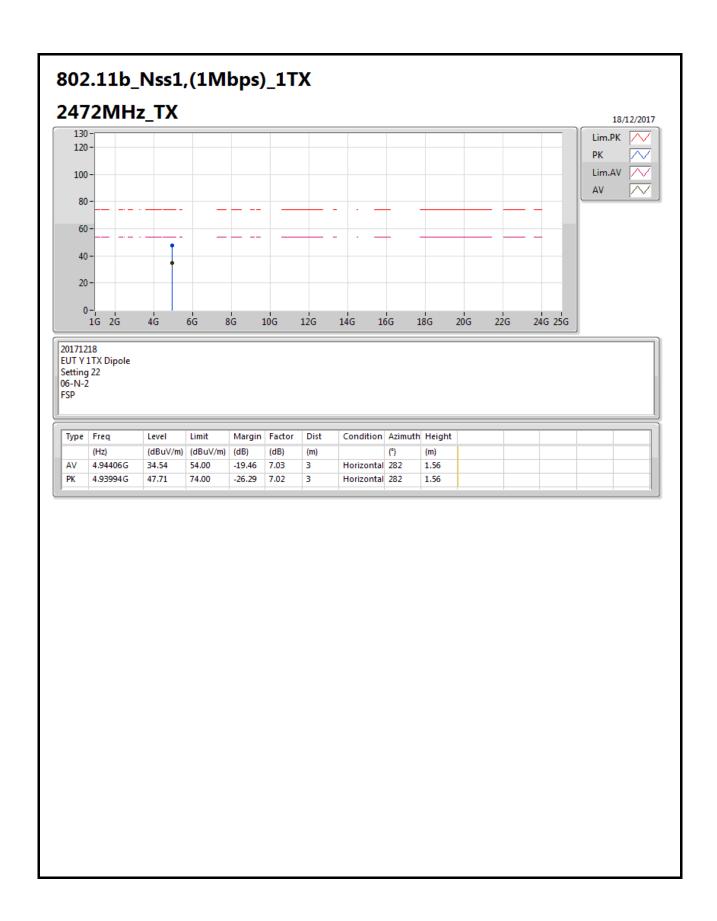
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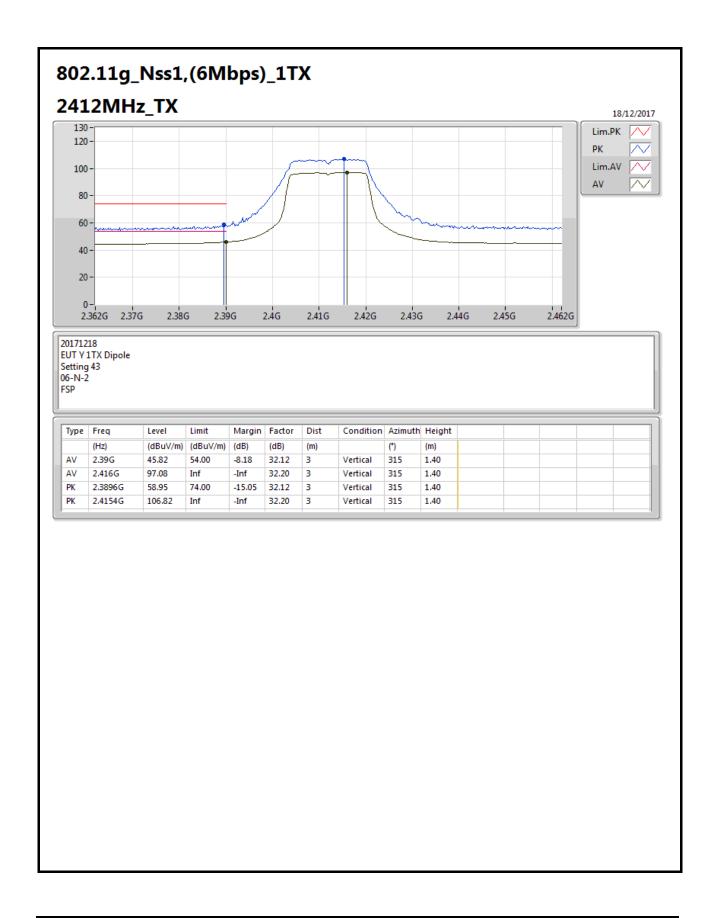


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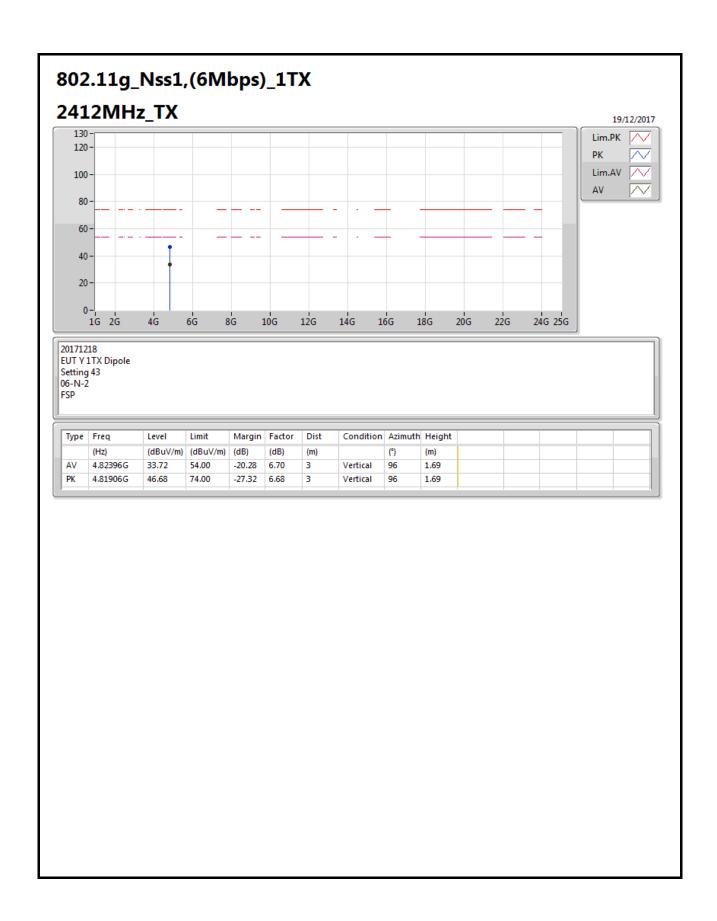






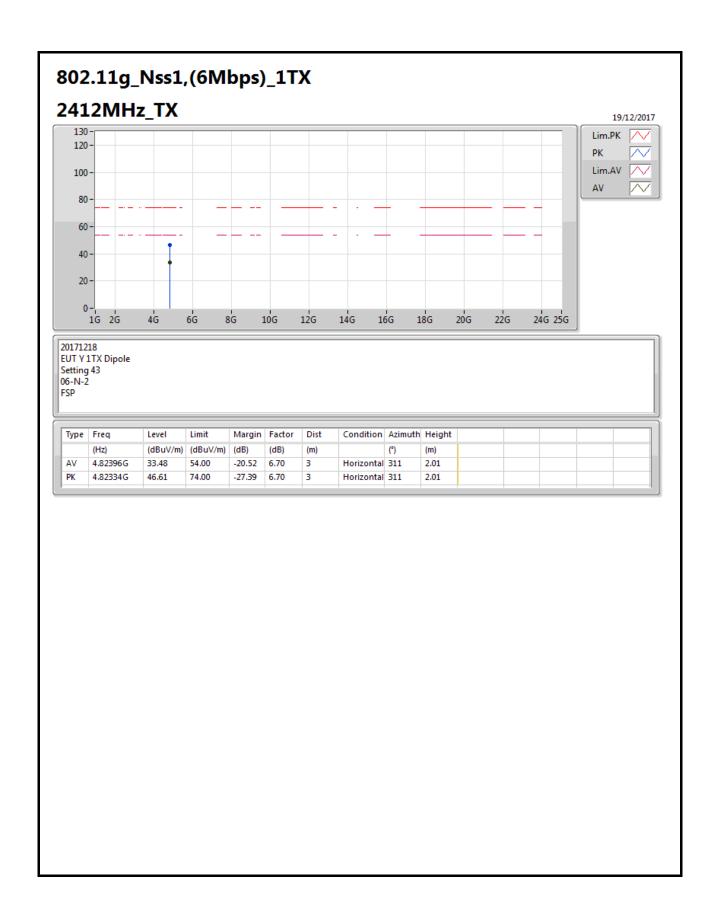
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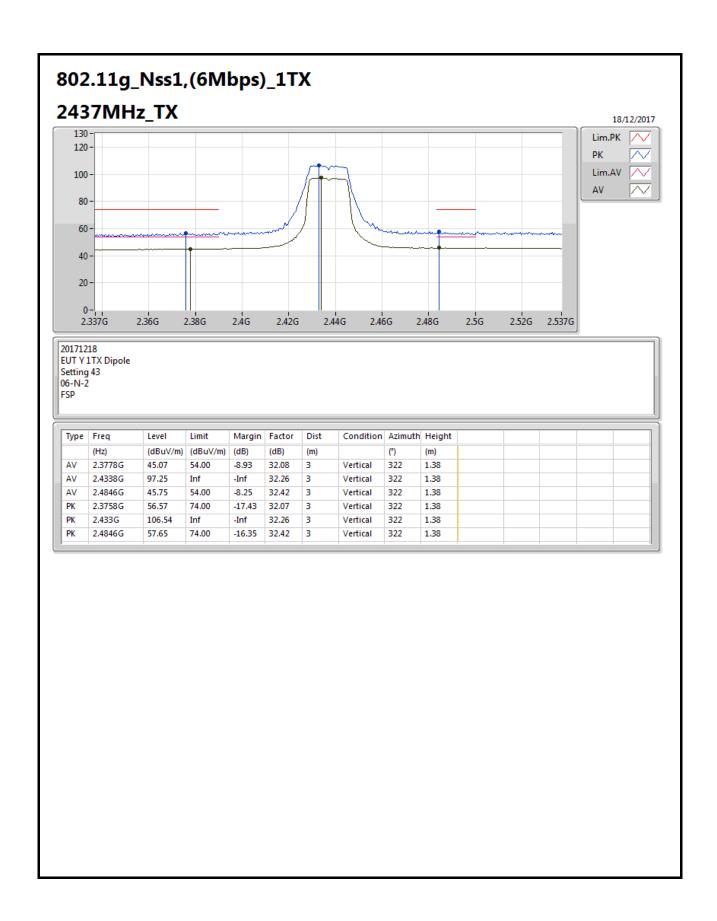
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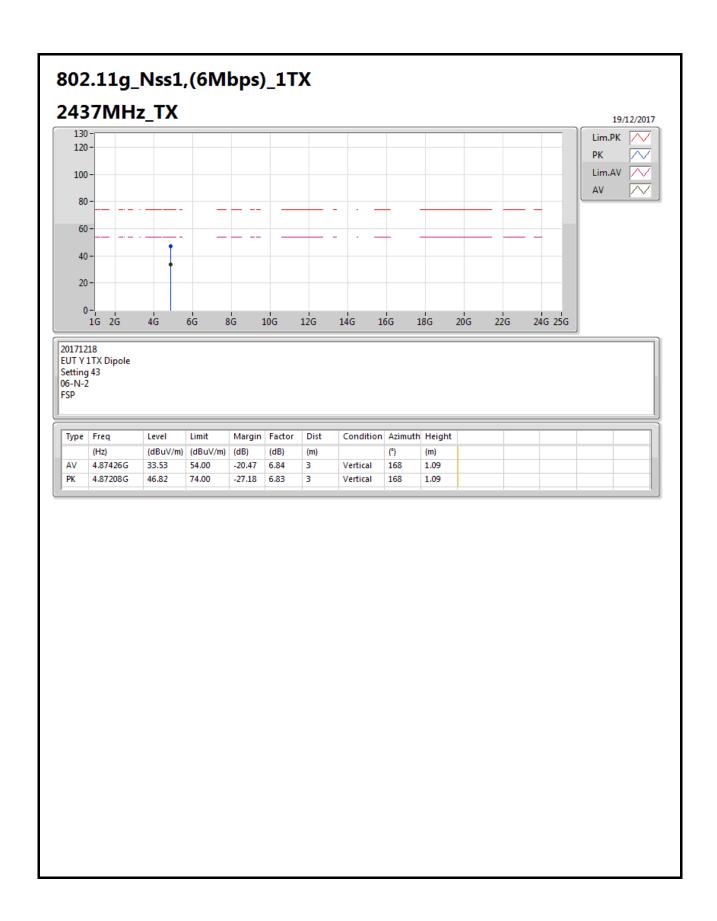


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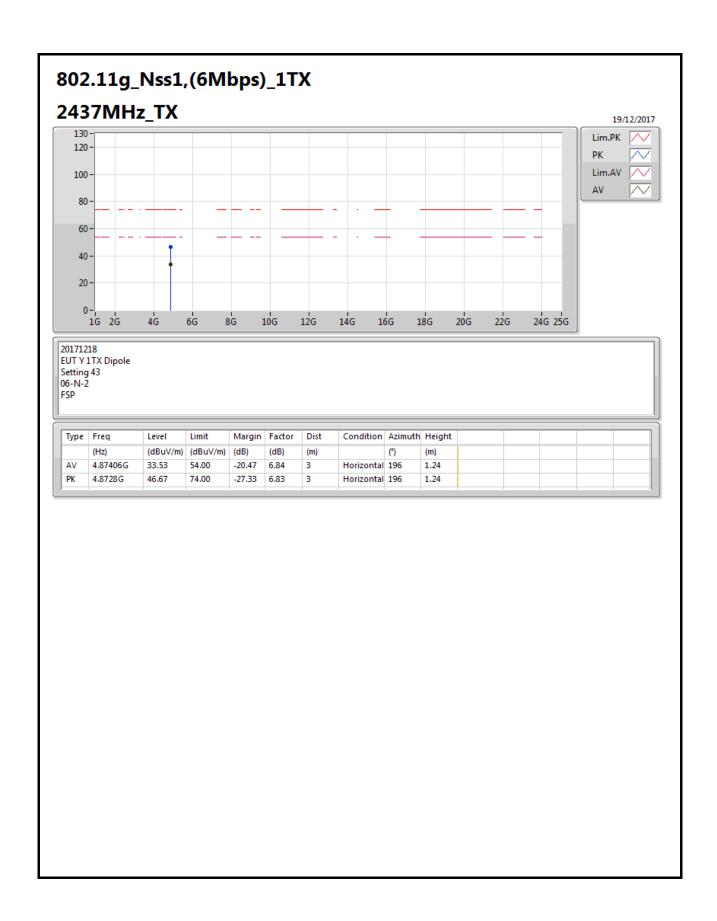




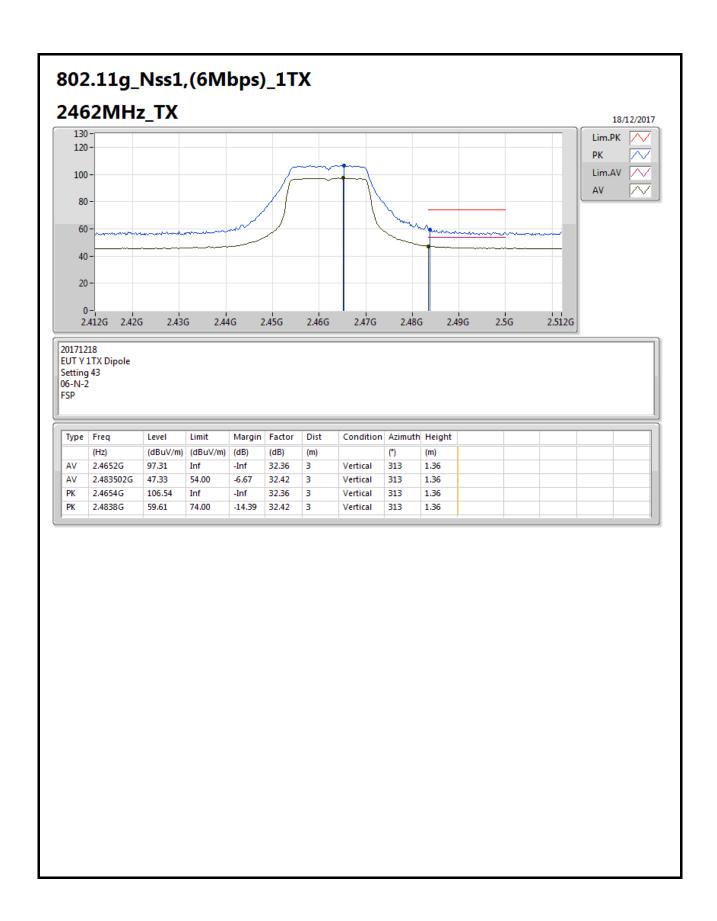






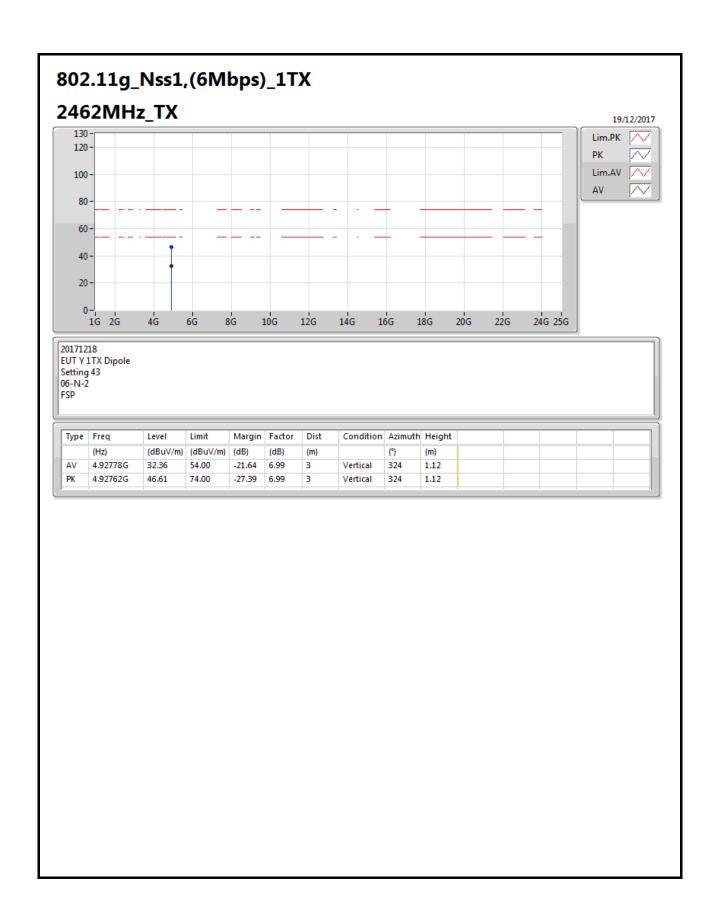




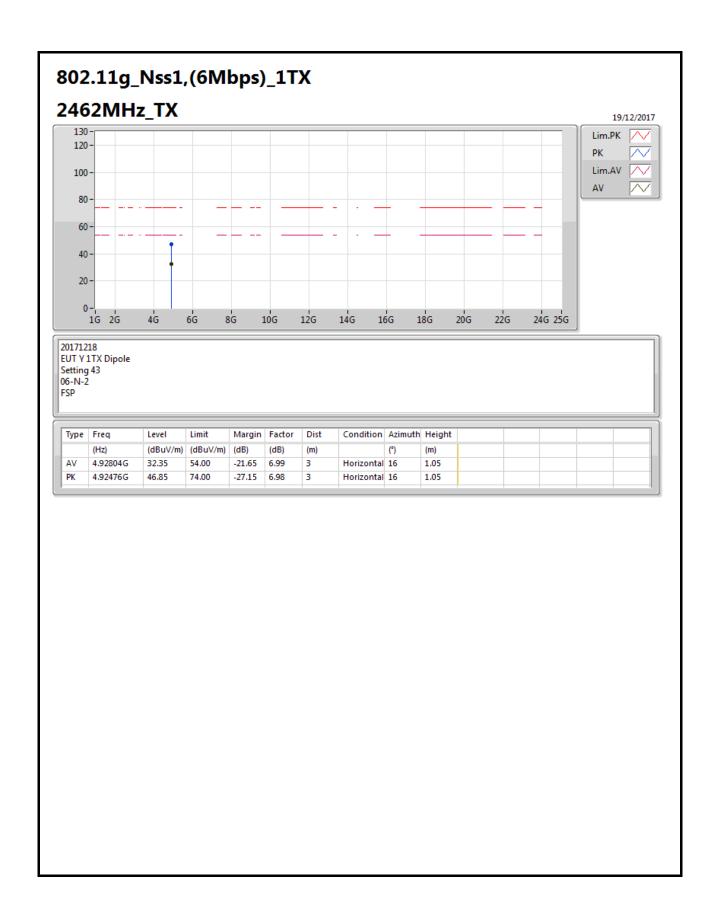


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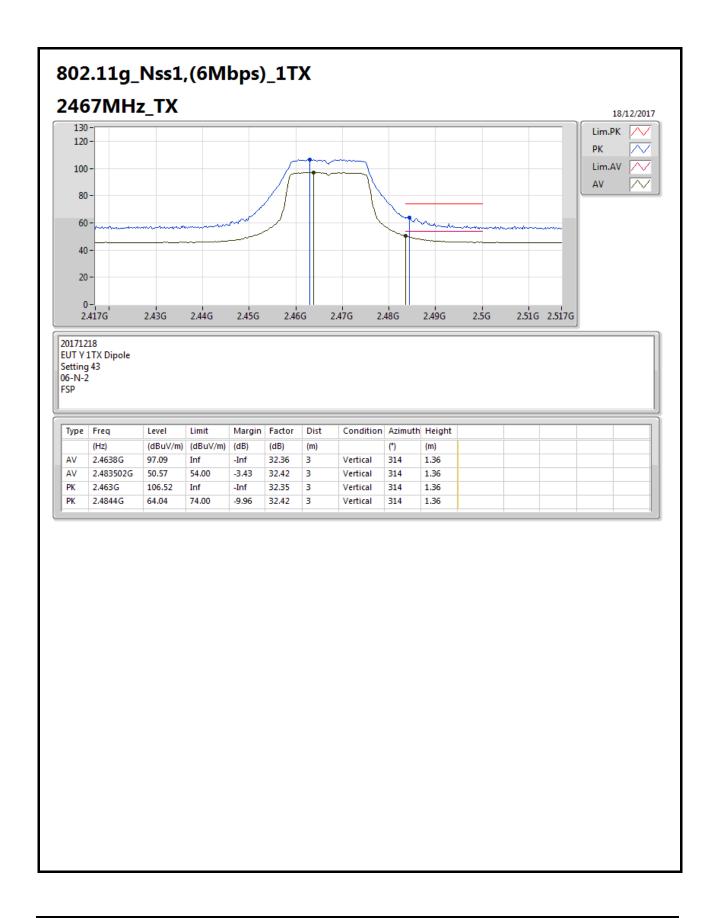




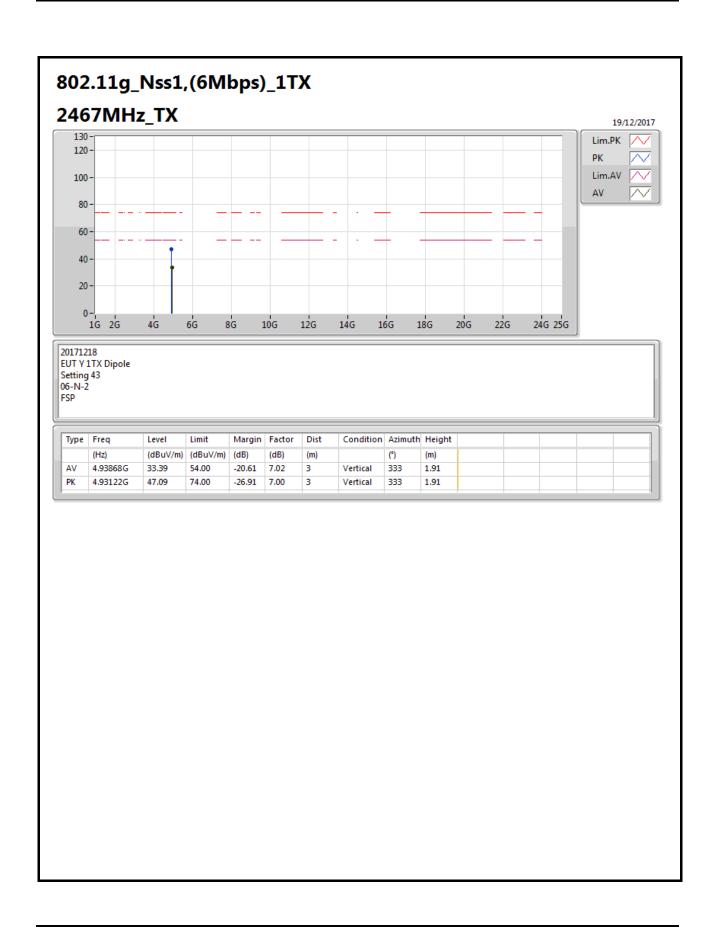






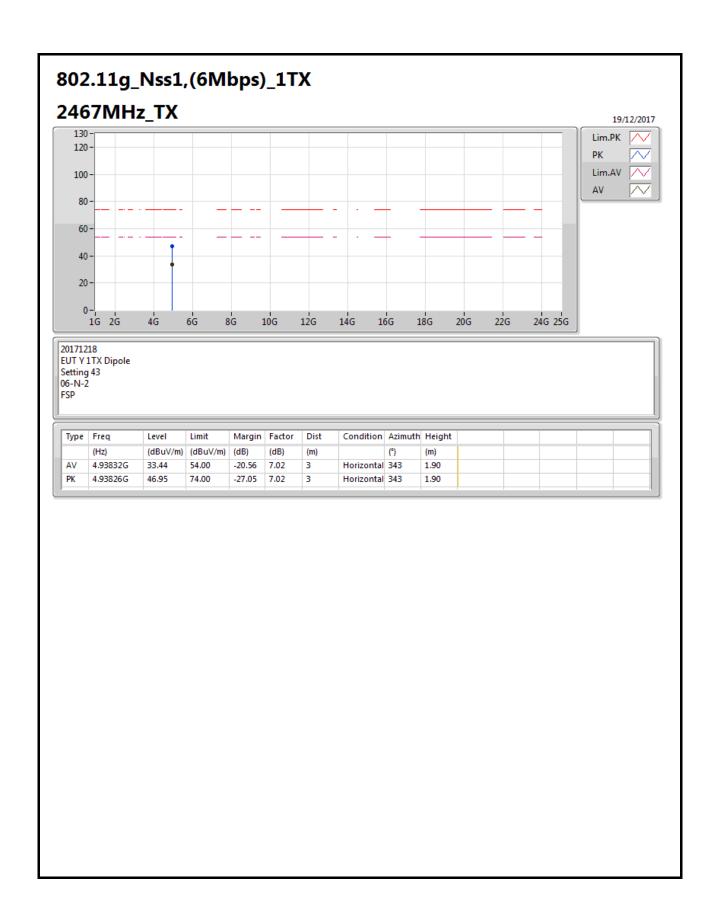






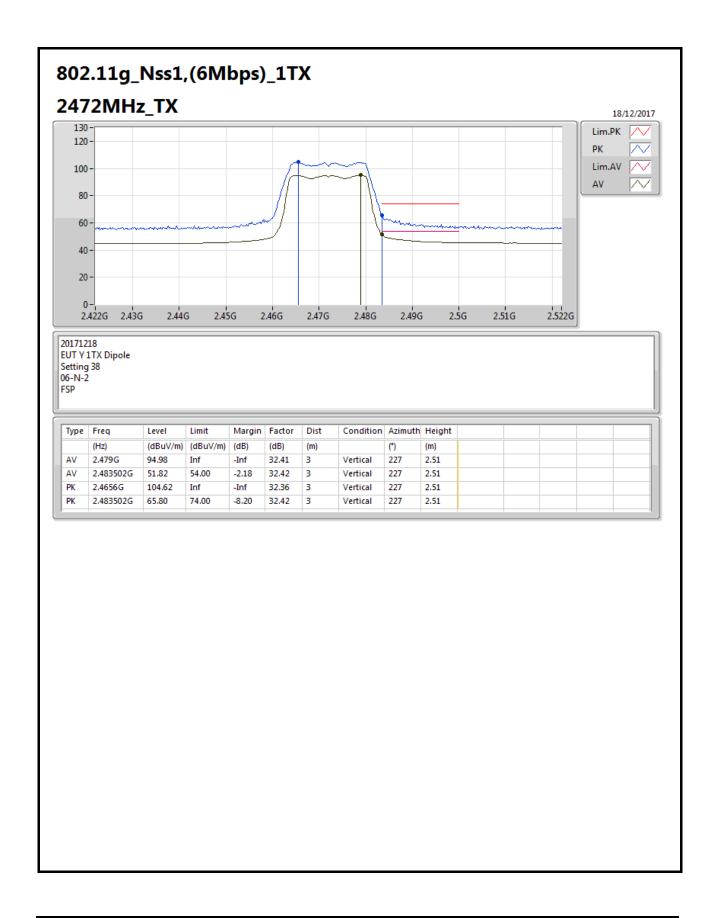
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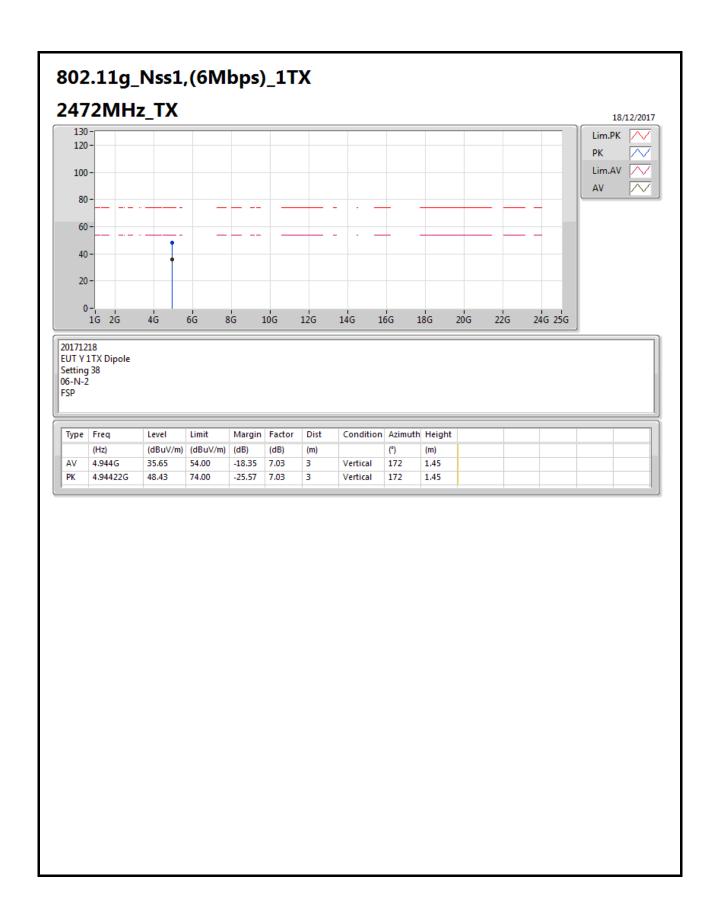
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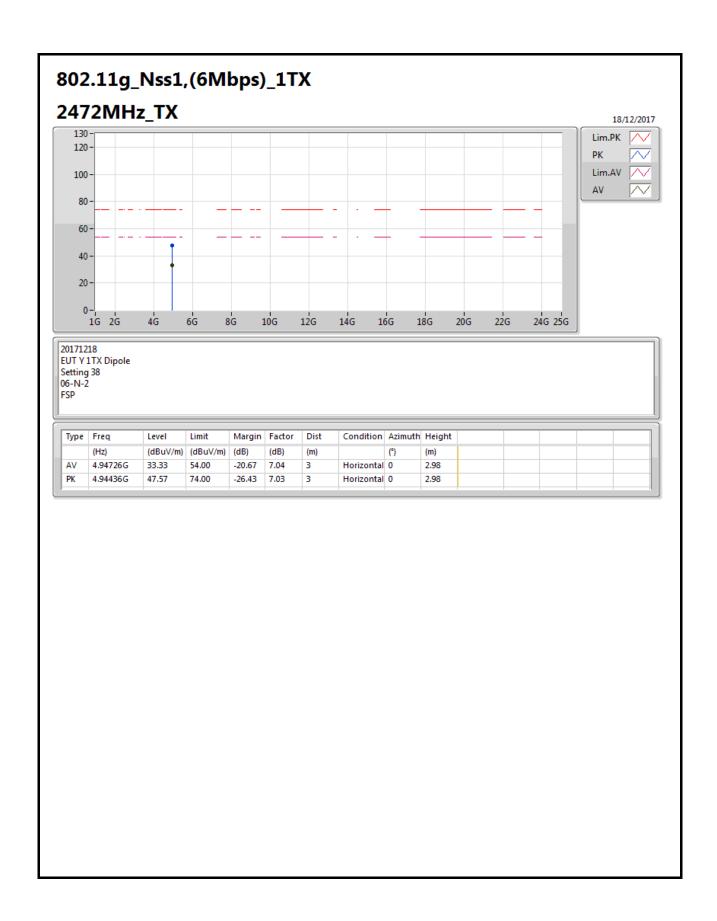
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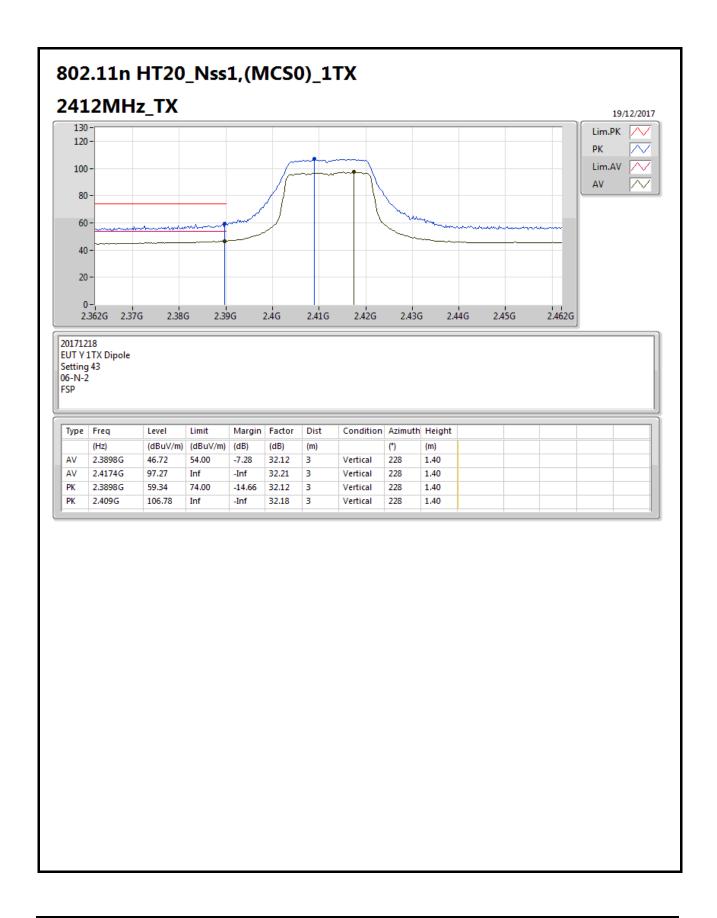
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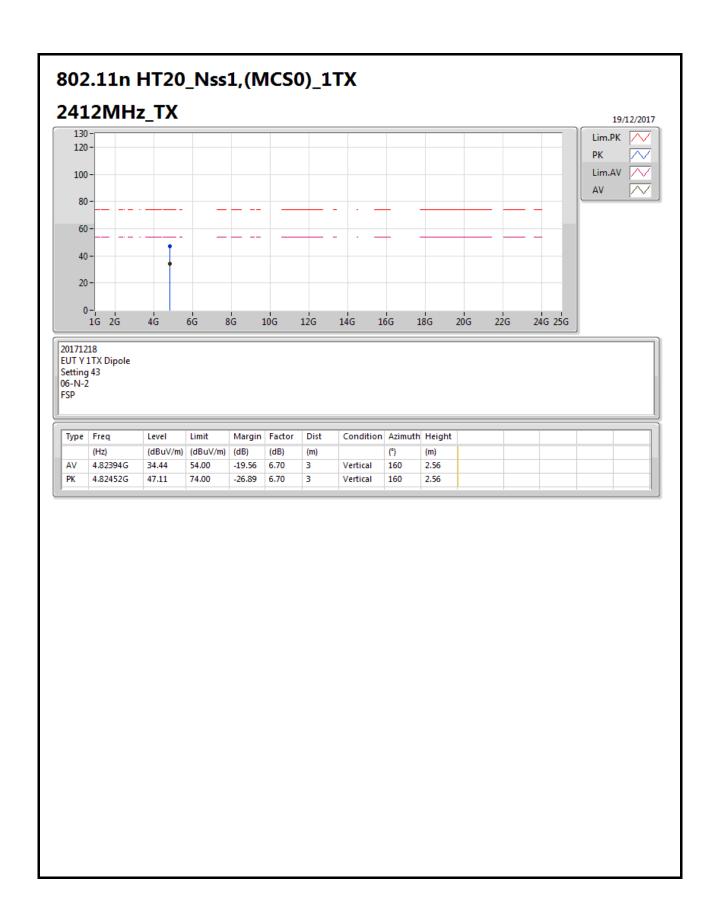
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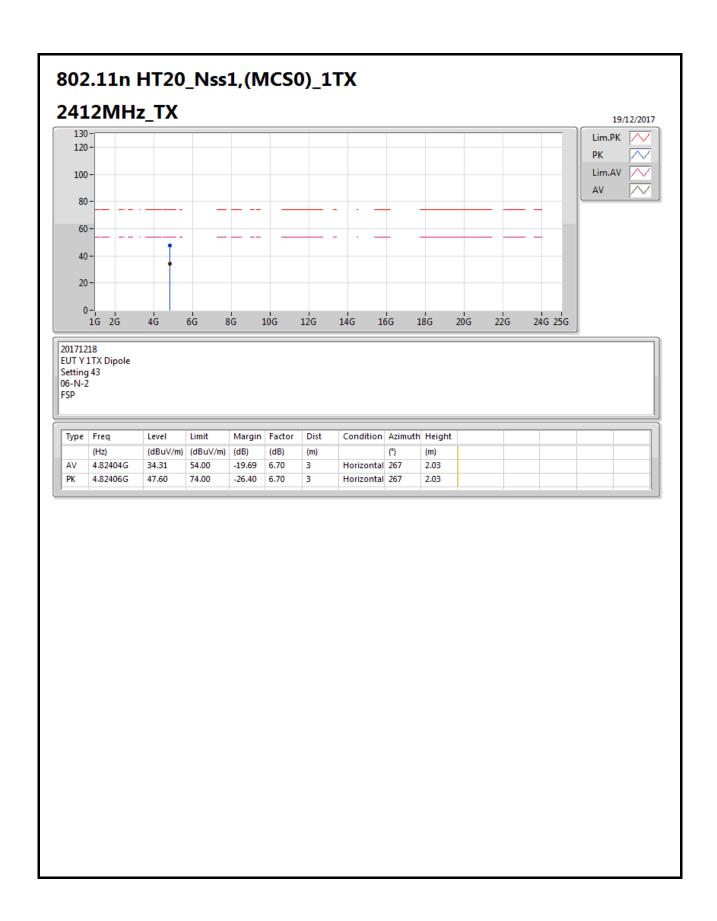


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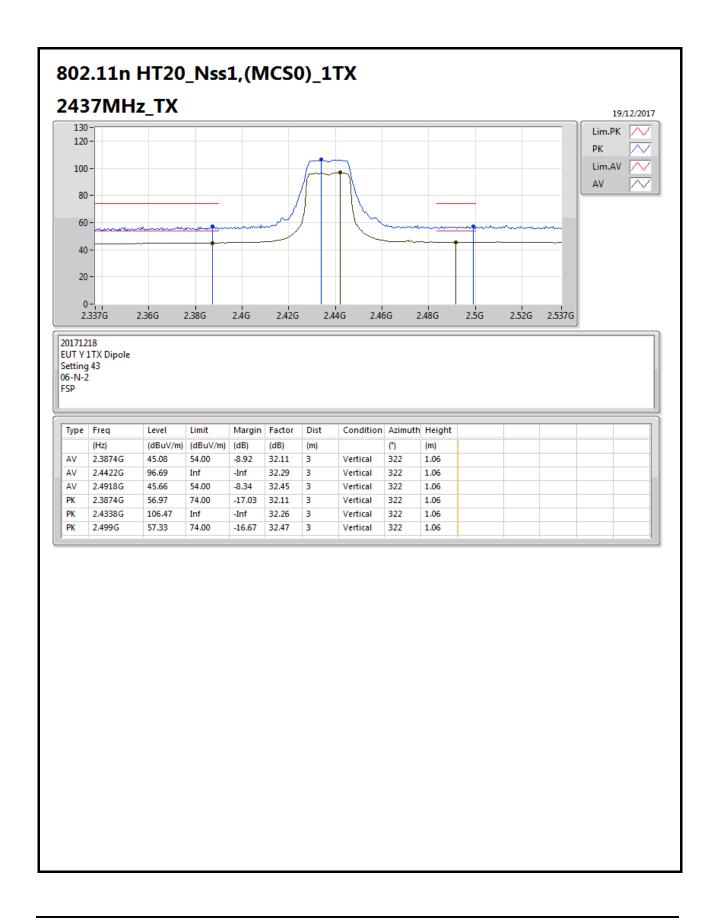






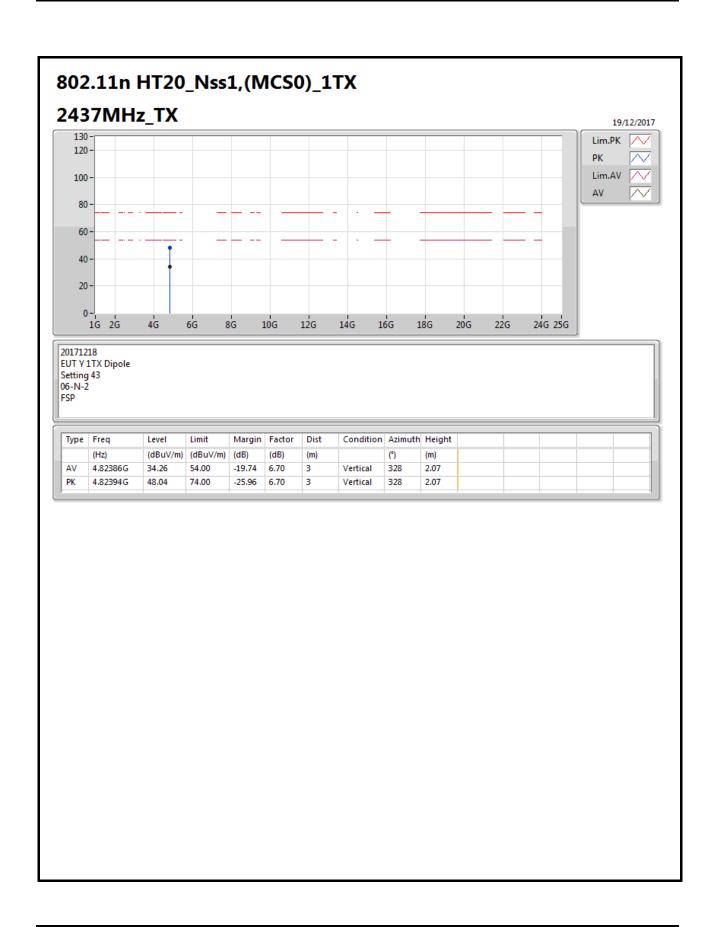






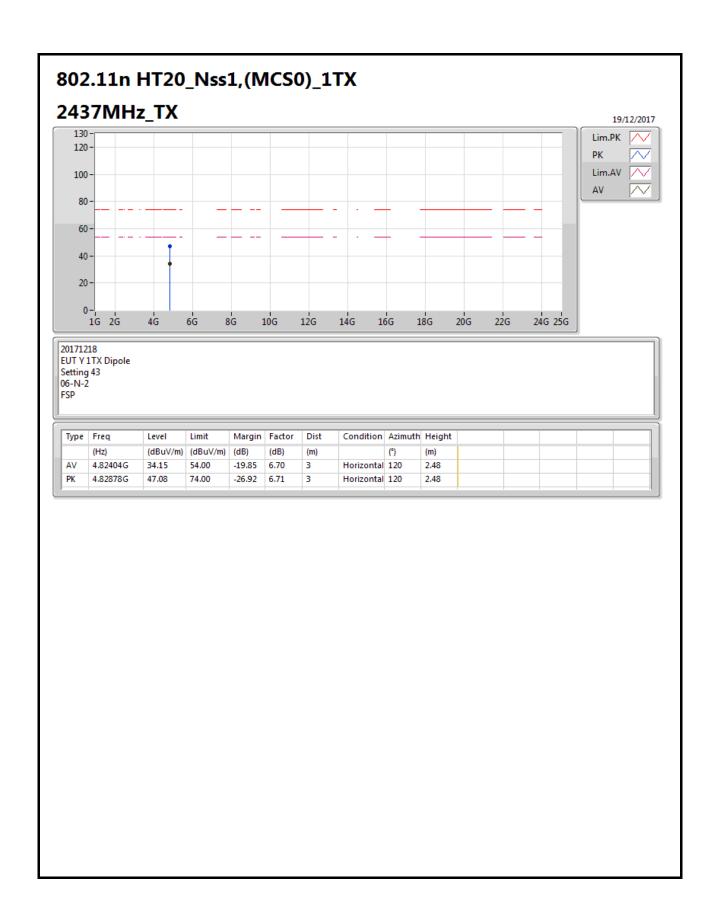
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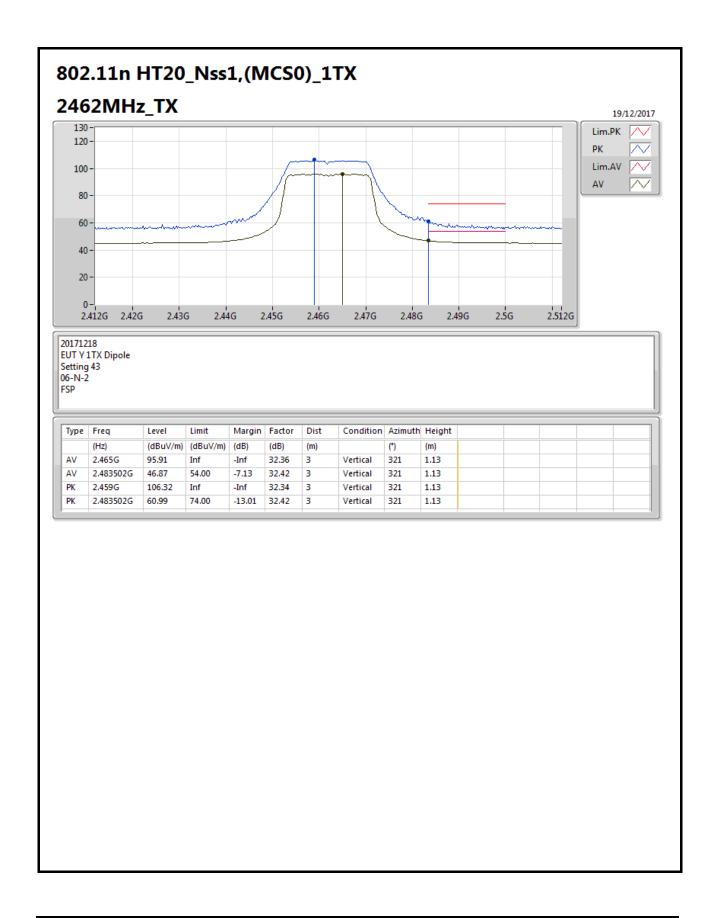
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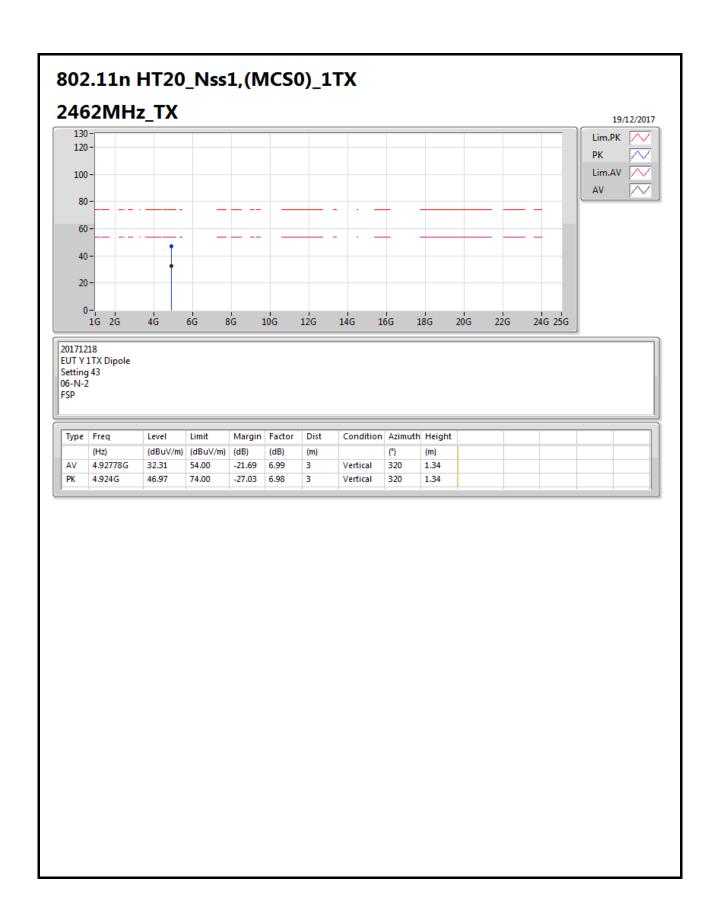
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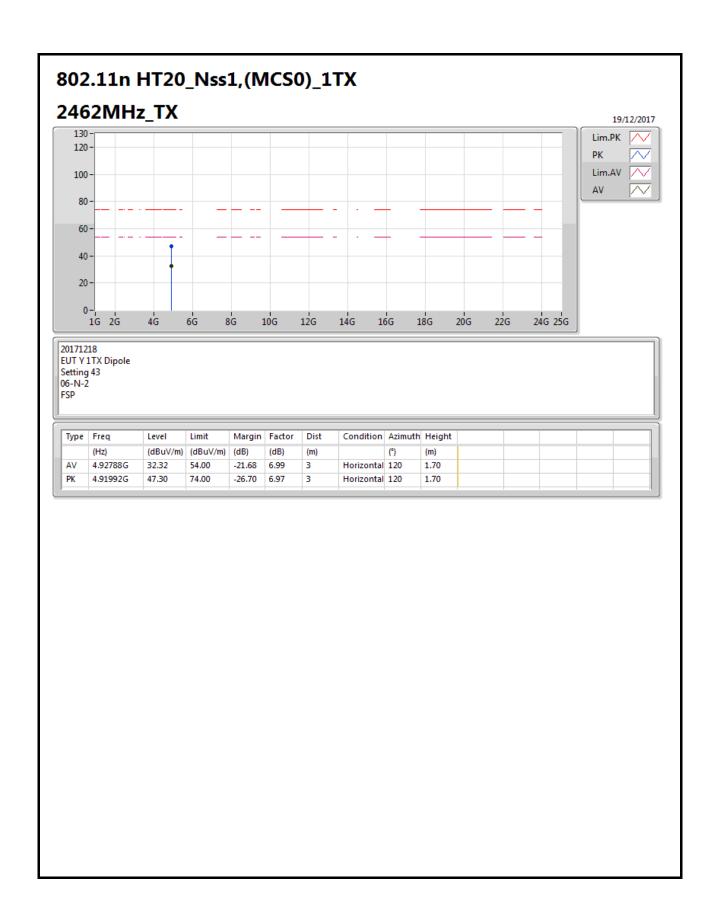
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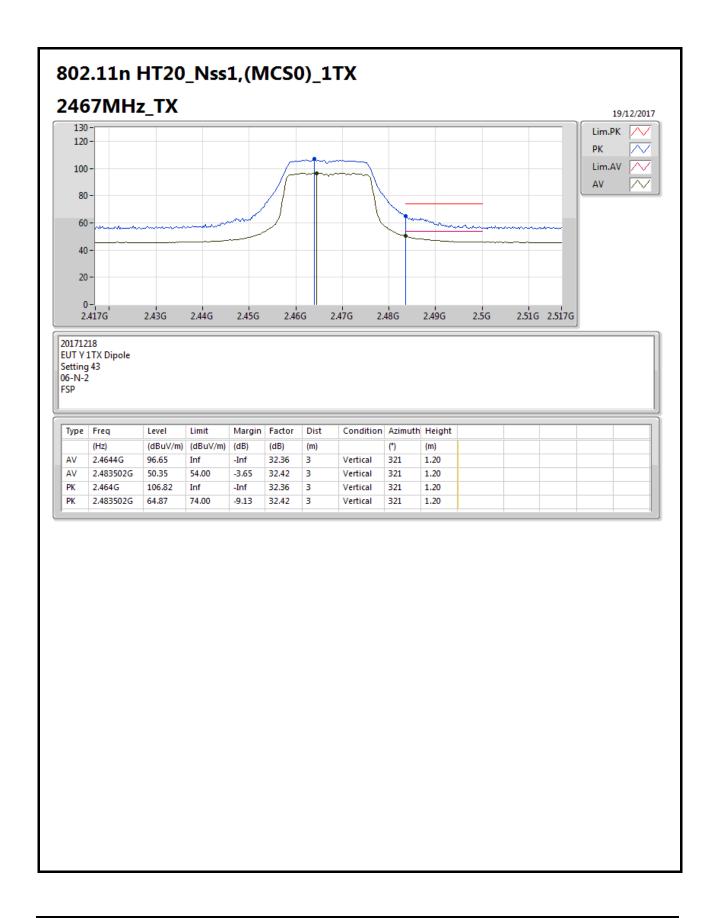
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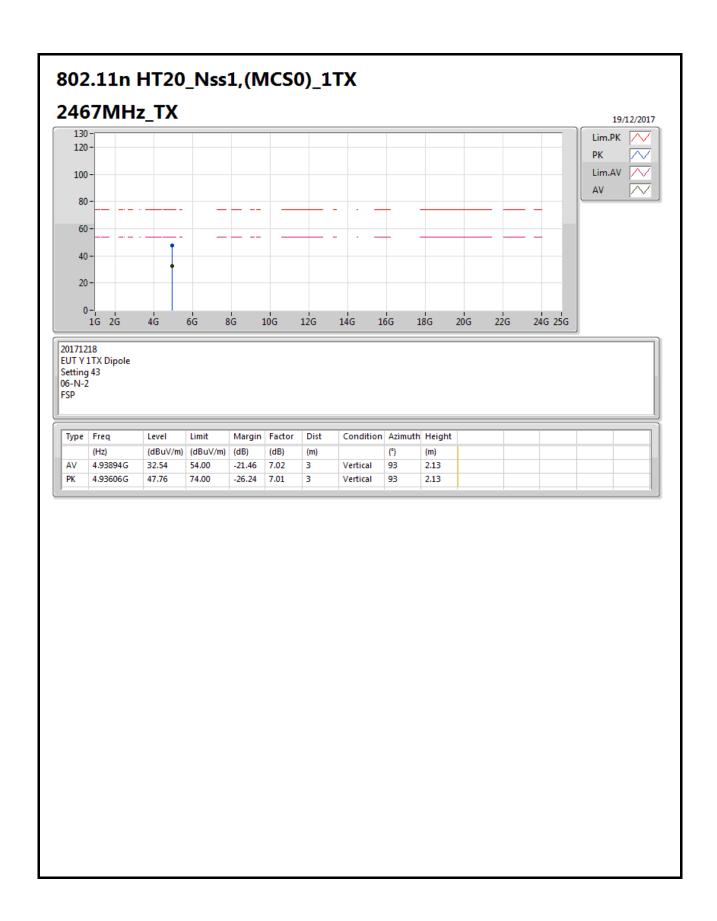
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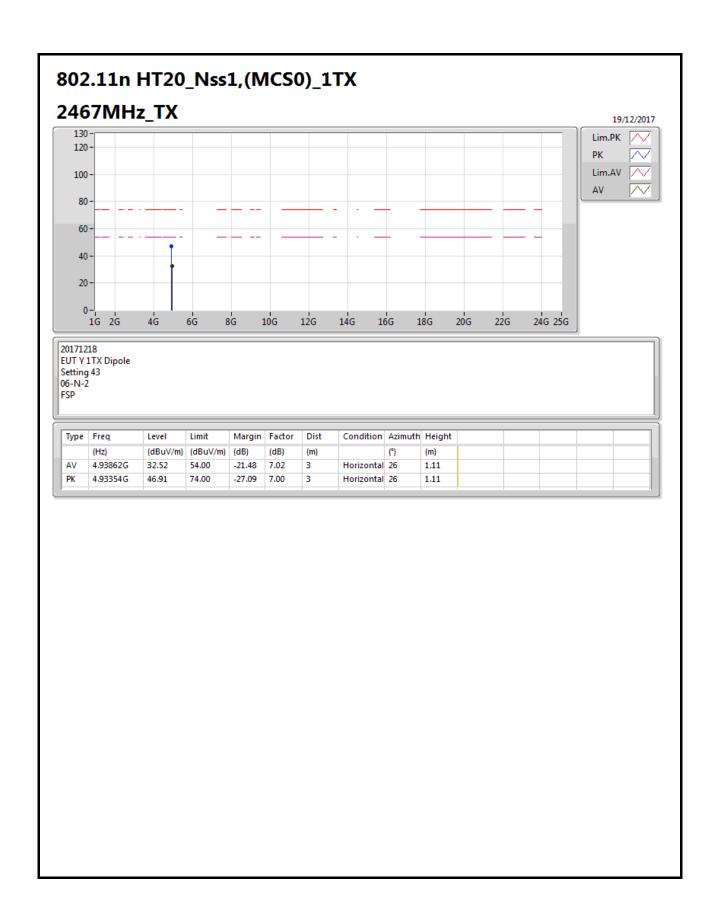


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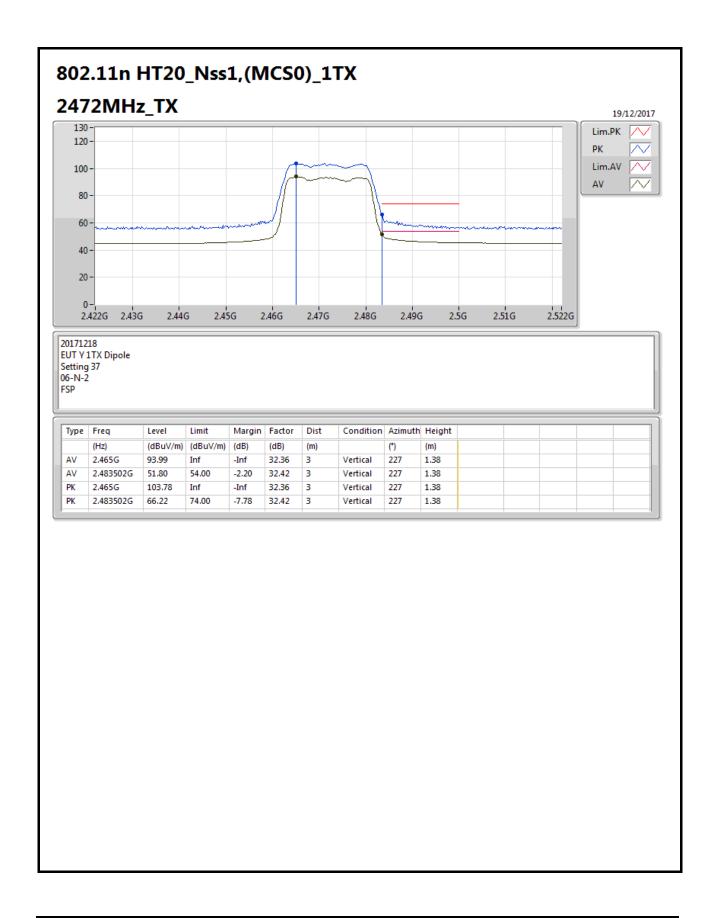






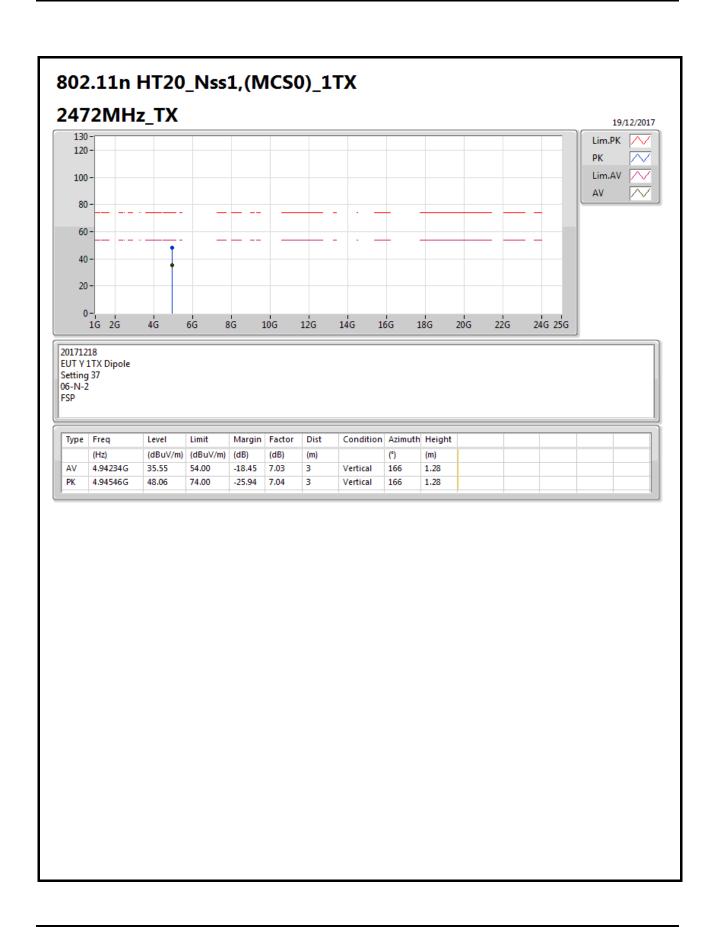






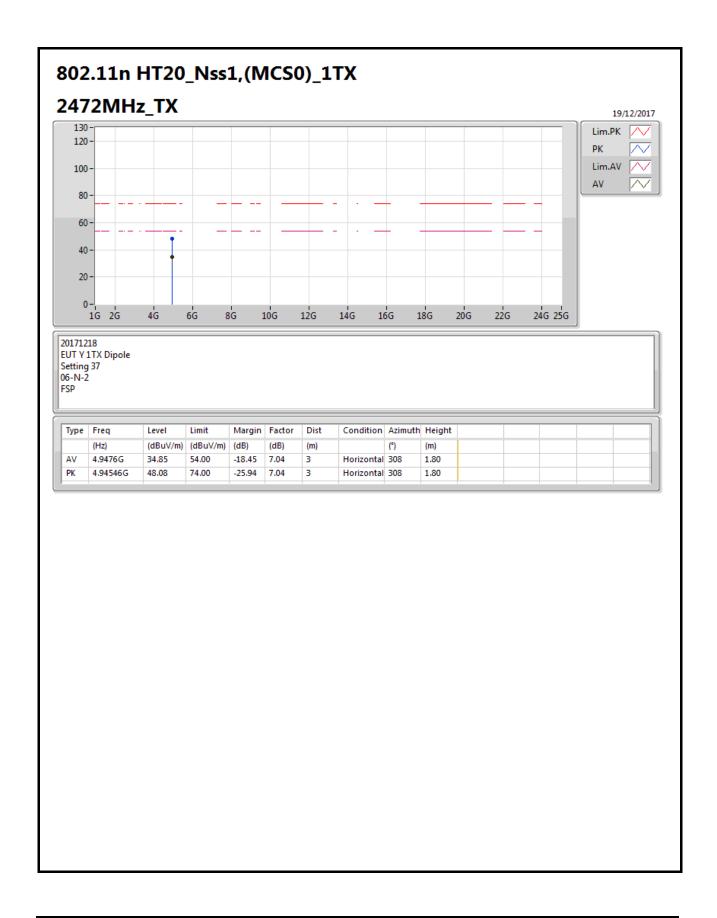
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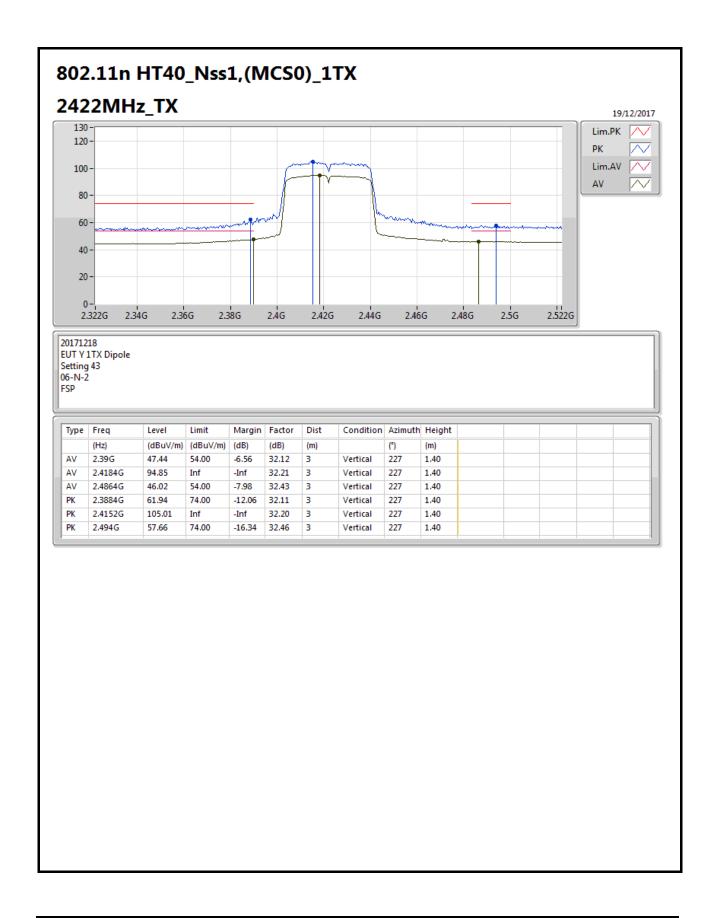
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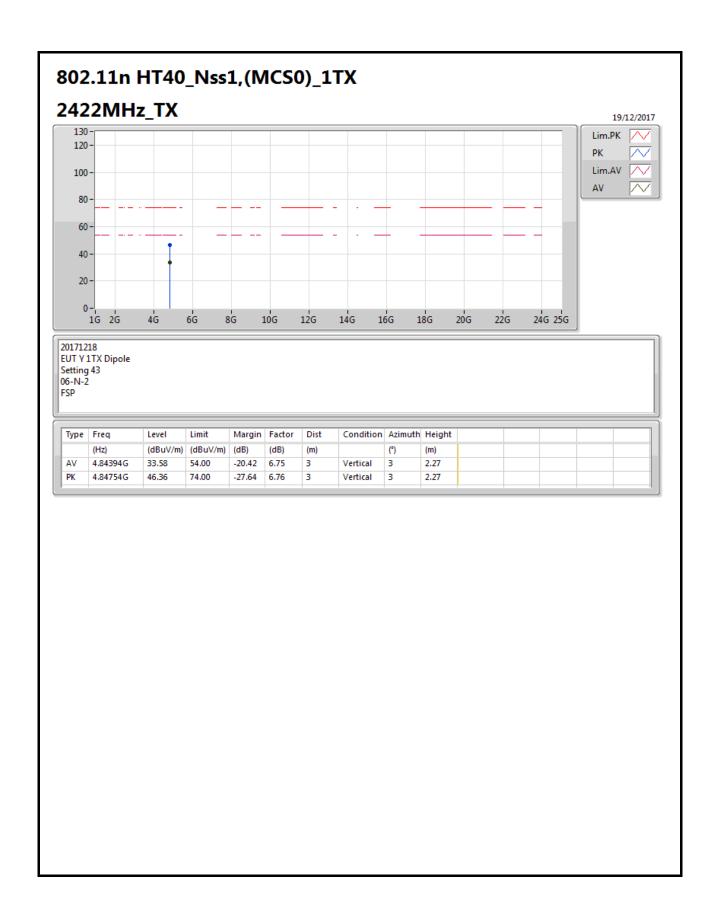
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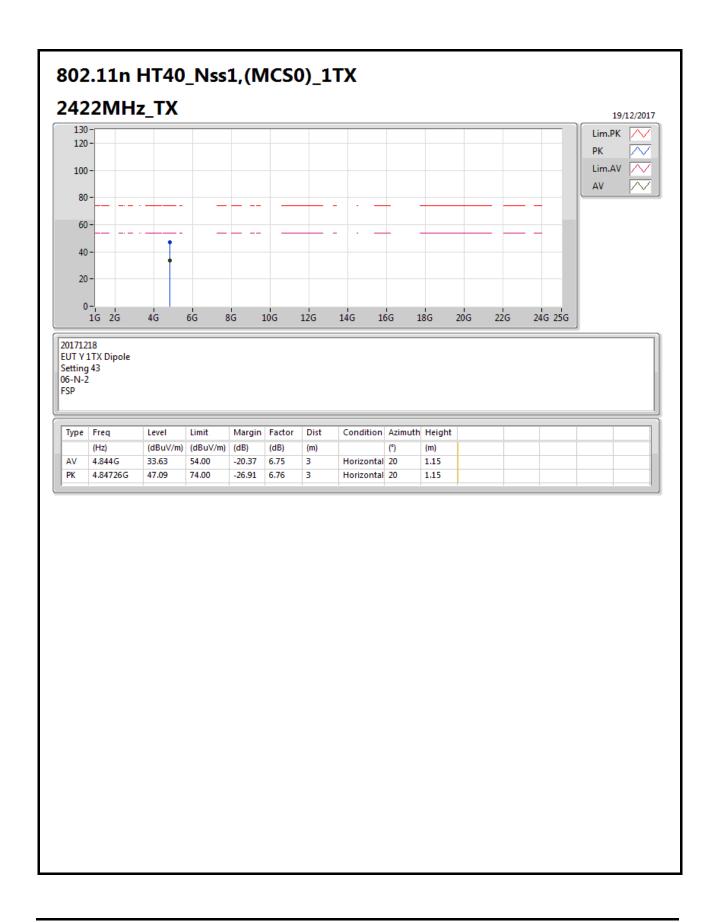
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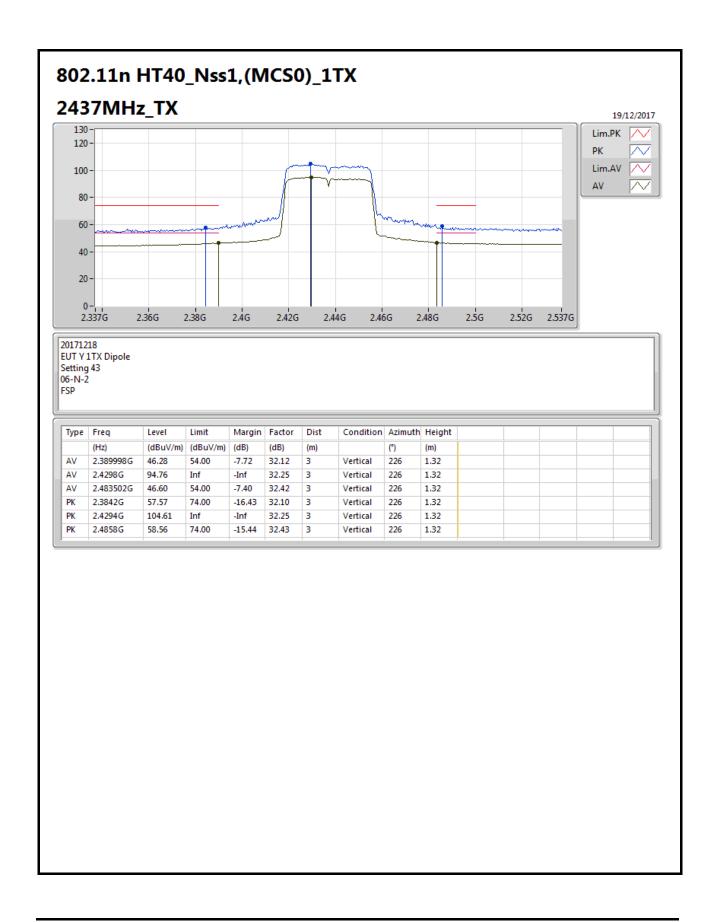
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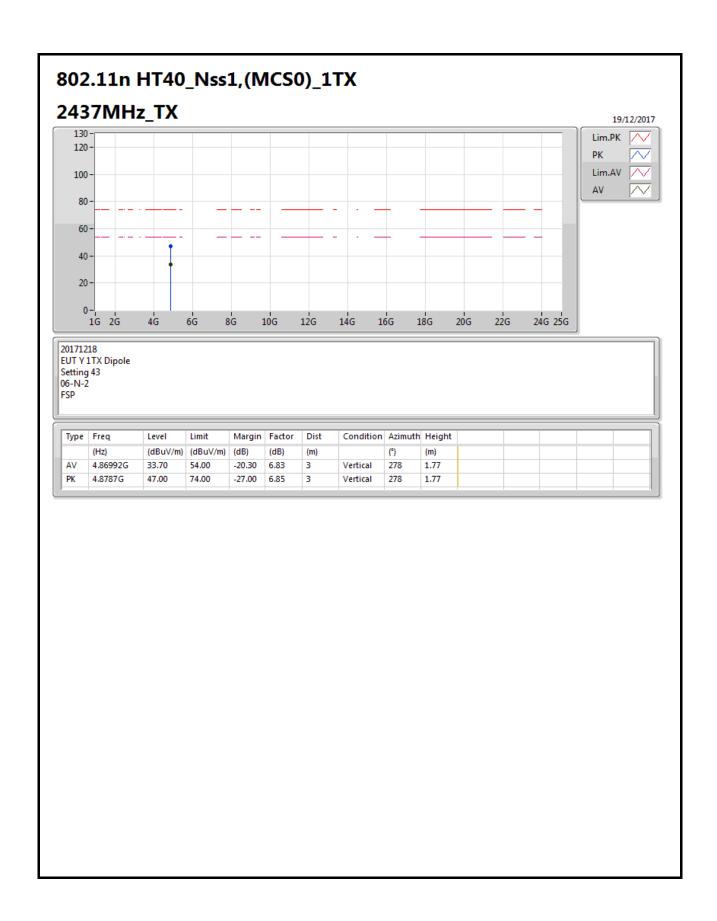
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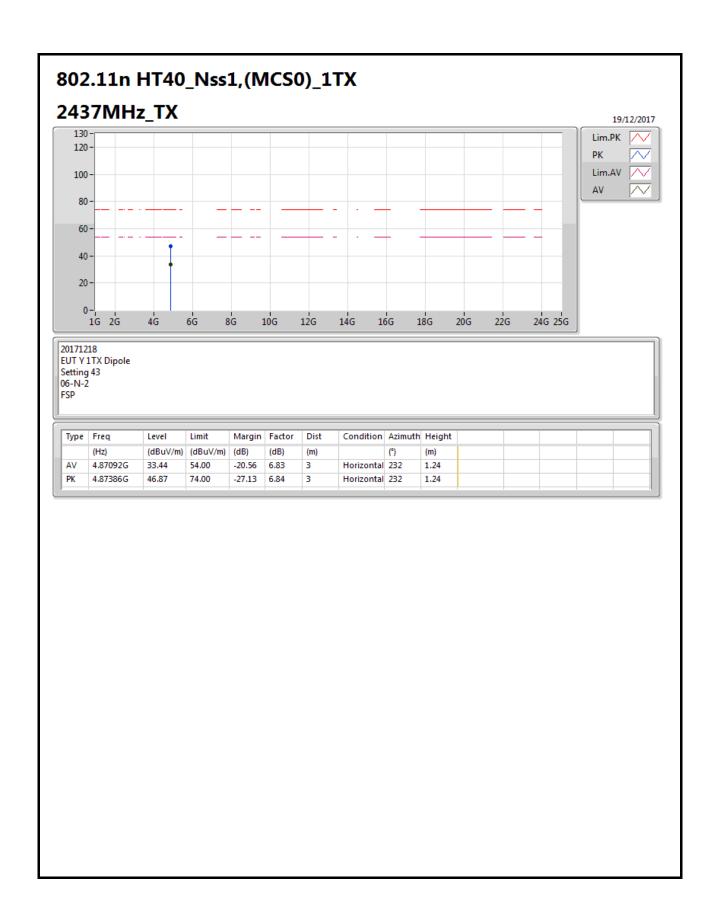
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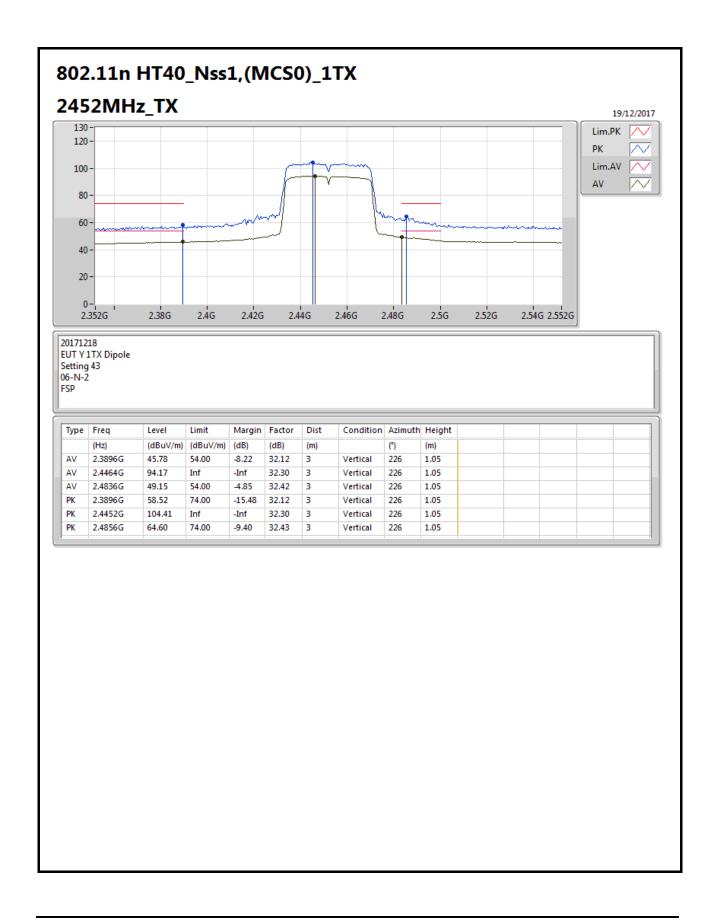
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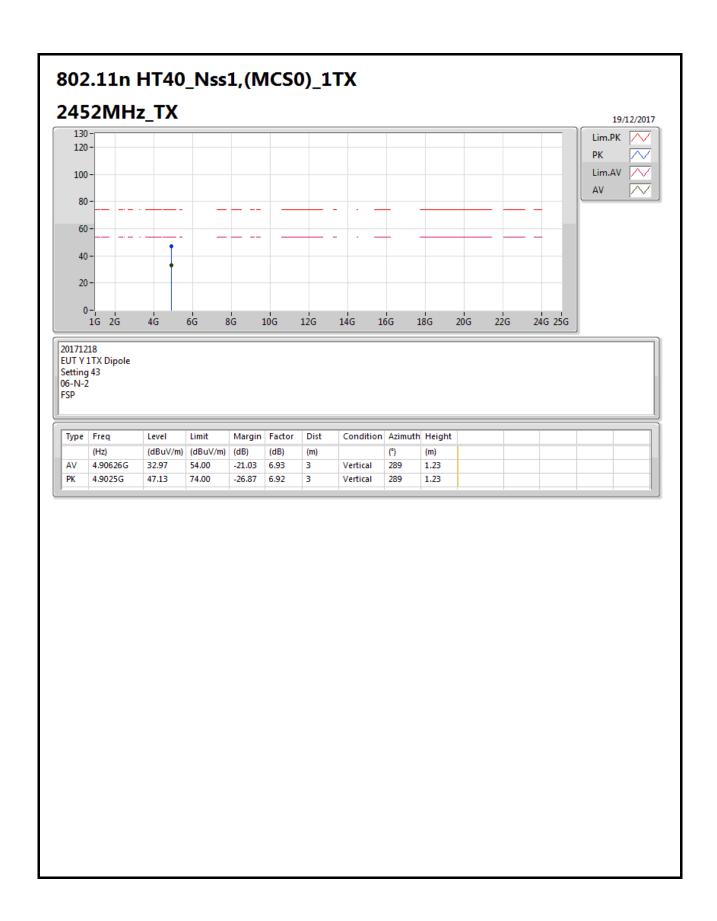
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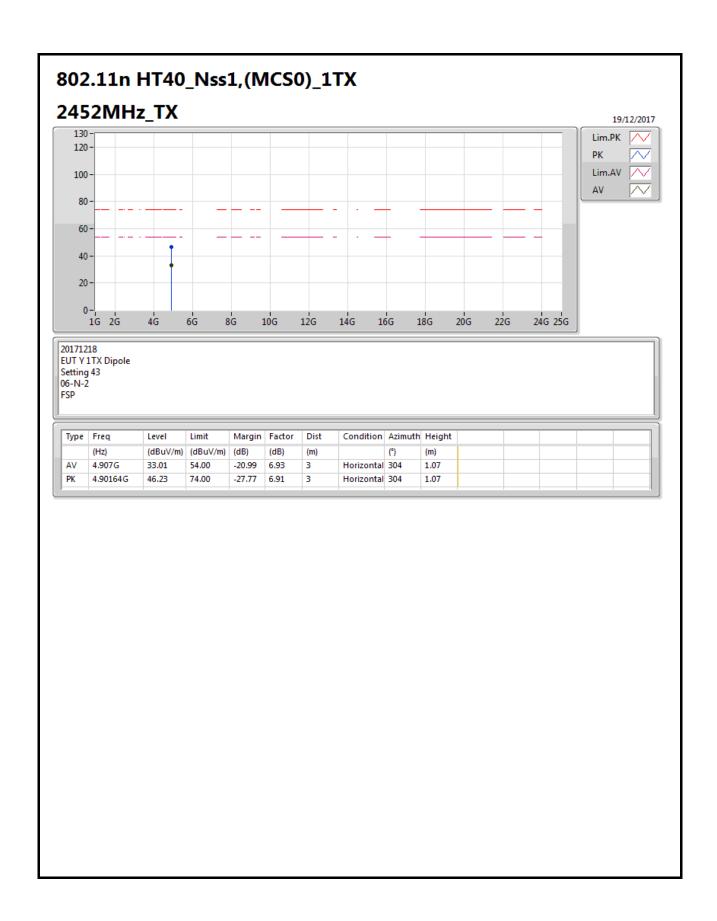
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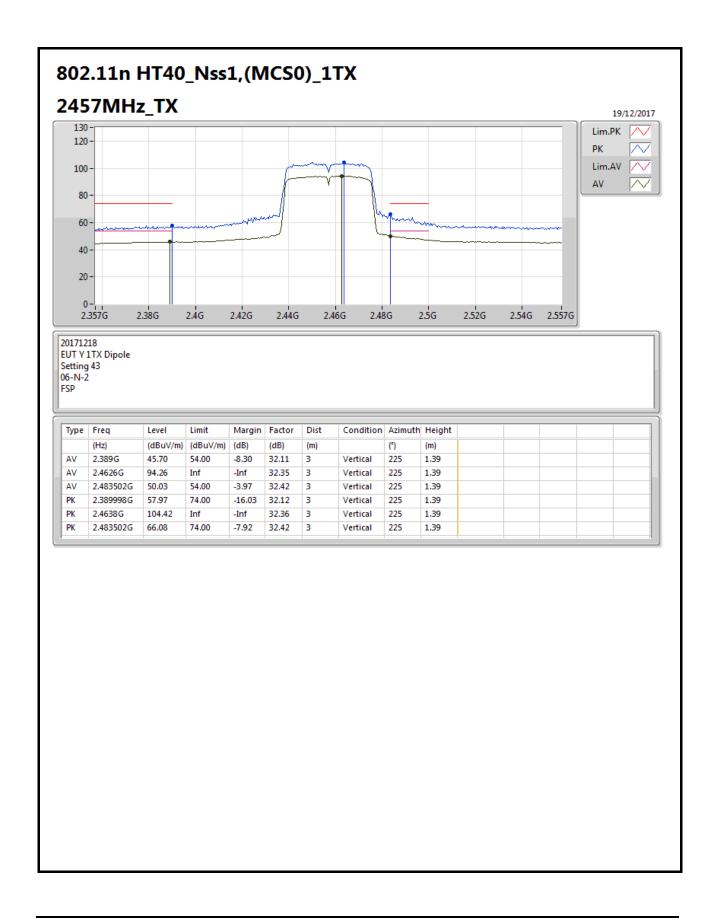
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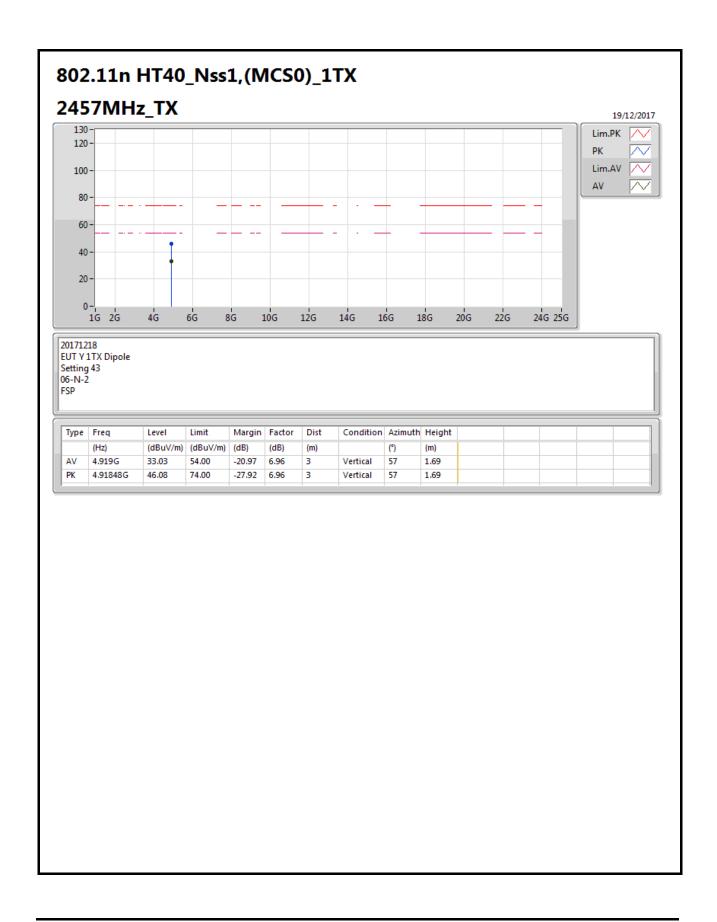
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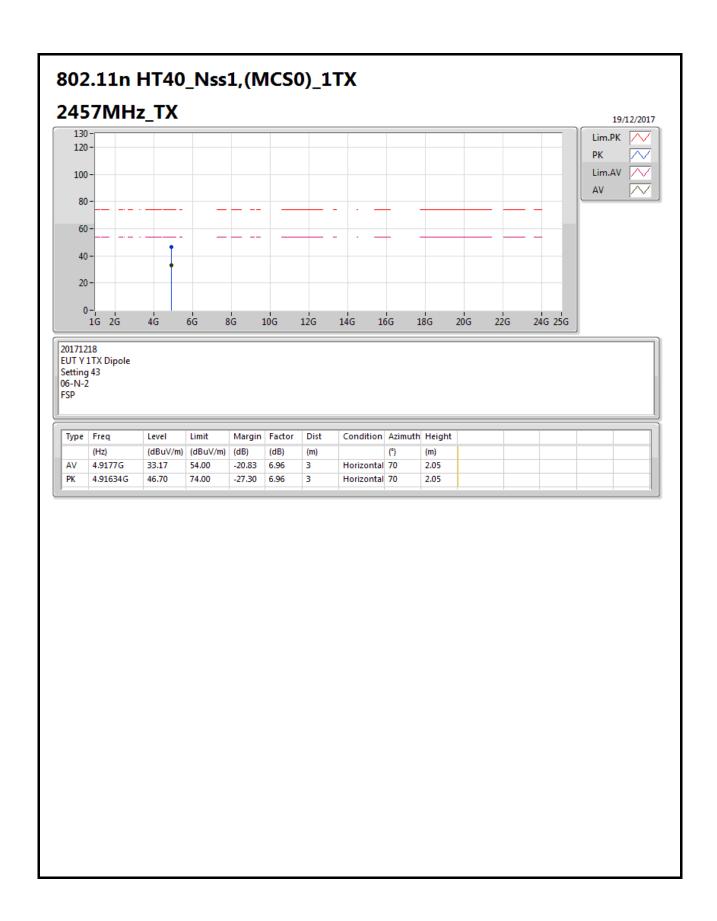
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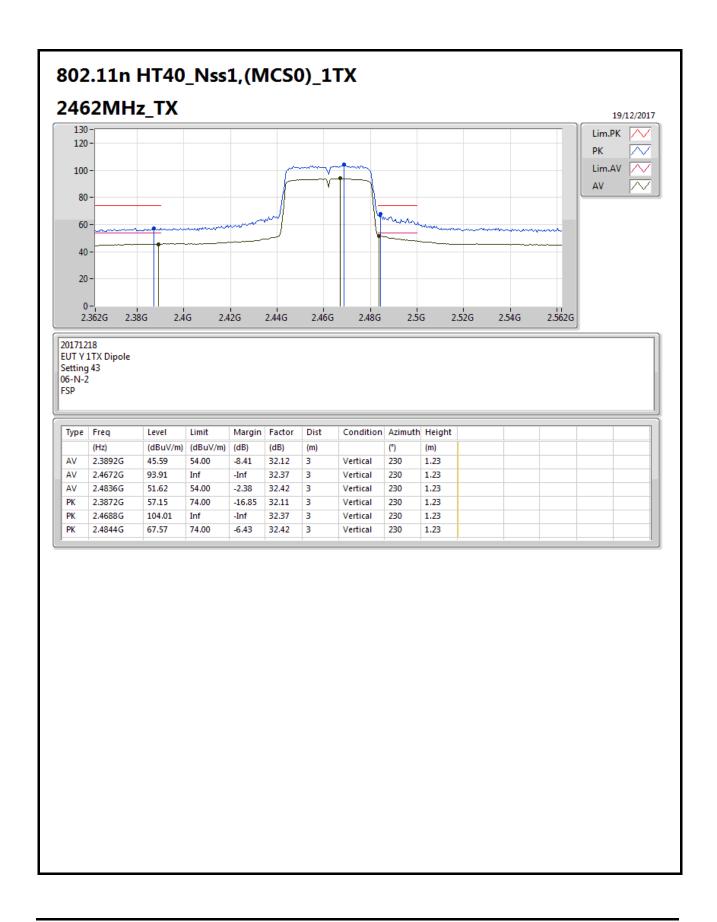
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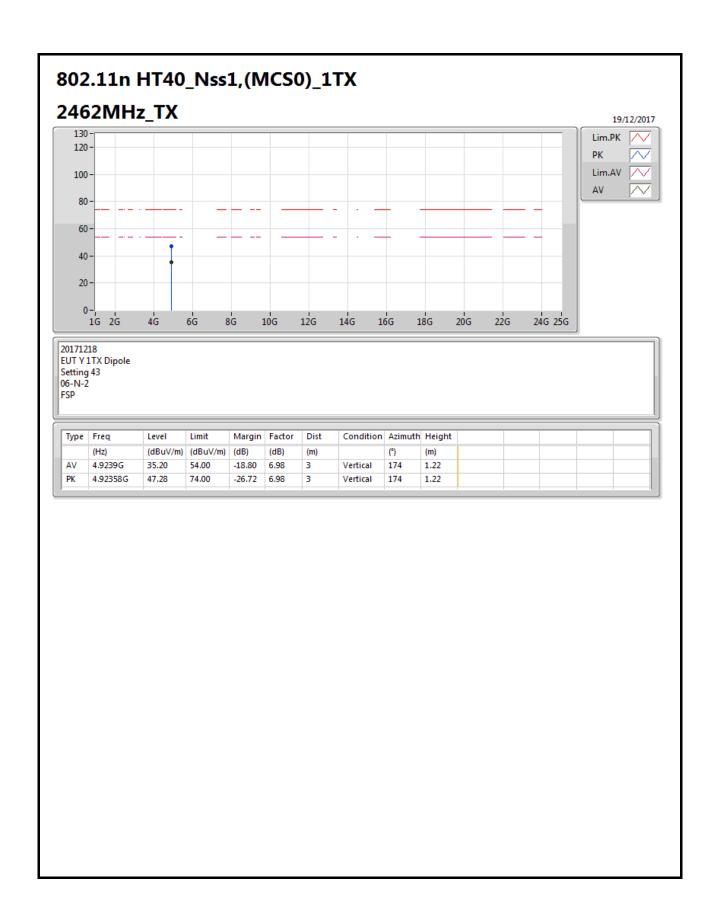
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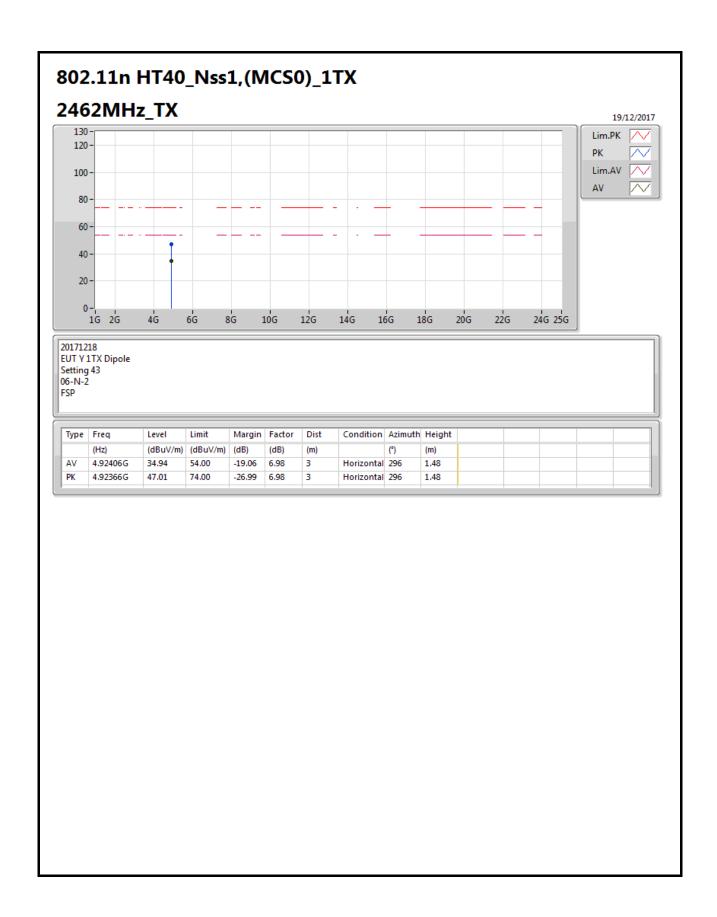
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RSE TX above 1GHz Result / Ant.3

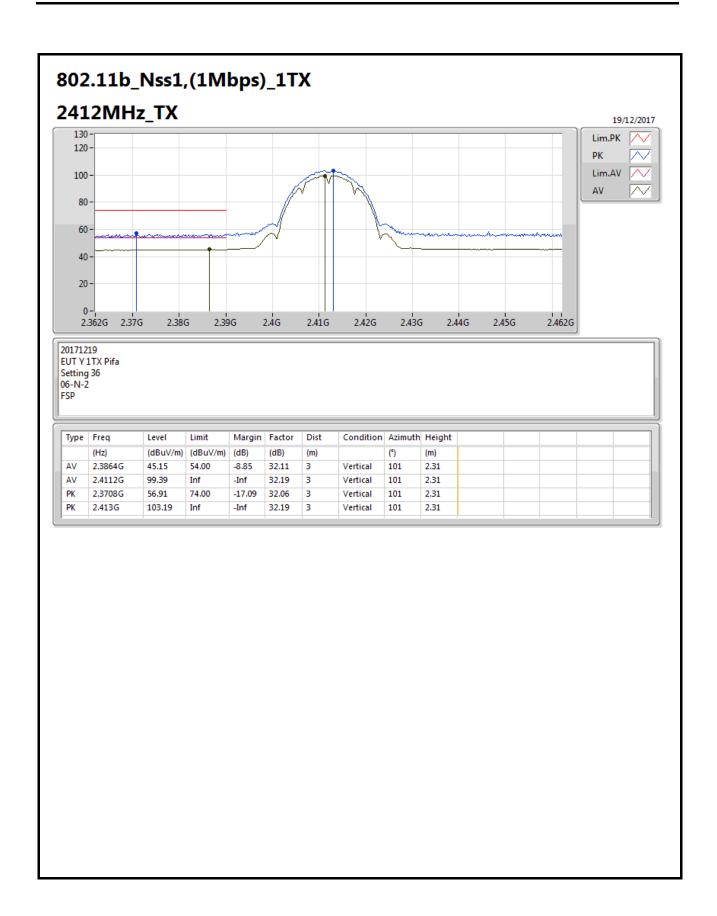
Appendix F.2

Summary

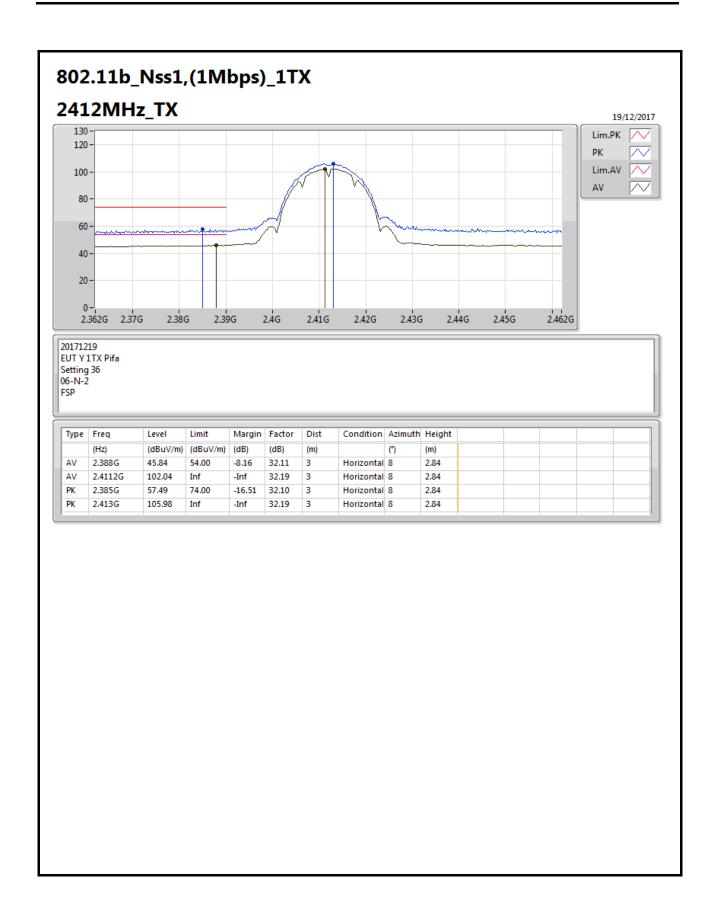
Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-		-	-	-	-	-	-	-	-	-	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.483502G	51.81	54.00	-2.19	31.17	3	Horizontal	36	1.08	-

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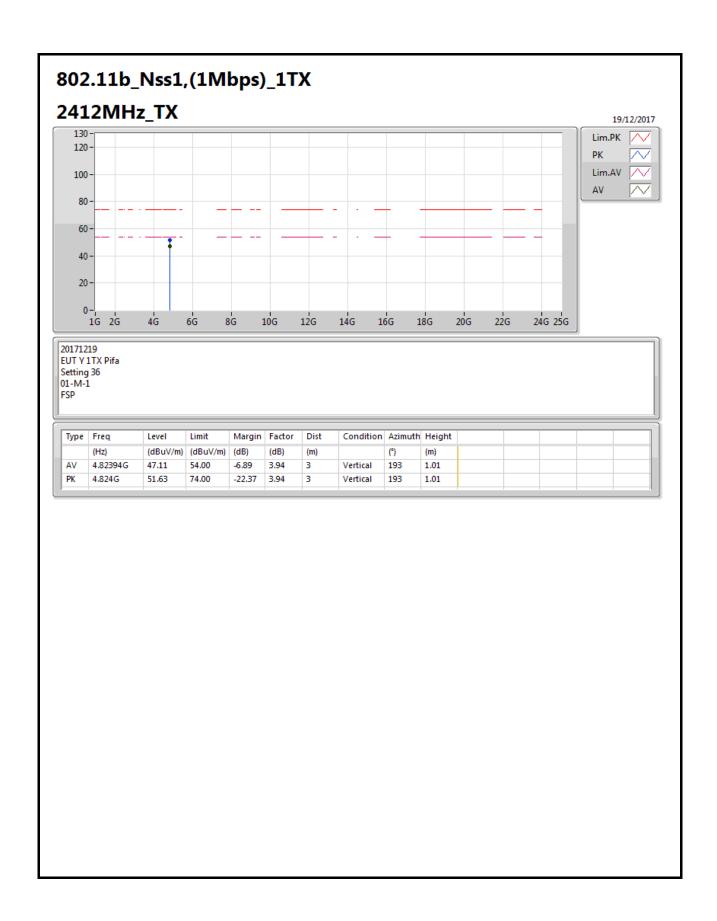




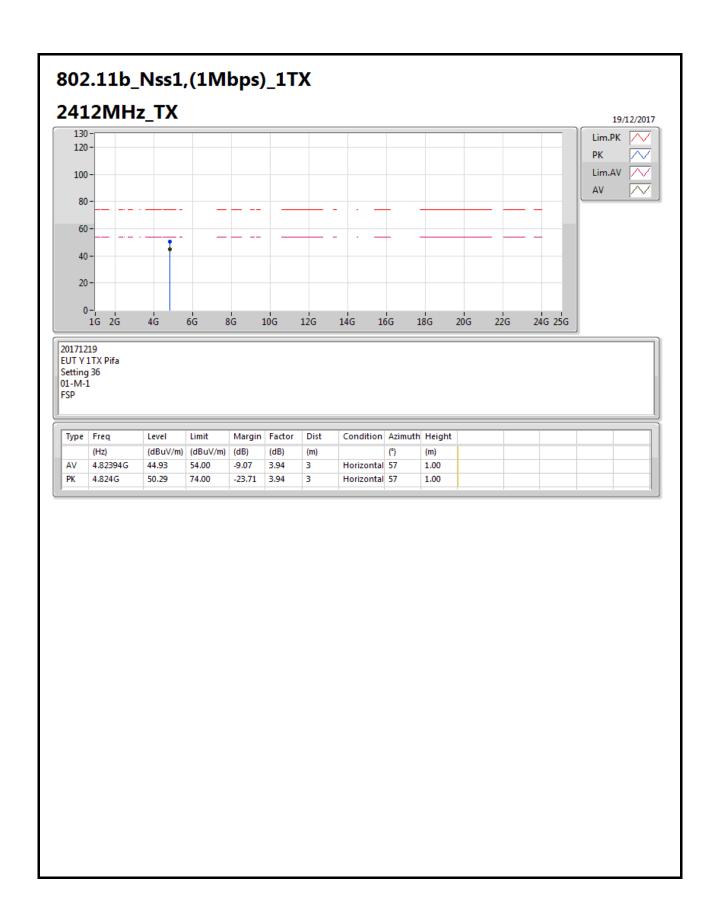


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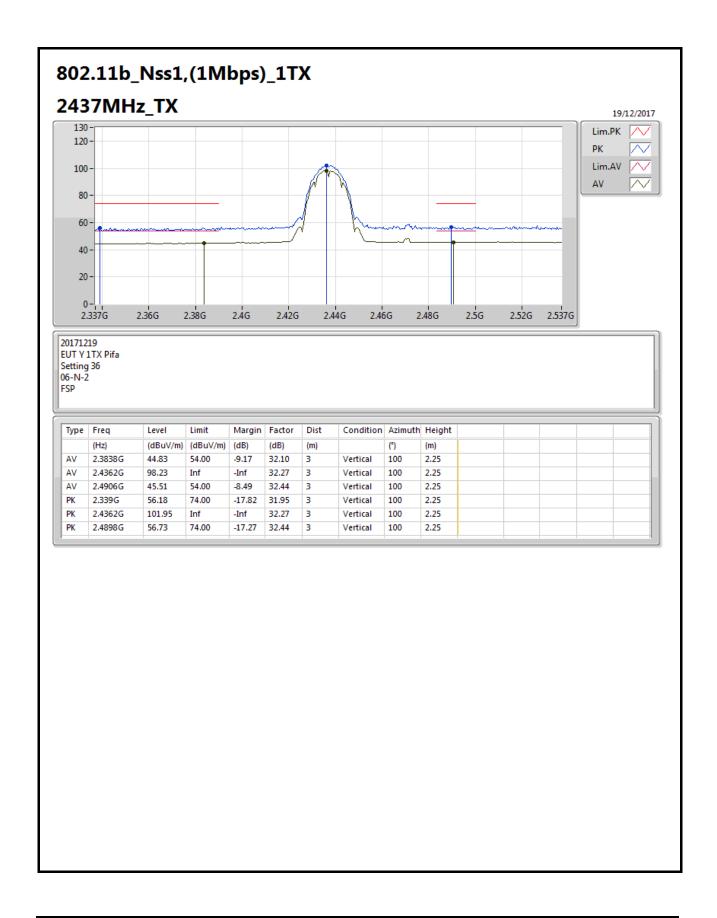




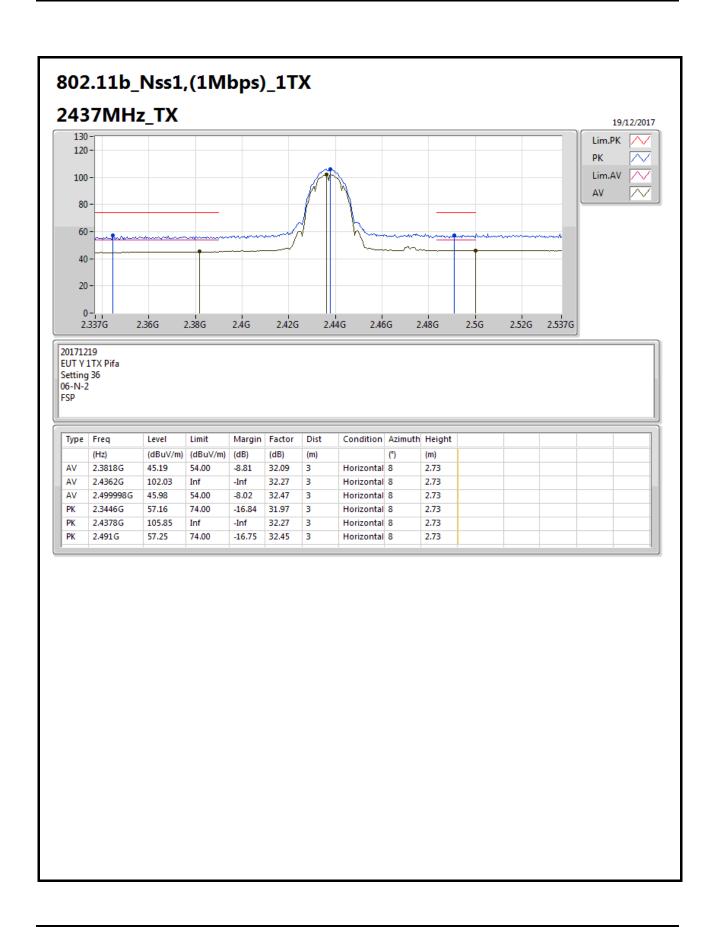








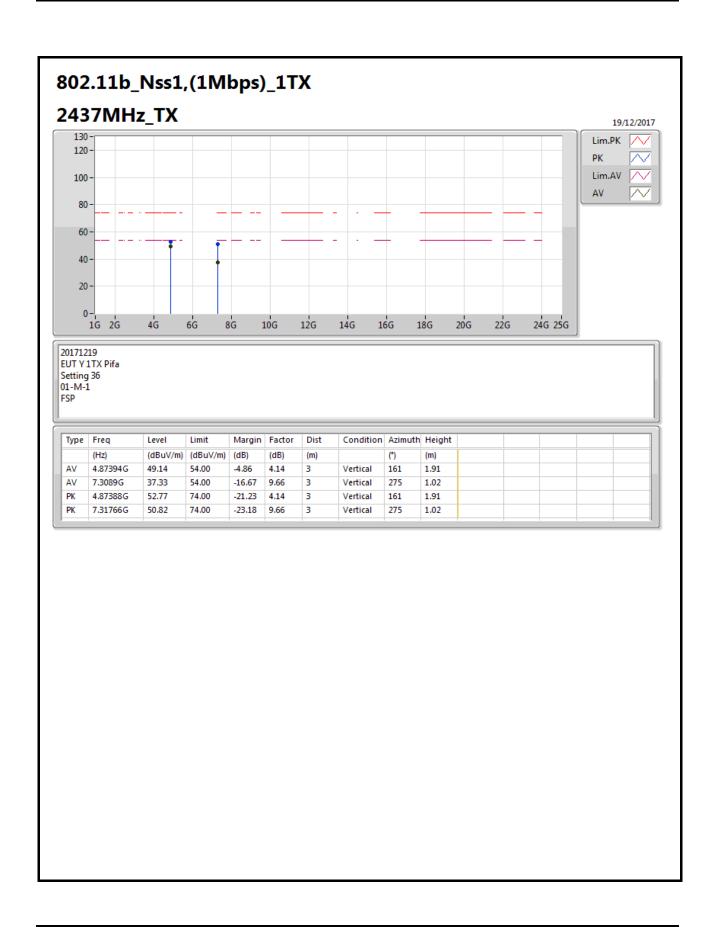




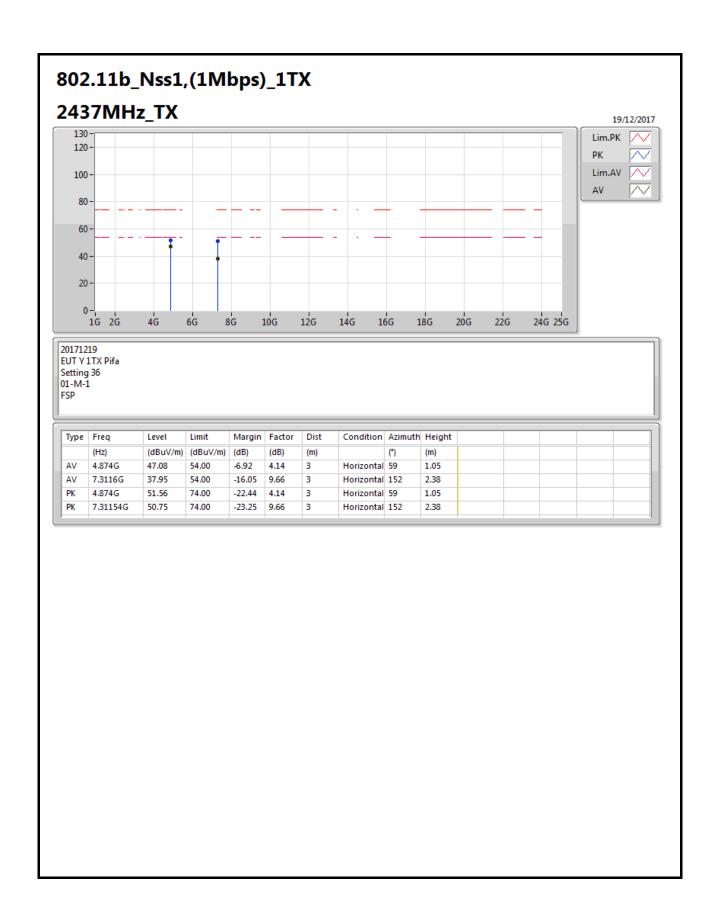
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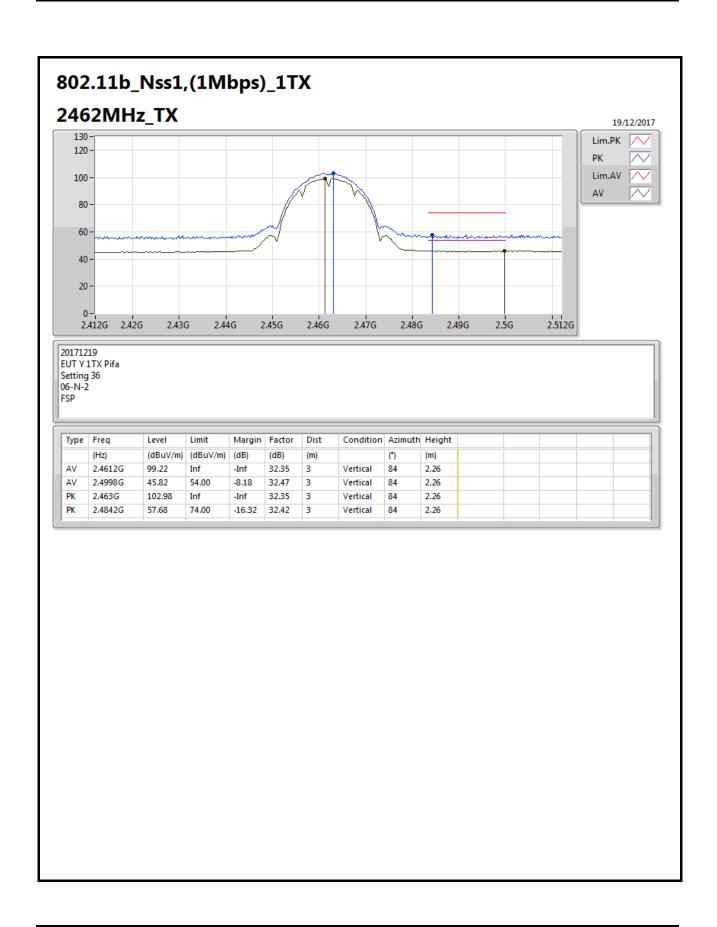




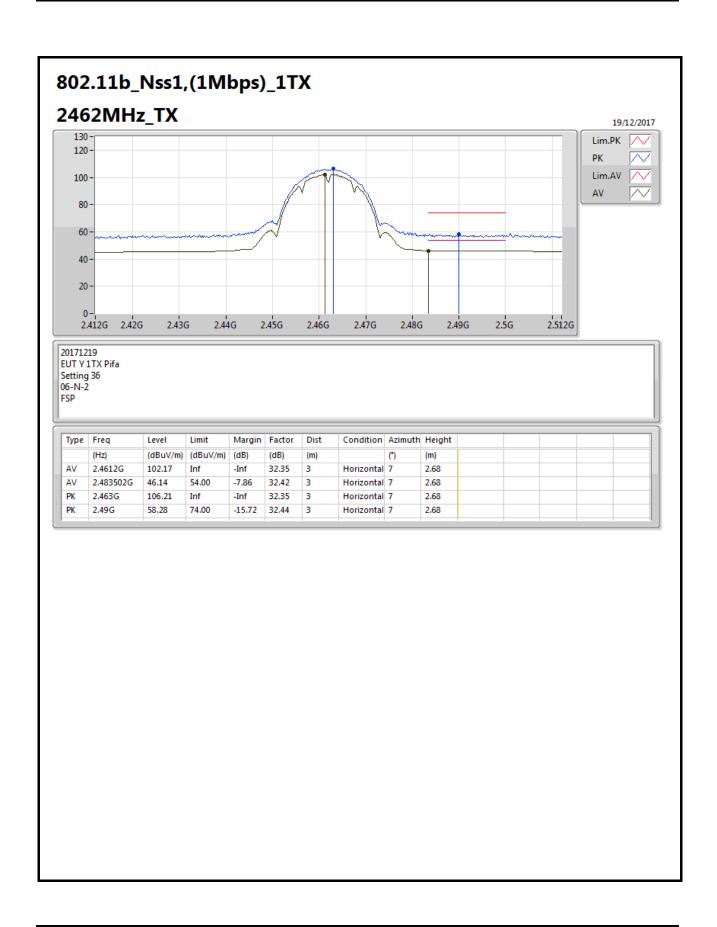




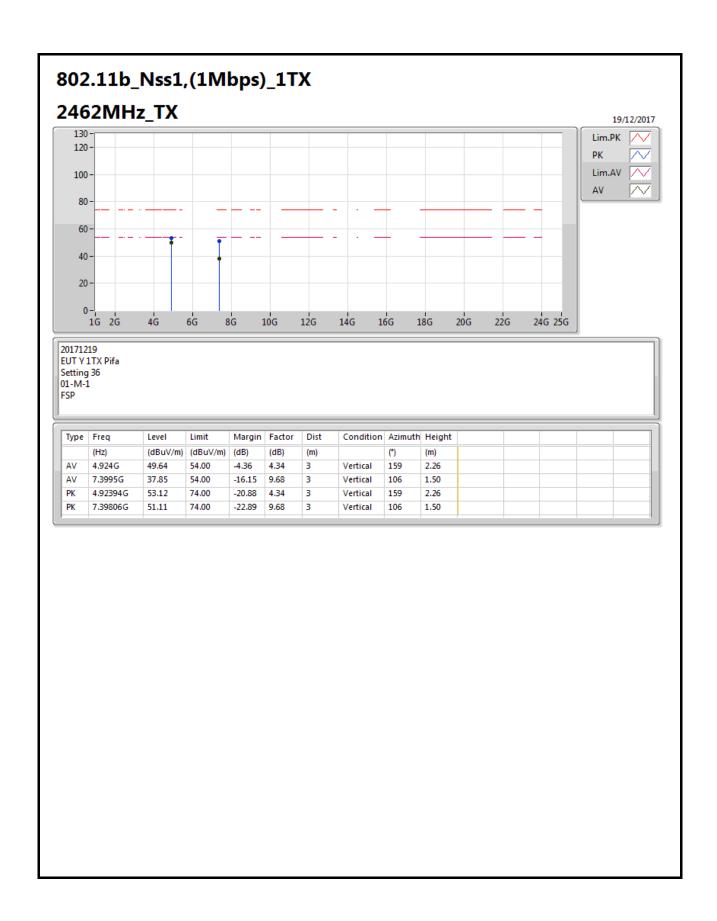




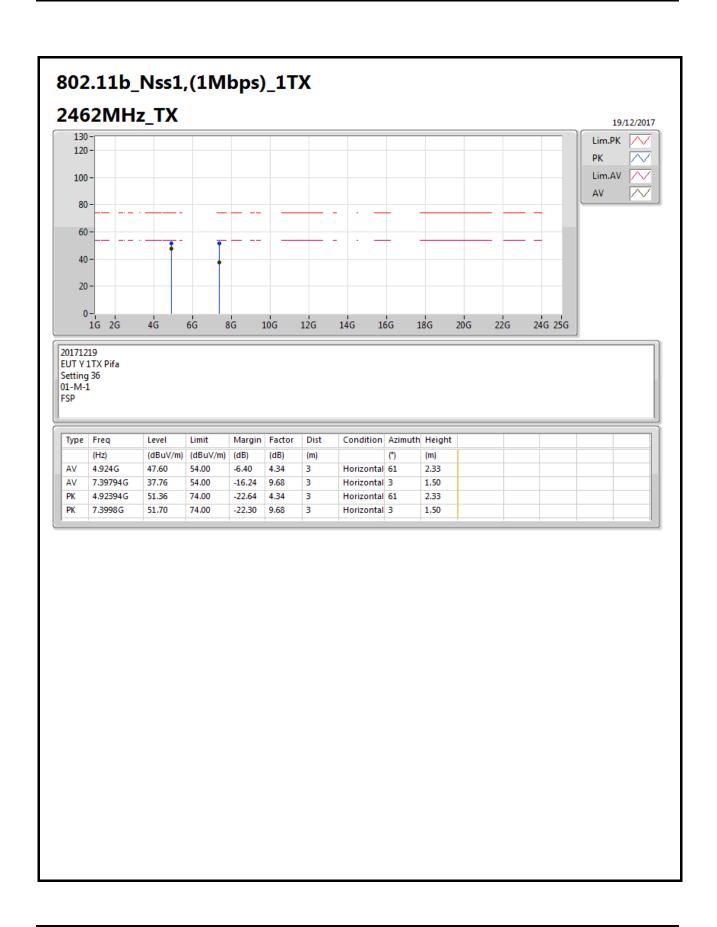




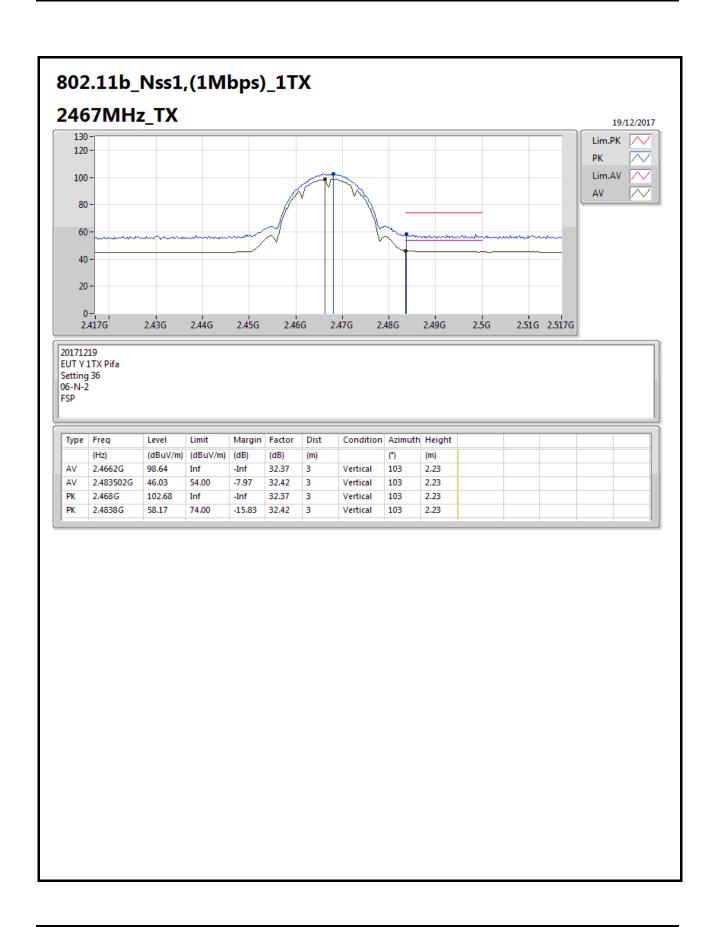




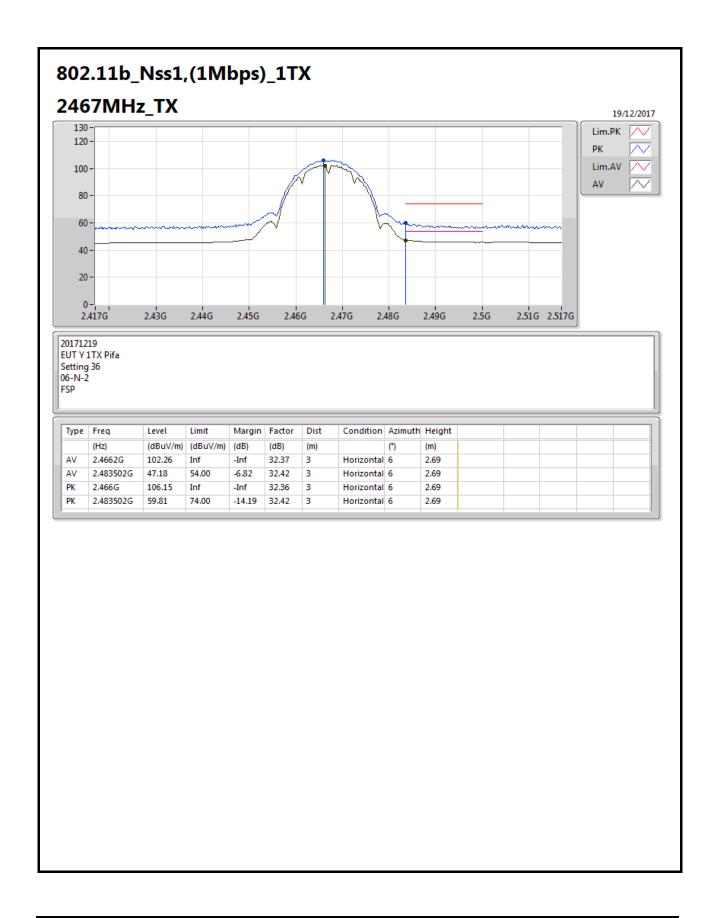




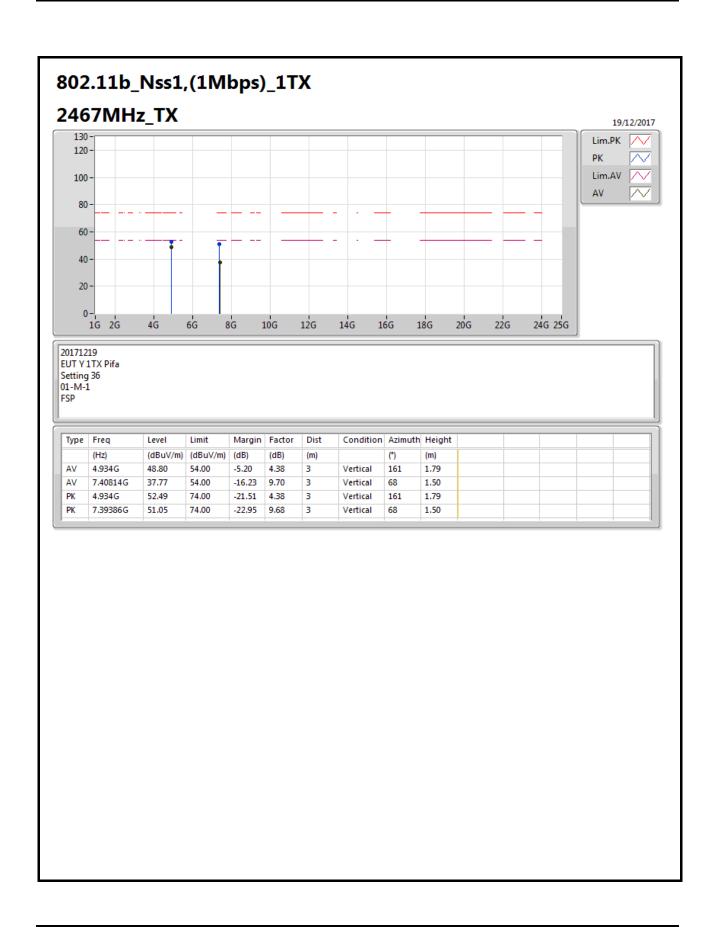




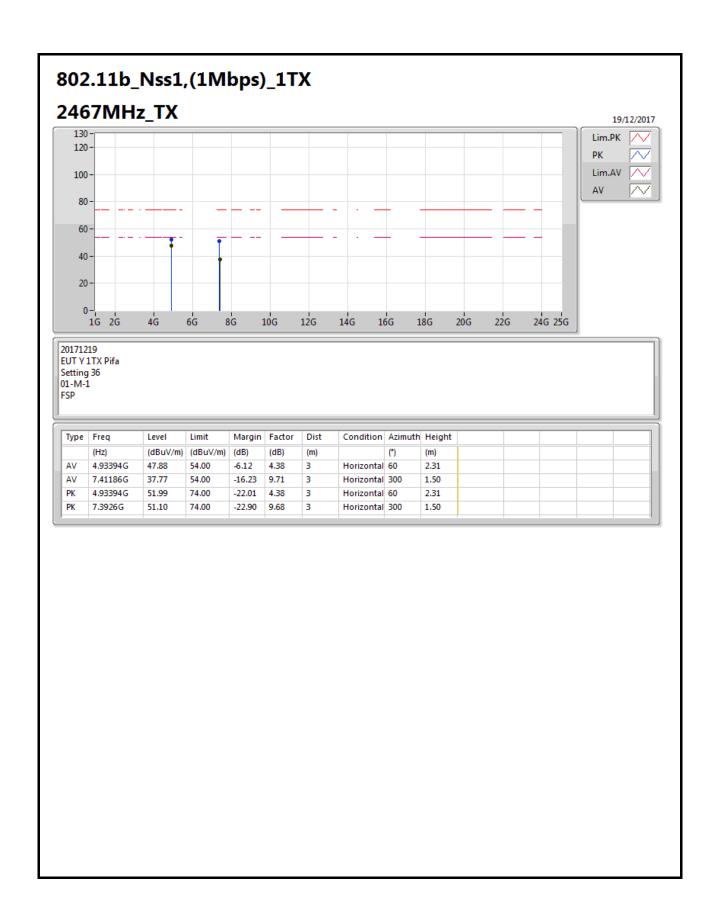








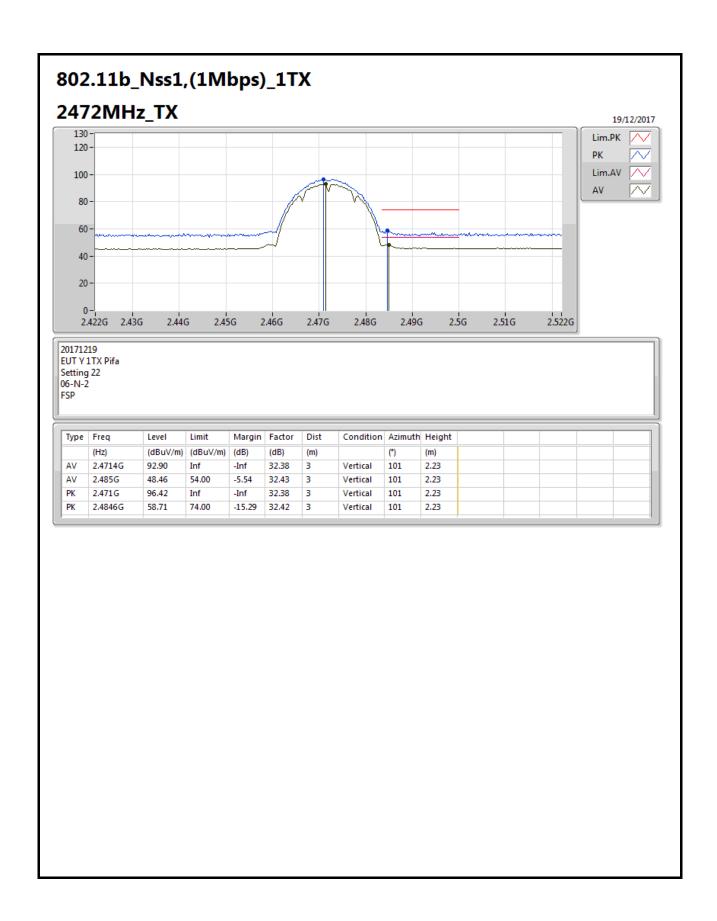




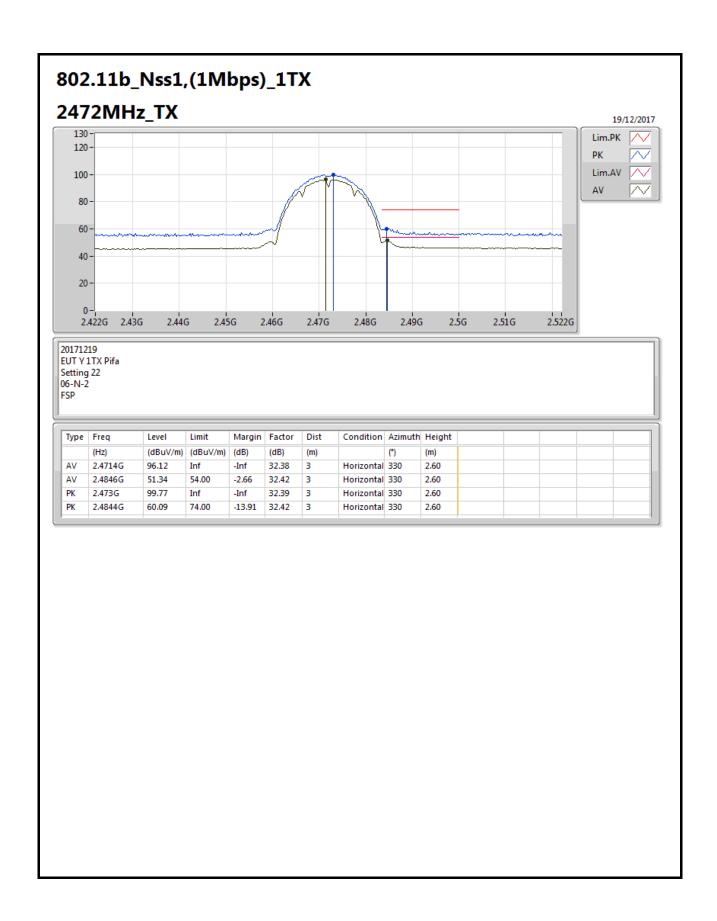
Page No.

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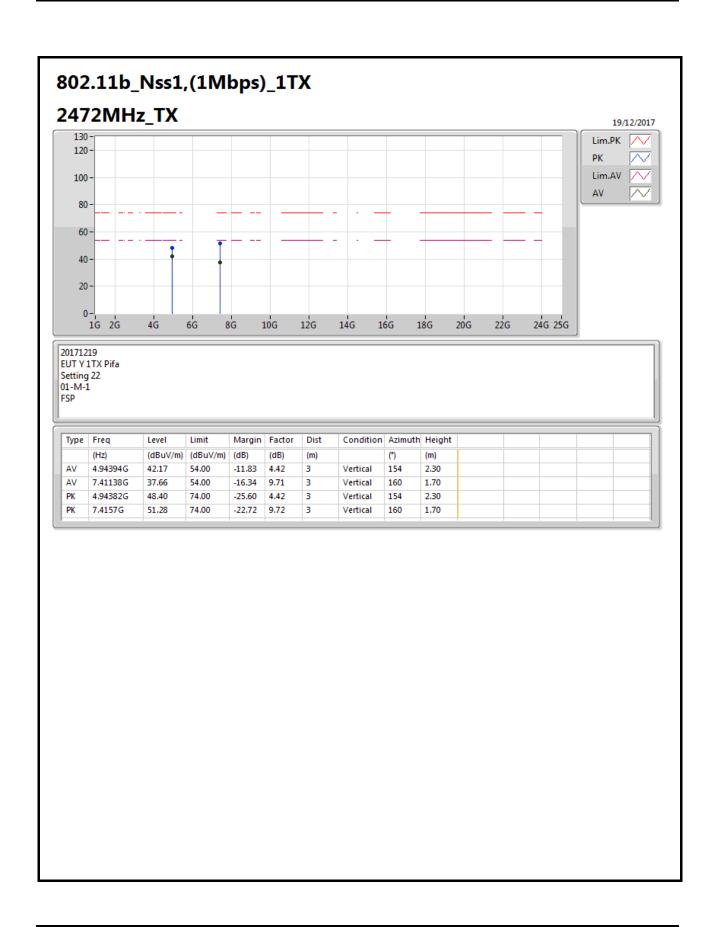




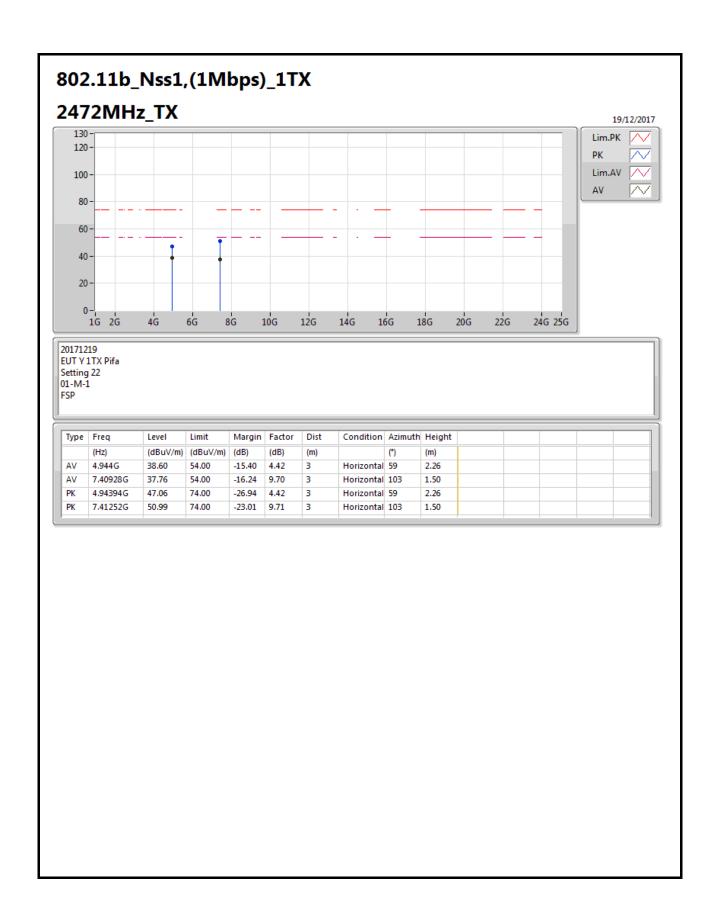






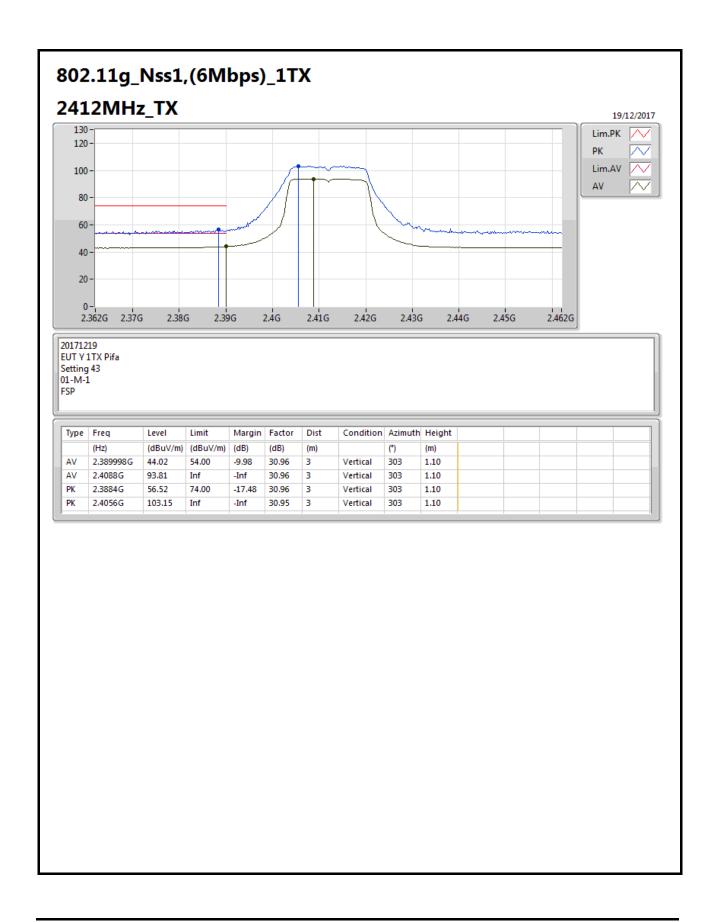




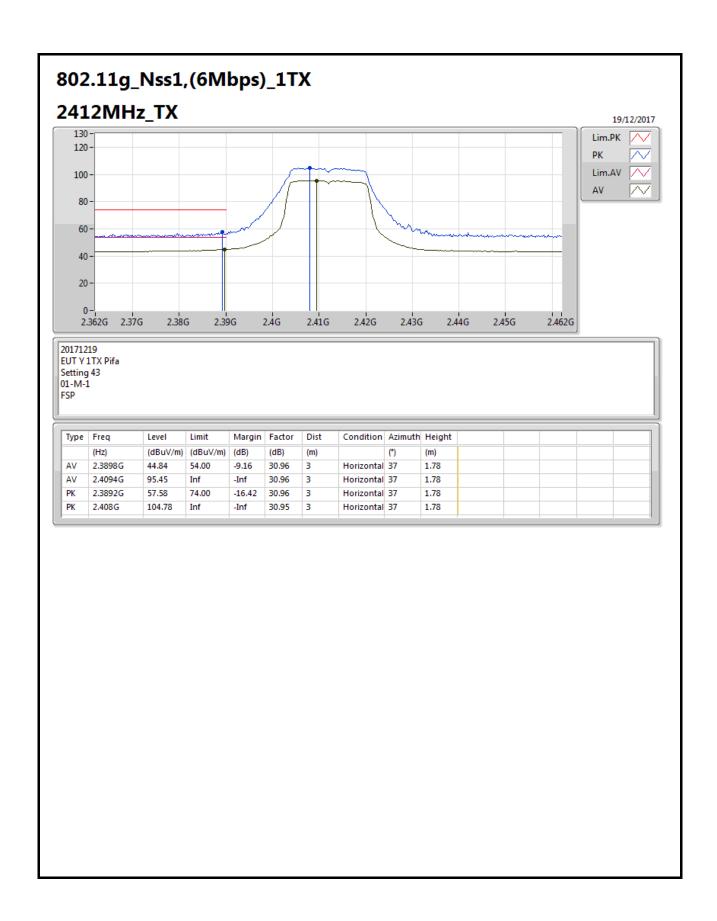


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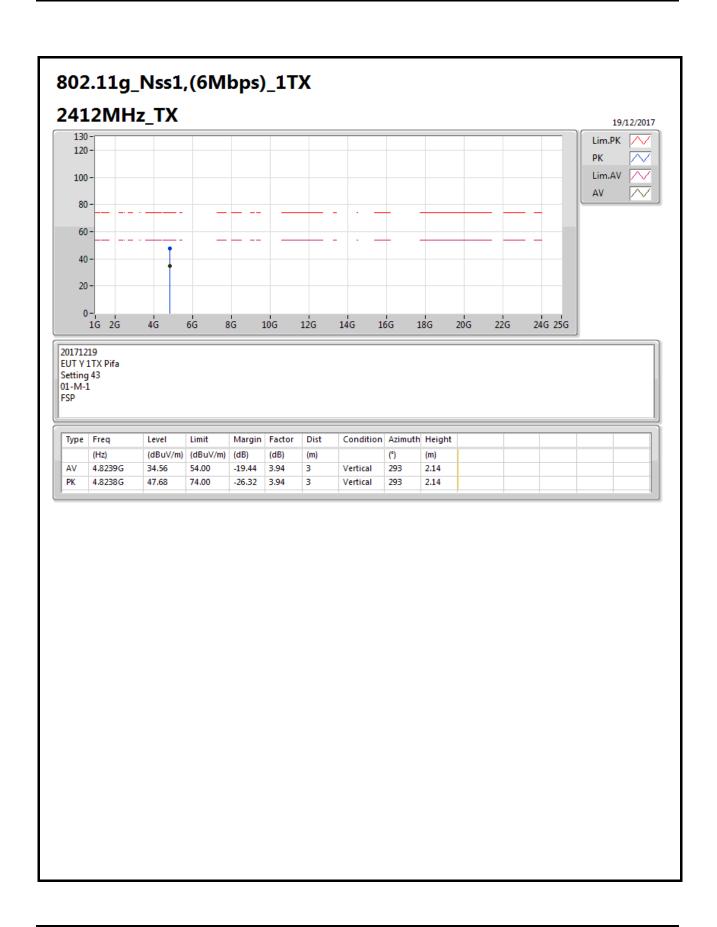






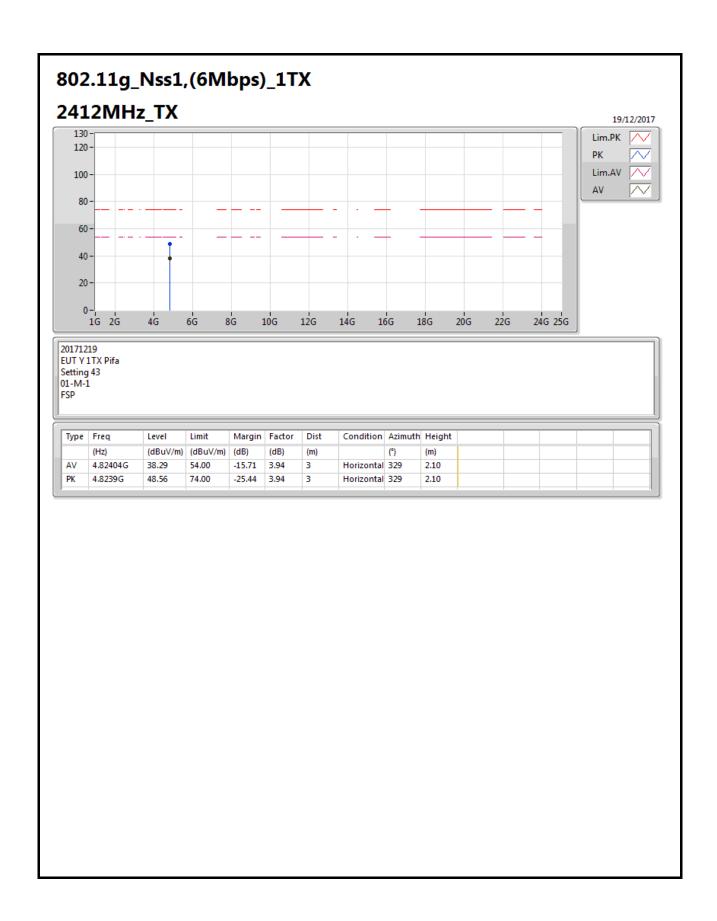




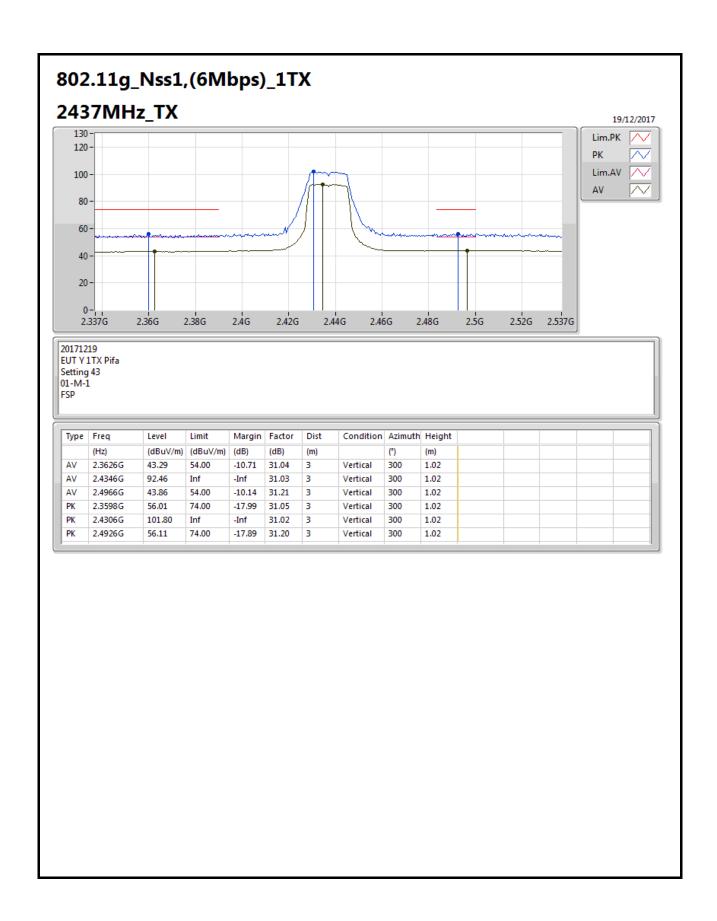


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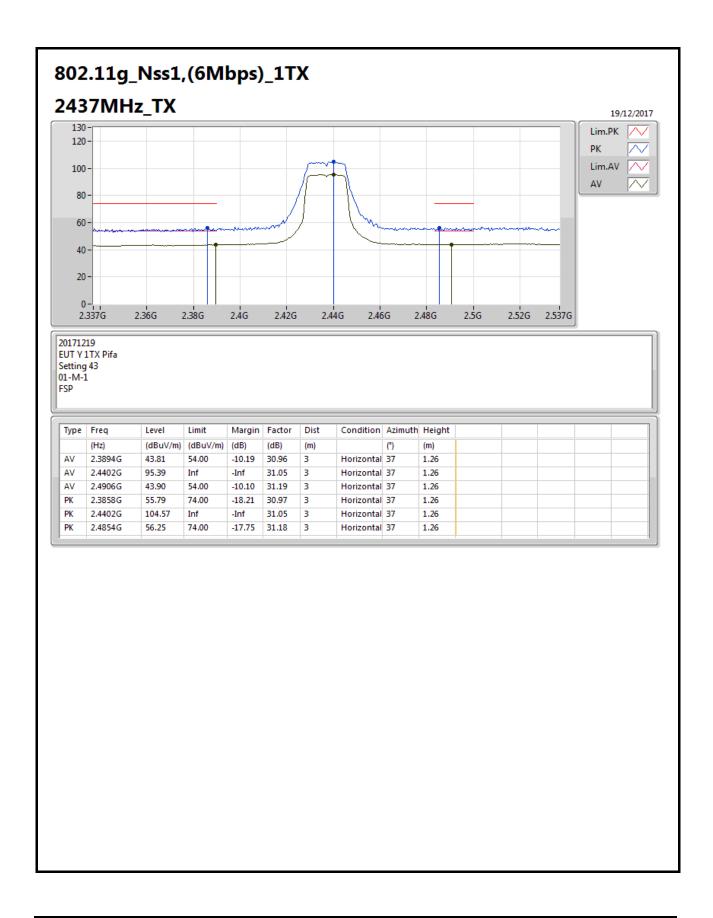








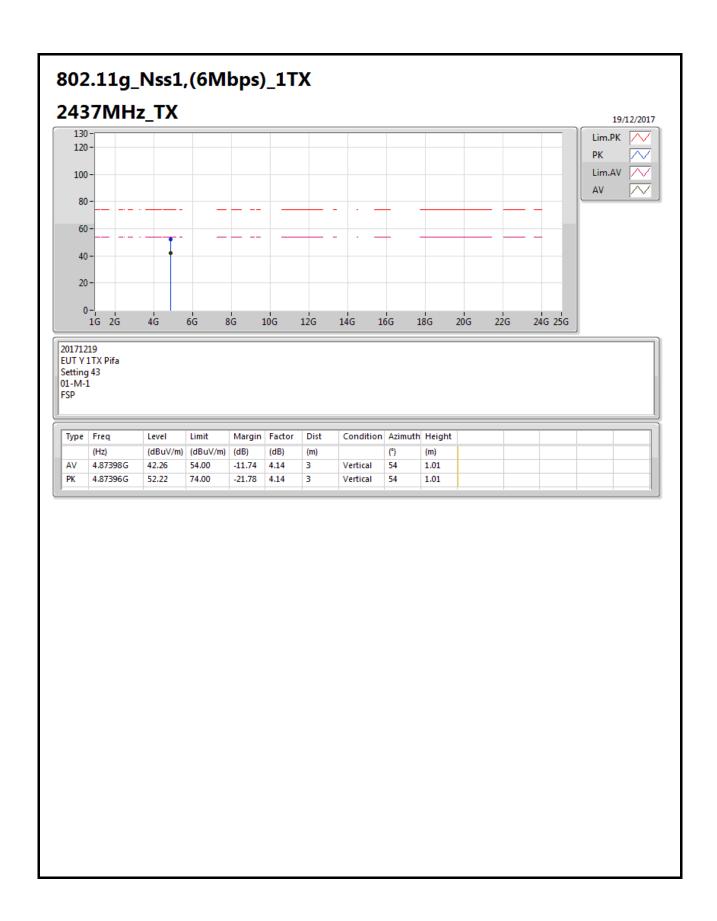




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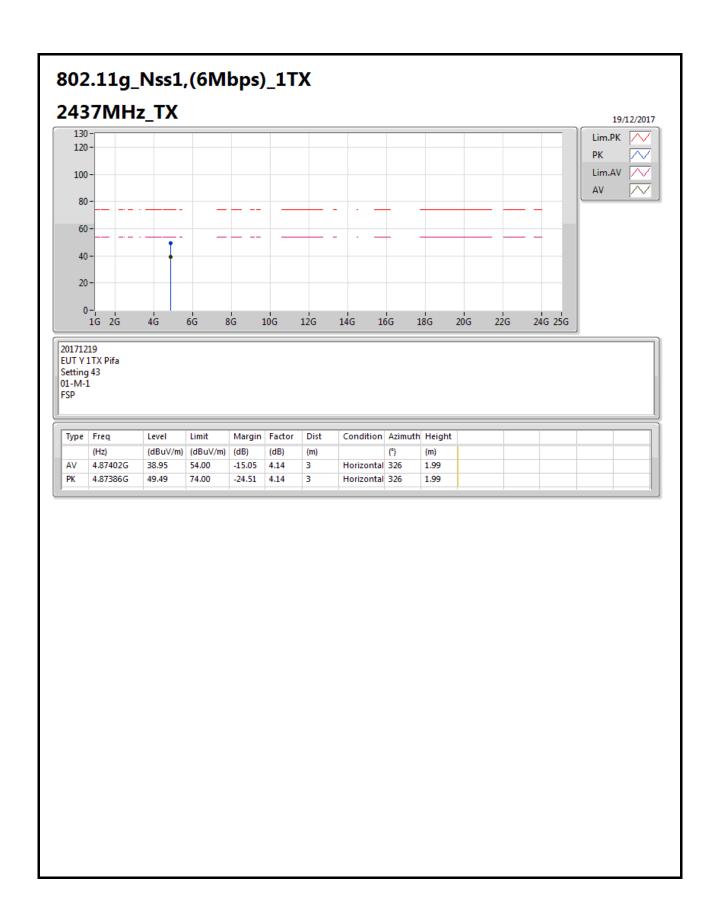
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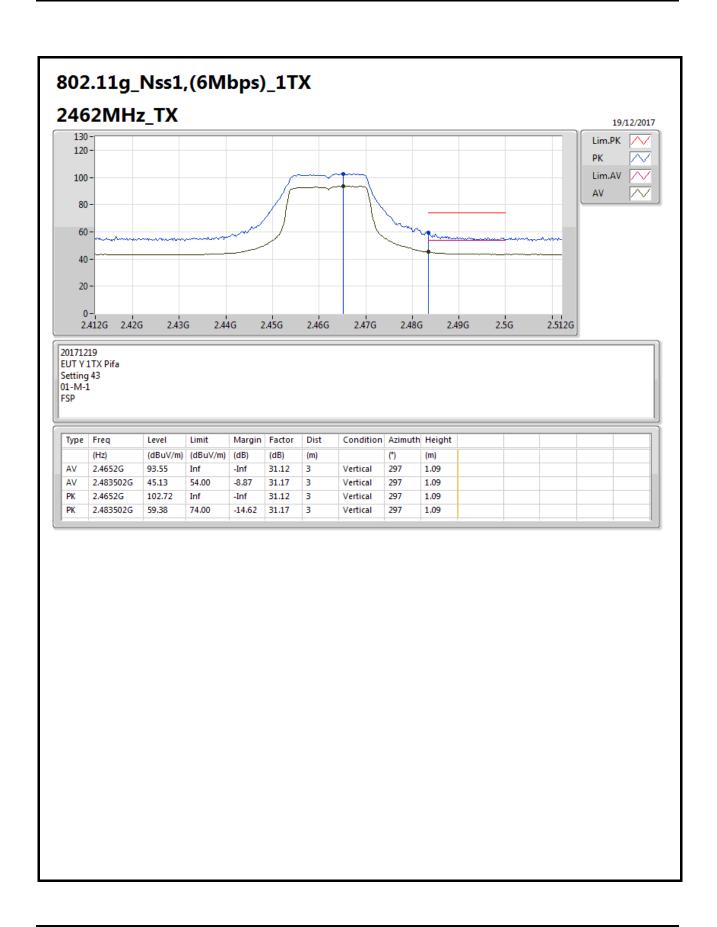
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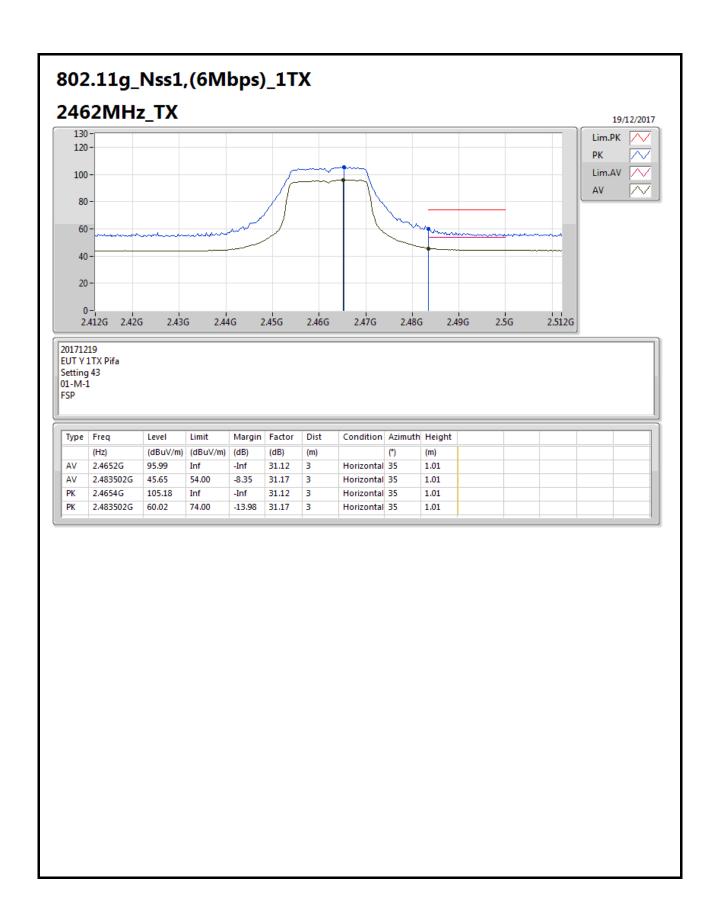


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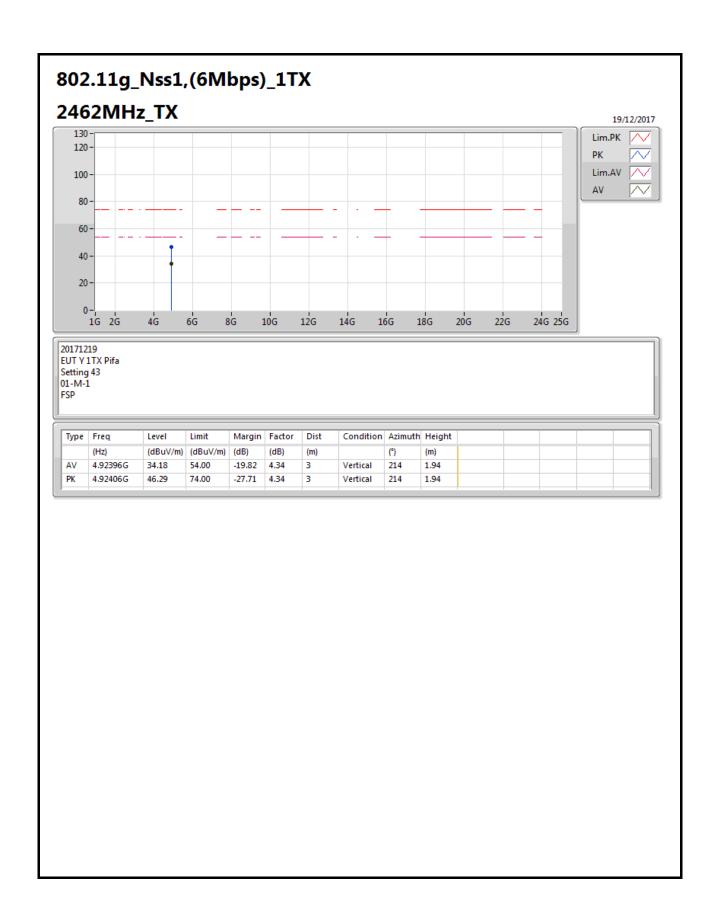




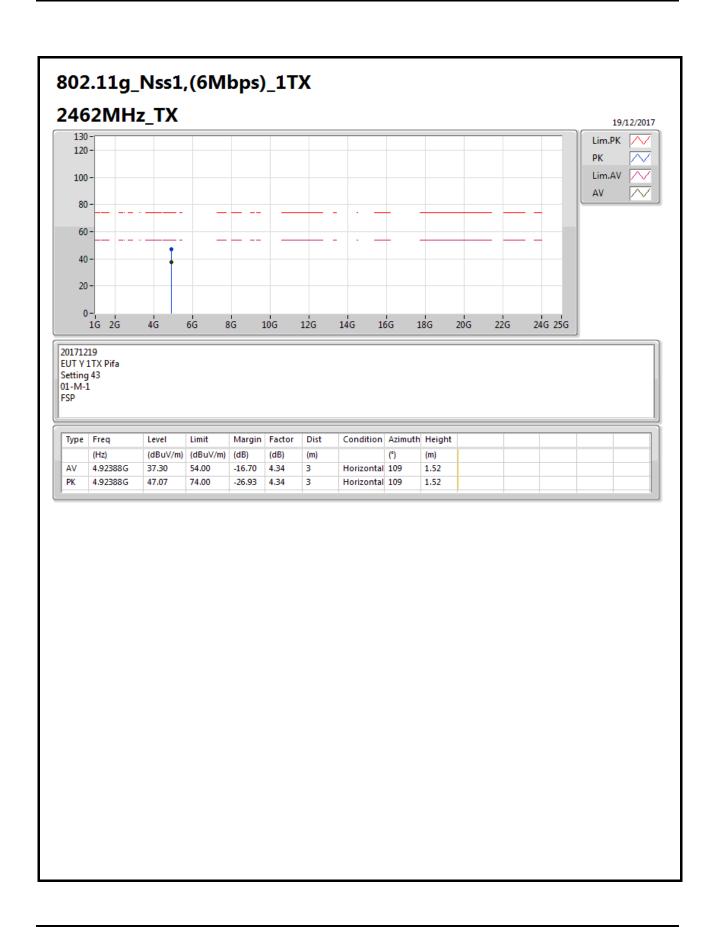


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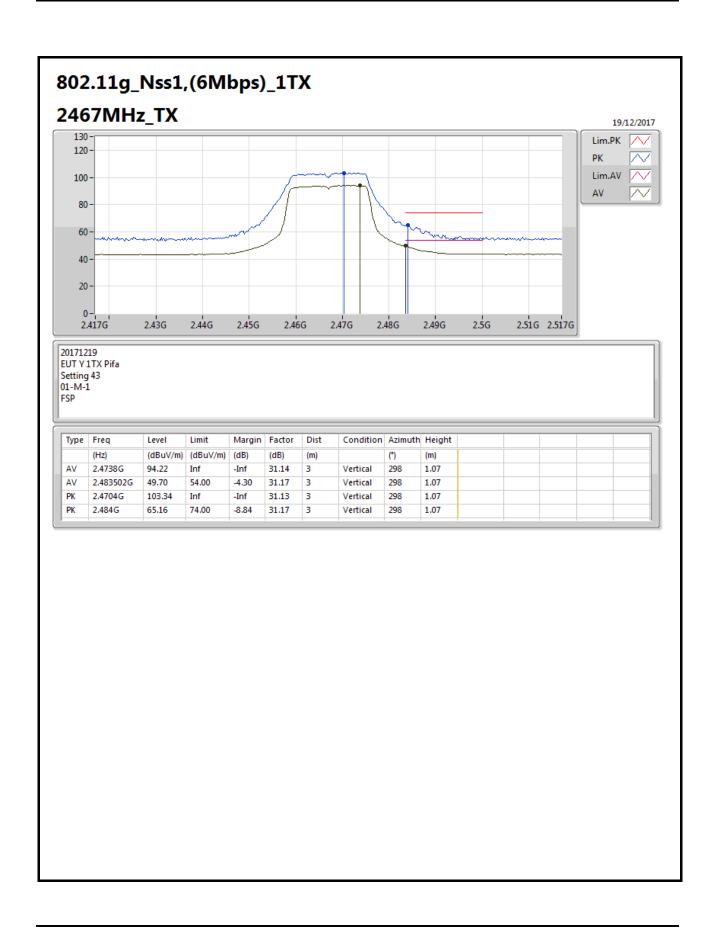






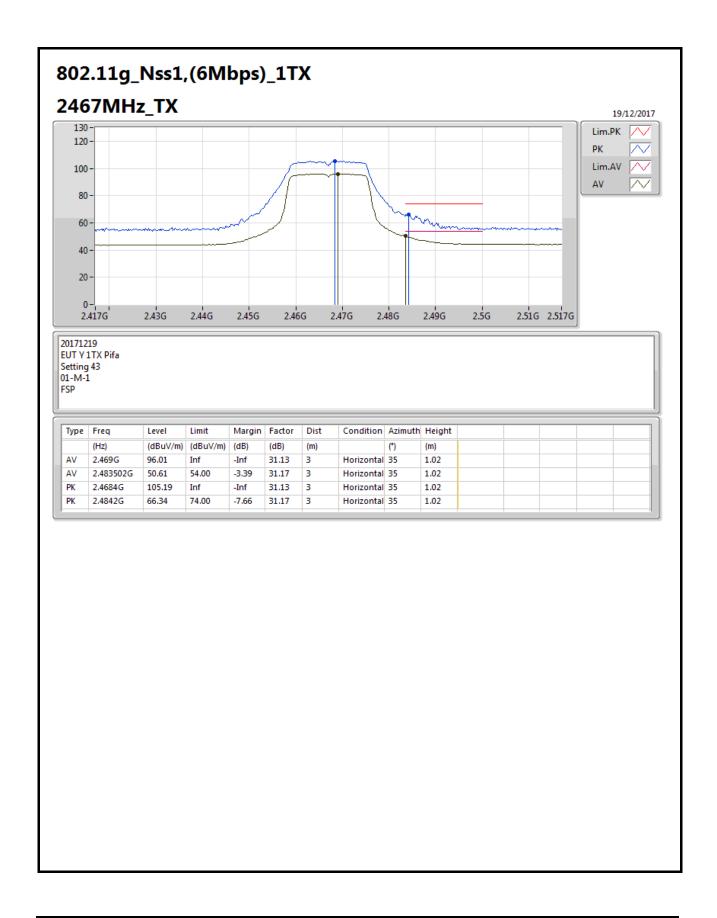






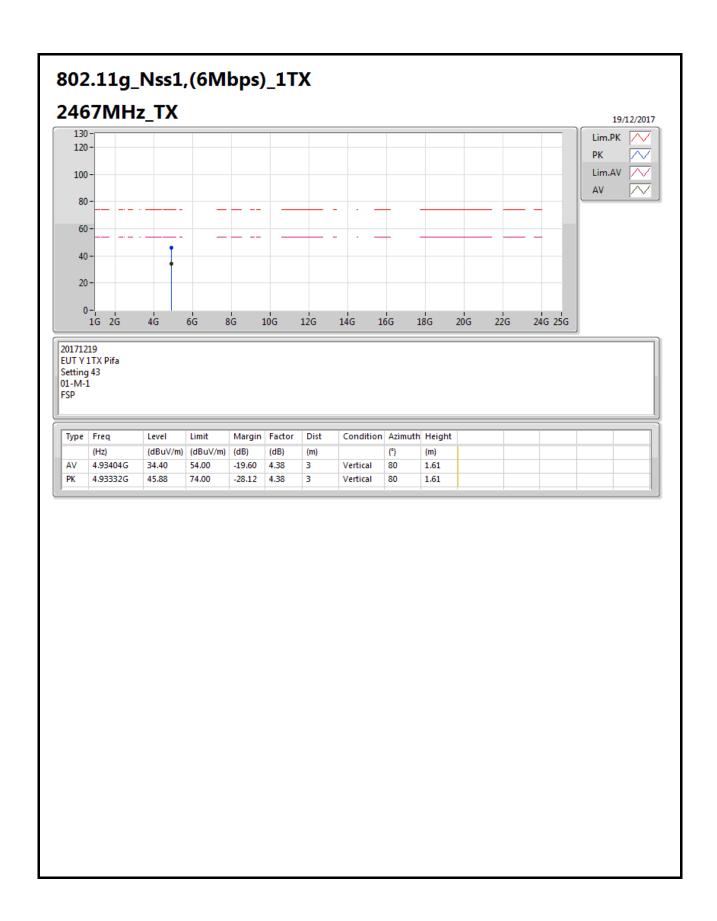
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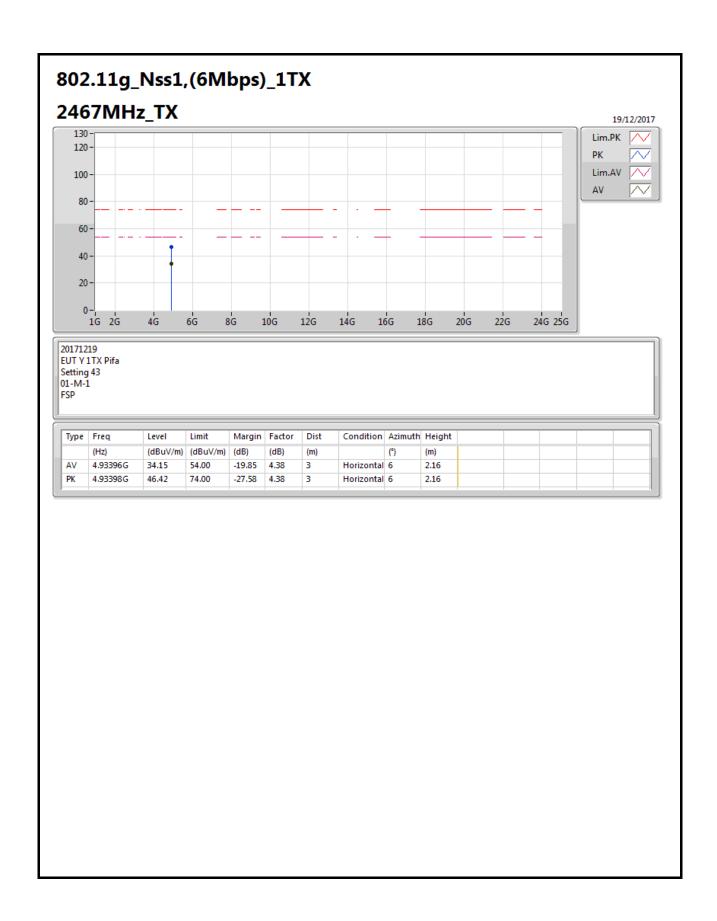
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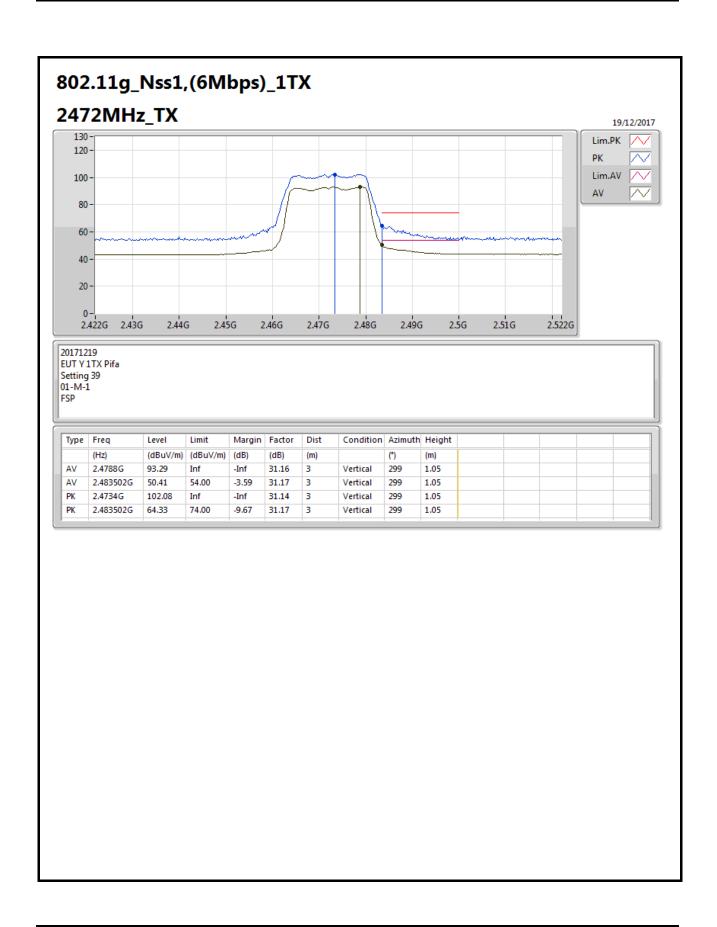


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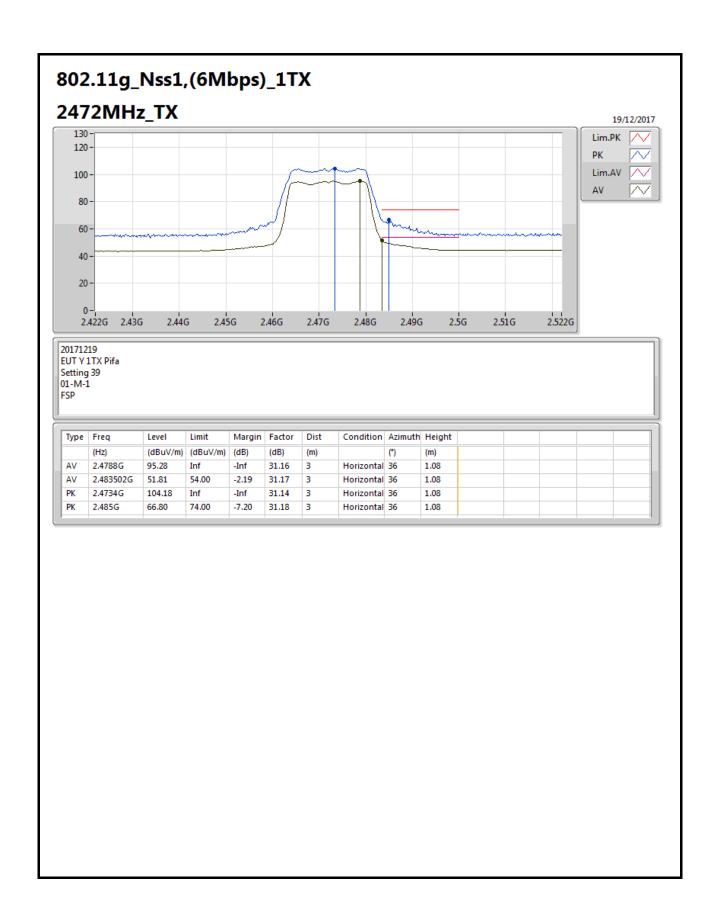




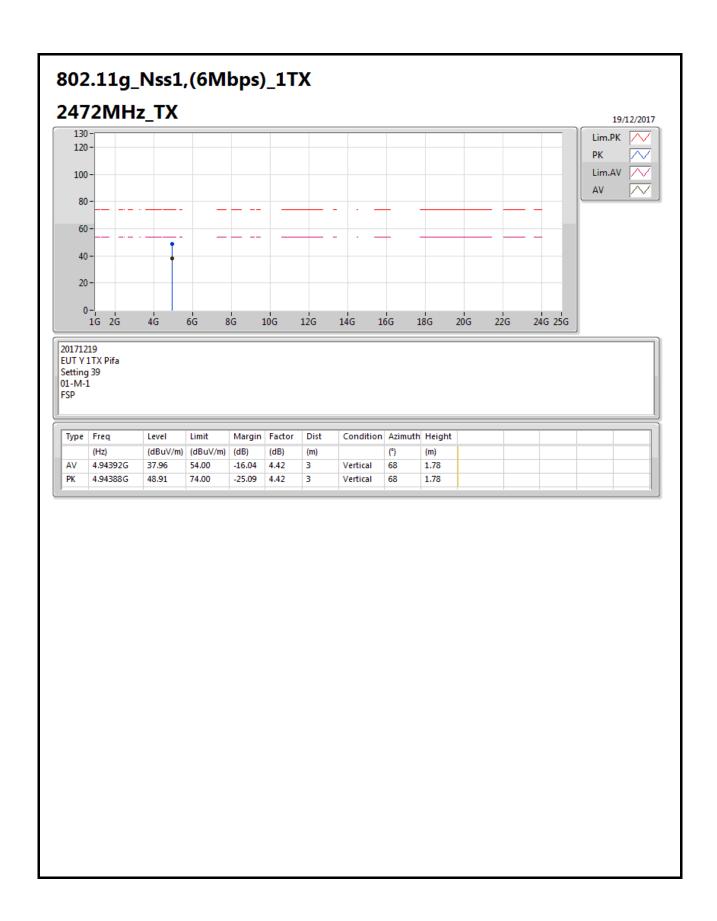


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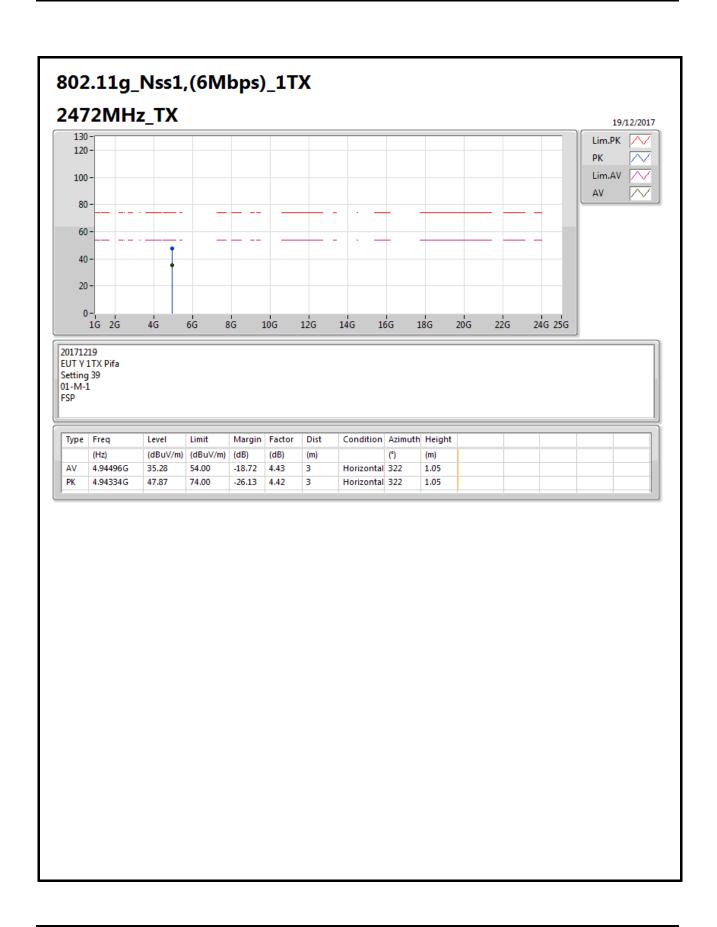




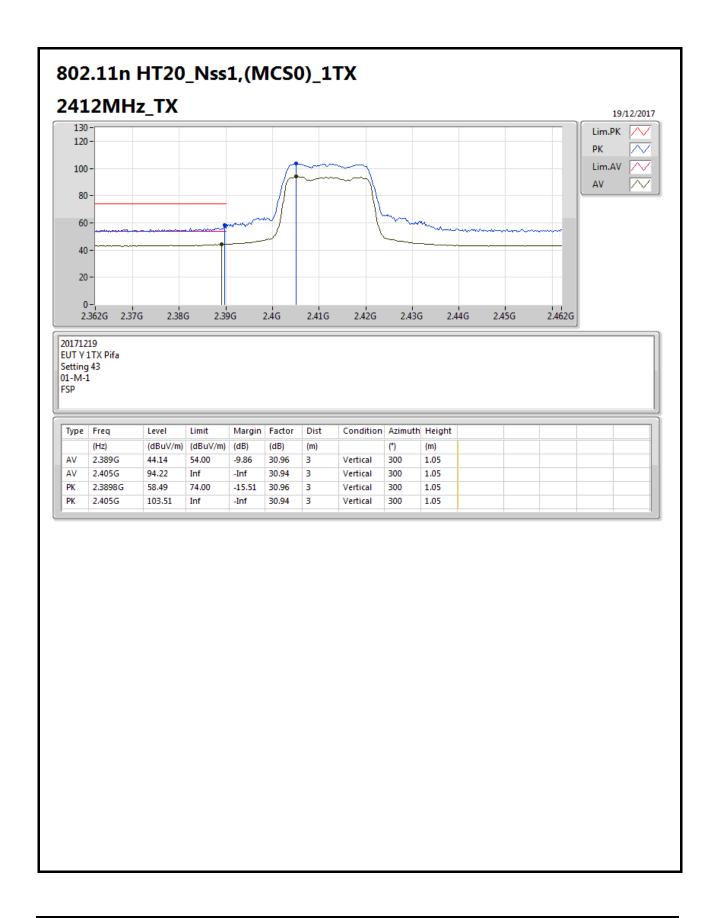




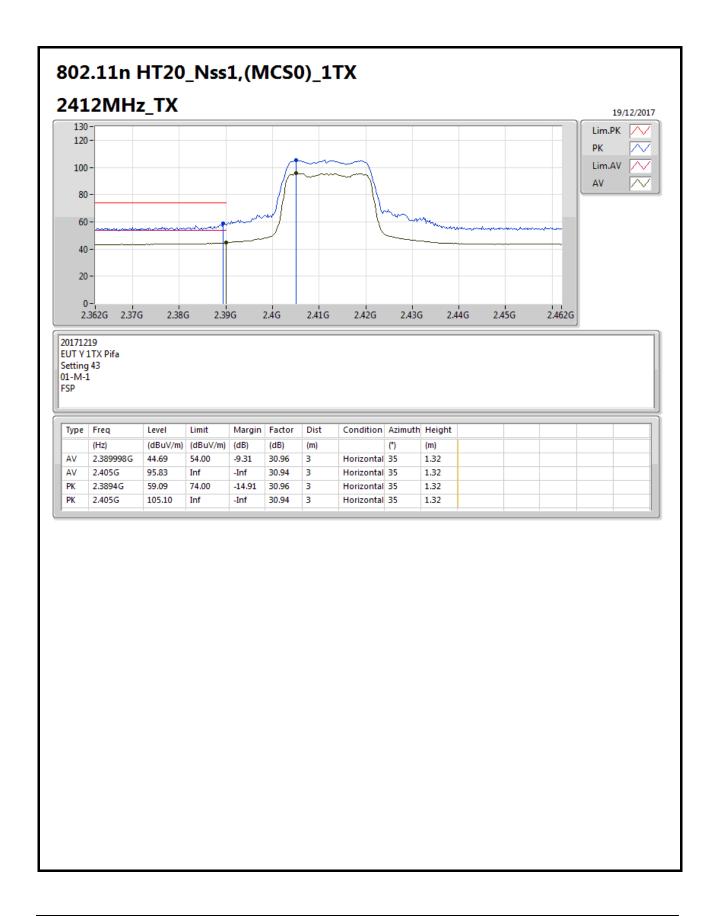




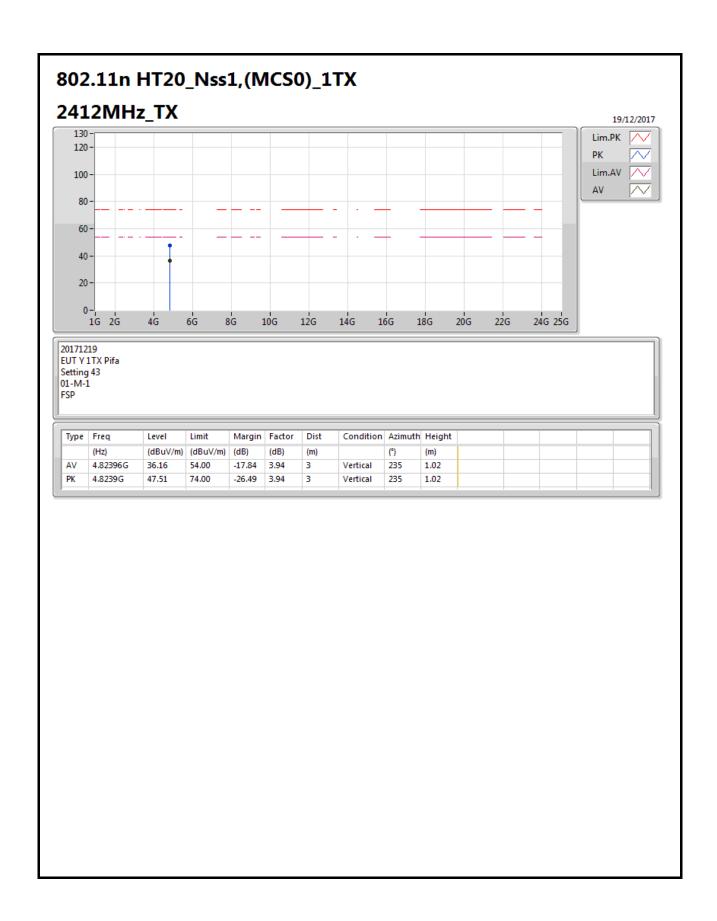




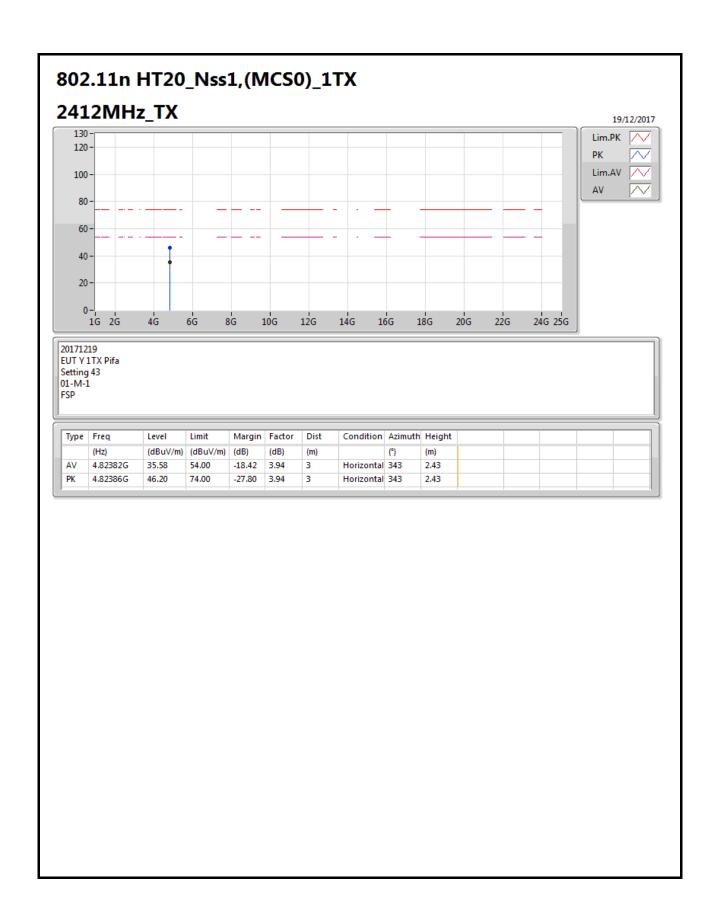




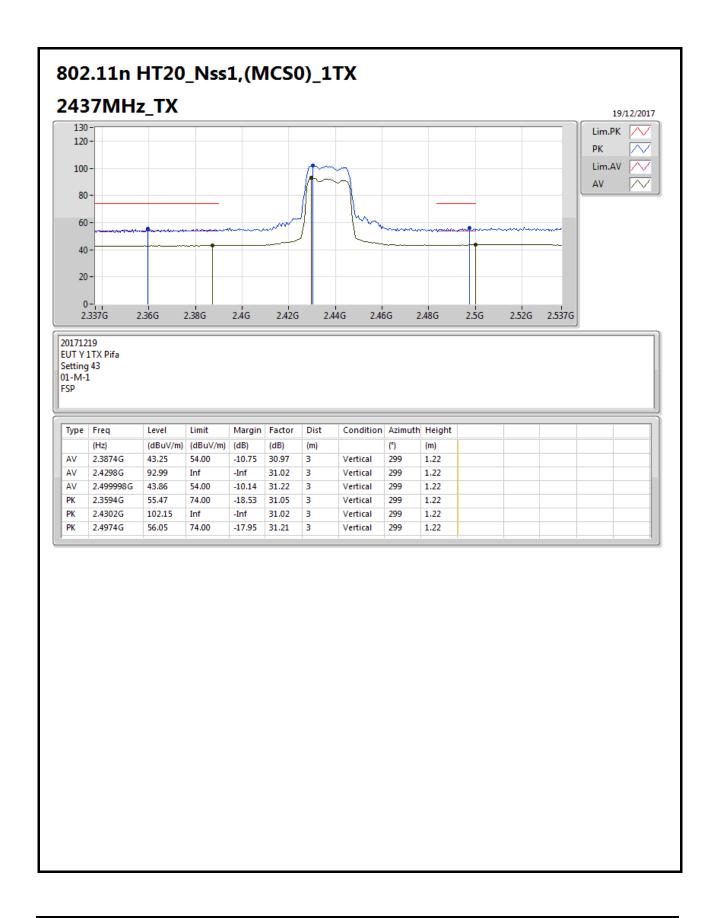




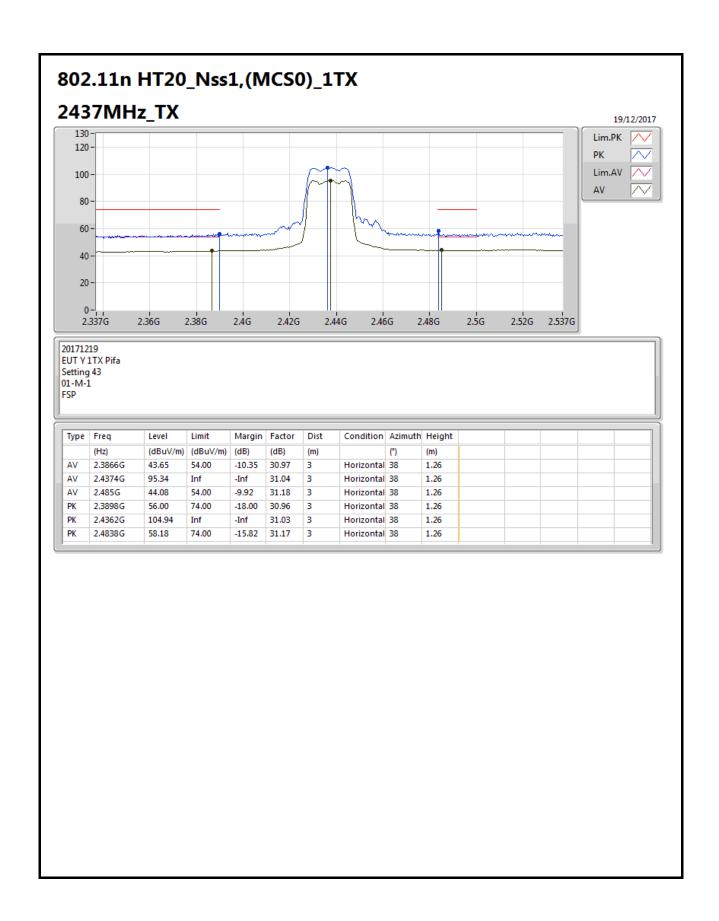




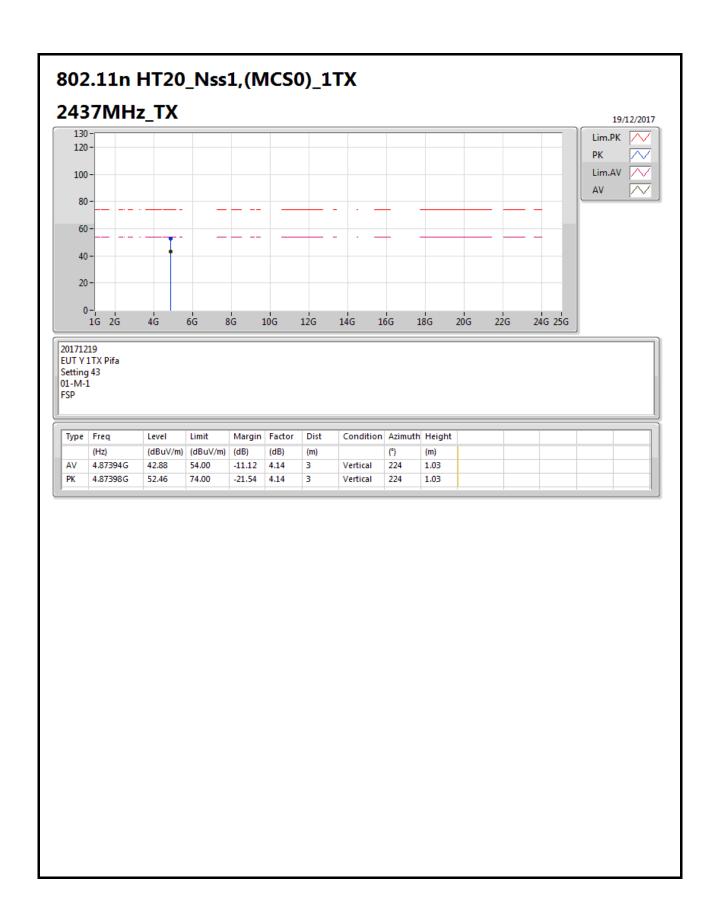




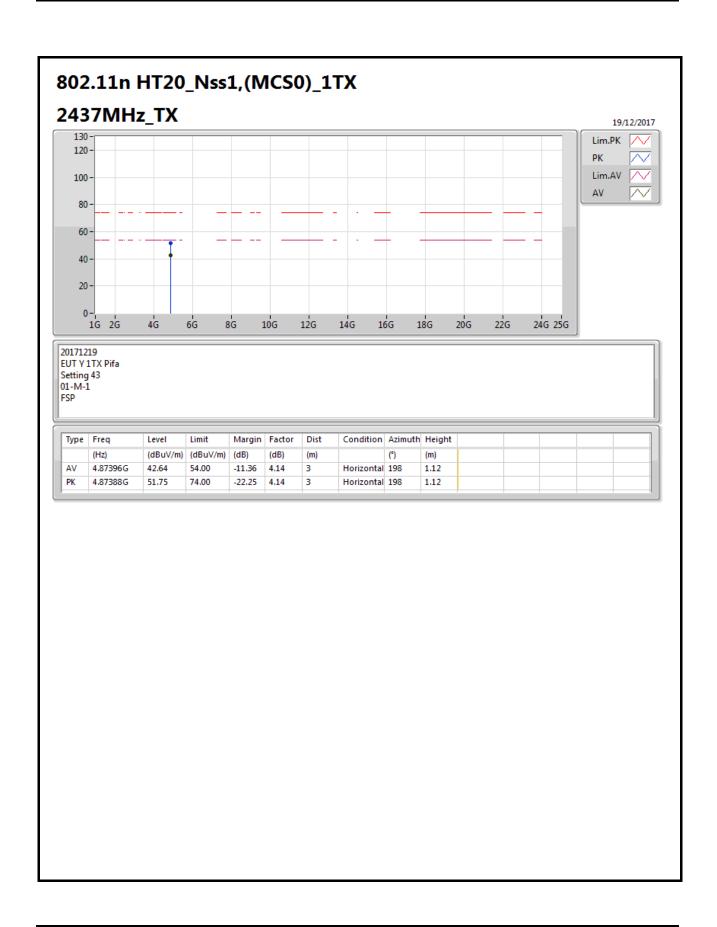




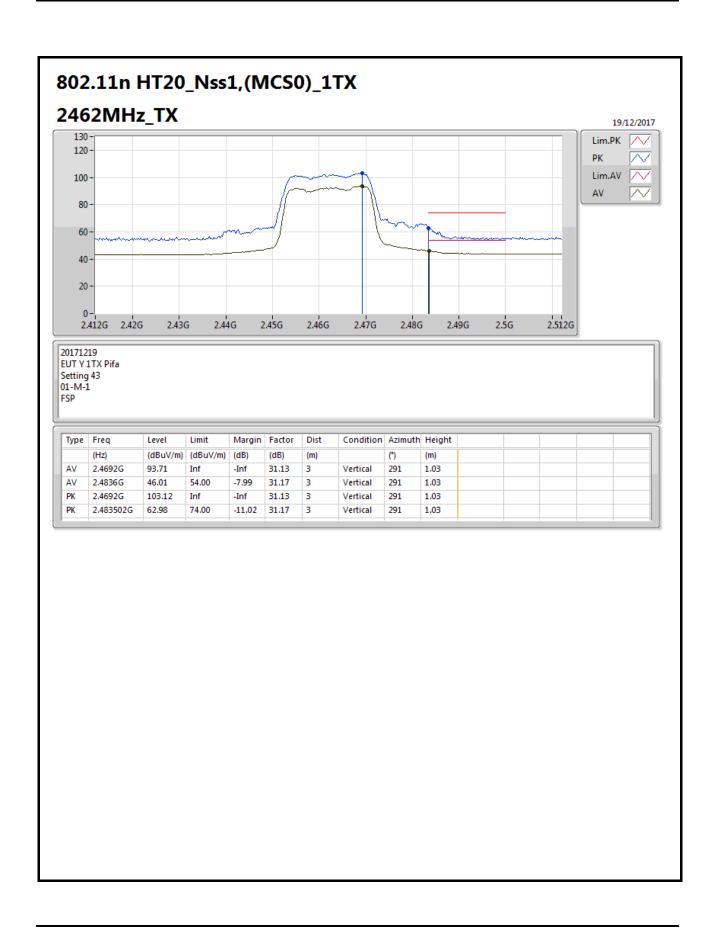




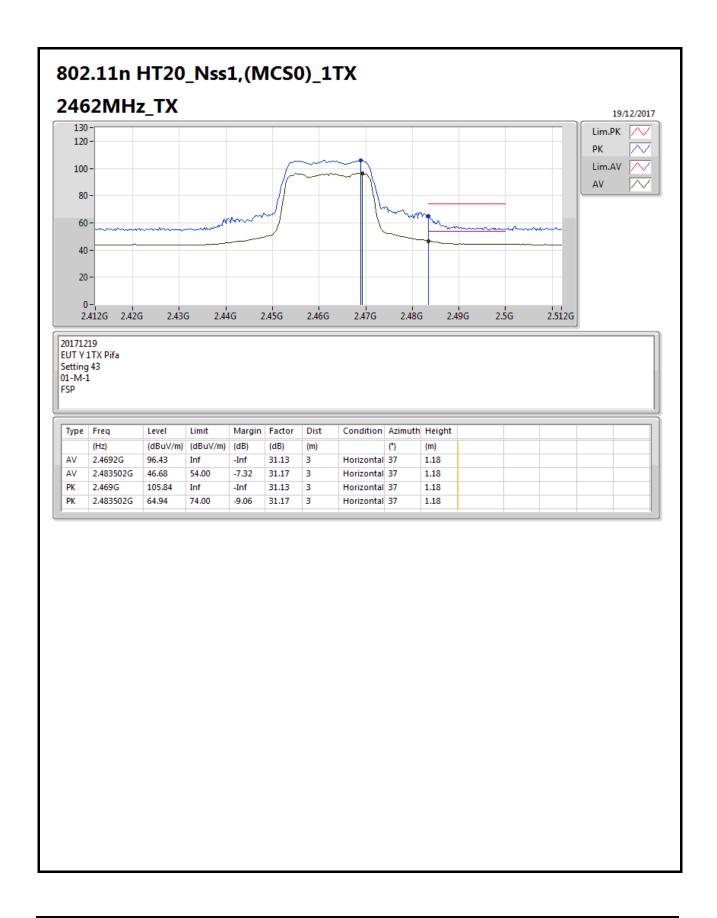




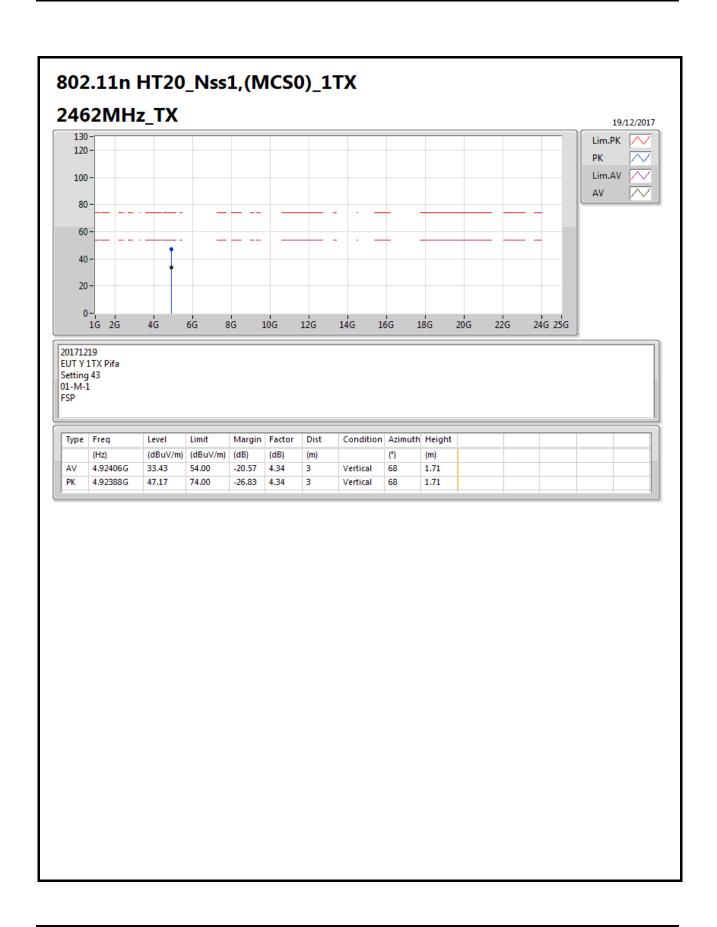




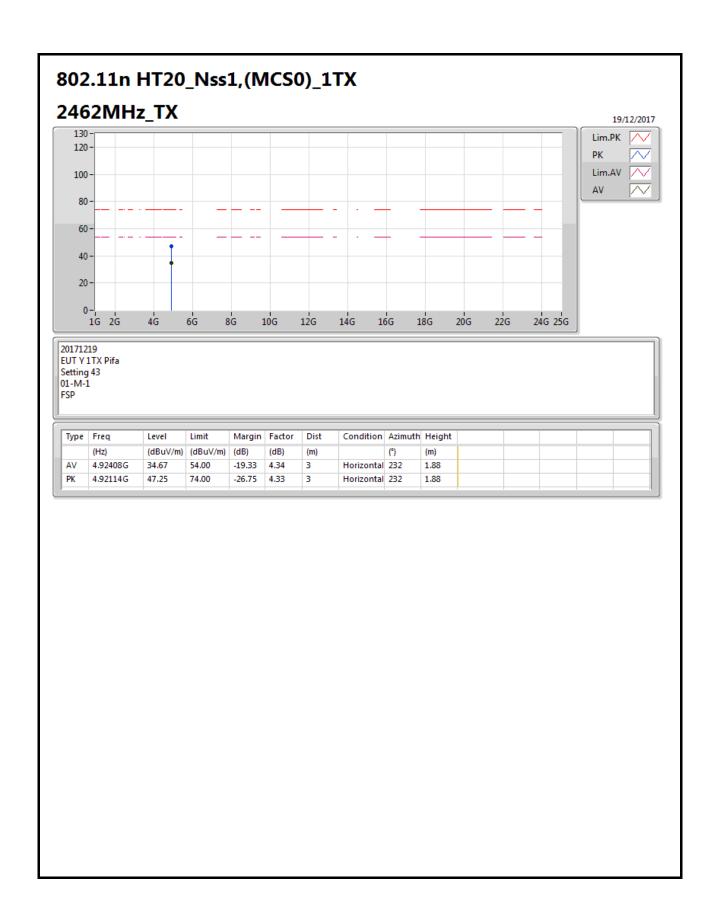




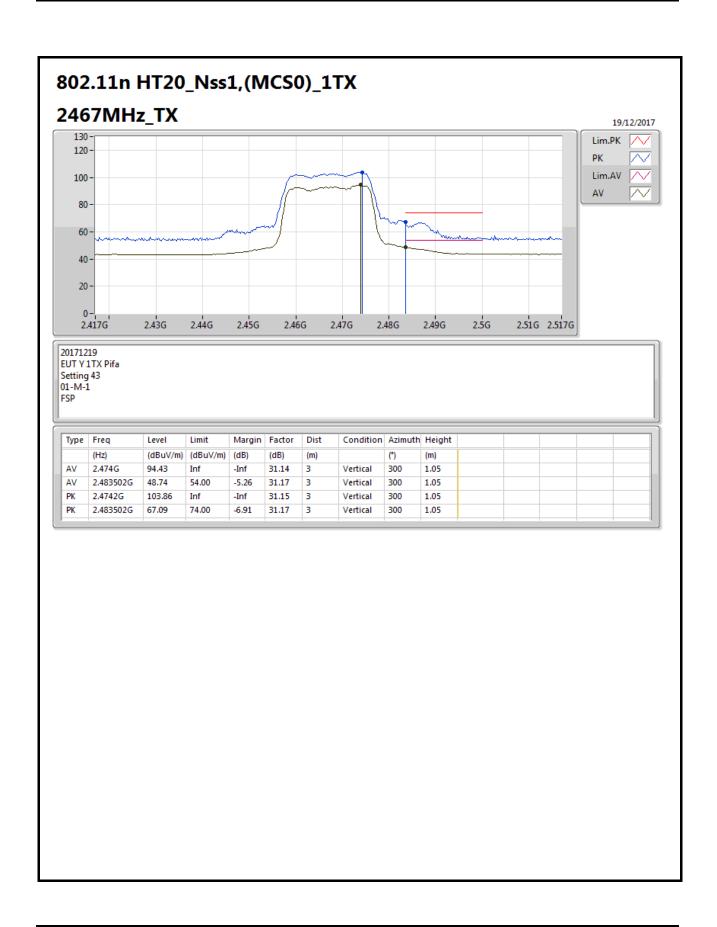




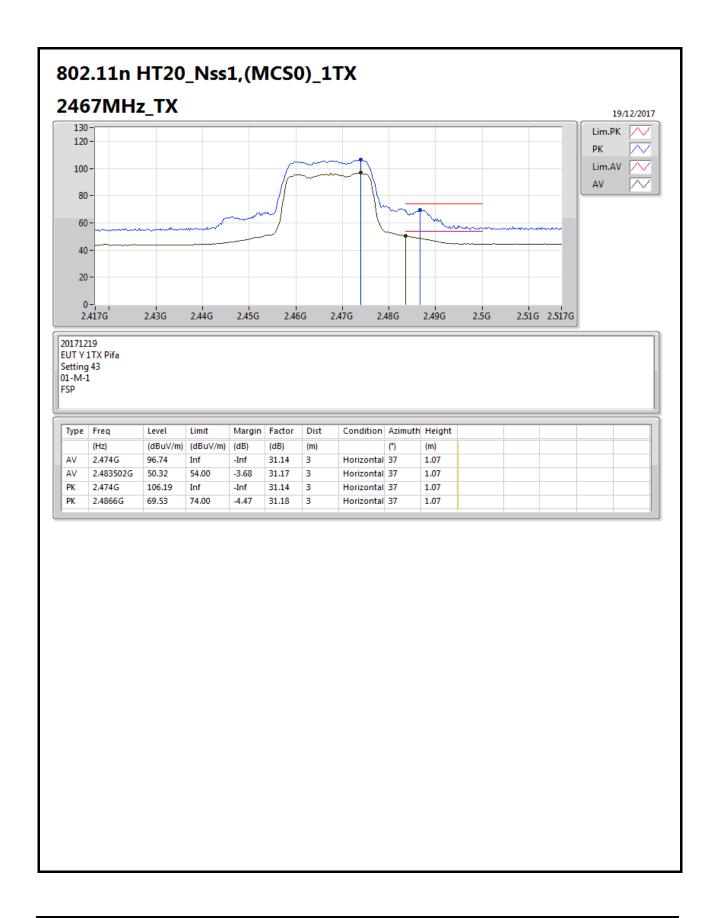




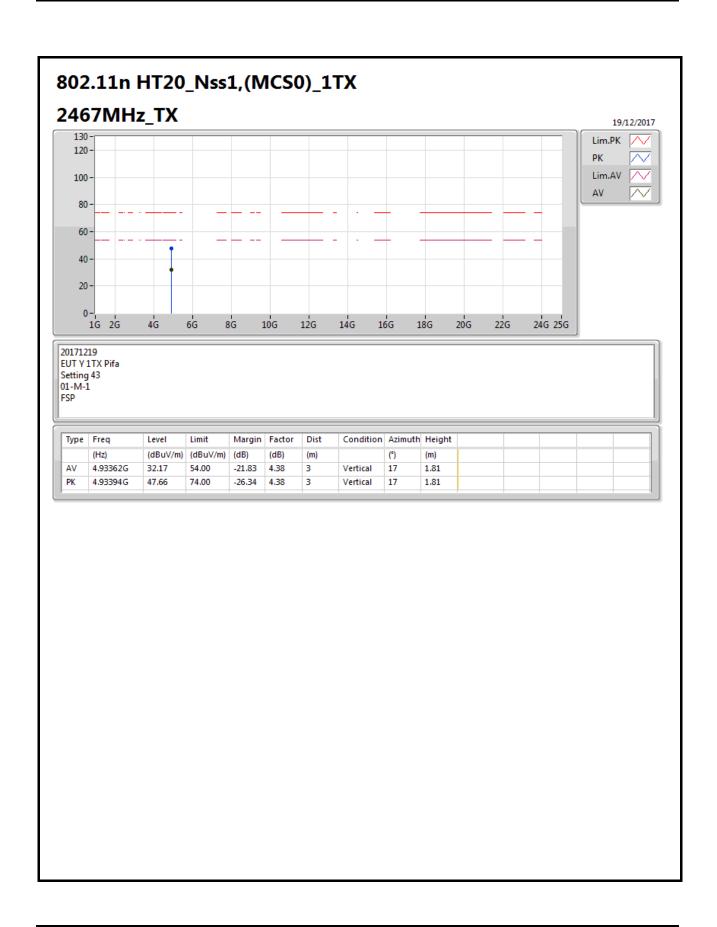




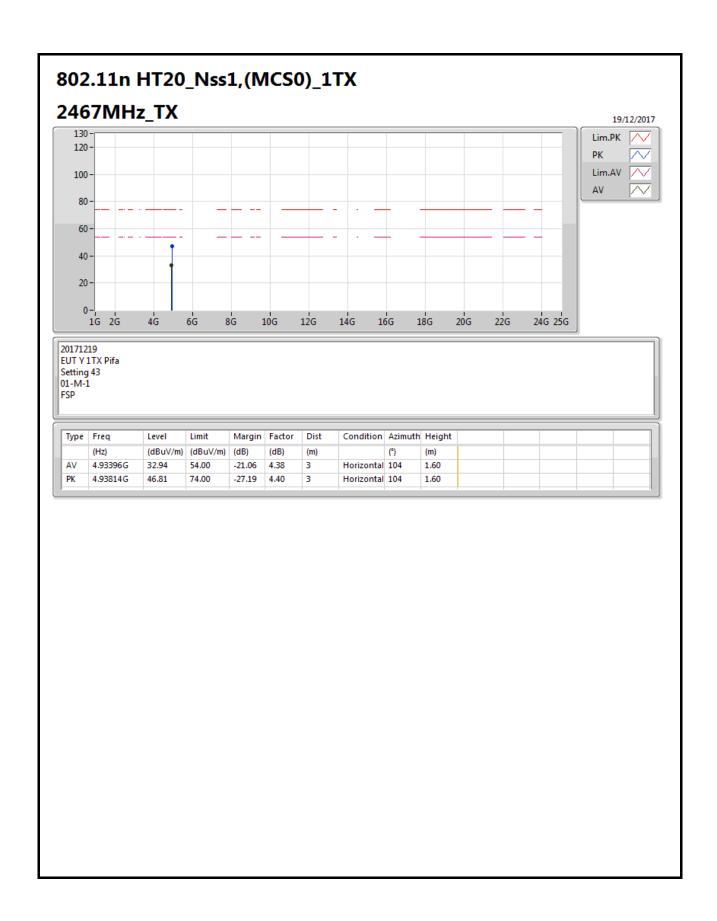




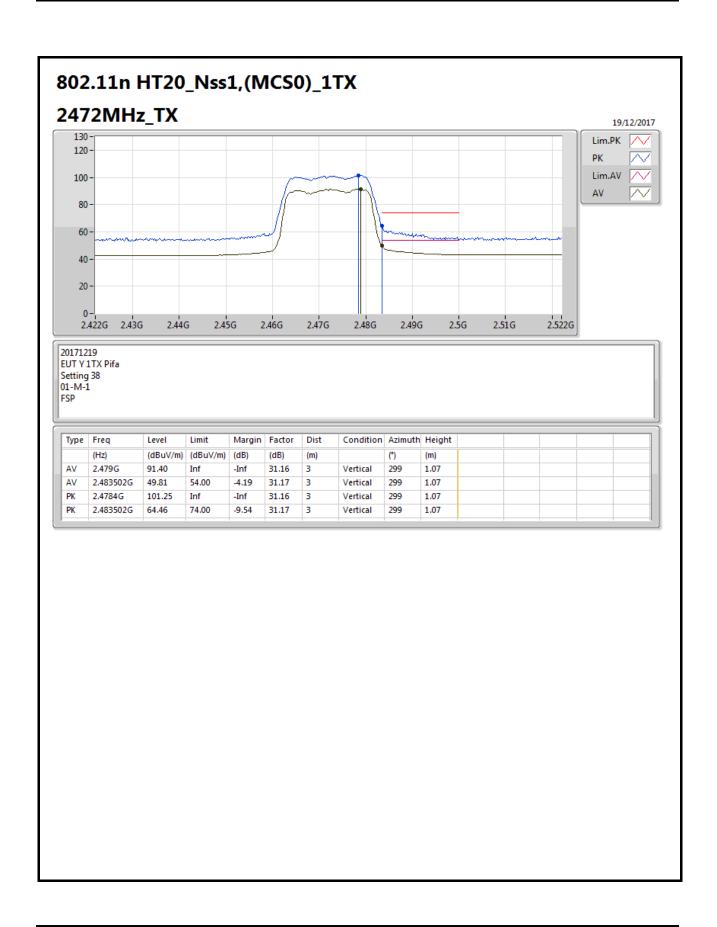




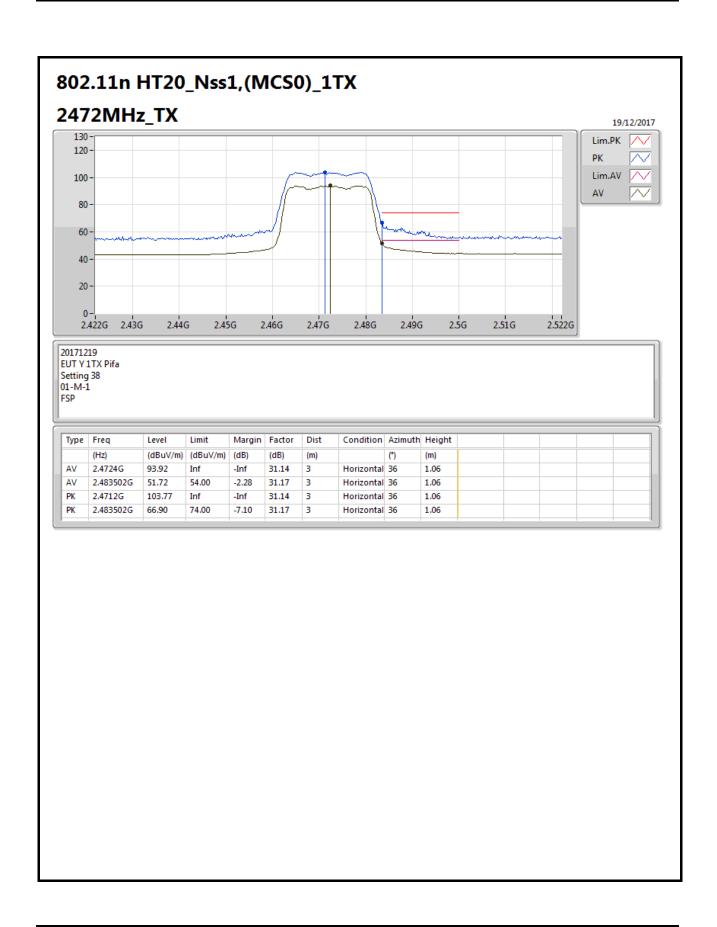




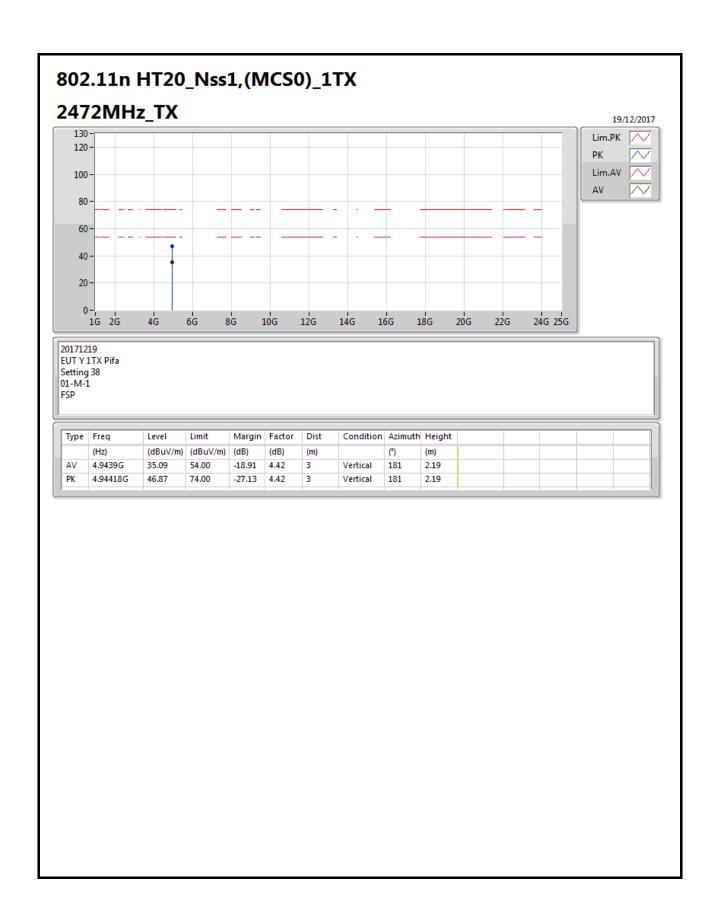




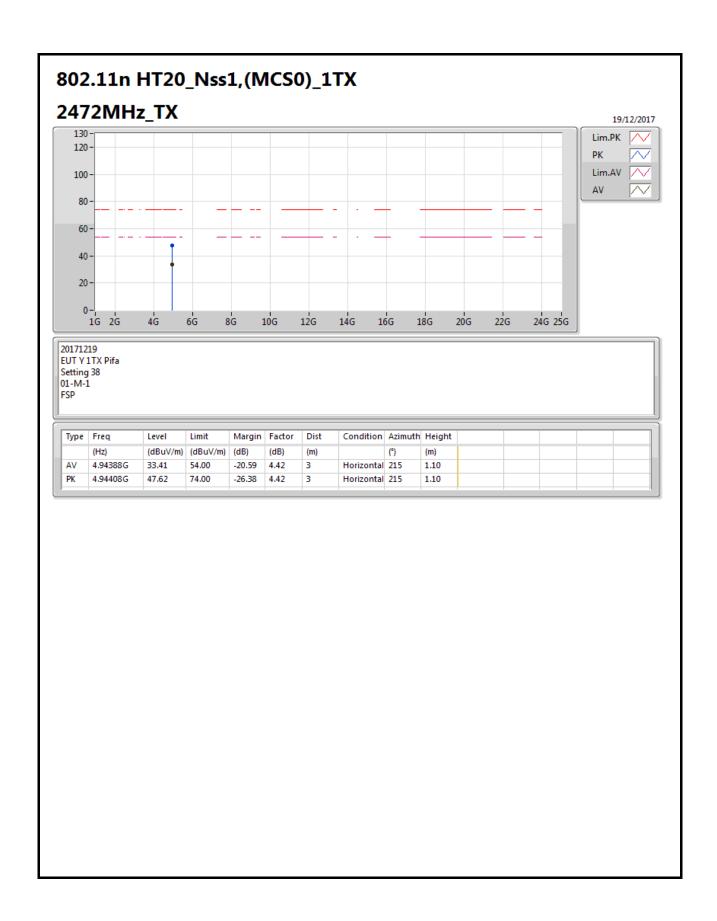




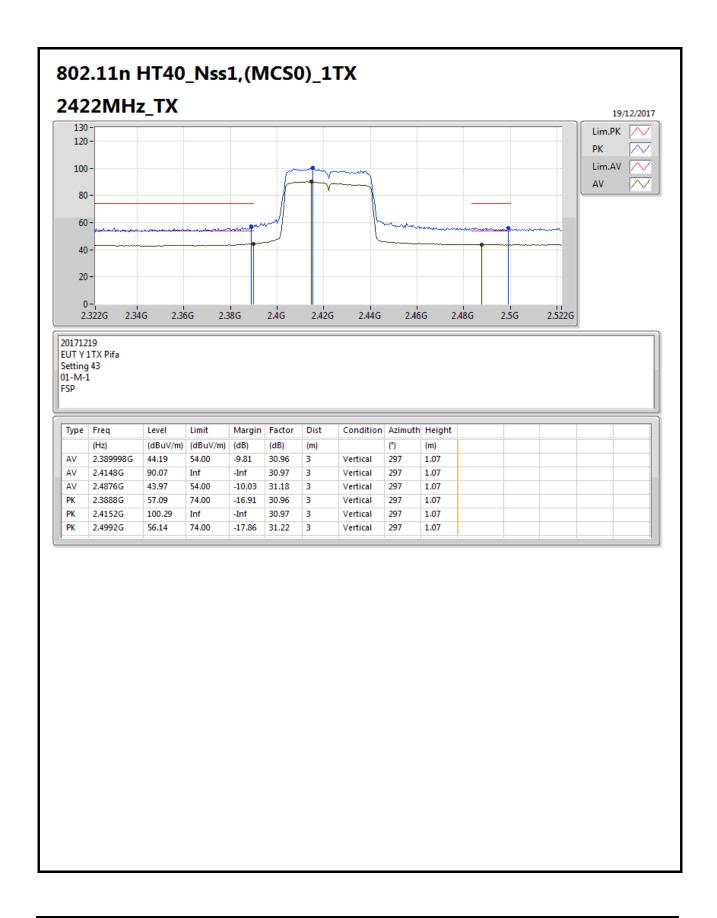




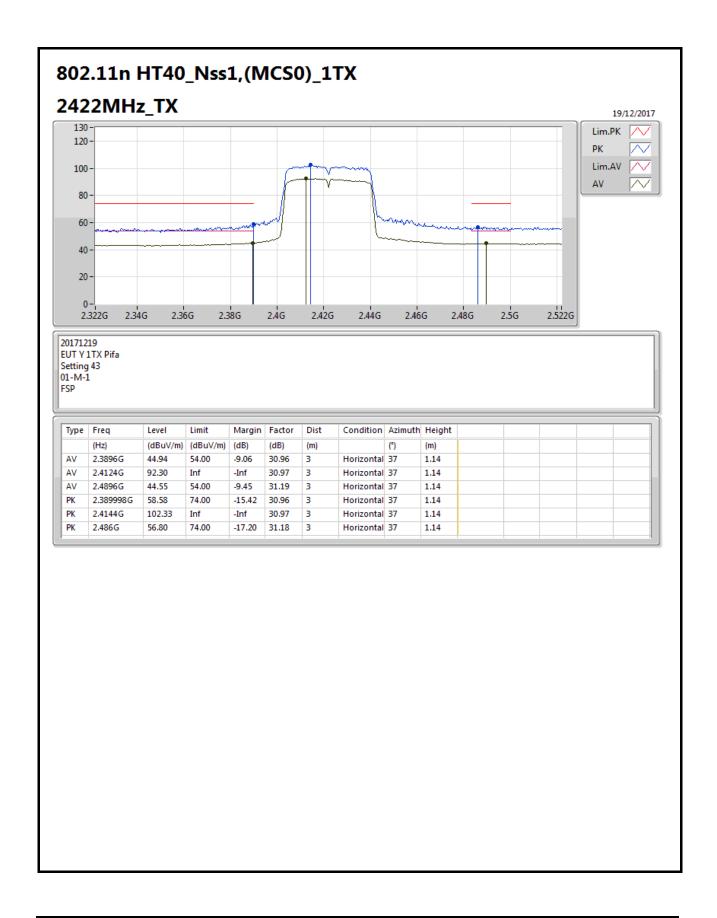




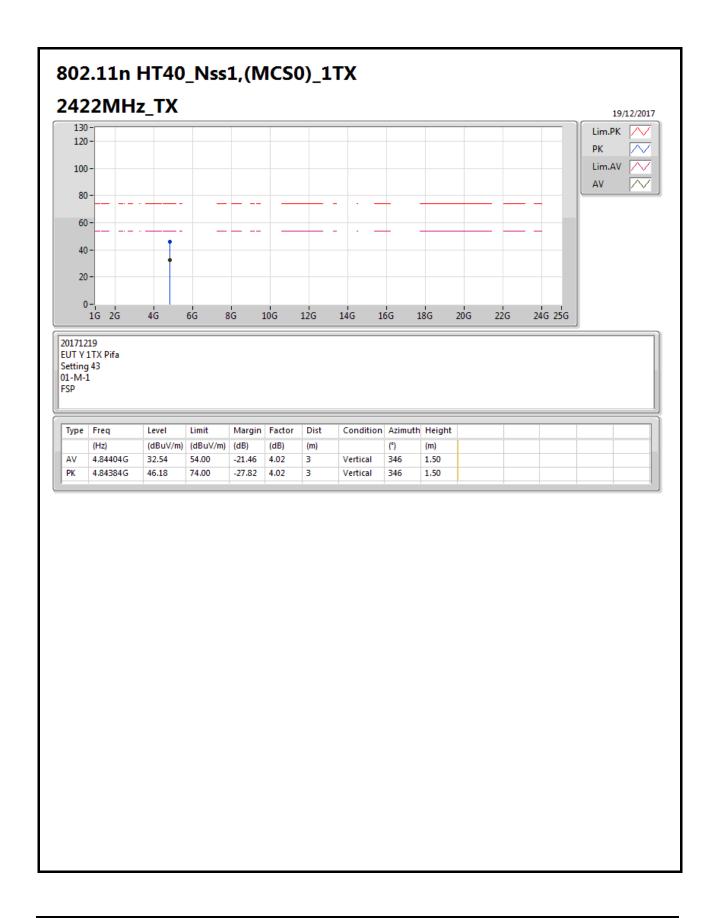




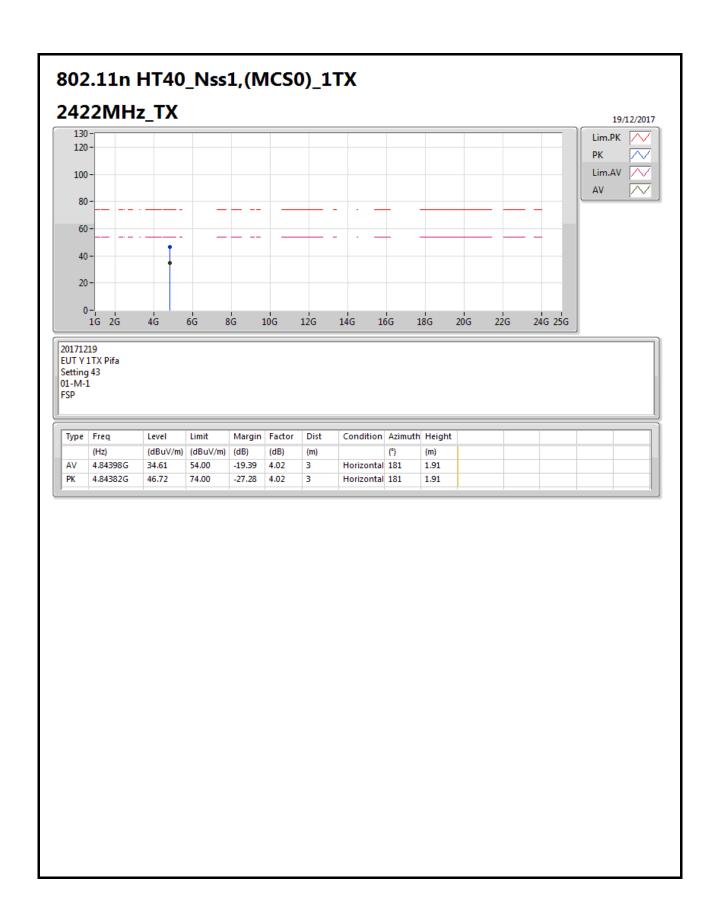




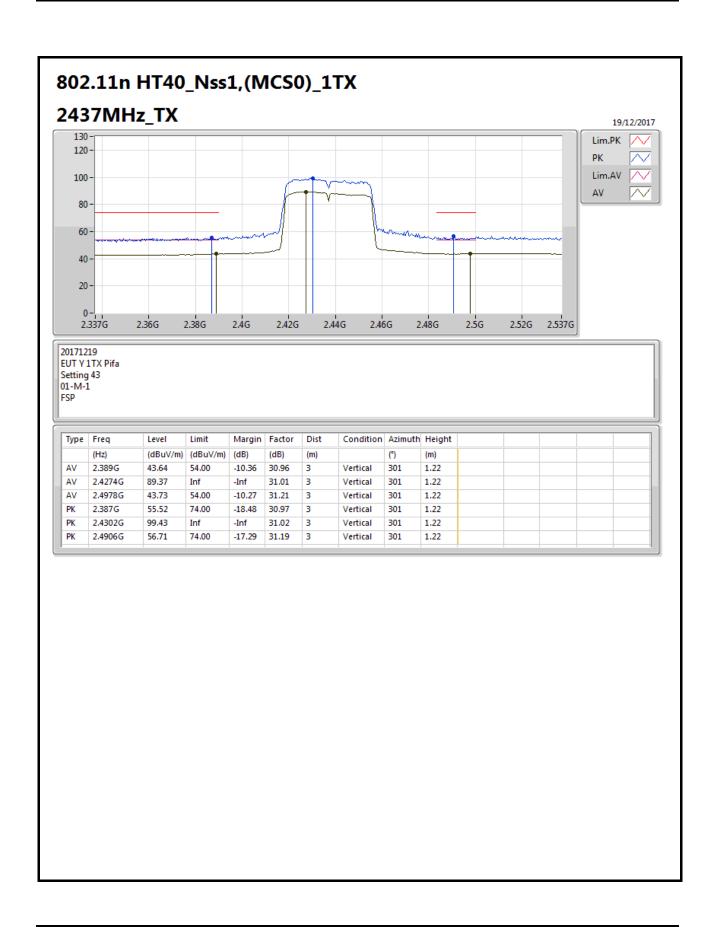




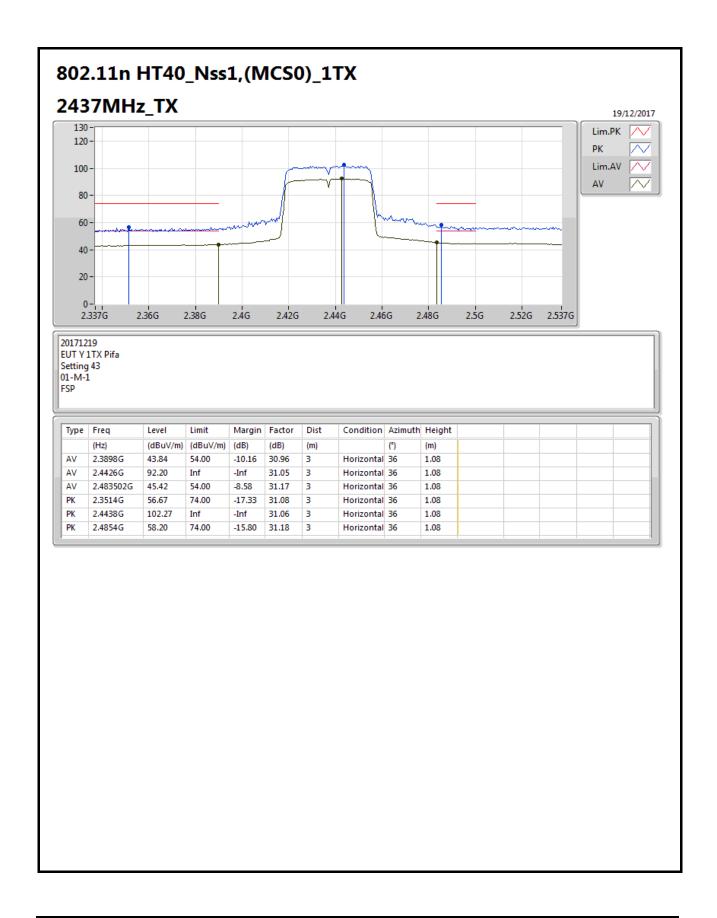




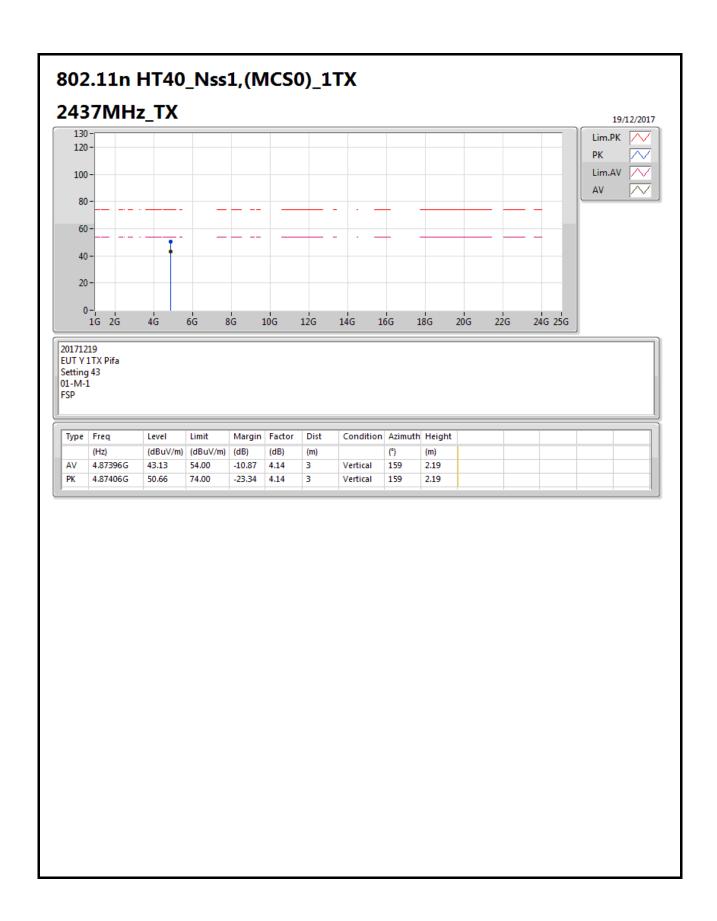




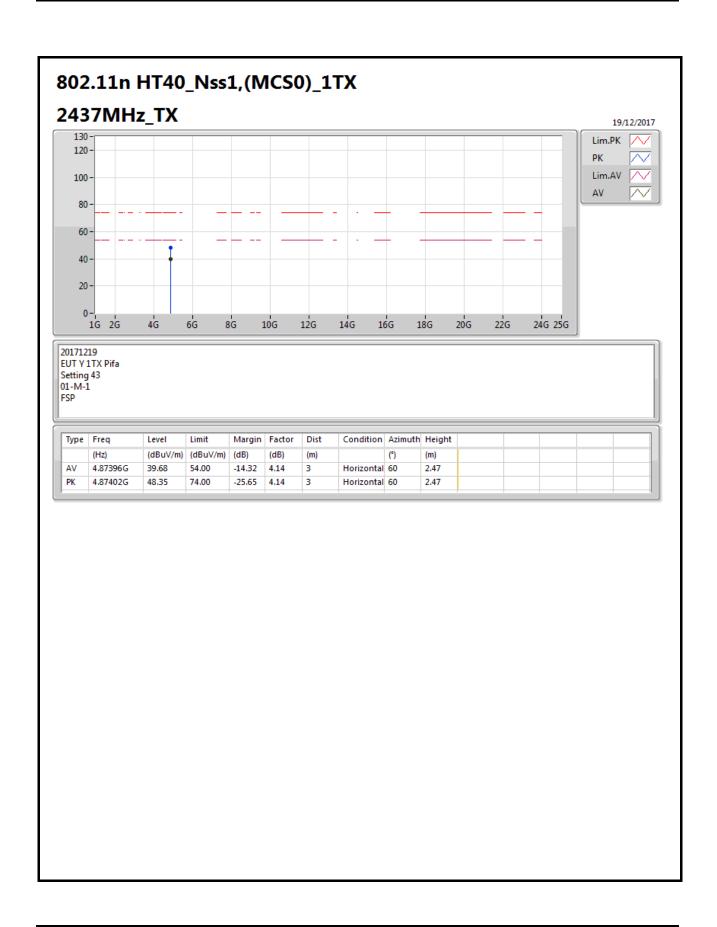




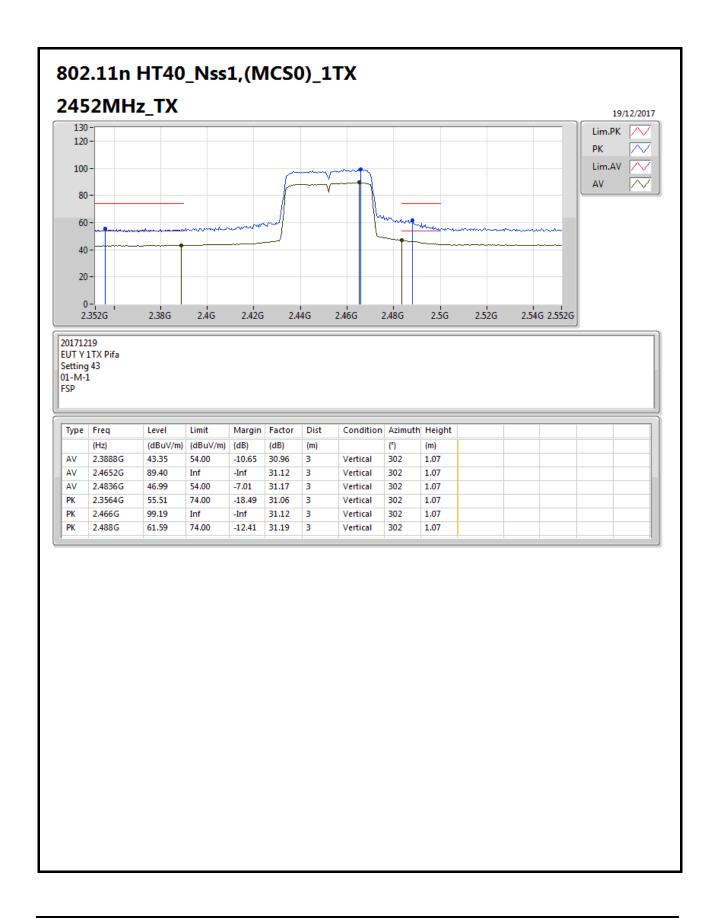




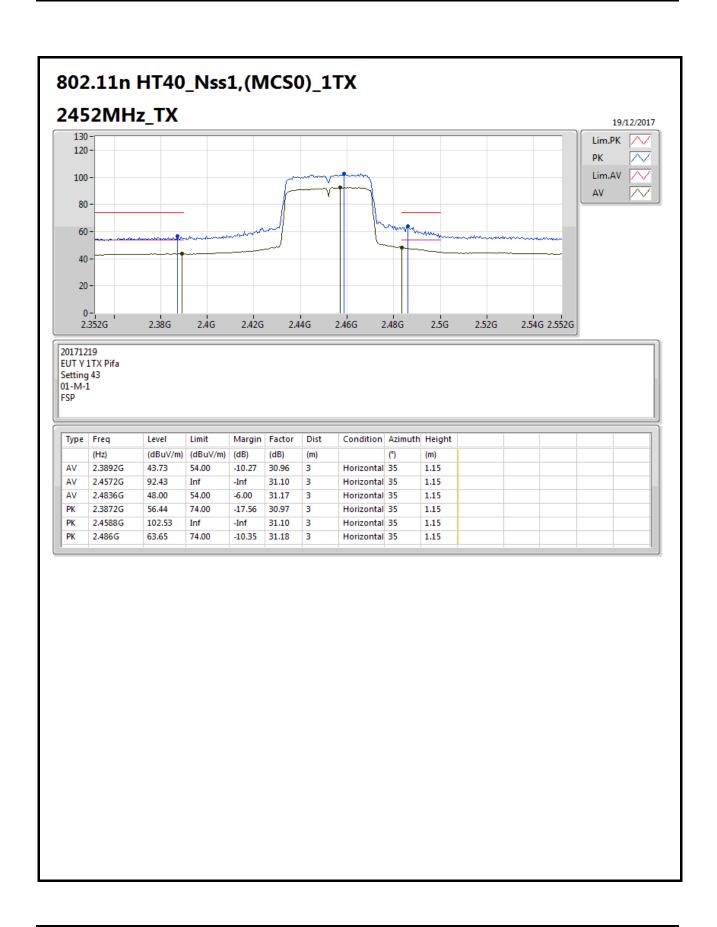




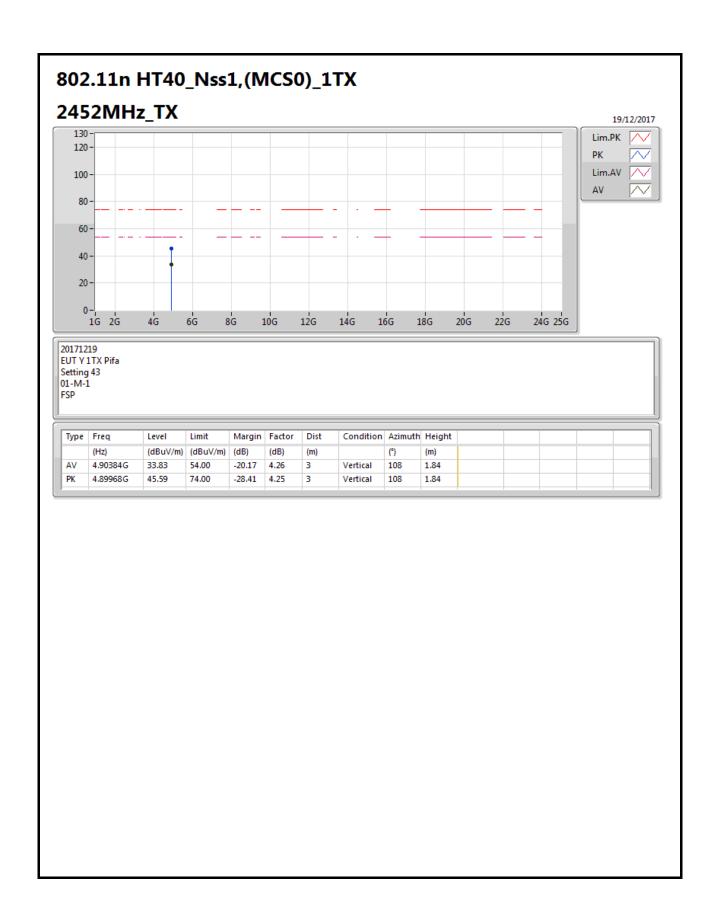








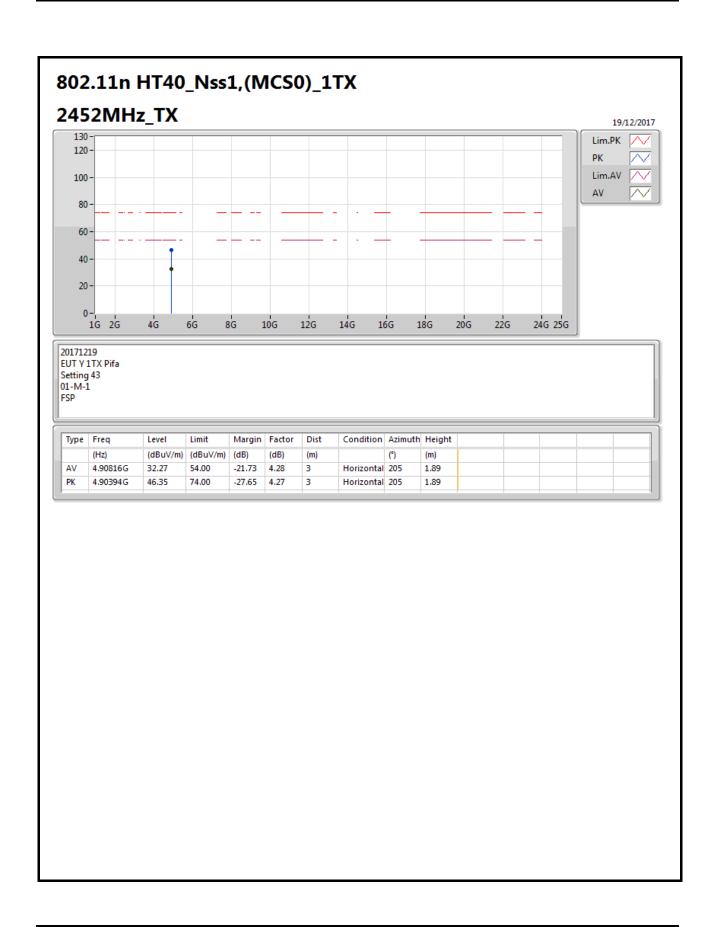




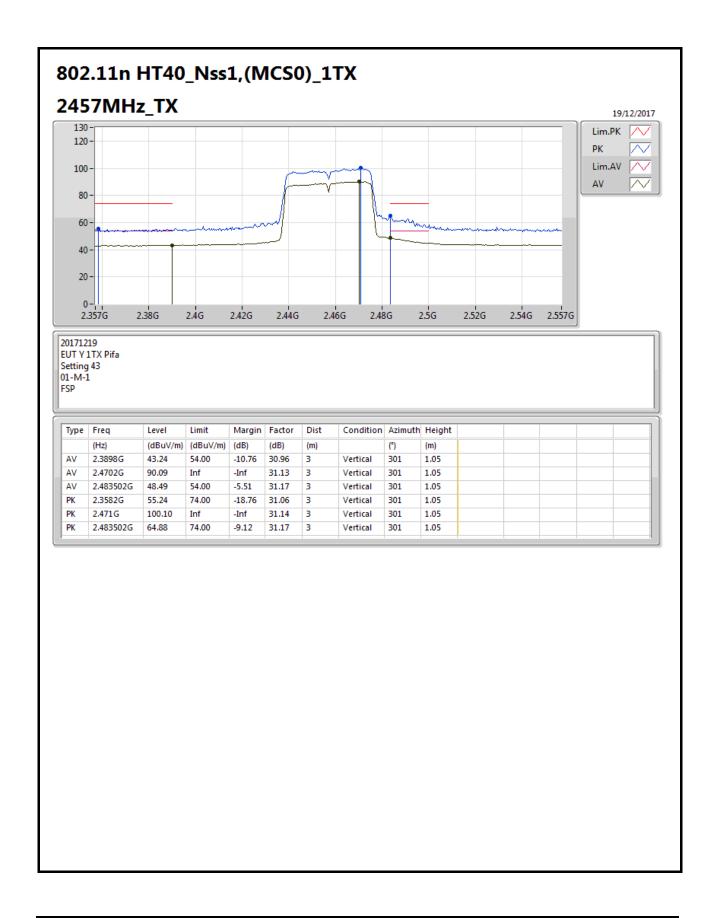
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