

Report No. : FR181814AA



RADIO TEST REPORT

FCC ID		TLZ-CM467
Equipment		IEEE 802.11 a/b/g/n/ac and Bluetooth 5.0 Module
Brand Name	а 0	AzureWave
Model Name	:	AW-CM467-SUR, AW-CM467-USB, AW-CM467-SUR-I, AW-CM467-USB-I
Applicant		AzureWave Technologies, Inc. 8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231
Manufacturer	:	AzureWave Technologies, Inc. 8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231
Standard	:	47 CFR FCC Part 15.247

The product was received on Aug. 30, 2021, and testing was started from Sep. 11, 2021 and completed on Dec. 08, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

TEL : 886-3-656-9065 FAX : 886-3-656-9085 Report Template No.: CB-A10_10 Ver1.3

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 : Dec. 15, 2021

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 : 01



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History of this test report

Report No.	Version	Description	Issued Date
FR181814AA	01	Initial issue of report	Dec. 15, 2021



Summary of Test Result

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

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Penny Kao



1 General Description

1.1 Information

1.1.1 RF General Information

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

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

Note:

• 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.

• 11g, HT20 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.

• BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

						Gain (dBi)		
Ant.	Port	Brand	Model Name	Antenna Type	Connector	WLAN 2.4GHz / Bluetooth	WLAN 5GHz	Remark
1	1	Nienyi	NYS4939	PCB	I-PEX	3.58	3.89	External
2	1	Genesis	650-10045-01	PCB	I-PEX	2.50	3.85	External
3	1	Lynwave	5-PP005737	PCB	I-PEX	4.20	3.60	Internal
4	1	Maglayers	MSA-4008-25GC1-A1	PIFA	I-PEX	2.98	5.16	External
5	1	Maglayers	MSA-4008-25GC1-A2	PIFA	I-PEX	2.98	5.16	External

Note 1: The above information was declared by manufacturer.

Note 2: The EUT has five antennas.

For AC power-line conducted emissions and radiated emission measurement, "Ant. 1", "Ant. 3" and

"Ant.4" was tested and recorded in the report.

For conducted measurement, only the highest gain antenna "Ant. 3" for WLAN 2.4GHz/Bluetooth and

"Ant.4" for WLAN 5GHz were selected to test and recorded in the report.

For 2.4GHz WLAN function

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

Only Port 1 can be used as transmitting/receiving.

For 5GHz WLAN function

IEEE 802.11a/n/ac mode (1TX/1RX):

Only Port 1 can be used as transmitting/receiving.

For Bluetooth function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving.



1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.942	0.26	4.42m	300
802.11g	0.7	1.55	728.75u	3k
802.11n HT20	0.7	1.55	697.5u	3k

Note:

DC is Duty Cycle.

DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From Host System			
Beamforming Function	□ With beamforming □ Without beamforming			
Function	Point-to-multipoint			
Test Software Version	Terminal 6.04			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

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

EUT	Model Name	Interface	Equip Antenna	Description	
1	AW-CM467-SUR	SDIO-UART	All the models are identical, difference model for difference b		
	AW-CM467-SUR-I	Internal Antenna	served as marketing strategy.		
2	AW-CM467-USB	USB-USB	External Antenna	All the models are identical, the difference model for difference brand	
2	AW-CM467-USB-I	038-038	External Antenna	served as marketing strategy.	

Note 1: From the above models, model: AW-CM467-SUR (EUT 1) and AW-CM467-USB (EUT 2) was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.



1.2 Applicable Standards

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

- 47 CFR FCC Part 15.247
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF.

- FCC KDB 558074 D01 v05r02
- FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location Information						
Test Lab. : Sporton International Inc. Hsinchu Laboratory						
Hsinchu	Hsinchu ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)					
(TAF: 3787)	TEL: 886-3-656-9065	FAX: 886-3-656-9085				
Test site Designation No. TW3787 with FCC.						
	Conformity Assessment Body	Identifier (CABID) TW3787 with ISED.				

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH01-CB	Caster Chang	21.9-22.4 / 69-72	Sep. 18, 2021
Radiated (Below 1GHz)	03CH03-CB		24.1-25.2 / 55-58	Sep. 11, 2021~
	03CH05-CB	Stim Sung	23.5-24.6 / 55-59	Dec. 08, 2021
Radiated (Above 1GHz)	03CH06-CB	Stim Sung	23.7-24.8 / 56-59	Sep. 11, 2021~ Dec. 08, 2021
Radiated (Emission Co-location)	03CH06-CB	Stim Sung	23.7-24.8 / 56-59	Sep. 11, 2021~ Dec. 08, 2021
AC Conduction	CO01-CB	Joe Chu	22~24 / 58~60	Nov. 29, 2021



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)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.5 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	2.5 dB	Confidence levels of 95%
Output Power Measurement	1.3 dB	Confidence levels of 95%
Power Density Measurement	2.5 dB	Confidence levels of 95%
Bandwidth Measurement	0.9%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	71
2437MHz	72
2462MHz	69
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	56
2417MHz	70
2437MHz	72
2462MHz	59
802.11n HT20_Nss1,(MCS0)_1TX	-
2412MHz	50
2417MHz	68
2437MHz	72
2457MHz	69
2462MHz	54



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 Test Voltage: 120Vac / 60Hz	
Operating Mode	Normal Link	
1	EUT 2 + WLAN 2.4GHz + Bluetooth + Ant. 1	
2	2 EUT 2 + WLAN 5GHz + Bluetooth + Ant. 1	
Mode 1 has been evaluate this same test mode.	d to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow	
3	EUT 1 + WLAN 2.4GHz + Bluetooth + Ant. 1	
Mode 3 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4~5 will follow this same test mode.		
4	EUT 1 + WLAN 2.4GHz + Bluetooth + Ant. 4	
5	5 EUT 1 + WLAN 5GHz + Bluetooth + Ant. 4	
6	EUT 1 + WLAN 2.4GHz + Bluetooth + Ant. 3	
7	EUT 1 + WLAN 5GHz + Bluetooth + Ant. 3	
For operating mode 3 is th	e worst case and it was record in this test report.	

Th	The Worst Case Mode for Following Conformance Tests		
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands		
Test Condition	Conducted measurement at transmit chains		
Operating Mode	After verifying, the output power is the same with EUT 1 and EUT 2. Thus only EUT 2 was selected to execute all test.		
1	EUT 2 + Ant. 3		



The Worst Case Mode for Following Conformance Tests		
Tests Item	Emissions in Restricted Frequency Bands	
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.	
	CTX	
Operating Mode < 1GHz	 The EUT was performed at X axis, Y axis and Z axis position for Emissions in Restricted Frequency Bands above 1GHz test. The worst case was found is below. So the measurement will follow this same test configuration. 	
1	EUT 1 in X axis + WLAN 2.4GHz + Ant.3	
2	EUT 1 in X axis + Bluetooth + Ant.3	
3	EUT 2 in Y axis + WLAN 5GHz + Ant.1	
4	EUT 1 in Y axis + WLAN 5GHz + Ant.1	
5	EUT 2 in Y axis + WLAN 2.4GHz + Ant.1	
6	EUT 2 in Y axis + Bluetooth + Ant.1	
7	EUT 2 in Y axis + WLAN 2.4GHz + Ant.4	
8	EUT 1 in Y axis + WLAN 2.4GHz + Ant.4	
9	EUT 2 in Y axis + Bluetooth + Ant.4	
10	EUT 1 in Y axis + Bluetooth + Ant.4	
11	EUT 2 in Y axis + WLAN 5GHz + Ant.4	
12	EUT 1 in Y axis + WLAN 5GHz + Ant.4	
For operating mode 1 is th	e worst case and it was record in this test report.	
	CTX	
Operating Mode > 1GHz	 The EUT was performed at X axis, Y axis and Z axis position. The antenna 1, antenna 4 was performed testing with EUT 1 and EUT 2. The antenna 3 were performed testing. The worst case was found is below. So the measurement will follow this same test configuration. 	
1	EUT 1 in X axis + Ant.3	
2	EUT 1 in Y axis + Ant.4	



The Worst Case Mode for Following Conformance Tests		
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location	
Test Condition	Radiated measurement	
	Normal Link	
Operating Mode	The EUT was performed at X axis, Y axis and Z axis position for Emissions in Restricted Frequency Bands above 1GHz test. The worst case was found is below. So the measurement will follow this same test configuration.	
1	EUT 1 in X axis - WLAN 2.4GHz + Bluetooth + Ant.3	
2	EUT 1 in X axis - WLAN 5GHz + Bluetooth + Ant.3	
3	EUT 2 in Y axis - WLAN 2.4GHz + Bluetooth + Ant.4	
4	EUT 2 in Y axis - WLAN 5GHz + Bluetooth + Ant.4	
5	EUT 1 in Y axis - WLAN 2.4GHz + Bluetooth + Ant.4	
6	EUT 1 in Y axis - WLAN 5GHz + Bluetooth + Ant.4	
For operating mode 3 is the worst case and it was record in this test report.		
Refer to Appendix G for Radiated Emission Co-location.		

The Worst Case Mode for Following Conformance Tests		
Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation		
Operating Mode		
1	WLAN 2.4GHz with Ant.3 + Bluetooth with Ant.3	
2 WLAN 5GHz with Ant.4 + Bluetooth with Ant.3		
Refer to Sporton Test Report No.: FA181814 for Co-location RF Exposure Evaluation.		

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

N/A



2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
А	Fixture	AzureWave	9007-I12 CK77	N/A
В	NB	HP	3168NGW	N/A
С	Bluetooth Speaker	MARUS	MSK06C-RD	N/A
D	AP Router	ASUS	RP-N53	N/A
Е	Mouse	Logitech	M-U0026	N/A
F	Earphone	SHYARO CHI	MIC-04	N/A

For Radiated below 1GHz, Radiated above 1GHz mode 1 and RF Conducted:

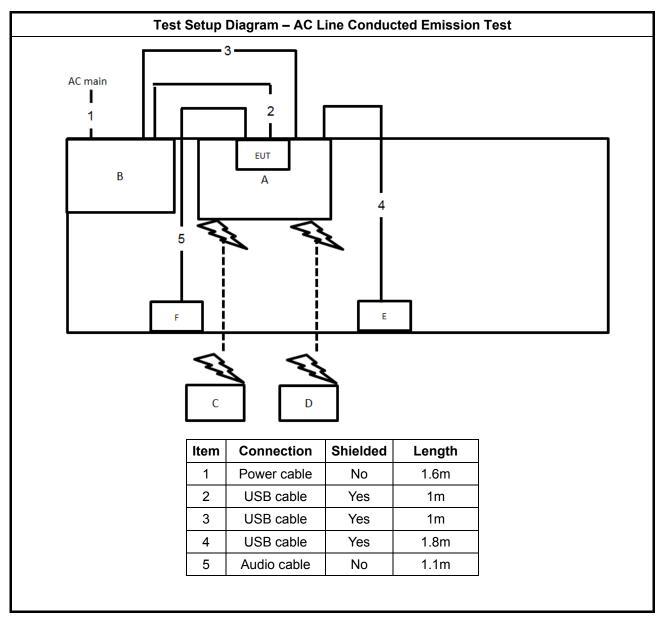
	Support Equipment			
No.	Equipment	Brand Name	Model Name	FCC ID
А	Notebook	DELL	E4300	N/A
В	Fixture	AzureWare	2532 I1	N/A

For Radiated above 1GHz mode 2:

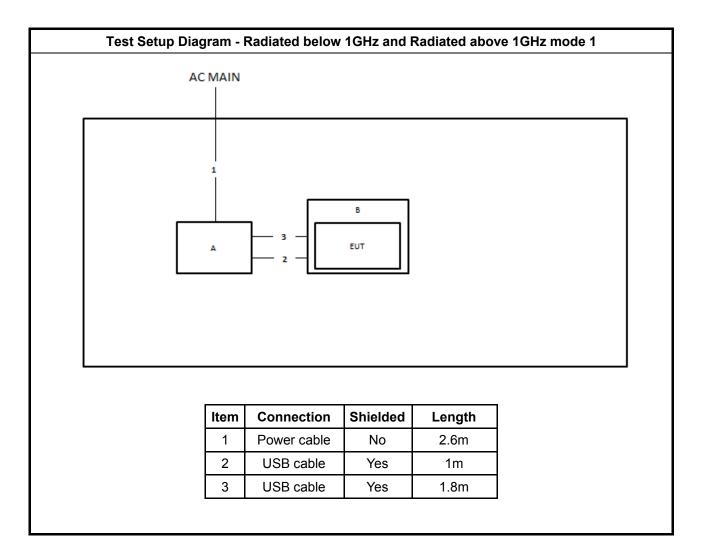
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
А	Notebook	DELL	E4300	N/A
В	Fixture	AzureWare	9007-I12 CK77	N/A



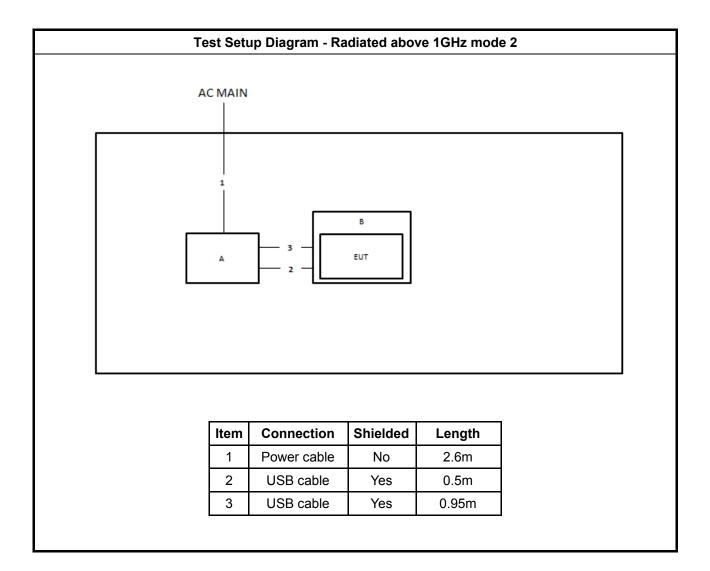
2.6 Test Setup Diagram













3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

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

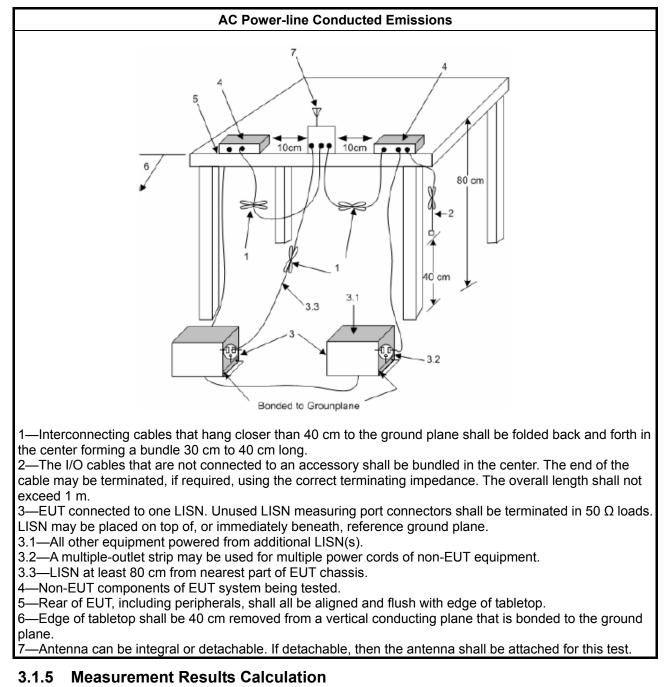
3.1.3 Test Procedures

Test Method

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



3.1.4 Test Setup



The measured Level is calculated using:

- a. Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- b. Margin = -Limit + Level

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A



3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

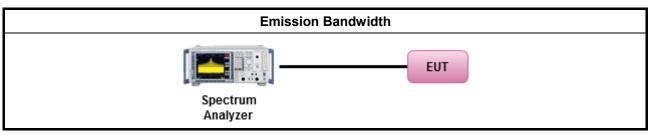
3.2.2 Measuring Instruments

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 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandw measurement.									
		Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.								
		Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.								

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum	Conducted	Output	Power Limit
maximani	oomaaotoa	Output	

•	Point-to-multipoint systems	(P2M)	If G _{TX} :	> 6 dBi,	, then P	_{Out} = 30 –	(G _{TX} –)	6) dBm
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- 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 $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)/3 \text{ dBm}$

- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm

 P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.

3.3.2 Measuring Instruments

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

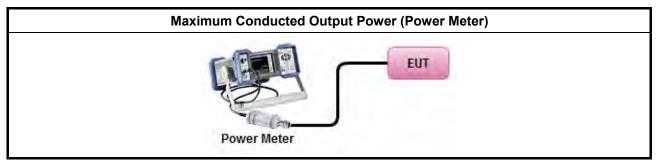


3.3.3 Test Procedures

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



3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit

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

3.4.2 Measuring Instruments

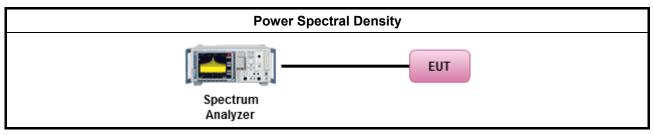
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

	Test Method								
•	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).								
	\square	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.							
•	For	onducted 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 6629 In-band power spectral density (PSD). Sample all transmit ports simultaneously using spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit p summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add the amplitude (power) values for the different transmit chains and use this as the new d trace.	g a port the the I up						
		Option 2: Measure and sum spectral maxima across the outputs. With this technique, spec are measured at each output of the device at the required resolution bandwidth. T maximum value (peak) of each spectrum is determined. These maximum values are th summed mathematically in linear power units across the outputs. These operations shall performed separately over frequency spans that have different out-of-band or spurio emission limits,	The hen I be						
		Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer 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(Or each transmit chains shall be add 10 log(N) to compared with the limit.	ains						



3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D



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 (dBc)						
Peak output power procedure	20					
Average output power procedure	30					
Average output power procedure	50					

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

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

3.5.2 Measuring Instruments

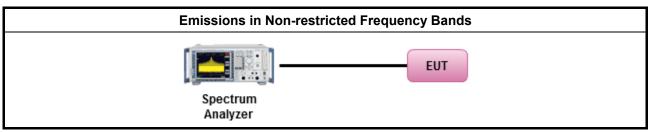
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method

Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E



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 Dist								
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300					
0.490~1.705	24000/F(kHz)	33.8 - 23	30					
1.705~30.0	30	29	30					
30~88	100	40	3					
88~216	150	43.5	3					
216~960	200	46	3					
Above 960	500	54	3					

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of 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.

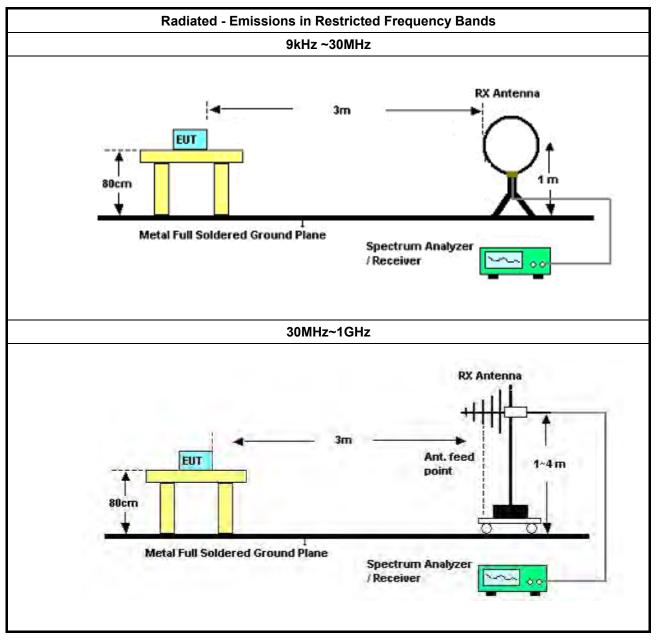


3.6.3 Test Procedures

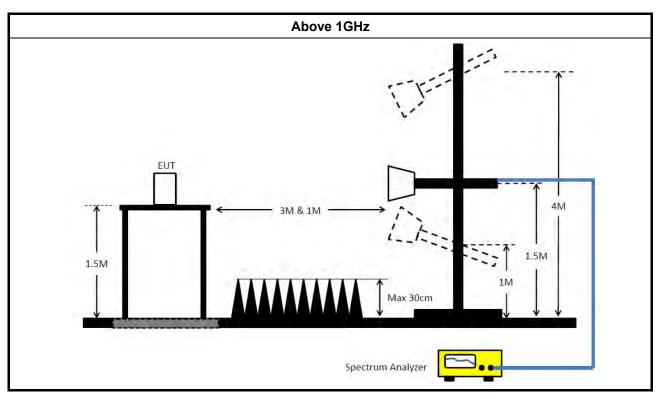
	Test Method								
•	The average emission levels shall be measured in [duty cycle \geq 98 or duty factor].								
•	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.								
•	 For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



3.6.4 Test Setup







3.6.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



Test Equipment and Calibration Data 4

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 03, 2021	Mar. 02, 2022	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50- 16-2	04083	150kHz ~ 100MHz	Jan. 06, 2021	Jan. 05, 2022	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Mar. 07, 2021	Mar. 06, 2022	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwa rz	ESH3-Z2	100430	9kHz ~ 30MHz	Jan. 30, 2021	Jan. 29, 2022	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 19, 2021	May 18, 2022	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (03CH03-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH03-CB	30 MHz ~ 1 GHz	Jan. 27, 2021	Jan. 26, 2022	Radiation (03CH03-CB)
Bilog Antenna with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	2928 & AT-N0608	20MHz ~ 2GHz	Feb. 22, 2021	Feb. 21, 2022	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8447D	2944A10259	9kHz ~ 1.3GHz	Jan. 11, 2021	Jan. 10, 2022	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 04, 2021	Jun. 03, 2022	Radiation (03CH03-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 21, 2021	Jun. 20, 2022	Radiation (03CH03-CB)
RF Cable-low	Woken	RG402	Low Cable-02+29	30MHz ~ 1GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH03-CB)
RF Cable-low	Woken	RG402	Low Cable-02+29	30MHz ~ 1GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 09, 2021	Aug. 08, 2022	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 26, 2021	Mar. 25, 2022	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 27, 2021	Apr. 26, 2022	Radiation (03CH05-CB)
Signal Analyzer	R&S	FSV40	101903	9kHz ~ 40GHz	Mar. 22, 2021	Mar. 21, 2022	Radiation (03CH05-CB)

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 21, 2021	Jun. 20, 2022	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 01, 2021	Sep. 30, 2022	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBE CK	BBHA9120D	BBHA 9120D-1292	1GHz~18GHz	Aug. 04, 2021	Aug. 03, 2022	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	May 06, 2021	May 05, 2022	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	ТТА1840-35-Н G	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 15, 2020	Dec. 14, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05	1GHz~18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+24	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+24	1GHz~18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 21, 2021	May 20, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 23, 2021	Feb. 22, 2022	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 23, 2021	Feb. 22, 2022	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

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

NCR means Non-Calibration required.



~

Conducted Emissions at Powerline

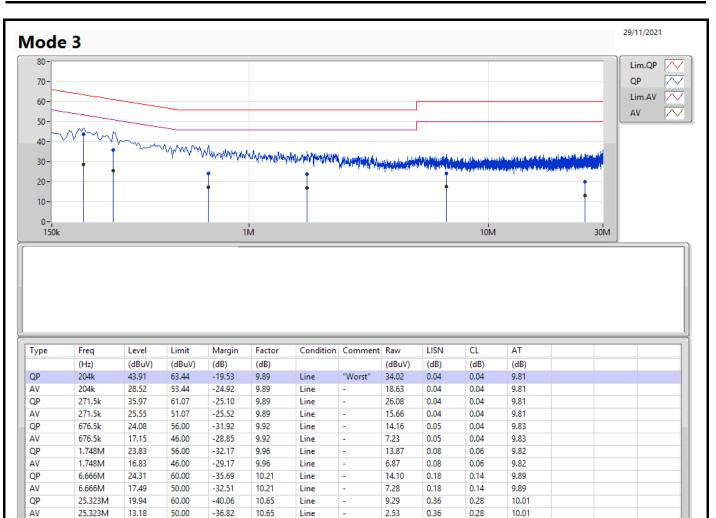
Appendix A

Summary							
Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV)	(dBuV)	(dB)	
Mode 3	Pass	QP	150k	52.95	66.00	-13.05	Neutral



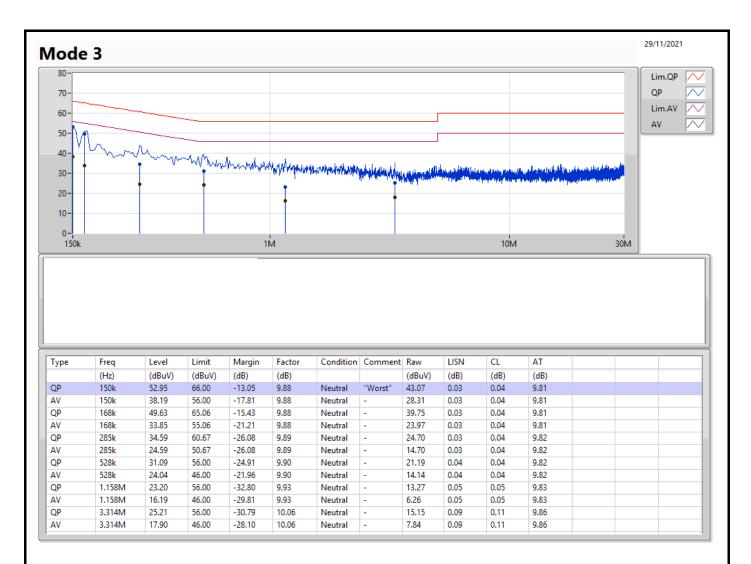
Conducted Emissions at Powerline

Appendix A





Appendix A





Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	9.025M	12.044M	12M0G1D	8.525M	11.994M
802.11g_Nss1,(6Mbps)_1TX	16.325M	16.942M	16M9D1D	16.3M	16.767M
802.11n HT20_Nss1,(MCS0)_1TX	17.6M	17.966M	18M0D1D	17.55M	17.891M

 $Max\cdot N\ dB = Maximum\ 6dB\ down\ bandwidth;\ Max-OBW = Maximum\ 99\%\ occupied\ bandwidth;\ Min-OBW = Minimum\ 99\%\ occupied\ bandwidth;\ 99\%\ occupied\ bandwidth;\ 90\%\ occupied\ band$



Result

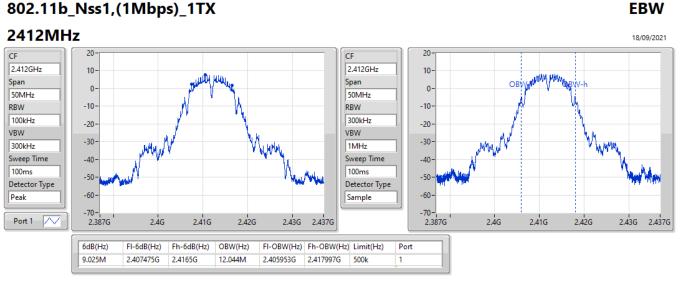
Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	9.025M	12.044M
2437MHz	Pass	500k	8.525M	12.044M
2462MHz	Pass	500k	9.025M	11.994M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.325M	16.767M
2437MHz	Pass	500k	16.3M	16.942M
2462MHz	Pass	500k	16.325M	16.792M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	17.575M	17.891M
2437MHz	Pass	500k	17.55M	17.966M
2462MHz	Pass	500k	17.6M	17.891M

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

EBW



802.11b_Nss1,(1Mbps)_1TX



802.11b_Nss1,(1Mbps)_1TX

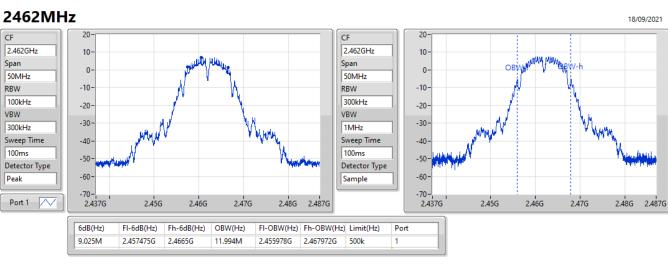
2437MHz 18/09/2021 20 20 CF CF 2.437GHz 2.437GHz 10-10-WWW WWW BRVV-h лин Span Span ОВУ 0. 0-50MHz 50MHz -10--10-RBW RBW 100kHz 300kHz -20--20-VBW VBW -30--30-300kHz 1MHz HHU 1 Sweep Time -40-Sweep Time -40 100ms 100ms -50 -50 Detector Type Detector Type -<mark>60</mark>--60-Peak Sample -70-2.412G -70-2.412G Port 1 📈 2.42G 2.44G 2.462G 2.42G 2.43G 2.44G 2.45G 2.462G 2.43G 2.45G 6dB(Hz) FI-6dB(Hz) Fh-6dB(Hz) OBW(Hz) FI-OBW(Hz) Fh-OBW(Hz) Limit(Hz) Port 8.525M 2.43295G 2.441475G 12.044M 2.430978G 2.443022G 500k 1

EBW

EBW



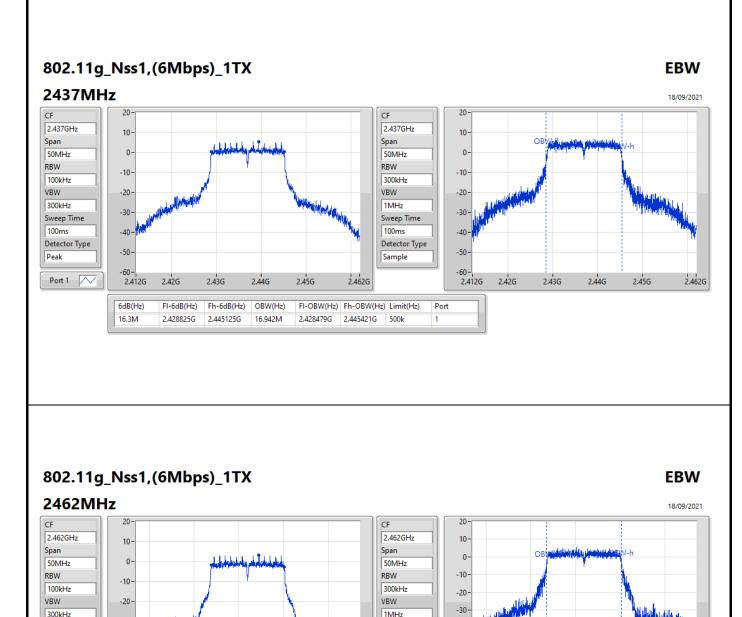
802.11b_Nss1,(1Mbps)_1TX



802.11g_Nss1,(6Mbps)_1TX

2412MHz 18/09/2021 20-20 CF CF 2.412GHz 2.412GHz 10-10-Span Span OBW 0-0-الماسانية والملتانية 50MHz 50MHz RBW -10-RBW -10-100kHz 300kHz -20--20-VBW VBW -30--30-300kHz 1MHz Sweep Time Sweep Time -40 -40-100ms 100ms -50· -50 Detector Type Detector Type -60--60-Peak Sample -70 -70 Port 1 📈 2.387G 2.4G 2.42G 2.43G 2.437G 2.387G 2.4G 2.41G 2.42G 2.43G 2.437G 2.41G 6dB(Hz) FI-6dB(Hz) Fh-6dB(Hz) OBW(Hz) FI-OBW(Hz) Fh-OBW(Hz) Limit(Hz) Port 16.325M 2.403825G 2.42015G 16.767M 2.403579G 2.420346G 500k





Sweep Time

Detector Type

100ms

Sample

WANN THE

2.48G 2.487G

FI-OBW(Hz) Fh-OBW(Hz) Limit(Hz)

2.453554G 2.470346G 500k

-40

-50

-60-

-70

Port

2.437G

2.45G

2.46G

-30-

-40

-50

-60

2.437G

16.325M

2.45G

2.453825G

2.46G

FI-6dB(Hz) Fh-6dB(Hz) OBW(Hz)

2.47015G

2.47G

16.792M

Sweep Time

Detector Type

Port 1 📈

100ms

Peak

2.47G

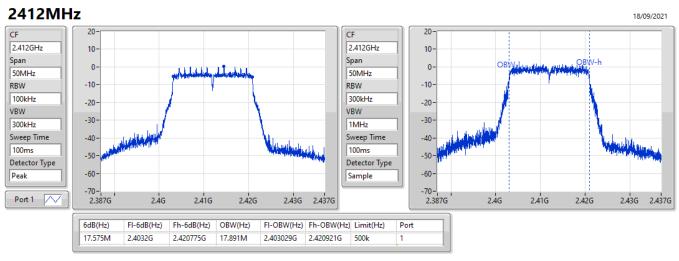
2.48G 2.487G

EBW

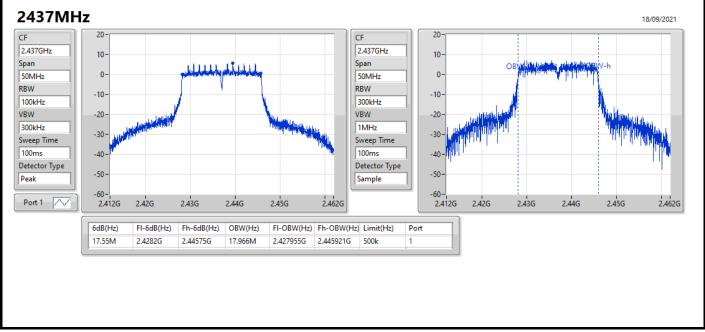
EBW





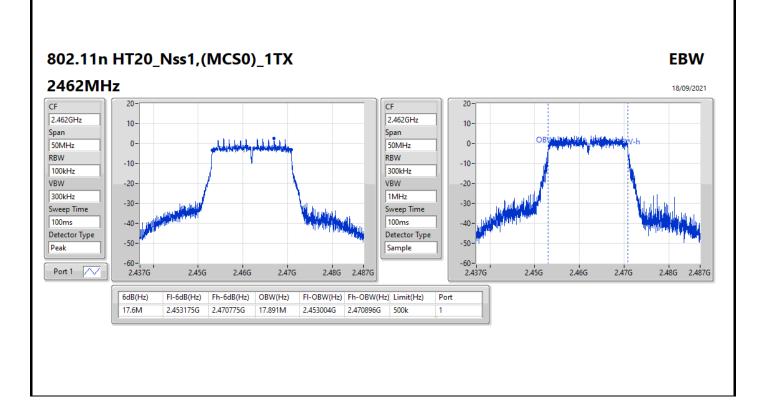


802.11n HT20_Nss1,(MCS0)_1TX









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Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	17.09	0.05117
802.11g_Nss1,(6Mbps)_1TX	17.19	0.05236
802.11n HT20_Nss1,(MCS0)_1TX	17.22	0.05272



Average Power

Result

Mode	Result	DG	Port 1	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	4.20	16.76	16.76	30.00
2437MHz	Pass	4.20	17.09	17.09	30.00
2462MHz	Pass	4.20	16.27	16.27	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	4.20	13.43	13.43	30.00
2417MHz	Pass	4.20	16.78	16.78	30.00
2437MHz	Pass	4.20	17.19	17.19	30.00
2462MHz	Pass	4.20	14.14	14.14	30.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	4.20	12.09	12.09	30.00
2417MHz	Pass	4.20	16.14	16.14	30.00
2437MHz	Pass	4.20	17.22	17.22	30.00
2457MHz	Pass	4.20	16.58	16.58	30.00
2462MHz	Pass	4.20	12.85	12.85	30.00

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



Summary

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-5.85
802.11g_Nss1,(6Mbps)_1TX	-9.36
802.11n HT20_Nss1,(MCS0)_1TX	-8.96

RBW = 3kHz;

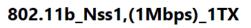


Result

Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	4.20	-6.43	-6.43	8.00
2437MHz	Pass	4.20	-5.85	-5.85	8.00
2462MHz	Pass	4.20	-7.64	-7.64	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	4.20	-12.68	-12.68	8.00
2437MHz	Pass	4.20	-9.36	-9.36	8.00
2462MHz	Pass	4.20	-11.52	-11.52	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	4.20	-14.75	-14.75	8.00
2437MHz	Pass	4.20	-8.96	-8.96	8.00
2462MHz	Pass	4.20	-11.67	-11.67	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;

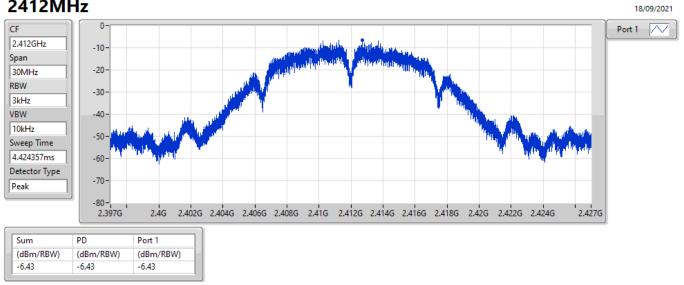




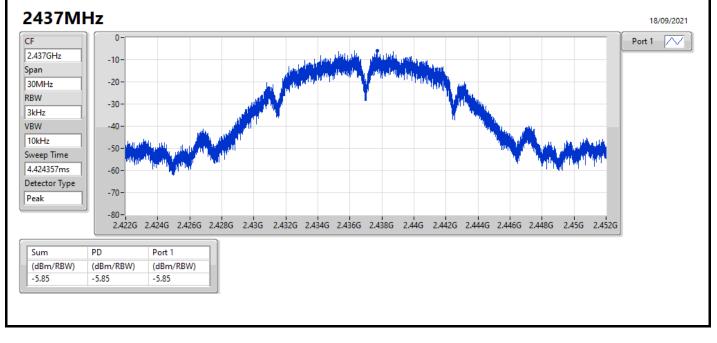


PSD

2412MHz



802.11b_Nss1,(1Mbps)_1TX

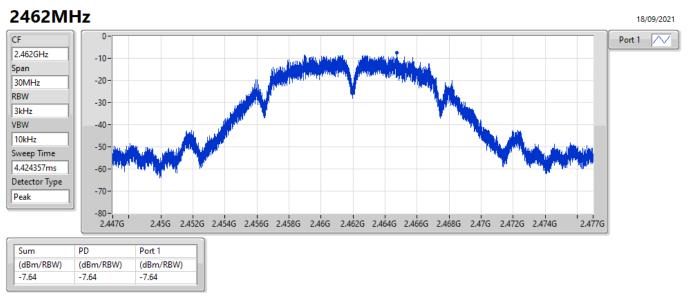


PSD

PSD



802.11b_Nss1,(1Mbps)_1TX

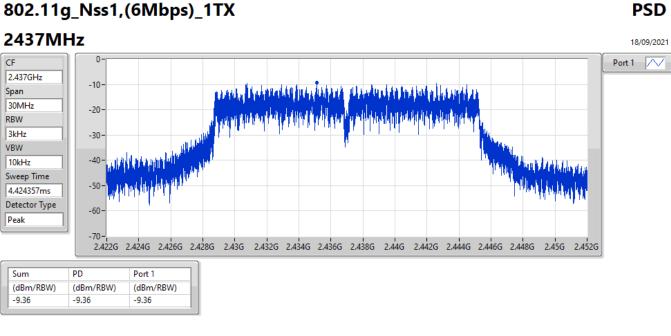


802.11g_Nss1,(6Mbps)_1TX

2412MHz 18/09/2021 -10-CF Port 1 📈 2.412GHz -20-Span -30-30MHz RBW -40-3kHz VBW -50-10kHz -60-Sweep Time 4.424357ms -70 Detector Type -80 Peak -90-2.397G 2.4G 2.402G 2.404G 2.406G 2.408G 2.41G 2.412G 2.414G 2.416G 2.418G 2.42G 2.422G 2.422G 2.422G 2.427G Sum PD Port 1 (dBm/RBW) (dBm/RBW) (dBm/RBW) -12.68 -12.68 -12.68

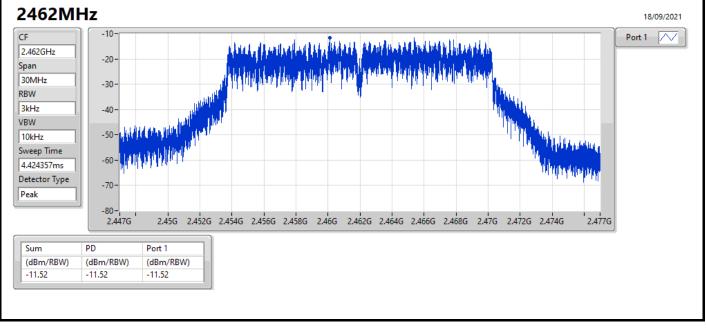
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802.11g_Nss1,(6Mbps)_1TX







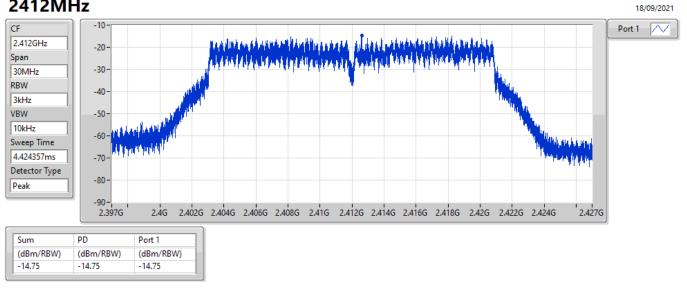
PSD

802.11n HT20_Nss1,(MCS0)_1TX



PSD

2412MHz



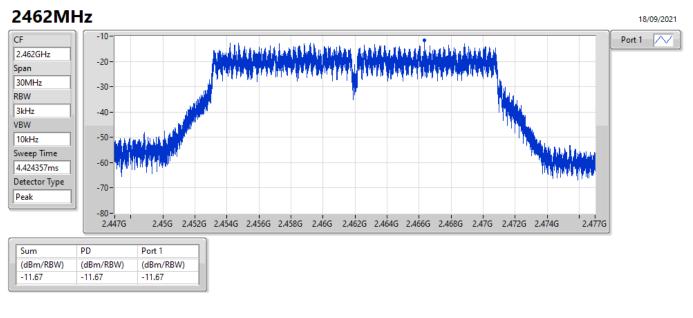
802.11n HT20_Nss1,(MCS0)_1TX

2437MHz 18/09/2021 0 CF Port 1 📈 2.437GHz -10-Span 30MHz -20 RBW 3kHz -30 VBW 10kHz -40 Sweep Time -50-4.424357ms Detector Type -<mark>60</mark>-Peak -70 2.422G 2.424G 2.426G 2.428G 2.436G 2.432G 2.434G 2.436G 2.438G 2.444G 2.444G 2.4446G 2.4486 2.448G 2.45G 2.452G Sum PD Port 1 (dBm/RBW) (dBm/RBW) (dBm/RBW) -8.96 -8.96 -8.96



802.11n HT20_Nss1,(MCS0)_1TX







Appendix E

Summary

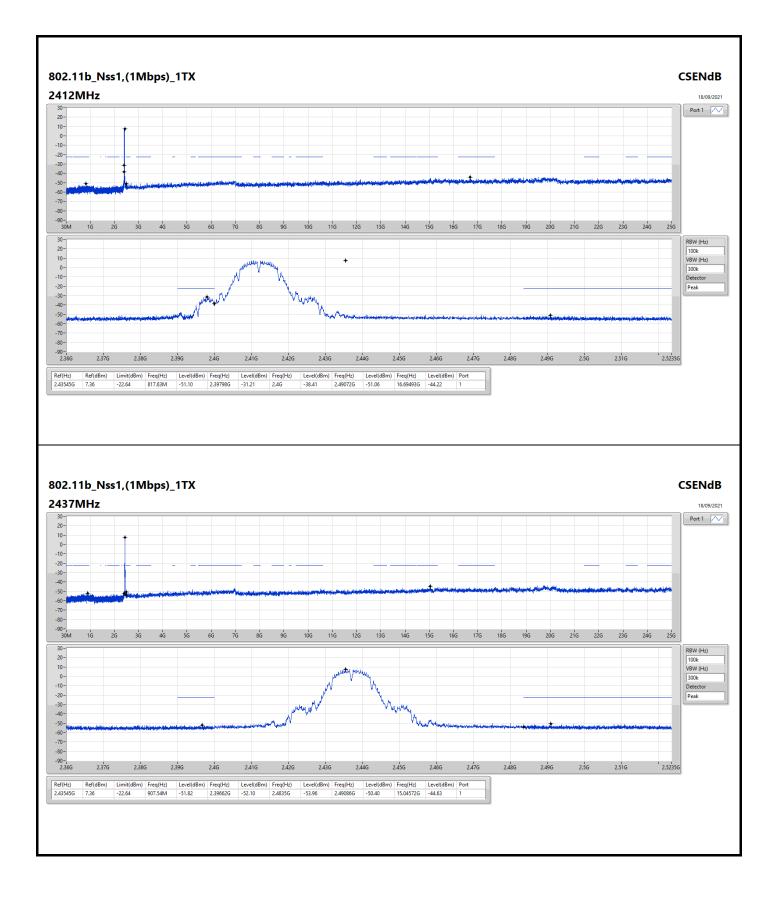
Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-	-		-	-	-	-	-		-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	2.43545G	7.36	-22.64	817.83M	-51.10	2.39798G	-31.21	2.4G	-38.41	2.49072G	-51.06	16.69493G	-44.22	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.442G	5.26	-24.74	623.57M	-51.96	2.39978G	-31.32	2.4G	-36.73	2.49244G	-50.89	21.71843G	-44.43	1
802.11n HT20_Nss1,(MCS0)_1TX	Pass	2.4395G	5.60	-24.40	945.98M	-52.36	2.39906G	-34.54	2.4G	-39.06	2.48386G	-50.95	24.86795G	-45.00	1



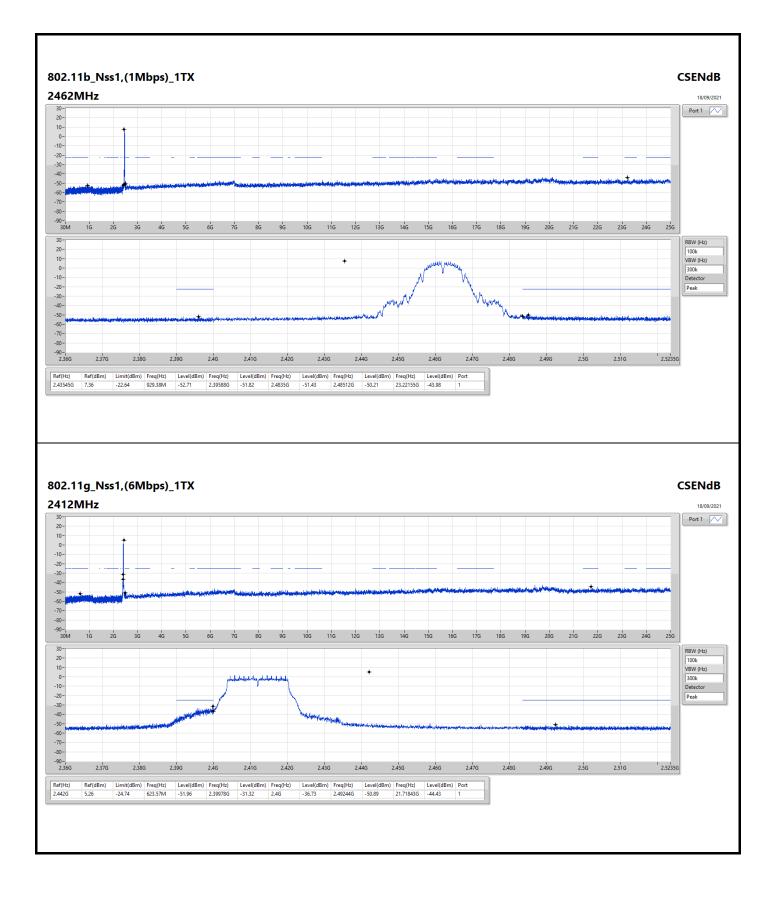
Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_Nss1,(1Mbps)_1TX	-		-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43545G	7.36	-22.64	817.83M	-51.10	2.39798G	-31.21	2.4G	-38.41	2.49072G	-51.06	16.69493G	-44.22	1
2437MHz	Pass	2.43545G	7.36	-22.64	907.54M	-51.82	2.39662G	-52.10	2.4835G	-53.96	2.49086G	-50.40	15.04572G	-44.63	1
2462MHz	Pass	2.43545G	7.36	-22.64	929.38M	-52.71	2.39588G	-51.82	2.4835G	-51.43	2.48512G	-50.21	23.22155G	-43.98	1
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.442G	5.26	-24.74	623.57M	-51.96	2.39978G	-31.32	2.4G	-36.73	2.49244G	-50.89	21.71843G	-44.43	1
2437MHz	Pass	2.442G	5.26	-24.74	2.14884G	-52.27	2.3989G	-44.04	2.4G	-47.00	2.4838G	-49.50	24.47461G	-45.11	1
2462MHz	Pass	2.442G	5.26	-24.74	863.85M	-52.15	2.39266G	-52.62	2.4835G	-39.41	2.48354G	-38.72	17.68109G	-44.29	1
802.11n HT20_Nss1,(MCS0)_1TX	-		-	-		-		-	-	-		-		-	-
2412MHz	Pass	2.4395G	5.60	-24.40	945.98M	-52.36	2.39906G	-34.54	2.4G	-39.06	2.48386G	-50.95	24.86795G	-45.00	1
2437MHz	Pass	2.4395G	5.60	-24.40	859.77M	-52.84	2.39934G	-41.62	2.4G	-46.66	2.4851G	-48.74	15.03729G	-44.96	1
2462MHz	Pass	2.4395G	5.60	-24.40	879.58M	-53.26	2.3988G	-52.45	2.4835G	-44.64	2.48378G	-36.04	21.74372G	-45.16	1

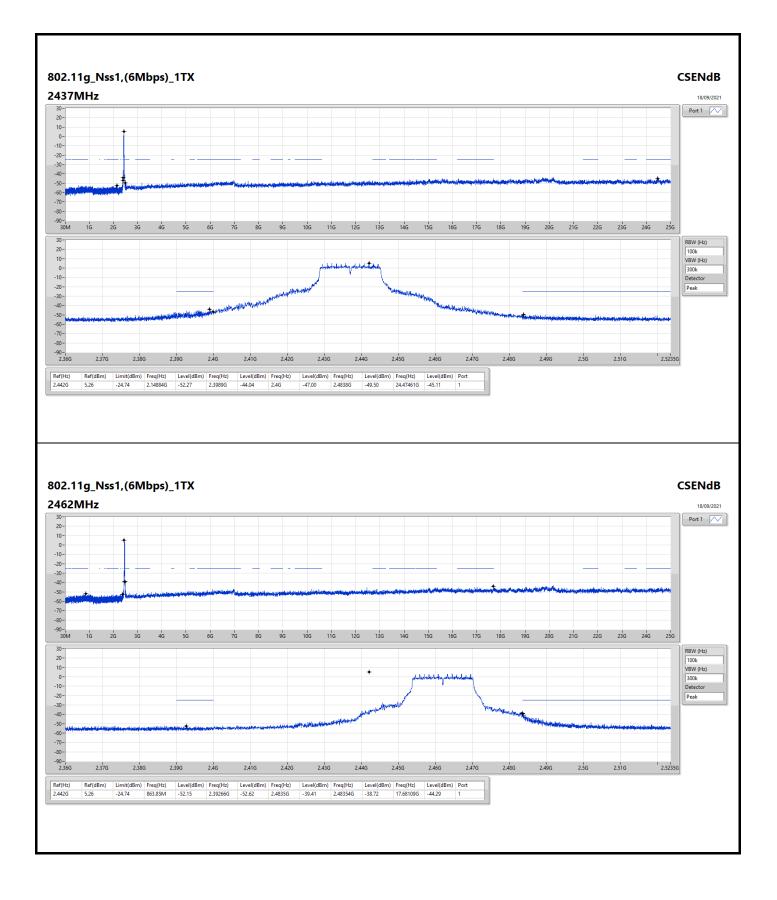




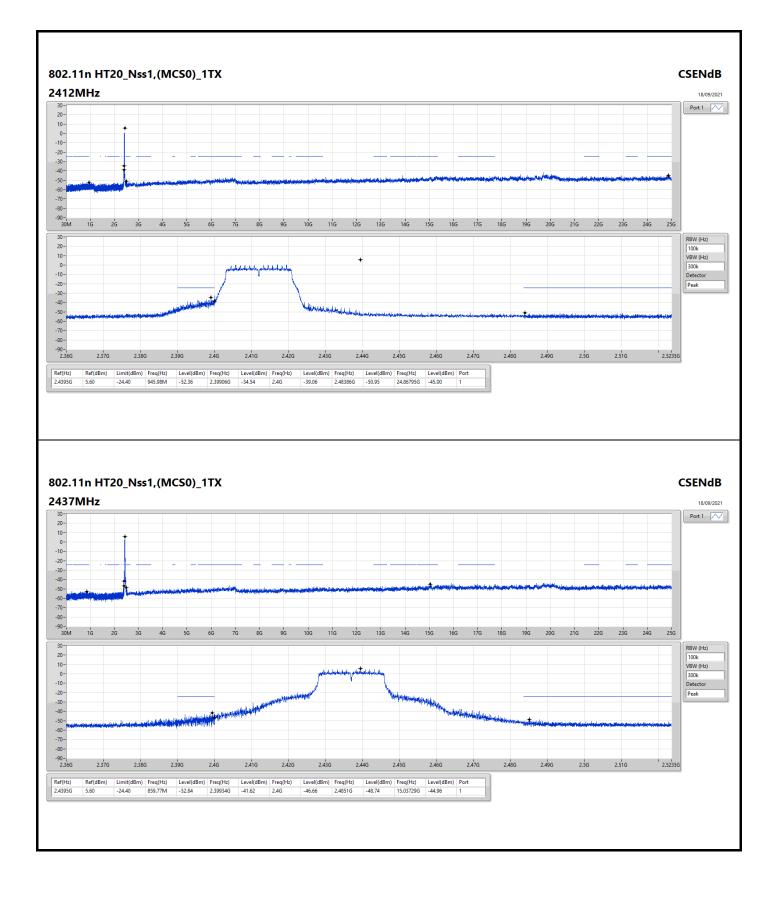




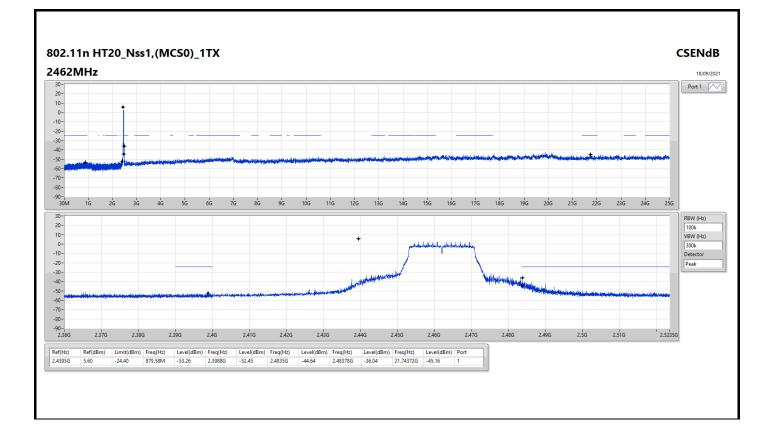














Radiated Emissions below 1GHz

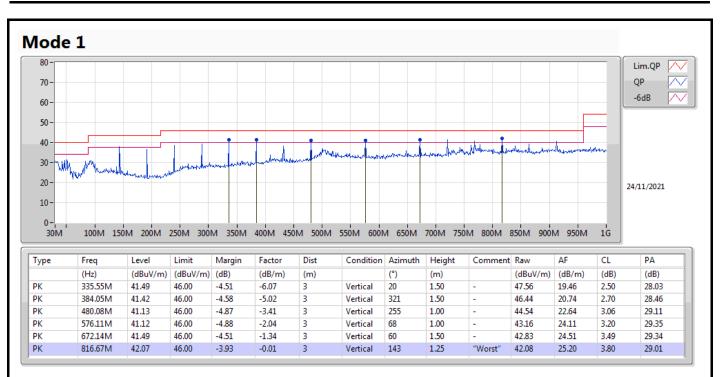
Appendix F.1

Summary							
Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	
Mode 1	Pass	PK	240M	42.34	46.00	-3.66	Horizontal



Radiated Emissions below 1GHz

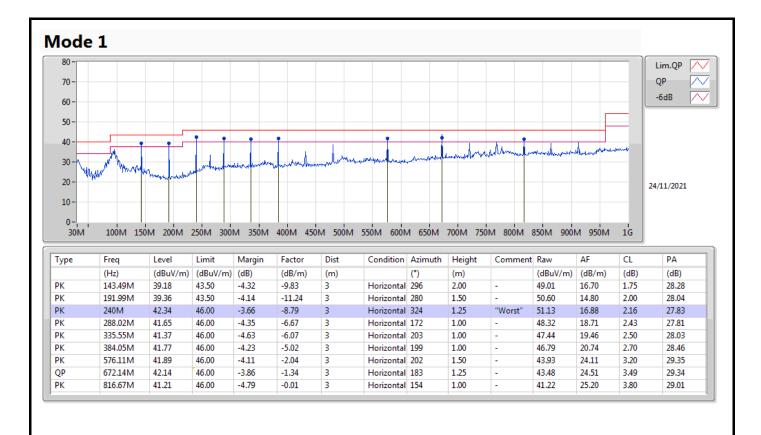
Appendix F.1





Radiated Emissions below 1GHz



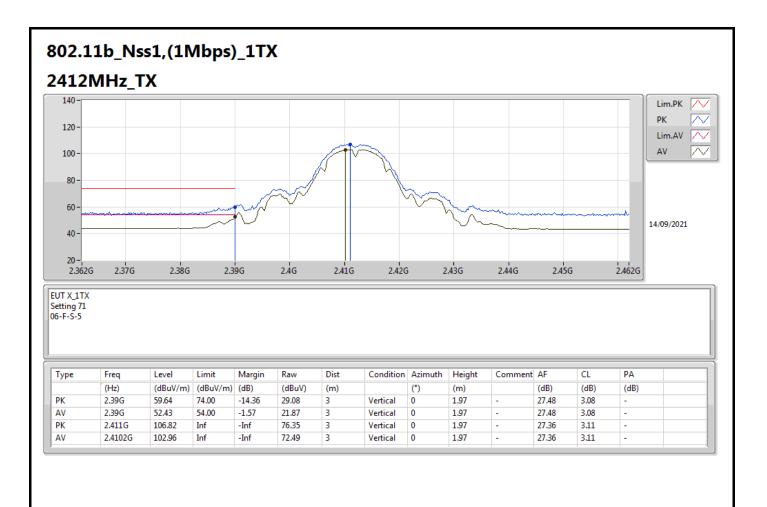




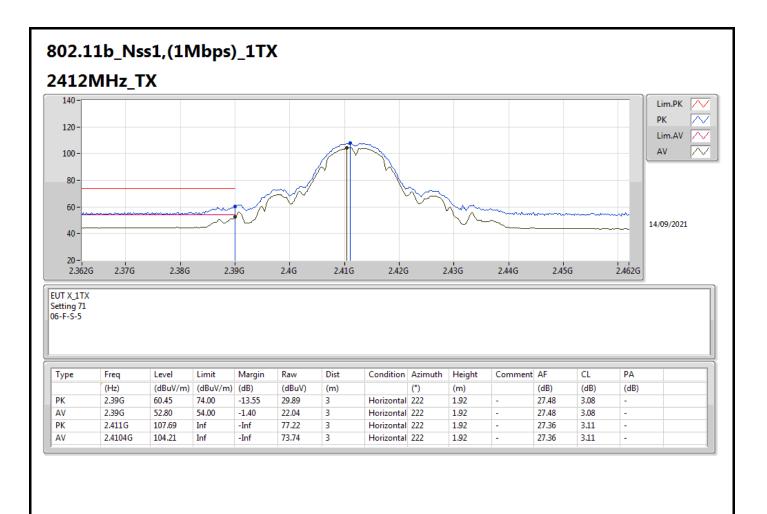
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.4835G	52.90	54.00	-1.10	3	Horizontal	132	2.04	-

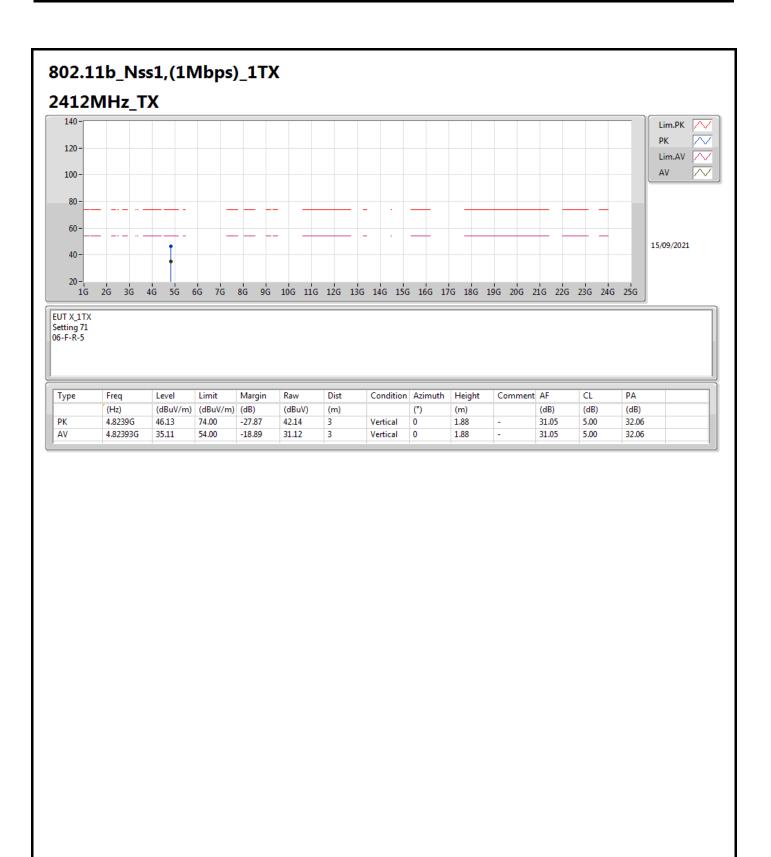




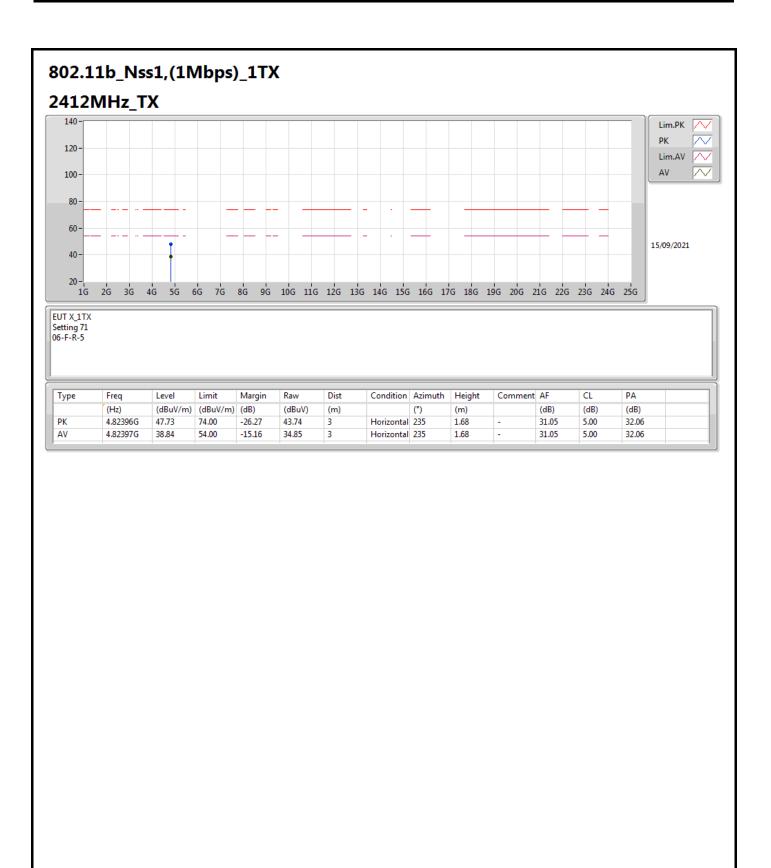




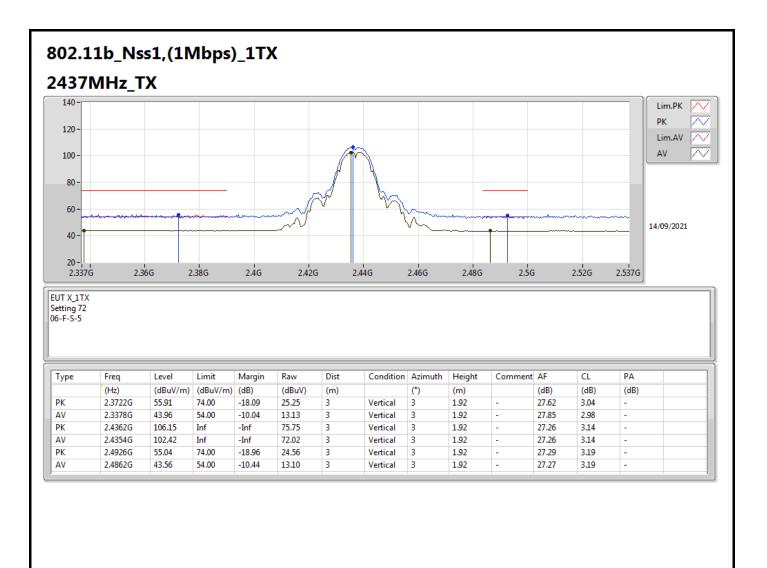




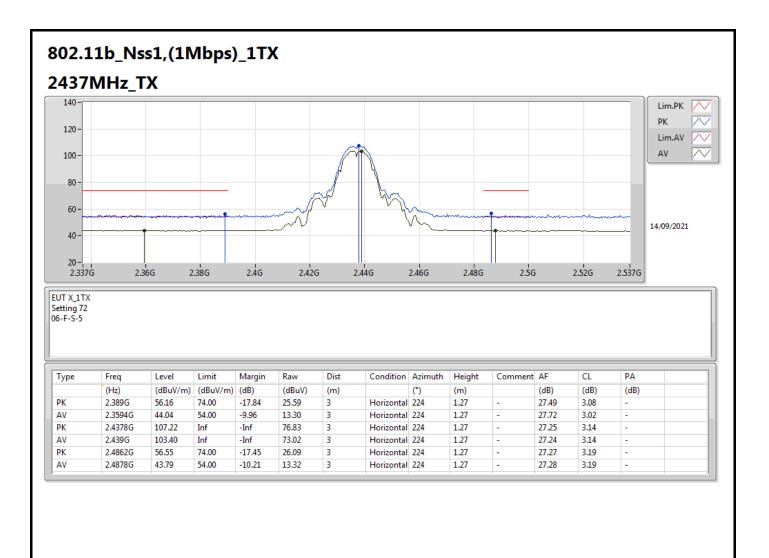




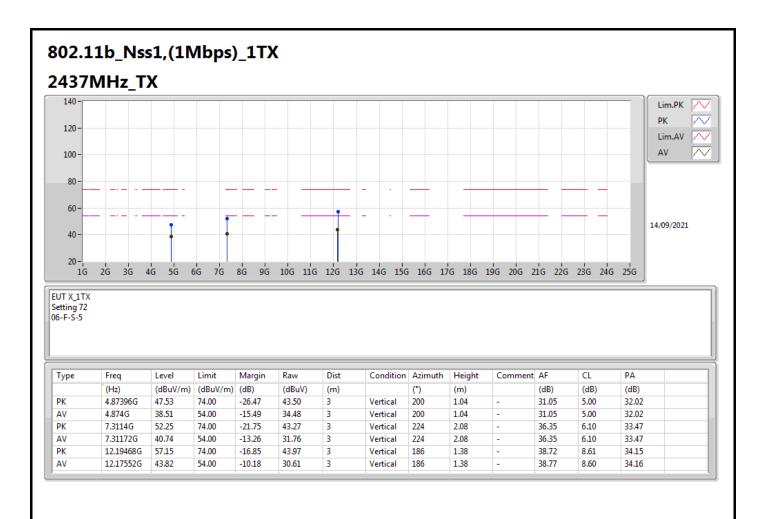




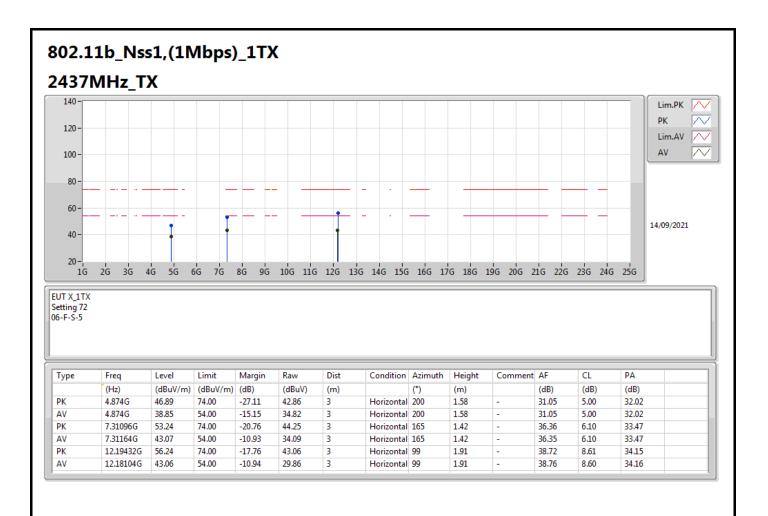




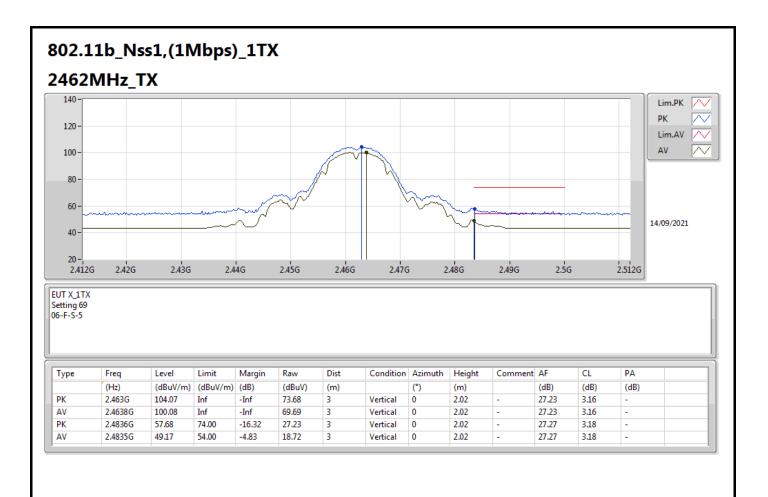




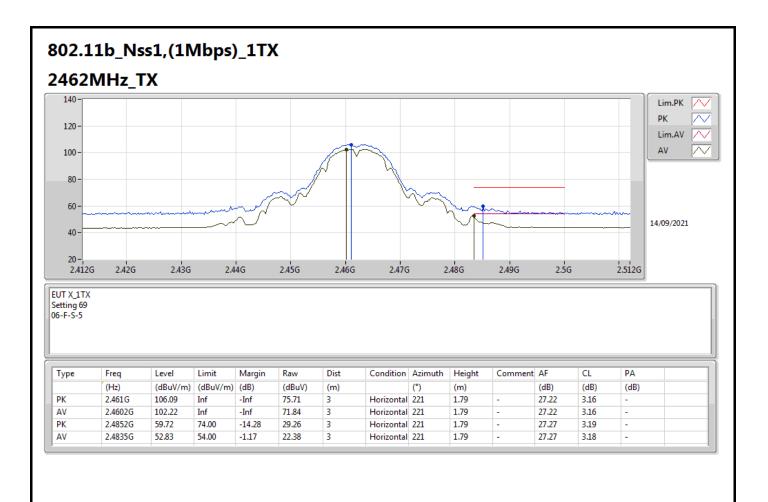




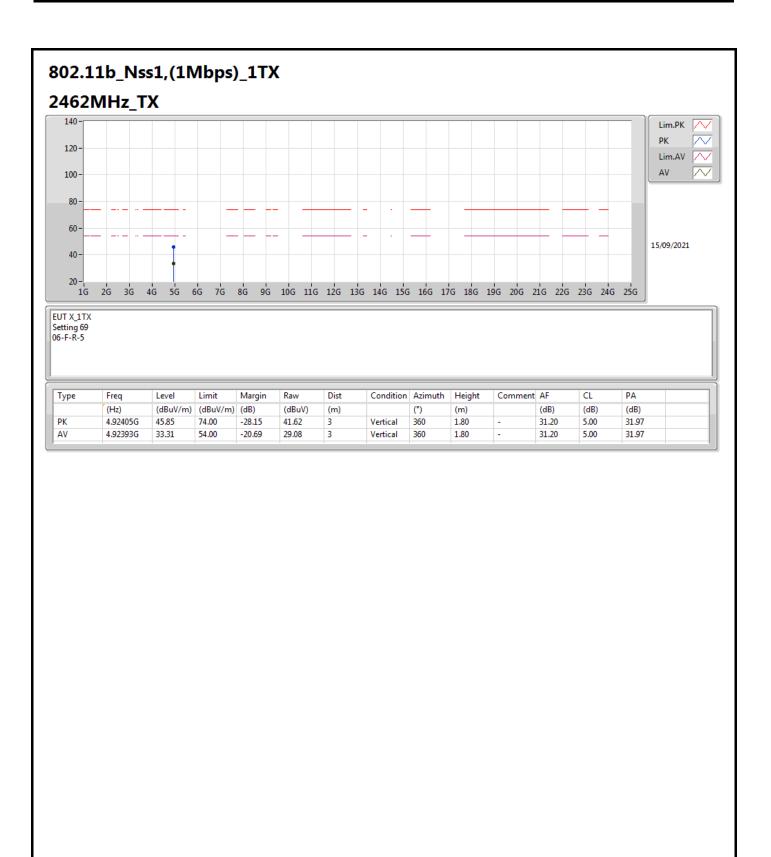




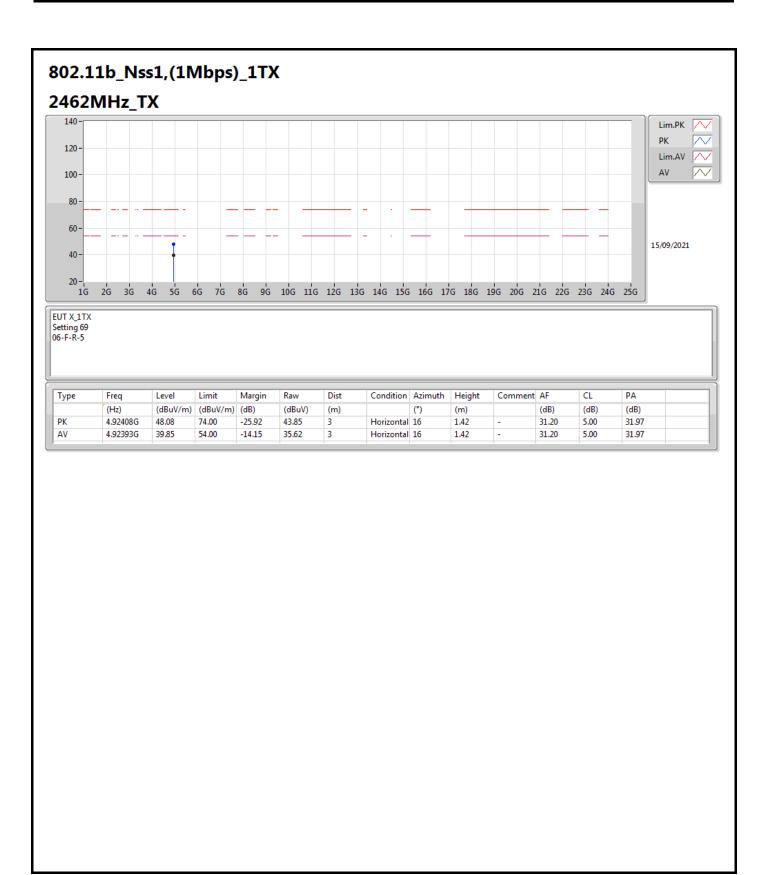




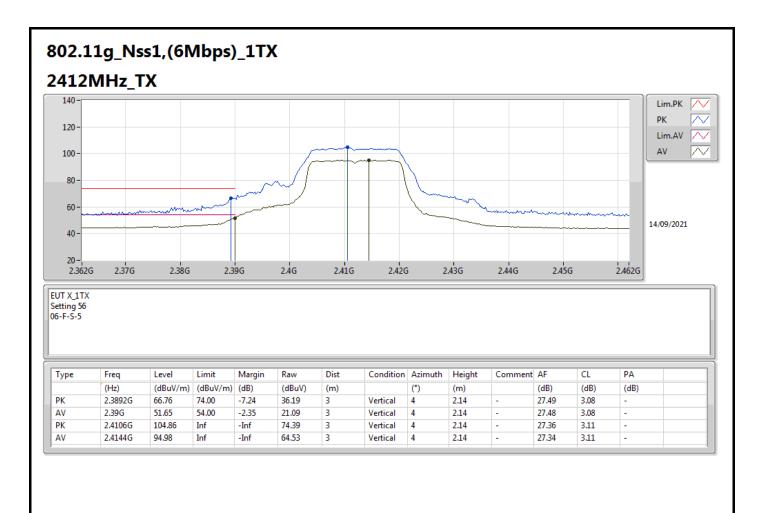




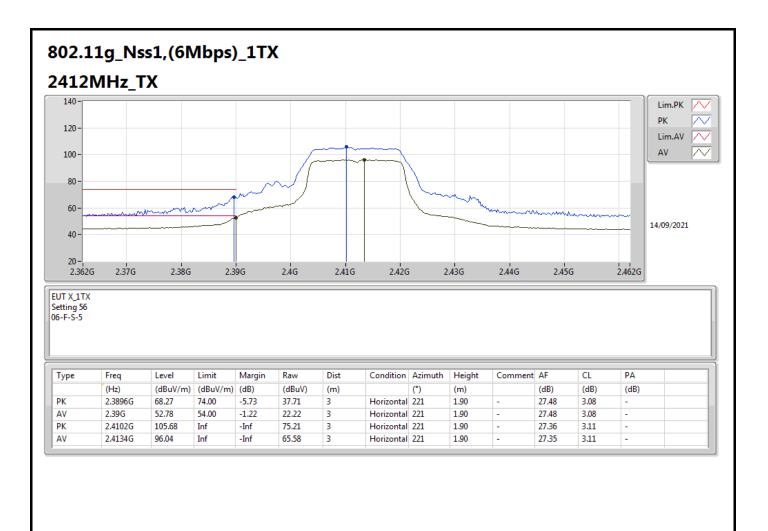




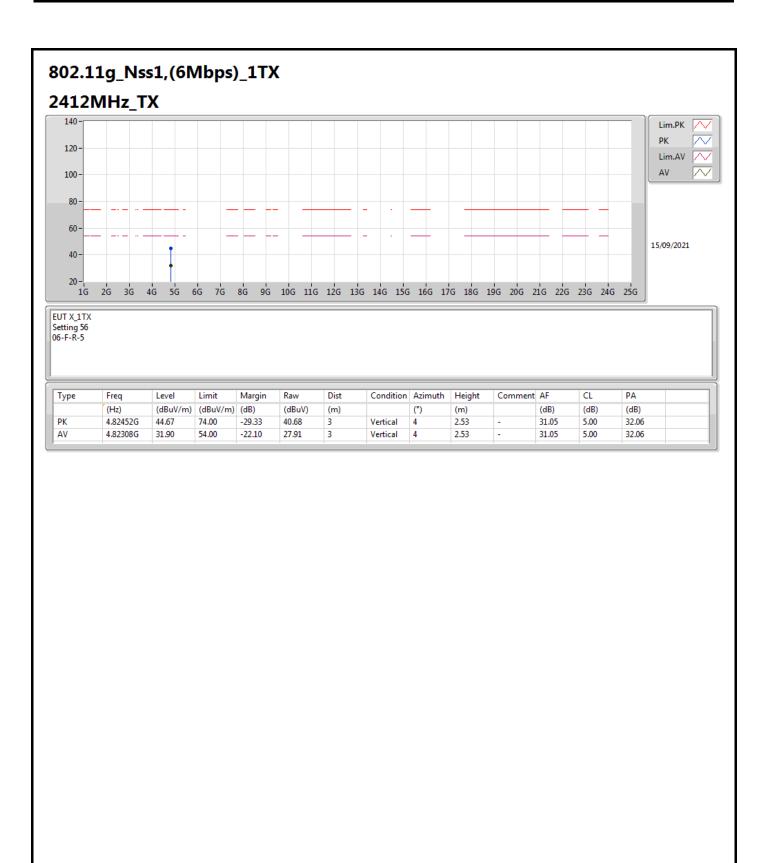




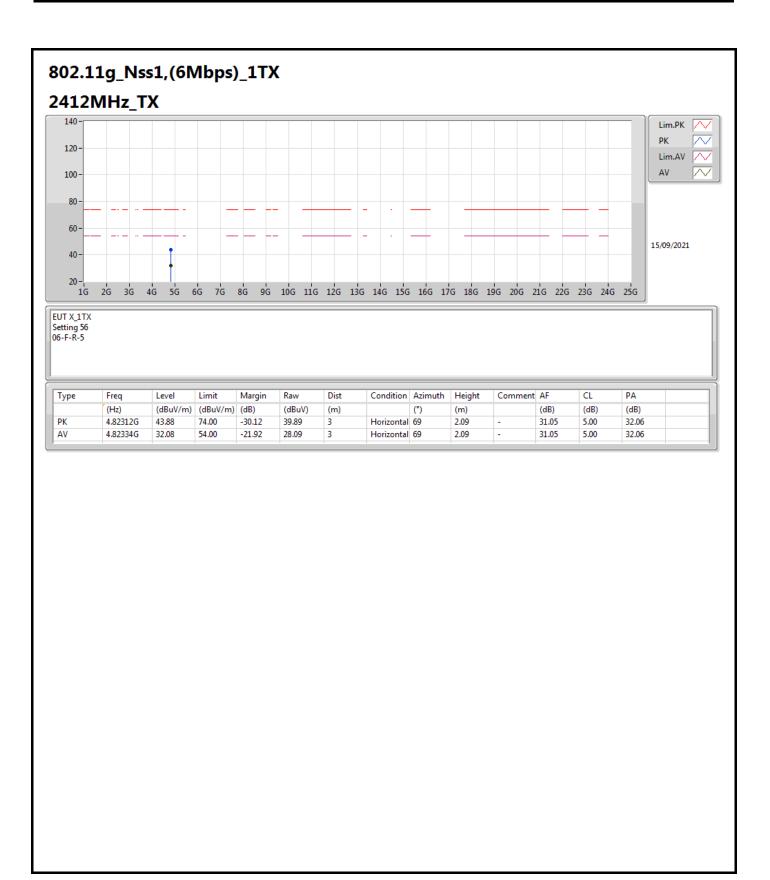




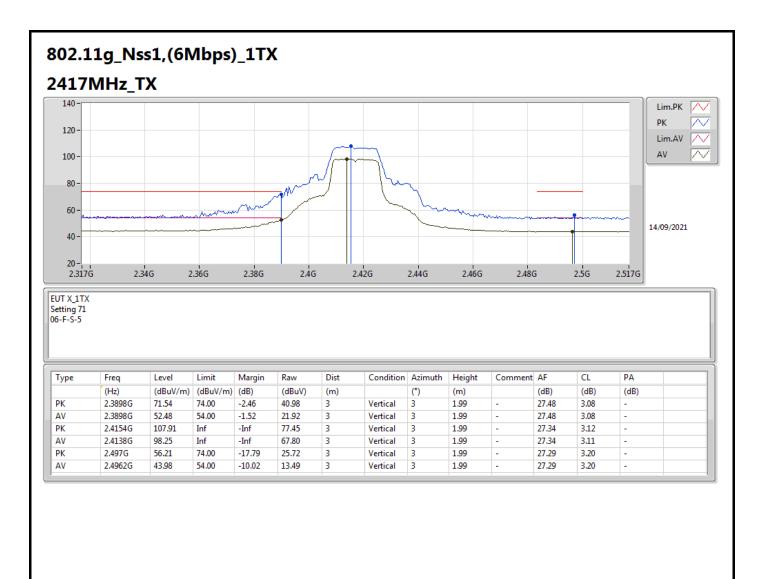




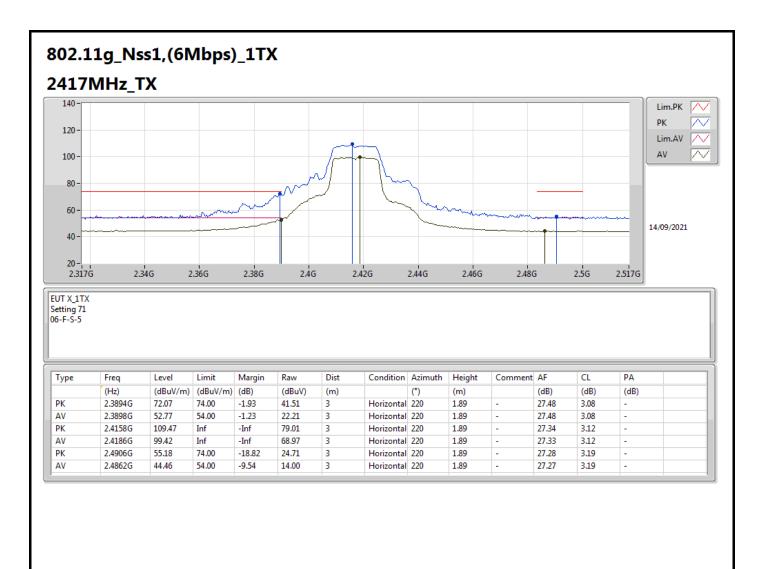




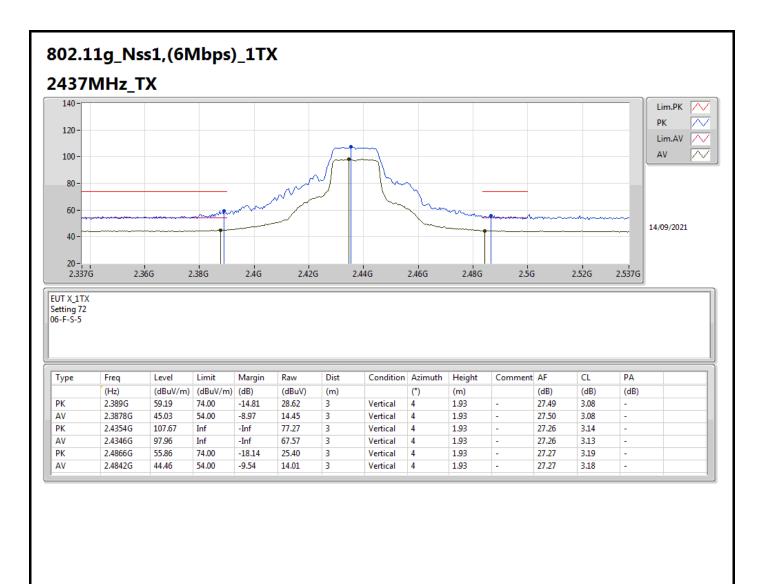




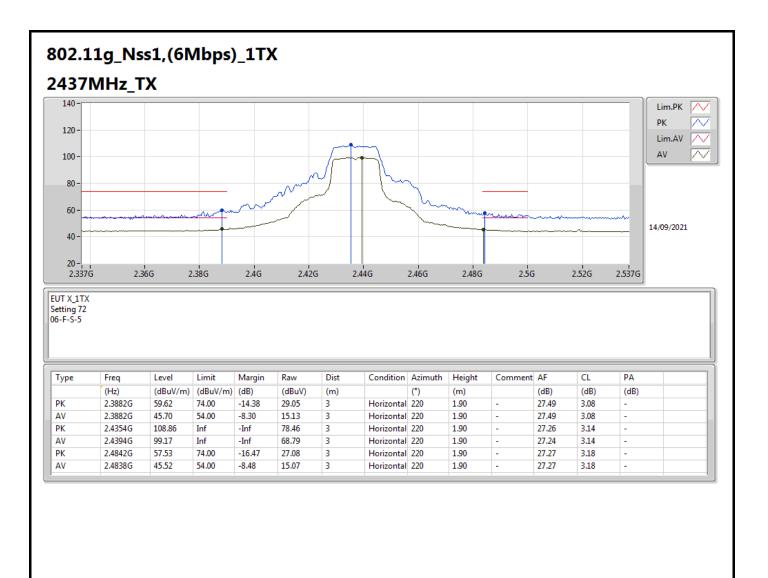




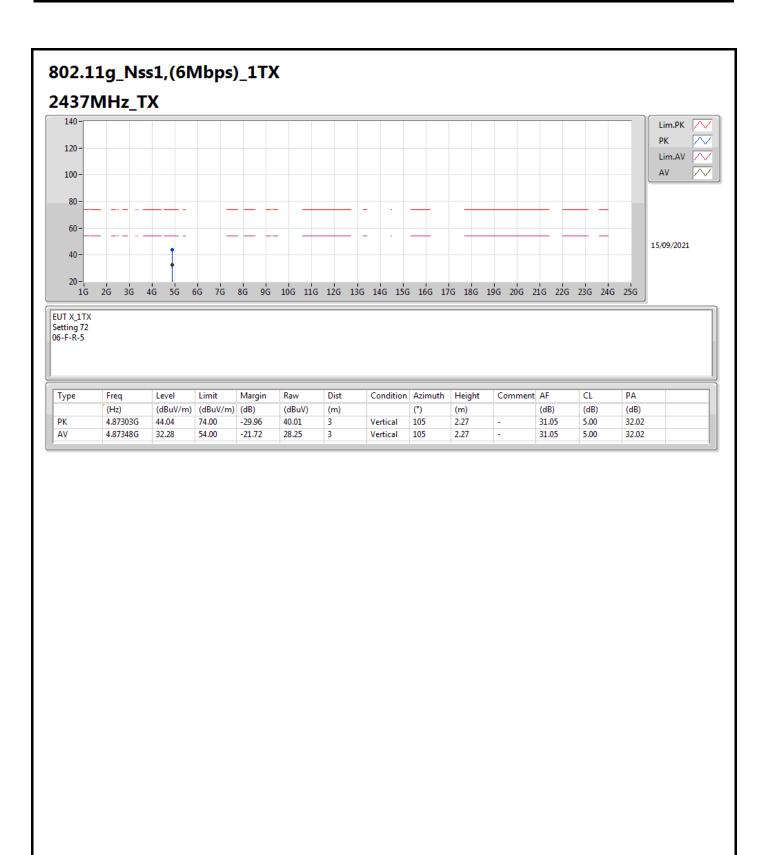




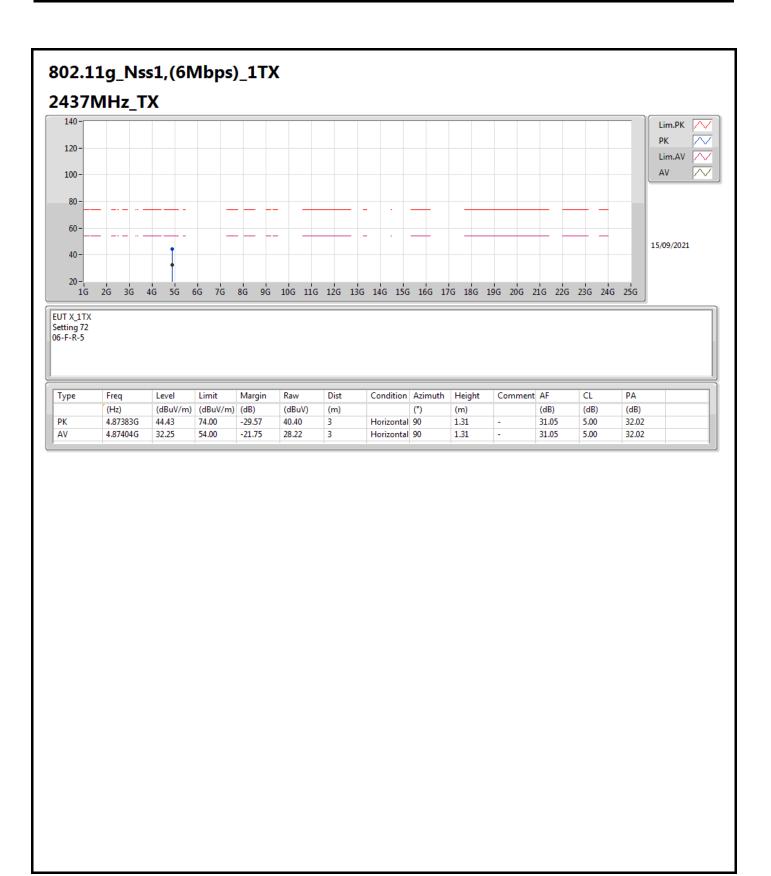




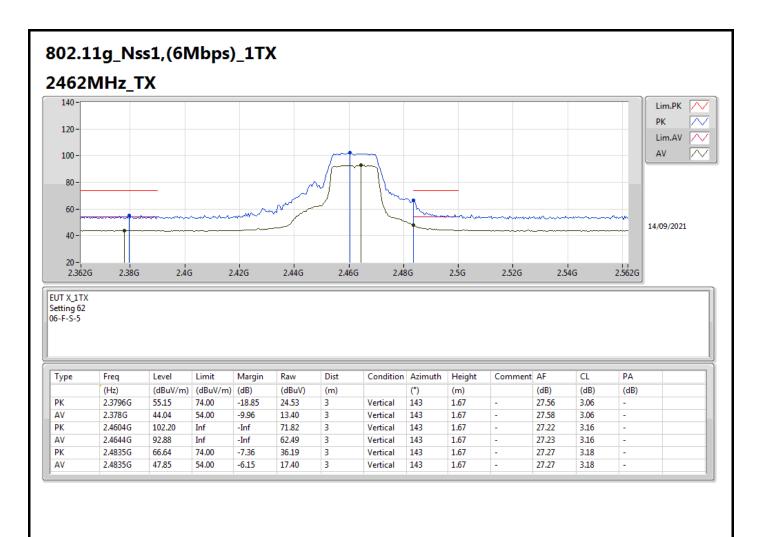




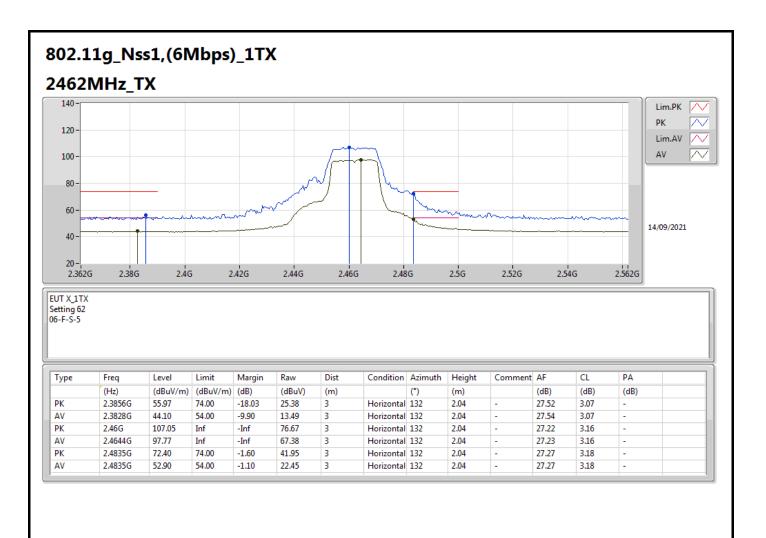




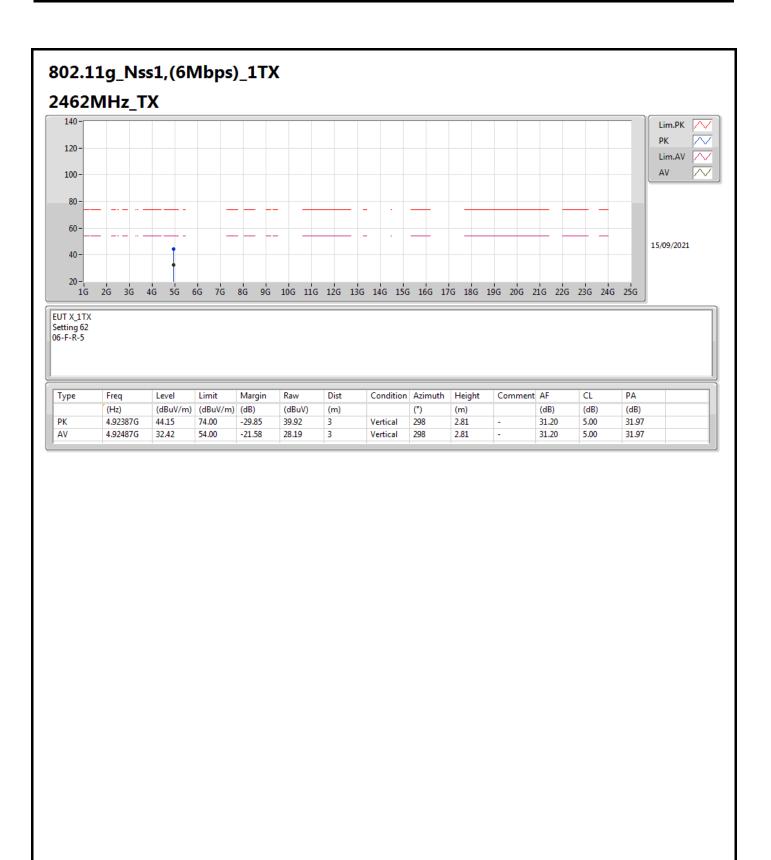




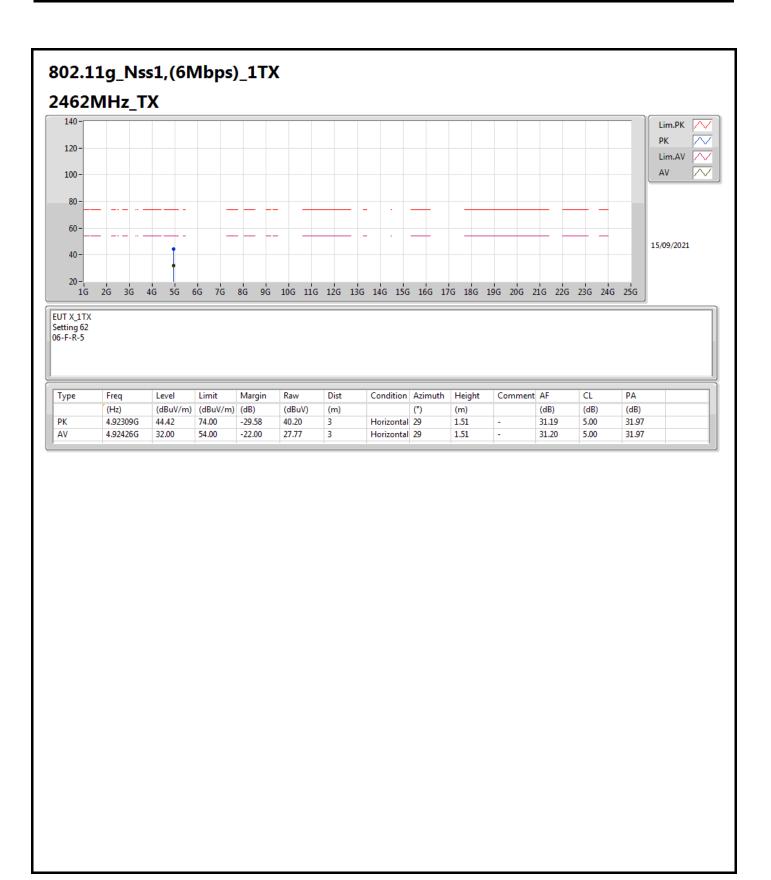




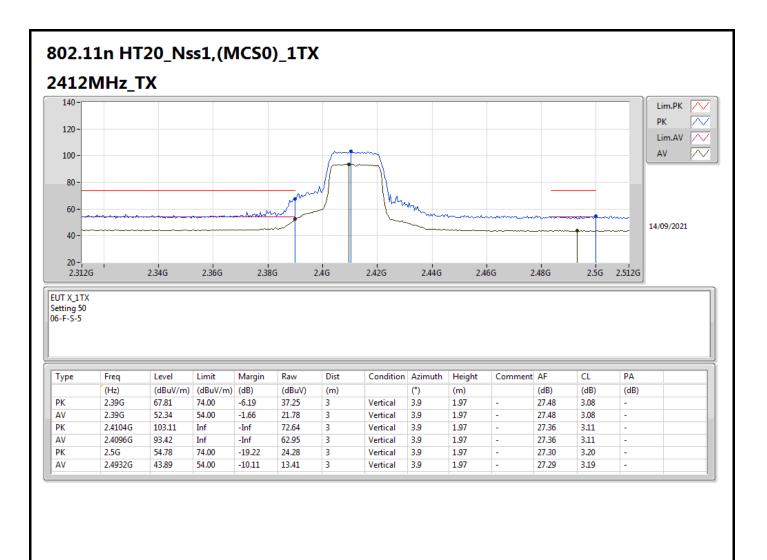




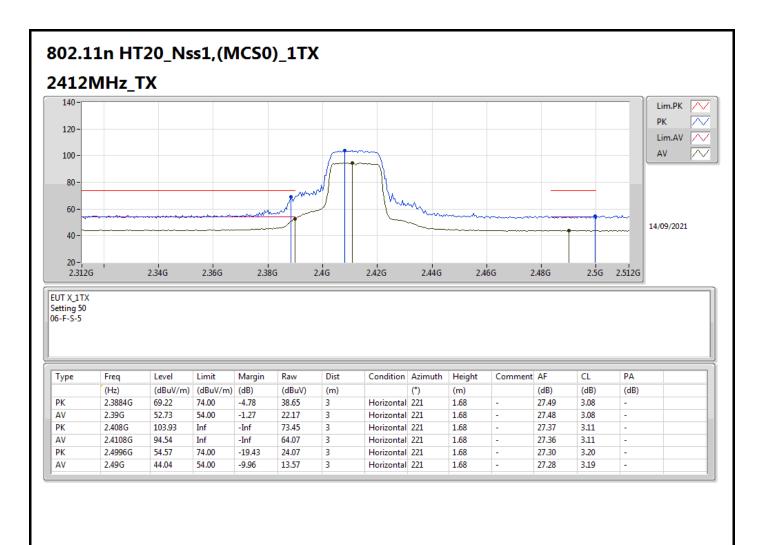




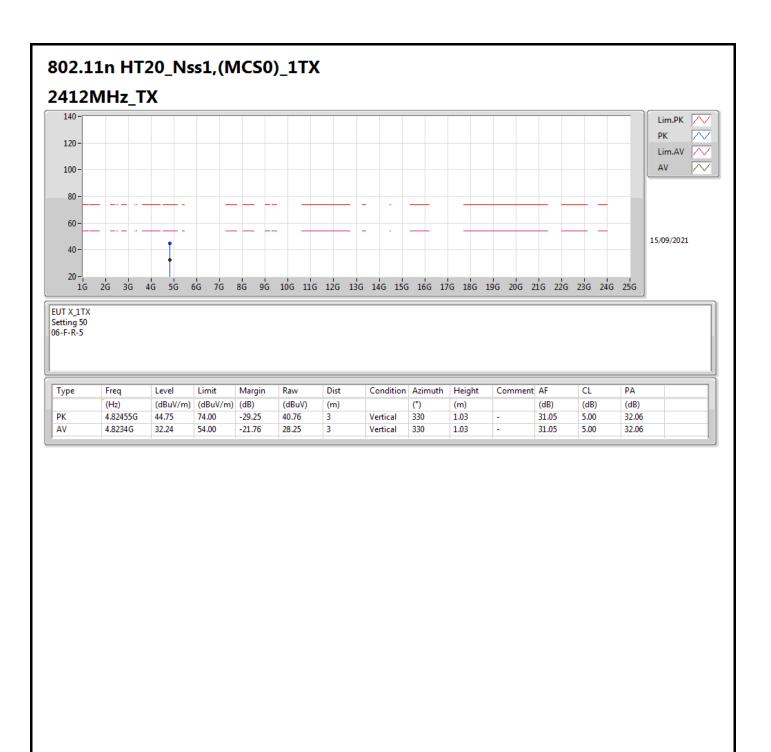




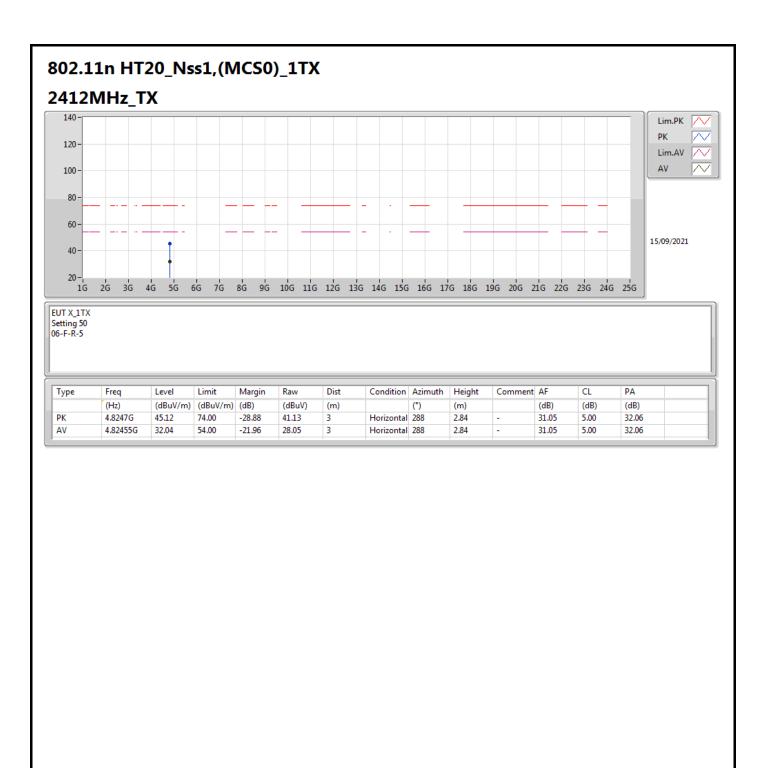




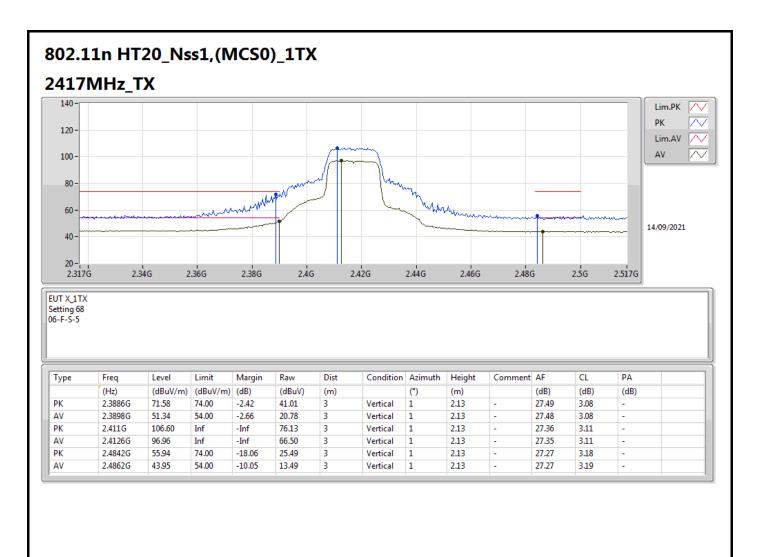




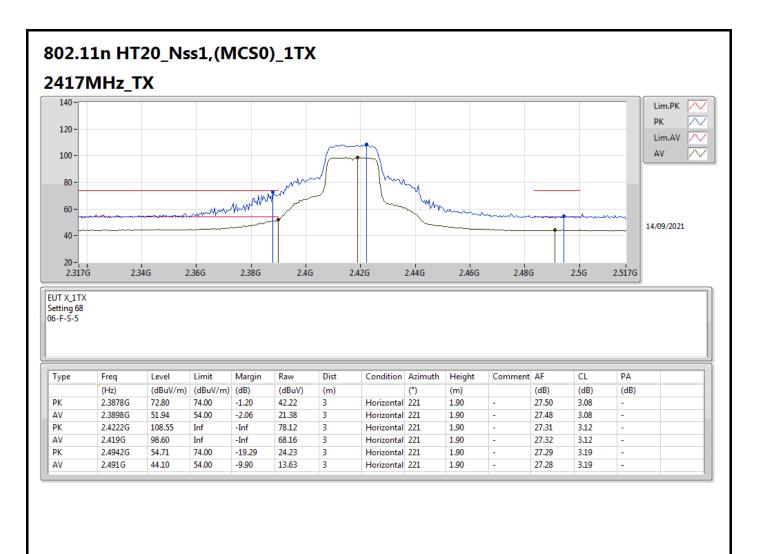




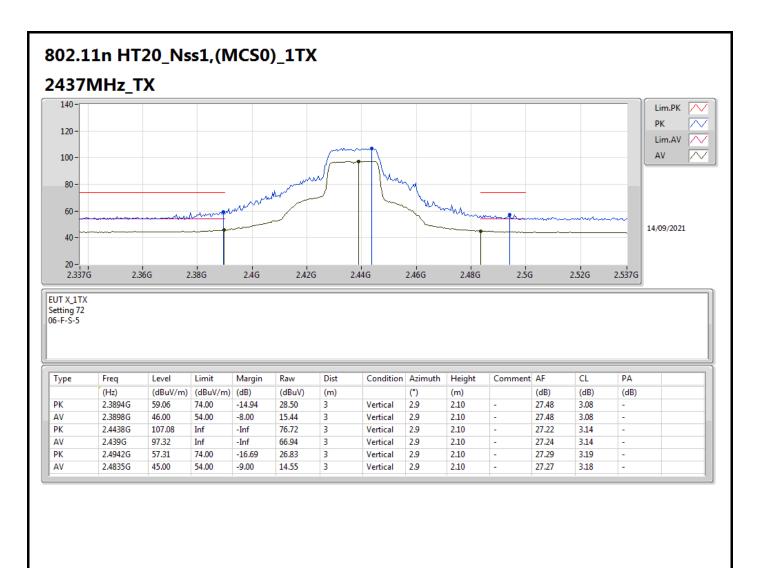




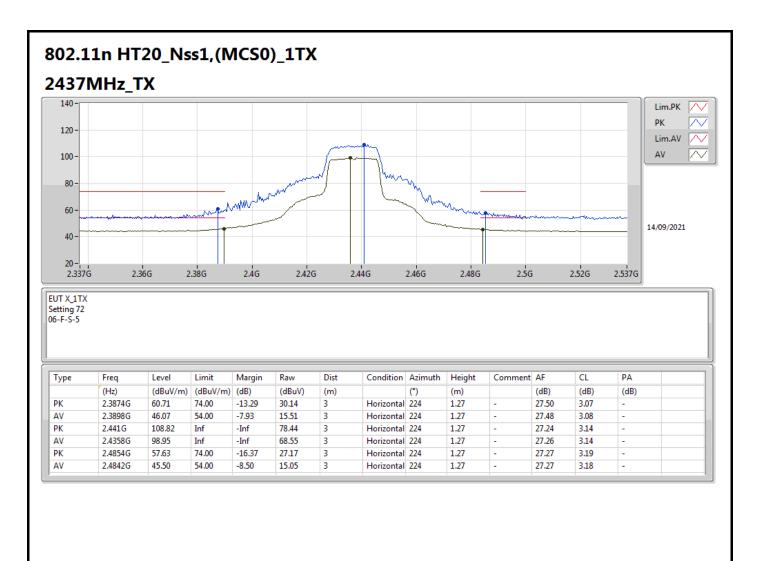




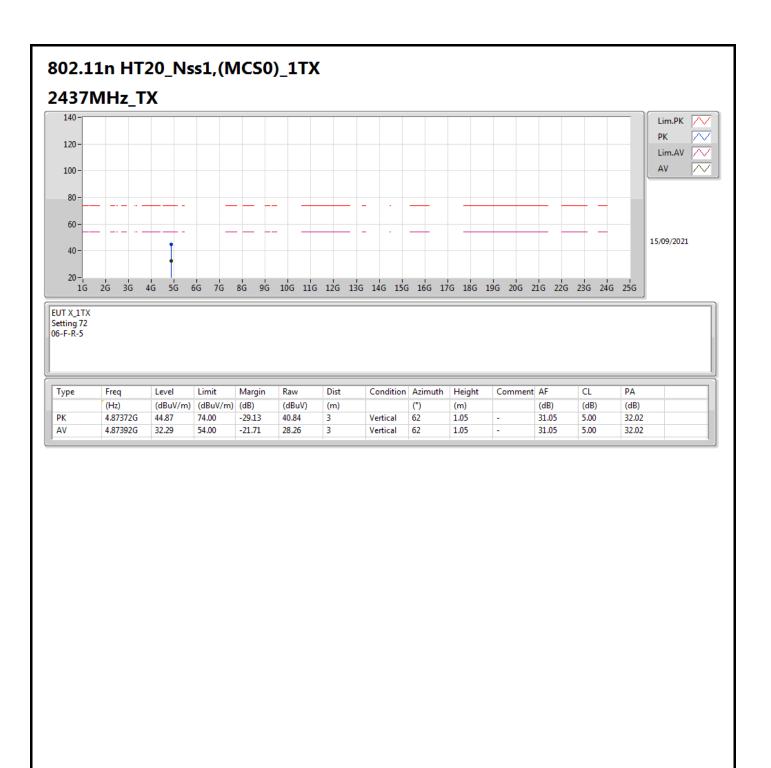




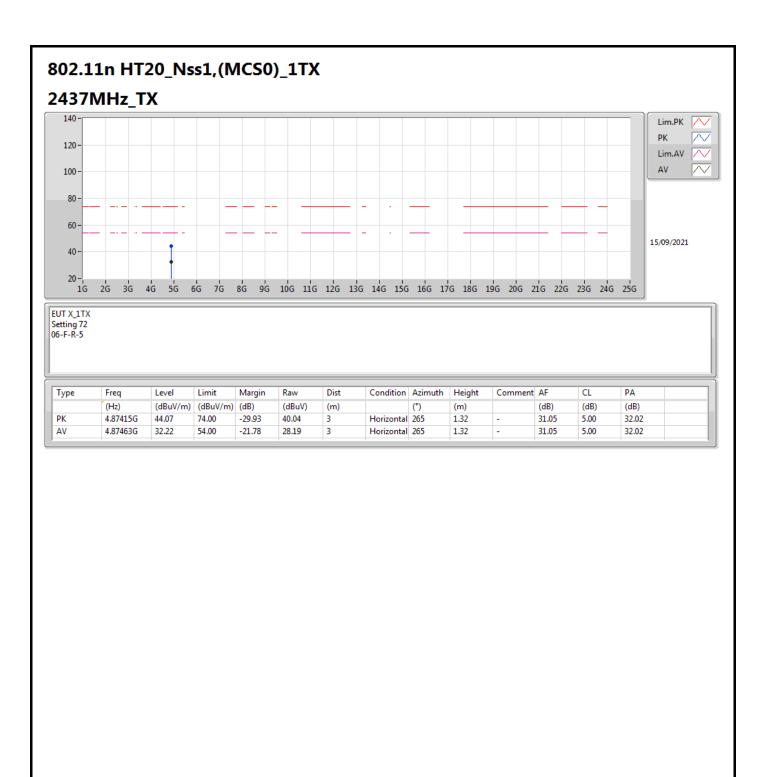




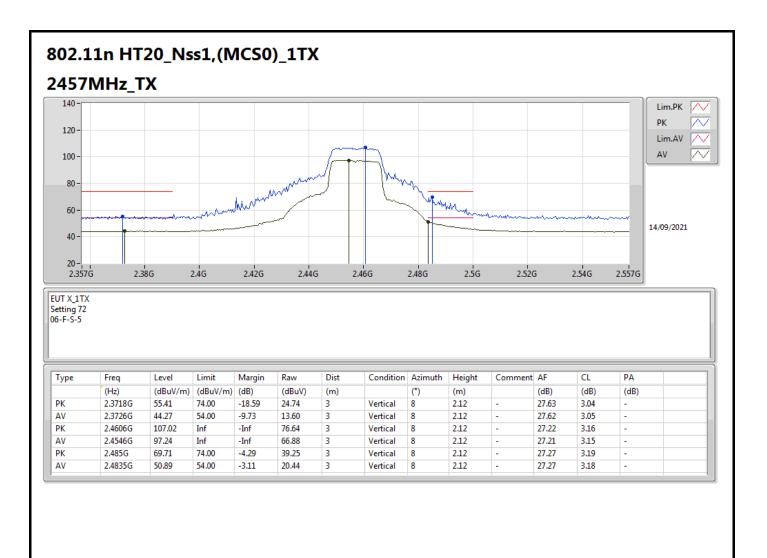




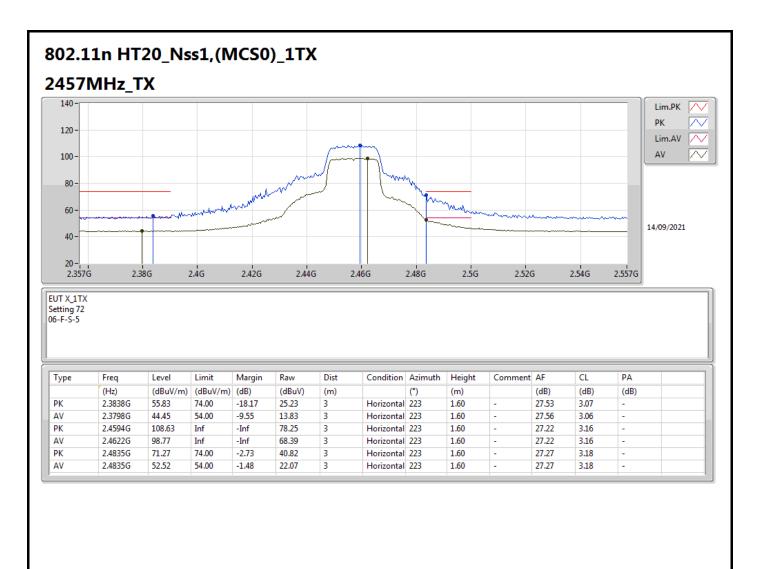




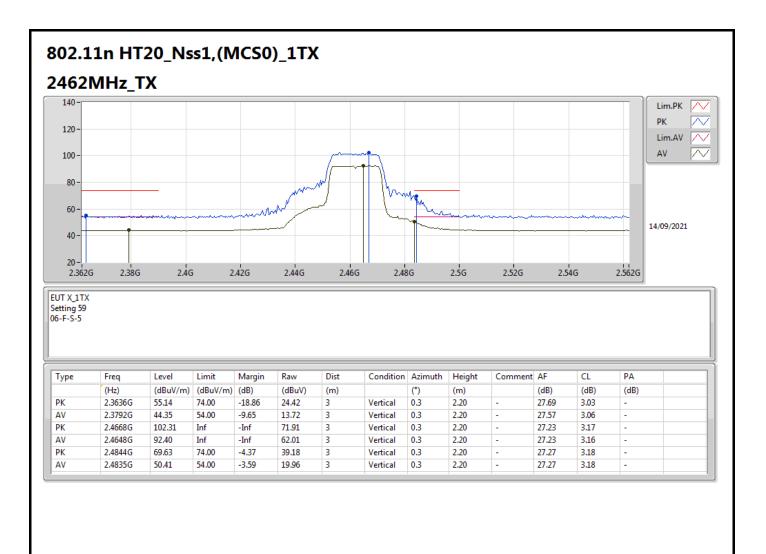




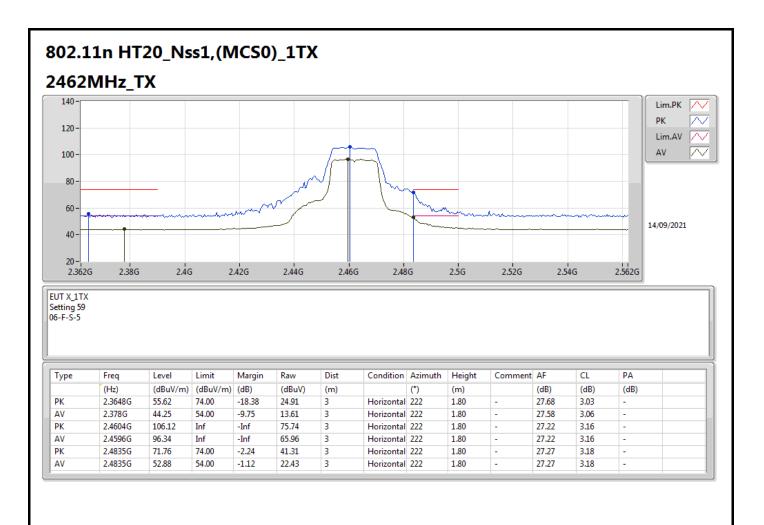




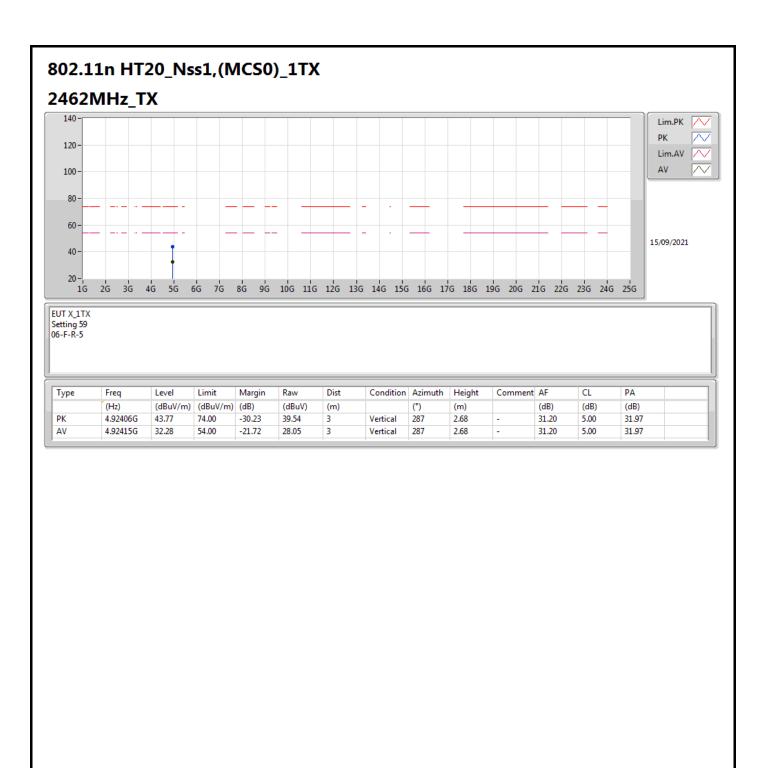




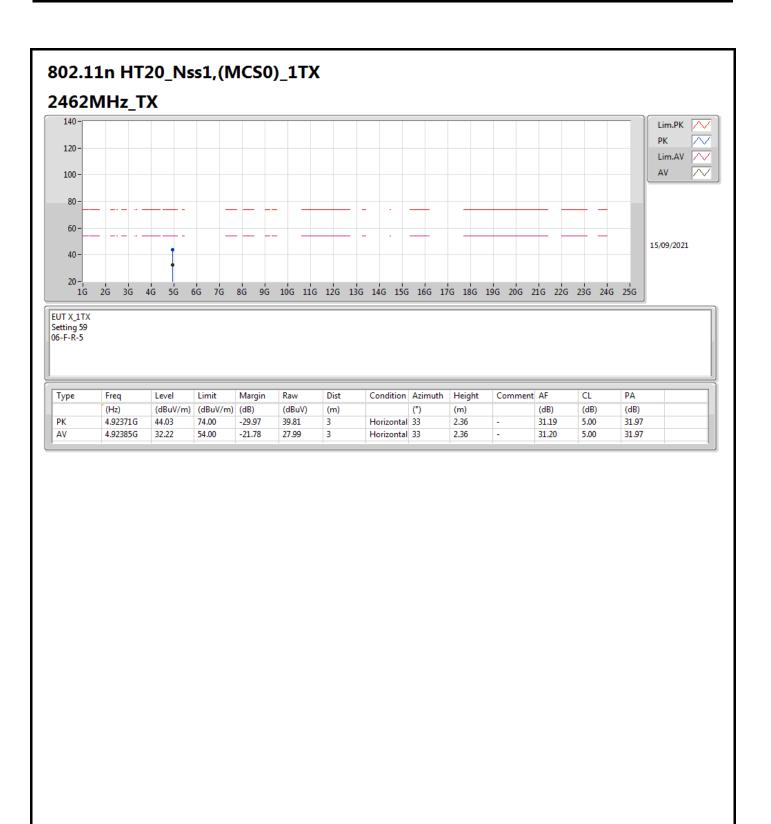










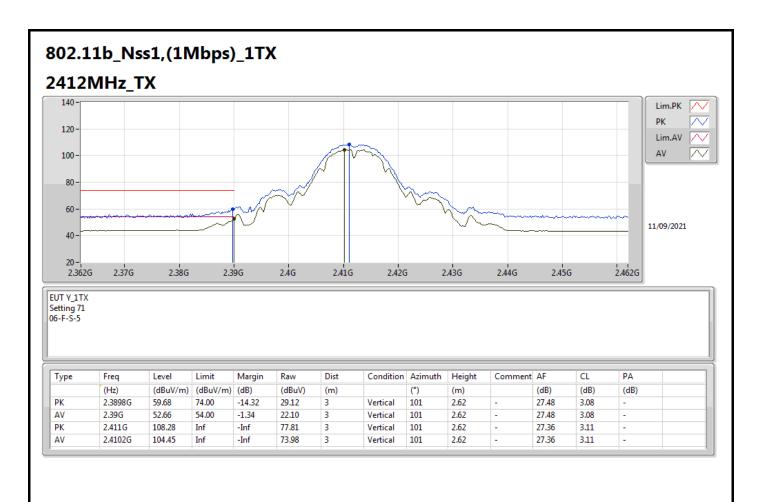




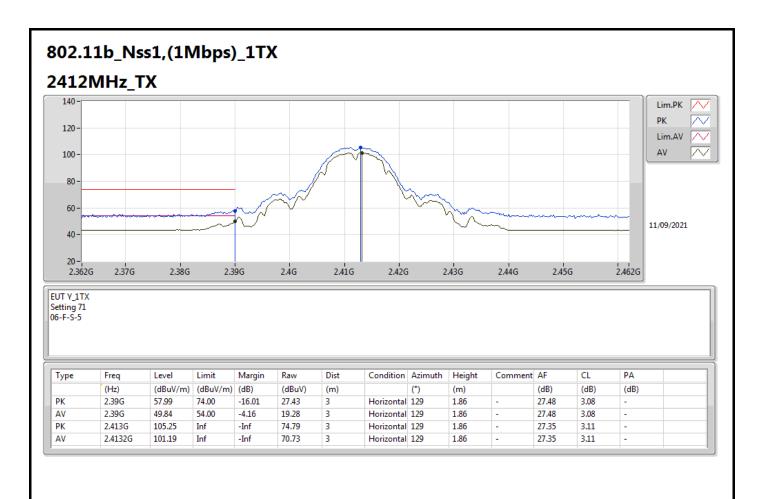
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-				-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	2.4835G	52.99	54.00	-1.01	3	Vertical	100	2.28	-

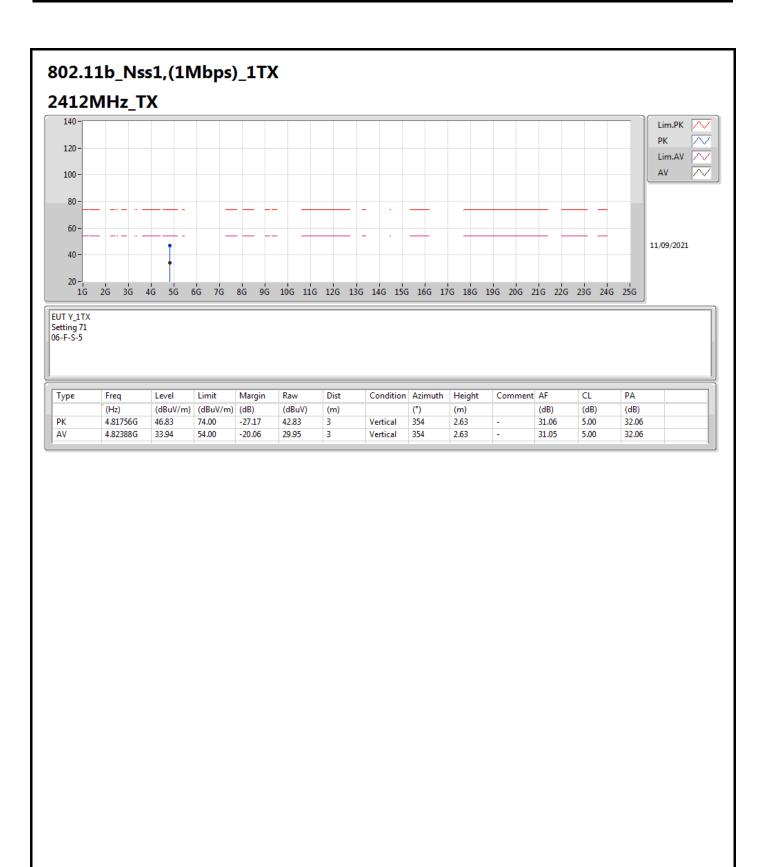




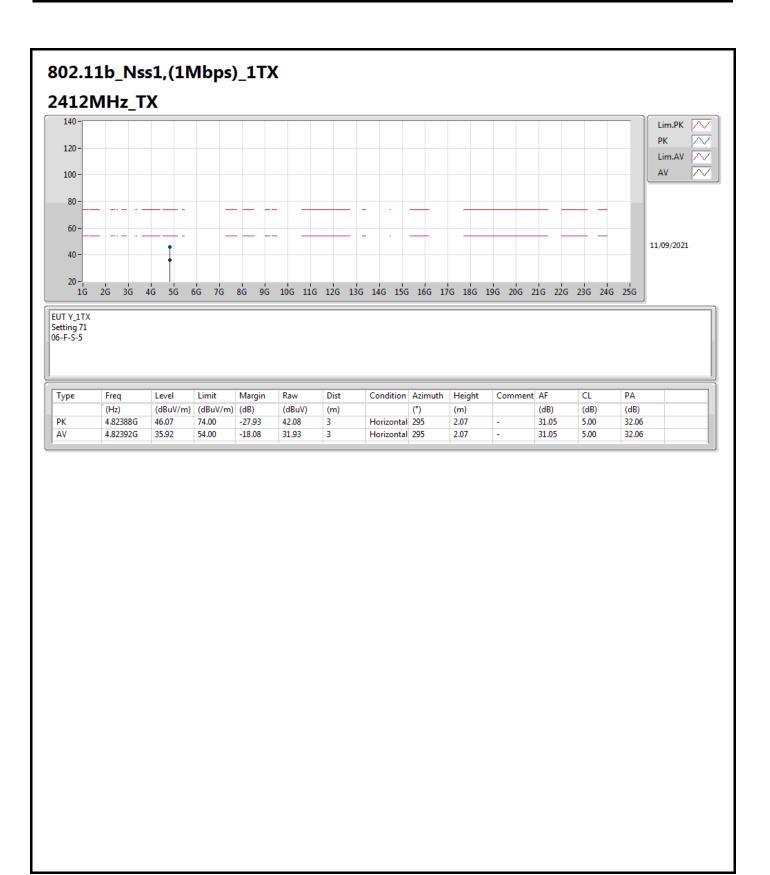




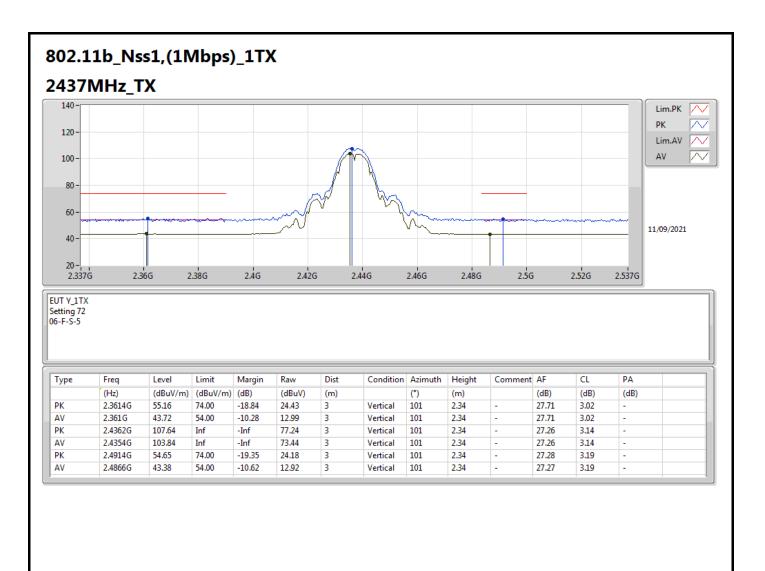




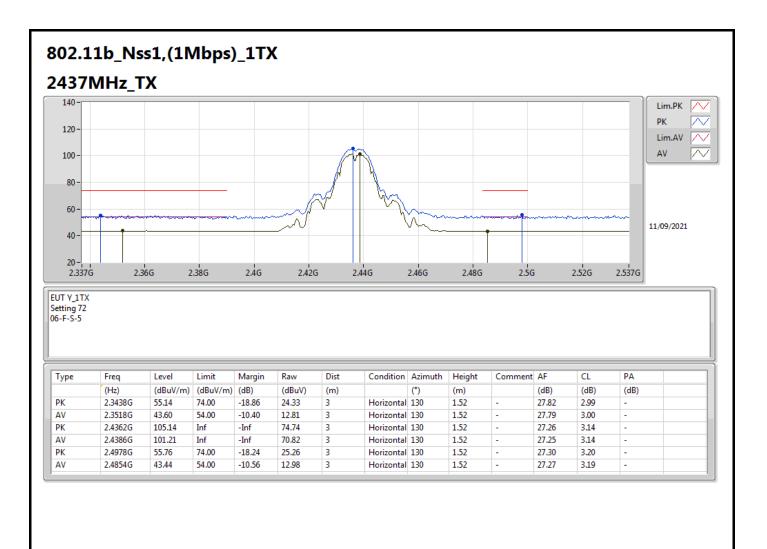




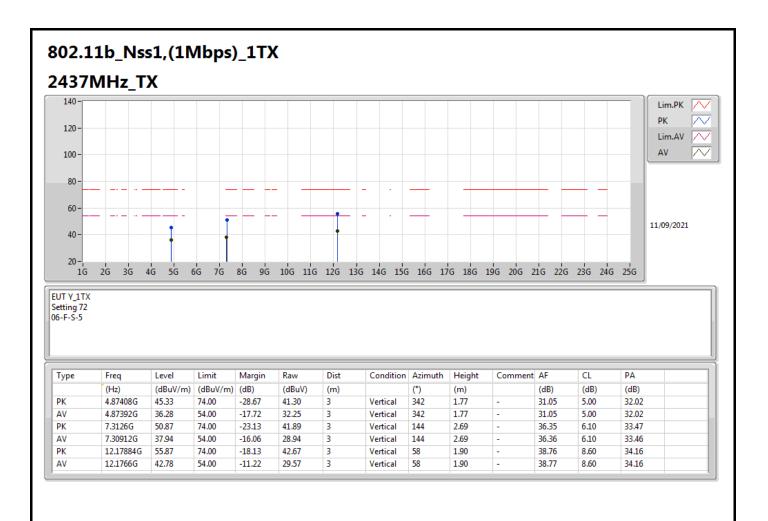




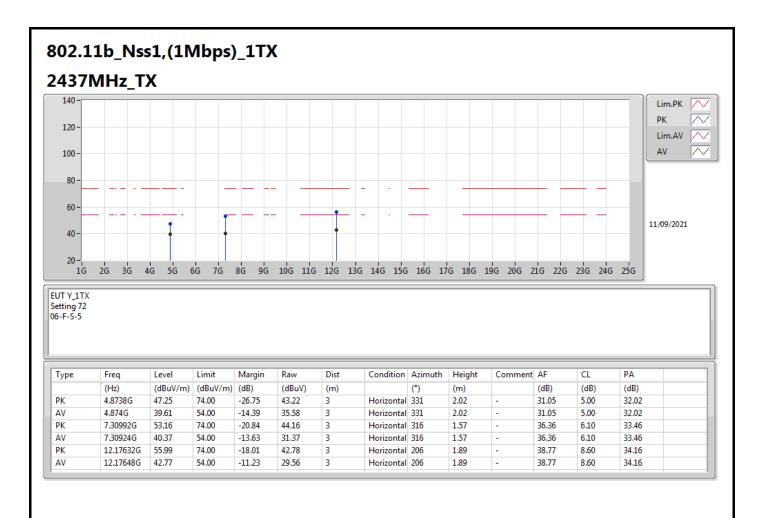




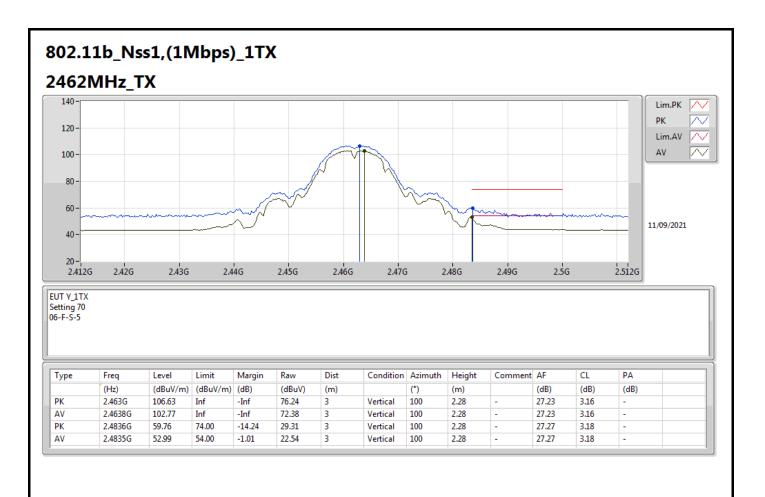




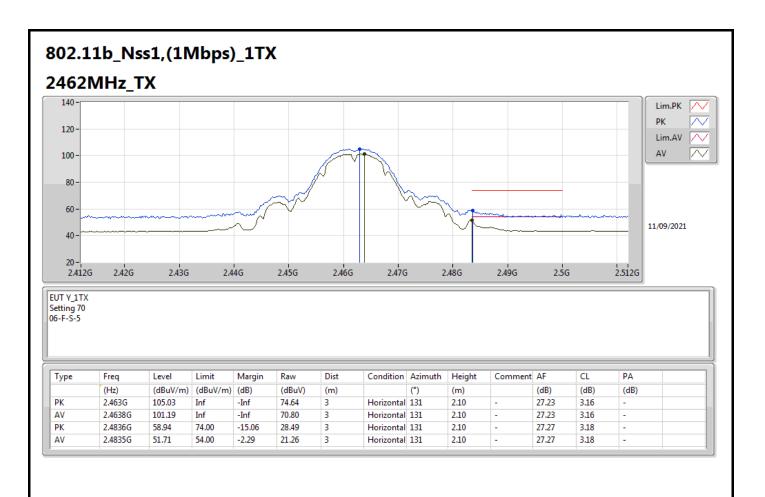




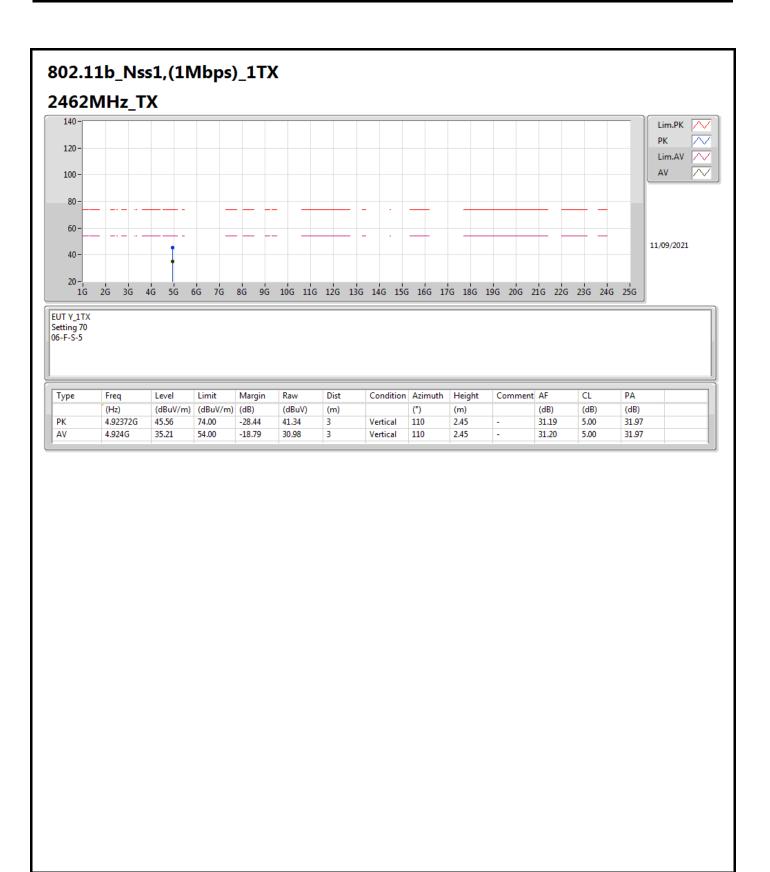




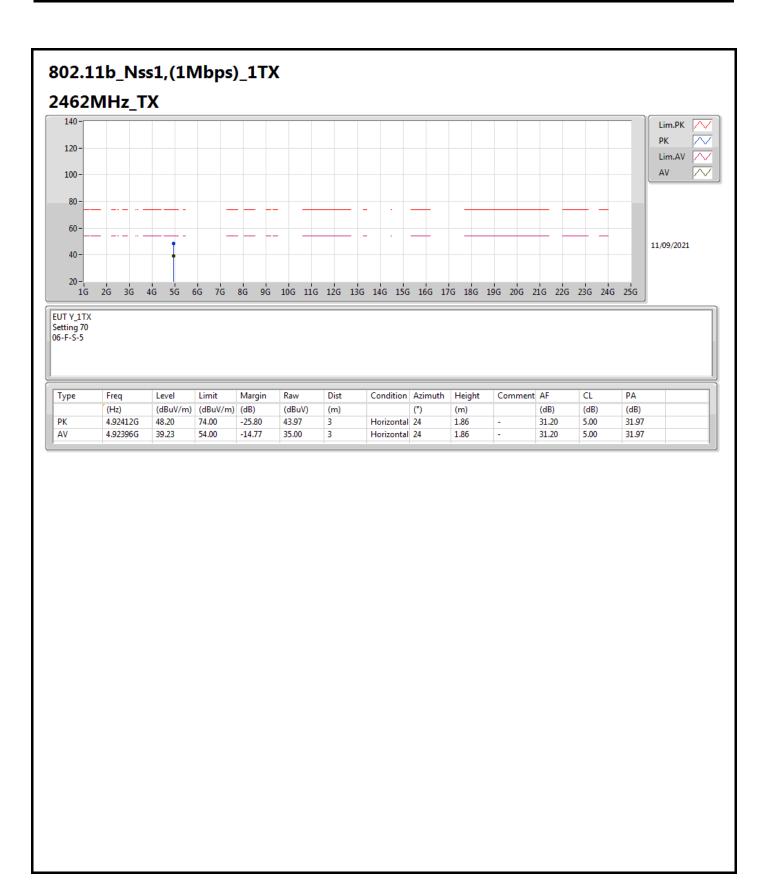




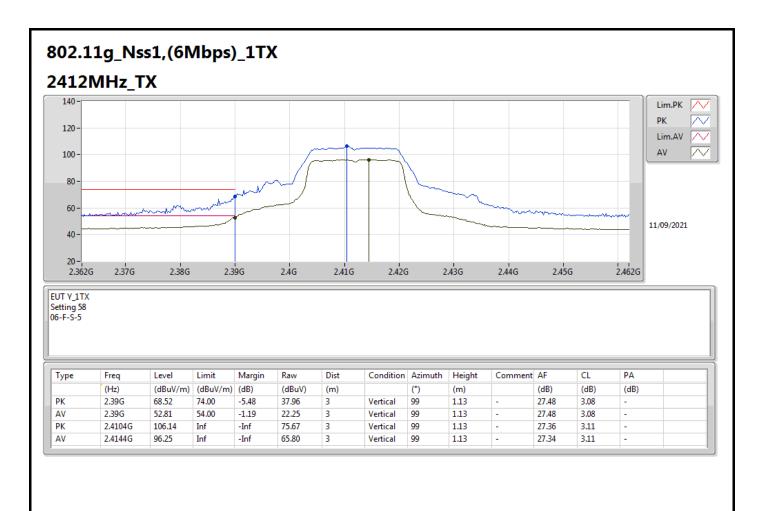




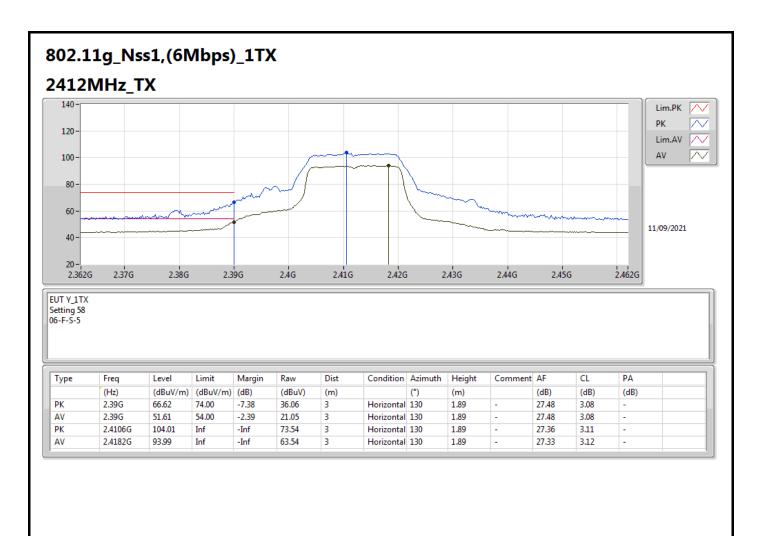




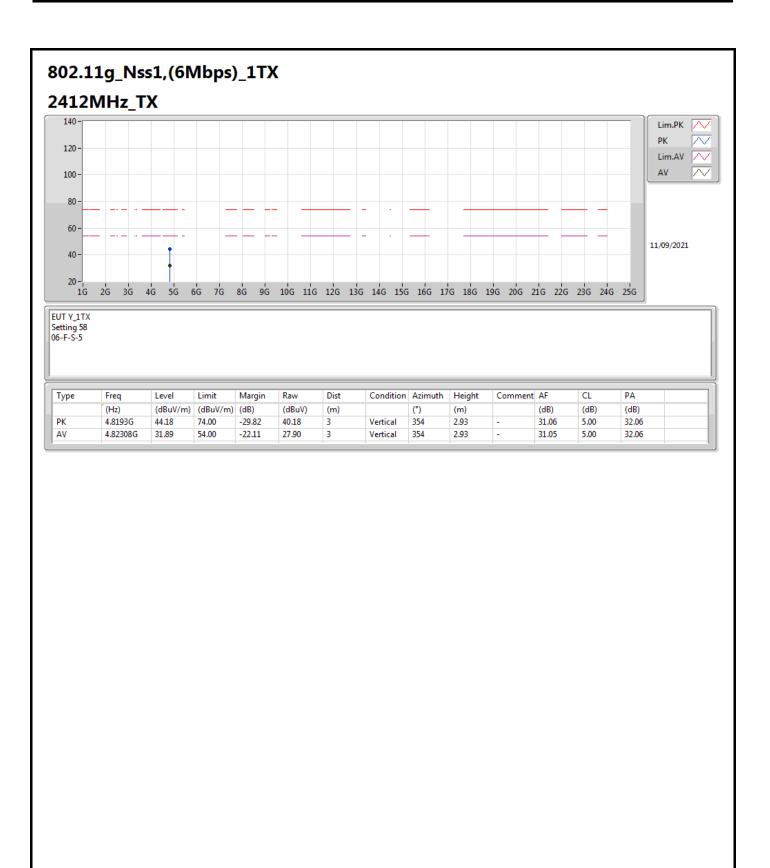




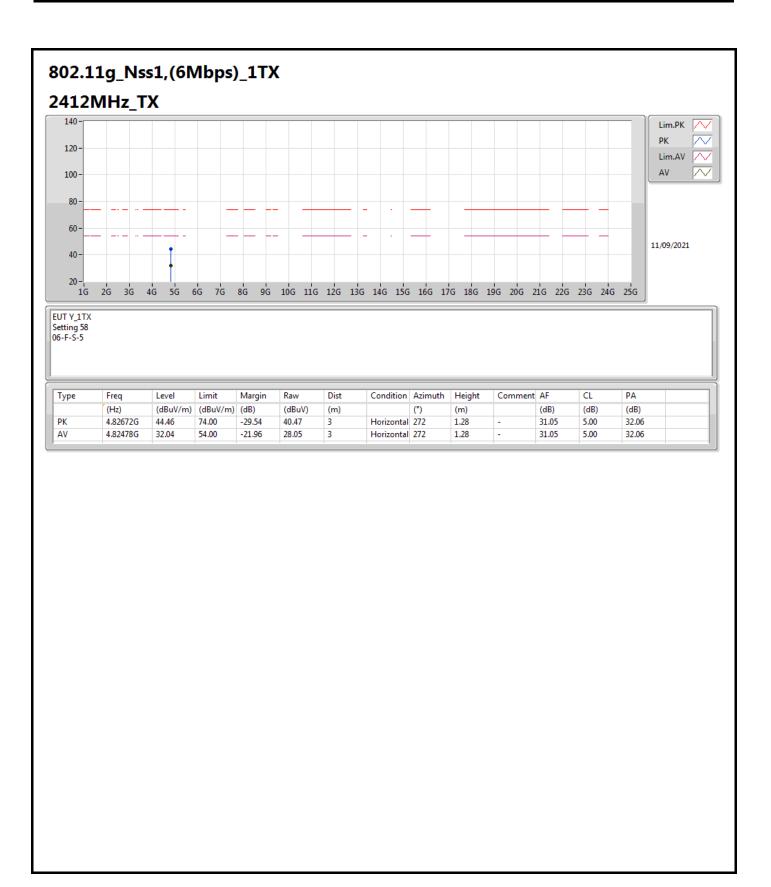




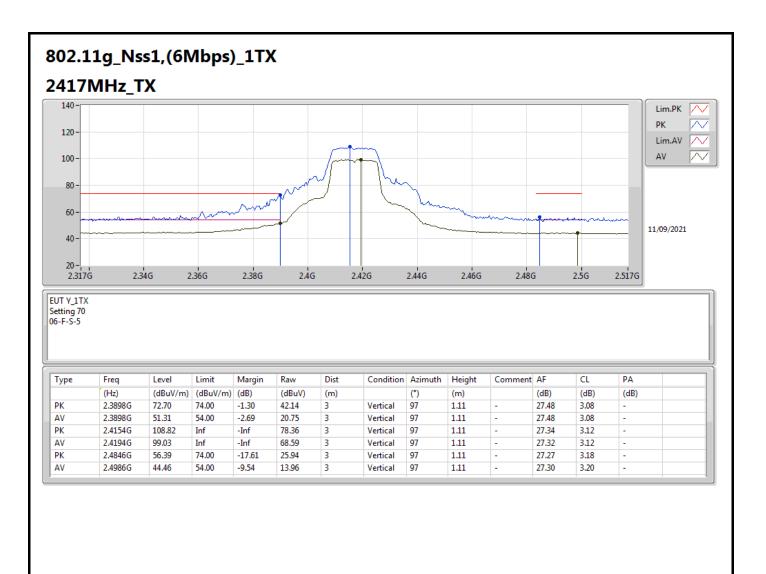




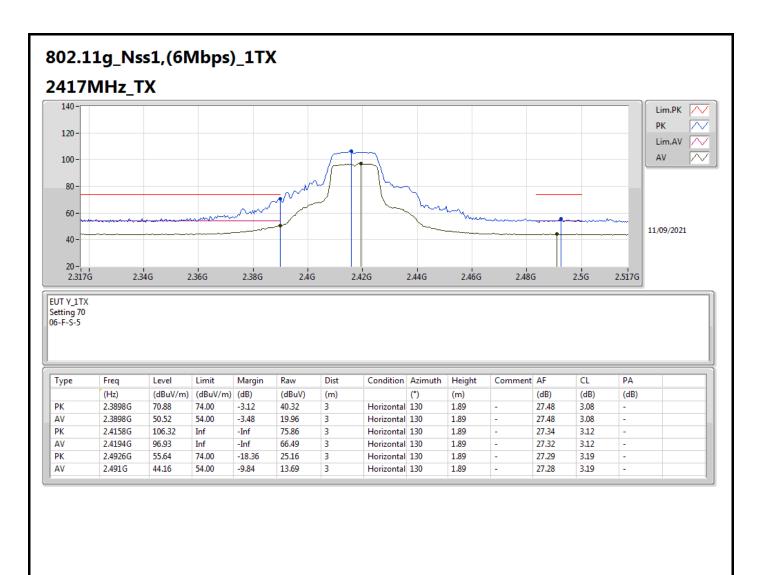




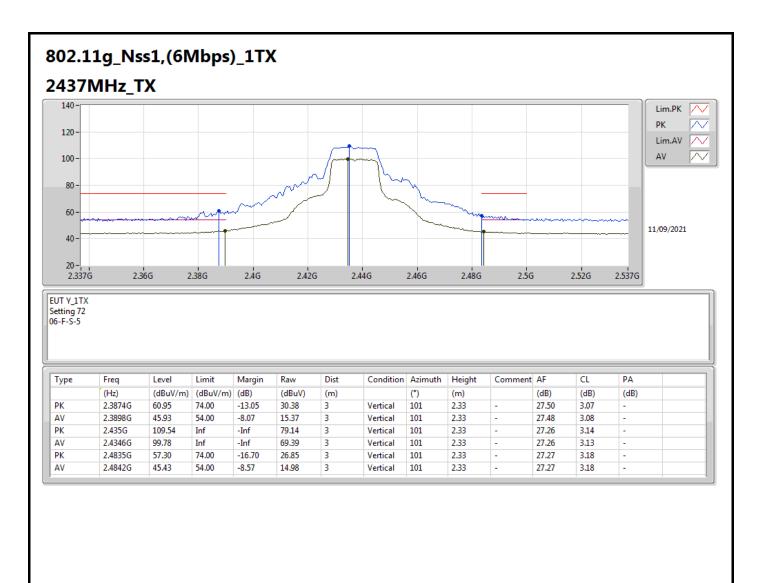




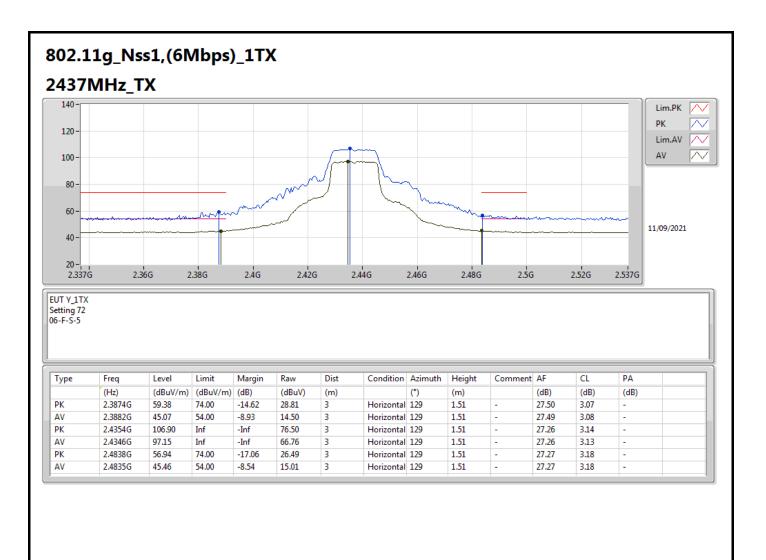




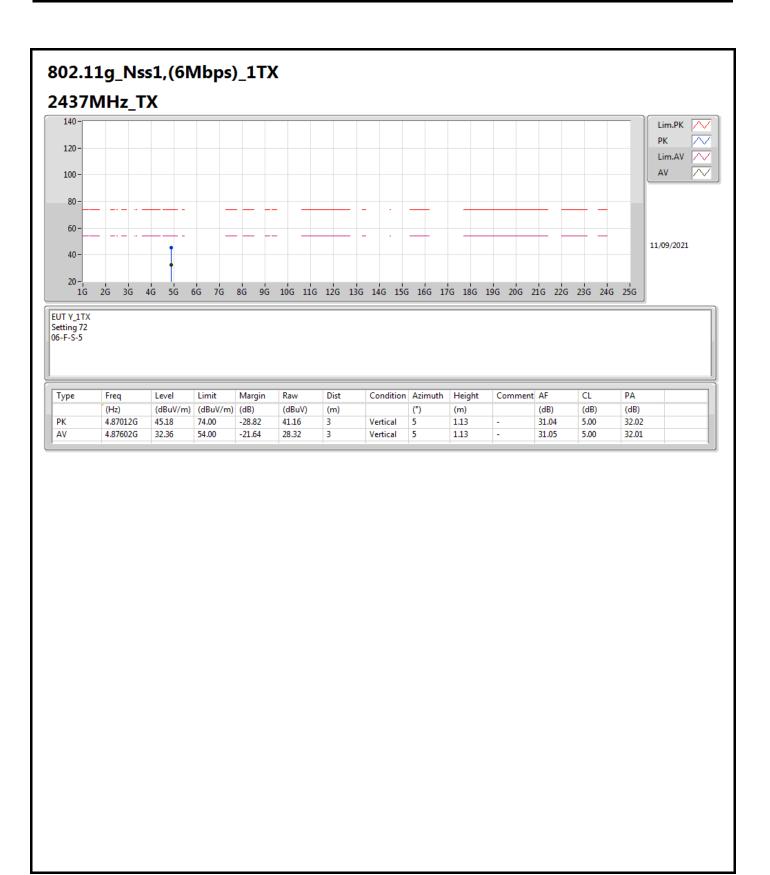




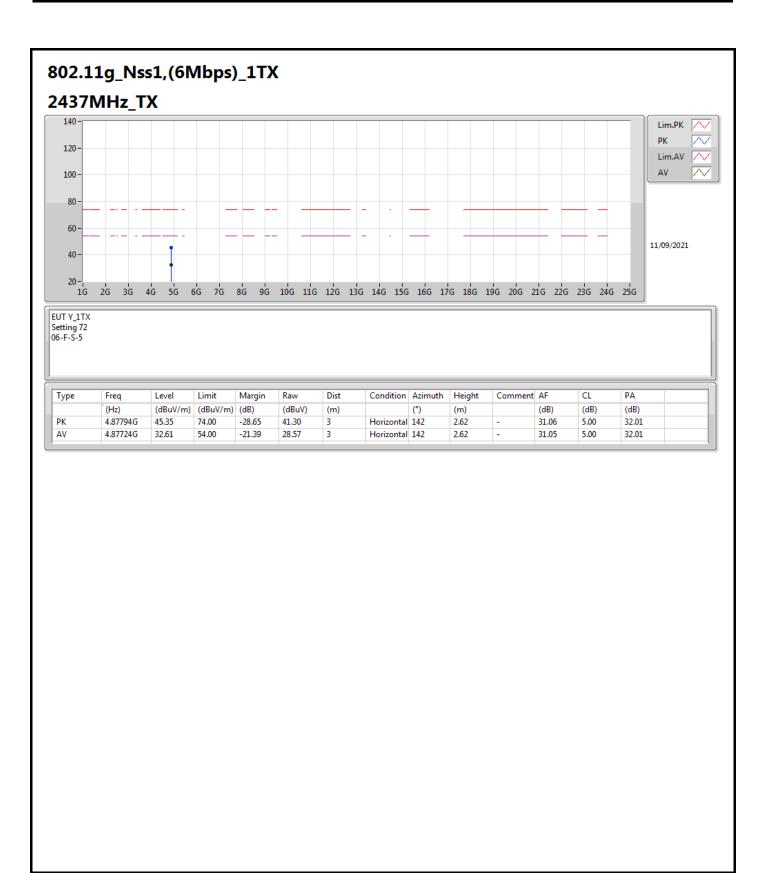




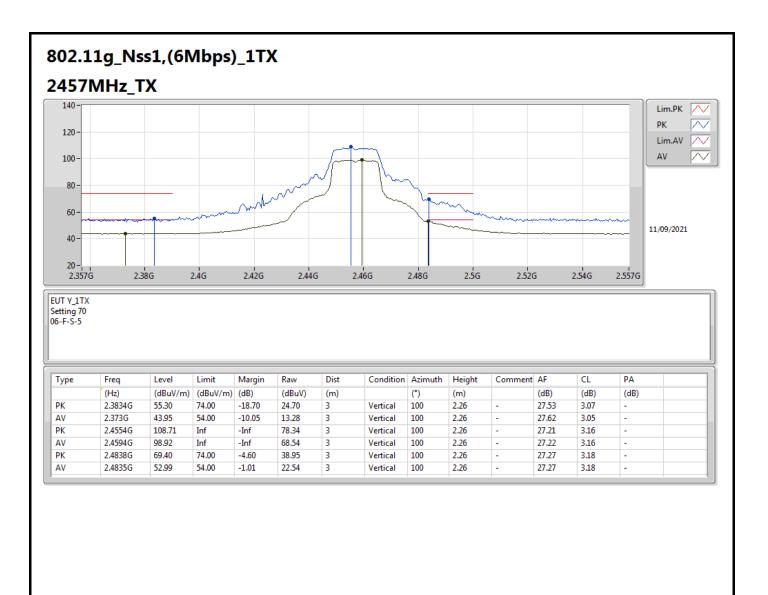




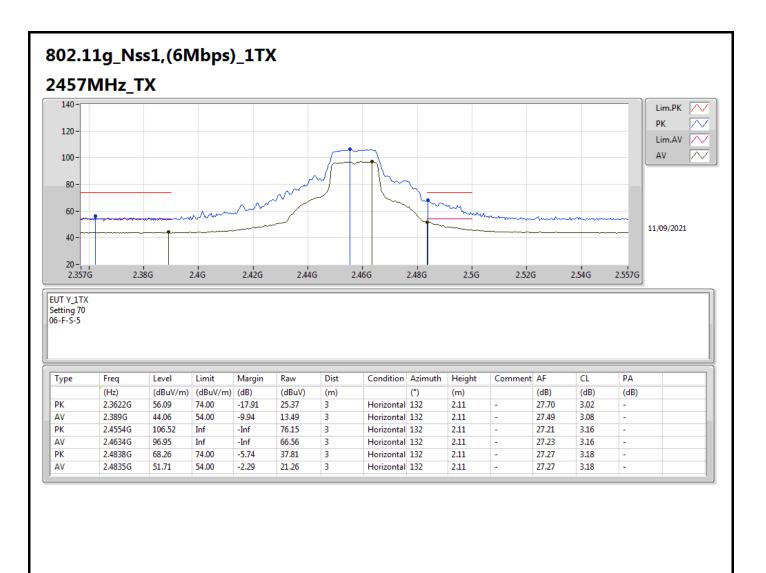




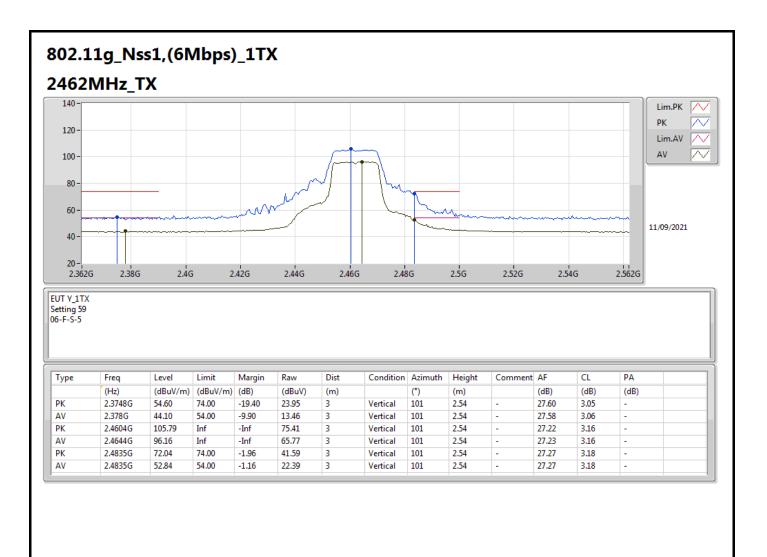




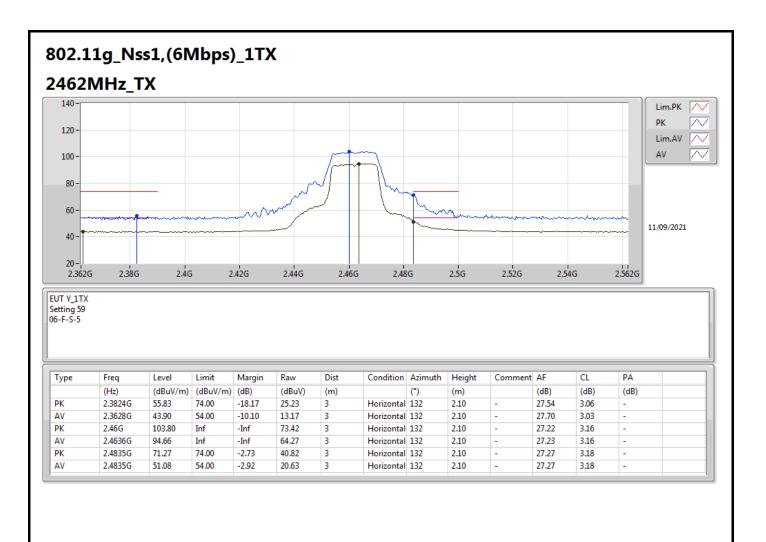




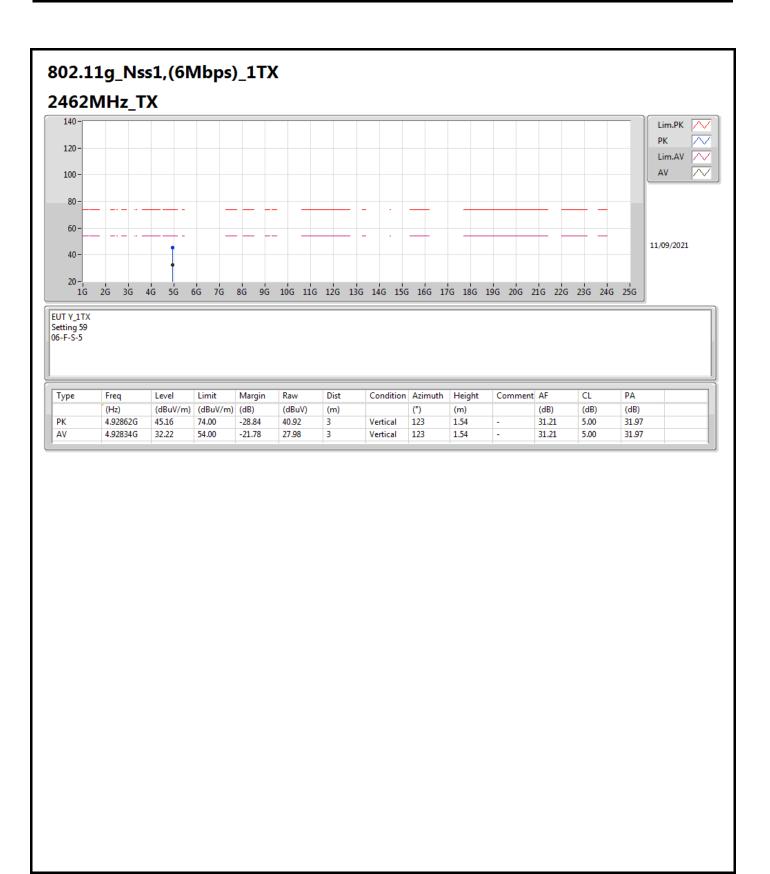




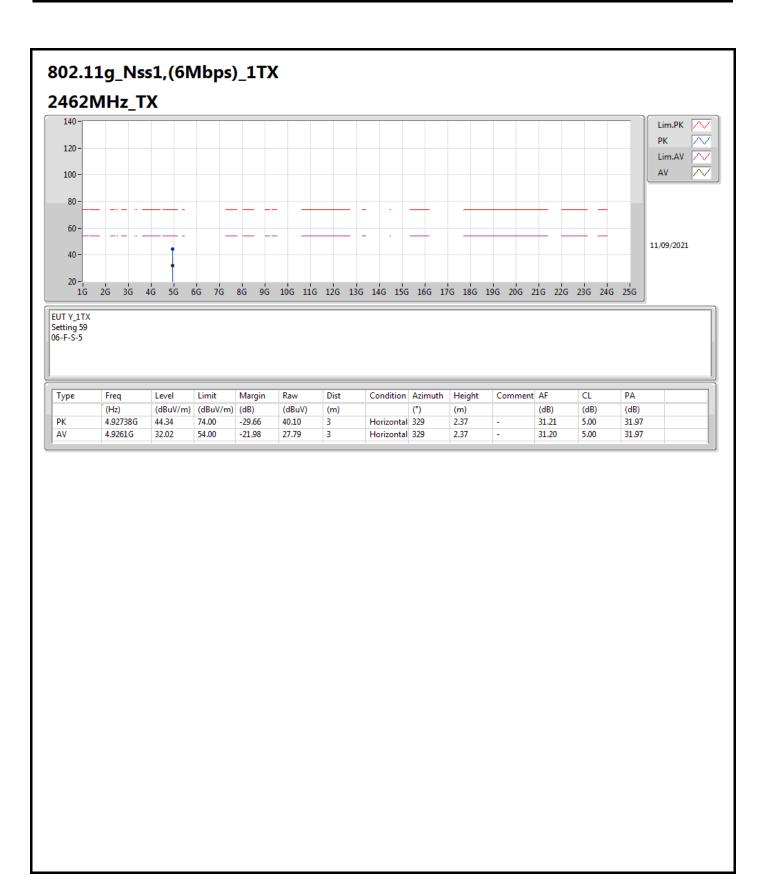




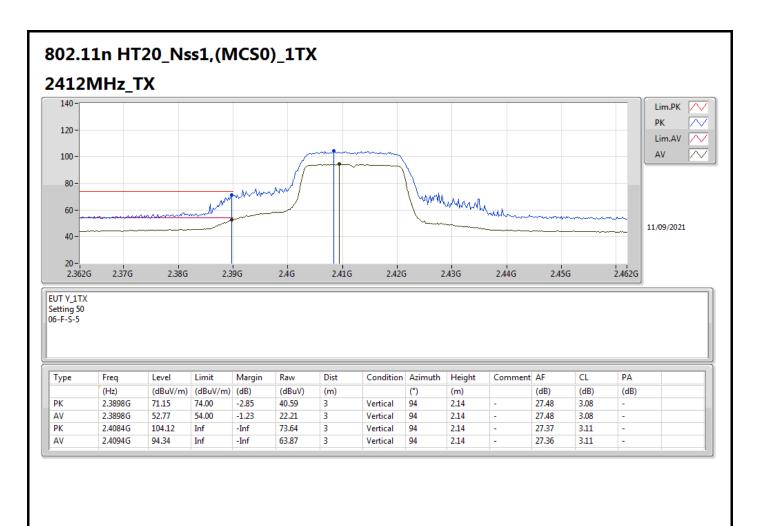




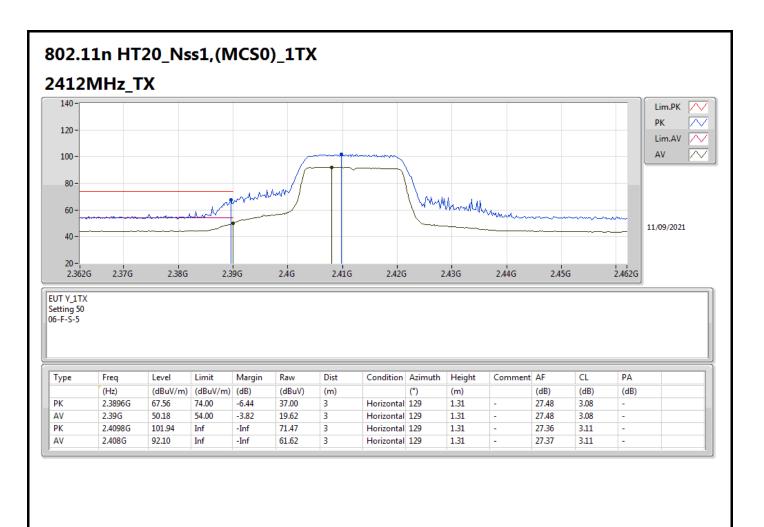




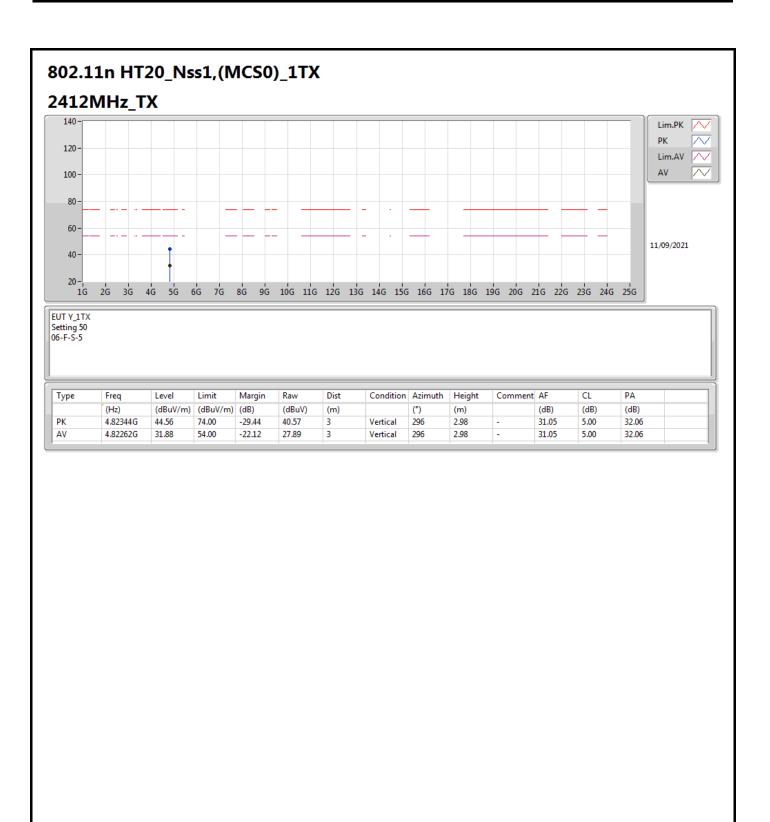




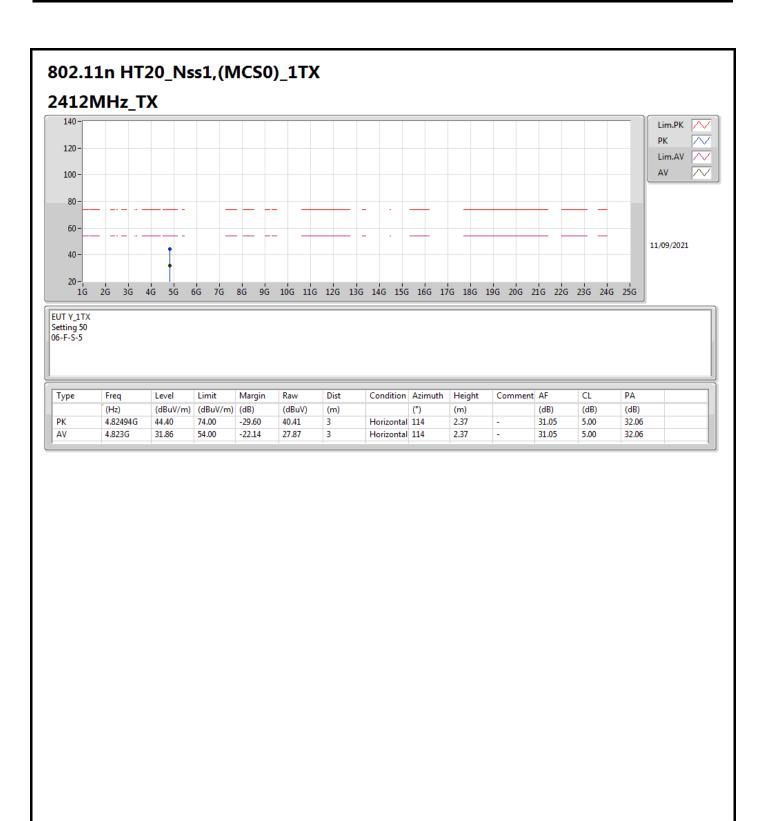




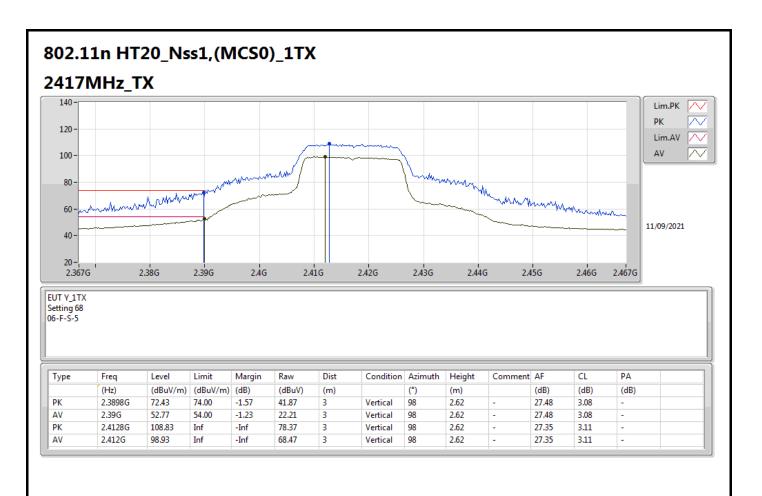




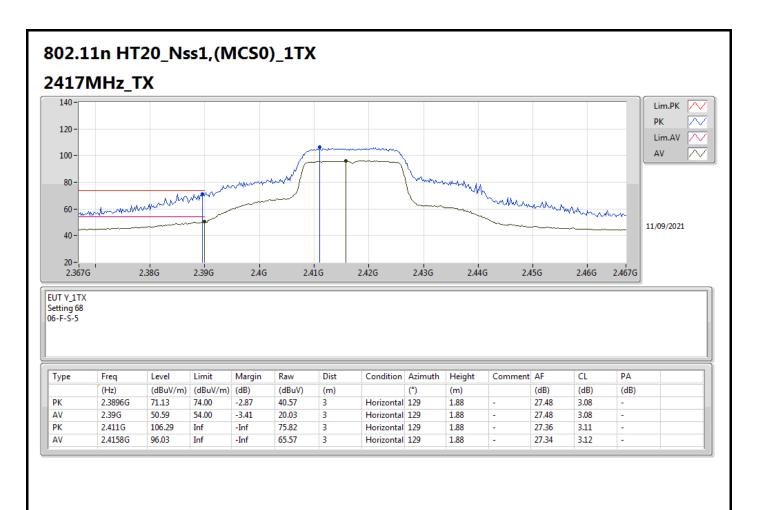




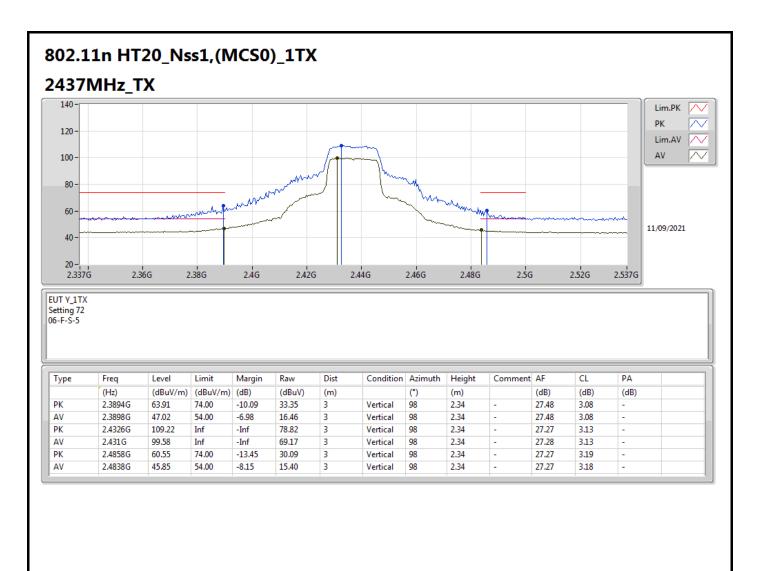




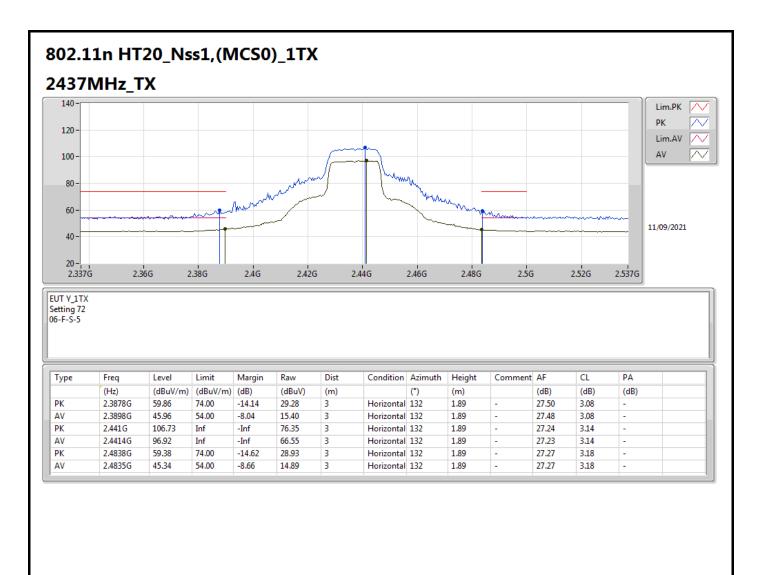




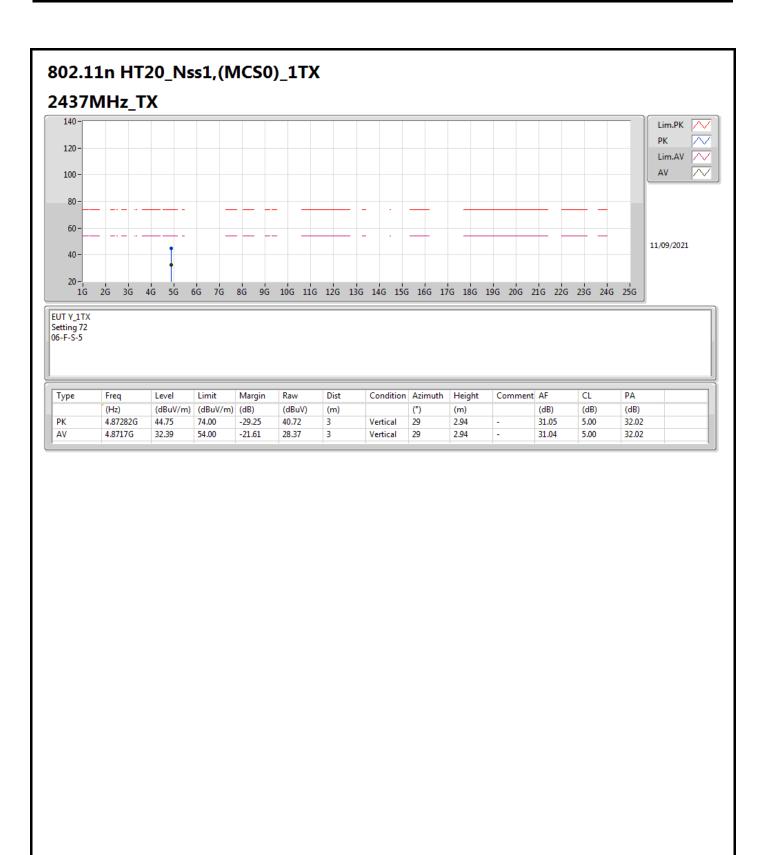




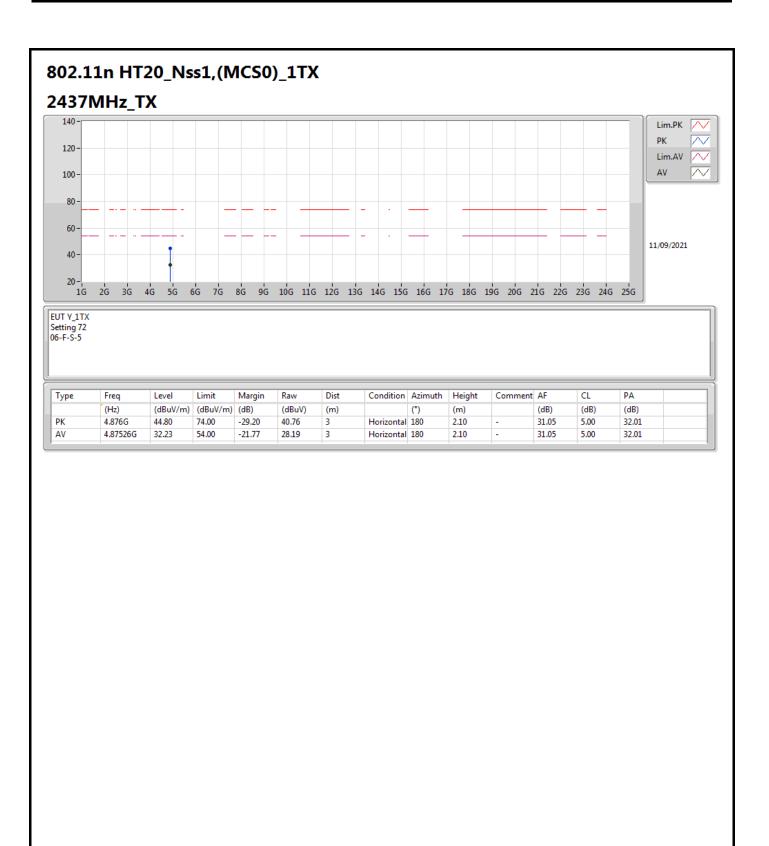




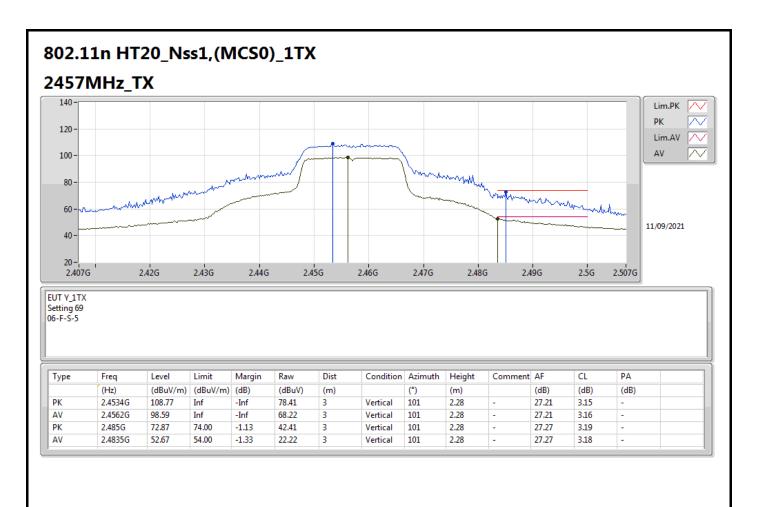




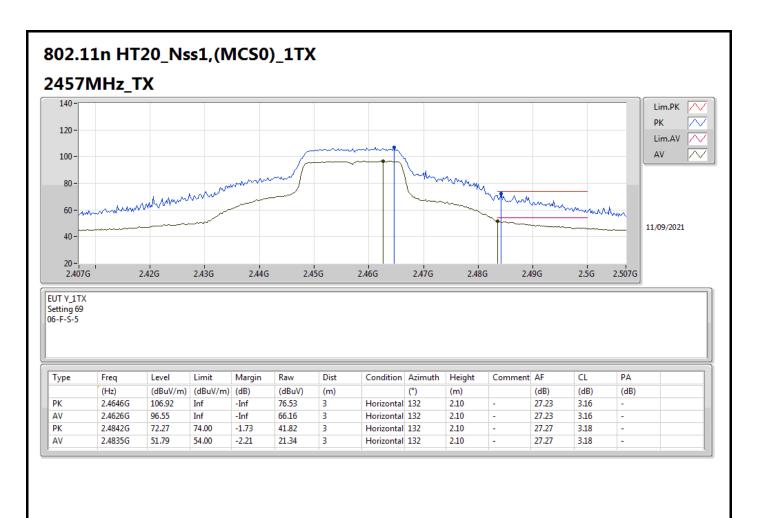




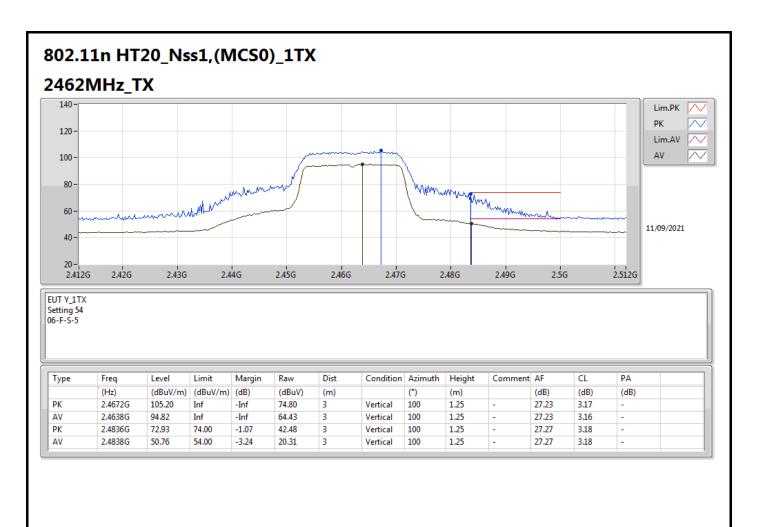




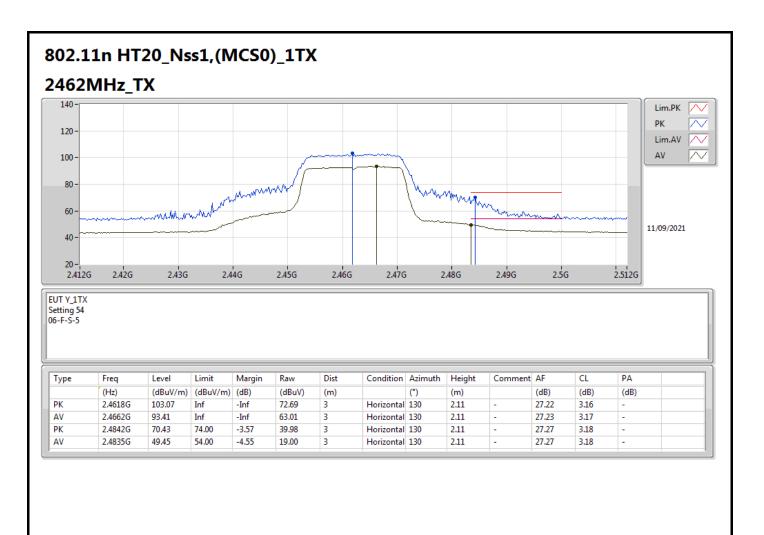




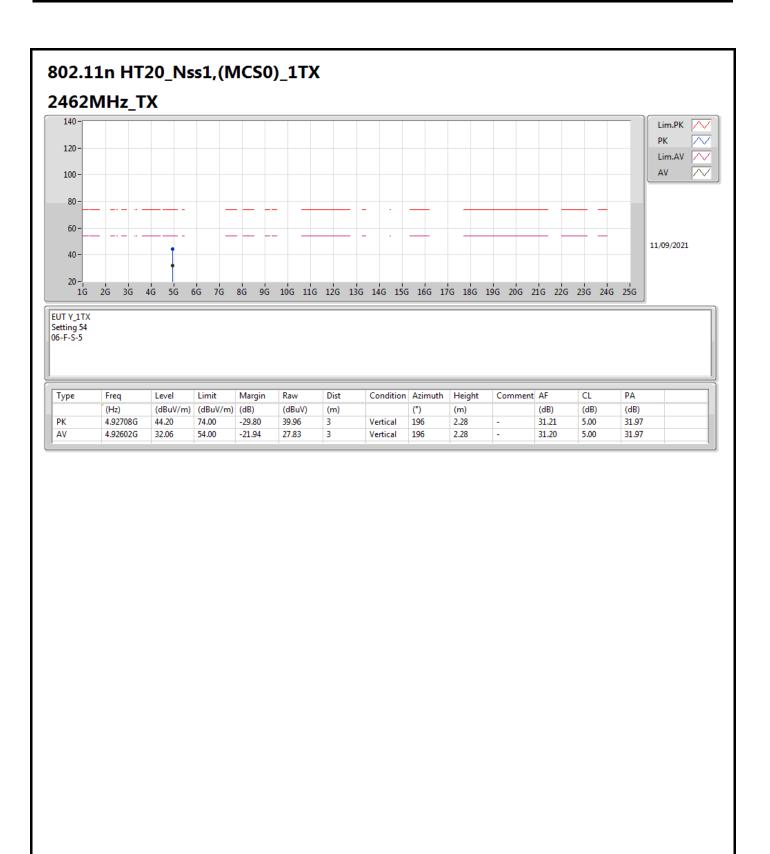




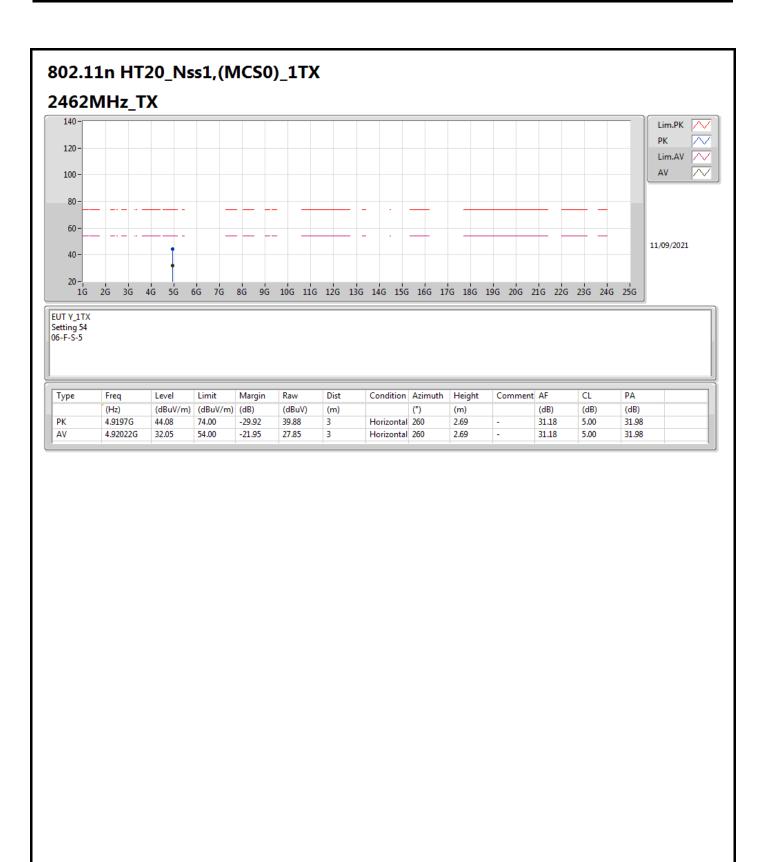














Summary							
Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	
Mode 3	Pass	AV	1.9955G	35.64	54.00	-18.36	Vertical



