

Report No.: FR032025AA



FCC RADIO TEST REPORT

FCC ID

: HDCSR820AC

Equipment

: Wireless Voice Gateway

Brand Name

ADIRAN

Model Name

: SR820ac

Applicant

: ADTRAN

901 Explorer BlvdHuntsville, AL 35806United States

Manufacturer

: COMPAL BROADBAND NETWORKS,INC.

13F-1, No.1, Taiyuan 1st St., Zhubei City, Hsinchu

County 30288, Taiwan, R.O.C.

Standard

: 47 CFR FCC Part 15.247

The product was received on Mar. 27, 2020, and testing was started from Apr. 08, 2020 and completed on Apr. 28, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

TEL: 886-3-656-9065

FAX: 886-3-656-9085

Report Template No.: CB-A10_10 Ver1.0

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: May 13, 2020

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Photographs of EUT v01

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History of this test report

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Version	Description	Issued Date
01	Initial issue of report	May 11, 2020
02	Revising section 2.6 test setup diagram	May 13, 2020
	01	01 Initial issue of report

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Summary of Test Result

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

Declaration of Conformity:

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

Comments and Explanations:

- 1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
- 2. 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: Viola Huang

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1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40)	2422-2452	3-9 [7]

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Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	11b	20	3
2.4-2.4835GHz	11g	20	3
2.4-2.4835GHz	11n HT20	20	3
2.4-2.4835GHz	11n HT40	40	3

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.
- VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- BWch is the nominal channel bandwidth.

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1.1.2 Antenna Information

Ant	Po	ort	Brand	Madel Name	Antonno Tyro	Connector	Gain	(dBi)
Ant.	2.4GHz	5GHz	Brand	Model Name	Antenna Type	Connector	2.4GHz	5GHz
1	1	1	YAGEO	ANTA0ZZ14022WLAN4	Dipole Antenna	I-PEX	4.6	4.6
2	2	3	YAGEO	ANTA0ZZ14022WLAN3	Dipole Antenna	I-PEX	4.4	5.6
3	3	4	YAGEO	ANTA0ZZ14022WLAN2	Dipole Antenna	I-PEX	3.2	5.7
4	-	2	YAGEO	ANTA0ZZ14021WLAN1	Dipole Antenna	I-PEX	-	5.7

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Note: The above information was declared by manufacturer.

For 2.4GHz function:

For IEEE 802.11b/g/n mode (3TX/3RX):

Port 1, Port 2 and Port 3 can be used as transmitting/receiving antenna.

Port 1, Port 2 and Port 3 could transmit/receive simultaneously.

For 5GHz function:

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

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

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

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.996	0.02	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.972	0.12	2.065m	1k
802.11n HT20	0.987	0.06	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT40	0.974	0.11	2.433m	1k

N	oto:	

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

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter				
Beamforming Function With beamforming Without beamforming					
Function	☑ Point-to-multipoint ☐ Point-to-point				
Test Software Version	QRCT(Version3.0.187.0)				
Serial Number	1418568200053				

Note: The above information was declared by manufacturer.

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1.2 Applicable Standards

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

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- 47 CFR FCC Part 15
- ANSI C63.10-2013
- FCC KDB 558074 D01 v05r02
- FCC KDB 662911 D01 v02r01
- FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

	Testing Location					
	HWA YA ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)					
		TEL	:	886-3-327-3456 FAX : 886-3-327-0973		
\boxtimes	JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.		
		TEL	:	886-3-656-9065 FAX : 886-3-656-9085		

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH03-CB	Owen Hsu	23.5~25.5°C / 53~55%	Apr. 09, 2020~Apr. 15, 2020
Radiated Below 1GHz	03CH06-CB	Stim Sung	21.5~22.4°C / 55~57%	Apr. 27, 2020
Radiated Above 1GHz	03CH03-CB	Stim Sung	24.2~24.5°C / 52~53%	Apr. 08, 2020~Apr. 09, 2020
AC Conduction	CO01-CB	Beck Wu	23~24°C / 55~60%	Apr. 28, 2020

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Power Density Measurement	2.4 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%

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2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11b_(1Mbps)_3TX	-
2412MHz	22
2437MHz	22.5
2462MHz	21.5
802.11g_(6Mbps)_3TX	-
2412MHz	18
2417MHz	20
2437MHz	22
2457MHz	19.5
2462MHz	18
802.11n HT20_(MCS0)_3TX	-
2412MHz	18
2417MHz	20
2437MHz	22
2457MHz	19.5
2462MHz	17.5
802.11n HT40_(MCS0)_3TX	-
2422MHz	14
2427MHz	16.5
2437MHz	18
2452MHz	15.5

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2.2 The Worst Case Measurement Configuration

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

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

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

The Worst Case Mode for Following Conformance Tests		
Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation		
Operating Mode		
1	WLAN 2.4GHz + WLAN 5GHz	
Refer to Sporton Test Report No.: FA032025 for Co-location RF Exposure Evaluation.		

Note: The EUT can only be used at Y axis position.

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2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories			
Equipment Name	Brand Holder	Model Name	Rating
Adapter	ChenZhou Frecom Electronics Co., Ltd.	F42L1-120350SPAU	INPUT: 100-240V ~ 50/60Hz, 1.4A OUTPUT: 12V, 3.5A
		Others	
RJ-45 cable, non-shielded, 1.8m			

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2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
Α	Flash disk3.0	Transcend	JetFlash-700	N/A
В	LAN NB	DELL	E6430	N/A
С	2.4G NB	DELL	E6430	N/A
D	5G NB	DELL	E6430	N/A
Е	Terminal System	MOTOROLA	BSR2000	N/A
F	Terminal System NB	Acer	MS2308	N/A
G	Phone 1	SAMPO	HT-B 907WL	N/A
Н	Phone 2	SAMPO	HT-B 907WL	N/A

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For Radiated (below 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
Α	2.4G NB	Apple	Mac Book	N/A
В	5G NB	Apple	Mac Book	N/A
С	LAN NB	DELL	E4300	N/A
D	Terminal system NB	Acer	MS2308	N/A
Е	Phone 1	SAMPO	HT-B 907WL	N/A
F	Phone 2	SAMPO	HT-B 907WL	N/A
G	Terminal system	MOTOROLA	BSR2000	N/A
Н	Flash disk3.0	Silicon Power	B06	N/A

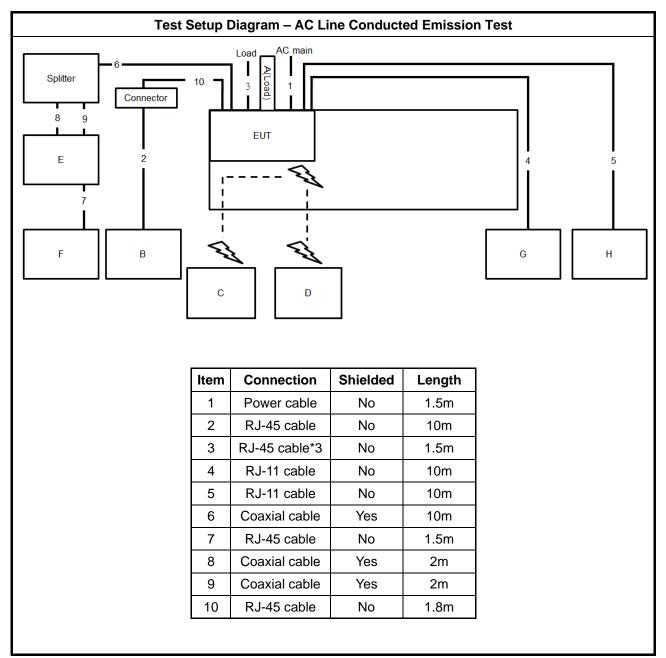
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For Radiated (above 1GHz) and RF Conducted:

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

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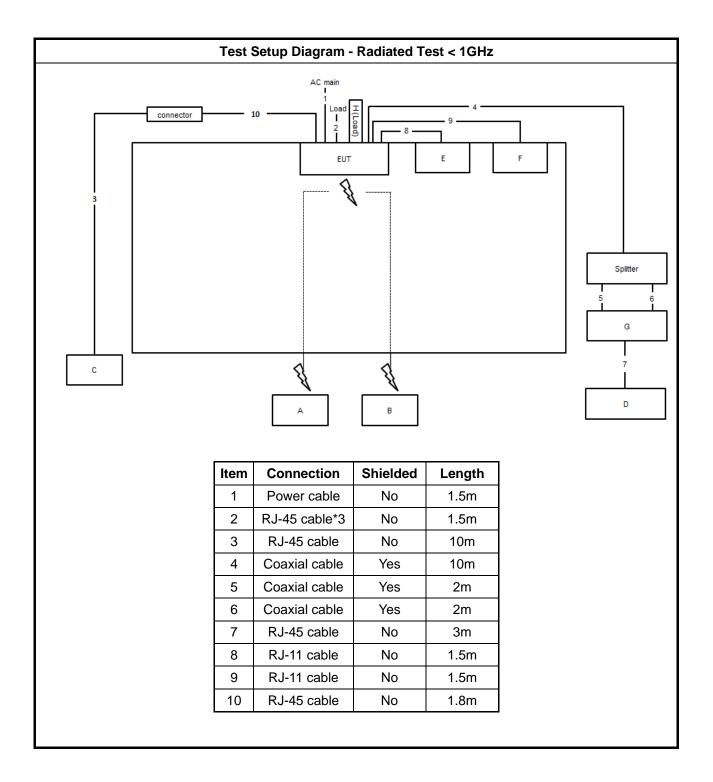
2.6 Test Setup Diagram



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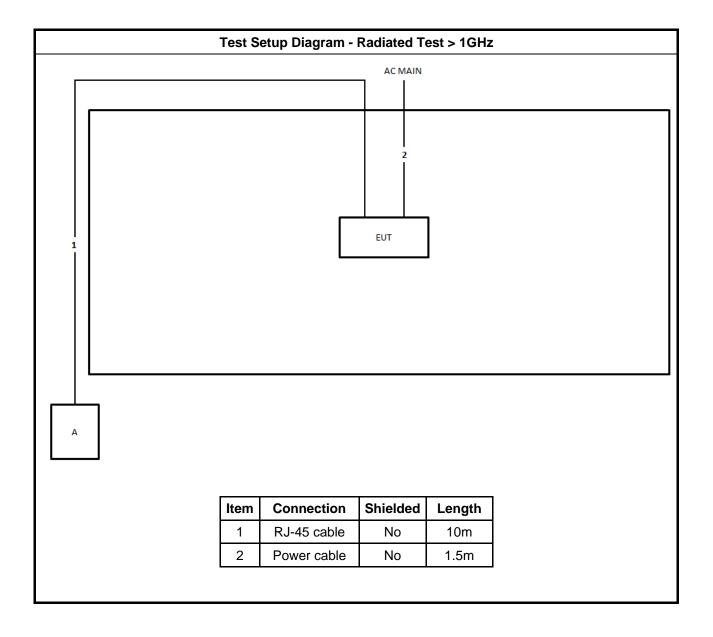
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3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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3.1.2 Measuring Instruments

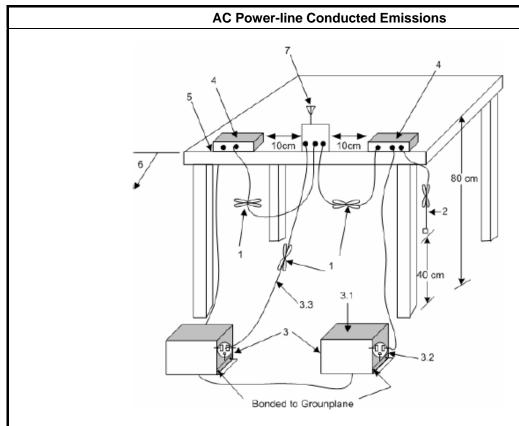
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

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3.1.4 Test Setup



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

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

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

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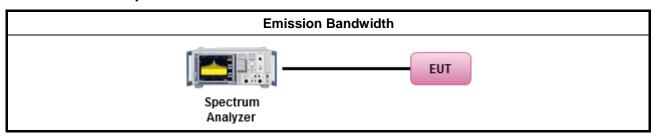
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit

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

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

3.3.2 Measuring Instruments

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

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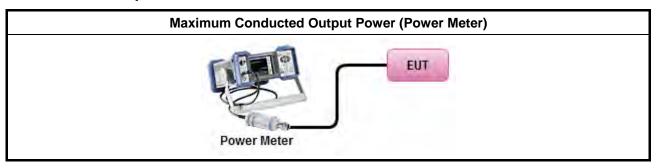
3.3.3 Test Procedures

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

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3.3.4 Test Setup



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3.3.5 Test Result of Maximum Conducted Output Power

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

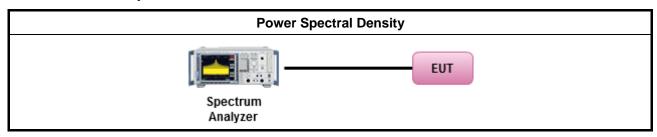
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

		Test Method
•	outp the c conc of th	power spectral density procedures that the same method as used to determine the conducted to power. If maximum peak conducted output power was measured to demonstrate compliance to utput power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum ucted output power was measured to demonstrate compliance to the output power limit, then one 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 8.4 & C63.10 clause 11.10 Method Max. PSD.
•	For	onducted measurement.
	•	f The EUT supports multiple transmit chains using options given below:
		Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
		Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
		Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

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3.4.4 Test Setup



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3.4.5 Test Result of Power Spectral Density

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

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

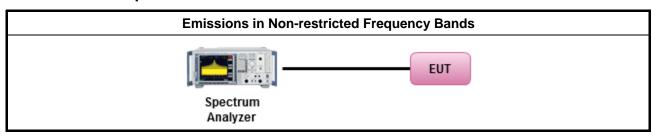
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

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3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit									
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure 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

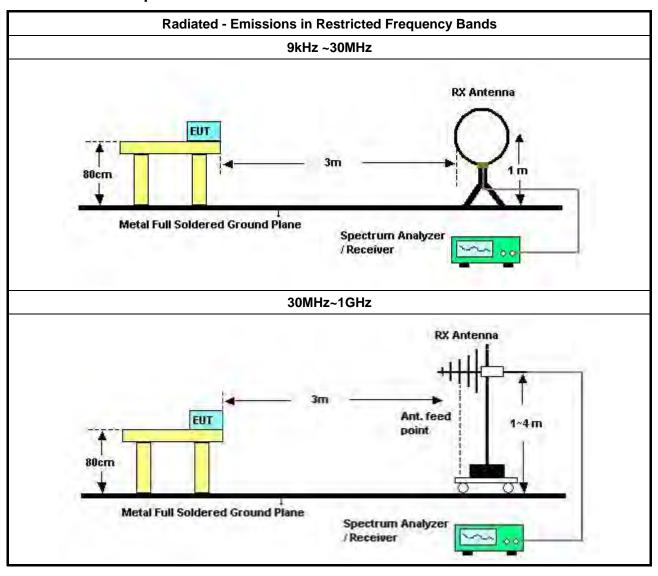
		Test Method							
•	The	average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].							
•		Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.							
•	For	the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

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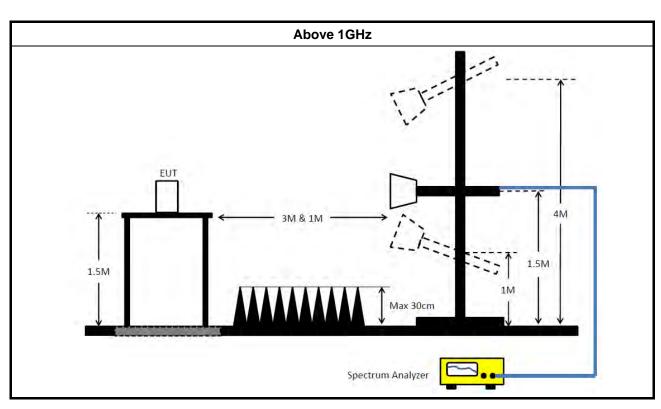
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3.6.4 Test Setup



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3.6.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = 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 10 harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

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4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Feb. 26, 2020	Feb. 25, 2021	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-1 6-2	04083	150kHz ~ 100MHz	Dec. 25, 2019	Dec. 24, 2020	Conduction (CO01-CB)
LISN	Schwarzbeck NSLK 8127 8127647		9kHz ~ 30MHz	Feb. 25, 2020	Feb. 24, 2021	Conduction (CO01-CB)	
COND Cable	OND Cable Woken Cable Low cable-CO01		9kHz ~ 30MHz	May 21, 2019	May 20, 2020	Conduction (CO01-CB)	
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	op Antenna Teseq HLA 6120 24155		9kHz - 30 MHz	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH06-CB)	
Bilog Antenna with 6 dB attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Aug. 03, 2019	Aug. 02, 2020	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	May 07, 2019	May 06, 2020	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 21, 2019	Oct. 20, 2020	Radiation (03CH06-CB)
EMI Test Receiver			826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH06-CB)
RF Cable-low	HUBER+SUH NER	RG402	Low Cable-05+24	30MHz~1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH06-CB)
Horn Antenna	ETS · Lindgren	3115	6821	750MHz~18GHz	Jan. 20, 2020	Jan. 19, 2021	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 27, 2019	Jun. 26, 2020	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Dec. 19, 2019	Dec.18, 2020	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 19, 2019	Jun. 18, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+27	1GHz ~ 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-27	1GHz ~ 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH03-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Nov. 01, 2019	Oct. 31, 2020	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Aug. 13, 2019	Aug. 12, 2020	Conducted (TH03-CB)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Aug. 13, 2019	Aug. 12, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)

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

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

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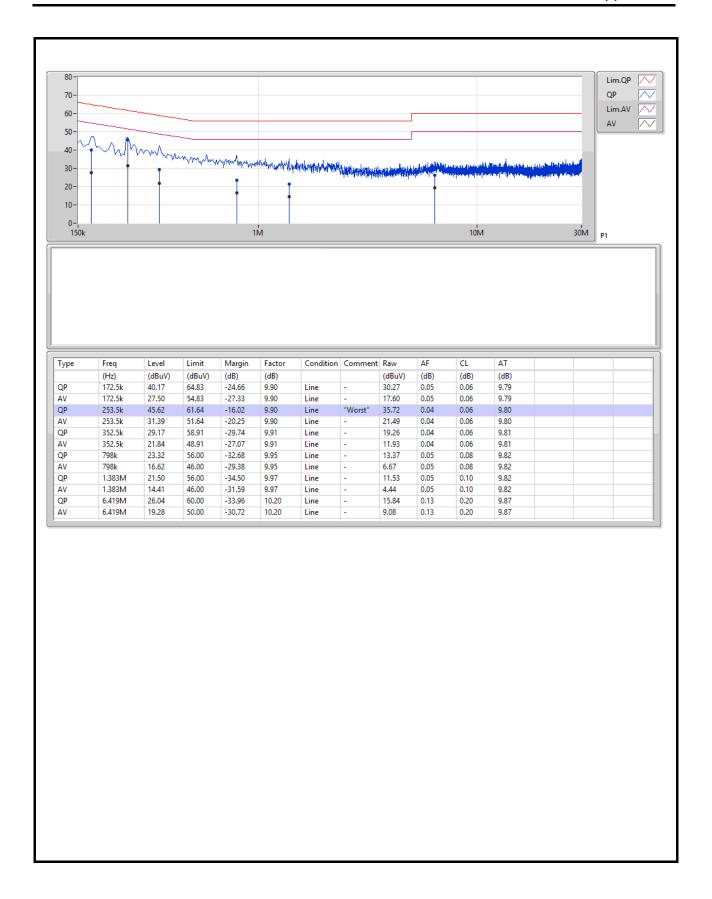
AC Power Port Conducted Emission Result

Appendix A

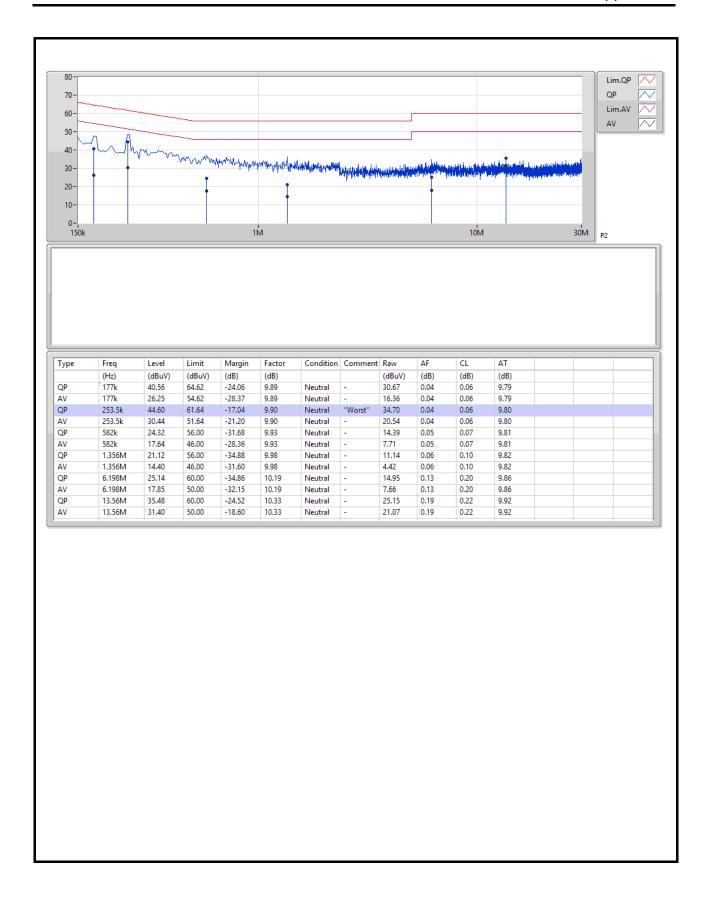
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Condition
			(Hz)	(dBuV)	(dBuV)	(dB)	(dB)	
Mode 1	Pass	QP	253.5k	45.62	61.64	-16.02	9.90	Line











Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_(1Mbps)_3TX	9.525M	13.993M	14M0G1D	7.075M	13.068M
802.11g_(6Mbps)_3TX	16.3M	20.665M	20M7D1D	15.775M	16.367M
802.11n HT20_(MCS0)_3TX	17.5M	19.615M	19M6D1D	15.65M	17.566M
802.11n HT40_(MCS0)_3TX	35M	35.832M	35M8D1D	30.1M	35.682M

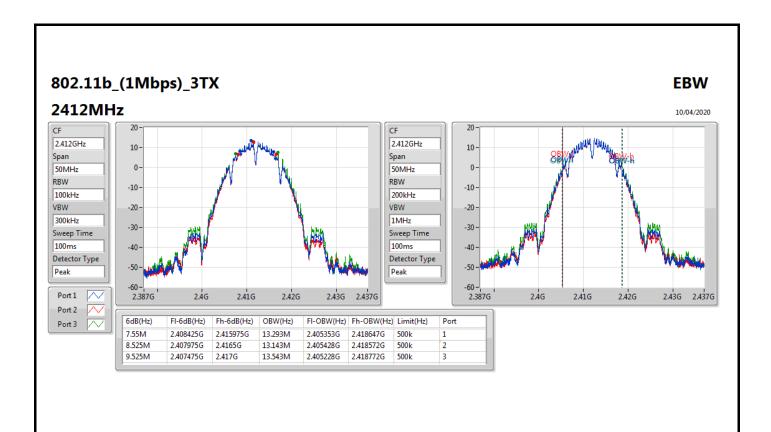
Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth; Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth;

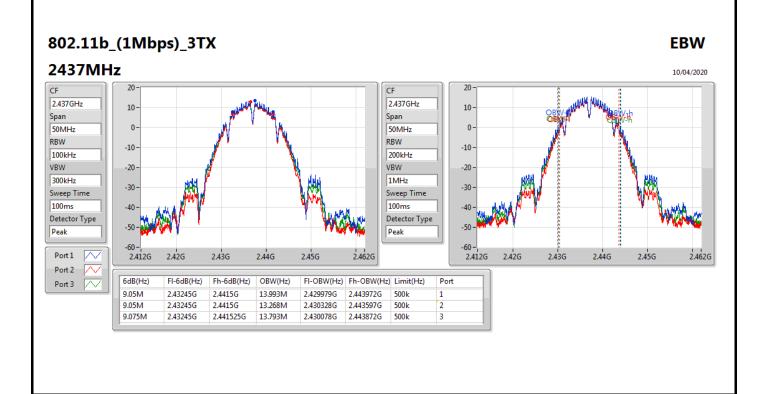


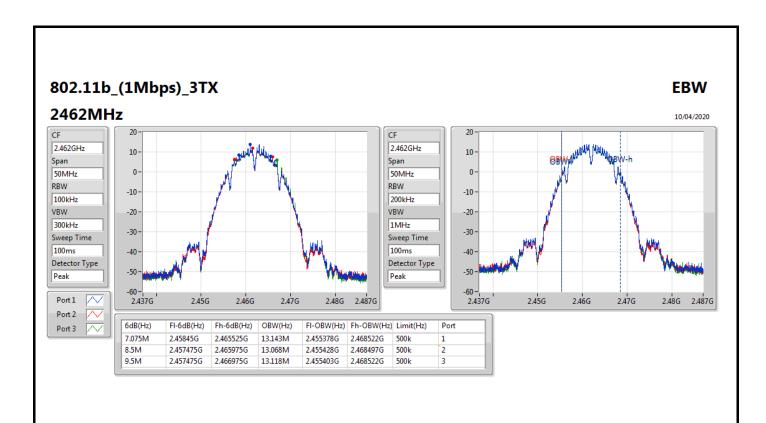
Result

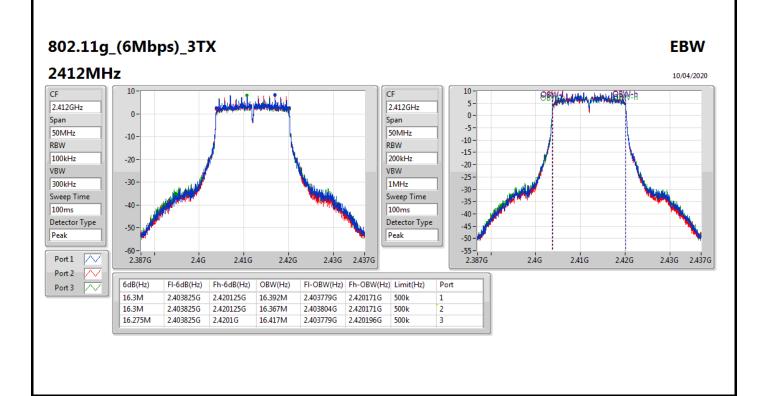
Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW	Port 3-N dB	Port 3-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11b_(1Mbps)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	7.55M	13.293M	8.525M	13.143M	9.525M	13.543M
2437MHz	Pass	500k	9.05M	13.993M	9.05M	13.268M	9.075M	13.793M
2462MHz	Pass	500k	7.075M	13.143M	8.5M	13.068M	9.5M	13.118M
802.11g_(6Mbps)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	16.3M	16.392M	16.3M	16.367M	16.275M	16.417M
2437MHz	Pass	500k	16M	18.591M	15.775M	17.116M	16.275M	20.665M
2462MHz	Pass	500k	16.275M	16.392M	16.025M	16.392M	16.025M	16.392M
802.11n HT20_(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	16.525M	17.566M	15.65M	17.566M	16.85M	17.566M
2437MHz	Pass	500k	16.525M	18.416M	17.5M	17.941M	17.25M	19.615M
2462MHz	Pass	500k	16.55M	17.591M	16.5M	17.566M	16.55M	17.566M
802.11n HT40_(MCS0)_3TX	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	33.75M	35.732M	34.95M	35.682M	35M	35.782M
2437MHz	Pass	500k	30.1M	35.782M	33.75M	35.732M	32.55M	35.832M
2452MHz	Pass	500k	35M	35.732M	33.85M	35.732M	33.85M	35.782M

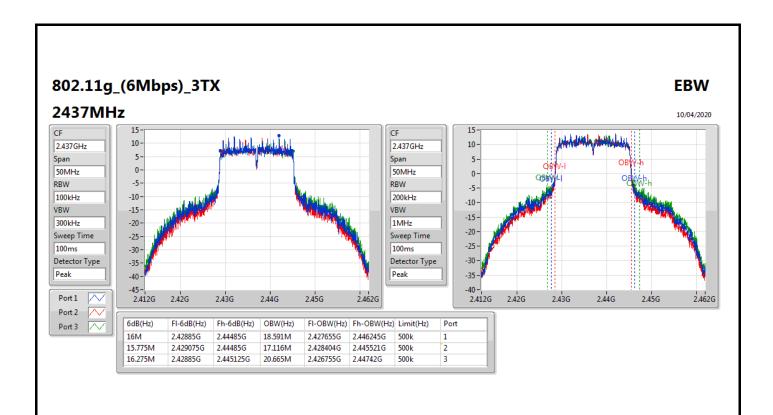
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

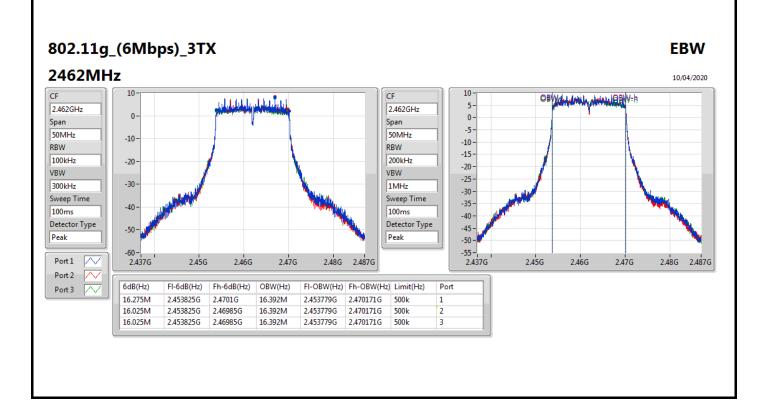


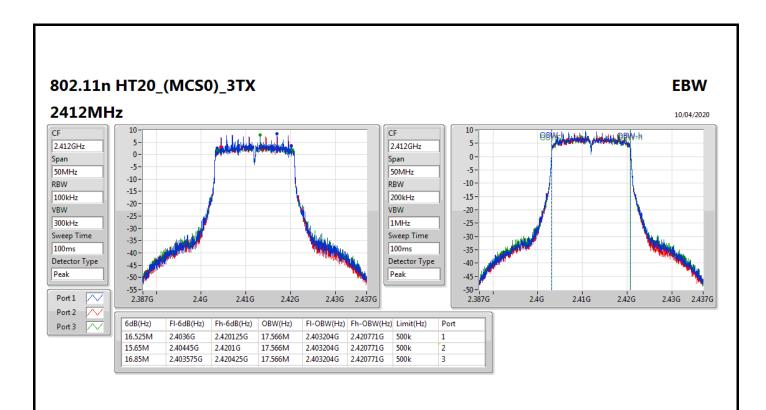


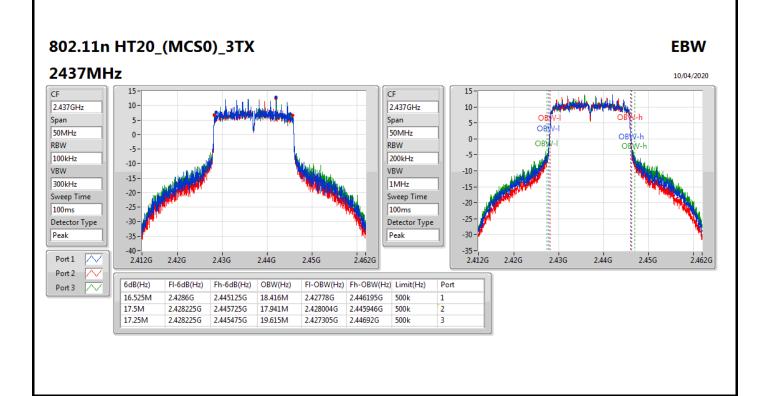


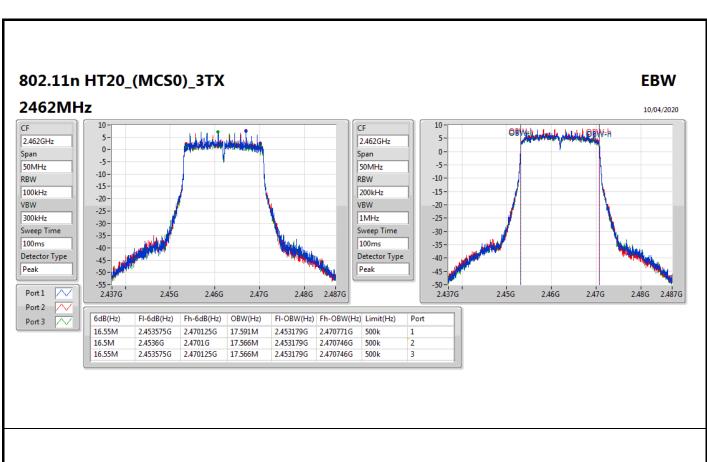


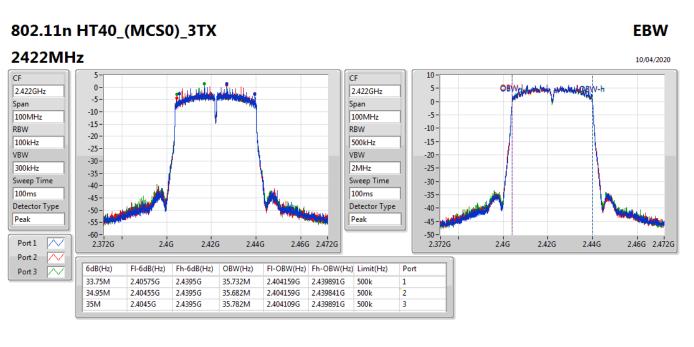


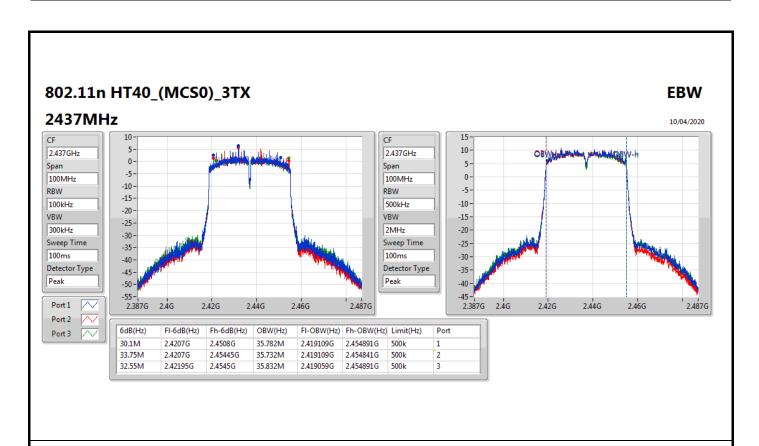


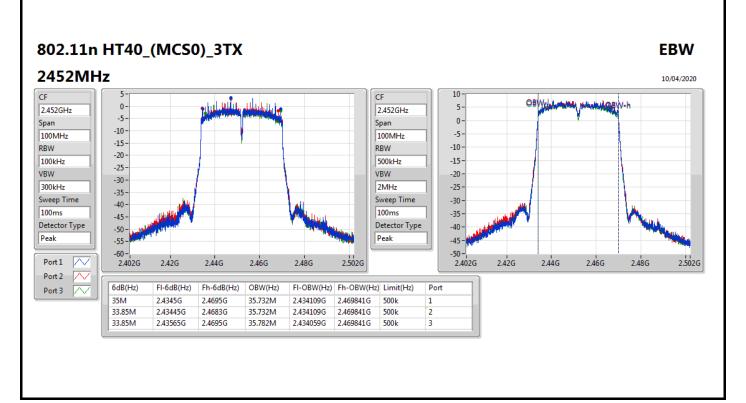














Average Power Appendix C

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
802.11b_(1Mbps)_3TX	27.82	0.60534
802.11g_(6Mbps)_3TX	27.70	0.58884
802.11n HT20_(MCS0)_3TX	27.51	0.56364
802.11n HT40_(MCS0)_3TX	23.59	0.22856

Average Power Appendix C

Result

Mode	Result	DG	Port 1	Port 2	Port 3	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11b_(1Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.60	22.44	22.07	22.70	27.18	30.00
2437MHz	Pass	4.60	23.42	22.82	22.89	27.82	30.00
2462MHz	Pass	4.60	22.07	21.99	21.69	26.69	30.00
802.11g_(6Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.60	18.92	18.90	18.63	23.59	30.00
2417MHz	Pass	4.60	20.74	20.88	20.80	25.58	30.00
2437MHz	Pass	4.60	23.00	22.84	22.94	27.70	30.00
2457MHz	Pass	4.60	20.30	20.22	20.03	24.96	30.00
2462MHz	Pass	4.60	18.78	18.88	18.42	23.47	30.00
802.11n HT20_(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.60	18.56	18.53	18.30	23.24	30.00
2417MHz	Pass	4.60	20.71	20.58	20.68	25.43	30.00
2437MHz	Pass	4.60	22.84	22.61	22.77	27.51	30.00
2457MHz	Pass	4.60	20.23	20.09	19.95	24.86	30.00
2462MHz	Pass	4.60	17.88	18.07	17.62	22.63	30.00
802.11n HT40_(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	4.60	14.99	14.78	14.82	19.64	30.00
2427MHz	Pass	4.60	17.05	17.00	17.08	21.81	30.00
2437MHz	Pass	4.60	18.88	18.85	18.72	23.59	30.00
2452MHz	Pass	4.60	15.96	16.33	15.84	20.82	30.00

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



Page No.

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Summary

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	·
802.11b_(1Mbps)_3TX	0.29
802.11g_(6Mbps)_3TX	-1.10
802.11n HT20_(MCS0)_3TX	-1.25
802.11n HT40_(MCS0)_3TX	-6.10

RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;



Appendix D **PSD**

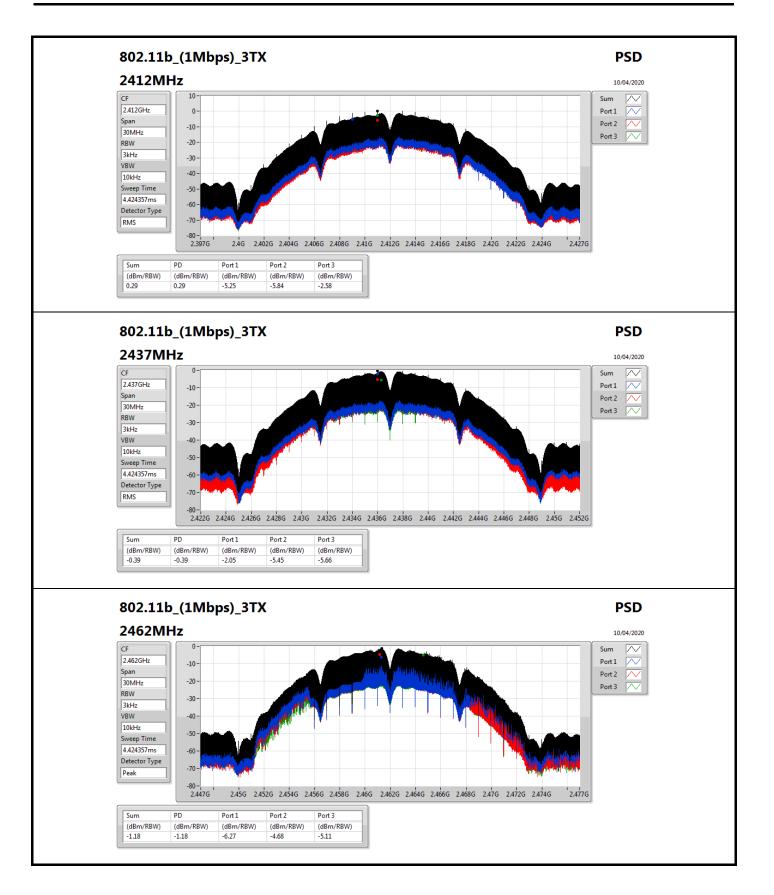
Page No.

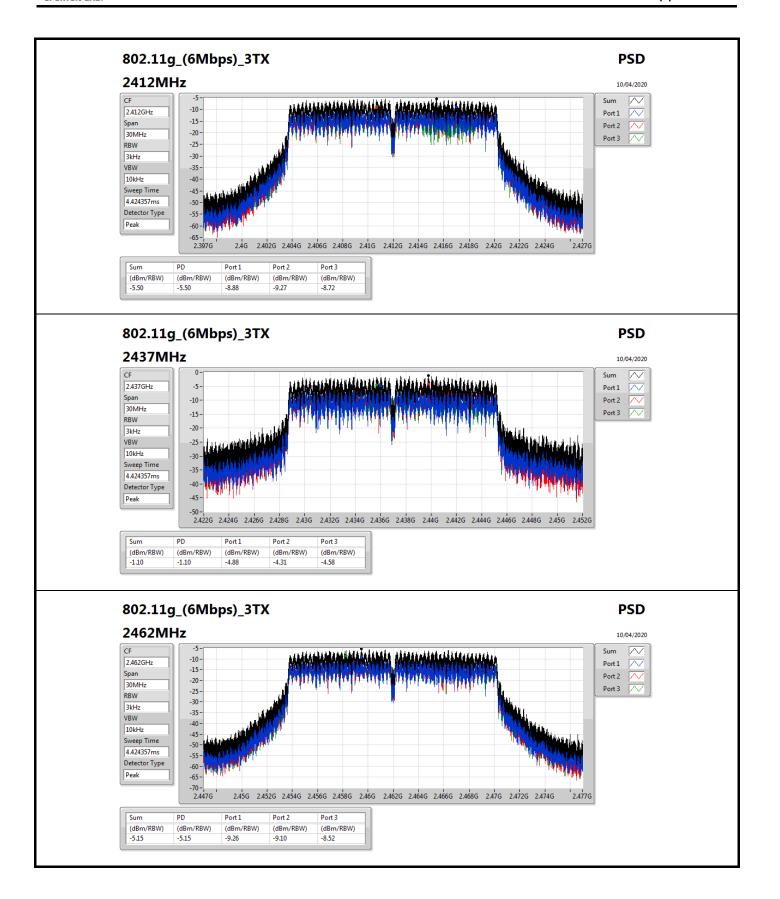
: 2 of 6

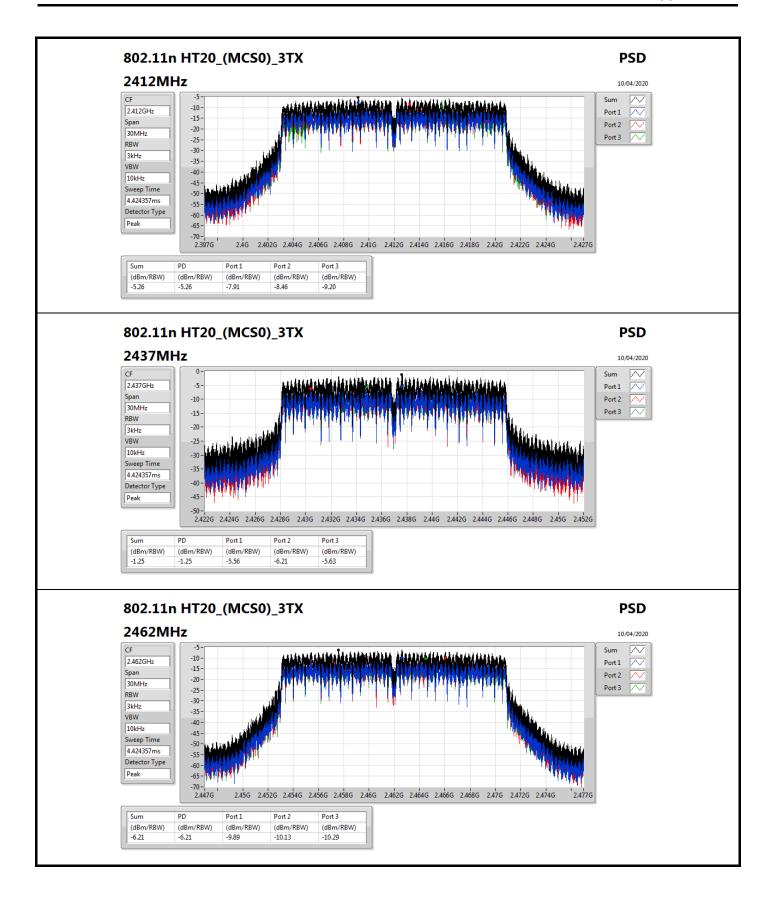
Result

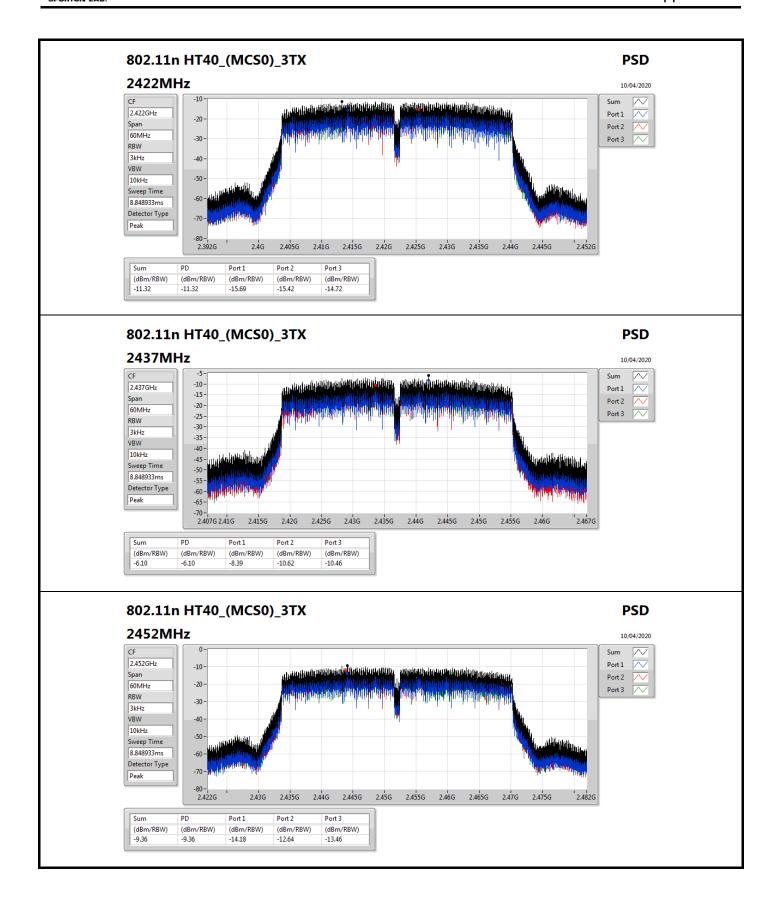
Mode	Result	DG	Port 1	Port 2	Port 3	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_(1Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	8.86	-5.25	-5.84	-2.58	0.29	5.14
2437MHz	Pass	8.86	-2.05	-5.45	-5.66	-0.39	5.14
2462MHz	Pass	8.86	-6.27	-4.68	-5.11	-1.18	5.14
802.11g_(6Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	8.86	-8.88	-9.27	-8.72	-5.50	5.14
2437MHz	Pass	8.86	-4.88	-4.31	-4.58	-1.10	5.14
2462MHz	Pass	8.86	-9.26	-9.10	-8.52	-5.15	5.14
802.11n HT20_(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	8.86	-7.91	-8.46	-9.20	-5.26	5.14
2437MHz	Pass	8.86	-5.56	-6.21	-5.63	-1.25	5.14
2462MHz	Pass	8.86	-9.89	-10.13	-10.29	-6.21	5.14
802.11n HT40_(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	8.86	-15.69	-15.42	-14.72	-11.32	5.14
2437MHz	Pass	8.86	-8.39	-10.62	-10.46	-6.10	5.14
2452MHz	Pass	8.86	-14.18	-12.64	-13.46	-9.36	5.14

DG = Directional Gain; RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;











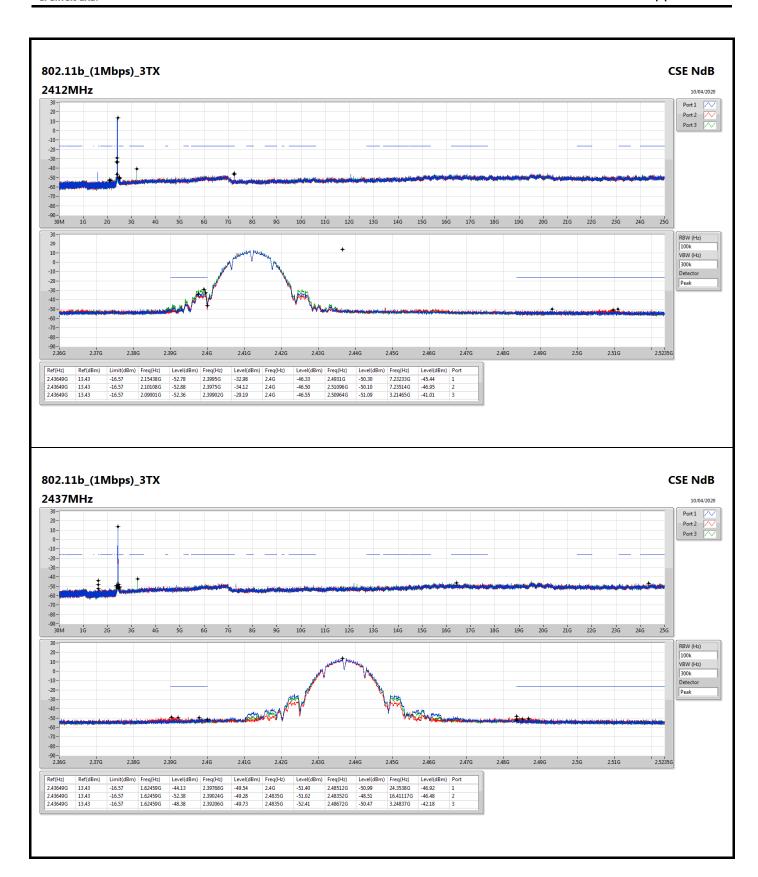
Summary

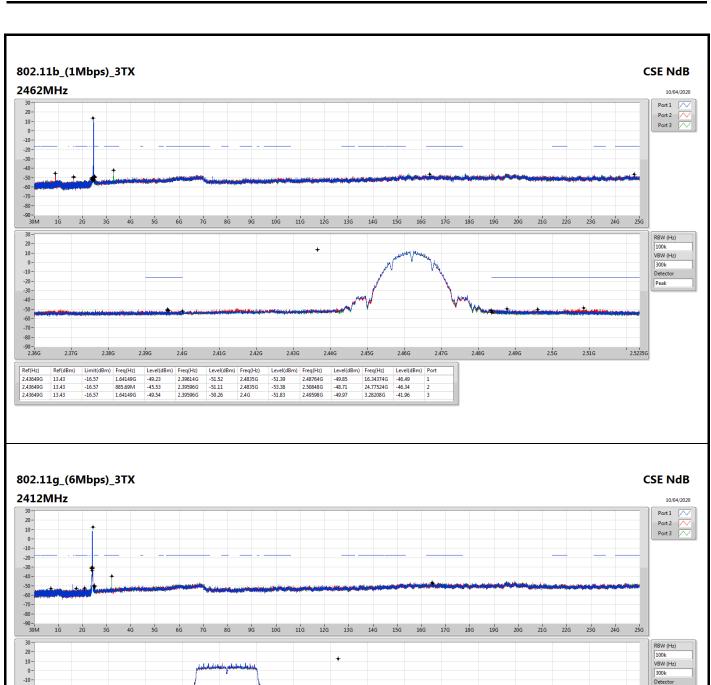
Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-		-	-	-	-	-	-	-	-	-	-	-	-
802.11b_(1Mbps)_3TX	Pass	2.43649G	13.43	-16.57	2.09001G	-52.36	2.39902G	-29.19	2.4G	-46.55	2.50964G	-51.09	3.21465G	-41.01	3
802.11g_(6Mbps)_3TX	Pass	2.442G	12.77	-17.23	695.8M	-53.05	2.39974G	-29.88	2.4G	-31.58	2.51312G	-50.87	16.43364G	-46.99	1
802.11n HT20_(MCS0)_3TX	Pass	2.44196G	12.79	-17.21	901.42M	-52.49	2.39986G	-29.74	2.4G	-28.25	2.50514G	-51.41	3.21465G	-40.38	3
802.11n HT40_(MCS0)_3TX	Pass	2.43194G	6.18	-23.82	2.14539G	-51.91	2.39956G	-35.56	2.4G	-39.73	2.48358G	-43.97	3.24781G	-41.37	3

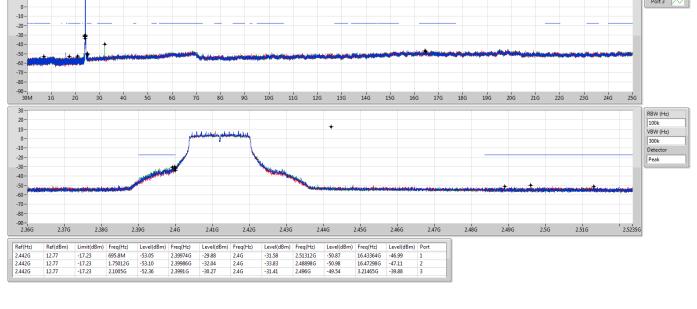


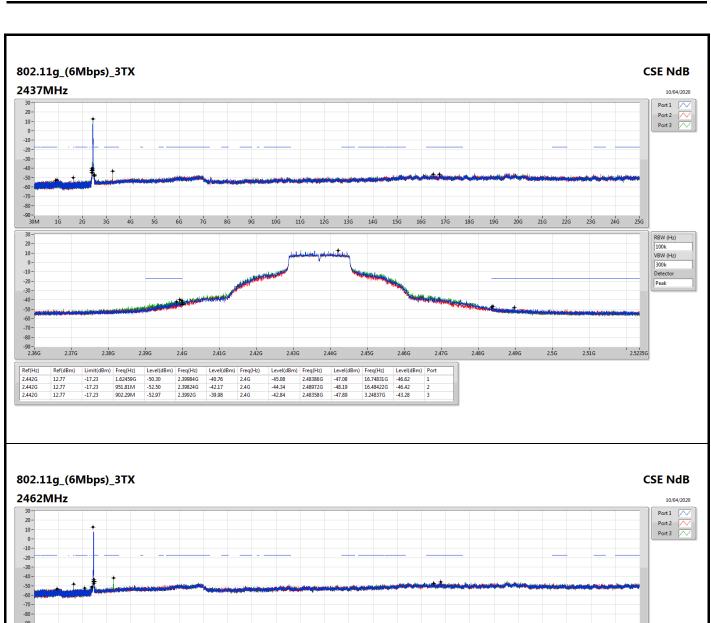
Result

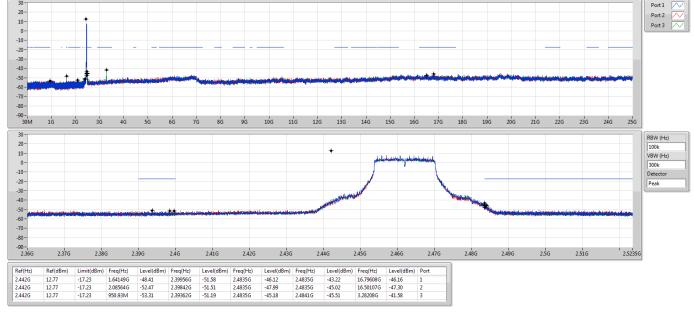
Result															
Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_(1Mbps)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43649G	13.43	-16.57	2.15438G	-52.78	2.3995G	-32.98	2.4G	-46.33	2.4931G	-50.30	7.23233G	-45.44	1
2412MHz	Pass	2.43649G	13.43	-16.57	2.10108G	-52.88	2.3975G	-34.12	2.4G	-46.50	2.51096G	-50.10	7.23514G	-46.95	2
2412MHz	Pass	2.43649G	13.43	-16.57	2.09001G	-52.36	2.39902G	-29.19	2.4G	-46.55	2.50964G	-51.09	3.21465G	-41.01	3
2417MHz															
2437MHz	Pass	2.43649G	13.43	-16.57	1.62459G	-44.13	2.39768G	-49.54	2.4G	-51.40	2.48512G	-50.99	24.3538G	-46.92	1
2437MHz	Pass	2.43649G	13.43	-16.57	1.62459G	-52.38	2.39024G	-49.28	2.4835G	-51.02	2.48352G	-48.51	16.41117G	-46.48	2
2437MHz	Pass	2.43649G	13.43	-16.57	1.62459G	-48.38	2.39206G	-49.73	2.4835G	-52.41	2.48672G	-50.47	3.24837G	-42.18	3
2457MHz															
2462MHz	Pass	2.43649G	13.43	-16.57	1.64149G	-49.23	2.39614G	-51.52	2.4835G	-51.39	2.48764G	-49.85	16.34374G	-46.49	1
2462MHz	Pass	2.43649G	13.43	-16.57	885.69M	-45.53	2.39596G	-51.11	2.4835G	-53.38	2.50848G	-48.71	24.77524G	-46.34	2
2462MHz	Pass	2.43649G	13.43	-16.57	1.64149G	-49.54	2.39596G	-50.26	2.4G	-51.83	2.49598G	-49.97	3.28208G	-41.96	3
802.11g_(6Mbps)_3TX	-	-	-	-	-		-	-			-		-		-
2412MHz	Pass	2.442G	12.77	-17.23	695.8M	-53.05	2.39974G	-29.88	2.4G	-31.58	2.51312G	-50.87	16.43364G	-46.99	1
2412MHz	Pass	2.442G	12.77	-17.23	1.75012G	-53.10	2.39986G	-32.04	2.4G	-33.83	2.48898G	-50.98	16.47298G	-47.11	2
2412MHz	Pass	2.442G	12.77	-17.23	2.1005G	-52.36	2.3991G	-30.27	2.4G	-31.41	2.496G	-49.54	3.21465G	-39.88	3
2417MHz															
2437MHz	Pass	2.442G	12.77	-17.23	1.62459G	-50.30	2.39984G	-40.76	2.4G	-45.08	2.48386G	-47.08	16.74831G	-46.62	1
2437MHz	Pass	2.442G	12.77	-17.23	951.81M	-52.50	2.39824G	-42.17	2.4G	-44.34	2.48972G	-48.19	16.48422G	-46.42	2
2437MHz	Pass	2.442G	12.77	-17.23	902.29M	-52.97	2.3992G	-39.98	2.4G	-42.84	2.48358G	-47.89	3.24837G	-43.28	3
2457MHz															
2462MHz	Pass	2.442G	12.77	-17.23	1.64149G	-48.41	2.39956G	-51.58	2.4835G	-46.12	2.4835G	-43.22	16.79608G	-46.16	1
2462MHz	Pass	2.442G	12.77	-17.23	2.08564G	-52.47	2.39842G	-51.51	2.4835G	-47.99	2.4835G	-45.02	16.50107G	-47.30	2
2462MHz	Pass	2.442G	12.77	-17.23	950.93M	-53.31	2.39362G	-51.19	2.4835G	-45.18	2.4841G	-45.51	3.28208G	-41.58	3
802.11n HT20_(MCS0)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.44196G	12.79	-17.21	915.11M	-50.97	2.39986G	-30.07	2.4G	-31.51	2.4914G	-50.83	16.74551G	-46.99	1
2412MHz	Pass	2.44196G	12.79	-17.21	565.9M	-52.54	2.39986G	-31.06	2.4G	-33.36	2.4845G	-50.87	24.14589G	-47.20	2
2412MHz	Pass	2.44196G	12.79	-17.21	901.42M	-52.49	2.39986G	-29.74	2.4G	-28.25	2.50514G	-51.41	3.21465G	-40.38	3
2417MHz															
2437MHz	Pass	2.44196G	12.79	-17.21	1.62459G	-48.52	2.39882G	-40.75	2.4G	-44.65	2.48388G	-47.23	15.22272G	-46.40	1
2437MHz	Pass	2.44196G	12.79	-17.21	648.91M	-53.19	2.39948G	-41.81	2.4G	-45.77	2.48416G	-48.59	16.48141G	-46.16	2
2437MHz	Pass	2.44196G	12.79	-17.21	2.12467G	-51.68	2.39982G	-40.37	2.4G	-42.33	2.48408G	-47.04	3.24837G	-42.10	3
2457MHz															
2462MHz	Pass	2.44196G	12.79	-17.21	1.6412G	-49.30	2.39586G	-51.48	2.4835G	-47.17	2.48352G	-45.31	16.88879G	-46.17	1
2462MHz	Pass	2.44196G	12.79	-17.21	463.09M	-53.04	2.3933G	-52.00	2.4835G	-46.24	2.4841G	-46.34	23.13726G	-46.33	2
2462MHz	Pass	2.44196G	12.79	-17.21	1.92021G	-52.62	2.39946G	-52.10	2.4835G	-46.42	2.48386G	-43.97	3.28208G	-42.07	3
802.11n HT40_(MCS0)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.43194G	6.18	-23.82	2.08556G	-53.01	2.39636G	-40.17	2.4G	-44.91	2.4923G	-52.00	16.31988G	-46.15	1
2422MHz	Pass	2.43194G	6.18	-23.82	899.34M	-52.90	2.39636G	-40.79	2.4G	-46.25	2.4865G	-51.18	6.76193G	-46.63	2
2422MHz	Pass	2.43194G	6.18	-23.82	1.94845G	-53.05	2.39572G	-39.11	2.4G	-45.73	2.48686G	-51.27	3.22818G	-40.51	3
2427MHz															
2437MHz	Pass	2.43194G	6.18	-23.82	1.6247G	-48.99	2.39948G	-35.92	2.4G	-39.31	2.48378G	-45.22	16.84714G	-46.81	1
2437MHz	Pass	2.43194G	6.18	-23.82	899.34M	-52.90	2.39824G	-37.89	2.4G	-39.60	2.48382G	-44.69	24.81209G	-46.60	2
2437MHz	Pass	2.43194G	6.18	-23.82	2.14539G	-51.91	2.39956G	-35.56	2.4G	-39.73	2.48358G	-43.97	3.24781G	-41.37	3
2452MHz	Pass	2.43194G	6.18	-23.82	1.63472G	-49.46	2.3938G	-51.57	2.4835G	-46.44	2.4853G	-45.67	16.52181G	-46.07	1
2452MHz	Pass	2.43194G	6.18	-23.82	1.85799G	-52.41	2.39496G	-51.34	2.4835G	-47.06	2.48442G	-44.69	16.83592G	-47.06	2
2452MHz	Pass	2.43194G	6.18	-23.82	1.92011G	-52.76	2.39544G	-52.36	2.4835G	-47.22	2.48442G	-45.05	3.26745G	-40.84	3

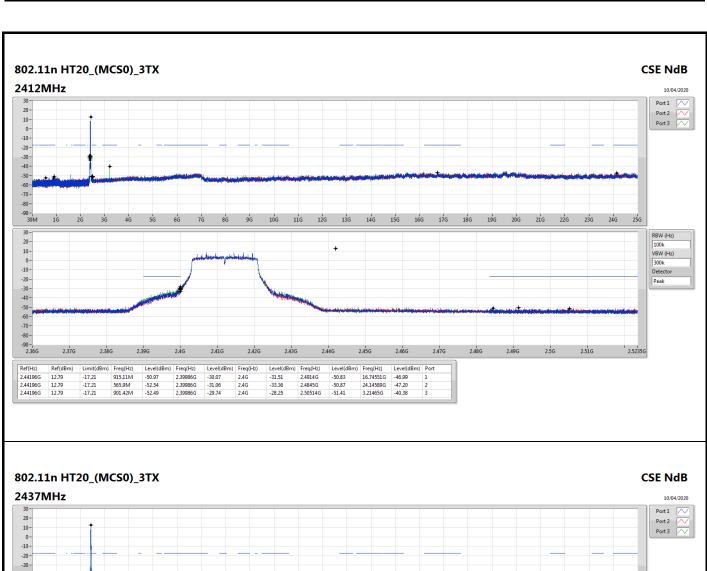


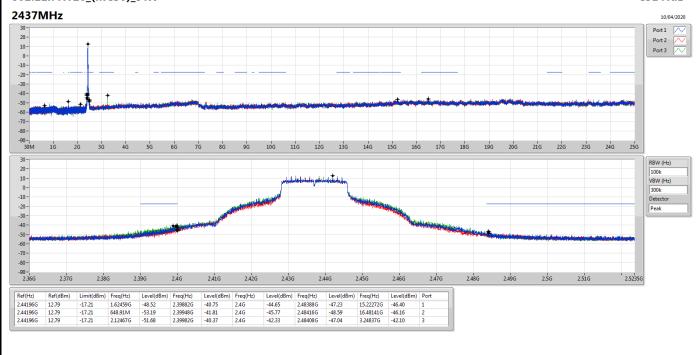


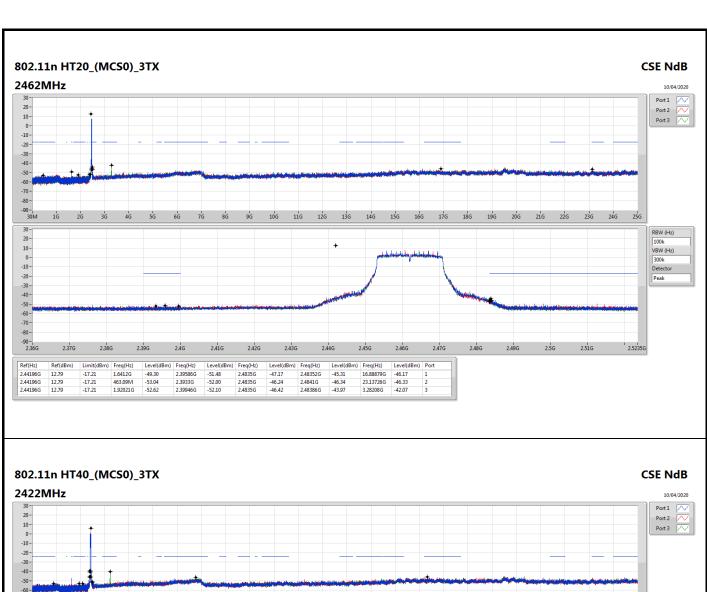


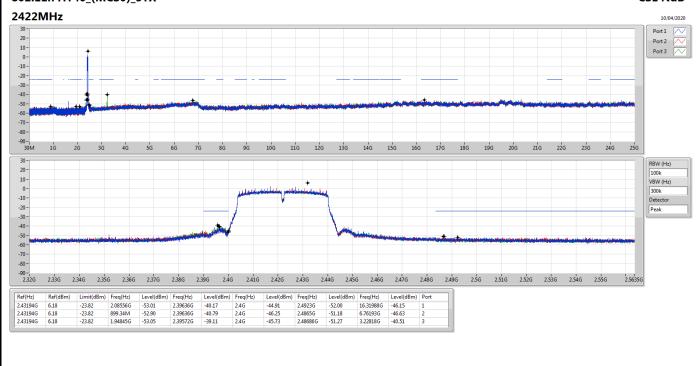












-90 -2.32G

2.43194G

2.43194G 6.18 2.43194G 6.18

2.33G

6.18

-23.82

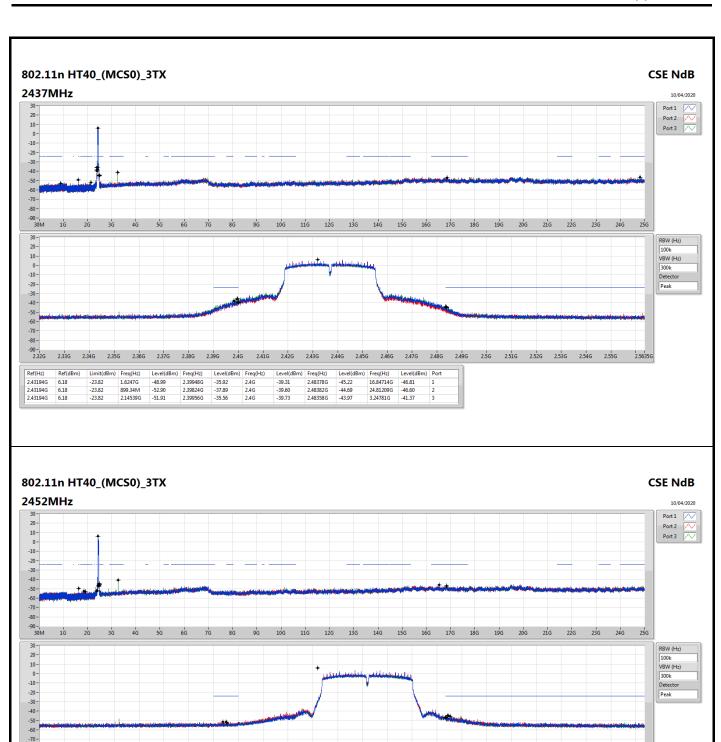
-23.82

-23.82

Freq(Hz) 1.63472G

1.85799G 1.92011G -49.46 -52.41 -52.76

CSE Appendix E



2.346 2.356 2.366 2.376 2.386 2.396 2.46 2.416 2.426 2.436 2.446 2.456 2.456 2.456 2.486 2.486 2.486 2.56 2.516 2.526 2.536 2.546 2.556

Level(dBm) -45.67

-44.69

-45.05

Freq(Hz) Level(dBm) 16.52181G -46.07

16.83592G

3.26745G

-46.07 -47.06 -40.84

Freq(Hz) 2.4853G

2.48442G

2.48442G

Freq(Hz) 2.4835G

2.4835G

2.4835G

-46.44

-47.06 -47.22

-51.57 -51.34 -52.36

2.3938G

2.39496G

2.39544G



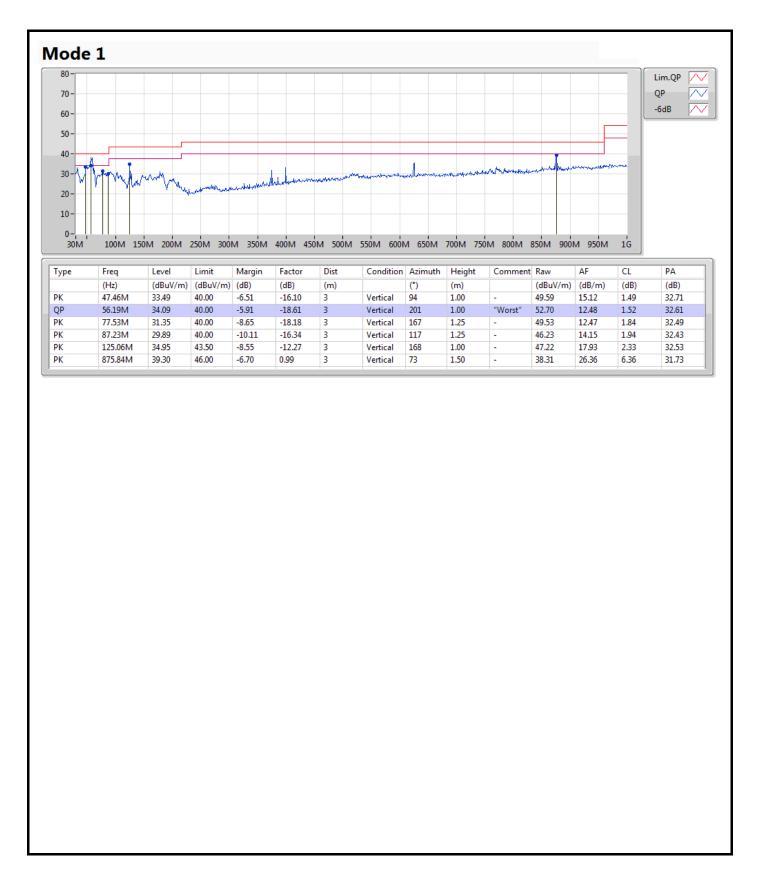
Radiated Emissions below 1GHz

Appendix F.1

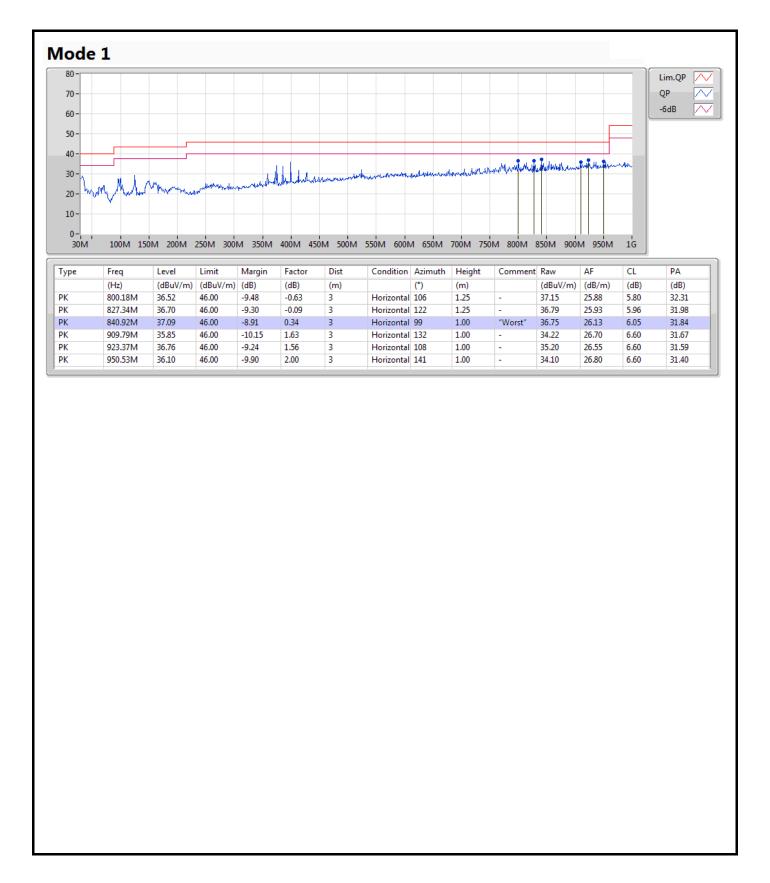
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	
Mode 1	Pass	QP	56.19M	34.09	40.00	-5.91	Vertical











RSE TX above 1GHz

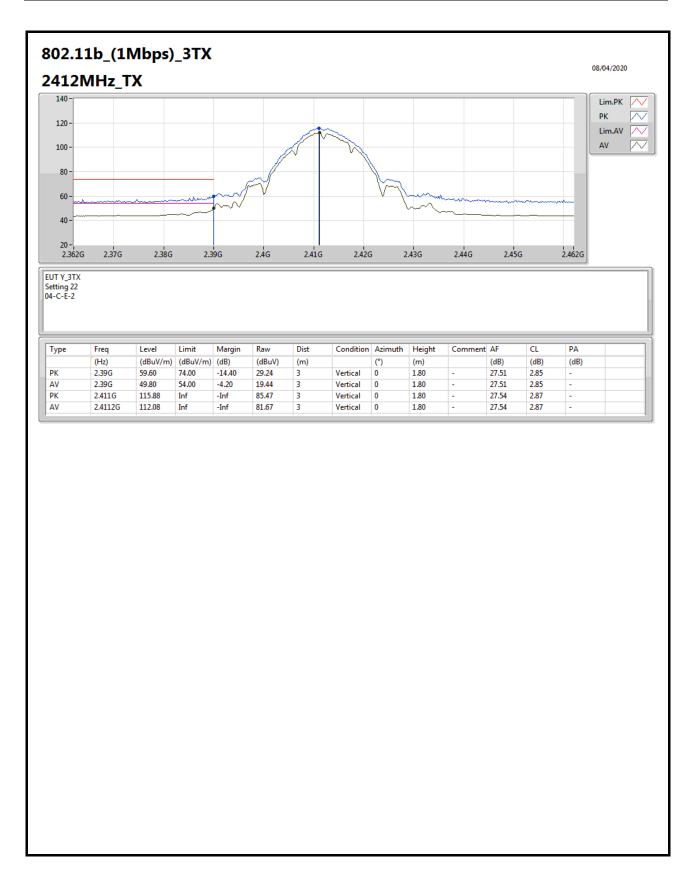
Appendix F.2

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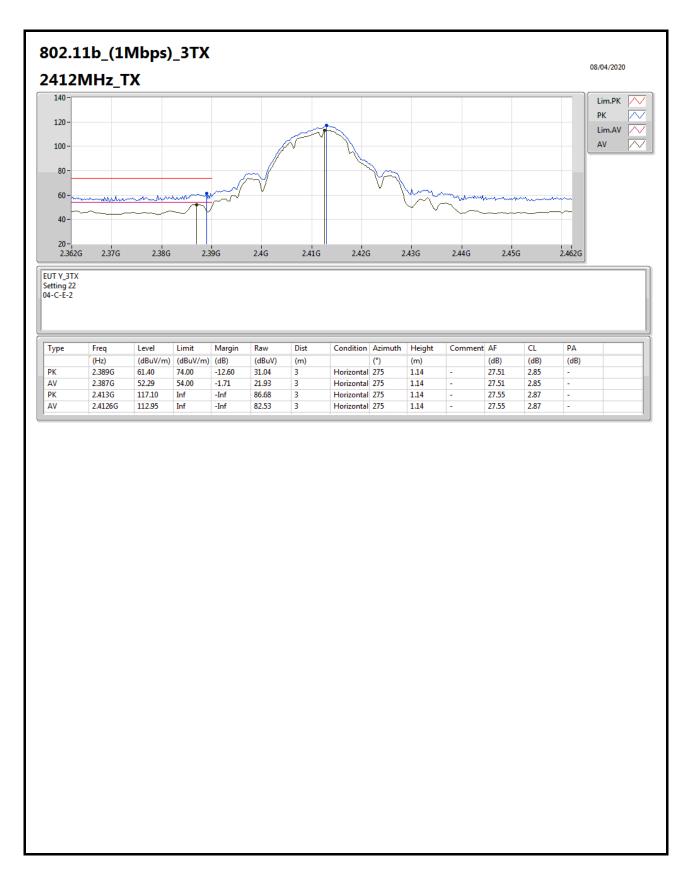
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
802.11g_(6Mbps)_3TX	Pass	AV	2.3898G	53.98	54.00	-0.02	3	Horizontal	264	1.98	-

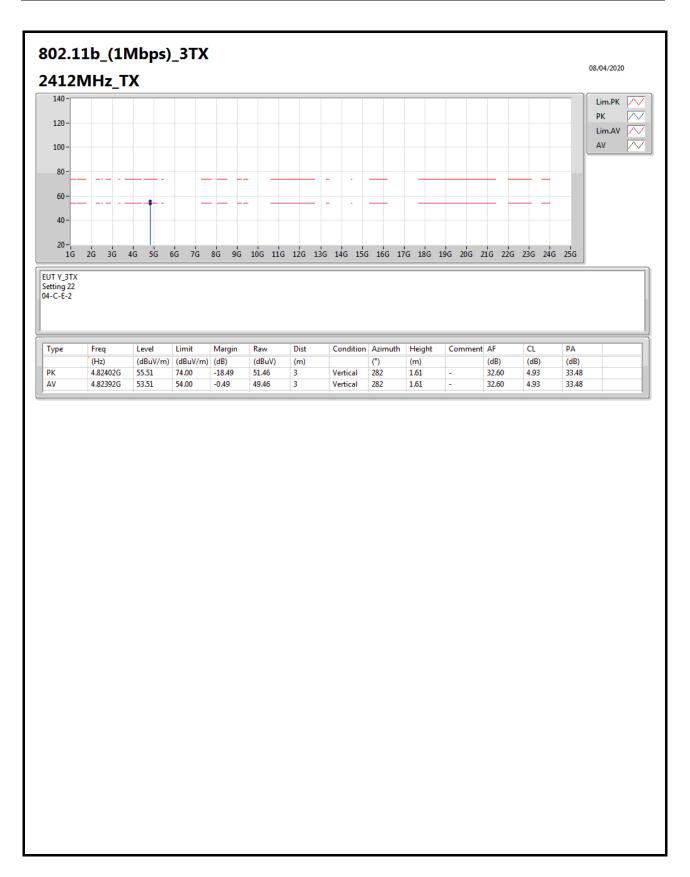




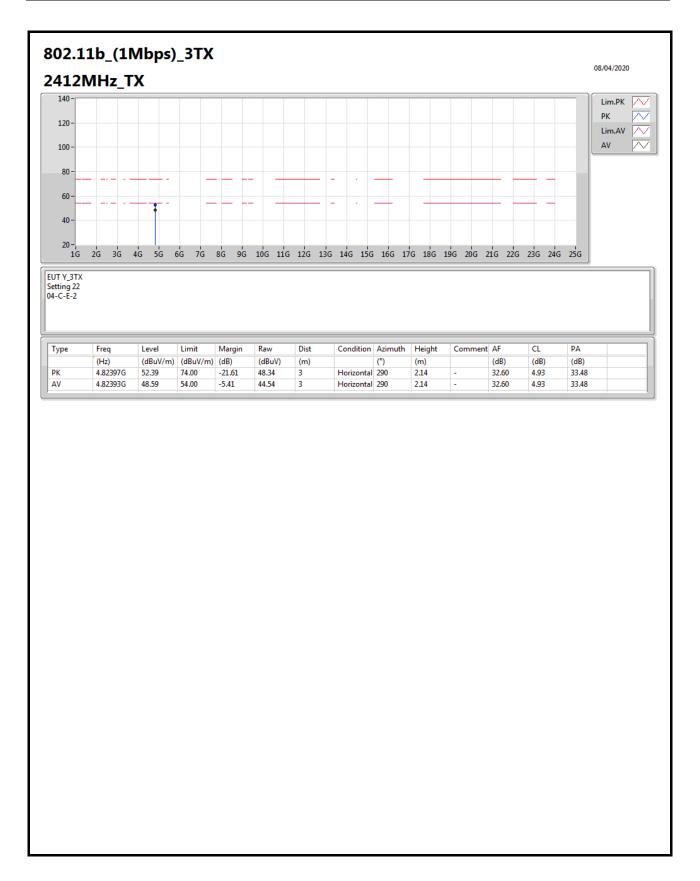




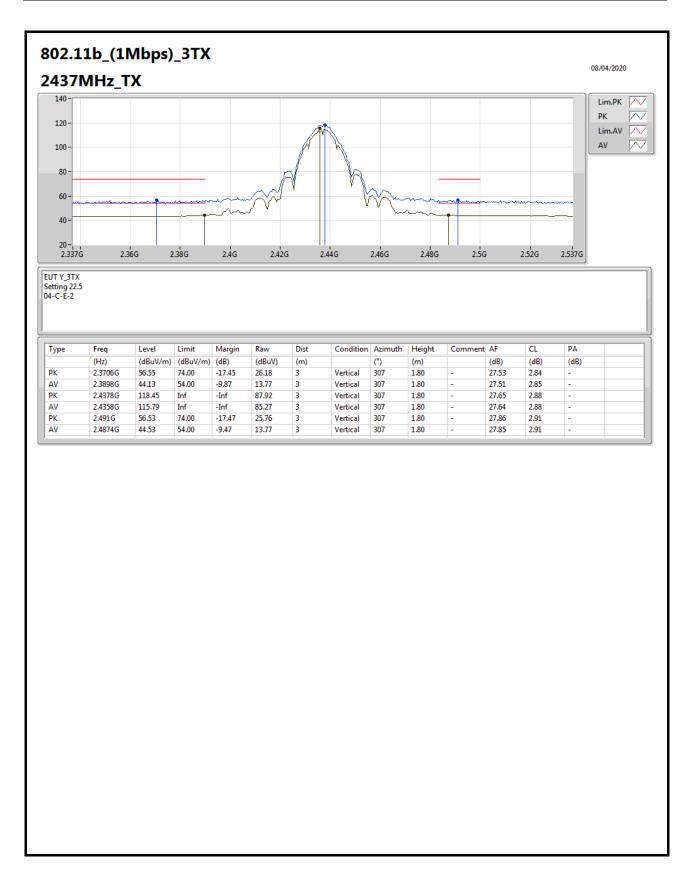




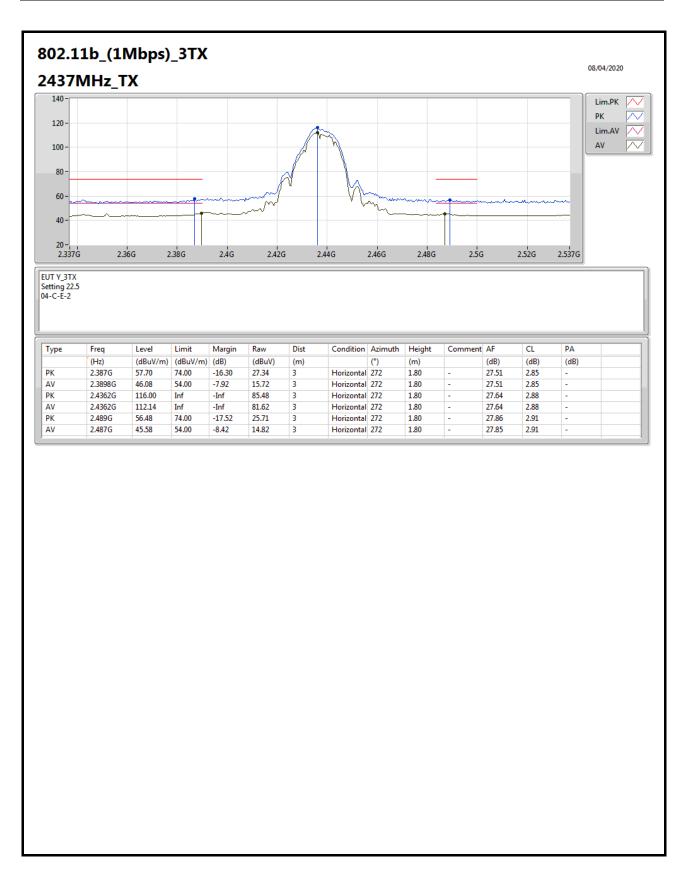






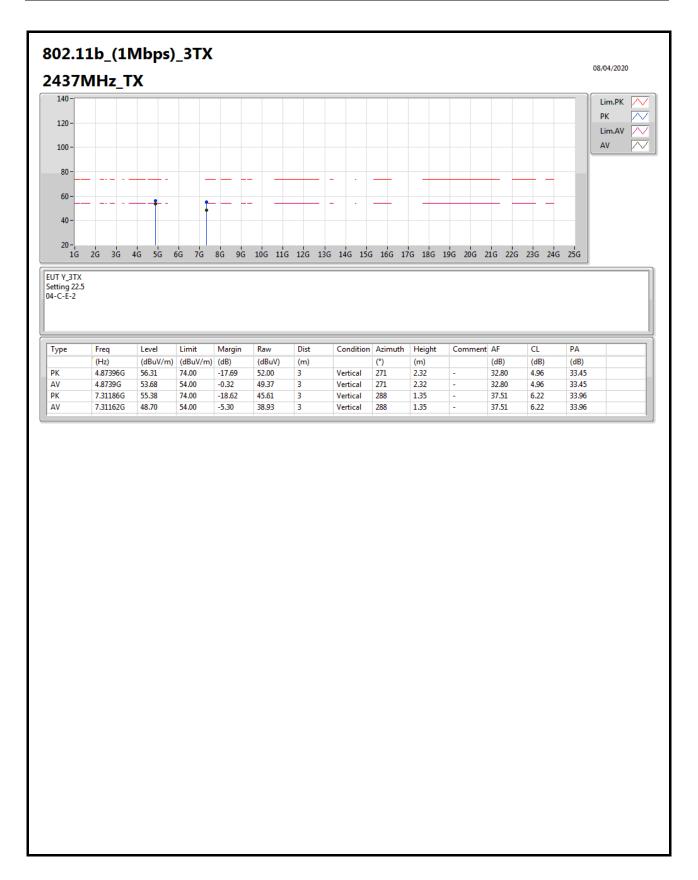




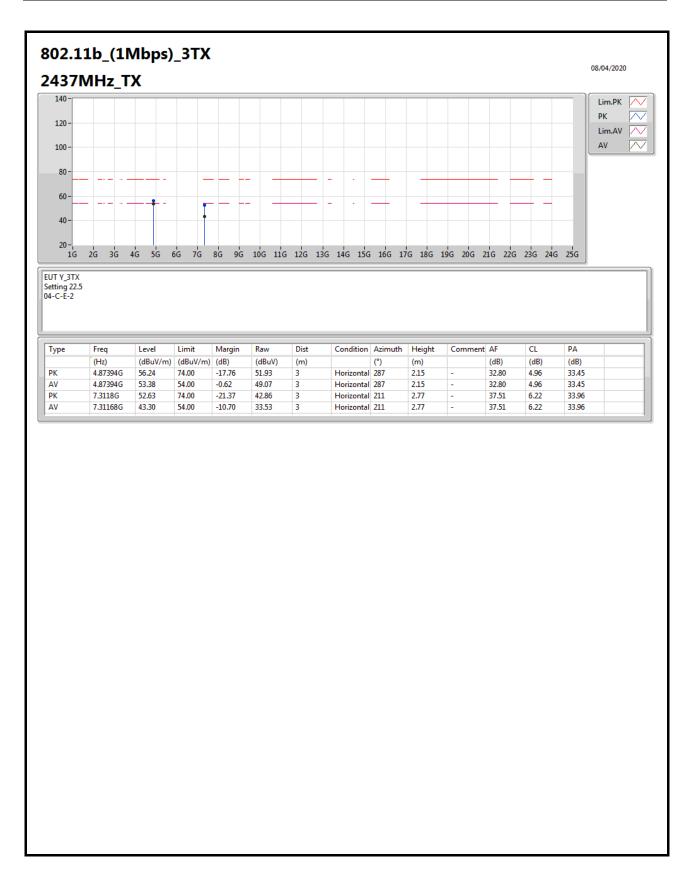


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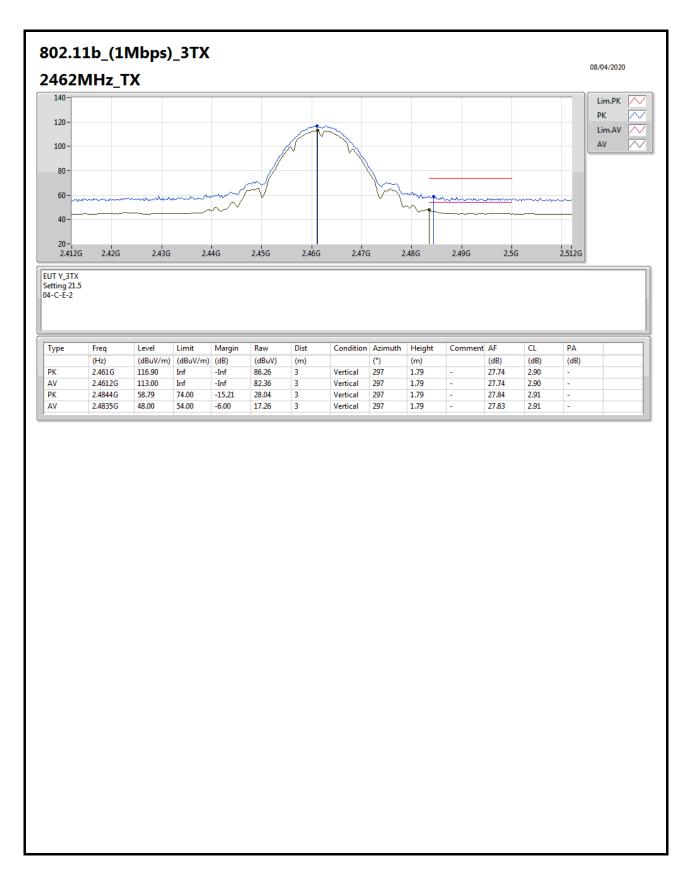




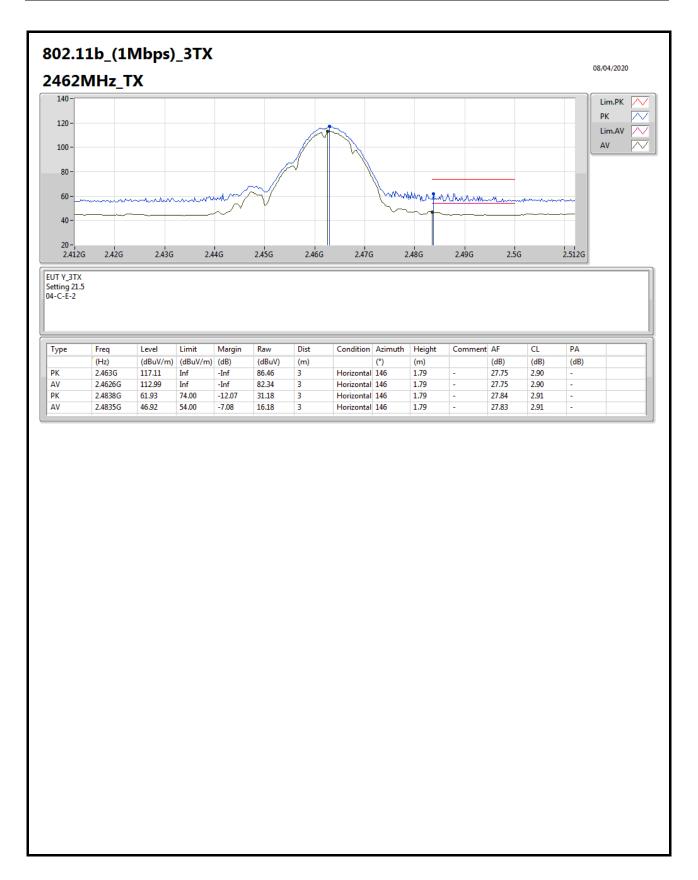




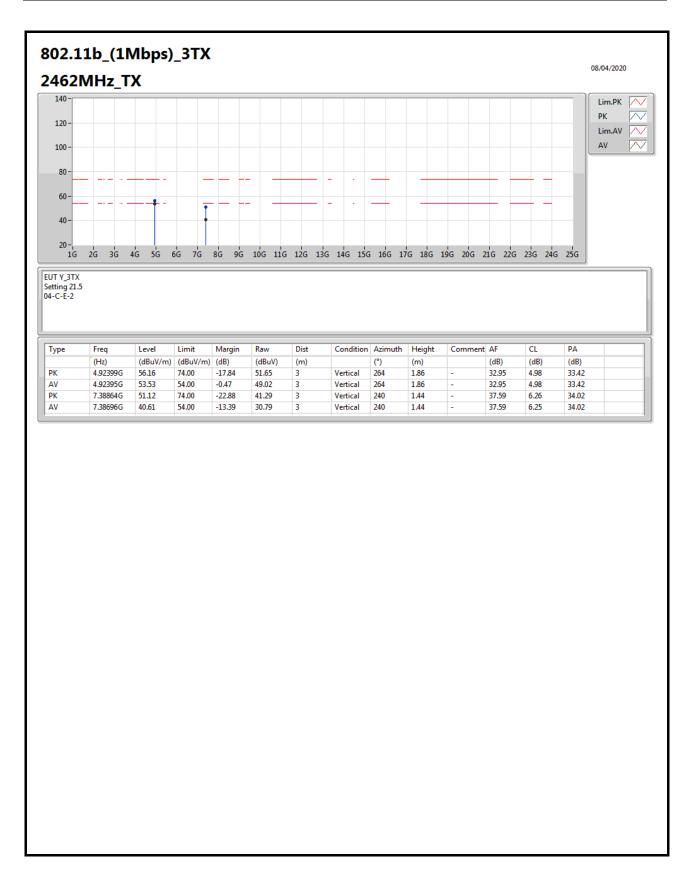




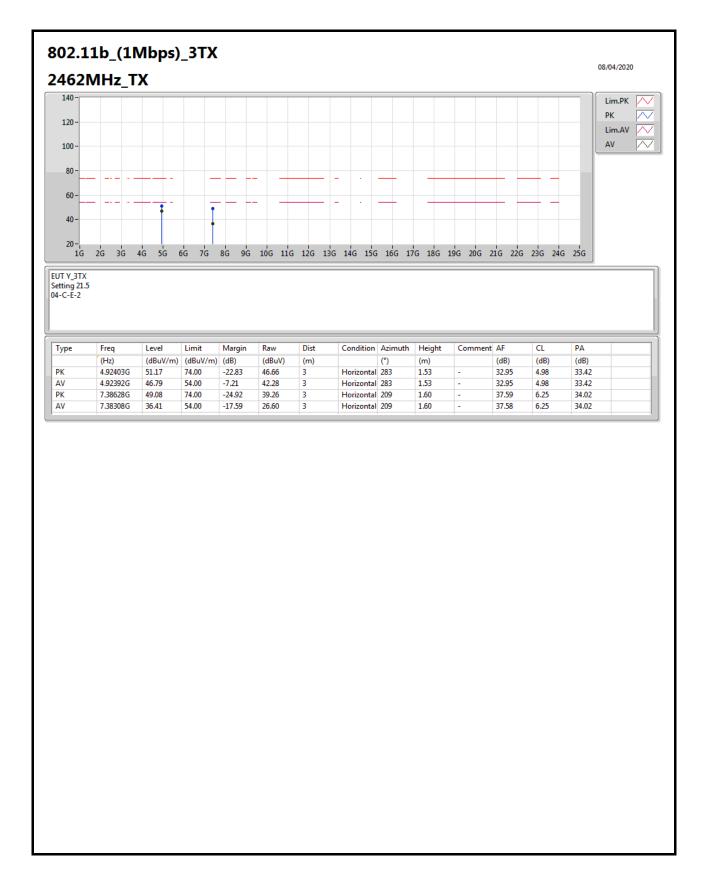




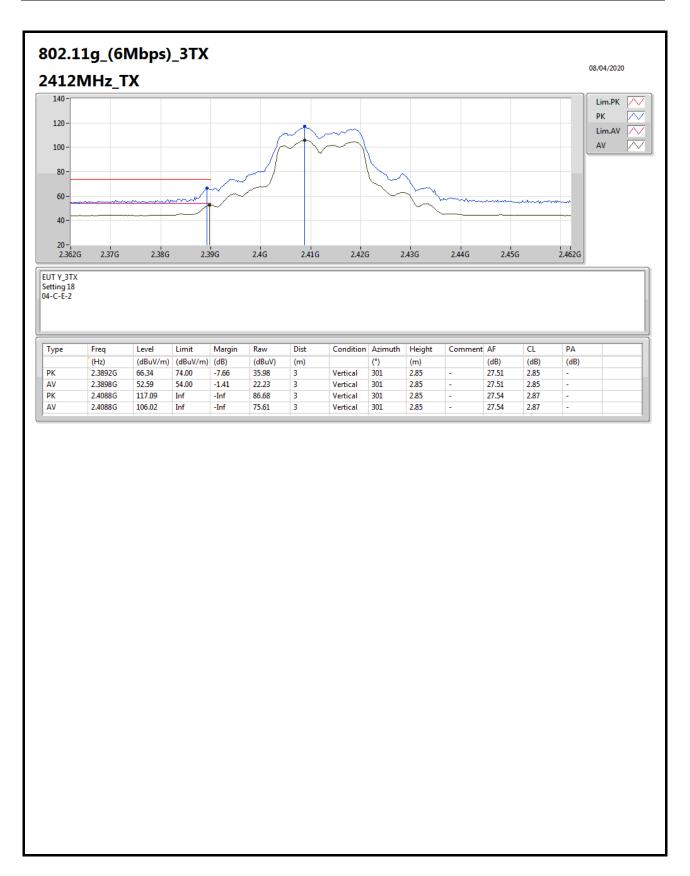




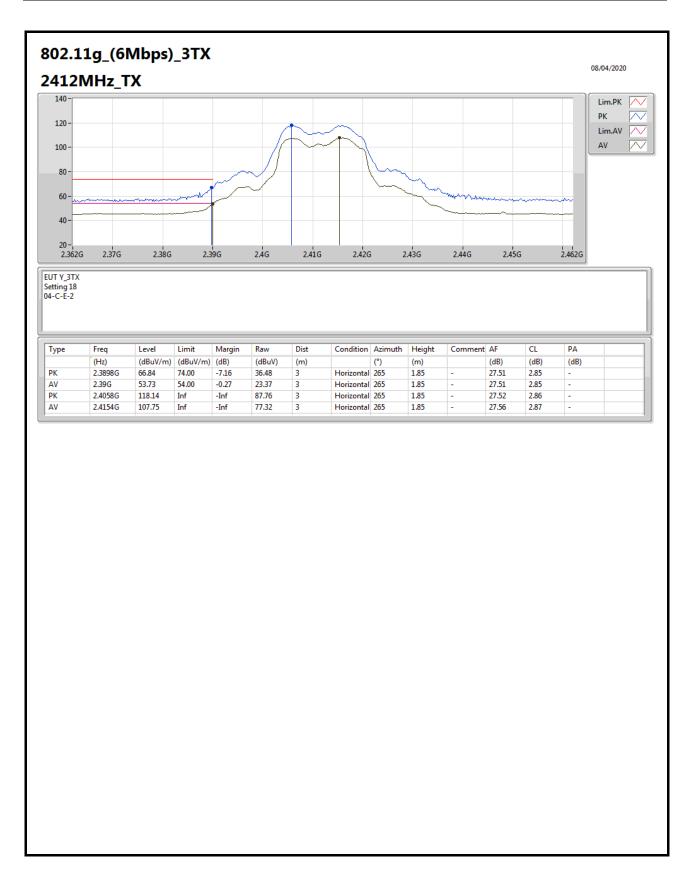






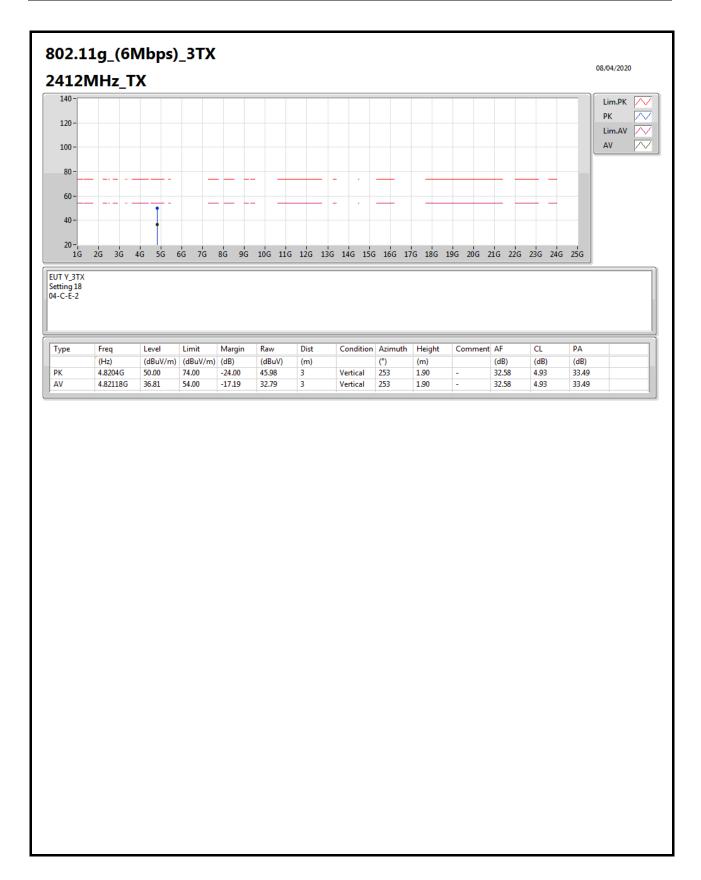






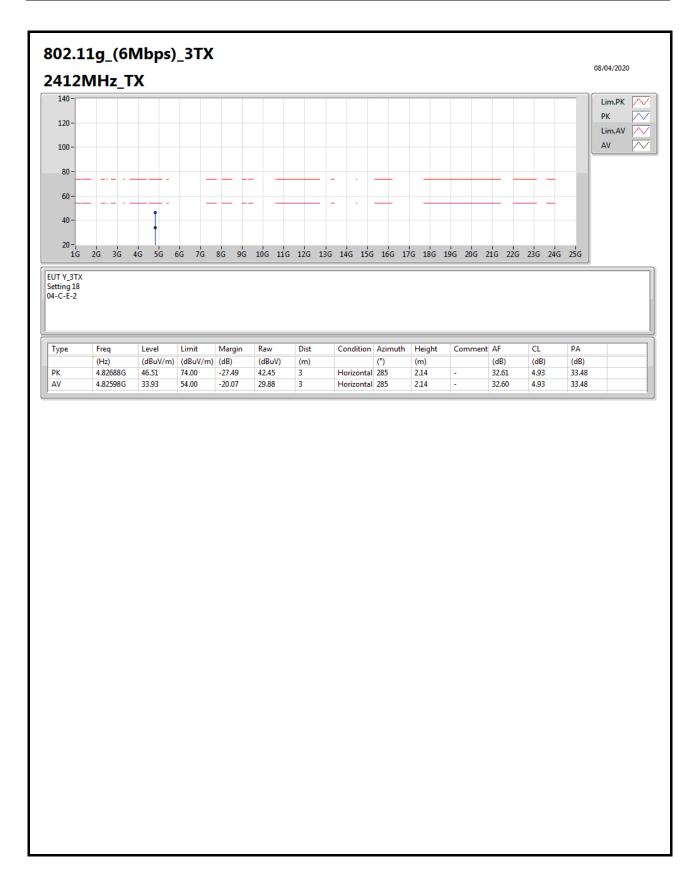
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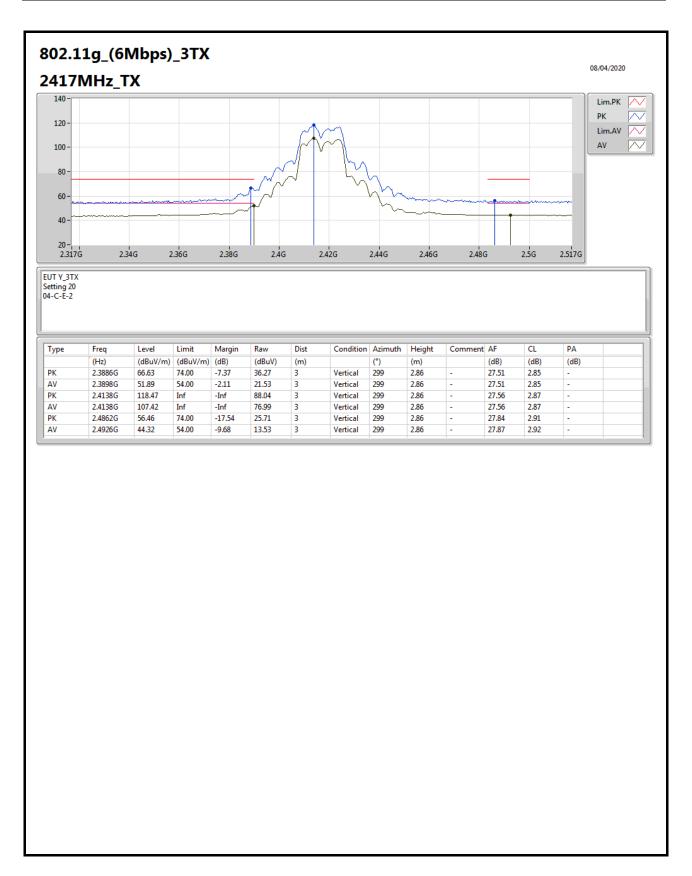


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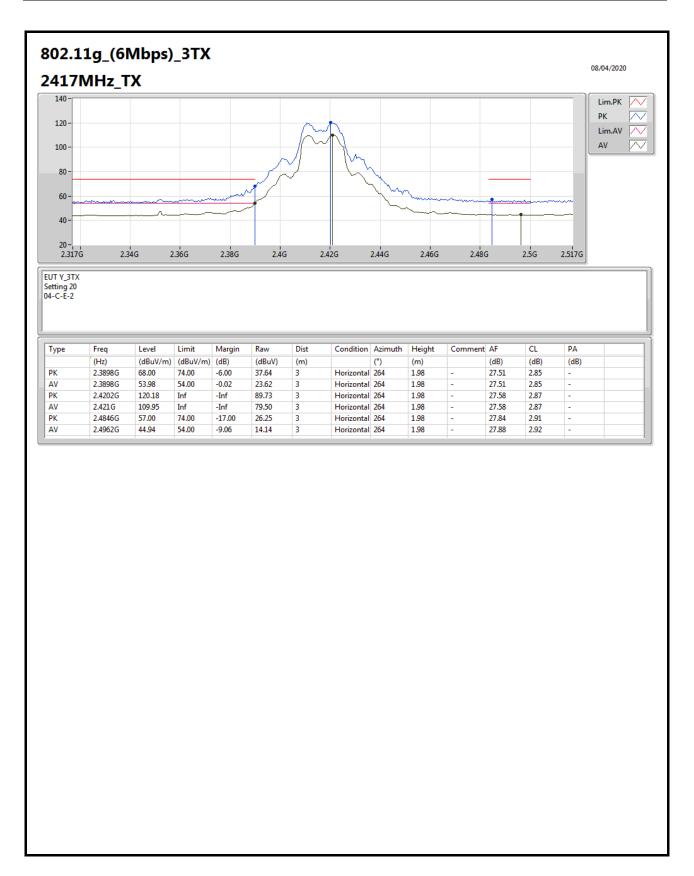




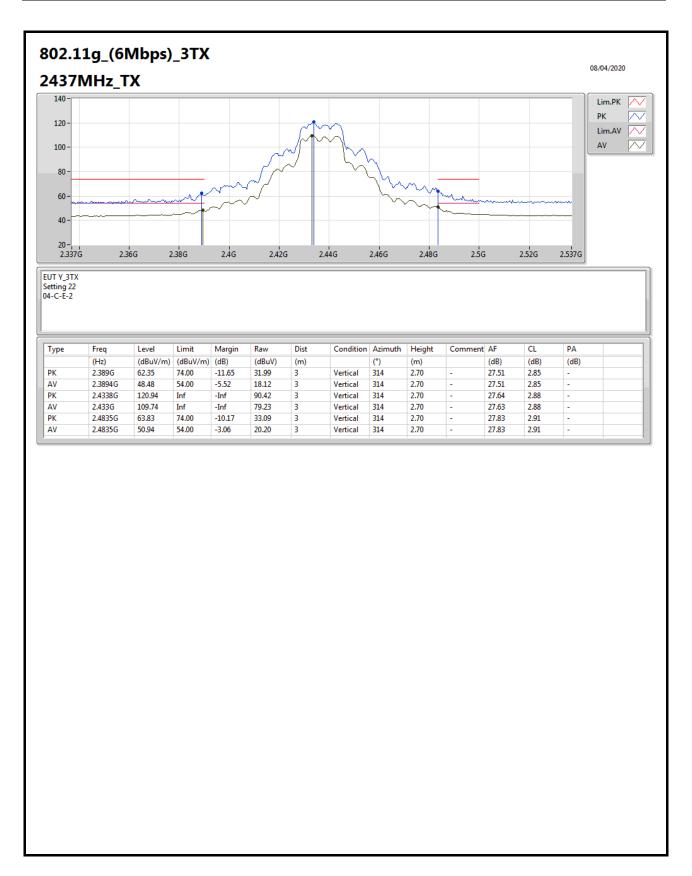




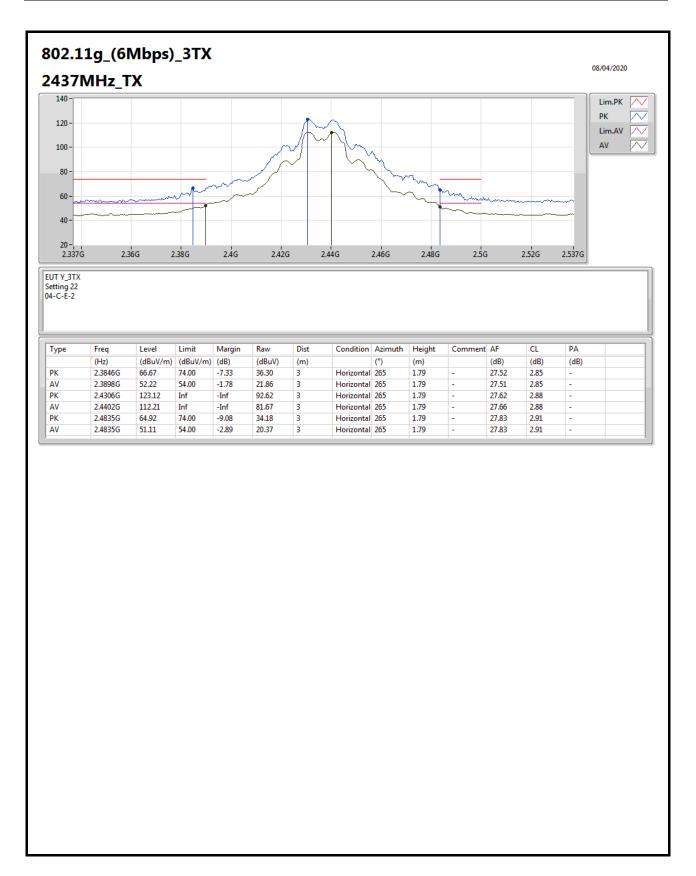




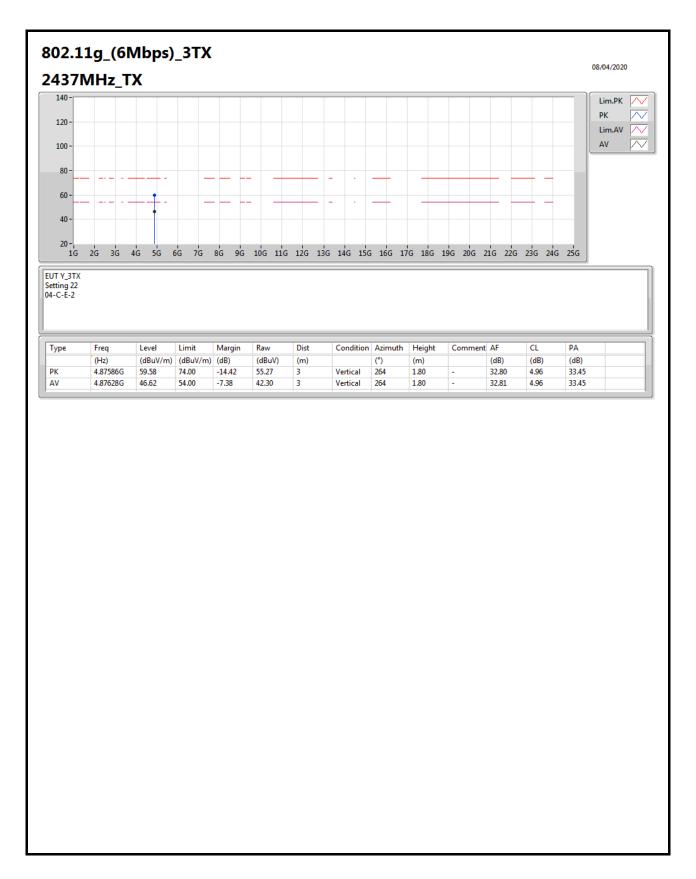




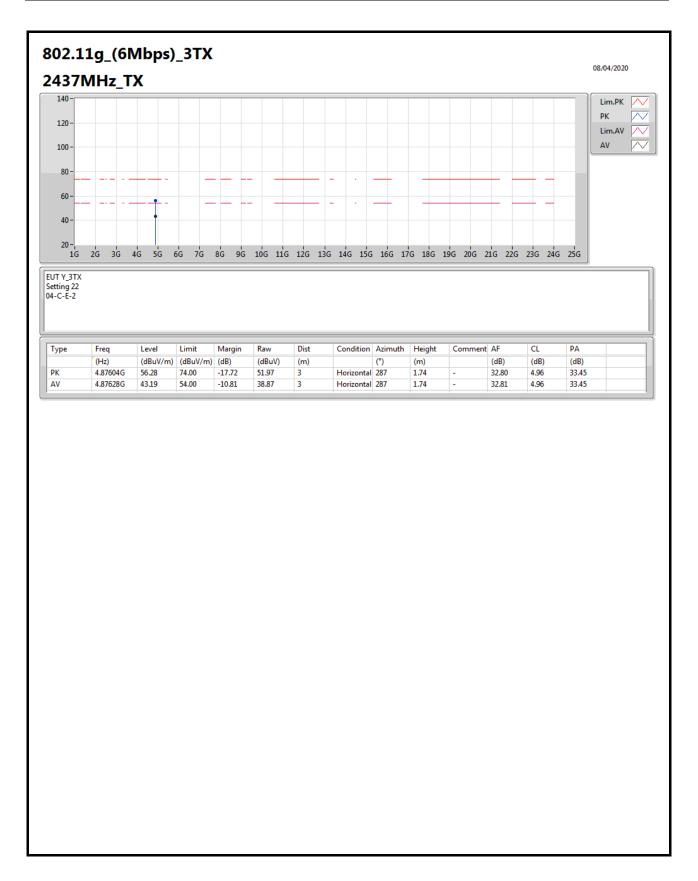




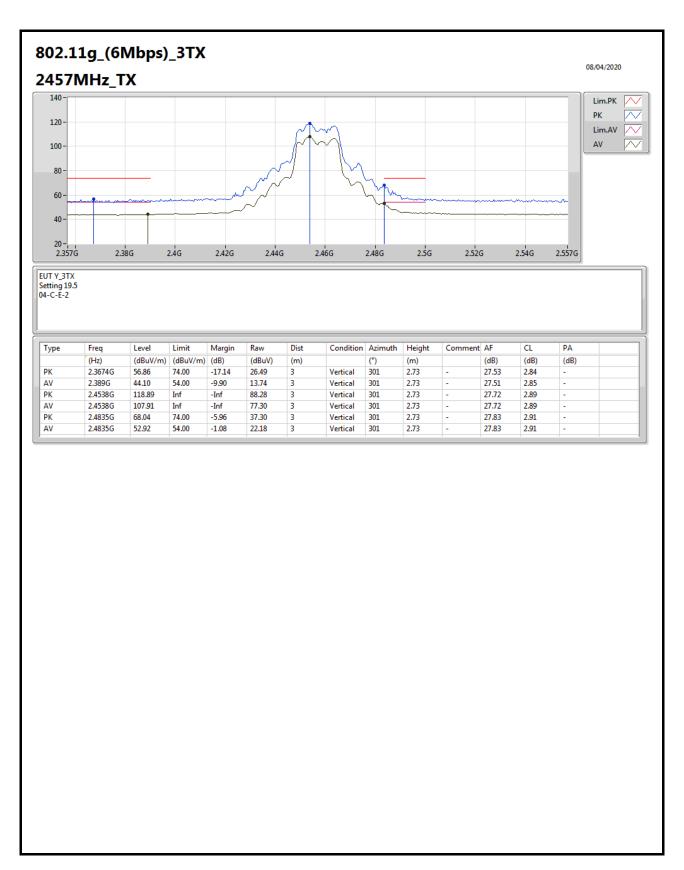




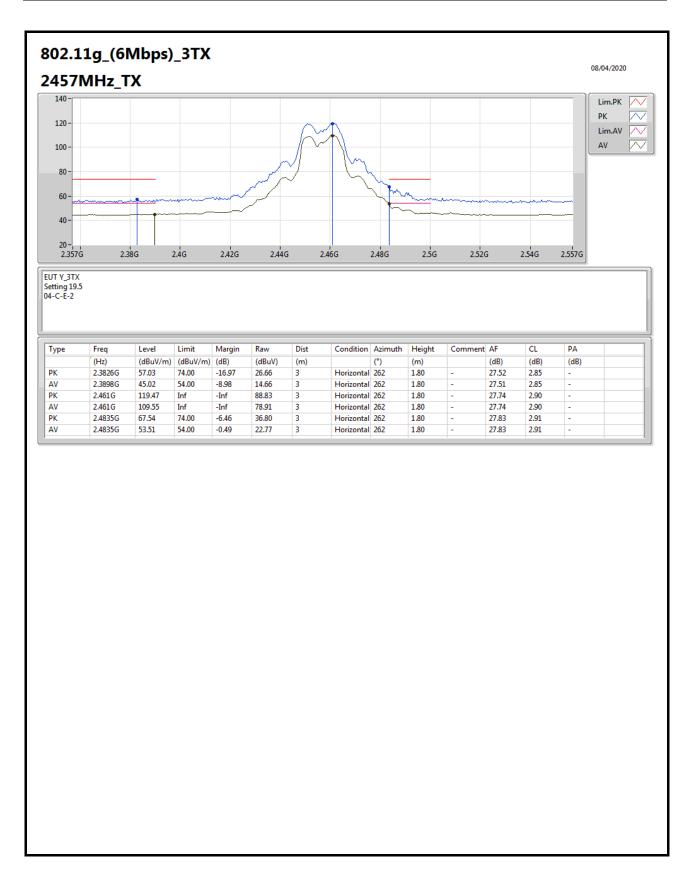




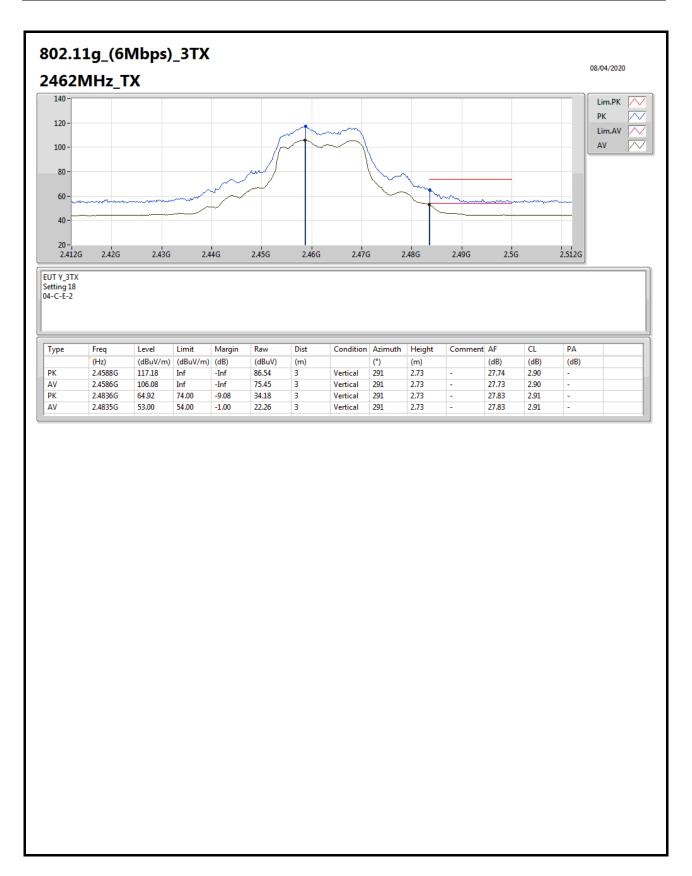




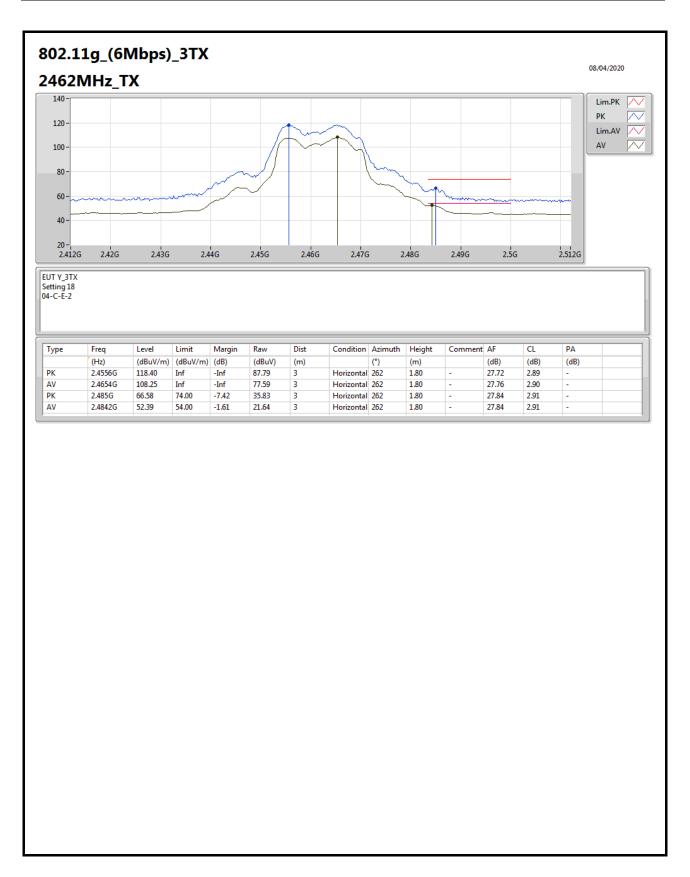






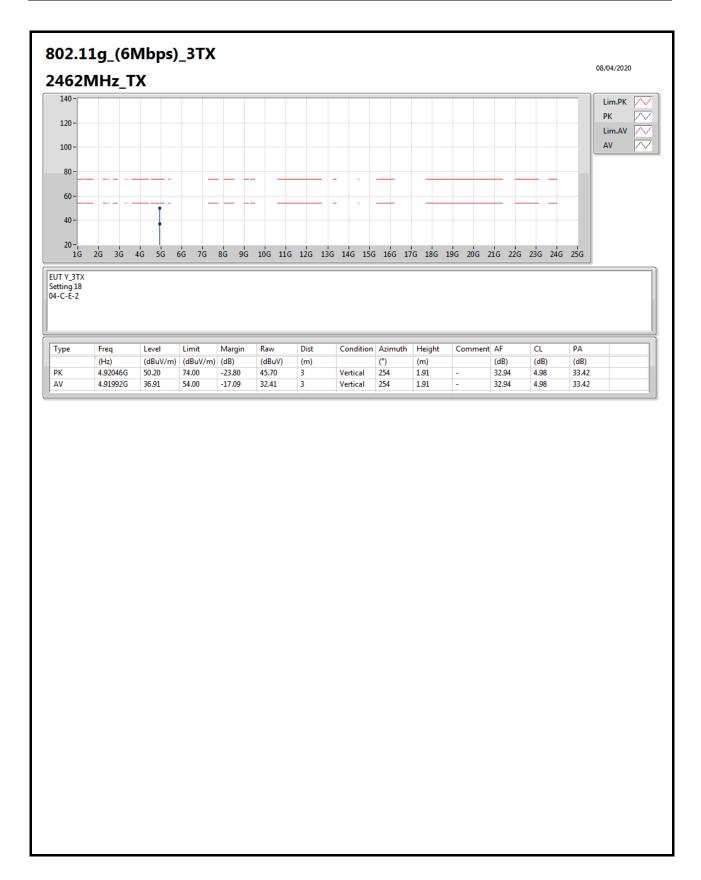




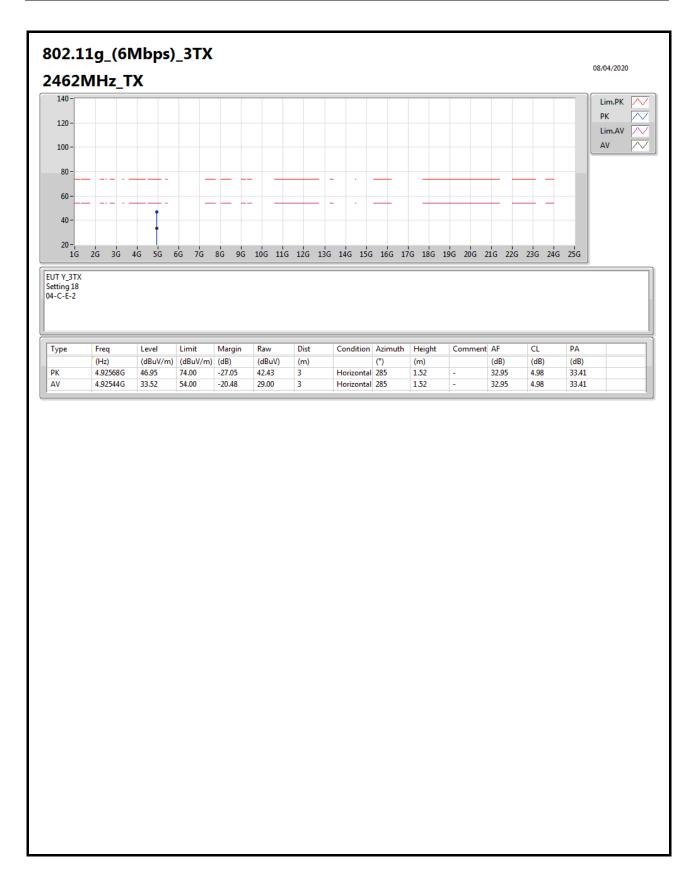


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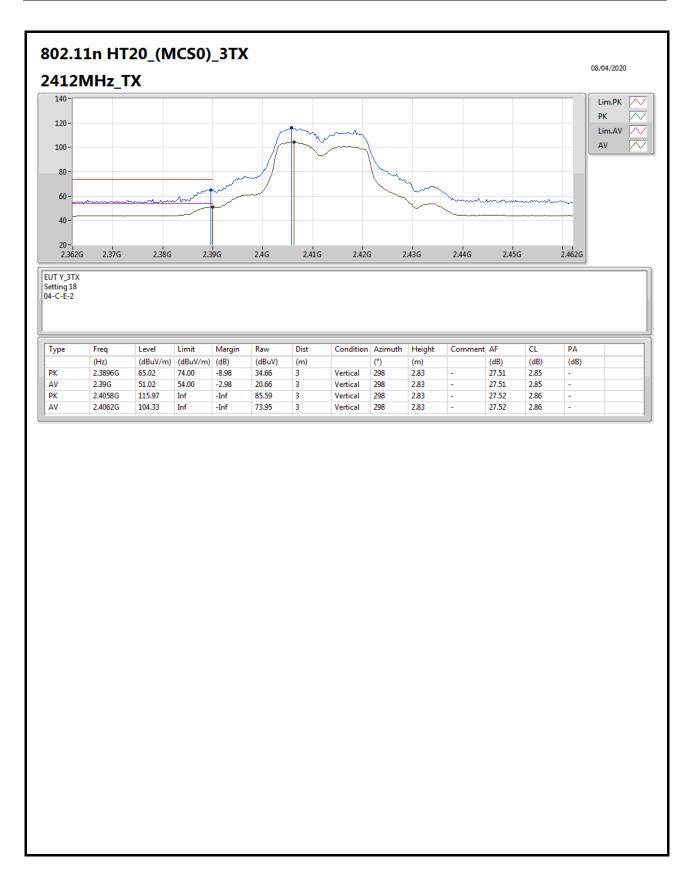




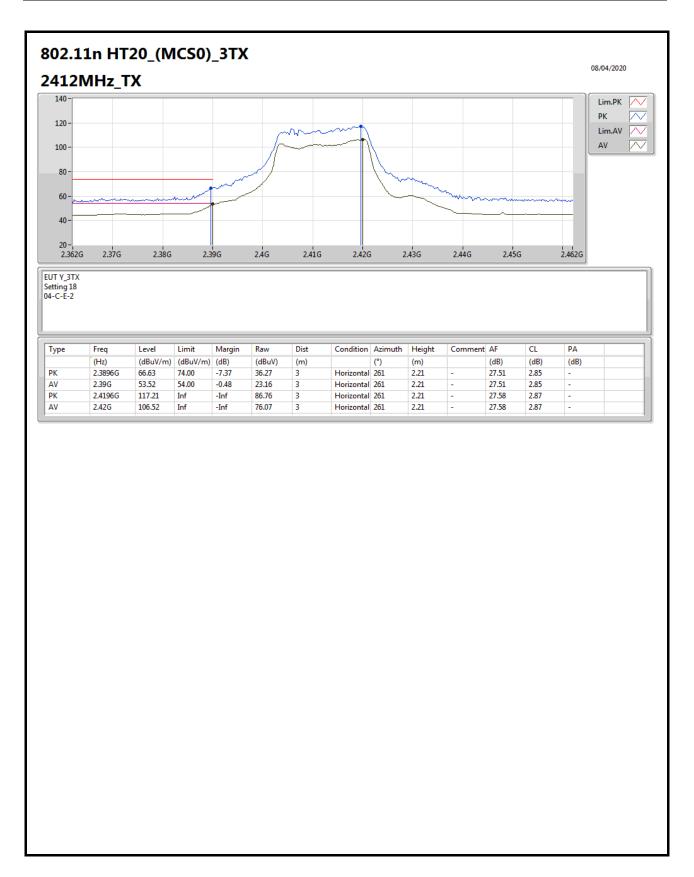




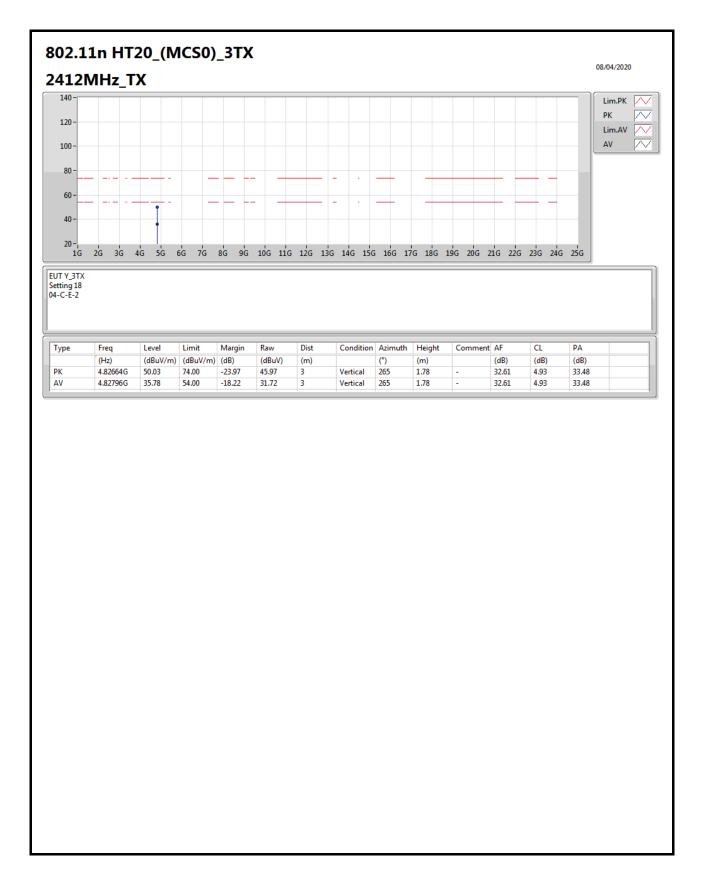




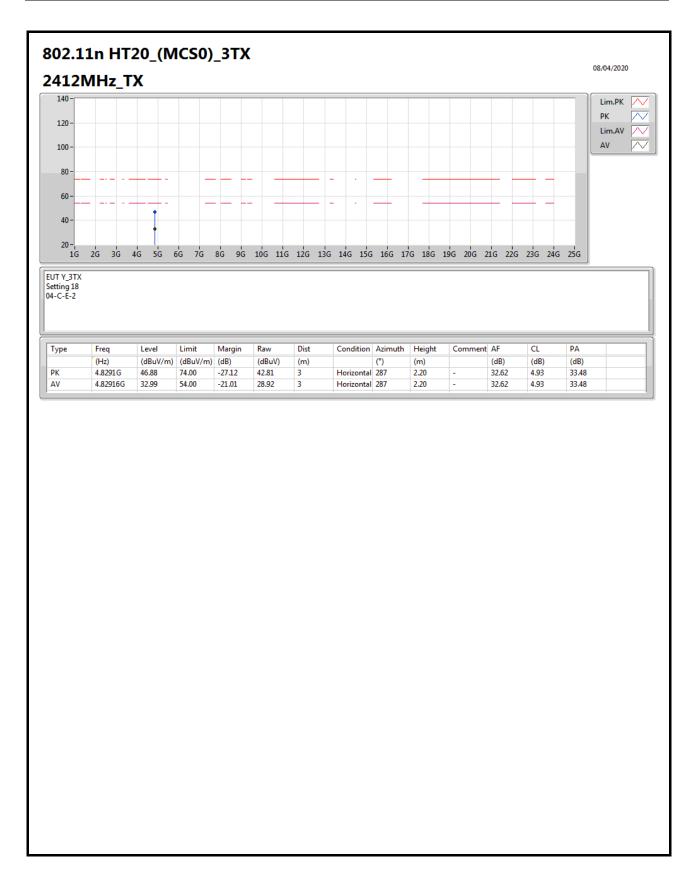




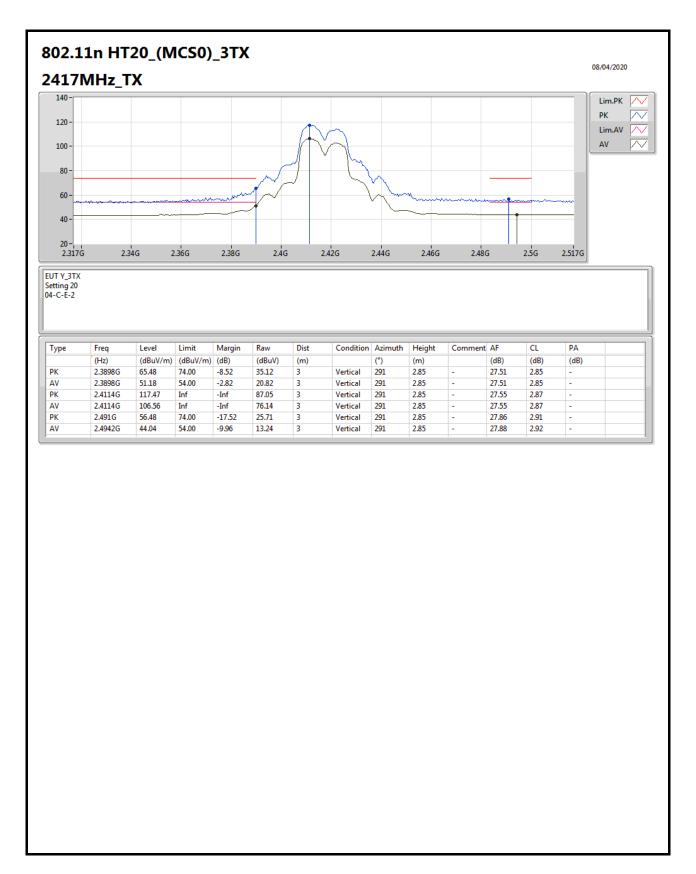




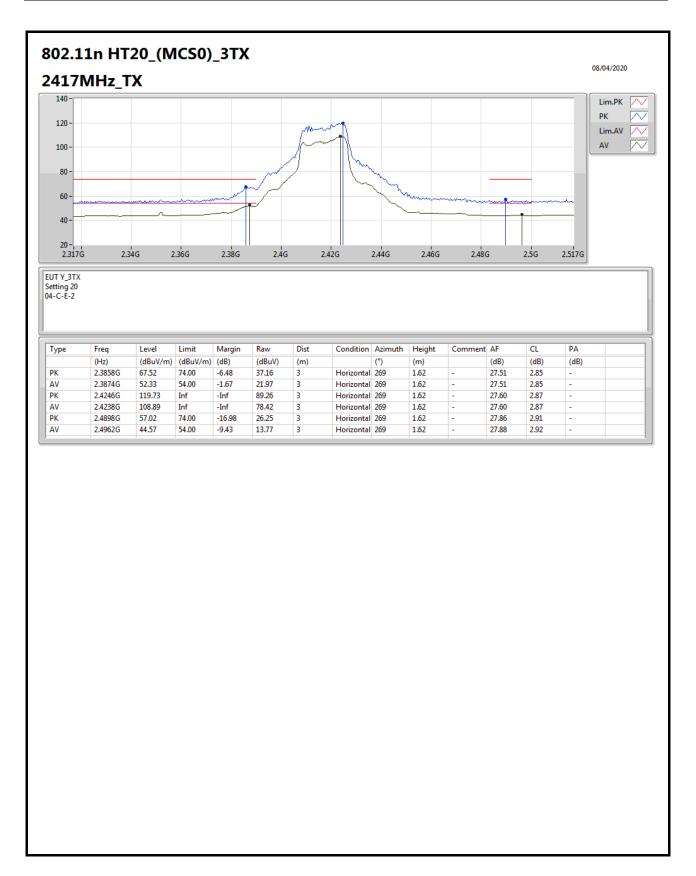




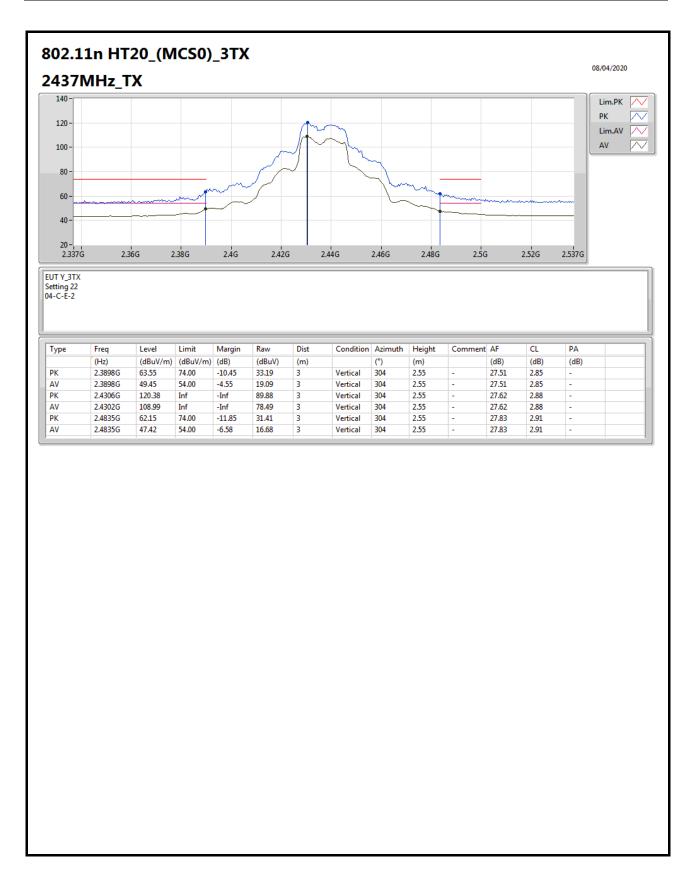




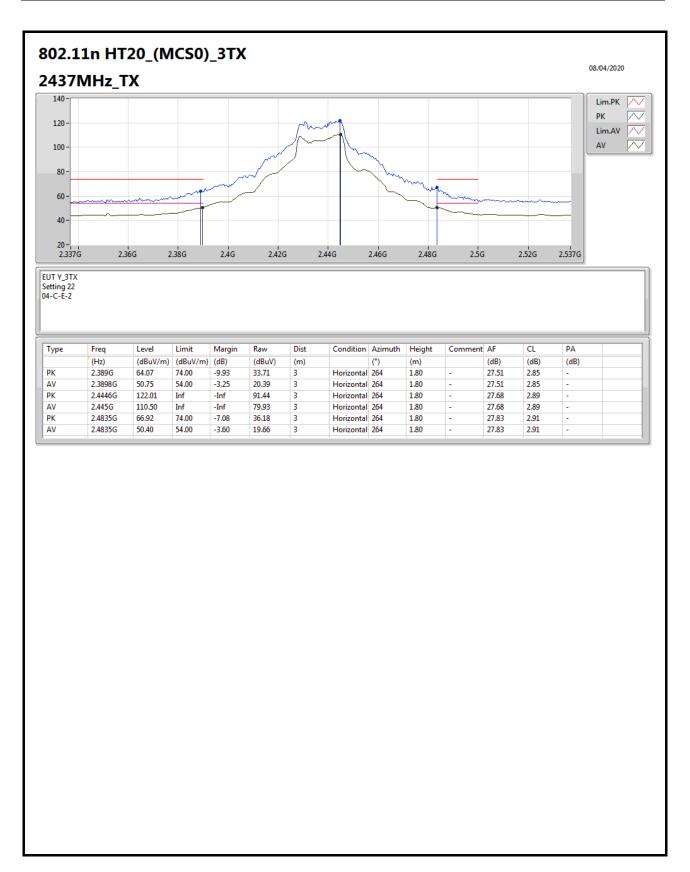




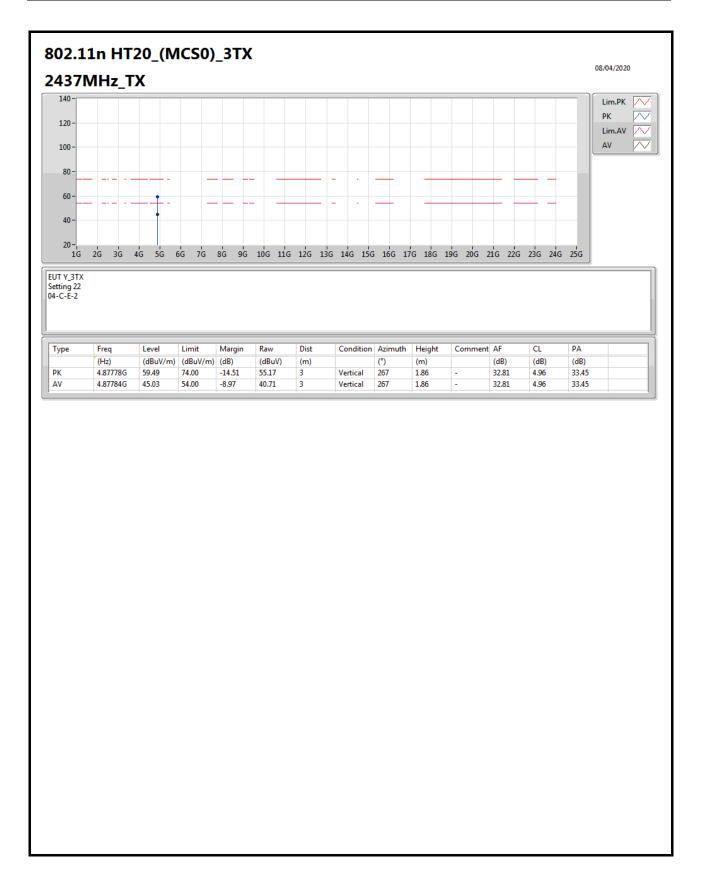




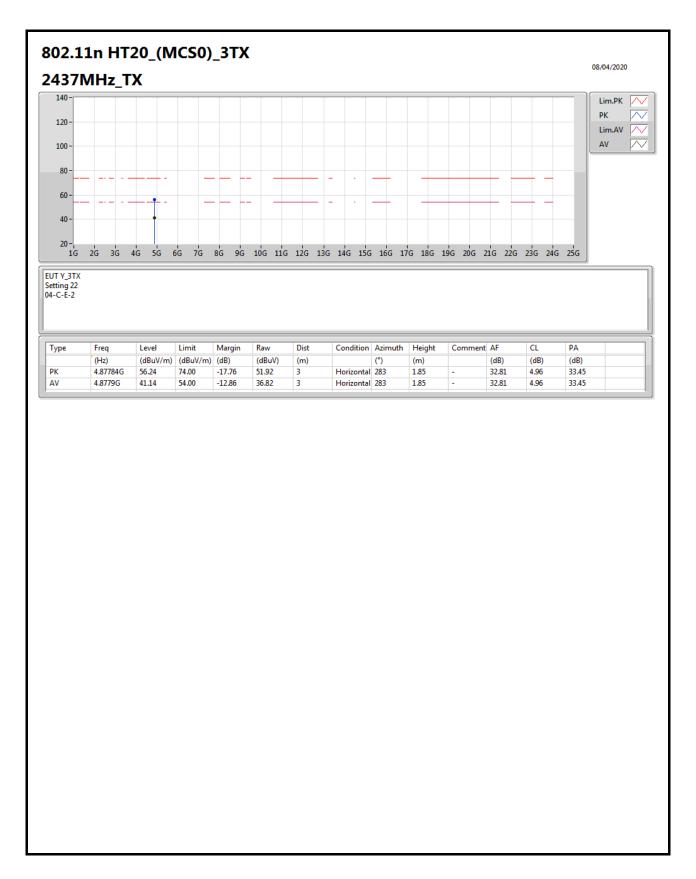




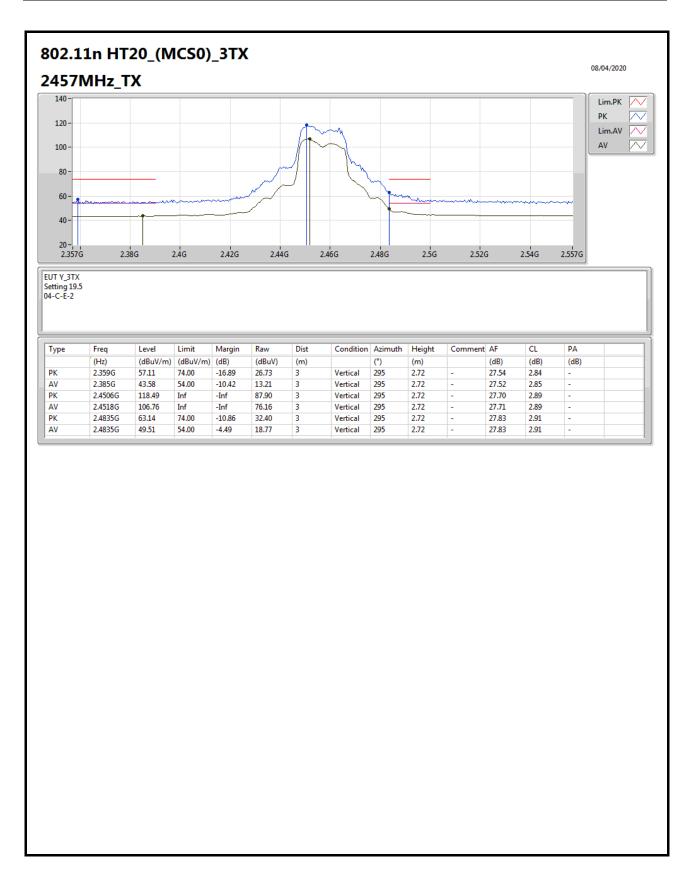




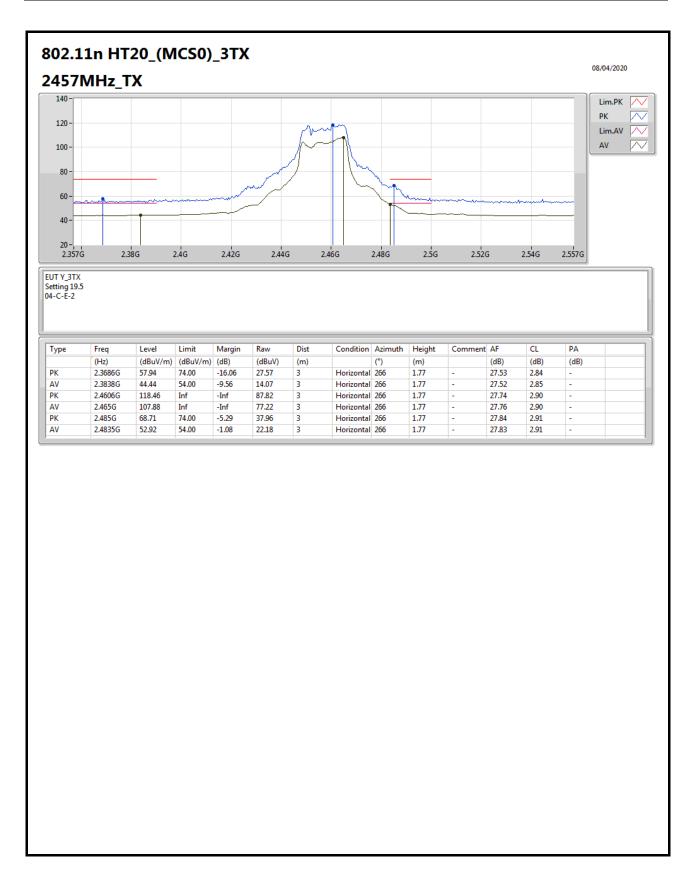




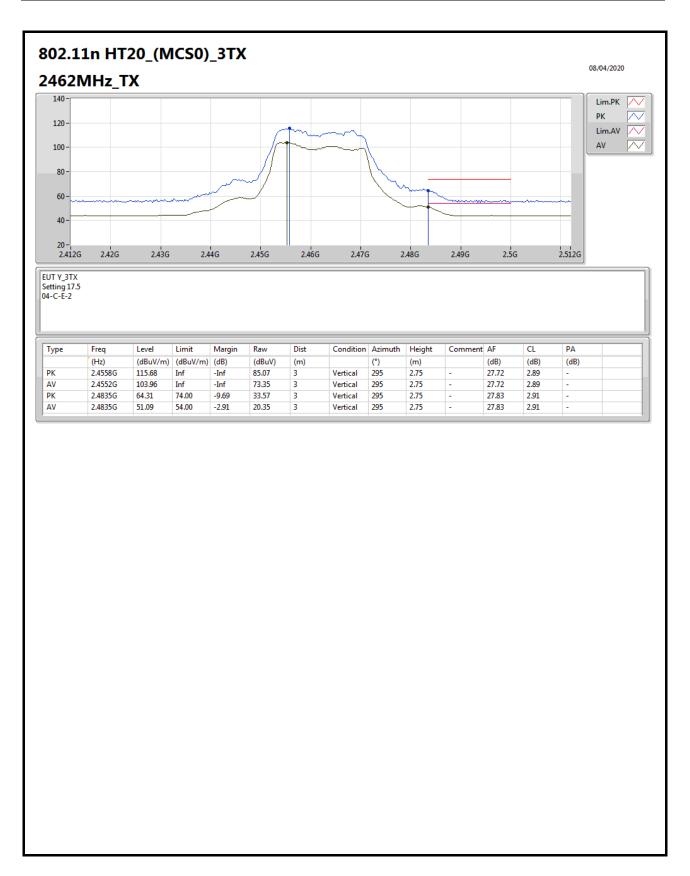




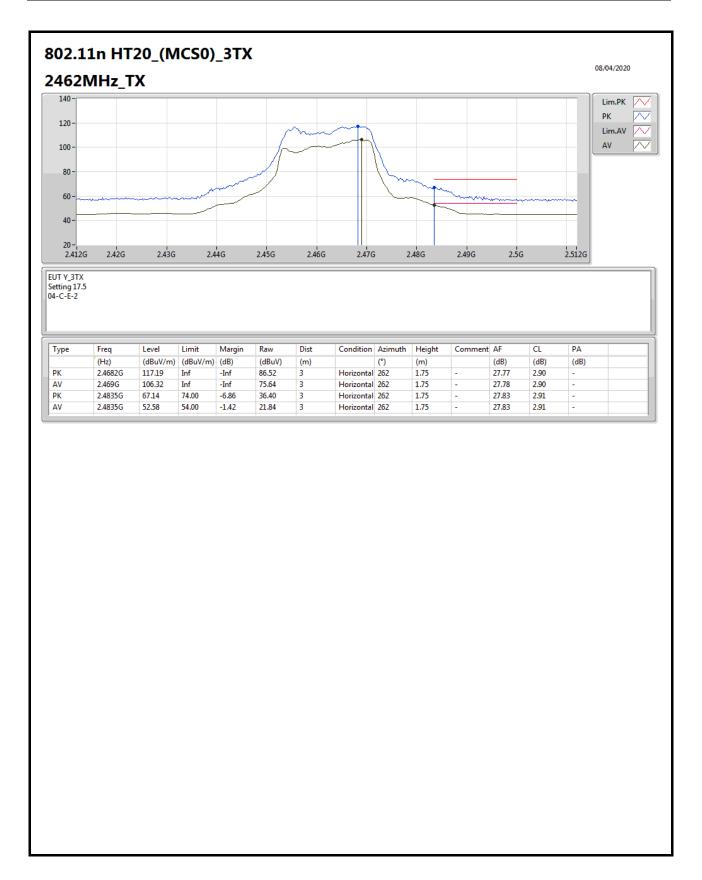




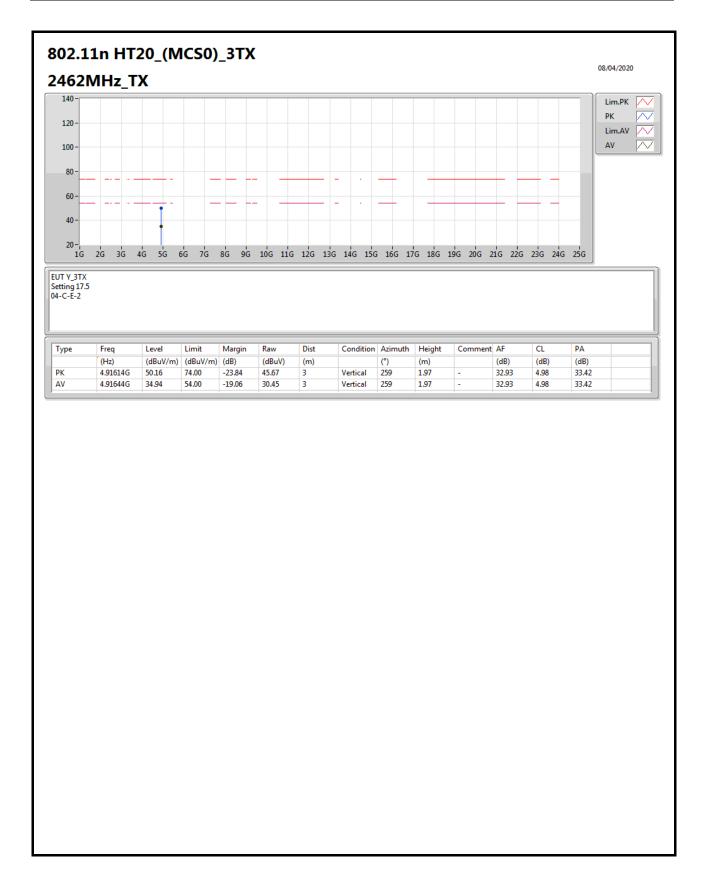






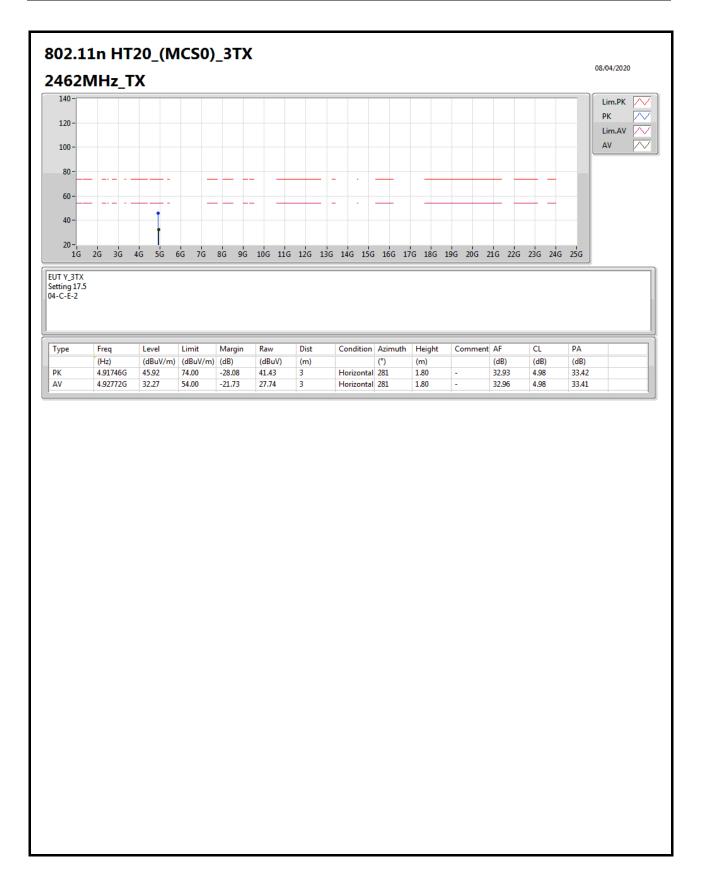




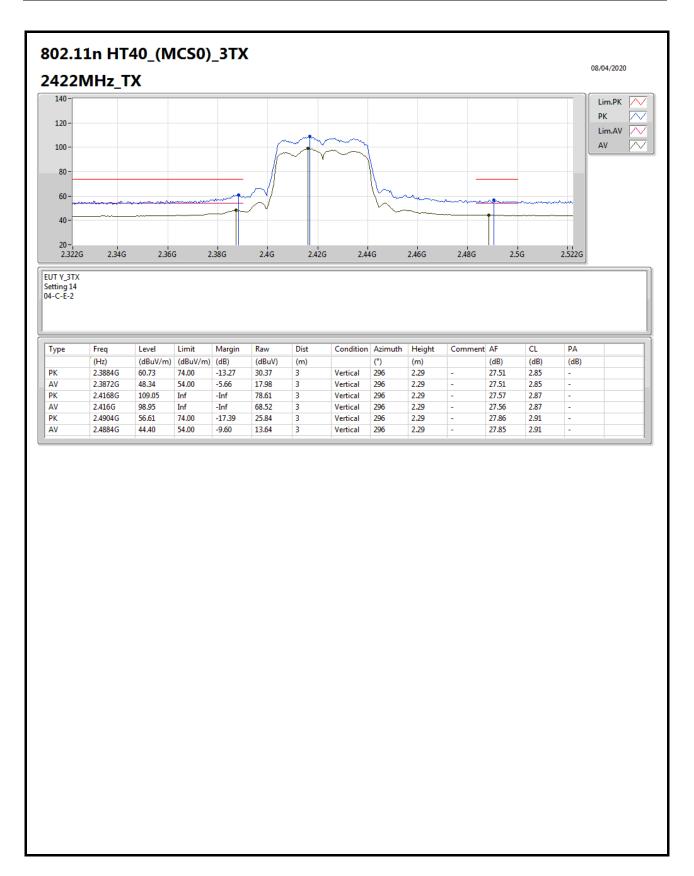


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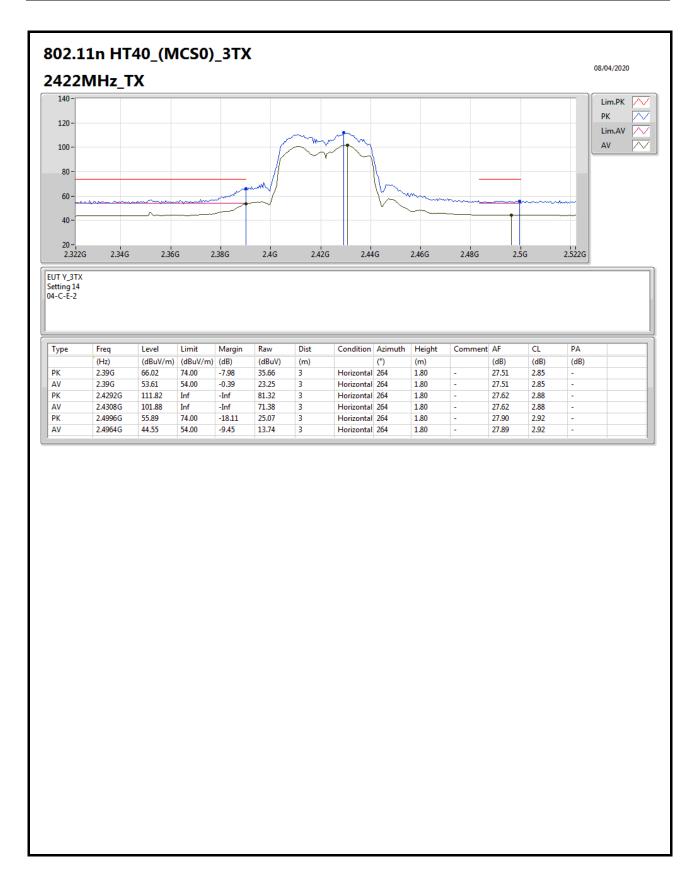




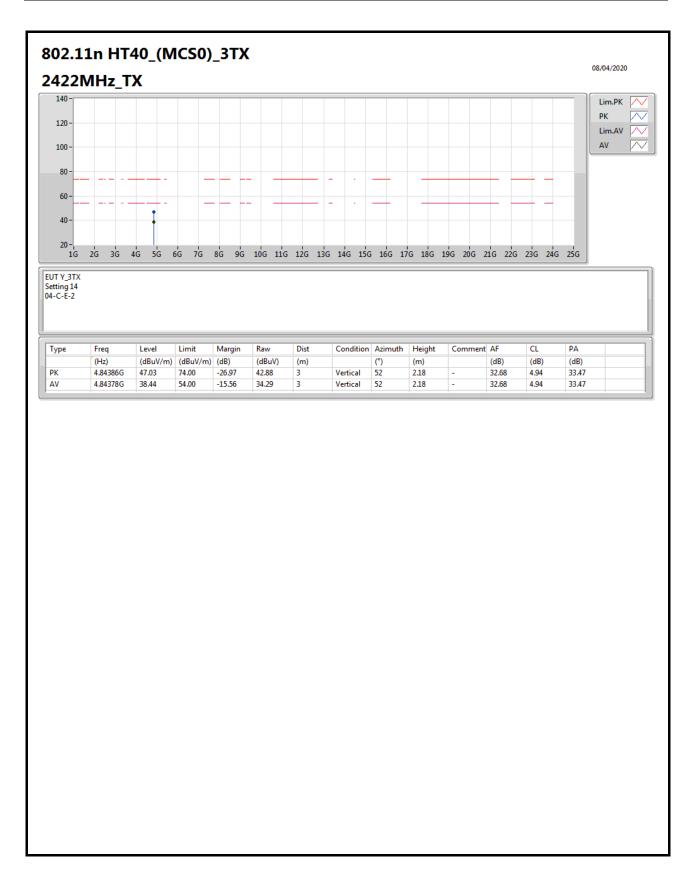




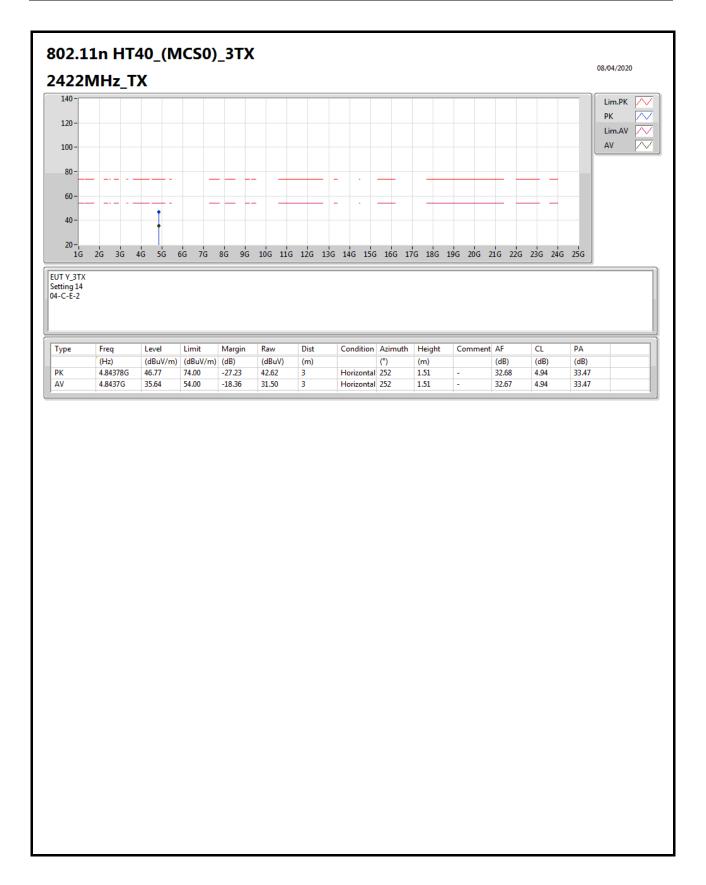






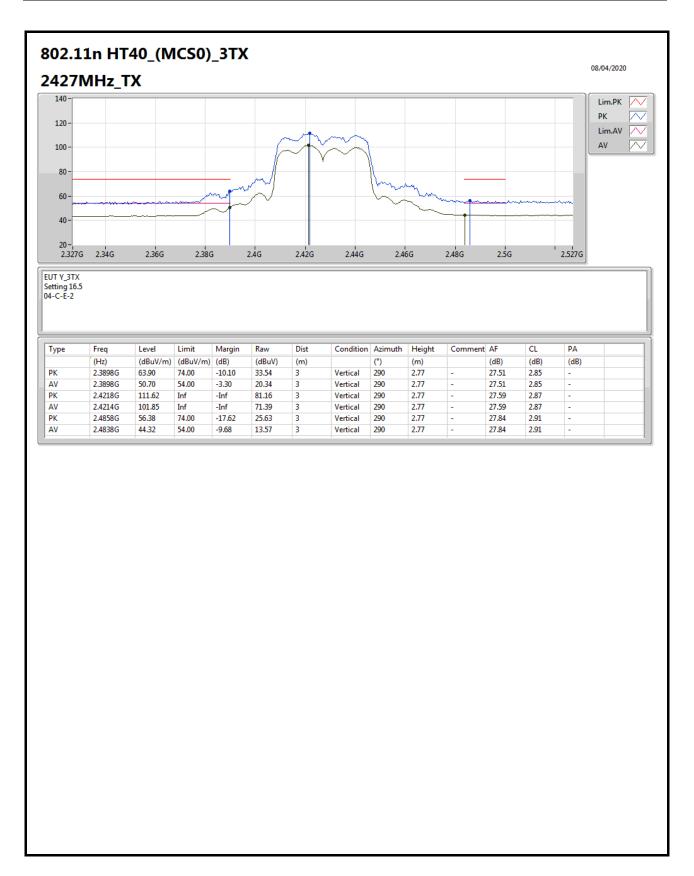




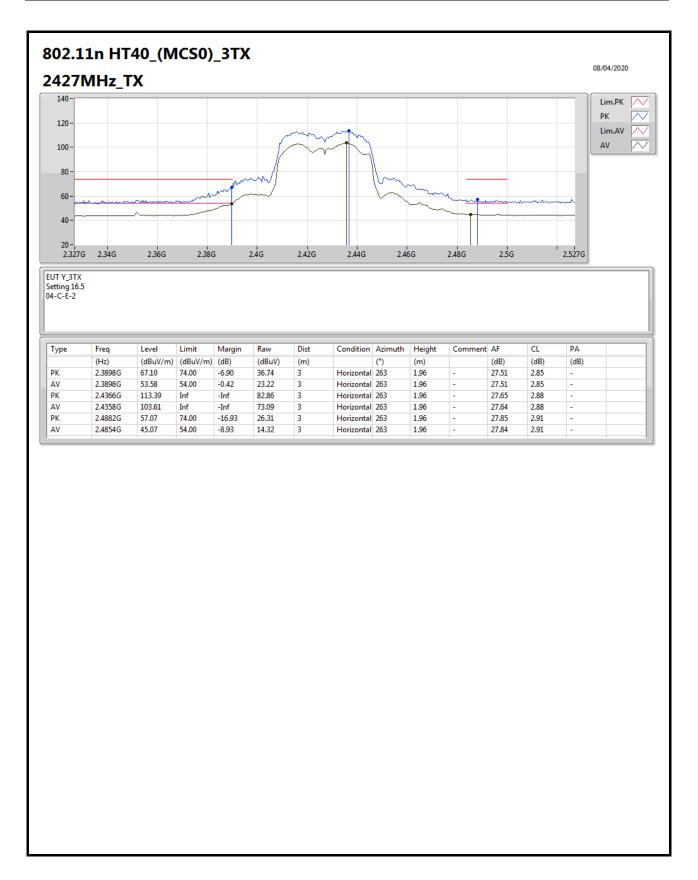


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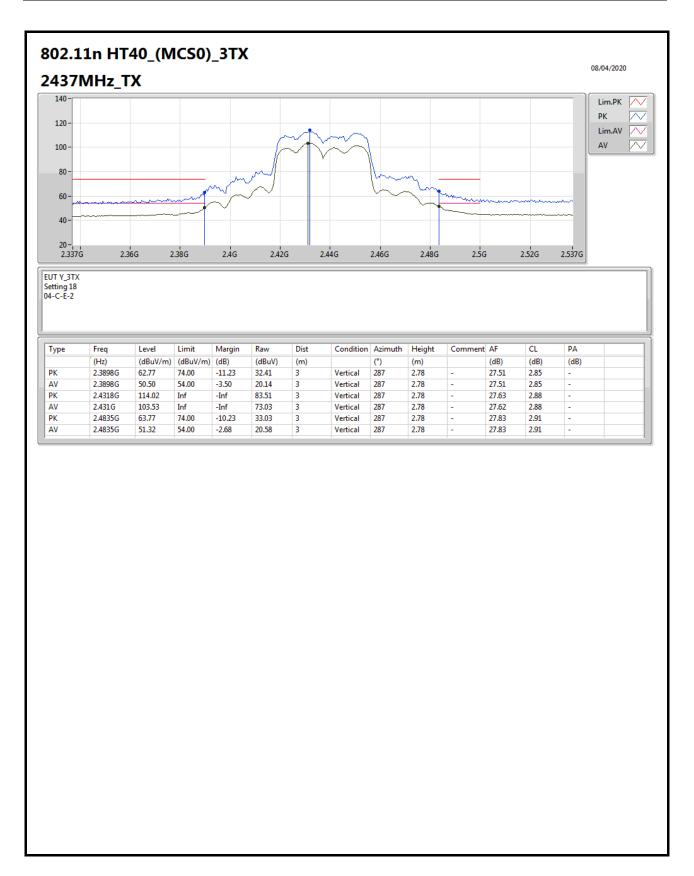






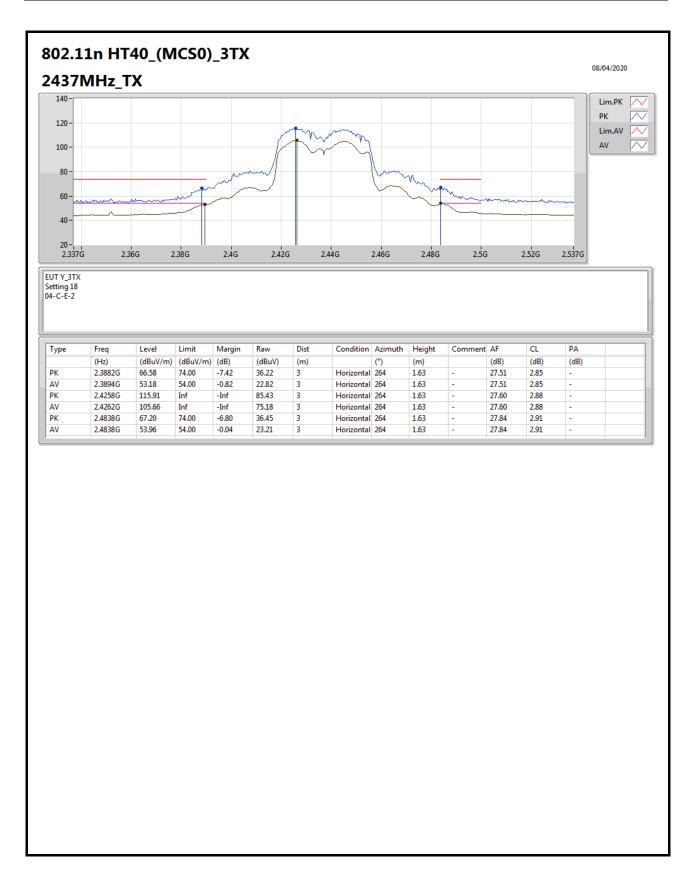






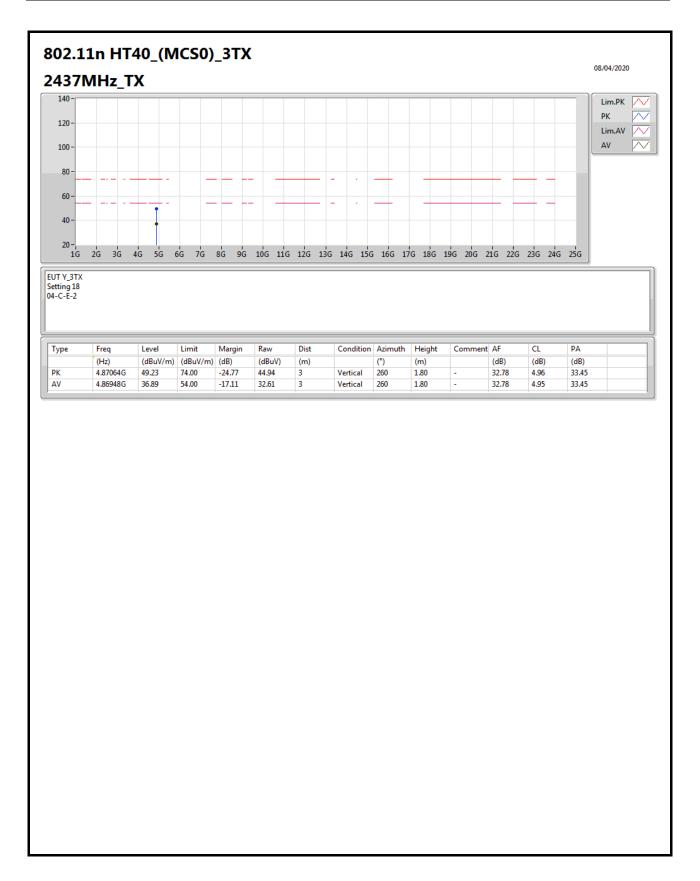
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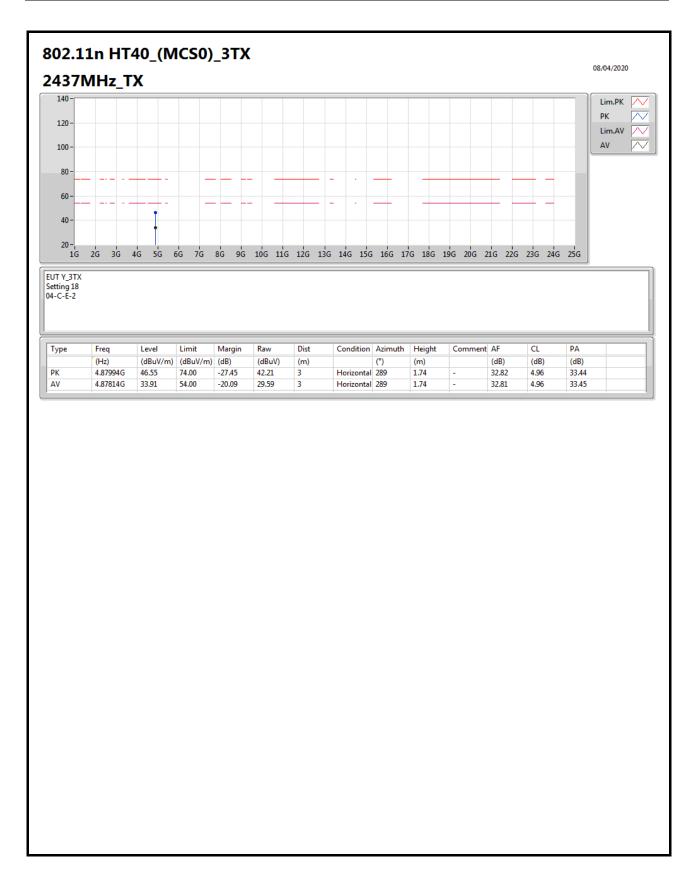
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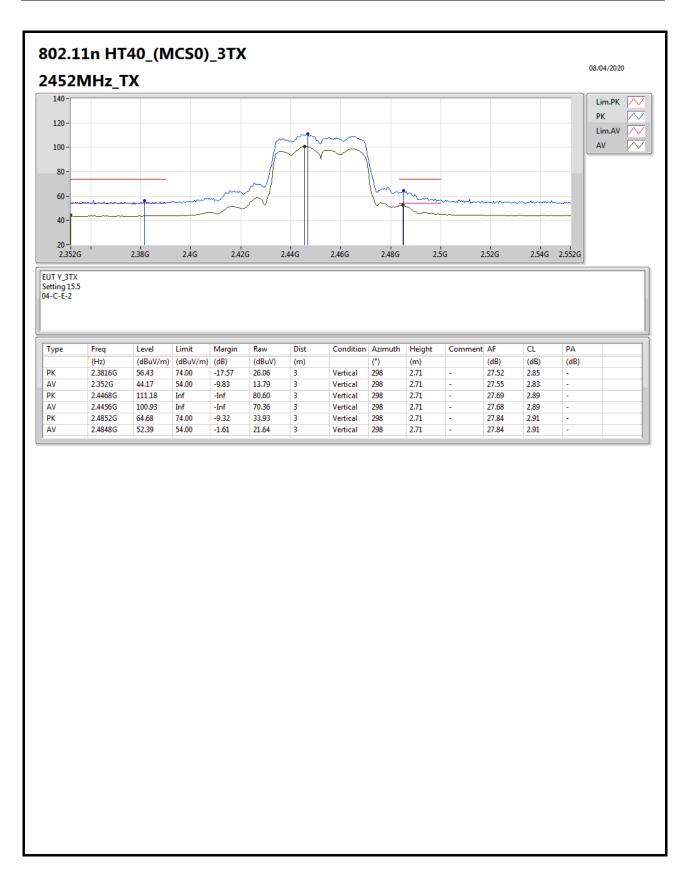


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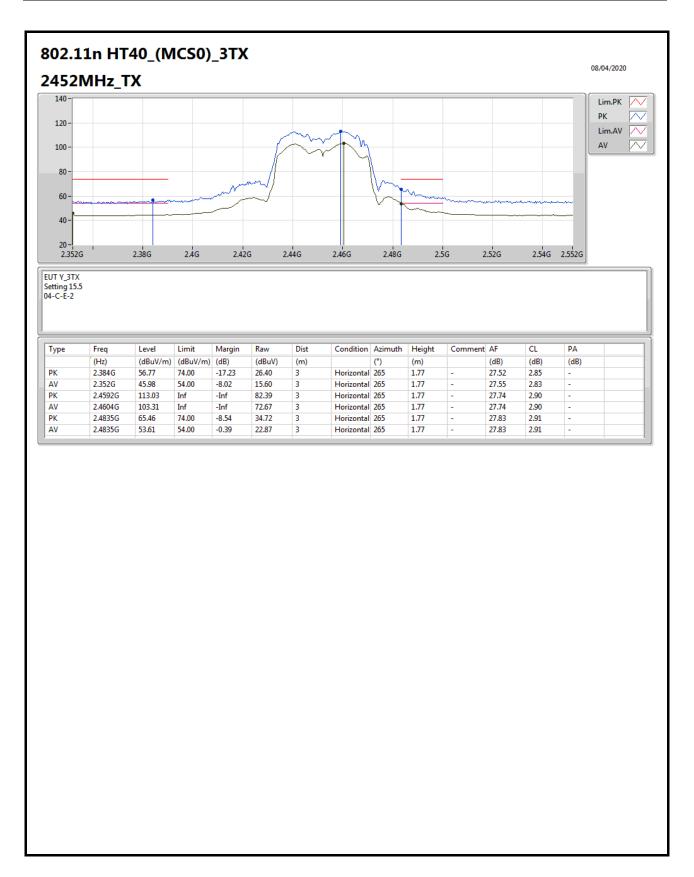




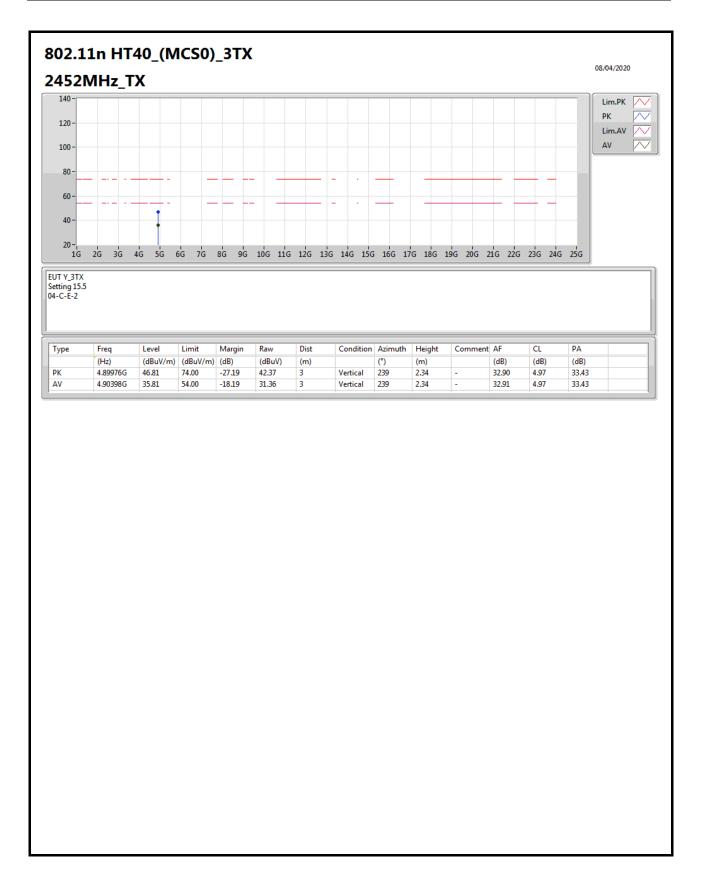












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