

Report No.: FR041508AB



FCC RADIO TEST REPORT

FCC ID

: G95-CGA4236

Equipment

: Cable Moden DOCSSIS 3.1

Trade Name

: technicolor

Model Number : CGA4236

Product Code : CGA4236VGW-TCH3;CGA4236DGW-TCH3;

CGA4236-TCH2

(Refer to section 1.1.5 for detail information)

Applicant

: Technicolor Connected Home USA LLC

5030 Sugarloaf Parkway, Building 6, Lawrenceville, Georgia, United States

Manufacturer

: Technicolor Connected Home USA LLC

5030 Sugarloaf Parkway, Building 6. Lawrenceville, Georgia, United States

Standard

: 47 CFR FCC Part 15.407

The product was received on Apr. 09, 2020, and testing was started from Apr. 09, 2020 and completed on Jun. 08, 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

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-A12_1 Ver1.2

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Issued Date

: Jun. 19, 2020

Report Version : 02

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Appendix A. Test Results of AC Power-line Conducted Emissions

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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	Jun. 18, 2020
02	Change received date to "Apr. 09, 2020" from "Apr. 20, 2020".	Jun. 19, 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	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Conducted Output Power	PASS	-
3.4	15.407(a)	Peak Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	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: 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
5150-5250	a, n (HT20), ac (VHT20),	5180-5240	36-48 [4]
5725-5850	ax (HEW20)	5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40),	5190-5230	38-46 [2]
5725-5850	ax (HEW40)	5755-5795	151-159 [2]
5150-5250	ac (VHT80), ax (HEW80)	5210	42 [1]
5725-5850	ac (111100), ax (1121100)	5775	155 [1]

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Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4
5.15-5.25GHz	802.11n (HT20)	20	4
5.15-5.25GHz	802.11n (HT40)	40	4
5.15-5.25GHz	802.11ac (VHT20)	20	4
5.15-5.25GHz	802.11ac (VHT40)	40	4
5.15-5.25GHz	802.11ac (VHT80)	80	4
5.15-5.25GHz	802.11ax (HEW20)	40	4
5.15-5.25GHz	802.11ax (HEW40)	40	4
5.15-5.25GHz	802.11ax (HEW80)	80	4
5.725-5.85GHz	802.11a	20	4
5.725-5.85GHz	802.11n (HT20)	20	4
5.725-5.85GHz	802.11n (HT40)	40	4
5.725-5.85GHz	802.11ac (VHT20)	20	4
5.725-5.85GHz	802.11ac (VHT40)	40	4
5.725-5.85GHz	802.11ac (VHT80)	80	4
5.725-5.85GHz	802.11ax (HEW20)	40	4
5.725-5.85GHz	802.11ax (HEW40)	40	4
5.725-5.85GHz	802.11ax (HEW80)	80	4

Note:

- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- HEW20, HEW40, HEW80 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- BWch is the nominal channel bandwidth.

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1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	TCH	1415-07JS0V8	Dipole Antenna	N/A	
2	2	TCH	1415-07JT0V8	Dipole Antenna	N/A	
3	3	TCH	1415-07JR0V8	Dipole Antenna	N/A	
4	1	TCH	1415-07JV0V8	Dipole Antenna	N/A	Note 1
5	2	TCH	1415-07JU0V8	Dipole Antenna	N/A	
6	3	TCH	1415-07JV0V8	Dipole Antenna	N/A	
7	4	TCH	1415-07JU0V8	Dipole Antenna	N/A	

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Note 1:

Ant.	Uncorrelated Gain (dBi)					
Ant.	2.4GHz	5GHz Band 1	5GHz Band 4			
1	2.35	-	-			
2	3.32	-	-			
3	2.87	-	-			
4	-	2.90	4.64			
5	-	3.42	2.20			
6	-	2.92	2.48			
7	-	2.68	3.51			
Correlated Gain (dBi)	6.01	6.63	7.30			

Note 2: The above information was declared by manufacturer.

For 2.4GHz function:

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

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

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

For 5GHz function:

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

Ant. 4, Ant. 5, Ant. 6 and Ant. 7 can be used as transmitting/receiving antenna.

Ant. 4, Ant. 5, Ant. 6 and Ant. 7 could transmit/receive simultaneously.

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1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.948	0.23	2.068m	1k
802.11ax HEW20	0.981	0.08	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ax HEW40	0.964	0.16	782.5u	3k
802.11ax HEW80	0.932	0.31	417.5u	3k

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- 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	\boxtimes	Without beamforming		
Function		Outdoor P2M	\boxtimes	Indoor P2M		
i dilotion		Fixed P2P		Client		
Test Software Version		accessMTool				
Firmware Version Broadcom BCA: 17.10 RC121.11 wl0: Feb 19 2020 10:51:50 version 17.10.121.11 (r783116 Wl						

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Porduct Code	Description
CGA4236VGW-TCH3	All the porduct code are identical, the difference porduct code as
CGA4236DGW-TCH3	marketing strategy.
CGA4236-TCH2	marketing strategy.

From the above list, Porduct Code: CGA4236VGW-TCH3 was selected as representative model for the test and its data was recorded in this report.

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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 789033 D02 v02r01

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

- FCC KDB 662911 D01 v02r01
- FCC KDB 412172 D01 v01r01
- 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	TH01-CB	Paul Chen	21.5~23.1°C / 56~58%	May 06, 2020 ~ Jun. 04, 2020
Radiated below 1GHz	03CH04-CB	Paul Chen	21.5~24.6°C / 56~60%	Jun. 06, 2020
Radiated above 1GHz	03CH05-CB	Paul Chen	21.4~23.5°C / 57~59%	Apr. 09, 2020 ~ Jun. 06, 2020
AC Conduction	CO02-CB	GN Hou	21~23°C / 62~65%	Jun. 08, 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
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	91
5200MHz	91
5240MHz	91
5745MHz	87
5785MHz	92
5825MHz	87
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	88
5200MHz	94
5240MHz	94
5745MHz	90
5785MHz	90
5825MHz	93
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	68
5230MHz	96
5755MHz	92
5795MHz	92
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	66
5775MHz	92

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Note:

♦ VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

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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	СТХ		
1	EUT_2.4GHz + Adapter 1		
2	EUT_2.4GHz + Adapter 2		
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.			
3	EUT_5GHz + Adapter 1		
For operating mode 1 is the worst case and it was record in this test report.			

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The Worst Case Mode for Following Conformance Tests		
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density	
Test Condition	Test Condition Conducted measurement at transmit chains	

Th	The Worst Case Mode for Following Conformance Tests			
Tests Item	Unwanted Emissions			
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	CTX			
1	EUT_2.4GHz + Adapter 1			
2	EUT_2.4GHz + Adapter 2			
Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.				
3	EUT_5GHz + Adapter 2			
For operating mode 3 is the worst case and it was record in this test report.				
Operating Mode > 1GHz CTX				

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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.: FA041508 for Co-location RF Exposure Evaluation.			

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

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

Accessories				
Equipment Name	Brand Name	Model Name	Rating	
Adapter 1	НОІОТО	ADS-36FKJ-12 12036EPCU	INPUT: 100-240V, 50/60Hz, Max.1.0A OUTPUT: 12V, 3.0A	
Adapter 2	AcBel	ADG009 AD:AD0G2	INPUT: 100-240V, 50/60Hz, MAX.1.5A OUTPUT: 12V, 4.5A	
Others				
Power cord*1, Non-shielded, 1.8m (For adapter 2 use)				

2.5 Support Equipment

For AC Conduction:

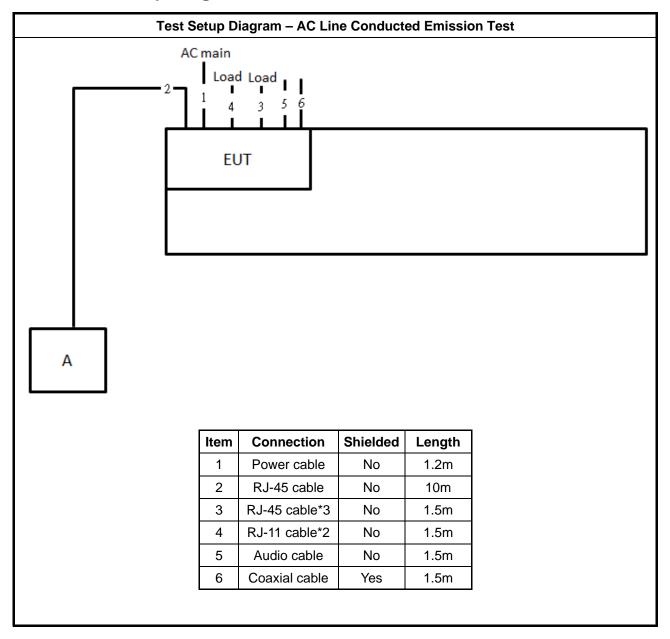
Support Equipment				
No.	lo. Equipment Brand Name Model Name FCC ID			
Α	LAN NB	DELL	E6430	N/A

For Radiated and RF Conducted:

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

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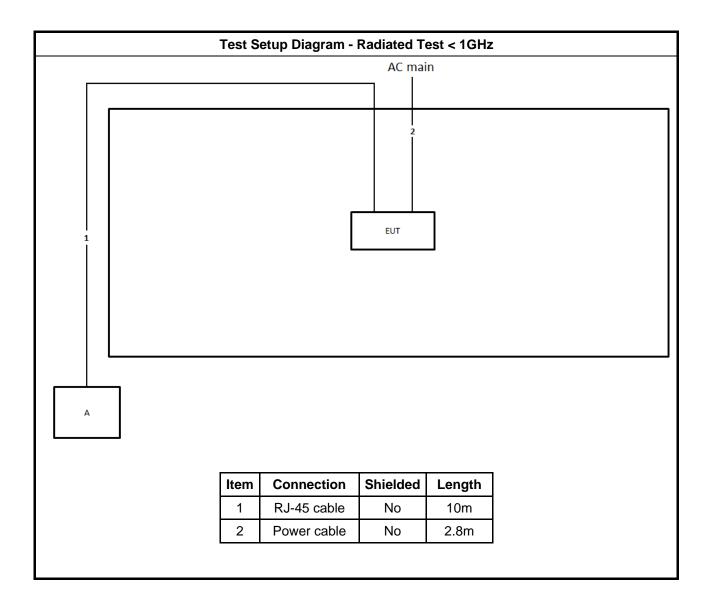
2.6 Test Setup Diagram



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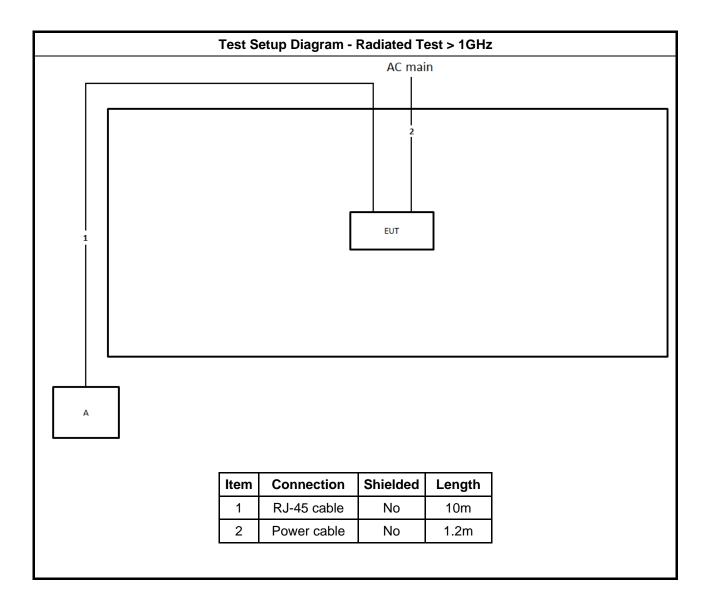
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3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC 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.				

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3.1.2 Measuring Instruments

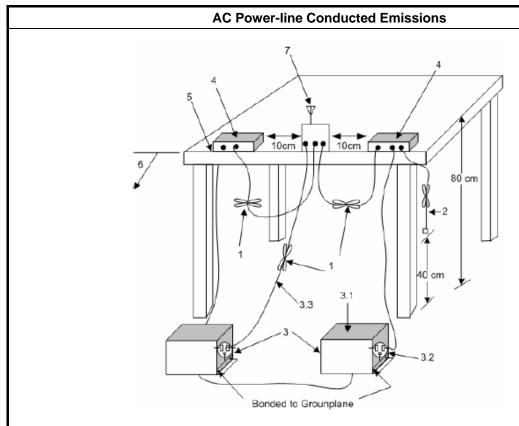
Refer a test equipment and calibration data table in this test report.

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 Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading (dBuV) = LISN Factor + Cable Loss + Read Level = Level
- b. Margin = Limit + (Read Level + LISN Factor + Cable Loss)

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

	Emission Bandwidth Limit
UNI	I Devices
\boxtimes	For the 5.15-5.25 GHz band, N/A
	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
	For the $5.47-5.725$ GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
\boxtimes	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.
LE-	LAN Devices
	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.

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3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

	Test Method								
-	For the emission bandwidth shall be measured using one of the options below:								
	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.								
	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.								
		Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.							

3.2.4 Test Setup

Emission Bandwidth							
	EUT						
Spectrum Analyzer							

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
UNI	I Devices
\boxtimes	For the 5.15-5.25 GHz band:
	 Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 - (G_{TX} - 6). e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm]
	Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$
	Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$.
	Mobile or Portable Client: the maximum conducted output power (P _{Out}) shall not exceed the lesser of 250 mW. If G _{TX} > 6 dBi, then P _{Out} = 24 - (G _{TX} - 6).
	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
\boxtimes	For the 5.725-5.85 GHz band:
	 Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 - (G_{TX} - 6).
	 Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-	LAN Devices
	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.725-5.85 GHz band:
	 Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 - (G_{TX} - 6).
	 Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
	t = maximum conducted output power in dBm, = the maximum transmitting antenna directional gain in dBi.

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3.3.2 Measuring Instruments

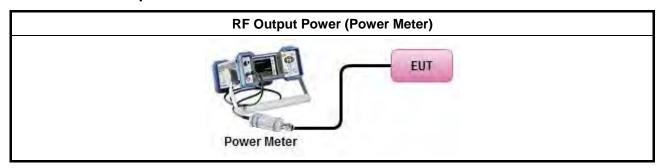
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

	Test Method					
•	Maximum Conducted Output Power					
	Average over on/off periods with duty factor					
	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).					
	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)					
	Wideband RF power meter and average over on/off periods with duty factor					
	Refer as FCC KDB 789033, clause E Method PM-G (using an 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} = P₁ + P₂ + + 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



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

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3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

	Peak Power Spectral Density Limit
UNI	I Devices
\boxtimes	For the 5.15-5.25 GHz band:
	 Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 - (G_{TX} - 6).
	Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$.
	Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G _{TX} > 6 dBi, then PPSD= 11 - (G _{TX} - 6)
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= 11 – ($G_{TX} - 6$).
	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= 11 – ($G_{TX} - 6$).
	For the 5.725-5.85 GHz band:
	Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then PPSD= $30 - (G_{TX} - 6)$.
	Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-	LAN Devices
	For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
	 e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for 0° ≤ θ < 8°; -13 − 0.716 (θ-8) dBW/MHz for 8° ≤ θ < 40° -35.9 − 1.22 (θ-40) dBW/MHz for 40° ≤ θ ≤ 45°; -42 dBW/MHz for θ > 45°
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz.
	For the 5.725-5.85 GHz band:
	Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then PPSD= $30 - (G_{TX} - 6)$.
	 Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
pow	SD = peak power spectral density that he same method as used to determine the conducted output ver shall be used to determine the power spectral density. And power spectral density in dBm/MHz = the maximum transmitting antenna directional gain in dBi.

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3.4.2 Measuring Instruments

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

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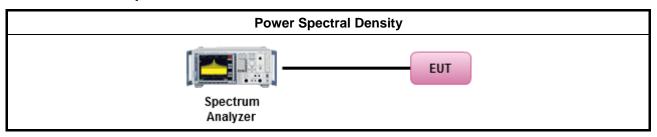
3.4.3 Test Procedures

		Test Method								
•	outp func	eak power spectral density procedures that the same method as used to determine the conducted atput power shall be used to determine the peak power spectral density and use the peak search action on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density all be measured using below options:								
		Refer as FCC KDB 789033, F)5) power spectral density can be measured using resolution bandwidths $<$ 1 MHz provided that the results are integrated over 1 MHz bandwidth								
	[duty	y cycle ≥ 98% or external video / power trigger]								
	\boxtimes	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).								
		Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)								
	duty	cycle < 98% and average over on/off periods with duty factor								
	\boxtimes	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).								
		Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)								
•	For	conducted measurement.								
	•	If the EUT supports multiple transmit chains using options given below:								
		Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.								
		Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,								
		Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.								
	•	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $ PPSD_{total} = PPSD_1 + PPSD_2 + + PPSD_n \\ (calculated in linear unit [mW] and transfer to log unit [dBm]) \\ EIRP_{total} = PPSD_{total} + DG $								

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3.4.4 Test Setup



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3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D

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3.5 Unwanted Emissions

3.5.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz 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.

Un-restricted band emissions above 1GHz Limit							
Operating Band	Limit						
⊠ 5.15 - 5.25 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]						
☐ 5.25 - 5.35 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]						
☐ 5.47 - 5.725 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]						
⊠ 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.						

Note 1: 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

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linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

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3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

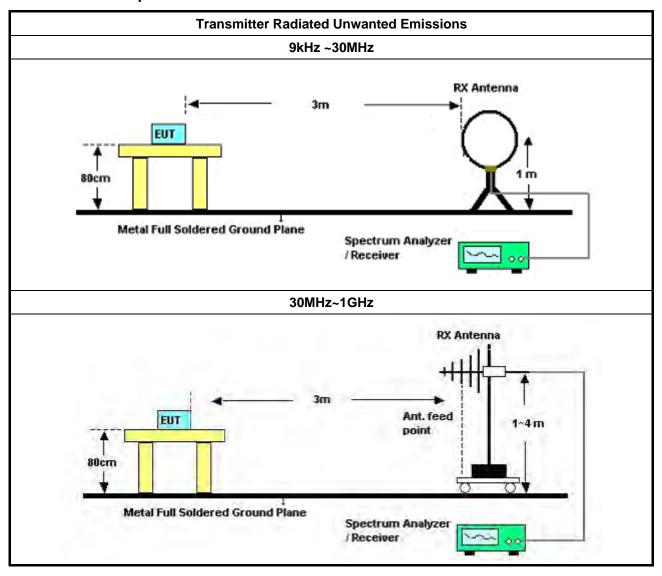
Test Method

- 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. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. 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).
- The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
- For the transmitter unwanted emissions shall be measured using following options below:
 - Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
 - Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.
 - Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).
 - Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).
 - Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
 - Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
 - Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.
 - Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
- For radiated measurement.
 - Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
 - Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
 - Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
- The any unwanted emissions level shall not exceed the fundamental emission level.
- All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

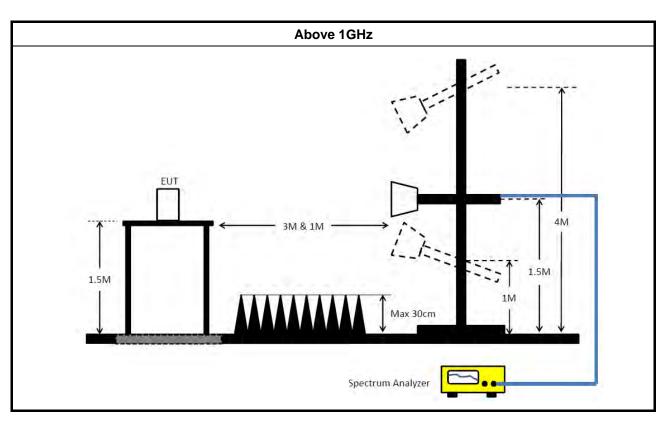
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3.5.4 Test Setup



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3.5.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor (if applicable) = Level.

3.5.6 Transmitter Unwanted Emissions (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.

3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

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4 Test Equipment and Calibration Data

					Calibration	Calibration	
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Date	Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 21, 2019	Nov. 20, 2020	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Oct. 30, 2019	Oct. 29, 2020	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Mar. 10, 2020	Mar. 09, 2021	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 21, 2019	Oct. 20, 2020	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N06 07	30MHz ~ 1GHz	Oct. 12, 2019	Oct. 11, 2020	Radiation (03CH04-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	310N	187291	0.1MHz ~ 1GHz	Mar. 19, 2020	Mar. 18, 2021	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 18, 2019	Dec. 17, 2020	Radiation (03CH04-CB
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 13, 2020	May 12, 2021	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+22	30MHz – 1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1291	1GHz~18GHz	Oct. 05, 2019	Oct. 04, 2020	Radiation (03CH05-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz – 26.5GHz	Apr. 16, 2019	Apr. 15, 2020	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz – 26.5GHz	Apr. 15, 2020	Apr. 14, 2021	Radiation (03CH05-CB)
Pre-Amplifier	MITEQ	TTA1840-35- HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Aug. 15, 2019	Aug. 14, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-28	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH05-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 05, 2020	May 04, 2021	Conducted (TH01-CB)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Cable-high Woken RG402		High Cable-08	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 18, 2019	Nov. 17, 2020	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 07, 2020	Feb. 06, 2021	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 07, 2020	Feb. 06, 2021	Conducted (TH01-CB)

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

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

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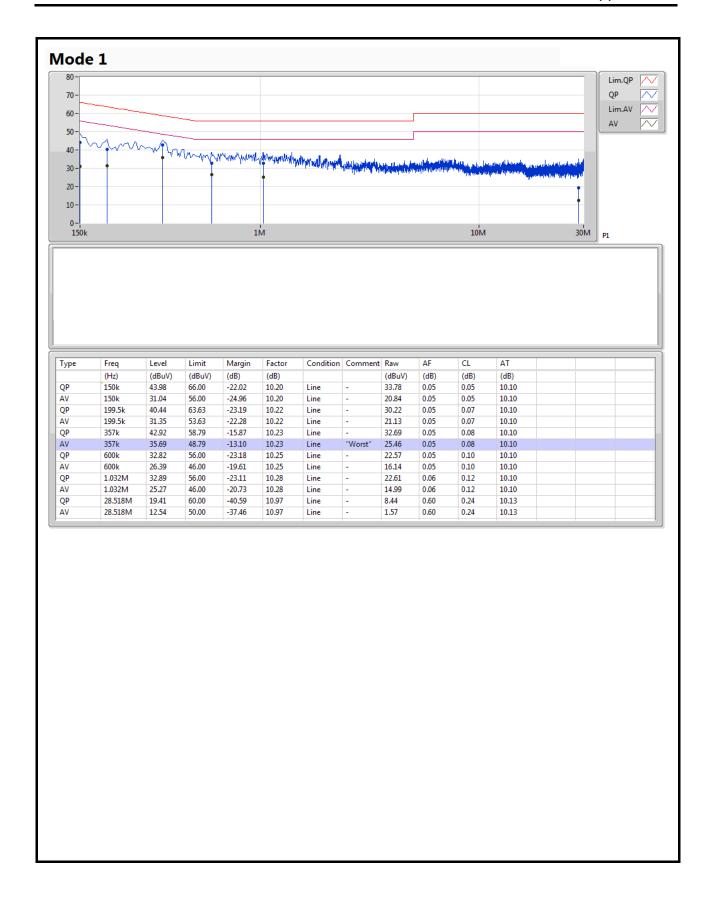
AC Power Port Conducted Emission Result

Appendix A

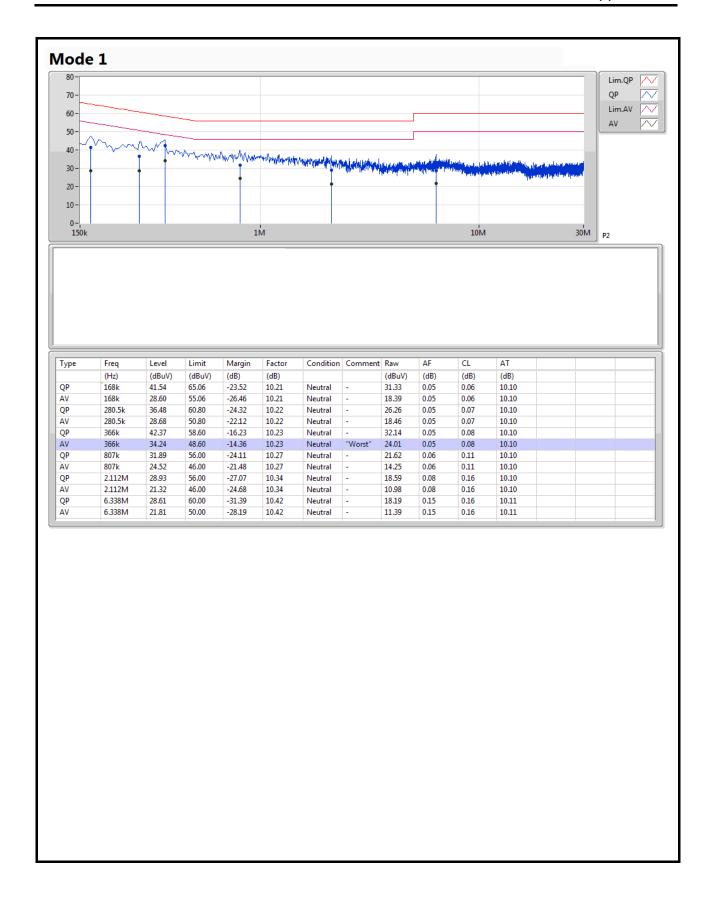
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition
Mode 1	Pass	AV	357k	35.69	48.79	-13.10	10.23	Line











Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW	
	(Hz)	(Hz)		(Hz)	(Hz)	
5.15-5.25GHz	-	-	-	-	-	
802.11a_Nss1,(6Mbps)_4TX	29.7M	16.942M	16M9D1D	21.96M	16.792M	
802.11ax HEW20_Nss1,(MCS0)_4TX	30.36M	19.22M	19M2D1D	21.21M	19.04M	
802.11ax HEW40_Nss1,(MCS0)_4TX	60.3M	37.541M	37M5D1D	39.84M	36.402M	
802.11ax HEW80_Nss1,(MCS0)_4TX	81.6M	76.882M	76M9D1D	81.24M	76.642M	
5.725-5.85GHz	-	-	-	-	-	
802.11a_Nss1,(6Mbps)_4TX	16.56M	17.211M	17M2D1D	16.29M	16.762M	
802.11ax HEW20_Nss1,(MCS0)_4TX	18.93M	19.19M	19M2D1D	18.81M	19.07M	
802.11ax HEW40_Nss1,(MCS0)_4TX	37.56M	37.721M	37M7D1D	36.84M	37.601M	
802.11ax HEW80_Nss1,(MCS0)_4TX	76.44M	77.241M	77M2D1D	75.36M	77.001M	

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

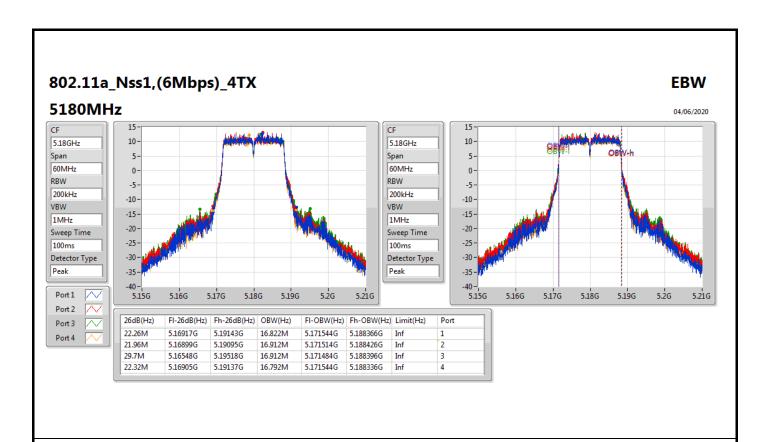
Min-OBW = Minimum 99% occupied bandwidth;

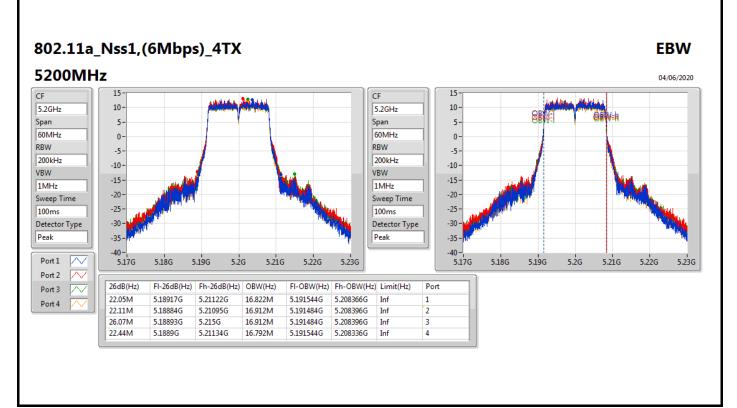


Result

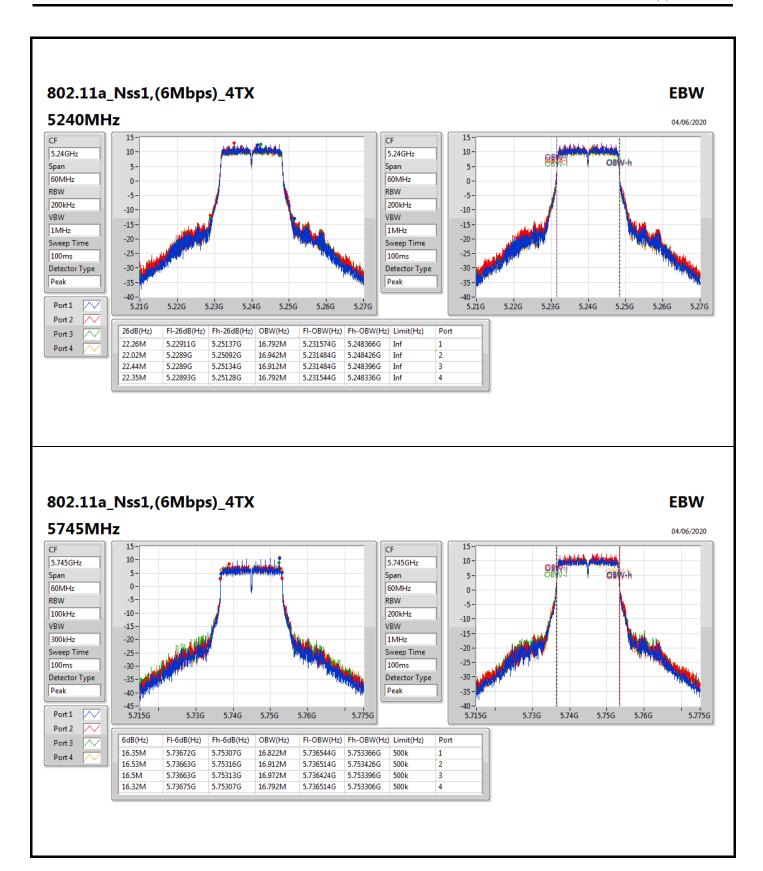
Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW	Port 3-N dB	Port 3-OBW	Port 4-N dB	Port 4-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	22.26M	16.822M	21.96M	16.912M	29.7M	16.912M	22.32M	16.792M
5200MHz	Pass	Inf	22.05M	16.822M	22.11M	16.912M	26.07M	16.912M	22.44M	16.792M
5240MHz	Pass	Inf	22.26M	16.792M	22.02M	16.942M	22.44M	16.912M	22.35M	16.792M
5745MHz	Pass	500k	16.35M	16.822M	16.53M	16.912M	16.5M	16.972M	16.32M	16.792M
5785MHz	Pass	500k	16.32M	16.942M	16.29M	17.031M	16.35M	17.211M	16.53M	16.942M
5825MHz	Pass	500k	16.32M	16.822M	16.56M	16.882M	16.5M	16.912M	16.32M	16.762M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	1	-	-	ī	·	i	-	-	-
5180MHz	Pass	Inf	21.48M	19.04M	21.33M	19.07M	21.42M	19.1M	21.57M	19.13M
5200MHz	Pass	Inf	21.21M	19.04M	23.01M	19.04M	24.06M	19.13M	22.62M	19.07M
5240MHz	Pass	Inf	24.06M	19.07M	23.16M	19.1M	30.36M	19.22M	25.47M	19.16M
5745MHz	Pass	500k	18.93M	19.1M	18.9M	19.07M	18.93M	19.16M	18.93M	19.16M
5785MHz	Pass	500k	18.9M	19.1M	18.81M	19.1M	18.9M	19.13M	18.9M	19.16M
5825MHz	Pass	500k	18.9M	19.13M	18.93M	19.13M	18.93M	19.16M	18.9M	19.19M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	1	-	-	ī	·	i	-	-	-
5190MHz	Pass	Inf	40.08M	37.541M	39.84M	37.481M	39.96M	37.481M	40.08M	37.481M
5230MHz	Pass	Inf	60.3M	36.822M	40.56M	36.402M	40.32M	36.402M	53.22M	36.462M
5755MHz	Pass	500k	37.56M	37.721M	36.84M	37.661M	37.5M	37.601M	37.38M	37.721M
5795MHz	Pass	500k	37.5M	37.661M	36.84M	37.661M	37.5M	37.661M	37.38M	37.721M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	•	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	81.24M	76.882M	81.24M	76.882M	81.6M	76.762M	81.6M	76.642M
5775MHz	Pass	500k	76.08M	77.241M	76.44M	77.001M	75.36M	77.001M	76.44M	77.121M

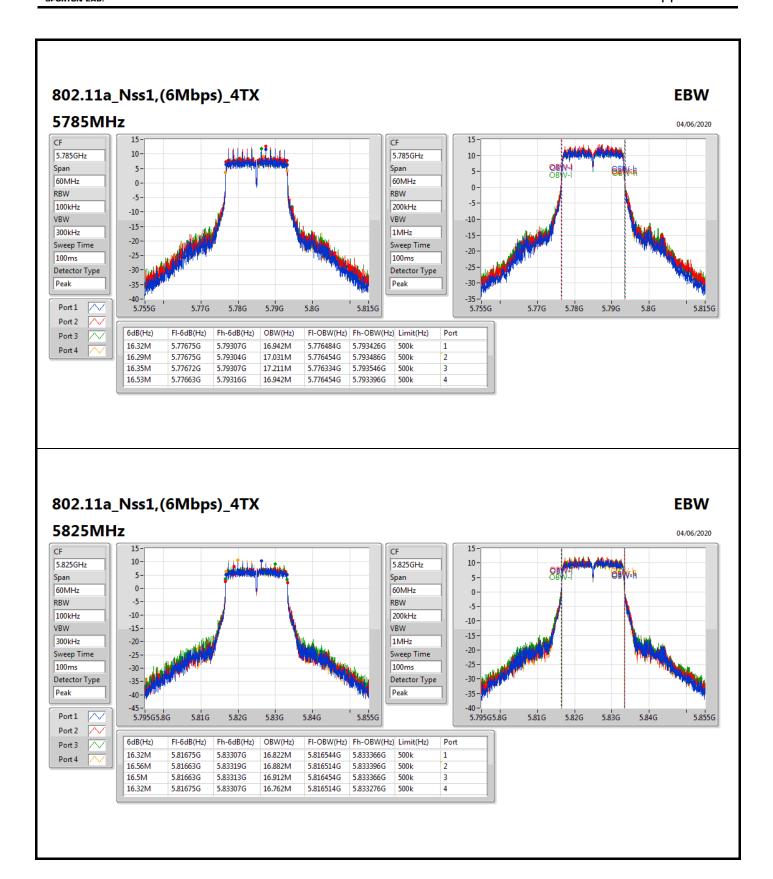
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth;

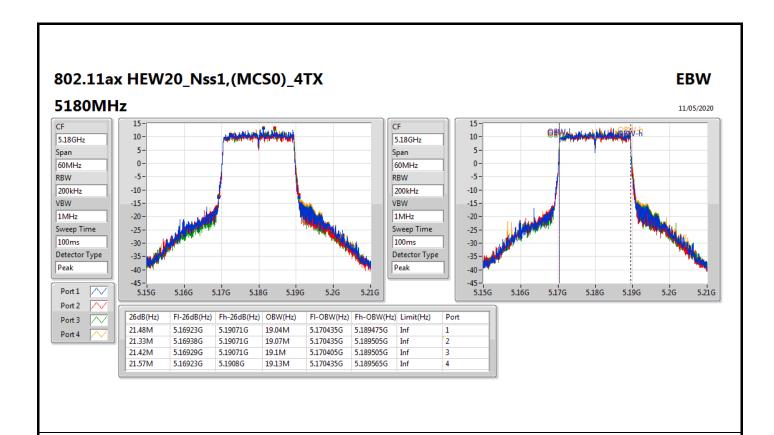


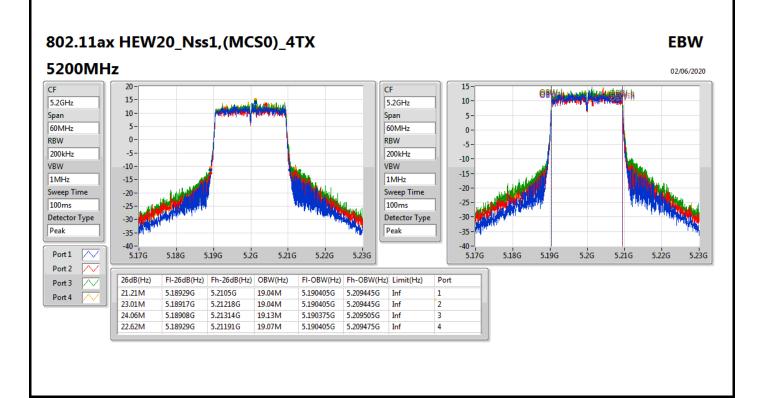


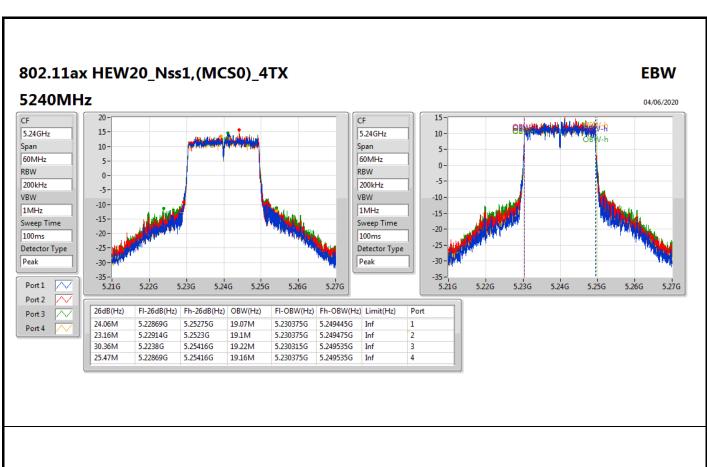
: 3 of 11

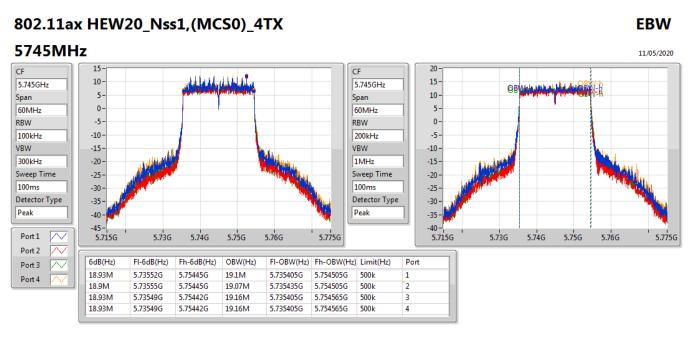


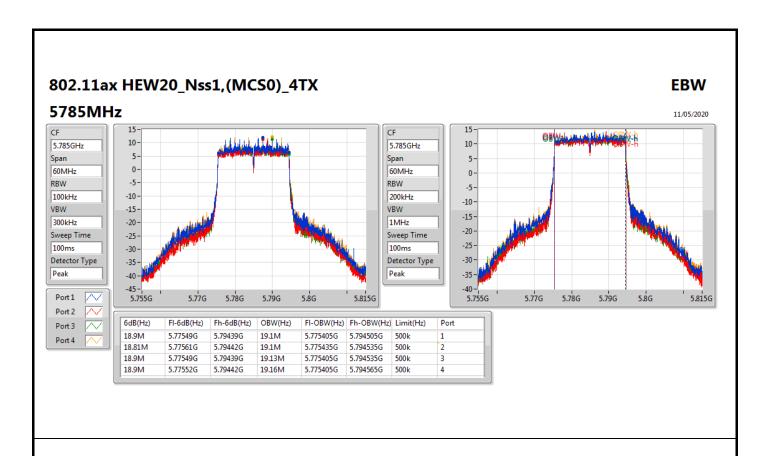


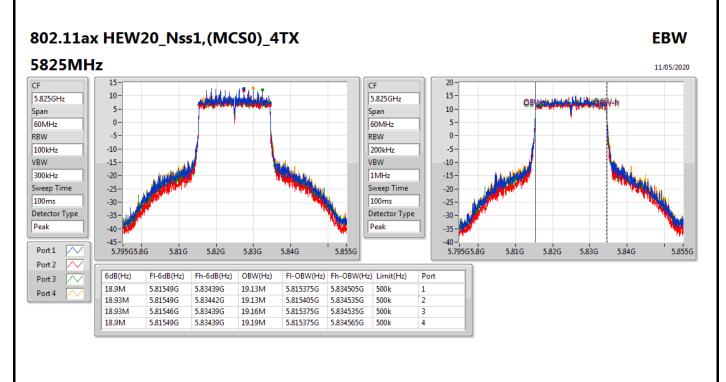




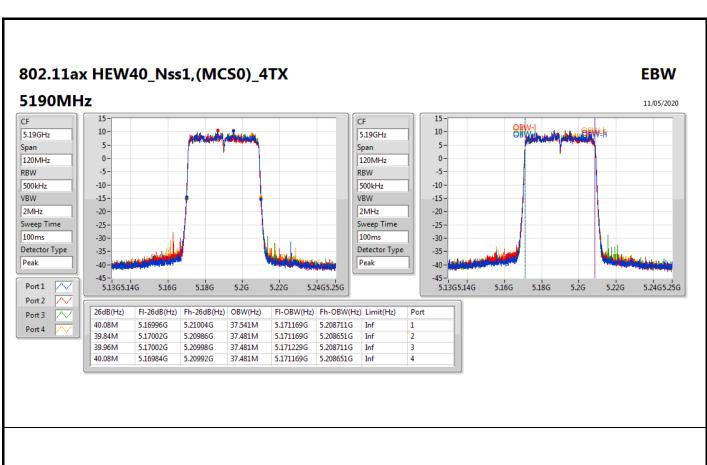


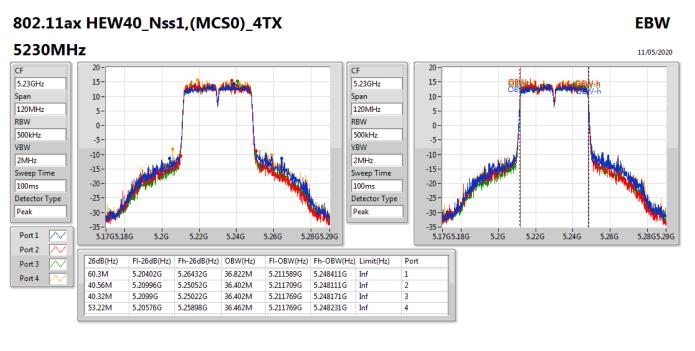


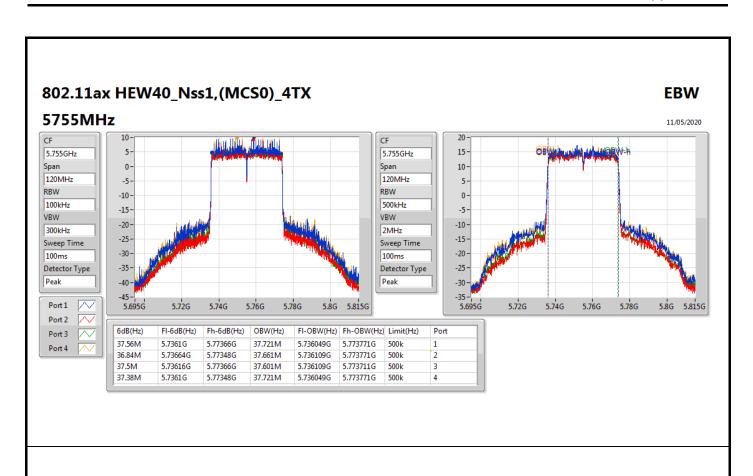


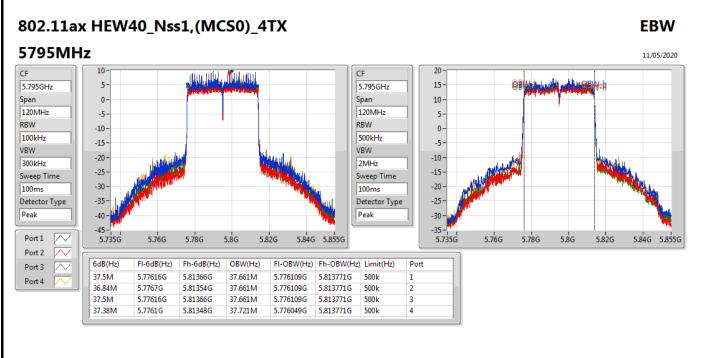


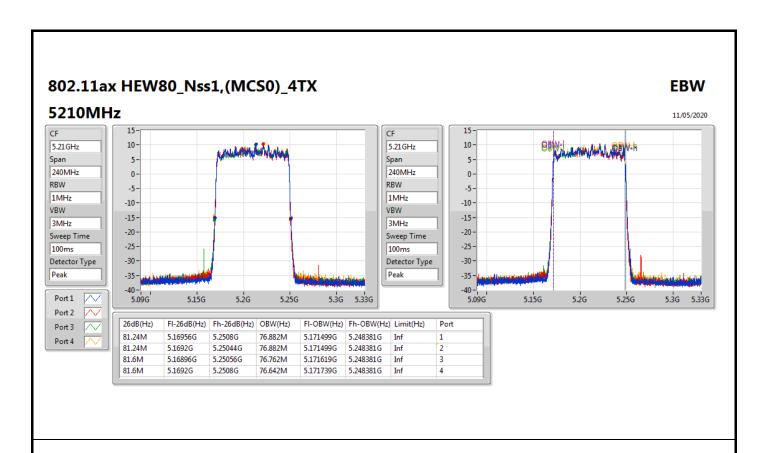
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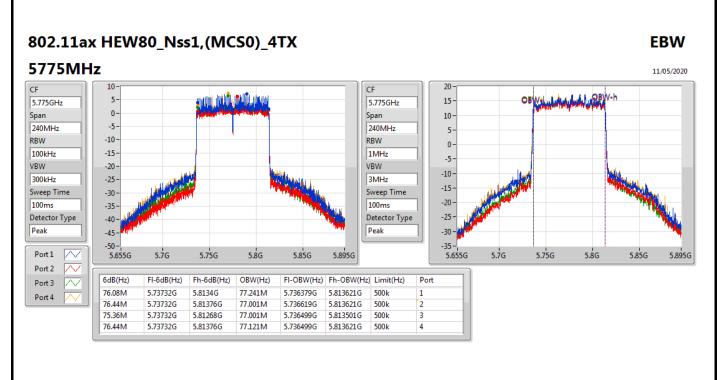














Average Power Appendix C

Summary

Mode	Total Power	Total Power		
	(dBm)	(W)		
5.15-5.25GHz	-	-		
802.11a_Nss1,(6Mbps)_4TX	29.21	0.83368		
802.11ax HEW20_Nss1,(MCS0)_4TX	29.98	0.99541		
802.11ax HEW40_Nss1,(MCS0)_4TX	29.88	0.97275		
802.11ax HEW80_Nss1,(MCS0)_4TX	22.95	0.19724		
5.725-5.85GHz	-	-		
802.11a_Nss1,(6Mbps)_4TX	29.56	0.90365		
802.11ax HEW20_Nss1,(MCS0)_4TX	29.86	0.96828		
802.11ax HEW40_Nss1,(MCS0)_4TX	29.95	0.98855		
802.11ax HEW80_Nss1,(MCS0)_4TX	29.94	0.98628		



Average Power Appendix C

Result

Mode	Result	DG	Port 1	Port 2	Port 3	Port 4	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.42	23.01	23.30	23.35	22.42	29.06	30.00
5200MHz	Pass	3.42	23.12	23.40	23.42	22.78	29.21	30.00
5240MHz	Pass	3.42	22.91	23.36	23.18	22.72	29.07	30.00
5745MHz	Pass	4.64	22.12	22.71	22.75	22.36	28.51	30.00
5785MHz	Pass	4.64	23.05	23.83	23.73	23.51	29.56	30.00
5825MHz	Pass	4.64	22.10	22.53	22.50	22.48	28.43	30.00
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.42	22.43	21.92	22.58	22.97	28.51	30.00
5200MHz	Pass	3.42	23.85	24.25	24.26	23.44	29.98	30.00
5240MHz	Pass	3.42	23.54	24.23	23.95	23.43	29.82	30.00
5745MHz	Pass	4.64	23.93	23.11	23.43	24.08	29.68	30.00
5785MHz	Pass	4.64	23.68	22.85	23.05	23.84	29.40	30.00
5825MHz	Pass	4.64	24.14	23.31	23.60	24.25	29.86	30.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	3.42	17.40	17.33	17.39	17.91	23.53	30.00
5230MHz	Pass	3.42	24.18	23.39	23.49	24.29	29.88	30.00
5755MHz	Pass	4.64	24.20	23.38	23.57	24.49	29.95	30.00
5795MHz	Pass	4.64	24.20	23.41	23.45	24.35	29.89	30.00
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	3.42	16.87	16.84	16.78	17.23	22.95	30.00
5775MHz	Pass	4.64	24.37	23.25	23.63	24.32	29.94	30.00

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



Summary

Mode	PD					
	(dBm/RBW)					
5.15-5.25GHz	-					
802.11a_Nss1,(6Mbps)_4TX	16.18					
802.11ax HEW20_Nss1,(MCS0)_4TX	16.34					
802.11ax HEW40_Nss1,(MCS0)_4TX	13.58					
802.11ax HEW80_Nss1,(MCS0)_4TX	3.86					
5.725-5.85GHz	-					
802.11a_Nss1,(6Mbps)_4TX	15.01					
802.11ax HEW20_Nss1,(MCS0)_4TX	14.81					
802.11ax HEW40_Nss1,(MCS0)_4TX	12.06					
802.11ax HEW80_Nss1,(MCS0)_4TX	9.42					

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



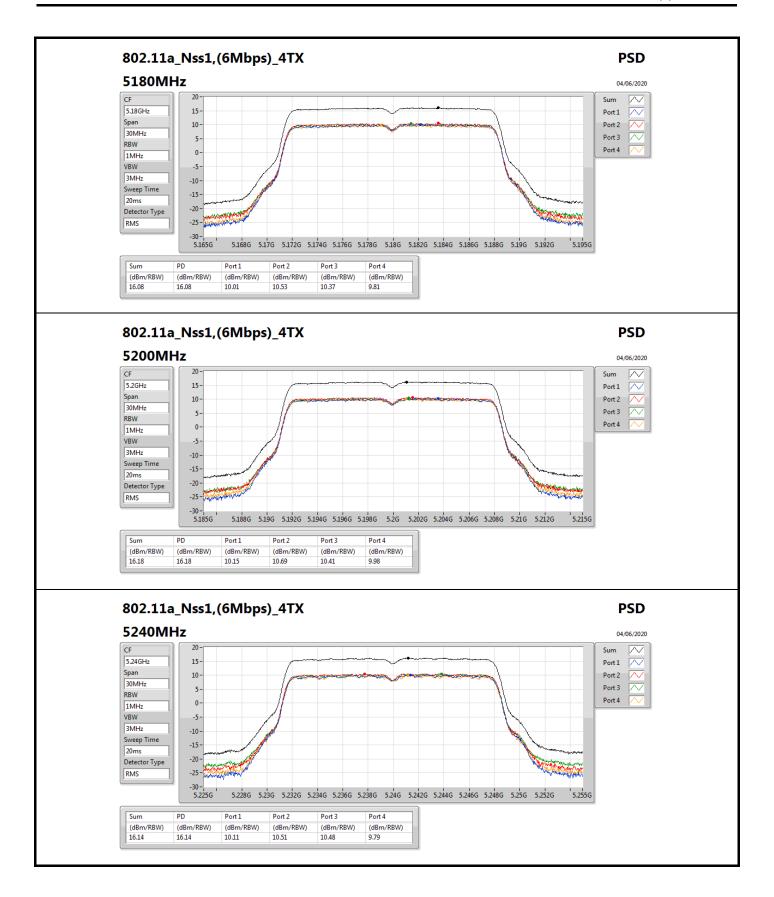
Appendix D **PSD**

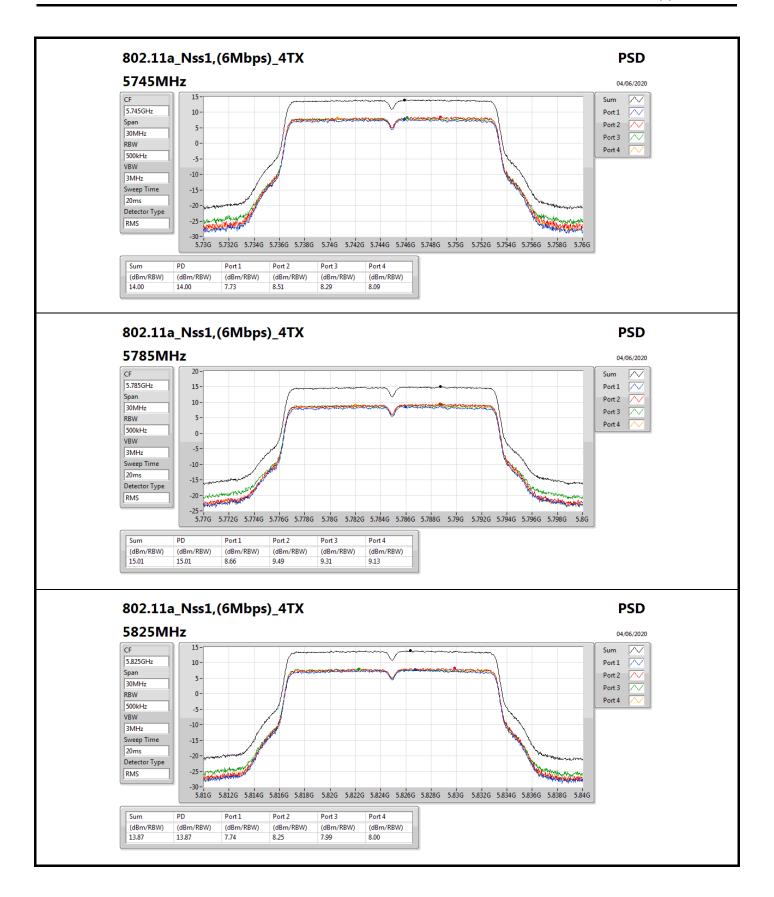
Result

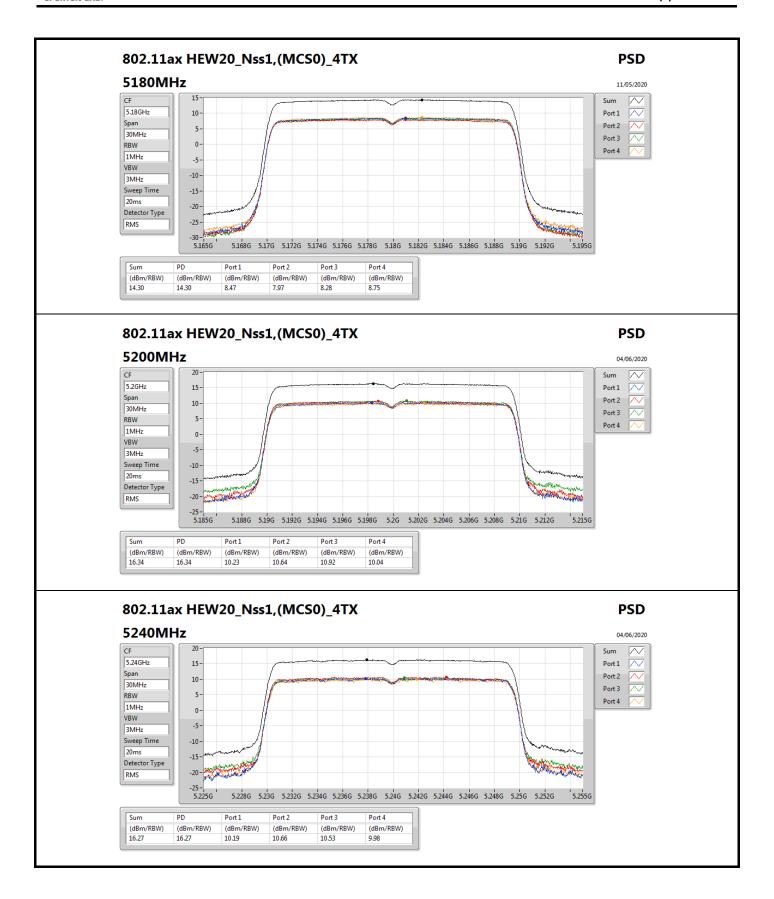
Mode	Result	DG	Port 1	Port 2	Port 3	Port 4	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	6.63	10.01	10.53	10.37	9.81	16.08	16.37
5200MHz	Pass	6.63	10.15	10.69	10.41	9.98	16.18	16.37
5240MHz	Pass	6.63	10.11	10.51	10.48	9.79	16.14	16.37
5745MHz	Pass	7.30	7.73	8.51	8.29	8.09	14.00	28.70
5785MHz	Pass	7.30	8.66	9.49	9.31	9.13	15.01	28.70
5825MHz	Pass	7.30	7.74	8.25	7.99	8.00	13.87	28.70
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	6.63	8.47	7.97	8.28	8.75	14.30	16.37
5200MHz	Pass	6.63	10.23	10.64	10.92	10.04	16.34	16.37
5240MHz	Pass	6.63	10.19	10.66	10.53	9.98	16.27	16.37
5745MHz	Pass	7.30	8.77	8.07	8.35	9.04	14.54	28.70
5785MHz	Pass	7.30	8.42	7.72	7.91	8.61	14.09	28.70
5825MHz	Pass	7.30	9.24	8.47	8.67	9.27	14.81	28.70
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	6.63	1.06	1.00	0.94	1.43	7.05	16.37
5230MHz	Pass	6.63	7.98	7.34	7.22	8.12	13.58	16.37
5755MHz	Pass	7.30	6.40	5.66	5.80	6.54	12.06	28.70
5795MHz	Pass	7.30	6.34	5.64	5.68	6.46	11.99	28.70
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	6.63	-2.23	-2.18	-2.17	-1.74	3.86	16.37
5775MHz	Pass	7.30	3.69	2.99	3.25	3.94	9.42	28.70

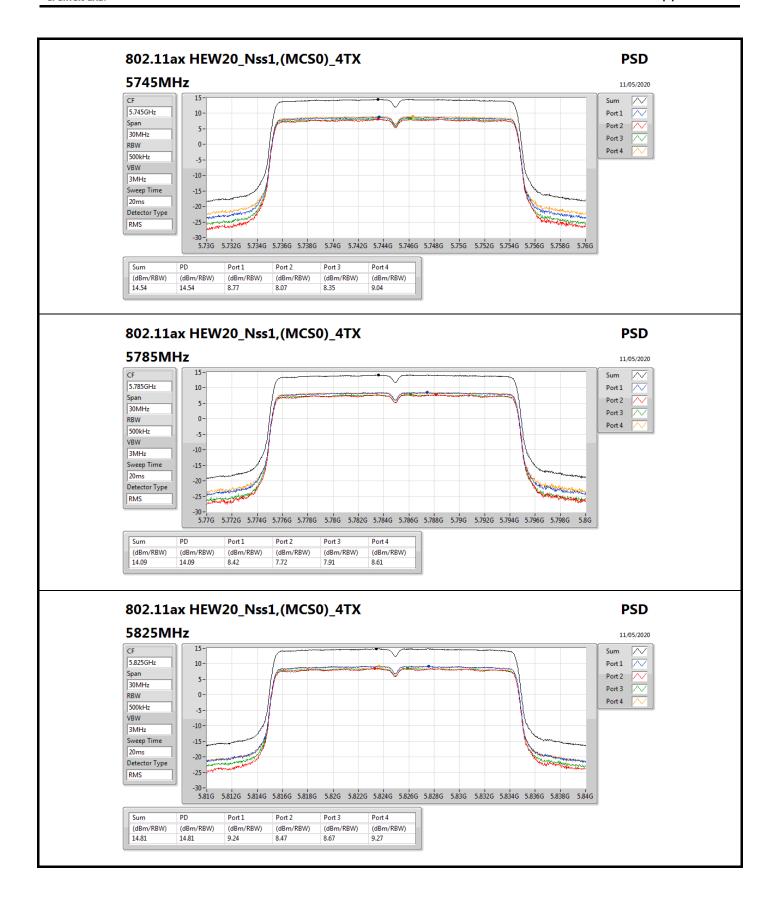
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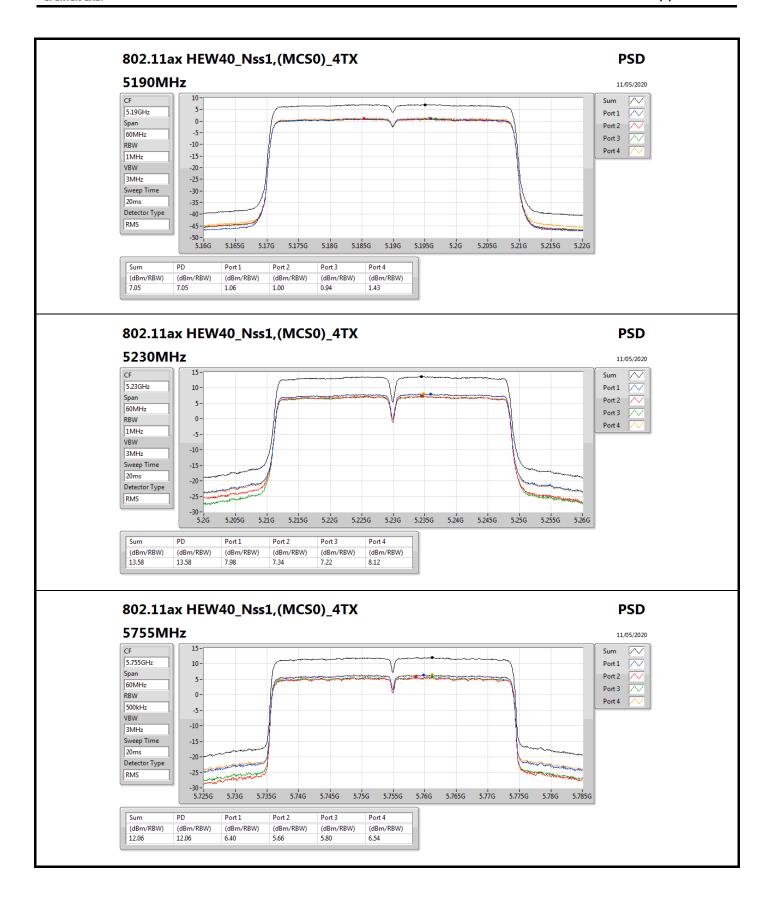
DG = Directional Gain; RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;

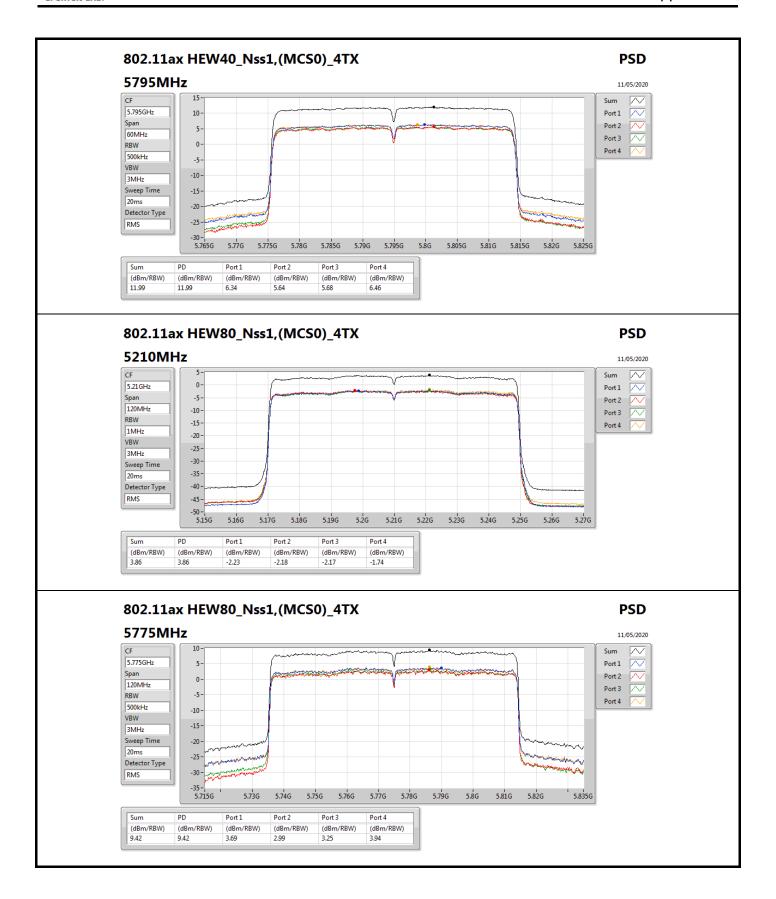














Radiated Emissions below 1GHz

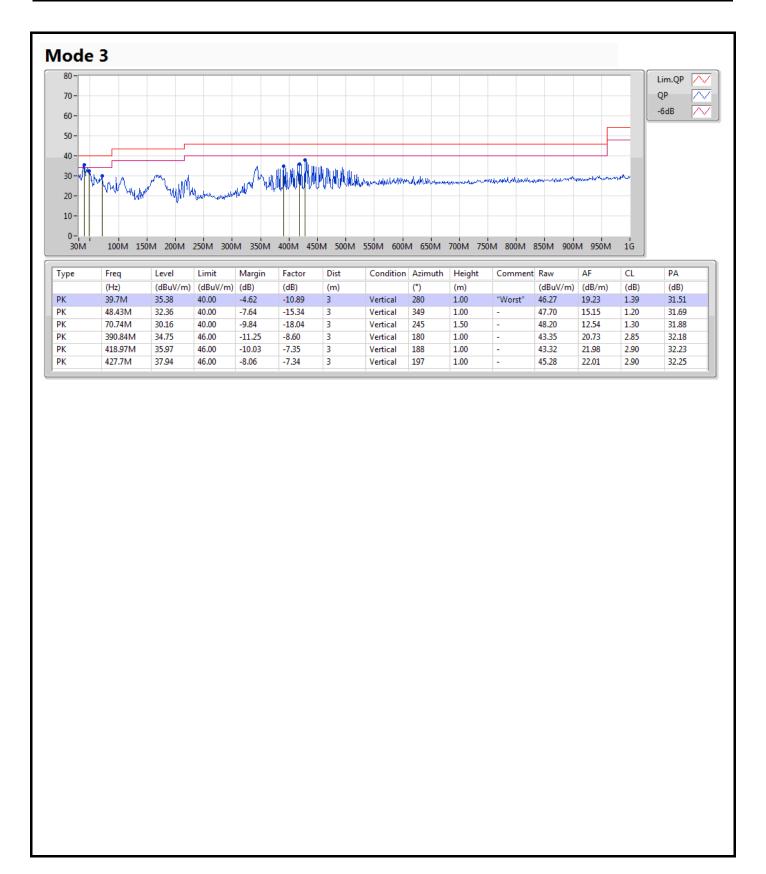
Appendix E.1

Summary

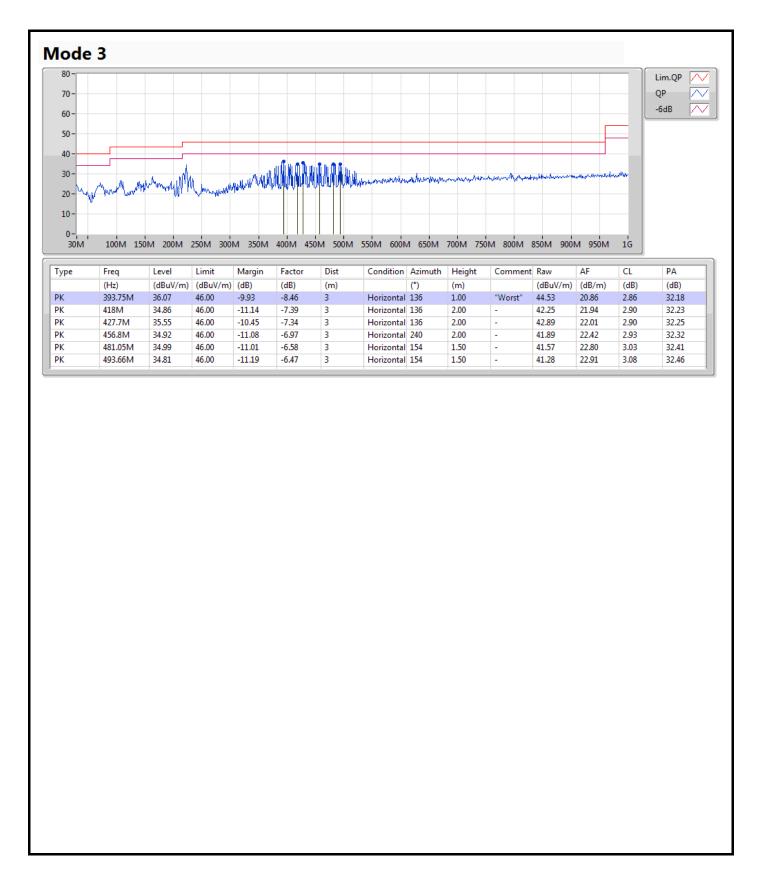
Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 3	Pass	PK	39.7M	35.38	40.00	-4.62	Vertical

: 1 of 3











RSE TX above 1GHz

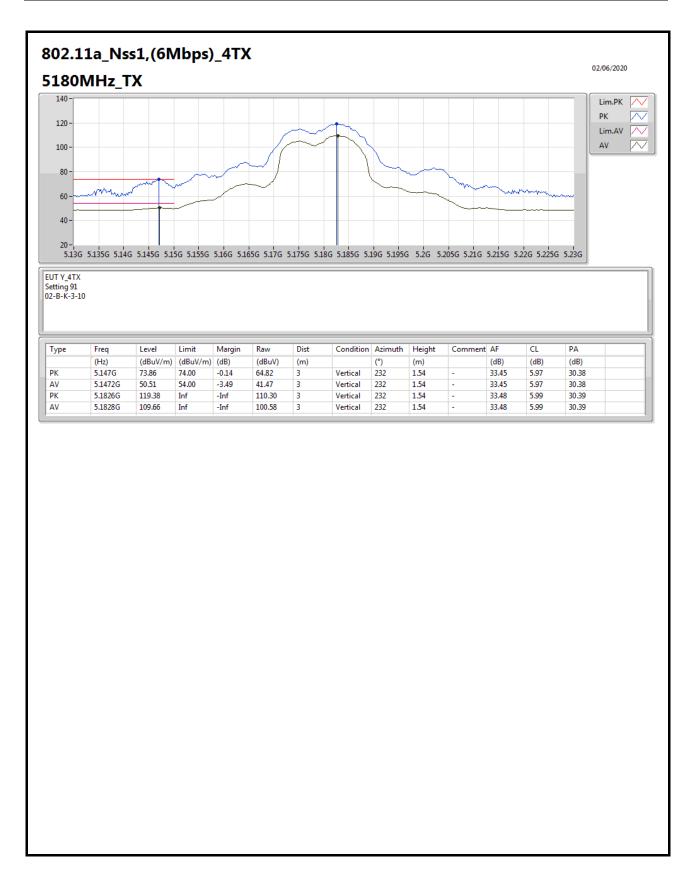
Appendix E.2

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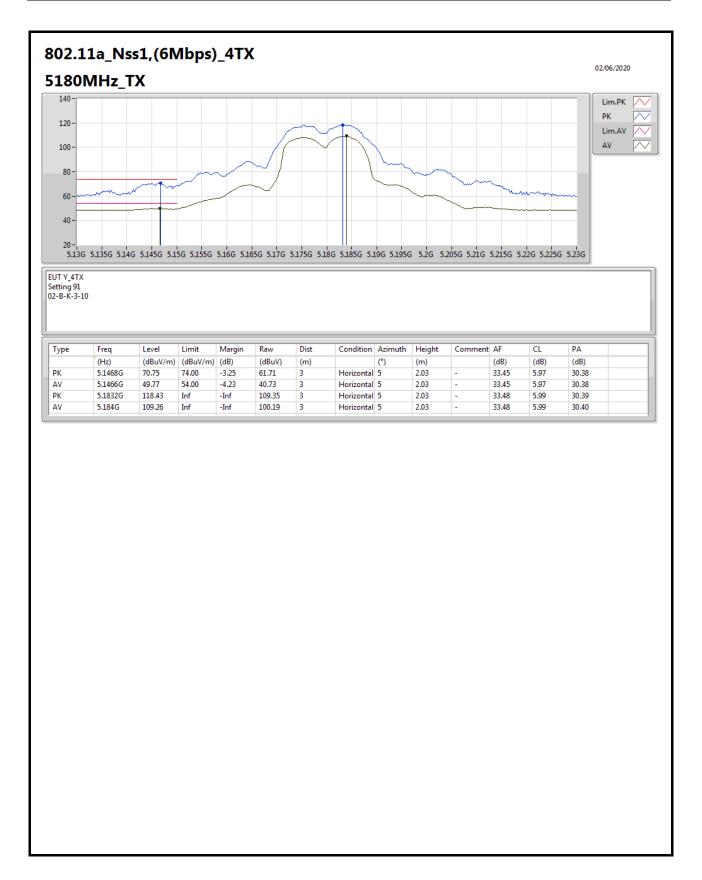
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW80_Nss1,(MCS0)_4TX	Pass	PK	5.651G	68.84	68.94	-0.10	3	Vertical	266	1.40	-



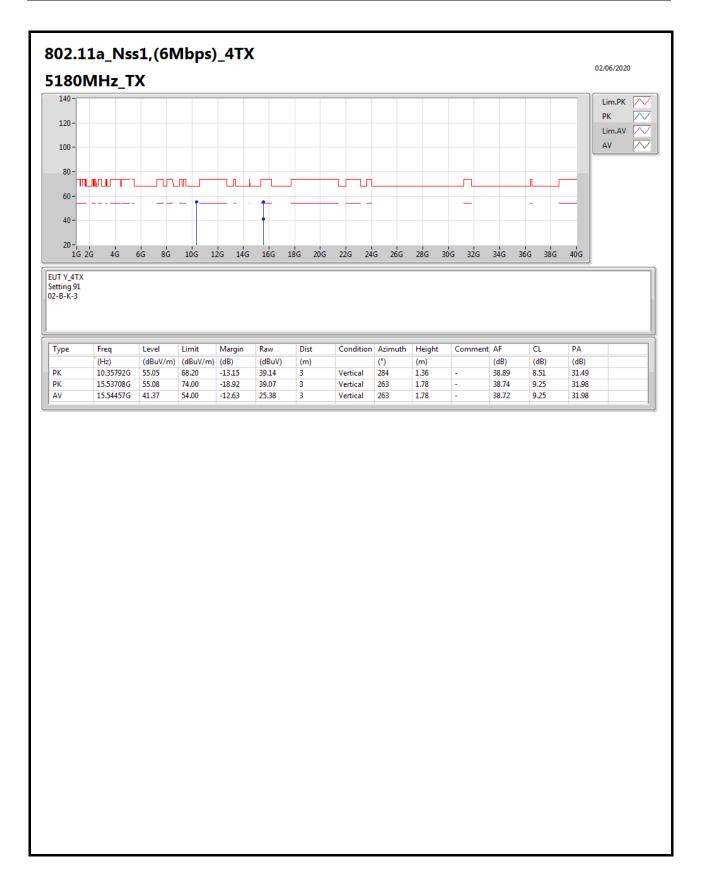




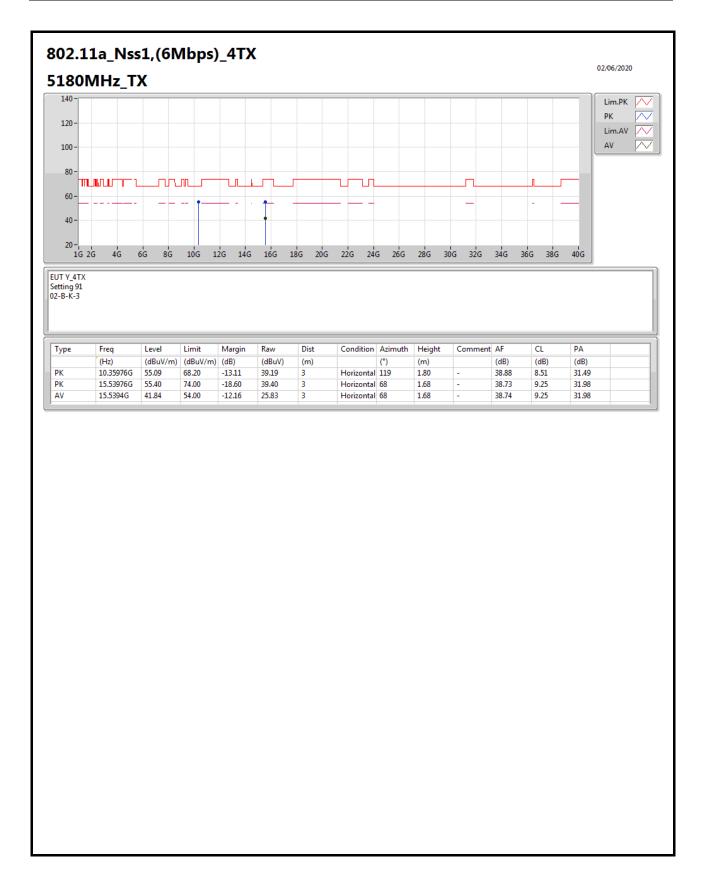


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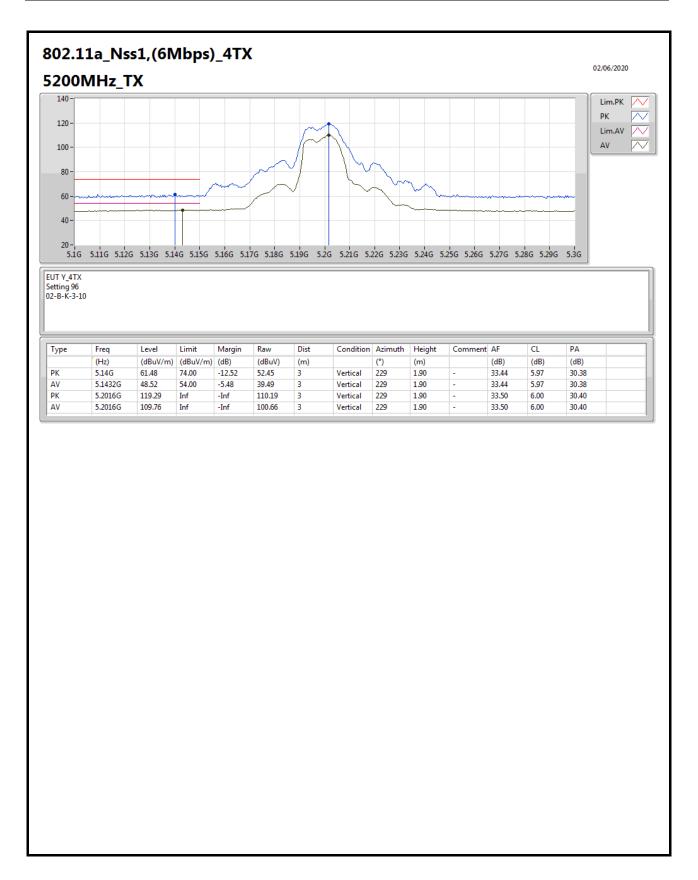






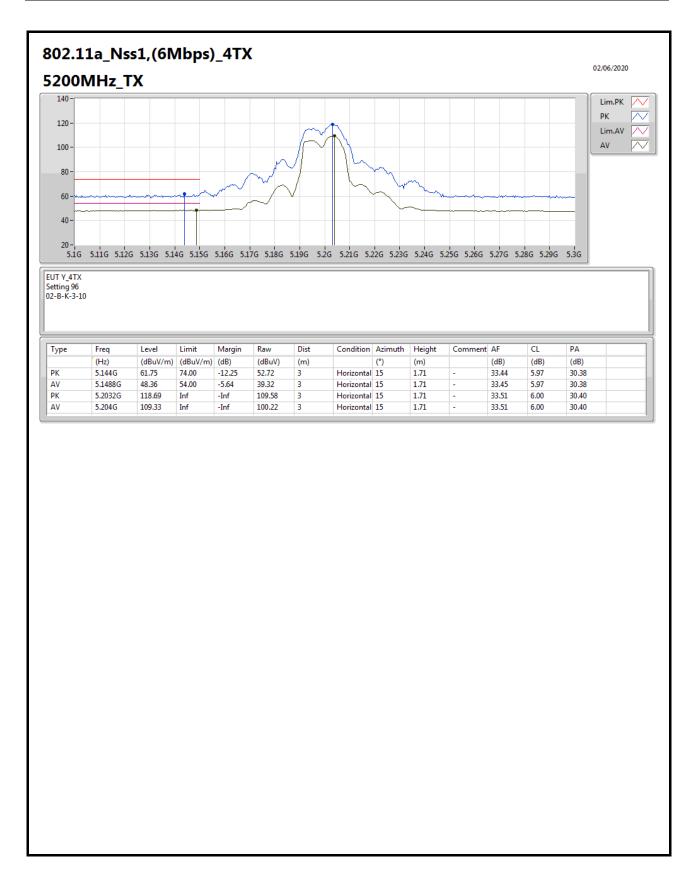




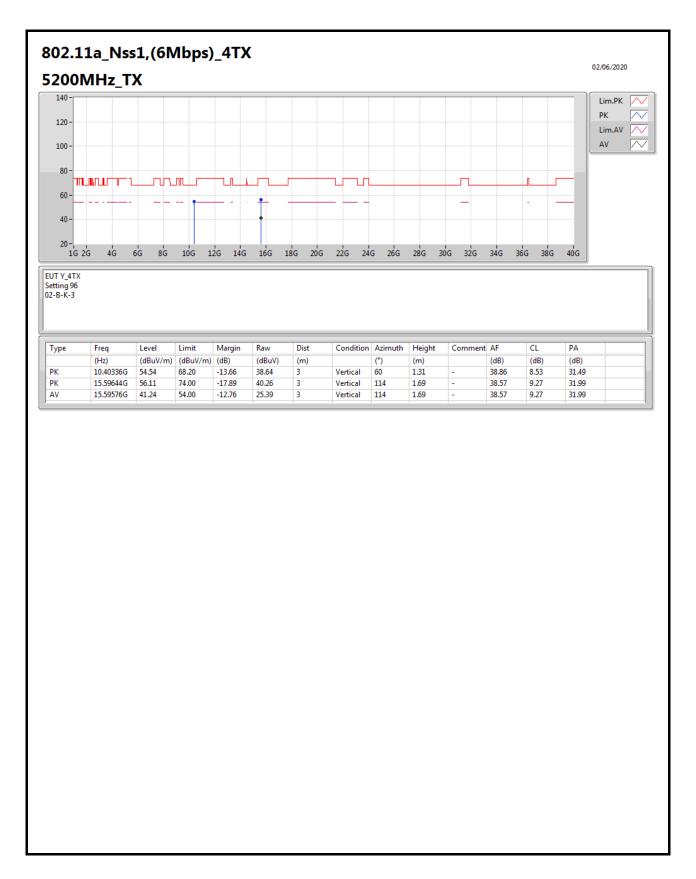


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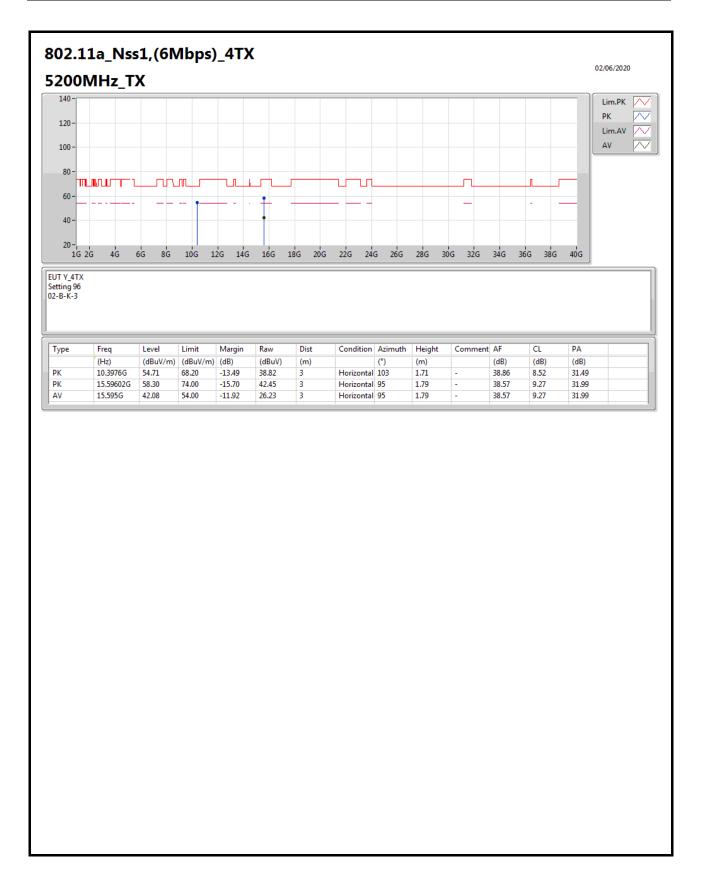




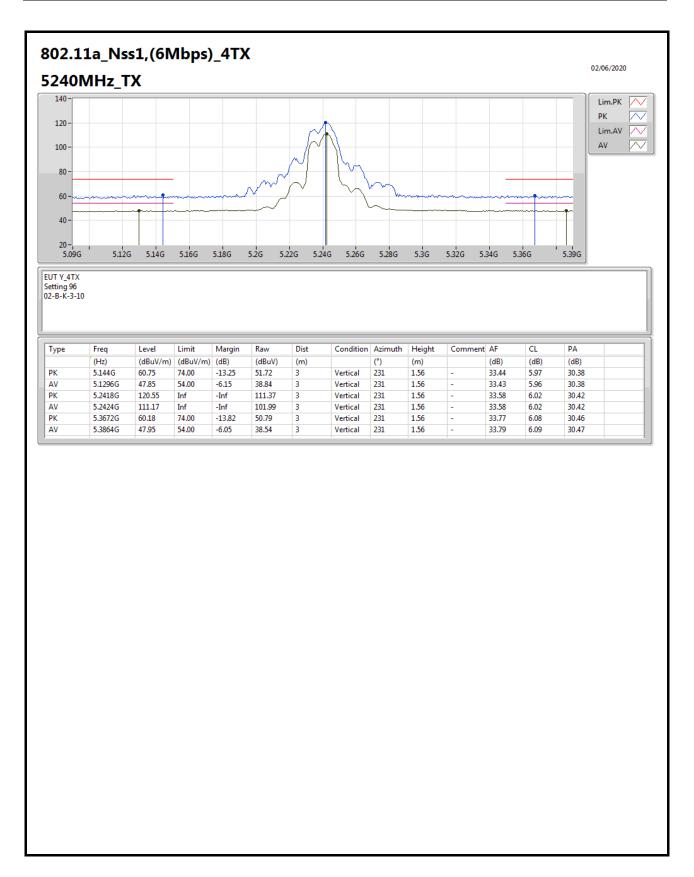




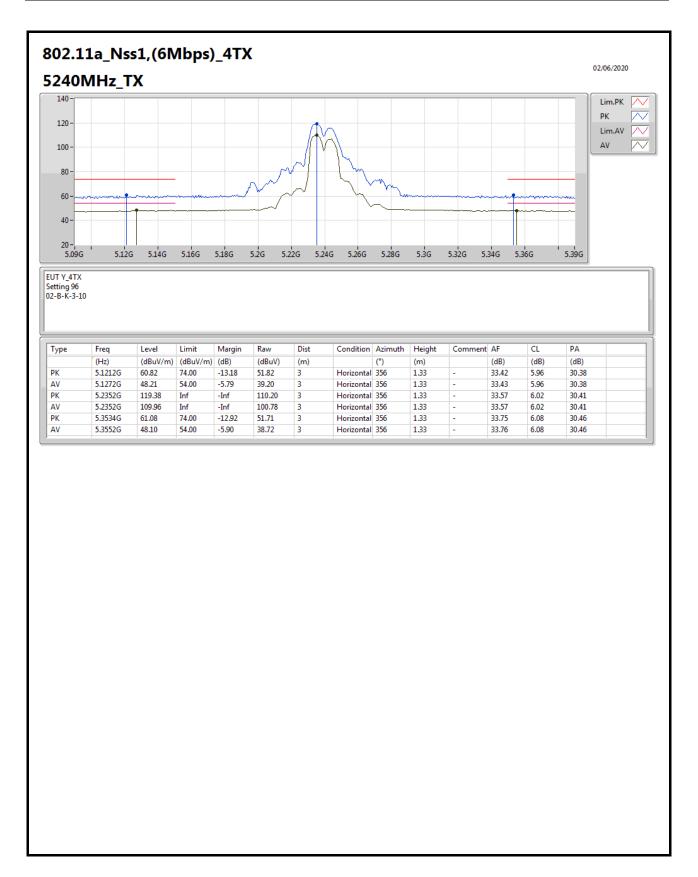




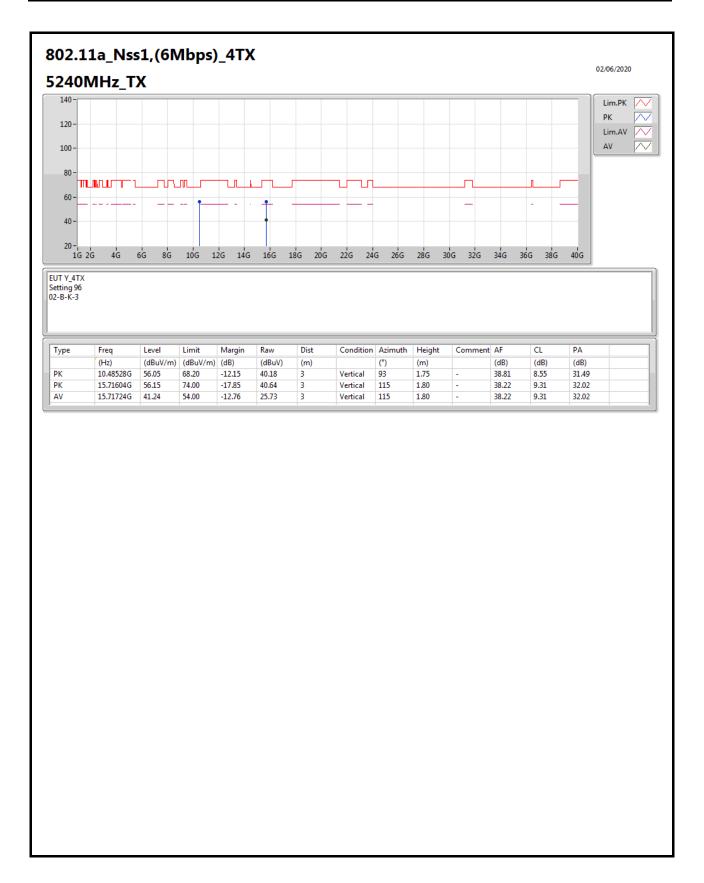




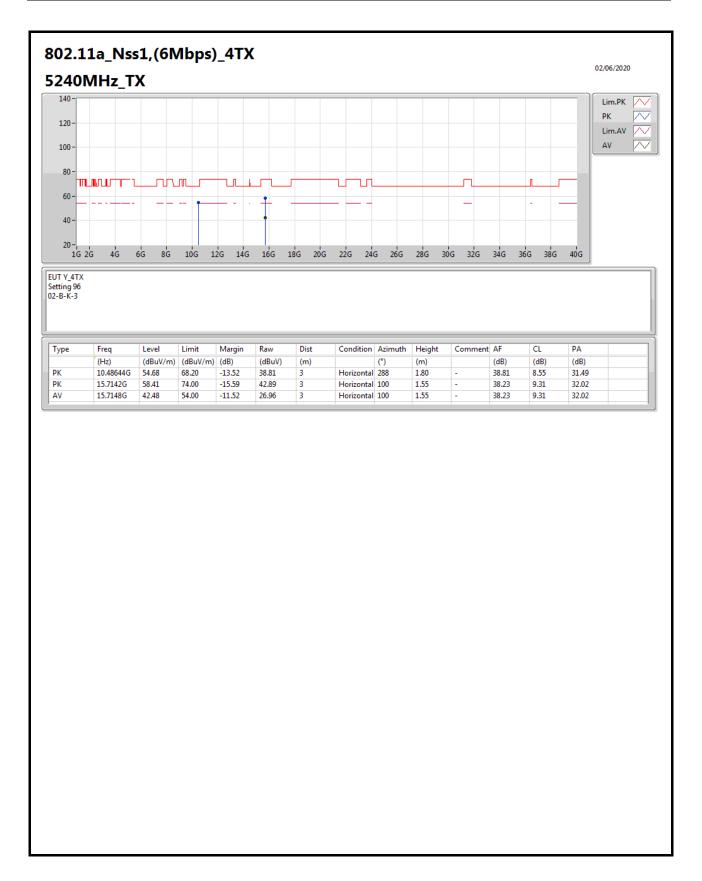




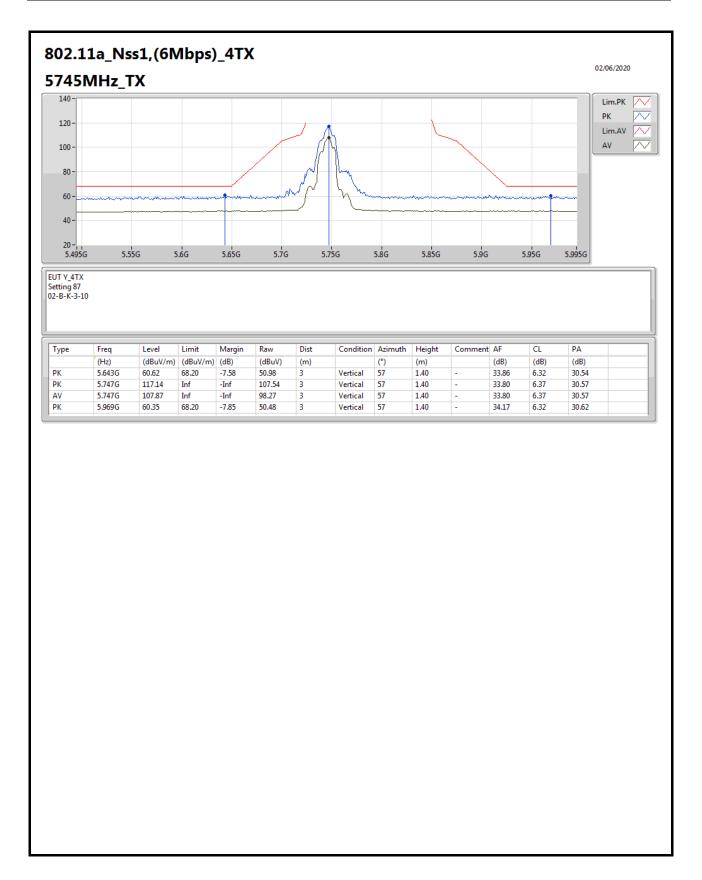




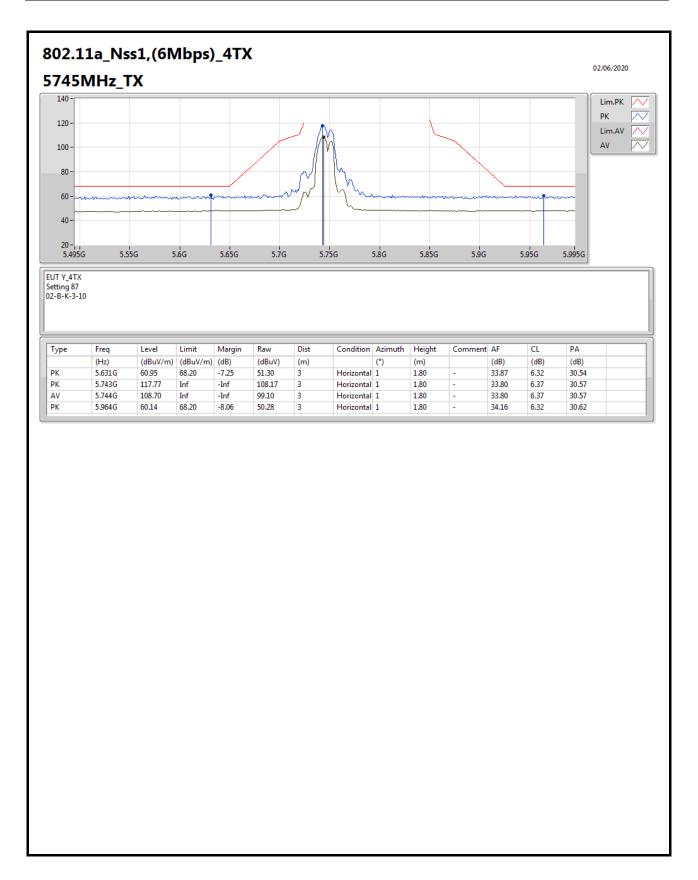






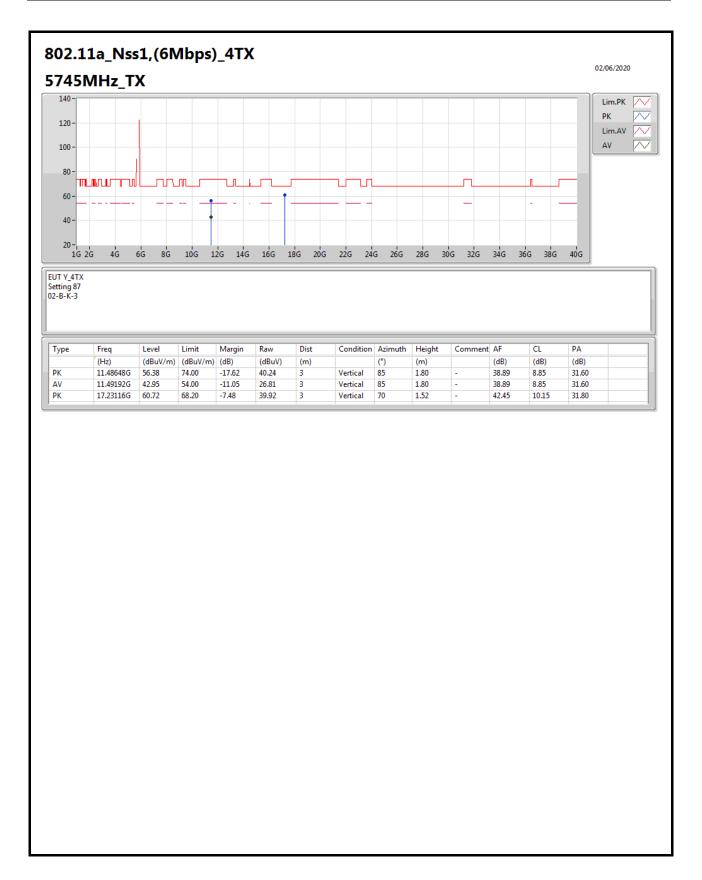






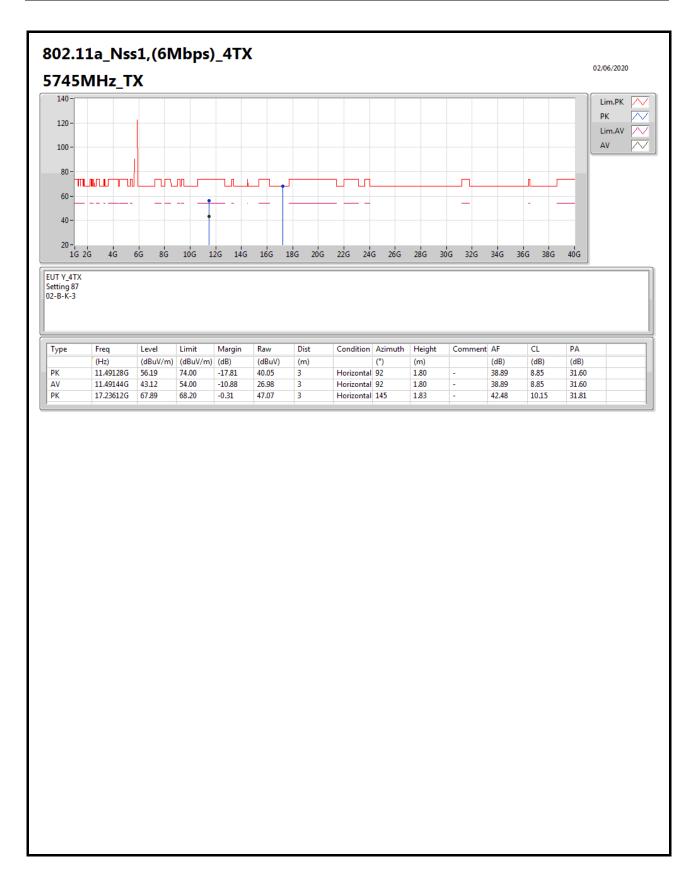
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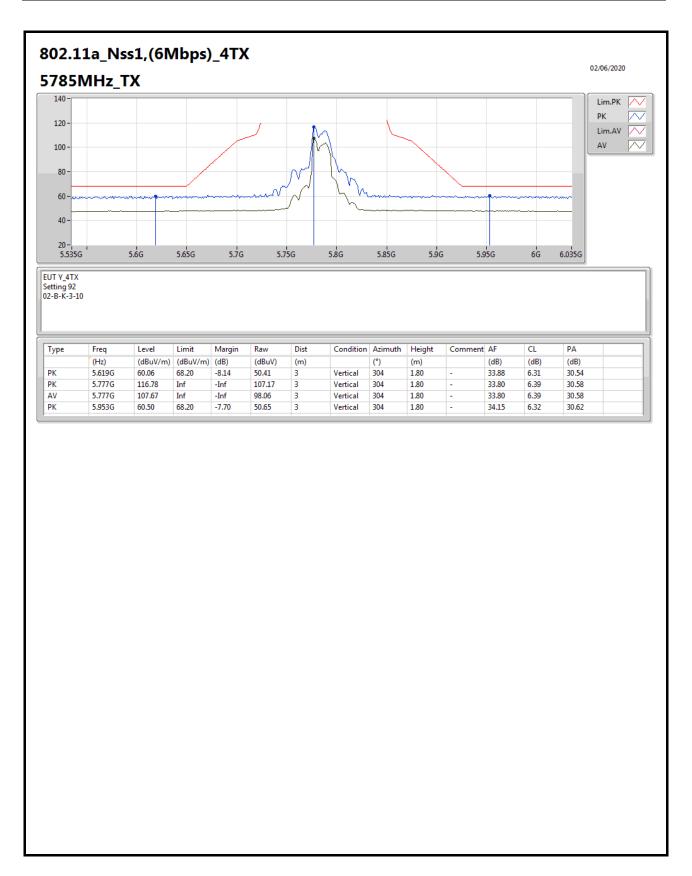


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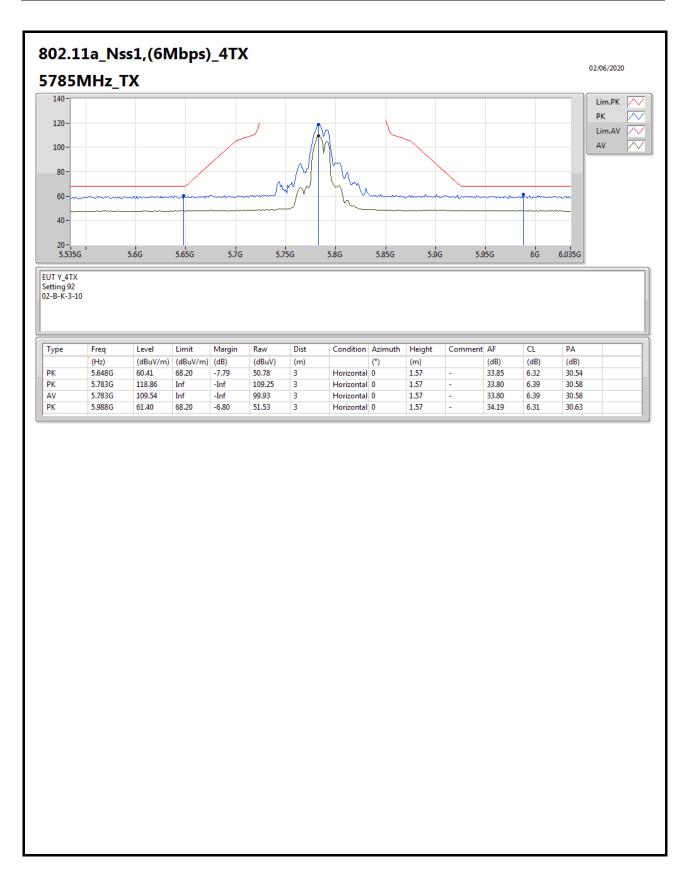




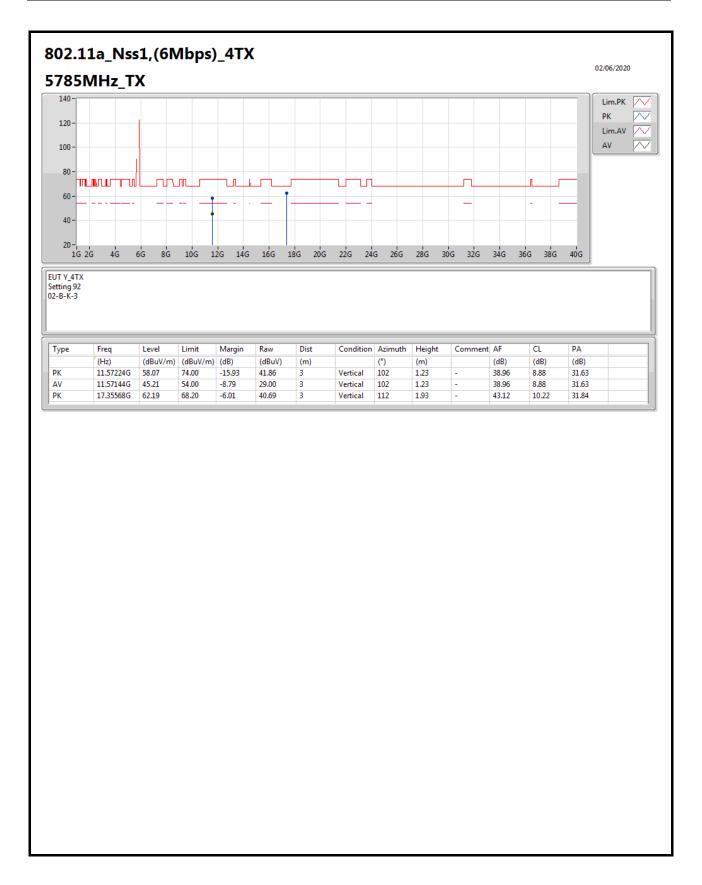






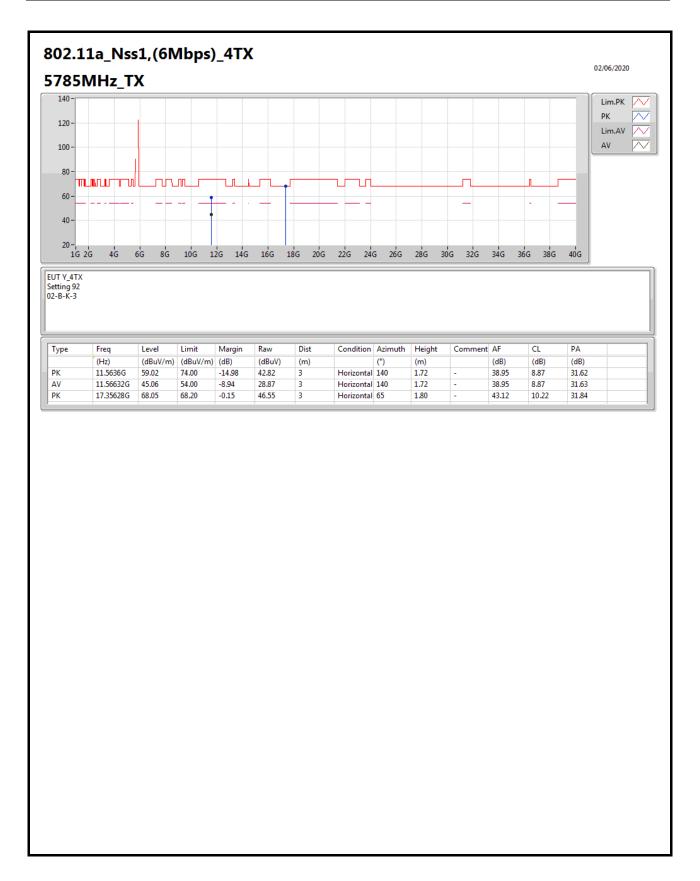




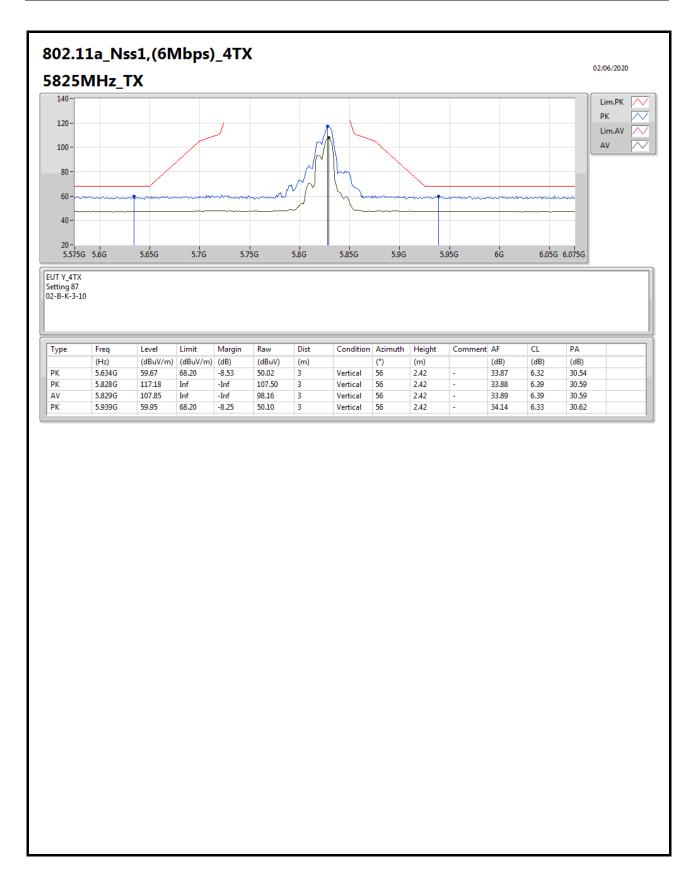


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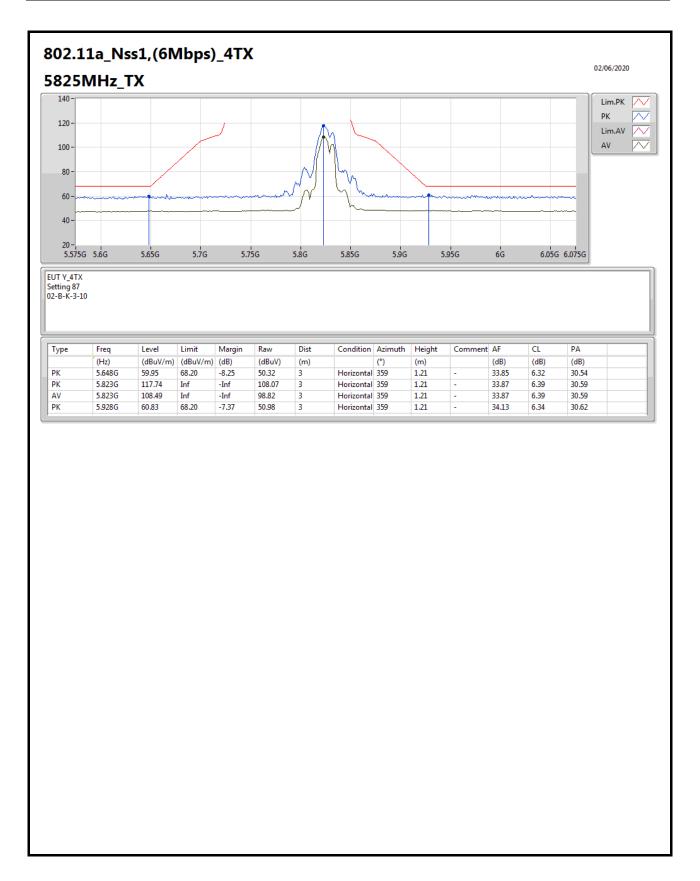




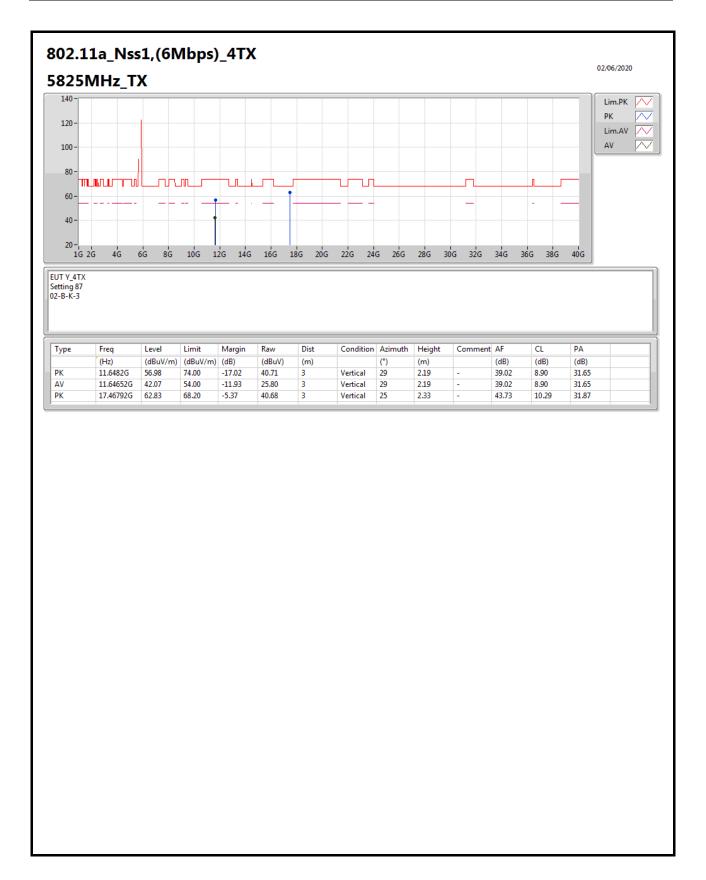




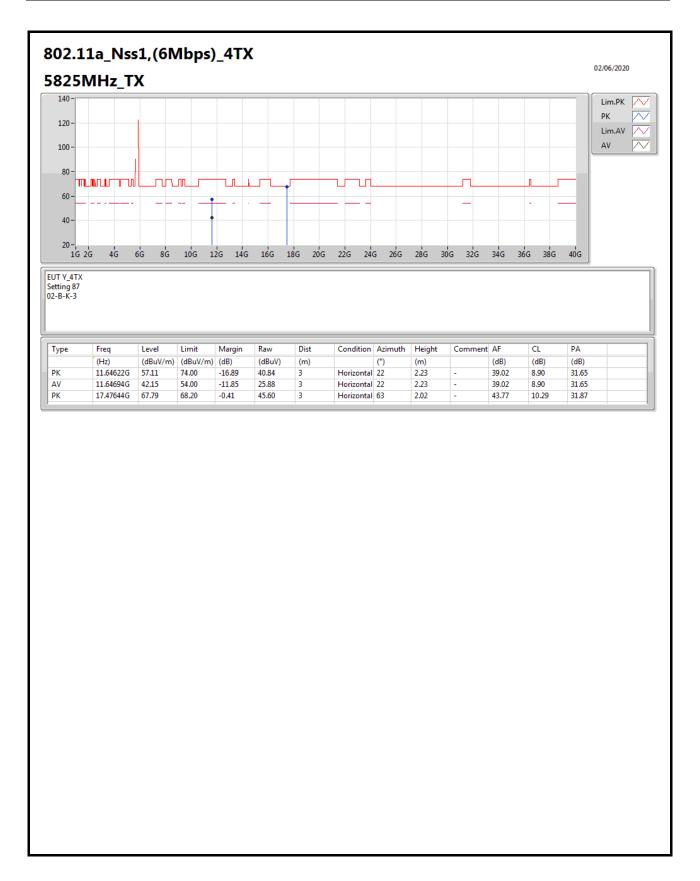




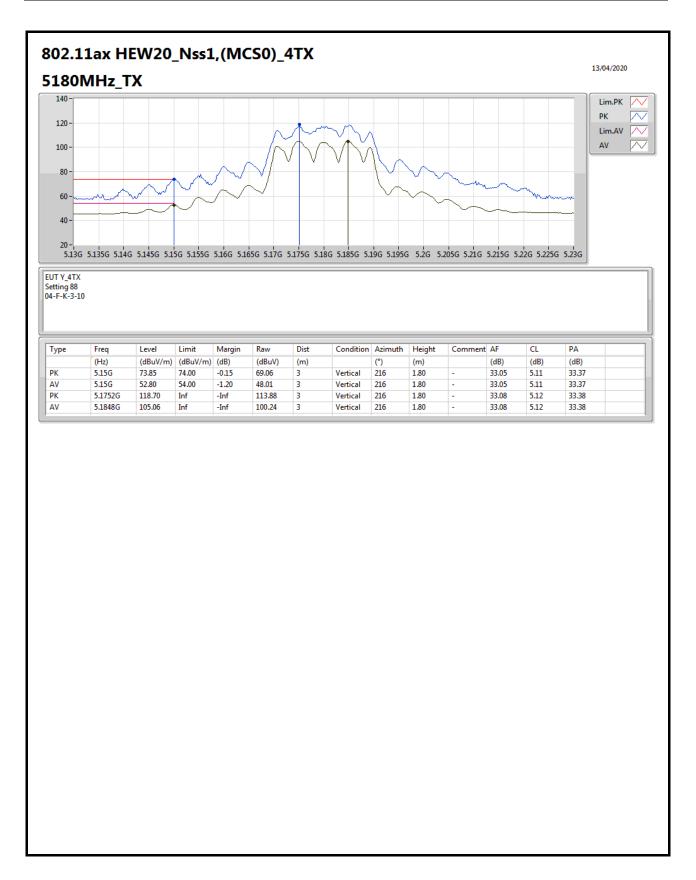






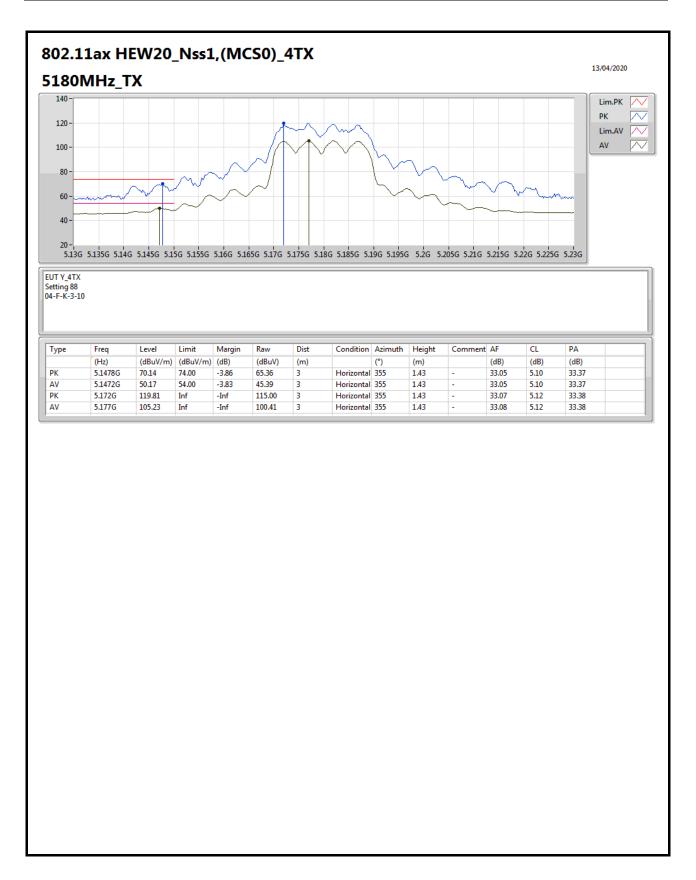




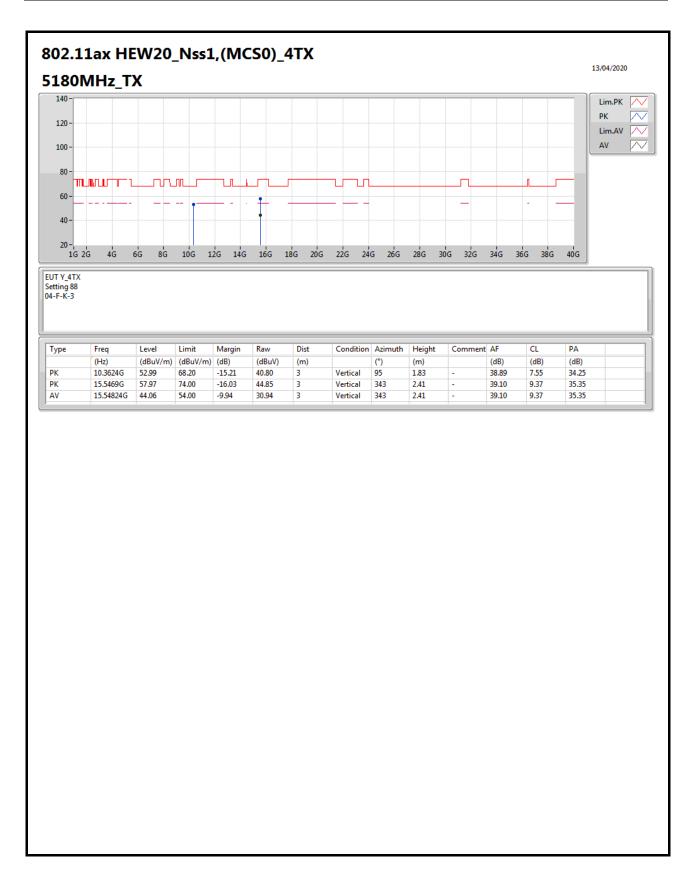


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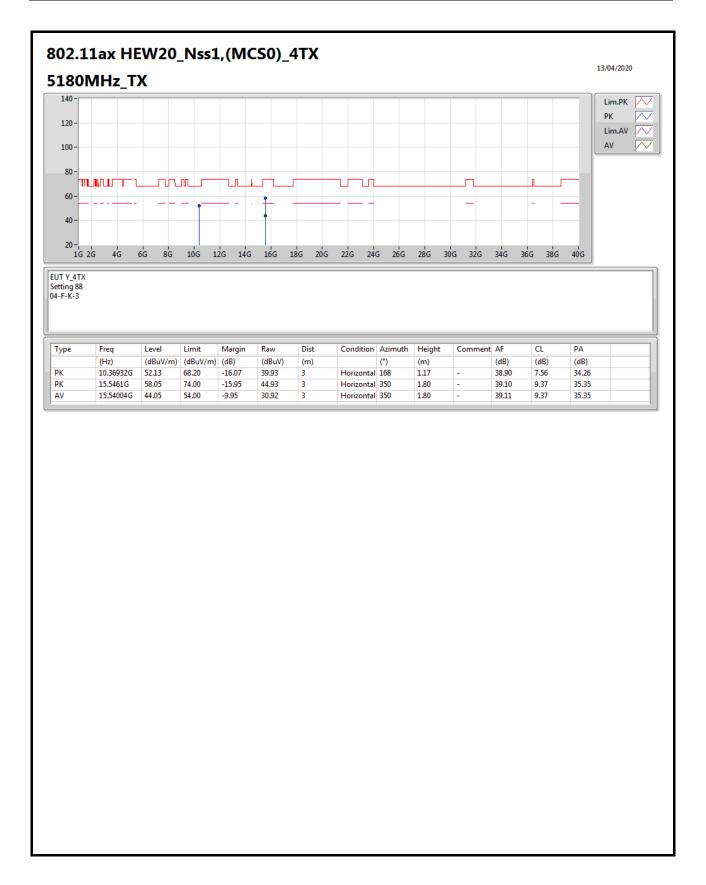




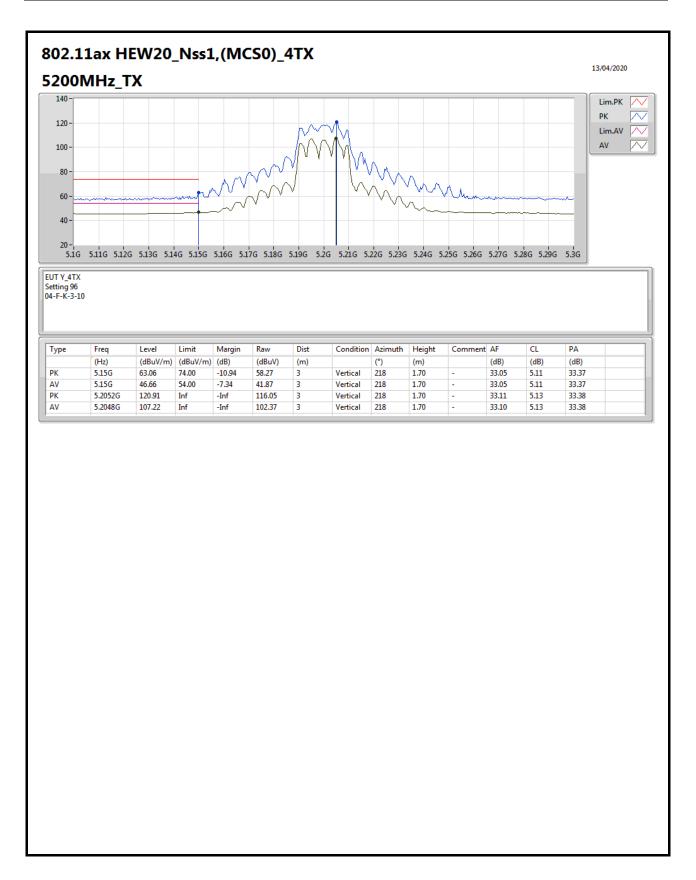




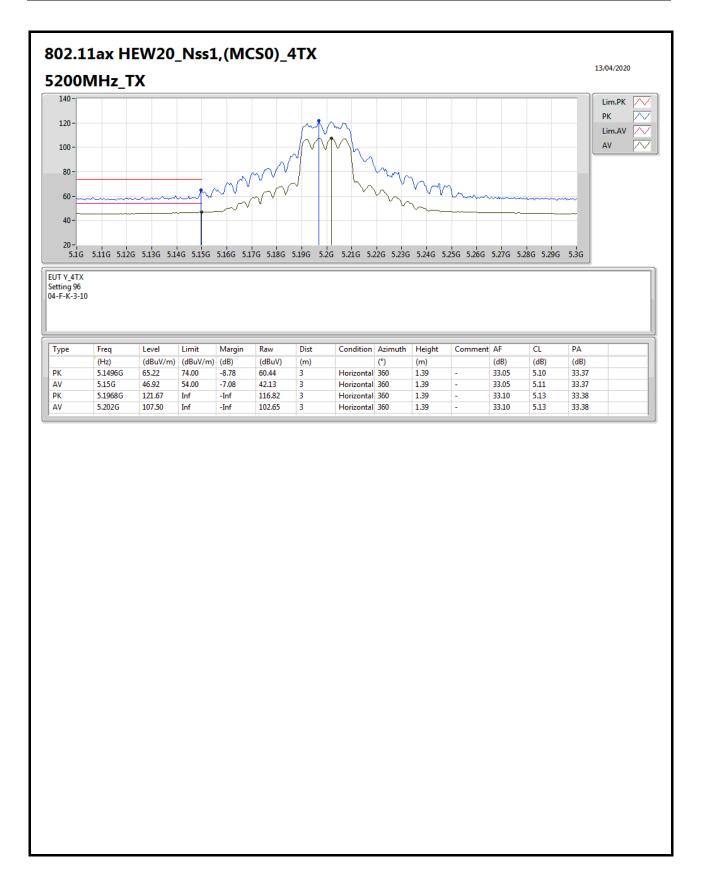




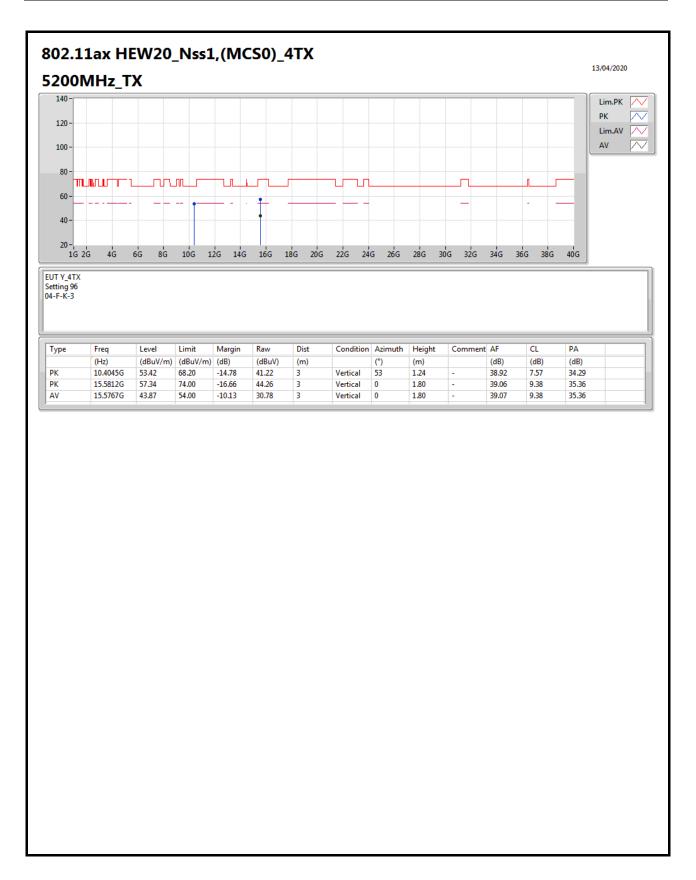




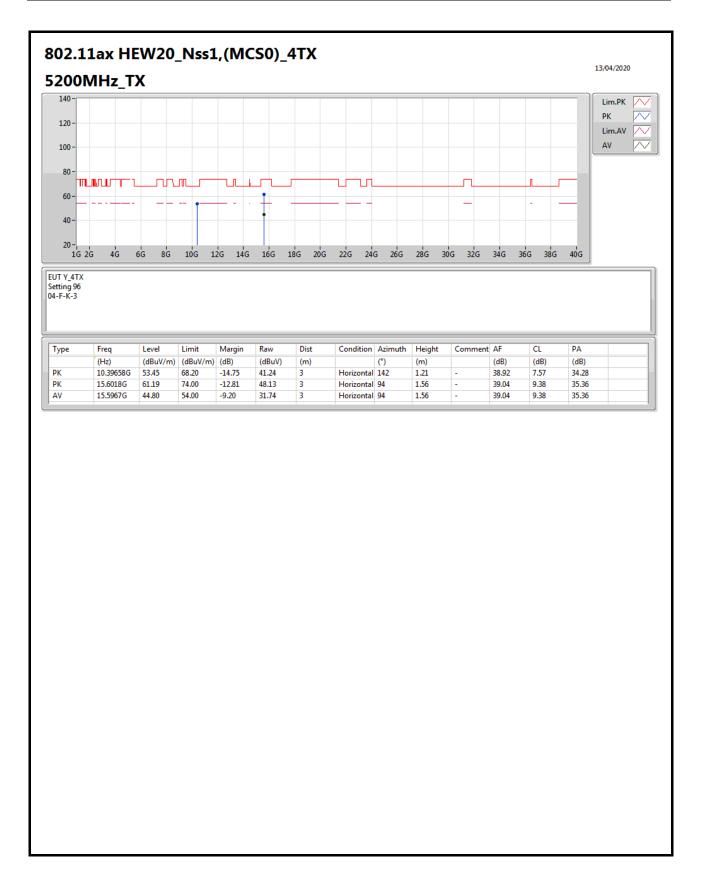




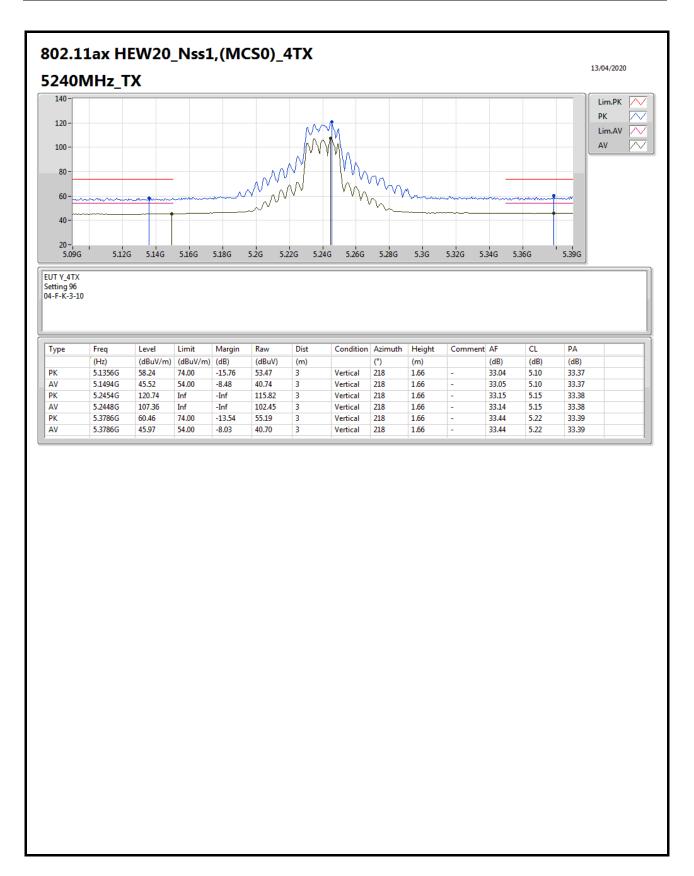




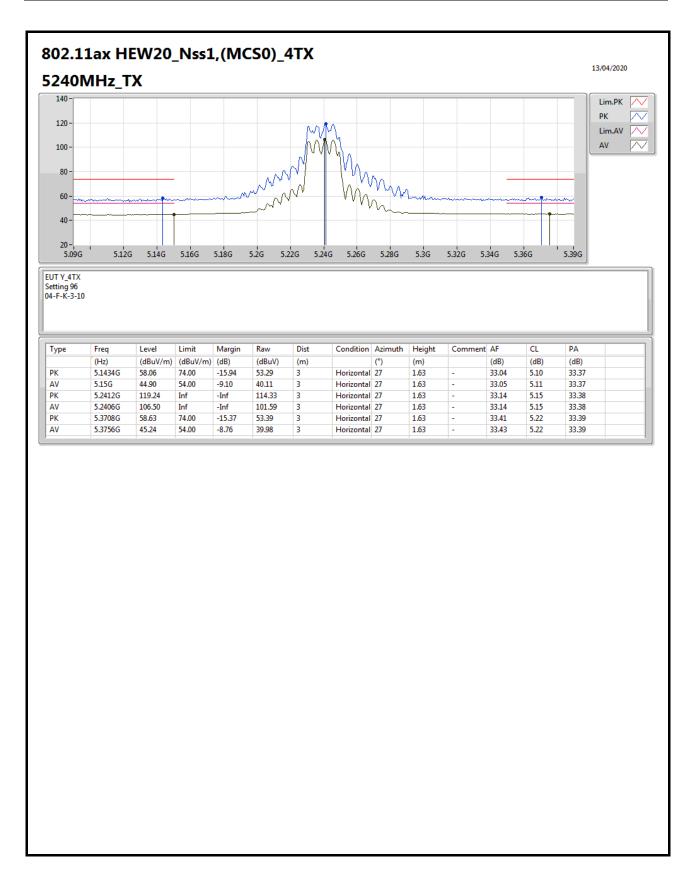




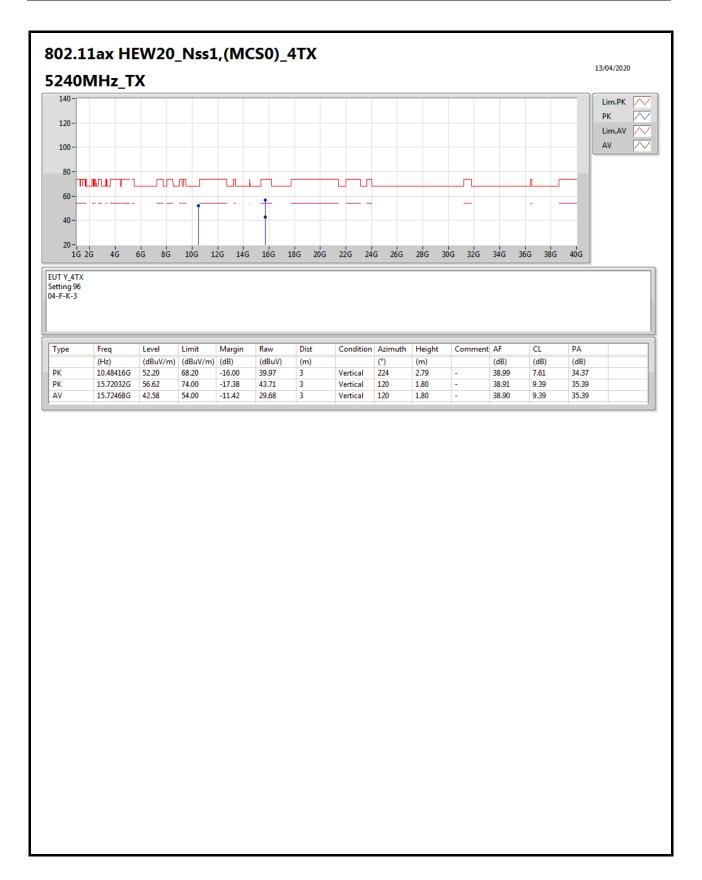




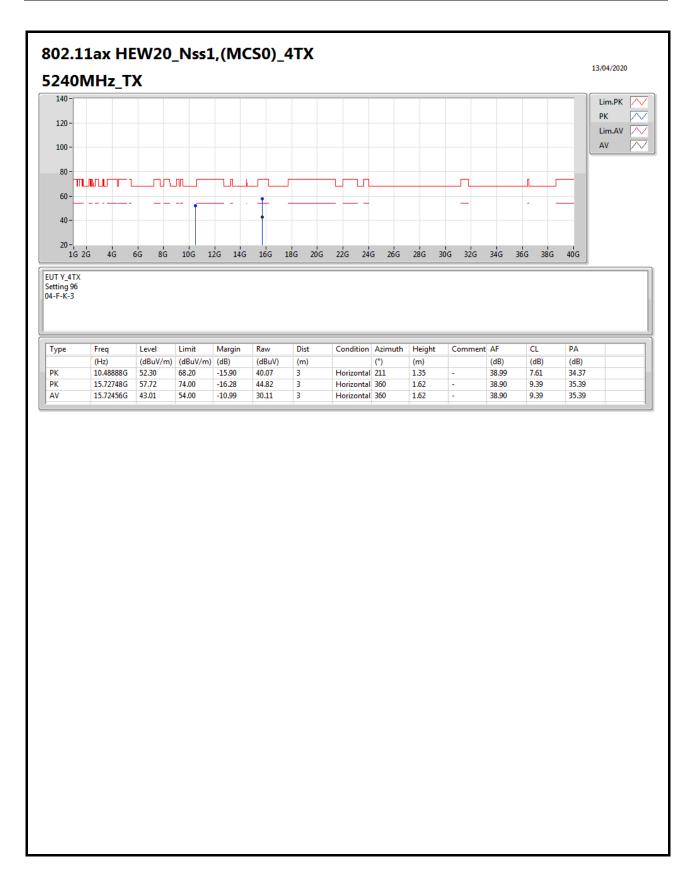




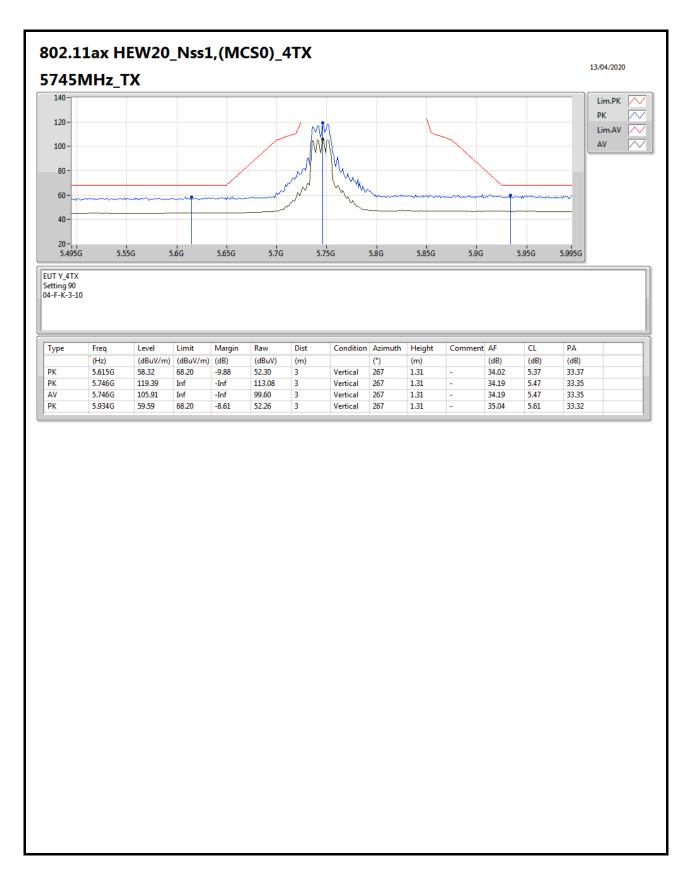




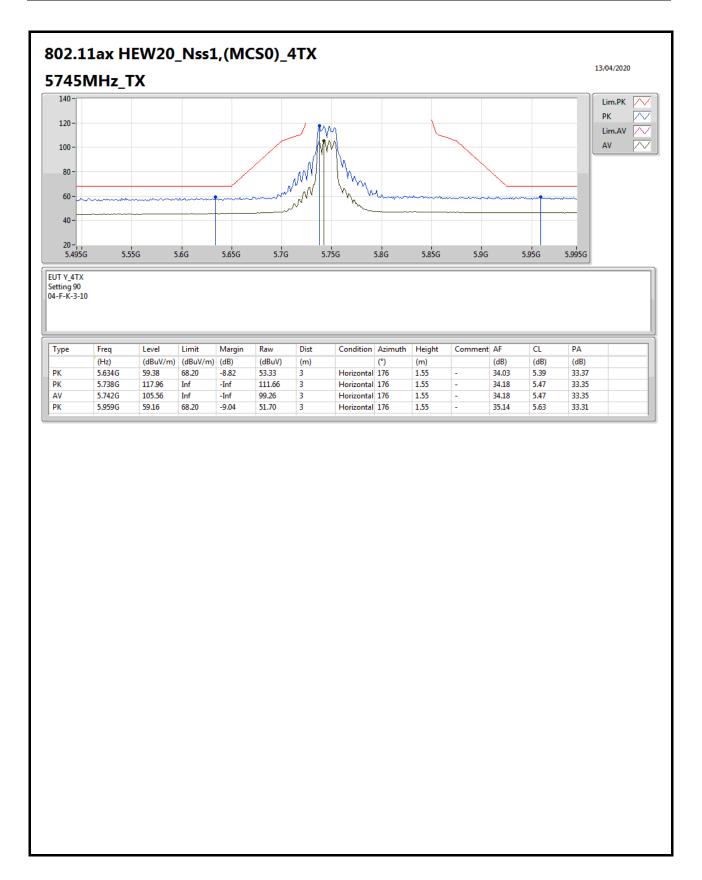






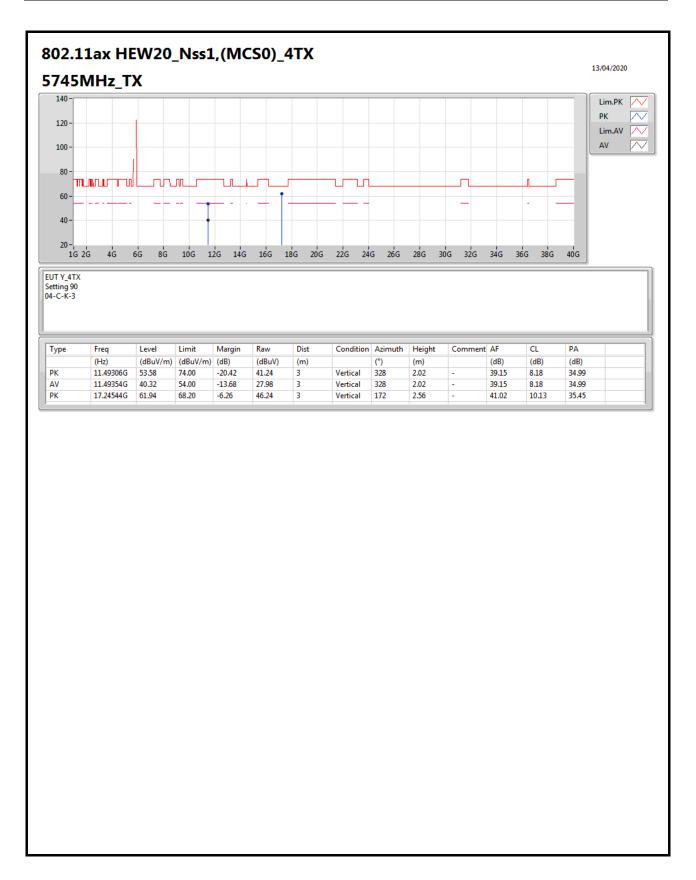




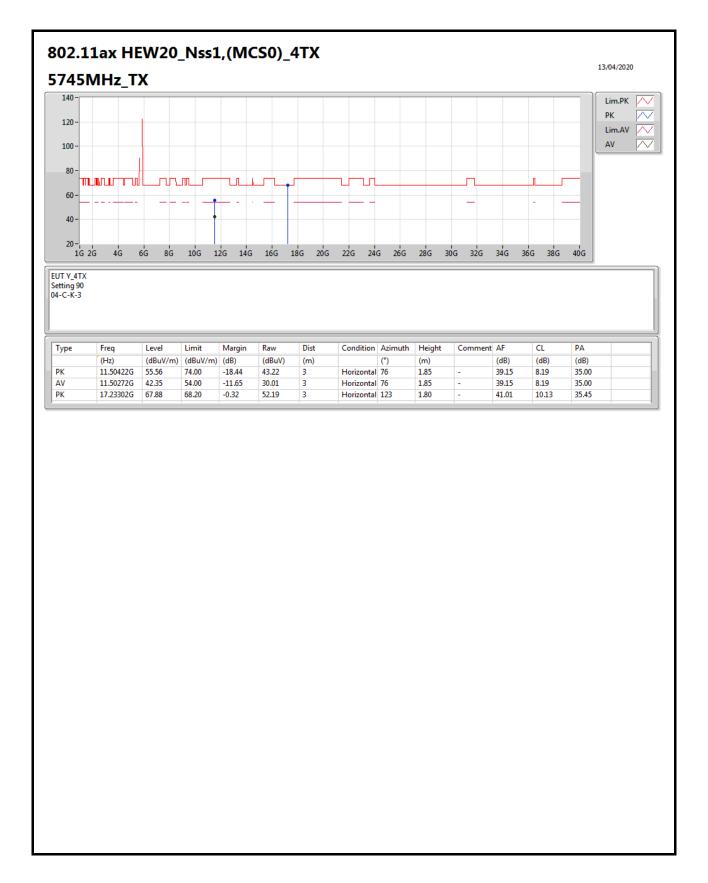


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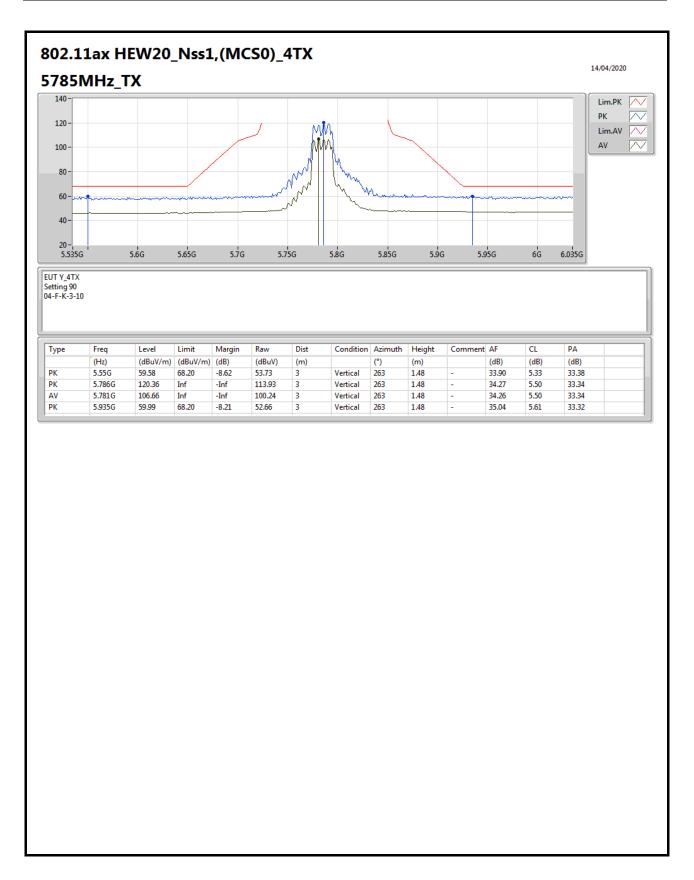




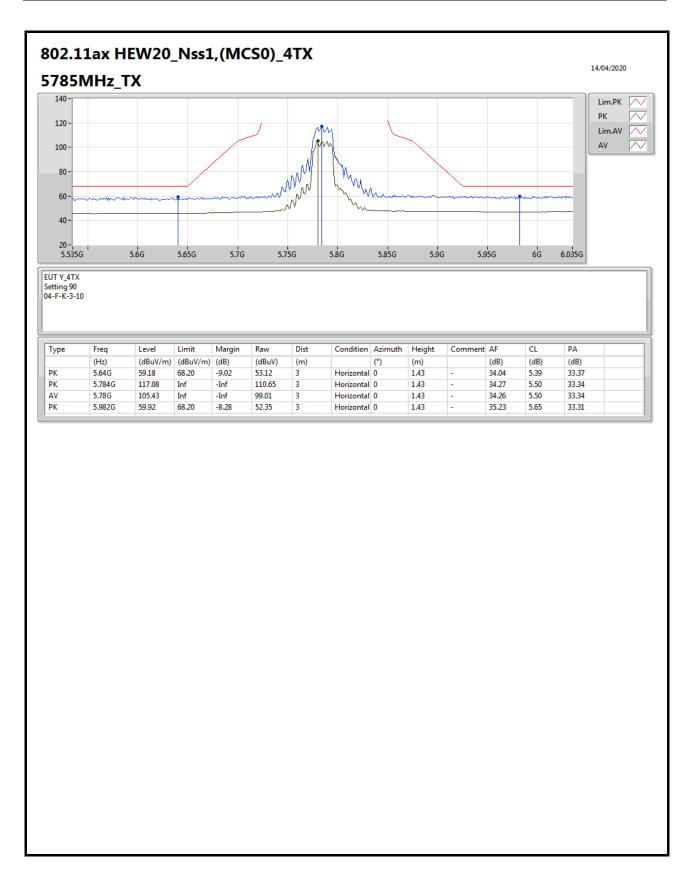






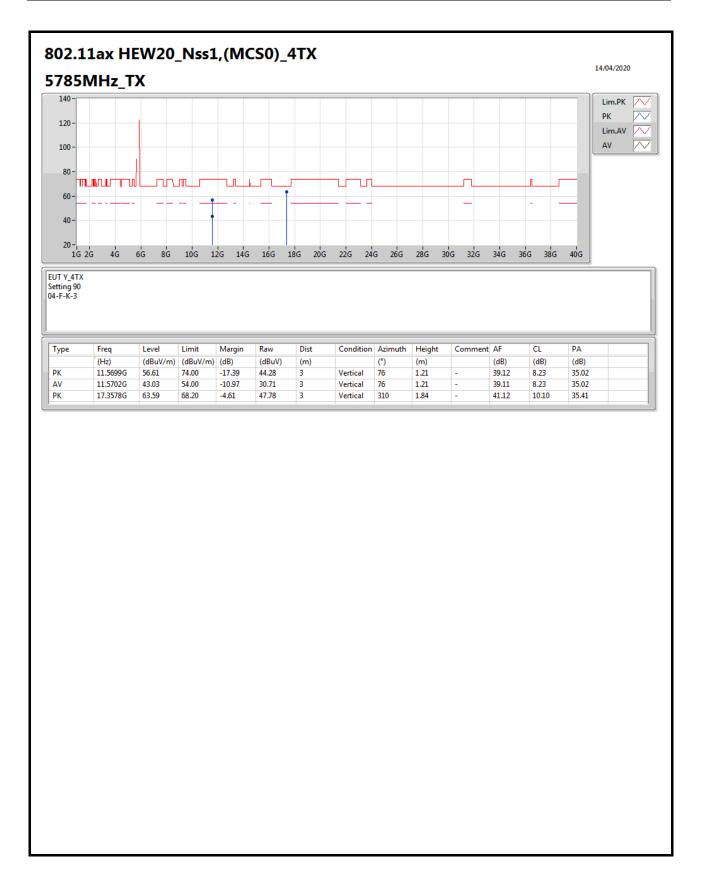




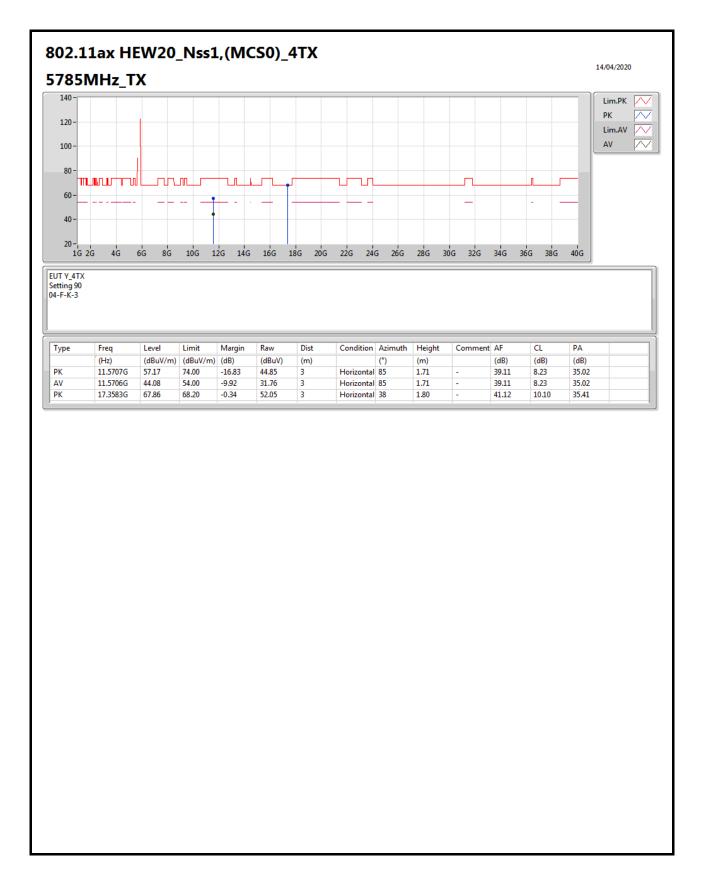


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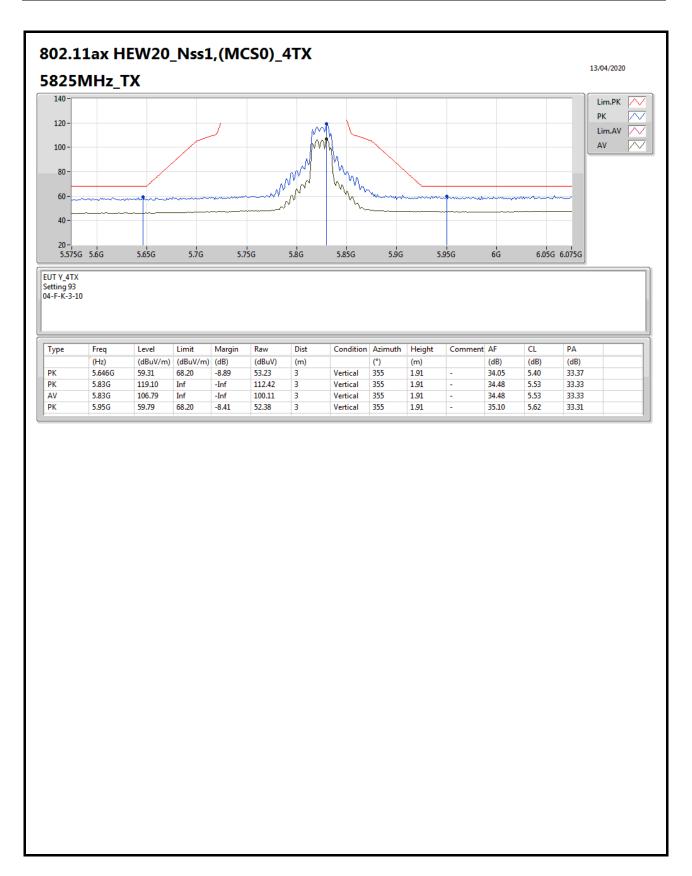




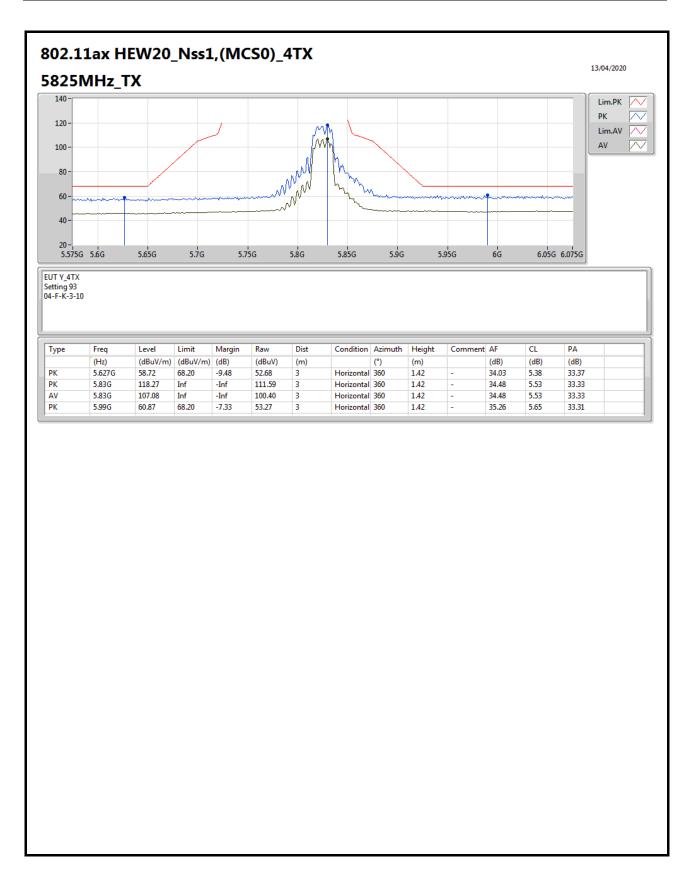




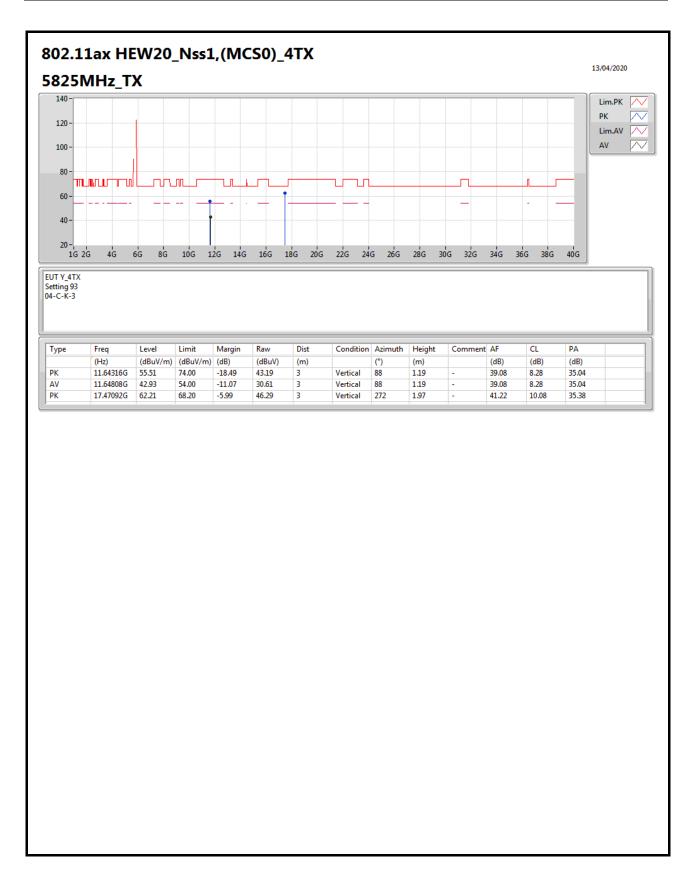




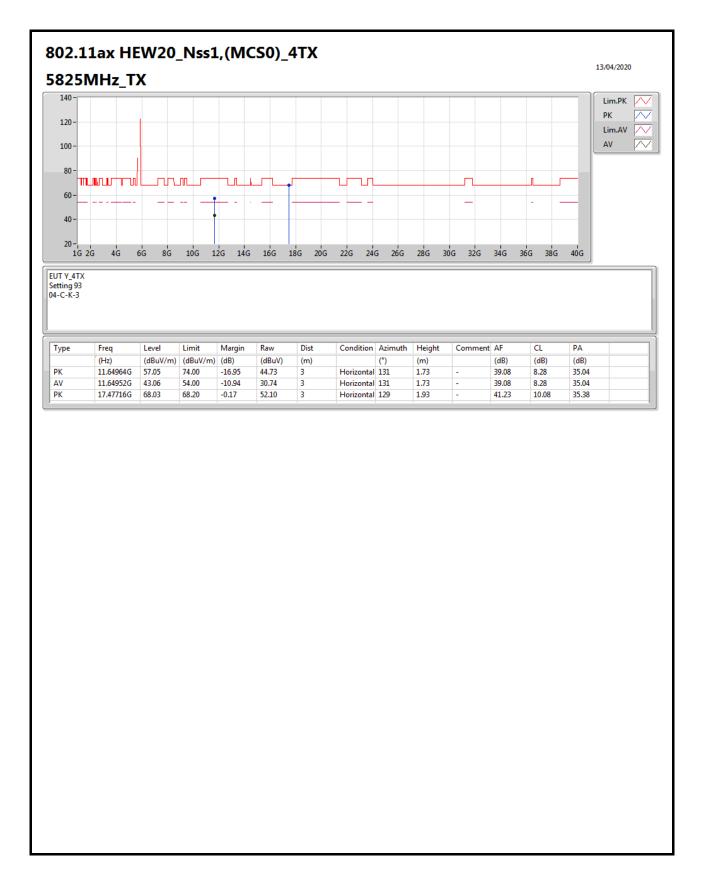






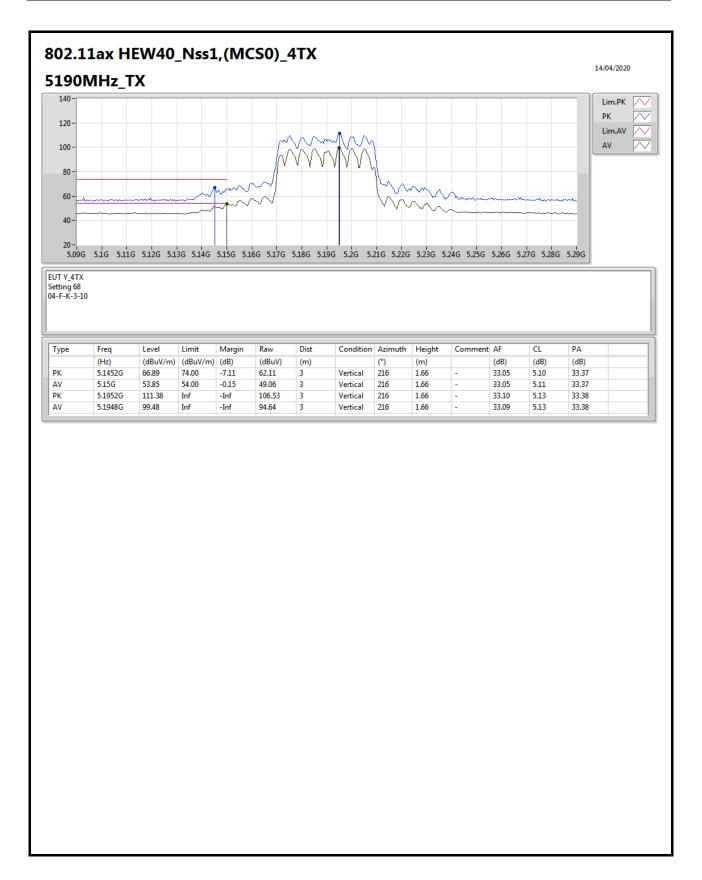






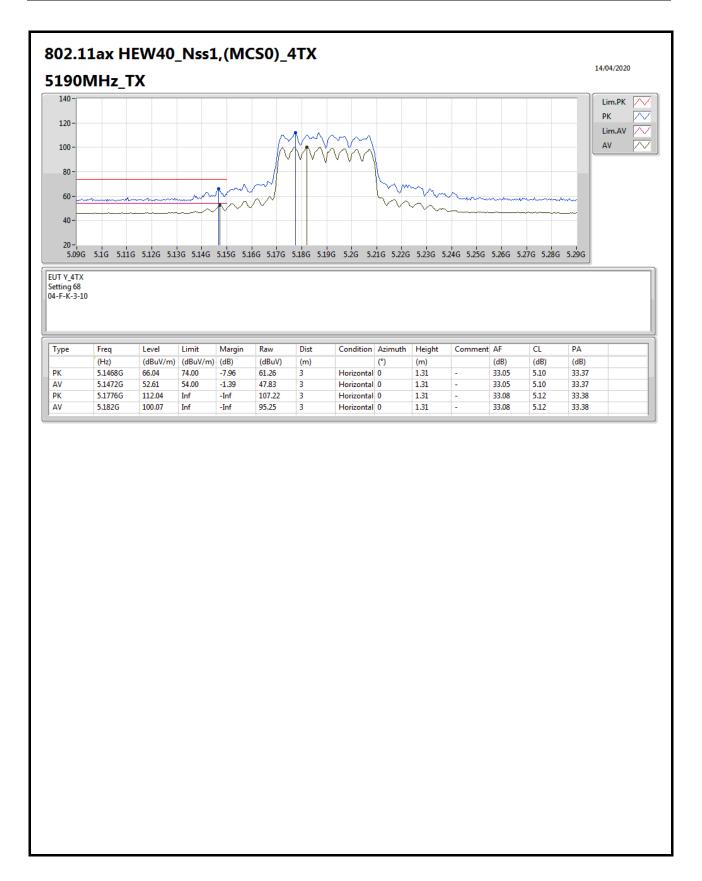
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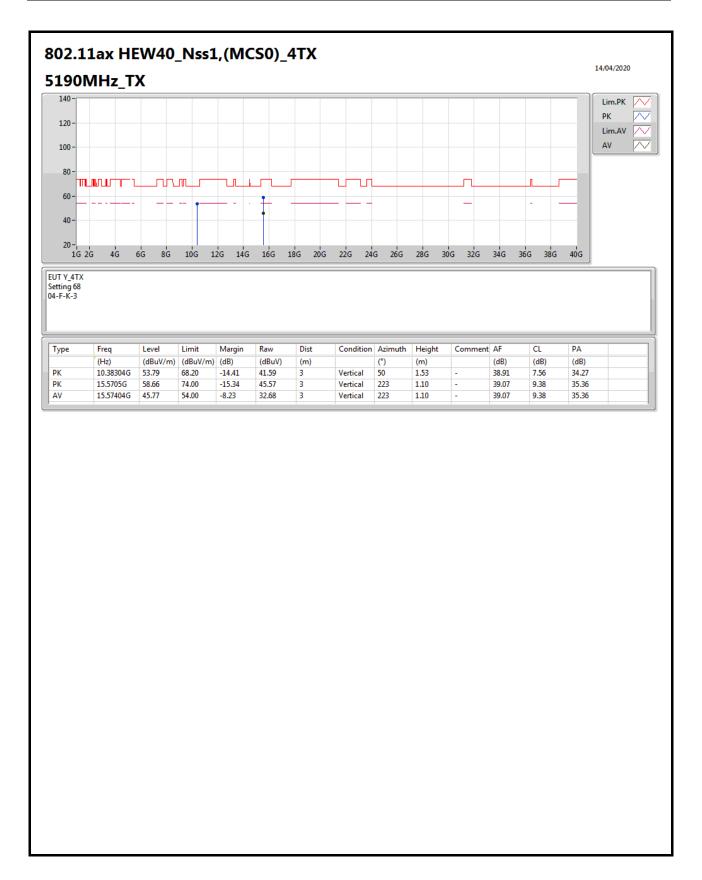
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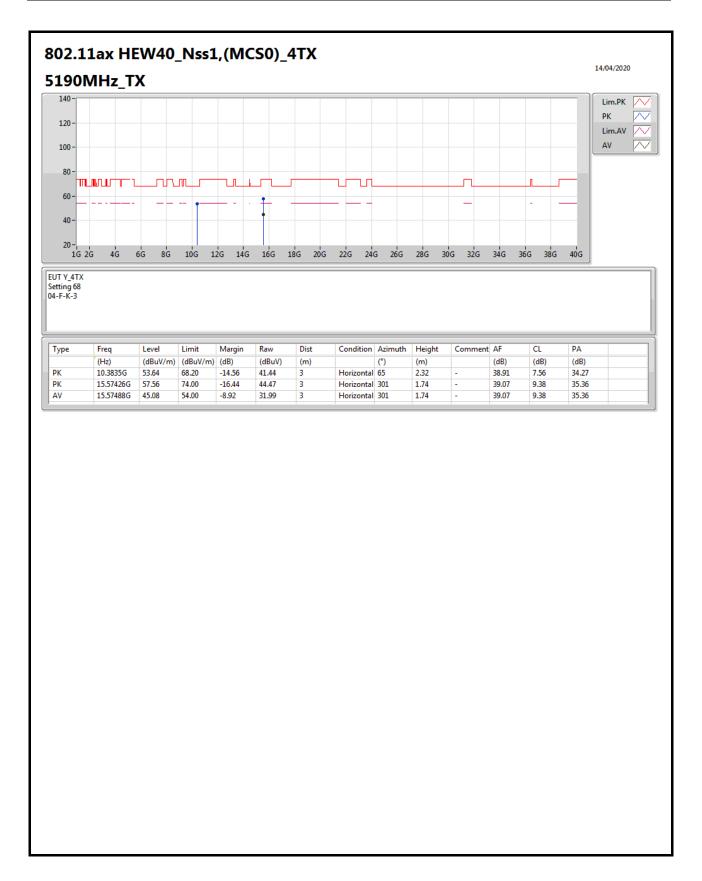
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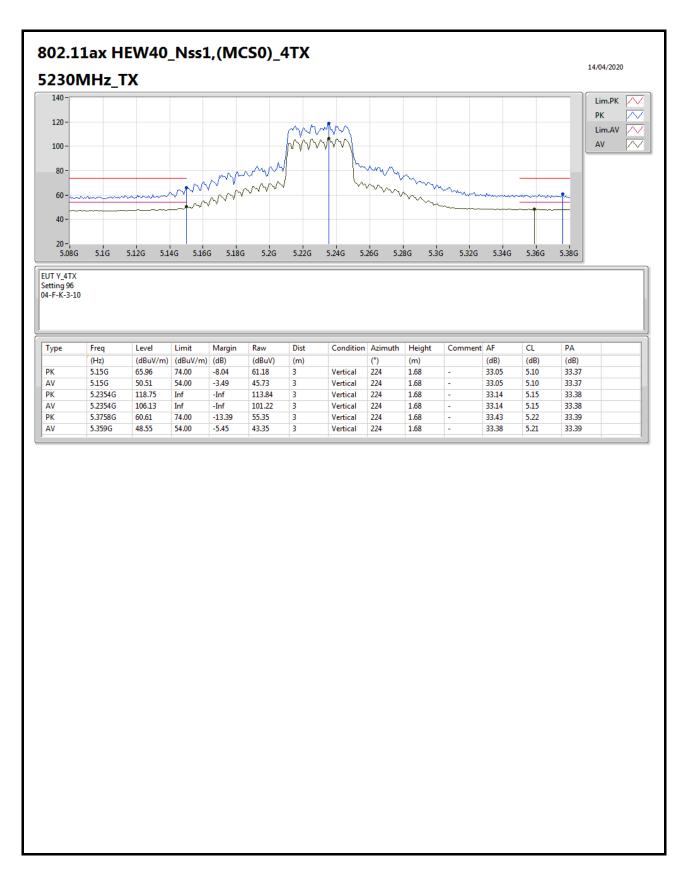


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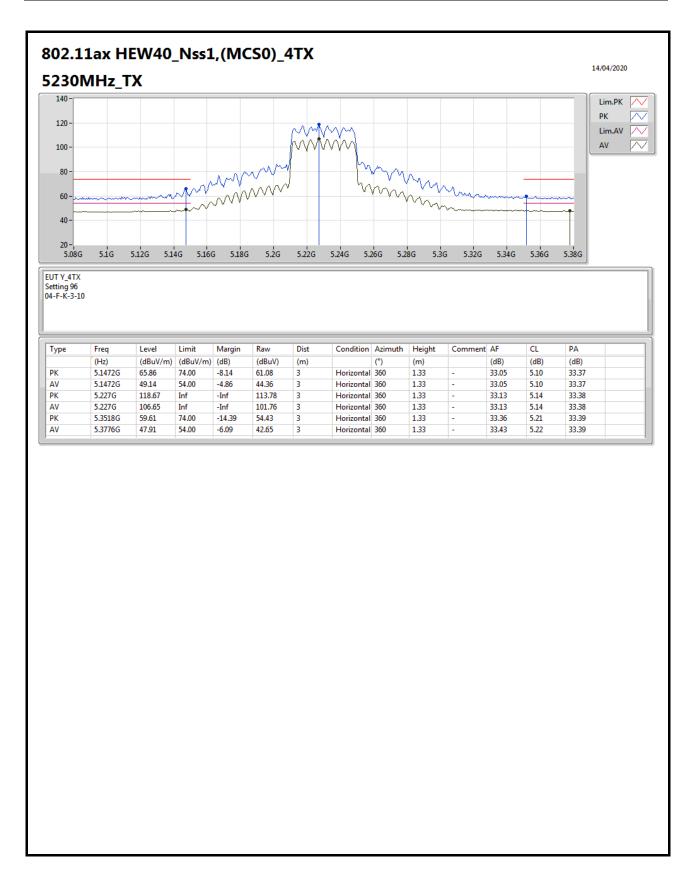






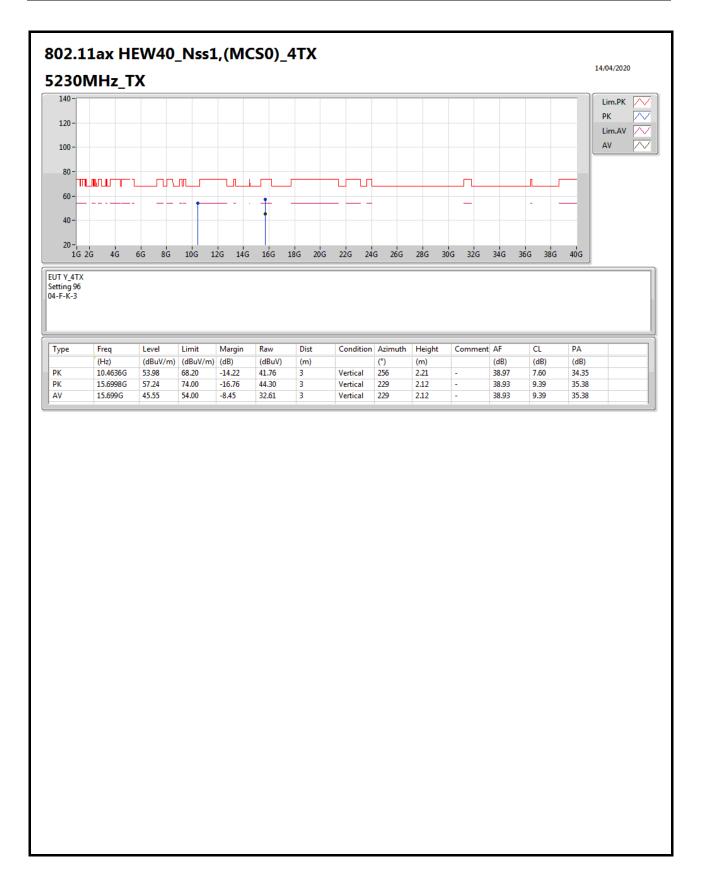
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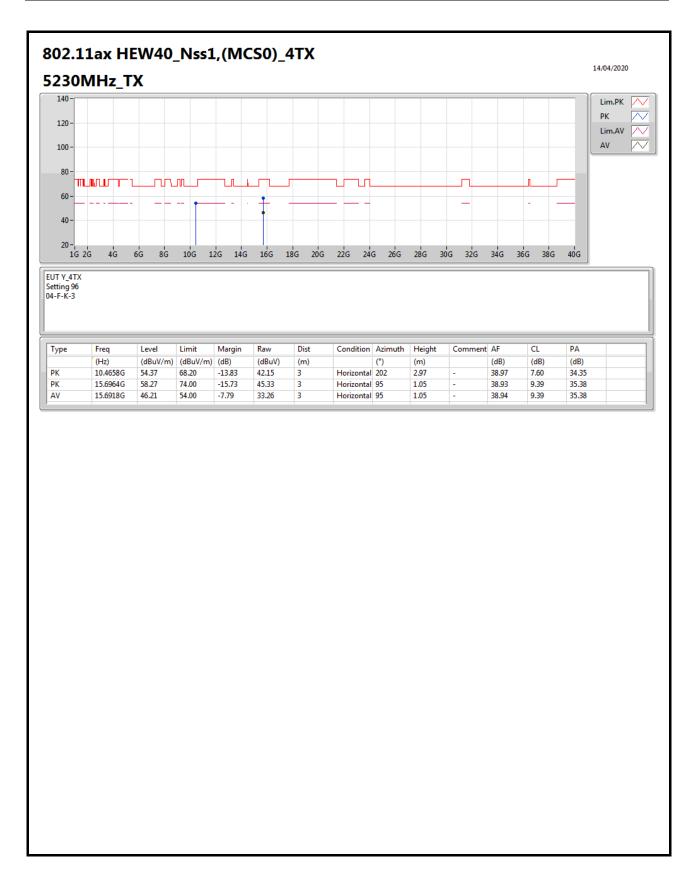
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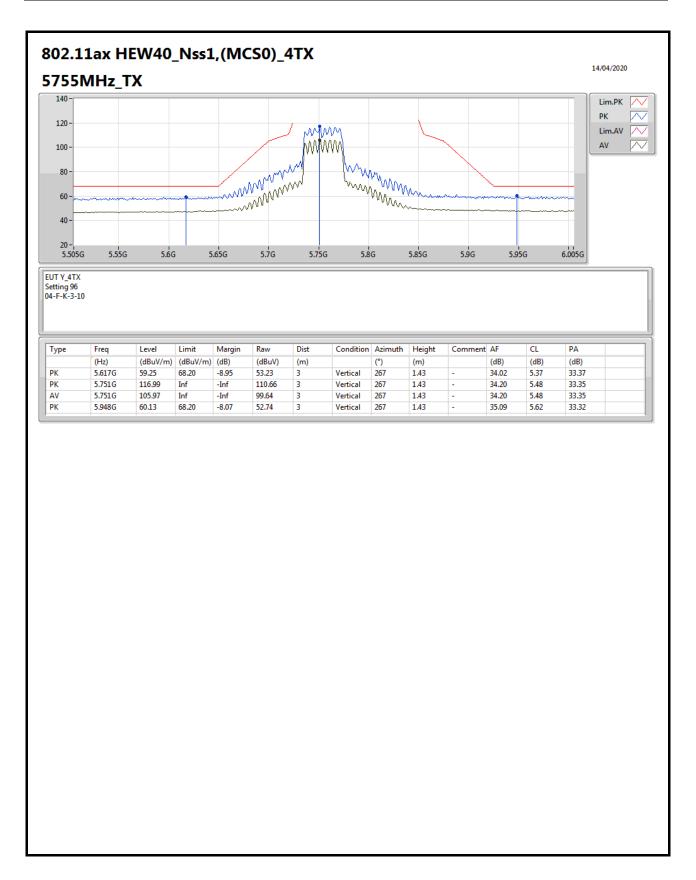
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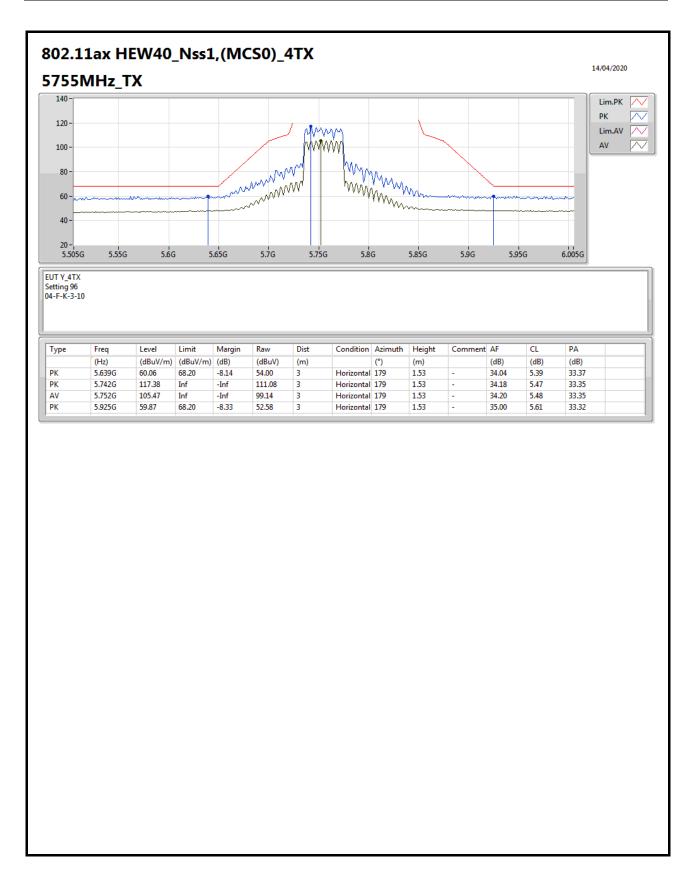
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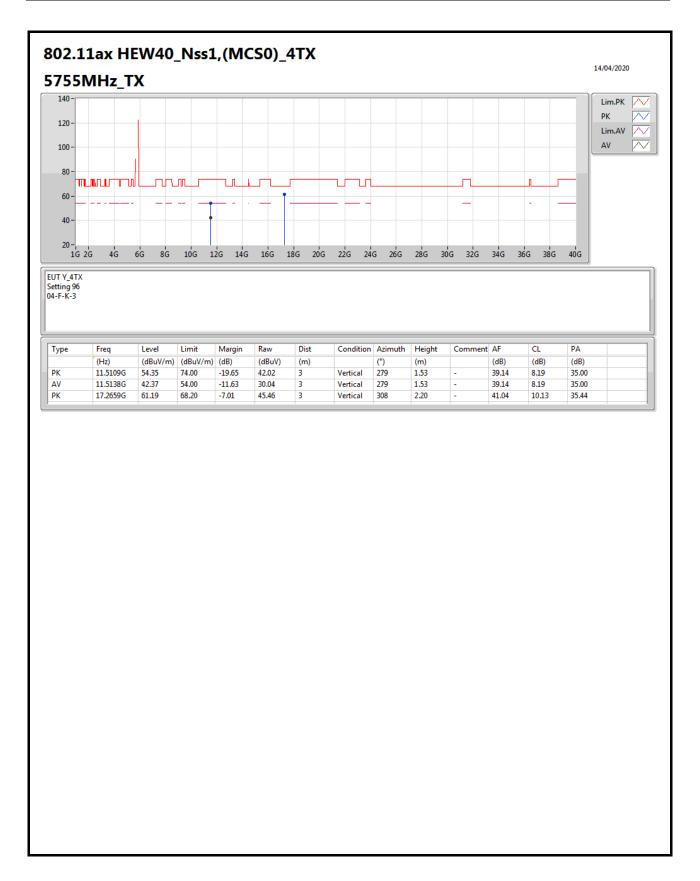
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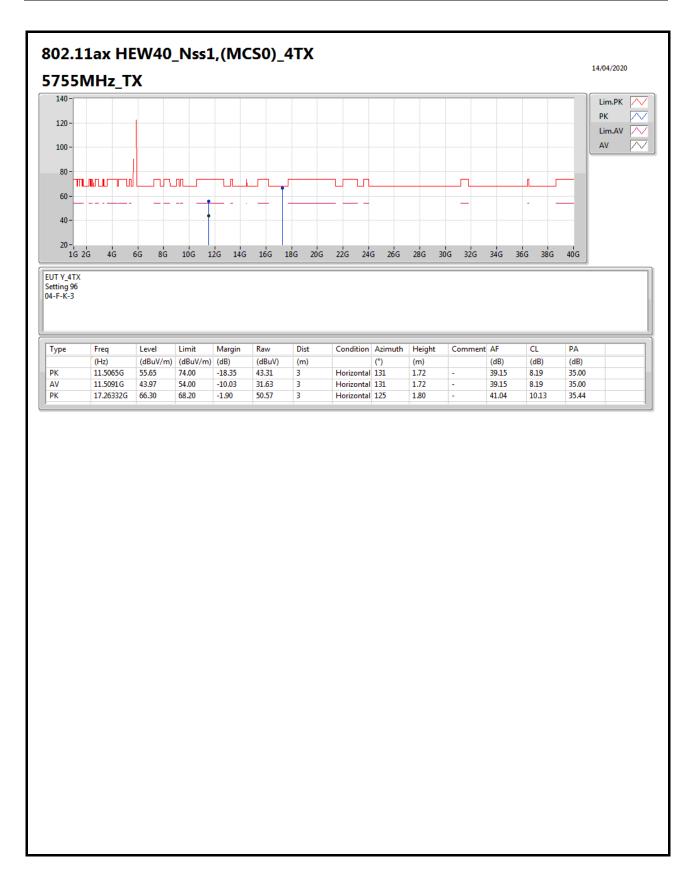


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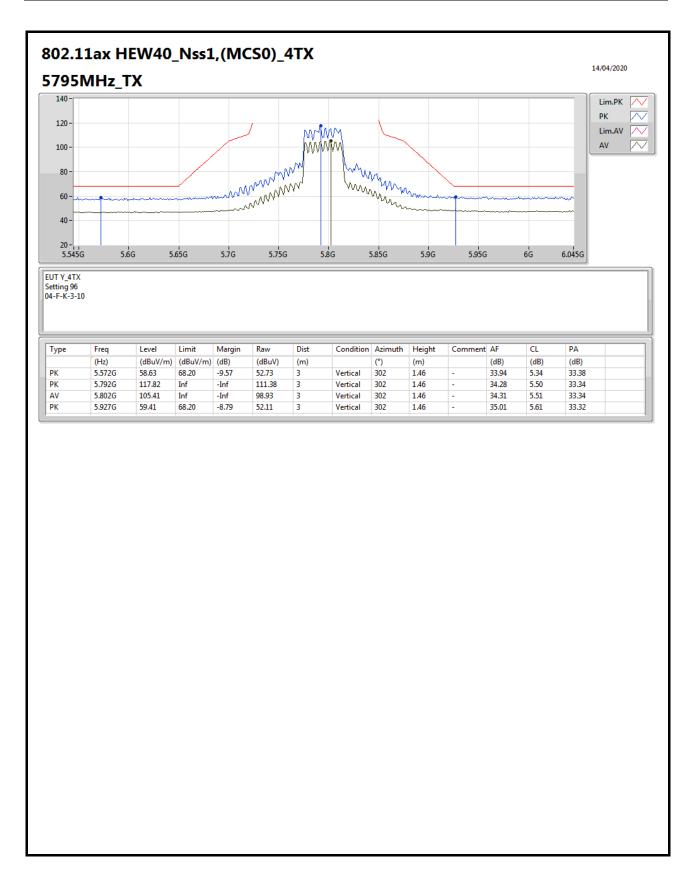




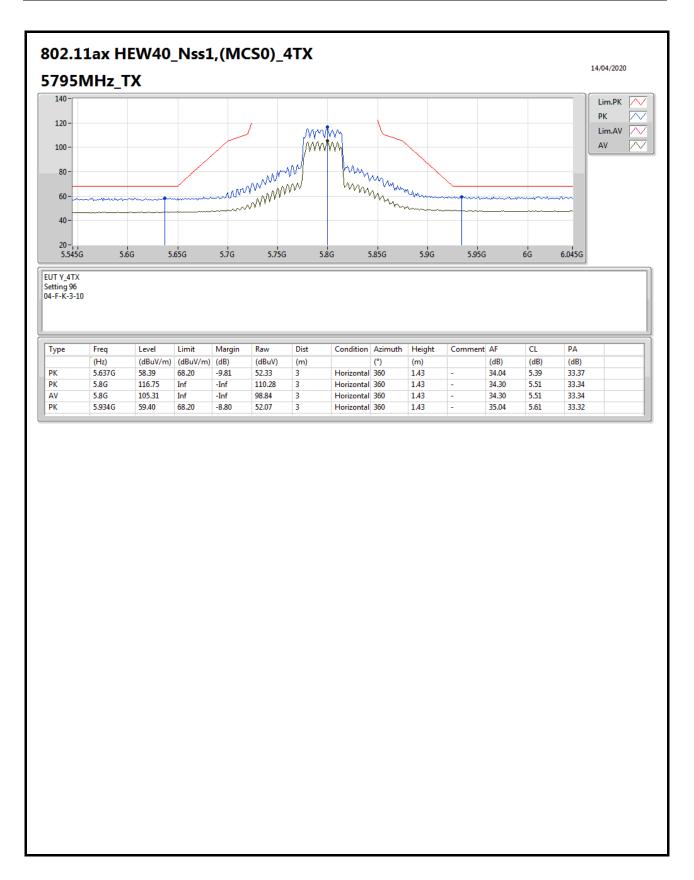




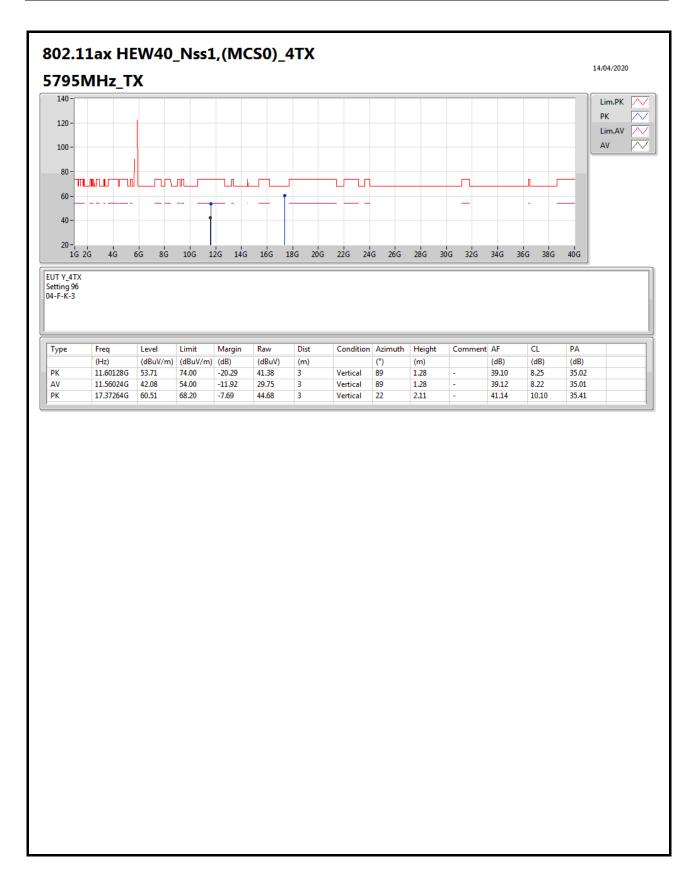




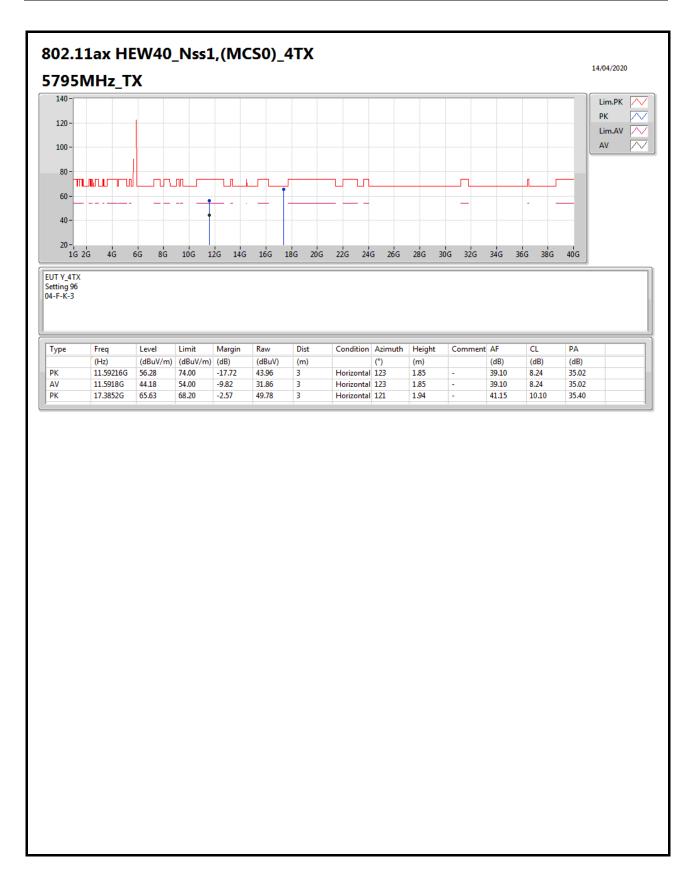




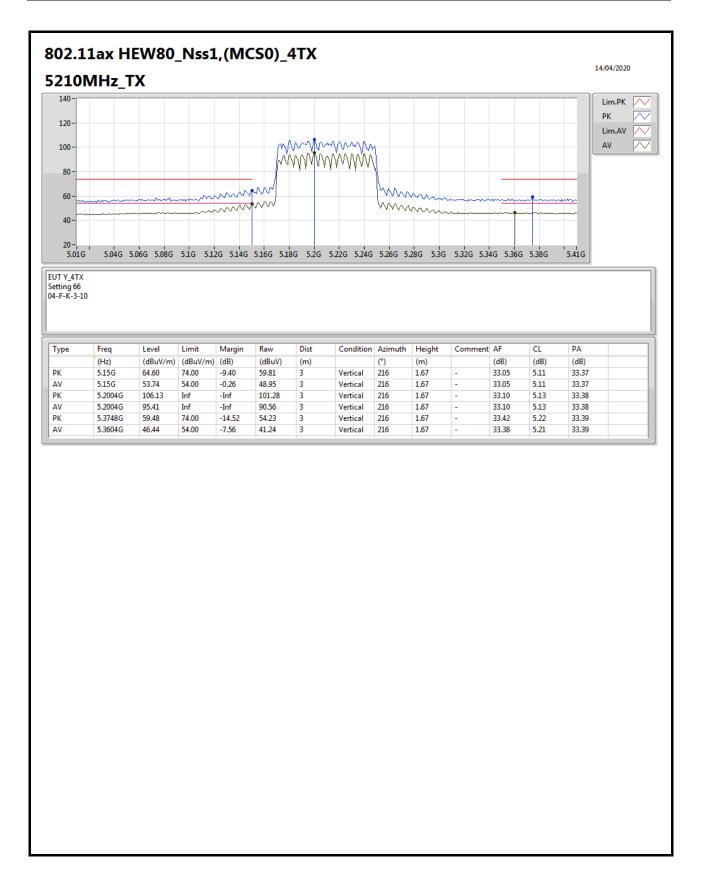




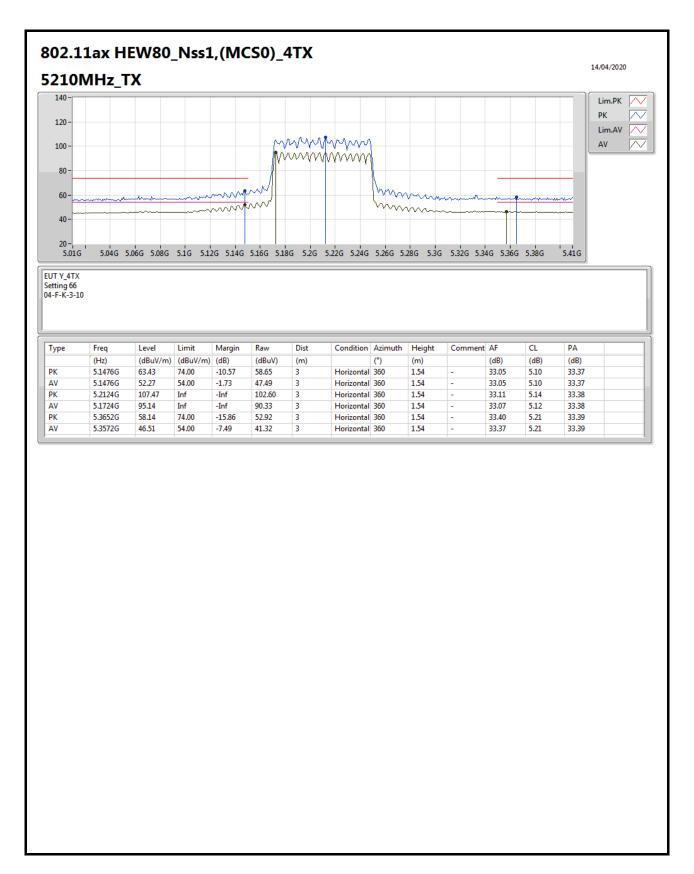




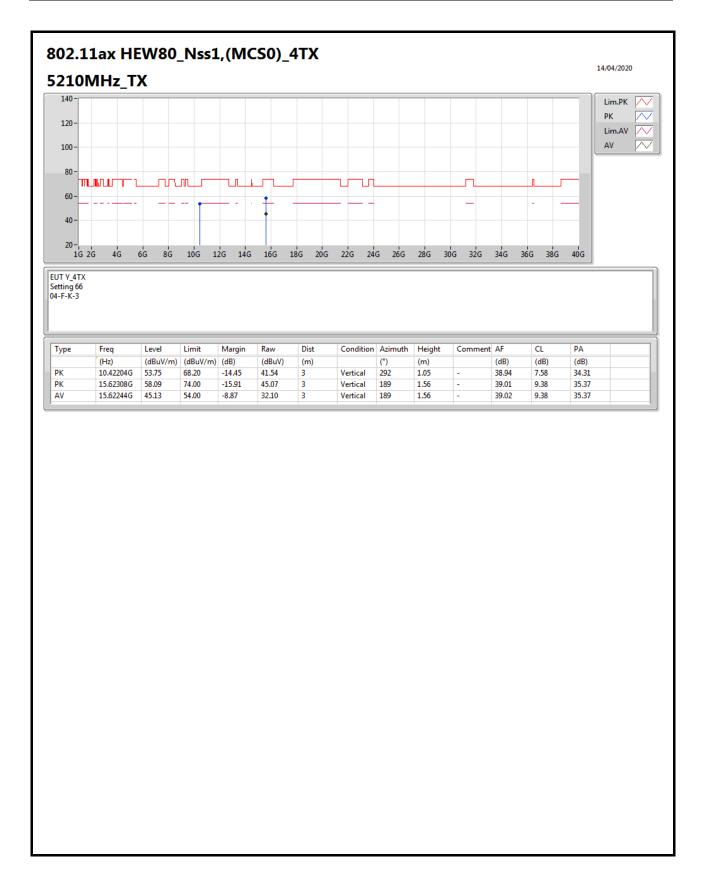




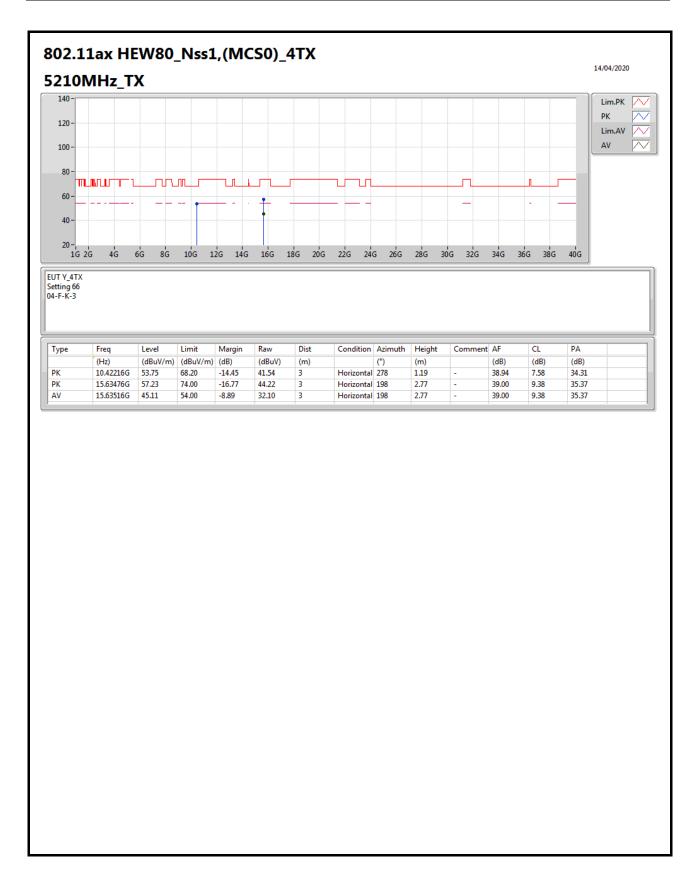




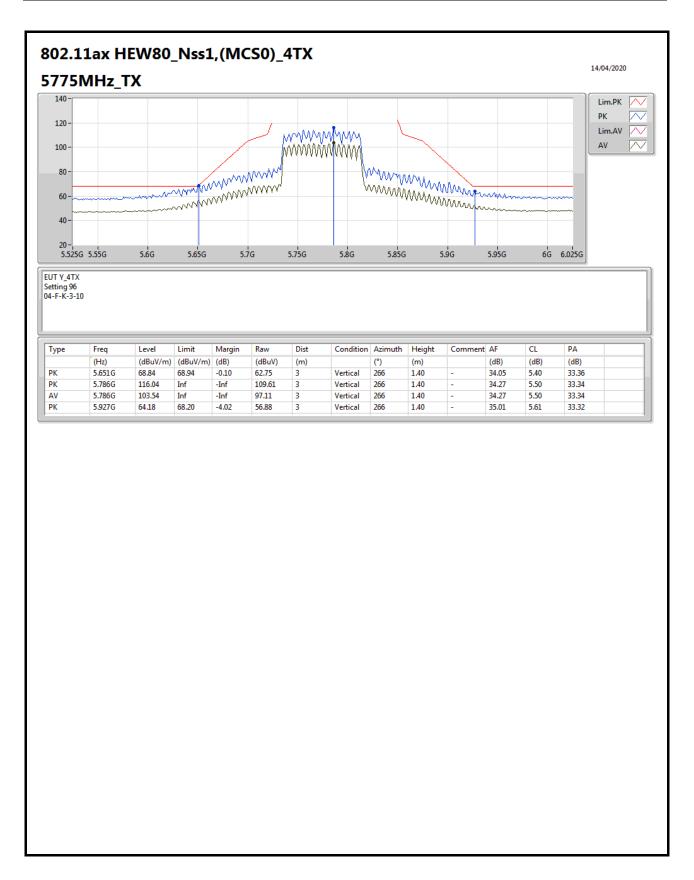




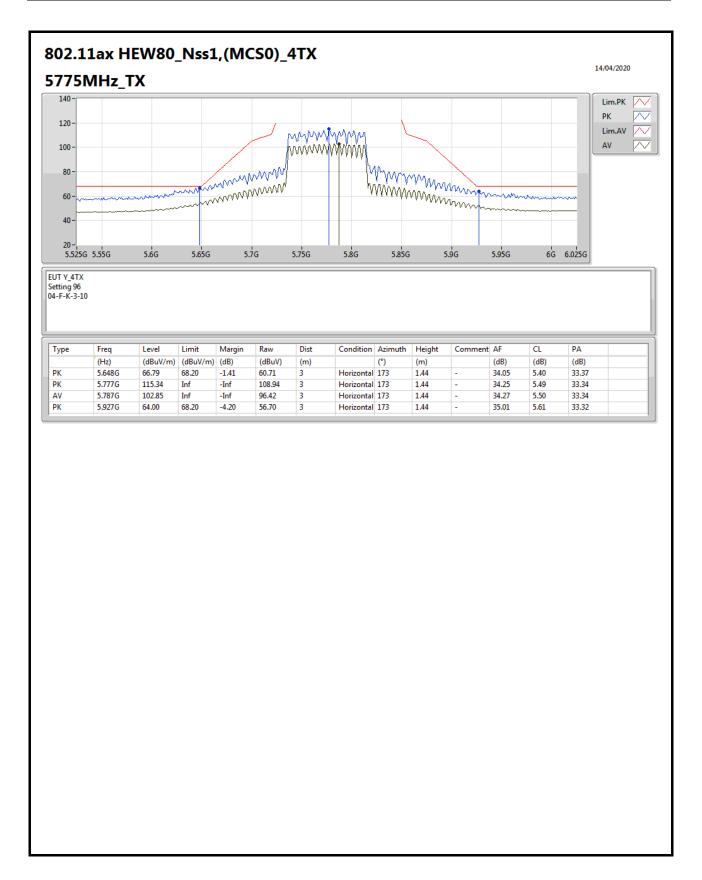






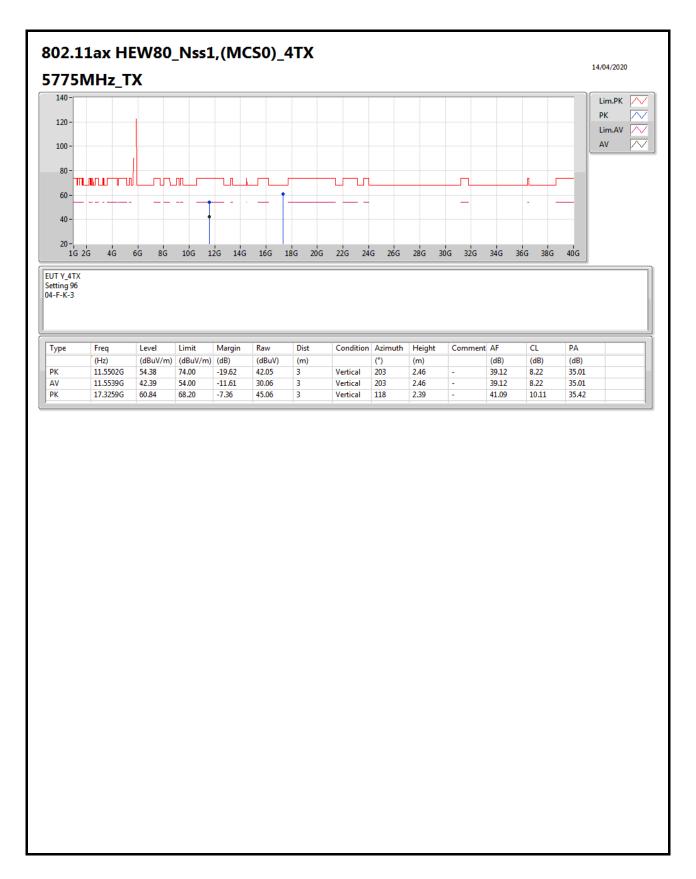






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