





FCC RADIO TEST REPORT

FCC ID

: K7S-03689

Equipment

: AX6600 Tri-band Mesh Router

Brand Name

: LINKSYS

Model Name

: MR7500, MR75WH

Applicant

: Belkin International, Inc.

12045 East Waterfront Dr. Playa Vista CA United

States Zip coode: 90094

Standard

: 47 CFR FCC Part 15,407

The product was received on Dec. 07, 2020, and testing was started from Dec. 07, 2020 and completed on Feb. 05, 2021. 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 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

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: Feb. 26, 2021

Report Version : 01

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Photographs of EUT v01

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History of this test report

Report No.: FR0D0129AB

Report No.	Version	Description	Issued Date
FR0D0129AB	01	Initial issue of report	Feb. 26, 2021

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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: Sandy Chuang

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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	oo (\/\LT90\ ov (\LT\\/90\)	5210	42 [1]
5725-5850	ac (VHT80), ax (HEW80)	5775	155 [1]

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Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	2
5.15-5.25GHz	802.11n HT20	20	2
5.15-5.25GHz	802.11n HT20-BF	20	2
5.15-5.25GHz	802.11ac VHT20	20	2
5.15-5.25GHz	802.11ac VHT20-BF	20	2
5.15-5.25GHz	802.11ax HEW20	20	2
5.15-5.25GHz	802.11ax HEW20-BF	20	2
5.15-5.25GHz	802.11n HT40	40	2
5.15-5.25GHz	802.11n HT40-BF	40	2
5.15-5.25GHz	802.11ac VHT40	40	2
5.15-5.25GHz	802.11ac VHT40-BF	40	2
5.15-5.25GHz	802.11ax HEW40	40	2
5.15-5.25GHz	802.11ax HEW40-BF	40	2
5.15-5.25GHz	802.11ac VHT80	80	2
5.15-5.25GHz	802.11ac VHT80-BF	80	2
5.15-5.25GHz	802.11ax HEW80	80	2
5.15-5.25GHz	802.11ax HEW80-BF	80	2
5.725-5.85GHz	802.11a	20	2
5.725-5.85GHz	802.11n HT20	20	2
5.725-5.85GHz	802.11n HT20-BF	20	2
5.725-5.85GHz	802.11ac VHT20	20	2
5.725-5.85GHz	802.11ac VHT20-BF	20	2
5.725-5.85GHz	802.11ax HEW20	20	2
5.725-5.85GHz	802.11ax HEW20-BF	20	2
5.725-5.85GHz	802.11n HT40	40	2

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Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11n HT40-BF	40	2
5.725-5.85GHz	802.11ac VHT40	40	2
5.725-5.85GHz	802.11ac VHT40-BF	40	2
5.725-5.85GHz	802.11ax HEW40	40	2
5.725-5.85GHz	802.11ax HEW40-BF	40	2
5.725-5.85GHz	802.11ac VHT80	80	2
5.725-5.85GHz	802.11ac VHT80-BF	80	2
5.725-5.85GHz	802.11ax HEW80	80	2
5.725-5.85GHz	802.11ax HEW80-BF	80	2

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 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 Holder	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	Signal Plus Technology Co., Ltd	6239F00003	Dipole	I-PEX	
2	2	Signal Plus Technology Co., Ltd	6239F00004	Dipole	I-PEX	
3	1	Signal Plus Technology Co., Ltd	6239F00001	Dipole	I-PEX	
4	2	Signal Plus Technology Co., Ltd	6239F00001	Dipole	I-PEX	Note 1
5	3	Signal Plus Technology Co., Ltd	6239F00002	Dipole	I-PEX	
6	4	Signal Plus Technology Co., Ltd	6239F00002	Dipole	I-PEX	
7	1	Signal Plus Technology Co., Ltd	6239F00005	PIFA	N/A	

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Note 1:

					Ga	in (dBi)			
Ant.	Port	WLAN	WLAN	I 5GHz		WLA	N 6GHz		Divista eth
		2.4GHz	UNII 1	UNII 3	UNII 5	UNII 6	UNII 7	UNII 8	Bluetooth
1	1	1.61	2.12	2.08	-	-	-	-	-
2	2	1.65	2.12	2.08	-	-	-	-	-
3	1	-	-	-	2.75	2.83	2.83	2.98	-
4	2	-	-	-	1.72	2.15	2.15	2.37	-
5	3	-	-	-	2.02	2.21	2.21	2.55	-
6	4	-	-	-	2.42	2.54	2.54	2.73	-
7	1	-	-	-	-	-	-	-	4

Note 2: The above information was declared by manufacturer.

<For WLAN 2.4GHz >

For IEEE 802.11b/g/n/VHT/ax mode (2TX/2RX)

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

Port 1 and Port 2 could transmit/receive simultaneously.

<For WLAN 5GHz Band UNII 1/UNII 3>

For IEEE 802.11a/n/ac/ax mode (2TX/2RX)

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

Port 1 and Port 2 could transmit/receive simultaneously.

<For WLAN 6GHz Band UNII 5~UNII 8>

For IEEE 802.11ax 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.

<For Bluetooth> (1TX/1RX)

Only Port 1 can be used as transmitting/receiving.

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1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.931	0.31	1.987m	1k
802.11ax HEW20-BF	0.949	0.23	1.771m	1k
802.11ax HEW40-BF	0.968	0.14	20.032m	100
802.11ax HEW80-BF	0.925	0.34	1.699m	1k

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N	~ +~	
N	()	

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

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter					
	\boxtimes	With beamforming		Without beamforming		
Beamforming Function	The product has beamforming function for n/VHT/ax in 2.4GHz, n/ac/ax in 5GHz UNII 1/UNII 3 and ax in 6GHz UNII 5~UNII 8.					
Function		Outdoor P2M	\boxtimes	Indoor P2M		
Function		Fixed P2P		Client		
Test Software Version	<non-beamforming mode=""> QSPR V5.0-00188 <br< th=""></br<></non-beamforming>					

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Model No.	Description
MR7500, MR75WH	All the model names are identical, the difference model names served as marketing strategy.

Note 1: Model Name: MR7500 was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

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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, Ln. 724, Bo'ai St., Zhubei 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 (°C / %)	Test Date	
RF Conducted	TH01-CB	Jeff Wu	24.1-25.9 / 55-56	Dec. 25, 2020~ Jan. 26, 2021	
Radiated	03CH01-CB	Bruce Yang	21.5-22.5 / 54-57	Dec. 07, 2020~	
(Above 1GHz)	03CH02-CB	Bruce Yang	20.4-21.4 / 55-57	Feb. 05, 2021	
Radiated (Below 1GHz: Mode 1~Mode 5)	03CH05-CB	Bruce Yang	21.1-22.3 / 56-58	Dec. 07, 2020~ Feb. 05, 2021	
Radiated (Below 1GHz: Mode 6)	03CH03-CB	Bruce Yang	22.3-23.3 / 56-58	Dec. 07, 2020~ Feb. 05, 2021	
Radiated (Co-location)	03CH01-CB	Bruce Yang	21.1-22.1 / 55-57	Dec. 07, 2020~ Feb. 05, 2021	
AC Conduction	CO01-CB	Peter Wu	22~23 / 62~64	Jan. 28, 2021	

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

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1.4 Measurement Uncertainty

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

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level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.8 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.0 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.9 dB	Confidence levels of 95%
Conducted Emission	2.8 dB	Confidence levels of 95%
Output Power Measurement	1.4 dB	Confidence levels of 95%
Power Density Measurement	2.8 dB	Confidence levels of 95%
Bandwidth Measurement	0.4%	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)_2TX	-	
5180MHz	23	
5200MHz	26	
5240MHz	26	
5745MHz	27	
5785MHz	27	
5825MHz	27	
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	
5180MHz	26	
5200MHz	27	
5240MHz	27	
5745MHz	27	
5785MHz	27	
5825MHz	27	
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	
5190MHz	25	
5230MHz	27	
5755MHz	27	
5795MHz	27	
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	
5210MHz	24	
5775MHz	25	

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Note

- The EUT supports non-beamforming and beamforming modes, after evaluating, the beamforming mode has been evaluated to be the worst case, so it was selected to test.
- Evaluated HEW20/HEW40/HEW80 mode only, due to similar modulation. The power setting of HT20/HT40/VHT20/VHT40/VHT80 mode are the same or lower than HEW20/HEW40/HEW80.

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 with Adapter 1			
2 EUT with Adapter 2				
3 EUT with Adapter 3				
For operating mode 2 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 Unwanted Emissions	
Test Condition Conducted measurement at transmit chains		

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-	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			
The EUT was performed at Y axis and Z axis position for Radiated measurement <above 1ghz="">, and the wo case was found at Z axis position for $2.4GHz \cdot 5GHz$ UNII $1/UNII 3 \cdot Bluetooth$ and Y axis position for $6GHz$ U $5\sim UNII 8$.</above>				
1	EUT + Bluetooth with Adapter 1 in Z axis			
2 EUT + Bluetooth with Adapter 2 in Z axis				
3	EUT + Bluetooth with Adapter 3 in Z axis			
Mode 1 has been evaluate this same test mode.	d to be the worst case among Mode 1~3, thus measurement for Mode 4 ~ 6 will follow			
4	EUT + WLAN 2.4GHz with Adapter 1 in Z axis			
5	EUT + WLAN 5GHz UNII 1/UNII 3 with Adapter 1 in Z axis			
6	EUT + WLAN 6GHz UNII 5~UNII 8 with Adapter 1 in Y axis			
For operating mode 1 is the worst case and it was record in this test report.				
Operating Mode > 1GHz CTX				
The EUT was performed at Y axis and Z axis position. The worst case was found at Z axis, thus the measurement will follow this same test configuration.				

The Worst Case Mode for Following Conformance Tests					
Tests Item Simultaneous Transmission Analysis - Radiated Emission Co-location					
Test Condition Radiated measurement					
Operating Mode Normal Link					
The EUT can be placed in Y axis and Z axis. EUT Z axis has been evaluated to be the worst case at Emissions in Radiated measurement <above 1ghz="">; thus, the measurement will follow this same test configuration.</above>					
1 EUT in Z axis + WLAN 2.4GHz + WLAN 5GHz UNII 1/UNII 3					
Refer to Appendix F for Radiated Emission Co-location.					

The Worst Case Mode for Following Conformance Tests				
Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation				
Operating Mode				
1 WLAN 2.4GHz + WLAN 5GHz UNII 1/UNII 3 + WLAN 6GHz UNII 5~UNII 8 + Blueto				
Refer to Sporton Test Report No.: FA0D0129 for Co-location RF Exposure Evaluation.				

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2.3 EUT Operation during Test

For CTX Mode:

<Non-beamforming mode>

The EUT was programmed to be in continuously transmitting mode.

 deamforming mode>

During the test, the following programs under WIN 7 were executed.

The program was executed as follows:

- 1. During the test, the EUT operation to normal function.
- 2. Executed command fixed test channel under DOS.
- 3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by RX Device and transmit duty cycle no less than 98%.

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For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories							
Equipment Name	Brand Name	Model Name	Rating				
Adapter 1	KTEC	KSA-36W-120300HU	Input: 100-240V~50/60Hz 1.0A Output: 12.0V, 3.0A				
Adapter 2	APD	WA-36N12FU	Input: 100-240V~, 50-60Hz 0.9A Max. Output: 12V, 3A				
Adapter 3 (Interchangeable)	KTEC	KSA-36W-120300D5	Input: 100-240V~50/60Hz 1.0A Output: 12.0V, 3.0A, 36.0W				
Other							
Plug*1 (Use for Adapter 3)							
RJ-45 cable*1: Non-Shielded, 0.9m							

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2.5 Support Equipment

For AC Conduction:

Support Equipment						
No.	Equipment	Brand Name	Model Name	FCC ID		
Α	LAN1 NB	DELL	E6430	N/A		
В	WAN PC	DELL	T3400	N/A		
С	2.4G NB	DELL	E6430	N/A		
D	5G NB	Apple	A1278	N/A		
Е	Smart phone	Samsung	Galaxy J2	N/A		
F	WiFi 6E Client	LINKSYS	Divo	N/A		
G	WiFi 6E Client NB	DELL	E6430	N/A		
Н	Flash disk3.0	Transcend	JetFlash-700	N/A		

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For Radiated (below 1GHz):

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

For Radiated (above 1GHz) and RF Conducted:

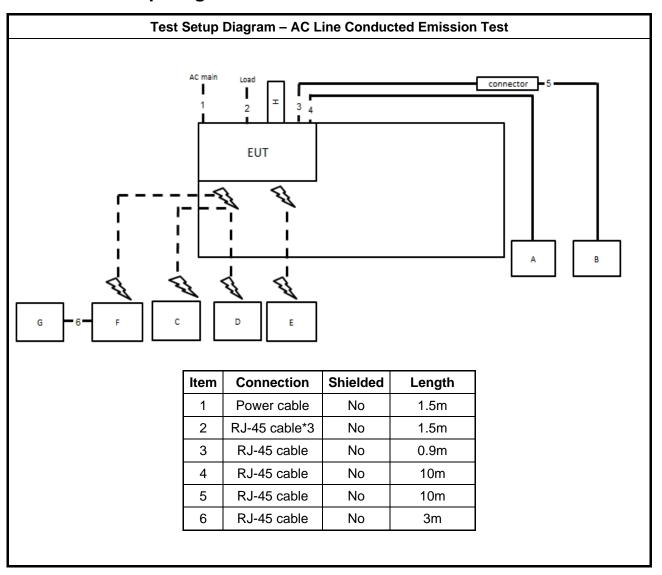
<Non-beamforming mode>

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

<beamforming mode>

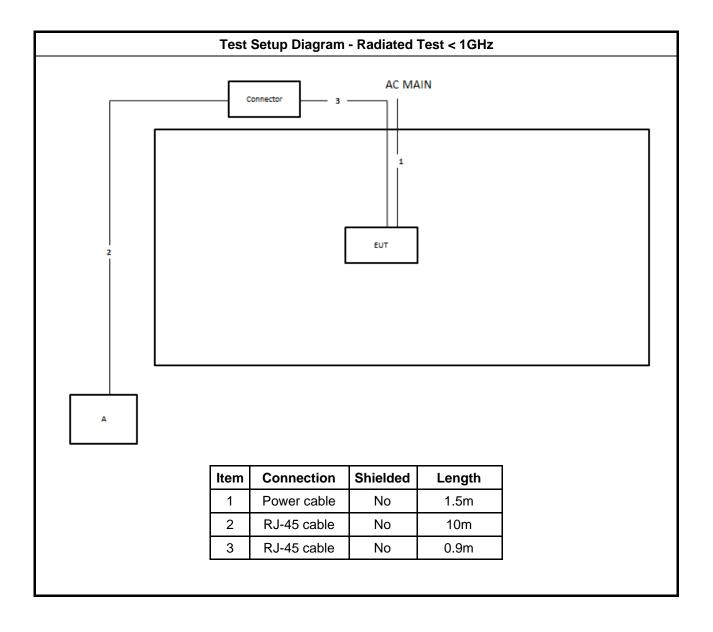
	Support Equipment			
No.	Equipment	Brand Name	Model Name	FCC ID
Α	NB	DELL	E4300	N/A
В	NB	DELL	E4300	N/A
С	RX Device	Cybertan	DIVO	N/A

2.6 Test Setup Diagram

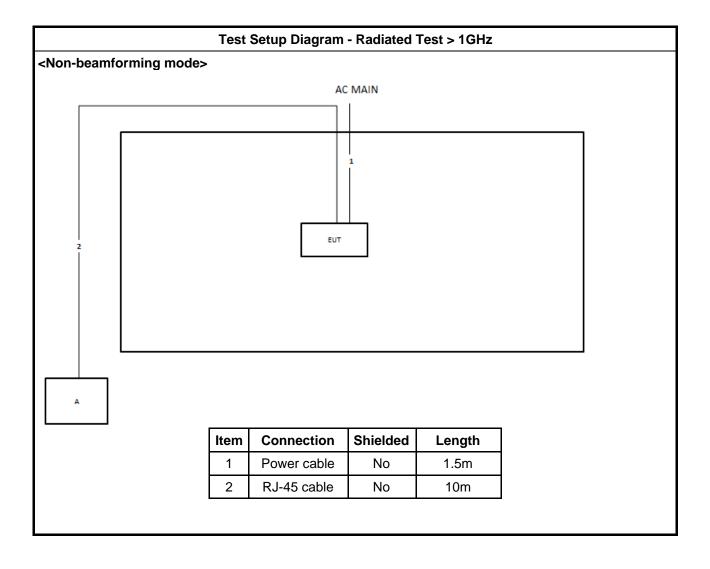


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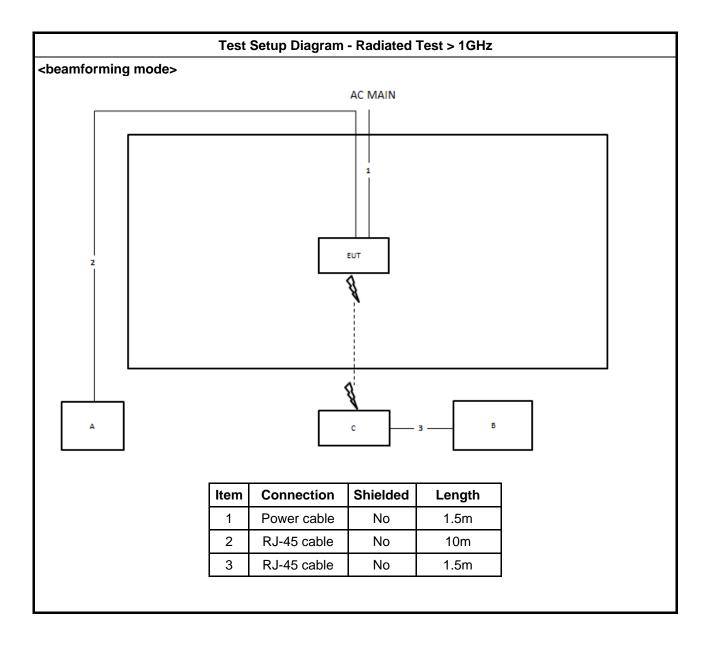
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3 Transmitter Test Result

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

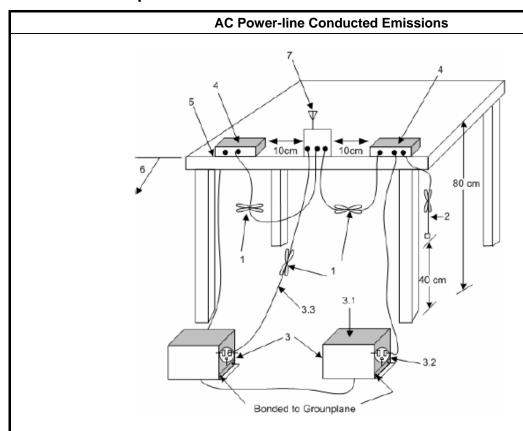
Refer a test equipment and calibration data table in this test report.

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

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

	Emission Bandwidth Limit				
UN	UNII 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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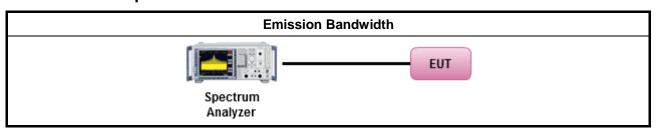
3.2.2 Measuring Instruments

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:		
	\boxtimes	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



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 \leq 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.
	e = maximum conducted output power in dBm, = the maximum transmitting antenna directional gain in dBi.

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3.3.2 Measuring Instruments

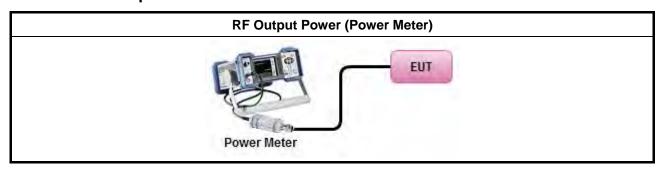
Refer a test equipment and calibration data table in this test report.

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)		
l	Wideband RF power meter and average over on/off periods with duty factor		
<u> </u>	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 – $(G_{TX} - 6)$.
\boxtimes	For the 5.725-5.85 GHz band:
	Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) \leq 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) \leq 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

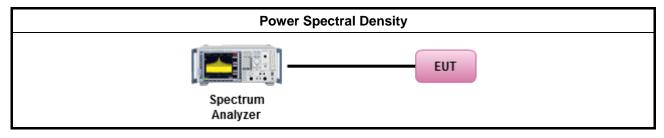
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

		Test Method
•	outp funct	c power spectral density procedures that the same method as used to determine the conducted ut power shall be used to determine the peak power spectral density and use the peak search tion on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density 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	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

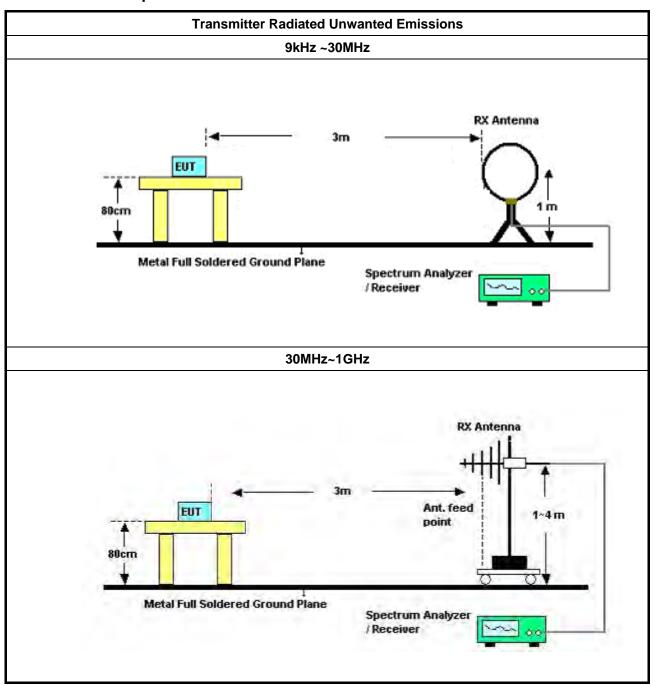
Test Method

- 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.

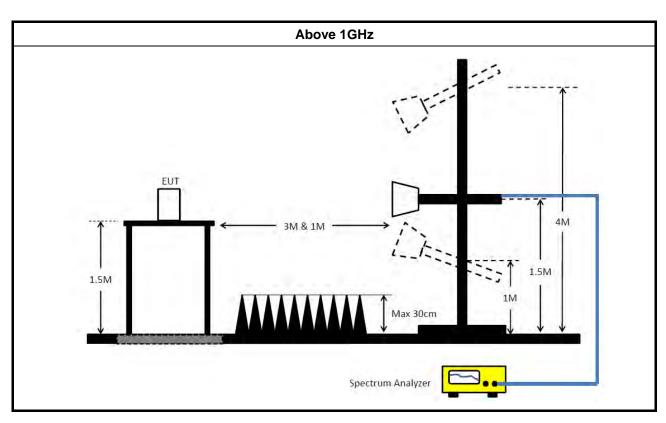
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3.5.4 Test Setup



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3.5.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(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 10th 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

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Feb. 26, 2020	Feb. 25, 2021	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16 -2	04083 150kHz ~ J:		Jan. 06, 2021	Jan. 05, 2022	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Feb. 25, 2020	Feb. 24, 2021	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Jan. 31, 2020	Jan. 30, 2021	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 20, 2020	May 19, 2021	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m May 29, 2020		May 28, 2021	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 06, 2020	Nov. 05, 2021	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2020	Jan. 07, 2021	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 07, 2021	Jan. 06, 2022	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Apr. 16, 2020	Apr. 15, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz 3m Mar. 28, 2020		Mar. 27, 2021	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 21, 2020	Apr. 20, 2021	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH02-CB)

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 13, 2020	Jul. 12, 2021	Radiation (03CH02-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Oct. 15, 2020	Oct. 14, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 10, 2020	Aug. 09, 2021	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 27, 2020	Mar. 26, 2021	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 28, 2020	Apr. 27, 2021	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Nov. 10, 2020	Nov. 09, 2021	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 13, 2020	May 12, 2021	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH03-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH03-CB	30 MHz ~ 1 GHz	Jan. 29, 2020	Jan. 28, 2021	Radiation (03CH03-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH03-CB	30 MHz ~ 1 GHz	Jan. 27, 2021	Jan. 26, 2022	Radiation (03CH03-CB)
Bilog Antenna with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	2928 & AT-N0608	20MHz ~ 2GHz	Feb. 28, 2020	Feb. 27, 2021	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8447D	2944A10259	9kHz ~ 1.3GHz	Jan. 15, 2020	Jan. 14, 2021	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8447D	2944A10259	9kHz ~ 1.3GHz	Jan. 11, 2021	Jan. 10, 2022	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 09, 2020	Jun. 08, 2021	Radiation (03CH03-CB)

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Report Version : 01

Instrument	Brand	Model No.	Serial No.	Characteristics Calibration Date		Calibration Due Date	Remark
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz May 13, 202		May 12, 2021	Radiation (03CH03-CB)
RF Cable-low	Woken	RG402	Low Cable-02+29	1 30MHz - 1GHz 1 ()		Oct. 04, 2021	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz May 05, 2020		May 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz Oct. 05, 202		Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 07, 2020	Feb. 06, 2021	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 07, 2020	Feb. 06, 2021	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

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

NCR means Non-Calibration required.

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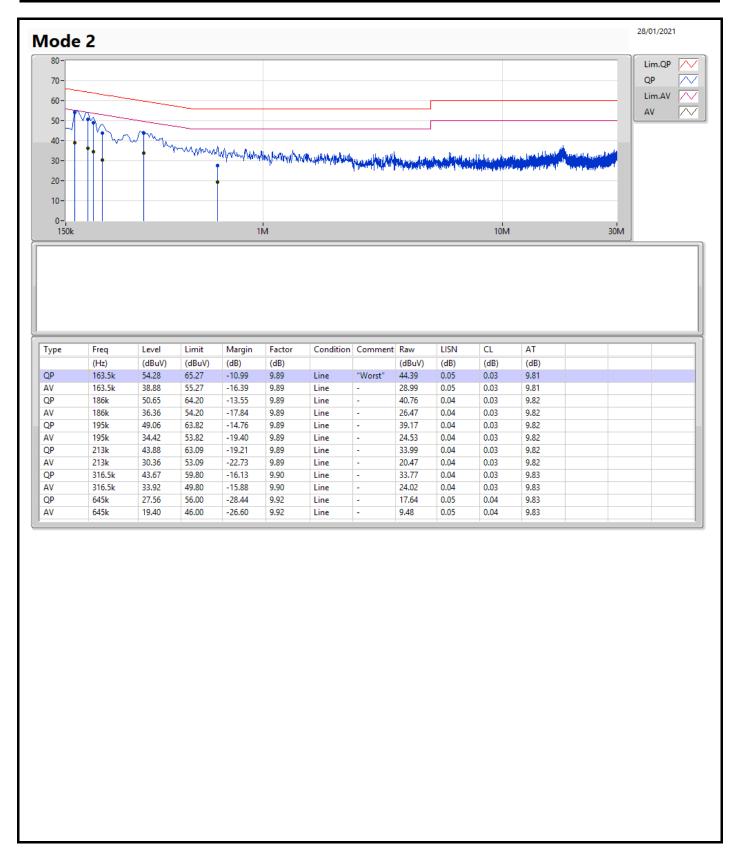
Conducted Emissions at Powerline

Appendix A

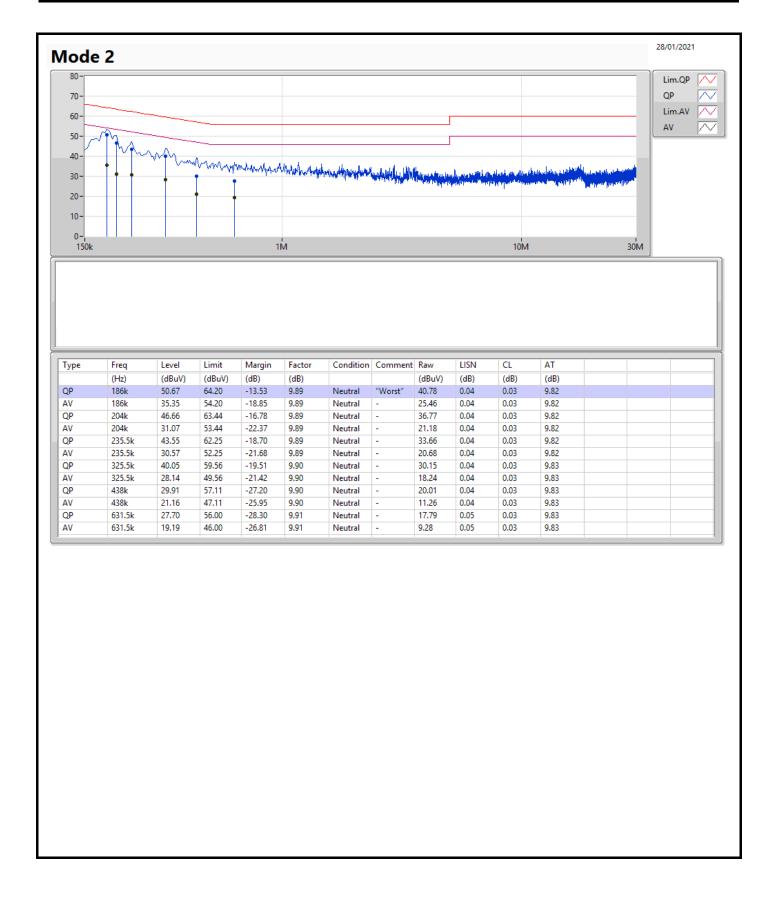
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 2	Pass	QP	163.5k	54.28	65.27	-10.99	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)_2TX	33.15M	19.01M	19M0D1D	19.62M	16.342M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	21.84M	18.981M	19M0D1D	21.42M	18.861M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	45.12M	37.721M	37M7D1D	41.04M	37.721M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	82.32M	77.121M	77M1D1D	81.84M	76.882M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.38M	35.172M	35M2D1D	15.66M	31.334M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	18.09M	18.951M	19M0D1D	16.71M	18.891M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	37.74M	38.201M	38M2D1D	34.86M	37.721M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	75.48M	77.121M	77M1D1D	73.8M	76.882M

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;

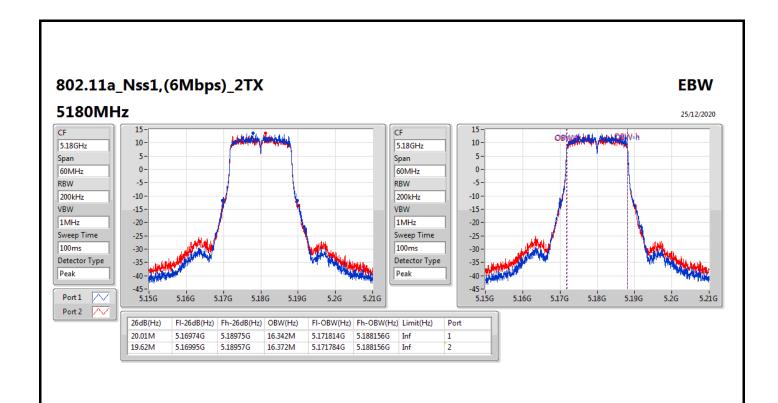
Min-OBW = Minimum 99% occupied bandwidth;

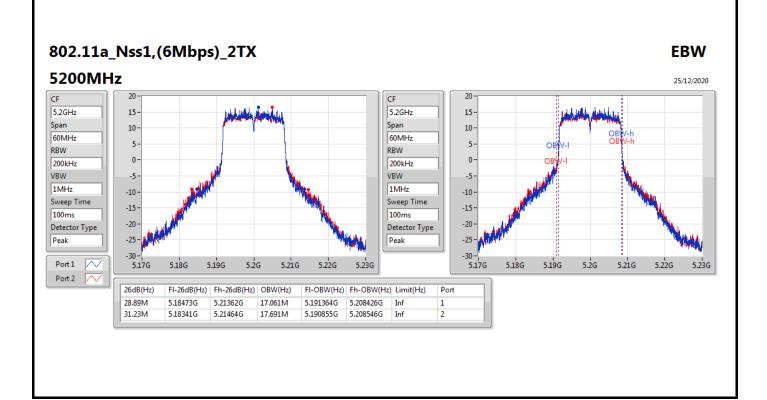


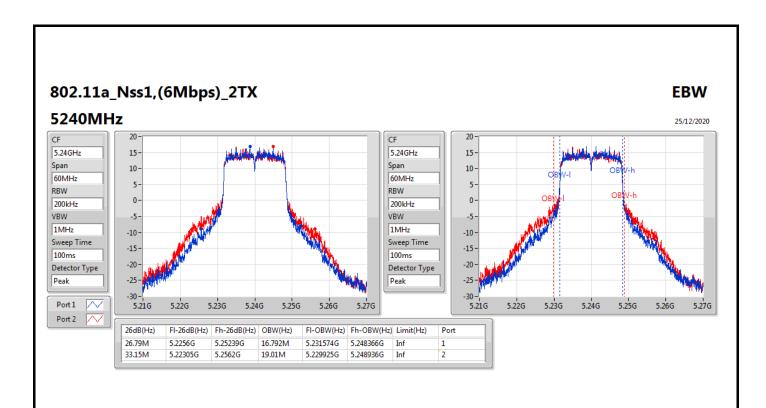
Result

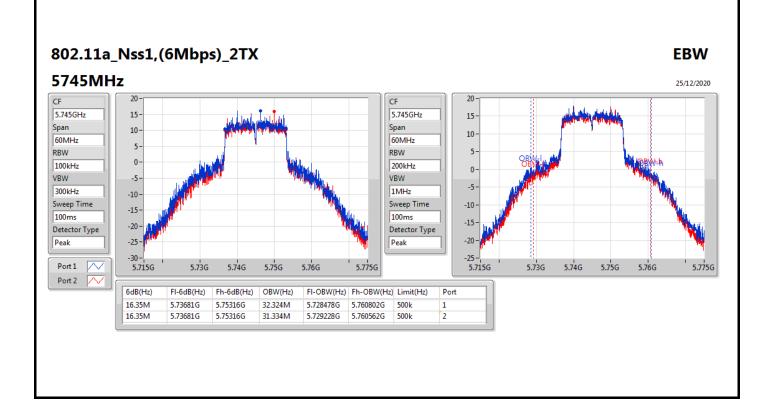
Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	20.01M	16.342M	19.62M	16.372M
5200MHz	Pass	Inf	28.89M	17.061M	31.23M	17.691M
5240MHz	Pass	Inf	26.79M	16.792M	33.15M	19.01M
5745MHz	Pass	500k	16.35M	32.324M	16.35M	31.334M
5785MHz	Pass	500k	16.38M	32.534M	15.66M	34.363M
5825MHz	Pass	500k	16.26M	32.624M	16.29M	35.172M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.75M	18.891M	21.84M	18.891M
5200MHz	Pass	Inf	21.48M	18.891M	21.63M	18.981M
5240MHz	Pass	Inf	21.42M	18.861M	21.51M	18.861M
5745MHz	Pass	500k	17.82M	18.891M	17.94M	18.891M
5785MHz	Pass	500k	18.09M	18.921M	16.71M	18.921M
5825MHz	Pass	500k	17.64M	18.921M	16.98M	18.951M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	41.04M	37.721M	41.04M	37.721M
5230MHz	Pass	Inf	41.16M	37.721M	45.12M	37.721M
5755MHz	Pass	500k	34.86M	37.721M	37.62M	37.841M
5795MHz	Pass	500k	37.44M	37.961M	37.74M	38.201M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	82.32M	77.121M	81.84M	76.882M
5775MHz	Pass	500k	75.48M	77.121M	73.8M	76.882M

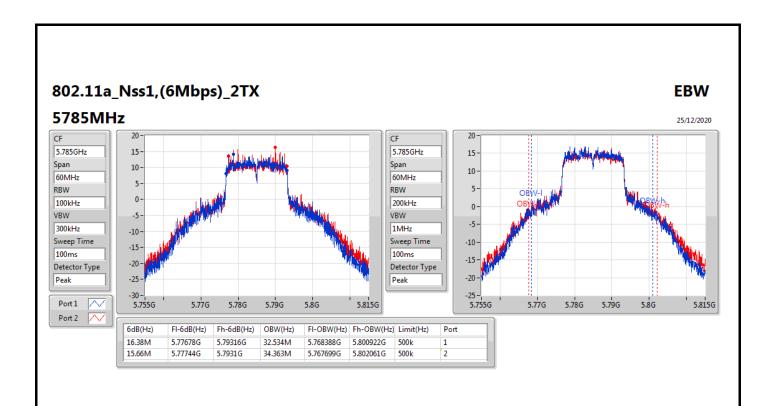
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth;

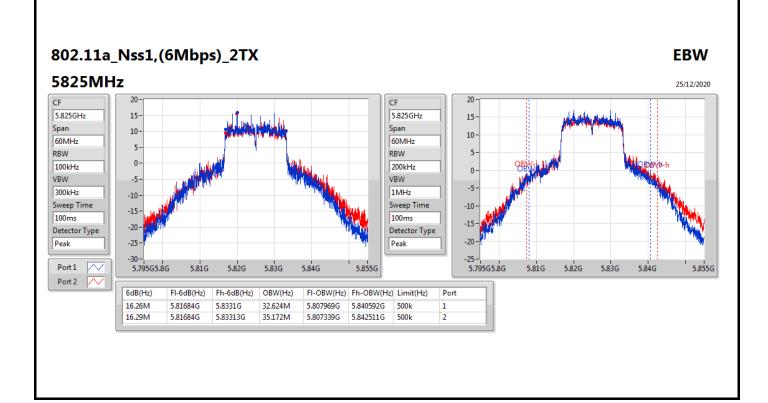


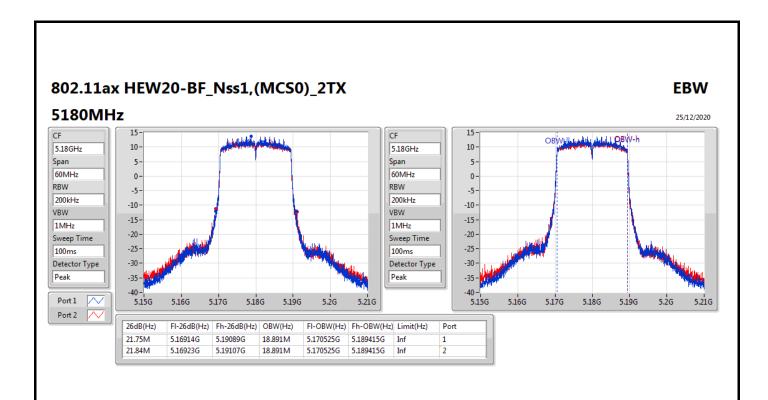


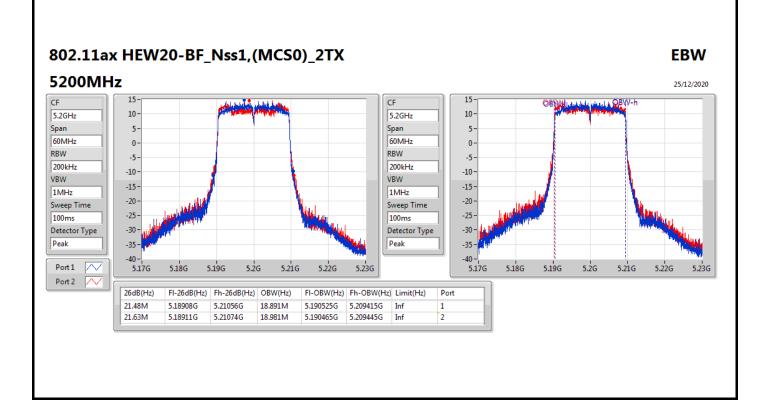


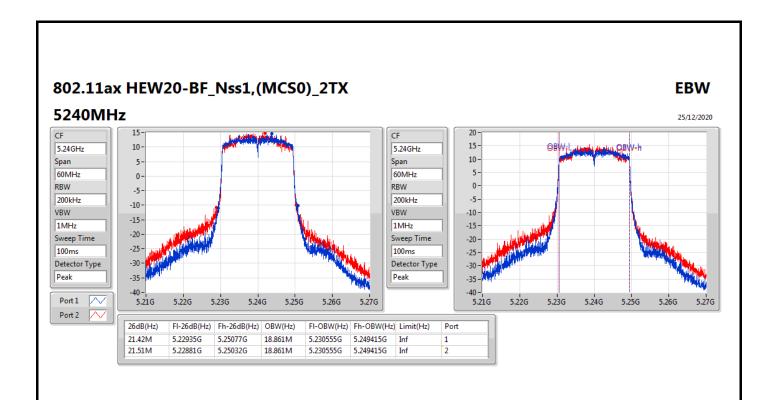


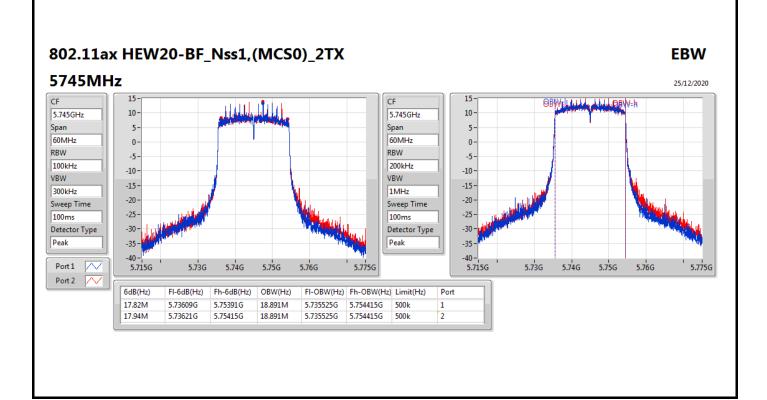


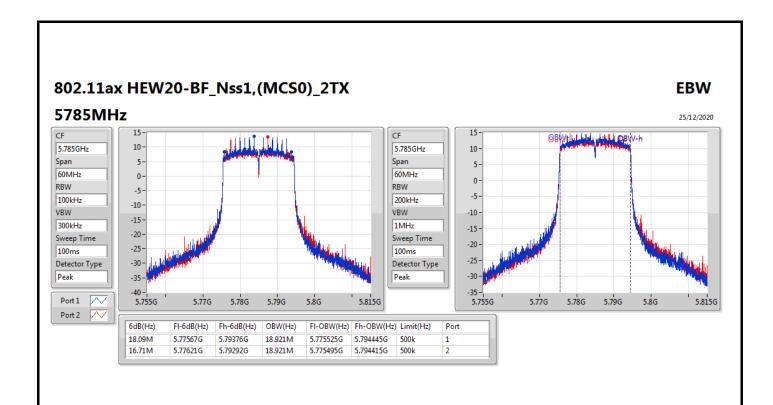


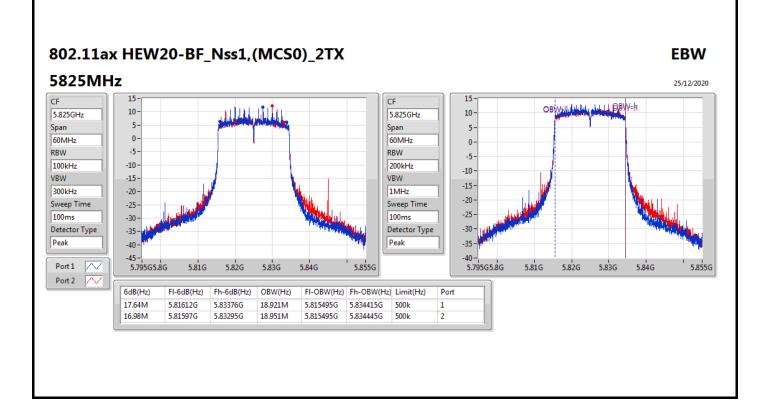


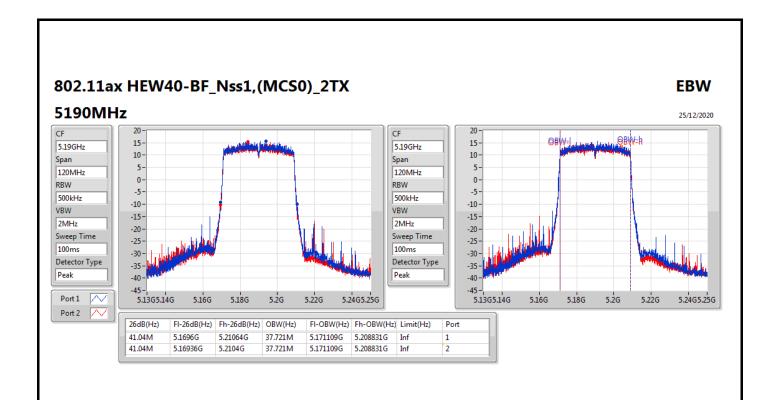


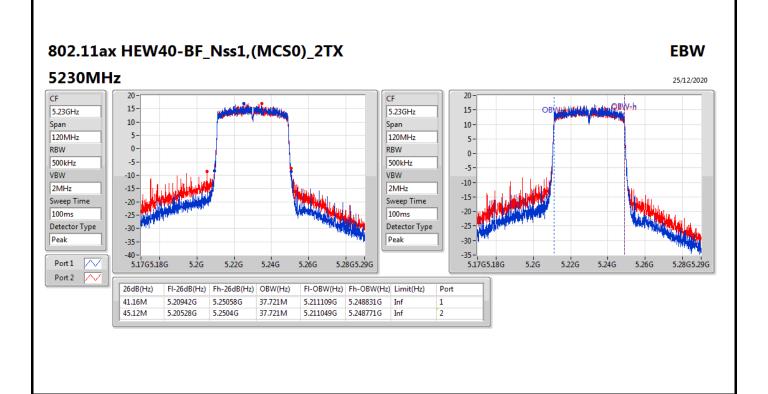


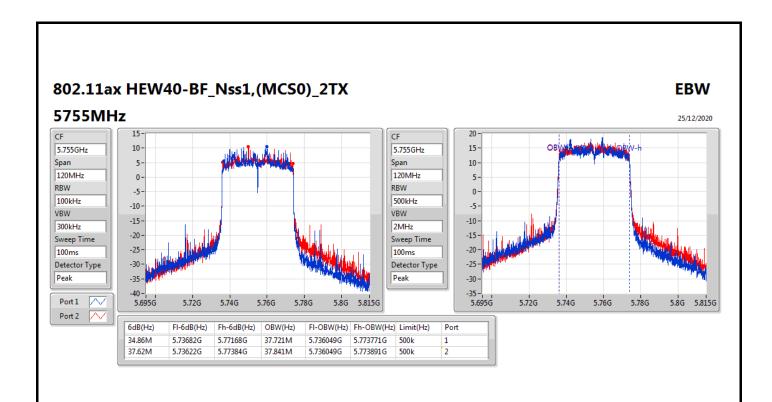


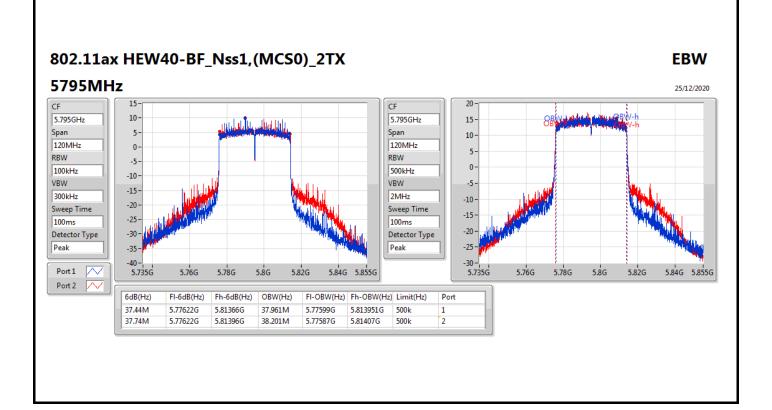


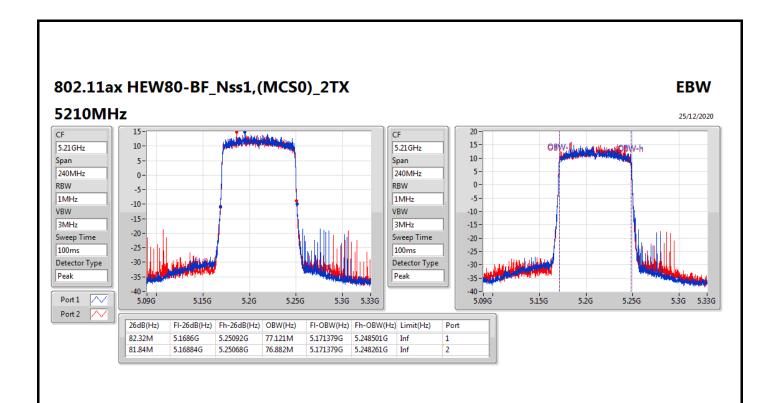


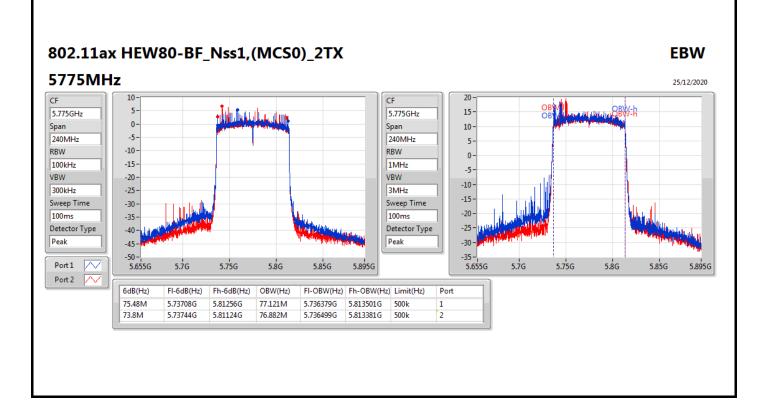
















Summary

Mode	Total Power	Total Power
	(dBm)	(W)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	28.73	0.74645
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	27.64	0.58076
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	27.59	0.57412
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	24.14	0.25942
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	29.35	0.86099
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	27.91	0.61802
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	27.56	0.57016
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	24.66	0.29242





Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	2.12	22.88	22.45	25.68	30.00
5200MHz	Pass	2.12	25.46	25.36	28.42	30.00
5240MHz	Pass	2.12	25.71	25.73	28.73	30.00
5745MHz	Pass	2.08	26.51	26.16	29.35	30.00
5785MHz	Pass	2.08	26.25	26.06	29.17	30.00
5825MHz	Pass	2.08	25.72	25.45	28.60	30.00
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	5.13	23.71	23.32	26.53	30.00
5200MHz	Pass	5.13	24.00	24.04	27.03	30.00
5240MHz	Pass	5.13	24.49	24.77	27.64	30.00
5745MHz	Pass	5.09	24.07	24.66	27.39	30.00
5785MHz	Pass	5.09	24.53	24.40	27.48	30.00
5825MHz	Pass	5.09	24.79	25.00	27.91	30.00
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	5.13	22.69	22.30	25.51	30.00
5230MHz	Pass	5.13	24.02	25.08	27.59	30.00
5755MHz	Pass	5.09	24.38	24.24	27.32	30.00
5795MHz	Pass	5.09	24.63	24.47	27.56	30.00
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	5.13	21.17	21.09	24.14	30.00
5775MHz	Pass	5.09	21.79	21.51	24.66	30.00

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

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Summary

Mode	PD
	(dBm/RBW)
5.15-5.25GHz	-
802.11a_Nss1,(6Mbps)_2TX	16.20
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	13.56
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	10.74
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	5.92
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_2TX	15.26
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	11.54
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	8.78
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	3.95

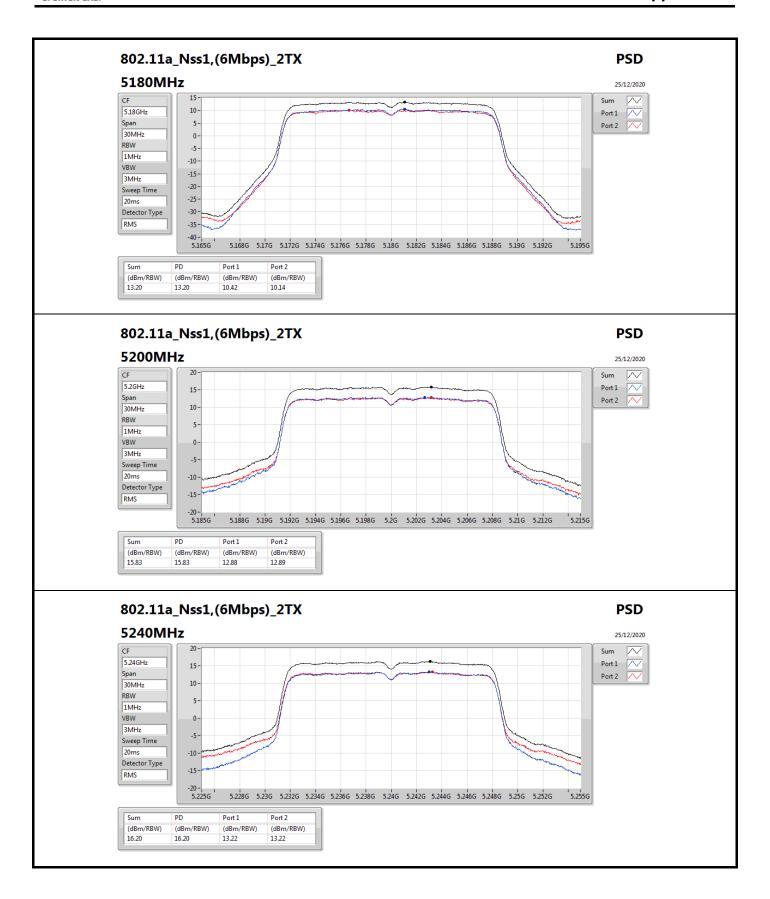
RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

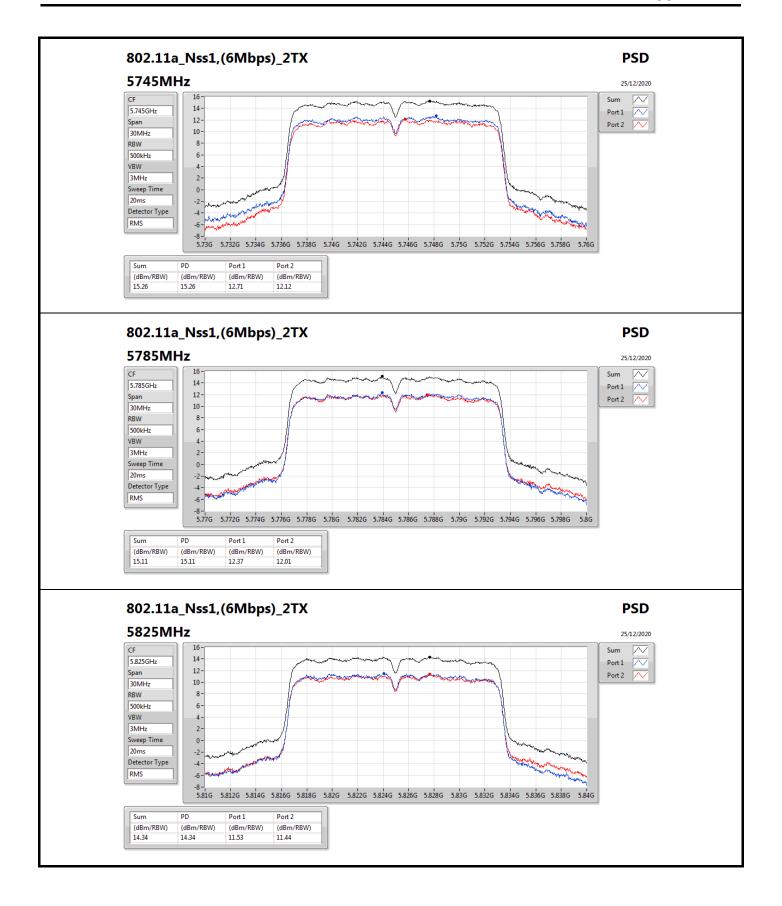
Appendix D **PSD**

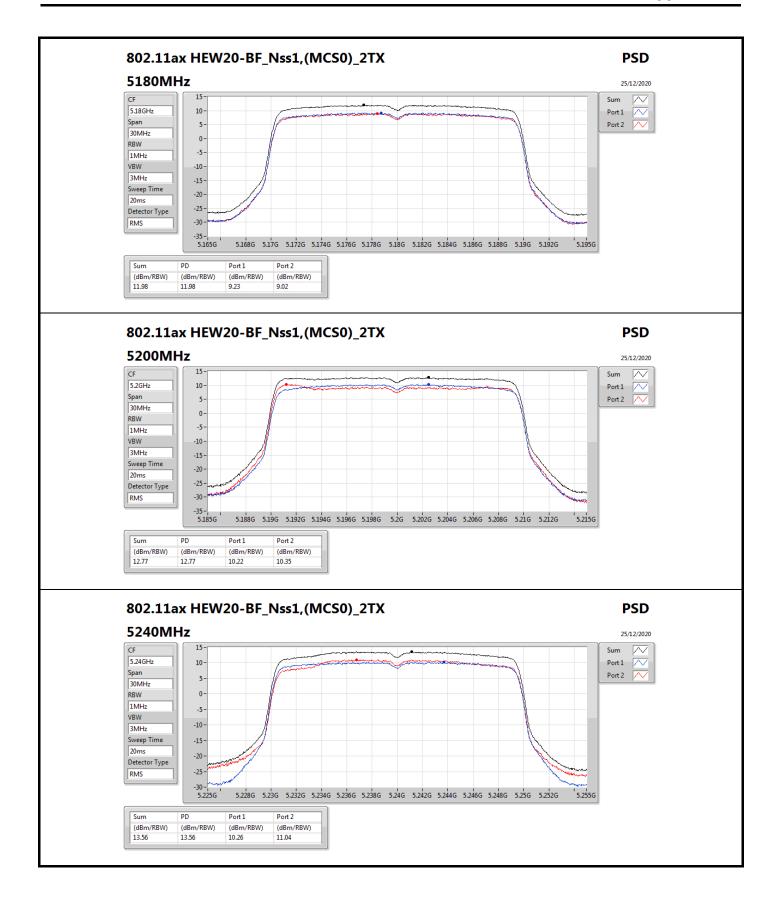
Result

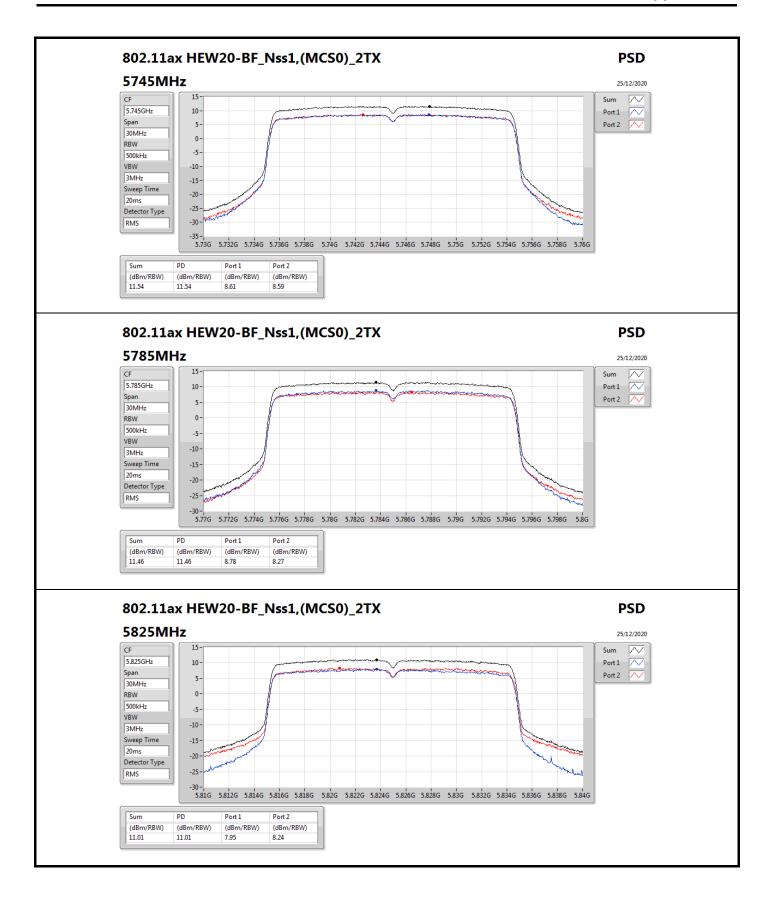
Mode	Result	DG	Port 1	Port 2	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	5.13	10.42	10.14	13.20	17.00
5200MHz	Pass	5.13	12.88	12.89	15.83	17.00
5240MHz	Pass	5.13	13.22	13.22	16.20	17.00
5745MHz	Pass	5.09	12.71	12.12	15.26	30.00
5785MHz	Pass	5.09	12.37	12.01	15.11	30.00
5825MHz	Pass	5.09	11.53	11.44	14.34	30.00
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	5.13	9.23	9.02	11.98	17.00
5200MHz	Pass	5.13	10.22	10.35	12.77	17.00
5240MHz	Pass	5.13	10.26	11.04	13.56	17.00
5745MHz	Pass	5.09	8.61	8.59	11.54	30.00
5785MHz	Pass	5.09	8.78	8.27	11.46	30.00
5825MHz	Pass	5.09	7.95	8.24	11.01	30.00
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	5.13	6.03	5.42	8.73	17.00
5230MHz	Pass	5.13	7.27	8.50	10.74	17.00
5755MHz	Pass	5.09	5.46	6.44	8.78	30.00
5795MHz	Pass	5.09	5.81	5.74	8.72	30.00
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	5.13	1.79	4.80	5.92	17.00
5775MHz	Pass	5.09	1.28	0.85	3.95	30.00

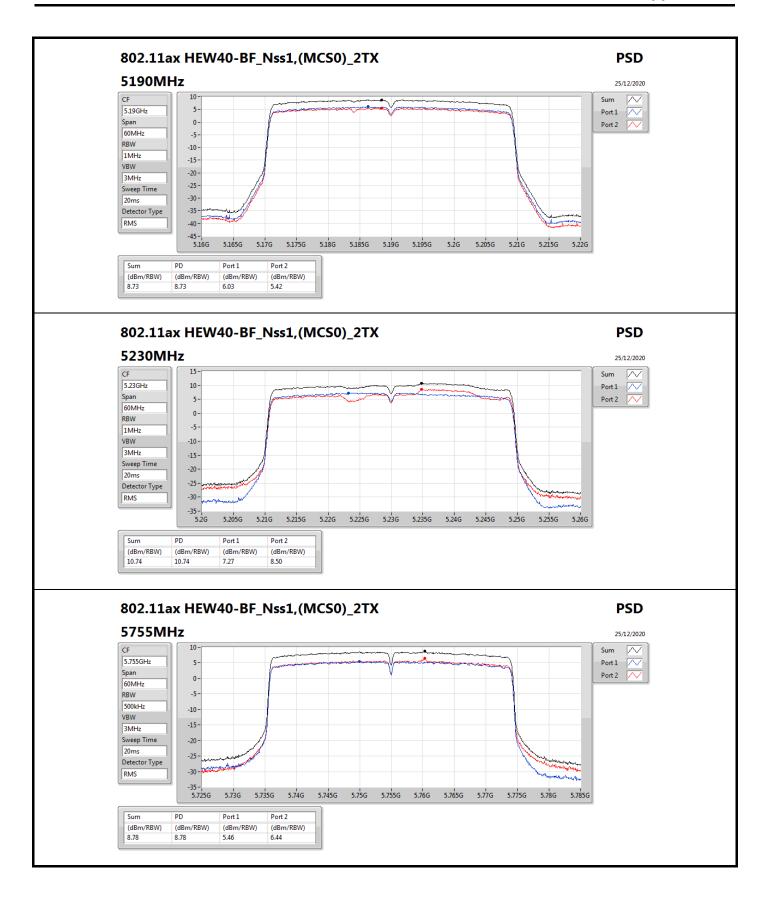
DG = Directional Gain; RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;

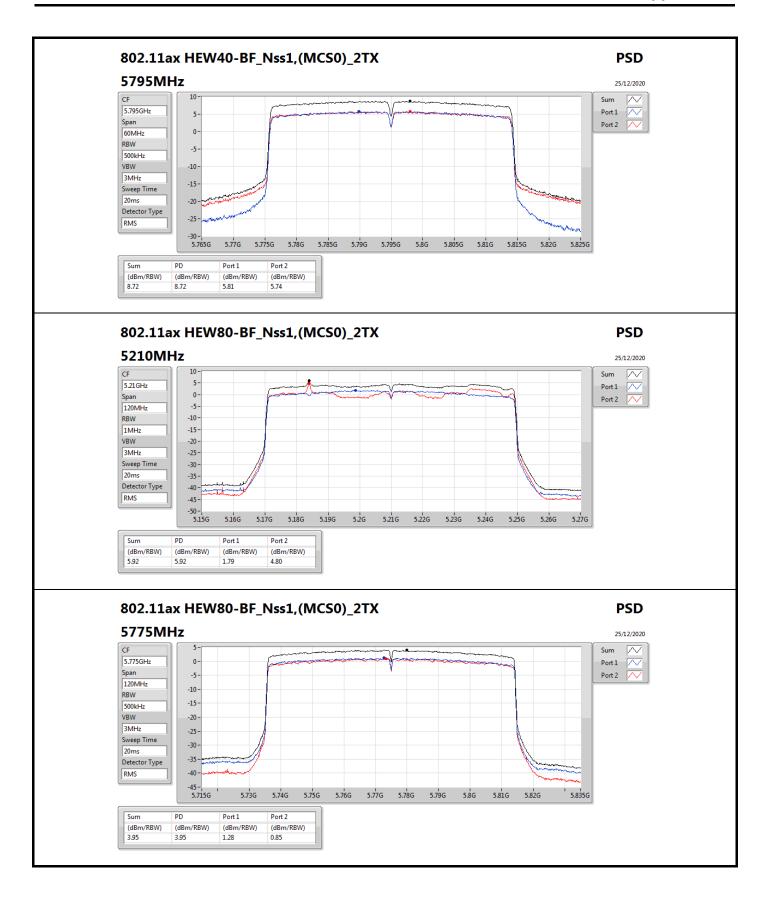














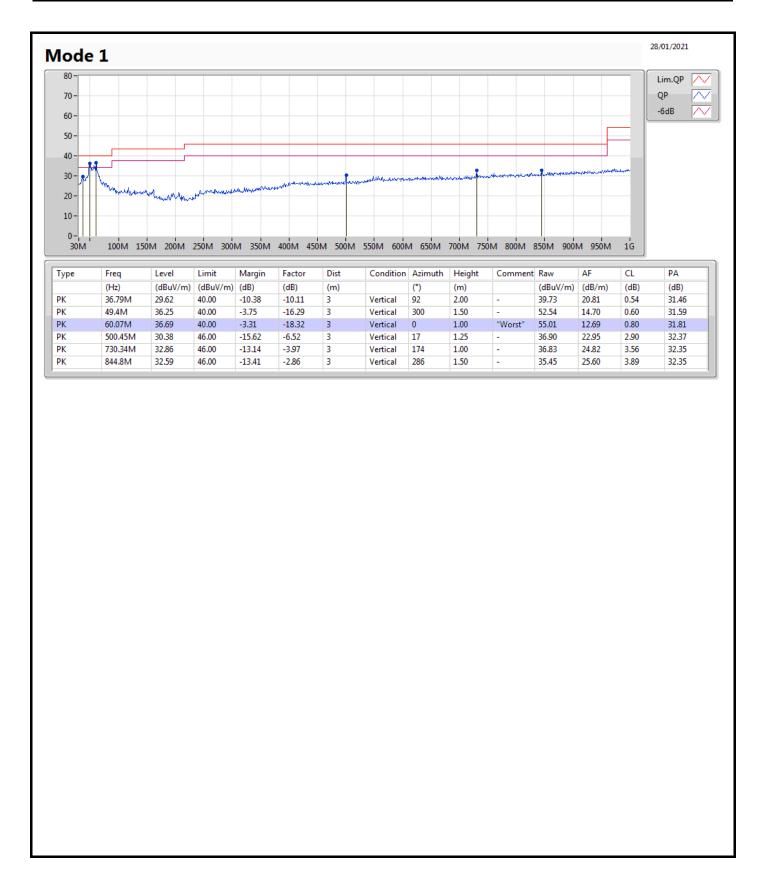
Radiated Emissions below 1GHz

Appendix E.1

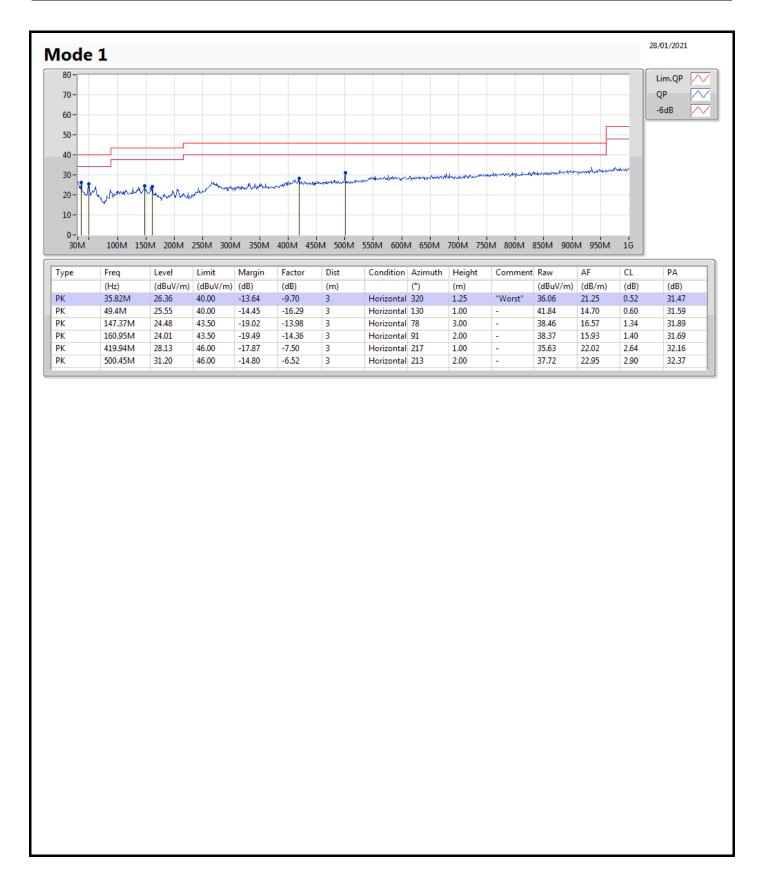
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	
Mode 1	Pass	PK	60.07M	36.69	40.00	-3.31	Vertical











RSE TX above 1GHz

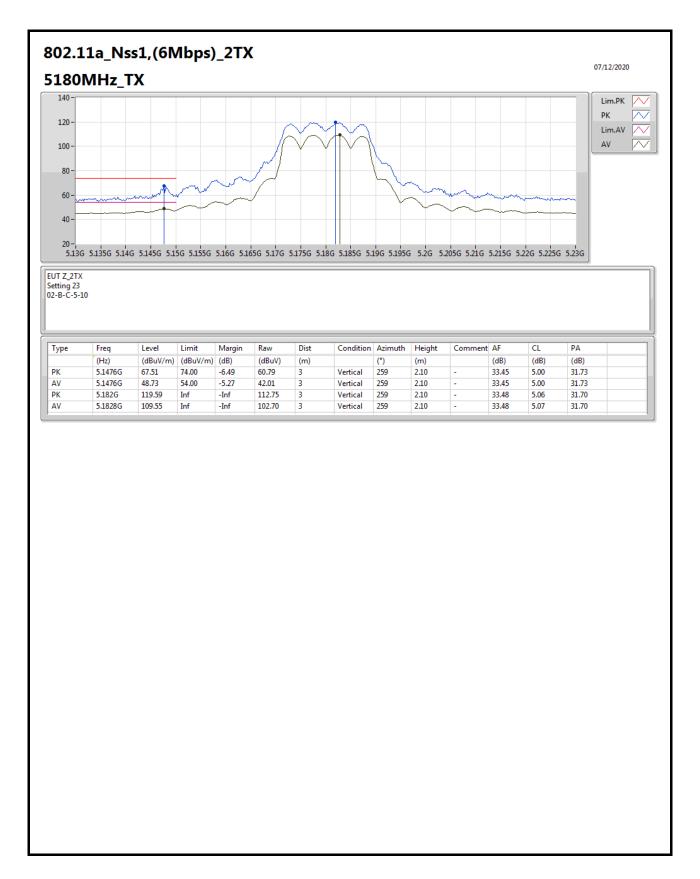
Appendix E.2

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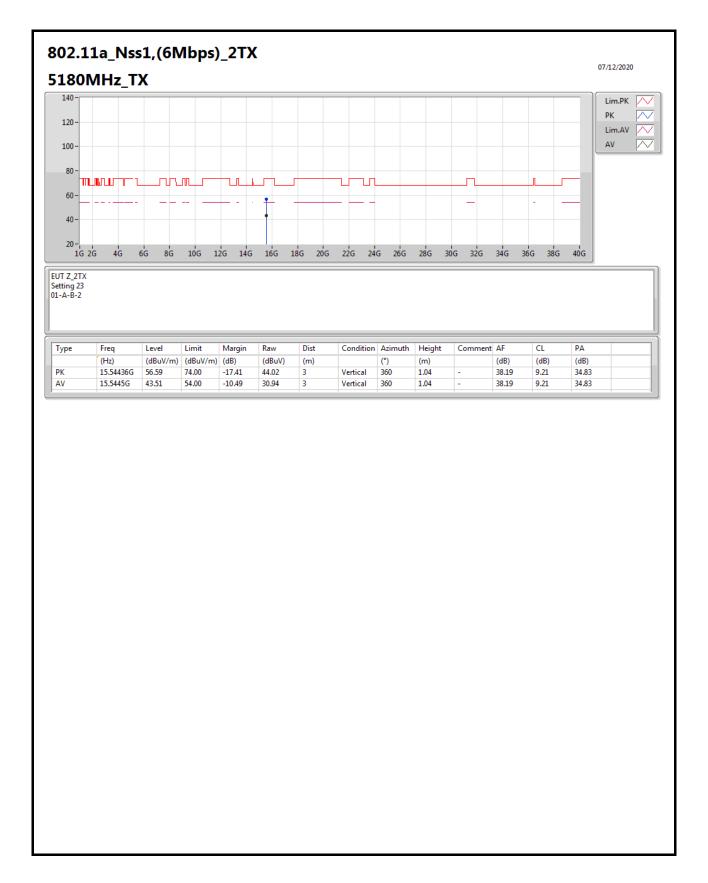
Summary

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-BF_Nss1,(MCS0)_2TX	Pass	PK	5.651G	67.86	68.94	-1.08	3	Vertical	269	1.93	-

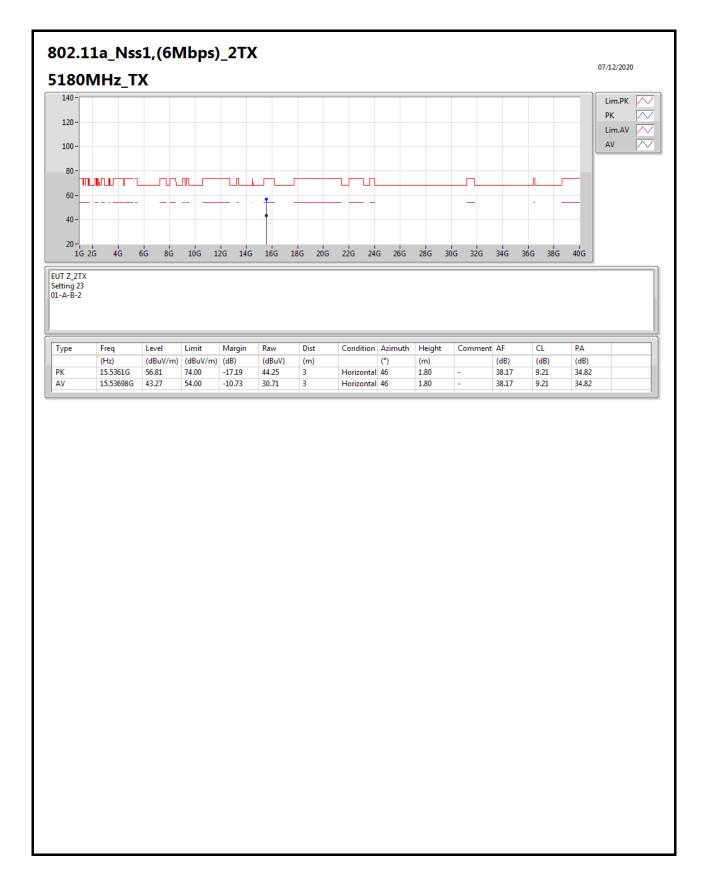




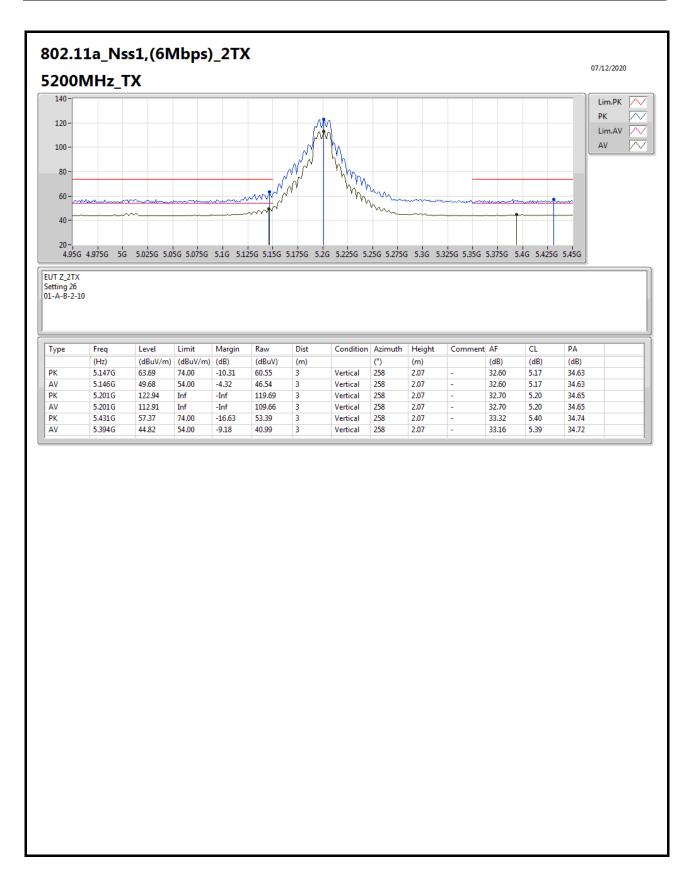




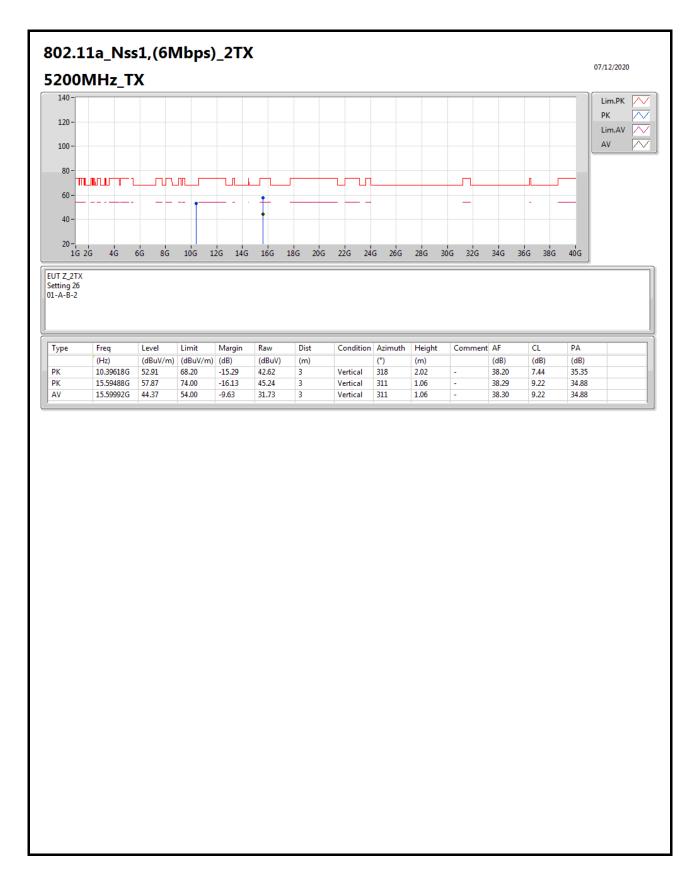




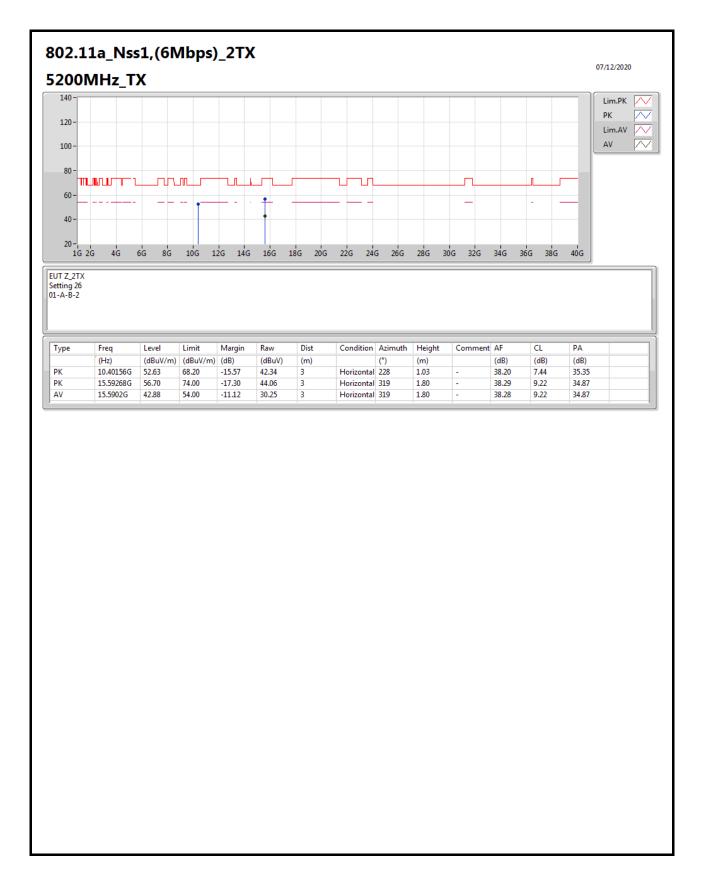




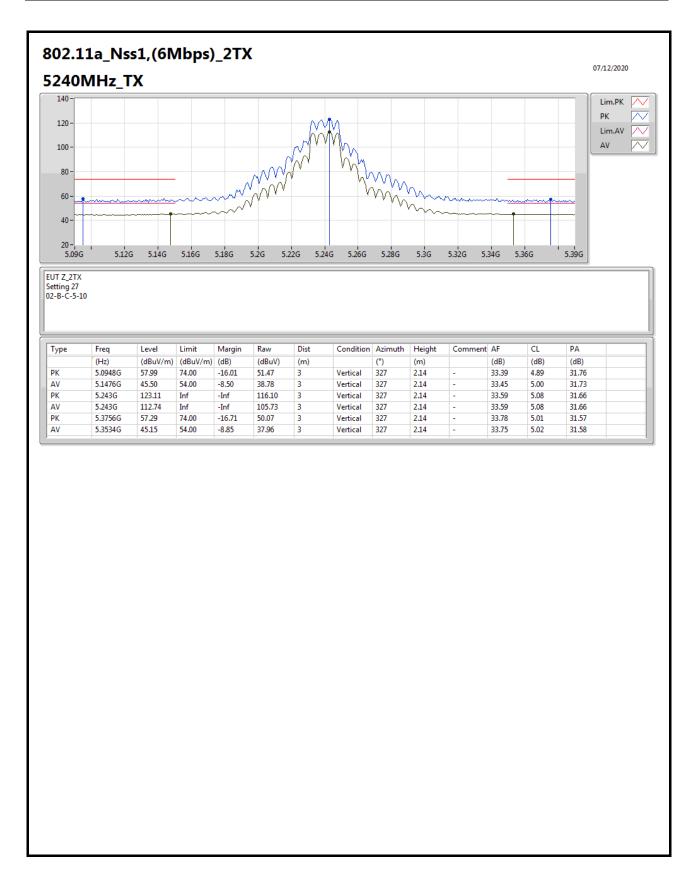




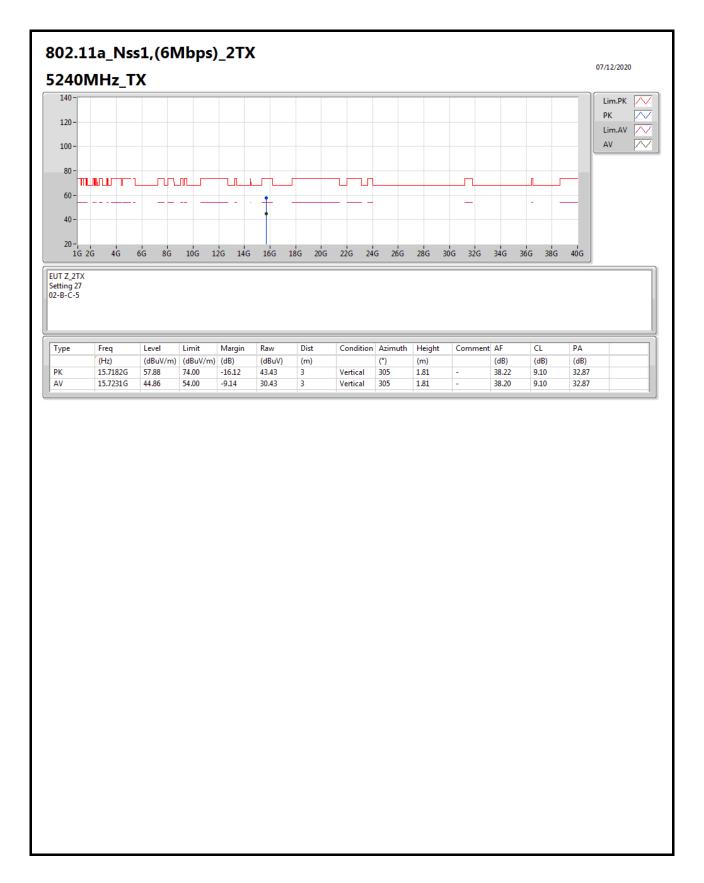




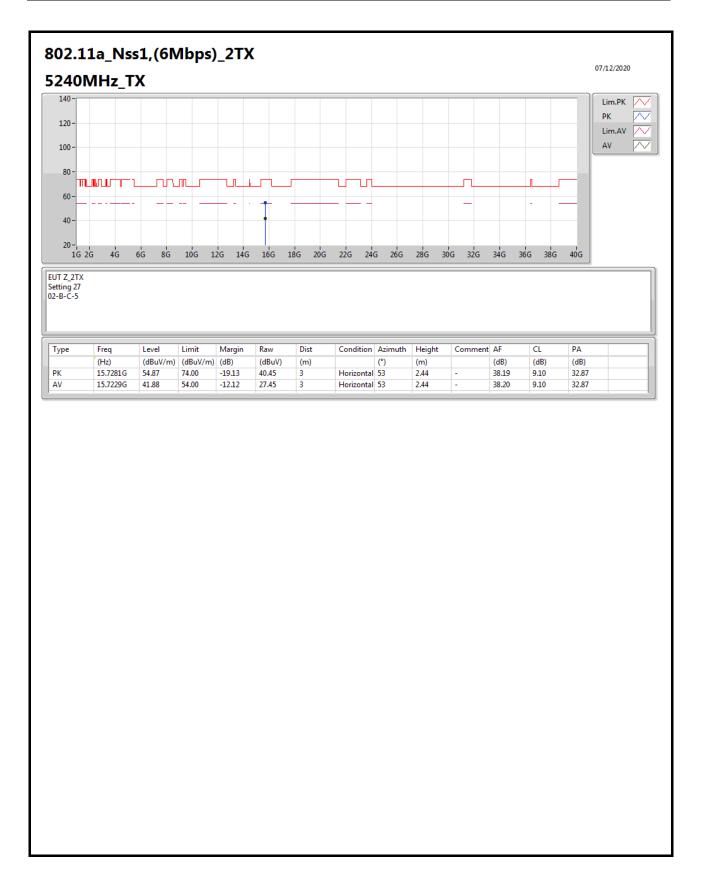




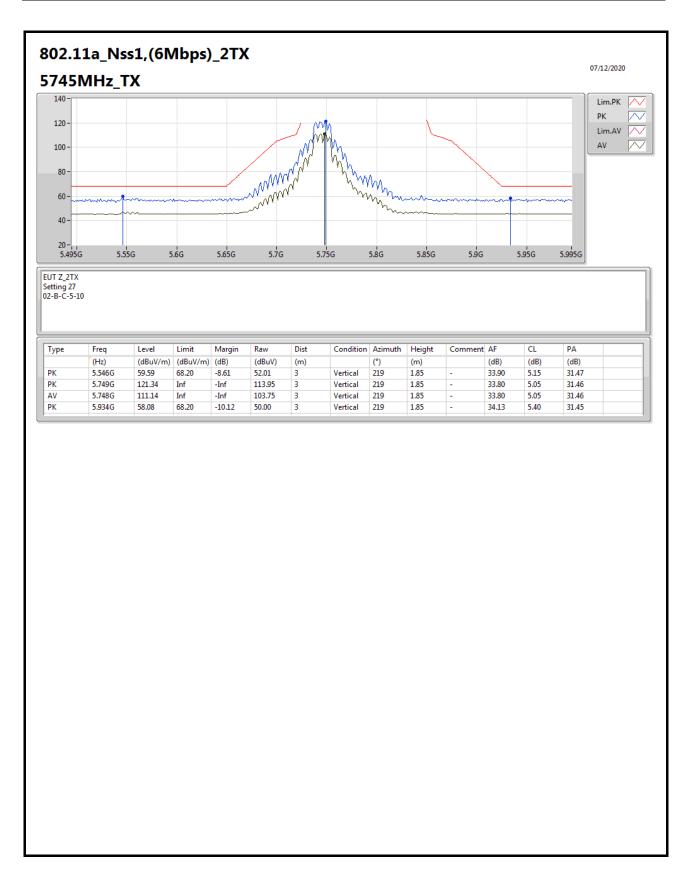




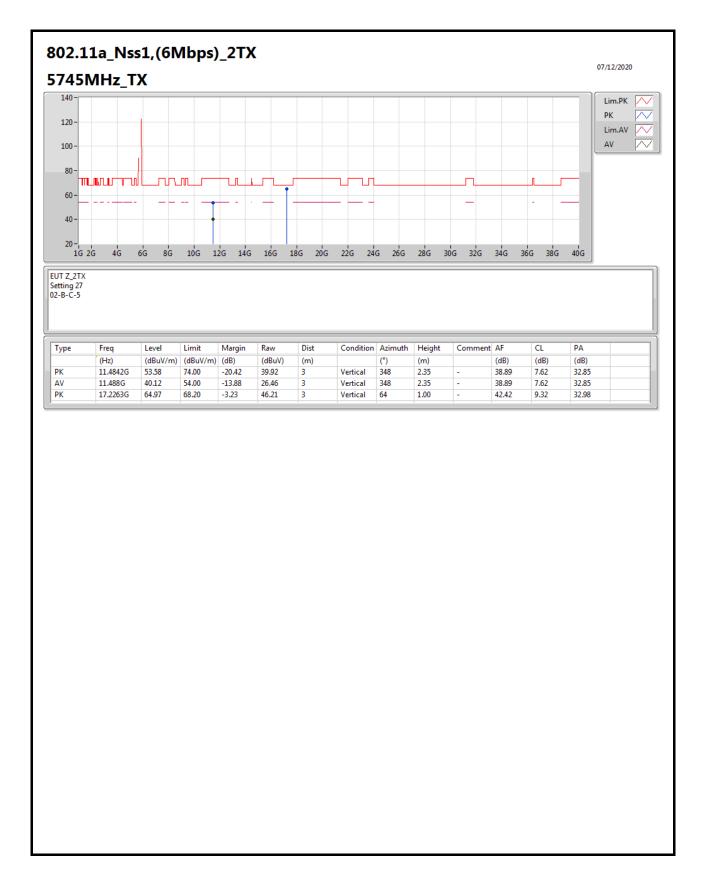




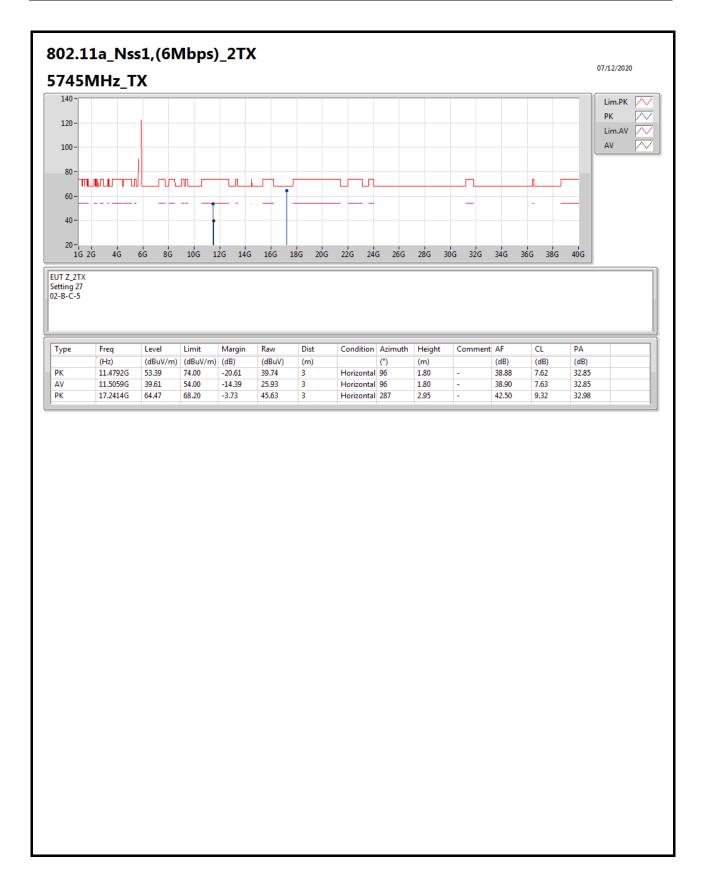




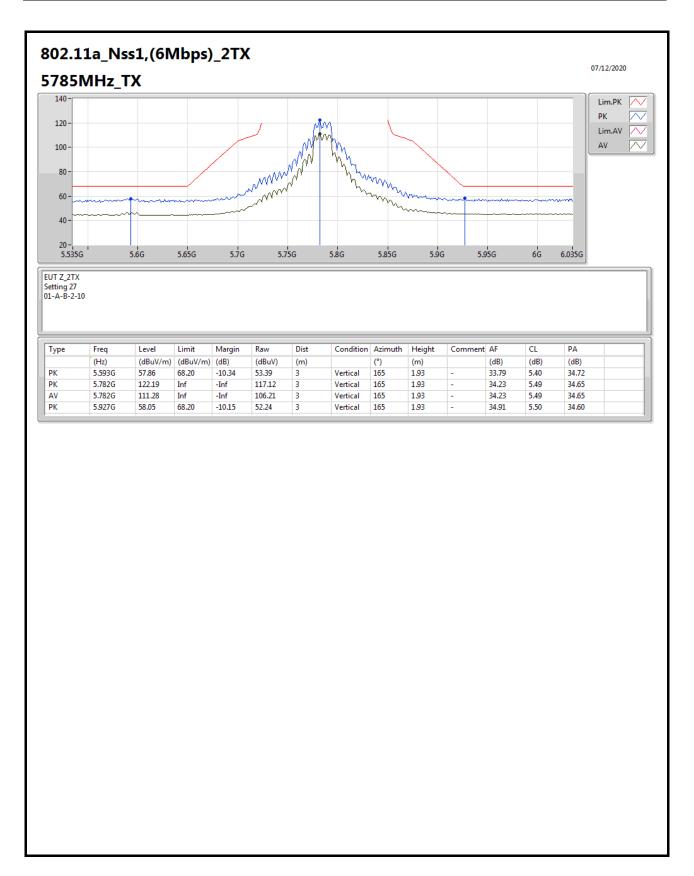




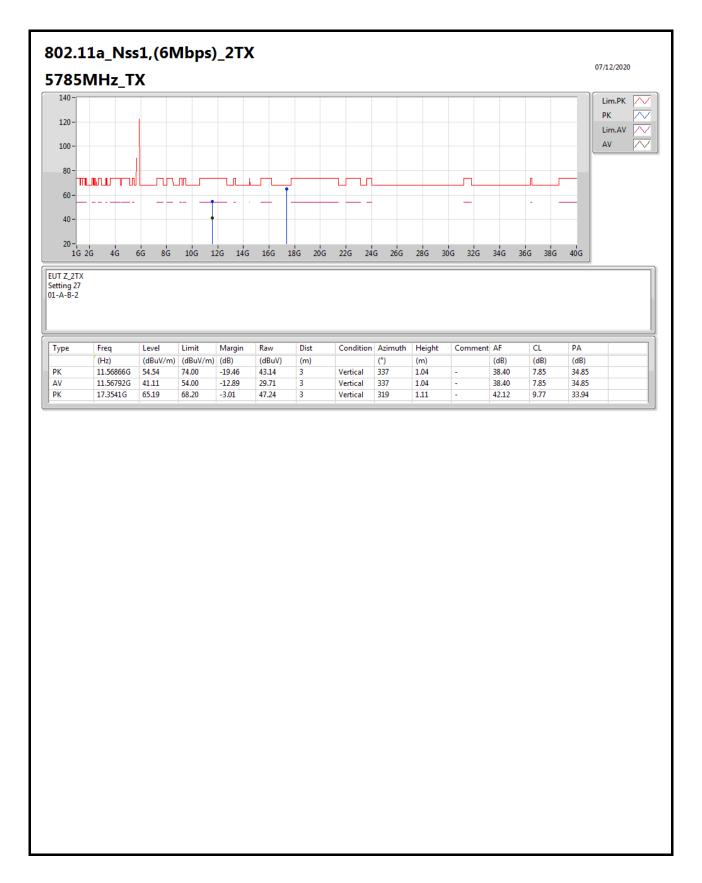






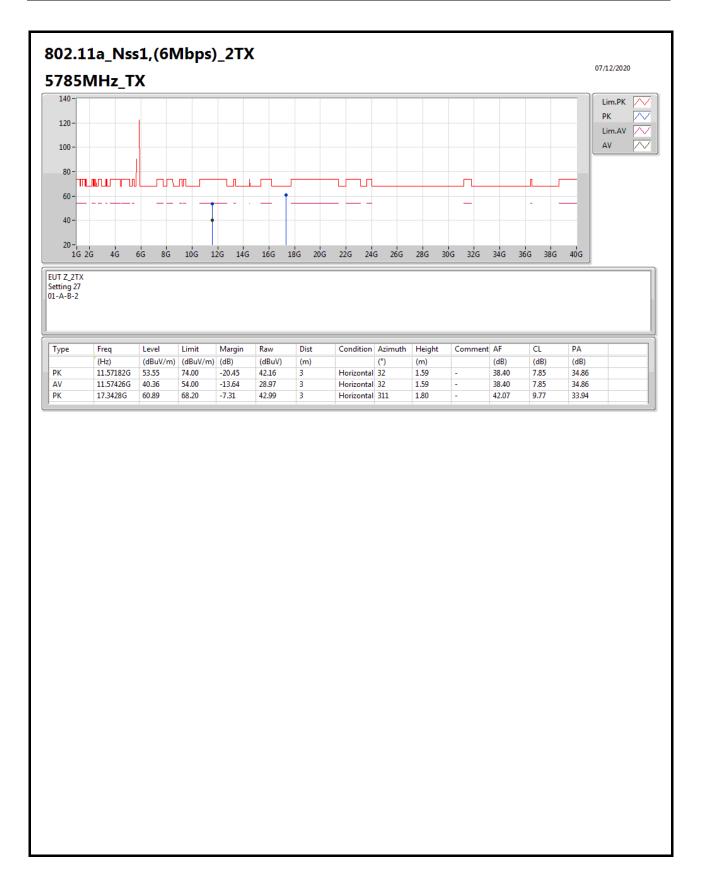




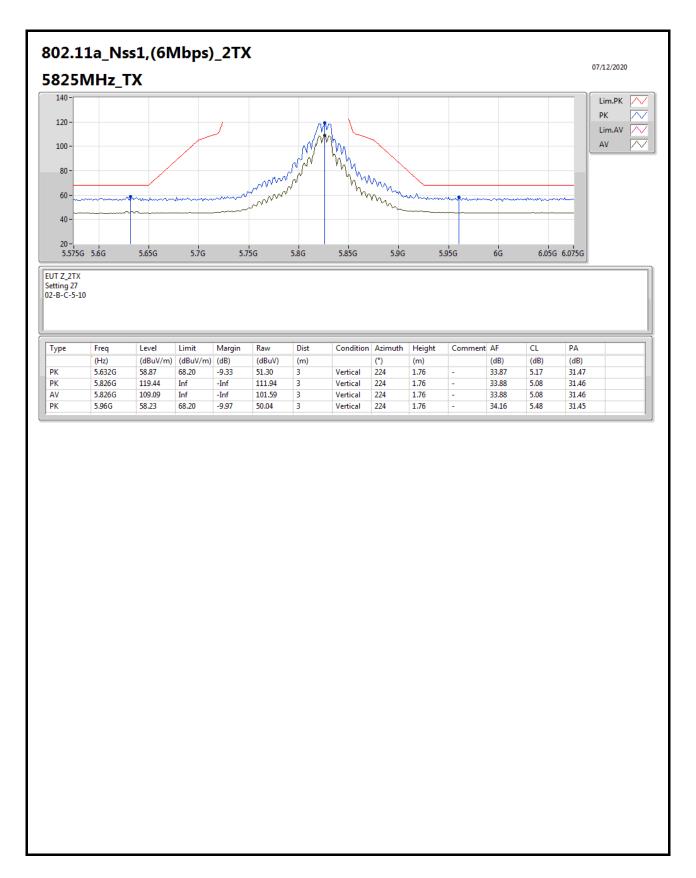


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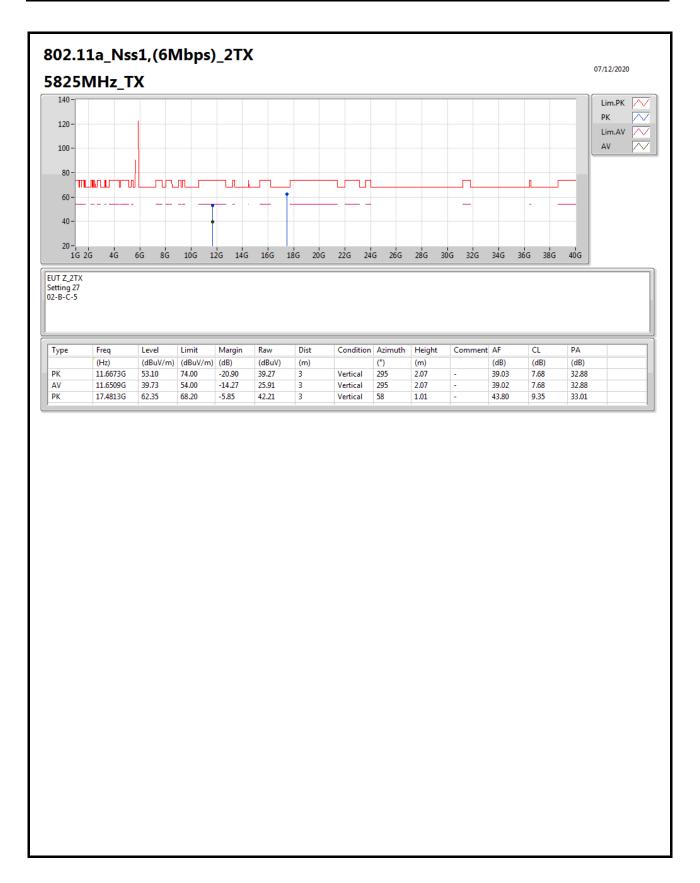




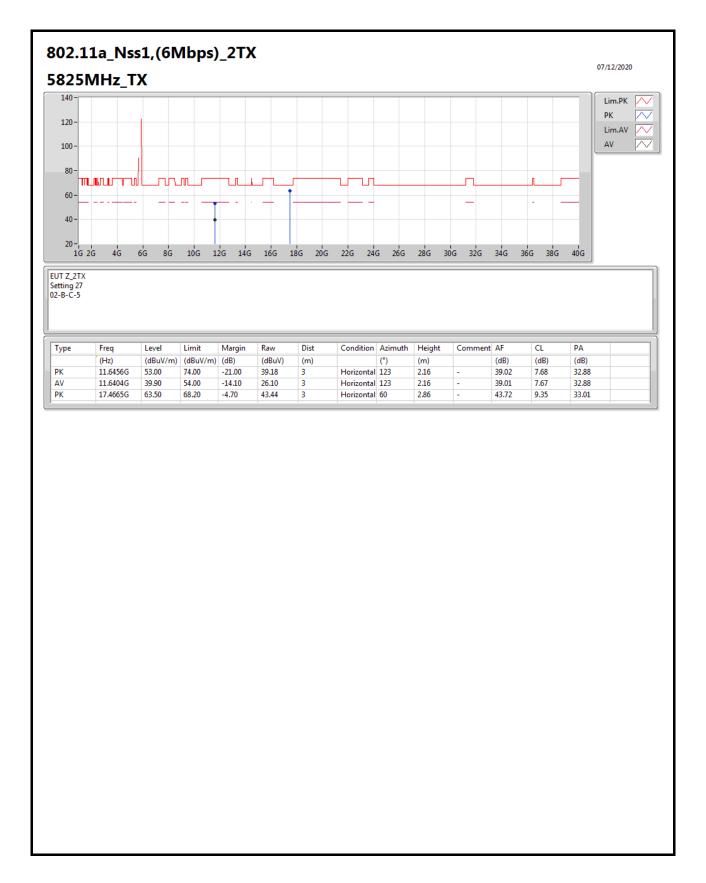




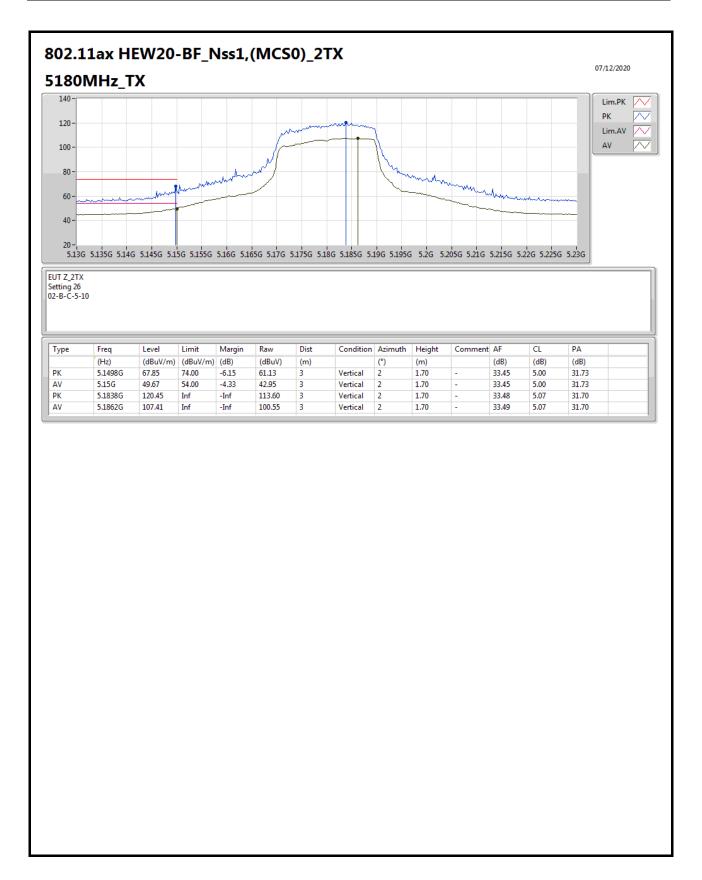




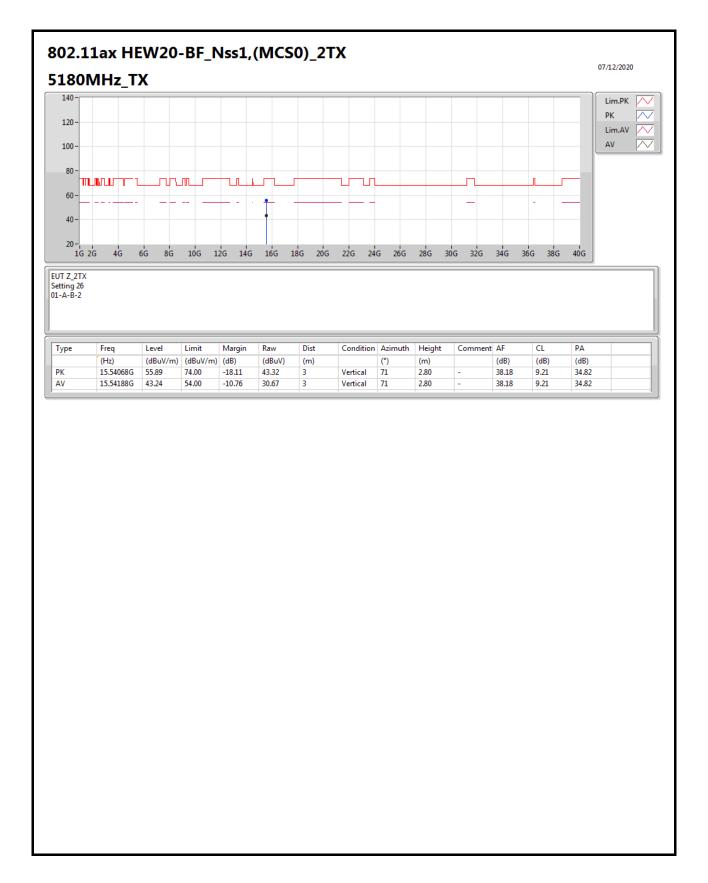




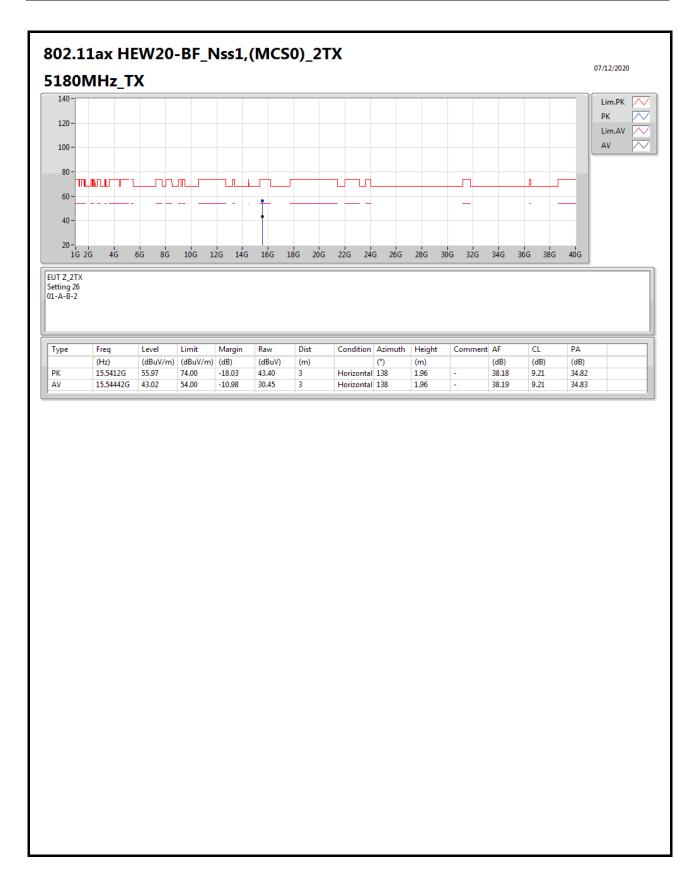




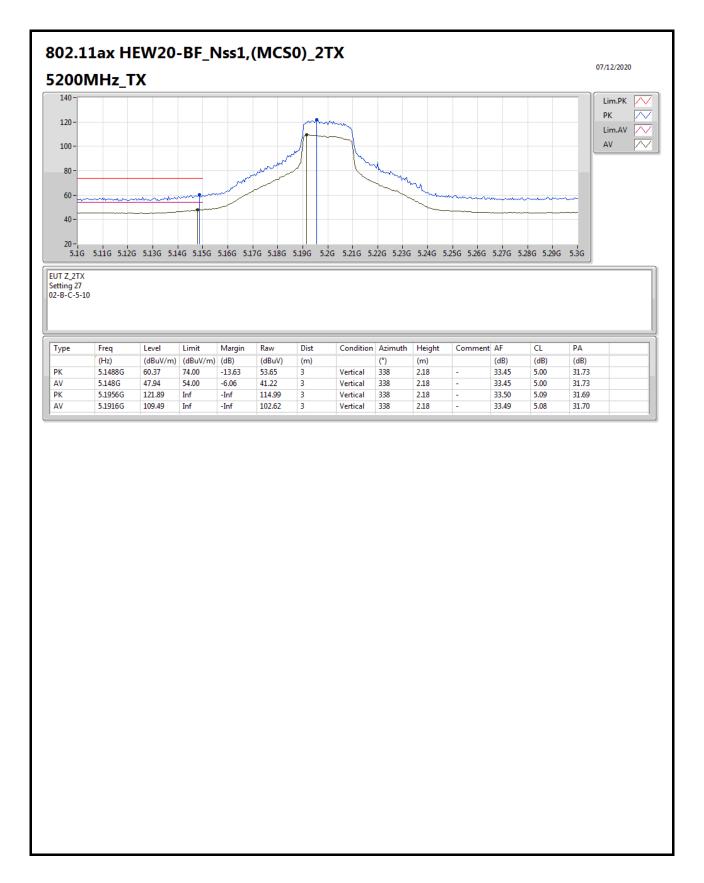




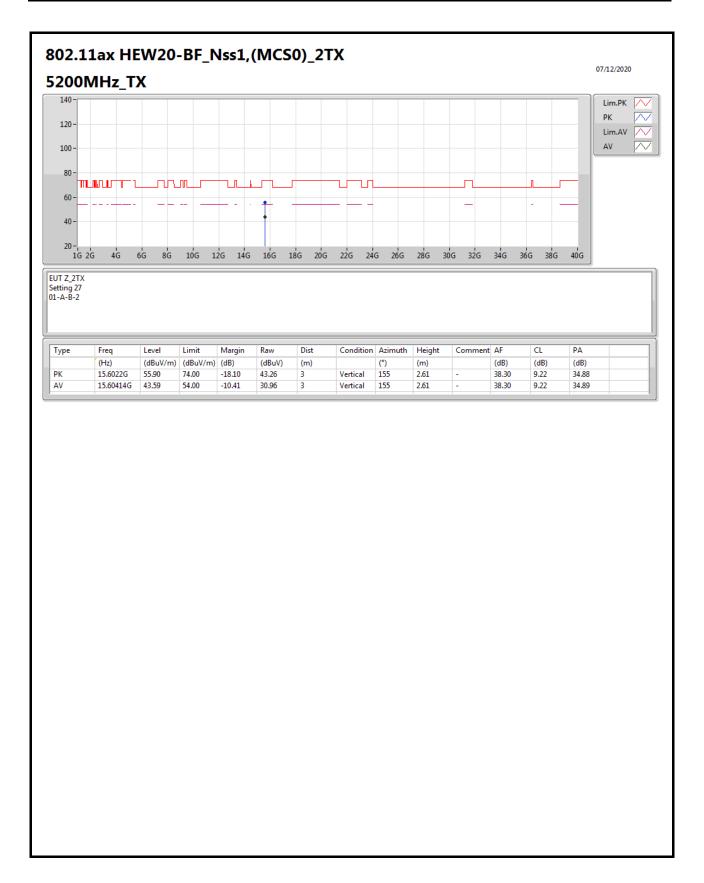




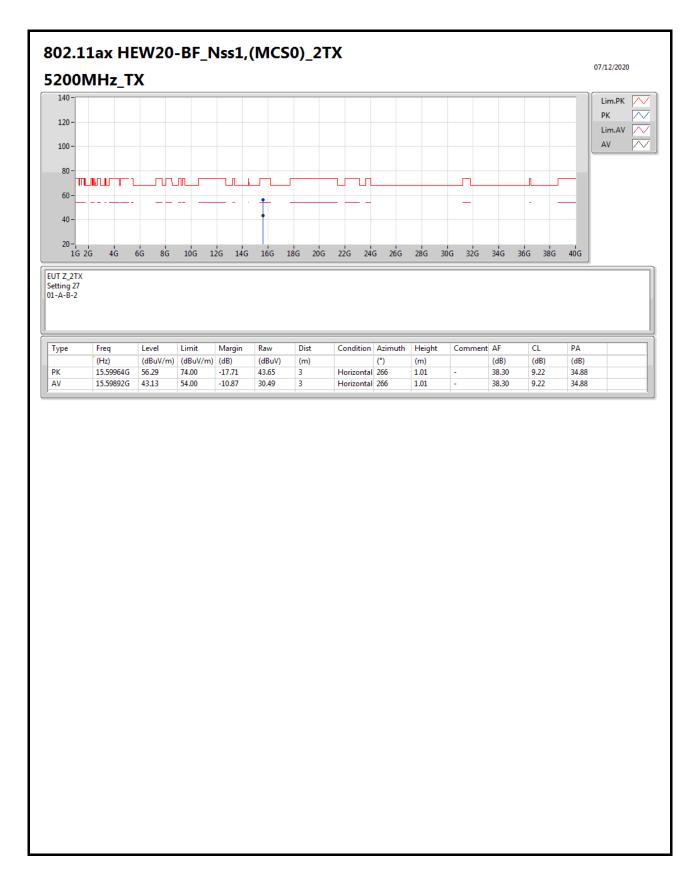




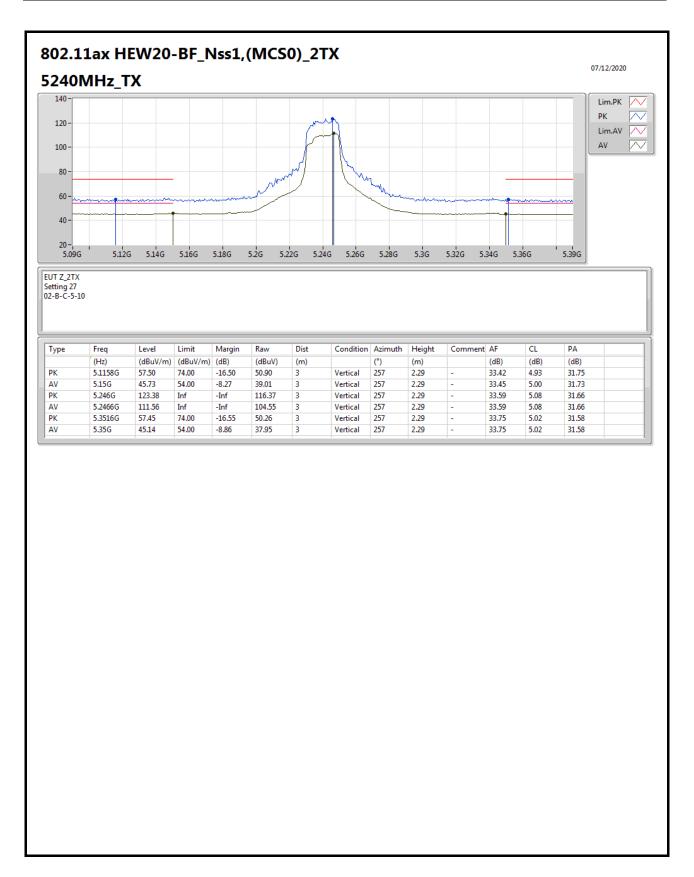




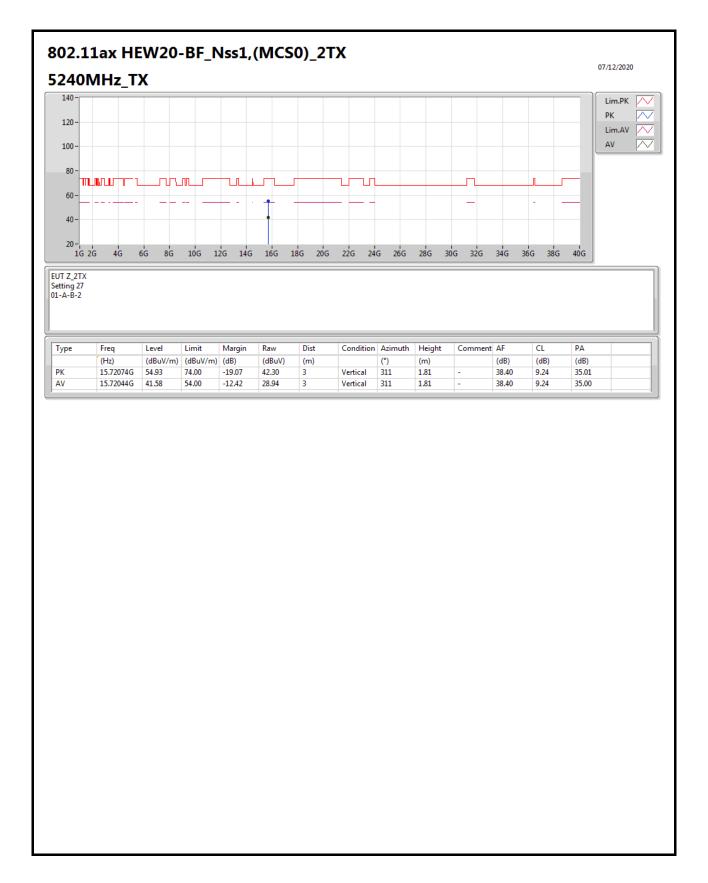




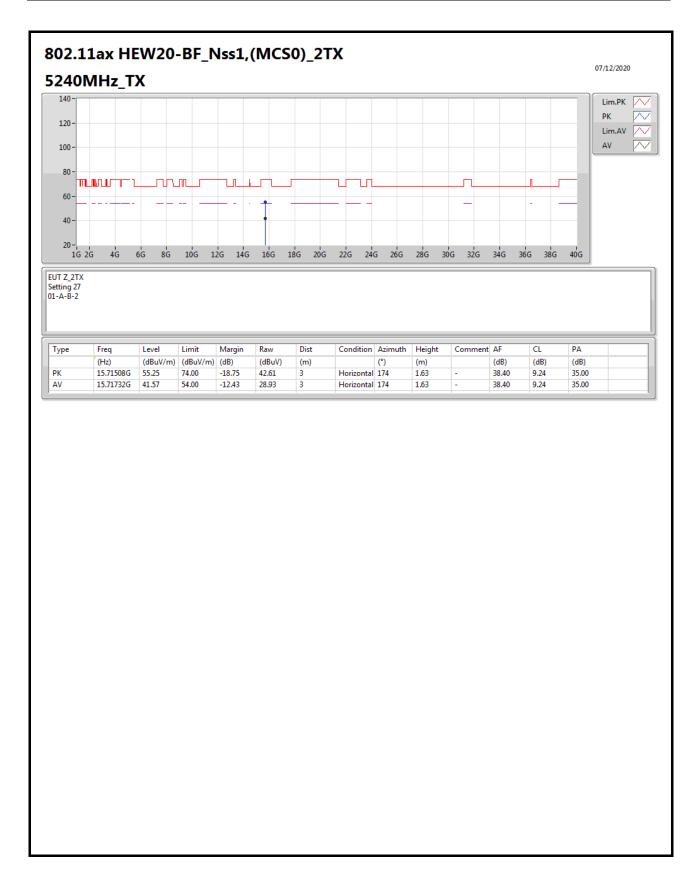




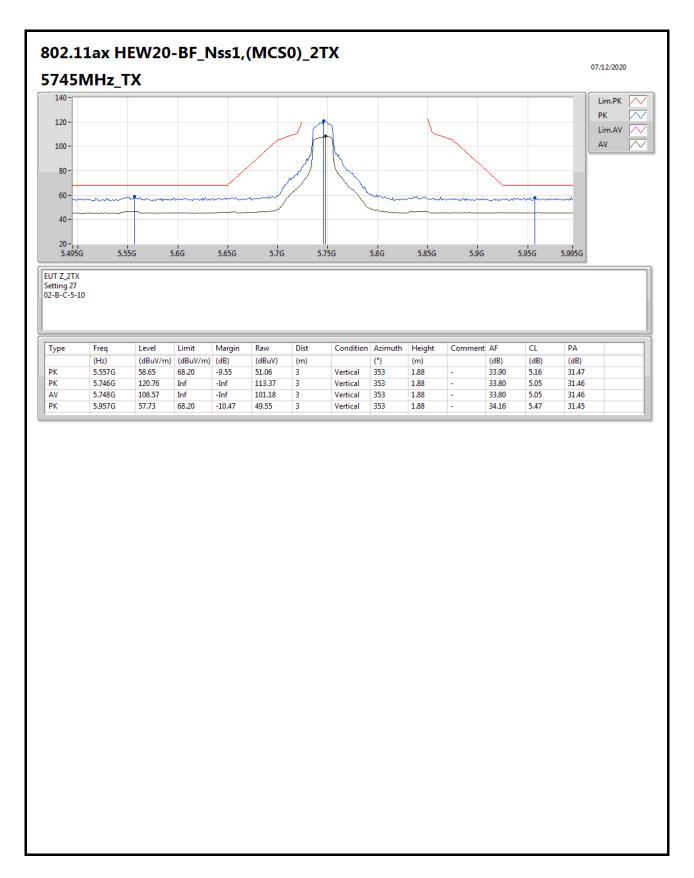




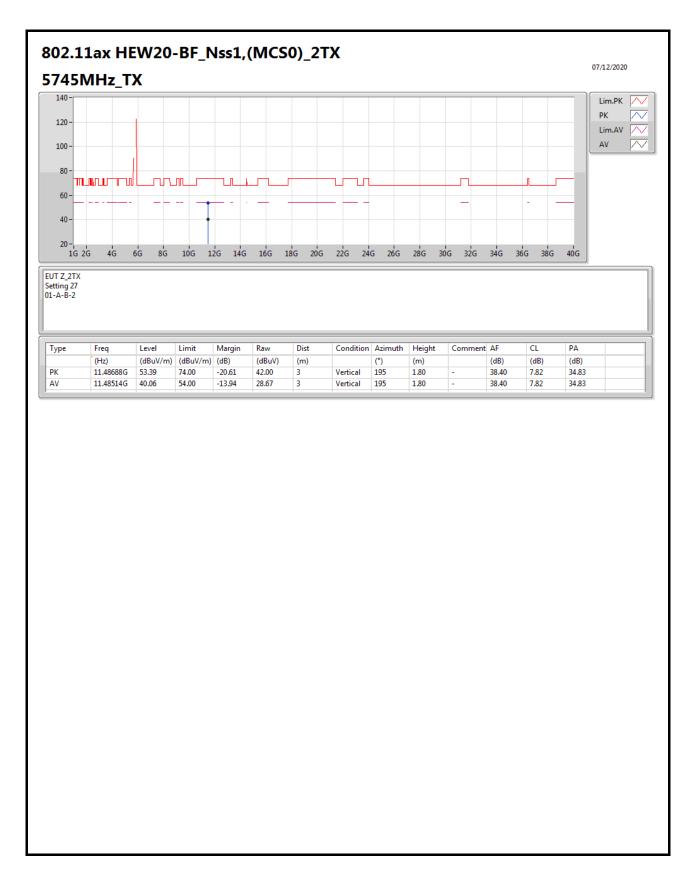




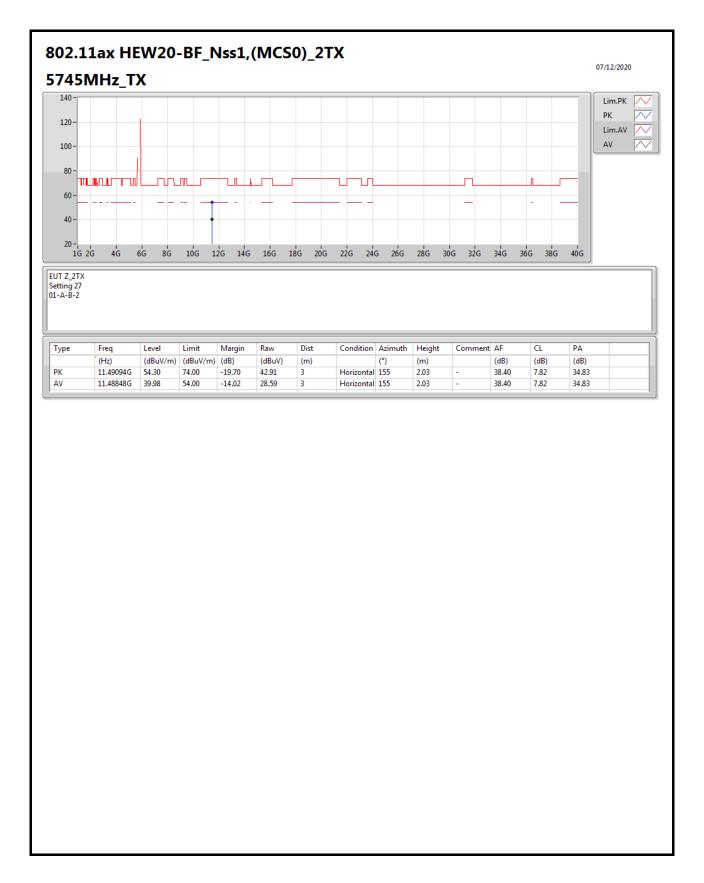




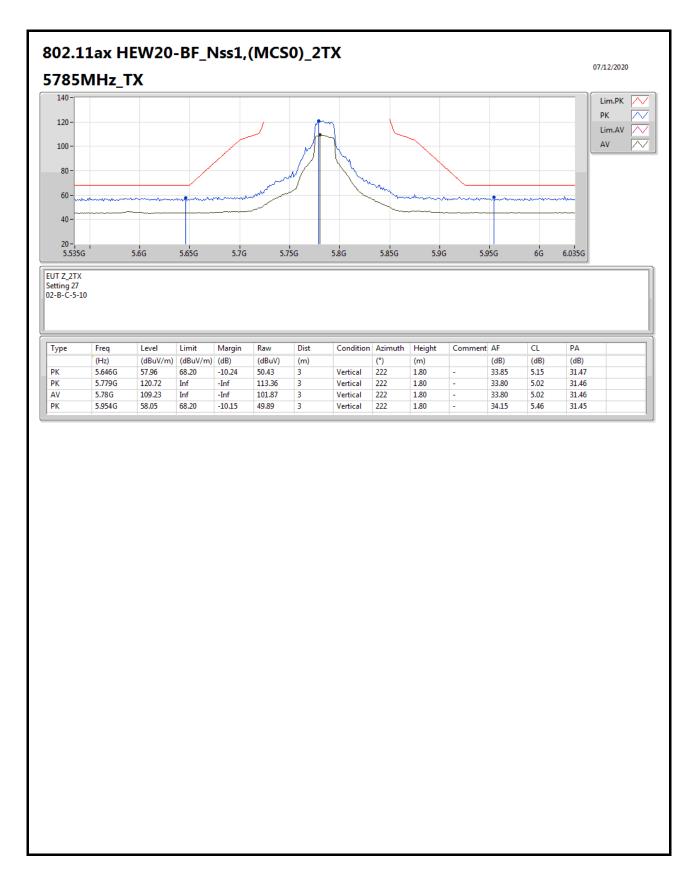




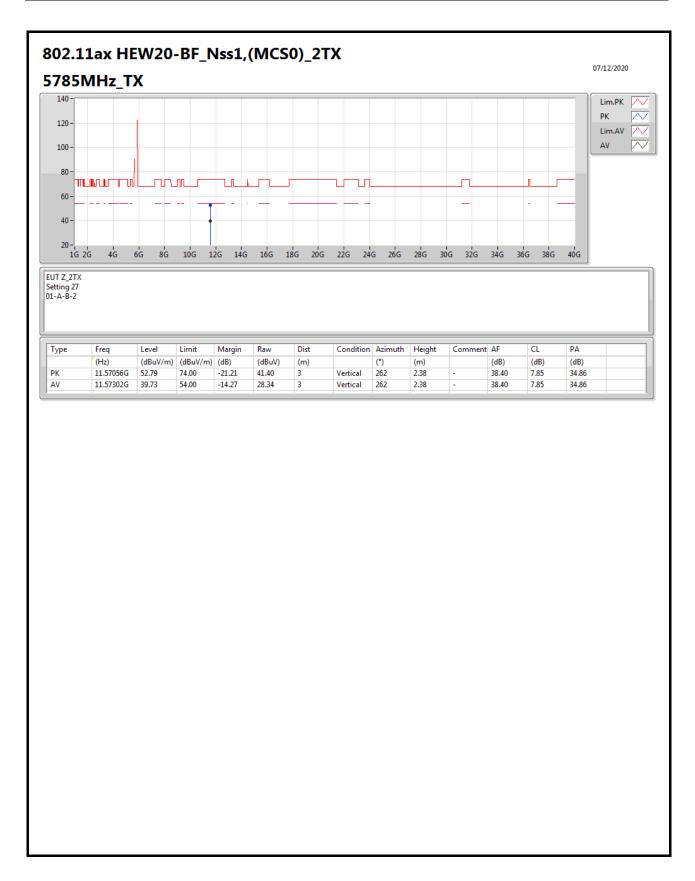




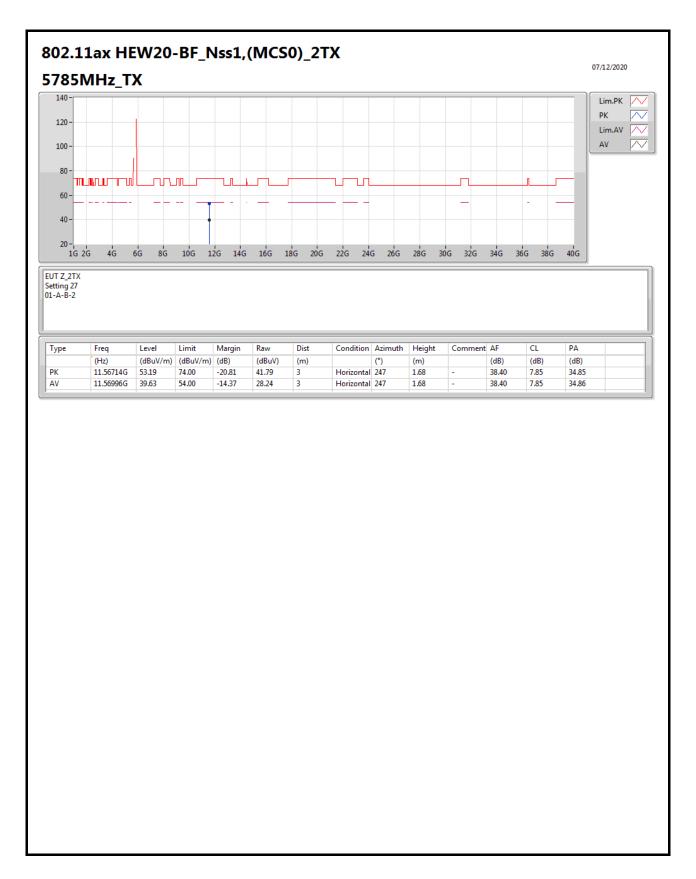




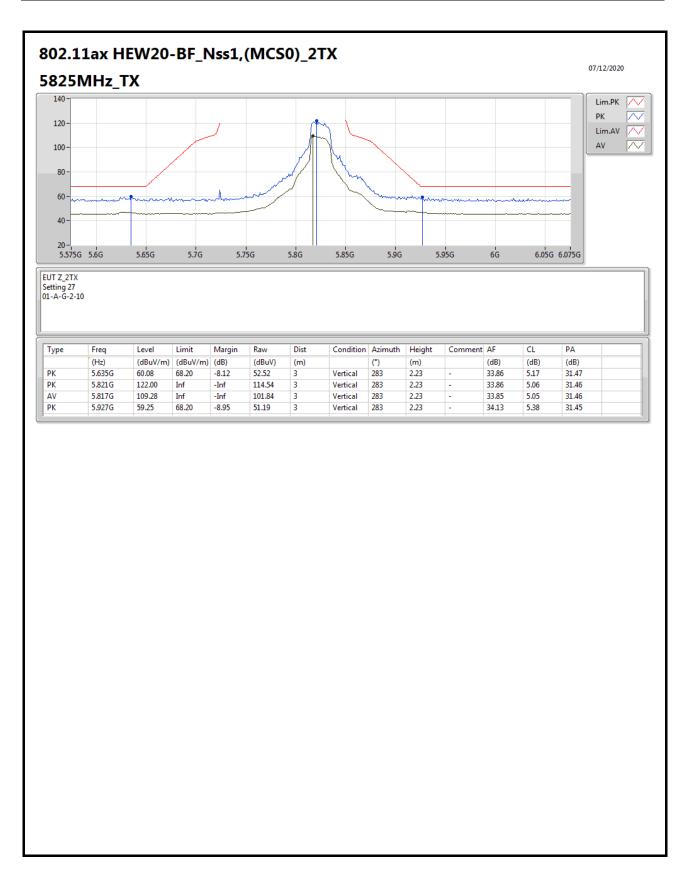




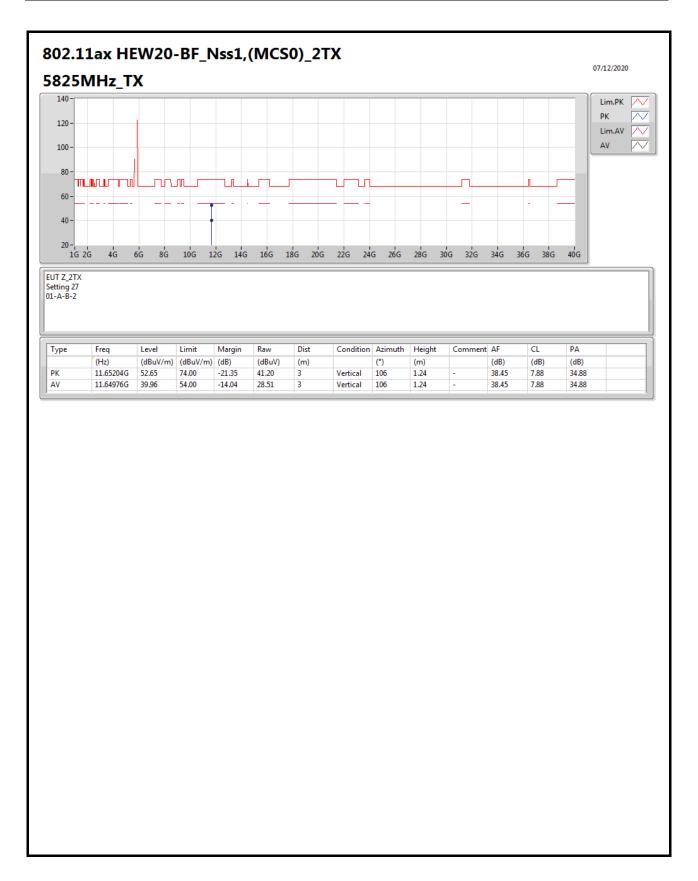




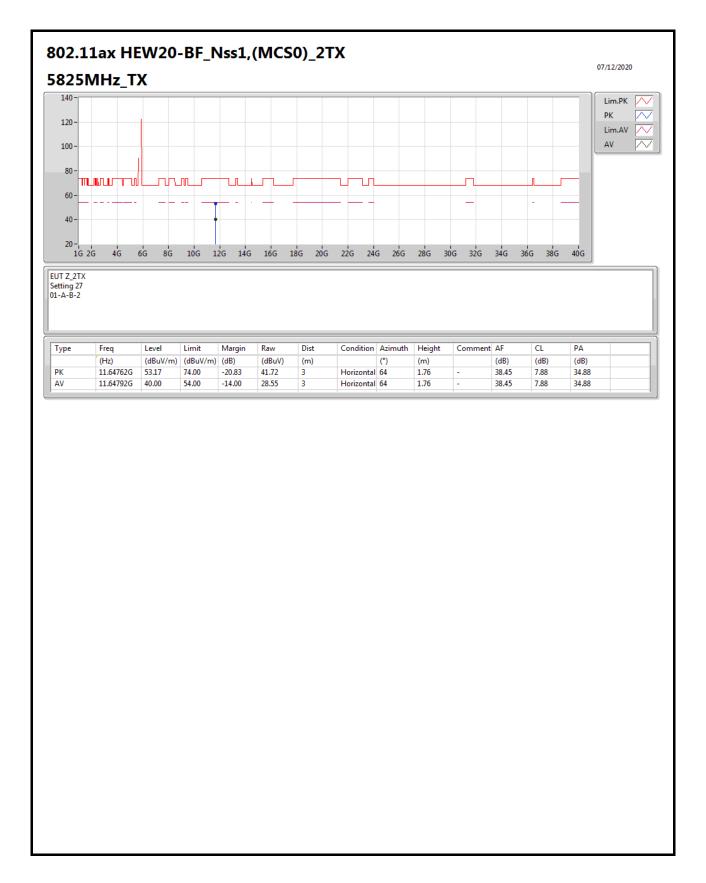




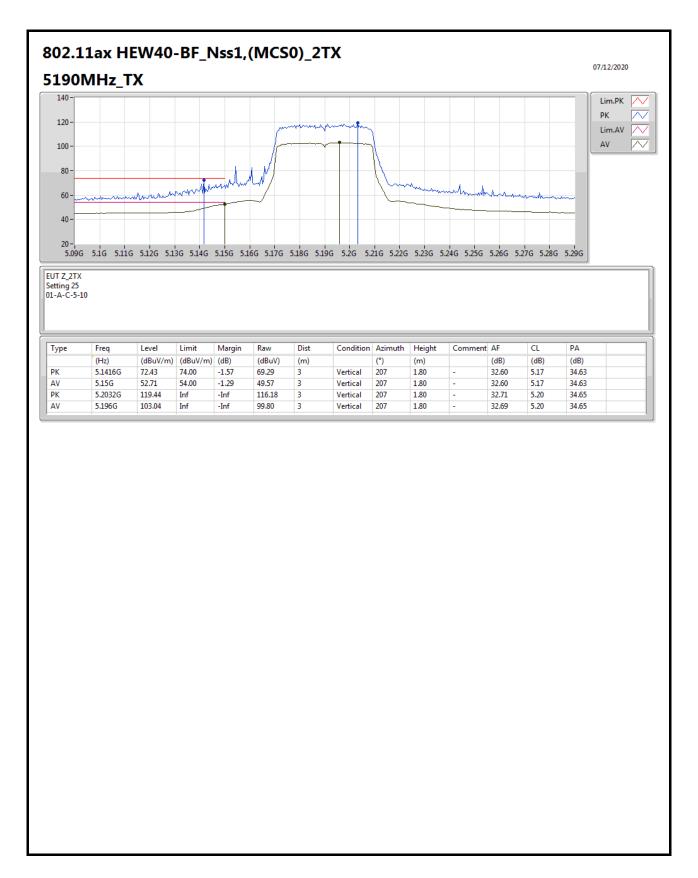




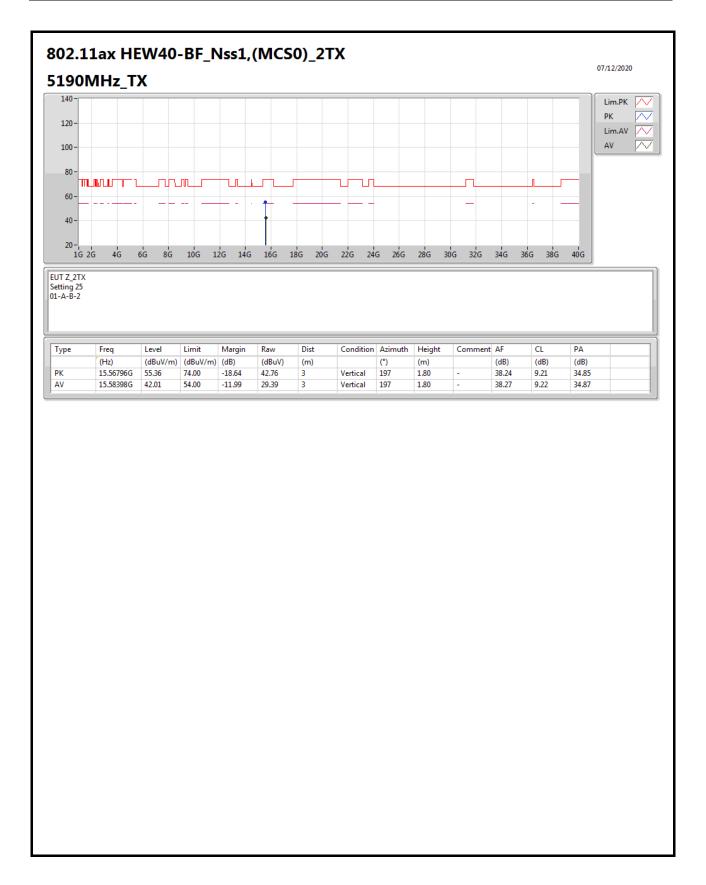




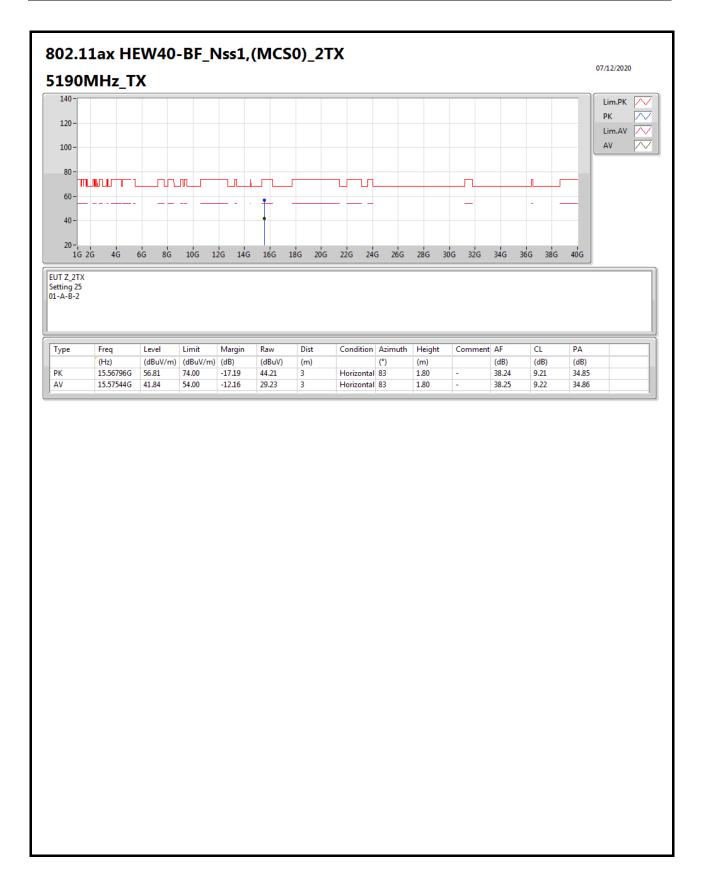




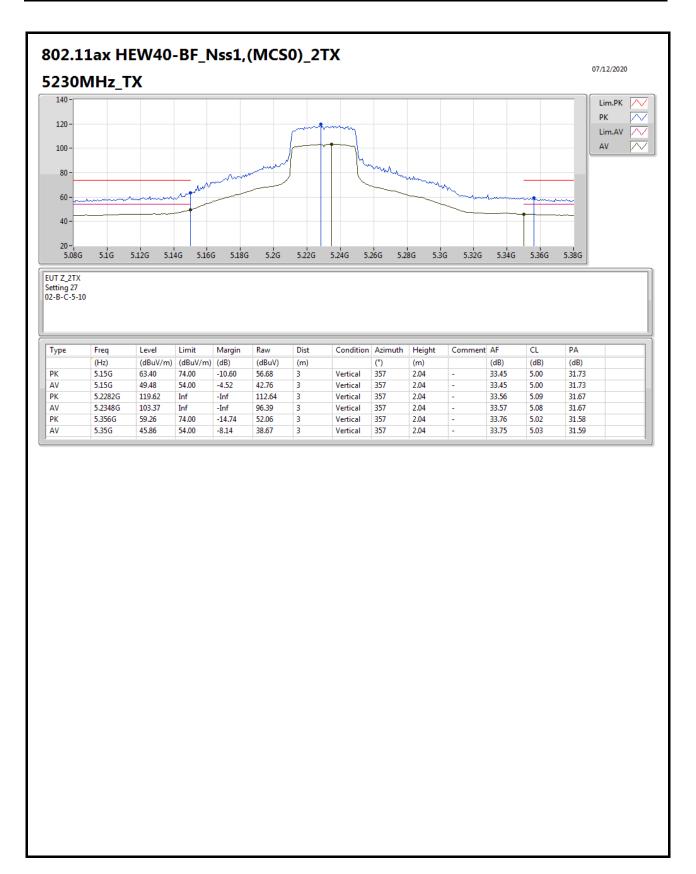




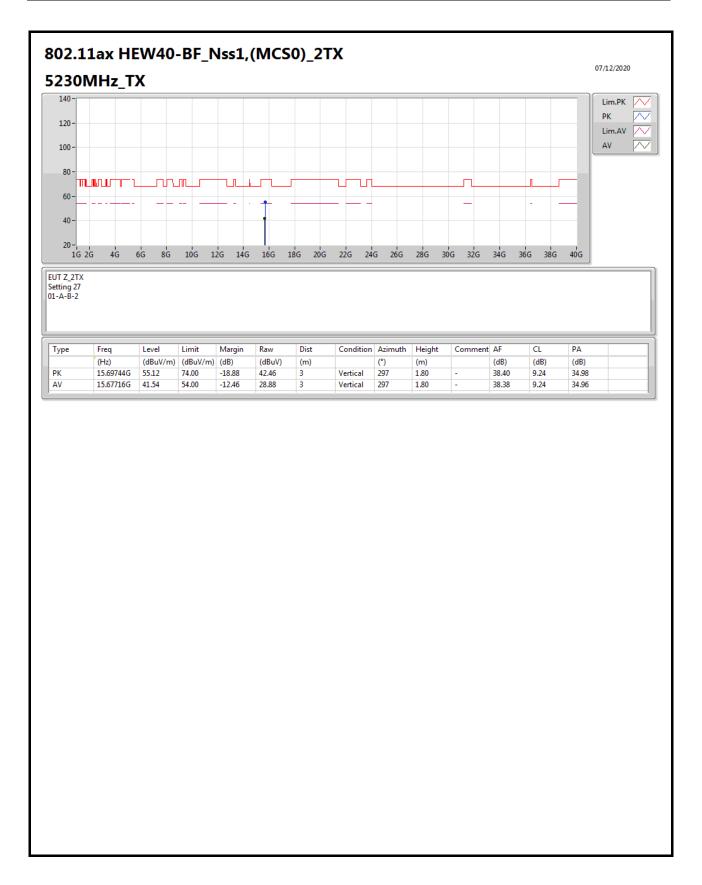






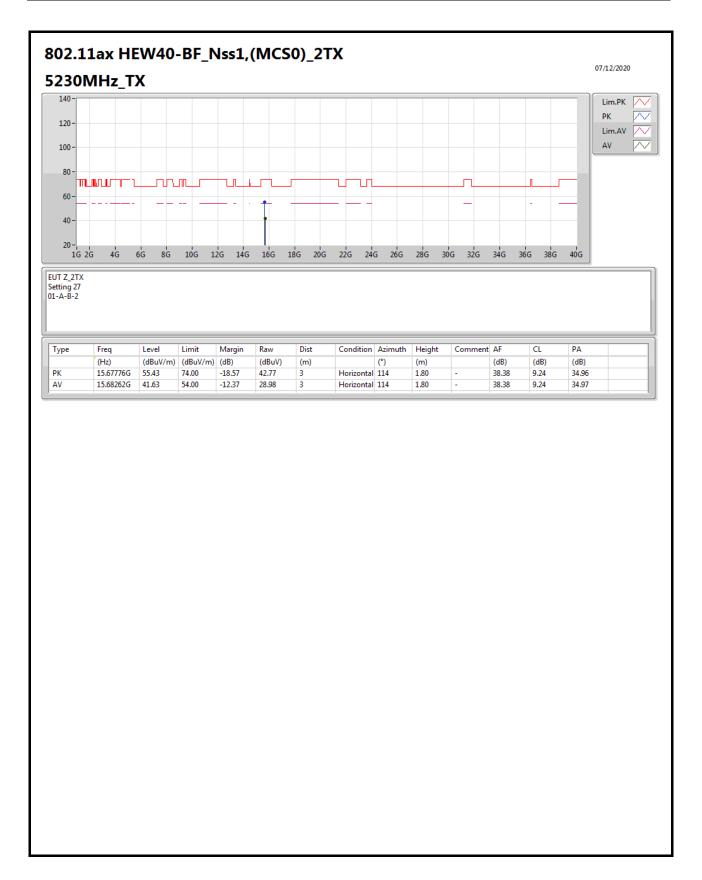




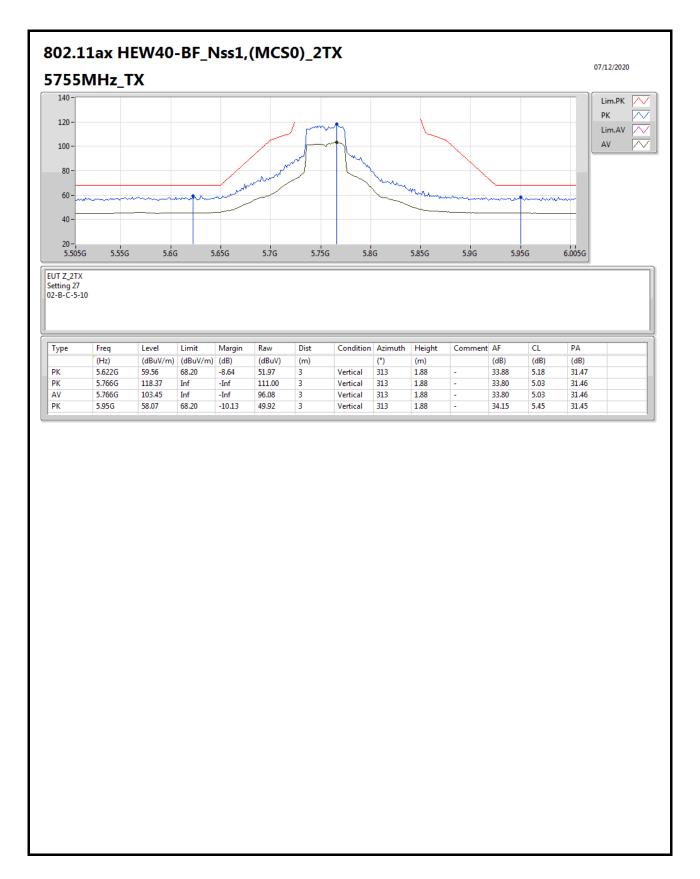


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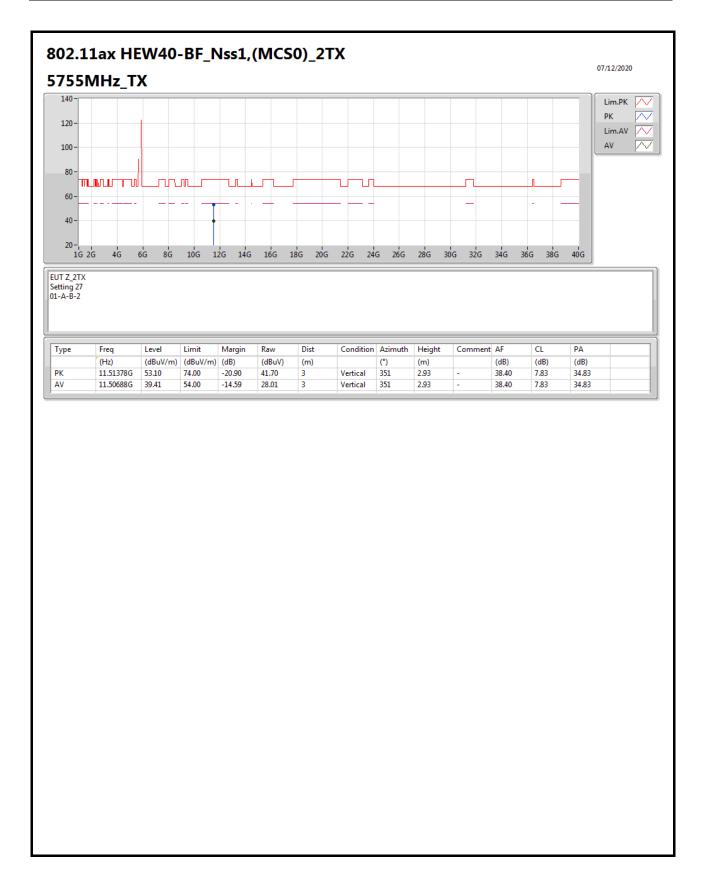




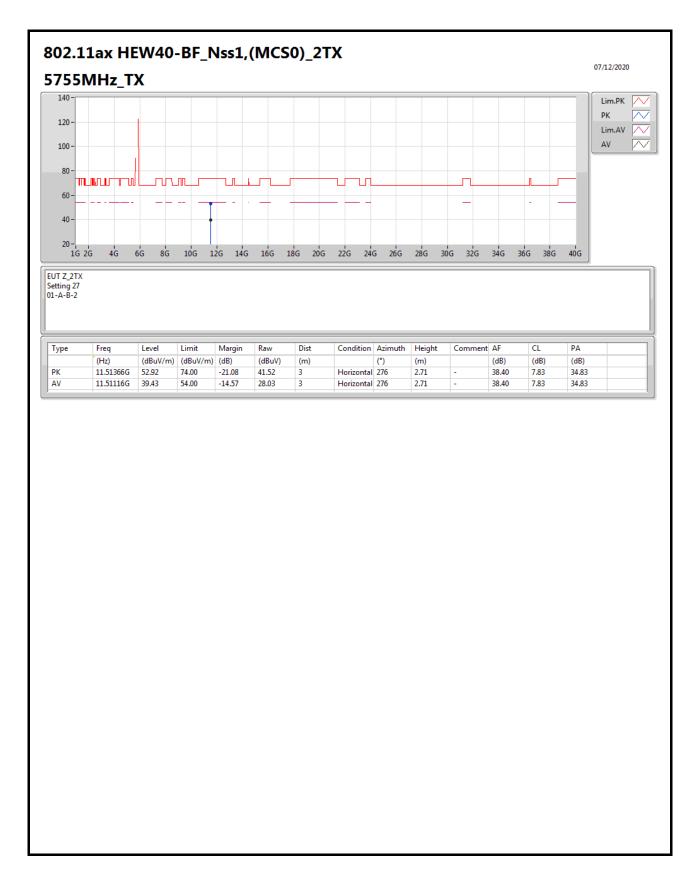






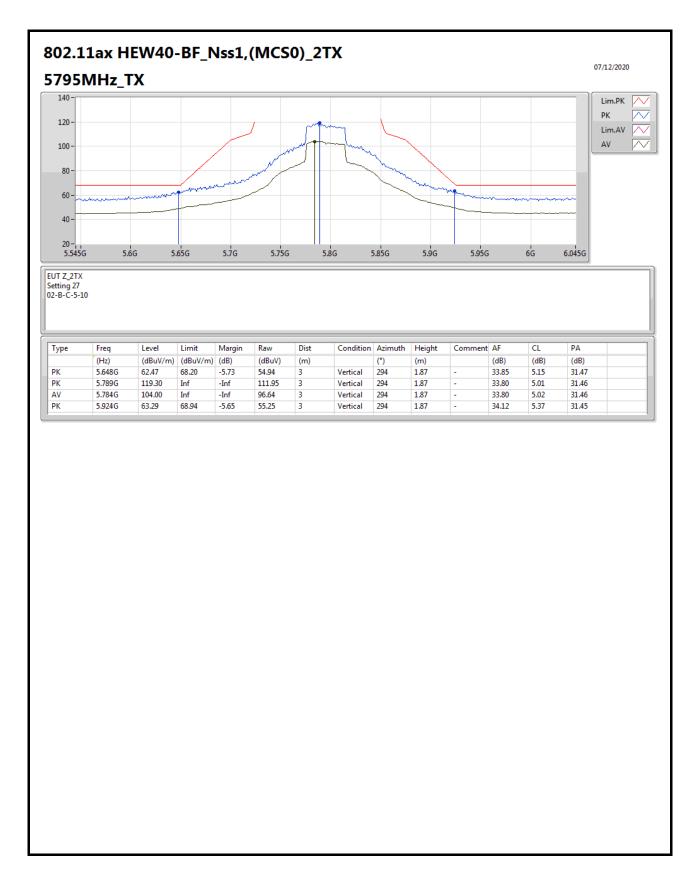




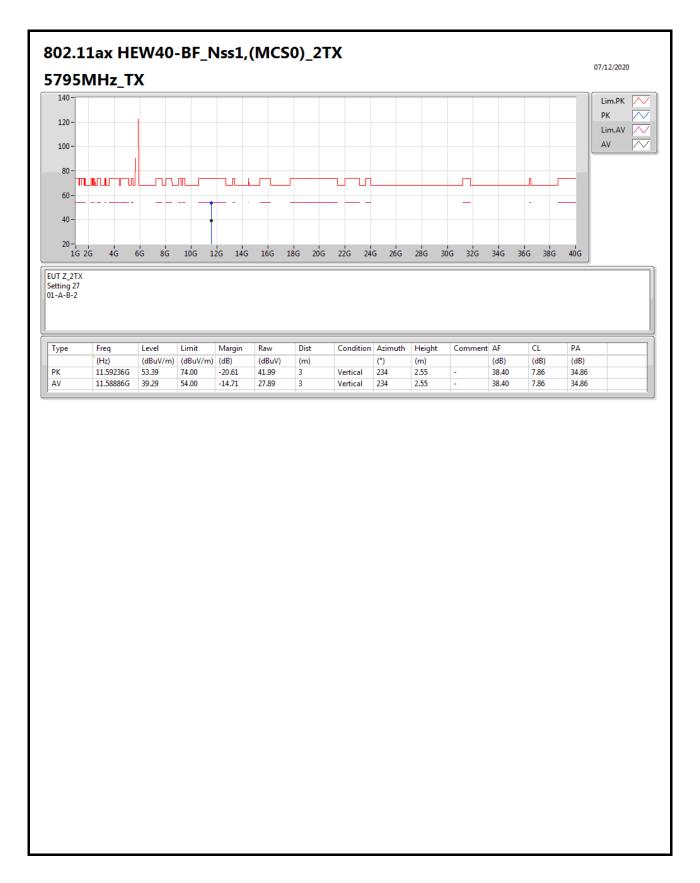


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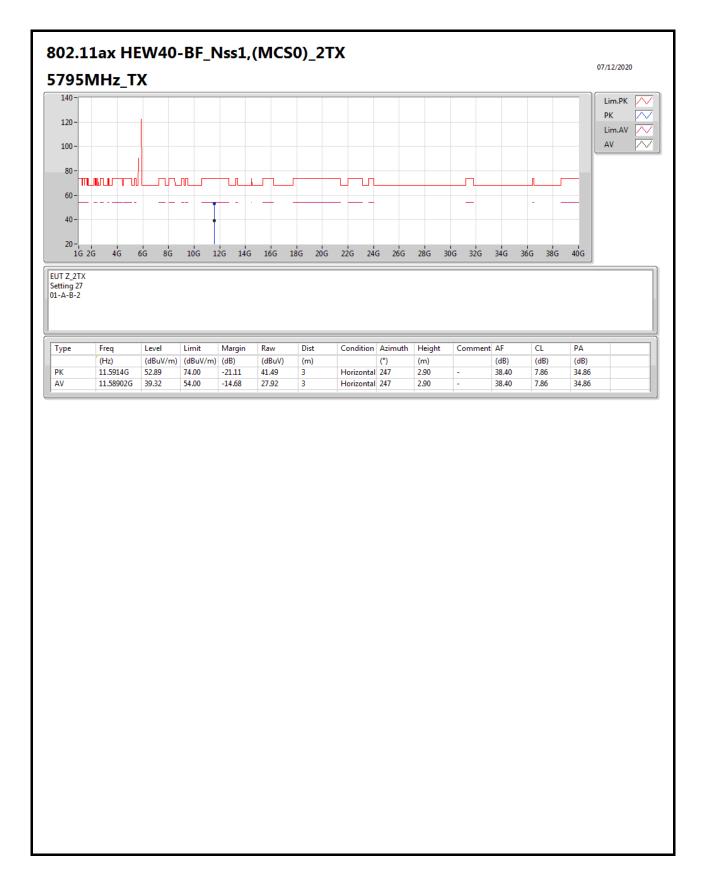




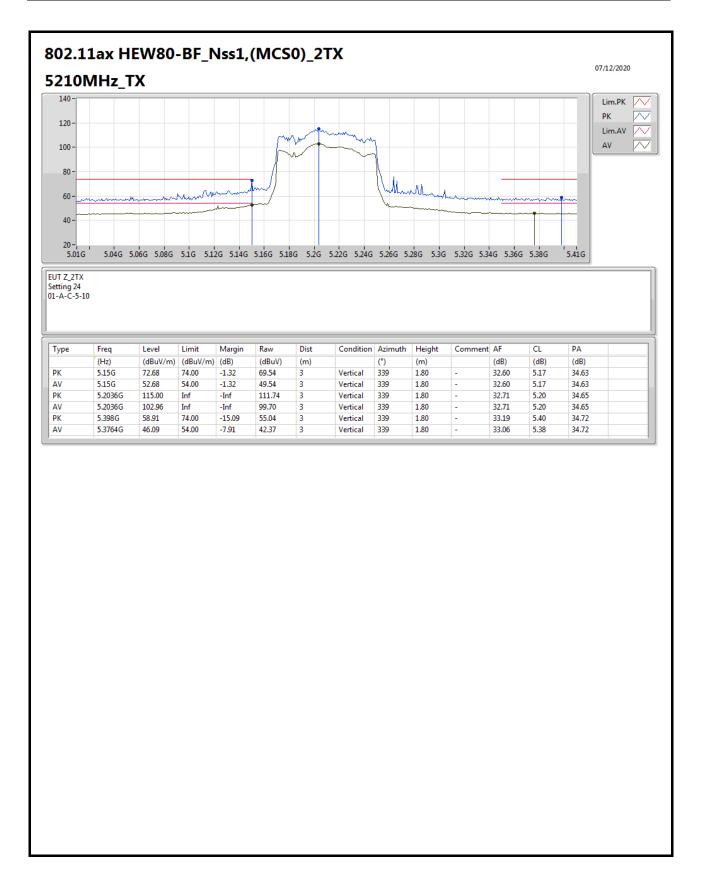




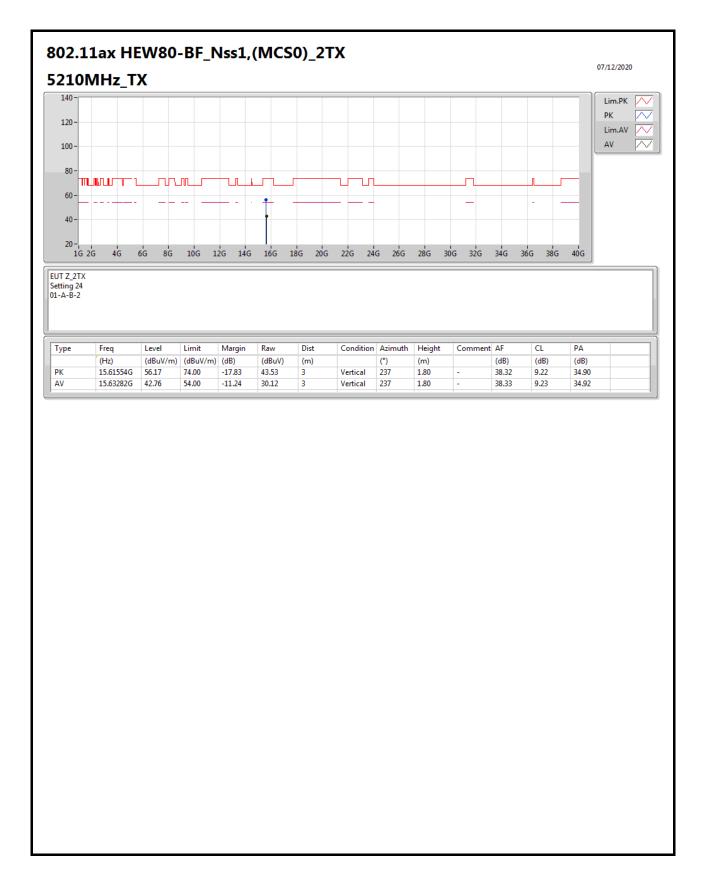




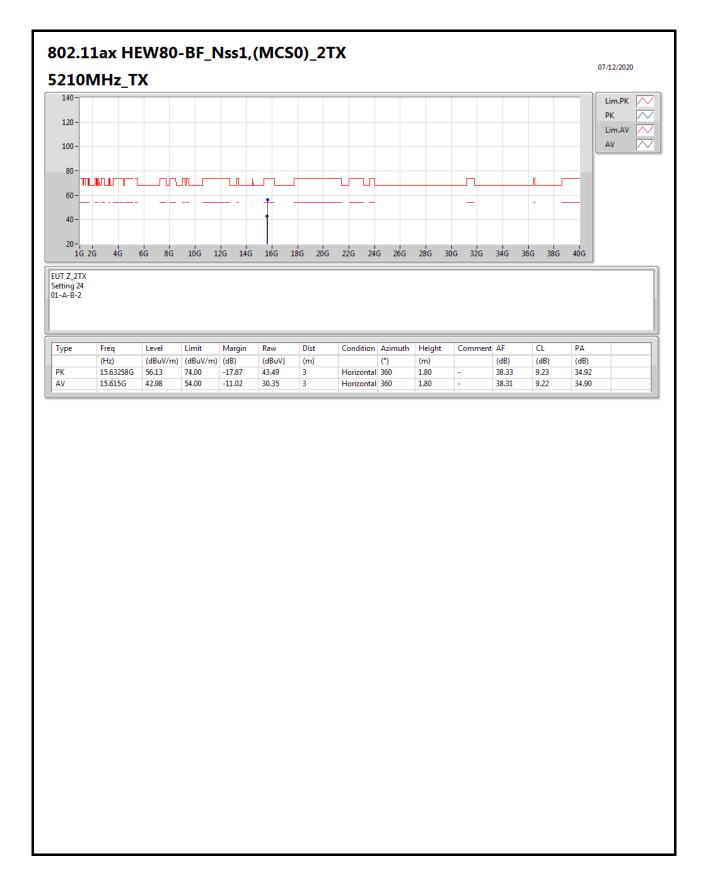




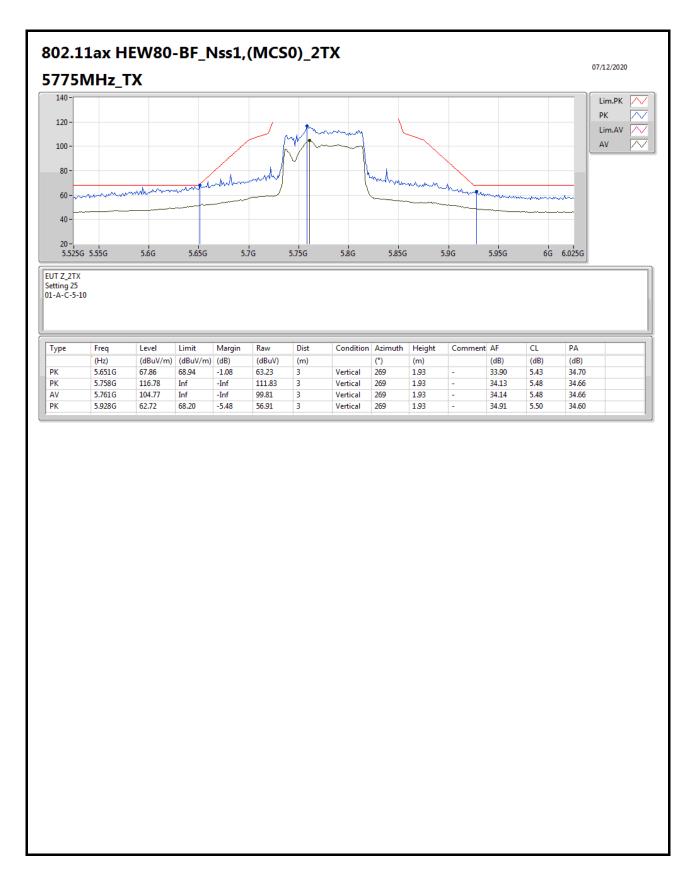




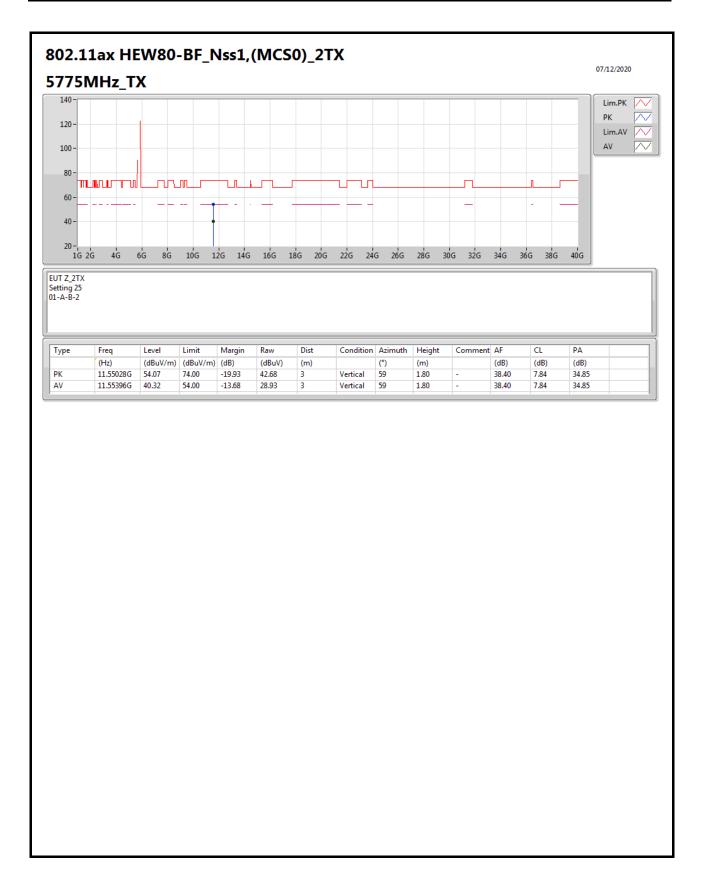






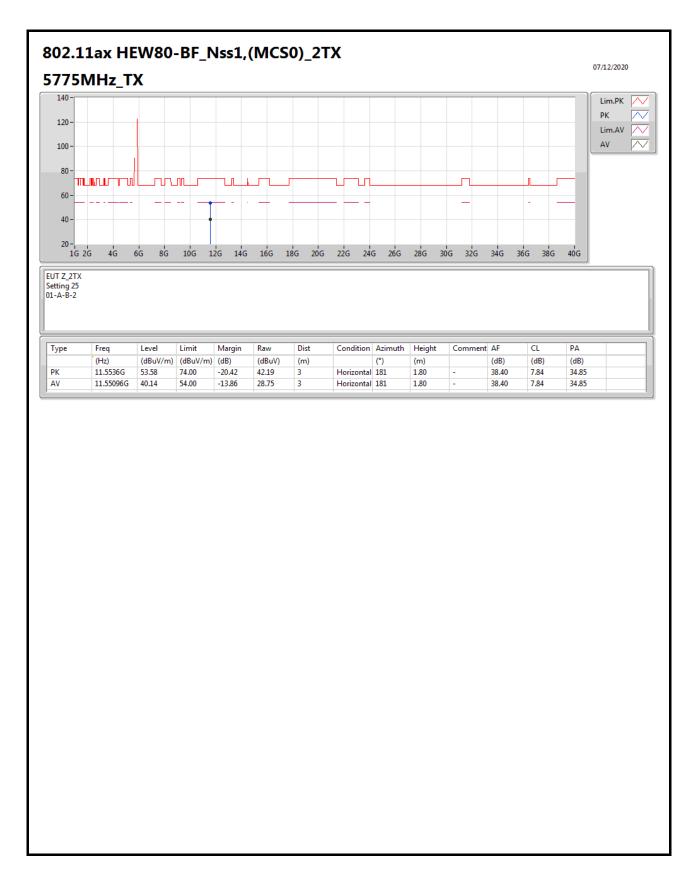






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Radiated Emissions above 1GHz

Appendix F

Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	1.12586G	28.54	54.00	-25.46	Vertical



