



FCC RADIO TEST REPORT

FCC ID

: 2AWNEKDE20102

Equipment

: Home Entertainment Hub

Brand Name

: E1 by Ericsson

Model Name

: KDE20102

Applicant

: Ericsson AB

21-23 Torshamnsgatan Stockholm, 16480 Sweden

Manufacturer : CyberTAN Technology Inc.

No. 99, Park Avenue III Science-based Industrial Park

Hsinchu Taiwan 308

Standard

: 47 CFR FCC Part 15.407

The product was received on Mar. 27, 2020, and testing was started from Apr. 07, 2020 and completed on May 22, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The 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 Ver1.1

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Photographs of EUT v01

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History of this test report

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Report No.	Version	Description	Issued Date
FR031609AB	01	Initial issue of report	Aug. 05, 2020

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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:

- 1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
- 2. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen
Report Producer: Cindy Peng

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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		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

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

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Note:

- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.

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• BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

For WLAN 2.4GHz / WLAN 5GHz / Bluetooth / Zigbee function:

	Port						Gain (dBi)		
Ant.	WLAN	WLAN	Brand	Model Name	Type	Connector	WLAN	WLAN 5GHz	
	2.4GHz	5GHz B1					2.4GHz	B1	
1	1	1	Airgain	N2420DSRD	PCB	I-PEX	2.2	3.1	
2	2	2	Airgain	N2420DSRF	PCB	I-PEX	2.7	3.3	
	Port						Gain (dBi)		
Ant.	WLAN	7iahaa	Brand	Model Name	Туре	Connector	WLAN 5GHz	7iah oo	
	5GHz B4	Zigbee					B4	Zigbee	
3	1	1 1		N2420DSRC	PCB	I-PEX	3.1	2.8	
	Port		Port					Gain	(dBi)
Ant.	WLAN	Bluetooth	Brand	Model Name	Type	Connector	WLAN 5GHz	Bluetooth	
	5GHz B4	Diueloolii					B4	Biuetootii	
4	2	1	Airgain	N2420DSRE	PCB	I-PEX	3.1	2.7	

Note1: B1 means band 1, B4 means band 4.

Note2: The above information was declared by manufacturer.

Note3: For WLAN 2.4GHz function (2TX/2RX):

The WLAN 2.4GHz supports the b, g, n, VHT.

Port 1 and Port 2 could transmit/receive simultaneously.

Note4: For WLAN 5GHz Band 1 function (2TX/2RX):

The WLAN 5GHz Band 1 supports the a, n, ac.

Port 1 and Port 2 could transmit/receive simultaneously.

Note5: For WLAN 5GHz Band 4 function (2TX/2RX):

The WLAN 5GHz Band 4 supports the a, n, ac.

Port 1 and Port 2 could transmit/receive simultaneously.

Note6: For Zigbee function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving.

Note7: For Bluetooth function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a-BF	0.927	0.33	2.15m	1k
802.11ac VHT20-BF	0.903	0.44	1.845m	1k
802.11ac VHT40-BF	0.865	0.63	1.699m	1k
802.11ac VHT80-BF	0.913	0.4	2.038m	1k

Note:

• DC is Duty Cycle.

DCF is Duty Cycle Factor.

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1.1.4 EUT Operational Condition

EUT Power Type	From power adapter					
Beamforming Function	\boxtimes	With beamforming		Without beamforming		
Beamforming Function	The product has beamforming function for g/n/VHT in 2.4GHz and a/n/ac in 5GHz.					
Function		Outdoor P2M	\boxtimes	Indoor P2M		
runction		Fixed P2P		Client		
Test Software Version	Putty, Telnet					

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Note: The above information was declared by manufacturer.

1.1.5 Table of WWAN Module

The EUT contains a LTE module, the detail information as following.

Brand Name	Model Name FCC ID		Function
Telit	LN960A16	RI7LN960A16	LTE: Band 2/4/5/7/12/13/14/17/25/26/30/38/41/66

1.1.6 Table for EUT Supports Functions

Function	Support Type
AP	Master
Mesh	Master
Bridge	Master

Note: The "AP mode" has been selected to test and recorded in the test report 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, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.				
		TEL	:	886-3-656-9065 FAX : 886-3-656-9085				

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH03-CB	Owen Hsu	23.5~25.5°C / 53~55%	Apr. 10, 2020~May 08, 2020
Radiated Below 1GHz (Mode 1~Mode 3)	03CH06-CB	JN Du	22.7~23.5°C / 53~57%	Apr. 13, 2020~May 22, 2020
Radiated Below 1GHz (Mode 4~Mode 6)	03CH06-CB	Eason Chen	22.7~23.5°C / 53~57%	Apr. 09, 2020~May 14, 2020
Radiated Above 1GHz 03CH06-CB, 03CH02-CB, 03CH04-CB		JN Du	22.7~23.5°C / 53~57%	Apr. 13, 2020~May 22, 2020
AC Conduction	AC Conduction CO01-CB		21~22°C / 60~63%	Apr. 07, 2020

Test site Designation No. TW0006 with FCC

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	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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Test site registered number IC 4086D with Industry Canada.

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11a-BF_Nss1,(6Mbps)_2TX	-
5180MHz	21.5
5200MHz	25.5
5240MHz	24
5745MHz	25.5
5785MHz	25.5
5825MHz	25.5
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	22
5200MHz	25
5240MHz	24
5745MHz	25.5
5785MHz	25.5
5825MHz	25.5
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
5190MHz	19.5
5230MHz	23.5
5755MHz	24.5
5795MHz	25.5
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-
5210MHz	18.5
5775MHz	23

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Note:

• There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for g/n/VHT in 2.4GHz and a/n/ac in 5GHz, after evaluating, beamforming mode has been evaluated to be the worst case, so it was selected to test and record in this test report.

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2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests			
Tests Item	Tests Item AC power-line conducted emissions		
Condition AC power-line conducted measurement for line and neutral			
Operating Mode Normal Link			
1 AP mode with LTE Link: Band 2 – EUT + Adapter 1 + Power cable			
2 AP mode with LTE Link: Band 4 – EUT + Adapter 2 + Power cable			
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		
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	WLAN 2.4GHz + Adapter 1			
2	WLAN 5GHz Band 1 + Adapter 1			
3	WLAN 5GHz Band 4 + Adapter 1			
4	Bluetooth + Adapter 1			
5	Zigbee + Adapter 1			
Mode 4 has been evaluated to be the worst case among Mode 1~5, thus measurement for Mode 6 will follow this same test mode.				
6	Bluetooth + Adapter 2			
For operating mode 6 is the	e worst case and it was record in this test report.			
Operating Mode > 1GHz	СТХ			

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The Worst Case Mode for Following Conformance Tests			
Tests Item Simultaneous Transmission Analysis - Radiated Emission Co-location			
Test Condition	Test Condition Radiated measurement		
Operating Mode Normal Link			
	·		

The Operating Mode of Radiated Emission Co-location as below:

- 1. WLAN 2.4GHz + WLAN 5GHz Band 1
- 2. WLAN 5GHz Band 4 + Bluetooth
- 3. WLAN 5GHz Band 4 + Zigbee

After evaluating, the full function generated the worst case, thus the measurement will follow this same test configuration.

1	WLAN 2.4GHz + WLAN 5GHz Band 1 + WLAN 5GHz Band 4 + Bluetooth + Zigbee
---	--

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 Band 1 + WLAN 5GHz Band 4 + Bluetooth Zigbee + LTE			
Refer to Sporton Test Report No.: FA031609 for Co-location RF Exposure Evaluation.			

Note: The EUT can only be used Z axis.

2.3 EUT Operation during Test

For CTX Mode:

For Radiated Below 1GHz test:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Above 1GHz and RF Conducted tests:

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 Putty, Telnet.
- 3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by WLAN AP and transmit duty cycle no less than 98%.

For Normal Link:

During the test, the EUT operation to normal function.

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2.4 Accessories

	Accessories					
No.	Equipment Name	Brand Name	Model Name	Rating	Remark	
1	Adapter 1	FSP	FSP100-A1AR3	INPUT: 100-240V~50-60Hz, 1.4A OUTPUT: 5V, 3A / 9V, 3A 12V, 3A / 15V, 3A 20V, 5.0A 100W MAX.	With the cable: Non-shielded, 1.6m	
2	Adapter 2	DELTA	ADH-100CR B	INPUT: 100-240V~1.8A, 50-60Hz OUTPUT: 5.0V, 3.0A, 15.0W or 9.0V, 3.0A 15.0V, 3.0A or 20.0V, 5.0A 100.0W.	With the cable: Non-shielded, 1.6m	
	Others					
3	3 HDMI cable*1: Shielded, 1.5m					
4	4 USB-C to USB-A cable*1: Shielded, 0.1m					
5	Power cable*1: Non-shielded, 1m					

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2.5 Support Equipment

For AC Conduction:

	Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID	
Α	TV	ASUS	VP28U	N/A	
В	Micro SD card	Transcend	TS16GUSDHC10	N/A	
С	SIM card	N/A	N/A	N/A	
D	LAN NB	DELL	E6430	N/A	
Е	WAN NB	DELL	E6430	N/A	
F	2.4G NB	DELL	E6430	N/A	
G	5G-1 NB	DELL	E6430	N/A	
Н	5G-2 NB	DELL	E6430	N/A	
I	Bluetooth speaker	Wei Xuan	S06B	N/A	
J	Zigbee device	N/A	N/A	N/A	
K	LTE base station	Anritsu	MT8820C	N/A	
L	Air mouse	HENGCHUANGYU	HCY-57B	2AOBUHCY-57B	

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For Radiated (below 1GHz):

	Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID					
Α	LCD Monitor	DELL	1704FPTt	N/A		
В	USB Hub	IOTNPCI	HB-16	N/A		
С	Keyboard	iCooky	SK068	N/A		
D	Mouse	Logitech	M-U0026	N/A		

For Radiated (above 1GHz):

	Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID					
Α	NB	DELL	E4300	N/A		
В	WLAN AP	LINKSYS	EA8300	N/A		
С	NB	DELL	E4300	N/A		

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For RF Conducted:

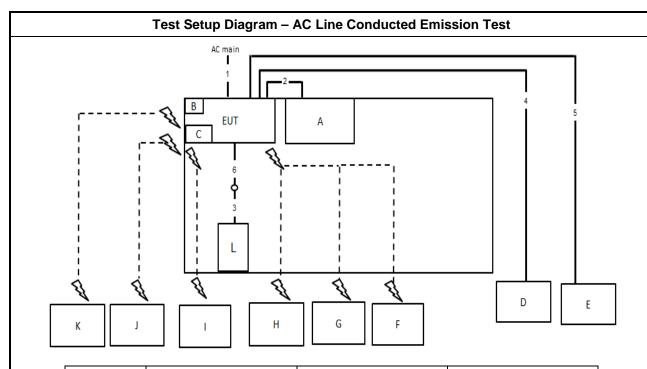
	Support Equipment					
No.	Equipment	Brand Name	Model Name	FCC ID		
Α	NB	DELL	E4300	N/A		
В	NB	DELL	E4300	N/A		
С	WLAN AP	LINKSYS	EA8300	N/A		

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2.6 Test Setup Diagram

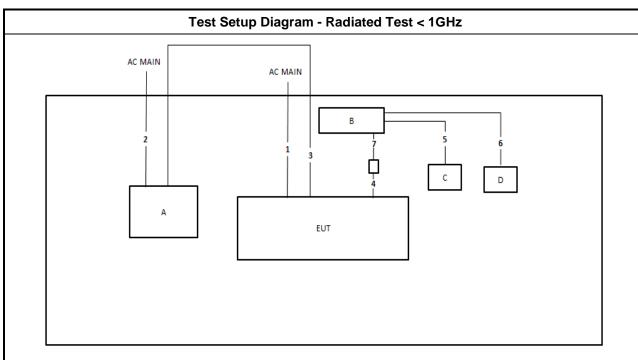


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Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	HDMI cable	Yes	1.5m
3	USB cable	Yes	0.9m
4	RJ-45 cable	No	10m
5	RJ-45 cable	No	10m
6	USB cable	Yes	0.1m

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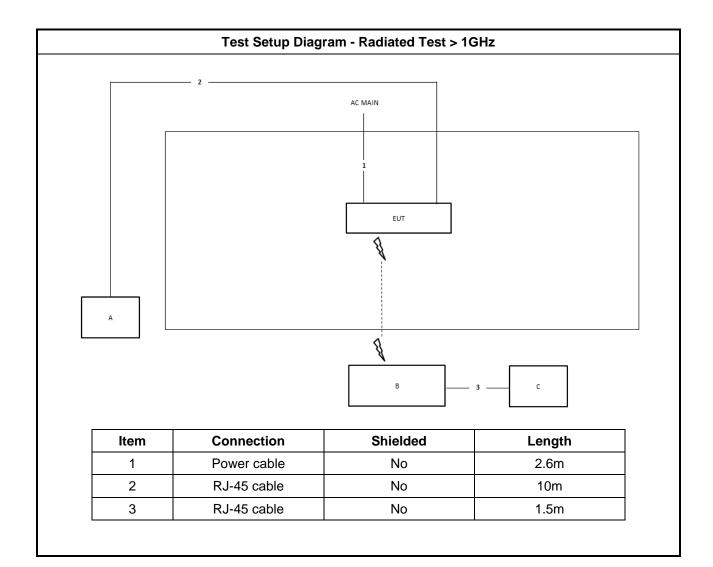
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Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	Power cable	No	1.5m
3	HDMI cable	Yes	1.5m
4	USB cable	Yes	0.1m
5	USB cable	Yes	1.8m
6	USB cable	Yes	1.8m
7	USB cable	Yes	0.9m

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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

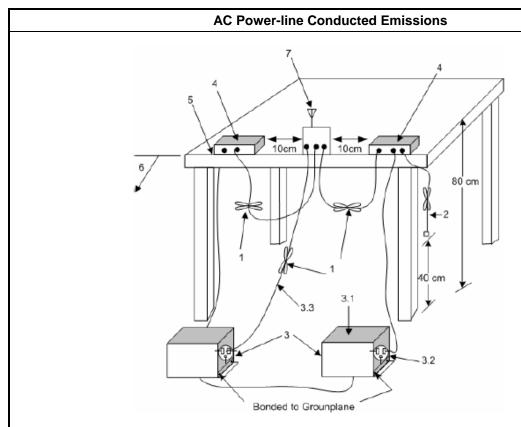
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

	Test Method
\boxtimes	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				
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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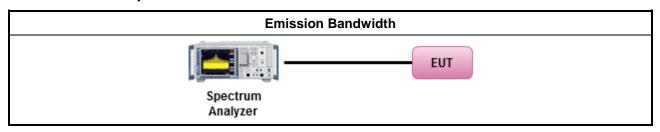
3.2.2 Measuring Instruments

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

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3.3.2 Measuring Instruments

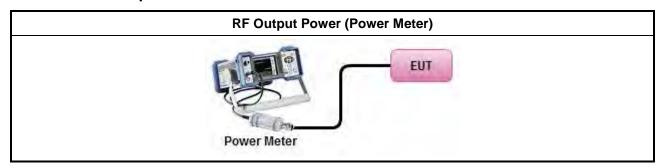
Refer a test equipment and calibration data table in this test report.

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) \leq 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.

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3.4.3 Test Procedures

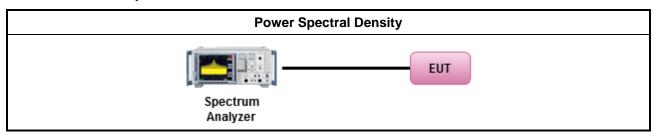
		Test Method
•	outp func	or power spectral density procedures that the same method as used to determine the conducted out power shall be used to determine the peak power spectral density and use the peak search tion on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral 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	v 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 + \ldots + 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

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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

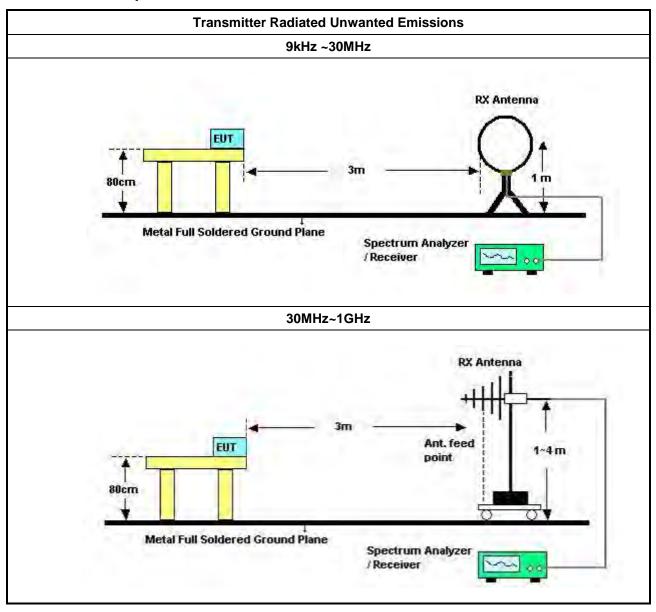
Test Method

- 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.

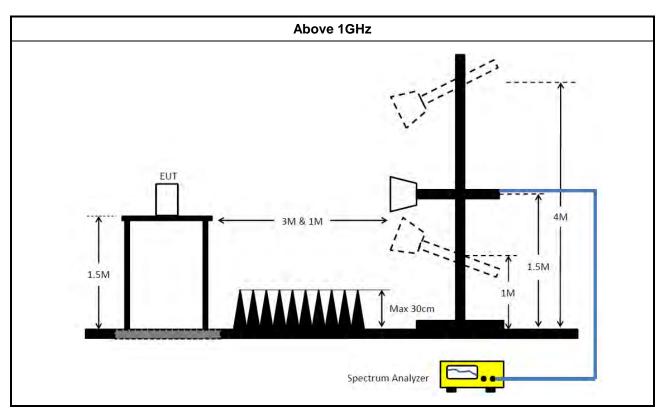
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3.5.4 Test Setup



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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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Feb. 26, 2020	Feb. 25, 2021	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50- 16-2	04083	04083 150kHz ~ 100MHz		Dec. 24, 2020	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Feb. 25, 2020	Feb. 24, 2021	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwa rz	ESH3-Z2	100430	9kHz ~ 30MHz	Jan. 31, 2020	Jan. 30, 2021	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 21, 2019	May 20, 2020	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 16, 2020	Mar. 15, 2021	Radiation (03CH06-CB)
Bilog Antenna with 6 dB attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Aug. 03, 2019	Aug. 02, 2020	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBE CK	BBHA9120D	9120D-1292	1GHz~18GHz	Jul. 17, 2019	Jul. 16, 2020	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	May 07, 2019	May 06, 2020	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Apr. 28, 2020	Apr. 27, 2021	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	May 08, 2019	May 07, 2020	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	May 07, 2020	May 06, 2021	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 21, 2019	Oct. 20, 2020	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 13, 2020	May 12, 2021	Radiation (03CH06-CB)
RF Cable-low	HUBER+SUH NER	RG402	Low Cable-05+24	30MHz~1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH06-CB)
RF Cable-high	HUBER+SUH NER	RG402	High Cable-05	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH06-CB)
RF Cable-high	HUBER+SUH NER	RG402	High Cable-05+24	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH06-CB)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration	Calibration	Remark
			High		Date	Due Date	Radiation
RF Cable-high	Woken	RG402	Cable-40G#2	18GHz ~ 40 GHz Jul. 24, 2019		Jul. 23, 2020	(03CH06-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz		Apr. 23, 2020	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	Jun. 27, 2019	Jun. 26, 2020	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Aug. 21, 2019	Aug. 20, 2020	Radiation (03CH02-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH02-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Aug. 15, 2019	Aug. 14, 2020	Radiation (03CH02-CB)
High Cable	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH02-CB)
High Cable	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH02-CB)
Horn Antenna	ETS • Lindgren	3115	00143147	750MHz~18GHz	Oct. 22, 2019	Oct. 21, 2020	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 11, 2020	Mar. 10, 2021	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 18, 2019	Dec. 17, 2020	Radiation (03CH04-CB
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Nov. 01, 2019	Oct. 31, 2020	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Aug. 13, 2019	Aug. 12, 2020	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Aug. 13, 2019	Aug. 12, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-12	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)

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

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

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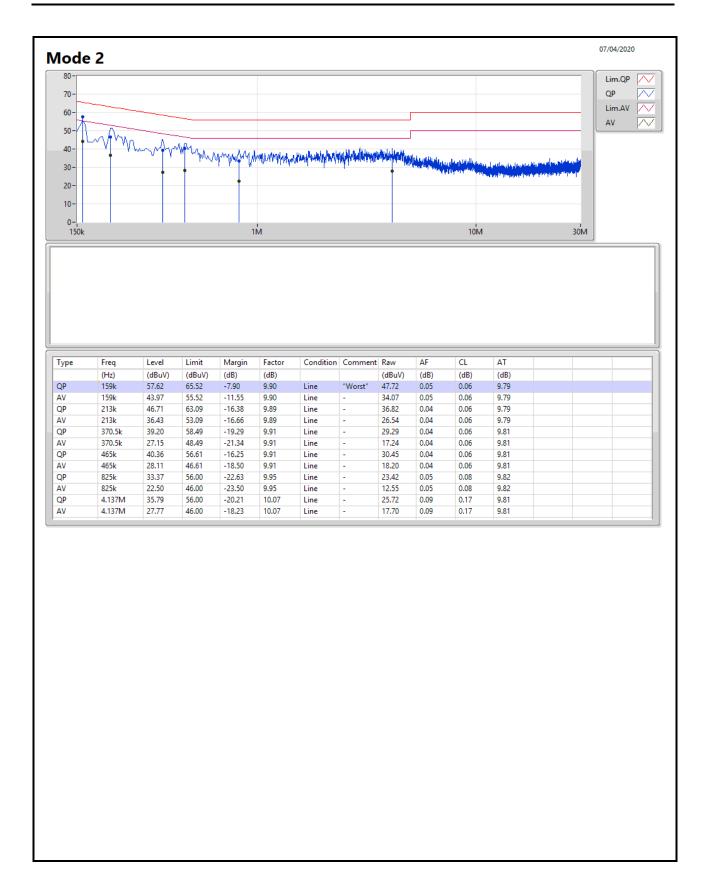
AC Power Port Conducted Emission Result

Appendix A

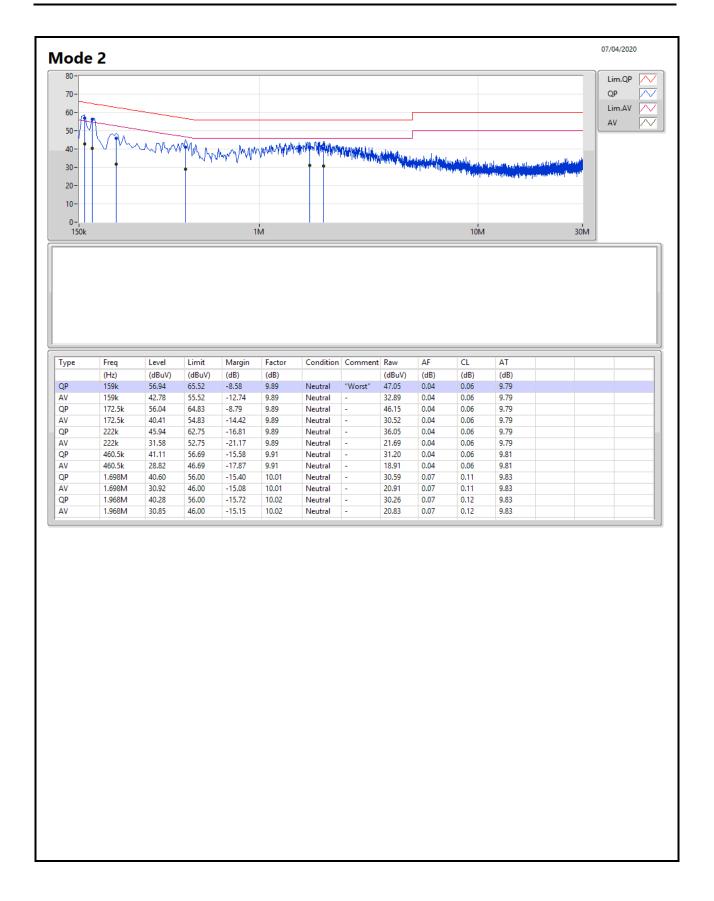
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition
Mode 2	Pass	QP	159k	57.62	65.52	-7.90	9.90	Line











Appendix B **EBW Result**

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a-BF_Nss1,(6Mbps)_2TX	41.01M	24.588M	24M6D1D	20.52M	16.462M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	39.9M	22.669M	22M7D1D	20.91M	17.691M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	78.06M	39.58M	39M6D1D	38.88M	35.802M
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	81.12M	75.922M	75M9D1D	80.88M	75.802M
5.725-5.85GHz	-	-	-	-	-
802.11a-BF_Nss1,(6Mbps)_2TX	16.35M	35.772M	35M8D1D	16.29M	21.109M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	17.52M	39.37M	39M4D1D	16.8M	18.771M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	35.7M	73.163M	73M2D1D	33M	45.517M
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	75.48M	85.517M	85M5D1D	72M	76.522M

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;

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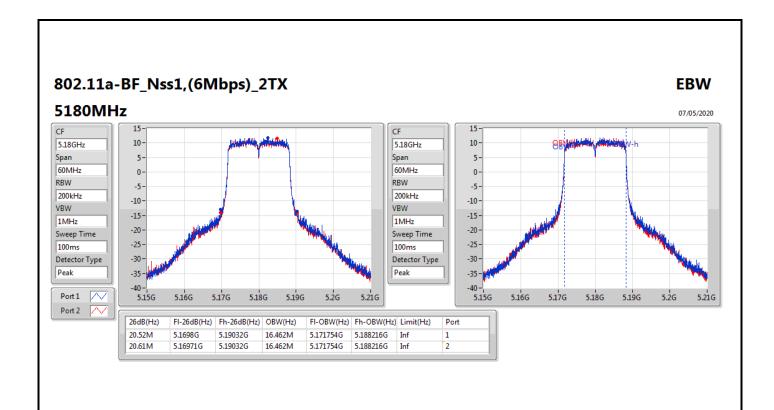
Result

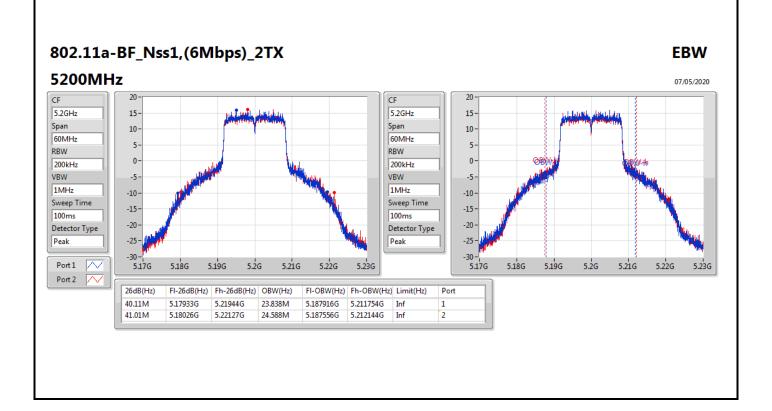
Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11a-BF_Nss1,(6Mbps)_2TX	-	-	-	-	=	-
5180MHz	Pass	Inf	20.52M	16.462M	20.61M	16.462M
5200MHz	Pass	Inf	40.11M	23.838M	41.01M	24.588M
5240MHz	Pass	Inf	35.82M	18.921M	34.05M	17.061M
5745MHz	Pass	500k	16.32M	21.199M	16.29M	30.255M
5785MHz	Pass	500k	16.32M	21.109M	16.29M	35.652M
5825MHz	Pass	500k	16.29M	33.553M	16.35M	35.772M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.03M	17.751M	20.91M	17.691M
5200MHz	Pass	Inf	37.11M	20.87M	39.9M	22.669M
5240MHz	Pass	Inf	37.32M	19.4M	33.09M	18.081M
5745MHz	Pass	500k	16.8M	21.829M	17.52M	30.645M
5785MHz	Pass	500k	17.4M	18.771M	17.07M	35.712M
5825MHz	Pass	500k	17.49M	31.994M	17.52M	39.37M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	38.88M	35.802M	38.88M	35.862M
5230MHz	Pass	Inf	78.06M	39.58M	71.1M	36.822M
5755MHz	Pass	500k	35.7M	46.537M	34.92M	55.292M
5795MHz	Pass	500k	33M	45.517M	33.78M	73.163M
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.12M	75.922M	80.88M	75.802M
5775MHz	Pass	500k	75.48M	76.522M	72M	85.517M

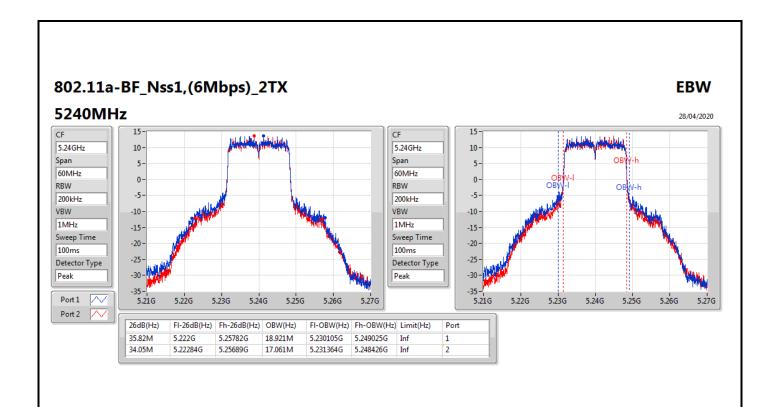
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth;

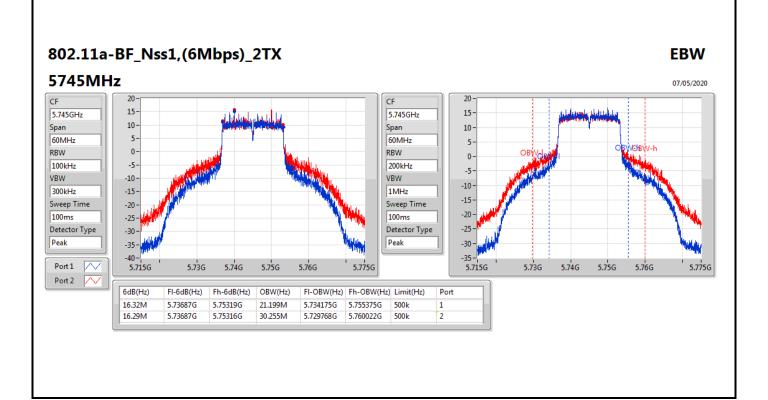
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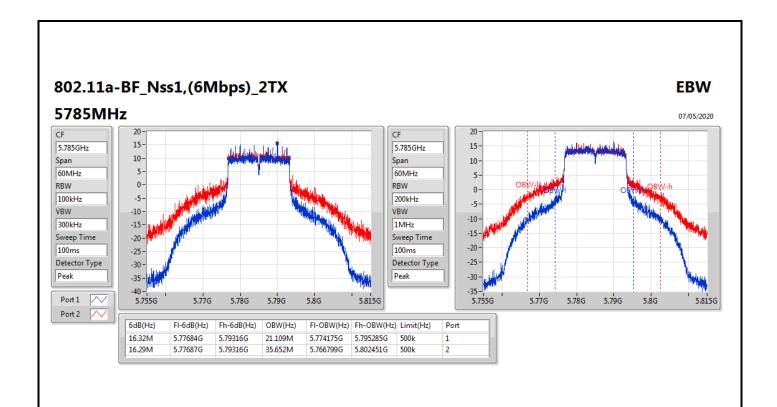
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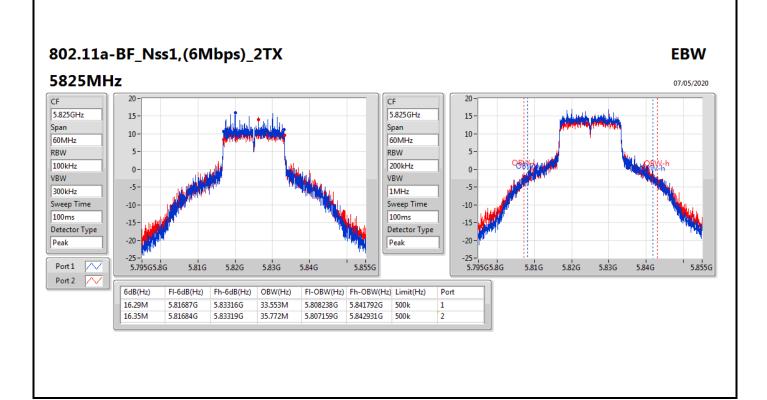


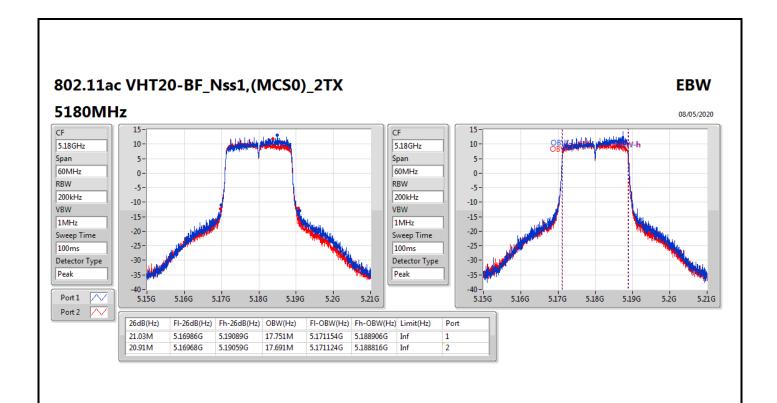


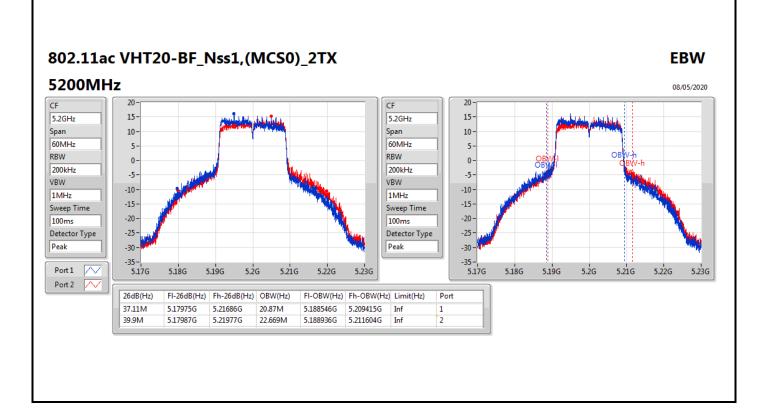


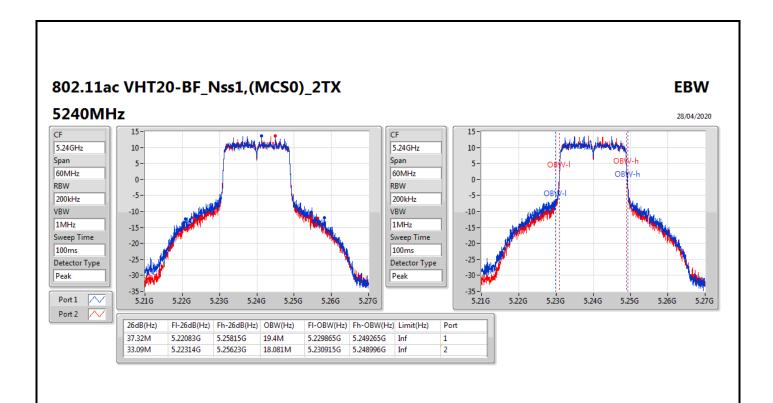


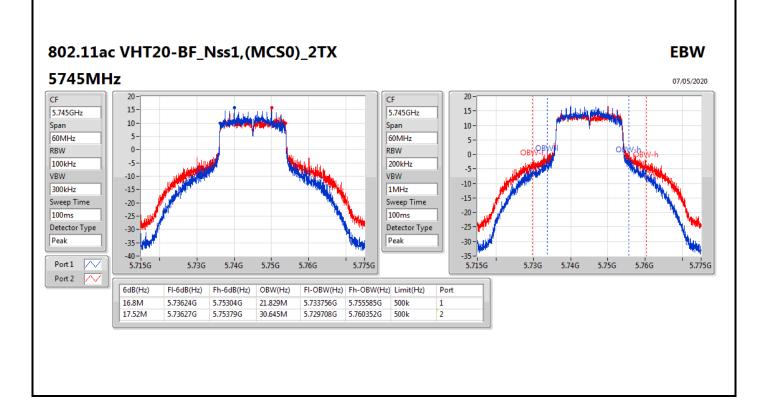


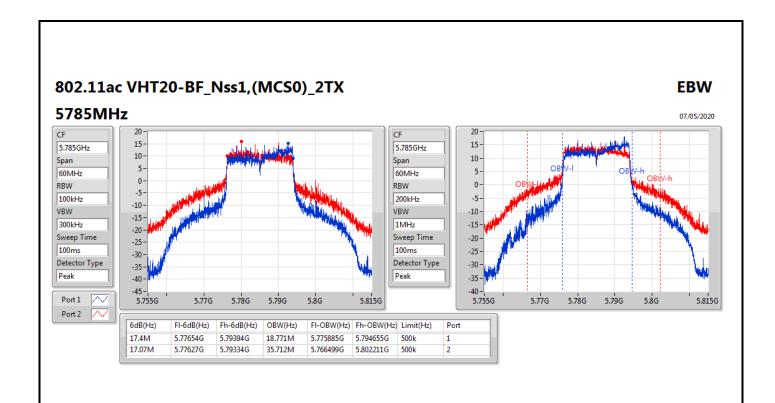


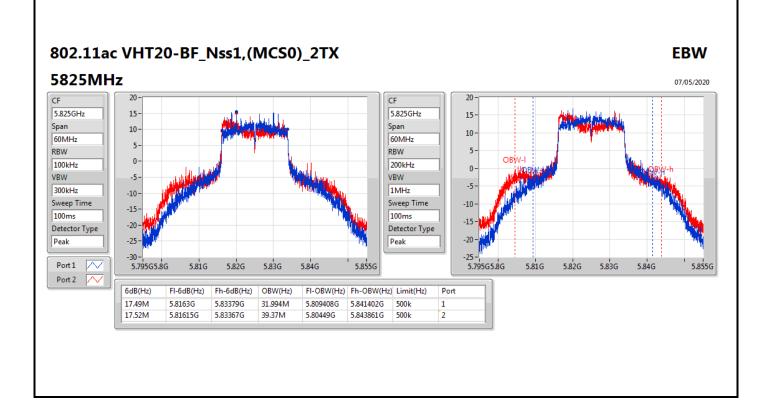


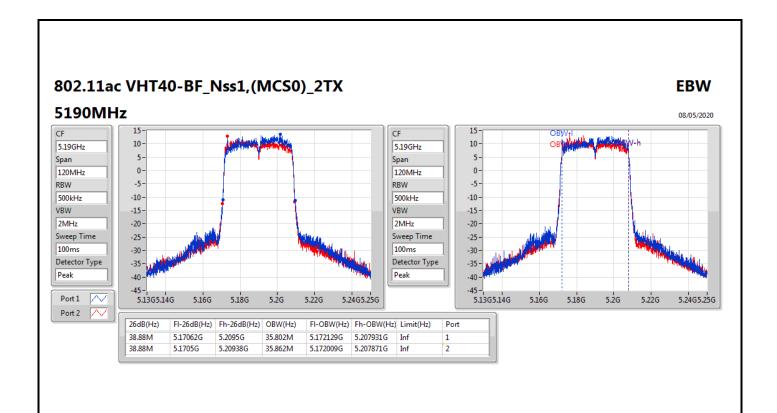


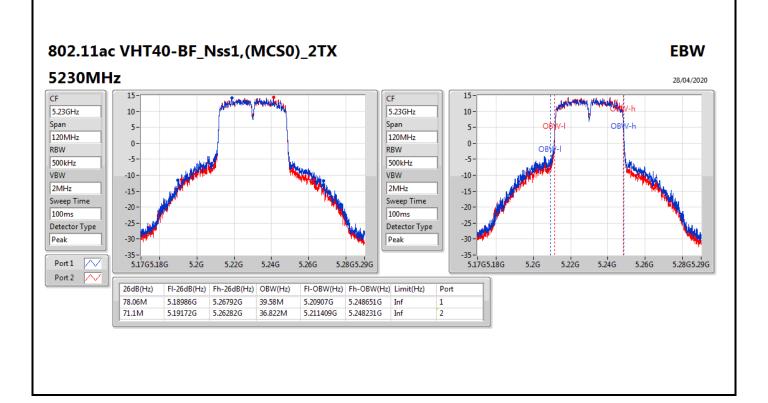


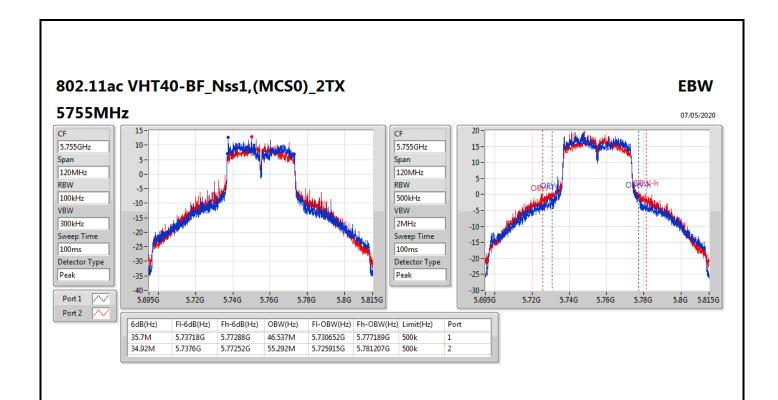


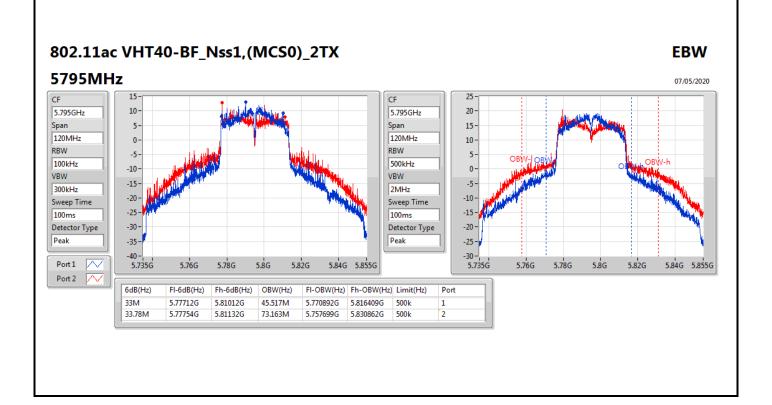


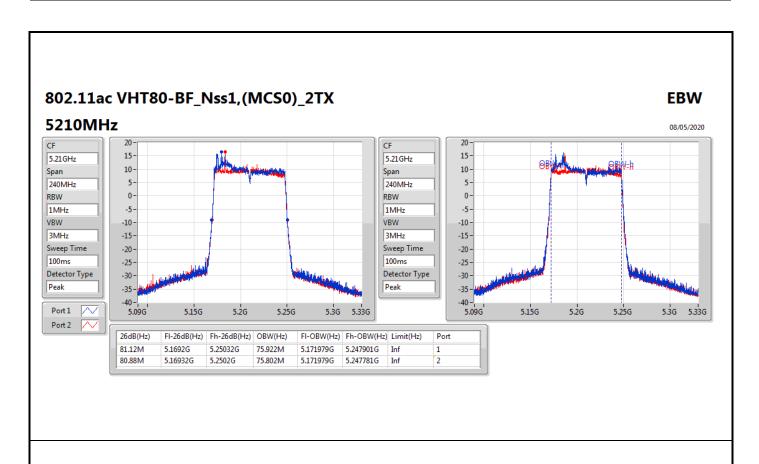


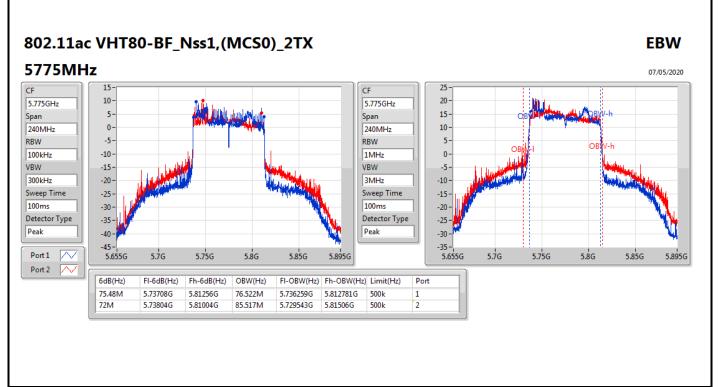














Average Power Result

Appendix C

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
5.15-5.25GHz	-	-
802.11a-BF_Nss1,(6Mbps)_2TX	28.34	0.68234
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	28.15	0.65313
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	26.85	0.48417
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	21.96	0.15704
5.725-5.85GHz	-	-
802.11a-BF_Nss1,(6Mbps)_2TX	28.35	0.68391
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	28.41	0.69343
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	28.23	0.66527
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	26.15	0.41210



Average Power Result

Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	6.21	21.94	21.72	24.84	29.79
5200MHz	Pass	6.21	25.37	25.28	28.34	29.79
5240MHz	Pass	6.21	24.25	24.07	27.17	29.79
5745MHz	Pass	6.11	25.43	25.25	28.35	29.89
5785MHz	Pass	6.11	25.35	25.18	28.28	29.89
5825MHz	Pass	6.11	25.12	24.75	27.95	29.89
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	6.21	22.56	22.31	25.45	29.79
5200MHz	Pass	6.21	25.23	25.04	28.15	29.79
5240MHz	Pass	6.21	24.09	24.02	27.07	29.79
5745MHz	Pass	6.11	25.52	25.28	28.41	29.89
5785MHz	Pass	6.11	25.16	25.34	28.26	29.89
5825MHz	Pass	6.11	25.09	24.71	27.91	29.89
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	6.21	20.06	20.02	23.05	29.79
5230MHz	Pass	6.21	23.94	23.73	26.85	29.79
5755MHz	Pass	6.11	25.17	25.26	28.23	29.89
5795MHz	Pass	6.11	25.29	24.84	28.08	29.89
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	6.21	19.03	18.87	21.96	29.79
5775MHz	Pass	6.11	23.07	23.21	26.15	29.89

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



Summary

Mode	PD
	(dBm/RBW)
5.15-5.25GHz	·
802.11a-BF_Nss1,(6Mbps)_2TX	15.74
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	15.16
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	11.24
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	3.38
5.725-5.85GHz	·
802.11a-BF_Nss1,(6Mbps)_2TX	14.18
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	14.04
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	12.17
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	6.25

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

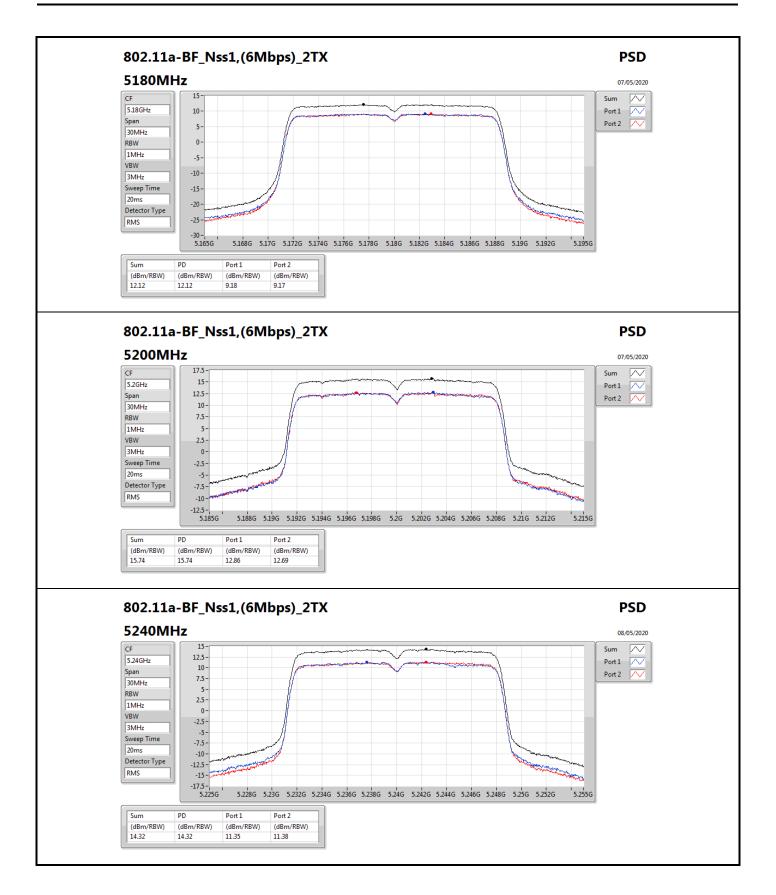


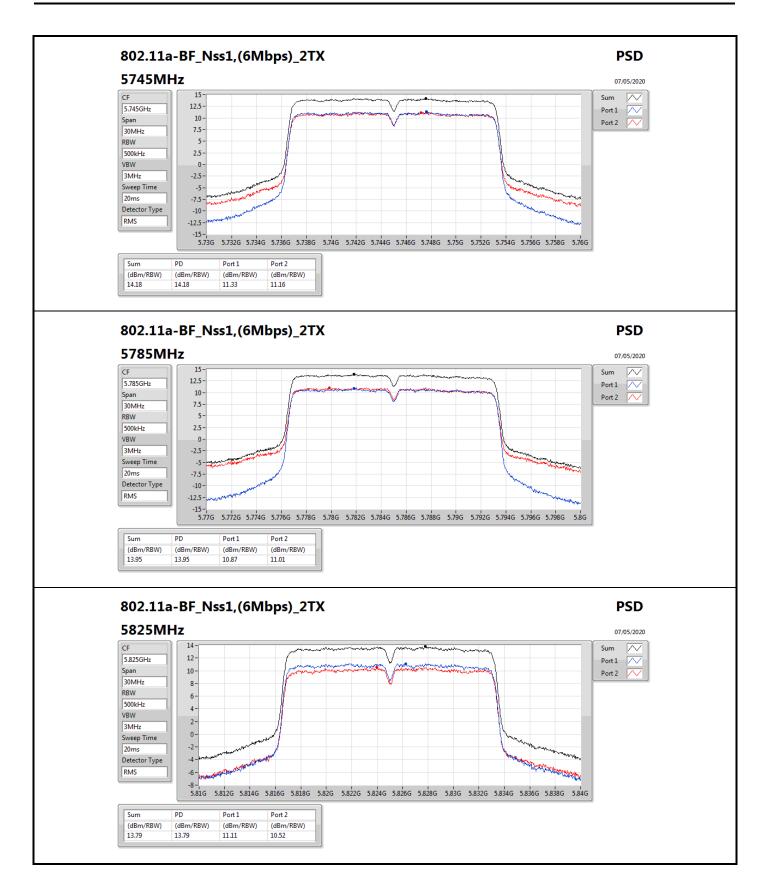
Appendix C **PSD Result**

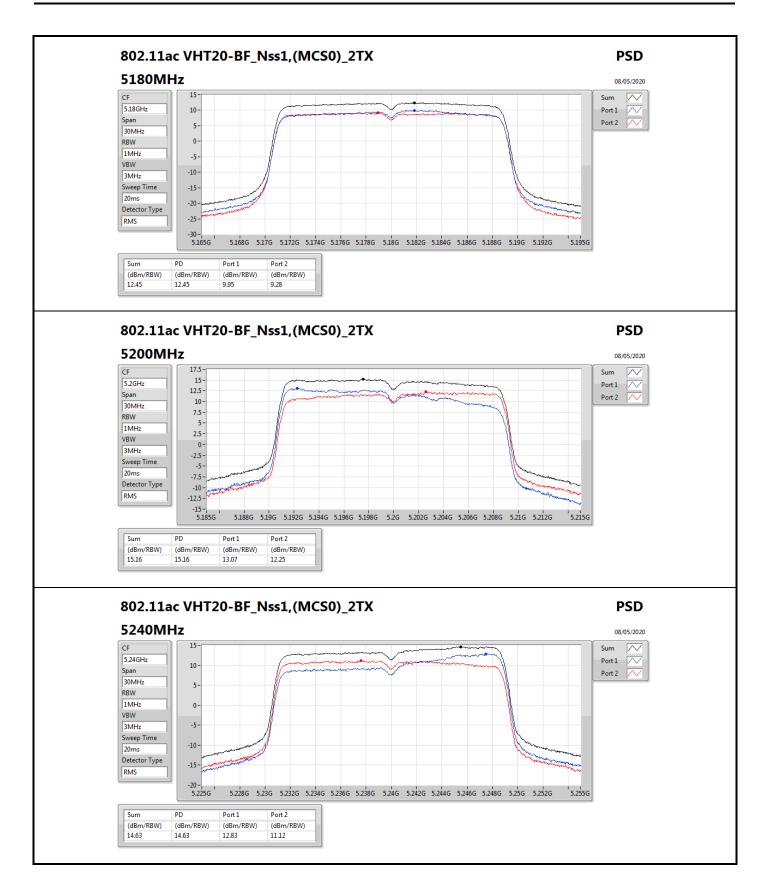
Result

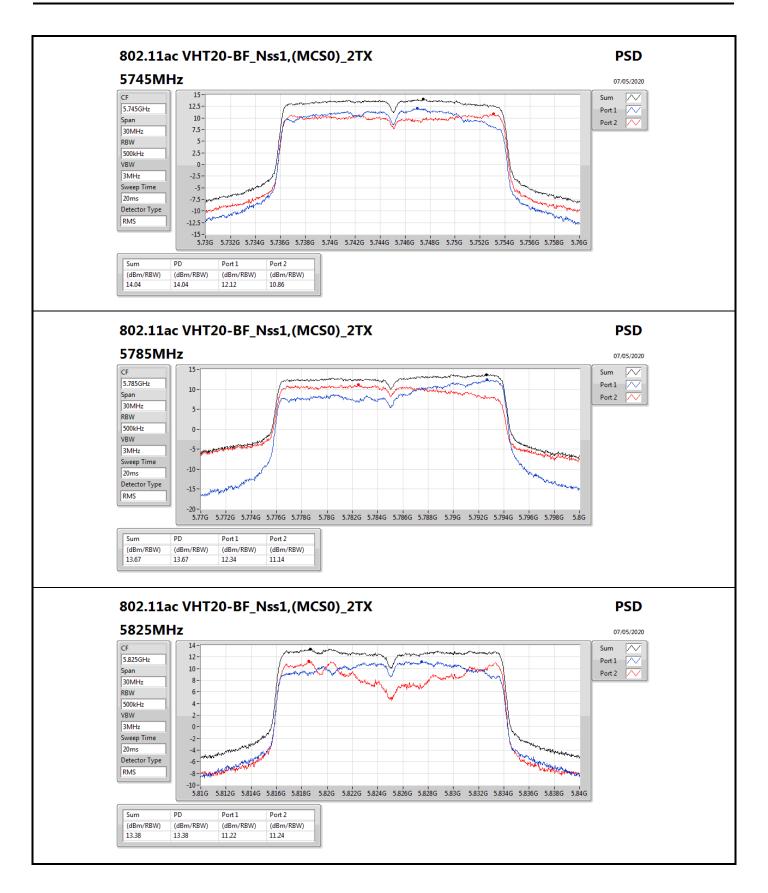
Mode	Result	DG	Port 1	Port 2	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	6.21	9.18	9.17	12.12	16.79
5200MHz	Pass	6.21	12.86	12.69	15.74	16.79
5240MHz	Pass	6.21	11.35	11.38	14.32	16.79
5745MHz	Pass	6.11	11.33	11.16	14.18	29.89
5785MHz	Pass	6.11	10.87	11.01	13.95	29.89
5825MHz	Pass	6.11	11.11	10.52	13.79	29.89
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	6.21	9.95	9.28	12.45	16.79
5200MHz	Pass	6.21	13.07	12.25	15.16	16.79
5240MHz	Pass	6.21	12.83	11.12	14.63	16.79
5745MHz	Pass	6.11	12.12	10.86	14.04	29.89
5785MHz	Pass	6.11	12.34	11.14	13.67	29.89
5825MHz	Pass	6.11	11.22	11.24	13.38	29.89
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	6.21	5.21	4.26	7.49	16.79
5230MHz	Pass	6.21	9.35	8.22	11.24	16.79
5755MHz	Pass	6.11	10.05	9.29	12.17	29.89
5795MHz	Pass	6.11	10.32	8.18	11.55	29.89
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	6.21	1.40	-0.37	3.38	16.79
5775MHz	Pass	6.11	4.85	3.70	6.25	29.89

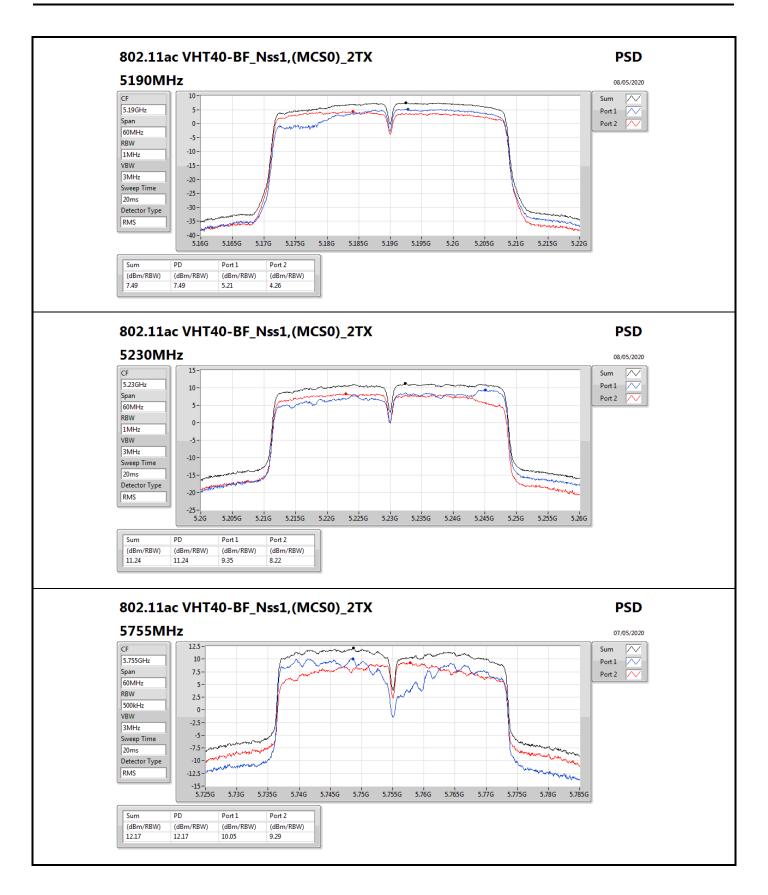
DG = Directional Gain; RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;

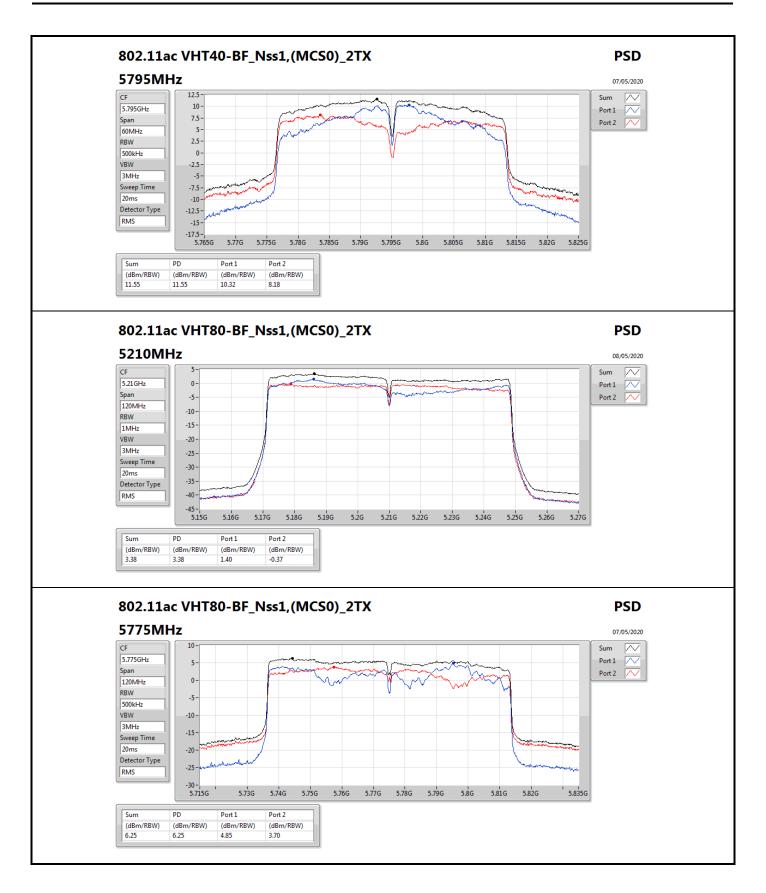














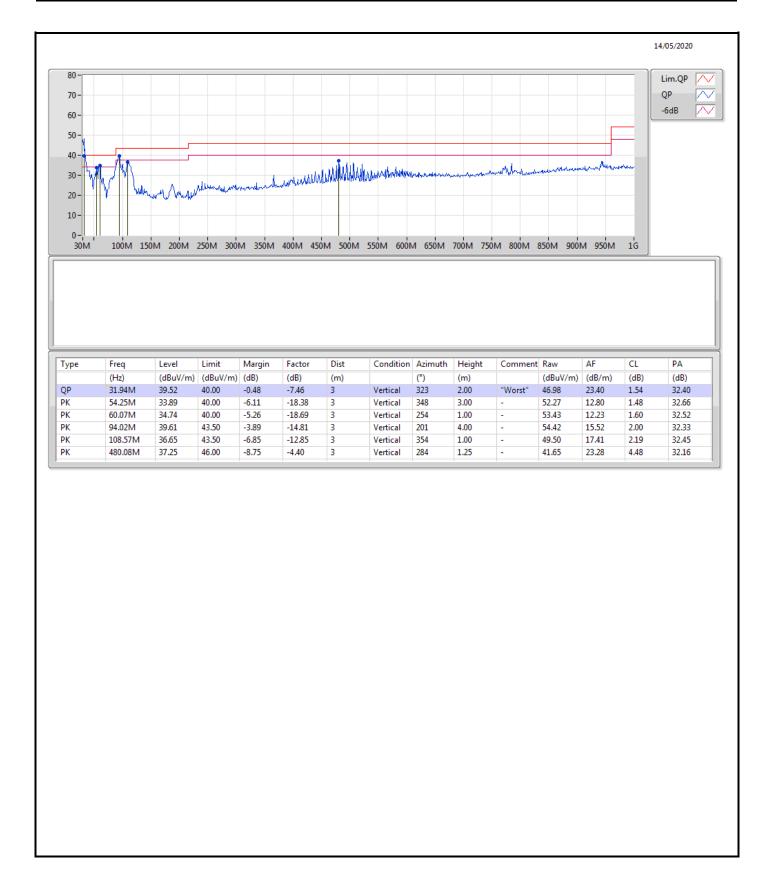
Radiated Emissions below 1GHz

Appendix E.1

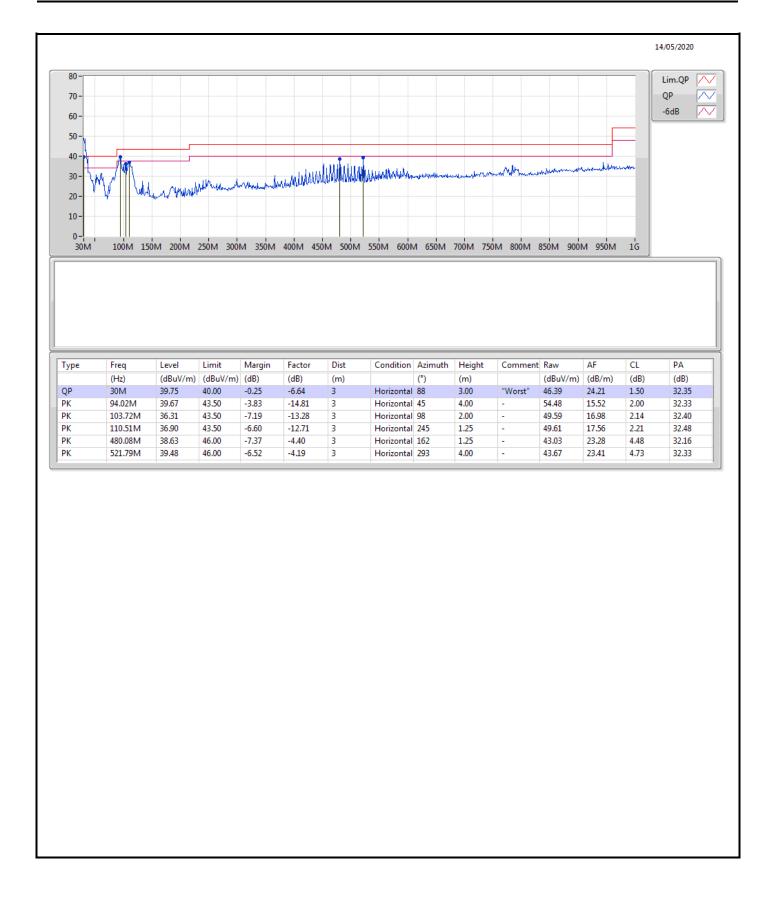
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	
Mode 6	Pass	QP	30M	39.75	40.00	-0.25	Horizontal











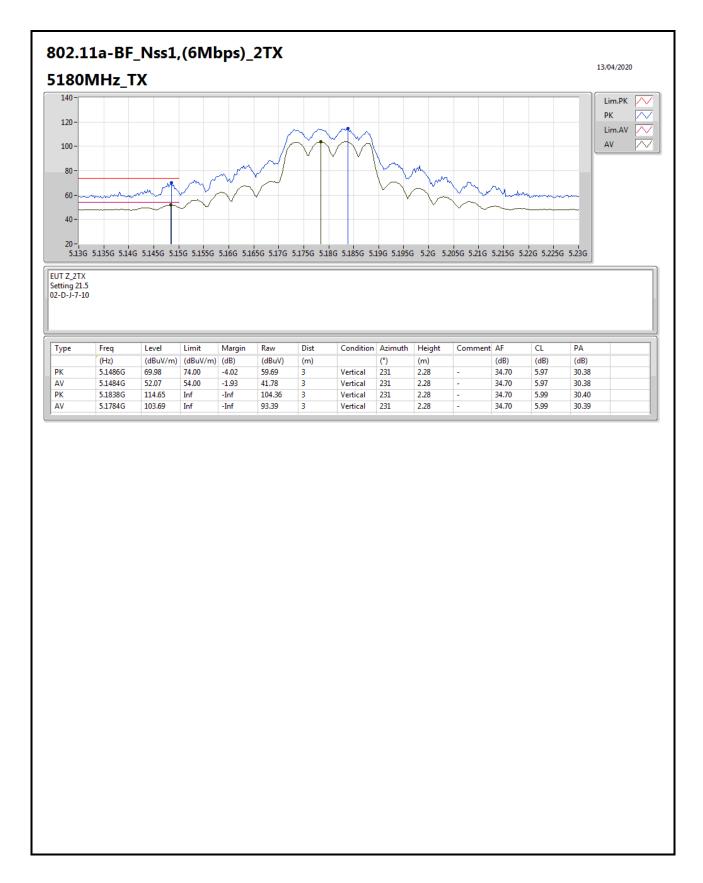
RSE TX above 1GHz Result

Appendix E.2

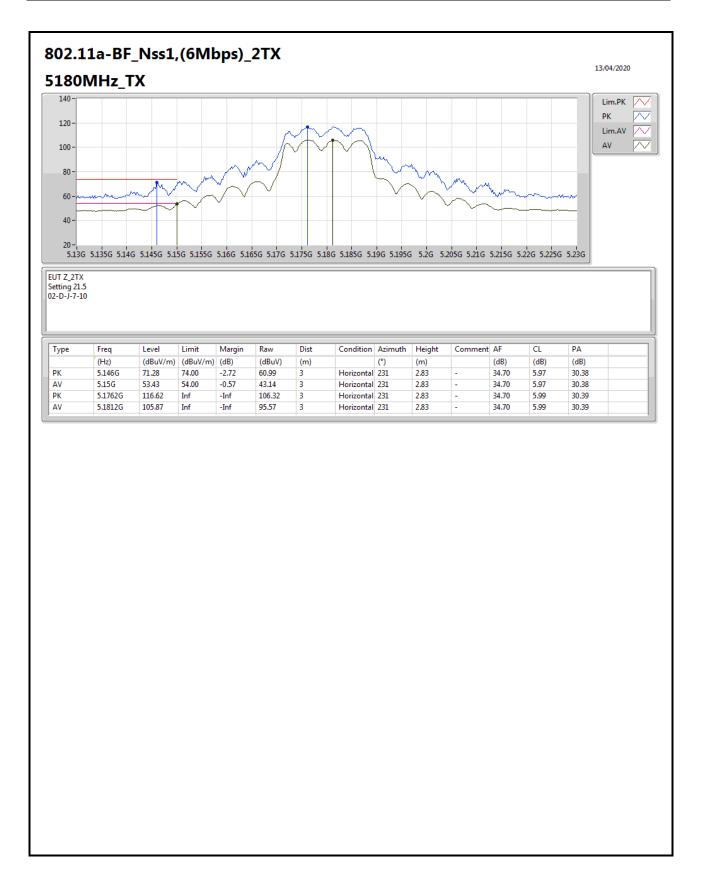
For 5GHz Band 1: Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	Pass	AV	5.15G	53.92	54.00	-0.08	3	Horizontal	260	1.11	-

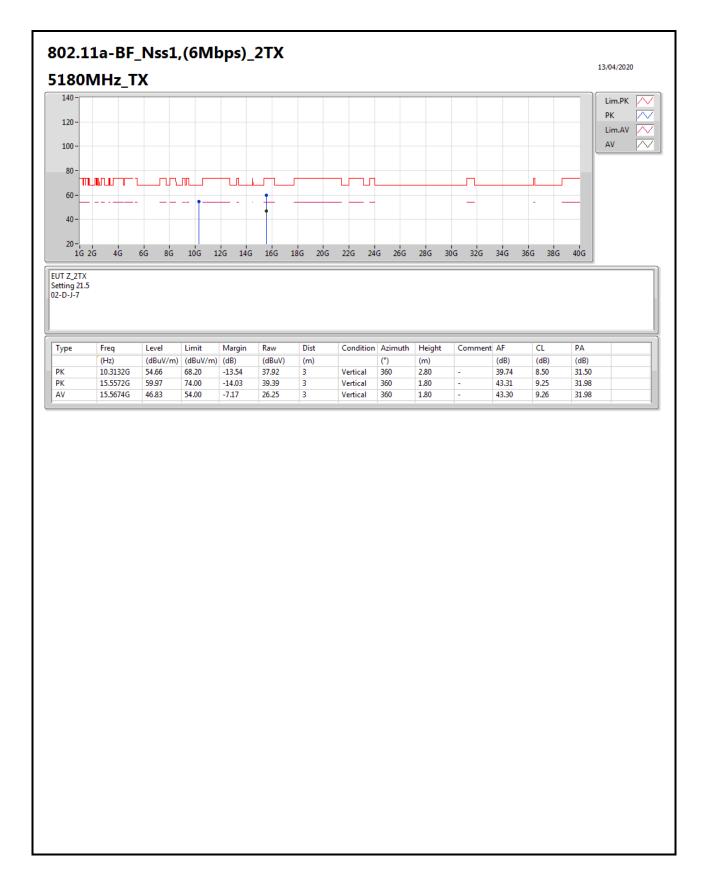




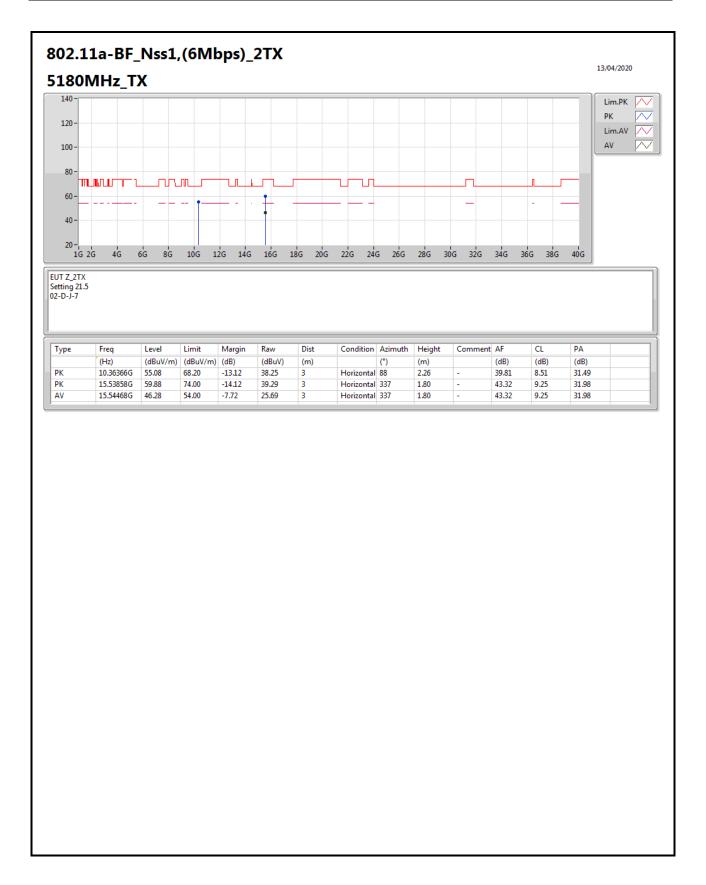




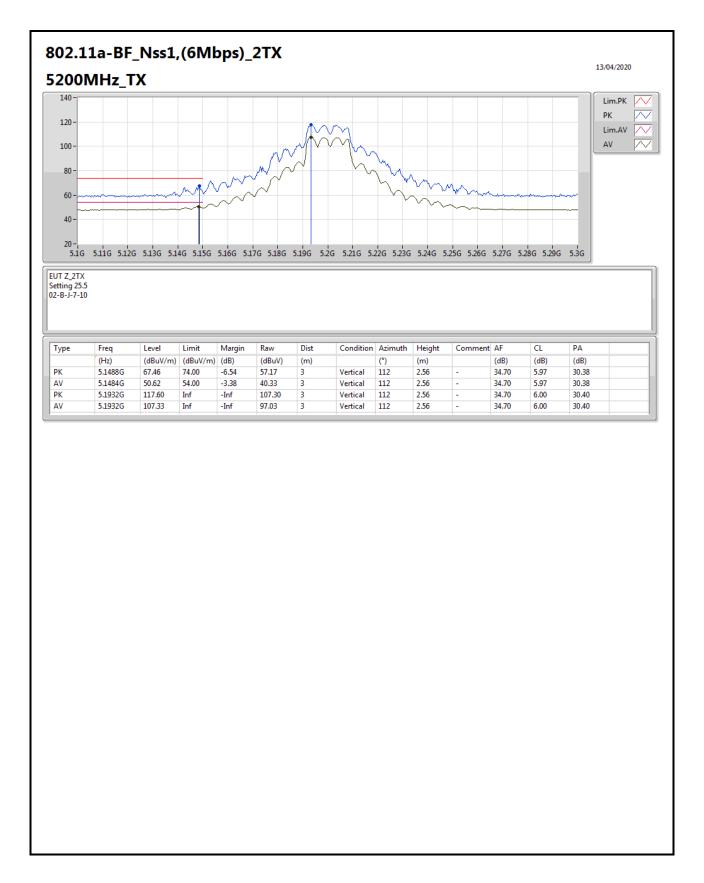




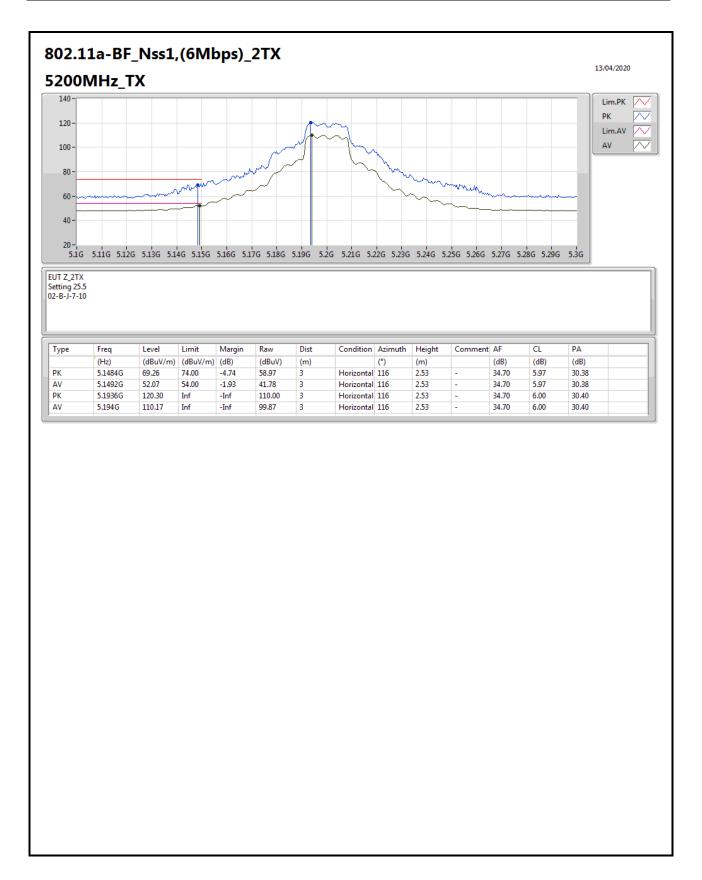




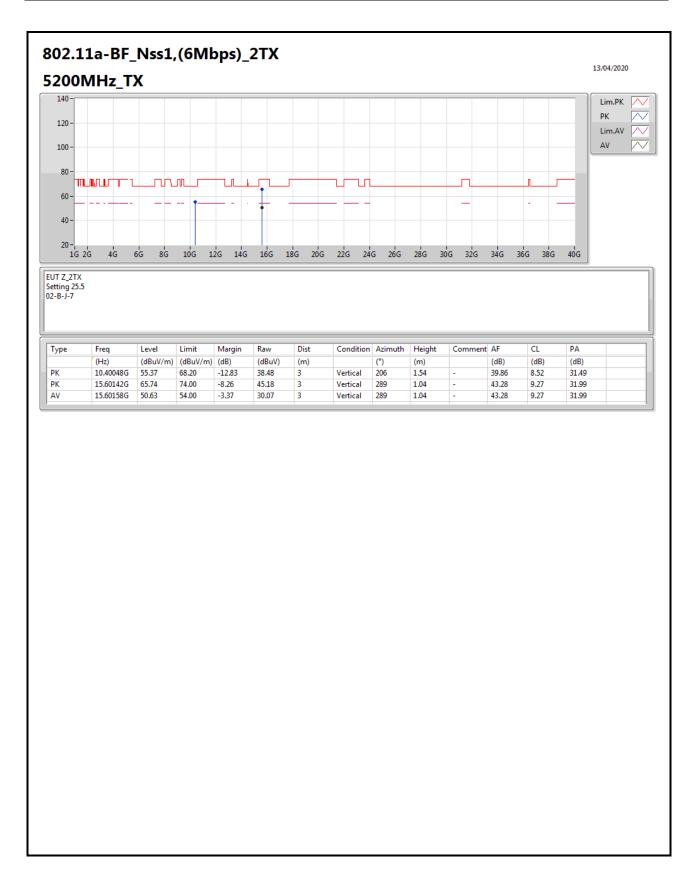




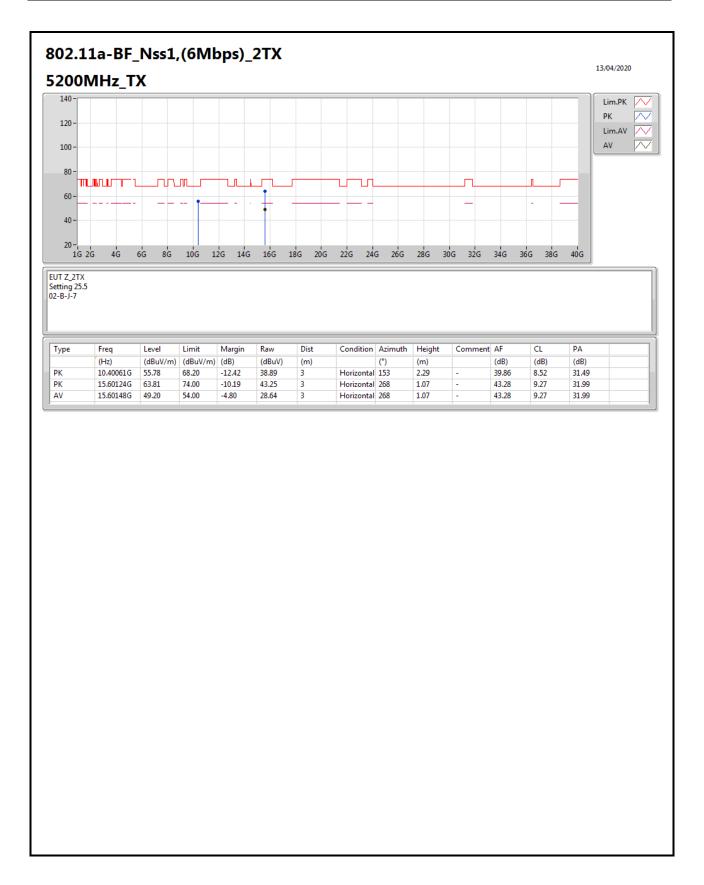




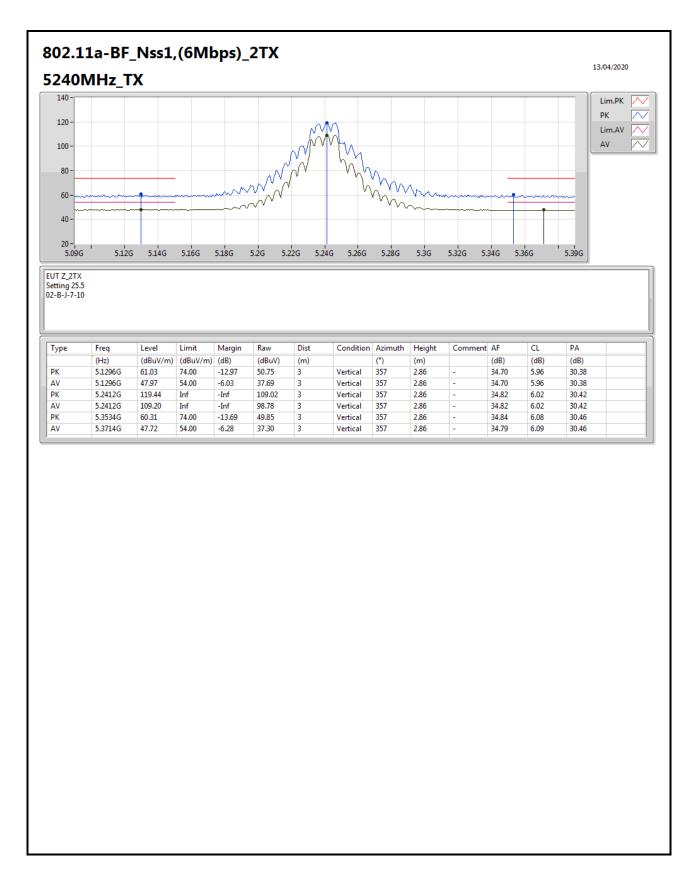




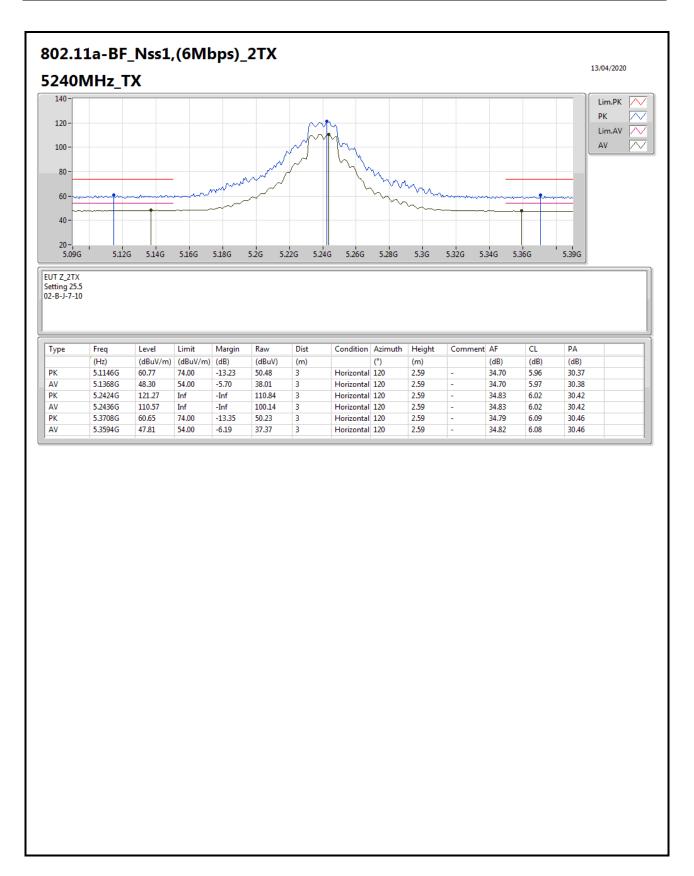




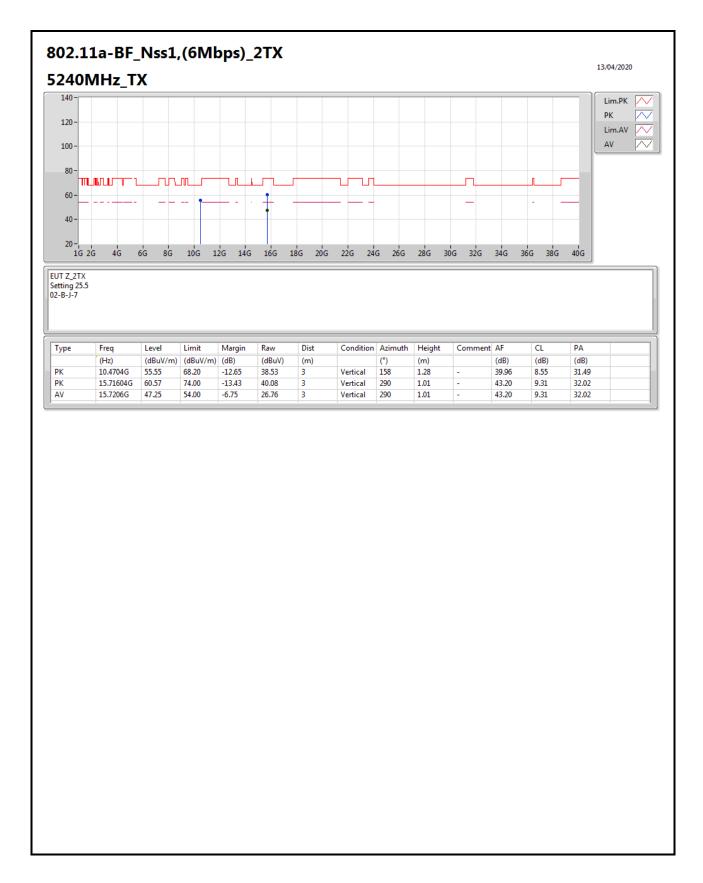




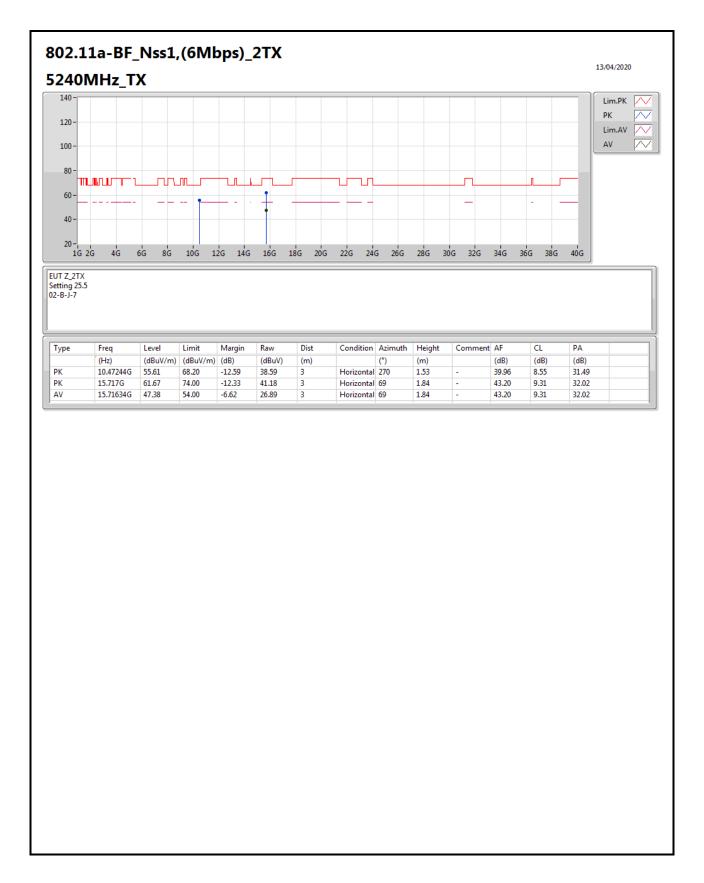




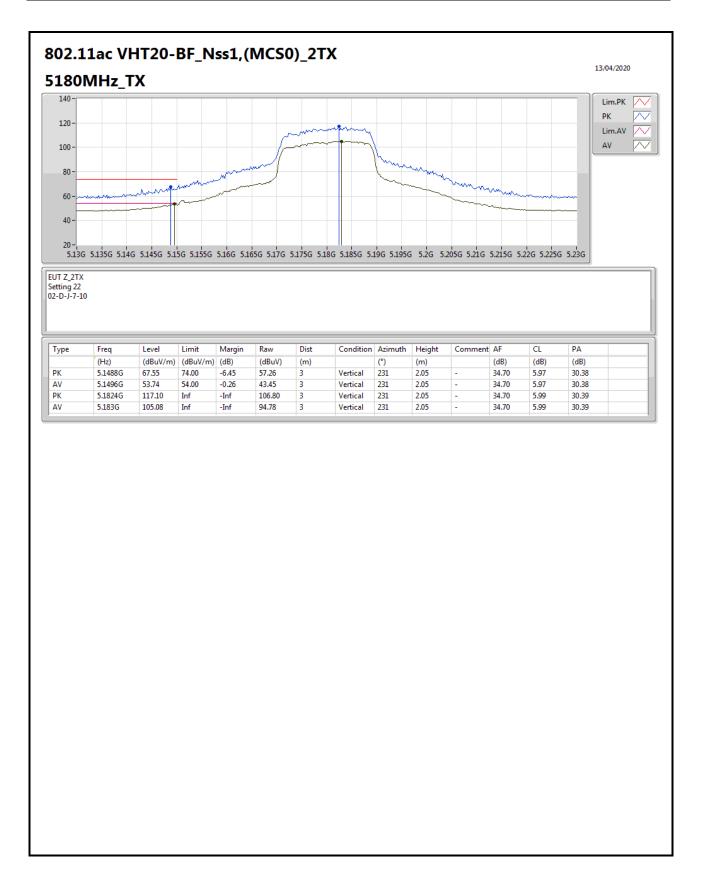




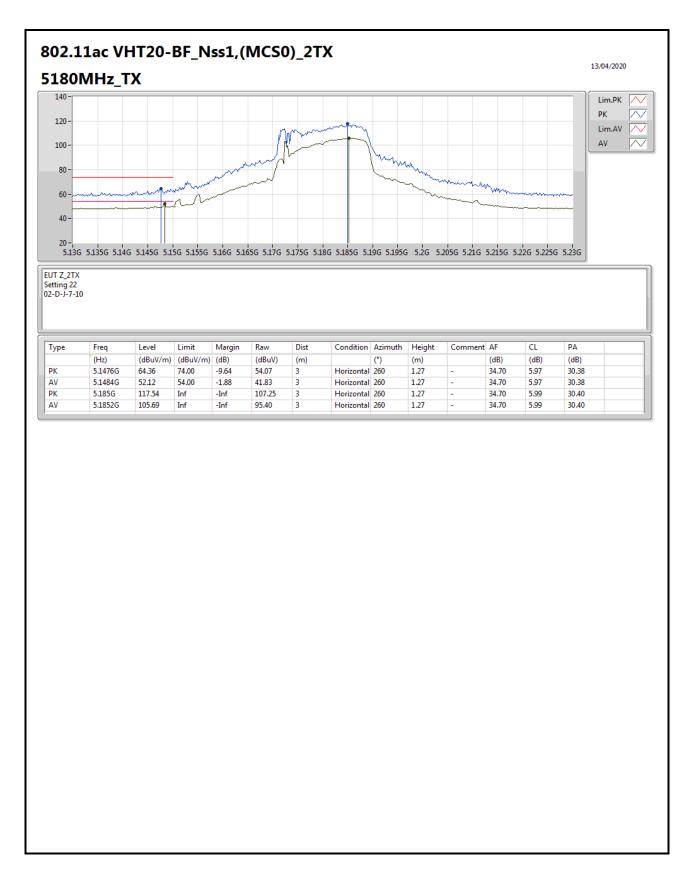




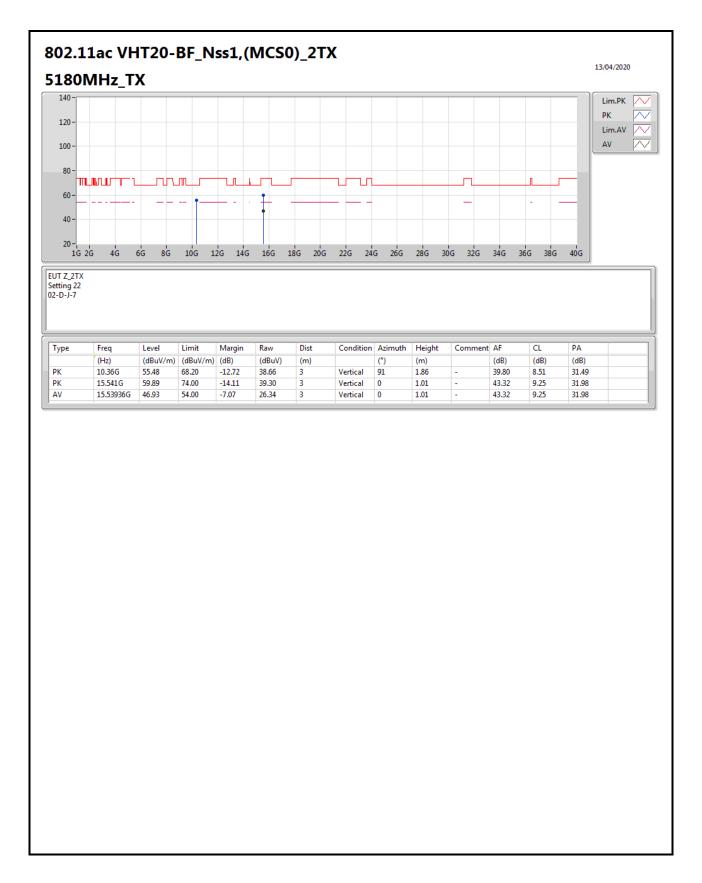




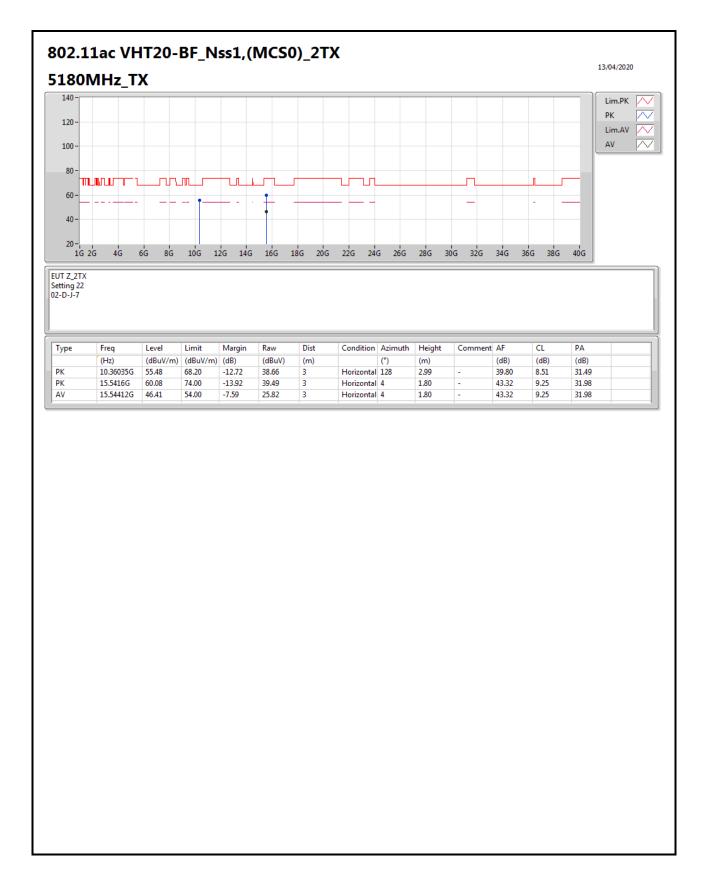




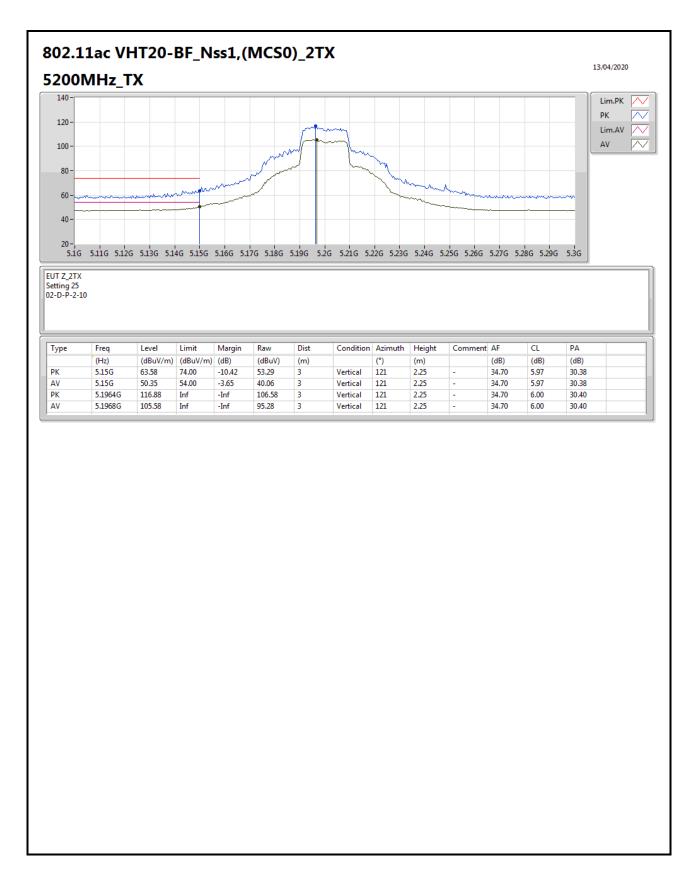




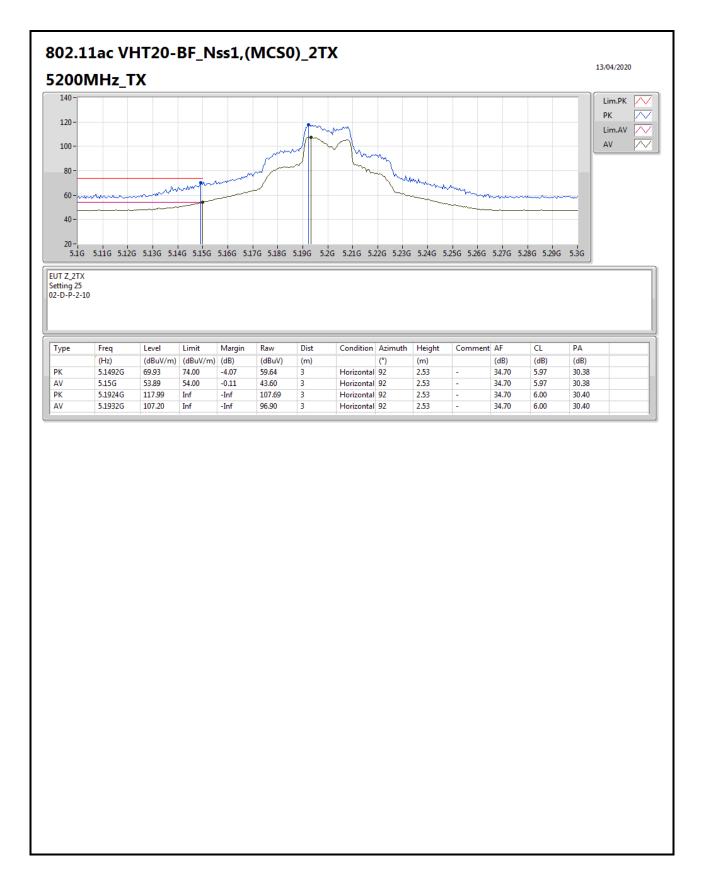




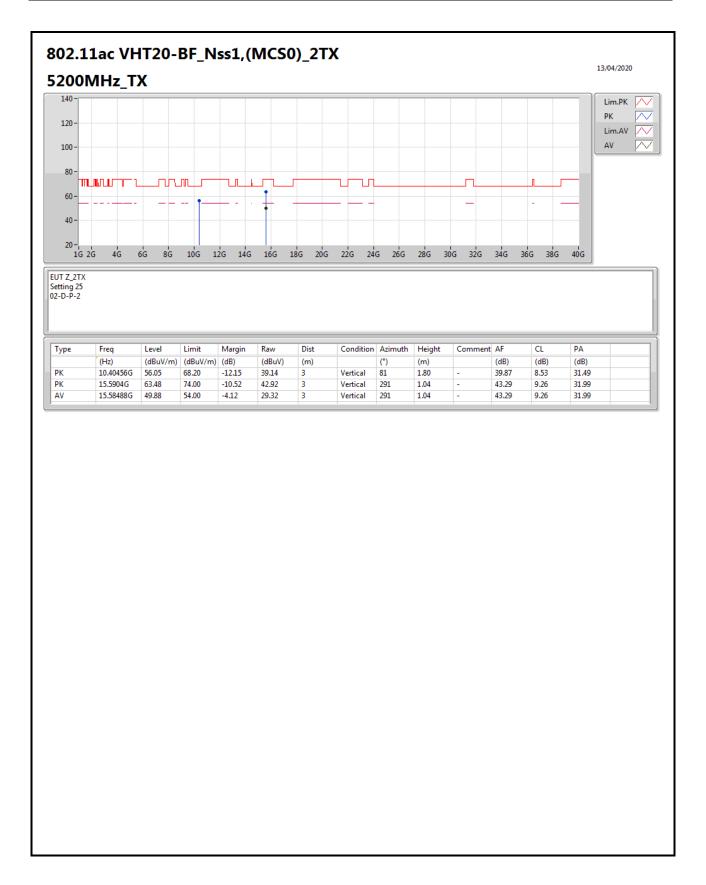




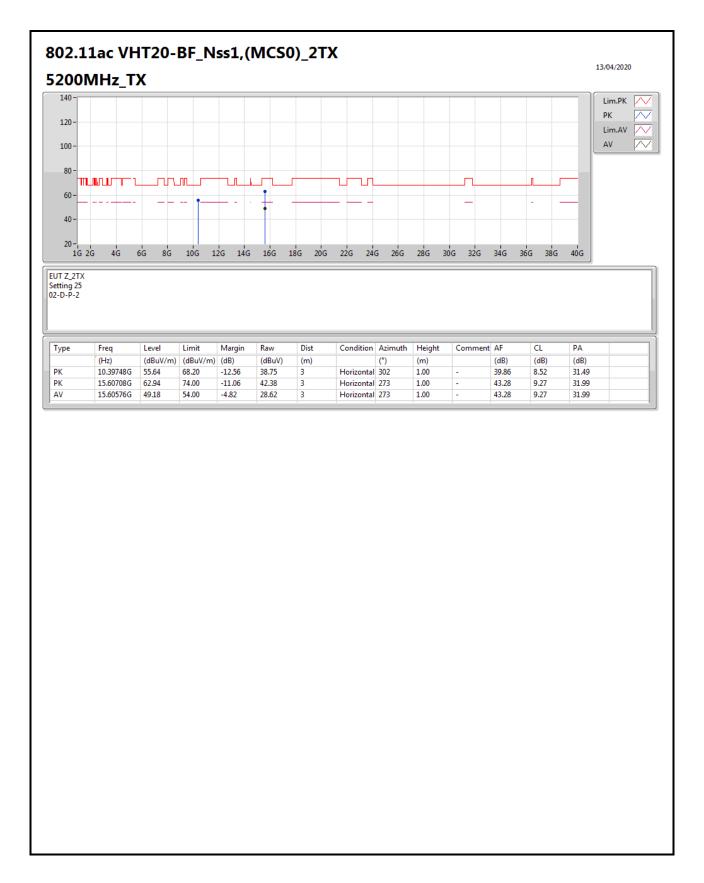




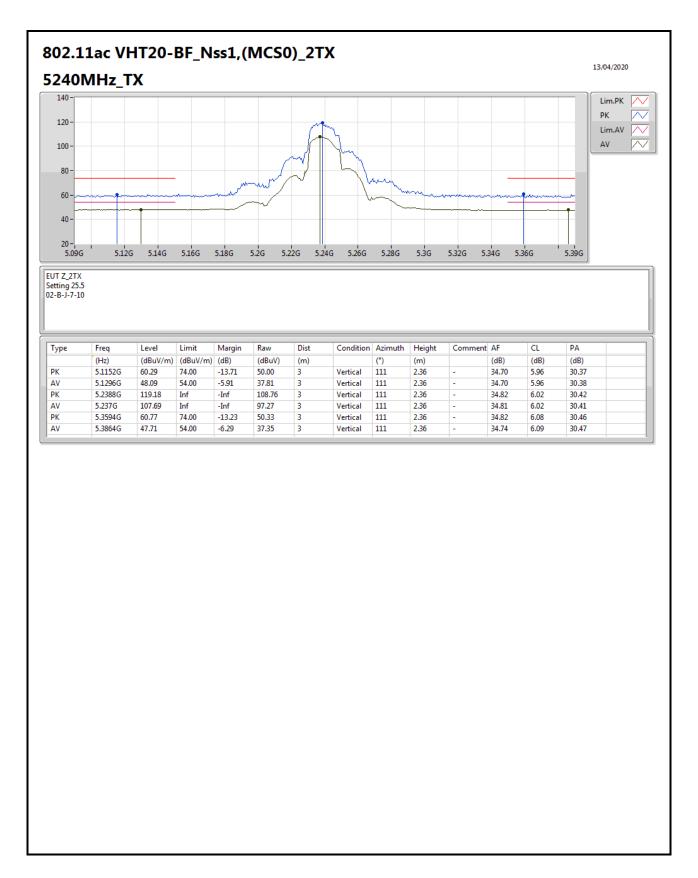




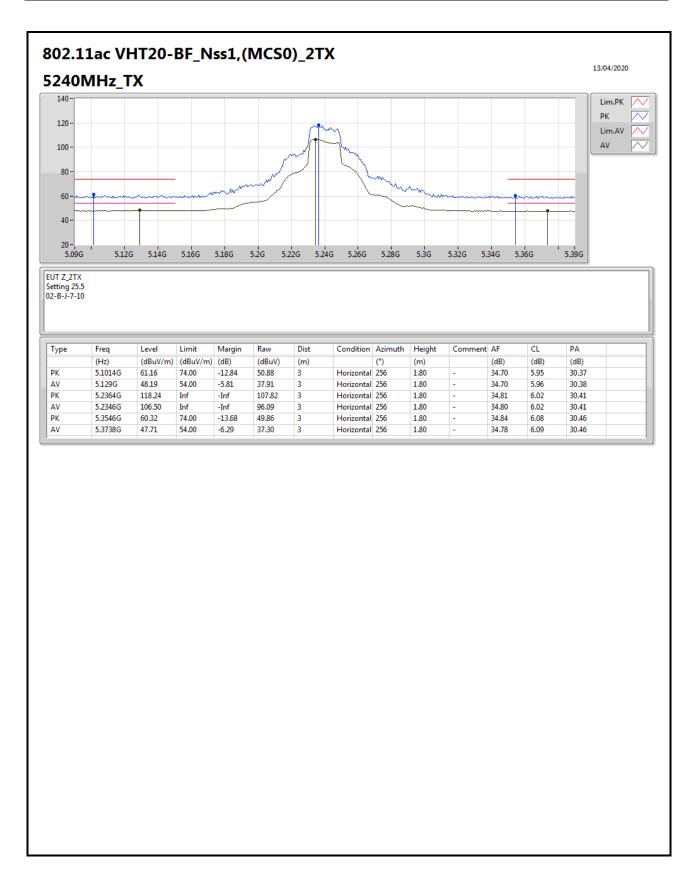




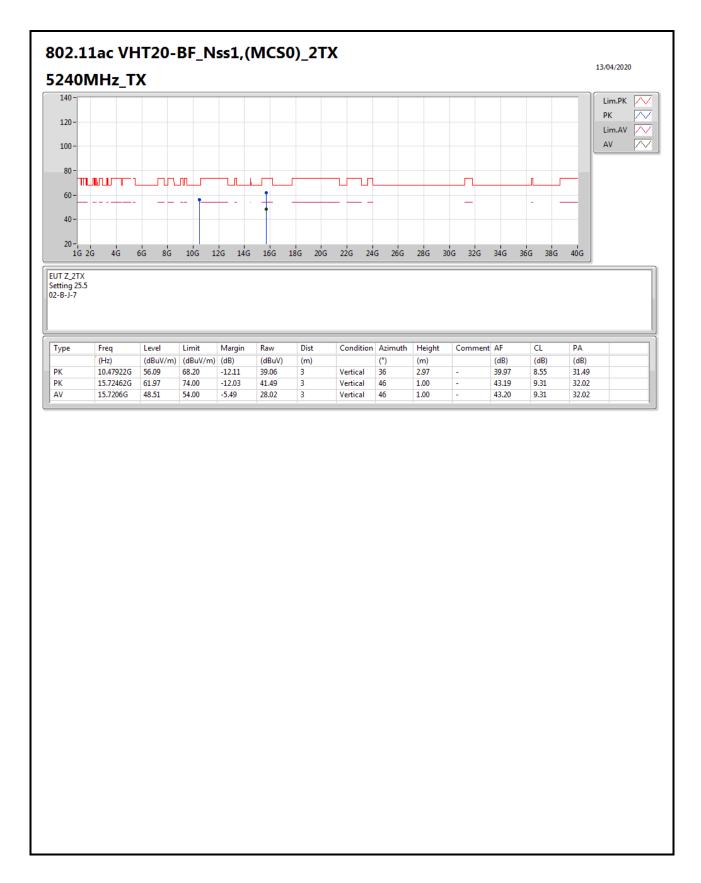




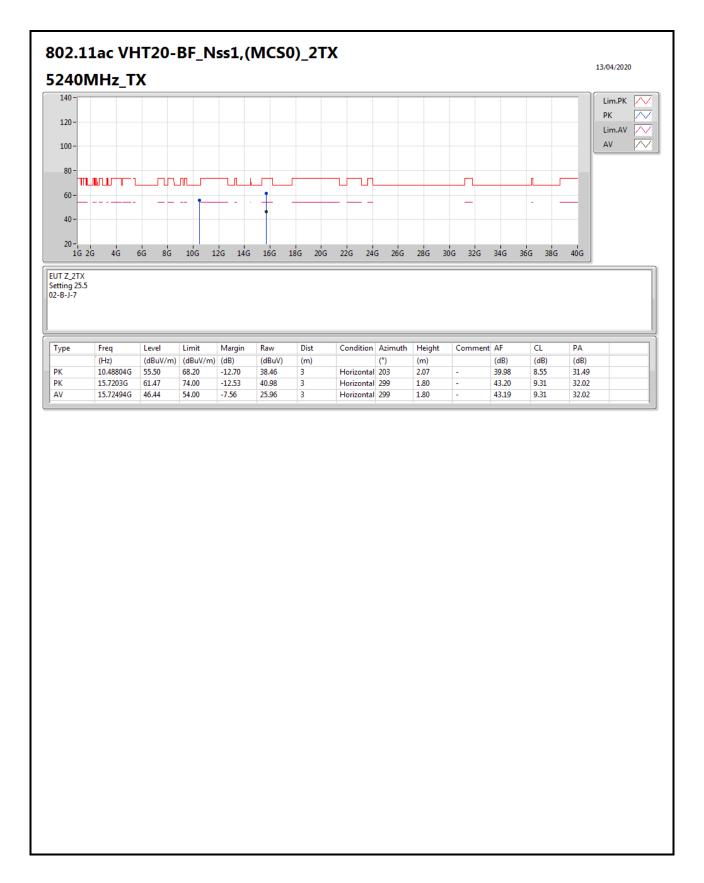




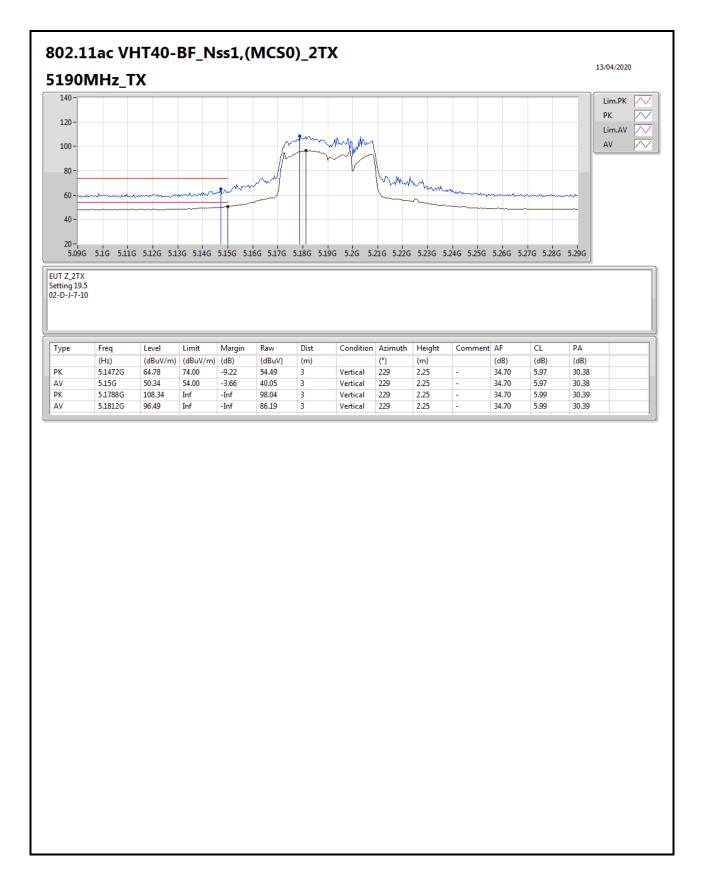




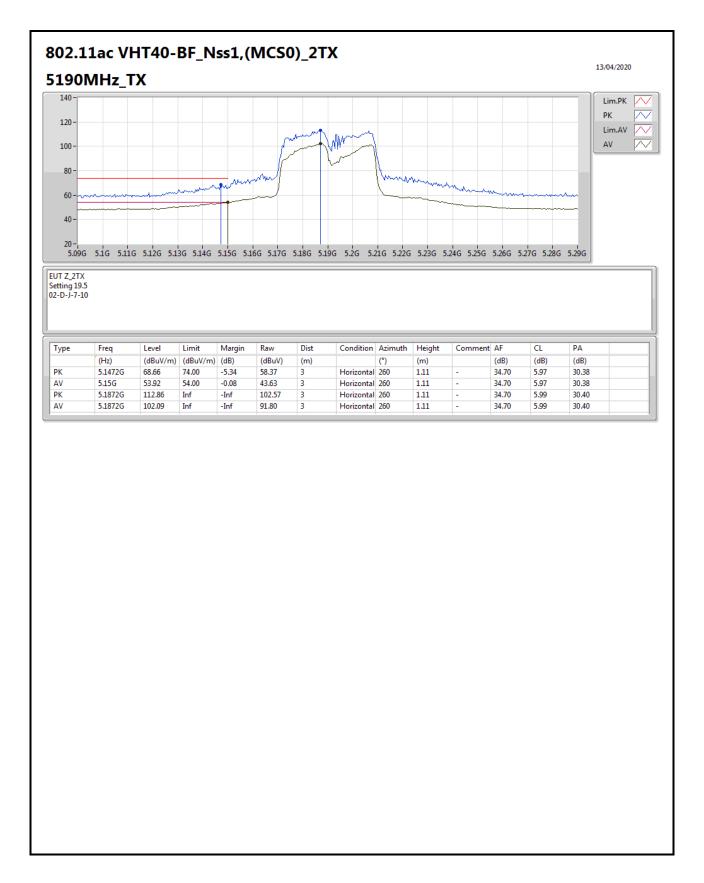




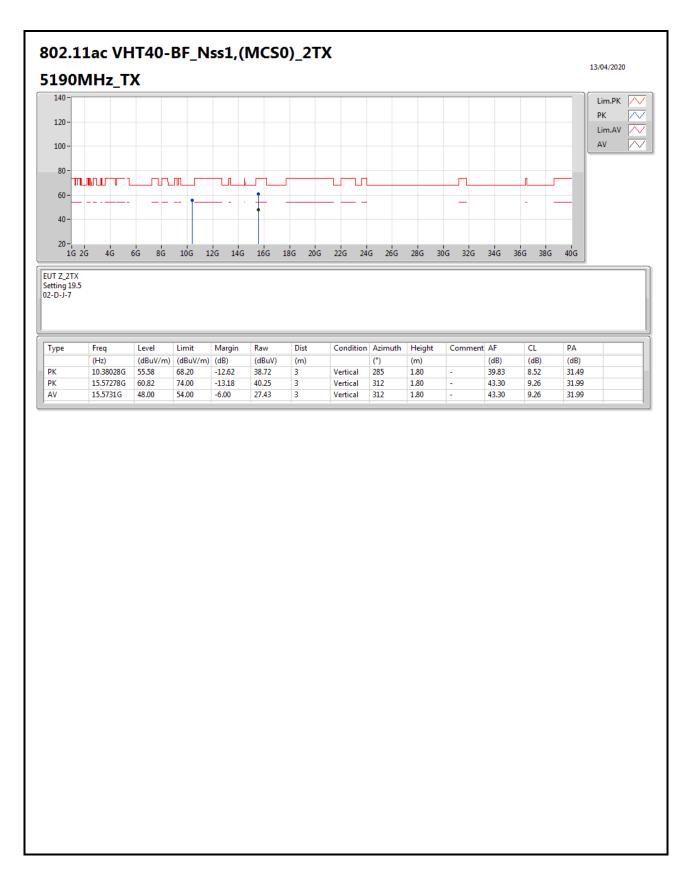




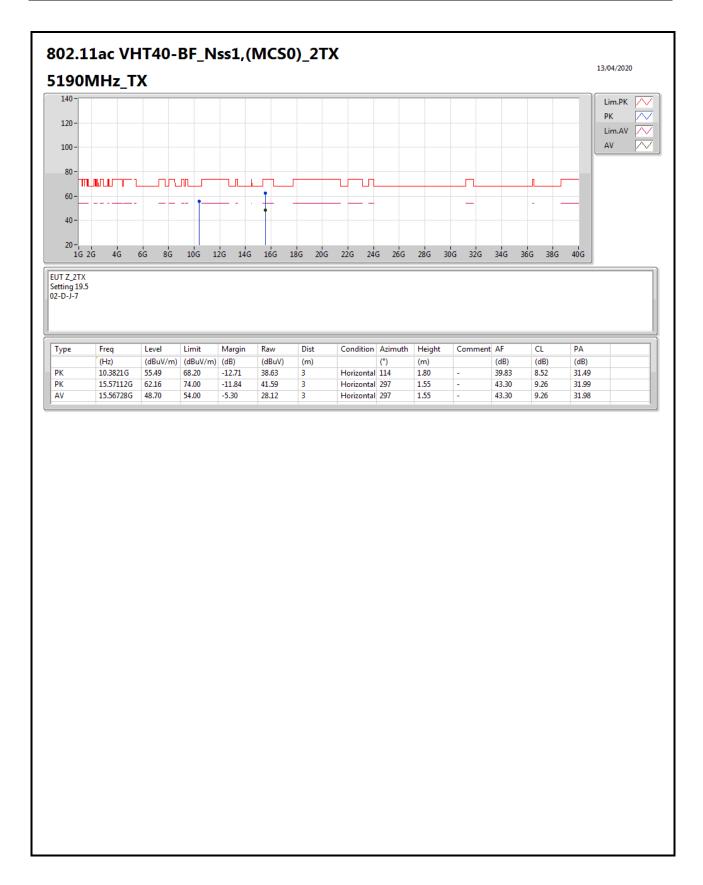




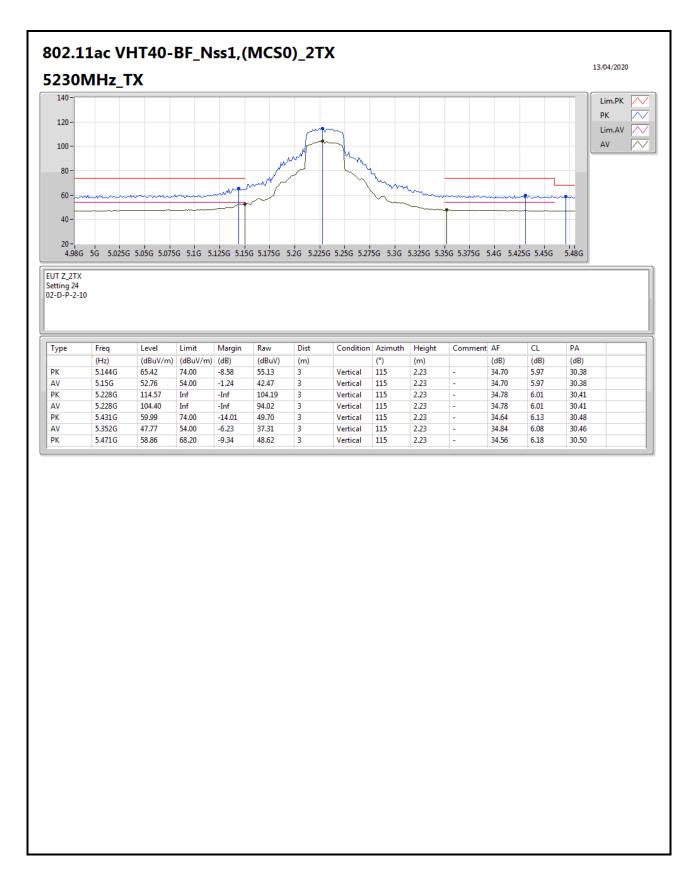




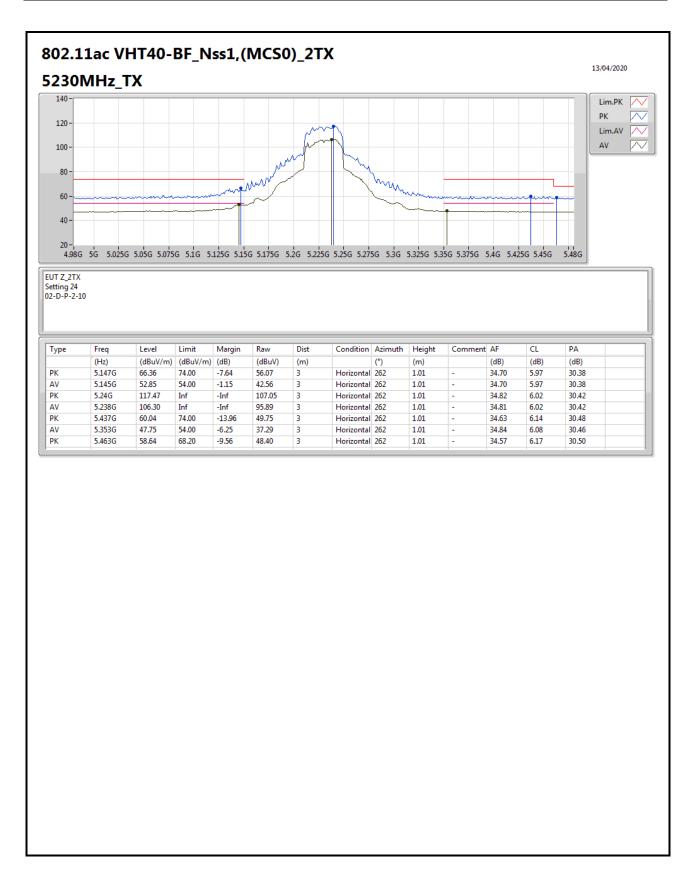




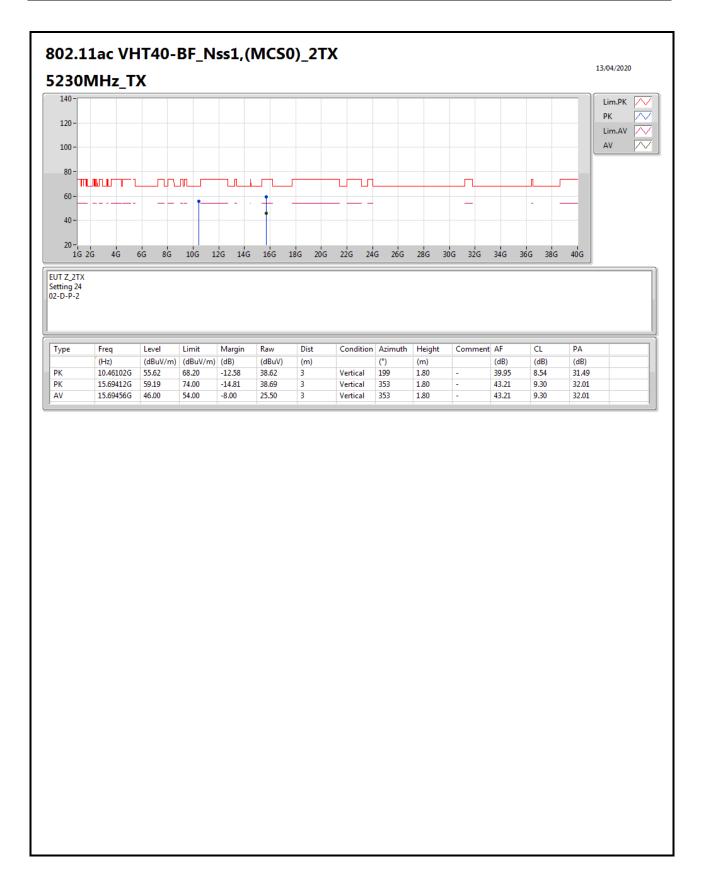




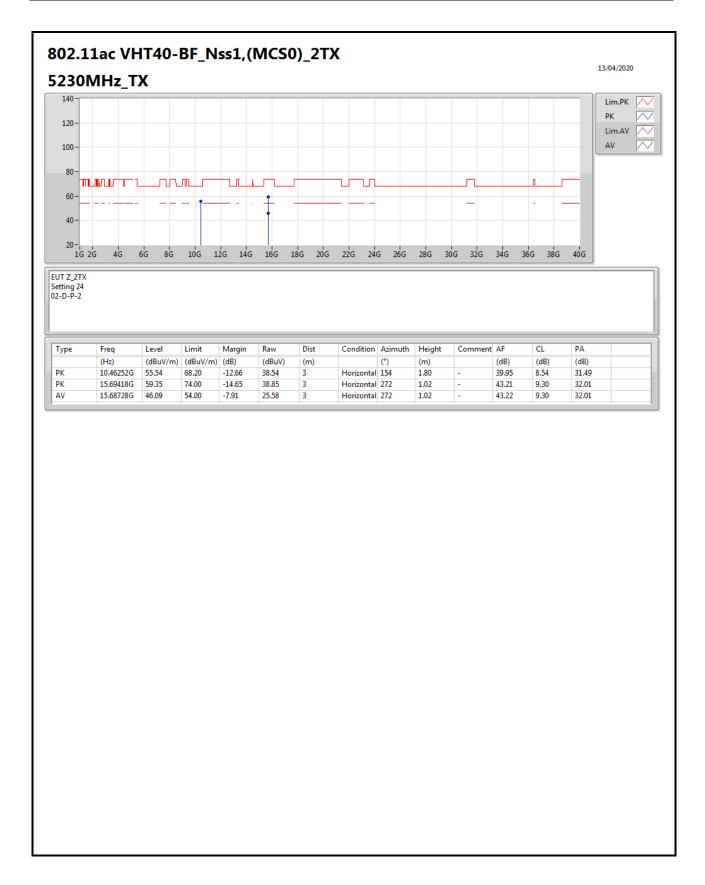




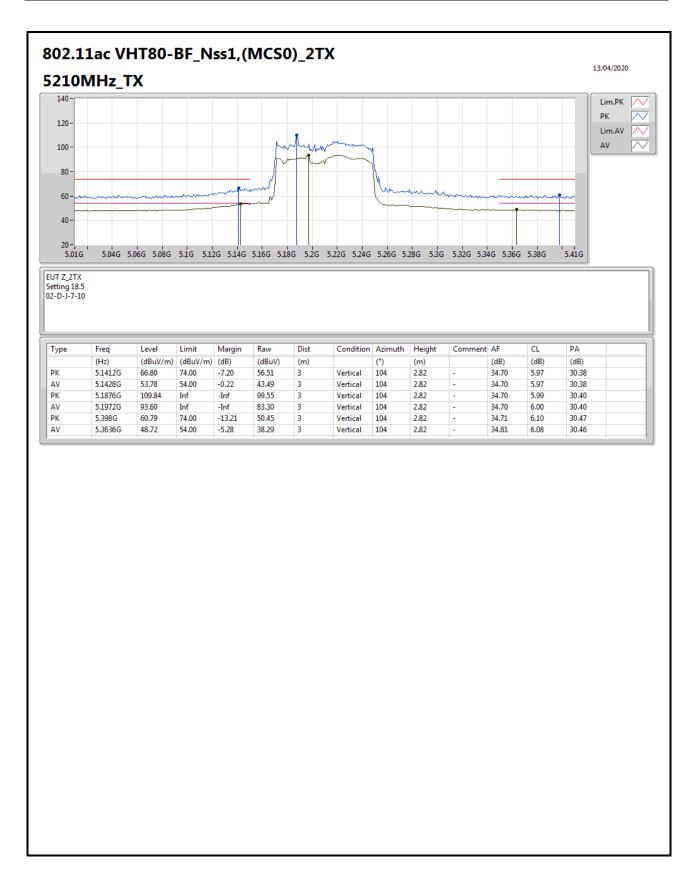




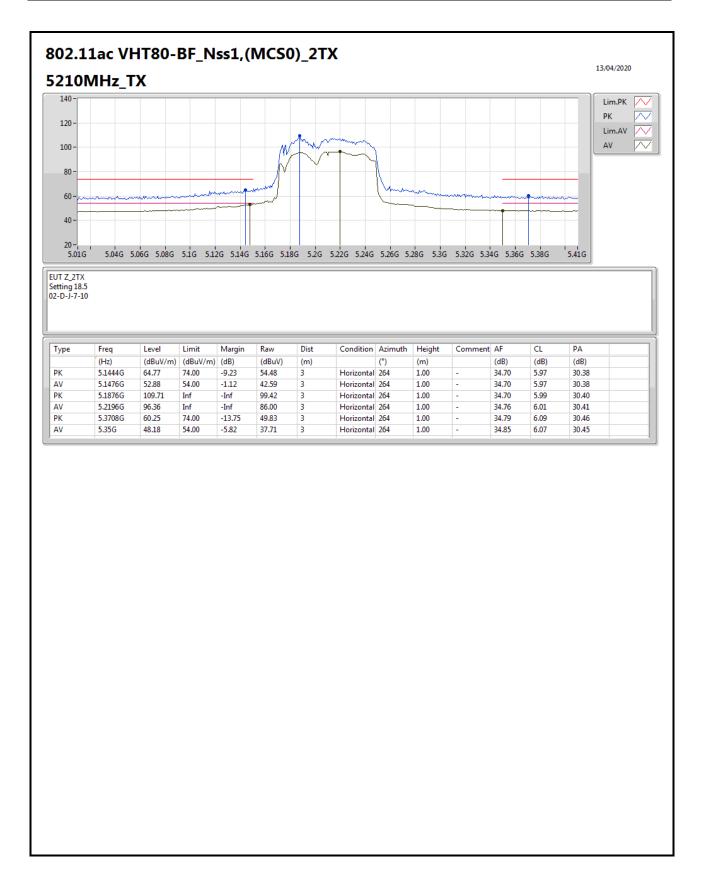




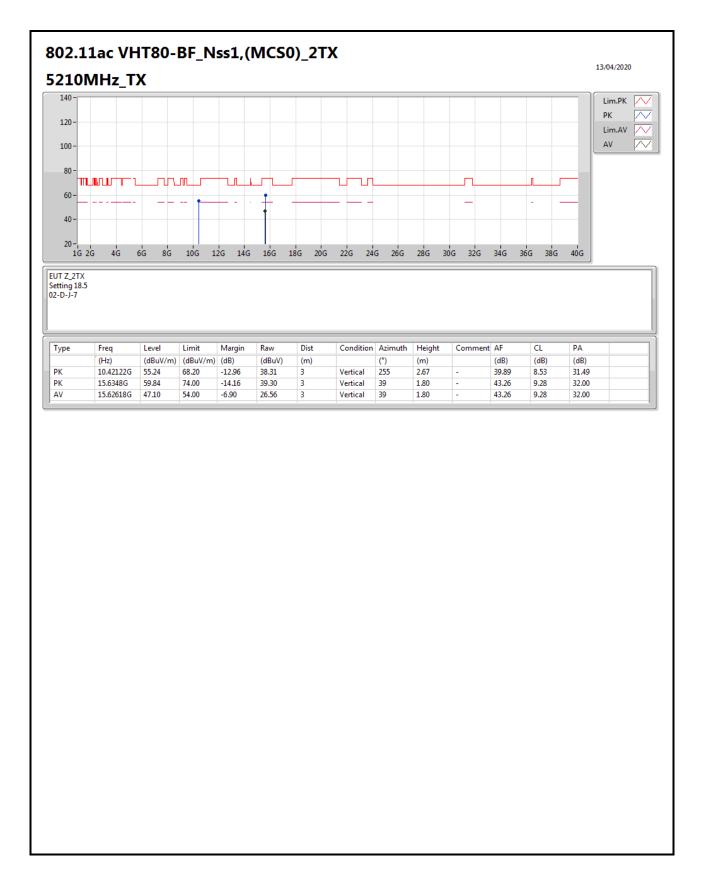




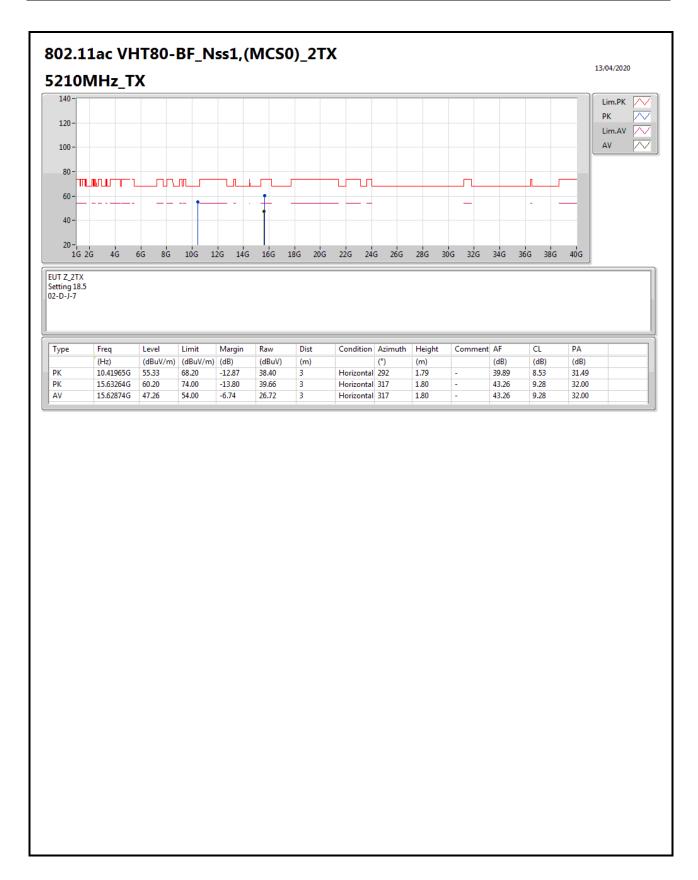














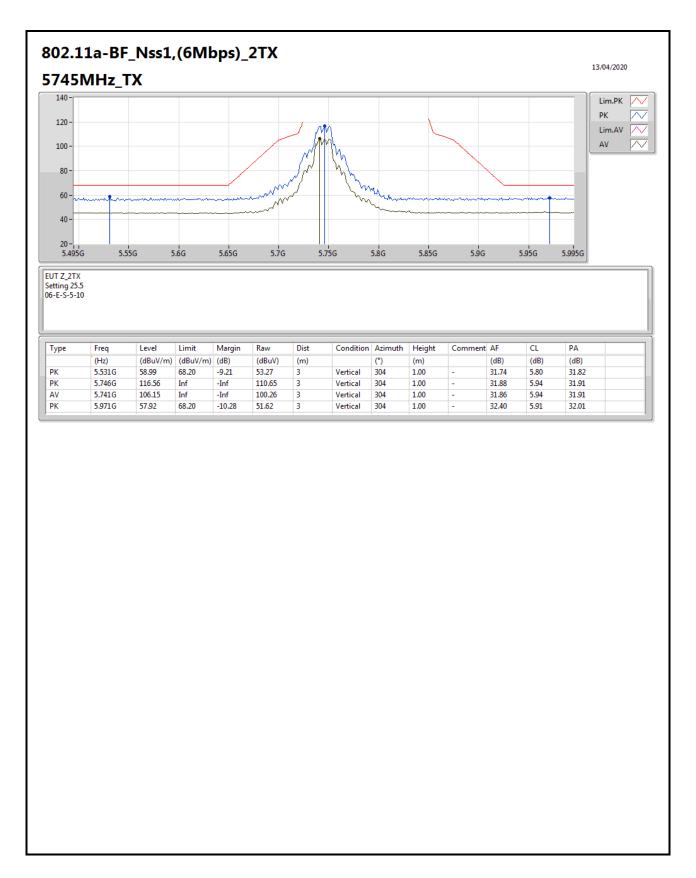
RSE TX above 1GHz Result

Appendix E.2

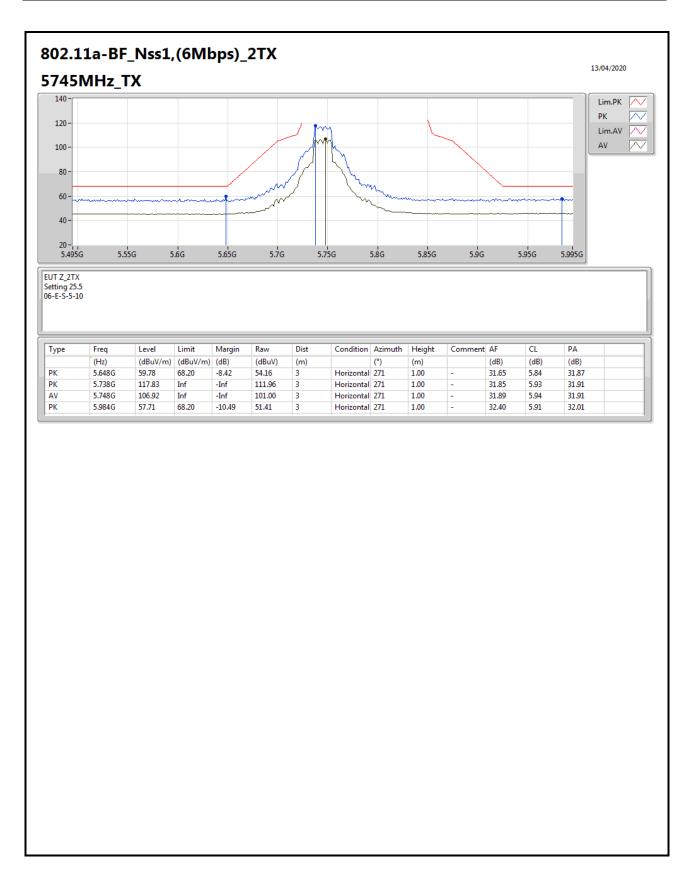
For 5GHz Band 4: Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	Pass	PK	5.648G	68.18	68.20	-0.02	3	Horizontal	270	2.97	-

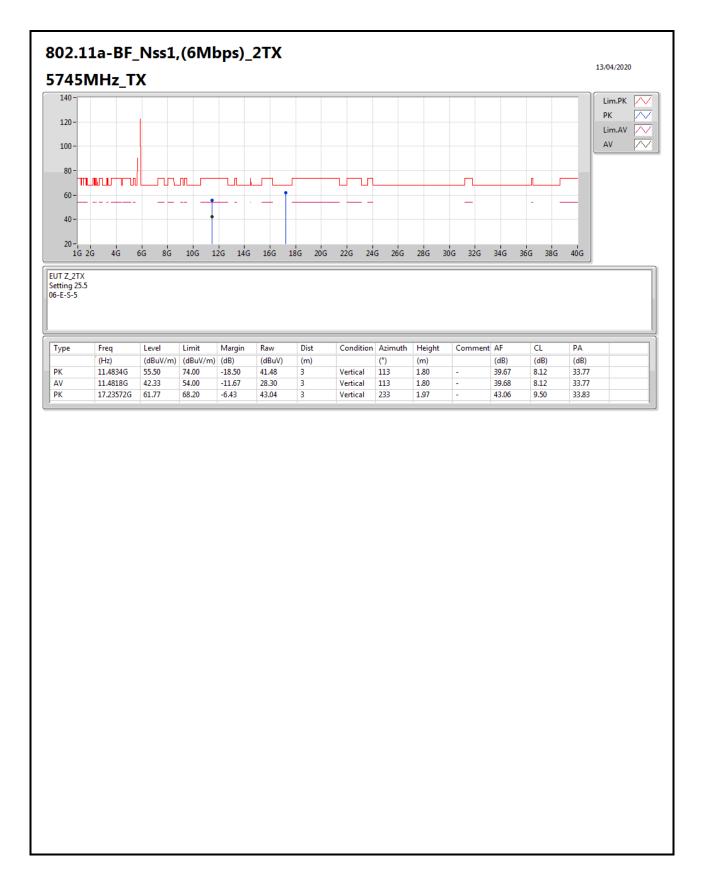




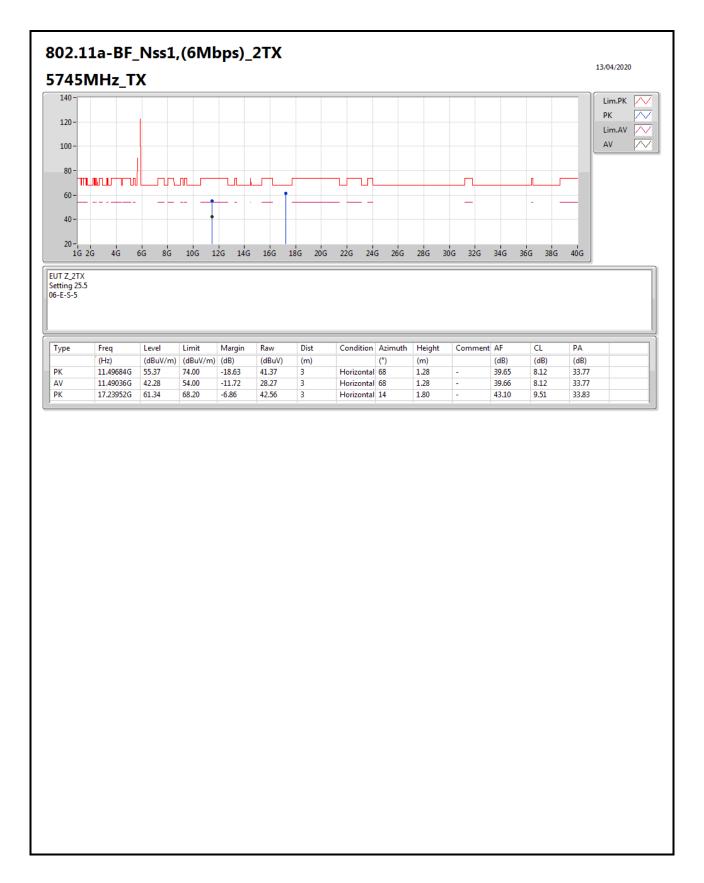




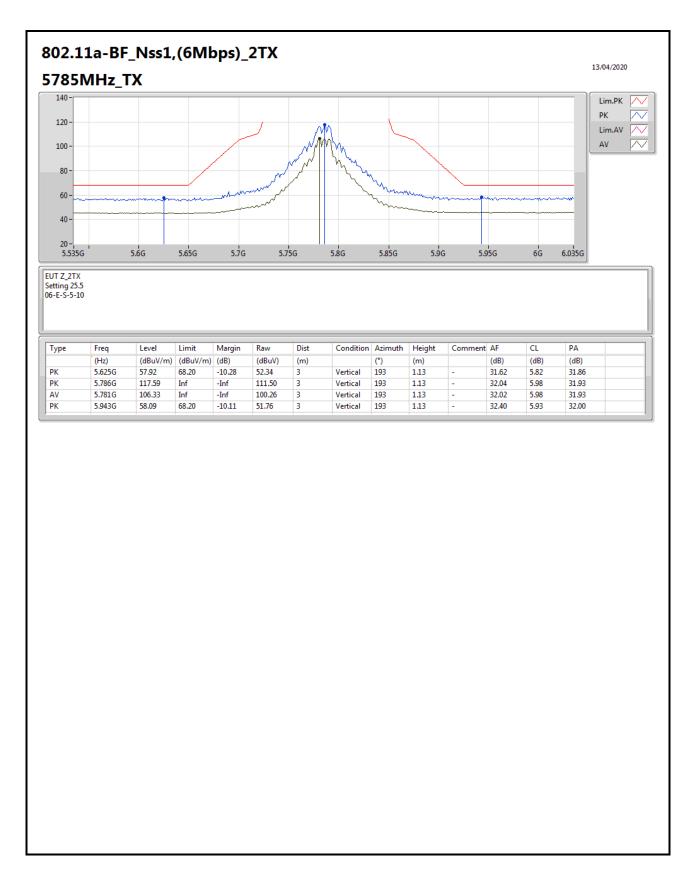




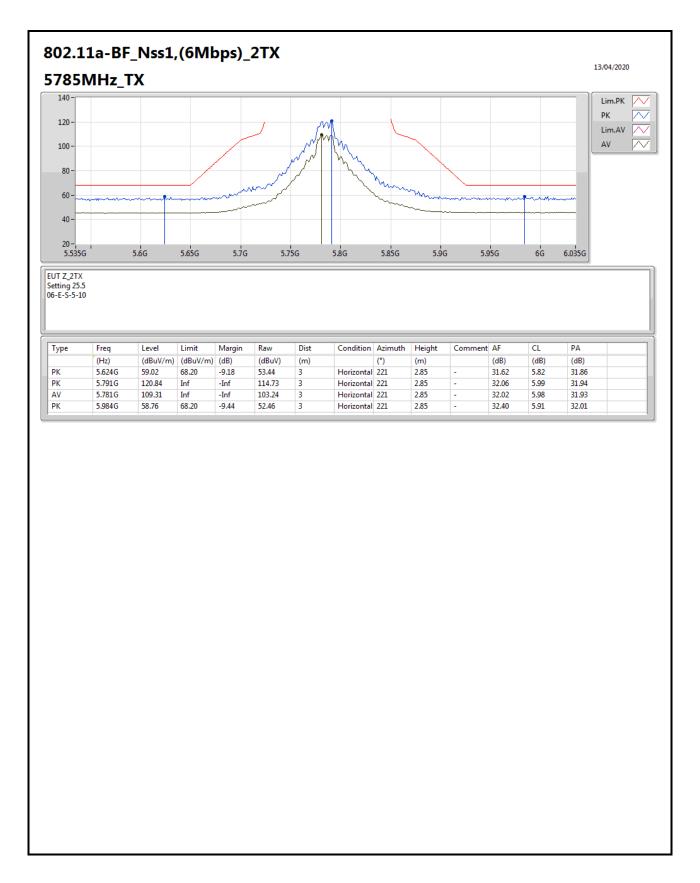




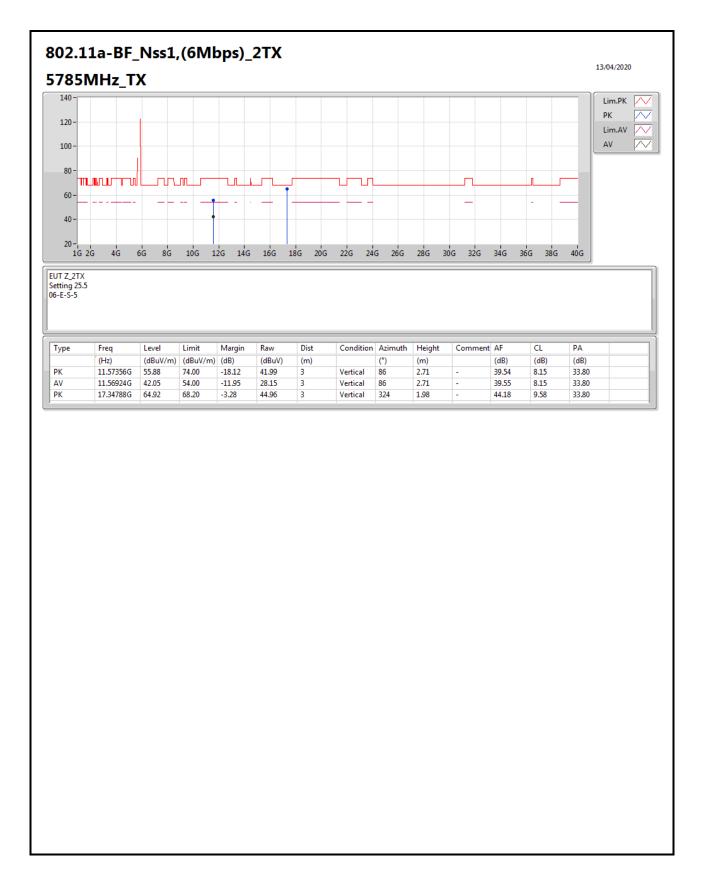




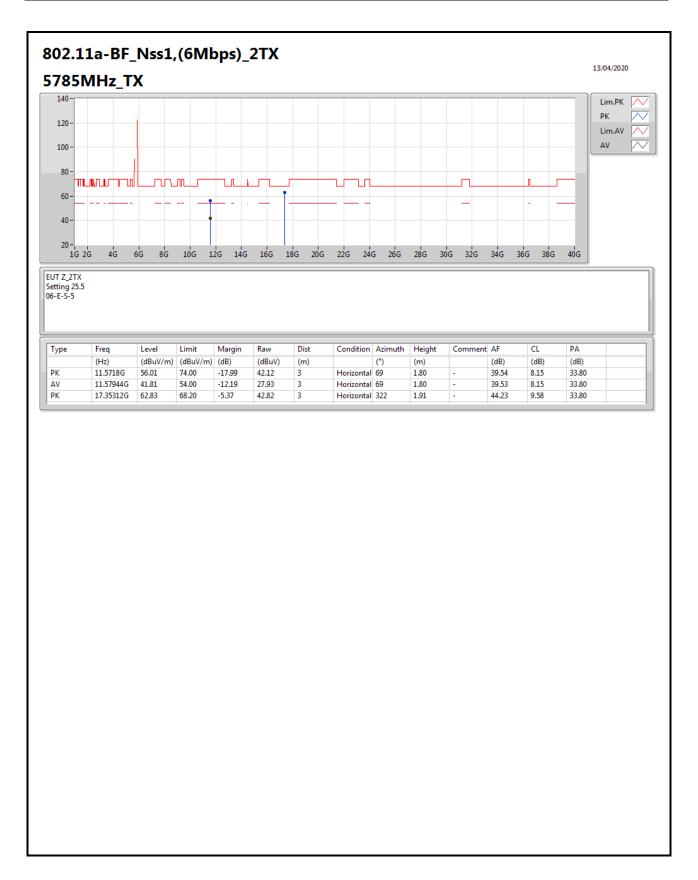




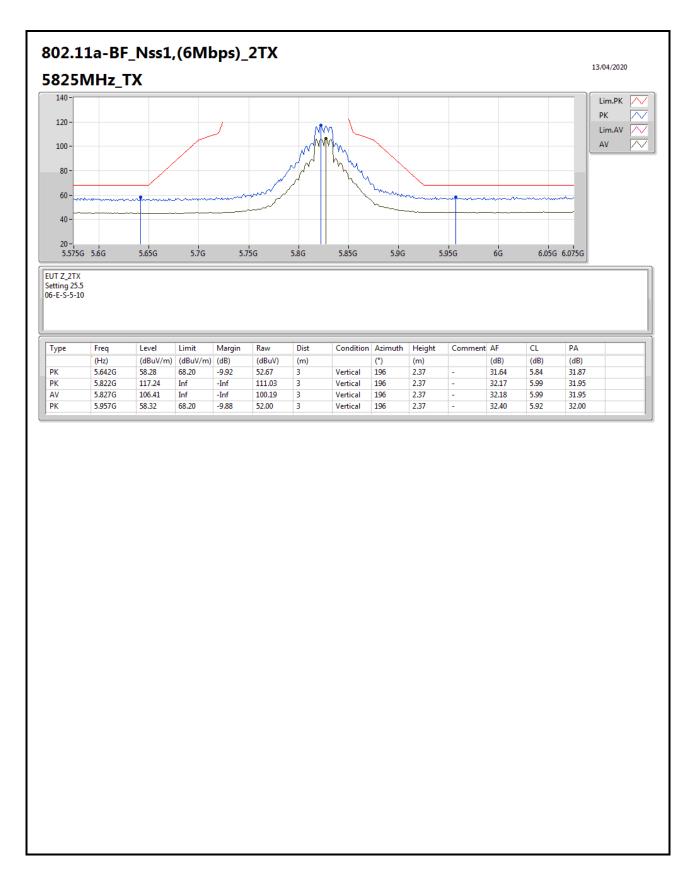




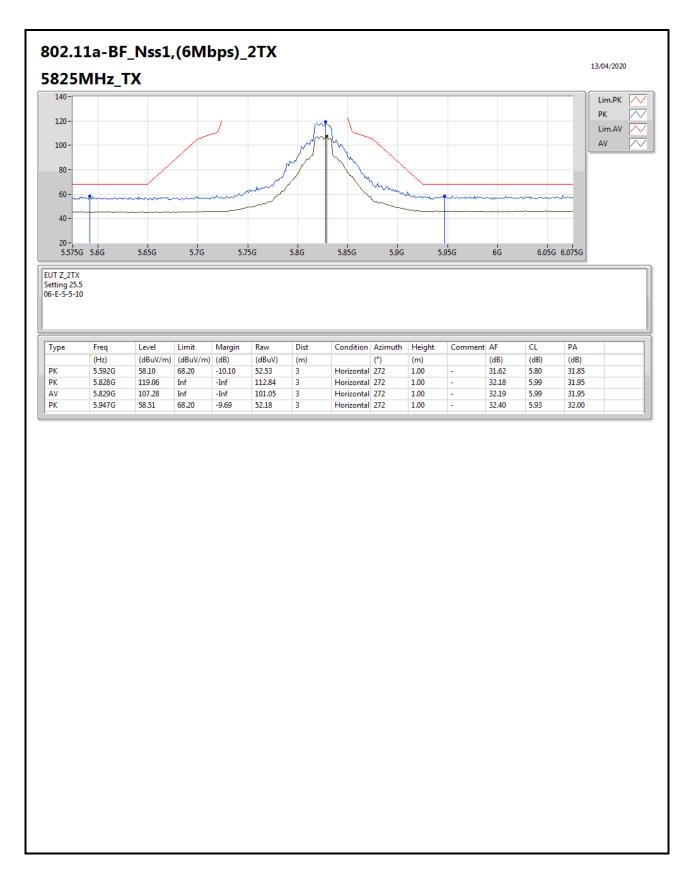




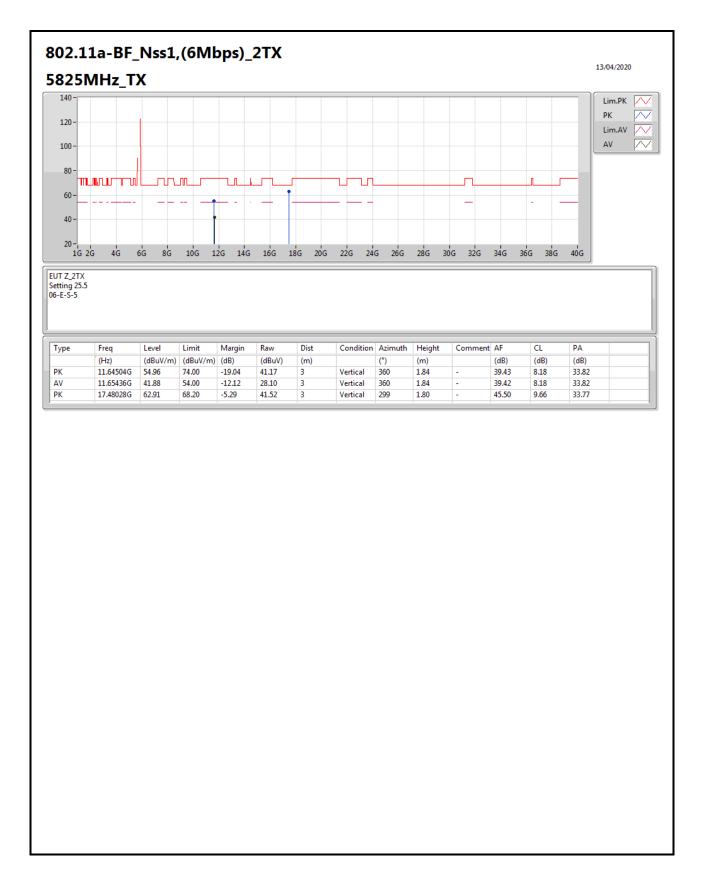




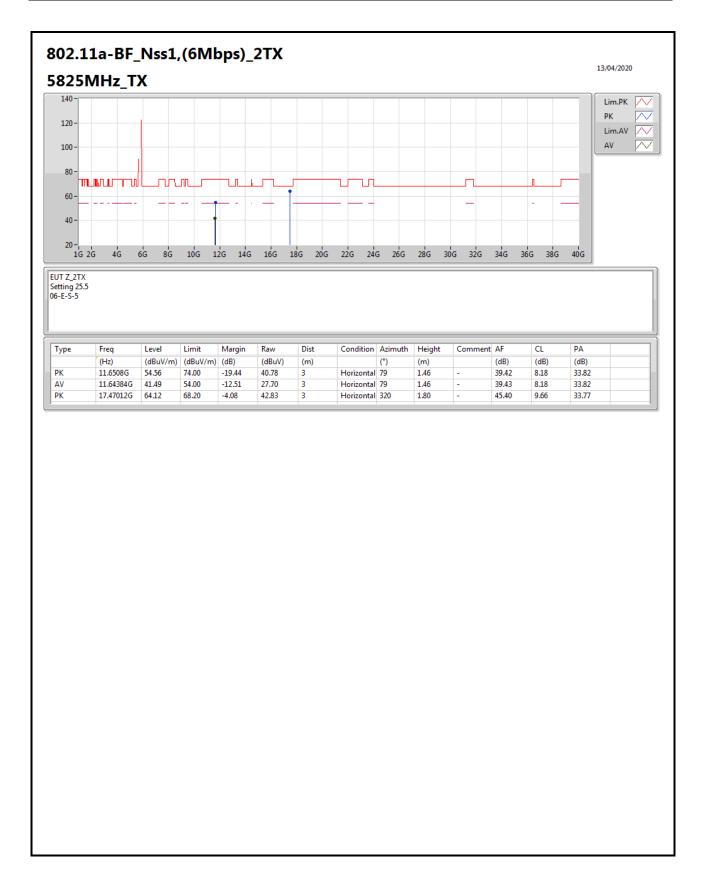




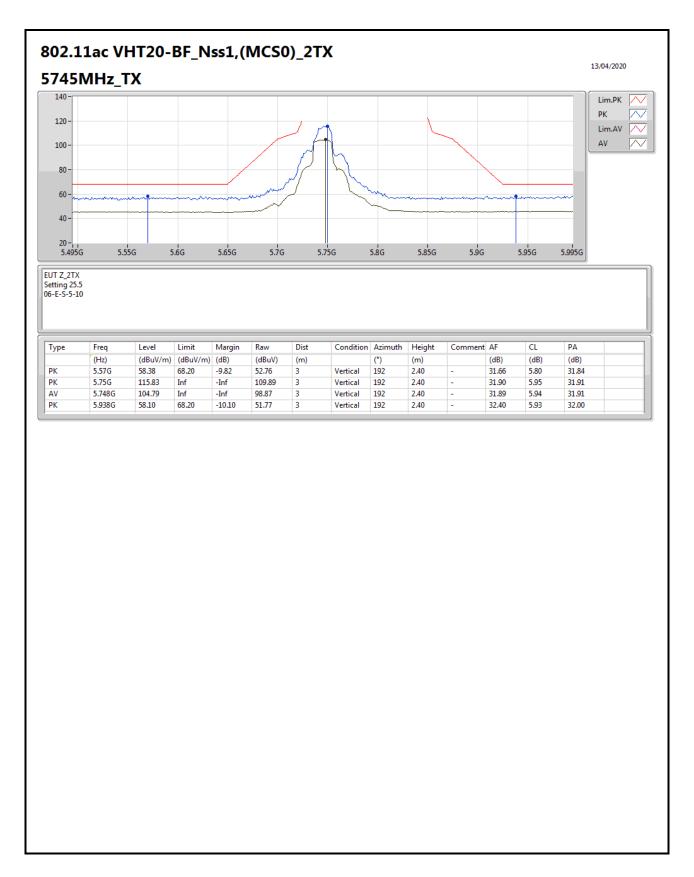




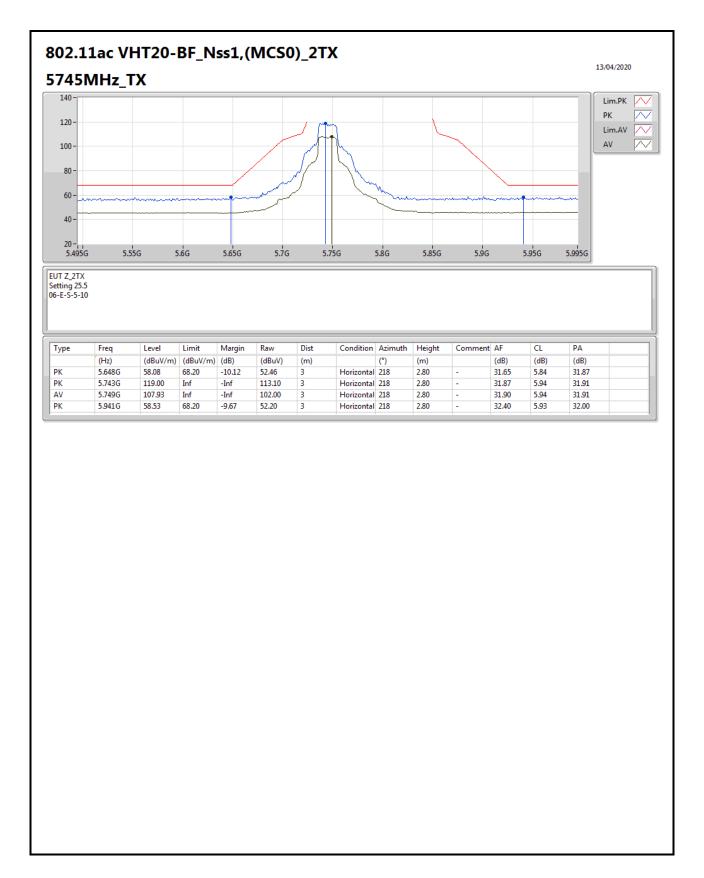




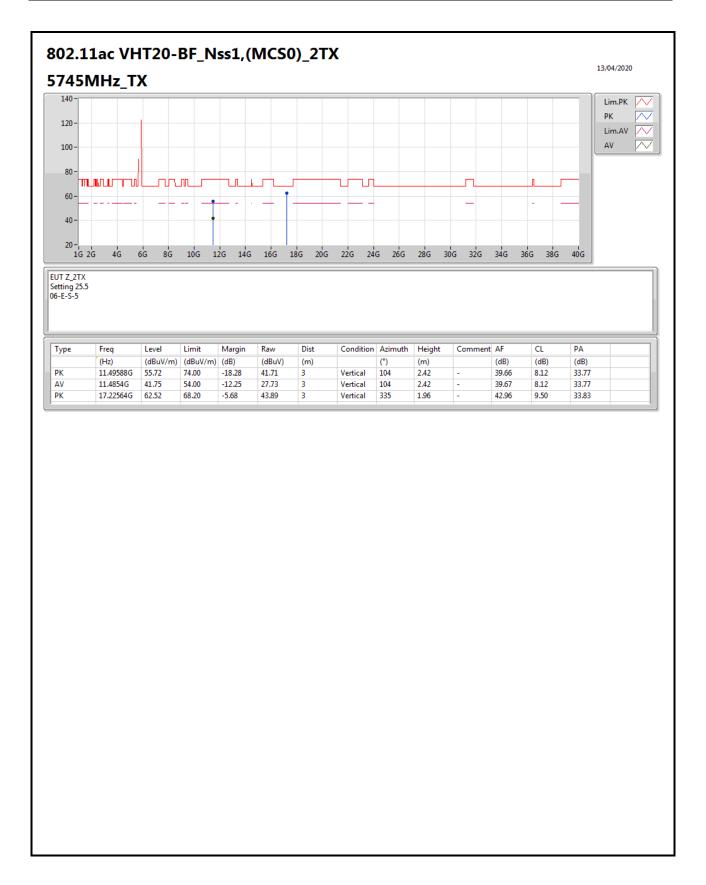




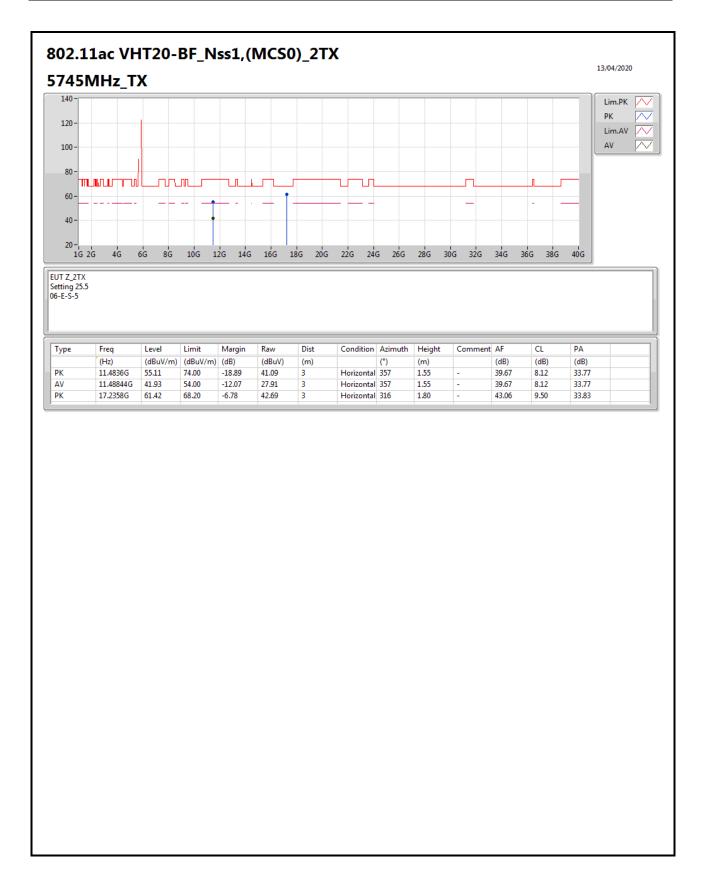




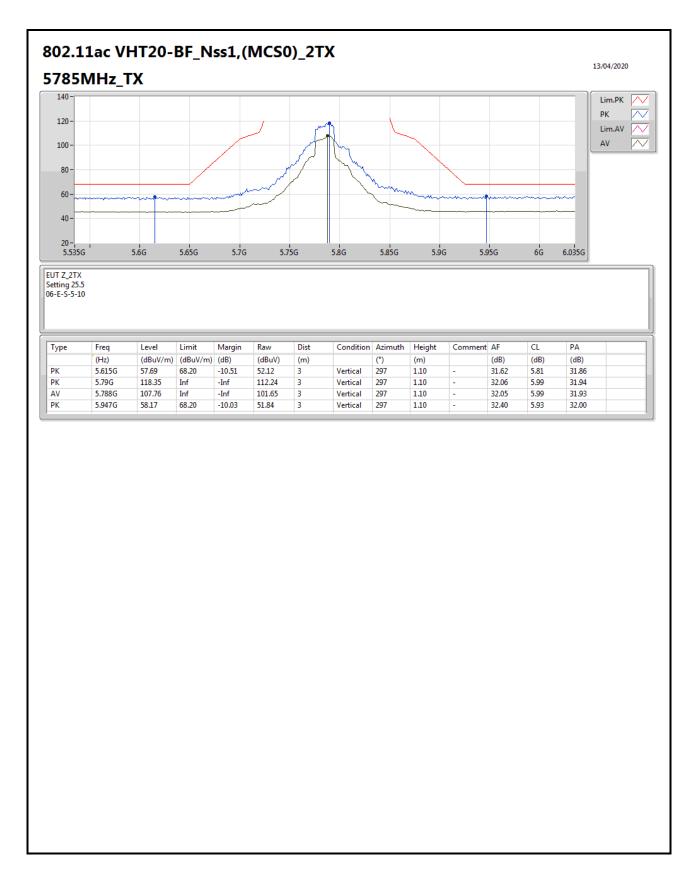




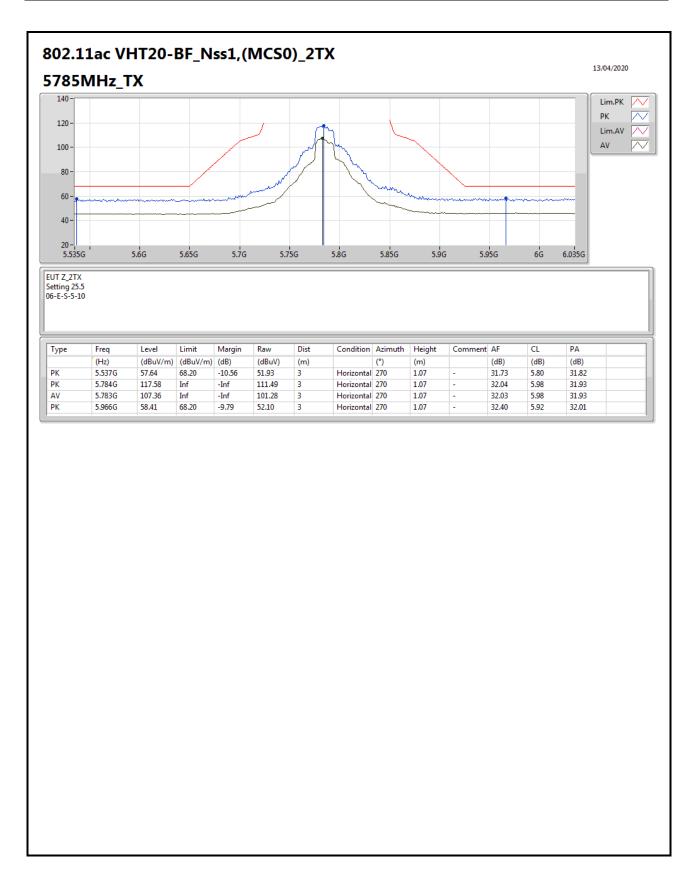




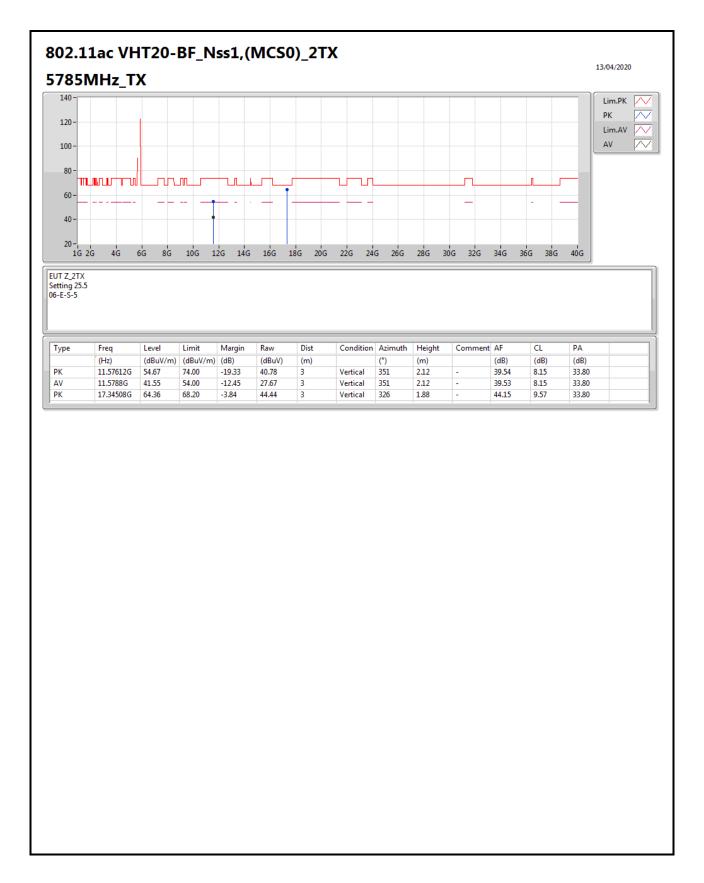




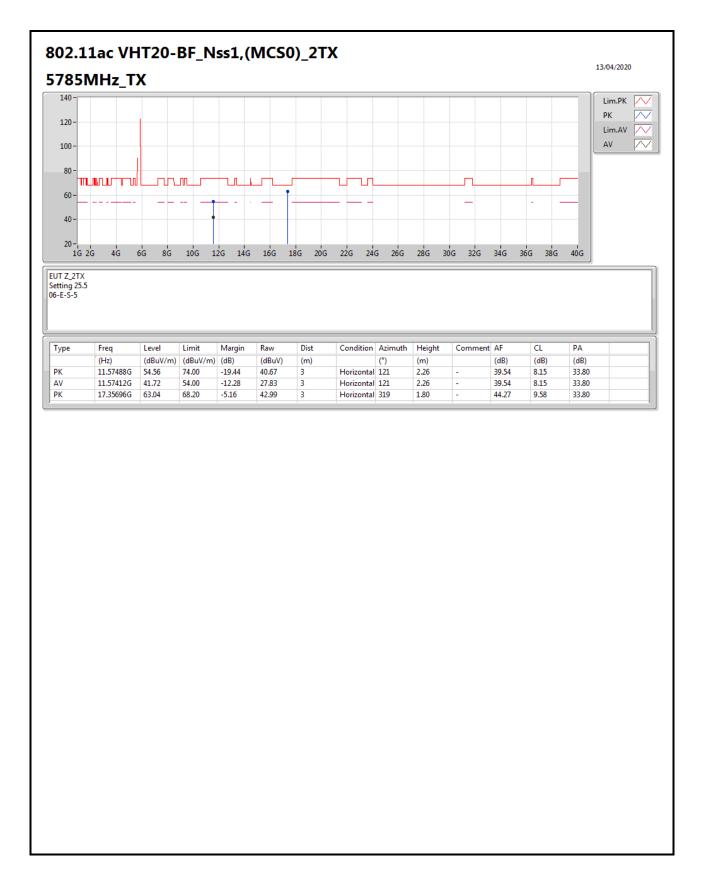




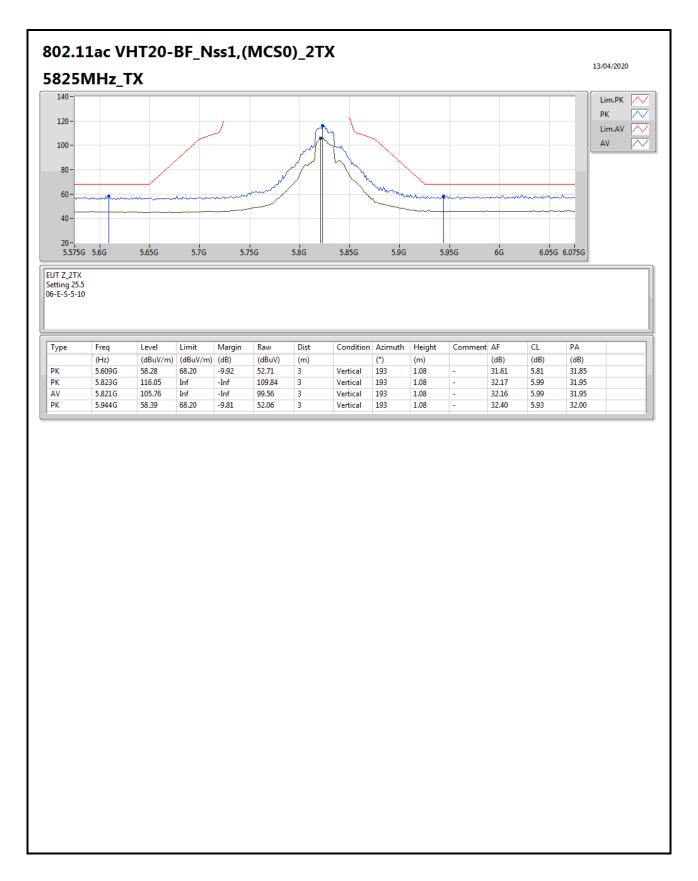




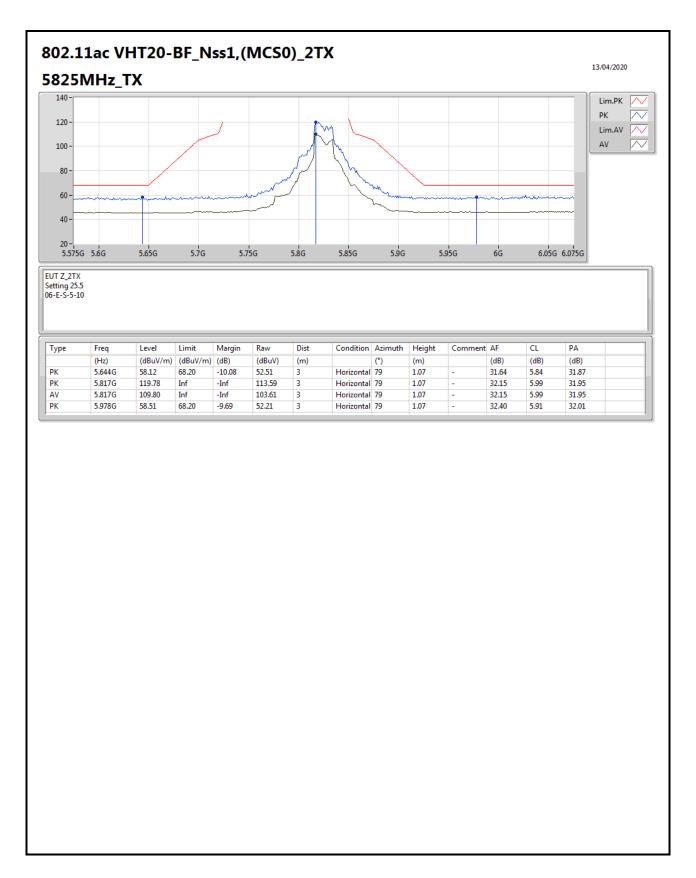




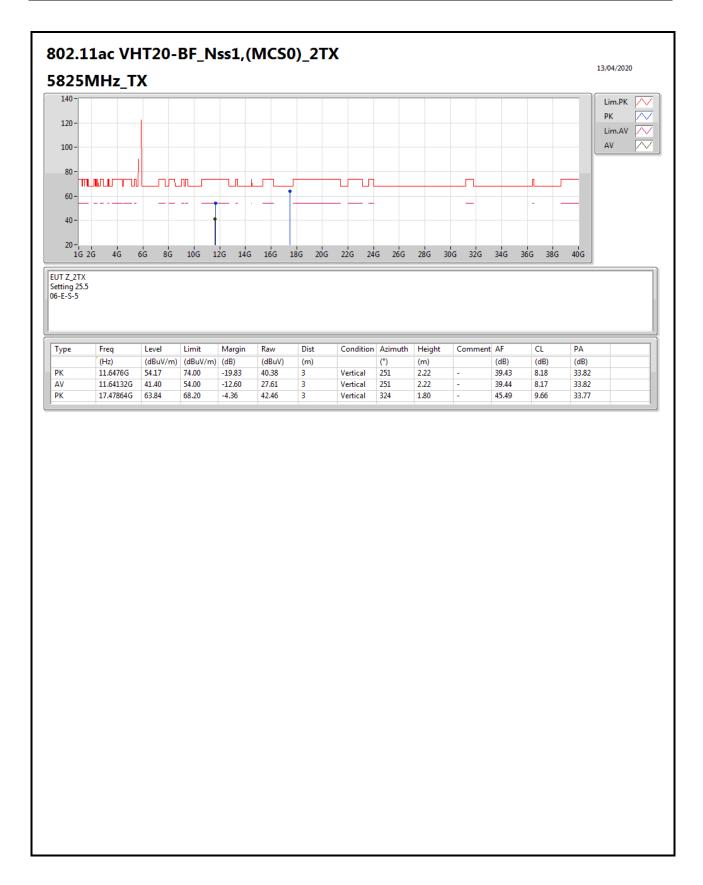




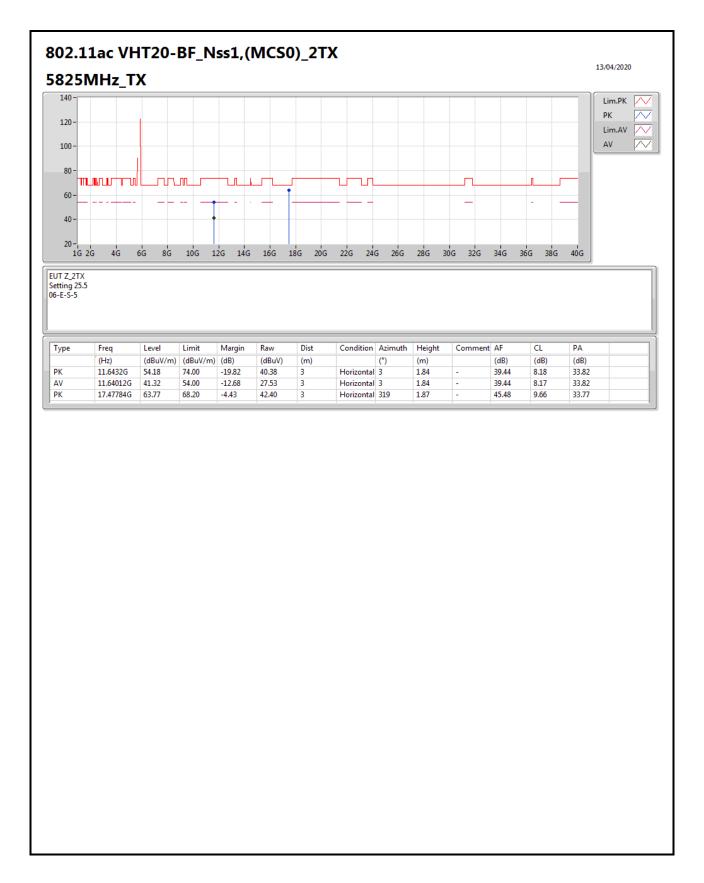




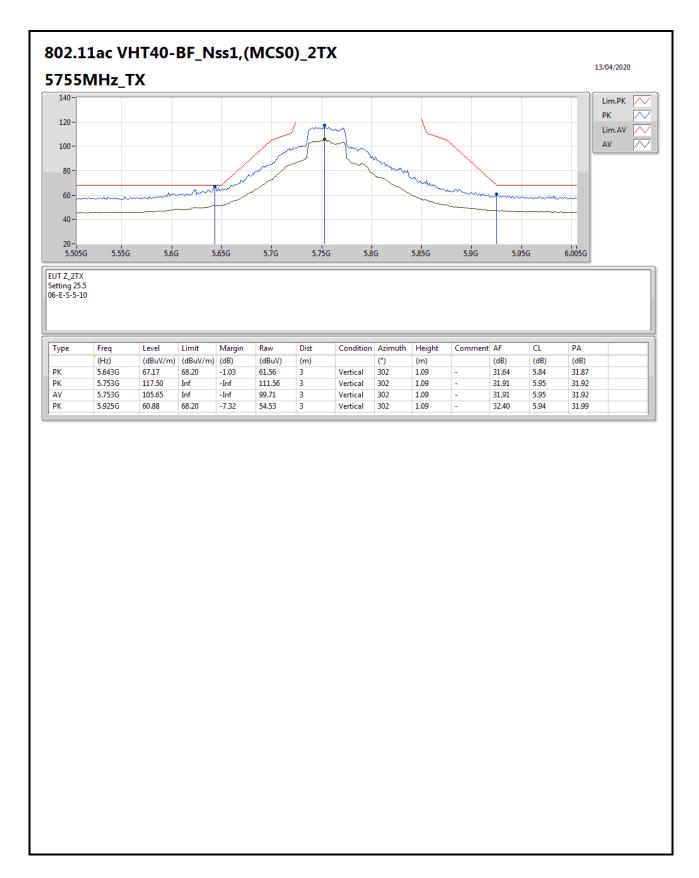




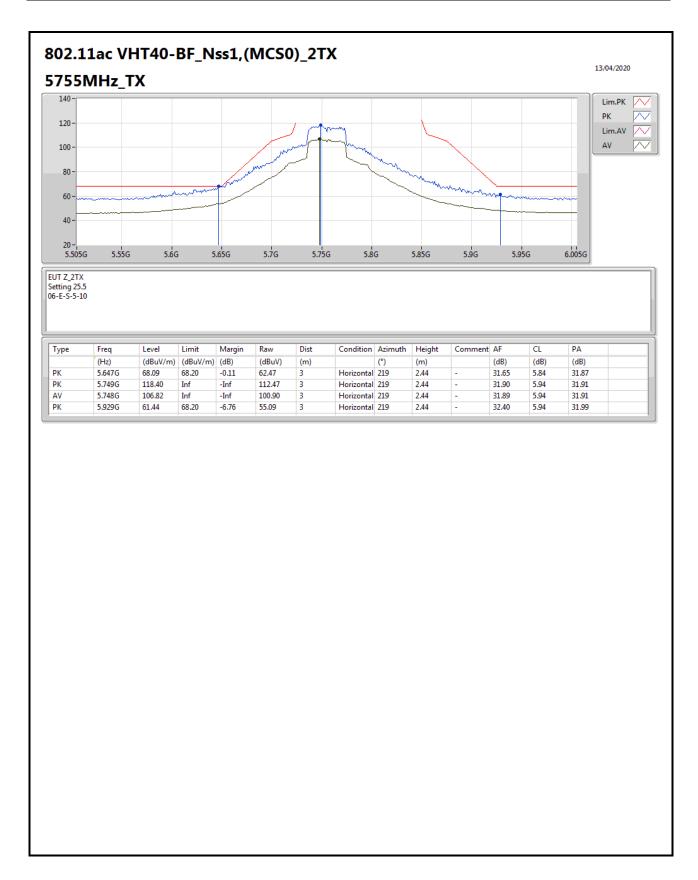




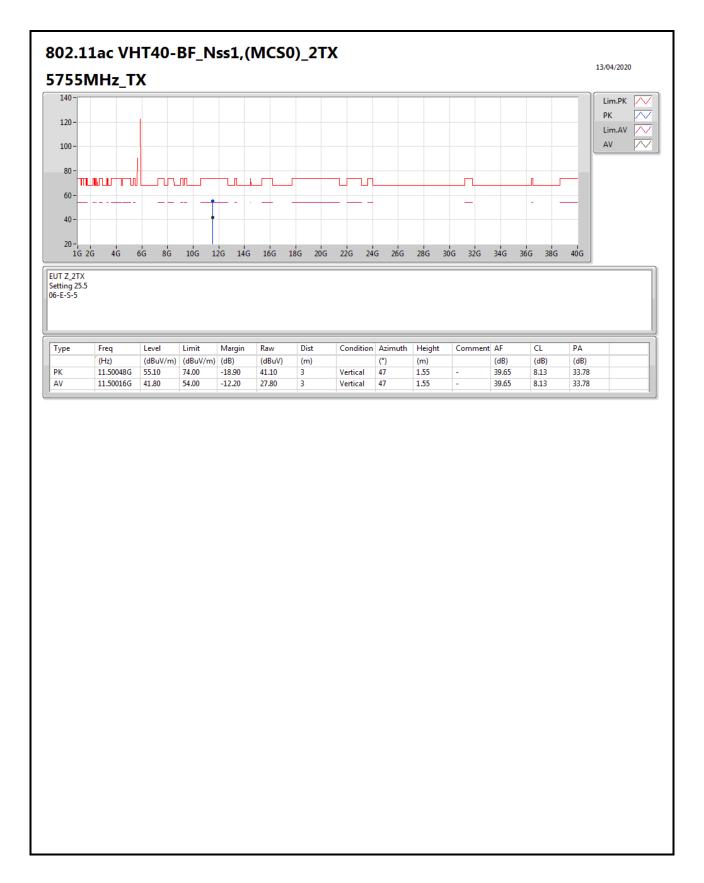




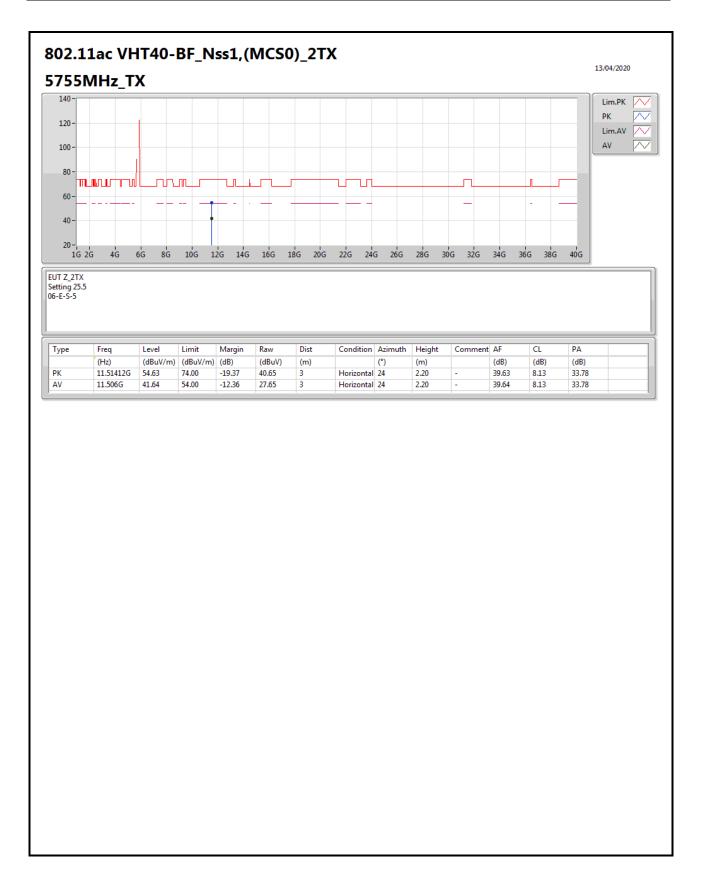




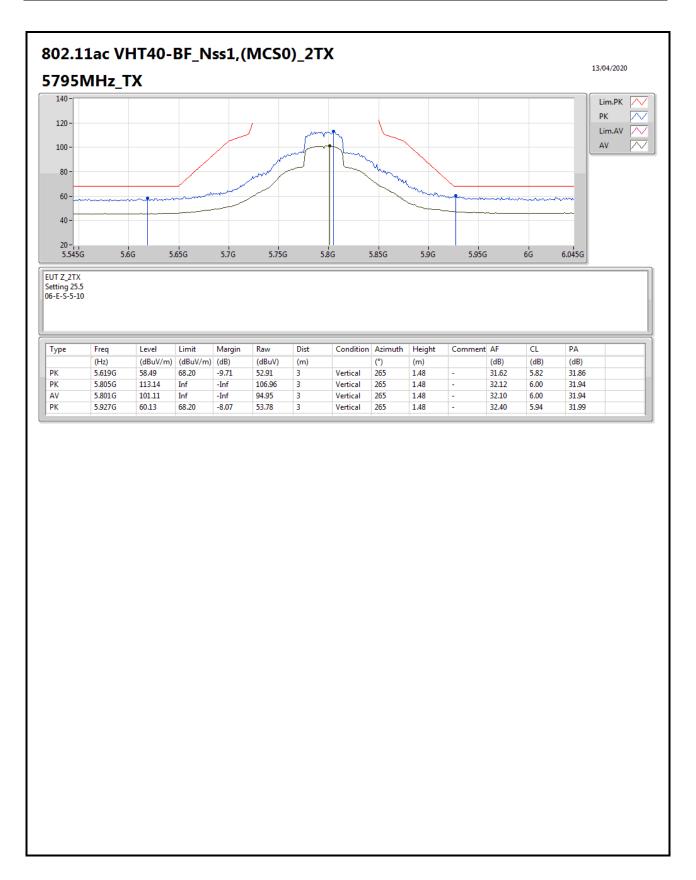




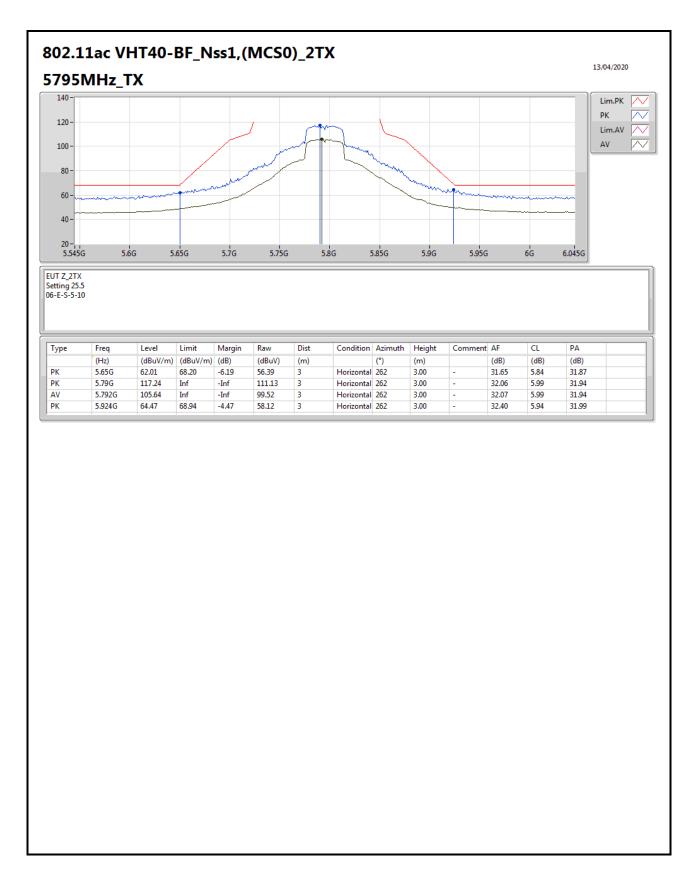




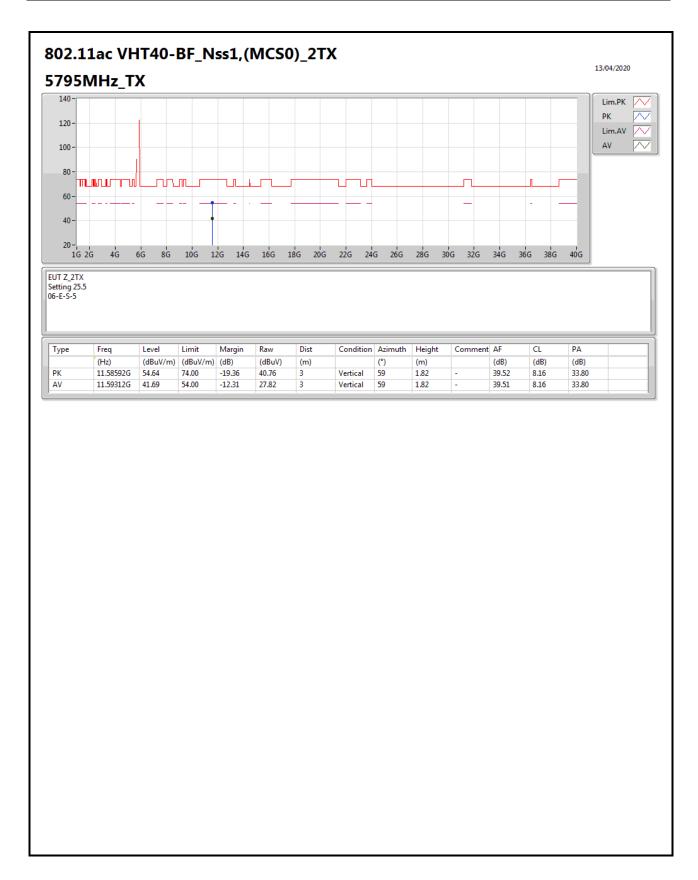




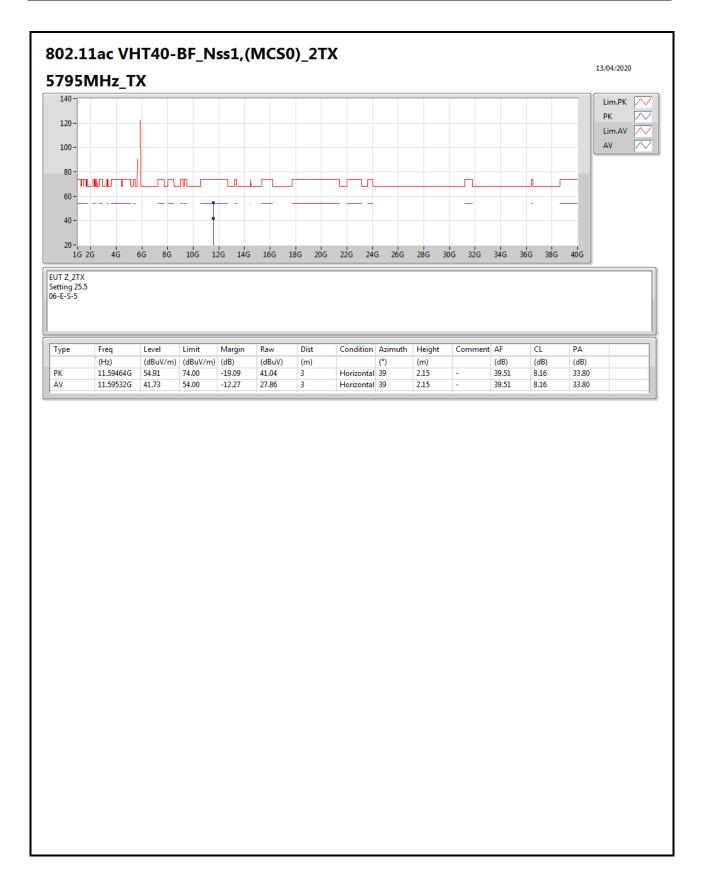




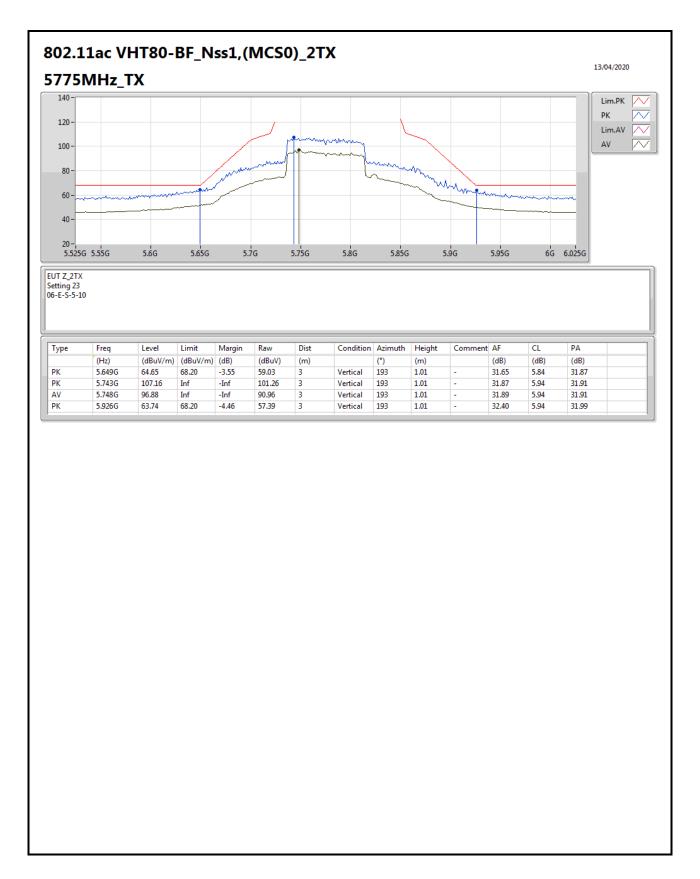




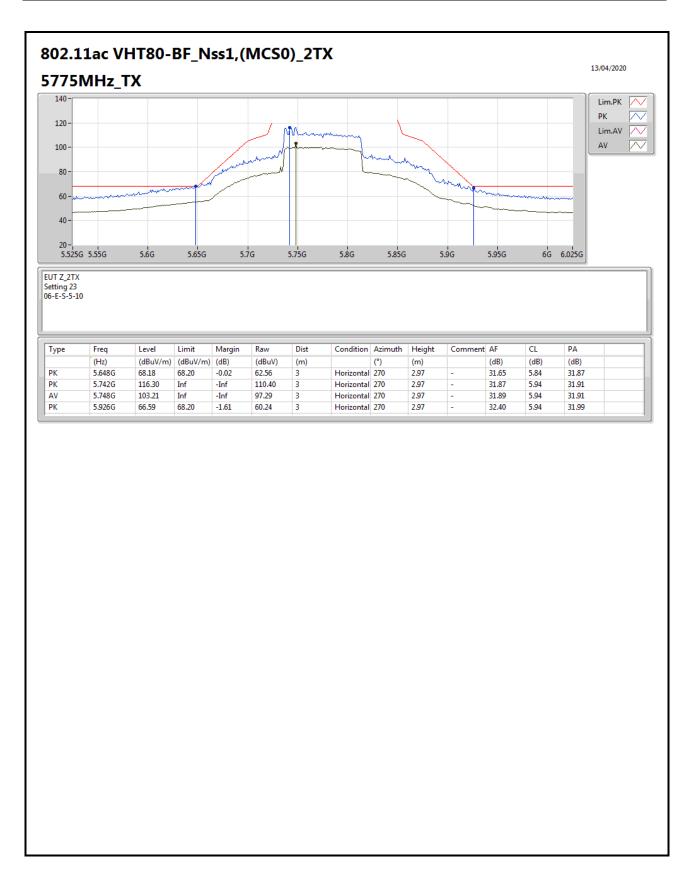




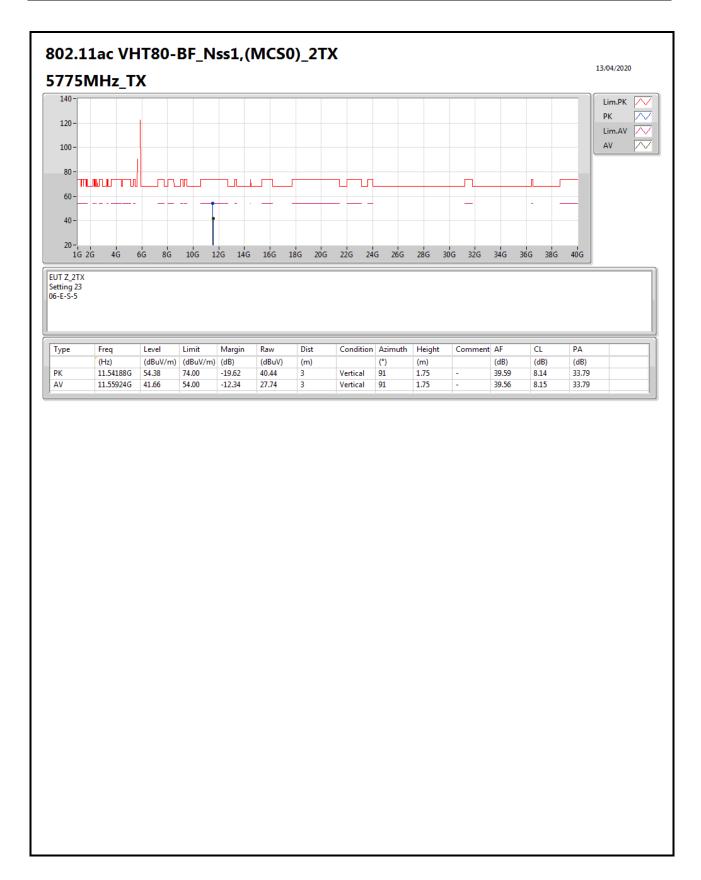




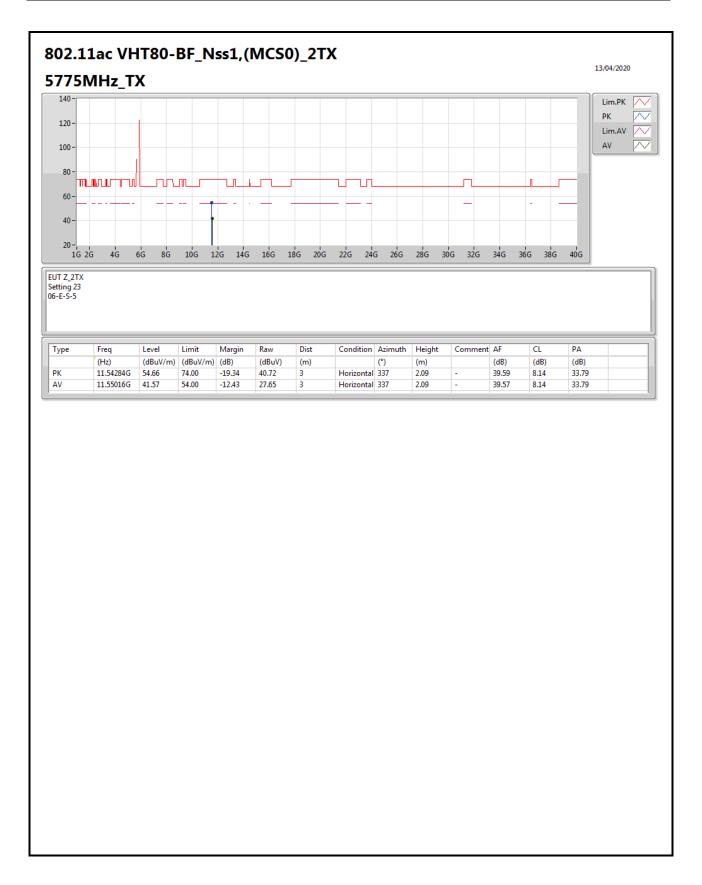














RSE Co-location Result

Appendix F

Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	1.33521G	50.00	54.00	-4.00	Vertical



