



FCC RADIO TEST REPORT

FCC ID : Q87-03433

Equipment : LINKSYS MR9000 TRI-BAND WIFI 5 ROUTER,
LINKSYS MR9000X TRI-BAND WIFI 5 ROUTER,
LINKSYS MR8900 TRI-BAND WIFI 5 ROUTER,
LINKSYS MR8950 TRI-BAND WIFI 5 ROUTER

Brand Name : LINKSYS

Model Name : MR9000, MR9000X, MR8900, MR8950

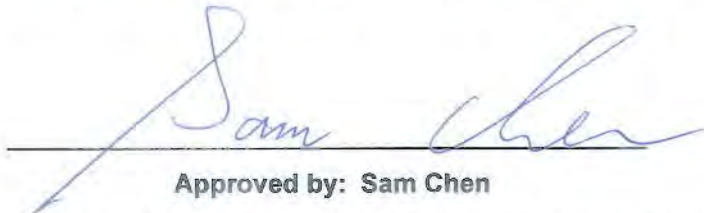
Applicant : Linksys LLC
121 Theory Drive, Irvine CA 92617, United States

Standard : 47 CFR FCC Part 15.407

The product was received on Apr. 02, 2019, and testing was started from Apr. 02, 2019 and completed on Jun. 03, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

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



Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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



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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB Ver1.0



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.407(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: Viola Huang



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]

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	4TX
5.725-5.85GHz	802.11a-BF	20	4TX
5.725-5.85GHz	802.11n HT20	20	4TX
5.725-5.85GHz	802.11ac VHT20-BF	20	4TX
5.725-5.85GHz	802.11n HT40	40	4TX
5.725-5.85GHz	802.11n HT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	4TX



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.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Nss-Min is the minimum number of spatial streams.
- ♦ Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

**1.1.2 Antenna Information**

Ant.	Port	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	1	FIT	ANEP5M3-CCG01-EH	Dipole Antenna	I-PEX	Note 1
2	2	FIT	ANEP5M3-CCG00-EH	Dipole Antenna	I-PEX	
3	3	FIT	ANEP5M1-CCG00-EH	Dipole Antenna	I-PEX	
4	4	FIT	ANEP5M1-CCG01-EH	Dipole Antenna	I-PEX	
5	1	FIT	ANTS1M1-CCG00-EH	PIFA Antenna	N/A	

Note 1:

Ant.	Port	Gain (dBi)			
		WLAN 2.4G	WLAN 5G Band 1	WLAN 5G Band 4	BT
1	1	2.84	2.60	2.44	-
2	2	2.36	2.87	2.28	-
3	3	-	-	2.93	-
4	4	-	-	3.01	-
5	1	-	-	-	2.90

Note 2: The above information was declared by manufacturer.

Note 3: The EUT has five antennas.

<For 2.4GHz Band>**For IEEE 802.11b/g/n/VHT 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 5GHz Band 1>**For IEEE 802.11a/n/ac 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 5GHz Band 4>**For IEEE 802.11a/n/ac mode (4TX/4RX)**

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

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

<For Bluetooth>**For BT function (1TX/1RX)**

Only Port 1 can be used as transmitting/receiving antenna.

1.1.3 Mode Test Duty Cycle

For Band 1 / 2T1S and Band 4 / 4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a-BF	0.89	0.506	1.717m	1k
802.11ac VHT20-BF	0.881	0.55	1.717m	1k
802.11ac VHT40-BF	0.818	0.872	1.758m	1k
802.11ac VHT80-BF	0.875	0.58	1.954m	1k

For Band 4 / 4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF	0.807	0.931	1.987m	1k
802.11ac VHT40-BF	0.893	0.491	1.958m	1k
802.11ac VHT80-BF	0.864	0.635	1.995m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	☒	With beamforming for 802.11g/n/VHT in 2.4GHz and 11a/n/ac in 5GHz	☐	Without beamforming
Function	☐	Outdoor P2M	☒	Indoor P2M
	☐	Fixed P2P	☐	Client
Test Software Version	QRCT Version3.0.187.0			

Note: The above information was declared by manufacturer.

1.1.5 Table for EUT supports function

Function	Supports type
AP Router	Master



1.1.6 Table for Multiple Listing

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

Equipment Name	Model Name	Description
LINKSYS MR9000 TRI-BAND WIFI 5 ROUTER	MR9000	Marketing purpose to sell in different retailers.
LINKSYS MR9000X TRI-BAND WIFI 5 ROUTER	MR9000X	
LINKSYS MR8900 TRI-BAND WIFI 5 ROUTER	MR8900	
LINKSYS MR8950 TRI-BAND WIFI 5 ROUTER	MR8950	

From the above models, model: MR9000 was selected as representative model for the test and its data was recorded in this report.



1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 789033 D02 v02r01
- ♦ FCC KDB 662911 D01 v02r01
- ♦ FCC KDB 412172 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
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.	TEL : 886-3-656-9065	FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Brian Sun	22~24°C / 50~60%	Apr. 18, 2019~May 15, 2019
Radiated	03CH01-CB for below 1GHz 03CH03-CB for above 1GHz	Brian Sun	22~24°C / 50~60%	Apr. 02, 2019~Jun 03, 2019
AC Conduction	CO01-CB	Wei Li	23~23.6°C / 55~58%	Apr. 11, 2019

Test site Designation No. TW0006 with FCC

Test site registered number IC 4086B with Industry Canada.

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 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	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74 x10 ⁻⁸	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

For Band 1 / 2T1S and Band 4 / 4T1S

Mode	PowerSetting
802.11a-BF_Nss1,(6Mbps)_2TX	-
5180MHz	22
5200MHz	25
5240MHz	25
802.11a-BF_Nss1,(6Mbps)_4TX	-
5745MHz	21.5
5785MHz	21
5825MHz	21
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	21
5200MHz	25
5240MHz	25
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5745MHz	21.5
5785MHz	21.5
5825MHz	21.5
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
5190MHz	19
5230MHz	24
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5755MHz	21.5
5795MHz	21.5
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-
5210MHz	17.5
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5775MHz	21

**For Band 4 / 4T2S**

Mode	PowerSetting
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	-
5745MHz	24.5
5785MHz	24
5825MHz	24
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-
5755MHz	24
5795MHz	24
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-
5775MHz	22.5

Note:

- ♦ VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.
- ♦ There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 11g/11n/VHT in 2.4GHz and 11a/11n/11ac 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.



2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	Normal Link
1	EUT + Adapter 2 with US plug
2	EUT + Adapter 1
3	EUT + Adapter 3
Mode 2 generated the worst test result, so it was recorded in this report.	

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

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 Unwanted Emissions above 1GHz test, and the worst case was found at Z axis. So the measurement will follow this same test configuration.
1	EUT_2.4GHz in Z axis + Adapter 1
2	EUT_2.4GHz in Z axis + Adapter 2 with US plug
3	EUT_2.4GHz in Z axis + Adapter 3
Mode 2 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4~6 will follow this same test mode.	
4	EUT_5GHz in Z axis + Adapter 2 with US plug
5	EUT_Bluetooth 2.0 in Z axis + Adapter 2 with US plug
6	EUT_Bluetooth 4.0 in Z axis + Adapter 2 with US plug
Mode 2 generated the worst test result, so it was recorded in this report.	



Operating Mode > 1GHz	CTX
	The EUT (Band 1) was performed at Y axis and Z axis position for Unwanted Emissions test , and the worst case was found at Y axis. So the measurement will follow this same test configuration. The EUT (Band 4) was performed at Y axis and Z axis position for Unwanted Emissions test , and the worst case was found at Z axis. So the measurement will follow this same test configuration.
1	EUT in Y axis (Band 1) + two of Antennas in 90° / EUT in Z axis (Band 4)

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
1	WLAN 2.4GHz + WLAN 5GHz B1
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 B1 + WLAN 5GHz B4 + Bluetooth
Refer to Sporton Test Report No.: FA941701 for Co-location RF Exposure Evaluation.	



2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting/receiving mode.

beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated 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 Telnet.
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%.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Adapter 1 (Fixed plug)	KTEC	KSA-24W-120200HU	INPUT: 100-240V, 50/60Hz 0.6A OUTPUT: 12V, 2.0A
Adapter 2 (Interchangeable plug)	KTEC	KSA-24W-120200D5	INPUT: 100-240V, 50/60Hz 0.6A OUTPUT: 12V, 2.0A
Adapter 3 (Fixed plug)	APD	WB-24J12FU-ABBC	INPUT: 100-240V, 50-60Hz 0.7A Max. OUTPUT: 12V, 2A
Other			
US plug*1 (only for adapter 2 use)			

Note: The power adapter does not affect the test result of RF tests, so only adapter 3 was tested and recorded in this report.



2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Flash disk3.0	Transcend	JetFlash-700	N/A
B	LAN NB	DELL	E6430	N/A
C	WAN NB	DELL	E6430	N/A
D	2.4G NB	DELL	E6430	N/A
E	5G-1 & BT NB	Apple	A1278	N/A
F	5G-2 NB	DELL	E6430	N/A

For Radiated (below 1GHz) and Radiated (above 1GHz / for Non-beamforming mode):

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

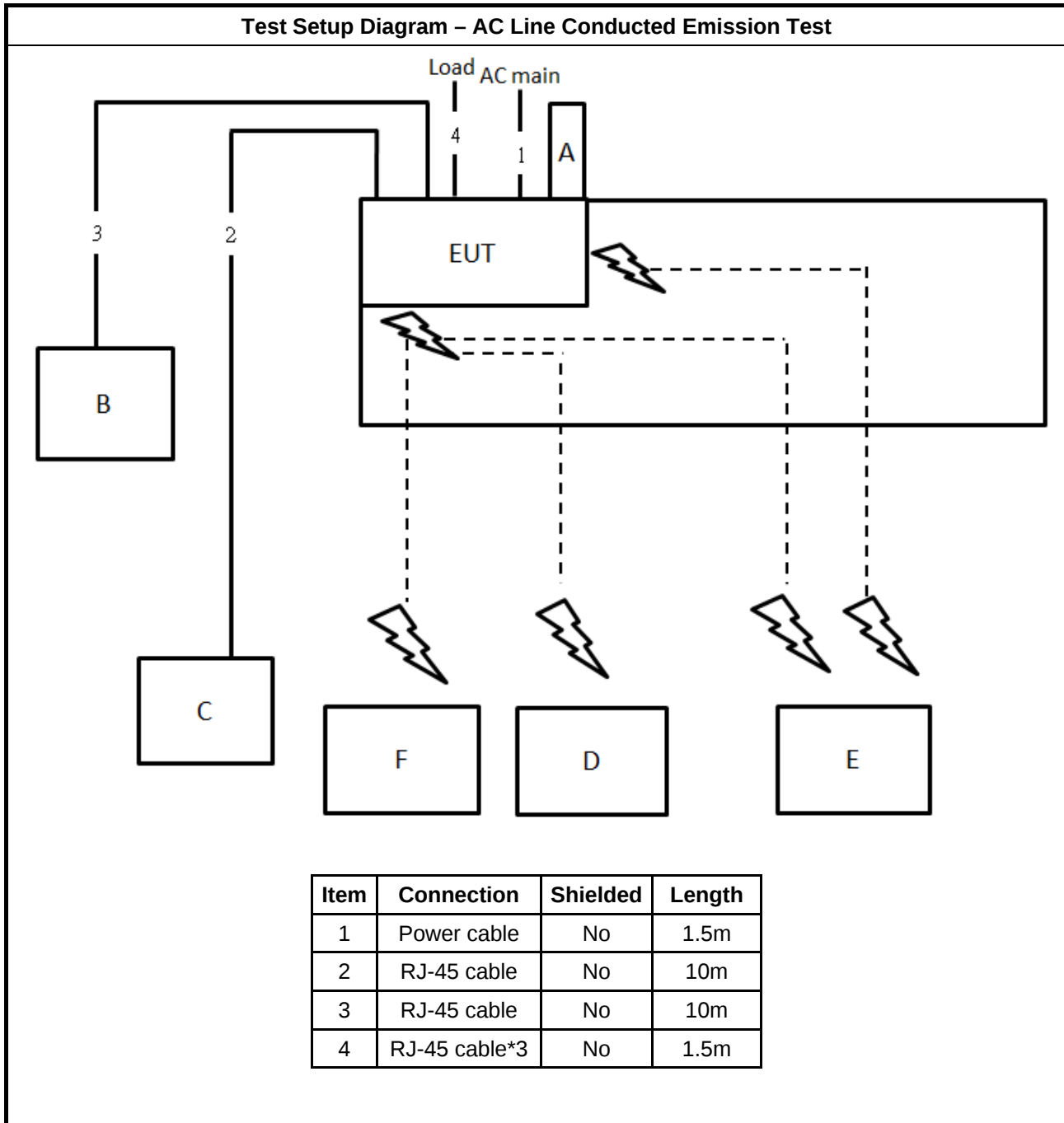
For Radiated (above 1GHz / for beamforming mode):

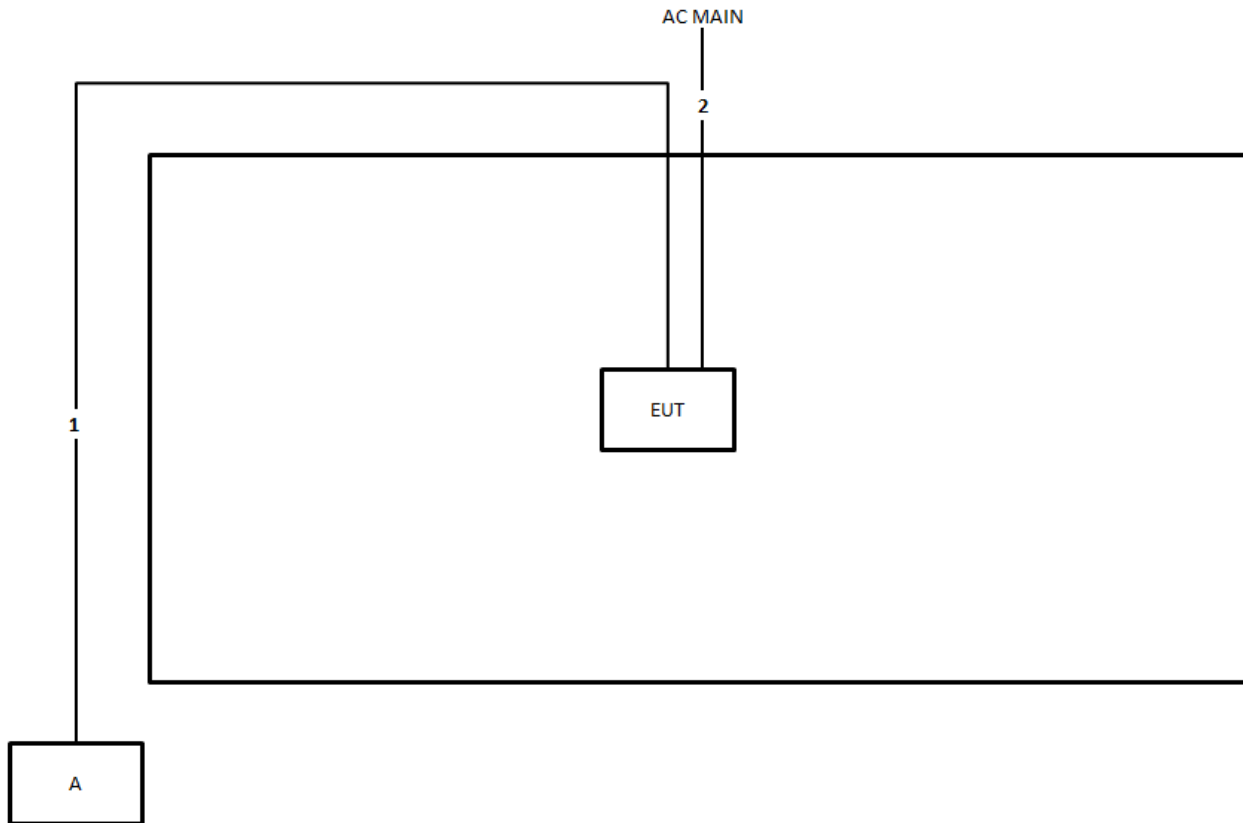
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	NB	DELL	E4300	N/A
C	RX Device	LINKSYS	MR9000	Q87-03433

For RF Conducted:

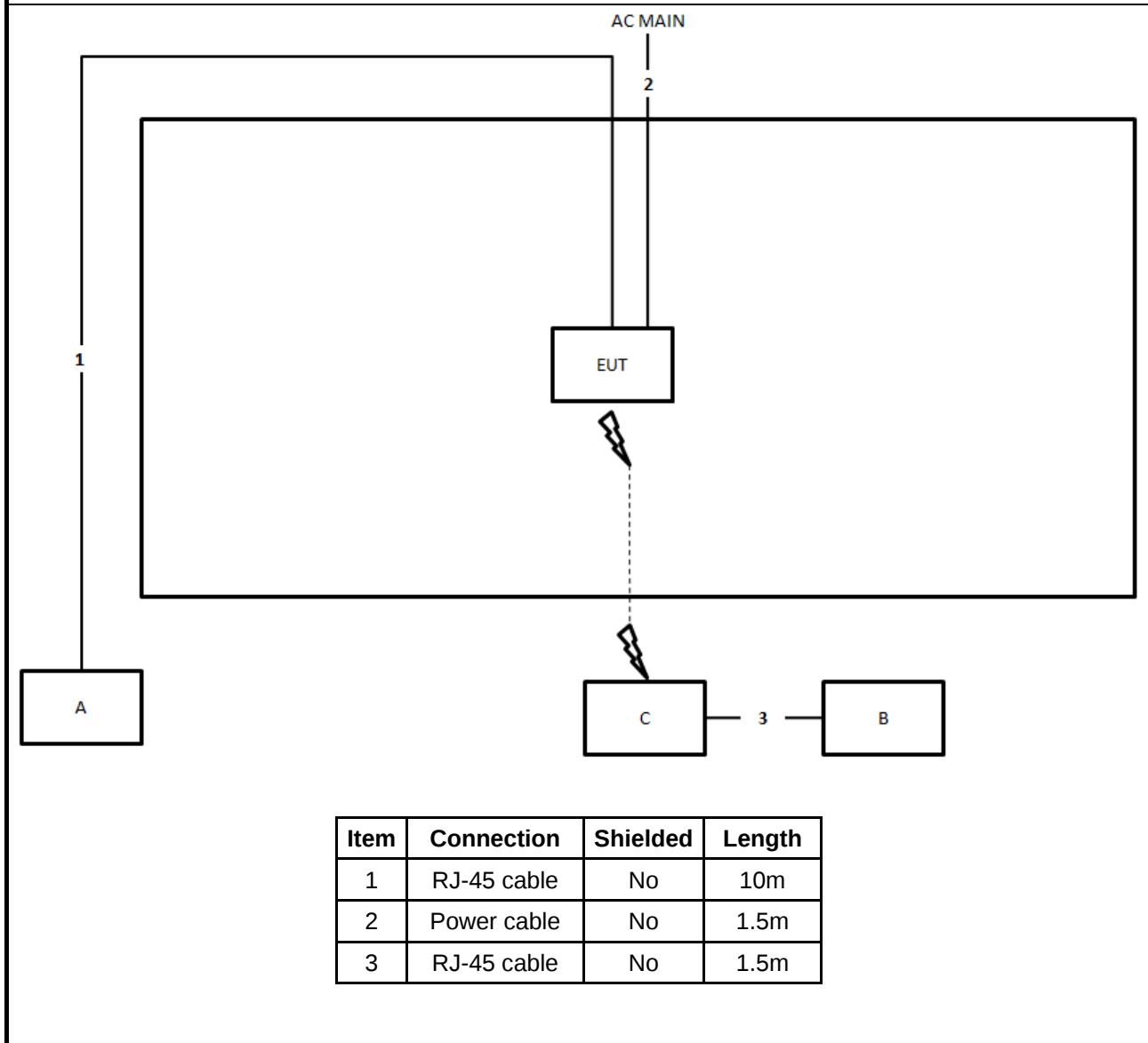
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	NA

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz and Radiated Test > 1GHz for non-beamforming mode


Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz for beamforming mode




3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

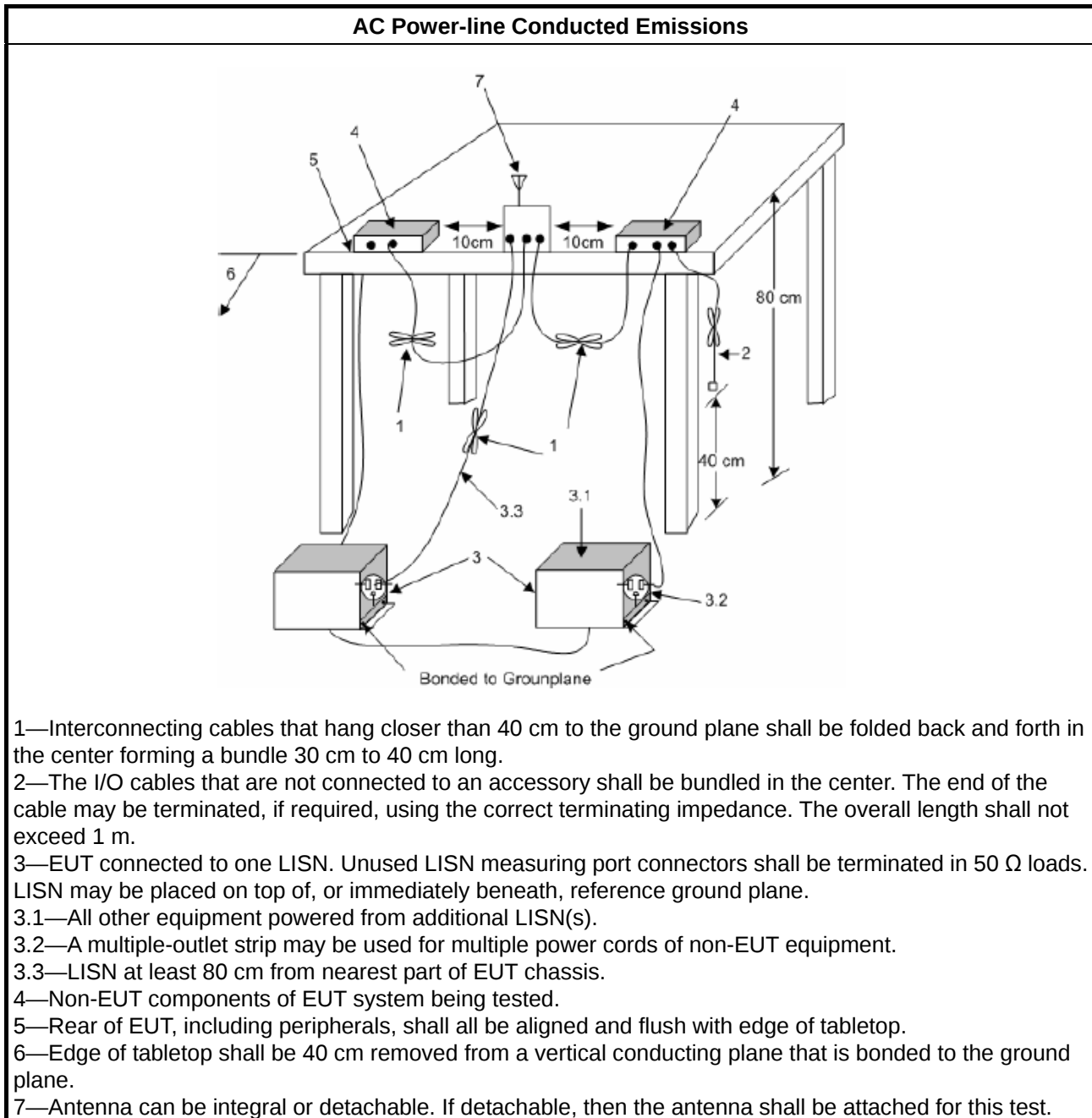
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
☒	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.
☒	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq$ 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 $\geq$ 500kHz.

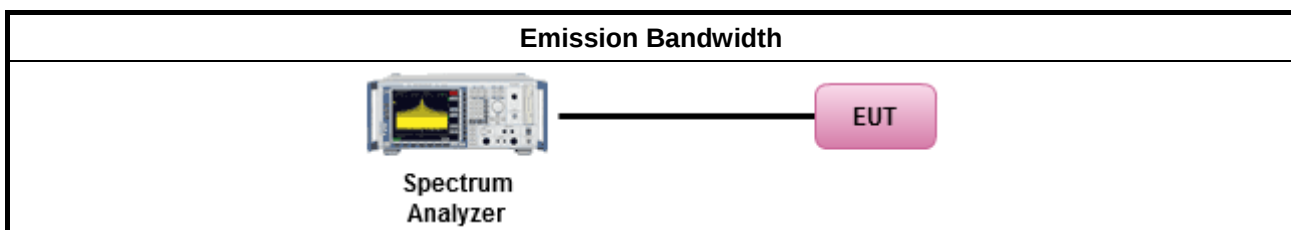
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
☐	- Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm] - Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ - Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. - Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☒ 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.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

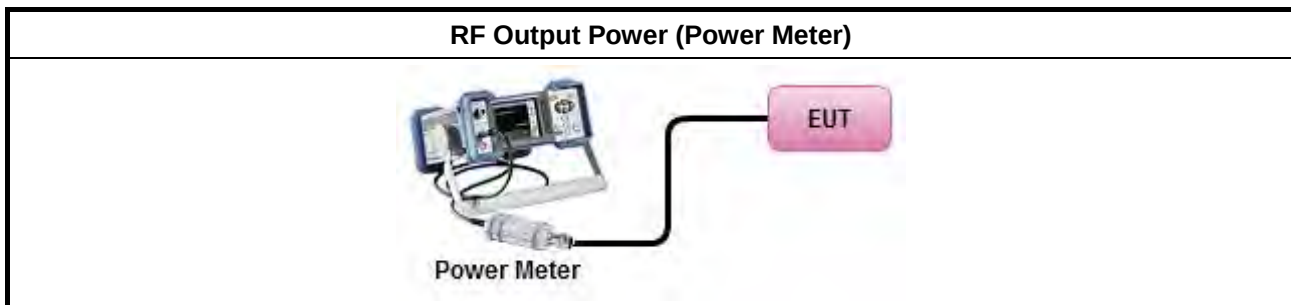
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
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: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒ 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) ≤ 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) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☒ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
☐	e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 (θ-8) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 (θ-40) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
☐ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

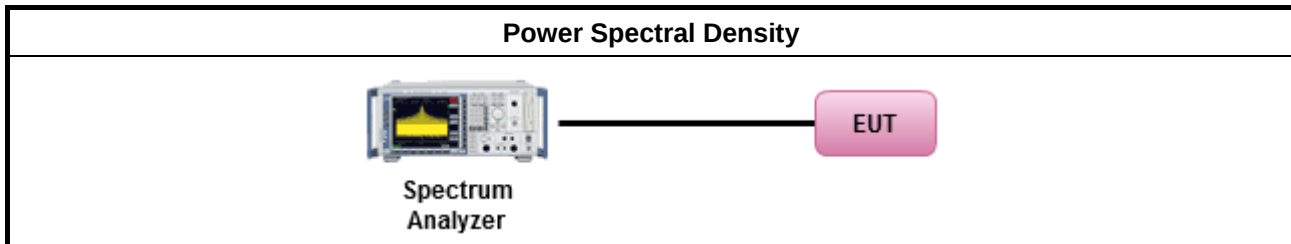
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall 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]
☒	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
☒	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: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$

3.4.4 Test Setup



3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D

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

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.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.47 - 5.725 GHz	e.i.r.p. -27 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



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

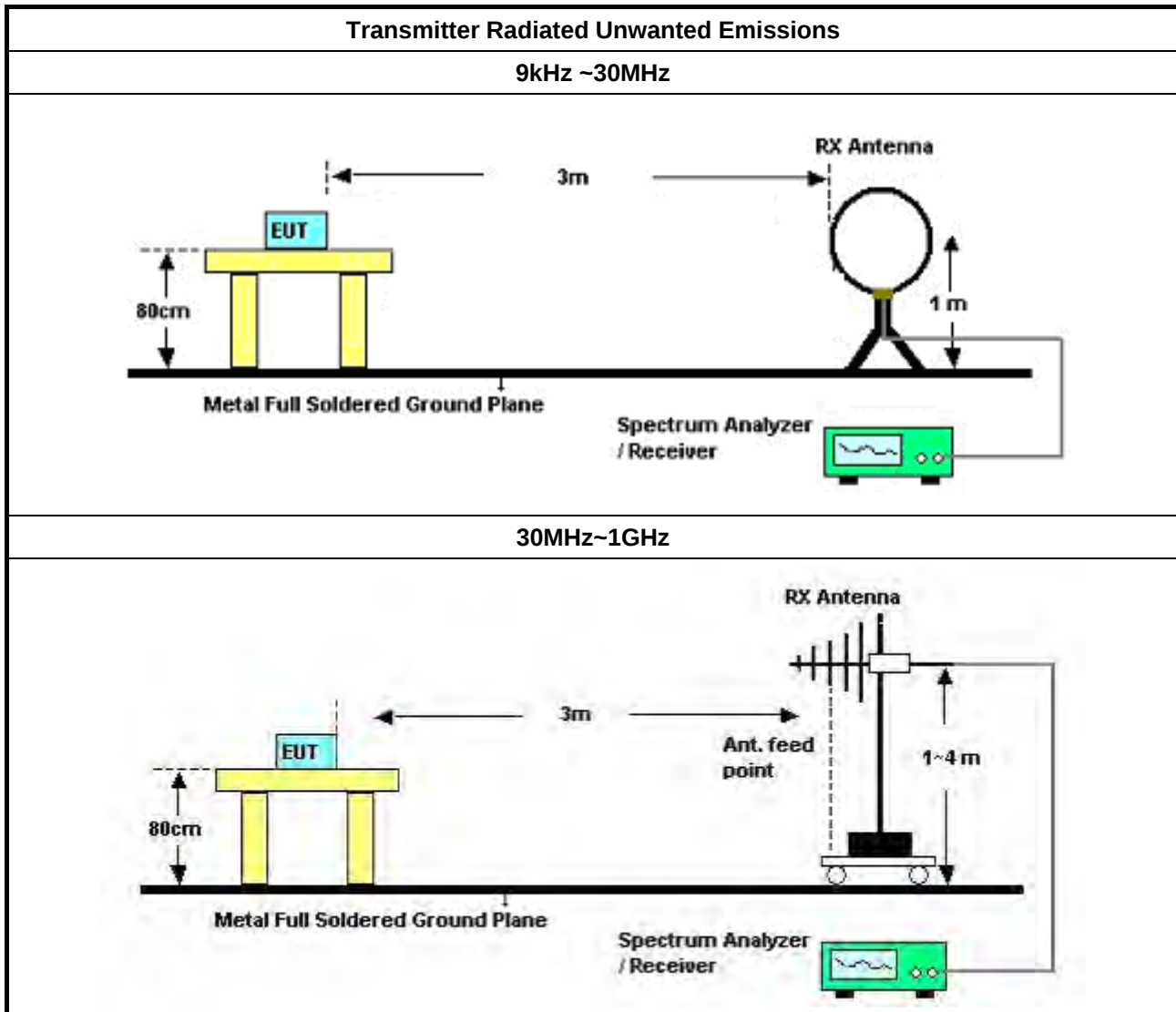
3.5.2 Measuring Instruments

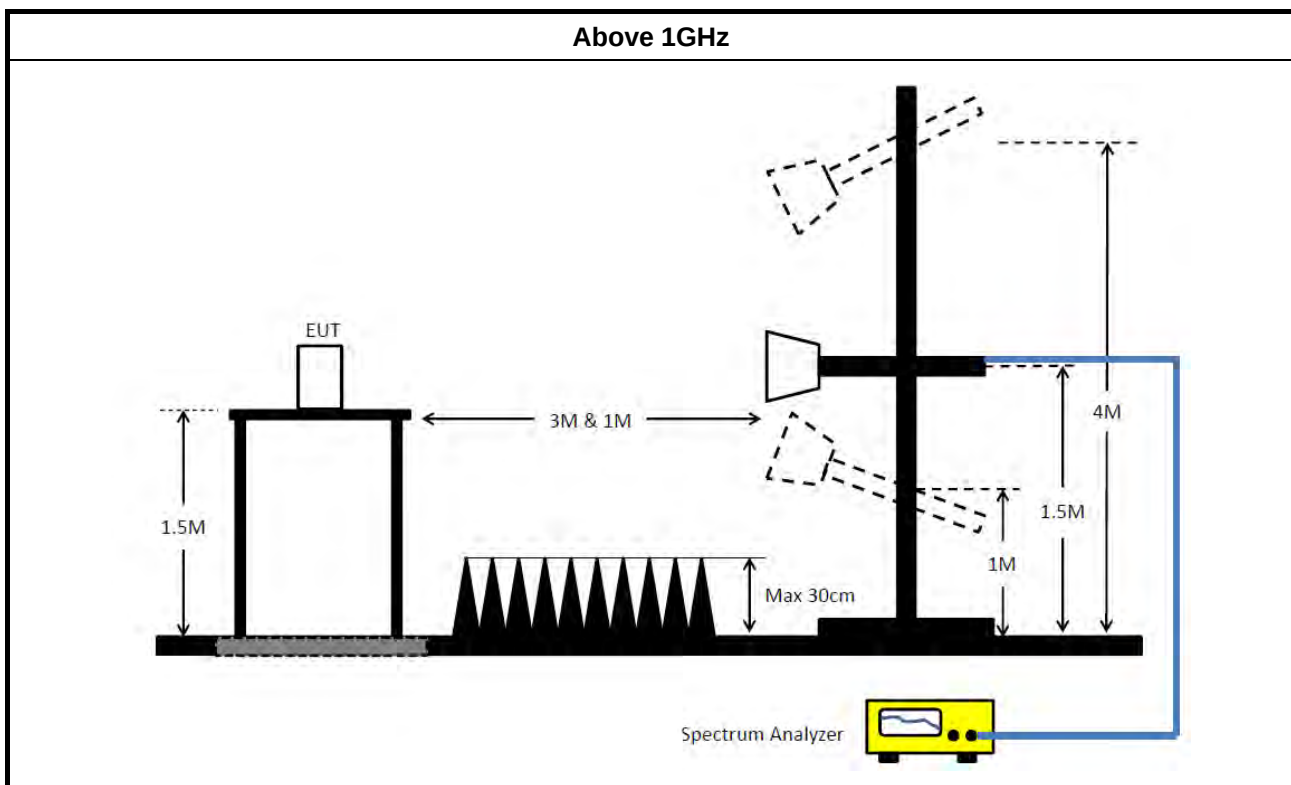
Refer a test equipment and calibration data table in this test report.

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 $\geq$ 98 or duty factor].	
For the transmitter unwanted emissions shall be measured using following options below:	
For radiated measurement.	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 $\geq$ 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.
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	☐ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
For radiated measurement.	
The any unwanted emissions level shall not exceed the fundamental emission level.	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.	

3.5.4 Test Setup





3.5.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.5.6 Transmitter Unwanted Emissions (Below 30MHz)

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



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	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	150kHz ~ 30MHz	May 22, 2018	May 21, 2019	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 27, 2018	Aug. 26, 2019	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH01-CB)
Horn Antenna	ETS-Lindgren	3115	6821	750MHz~18GHz	Jan. 24, 2019	Jan. 23, 2020	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH03-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2018	May 01, 2019	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 01, 2019	Apr. 30, 2020	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Dec. 20, 2018	Dec. 19, 2019	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Jan. 31, 2019	Jan. 30, 2020	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 26, 2018	Dec. 25, 2019	Radiation (03CH03-CB)
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-20+27	1GHz ~ 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-27	1GHz ~ 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH03-CB)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 05, 2018	Nov. 04, 2019	Conducted (TH01-CB)

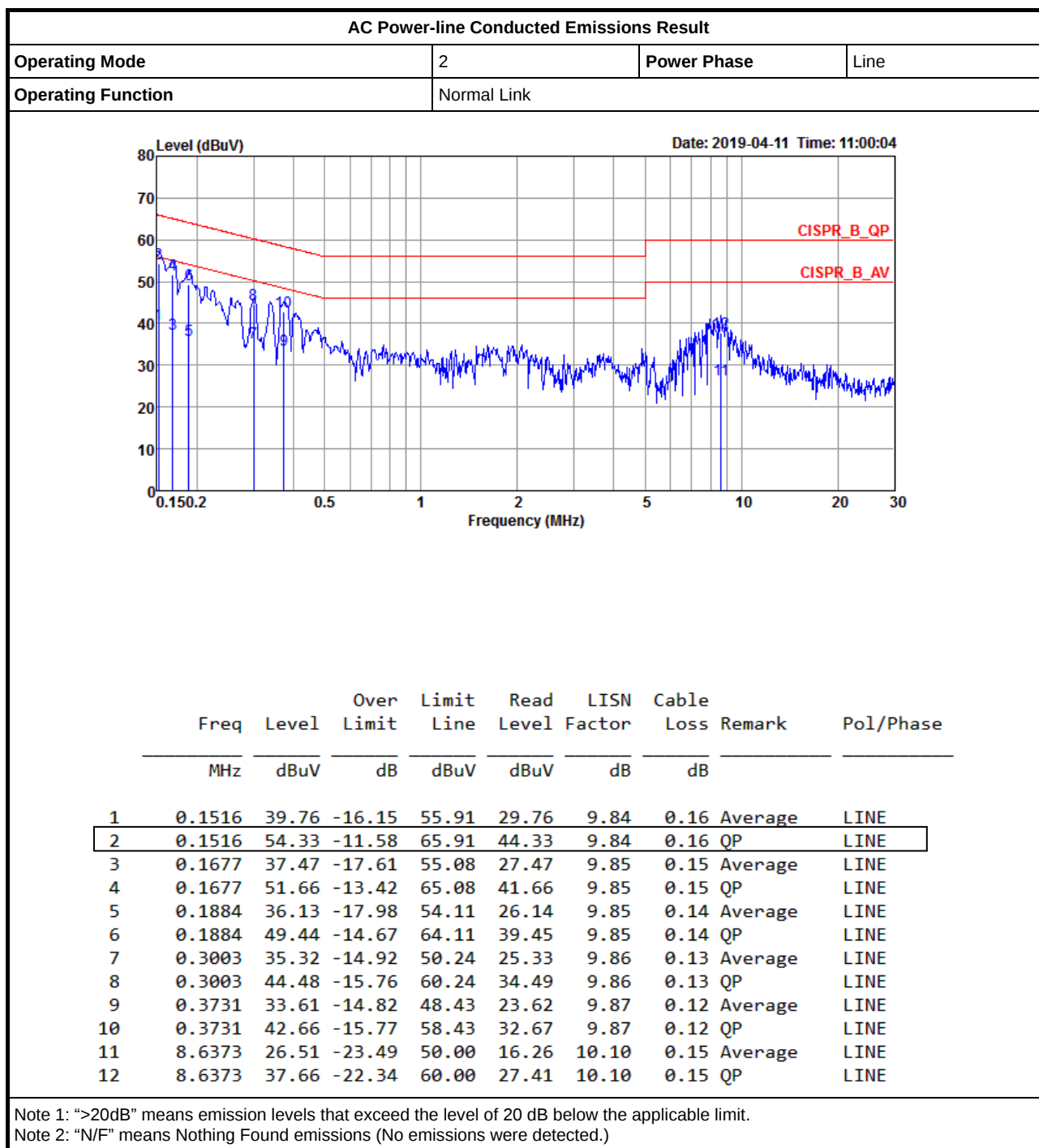
Note: Calibration Interval of instruments listed above is one year.

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



AC Power-line Conducted Emissions Result

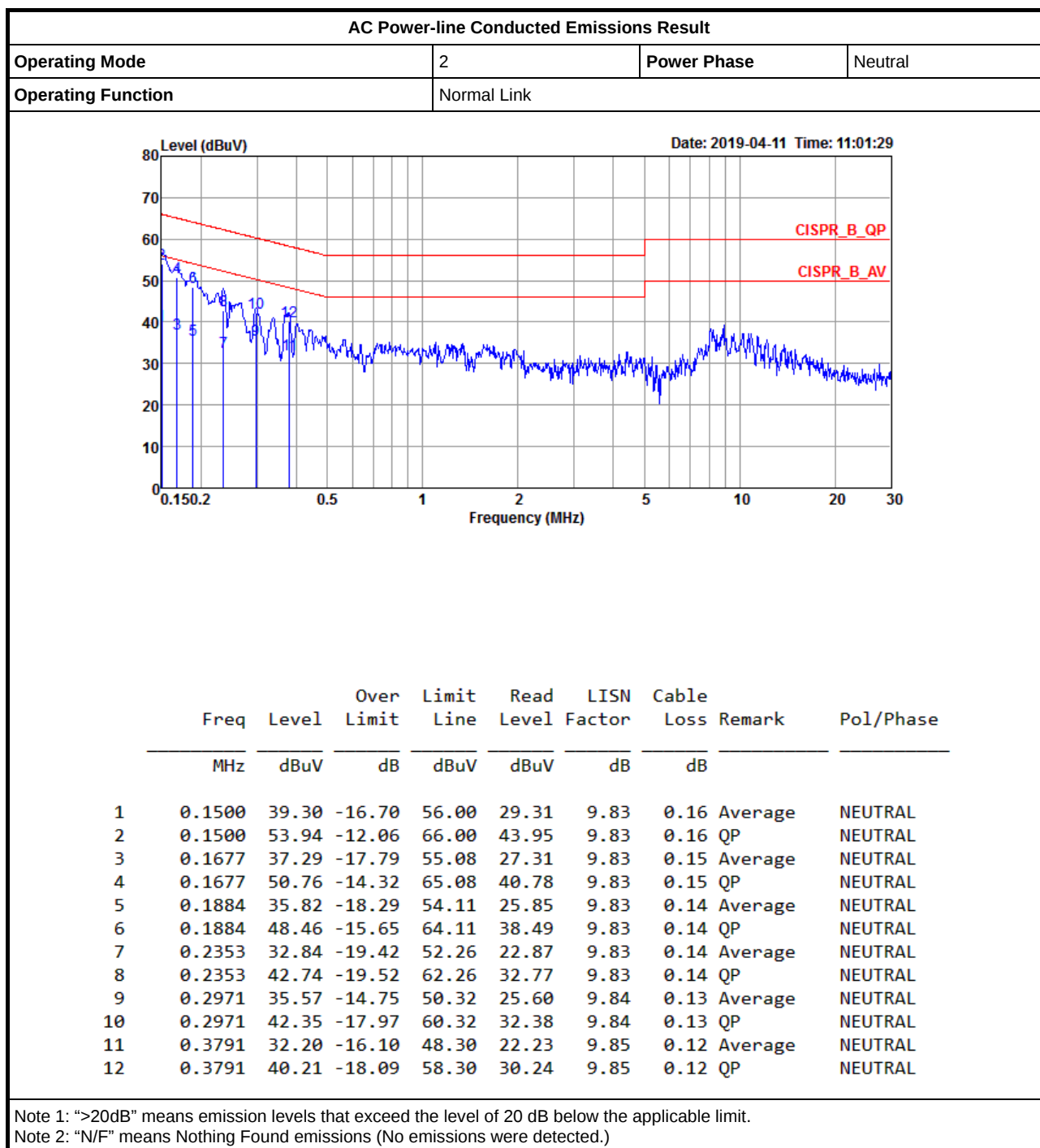
Appendix A





AC Power-line Conducted Emissions Result

Appendix A



**For Band 1 / 2T1S and Band 4 / 4T1S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a-BF_Nss1,(6Mbps)_2TX	38.925M	16.942M	16M9D1D	19.025M	16.417M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	41.95M	18.041M	18M0D1D	19.85M	17.616M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	74.3M	36.332M	36M3D1D	39.55M	35.882M
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	83.7M	75.662M	75M7D1D	83.2M	75.662M
5.725-5.85GHz	-	-	-	-	-
802.11a-BF_Nss1,(6Mbps)_4TX	16.325M	16.442M	16M4D1D	15.925M	16.392M
VHT20.BF_Nss1,(MCS0)_4TX	17.575M	17.641M	17M6D1D	16.5M	17.591M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	35.7M	36.032M	36M0D1D	30.9M	35.932M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	75.6M	75.862M	75M9D1D	73.1M	75.762M

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

Max-OBW = Maximum 99% 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 (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	19.025M	16.417M	19.075M	16.442M				
5200MHz	Pass	Inf	33.975M	16.567M	33.65M	16.642M				
5240MHz	Pass	Inf	38.925M	16.942M	34.375M	16.642M				
802.11a-BF_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	16.3M	16.417M	16.3M	16.417M	16.275M	16.392M	16.3M	16.442M
5785MHz	Pass	500k	16.3M	16.417M	16.3M	16.392M	15.925M	16.417M	16.3M	16.392M
5825MHz	Pass	500k	16.3M	16.442M	16.3M	16.392M	16.325M	16.392M	16.3M	16.392M
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	19.85M	17.616M	19.925M	17.666M				
5200MHz	Pass	Inf	34.1M	17.766M	34.85M	17.841M				
5240MHz	Pass	Inf	41.95M	18.041M	37M	17.791M				
VHT20.BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	17.15M	17.591M	17.15M	17.616M	16.5M	17.616M	17.575M	17.616M
5785MHz	Pass	500k	17.525M	17.591M	17.525M	17.591M	17.125M	17.616M	17.15M	17.616M
5825MHz	Pass	500k	17.525M	17.641M	16.55M	17.591M	17.1M	17.616M	16.525M	17.616M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	39.55M	35.982M	39.6M	35.882M				
5230MHz	Pass	Inf	74.3M	36.332M	65.05M	36.132M				
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5755MHz	Pass	500k	31.25M	35.982M	34.35M	35.982M	32.5M	36.032M	34.35M	35.982M
5795MHz	Pass	500k	30.9M	35.982M	35.05M	35.932M	34.45M	36.032M	35.7M	35.982M
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	83.7M	75.662M	83.2M	75.662M				
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5775MHz	Pass	500k	74.4M	75.762M	75.6M	75.862M	74.4M	75.762M	73.1M	75.762M

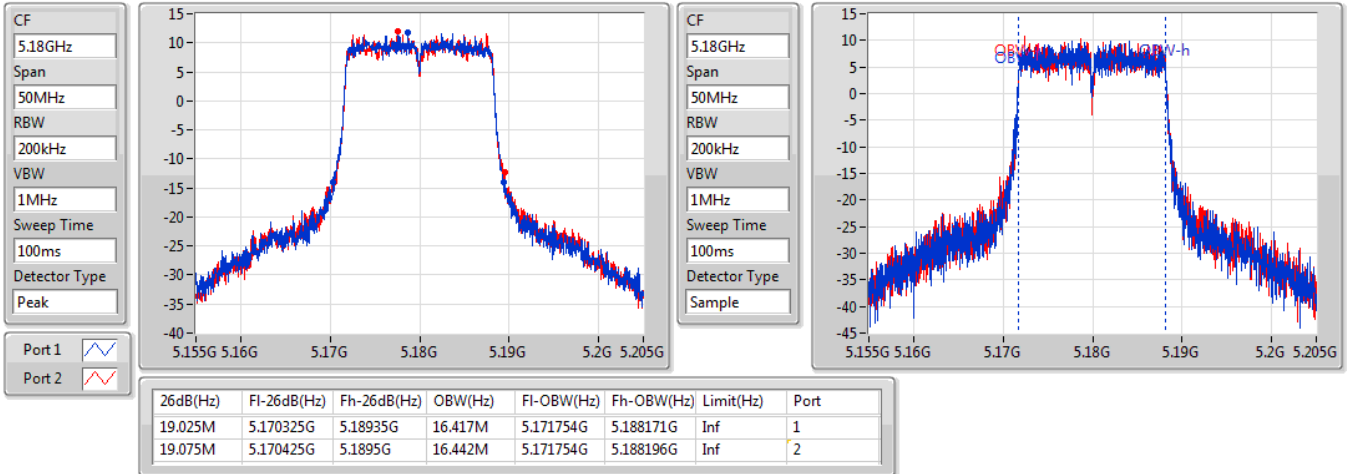
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

Port X-OBW = Port X 99% occupied bandwidth;

802.11a-BF_Nss1,(6Mbps)_2TX

EBW
5180MHz

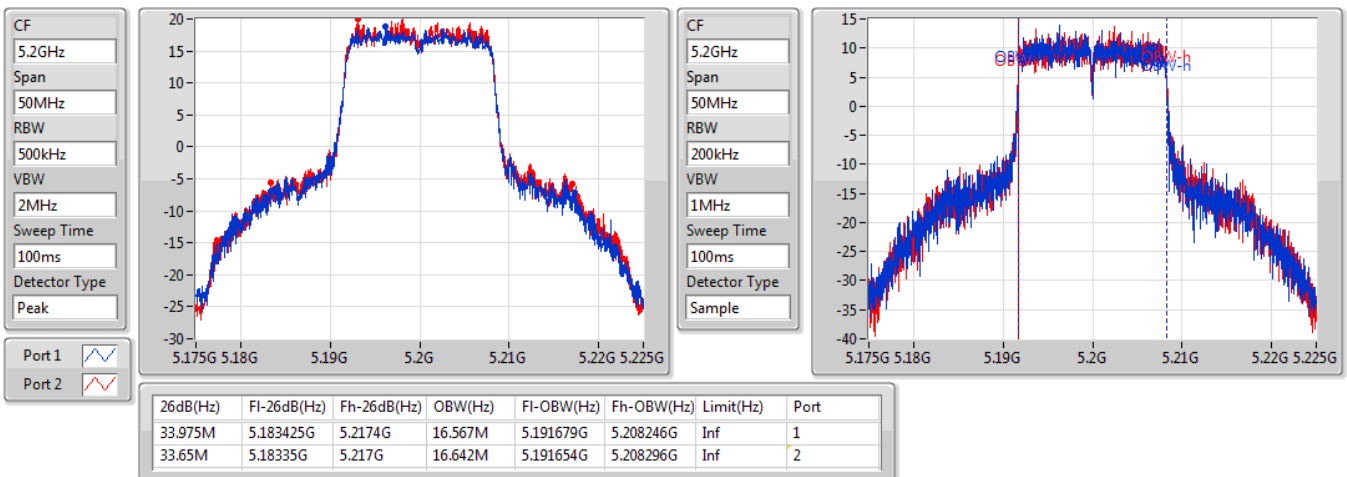
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802.11a-BF_Nss1,(6Mbps)_2TX

EBW
5200MHz

18/04/2019

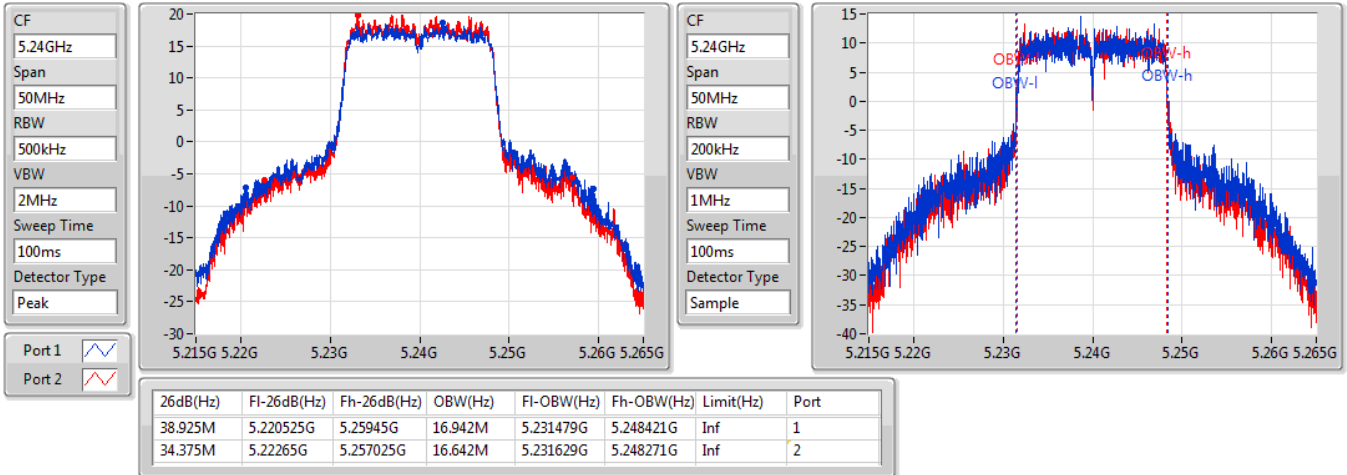


802.11a-BF_Nss1,(6Mbps)_2TX

EBW

5240MHz

18/04/2019

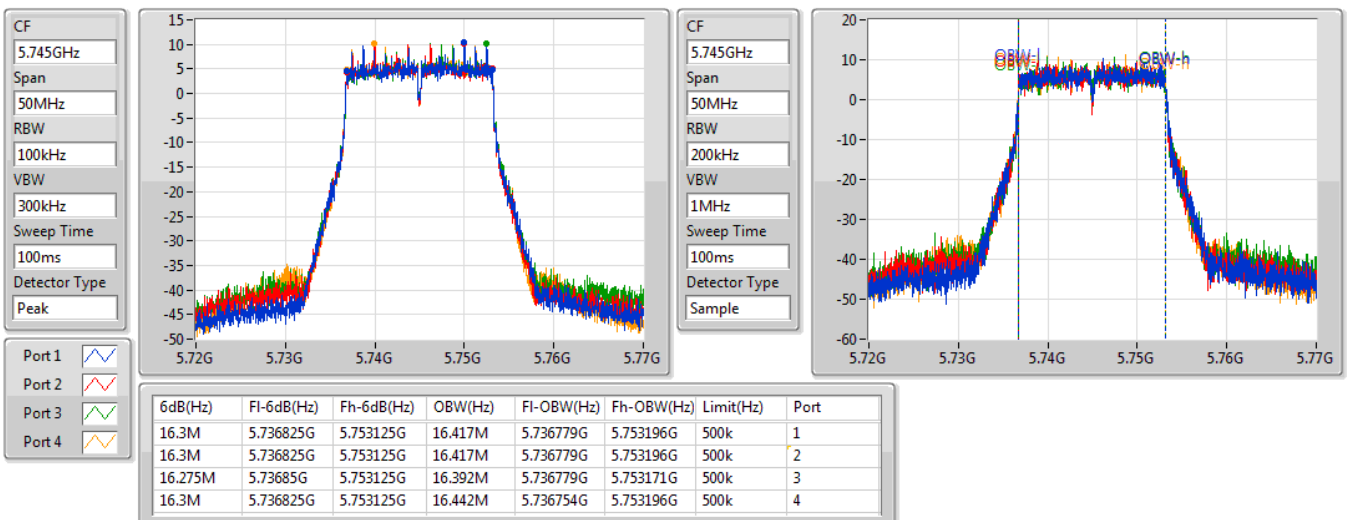


802.11a-BF_Nss1,(6Mbps)_4TX

EBW

5745MHz

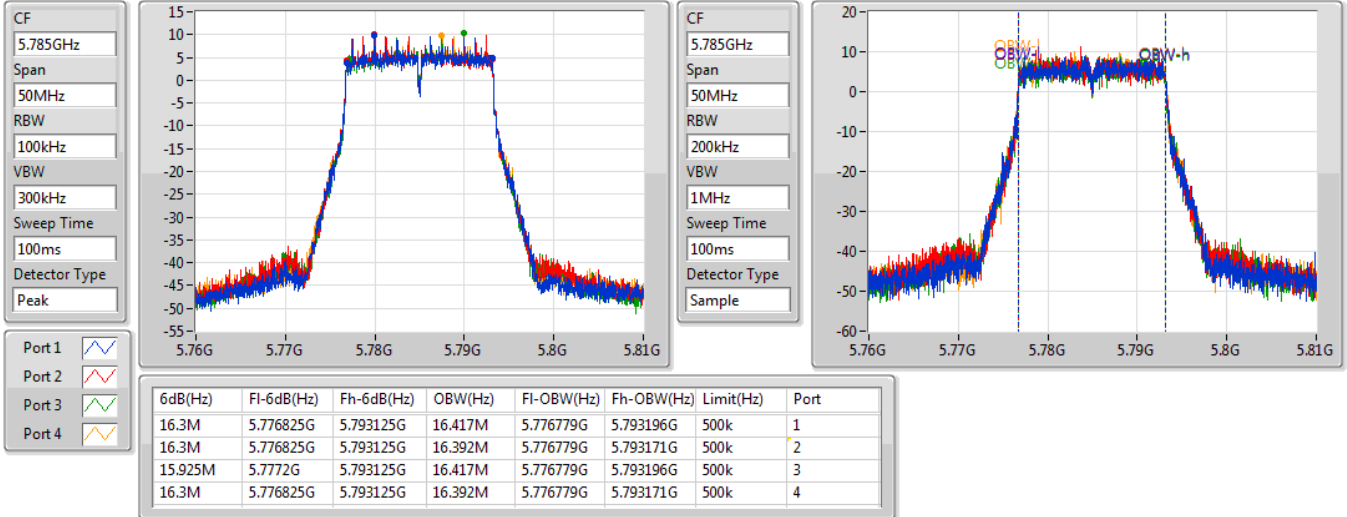
18/04/2019



802.11a-BF_Nss1,(6Mbps)_4TX

EBW
5785MHz

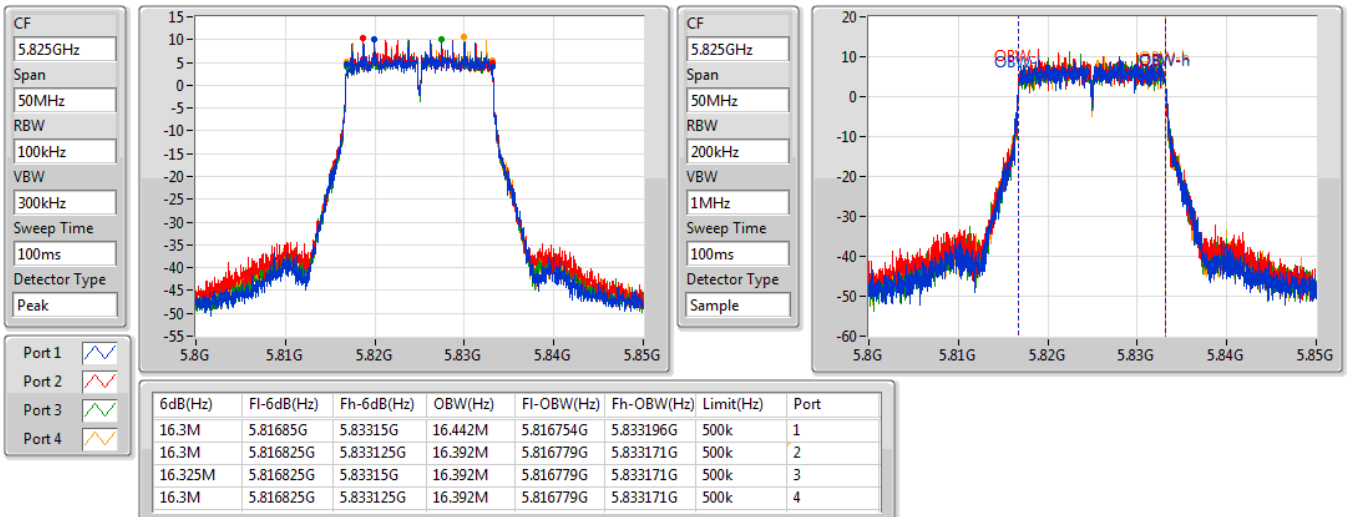
18/04/2019



802.11a-BF_Nss1,(6Mbps)_4TX

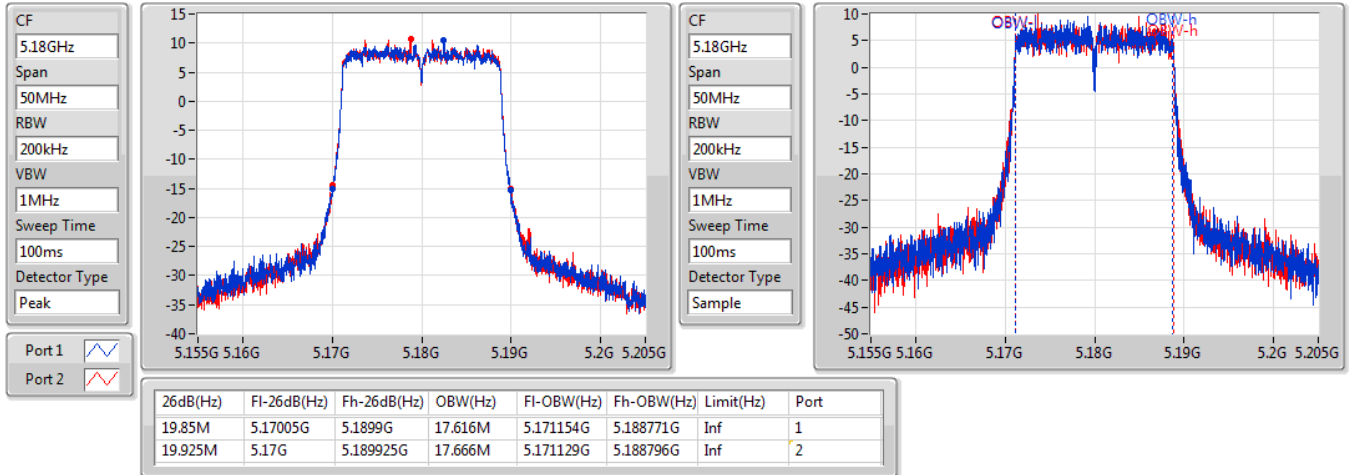
EBW
5825MHz

18/04/2019

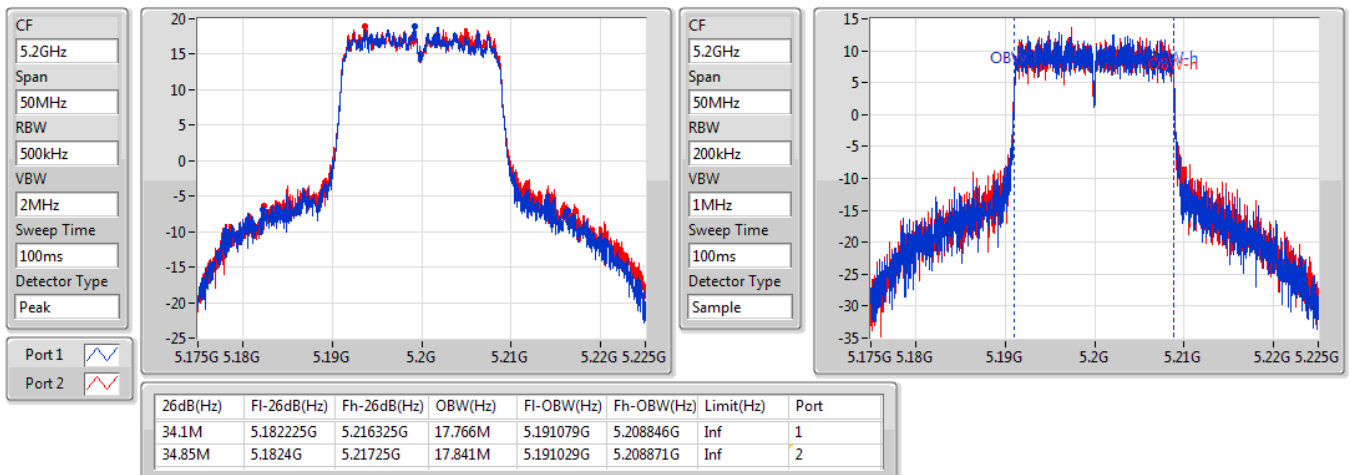


802.11ac VHT20-BF_Nss1,(MCS0)_2TX
EBW
5180MHz

18/04/2019

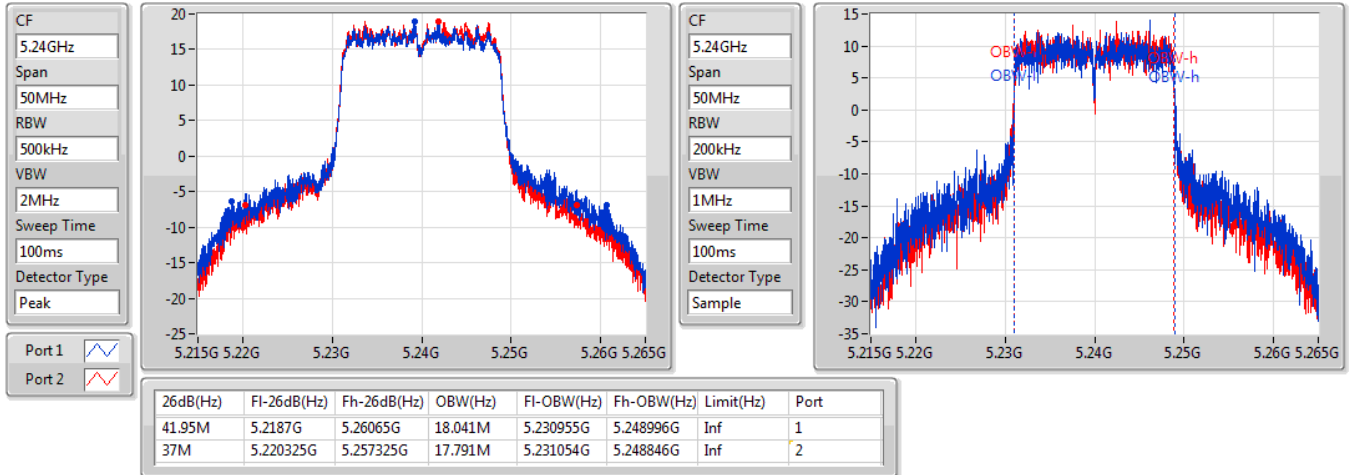

802.11ac VHT20-BF_Nss1,(MCS0)_2TX
EBW
5200MHz

18/04/2019

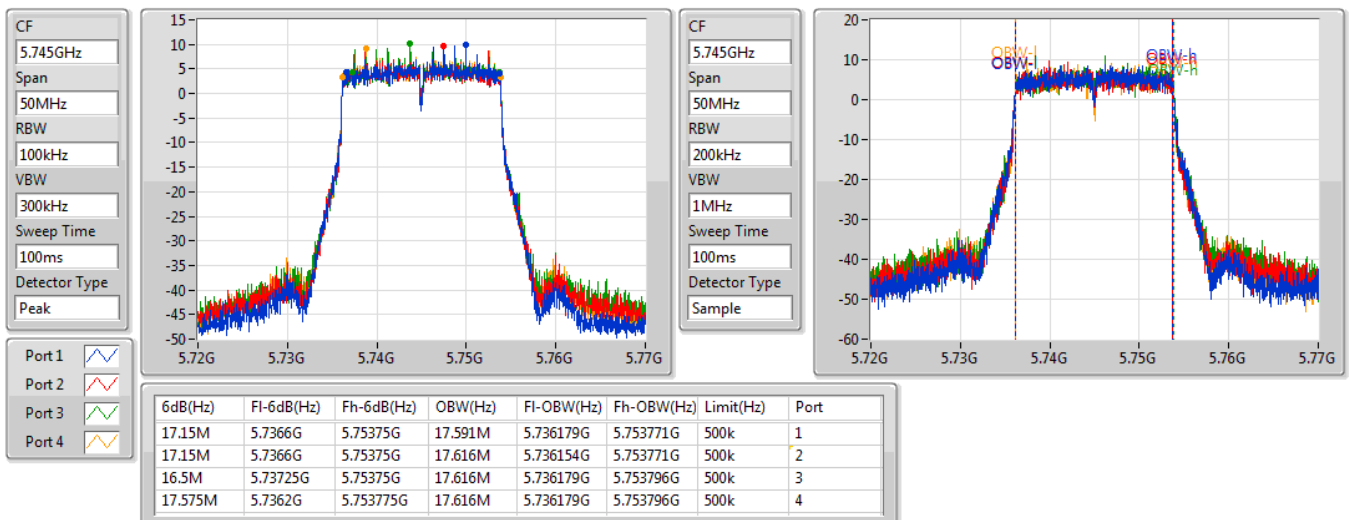


802.11ac VHT20-BF_Nss1,(MCS0)_2TX
EBW
5240MHz

18/04/2019

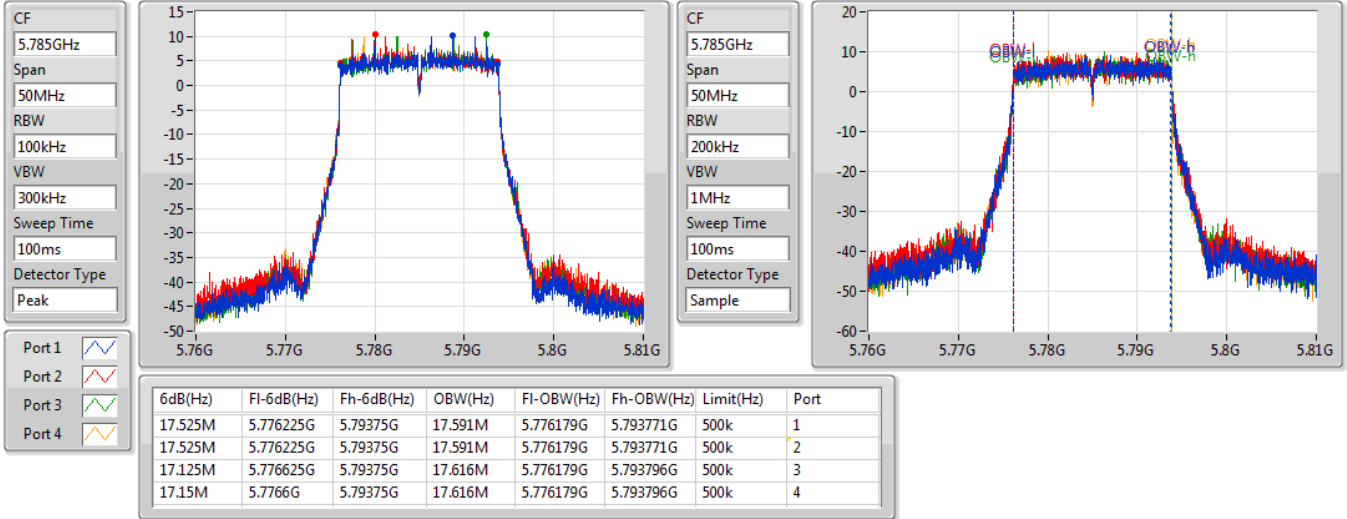

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5745MHz

18/04/2019

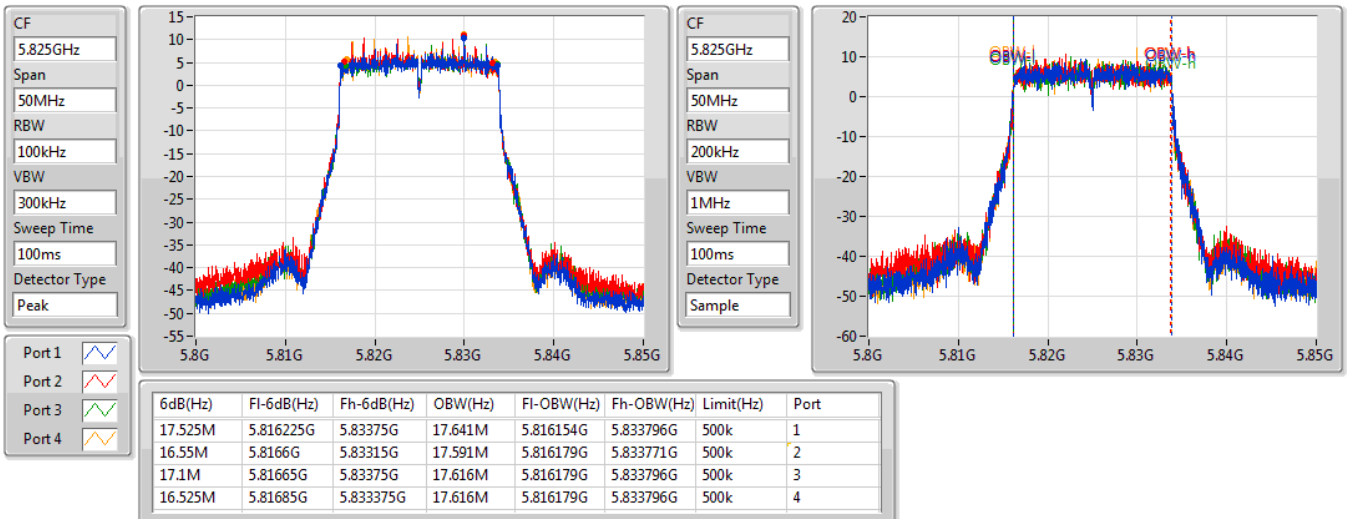


802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5785MHz

18/04/2019

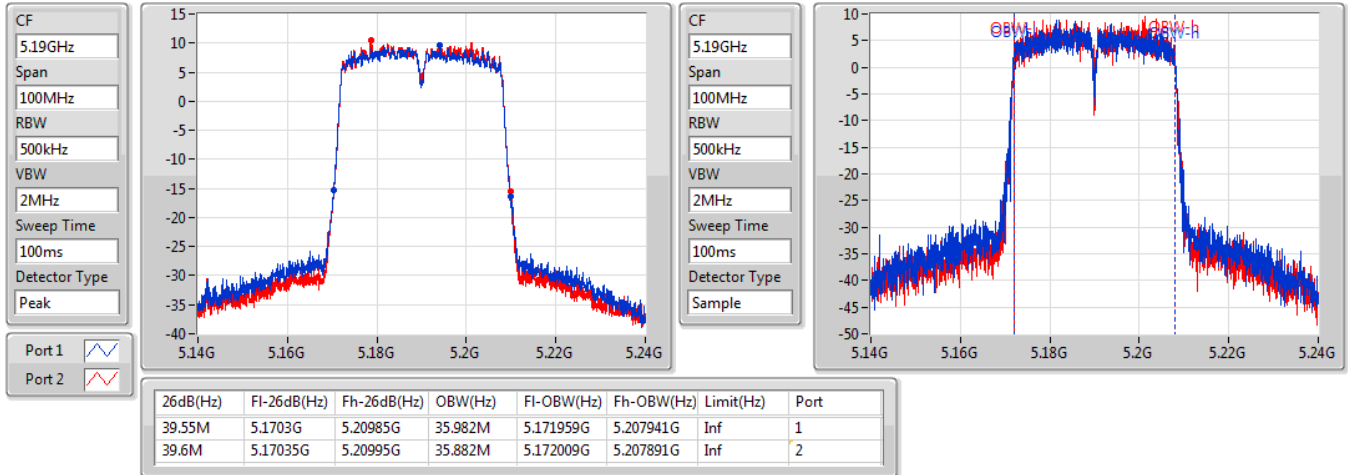

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5825MHz

18/04/2019

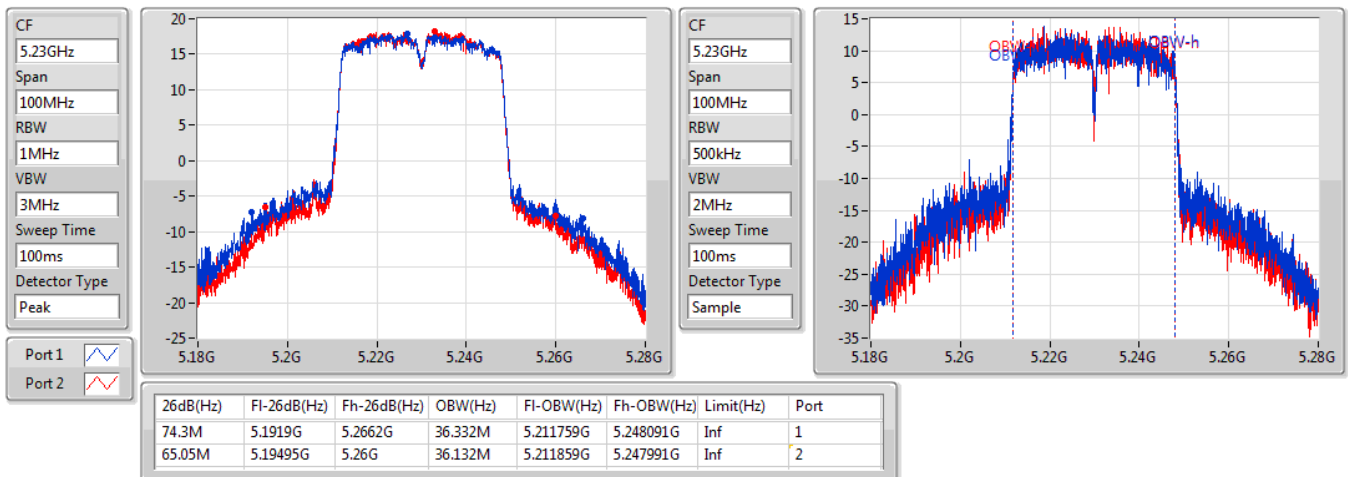


802.11ac VHT40-BF_Nss1,(MCS0)_2TX
EBW
5190MHz

18/04/2019


802.11ac VHT40-BF_Nss1,(MCS0)_2TX
EBW
5230MHz

18/04/2019

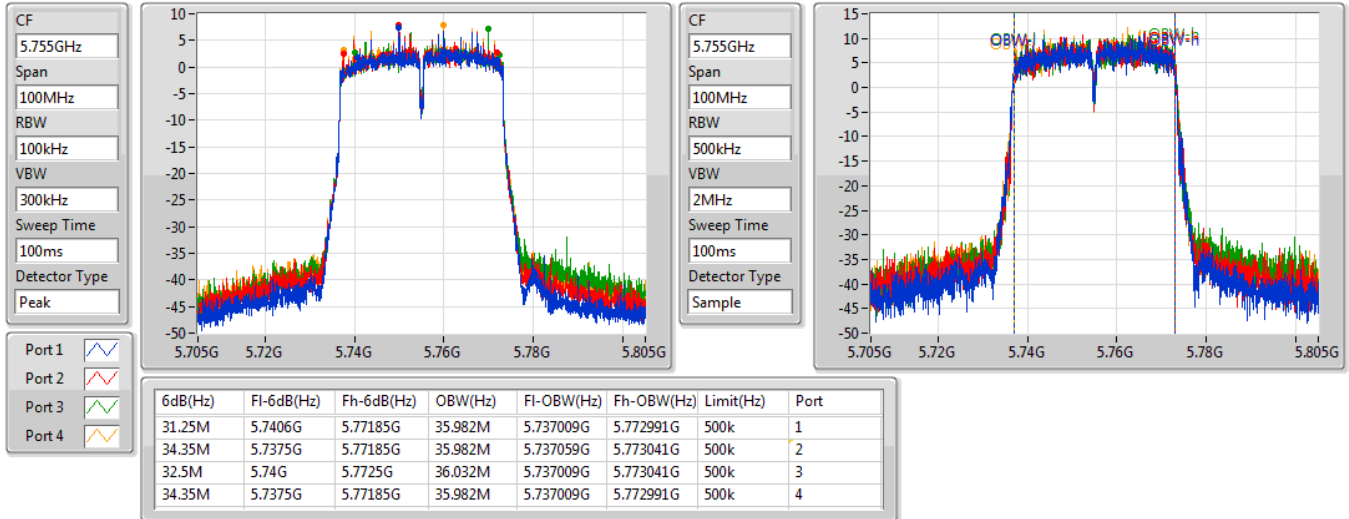


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

5755MHz

18/04/2019

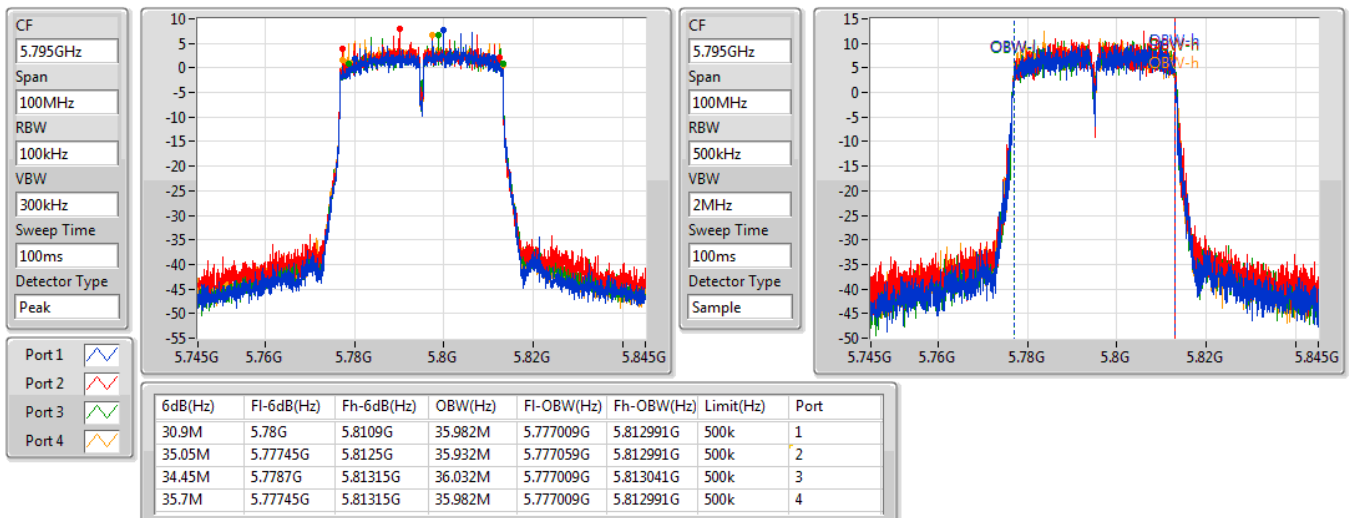


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

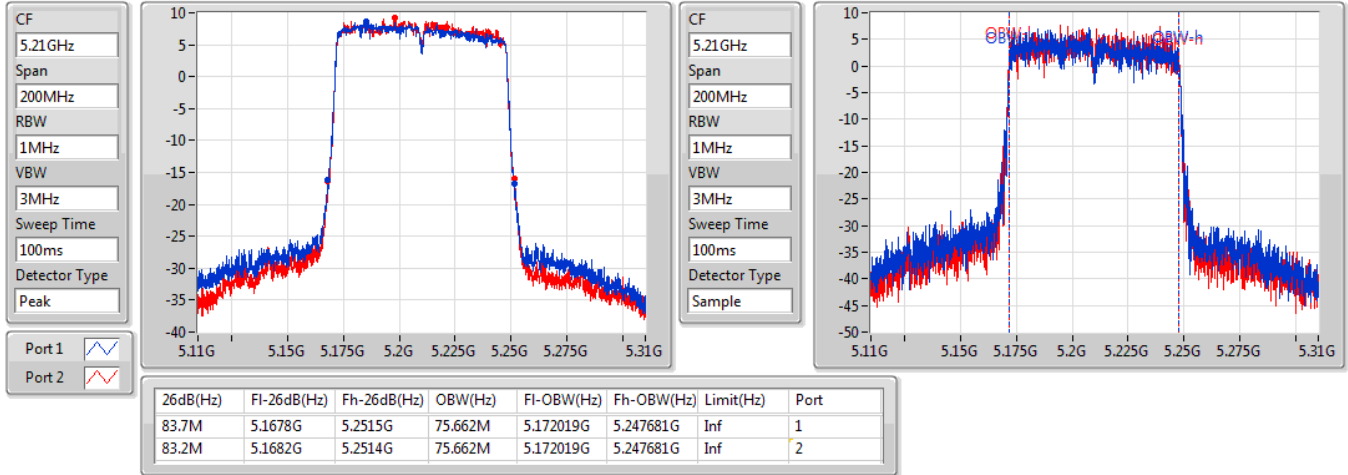
5795MHz

18/04/2019

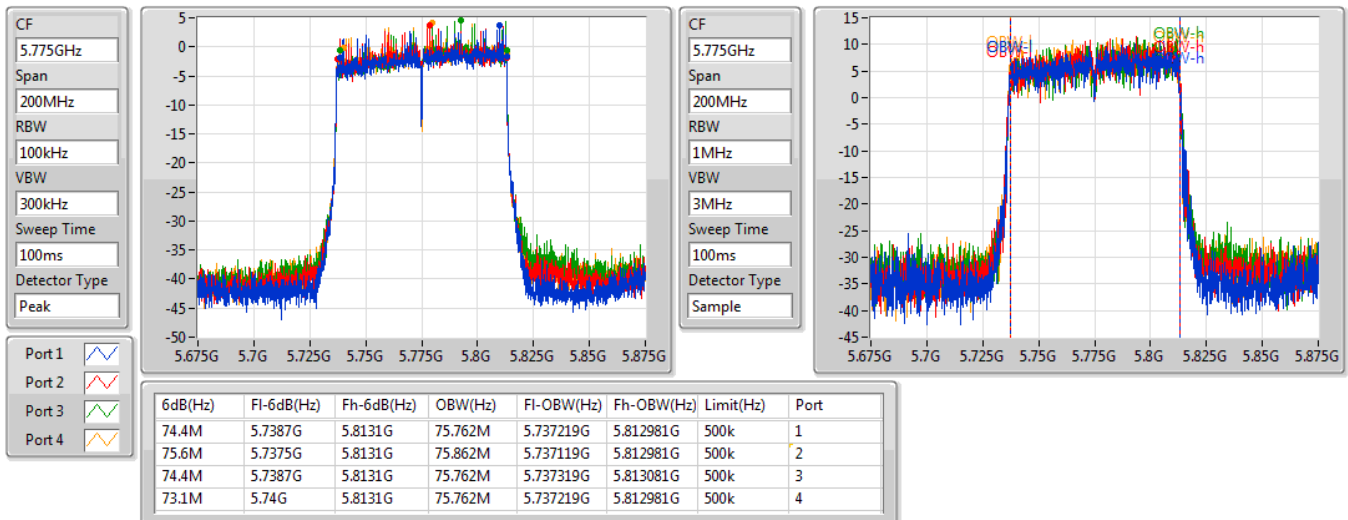


802.11ac VHT80-BF_Nss1,(MCS0)_2TX
EBW
5210MHz

18/04/2019


802.11ac VHT80-BF_Nss1,(MCS0)_4TX
EBW
5775MHz

18/04/2019



For Band 4 / 4T2S Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	17.575M	17.691M	17M7D1D	16.825M	17.616M
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	35.65M	36.082M	36M1D1D	34.05M	35.982M
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	74.4M	75.862M	75M9D1D	73.2M	75.762M

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

Max-OBW = Maximum 99% 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 (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
VHT20.BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5745MHz	Pass	500k	17.525M	17.666M	17.15M	17.641M	16.9M	17.691M	16.875M	17.666M
5785MHz	Pass	500k	17.55M	17.641M	17.525M	17.666M	17.575M	17.641M	17.525M	17.641M
5825MHz	Pass	500k	17.175M	17.616M	16.825M	17.691M	17.275M	17.641M	17.525M	17.616M
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5755MHz	Pass	500k	34.95M	36.032M	34.05M	36.032M	35.05M	36.082M	35.65M	36.032M
5795MHz	Pass	500k	34.95M	35.982M	34.65M	36.032M	35M	36.032M	35.05M	36.032M
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5775MHz	Pass	500k	74.4M	75.762M	73.2M	75.862M	74.4M	75.862M	74.3M	75.862M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

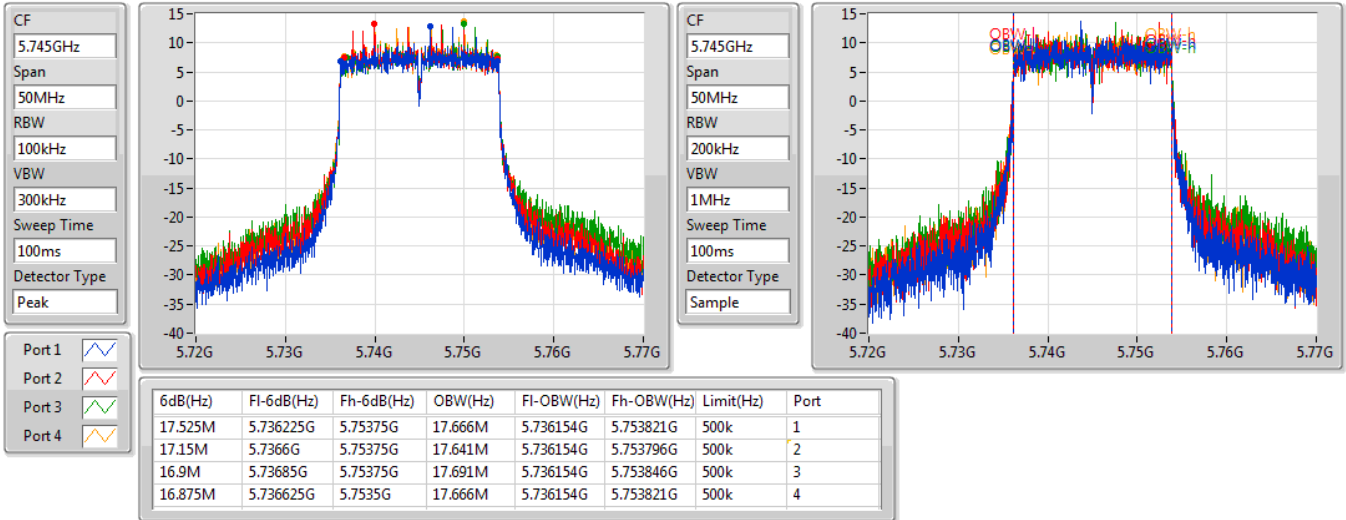
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

EBW

5745MHz

18/04/2019

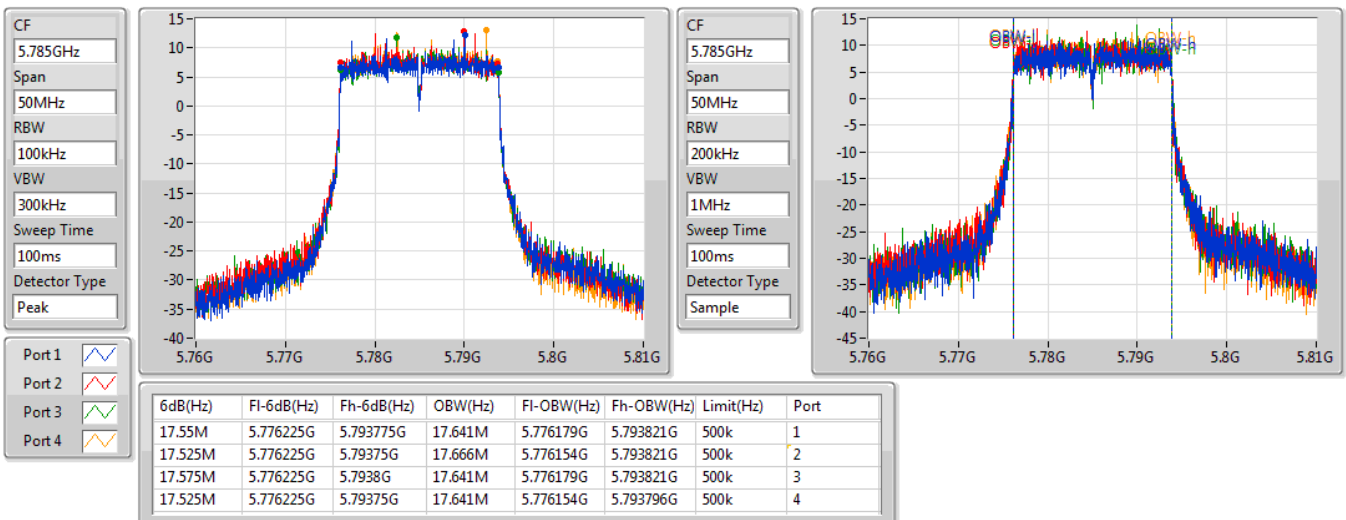


802.11ac VHT20-BF_Nss2,(MCS0)_4TX

EBW

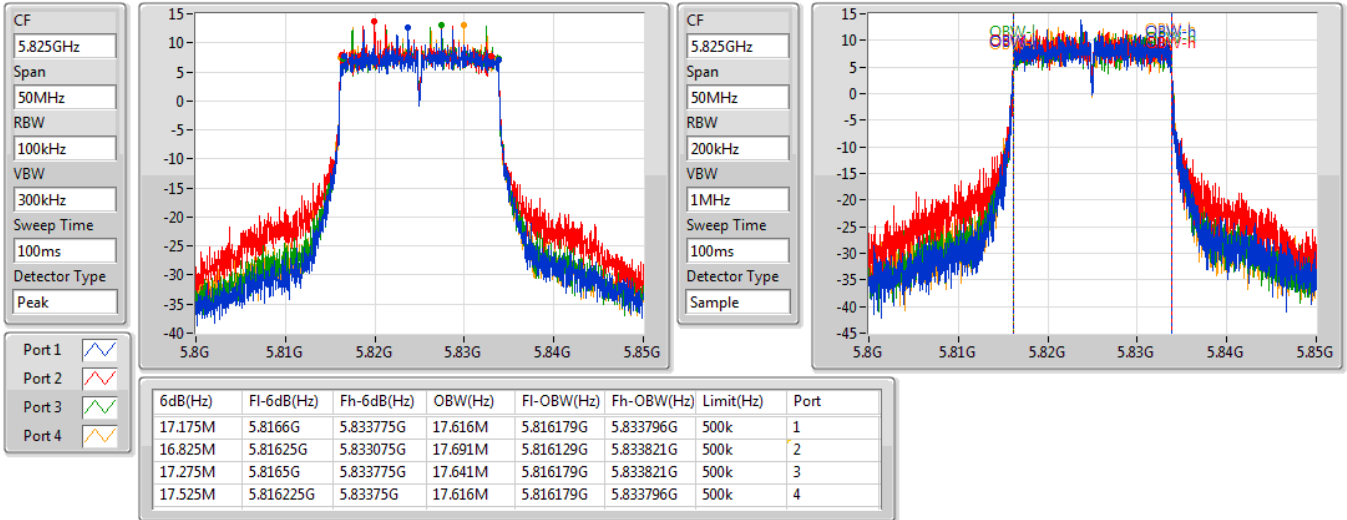
5785MHz

18/04/2019

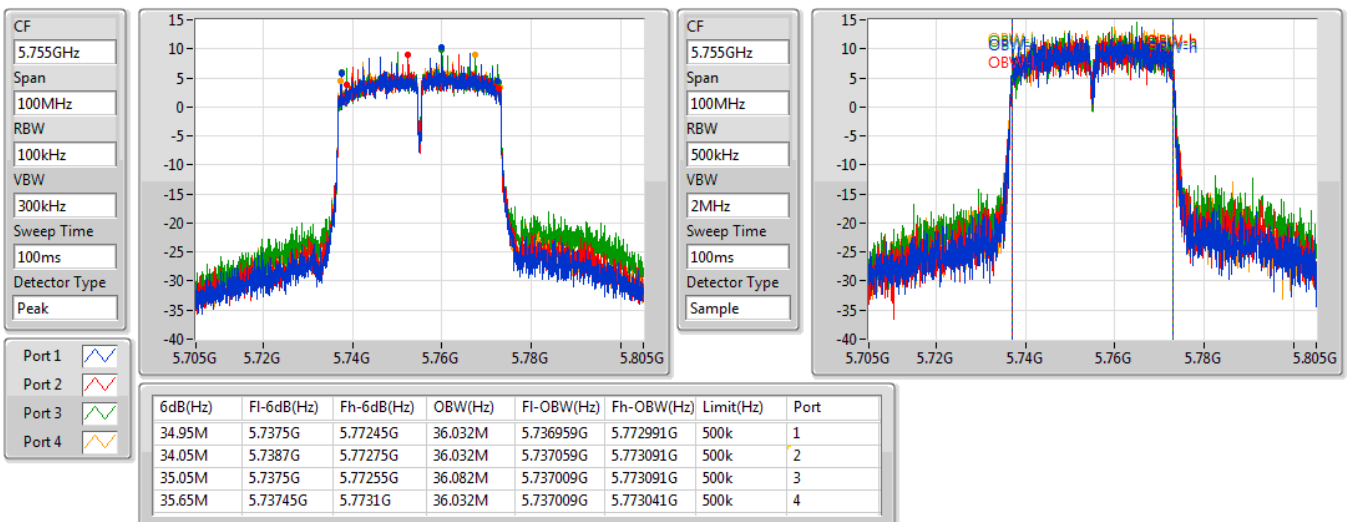


802.11ac VHT20-BF_Nss2,(MCS0)_4TX
EBW
5825MHz

18/04/2019

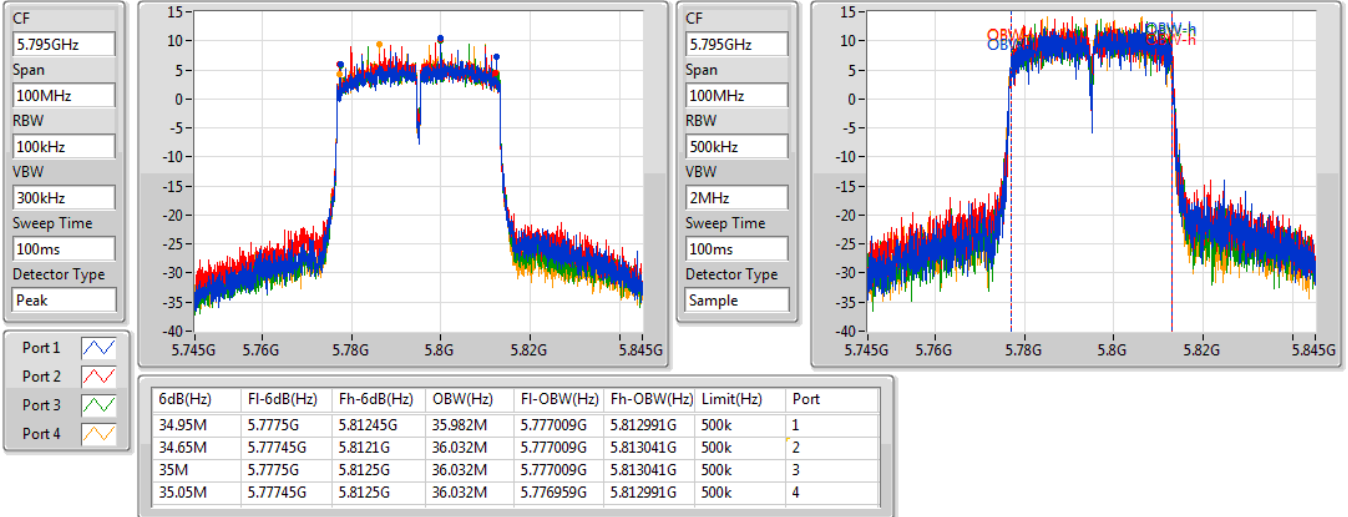

802.11ac VHT40-BF_Nss2,(MCS0)_4TX
EBW
5755MHz

18/04/2019

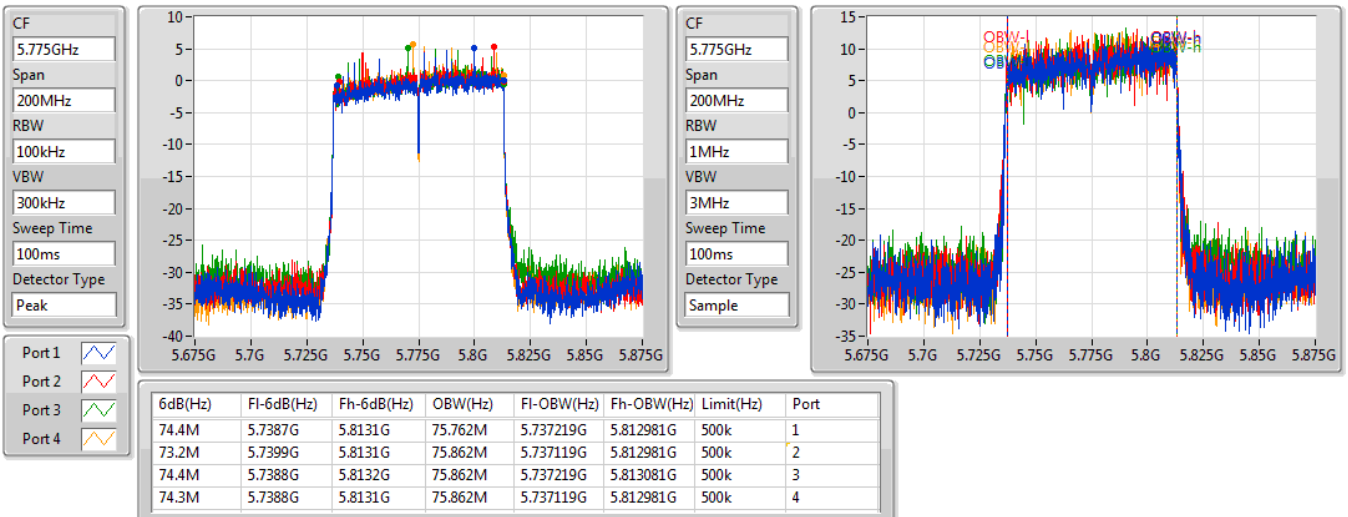


802.11ac VHT40-BF_Nss2,(MCS0)_4TX
EBW
5795MHz

18/04/2019


802.11ac VHT80-BF_Nss2,(MCS0)_4TX
EBW
5775MHz

18/04/2019





Power Result

Appendix C.1

For Band 1 / 2T1S and Band 4 / 4T1S Summary

Mode	Total Power (dBm)	Total Power (W)
5.15-5.25GHz	-	-
802.11a-BF_Nss1,(6Mbps)_2TX	27.45	0.55590
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	27.46	0.55719
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	26.98	0.49888
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	20.85	0.12162
5.725-5.85GHz	-	-
802.11a-BF_Nss1,(6Mbps)_4TX	27.14	0.51761
VHT20.BF_Nss1,(MCS0)_4TX	27.27	0.53333
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	27.21	0.52602
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	26.87	0.48641



Power Result

Appendix C.1

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	5.75	21.97	21.96			24.98	30.00
5200MHz	Pass	5.75	24.29	24.37			27.34	30.00
5240MHz	Pass	5.75	24.31	24.57			27.45	30.00
802.11a-BF_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	8.69	21.06	21.06	20.99	21.35	27.14	27.31
5785MHz	Pass	8.69	20.79	20.86	20.79	20.85	26.84	27.31
5825MHz	Pass	8.69	20.45	21.44	20.83	20.35	26.81	27.31
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	5.75	20.82	20.82			23.83	30.00
5200MHz	Pass	5.75	24.25	24.01			27.14	30.00
5240MHz	Pass	5.75	24.22	24.67			27.46	30.00
VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	8.69	20.73	20.81	20.85	20.98	26.86	27.31
5785MHz	Pass	8.69	21.06	21.32	21.24	21.36	27.27	27.31
5825MHz	Pass	8.69	20.97	21.39	21.19	21.27	27.23	27.31
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	5.75	19.03	19.33			22.19	30.00
5230MHz	Pass	5.75	23.89	24.05			26.98	30.00
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5755MHz	Pass	8.69	20.78	20.96	20.89	21.18	26.98	27.31
5795MHz	Pass	8.69	20.88	21.27	21.08	21.52	27.21	27.31
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	5.75	17.81	17.86			20.85	30.00
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5775MHz	Pass	8.69	20.72	20.98	20.81	20.90	26.87	27.31

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



Power Result

Appendix C.2

For Band 4 / 4T2S Summary

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	29.96	0.99083
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	29.75	0.94406
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	28.39	0.69024

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	5.69	23.66	23.90	24.00	24.18	29.96	30.00
5785MHz	Pass	5.69	23.76	24.00	23.47	23.70	29.76	30.00
5825MHz	Pass	5.69	23.52	24.19	23.57	23.37	29.69	30.00
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5755MHz	Pass	5.69	23.67	23.60	23.58	23.56	29.62	30.00
5795MHz	Pass	5.69	23.77	23.98	23.50	23.67	29.75	30.00
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5775MHz	Pass	5.69	22.35	22.51	22.31	22.32	28.39	30.00

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

**For Band 1 / 2T1S and Band 4 / 4T1S
Summary**

Mode	PD (dBm/RBW)
5.15-5.25GHz	-
802.11a-BF_Nss1,(6Mbps)_2TX	15.21
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	14.95
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	11.87
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	2.00
5.725-5.85GHz	-
802.11a-BF_Nss1,(6Mbps)_4TX	13.12
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	13.22
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	10.58
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	6.72

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

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11a-BF_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	5.75	9.45	9.70			12.52	17.00
5200MHz	Pass	5.75	12.17	12.37			15.21	17.00
5240MHz	Pass	5.75	12.00	12.43			15.17	17.00
802.11a-BF_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	8.69	7.14	7.08	7.36	7.48	13.12	27.31
5785MHz	Pass	8.69	6.91	7.16	7.09	7.37	12.97	27.31
5825MHz	Pass	8.69	7.04	7.46	7.31	7.36	13.11	27.31
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	5.75	8.45	8.38			11.35	17.00
5200MHz	Pass	5.75	12.04	11.87			14.95	17.00
5240MHz	Pass	5.75	11.81	12.06			14.84	17.00
VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	8.69	6.52	6.52	6.74	7.04	12.59	27.31
5785MHz	Pass	8.69	7.16	7.43	7.35	7.64	13.22	27.31
5825MHz	Pass	8.69	6.89	7.44	7.34	7.32	13.12	27.31
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	5.75	4.07	4.29			7.18	17.00
5230MHz	Pass	5.75	8.89	9.04			11.87	17.00
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5755MHz	Pass	8.69	4.18	4.45	4.55	4.78	10.42	27.31
5795MHz	Pass	8.69	4.43	4.87	4.63	5.09	10.58	27.31
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	5.75	-0.99	-1.01			2.00	17.00
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5775MHz	Pass	8.69	0.69	0.97	0.99	1.19	6.72	27.31

DG = Directional Gain; **RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

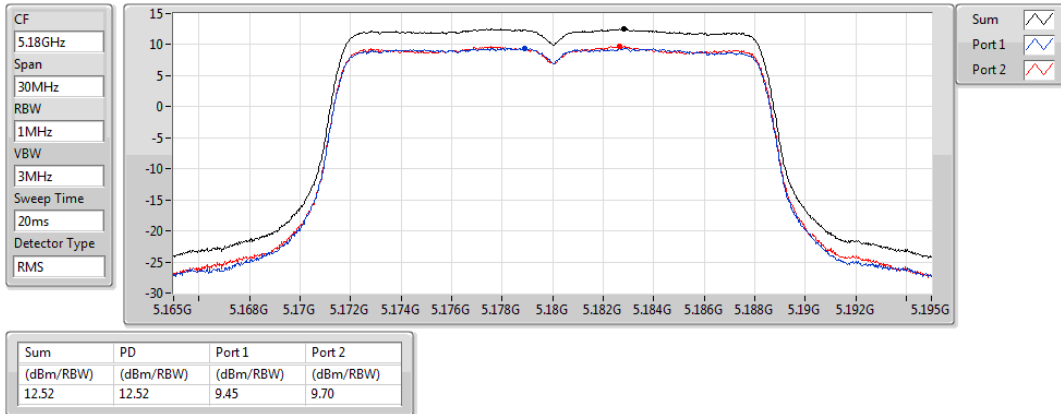
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.11a-BF_Nss1,(6Mbps)_2TX

PSD

5180MHz

18/04/2019

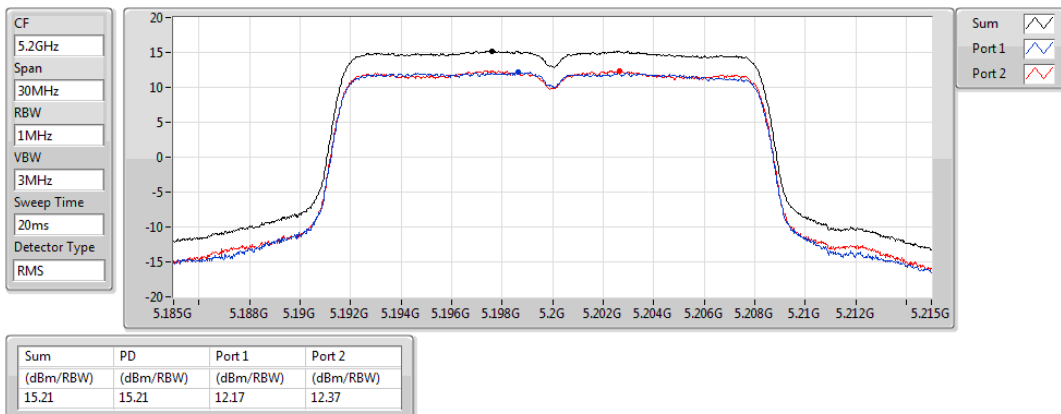


802.11a-BF_Nss1,(6Mbps)_2TX

PSD

5200MHz

18/04/2019

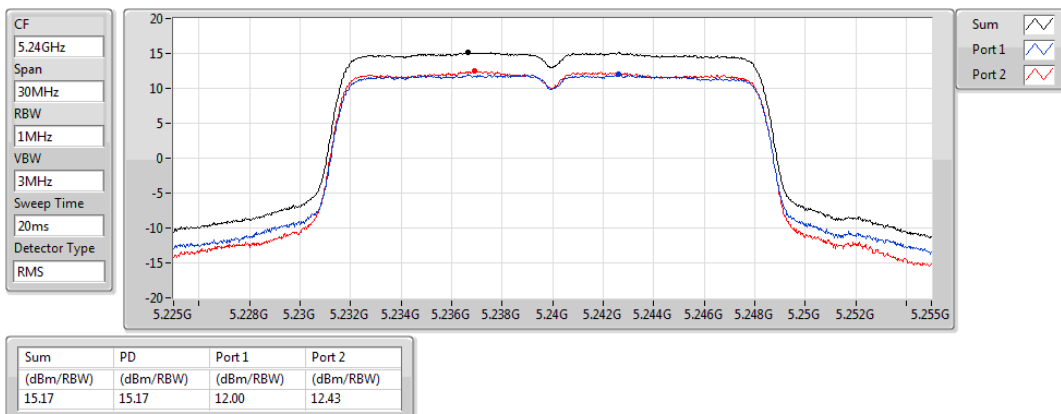


802.11a-BF_Nss1,(6Mbps)_2TX

PSD

5240MHz

18/04/2019

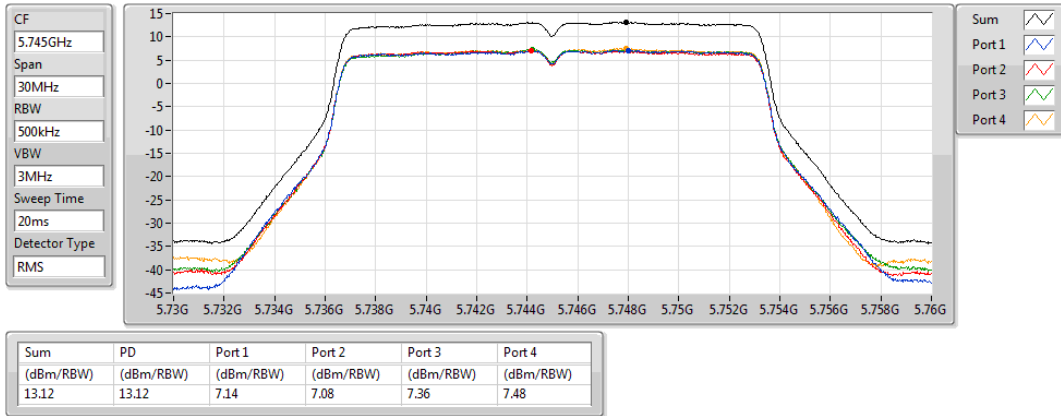


802.11a-BF_Nss1,(6Mbps)_4TX

PSD

5745MHz

18/04/2019

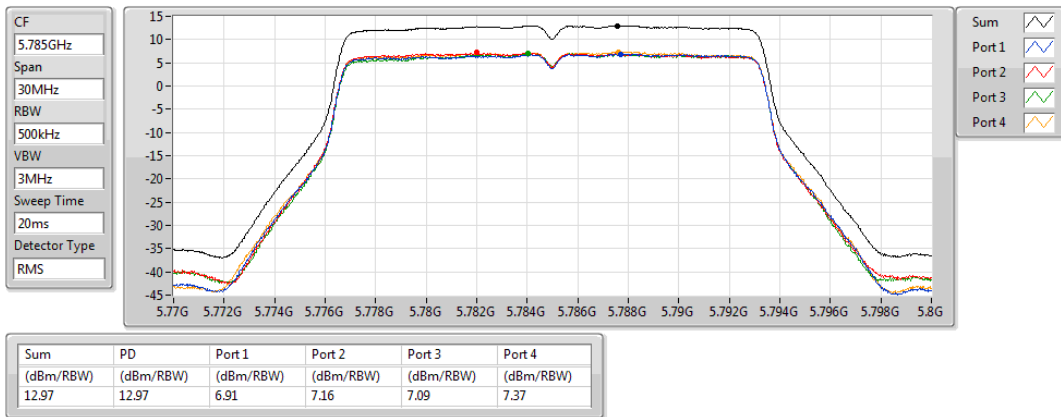


802.11a-BF_Nss1,(6Mbps)_4TX

PSD

5785MHz

18/04/2019

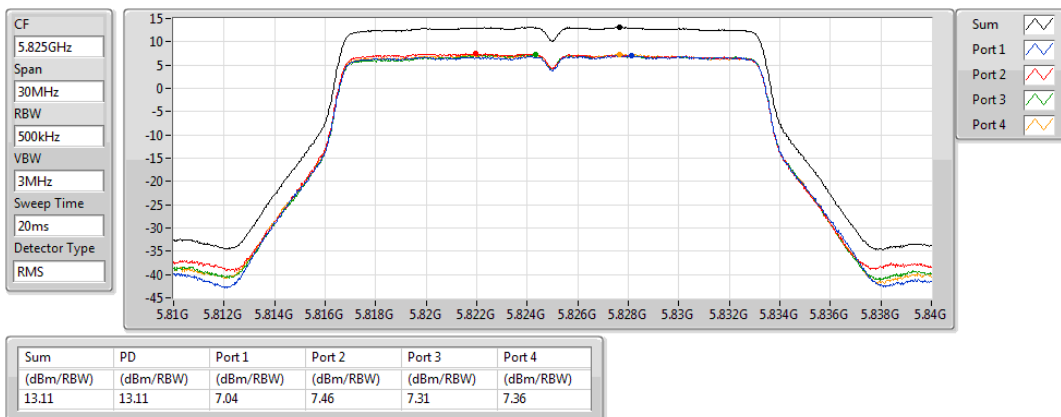


802.11a-BF_Nss1,(6Mbps)_4TX

PSD

5825MHz

18/04/2019

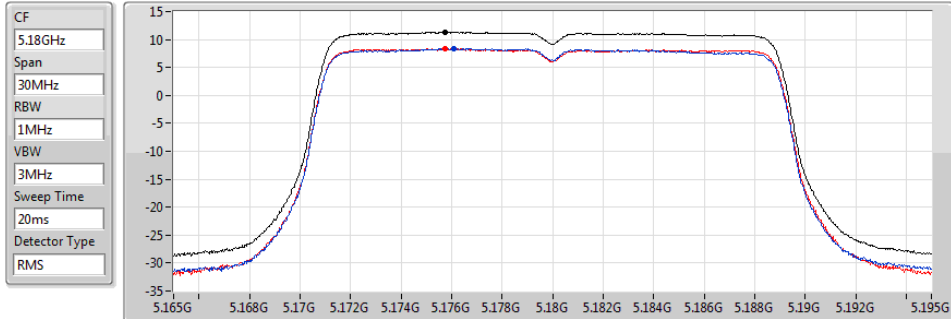


802.11ac VHT20-BF_Nss1,(MCS0)_2TX

PSD

5180MHz

18/04/2019



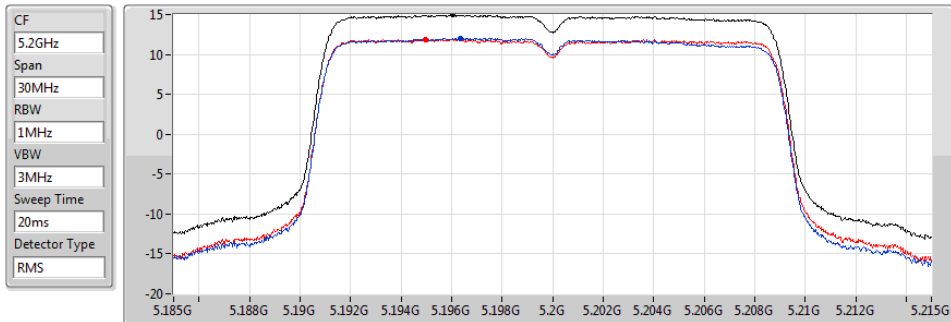
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.35	11.35	8.45	8.38

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

PSD

5200MHz

18/04/2019



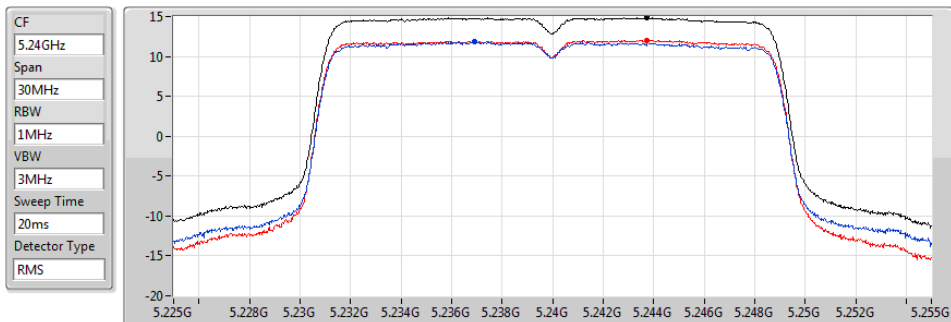
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.95	14.95	12.04	11.87

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

PSD

5240MHz

18/04/2019



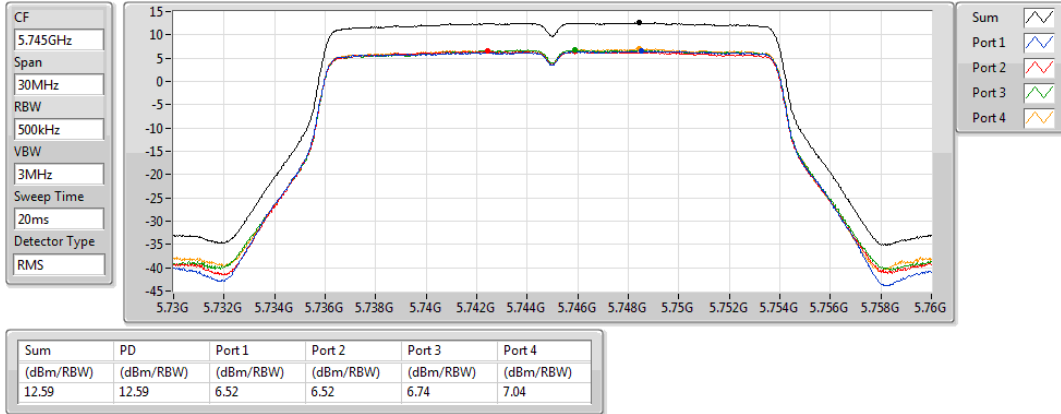
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.84	14.84	11.81	12.06

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5745MHz

18/04/2019

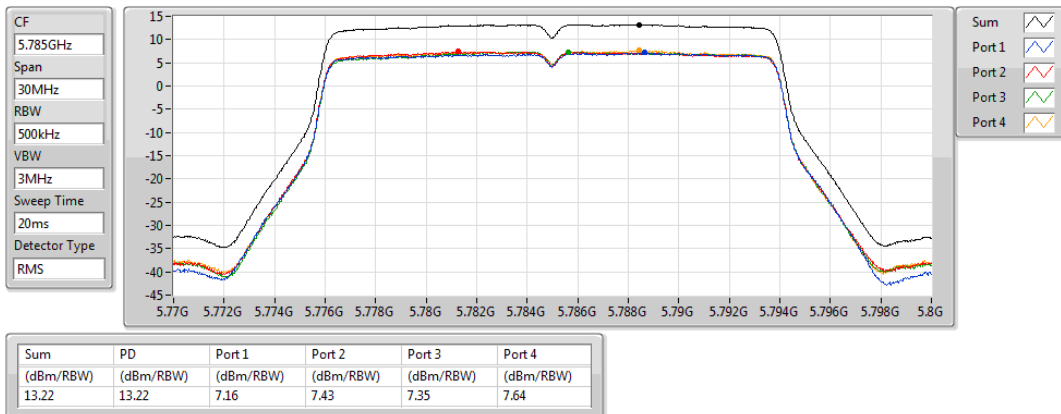


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5785MHz

18/04/2019

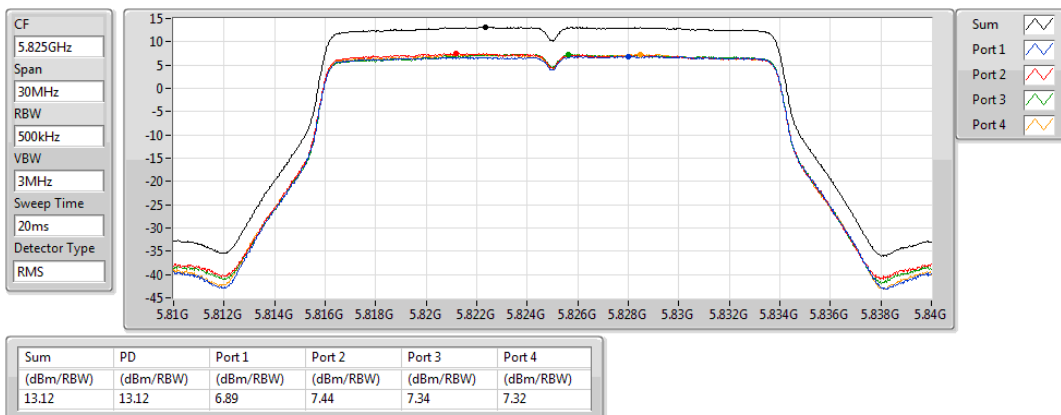


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5825MHz

18/04/2019

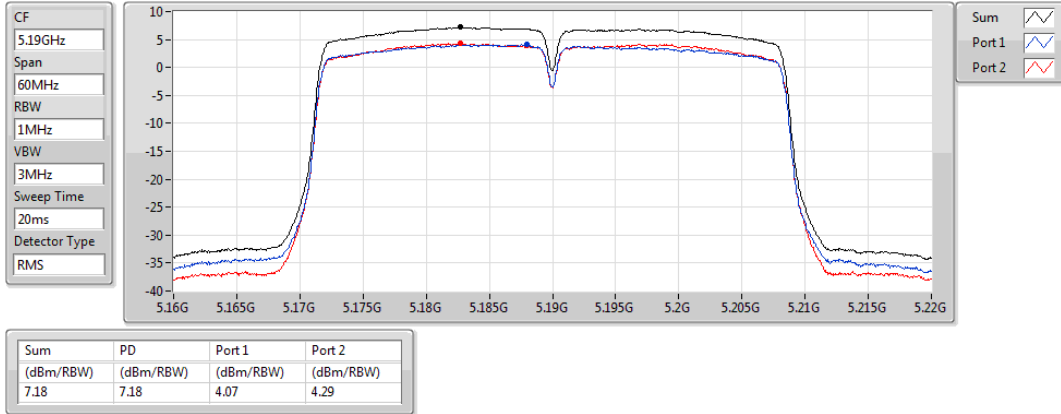


802.11ac VHT40-BF_Nss1,(MCS0)_2TX

PSD

5190MHz

18/04/2019

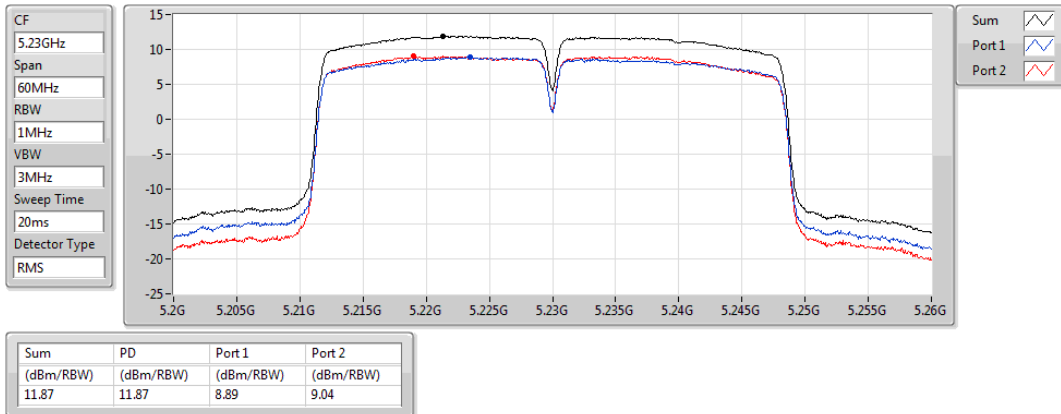


802.11ac VHT40-BF_Nss1,(MCS0)_2TX

PSD

5230MHz

18/04/2019

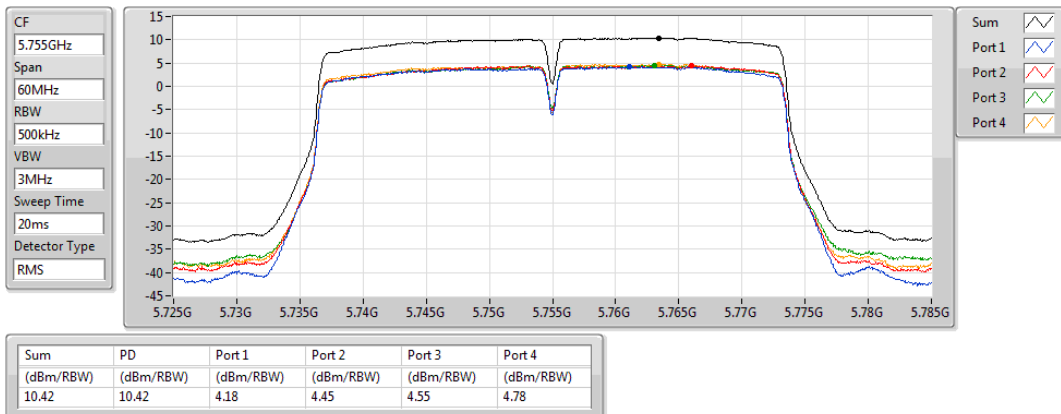


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

5755MHz

18/04/2019

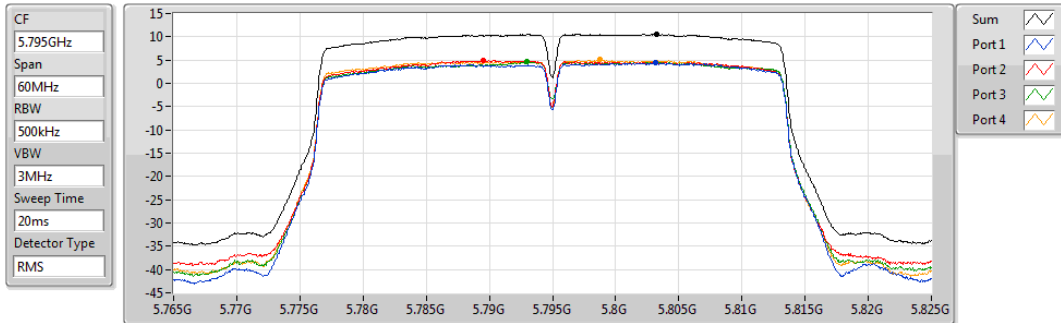


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

5795MHz

18/04/2019



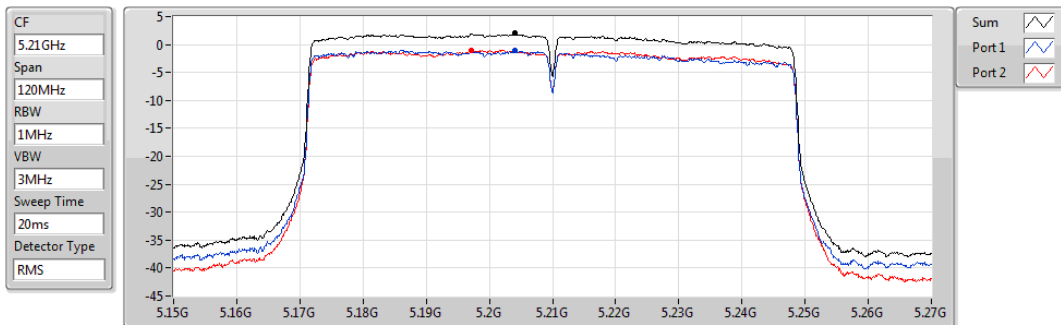
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
10.58	10.58	4.43	4.87	4.63	5.09

802.11ac VHT80-BF_Nss1,(MCS0)_2TX

PSD

5210MHz

18/04/2019



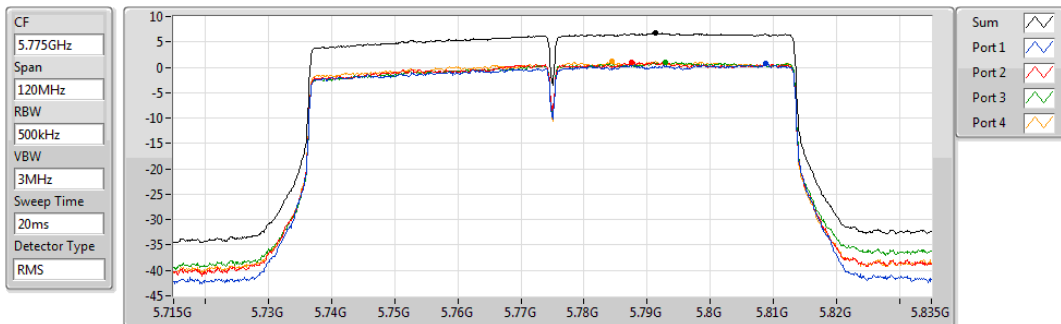
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
2.00	2.00	-0.99	-1.01

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

PSD

5775MHz

18/04/2019



Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
6.72	6.72	0.69	0.97	0.99	1.19

**For Band 4 / 4T2S
Summary**

Mode	PD (dBm/RBW)
5.725-5.85GHz	-
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	15.72
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	12.03
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	8.07

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

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	5.69	9.56	9.60	9.93	10.09	15.64	30.00
5785MHz	Pass	5.69	9.32	9.78	9.78	10.20	15.63	30.00
5825MHz	Pass	5.69	9.64	10.15	9.97	10.08	15.72	30.00
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5755MHz	Pass	5.69	5.81	5.90	6.16	6.34	11.93	30.00
5795MHz	Pass	5.69	6.00	6.46	6.18	6.44	12.03	30.00
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5775MHz	Pass	5.69	1.73	2.37	2.48	2.22	8.07	30.00

DG = Directional Gain; **RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

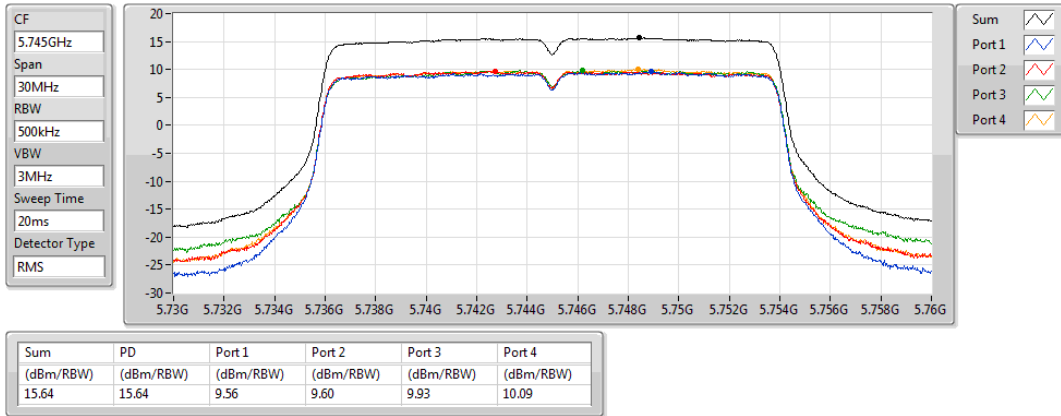
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

PSD

5745MHz

18/04/2019

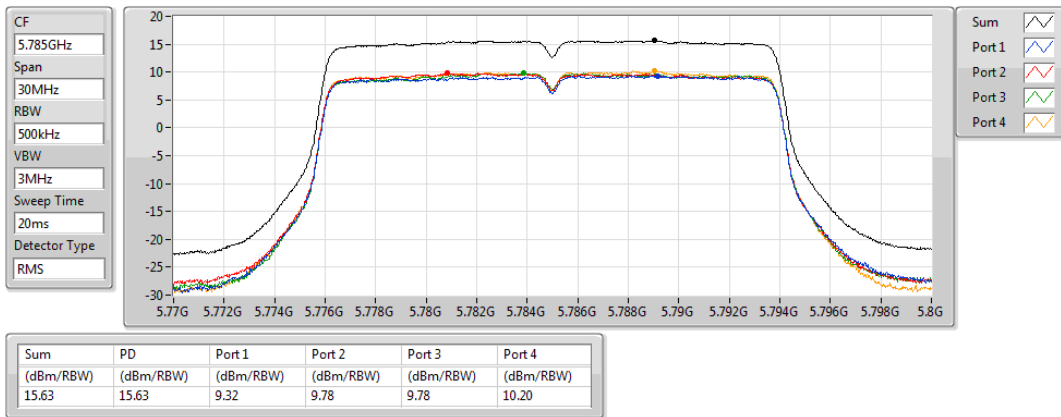


802.11ac VHT20-BF_Nss2,(MCS0)_4TX

PSD

5785MHz

18/04/2019

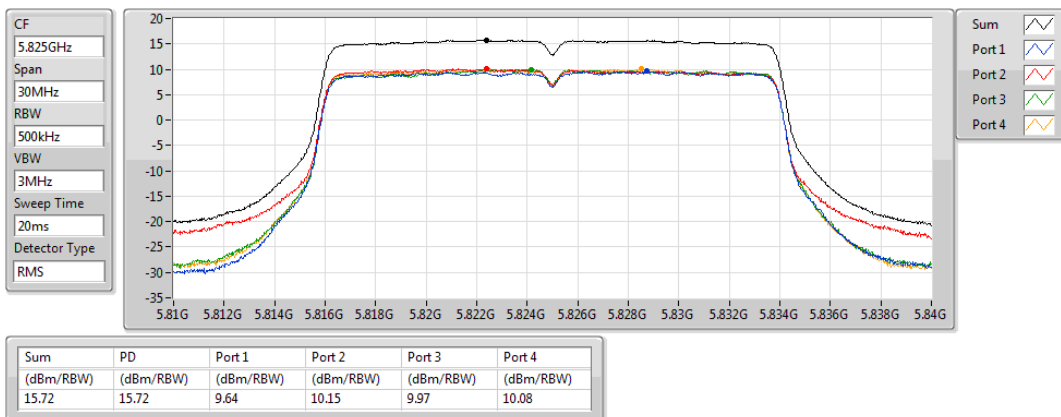


802.11ac VHT20-BF_Nss2,(MCS0)_4TX

PSD

5825MHz

18/04/2019

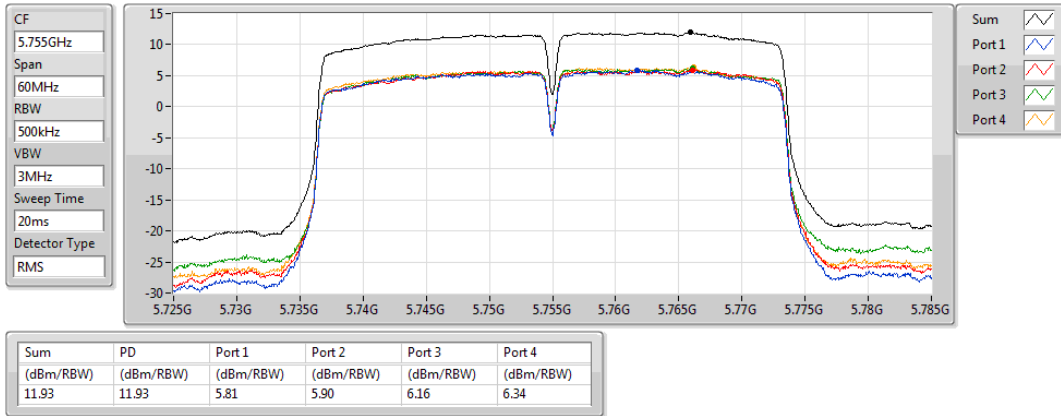


802.11ac VHT40-BF_Nss2,(MCS0)_4TX

PSD

5755MHz

18/04/2019

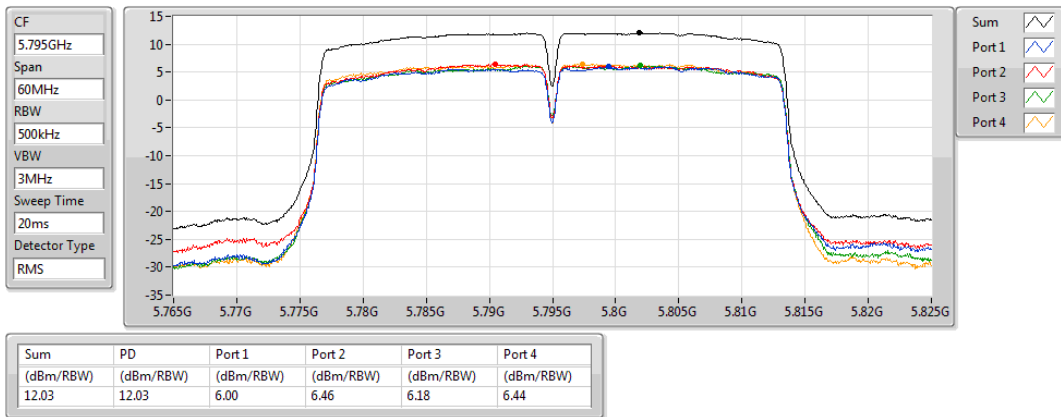


802.11ac VHT40-BF_Nss2,(MCS0)_4TX

PSD

5795MHz

18/04/2019

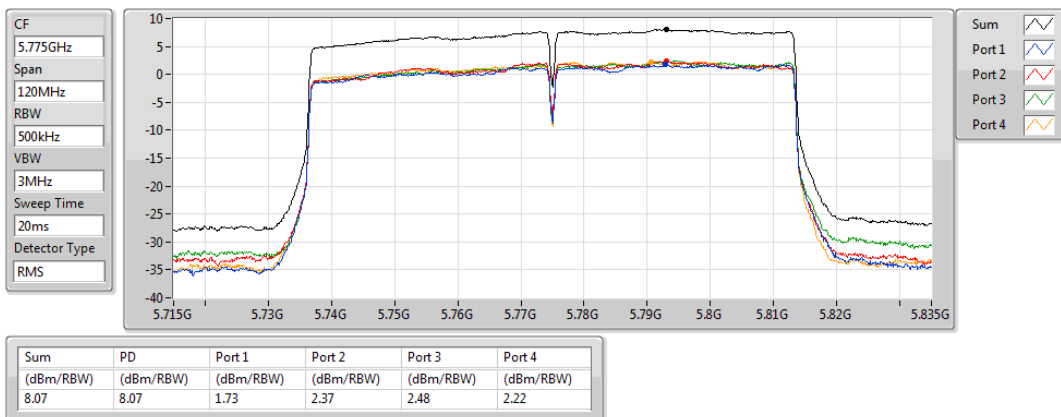


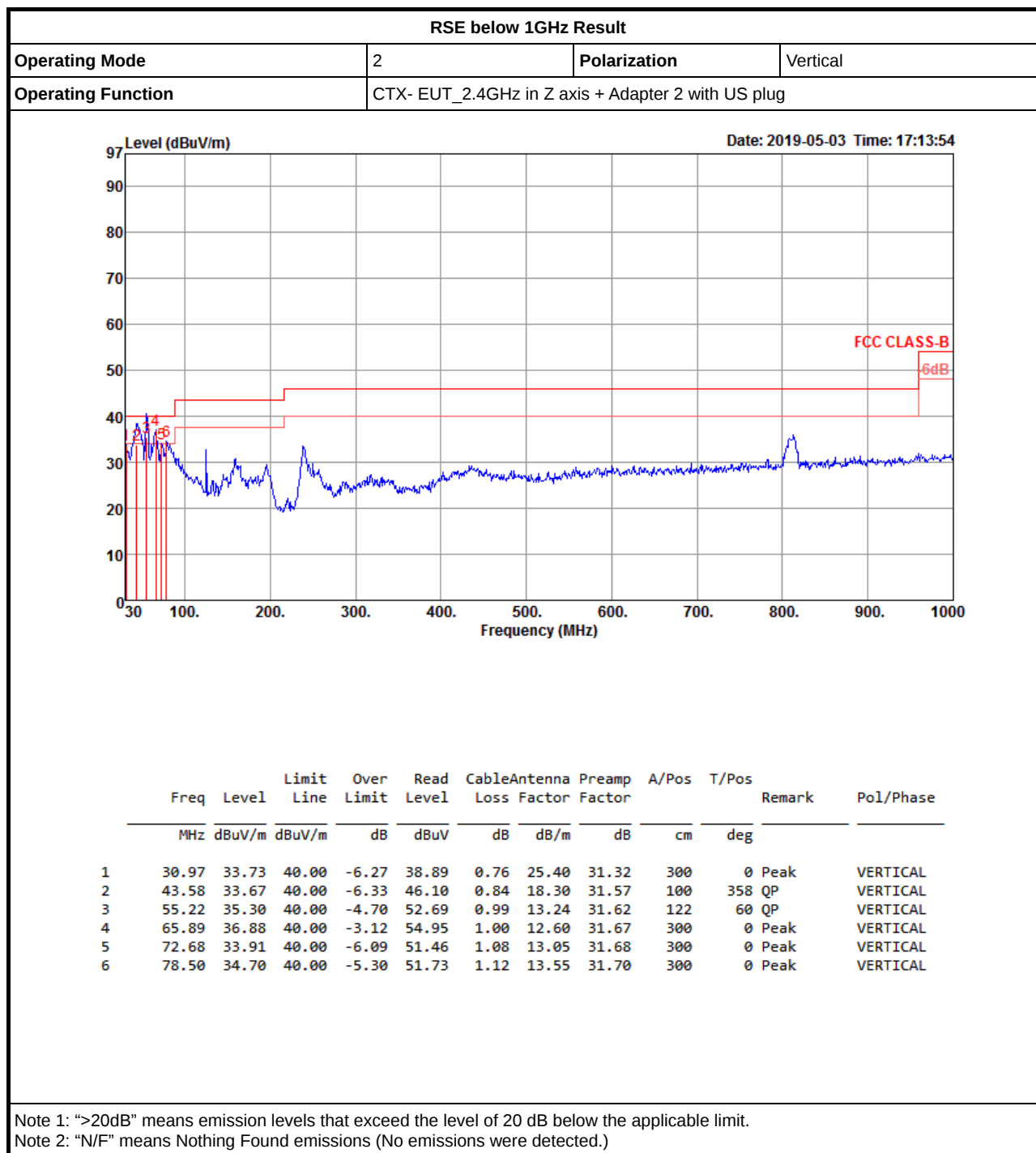
802.11ac VHT80-BF_Nss2,(MCS0)_4TX

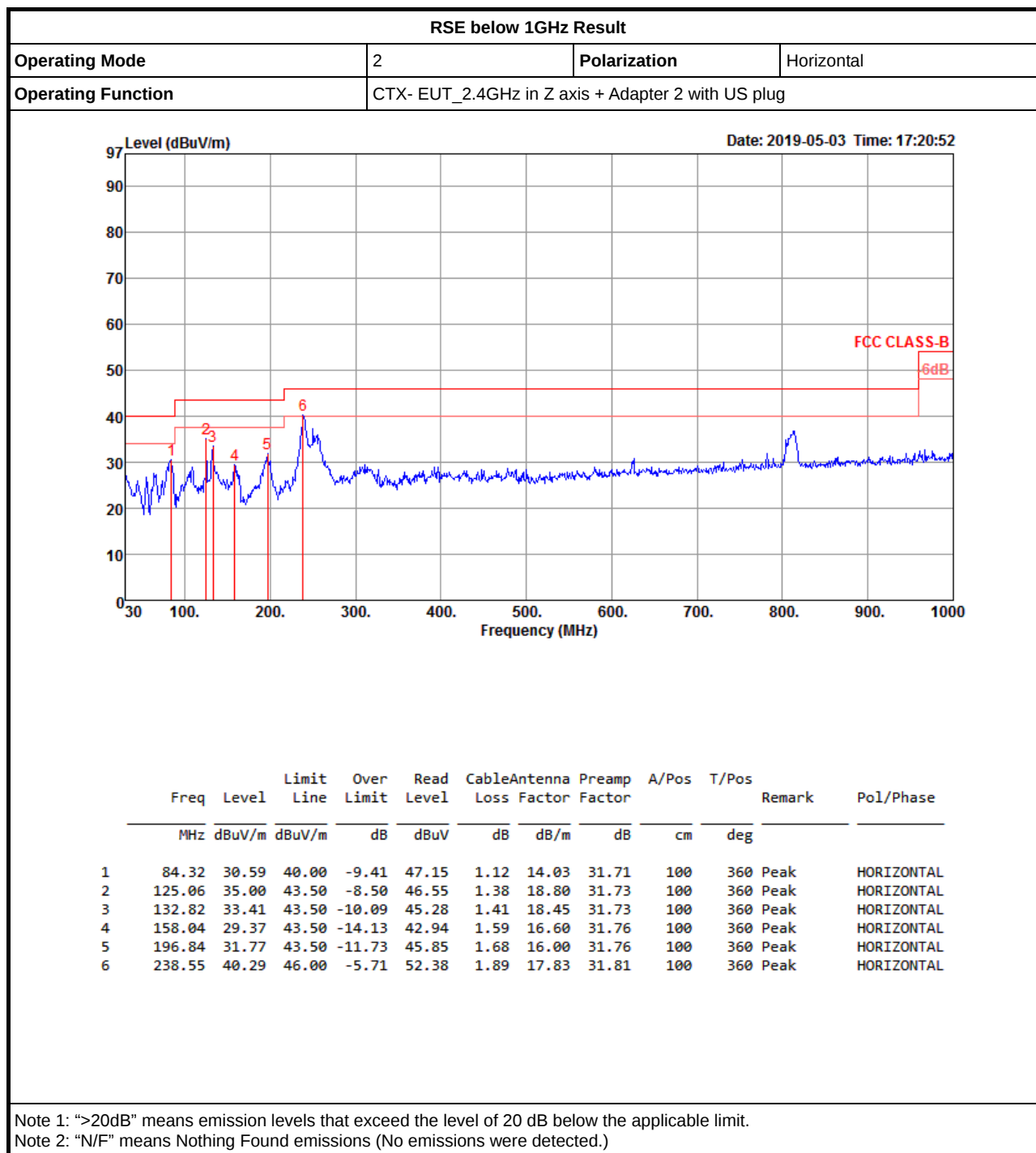
PSD

5775MHz

18/04/2019









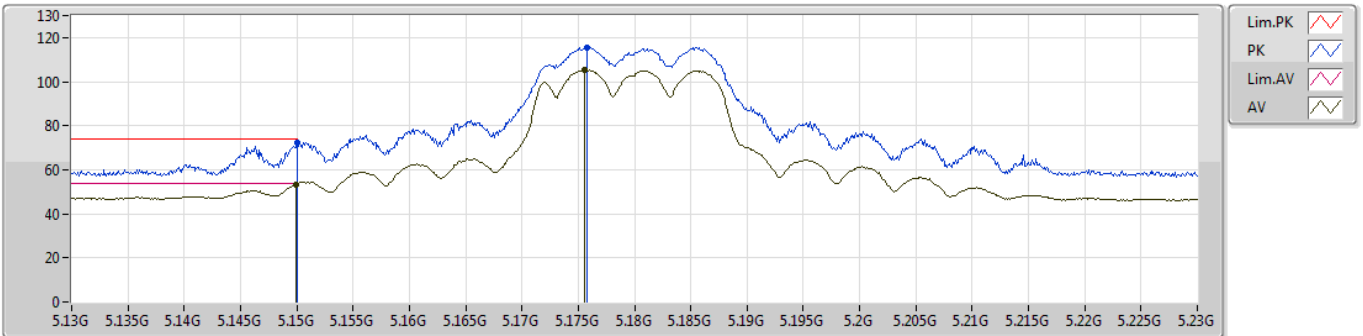
**For Band 1 / 2T1S and Band 4 / 4T1S
Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-
802.11a-BF_Nss1,(6Mbps)_2TX	Pass	AV	5.1499G	53.41	54.00	-0.59	5.83	3	Vertical	18	1.89

802.11a-BF_Nss1,(6Mbps)_2TX

09/04/2019

5180MHz_TX



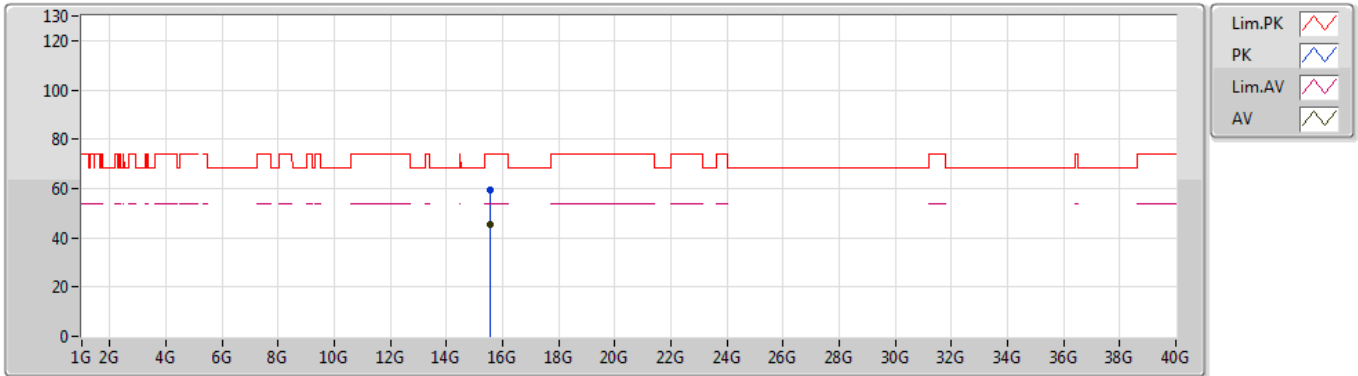
EUT Y_2TX_Dipole
Setting 22
03-B-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.15G	72.06	74.00	-1.94	5.83	3	Vertical	18	1.89	-
AV	5.1499G	53.41	54.00	-0.59	5.83	3	Vertical	18	1.89	-
PK	5.1758G	115.52	Inf	-Inf	5.87	3	Vertical	18	1.89	-
AV	5.1756G	105.52	Inf	-Inf	5.87	3	Vertical	18	1.89	-

802.11a-BF_Nss1,(6Mbps)_2TX

30/04/2019

5180MHz_TX



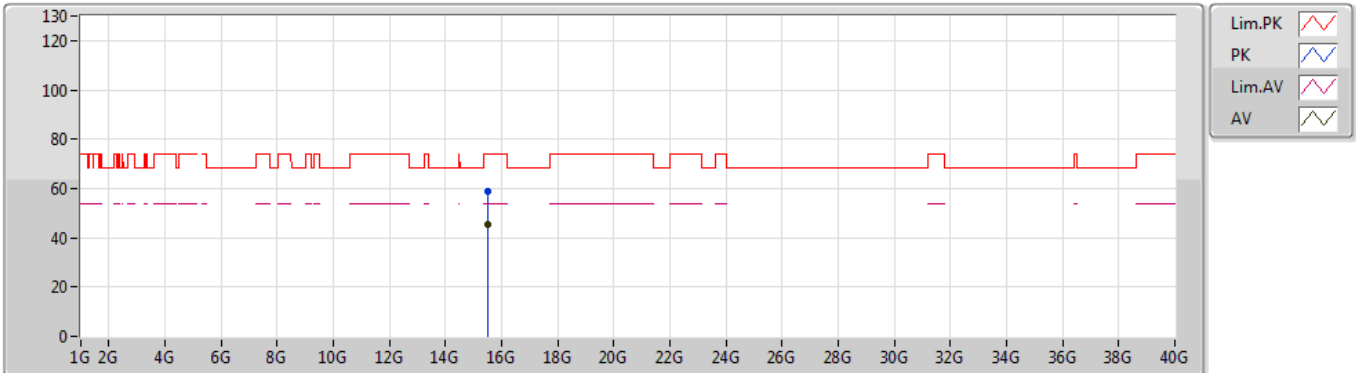
EUT Y_2TX_Dipole
Setting 22
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.53781G	59.43	74.00	-14.57	15.27	3	Vertical	286	1.50	-				
AV	15.54351G	45.47	54.00	-8.53	15.25	3	Vertical	286	1.50	-				

802.11a-BF_Nss1,(6Mbps)_2TX

30/04/2019

5180MHz_TX



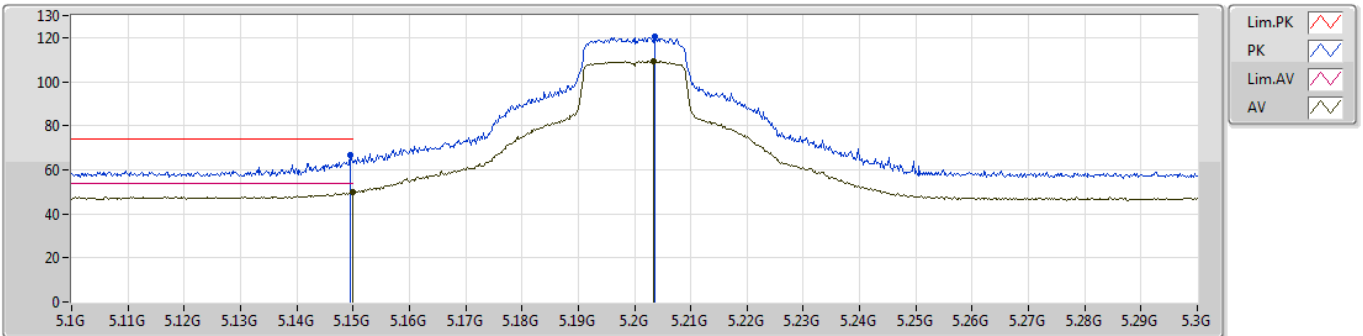
EUT Y_2TX_Dipole
Setting 22
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.5211G	58.56	74.00	-15.44	15.33	3	Horizontal	320	1.62	-				
AV	15.5282G	45.13	54.00	-8.87	15.31	3	Horizontal	320	1.62	-				

802.11a-BF_Nss1,(6Mbps)_2TX

02/04/2019

5200MHz_TX



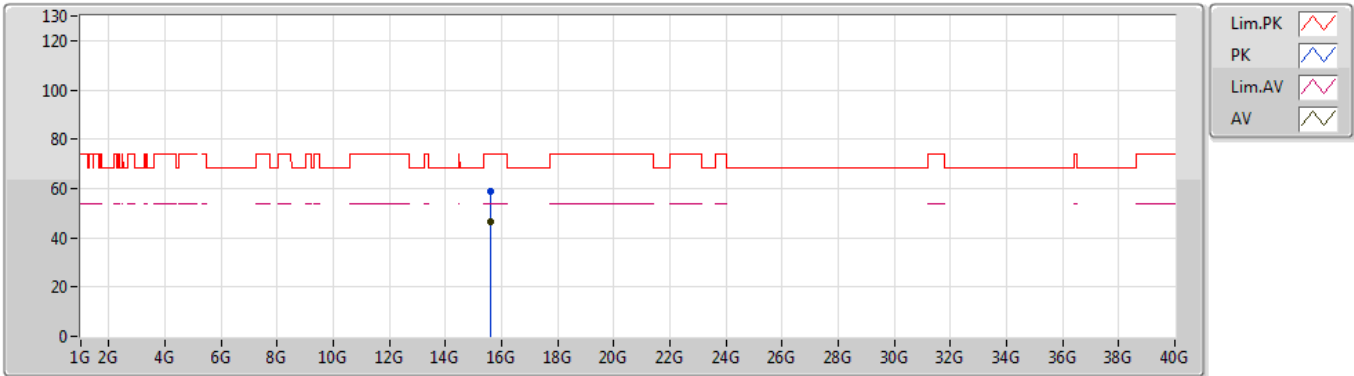
EUT_Y_2TX
Setting 25
03-B-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	5.1494G	66.83	74.00	-7.17	5.83	3	Vertical	205	1.54	-						
AV	5.15G	49.91	54.00	-4.09	5.83	3	Vertical	205	1.54	-						
PK	5.2036G	120.40	Inf	-Inf	5.92	3	Vertical	205	1.54	-						
AV	5.2034G	109.35	Inf	-Inf	5.92	3	Vertical	205	1.54	-						

802.11a-BF_Nss1,(6Mbps)_2TX

30/04/2019

5200MHz_TX



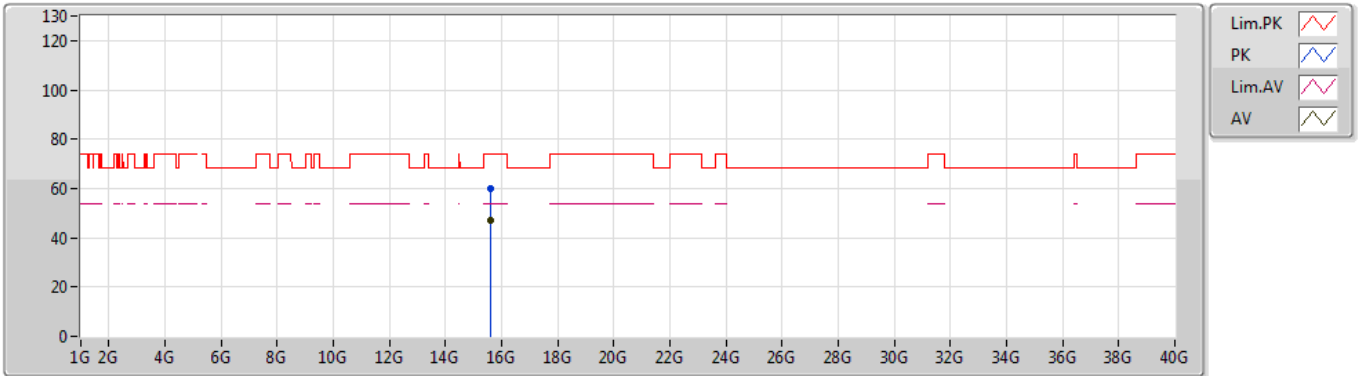
EUT Y_2TX_Dipole
Setting 25
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.60975G	59.11	74.00	-14.89	14.99	3	Vertical	287	2.76	-				
AV	15.60915G	46.44	54.00	-7.56	14.99	3	Vertical	287	2.76	-				

802.11a-BF_Nss1,(6Mbps)_2TX

30/04/2019

5200MHz_TX



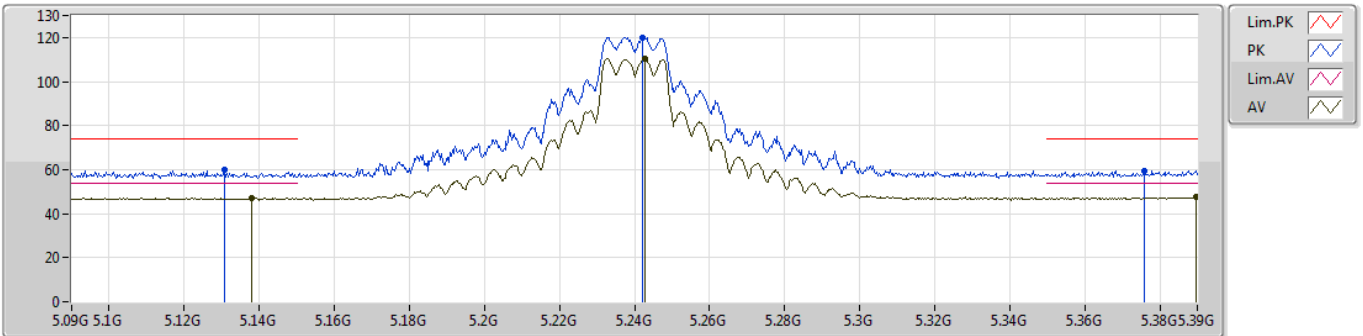
EUT Y_2TX_Dipole
Setting 25
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.6065G	59.76	74.00	-14.24	15.00	3	Horizontal	109	1.83	-				
AV	15.6011G	46.83	54.00	-7.17	15.03	3	Horizontal	109	1.83	-				

802.11a-BF_Nss1,(6Mbps)_2TX

02/04/2019

5240MHz_TX



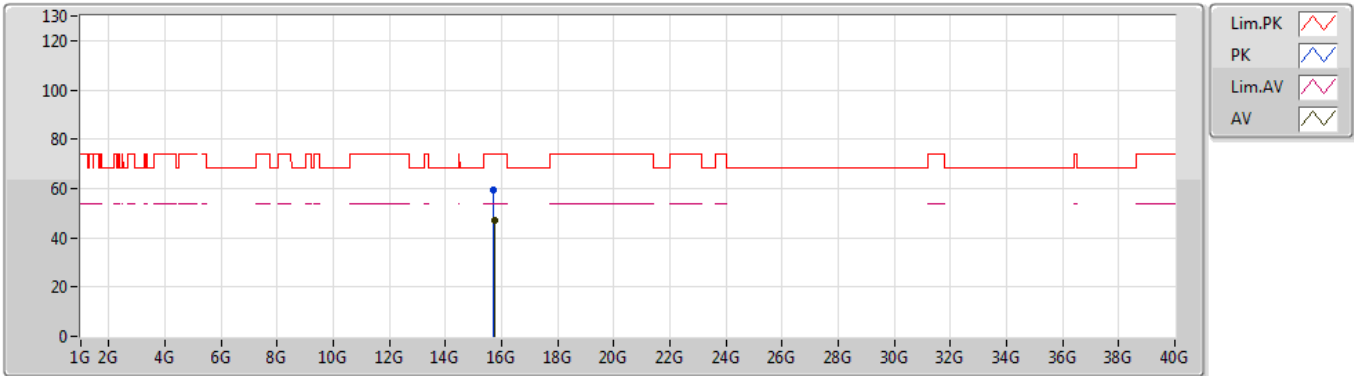
EUT_Y_2TX
Setting 25
03-B-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	5.1308G	59.78	74.00	-14.22	5.79	3	Vertical	322	2.58	-						
AV	5.138G	47.21	54.00	-6.79	5.81	3	Vertical	322	2.58	-						
PK	5.2421G	120.16	Inf	-Inf	6.04	3	Vertical	322	2.58	-						
AV	5.2427G	110.22	Inf	-Inf	6.05	3	Vertical	322	2.58	-						
PK	5.3759G	59.52	74.00	-14.48	6.36	3	Vertical	322	2.58	-						
AV	5.3897G	47.40	54.00	-6.60	6.38	3	Vertical	322	2.58	-						

802.11a-BF_Nss1,(6Mbps)_2TX

30/04/2019

5240MHz_TX



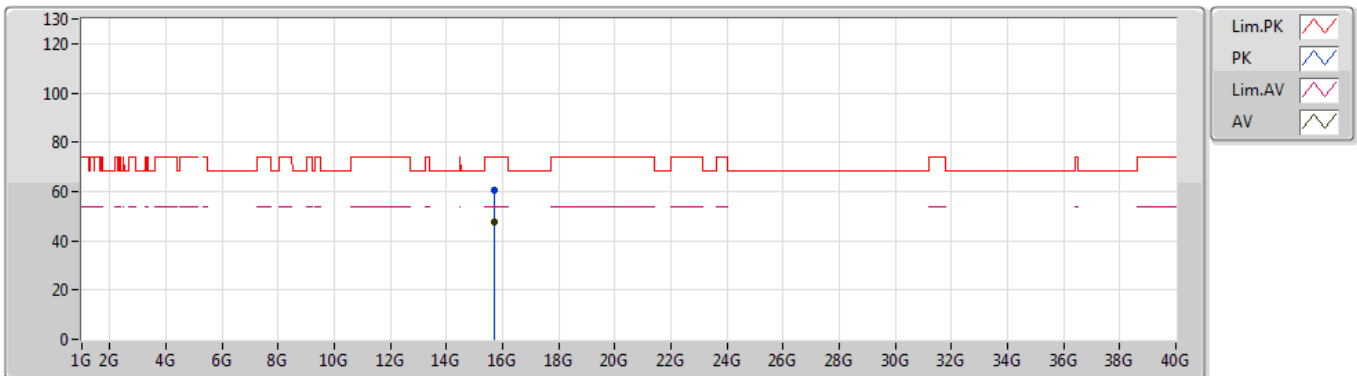
EUT Y_2TX_Dipole
Setting 25
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.70315G	59.44	74.00	-14.56	14.64	3	Vertical	148	1.50	-				
AV	15.74285G	46.85	54.00	-7.15	14.49	3	Vertical	148	1.50	-				

802.11a-BF_Nss1,(6Mbps)_2TX

30/04/2019

5240MHz_TX



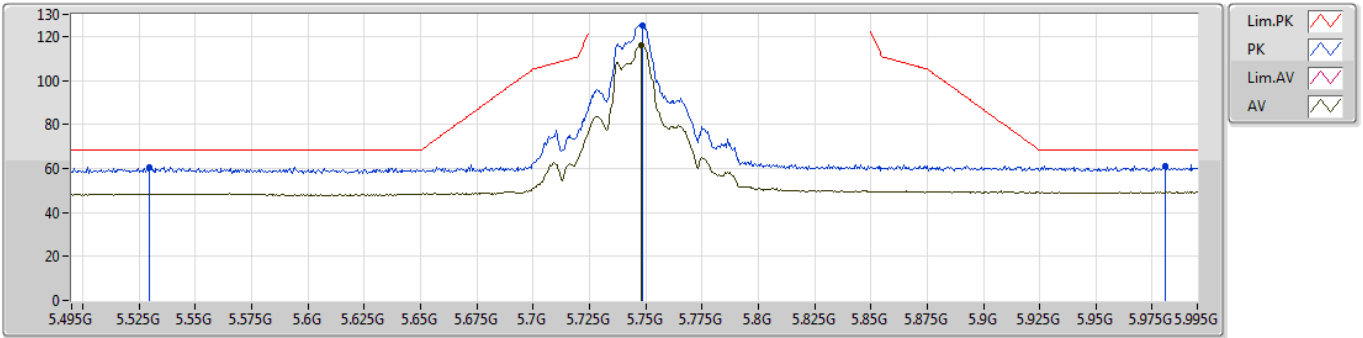
EUT Y_2TX_Dipole
Setting 25
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.7264G	60.38	74.00	-13.62	14.55	3	Horizontal	290	1.86	-				
AV	15.721G	47.78	54.00	-6.22	14.58	3	Horizontal	290	1.86	-				

802.11a-BF_Nss1,(6Mbps)_4TX

01/04/2019

5745MHz_TX



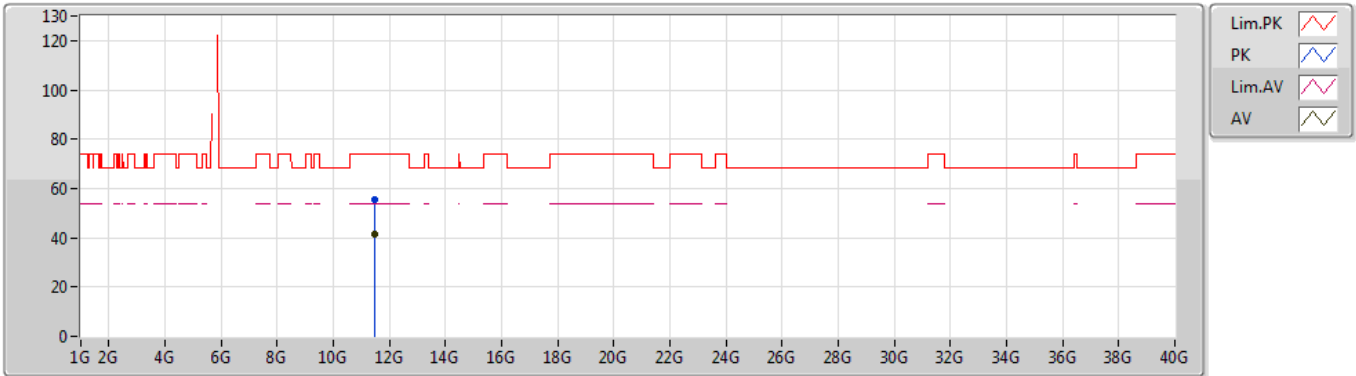
EUT Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.5295G	60.58	68.20	-7.62	6.46	3	Vertical	115	1.59	-
PK	5.7485G	125.20	Inf	-Inf	6.41	3	Vertical	115	1.59	-
AV	5.748G	115.82	Inf	-Inf	6.41	3	Vertical	115	1.59	-
PK	5.981G	61.25	68.20	-6.95	7.01	3	Vertical	115	1.59	-

802.11a-BF_Nss1,(6Mbps)_4TX

30/04/2019

5745MHz_TX



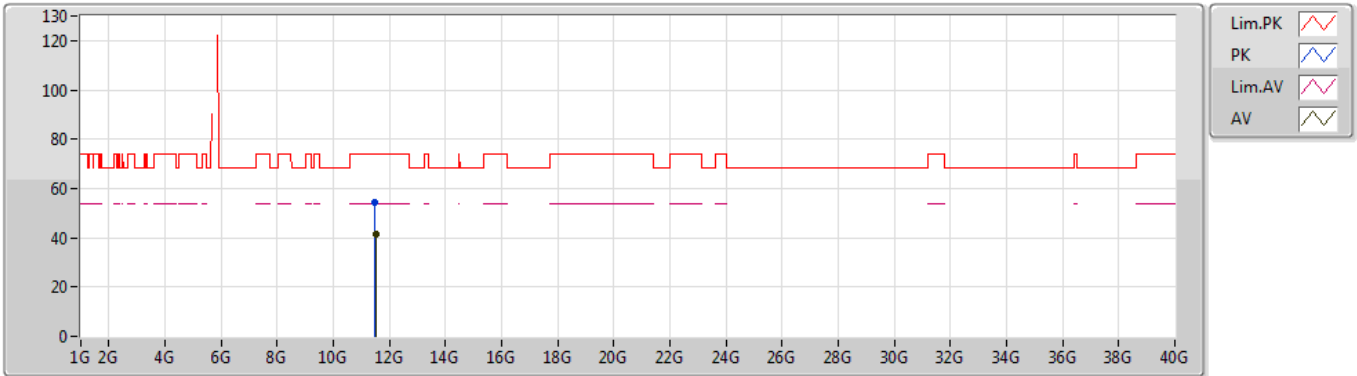
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.49894G	55.55	74.00	-18.45	14.42	3	Vertical	229	1.95	-				
AV	11.49474G	41.34	54.00	-12.66	14.42	3	Vertical	229	1.95	-				

802.11a-BF_Nss1,(6Mbps)_4TX

30/04/2019

5745MHz_TX



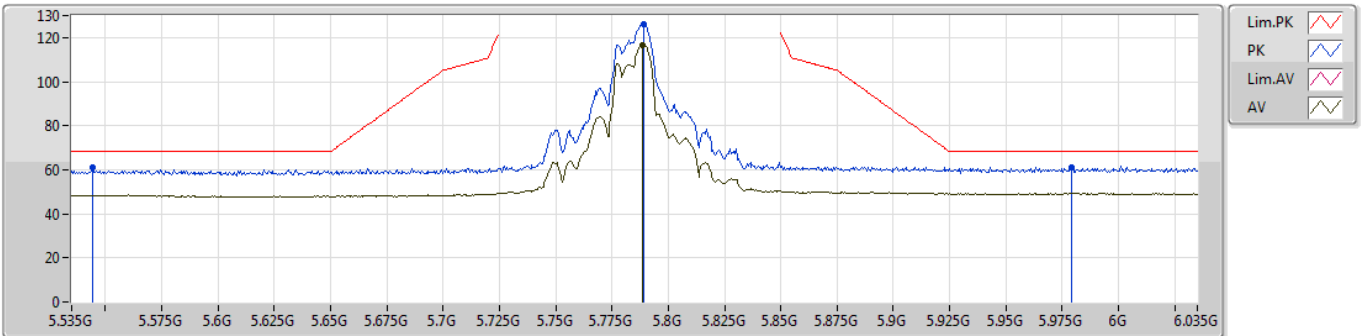
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.47872G	54.19	74.00	-19.81	14.41	3	Horizontal	164	1.97	-				
AV	11.50107G	41.36	54.00	-12.64	14.43	3	Horizontal	164	1.97	-				

802.11a-BF_Nss1,(6Mbps)_4TX

01/04/2019

5785MHz_TX



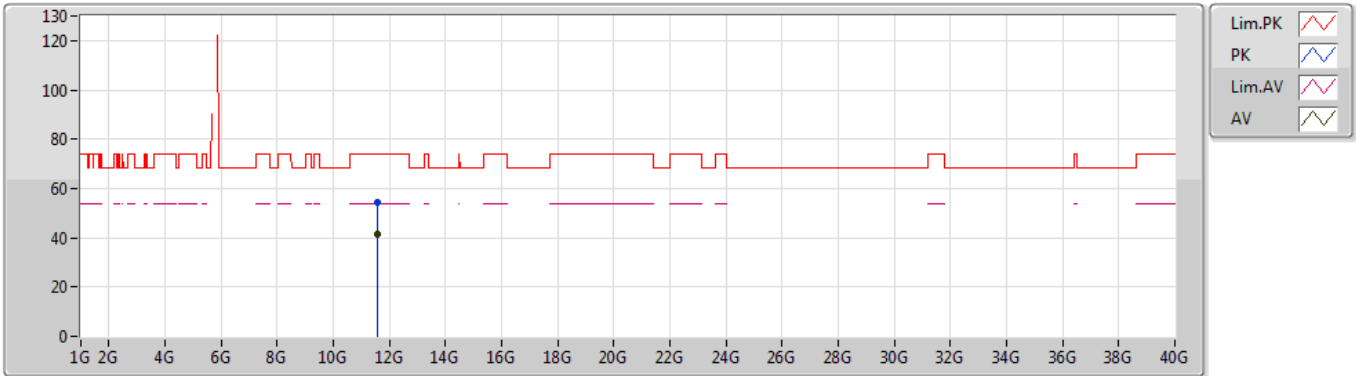
EUT Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.5445G	60.91	68.20	-7.29	6.45	3	Vertical	117	1.51	-
PK	5.789G	126.03	Inf	-Inf	6.45	3	Vertical	117	1.51	-
AV	5.7885G	116.53	Inf	-Inf	6.45	3	Vertical	117	1.51	-
PK	5.979G	61.28	68.20	-6.92	7.01	3	Vertical	117	1.51	-

802.11a-BF_Nss1,(6Mbps)_4TX

30/04/2019

5785MHz_TX



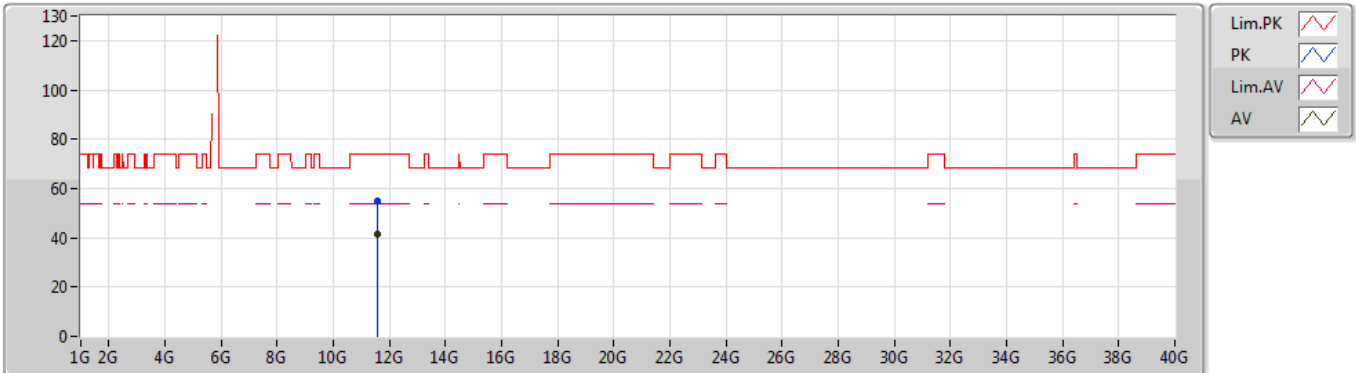
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.56313G	54.56	74.00	-19.44	14.48	3	Vertical	103	1.84	-				
AV	11.5787G	41.36	54.00	-12.64	14.51	3	Vertical	103	1.84	-				

802.11a-BF_Nss1,(6Mbps)_4TX

30/04/2019

5785MHz_TX



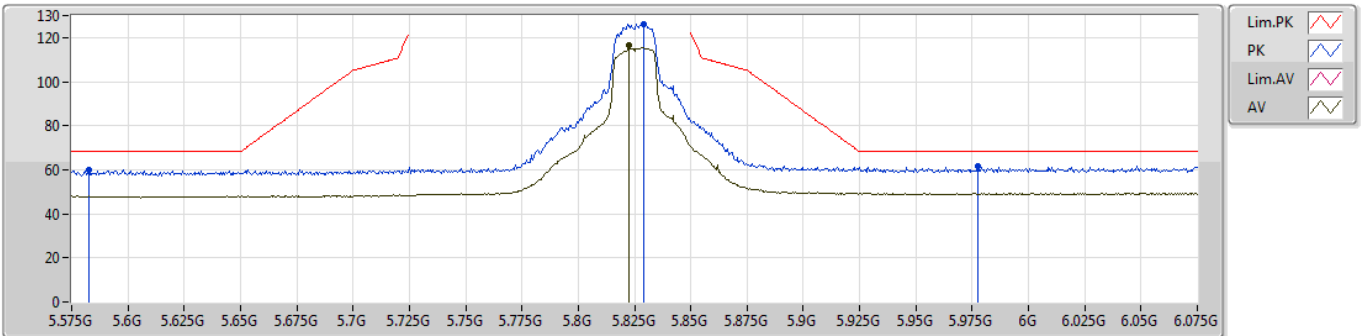
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.55671G	54.92	74.00	-19.08	14.48	3	Horizontal	27	2.04	-				
AV	11.56841G	41.67	54.00	-12.33	14.49	3	Horizontal	27	2.04	-				

802.11a-BF_Nss1,(6Mbps)_4TX

01/04/2019

5825MHz_TX



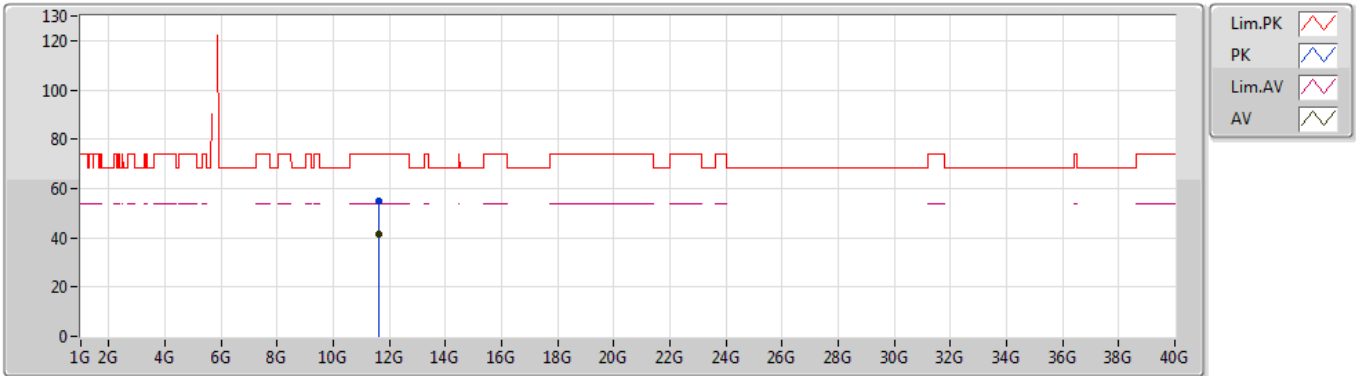
EUT Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.5825G	60.09	68.20	-8.11	6.39	3	Vertical	62	1.71	-
PK	5.829G	126.11	Inf	-Inf	6.54	3	Vertical	62	1.71	-
AV	5.8225G	116.78	Inf	-Inf	6.52	3	Vertical	62	1.71	-
PK	5.9775G	61.66	68.20	-6.54	6.99	3	Vertical	62	1.71	-

802.11a-BF_Nss1,(6Mbps)_4TX

30/04/2019

5825MHz_TX



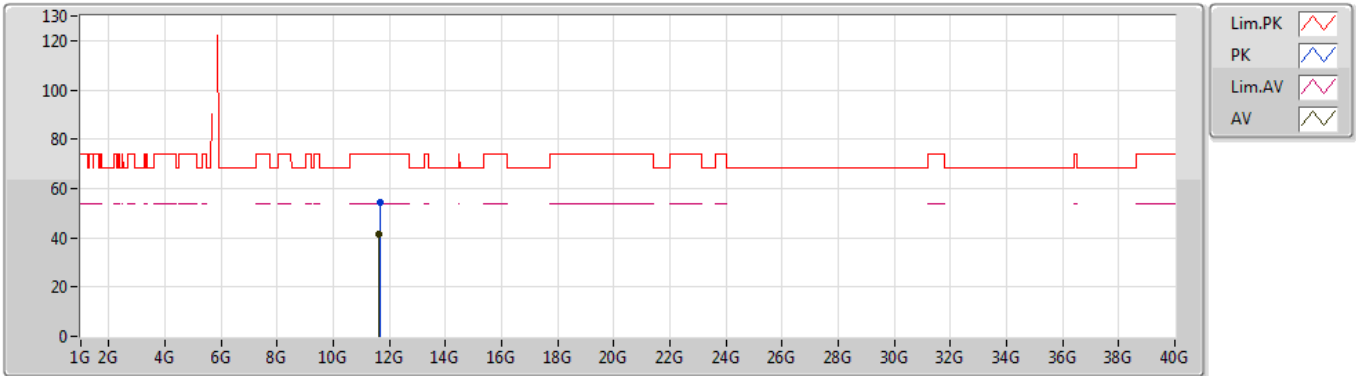
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.63533G	54.84	74.00	-19.16	14.55	3	Vertical	254	1.66	-				
AV	11.63929G	41.48	54.00	-12.52	14.56	3	Vertical	254	1.66	-				

802.11a-BF_Nss1,(6Mbps)_4TX

30/04/2019

5825MHz_TX



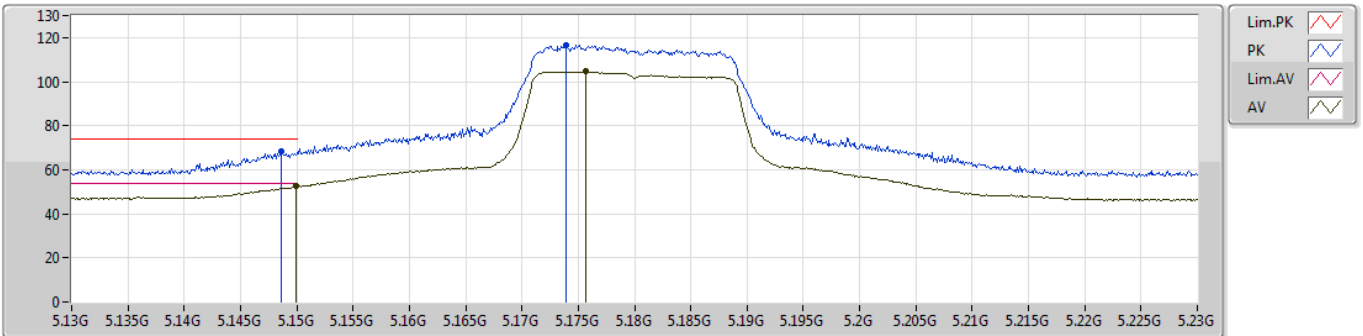
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.65609G	54.53	74.00	-19.47	14.58	3	Horizontal	333	1.80	-				
AV	11.63749G	41.57	54.00	-12.43	14.56	3	Horizontal	333	1.80	-				

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

15/04/2019

5180MHz_TX



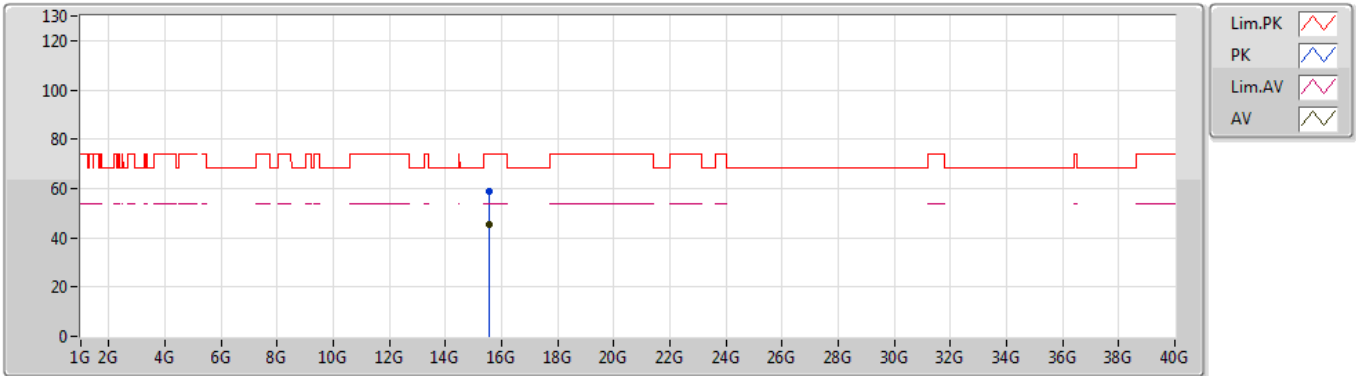
EUT Y_2TX_Dipole
Setting 21
03-B-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	5.1486G	68.34	74.00	-5.66	5.83	3	Vertical	16	2.28	-						
AV	5.1499G	52.46	54.00	-1.54	5.83	3	Vertical	16	2.28	-						
PK	5.1739G	116.68	Inf	-Inf	5.86	3	Vertical	16	2.28	-						
AV	5.1757G	104.69	Inf	-Inf	5.87	3	Vertical	16	2.28	-						

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

30/04/2019

5180MHz_TX



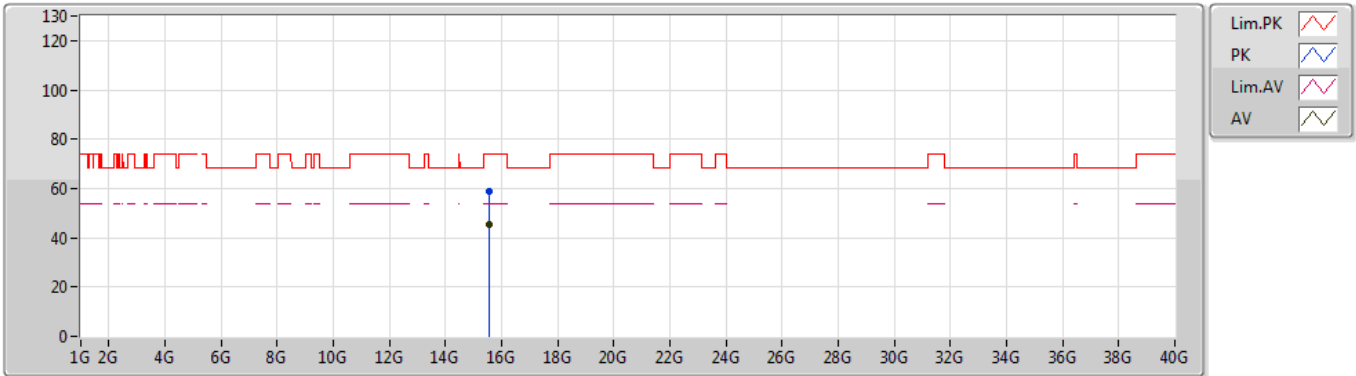
EUT Y_2TX_Dipole
Setting 21
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.56105G	59.08	74.00	-14.92	15.18	3	Vertical	42	2.67	-				
AV	15.536G	45.15	54.00	-8.85	15.27	3	Vertical	42	2.67	-				

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

30/04/2019

5180MHz_TX



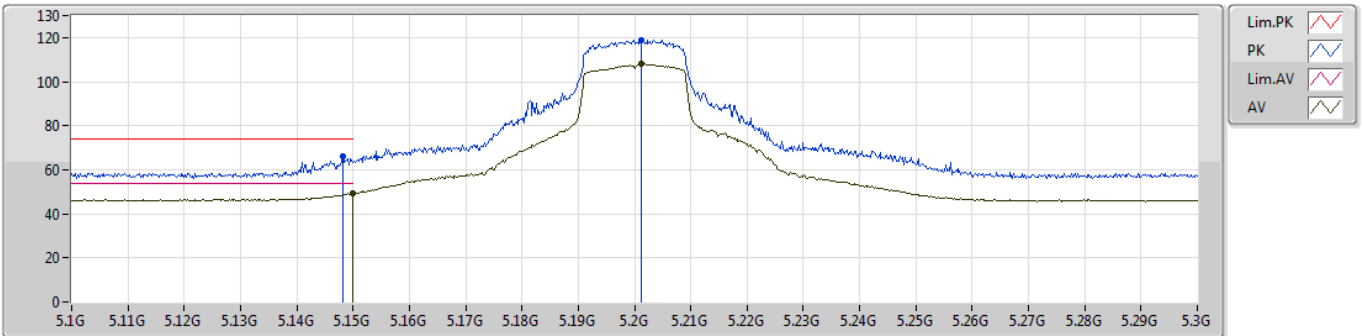
EUT Y_2TX_Dipole
Setting 21
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.54335G	58.94	74.00	-15.06	15.25	3	Horizontal	312	1.09	-				
AV	15.5383G	45.13	54.00	-8.87	15.27	3	Horizontal	312	1.09	-				

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

02/04/2019

5200MHz_TX



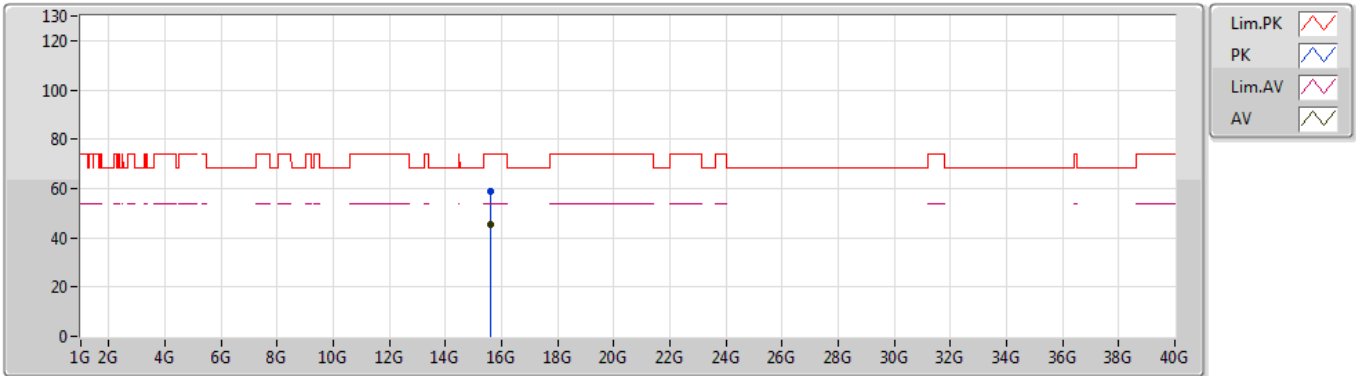
EUT Y_2TX_Dipole
Setting 25
03-B-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.1482G	65.89	74.00	-8.11	5.83	3	Vertical	323	1.50	-
AV	5.15G	49.25	54.00	-4.75	5.83	3	Vertical	323	1.50	-
PK	5.2012G	119.06	Inf	-Inf	5.91	3	Vertical	323	1.50	-
AV	5.2012G	107.93	Inf	-Inf	5.91	3	Vertical	323	1.50	-

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

30/04/2019

5200MHz_TX



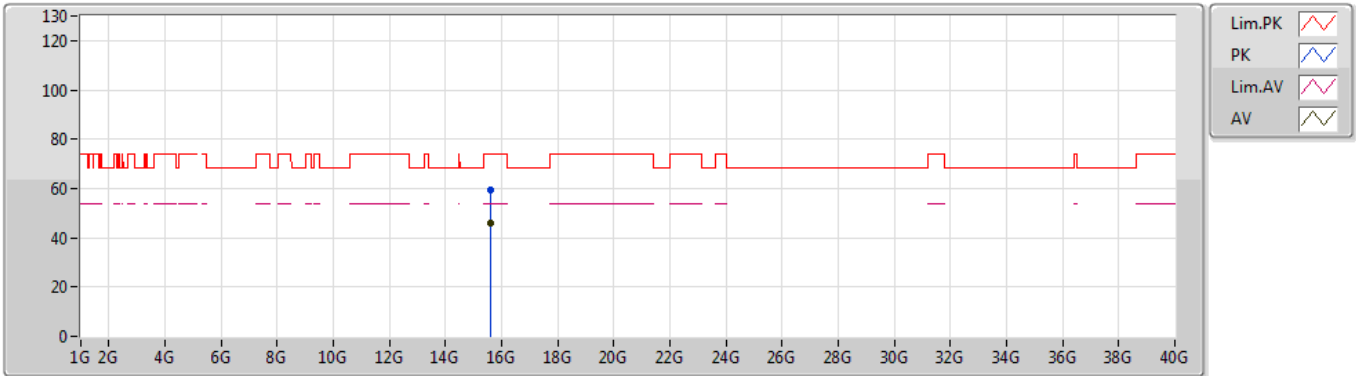
EUT Y_2TX_Dipole
Setting 25
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.6112G	58.83	74.00	-15.17	14.99	3	Vertical	301	1.50	-				
AV	15.61095G	45.36	54.00	-8.64	14.99	3	Vertical	301	1.50	-				

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

30/04/2019

5200MHz_TX



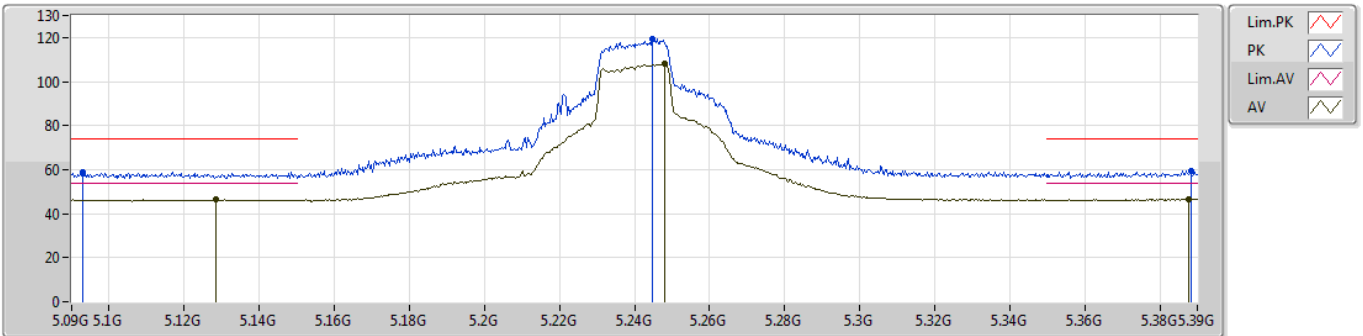
EUT Y_2TX_Dipole
Setting 25
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.5965G	59.18	74.00	-14.82	15.04	3	Horizontal	286	1.92	-				
AV	15.6092G	46.13	54.00	-7.87	14.99	3	Horizontal	286	1.92	-				

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

02/04/2019

5240MHz_TX



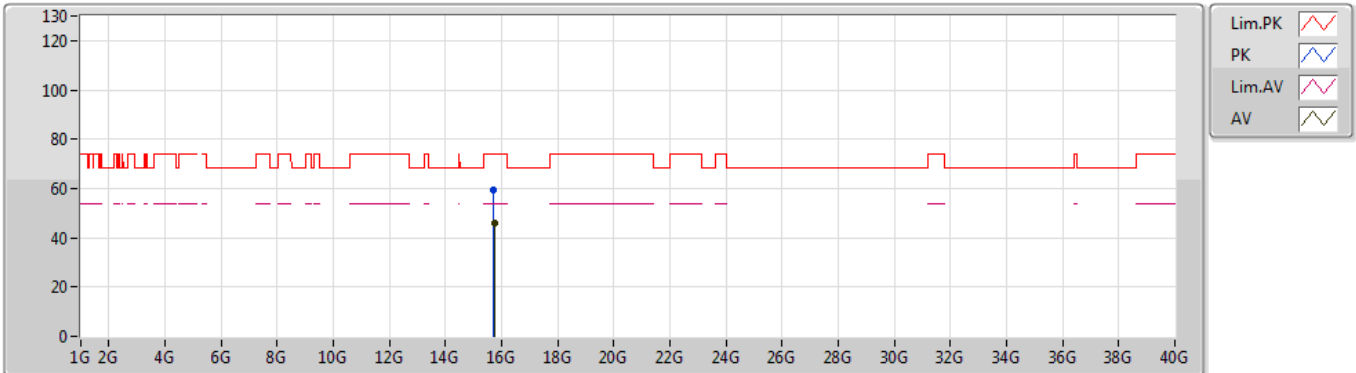
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Setting 25
03-B-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.093G	58.84	74.00	-15.16	5.72	3	Vertical	329	1.50	-
AV	5.1284G	46.27	54.00	-7.73	5.79	3	Vertical	329	1.50	-
PK	5.2448G	119.10	Inf	-Inf	6.05	3	Vertical	329	1.50	-
AV	5.2481G	107.97	Inf	-Inf	6.06	3	Vertical	329	1.50	-
PK	5.3882G	59.25	74.00	-14.75	6.38	3	Vertical	329	1.50	-
AV	5.3876G	46.78	54.00	-7.22	6.38	3	Vertical	329	1.50	-

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

30/04/2019

5240MHz_TX



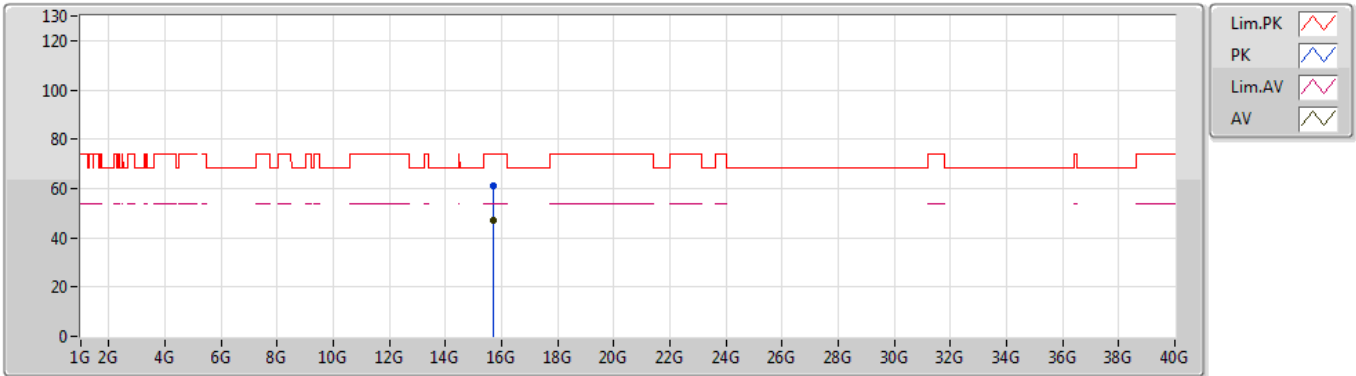
EUT Y_2TX_Dipole
Setting 25
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.7165G	59.19	74.00	-14.81	14.59	3	Vertical	133	1.50	-				
AV	15.7428G	45.83	54.00	-8.17	14.49	3	Vertical	133	1.50	-				

802.11ac VHT20-BF_Nss1,(MCS0)_2TX

30/04/2019

5240MHz_TX



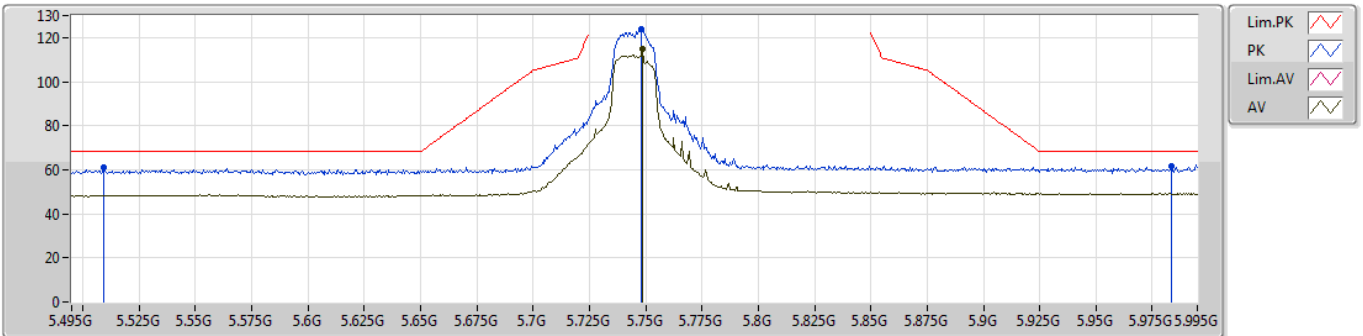
EUT Y_2TX_Dipole
Setting 25
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.72535G	60.92	74.00	-13.08	14.55	3	Horizontal	242	1.89	-				
AV	15.7228G	47.14	54.00	-6.86	14.57	3	Horizontal	242	1.89	-				

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

08/04/2019

5745MHz_TX



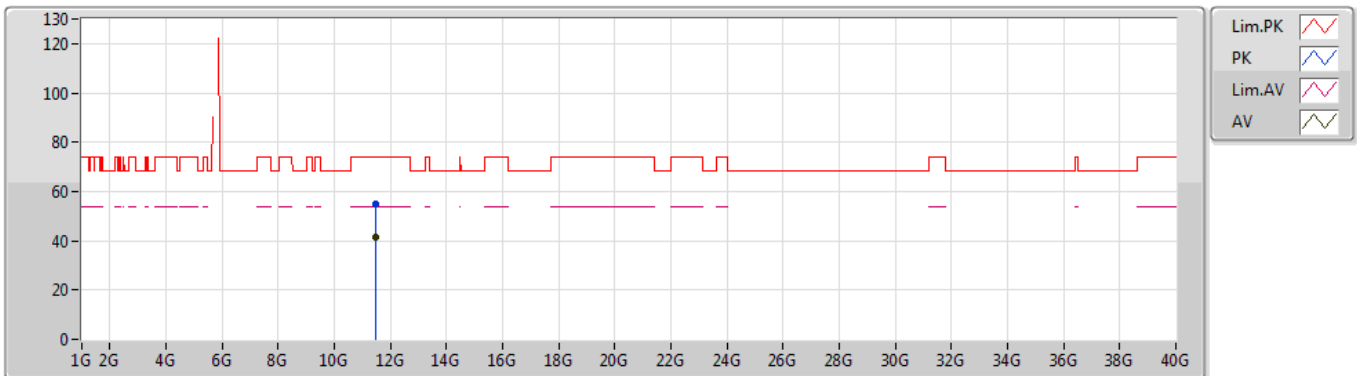
EUT_Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.509G	60.89	68.20	-7.31	6.48	3	Vertical	116	1.49	-
PK	5.748G	124.01	Inf	-Inf	6.41	3	Vertical	116	1.49	-
AV	5.7485G	114.90	Inf	-Inf	6.41	3	Vertical	116	1.49	-
PK	5.9835G	61.74	68.20	-6.46	7.02	3	Vertical	116	1.49	-

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

30/04/2019

5745MHz_TX



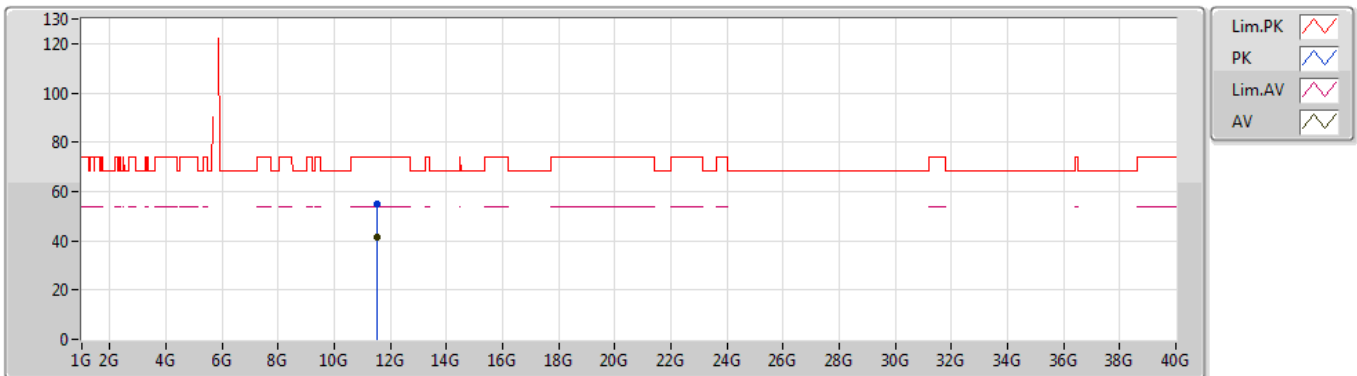
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.46096G	54.89	74.00	-19.11	14.39	3	Vertical	172	2.01	-				
AV	11.49498G	41.57	54.00	-12.43	14.42	3	Vertical	172	2.01	-				

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

30/04/2019

5745MHz_TX



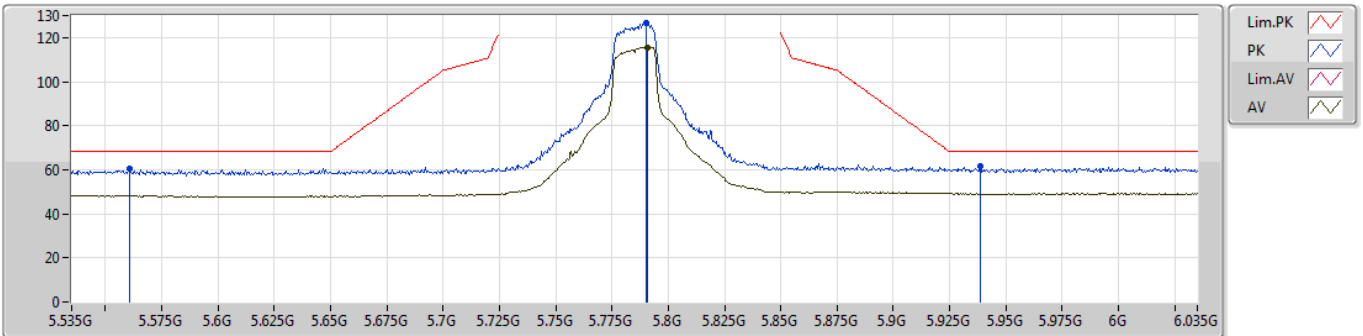
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Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.50758G	54.77	74.00	-19.23	14.44	3	Horizontal	254	2.12	-				
AV	11.50536G	41.62	54.00	-12.38	14.43	3	Horizontal	254	2.12	-				

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

08/04/2019

5785MHz_TX

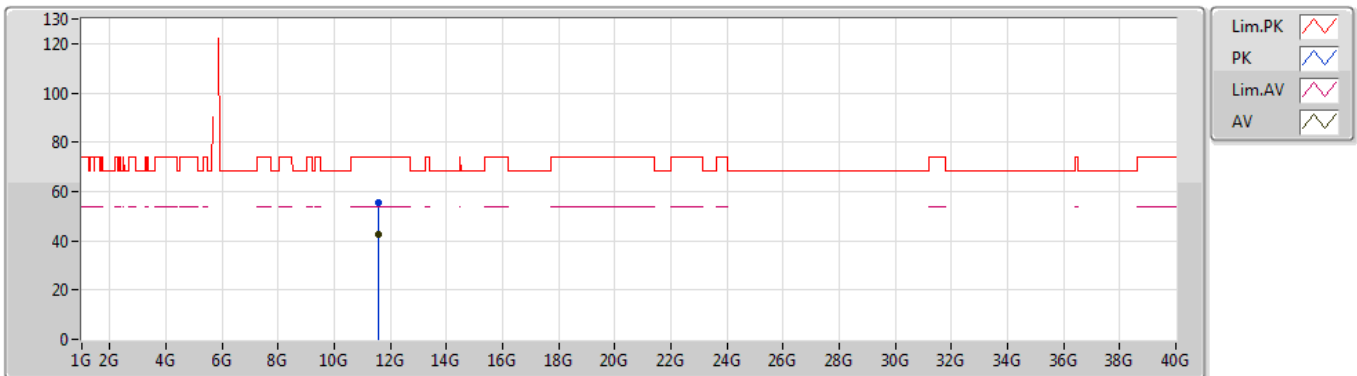

EUT Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.5605G	60.37	68.20	-7.83	6.41	3	Vertical	278	1.57	-
PK	5.79G	126.52	Inf	-Inf	6.45	3	Vertical	278	1.57	-
AV	5.7905G	115.65	Inf	-Inf	6.45	3	Vertical	278	1.57	-
PK	5.9385G	61.76	68.20	-6.44	6.87	3	Vertical	278	1.57	-

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

30/04/2019

5785MHz_TX



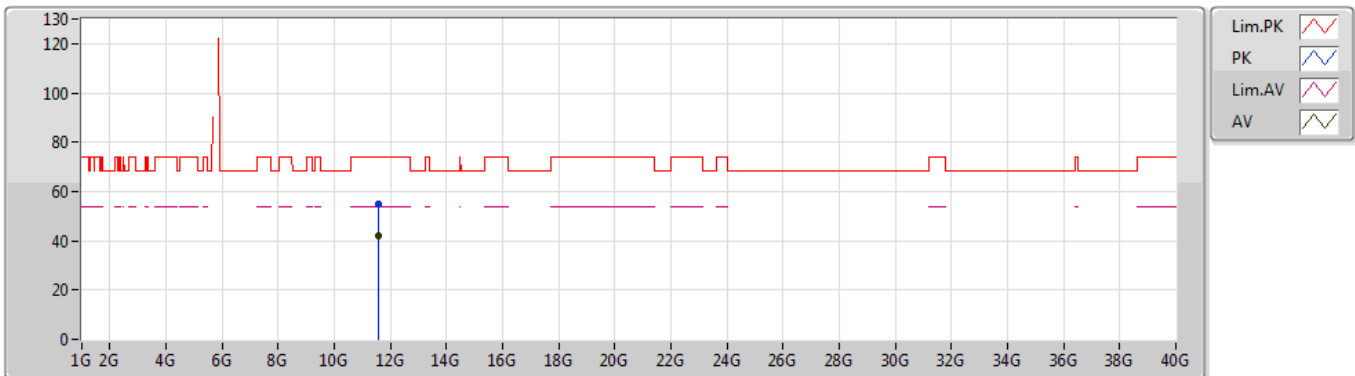
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.5886G	55.65	74.00	-18.35	14.51	3	Vertical	315	1.22	-				
AV	11.56628G	42.61	54.00	-11.39	14.49	3	Vertical	315	1.22	-				

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

30/04/2019

5785MHz_TX



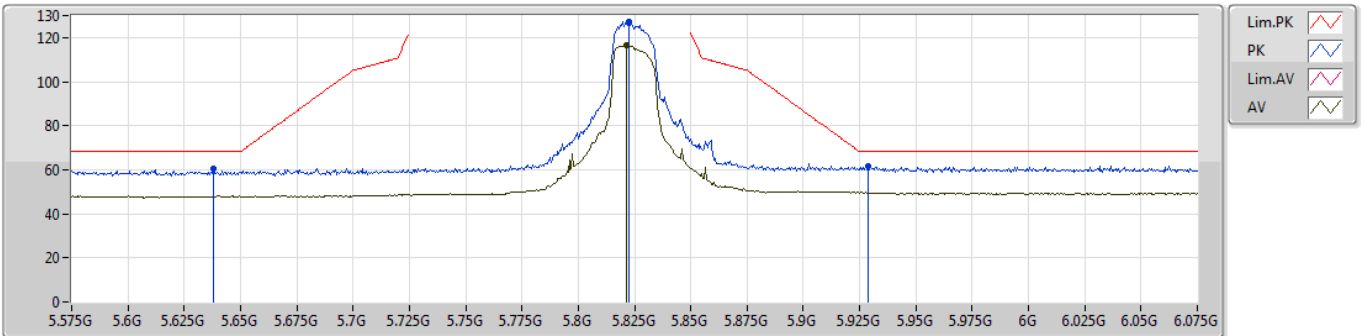
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.57852G	55.13	74.00	-18.87	14.50	3	Horizontal	296	1.61	-				
AV	11.58482G	42.21	54.00	-11.79	14.51	3	Horizontal	296	1.61	-				

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

08/04/2019

5825MHz_TX



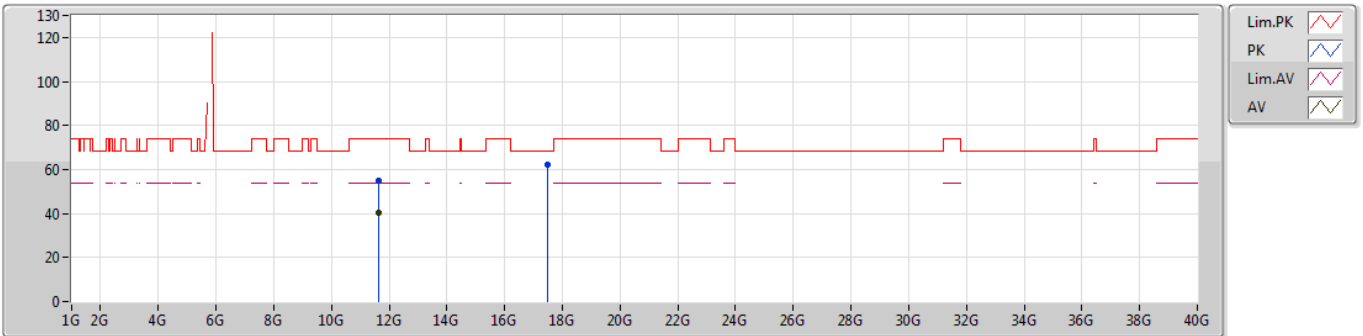
EUT_Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.638G	60.57	68.20	-7.63	6.37	3	Vertical	281	1.73	-
PK	5.8225G	127.29	Inf	-Inf	6.52	3	Vertical	281	1.73	-
AV	5.8215G	116.44	Inf	-Inf	6.52	3	Vertical	281	1.73	-
PK	5.929G	61.79	68.20	-6.41	6.83	3	Vertical	281	1.73	-

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

08/04/2019

5825MHz_TX



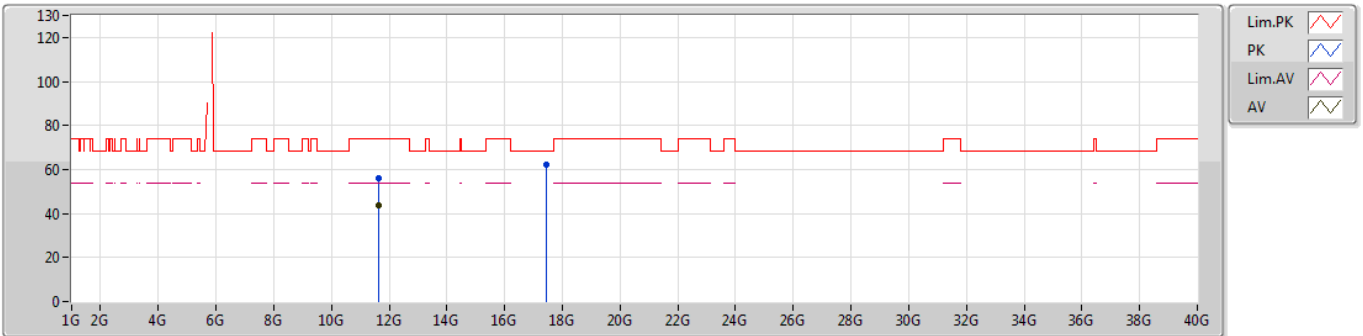
EUT Z_4TX_Dipole
Setting 25
03-C-4
FSP
SA AMP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	11.64568G	55.03	74.00	-18.97	14.57	3	Vertical	68	1.44	-
AV	11.63707G	40.47	54.00	-13.53	14.56	3	Vertical	68	1.44	-
PK	17.47662G	62.09	68.20	-6.11	19.45	3	Vertical	184	1.61	-

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

08/04/2019

5825MHz_TX



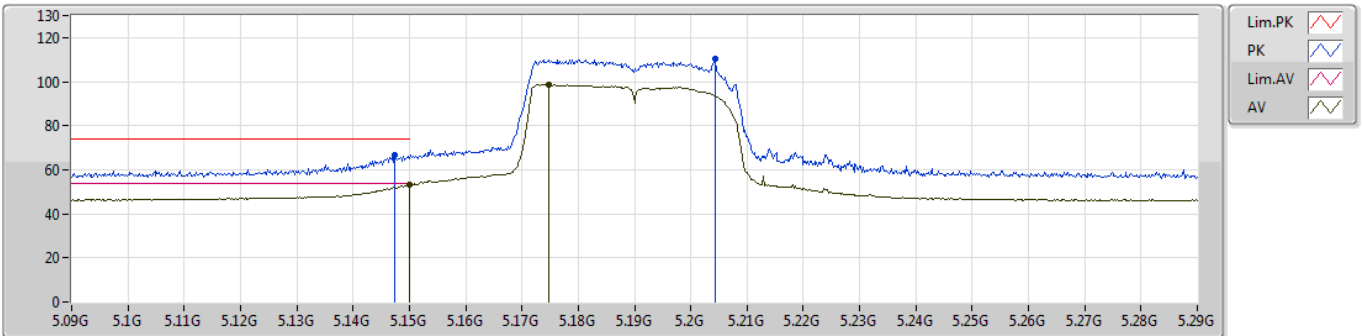
EUT Z_4TX_Dipole
Setting 25
03-C-4
FSP
SA AMP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	11.65615G	56.14	74.00	-17.86	14.58	3	Horizontal	155	1.43	-
AV	11.65741G	43.68	54.00	-10.32	14.57	3	Horizontal	155	1.43	-
PK	17.46615G	62.37	68.20	-5.83	19.40	3	Horizontal	295	1.51	-

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

02/04/2019

5190MHz_TX



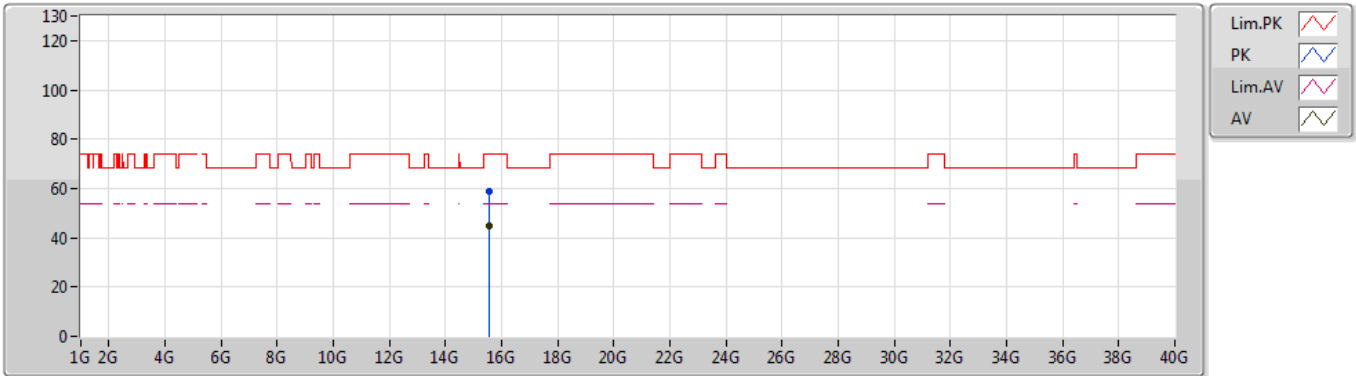
EUT Y_2TX_Dipole
Setting 19
03-B-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.1474G	66.63	74.00	-7.37	5.83	3	Vertical	18	1.50	-
AV	5.15G	53.01	54.00	-0.99	5.83	3	Vertical	18	1.50	-
PK	5.2044G	110.24	Inf	-Inf	5.92	3	Vertical	18	1.50	-
AV	5.1748G	98.59	Inf	-Inf	5.86	3	Vertical	18	1.50	-

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

30/04/2019

5190MHz_TX



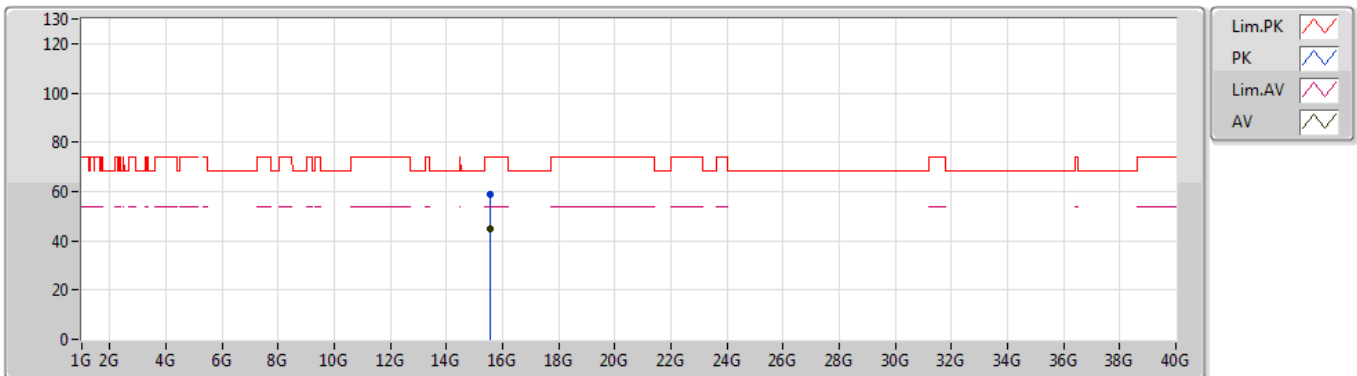
EUT Y_2TX_Dipole
Setting 19
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.56256G	58.58	74.00	-15.42	15.17	3	Vertical	42	1.85	-				
AV	15.56862G	45.09	54.00	-8.91	15.15	3	Vertical	42	1.85	-				

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

30/04/2019

5190MHz_TX



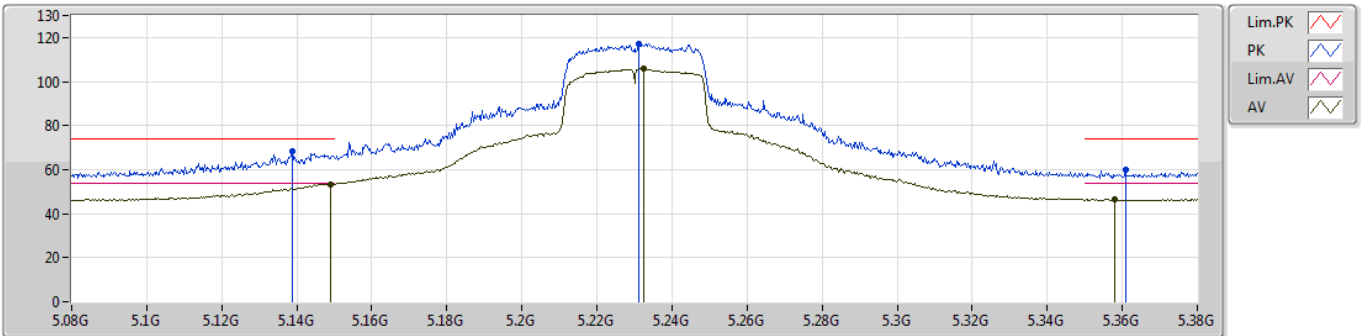
EUT Y_2TX_Dipole
Setting 19
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.56388G	58.75	74.00	-15.25	15.17	3	Horizontal	212	2.27	-				
AV	15.56211G	45.07	54.00	-8.93	15.17	3	Horizontal	212	2.27	-				

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

02/04/2019

5230MHz_TX



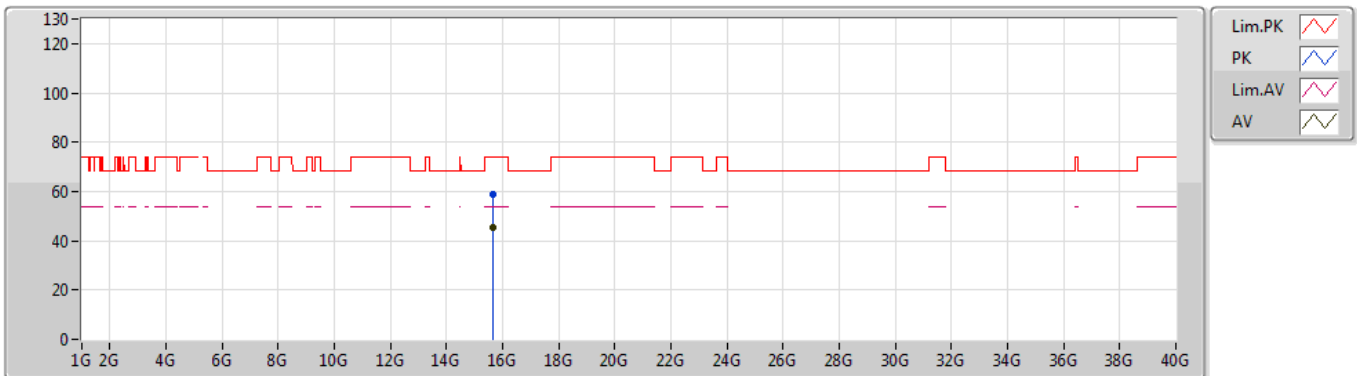
EUT Y_2TX_Dipole
Setting 24
03-B-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.1388G	68.62	74.00	-5.38	5.81	3	Vertical	338	1.49	-
AV	5.149G	53.41	54.00	-0.59	5.83	3	Vertical	338	1.49	-
PK	5.2312G	117.23	Inf	-Inf	6.00	3	Vertical	338	1.49	-
AV	5.2324G	105.84	Inf	-Inf	6.01	3	Vertical	338	1.49	-
PK	5.3608G	59.70	74.00	-14.30	6.32	3	Vertical	338	1.49	-
AV	5.3581G	46.47	54.00	-7.53	6.32	3	Vertical	338	1.49	-

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

30/04/2019

5230MHz_TX



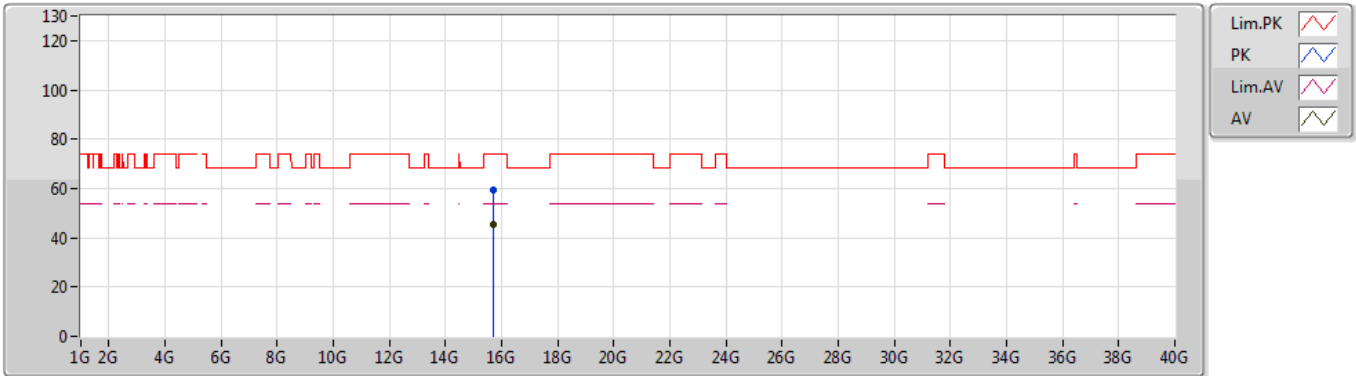
EUT Y_2TX_Dipole
Setting 24
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.67764G	58.95	74.00	-15.05	14.74	3	Vertical	173	2.74	-				
AV	15.67632G	45.47	54.00	-8.53	14.74	3	Vertical	173	2.74	-				

802.11ac VHT40-BF_Nss1,(MCS0)_2TX

30/04/2019

5230MHz_TX



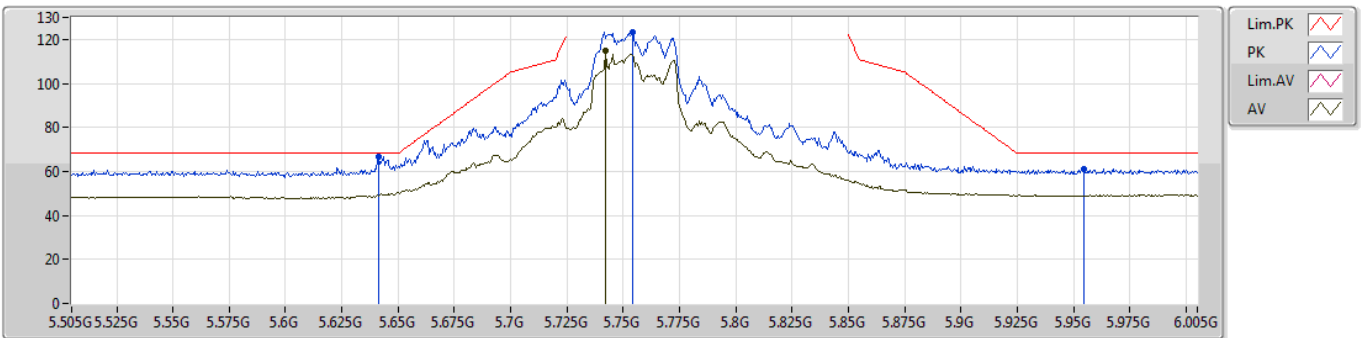
EUT Y_2TX_Dipole
Setting 24
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	15.69834G	59.25	74.00	-14.75	14.65	3	Horizontal	337	2.36	-				
AV	15.68235G	45.48	54.00	-8.52	14.72	3	Horizontal	337	2.36	-				

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

01/04/2019

5755MHz_TX



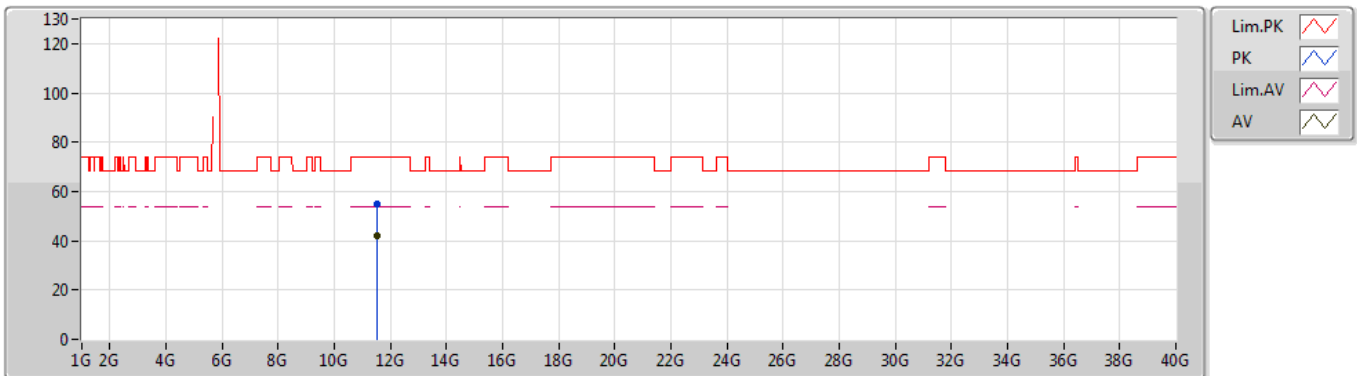
EUT_Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.6415G	66.72	68.20	-1.48	6.38	3	Vertical	154	1.80	-
PK	5.754G	123.18	Inf	-Inf	6.42	3	Vertical	154	1.80	-
AV	5.742G	114.92	Inf	-Inf	6.41	3	Vertical	154	1.80	-
PK	5.9545G	61.14	68.20	-7.06	6.91	3	Vertical	154	1.80	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

01/05/2019

5755MHz_TX



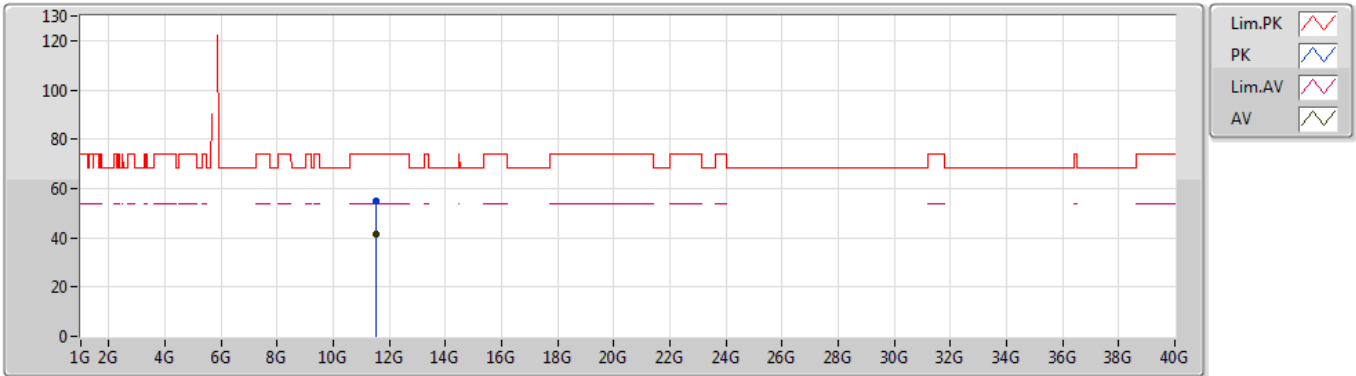
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.51126G	54.79	74.00	-19.21	14.44	3	Vertical	142	1.80	-				
AV	11.5145G	42.17	54.00	-11.83	14.44	3	Vertical	142	1.80	-				

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

01/05/2019

5755MHz_TX



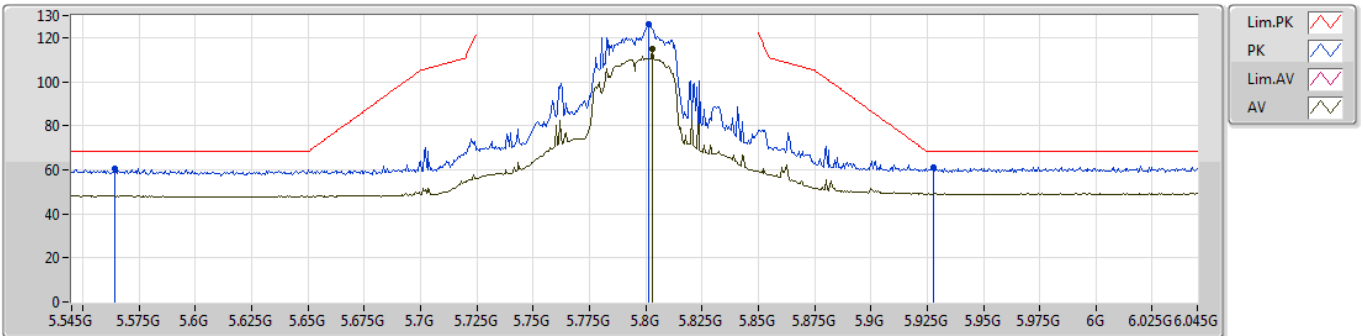
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.52386G	55.10	74.00	-18.90	14.46	3	Horizontal	228	1.51	-				
AV	11.51582G	41.70	54.00	-12.30	14.44	3	Horizontal	228	1.51	-				

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

01/04/2019

5795MHz_TX



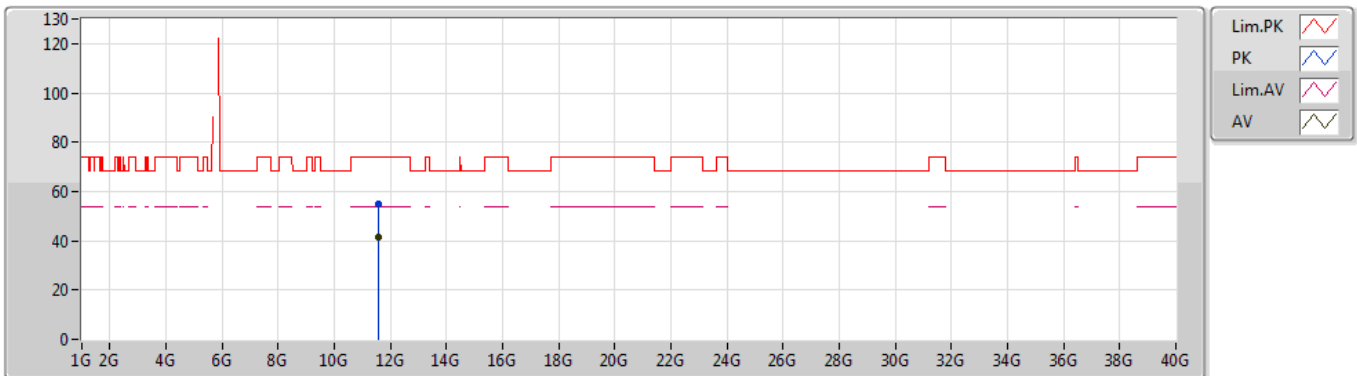
EUT_Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.564G	60.38	68.20	-7.82	6.41	3	Vertical	62	1.91	-
PK	5.8015G	125.92	Inf	-Inf	6.46	3	Vertical	62	1.91	-
AV	5.803G	114.93	Inf	-Inf	6.47	3	Vertical	62	1.91	-
PK	5.928G	61.19	68.20	-7.01	6.82	3	Vertical	62	1.91	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

01/05/2019

5795MHz_TX



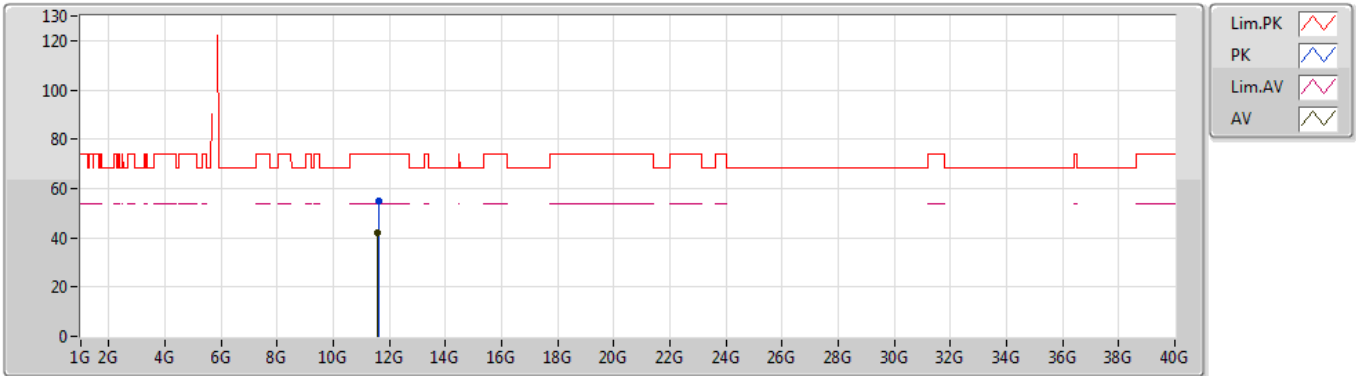
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.56768G	55.18	74.00	-18.82	14.49	3	Vertical	238	2.36	-				
AV	11.5822G	41.68	54.00	-12.32	14.51	3	Vertical	238	2.36	-				

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

01/05/2019

5795MHz_TX



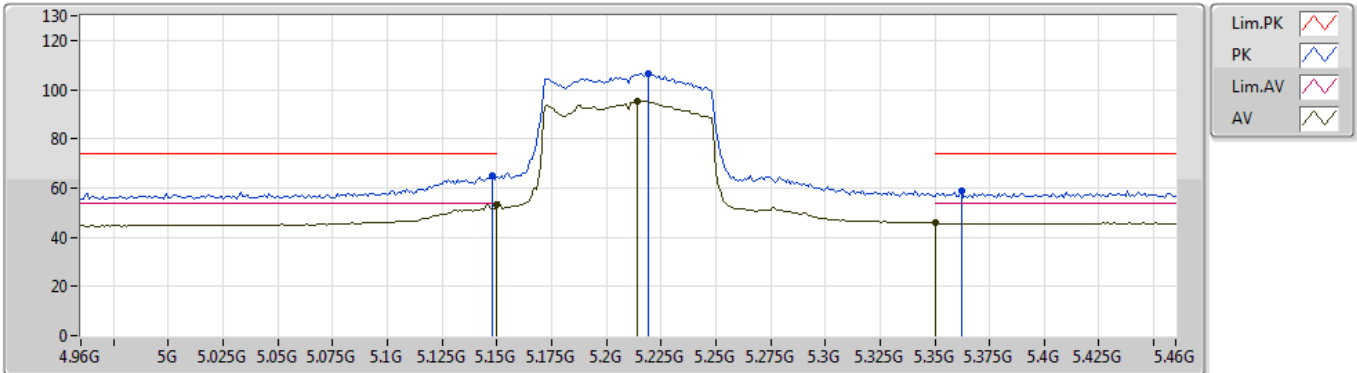
EUT_Z_4TX_Dipole
Setting 25
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.61982G	54.87	74.00	-19.13	14.54	3	Horizontal	62	1.06	-				
AV	11.59042G	41.84	54.00	-12.16	14.51	3	Horizontal	62	1.06	-				

802.11ac VHT80-BF_Nss1,(MCS0)_2TX

03/05/2019

5210MHz_TX



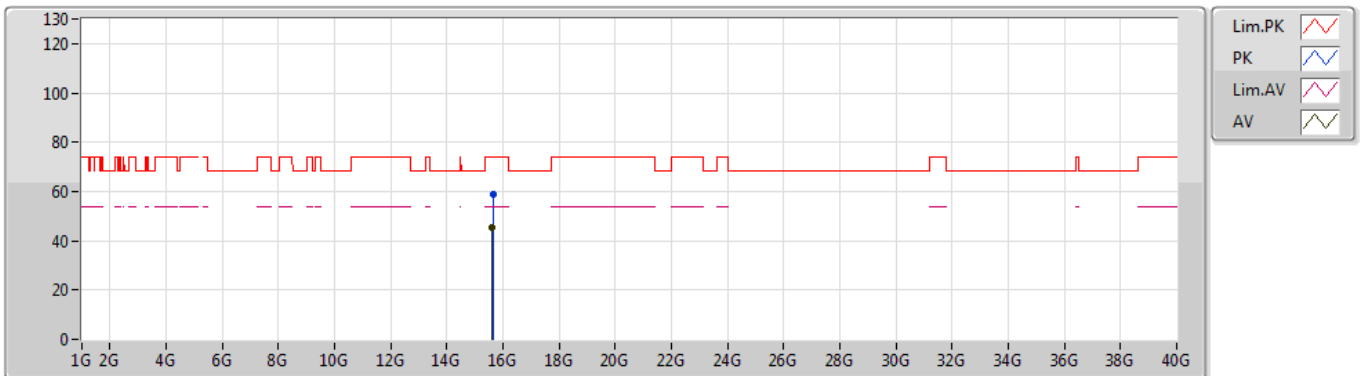
EUT Y_2TX Dipole
Setting 17.5
01-C-5-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	5.148G	65.27	74.00	-8.73	4.25	3	Vertical	289	1.50	-
AV	5.1499G	53.38	54.00	-0.62	4.25	3	Vertical	289	1.50	-
PK	5.219G	106.45	Inf	-Inf	4.34	3	Vertical	289	1.50	-
AV	5.214G	95.20	Inf	-Inf	4.32	3	Vertical	289	1.50	-
PK	5.362G	58.75	74.00	-15.25	4.86	3	Vertical	289	1.50	-
AV	5.3501G	45.85	54.00	-8.15	4.81	3	Vertical	289	1.50	-

802.11ac VHT80-BF_Nss1,(MCS0)_2TX

03/05/2019

5210MHz_TX



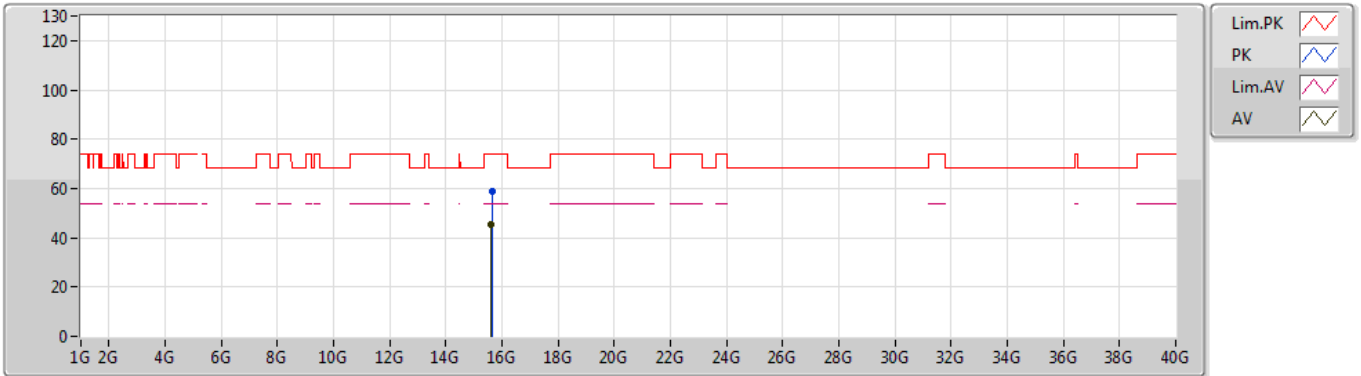
EUT Y_2TX Dipole
Setting 17.5
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment			
PK	15.63246G	58.81	74.00	-15.19	14.91	3	Vertical	69	1.99	-			
AV	15.61518G	45.49	54.00	-8.51	14.97	3	Vertical	69	1.99	-			

802.11ac VHT80-BF_Nss1,(MCS0)_2TX

03/05/2019

5210MHz_TX



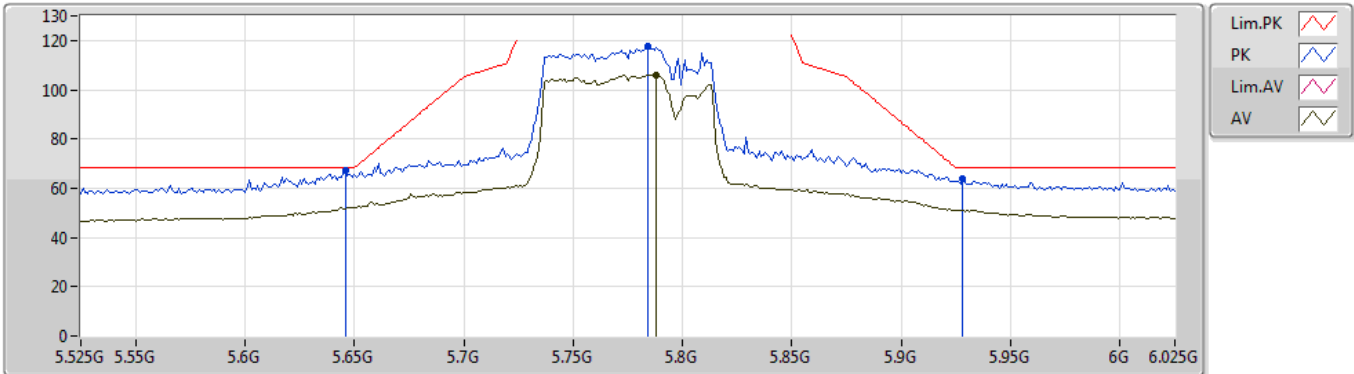
EUT Y_2TX Dipole
Setting 17.5
03-B-4
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment			
PK	15.63216G	58.75	74.00	-15.25	14.91	3	Vertical	283	1.66	-			
AV	15.62346G	45.38	54.00	-8.62	14.95	3	Vertical	283	1.66	-			

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

01/05/2019

5775MHz_TX



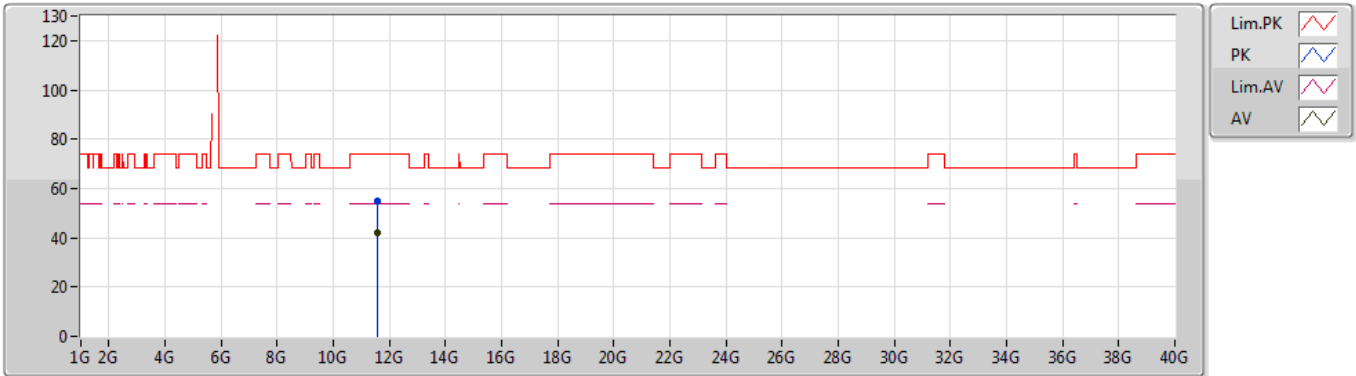
EUT_Z_4TX Dipole
Setting 22.5
01-Z-1-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	5.646G	67.44	68.20	-0.76	5.69	3	Vertical	116	1.46	-				
PK	5.784G	117.70	Inf	-Inf	5.92	3	Vertical	116	1.46	-				
AV	5.788G	106.13	Inf	-Inf	5.94	3	Vertical	116	1.46	-				
PK	5.928G	64.12	68.20	-4.08	6.82	3	Vertical	116	1.46	-				

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

01/05/2019

5775MHz_TX



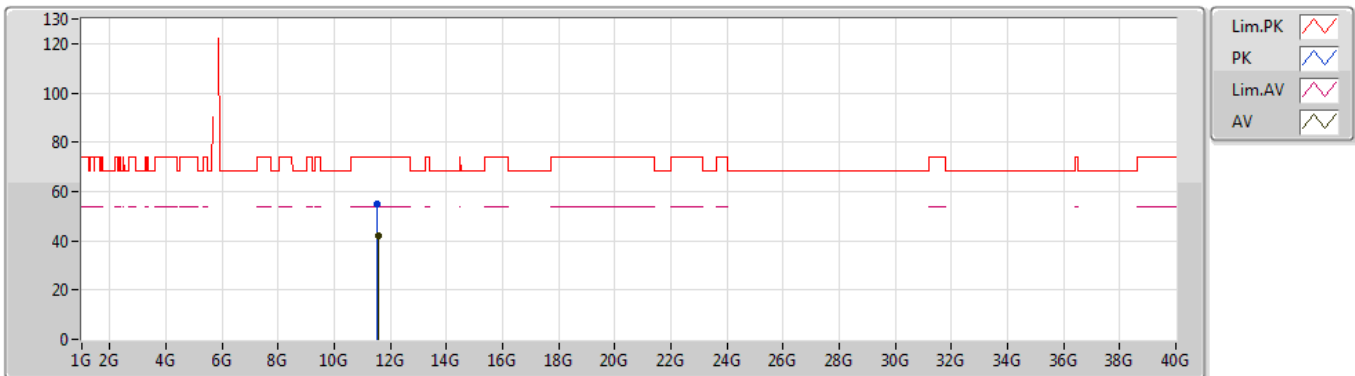
EUT_Z_4TX Dipole
Setting 22.5
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.57232G	55.02	74.00	-18.98	14.50	3	Vertical	1	2.01	-				
AV	11.57712G	41.78	54.00	-12.22	14.50	3	Vertical	1	2.01	-				

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

01/05/2019

5775MHz_TX



EUT_Z_4TX Dipole
Setting 22.5
03-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.52204G	54.96	74.00	-19.04	14.45	3	Vertical	212	2.40	-				
AV	11.57388G	41.76	54.00	-12.24	14.50	3	Vertical	212	2.40	-				



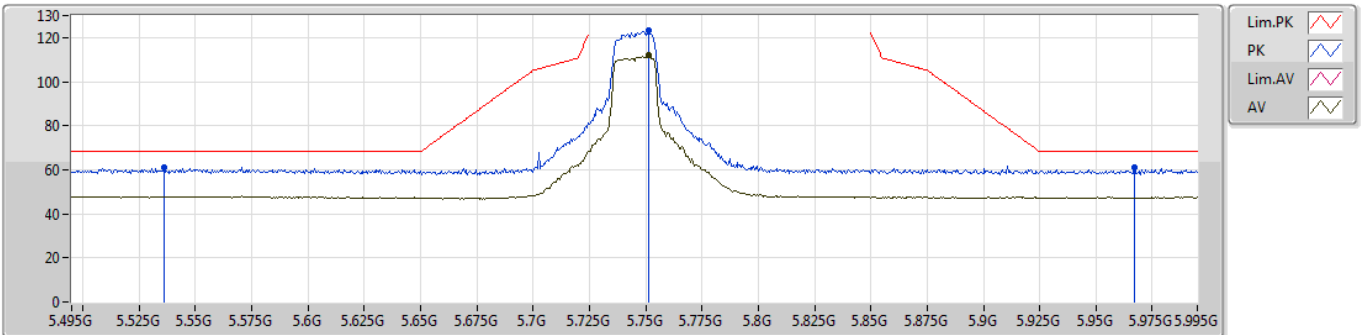
**For Band 4 / 4T2S
Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	Pass	PK	5.649G	66.67	68.20	-1.53	5.69	3	Vertical	60	1.48

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

08/04/2019

5745MHz_TX



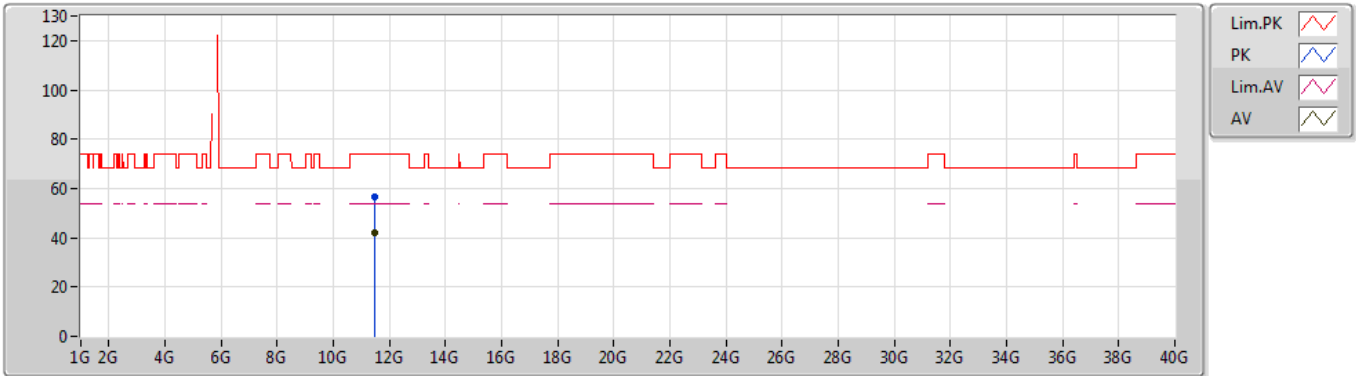
EUT_Z_4TX Dipole
Setting 25
03-C-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.536G	61.02	68.20	-7.18	6.45	3	Vertical	260	1.60	-
PK	5.7515G	123.06	Inf	-Inf	6.42	3	Vertical	260	1.60	-
AV	5.7515G	112.21	Inf	-Inf	6.42	3	Vertical	260	1.60	-
PK	5.967G	60.88	68.20	-7.32	6.96	3	Vertical	260	1.60	-

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

30/04/2019

5745MHz_TX



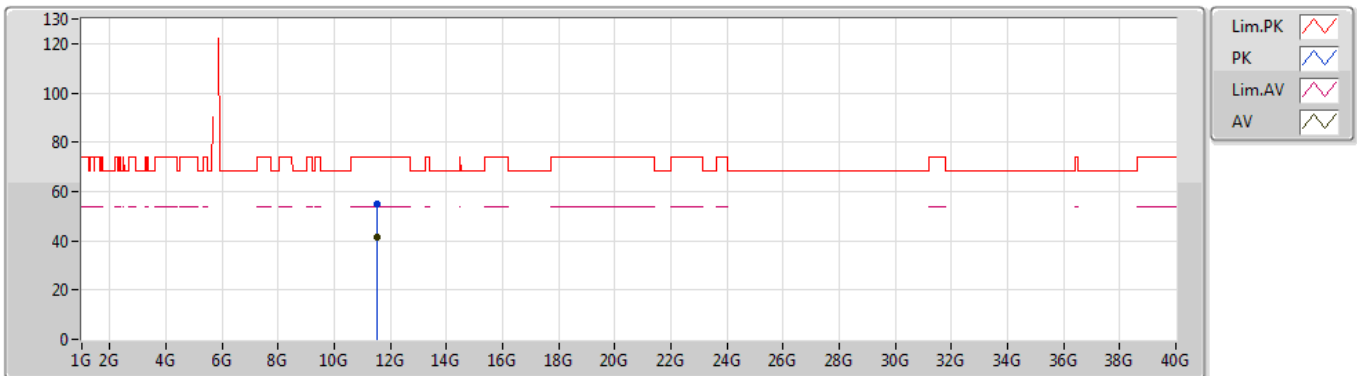
EUT_Z_4TX Dipole
Setting 25
03-N-2
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.49201G	56.45	74.00	-17.55	14.41	3	Vertical	90	2.93	-				
AV	11.49195G	42.29	54.00	-11.71	14.41	3	Vertical	90	2.93	-				

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

30/04/2019

5745MHz_TX



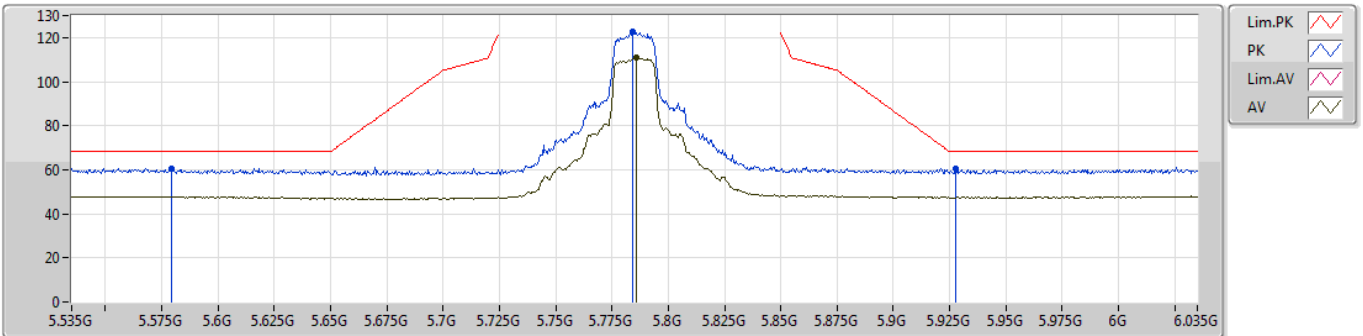
EUT_Z_4TX Dipole
Setting 25
03-N-2
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.50035G	54.74	74.00	-19.26	14.43	3	Horizontal	178	2.45	-				
AV	11.50134G	41.50	54.00	-12.50	14.43	3	Horizontal	178	2.45	-				

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

08/04/2019

5785MHz_TX



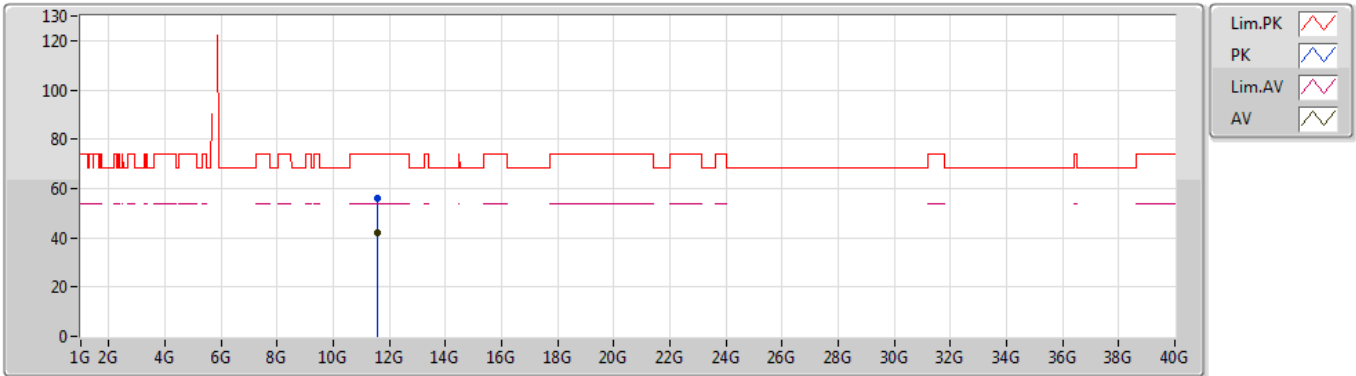
EUT_Z_4TX Dipole
Setting 25
03-C-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.5795G	60.78	68.20	-7.42	6.39	3	Vertical	157	1.50	-
PK	5.784G	122.67	Inf	-Inf	6.44	3	Vertical	157	1.50	-
AV	5.786G	110.72	Inf	-Inf	6.44	3	Vertical	157	1.50	-
PK	5.9275G	60.45	68.20	-7.75	6.82	3	Vertical	157	1.50	-

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

30/04/2019

5785MHz_TX



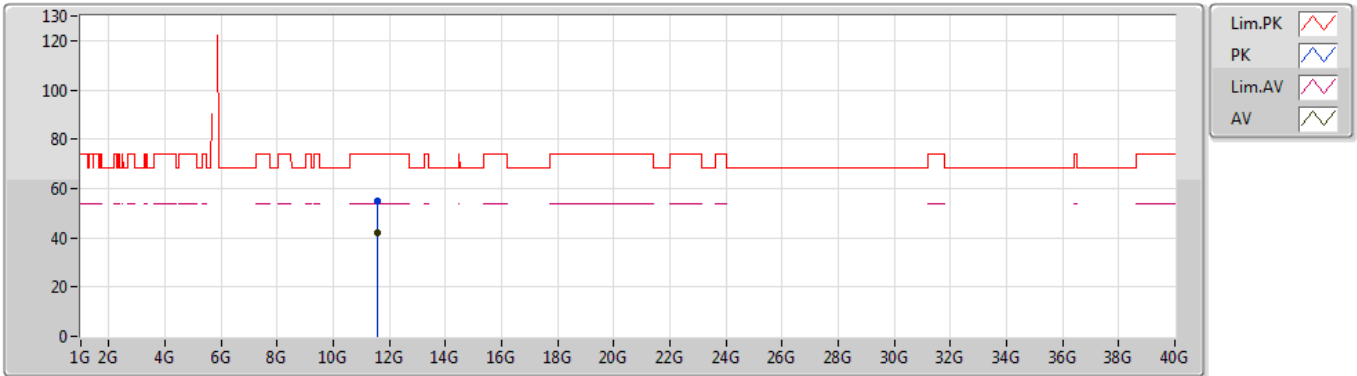
EUT_Z_4TX Dipole
Setting 25
03-N-2
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.55971G	55.82	74.00	-18.18	14.48	3	Vertical	0	1.08	-				
AV	11.58218G	41.83	54.00	-12.17	14.51	3	Vertical	0	1.08	-				

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

30/04/2019

5785MHz_TX



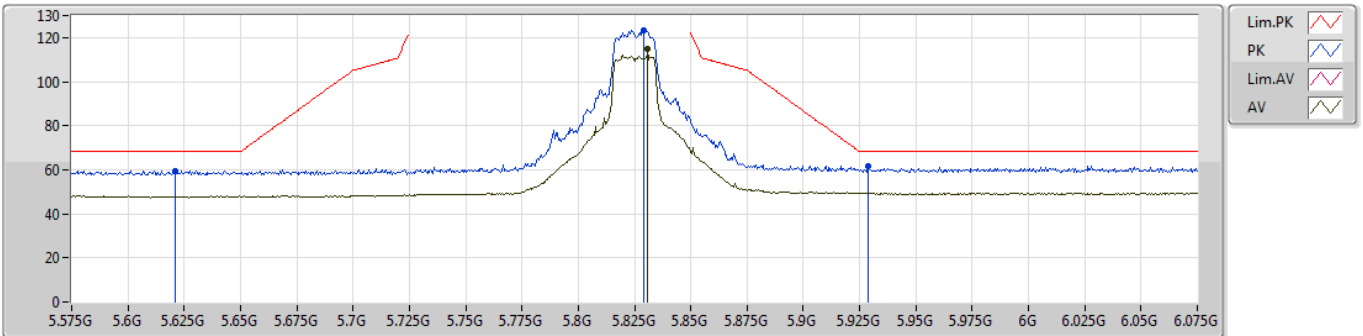
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Setting 25
03-N-2
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.56112G	55.11	74.00	-18.89	14.48	3	Horizontal	206	2.16	-				
AV	11.57657G	41.92	54.00	-12.08	14.50	3	Horizontal	206	2.16	-				

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

08/04/2019

5825MHz_TX



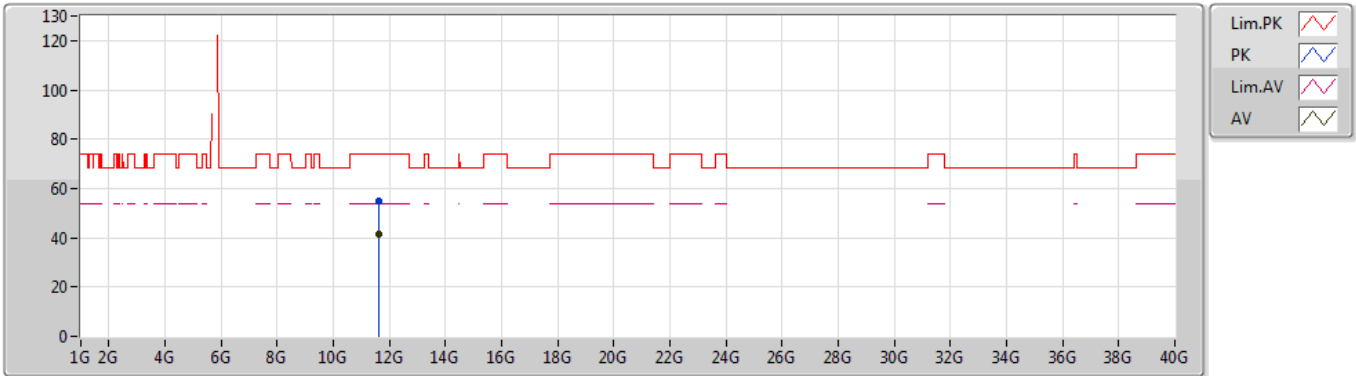
EUT Z_4TX_Dipole
Setting 25
03-C-4-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.621G	59.45	68.20	-8.75	6.37	3	Vertical	119	1.49	-
PK	5.829G	123.50	Inf	-Inf	6.54	3	Vertical	119	1.49	-
AV	5.831G	114.64	Inf	-Inf	6.54	3	Vertical	119	1.49	-
PK	5.929G	61.40	68.20	-6.80	6.83	3	Vertical	119	1.49	-

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

30/04/2019

5825MHz_TX



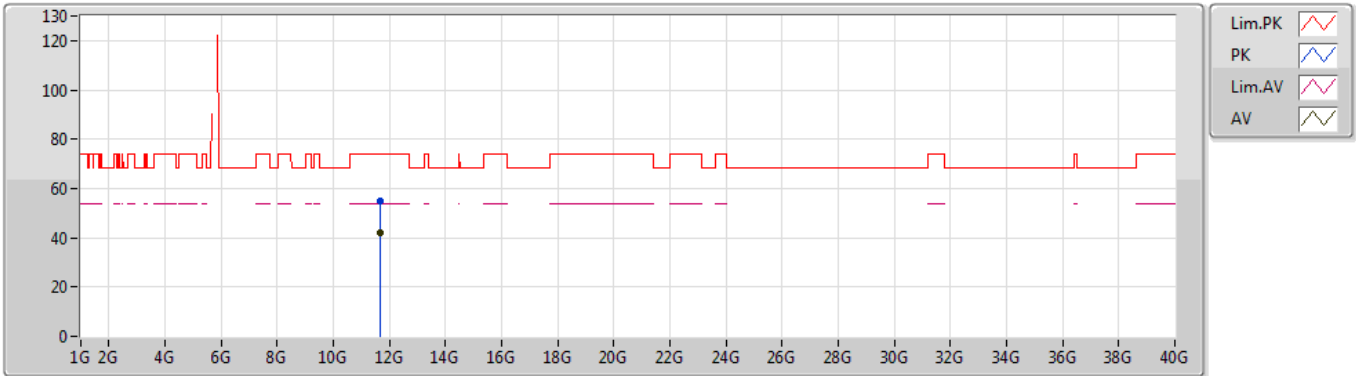
EUT_Z_4TX_Dipole
Setting 25
03-N-2
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.63872G	54.85	74.00	-19.15	14.56	3	Vertical	111	2.01	-				
AV	11.64439G	41.73	54.00	-12.27	14.57	3	Vertical	111	2.01	-				

802.11ac VHT20-BF_Nss2,(MCS0)_4TX

30/04/2019

5825MHz_TX



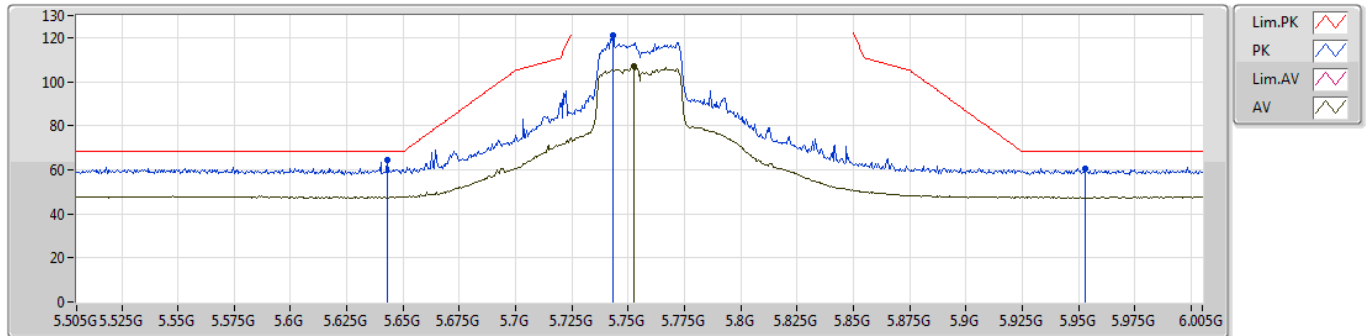
EUT_Z_4TX_Dipole
Setting 25
03-N-2
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.65057G	55.08	74.00	-18.92	14.58	3	Horizontal	183	2.69	-				
AV	11.65669G	41.86	54.00	-12.14	14.57	3	Horizontal	183	2.69	-				

802.11ac VHT40-BF_Nss2,(MCS0)_4TX

02/04/2019

5755MHz_TX



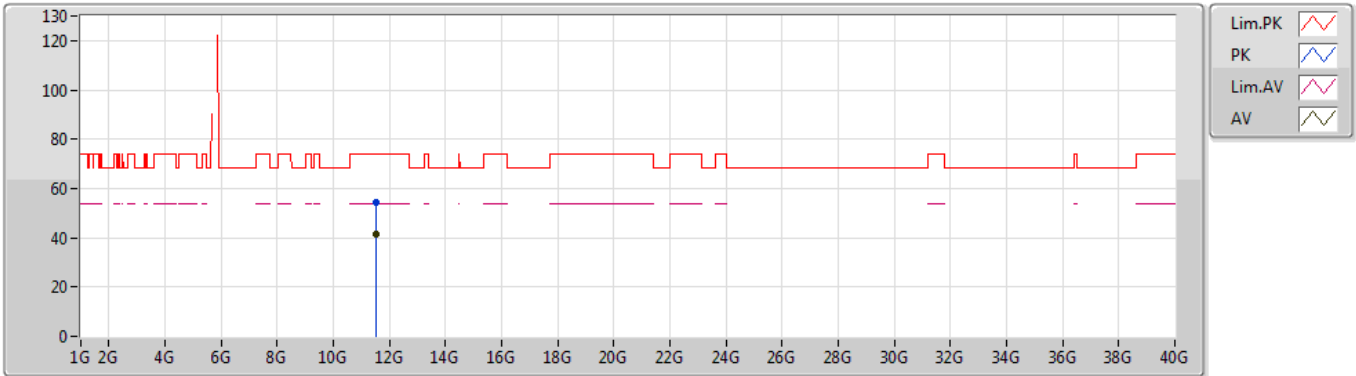
EUT_Z_4TX Dipole
Setting 25
03-C-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.643G	64.23	68.20	-3.97	6.38	3	Vertical	153	1.50	-
PK	5.743G	121.16	Inf	-Inf	6.41	3	Vertical	153	1.50	-
AV	5.7525G	106.87	Inf	-Inf	6.42	3	Vertical	153	1.50	-
PK	5.953G	60.41	68.20	-7.79	6.91	3	Vertical	153	1.50	-

802.11ac VHT40-BF_Nss2,(MCS0)_4TX

30/04/2019

5755MHz_TX



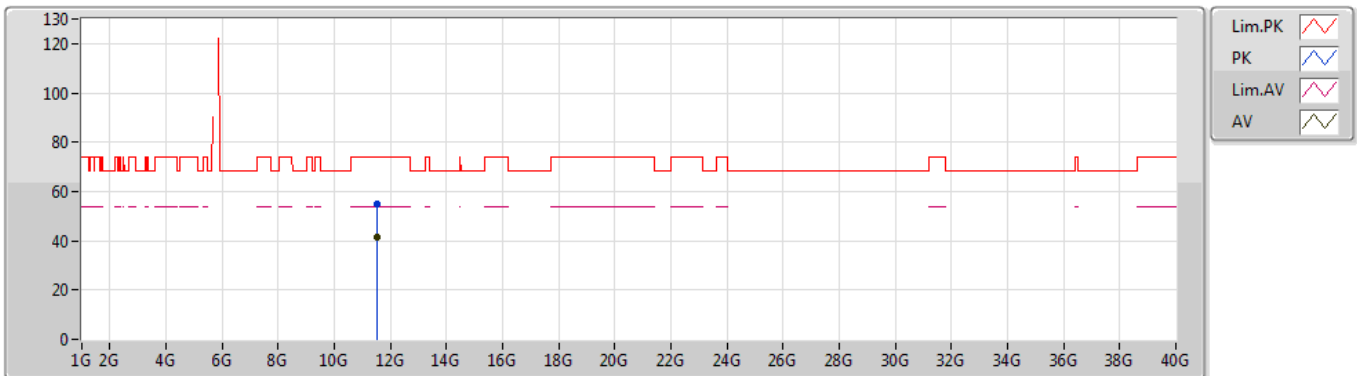
EUT_Z_4TX Dipole
Setting 25
03-N-2
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.51618G	54.49	74.00	-19.51	14.44	3	Vertical	210	1.66	-				
AV	11.52023G	41.39	54.00	-12.61	14.44	3	Vertical	210	1.66	-				

802.11ac VHT40-BF_Nss2,(MCS0)_4TX

30/04/2019

5755MHz_TX



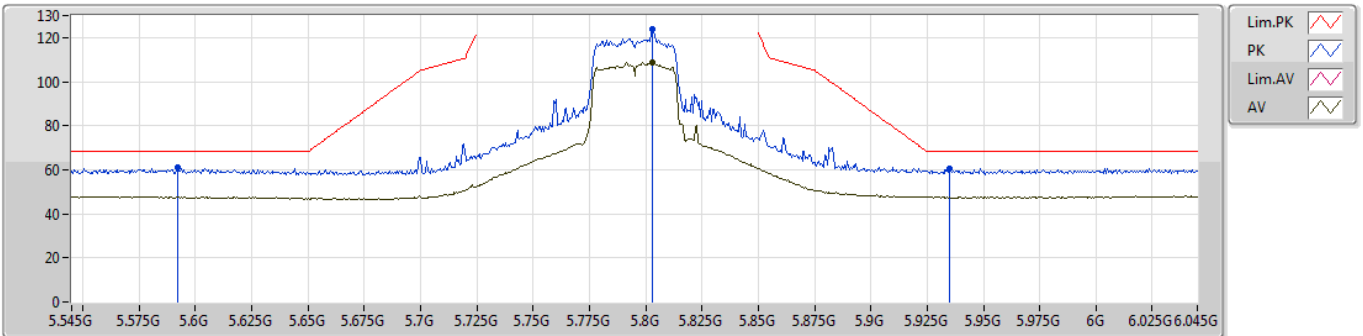
EUT_Z_4TX Dipole
Setting 25
03-N-2
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.50559G	55.09	74.00	-18.91	14.43	3	Horizontal	254	1.22	-				
AV	11.51726G	41.70	54.00	-12.30	14.44	3	Horizontal	254	1.22	-				

802.11ac VHT40-BF_Nss2,(MCS0)_4TX

02/04/2019

5795MHz_TX



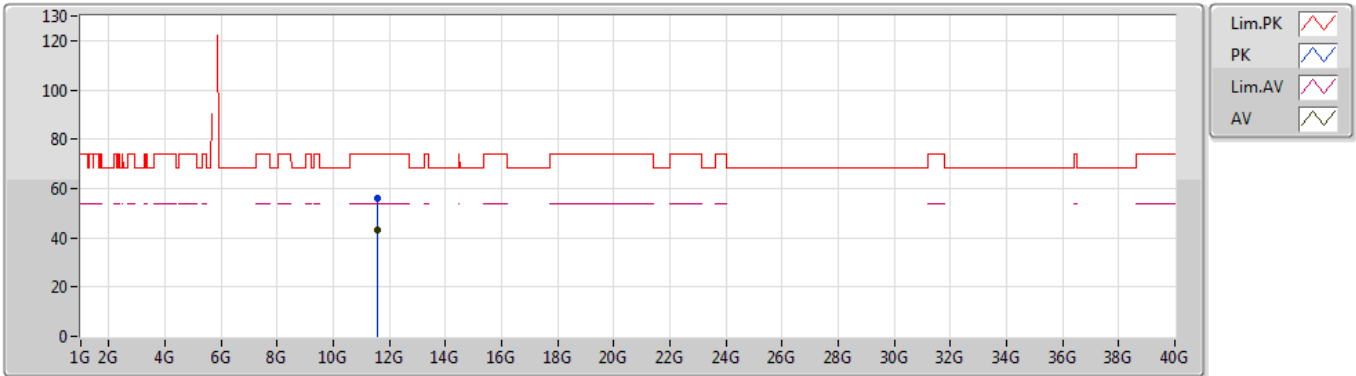
EUT Z_4TX Dipole
Setting 25
03-C-4-10
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.592G	60.83	68.20	-7.37	6.38	3	Vertical	350	1.47	-
PK	5.803G	123.61	Inf	-Inf	6.47	3	Vertical	350	1.47	-
AV	5.803G	108.96	Inf	-Inf	6.47	3	Vertical	350	1.47	-
PK	5.935G	60.58	68.20	-7.62	6.84	3	Vertical	350	1.47	-

802.11ac VHT40-BF_Nss2,(MCS0)_4TX

30/04/2019

5795MHz_TX



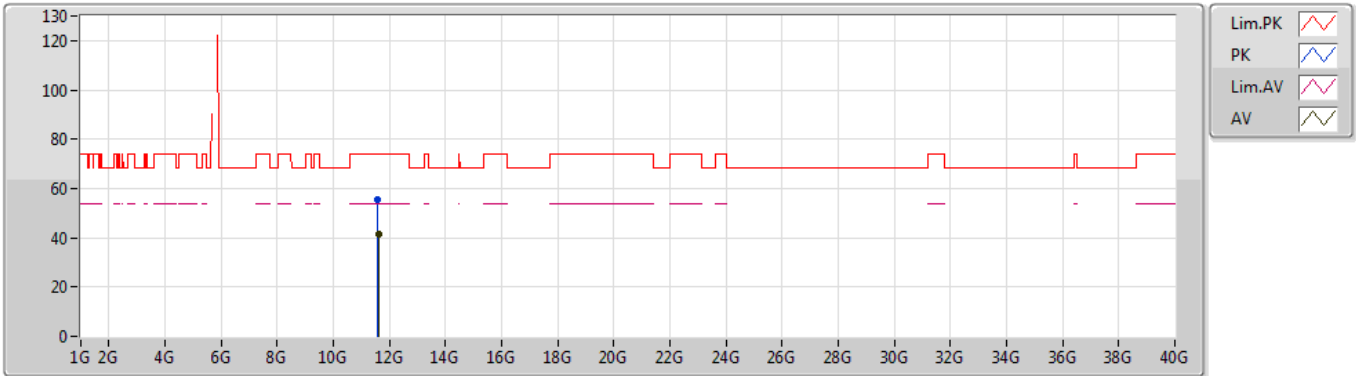
EUT_Z_4TX Dipole
Setting 25
03-N-2
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.59615G	55.81	74.00	-18.19	14.52	3	Vertical	286	2.99	-				
AV	11.57515G	43.02	54.00	-10.98	14.50	3	Vertical	286	2.99	-				

802.11ac VHT40-BF_Nss2,(MCS0)_4TX

30/04/2019

5795MHz_TX



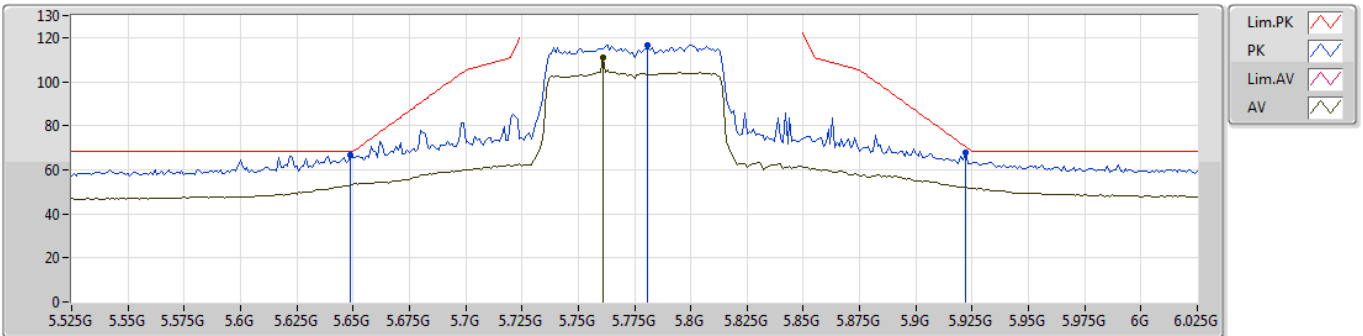
EUT_Z_4TX Dipole
Setting 25
03-N-2
FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.58517G	55.33	74.00	-18.67	14.51	3	Horizontal	246	1.66	-				
AV	11.60287G	41.71	54.00	-12.29	14.52	3	Horizontal	246	1.66	-				

802.11ac VHT80-BF_Nss2,(MCS0)_4TX

15/04/2019

5775MHz_TX



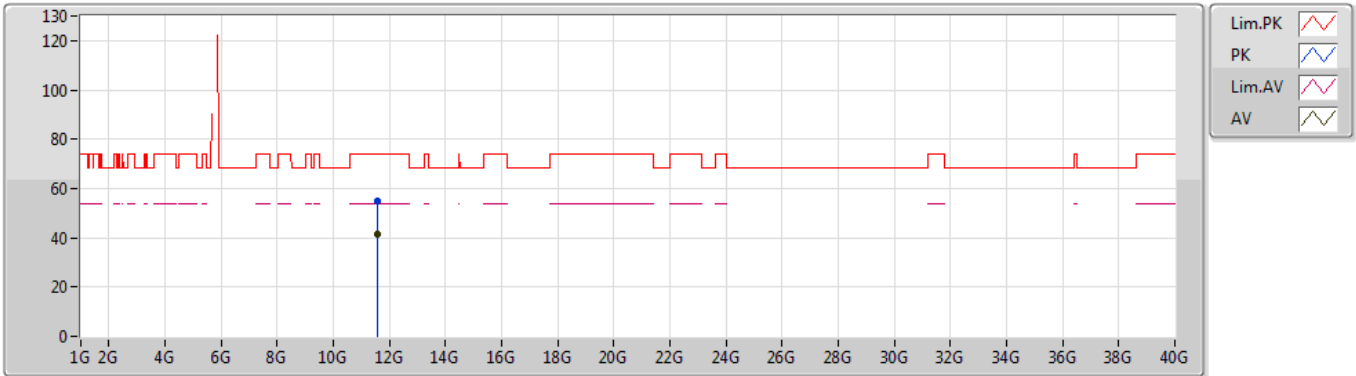
EUT_Z_2TX Dipole
Setting 22.5
01-Z-1-10
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	5.649G	66.67	68.20	-1.53	5.69	3	Vertical	60	1.48	-
PK	5.781G	116.78	Inf	-Inf	5.91	3	Vertical	60	1.48	-
AV	5.761G	110.78	Inf	-Inf	5.87	3	Vertical	60	1.48	-
PK	5.922G	67.66	70.42	-2.76	6.81	3	Vertical	60	1.48	-

802.11ac VHT80-BF_Nss2,(MCS0)_4TX

30/04/2019

5775MHz_TX



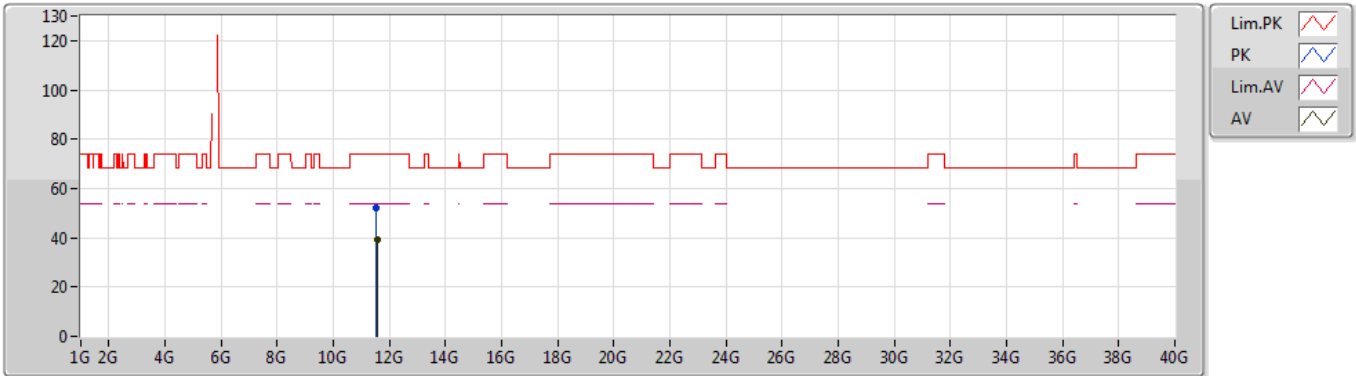
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Setting 22.5
03-N-2
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.5605G	54.93	74.00	-19.07	14.48	3	Vertical	71	2.83	-				
AV	11.55726G	41.60	54.00	-12.40	14.48	3	Vertical	71	2.83	-				

802.11ac VHT80-BF_Nss2,(MCS0)_4TX

30/04/2019

5775MHz_TX



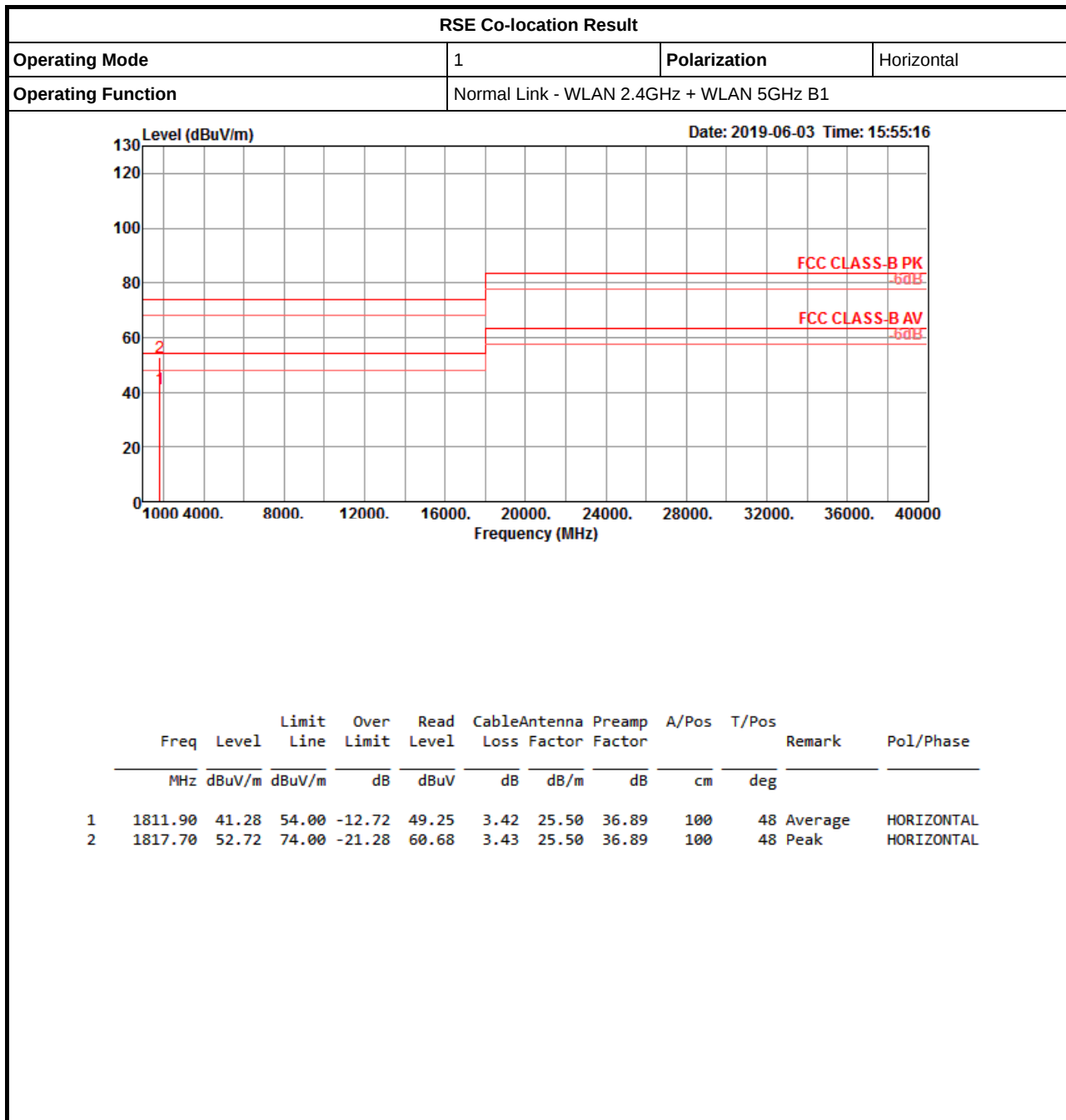
EUT Z_2TX Dipole
Setting 22.5
03-N-2
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	11.54874G	52.11	74.00	-21.89	14.47	3	Vertical	309	1.50	-				
AV	11.56242G	39.04	54.00	-14.96	14.48	3	Vertical	309	1.50	-				



RSE Co-location Result

Appendix F





RSE Co-location Result

Appendix F

