



FCC Test Report

Equipment : C61W-700 Wireless RVU Client
Brand Name : AT&T DIRECTV
Model No. : C61W-700
FCC ID : PGRC61W
Standard : 47 CFR FCC Part 15.407
Operating Band : 5150 MHz – 5250 MHz
 5250 MHz – 5350 MHz
 5470 MHz – 5725 MHz
 5725 MHz – 5850 MHz
Applicant : ARRIS
 310 Providence Mine Road
 Nevada City, CA 95959
Manufacturer : ARRIS
 310 Providence Mine Road
 Nevada City, CA 95959
Function : Outdoor; Indoor; Fixed P2P
 Client
TPC Function : With TPC Without TPC

The product sample received on Jun. 21, 2017 and completely tested on Aug. 01, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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


 Cliff Chang
 SPORTON INTERNATIONAL INC.





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Summary of Test Result

Conformance Test Specifications			
Report Clause	Ref. Std. Clause	Description	Result
1.1.2	15.203	Antenna Requirement	Complied
3.1	15.407(a)	Emission Bandwidth	Complied
3.2	15.407(a)	Maximum Conducted Output Power	Complied
3.3	15.407(a)	Peak Power Spectral Density	Complied
3.4	15.407(b)	Unwanted Emissions	Complied



Revision History

Report No.	Version	Description	Issued Date
FR762004	Rev. 01	Initial issue of report	Aug. 08, 2017



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]
5250-5350		5260-5320	52-64 [4]
5470-5725		5500-5720	100-144 [12]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5250-5350		5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5250-5350		5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	11a	20	4TX
5.15-5.25GHz	802.11n HT20	20	4TX
5.15-5.25GHz	802.11n HT20-BF	20	4TX
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ac VHT20-BF	20	4TX
5.15-5.25GHz	802.11n HT40	40	4TX
5.15-5.25GHz	802.11n HT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	4TX
5.25-5.35GHz	11a	20	4TX
5.25-5.35GHz	802.11n HT20	20	4TX
5.25-5.35GHz	802.11n HT20-BF	20	4TX
5.25-5.35GHz	802.11ac VHT20	20	4TX
5.25-5.35GHz	802.11ac VHT20-BF	20	4TX
5.25-5.35GHz	802.11n HT40	40	4TX
5.25-5.35GHz	802.11n HT40-BF	40	4TX
5.25-5.35GHz	802.11ac VHT40	40	4TX
5.25-5.35GHz	802.11ac VHT40-BF	40	4TX



Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11ac VHT80	80	4TX
5.25-5.35GHz	802.11ac VHT80-BF	80	4TX
5.47-5.725GHz	11a	20	4TX
5.47-5.725GHz	802.11n HT20	20	4TX
5.47-5.725GHz	802.11n HT20-BF	20	4TX
5.47-5.725GHz	802.11ac VHT20	20	4TX
5.47-5.725GHz	802.11ac VHT20-BF	20	4TX
5.47-5.725GHz	802.11n HT40	40	4TX
5.47-5.725GHz	802.11n HT40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT40	40	4TX
5.47-5.725GHz	802.11ac VHT40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT80	80	4TX
5.47-5.725GHz	802.11ac VHT80-BF	80	4TX
5.725-5.85GHz	11a	20	4TX
5.725-5.85GHz	802.11n HT20	20	4TX
5.725-5.85GHz	802.11n HT20-BF	20	4TX
5.725-5.85GHz	802.11ac VHT20	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	Model Name	Antenna Type	Connector	Peak Composite Gain (dBi)			
						Band 1	Band 2	Band 3	Band 4
1	1	Airgain	-	Stamped metal	I-PEX	1.5	0.8	2	2
2	2	Airgain	-	Stamped metal	I-PEX	0.4	-1.4	-4.2	-1.4
3	3	Airgain	-	Stamped metal	I-PEX	-0.1	0.7	1.9	0.7
4	4	Airgain	-	Stamped metal	I-PEX	1	1.7	1.9	0.7
Correlated Effective Directional Gain (dBi)						6.7	6.5	6.8	6.6

Note: The EUT has four antennas.

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

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

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

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT40	0.983	0.074	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT40-BF	0.966	0.15	4.608m	300
802.11ac VHT80	0.926	0.334	1.412m	1k
802.11ac VHT80-BF	0.956	0.195	5.08m	300

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter		
Beamforming Function	<input checked="" type="checkbox"/>	With beamforming for 802.11n/ac in 5GHz.	<input type="checkbox"/> Without beamforming
Weather Band	<input checked="" type="checkbox"/>	With 5600~5650MHz	<input type="checkbox"/> Without 5600~5650MHz

1.1.5 Table for Class III Change

Modifications	Performance Checking
Increase VHT40 & VHT80 power for measurement to deviation There is no change in hardware or in existing RF relevant portion.	1. Emission Bandwidth 2. Maximum Conducted Output Power 3. Peak Power Spectral Density 4. Unwanted Emissions

Note: According to above, only 11ac VHT40 CH38 (frequency: 5190MHz), CH62 (frequency: 5310MHz), CH102 (frequency: 5510MHz) and 11ac VHT80 CH42 (frequency: 5210MHz), CH58 (frequency: 5290MHz), CH106 (frequency: 5530MHz) mode to perform measurement.

1.2 Testing Applied 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 v01r04
- ◆ FCC KDB 644545 D03 v01
- ◆ FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
<input checked="" type="checkbox"/>	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	Lucke Hsieh, Ron Huang	20°C / 50%	Jul. 22, 2017 ~ Jul. 24, 2017
Radiated	03CH01-CB	Jay Luo, Ron Huang, Paul Chen, Justin Lin	22°C / 54%	Jul. 22, 2017 ~ Aug. 01, 2017

Test site Designation No. TW0006 with FCC
 Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 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

Mode	Power Setting
802.11ac VHT40_Nss1,(MCS0)_4TX	-
5190MHz	63
5310MHz	66
5510MHz	60
802.11ac VHT80_Nss1,(MCS0)_4TX	-
5210MHz	60
5290MHz	62
5530MHz	57
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5190MHz	60
5310MHz	66
5510MHz	65
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5210MHz	60
5290MHz	65
5530MHz	60

Note: 1.VHT40 covers HT40, due to same modulation. The power setting for 802.11n HT40 are the same or lower than 802.11ac VHT40.

2. There are two modes of EUT, one is non-beamforming mode, and the other is beamforming mode for 802.11n/ac. All test results were recorded in the report.

2.2 The Worst Case Measurement Configuration

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
1	EUT in Z axis

Note: The Adapter is for measurement only, would not be marketed.

Adapter information as below:

Power	Brand	Model
Adapter	DIRECTV	EPS10R4-16

2.3 EUT Operation during Test

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 Tera Term.
3. Executed "Iperf" to link with the remote workstation to transmit and receive packet by RX Device and transmit duty cycle no less than 98%.



2.4 Accessories

N/A

2.5 Support Equipment

For Test Site No: 03CH01-CB
<For Non-Beamforming Mode>

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC
2	Adapter	DIRECTV	EPS10R4-16	N/A

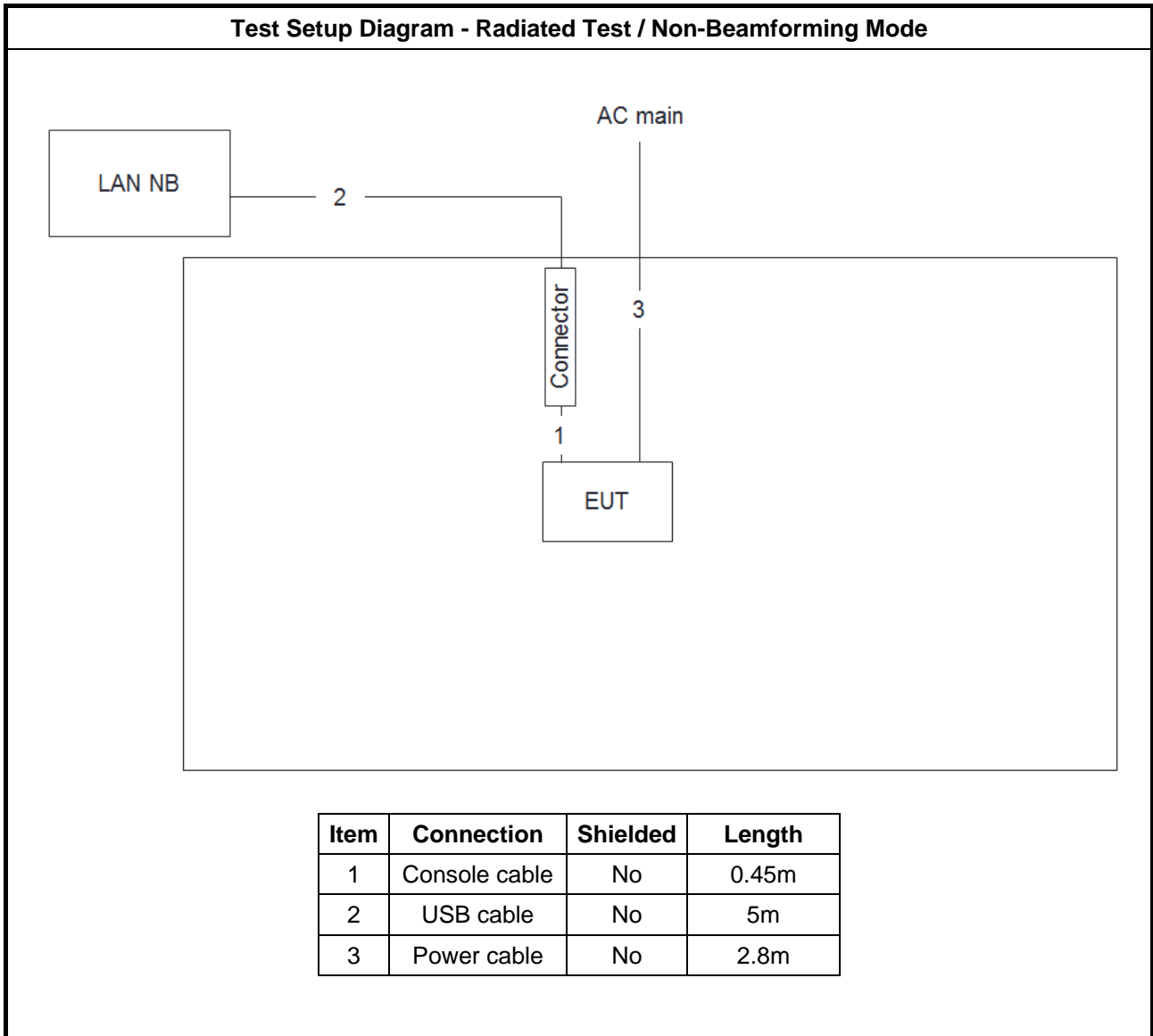
<For Beamforming Mode>

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC
2	Notebook	DELL	E4300	DoC
3	RX Device	DIRECTV	WVB2	N/A
4	Adapter	DRECTV	EPS10R4-16	N/A

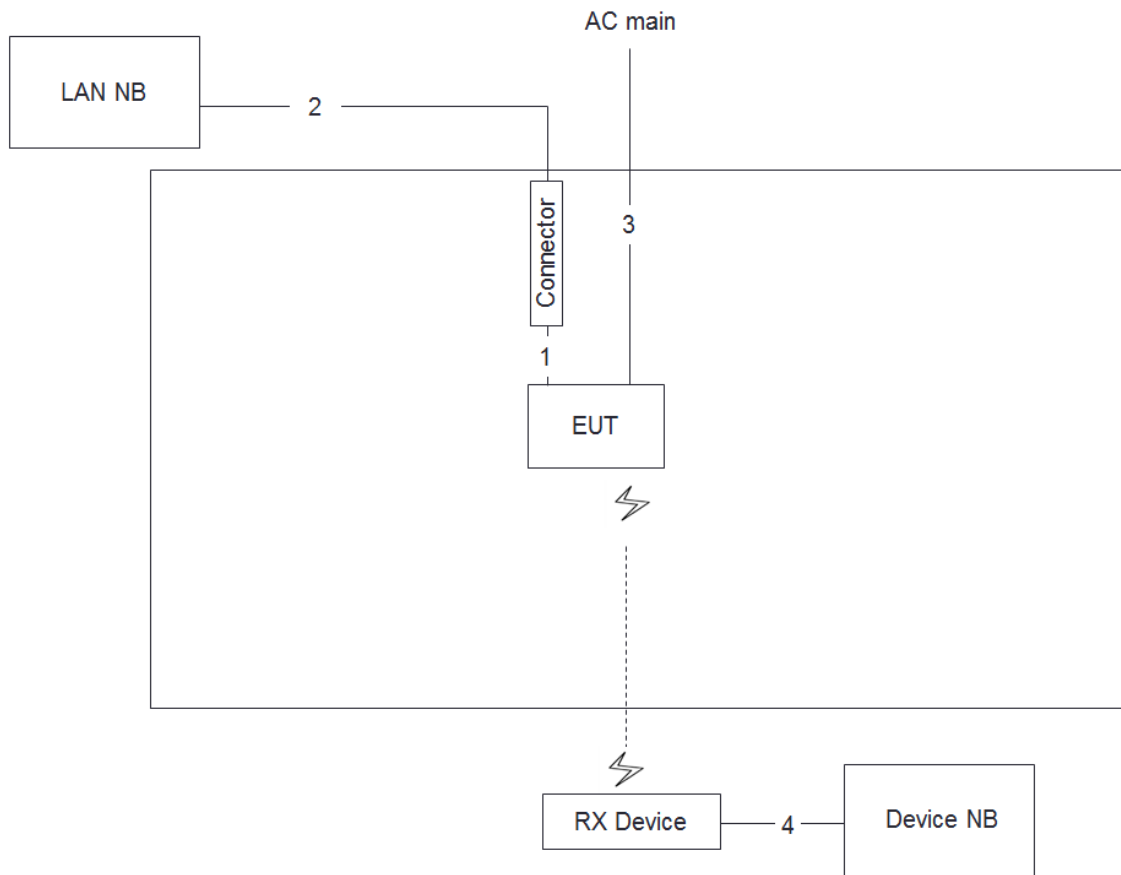
For Test Site No: TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC
2	Adapter	DIRECTV	EPS10R4-16	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test / Beamforming Mode



Item	Connection	Shielded	Length
1	Console cable	No	0.45m
2	USB cable	No	5m
3	Power cable	No	2.8m
4	RJ-45 cable	No	10m

3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band, N/A
<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.
LE-LAN Devices	
<input type="checkbox"/>	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.
<input type="checkbox"/>	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
<input type="checkbox"/>	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
<input type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.

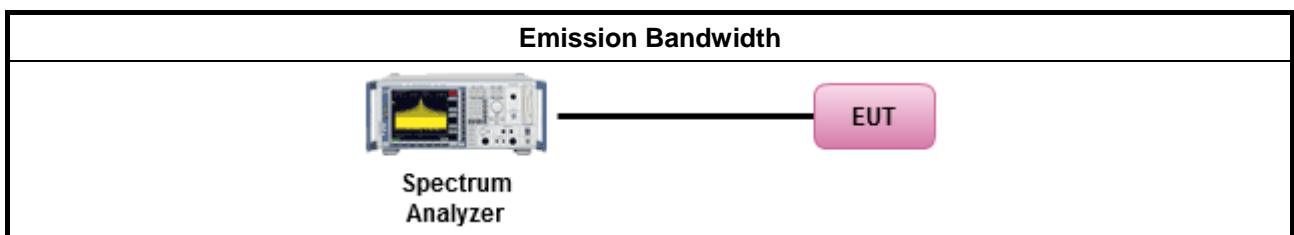
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> For the emission bandwidth shall be measured using one of the options below: 	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
<input checked="" type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A



3.2 Maximum Conducted Output Power

3.2.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
	<ul style="list-style-type: none"> ▪ Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees $\leq 125mW$ [21dBm] ▪ Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ ▪ Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. ▪ Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/> For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> ▪ 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	
<input type="checkbox"/> 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.	
<input type="checkbox"/> 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	
<input type="checkbox"/> 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	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> ▪ 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>P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	

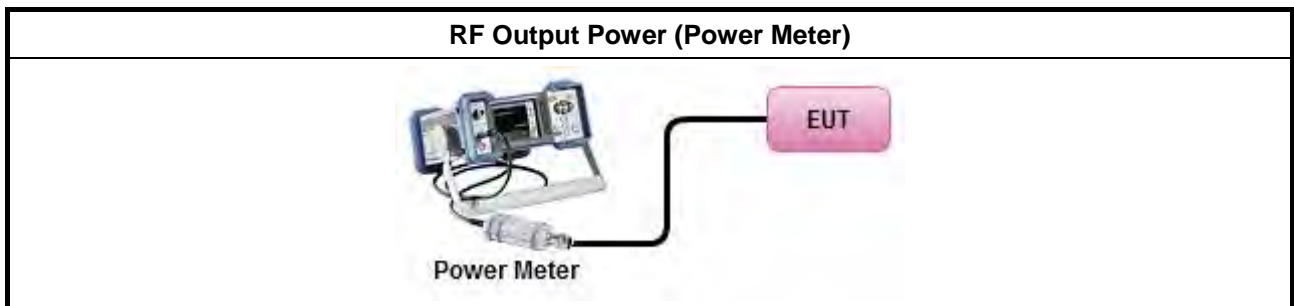
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Maximum Conducted Output Power 	
Average over on/off periods with duty factor	
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	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	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ 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. 	
<ul style="list-style-type: none"> ▪ 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]) $EIRP_{total} = P_{total} + DG$ 	

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B

3.3 Peak Power Spectral Density

3.3.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
	<ul style="list-style-type: none"> ▪ 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 $PPSD = 11 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> ▪ 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	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) ≤ 4 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.	
	<ul style="list-style-type: none"> ▪ 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 $\theta > 45^\circ$
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> ▪ 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.
<p>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.</p>	

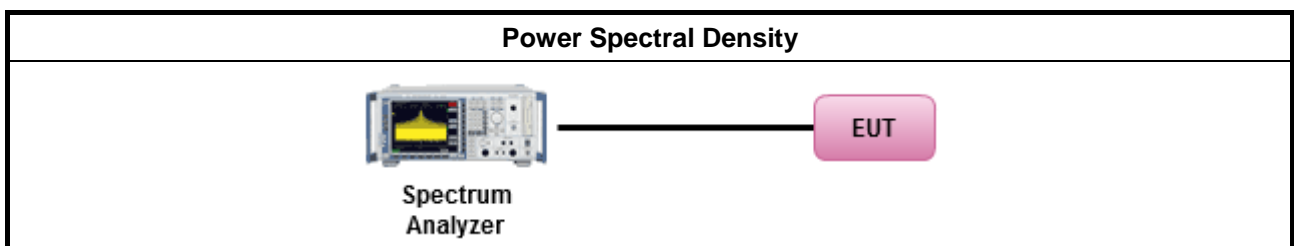
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ 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: 	
<input type="checkbox"/>	Refer as FCC KDB 789033, F5) 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]	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/>	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	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: 	
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	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,
<input type="checkbox"/>	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.
<ul style="list-style-type: none"> ▪ 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]) $EIRP_{total} = PPSD_{total} + DG$ 	

3.3.4 Test Setup





3.3.5 Test Result of Peak Power Spectral Density

Refer as Appendix C



3.4 Unwanted Emissions

3.4.1 Transmitter Radiated 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.

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).



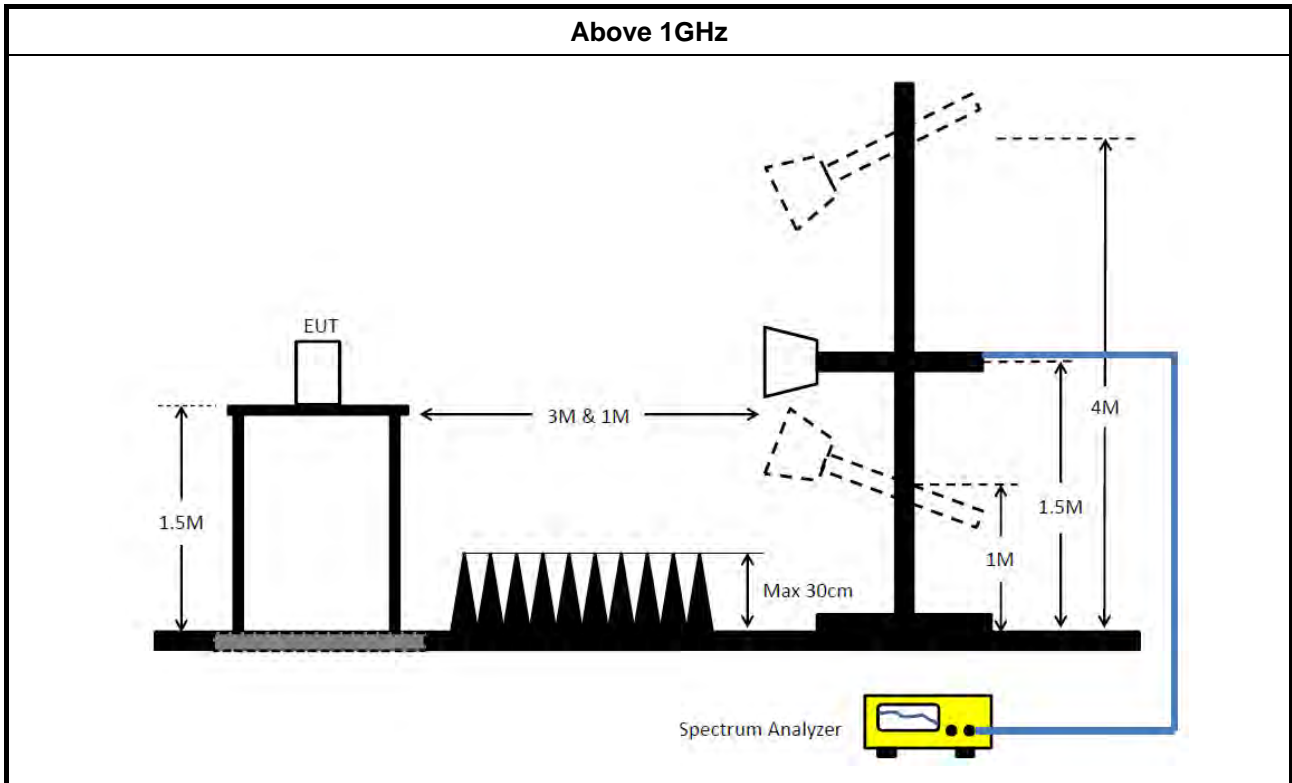
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
	<ul style="list-style-type: none"> ▪ 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).
	<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle \geq 98 or duty factor].
	<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below:
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 789033, clause H)2) for unwanted emissions into non-restricted bands.
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.
	<ul style="list-style-type: none"> <input type="checkbox"/> Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging). <input checked="" type="checkbox"/> Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW). <input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time. <input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions. <input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit. <input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
	<ul style="list-style-type: none"> ▪ For radiated measurement.
	<ul style="list-style-type: none"> ▪ 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.
	<ul style="list-style-type: none"> ▪ The any unwanted emissions level shall not exceed the fundamental emission level.
	<ul style="list-style-type: none"> ▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.4.4 Test Setup



3.4.5 Test Result of Transmitter Unwanted Emissions

Refer as Appendix D



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 05, 2017	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 10, 2017	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-10-7	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz-40GHz	Dec. 26, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Conducted (TH01-CB)

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



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	42.2M	36.332M	36M3D1D	39.9M	36.182M
5.25-5.35GHz	46.9M	36.282M	36M3D1D	39.95M	36.282M
5.47-5.725GHz	40.25M	36.332M	36M3D1D	39.75M	36.232M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	81.3M	75.062M	75M1D1D	80.8M	74.863M
5.25-5.35GHz	81.8M	75.962M	76M0D1D	81M	75.662M
5.47-5.725GHz	82.3M	75.862M	75M9D1D	81M	75.662M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	40.4M	36.282M	36M3D1D	39.9M	36.182M
5.25-5.35GHz	55.35M	36.332M	36M3D1D	39.95M	36.232M
5.47-5.725GHz	47.95M	36.282M	36M3D1D	39.95M	36.232M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	81.8M	75.062M	75M1D1D	80.8M	74.763M
5.25-5.35GHz	92.2M	75.862M	75M9D1D	81.8M	75.662M
5.47-5.725GHz	82.5M	75.962M	76M0D1D	81.3M	75.762M

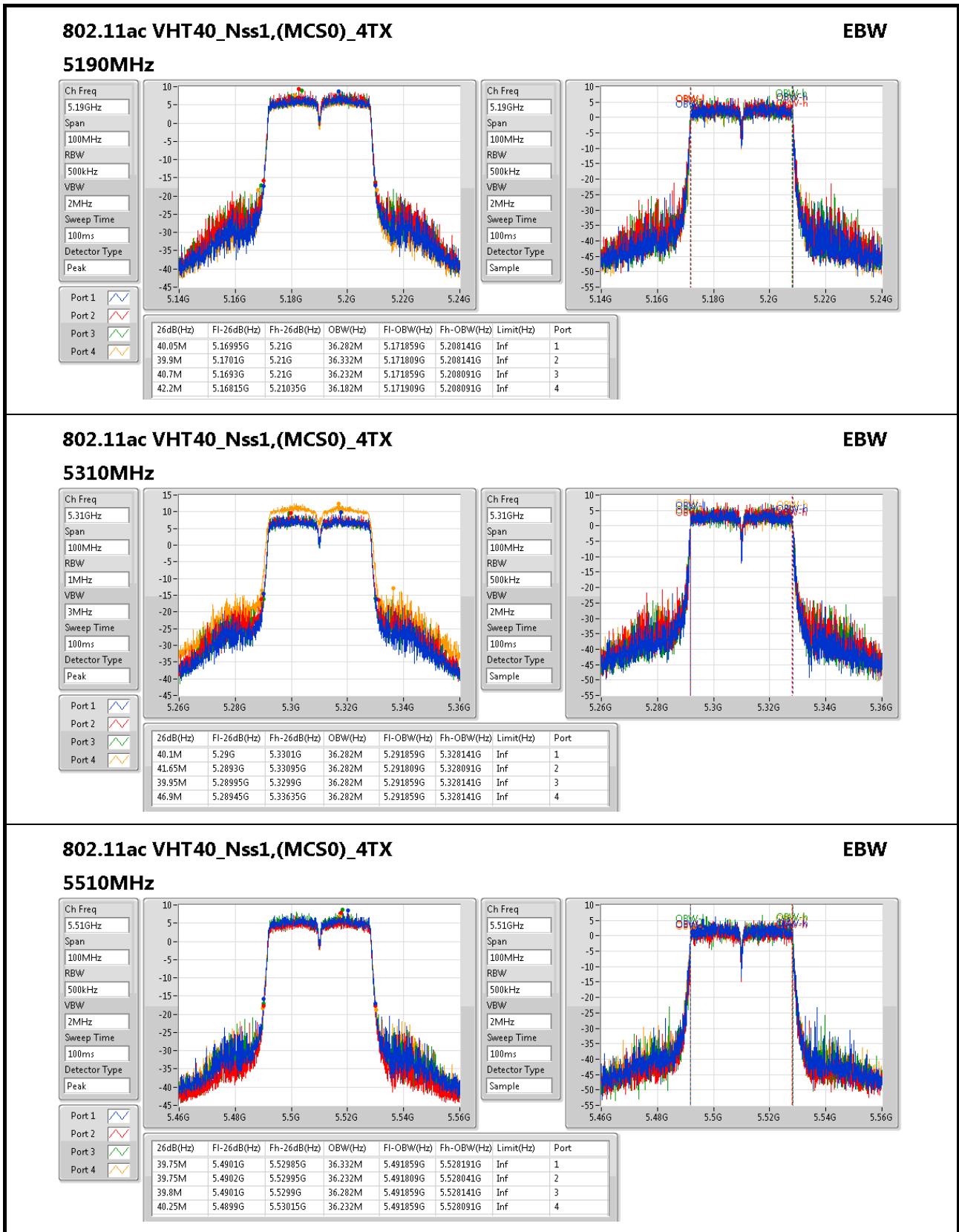
Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Min-OBW = Minimum 99% occupied bandwidth;

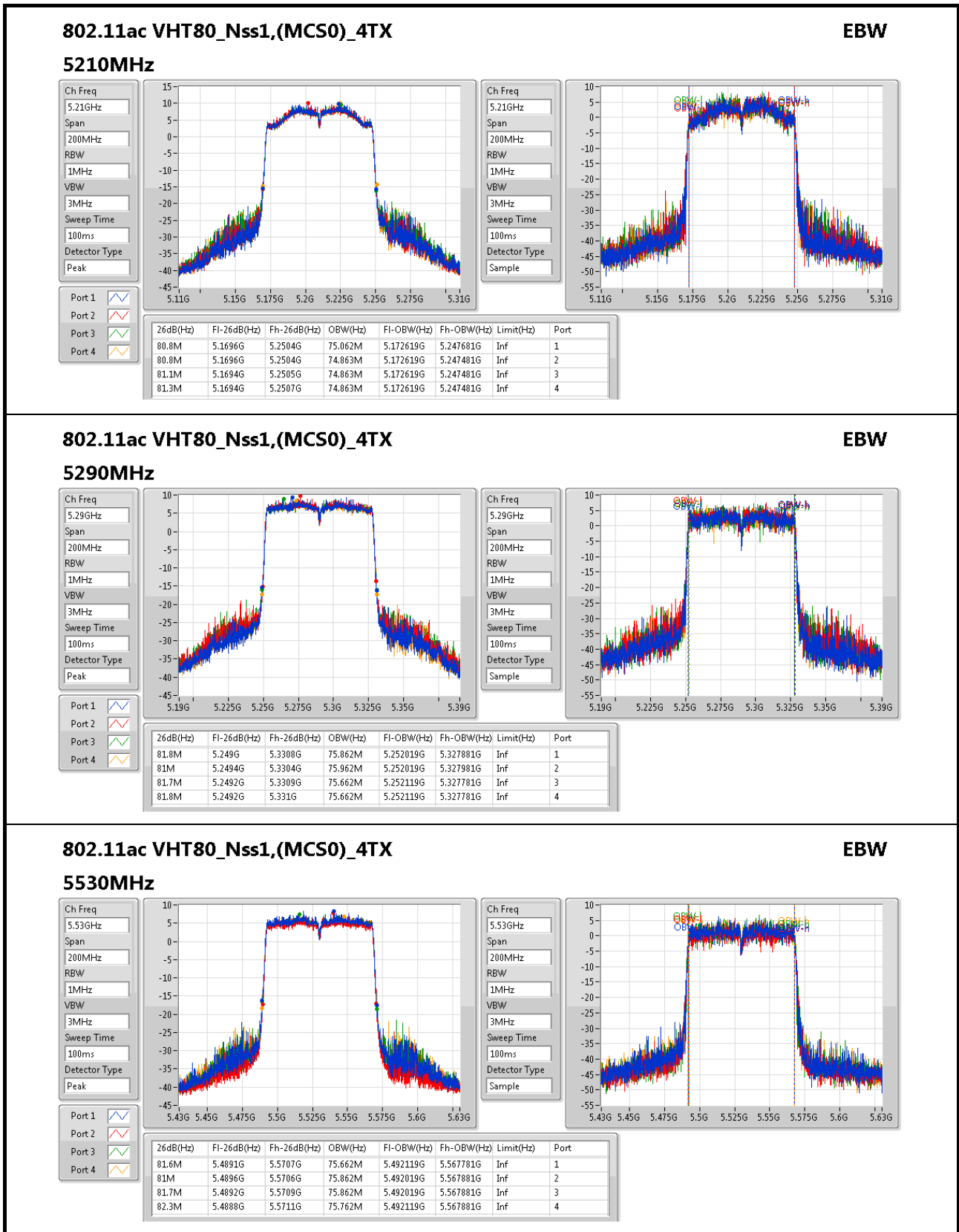


Result

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)
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40.05M	36.282M	39.9M	36.332M	40.7M	36.232M	42.2M	36.182M
5310MHz	Pass	Inf	40.1M	36.282M	41.65M	36.282M	39.95M	36.282M	46.9M	36.282M
5510MHz	Pass	Inf	39.75M	36.332M	39.75M	36.232M	39.8M	36.282M	40.25M	36.232M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	80.8M	75.062M	80.8M	74.863M	81.1M	74.863M	81.3M	74.863M
5290MHz	Pass	Inf	81.8M	75.862M	81M	75.962M	81.7M	75.662M	81.8M	75.662M
5530MHz	Pass	Inf	81.6M	75.662M	81M	75.862M	81.7M	75.862M	82.3M	75.762M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	39.9M	36.182M	40.1M	36.232M	40.4M	36.282M	40.4M	36.282M
5310MHz	Pass	Inf	39.95M	36.282M	41.2M	36.232M	40.35M	36.332M	55.35M	36.232M
5510MHz	Pass	Inf	39.95M	36.232M	40.15M	36.232M	40.35M	36.232M	47.95M	36.282M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	80.8M	74.863M	80.9M	74.763M	81M	74.763M	81.8M	75.062M
5290MHz	Pass	Inf	81.8M	75.862M	82.1M	75.762M	82M	75.862M	92.2M	75.662M
5530MHz	Pass	Inf	81.3M	75.862M	81.7M	75.962M	82.1M	75.962M	82.5M	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;




802.11ac VHT80_Nss1,(MCS0)_4TX
EBW

5530MHz

Ch Freq: 5.53GHz
Span: 200MHz
RBW: 1MHz
VBW: 3MHz
Sweep Time: 100ms
Detector Type: Peak

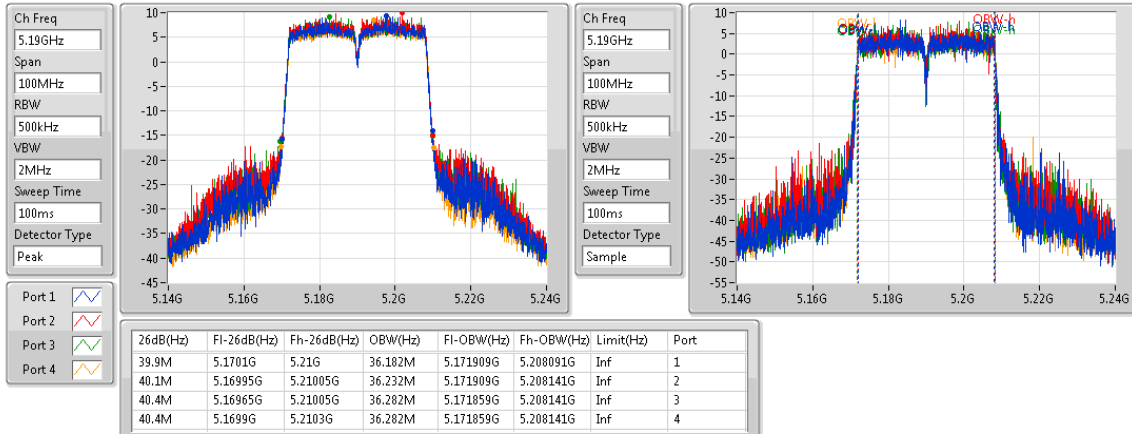
Ch Freq: 5.53GHz
Span: 200MHz
RBW: 1MHz
VBW: 3MHz
Sweep Time: 100ms
Detector Type: Sample

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.6M	5.4891G	5.5707G	75.662M	5.492119G	5.567781G	Inf	1
81M	5.4896G	5.5706G	75.862M	5.492019G	5.567881G	Inf	2
81.7M	5.4892G	5.5709G	75.862M	5.492019G	5.567881G	Inf	3
82.3M	5.4888G	5.5711G	75.762M	5.492119G	5.567881G	Inf	4

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

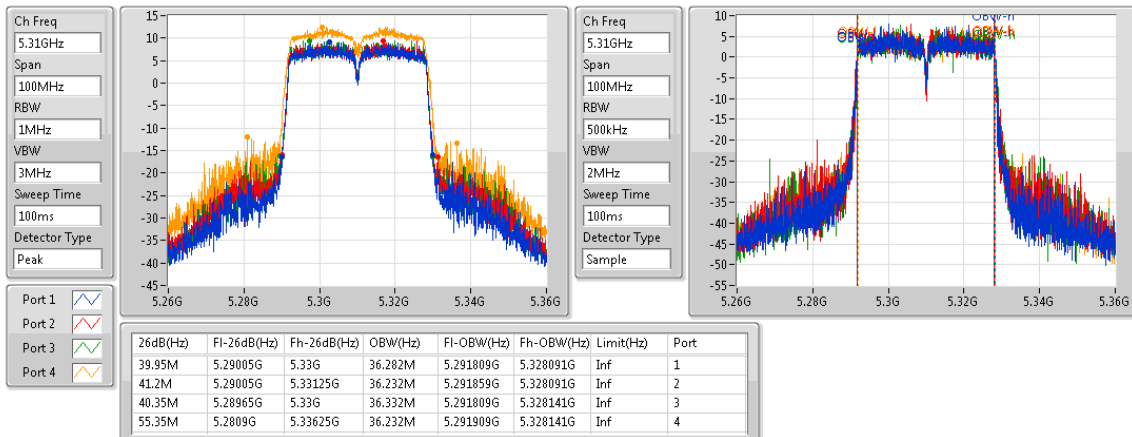
5190MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

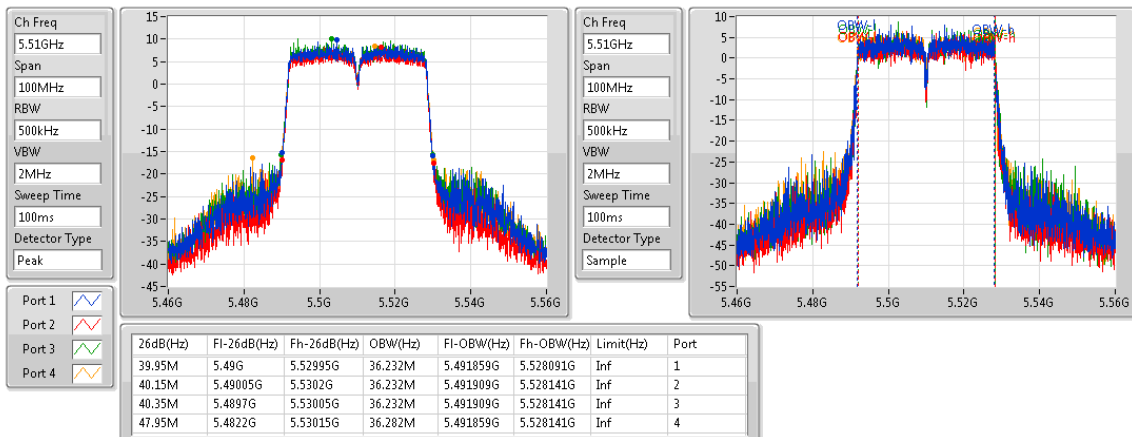
5310MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

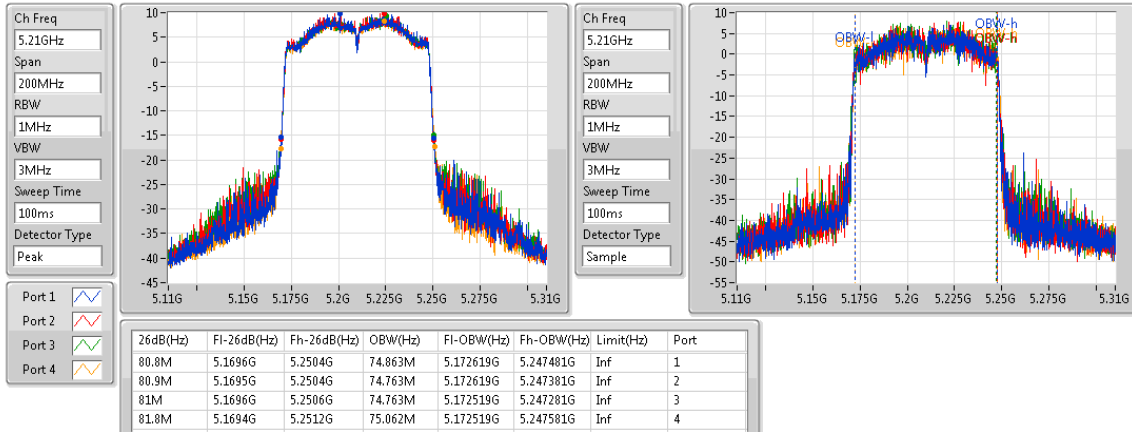
5510MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

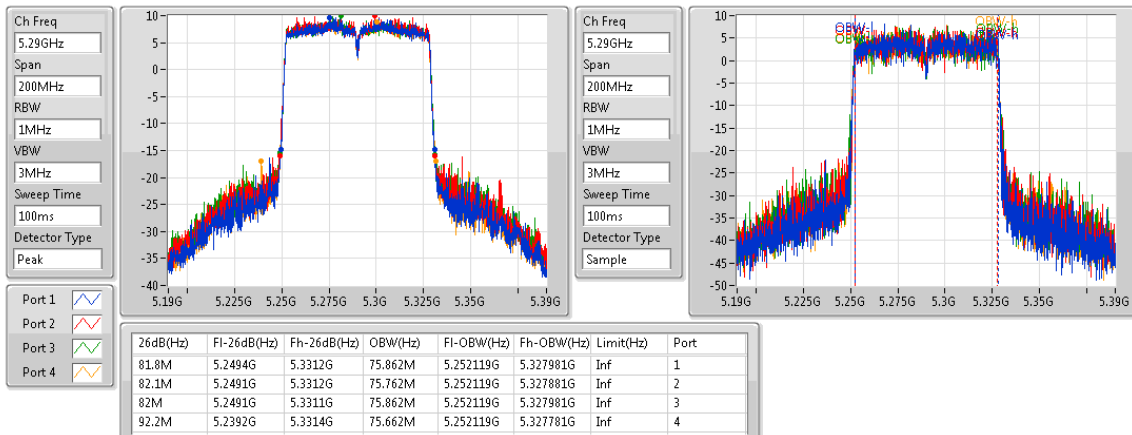
5210MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

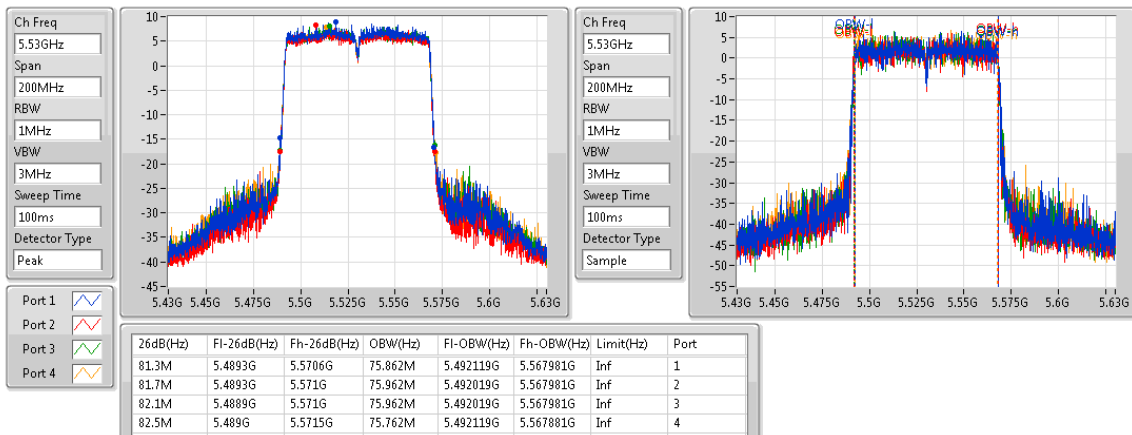
5290MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

5530MHz





Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-
5.15-5.25GHz	23.08	0.20324	24.58	0.28708
5.25-5.35GHz	23.40	0.21878	25.10	0.32359
5.47-5.725GHz	21.87	0.15382	23.87	0.24378
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-
5.15-5.25GHz	22.52	0.17865	24.02	0.25235
5.25-5.35GHz	22.76	0.18880	24.46	0.27925
5.47-5.725GHz	21.35	0.13646	23.35	0.21627
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.15-5.25GHz	22.33	0.17100	29.03	0.79983
5.25-5.35GHz	23.39	0.21827	29.89	0.97499
5.47-5.725GHz	23.08	0.20324	29.88	0.97275
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.15-5.25GHz	22.48	0.17701	29.18	0.82794
5.25-5.35GHz	23.41	0.21928	29.91	0.97949
5.47-5.725GHz	22.06	0.16069	28.86	0.76913



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 VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	1.50	16.87	17.47	16.93	16.94	23.08	23.98
5310MHz	Pass	1.70	17.13	17.51	17.24	17.63	23.40	23.98
5510MHz	Pass	2.00	16.04	15.31	15.79	16.22	21.87	23.98
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	1.50	16.41	16.36	16.70	16.51	22.52	23.98
5290MHz	Pass	1.70	16.62	16.95	16.74	16.64	22.76	23.98
5530MHz	Pass	2.00	15.48	14.82	15.35	15.63	21.35	23.98
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	6.70	16.10	16.55	16.13	16.45	22.33	23.28
5310MHz	Pass	6.50	17.13	17.52	17.27	17.54	23.39	23.48
5510MHz	Pass	6.80	17.19	16.35	17.19	17.45	23.08	23.18
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	6.70	16.30	16.35	16.62	16.56	22.48	23.28
5290MHz	Pass	6.50	17.25	17.53	17.33	17.43	23.41	23.48
5530MHz	Pass	6.80	16.17	15.64	16.08	16.26	22.06	23.18

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



Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	6.45	13.15
5.25-5.35GHz	7.14	13.64
5.47-5.725GHz	5.58	12.38
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	4.35	11.05
5.25-5.35GHz	3.47	9.97
5.47-5.725GHz	2.04	8.84
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	6.99	13.69
5.25-5.35GHz	7.24	13.74
5.47-5.725GHz	6.89	13.69
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	4.31	11.01
5.25-5.35GHz	4.31	10.81
5.47-5.725GHz	2.84	9.64

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

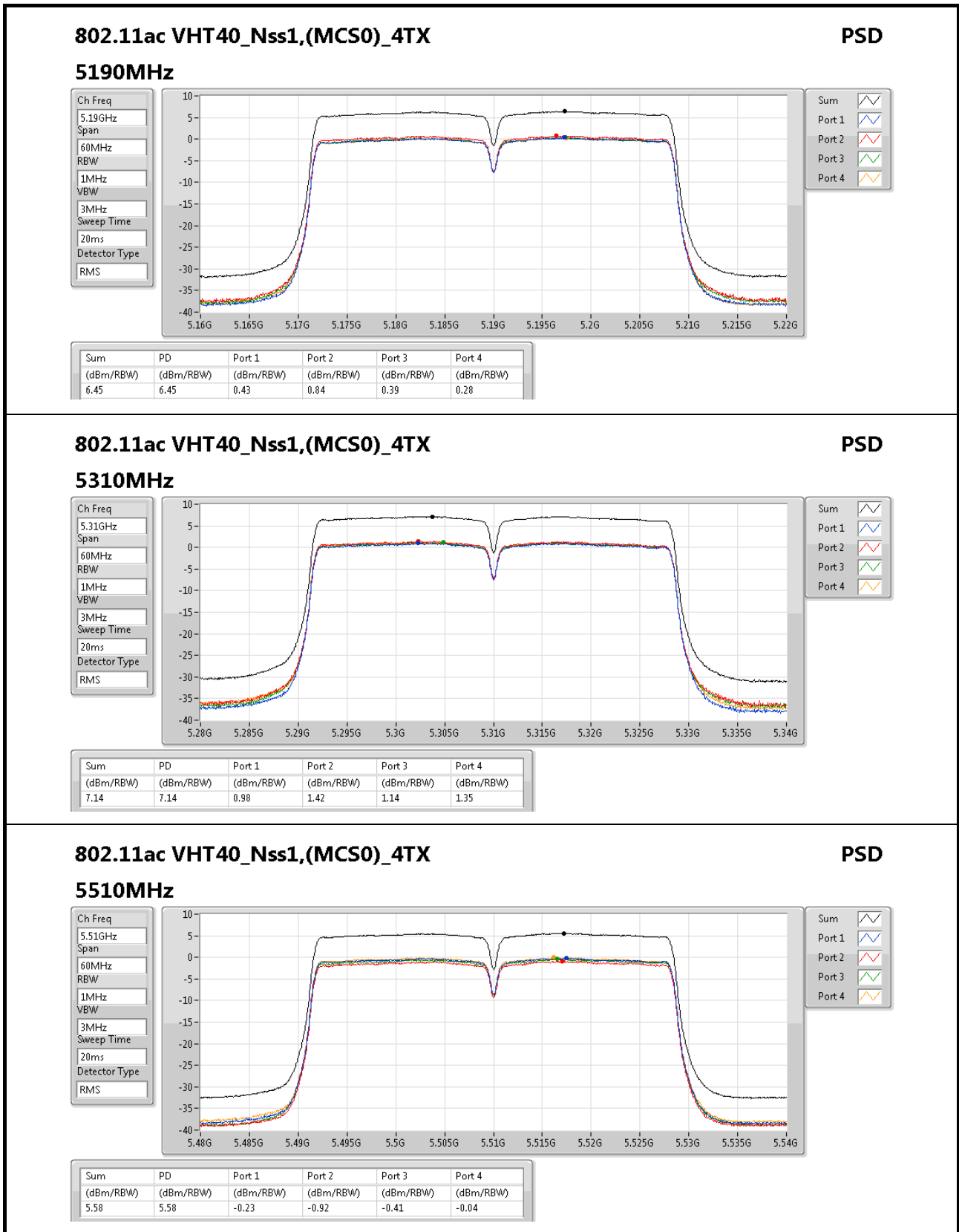


Result

Mode	Result	DG (dB)	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 VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	6.70	0.43	0.84	0.39	0.28	6.45	10.30
5310MHz	Pass	6.50	0.98	1.42	1.14	1.35	7.14	10.50
5510MHz	Pass	6.80	-0.23	-0.92	-0.41	-0.04	5.58	10.20
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	6.70	-1.61	-1.72	-1.49	-1.74	4.35	10.30
5290MHz	Pass	6.50	-2.59	-2.21	-2.53	-2.60	3.47	10.50
5530MHz	Pass	6.80	-3.76	-4.48	-3.72	-3.66	2.04	10.20
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	6.70	0.90	1.47	0.96	0.86	6.99	10.30
5310MHz	Pass	6.50	1.04	1.52	1.18	1.48	7.24	10.50
5510MHz	Pass	6.80	1.06	0.20	1.13	1.29	6.89	10.20
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	6.70	-1.76	-1.77	-1.47	-1.54	4.31	10.30
5290MHz	Pass	6.50	-1.90	-1.55	-1.64	-1.59	4.31	10.50
5530MHz	Pass	6.80	-3.00	-3.51	-3.00	-2.94	2.84	10.20

DG = Directional Gain; RBW = 500kHz 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 VHT40_Nss1,(MCS0)_4TX
PSD

5510MHz

Ch Freq
5.51GHz

Span
60MHz

RBW
1MHz

VBW
3MHz

Sweep Time
20ms

Detector Type
RMS

Sum

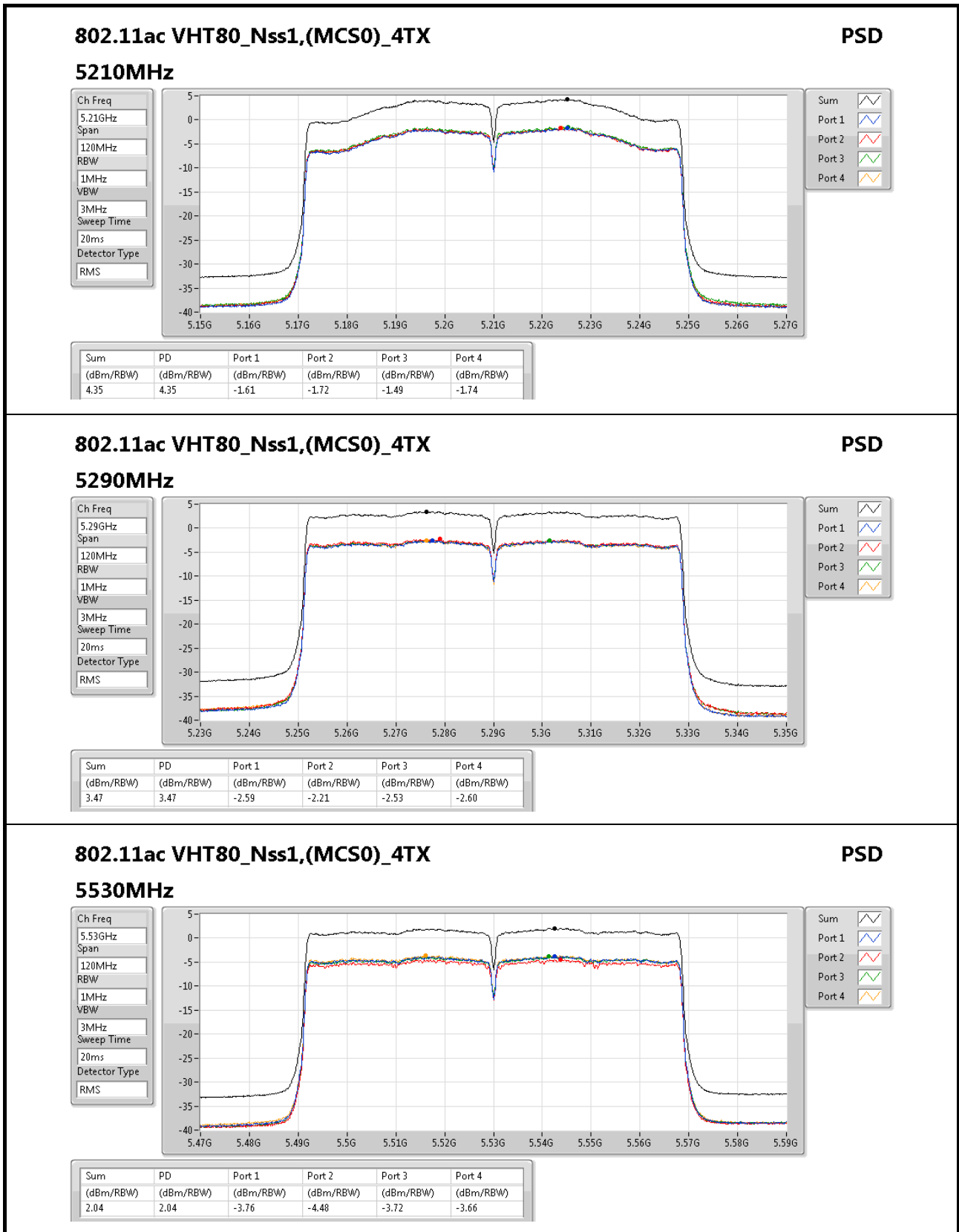
Port 1

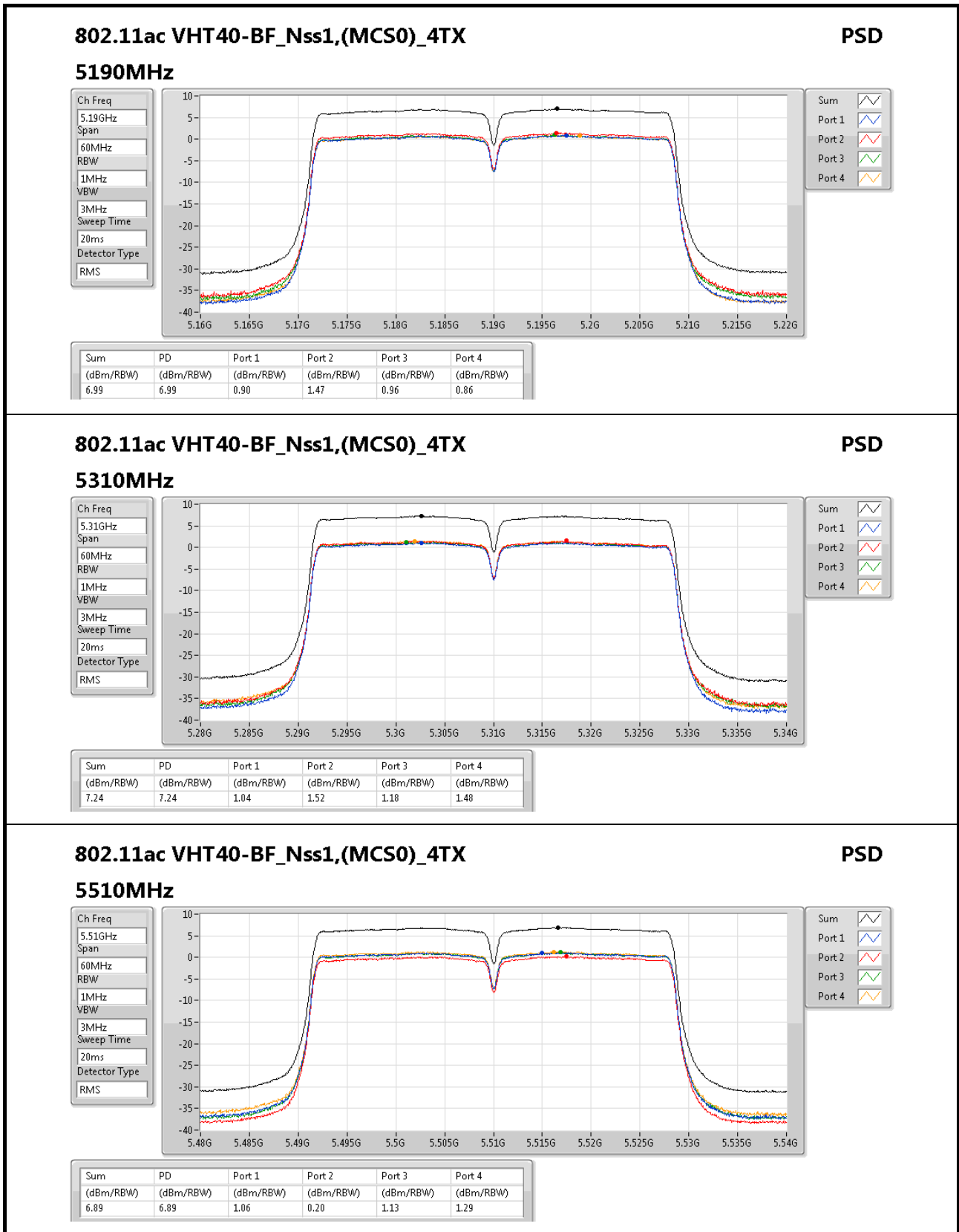
Port 2

Port 3

Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.58	5.58	-0.23	-0.92	-0.41	-0.04




802.11ac VHT40-BF_Nss1,(MCS0)_4TX
PSD

5510MHz

Ch Freq: 5.51GHz

Span: 60MHz

RBW: 1MHz

VBW: 3MHz

Sweep Time: 20ms

Detector Type: RMS

Sum

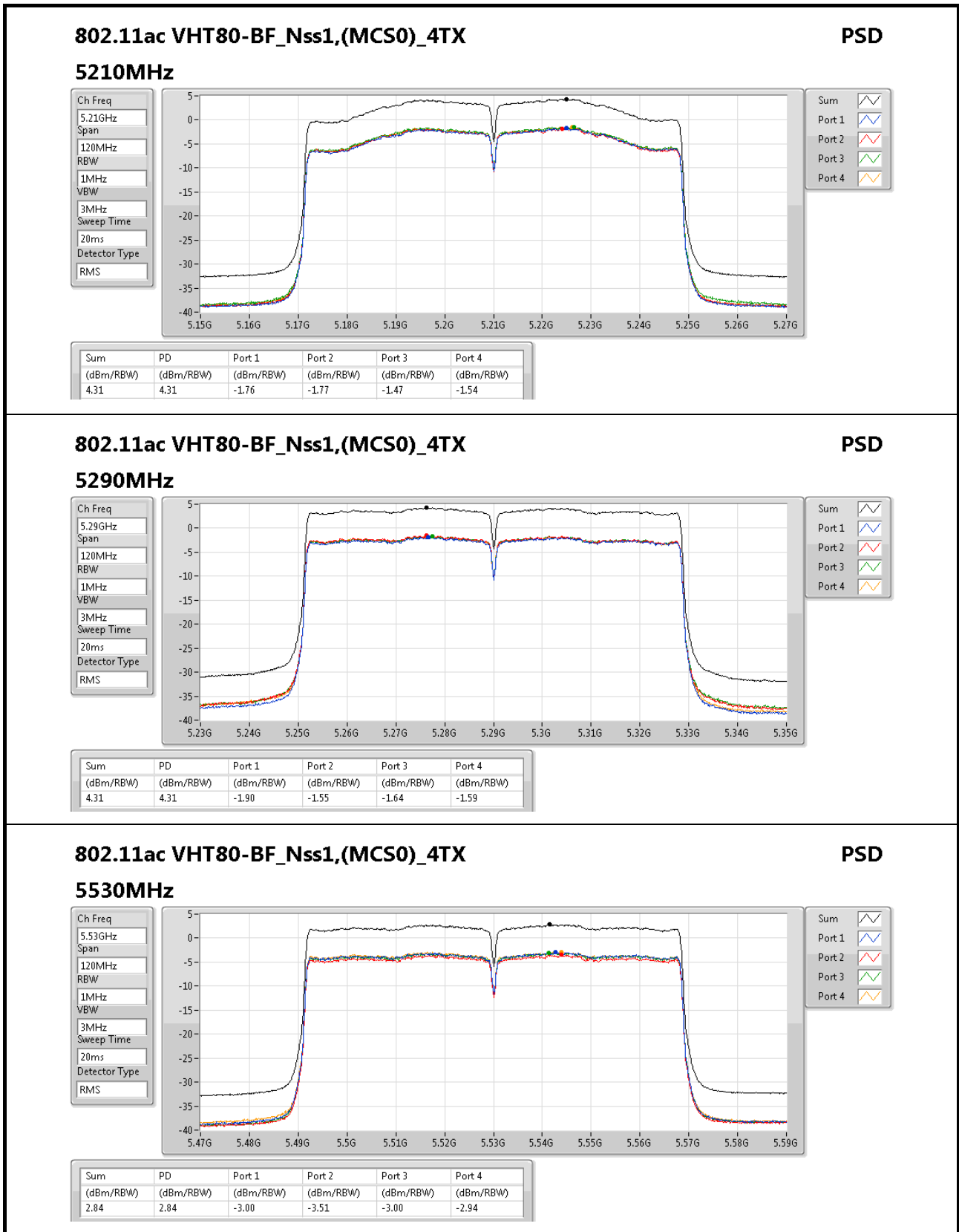
Port 1

Port 2

Port 3

Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.89	6.89	1.06	0.20	1.13	1.29



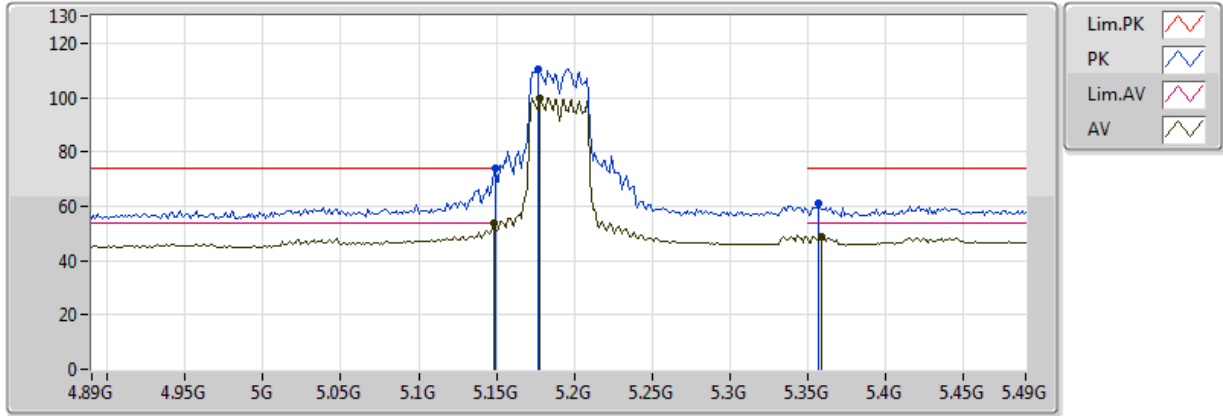


Summary for Non-beamforming Mode

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
5.15-5.25GHz	Pass	PK	5.1492G	73.91	74.00	-0.09	5.31	3	V	93	1.02	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5190MHz_TX

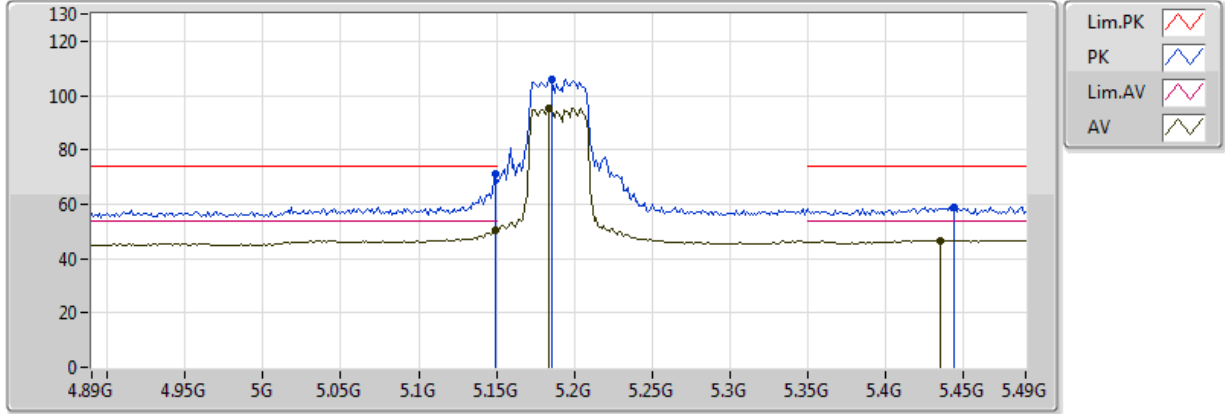


20170722
EUT_Z_4TX
Setting 63
04-J-4-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.148G	53.72	54.00	-0.28	5.31	3	V	93	1.02	-
AV	5.178G	100.00	Inf	-Inf	5.41	3	V	93	1.02	-
AV	5.3592G	49.03	54.00	-4.97	5.66	3	V	93	1.02	-
PK	5.1492G	73.91	74.00	-0.09	5.31	3	V	93	1.02	-
PK	5.1768G	110.32	Inf	-Inf	5.41	3	V	93	1.02	-
PK	5.3568G	60.94	74.00	-13.06	5.66	3	V	93	1.02	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5190MHz_TX

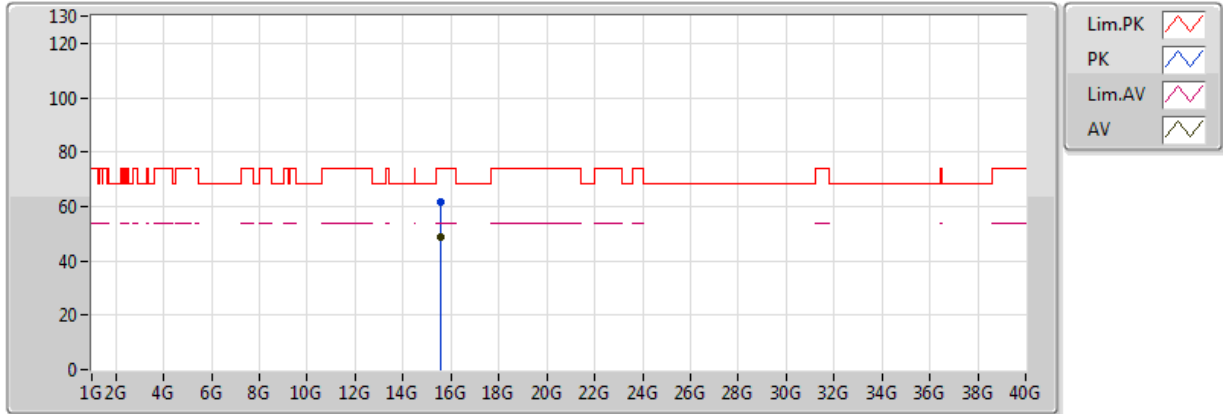


20170722
 EUT_Z_4TX
 Setting 63
 04-J-4-10
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1492G	50.53	54.00	-3.47	5.31	3	H	72	1.02	-
AV	5.184G	95.52	Inf	-Inf	5.43	3	H	72	1.02	-
AV	5.4348G	46.76	54.00	-7.24	5.86	3	H	72	1.02	-
PK	5.1492G	71.32	74.00	-2.68	5.31	3	H	72	1.02	-
PK	5.1852G	106.12	Inf	-Inf	5.44	3	H	72	1.02	-
PK	5.4444G	59.09	74.00	-14.91	5.90	3	H	72	1.02	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5190MHz_TX

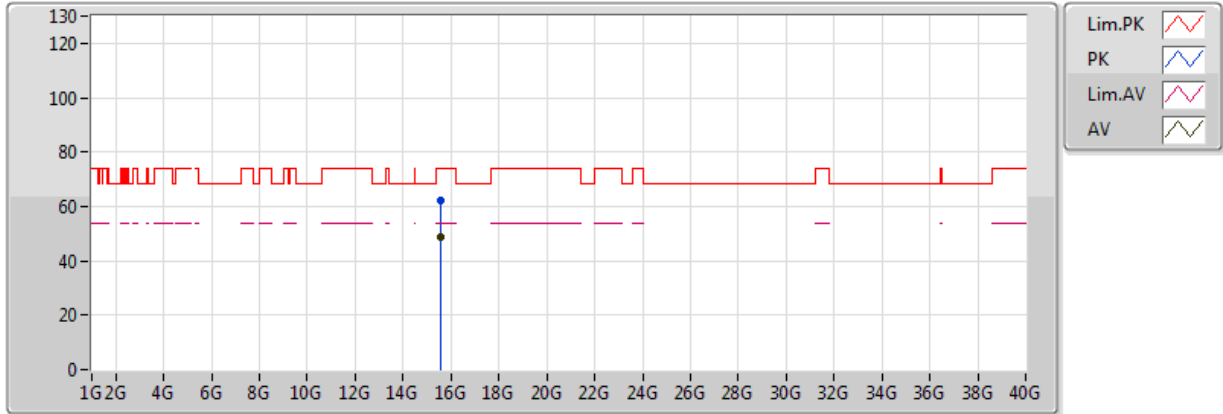


20170722
EUT_Z_4TX
Setting 63
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.56876G	48.91	54.00	-5.09	17.82	3	V	130	1.5	-
PK	15.56704G	61.68	74.00	-12.32	17.82	3	V	130	1.5	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5190MHz_TX

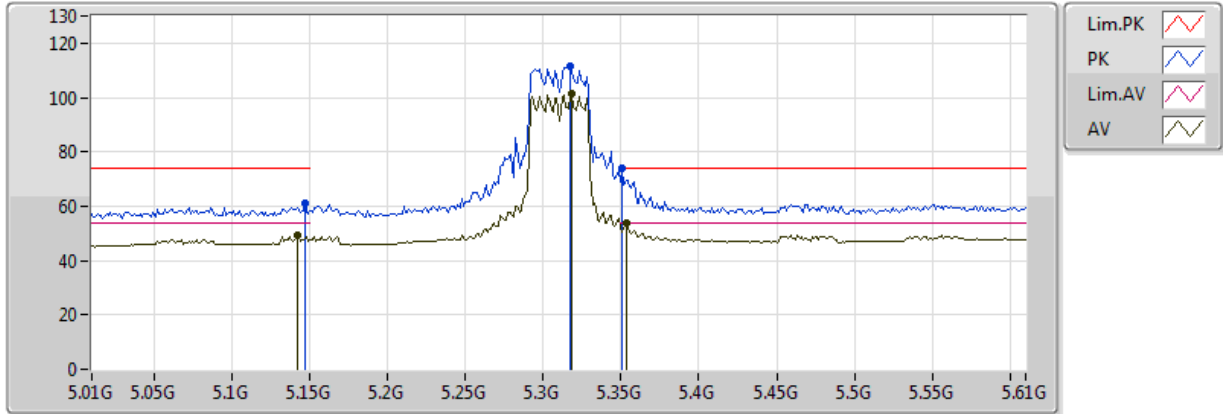


20170722
EUT_Z_4TX
Setting 63
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.56964G	48.68	54.00	-5.32	17.82	3	H	340	1.07	-
PK	15.56392G	62.07	74.00	-11.93	17.82	3	H	340	1.07	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5310MHz_TX

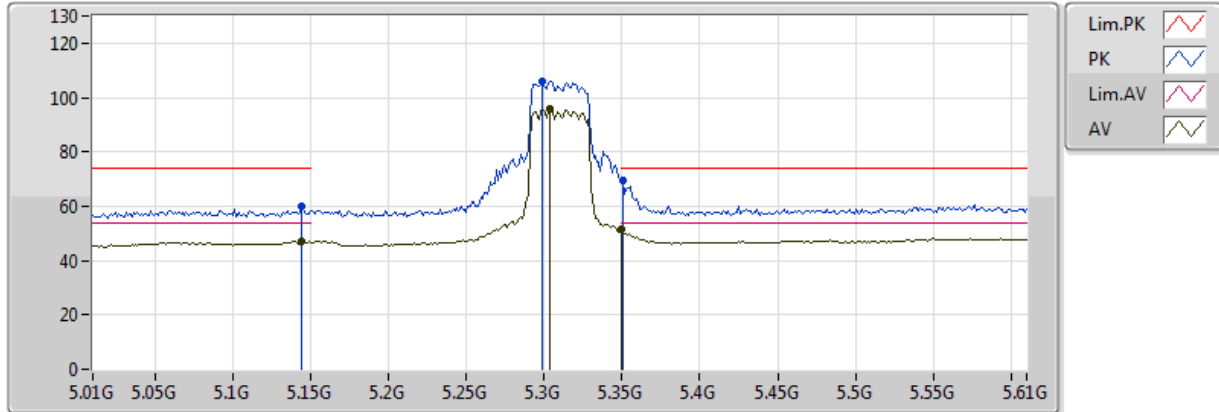


20170722
 EUT_Z_4TX
 Setting 66
 04-J-4-10
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.142G	49.15	54.00	-4.85	5.29	3	V	95	1.05	-
AV	5.3184G	101.16	Inf	-Inf	5.62	3	V	95	1.05	-
AV	5.3532G	53.68	54.00	-0.32	5.65	3	V	95	1.05	-
PK	5.1468G	60.95	74.00	-13.05	5.30	3	V	95	1.05	-
PK	5.3172G	111.24	Inf	-Inf	5.62	3	V	95	1.05	-
PK	5.3508G	73.74	74.00	-0.26	5.65	3	V	95	1.05	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5310MHz_TX

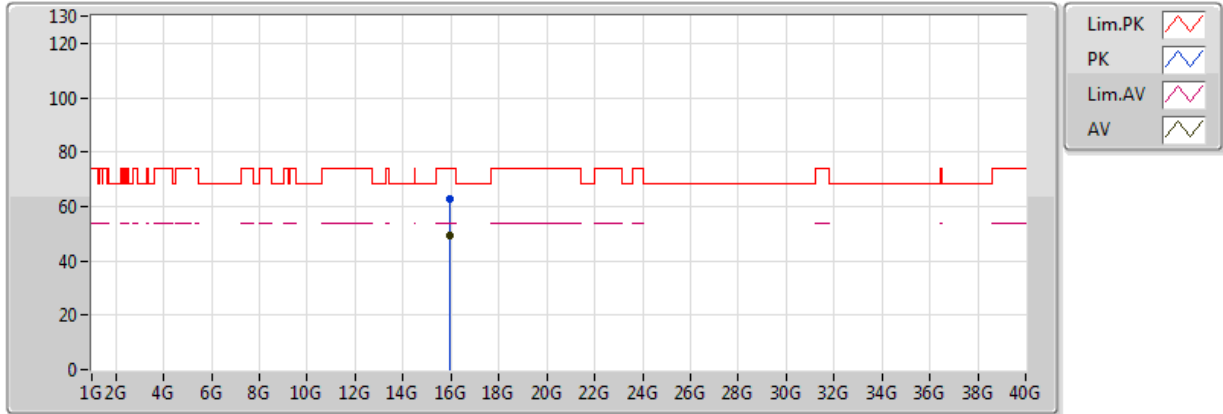


20170722
EUT_Z_4TX
Setting 66
04-J-4-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1444G	47.16	54.00	-6.84	5.30	3	H	70	1.02	-
AV	5.304G	96.02	Inf	-Inf	5.60	3	H	70	1.02	-
AV	5.350005G	51.33	54.00	-2.67	5.65	3	H	70	1.02	-
PK	5.1444G	59.73	74.00	-14.27	5.30	3	H	70	1.02	-
PK	5.2992G	106.13	Inf	-Inf	5.60	3	H	70	1.02	-
PK	5.3508G	69.64	74.00	-4.36	5.65	3	H	70	1.02	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5310MHz_TX

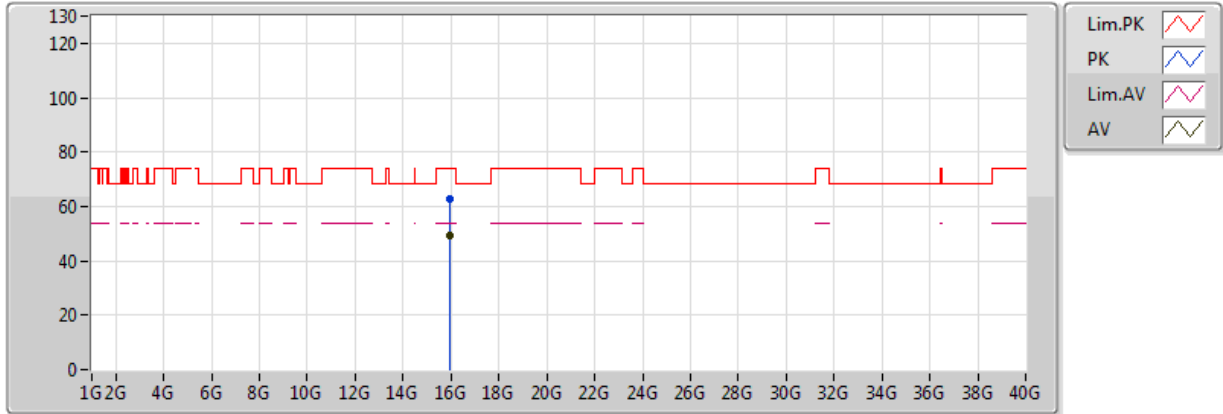


20170722
EUT_Z_4TX
Setting 66
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.9372G	49.07	54.00	-4.93	18.12	3	V	116	2.20	-
PK	15.93992G	62.66	74.00	-11.34	18.12	3	V	116	2.20	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5310MHz_TX

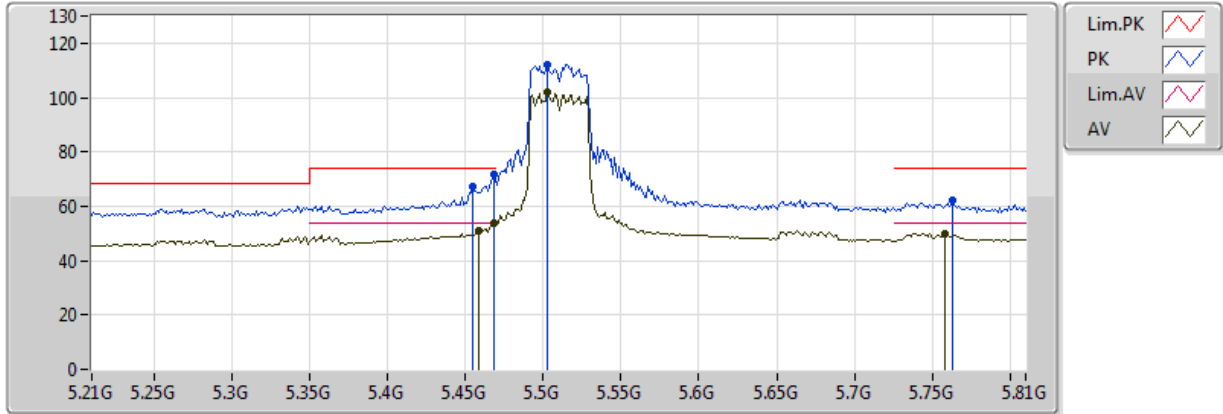


20170722
EUT_Z_4TX
Setting 66
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.92612G	49.15	54.00	-4.85	18.11	3	H	200	1.86	-
PK	15.93744G	62.51	74.00	-11.49	18.12	3	H	200	1.86	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5510MHz_TX

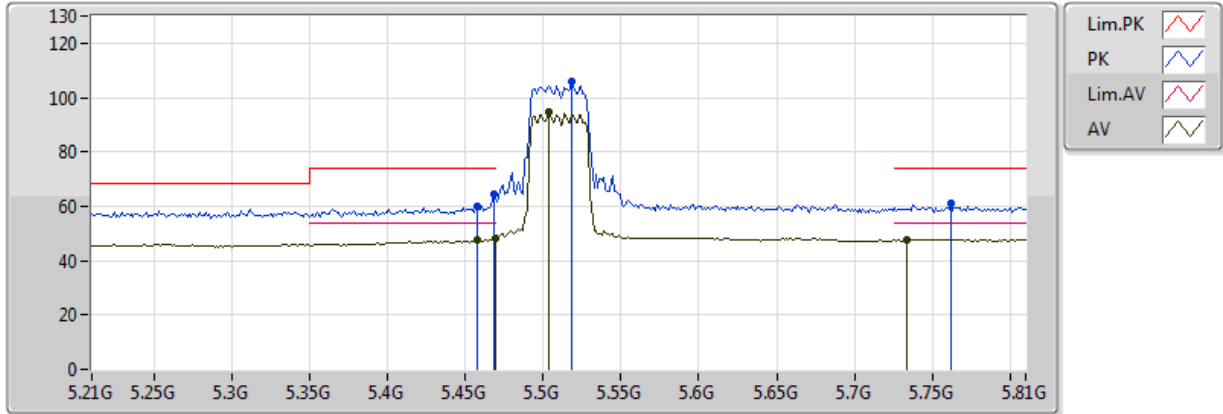


20170722
EUT_Z_4TX
Setting 60
04-J-4-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.4584G	50.80	54.00	-3.20	5.97	3	V	98	1.04	-
AV	5.468G	53.73	54.00	-0.27	6.01	3	V	98	1.04	-
AV	5.5028G	102.03	Inf	-Inf	6.18	3	V	98	1.04	-
AV	5.7584G	49.99	54.00	-4.01	7.09	3	V	98	1.04	-
PK	5.4548G	67.02	74.00	-6.98	5.95	3	V	98	1.04	-
PK	5.468G	71.75	74.00	-2.25	6.01	3	V	98	1.04	-
PK	5.5028G	112.33	Inf	-Inf	6.18	3	V	98	1.04	-
PK	5.7632G	62.21	74.00	-11.79	7.10	3	V	98	1.04	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5510MHz_TX

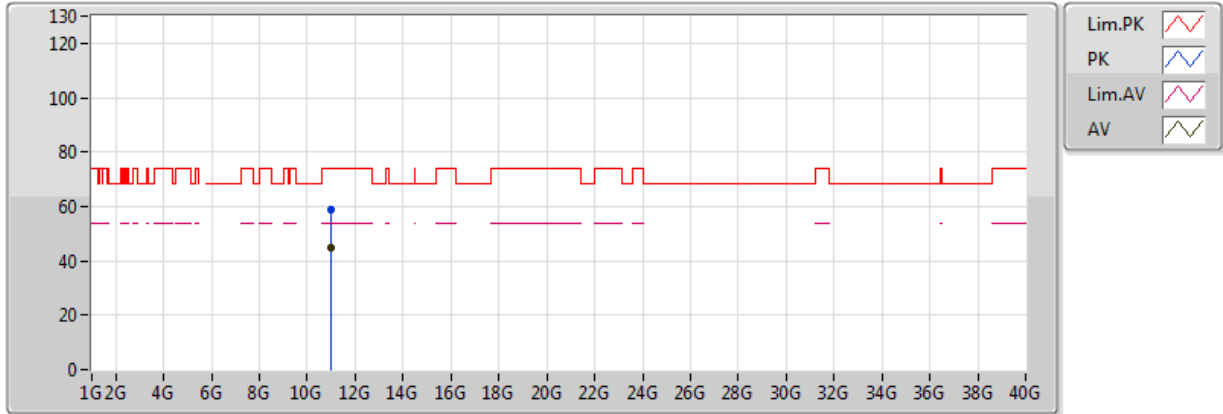


20170722
EUT_Z_4TX
Setting 60
04-J-4-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.4572G	47.42	54.00	-6.58	5.96	3	H	71	1.09	-
AV	5.4692G	48.31	54.00	-5.69	6.02	3	H	71	1.09	-
AV	5.504G	94.47	Inf	-Inf	6.18	3	H	71	1.09	-
AV	5.7332G	47.89	54.00	-6.11	7.04	3	H	71	1.09	-
PK	5.4572G	59.88	74.00	-14.12	5.96	3	H	71	1.09	-
PK	5.468G	64.61	74.00	-9.39	6.01	3	H	71	1.09	-
PK	5.5184G	105.64	Inf	-Inf	6.27	3	H	71	1.09	-
PK	5.762G	60.91	74.00	-13.09	7.10	3	H	71	1.09	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5510MHz_TX

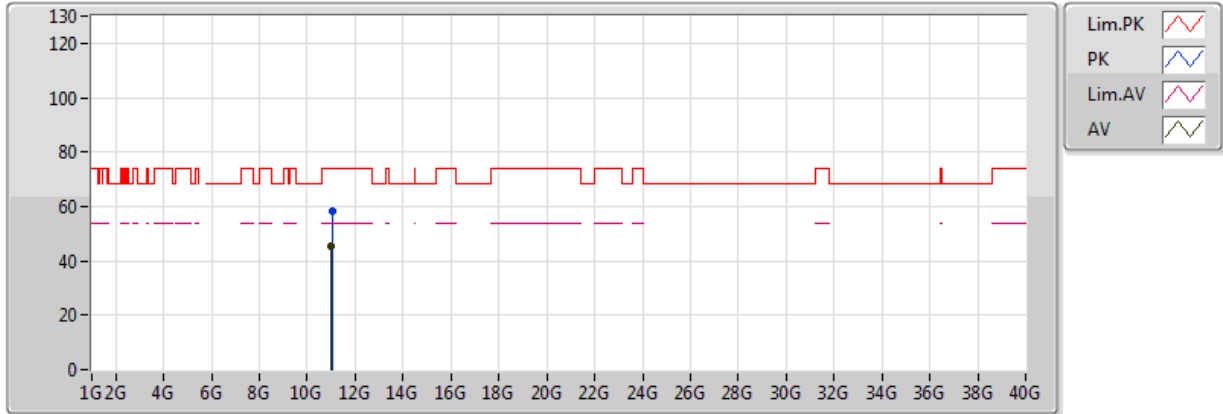


20170722
 EUT_Z_4TX
 Setting 60
 04-J-4
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.01104G	45.05	54.00	-8.95	15.81	3	V	67	2.39	-
PK	11.01528G	58.78	74.00	-15.22	15.81	3	V	67	2.39	-

802.11ac VHT40_Nss1,(MCS0)_4TX

5510MHz_TX

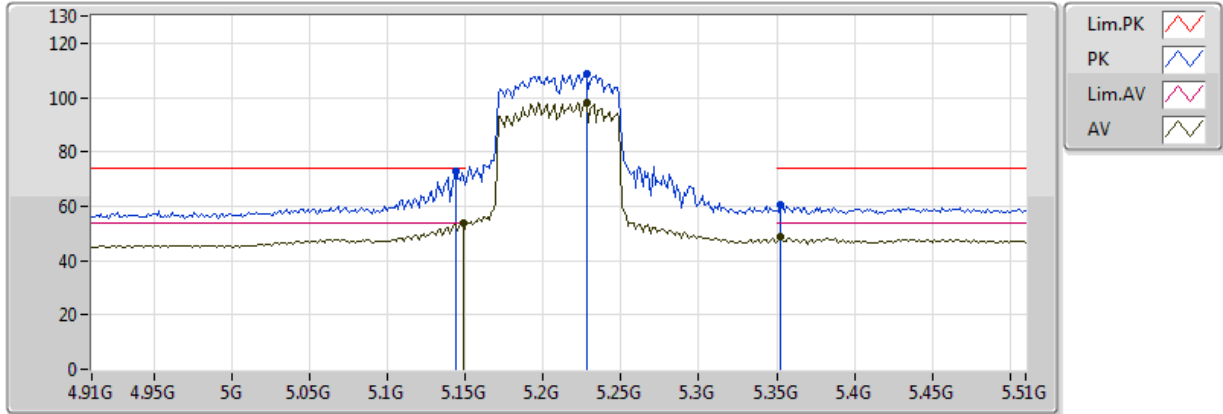


20170722
EUT_Z_4TX
Setting 60
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.01096G	45.15	54.00	-8.85	15.81	3	H	8	2.10	-
PK	11.02464G	58.44	74.00	-15.56	15.82	3	H	8	2.10	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5210MHz_TX

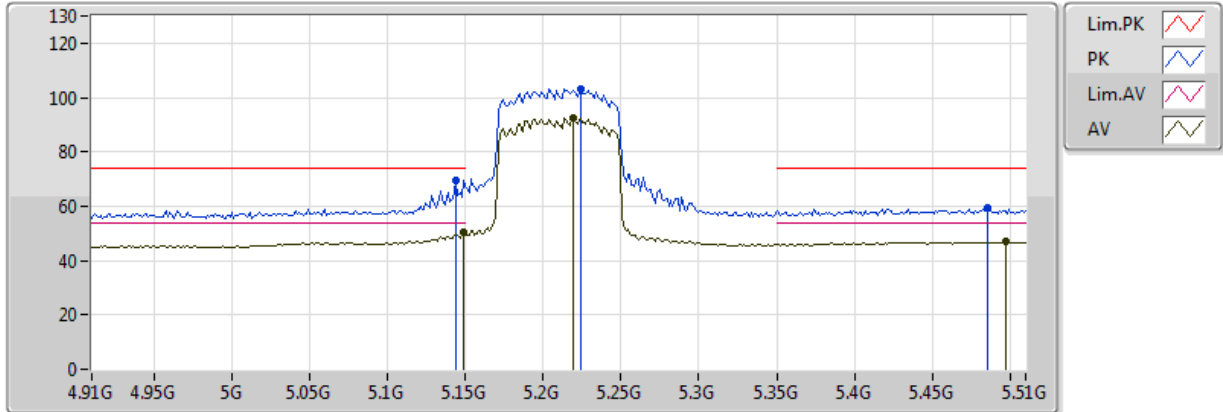


20170722
EUT_Z_4TX
Setting 60
04-J-4-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1488G	53.85	54.00	-0.15	5.31	3	V	244	1.24	-
AV	5.228G	98.18	Inf	-Inf	5.52	3	V	244	1.24	-
AV	5.3528G	48.58	54.00	-5.42	5.65	3	V	244	1.24	-
PK	5.144G	72.77	74.00	-1.23	5.29	3	V	244	1.24	-
PK	5.228G	108.53	Inf	-Inf	5.52	3	V	244	1.24	-
PK	5.3528G	60.27	74.00	-13.73	5.65	3	V	244	1.24	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5210MHz_TX

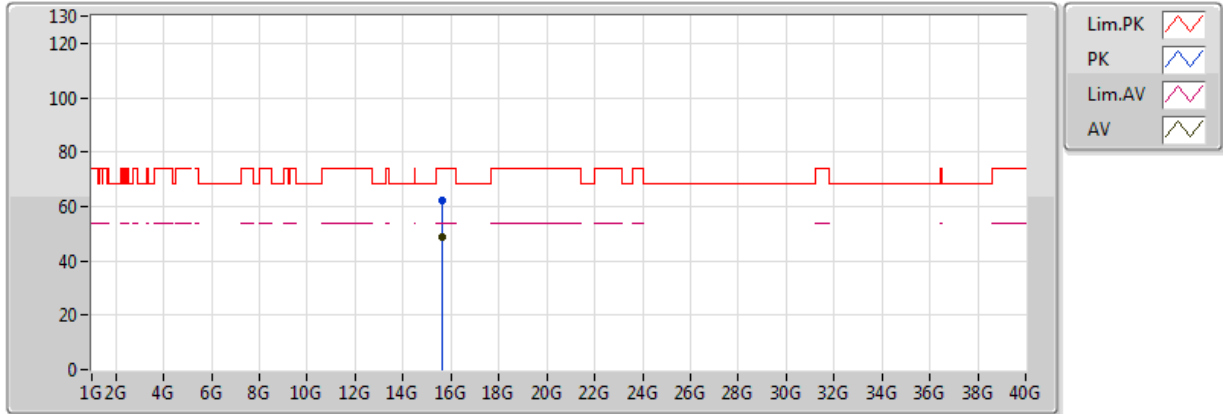


20170722
EUT_Z_4TX
Setting 60
04-R-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1488G	50.52	54.00	-3.48	5.31	3	H	74	1.01	-
AV	5.2196G	92.31	Inf	-Inf	5.51	3	H	74	1.01	-
AV	5.4968G	46.81	54.00	-7.19	6.15	3	H	74	1.01	-
PK	5.144G	69.35	74.00	-4.65	5.29	3	H	74	1.01	-
PK	5.2244G	103.35	Inf	-Inf	5.52	3	H	74	1.01	-
PK	5.486G	59.25	74.00	-14.75	6.10	3	H	74	1.01	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5210MHz_TX

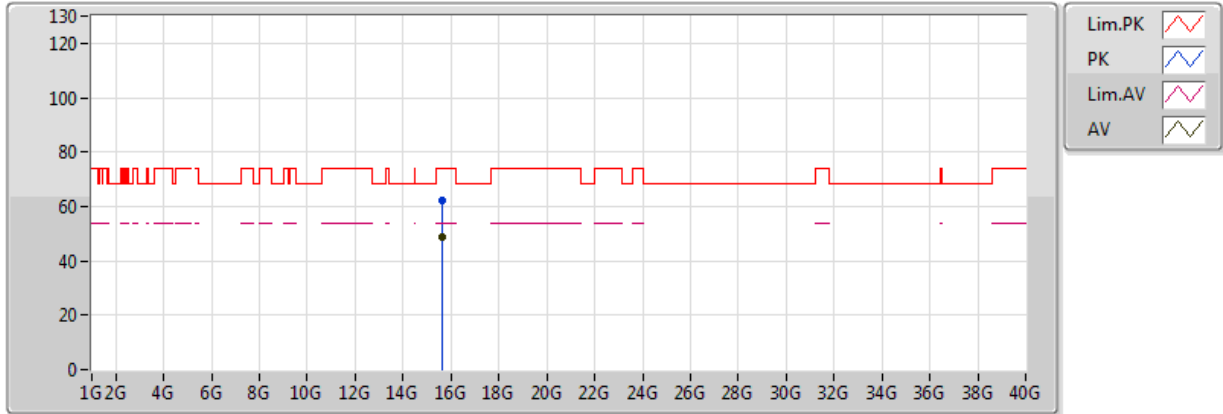


20170722
EUT_Z_4TX
Setting 60
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.62932G	48.60	54.00	-5.40	17.87	3	V	225	1.5	-
PK	15.62148G	62.44	74.00	-11.56	17.86	3	V	225	1.5	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5210MHz_TX

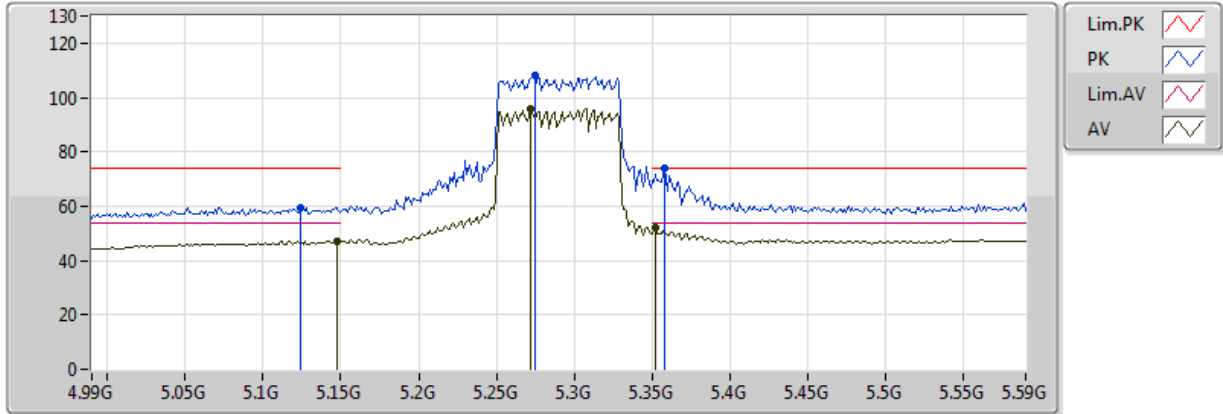


20170722
EUT_Z_4TX
Setting 60
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.62804G	48.62	54.00	-5.38	17.87	3	H	120	1.25	-
PK	15.63236G	62.07	74.00	-11.93	17.87	3	H	120	1.25	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5290MHz_TX

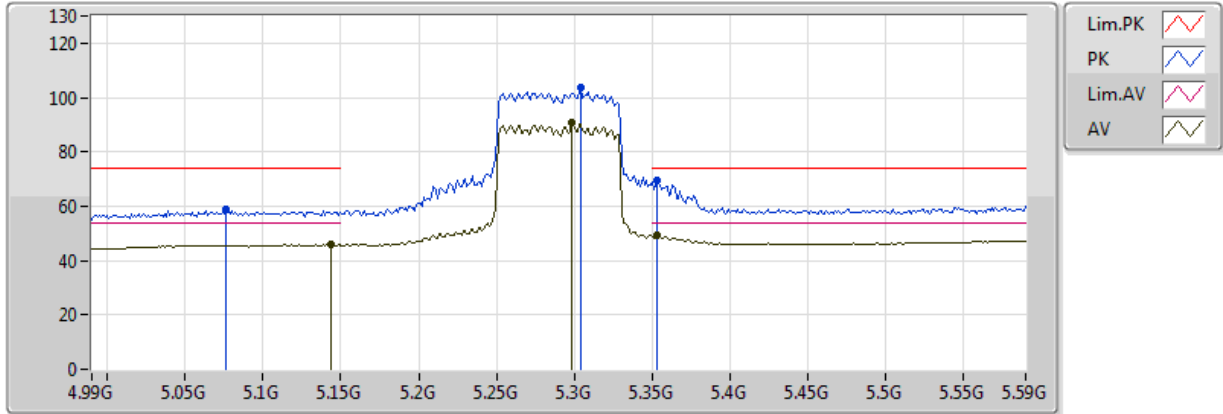


20170722
EUT_Z_4TX
Setting 62
04-R-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1472G	47.23	54.00	-6.77	5.31	3	V	244	1.23	-
AV	5.272G	95.72	Inf	-Inf	5.57	3	V	244	1.23	-
AV	5.3524G	51.85	54.00	-2.15	5.65	3	V	244	1.23	-
PK	5.1244G	59.47	74.00	-14.53	5.23	3	V	244	1.23	-
PK	5.2744G	108.24	Inf	-Inf	5.57	3	V	244	1.23	-
PK	5.3584G	73.84	74.00	-0.16	5.66	3	V	244	1.23	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5290MHz_TX

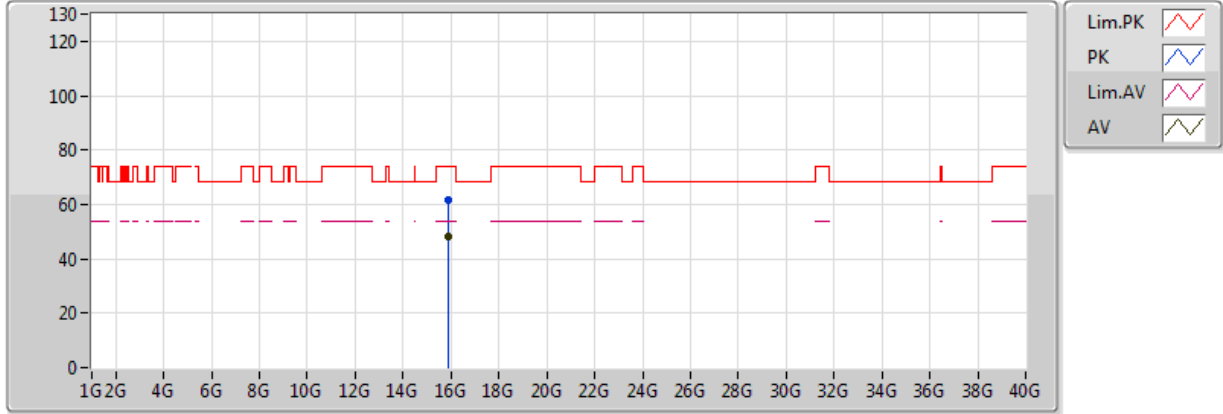


20170722
EUT_Z_4TX
Setting 62
04-R-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1436G	45.92	54.00	-8.08	5.29	3	H	70	1.02	-
AV	5.2984G	90.54	Inf	-Inf	5.60	3	H	70	1.02	-
AV	5.3536G	49.24	54.00	-4.76	5.65	3	H	70	1.02	-
PK	5.0764G	58.66	74.00	-15.34	5.04	3	H	70	1.02	-
PK	5.3044G	103.45	Inf	-Inf	5.60	3	H	70	1.02	-
PK	5.3536G	69.21	74.00	-4.79	5.65	3	H	70	1.02	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5290MHz_TX

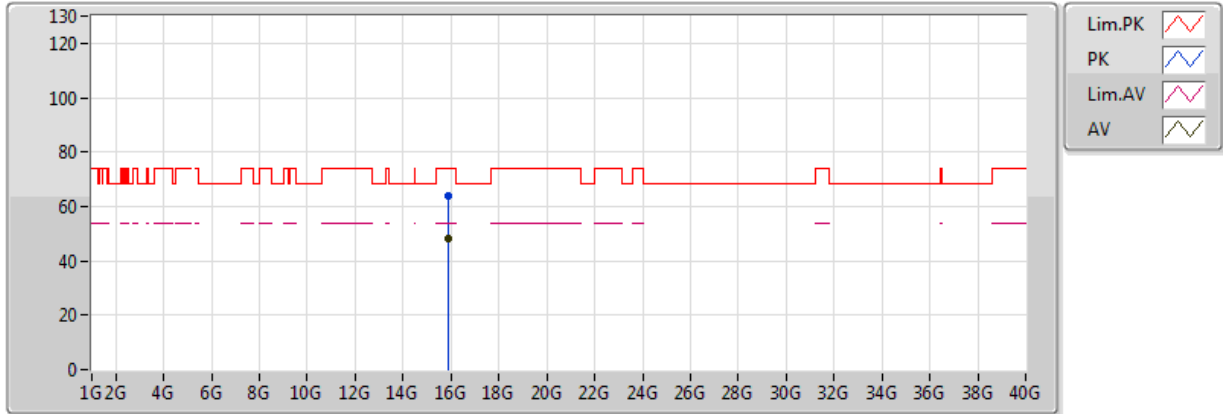


20170722
EUT_Z_4TX
Setting 62
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.87996G	47.91	54.00	-6.09	18.07	3	V	357	1.50	-
PK	15.87228G	61.63	74.00	-12.37	18.07	3	V	357	1.50	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5290MHz_TX

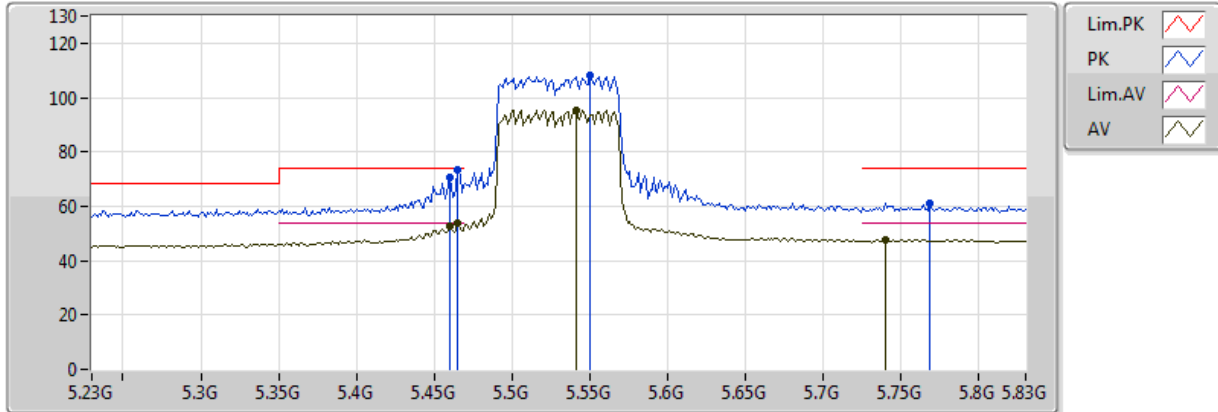


20170722
EUT_Z_4TX
Setting 62
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.8786G	48.33	54.00	-5.67	18.07	3	H	144	1.96	-
PK	15.86572G	64.02	74.00	-9.98	18.06	3	H	144	1.96	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5530MHz_TX

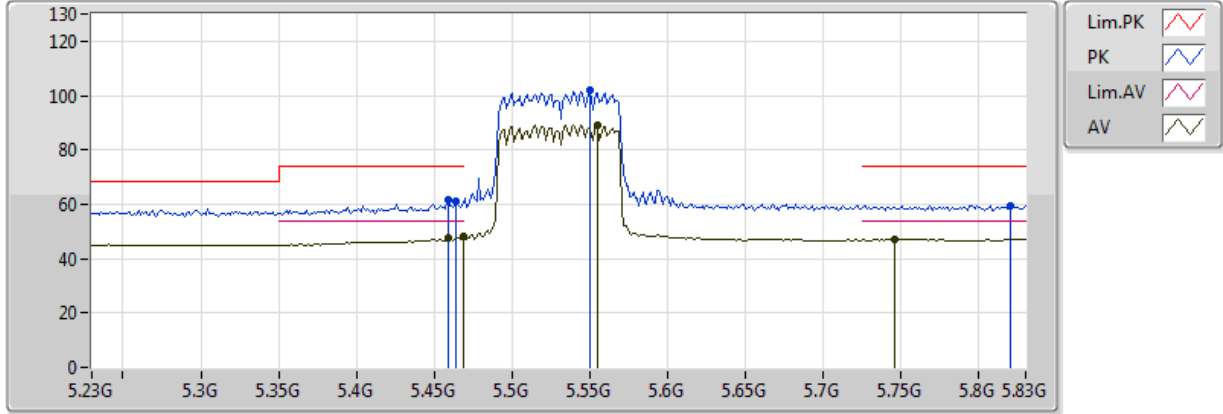


20170722
EUT_Z_4TX
Setting 57
04-R-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.459995G	52.45	54.00	-1.55	5.98	3	V	245	1.01	-
AV	5.4652G	53.60	54.00	-0.40	6.00	3	V	245	1.01	-
AV	5.5408G	95.51	Inf	-Inf	6.41	3	V	245	1.01	-
AV	5.74G	47.83	54.00	-6.17	7.05	3	V	245	1.01	-
PK	5.459995G	70.37	74.00	-3.63	5.98	3	V	245	1.01	-
PK	5.4652G	73.13	74.00	-0.87	6.00	3	V	245	1.01	-
PK	5.5504G	107.95	Inf	-Inf	6.47	3	V	245	1.01	-
PK	5.7688G	61.24	74.00	-12.76	7.11	3	V	245	1.01	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5530MHz_TX

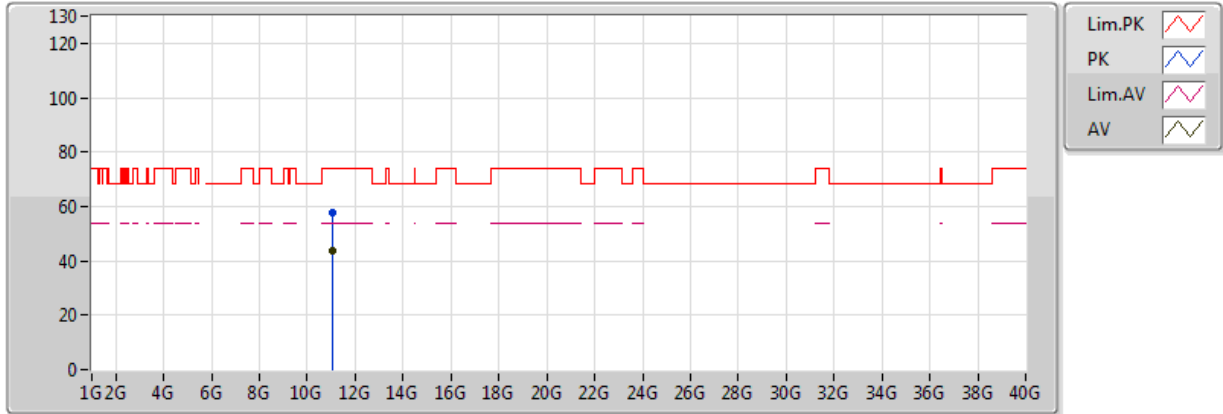


20170722
EUT_Z_4TX
Setting 57
04-R-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.4592G	47.66	54.00	-6.34	5.97	3	H	66	2.99	-
AV	5.4688G	48.25	54.00	-5.75	6.02	3	H	66	2.99	-
AV	5.5552G	89.23	Inf	-Inf	6.50	3	H	66	2.99	-
AV	5.746G	47.04	54.00	-6.96	7.07	3	H	66	2.99	-
PK	5.464G	60.97	74.00	-13.03	5.99	3	H	66	2.99	-
PK	5.5504G	102.07	Inf	-Inf	6.47	3	H	66	2.99	-
PK	5.8204G	59.65	74.00	-14.35	7.31	3	H	66	2.99	-
PK	5.4592G	61.49	74.00	-12.51	5.97	3	H	66	2.99	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5530MHz_TX

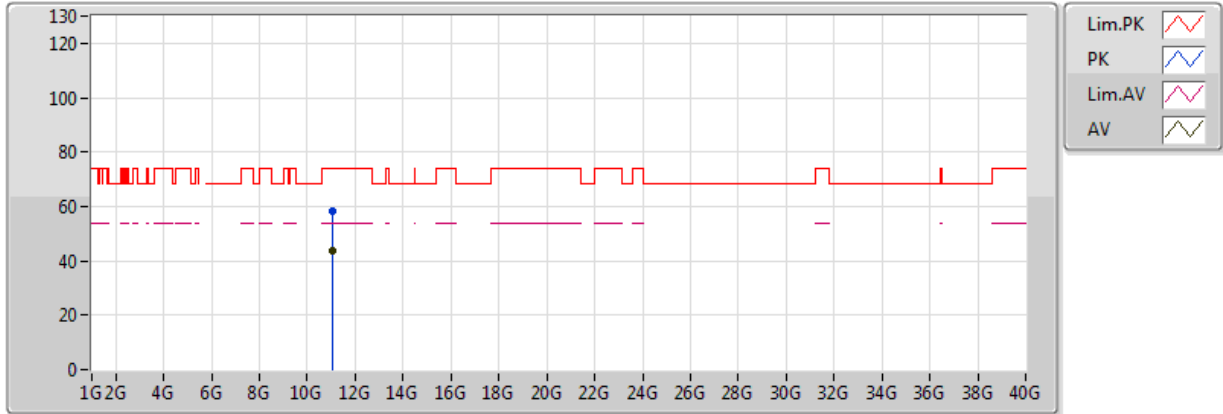


20170722
 EUT_Z_4TX
 Setting 57
 04-R-2
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.06988G	43.81	54.00	-10.19	15.85	3	V	97	1.50	-
PK	11.05604G	57.77	74.00	-16.23	15.84	3	V	97	1.50	-

802.11ac VHT80_Nss1,(MCS0)_4TX

5530MHz_TX



20170722
 EUT_Z_4TX
 Setting 57
 04-R-2
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.06976G	43.80	54.00	-10.20	15.85	3	H	215	1.15	-
PK	11.06756G	58.19	74.00	-15.81	15.84	3	H	215	1.15	-

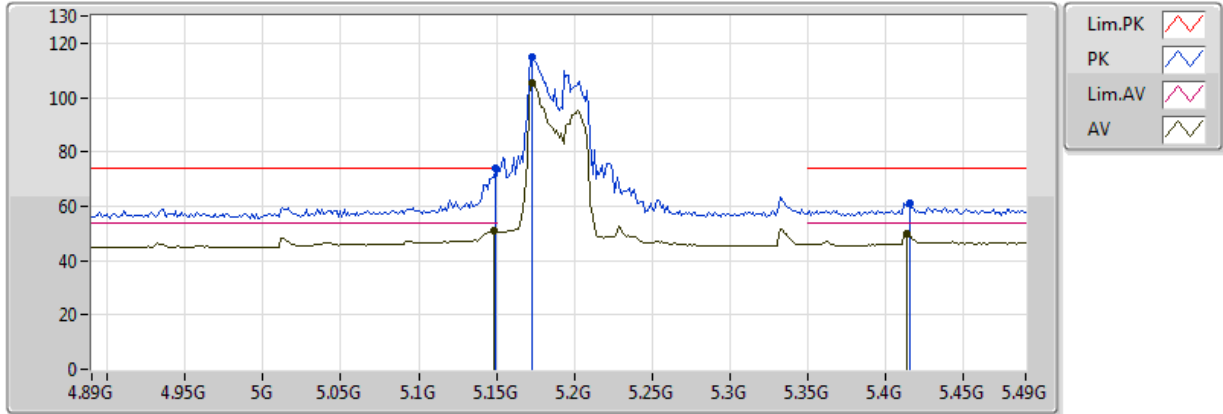


Summary for Beamforming Mode

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
5.47-5.725GHz	Pass	PK	5.4412G	73.98	74.00	-0.02	5.89	3	V	48	1.01	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5190MHz_TX

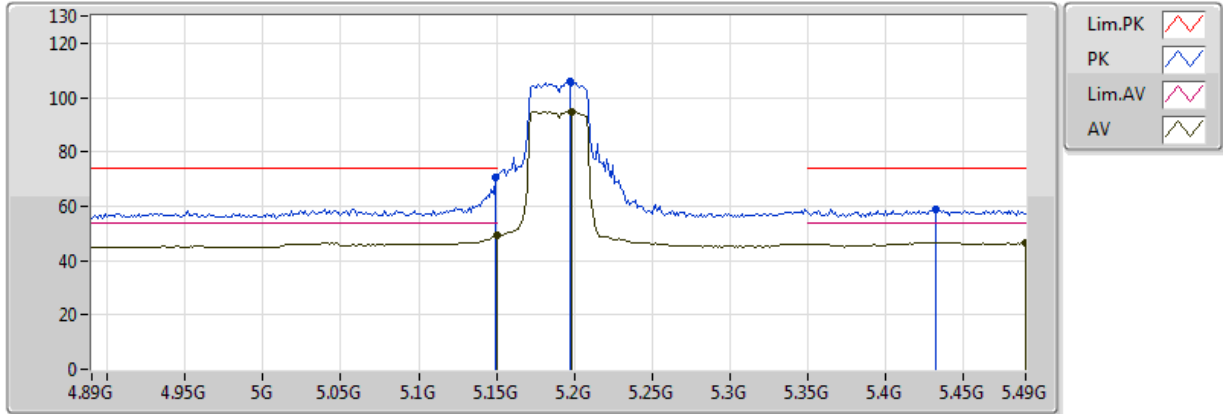


20170721
EUT_Z_4TX
Setting 60
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.148G	50.78	54.00	-3.22	5.31	3	V	100	1.17	-
AV	5.1732G	105.59	Inf	-Inf	5.40	3	V	100	1.17	-
AV	5.4132G	49.80	54.00	-4.20	5.76	3	V	100	1.17	-
PK	5.1492G	73.86	74.00	-0.14	5.31	3	V	100	1.17	-
PK	5.1732G	114.83	Inf	-Inf	5.40	3	V	100	1.17	-
PK	5.4156G	60.97	74.00	-13.03	5.77	3	V	100	1.17	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5190MHz_TX

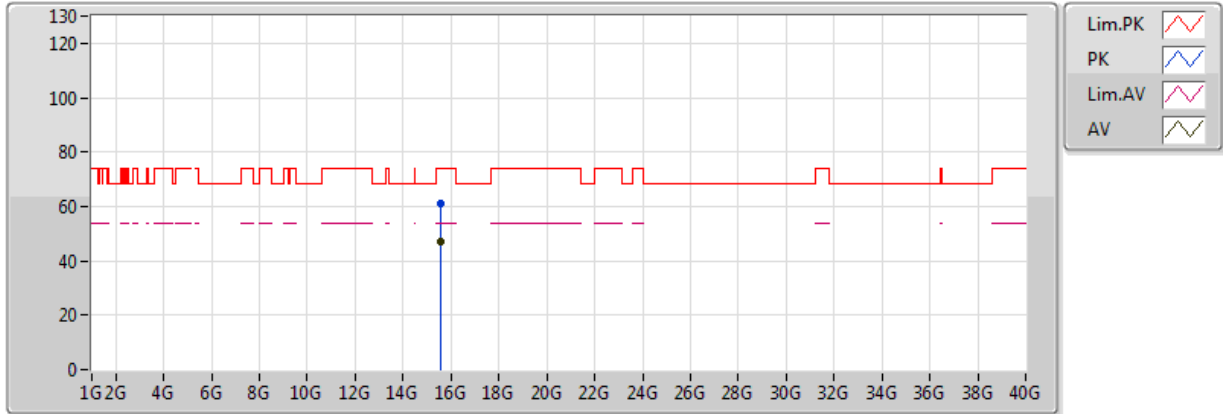


20170721
EUT_Z_4TX
Setting 60
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.149995G	49.04	54.00	-4.96	5.31	3	H	72	1.05	-
AV	5.1984G	94.83	Inf	-Inf	5.48	3	H	72	1.05	-
AV	5.49G	46.51	54.00	-7.49	6.11	3	H	72	1.05	-
PK	5.1492G	70.68	74.00	-3.32	5.31	3	H	72	1.05	-
PK	5.1972G	106.02	Inf	-Inf	5.48	3	H	72	1.05	-
PK	5.4324G	58.86	74.00	-15.14	5.85	3	H	72	1.05	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5190MHz_TX

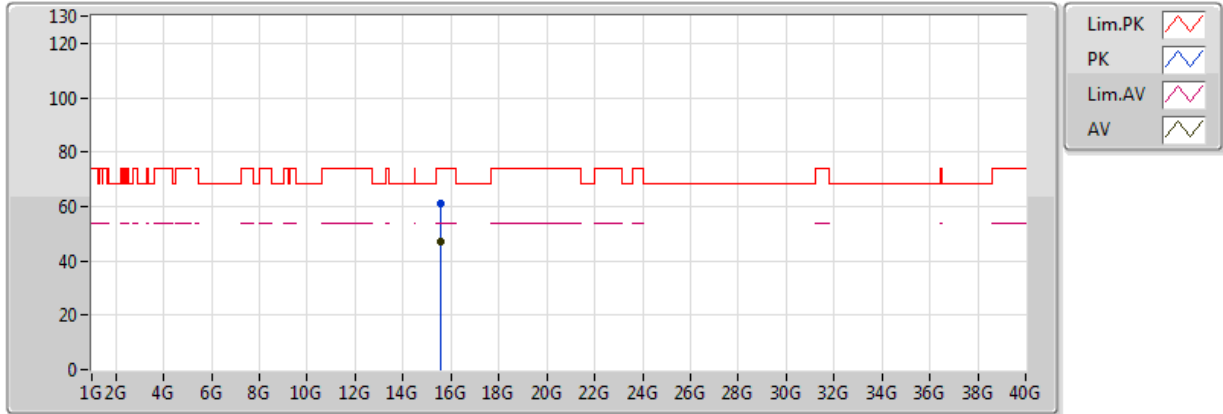


20170721
EUT_Z_4TX
Setting 60
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.58164G	47.33	54.00	-6.67	17.83	3	V	66	1.08	-
PK	15.55992G	61.13	74.00	-12.87	17.81	3	V	66	1.08	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5190MHz_TX

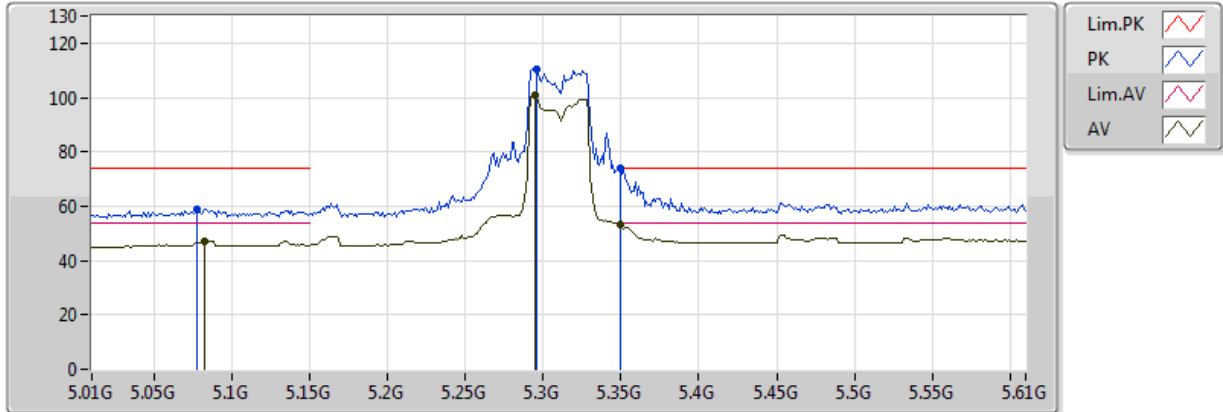


20170721
EUT_Z_4TX
Setting 60
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.56202G	47.20	54.00	-6.80	17.82	3	H	279	2.38	-
PK	15.55986G	60.96	74.00	-13.04	17.81	3	H	279	2.38	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5310MHz_TX

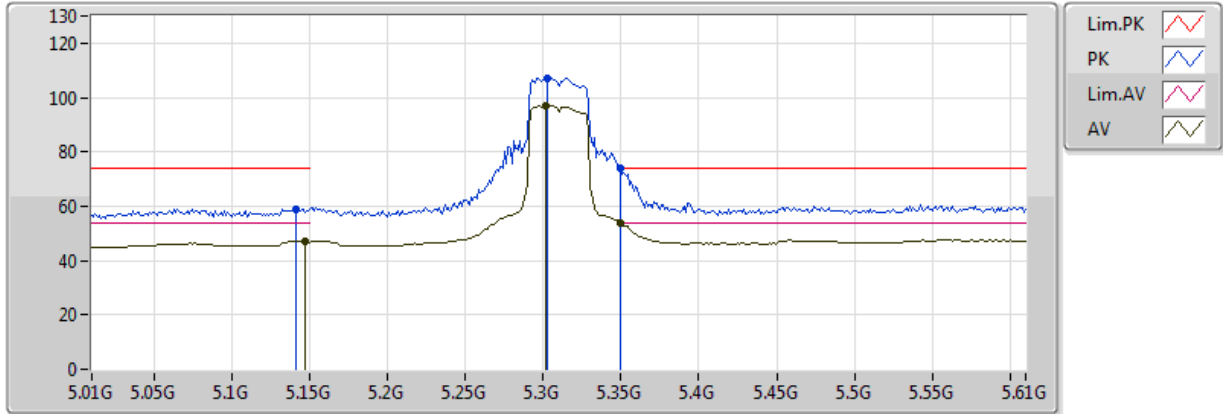


20170721
EUT_Z_4TX
Setting 66
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.082G	47.09	54.00	-6.91	5.07	3	V	70	1.15	-
AV	5.2944G	100.69	Inf	-Inf	5.59	3	V	70	1.15	-
AV	5.350005G	53.09	54.00	-0.91	5.65	3	V	70	1.15	-
PK	5.0772G	58.99	74.00	-15.01	5.05	3	V	70	1.15	-
PK	5.2956G	110.23	Inf	-Inf	5.60	3	V	70	1.15	-
PK	5.350005G	73.90	74.00	-0.10	5.65	3	V	70	1.15	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5310MHz_TX

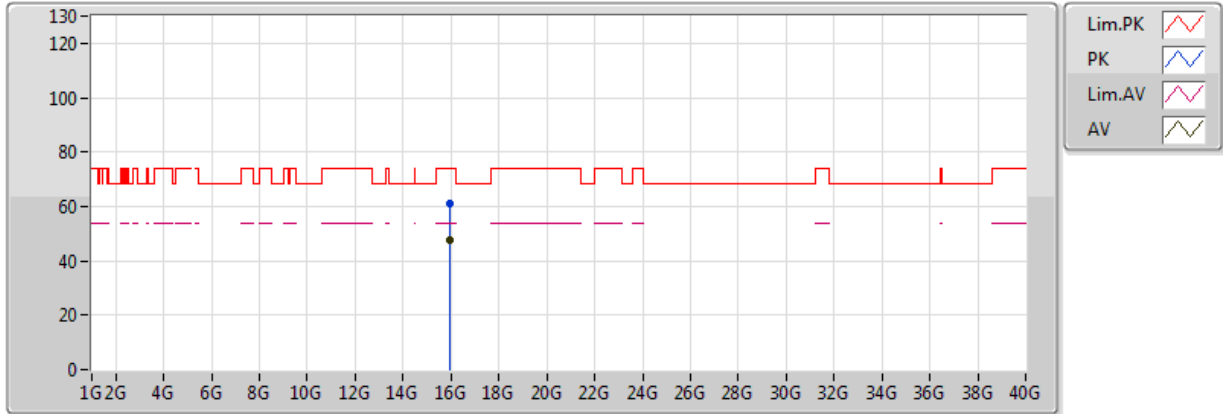


20170721
EUT_Z_4TX
Setting 66
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1468G	47.18	54.00	-6.82	5.30	3	H	74	1.01	-
AV	5.3016G	97.02	Inf	-Inf	5.60	3	H	74	1.01	-
AV	5.350005G	53.64	54.00	-0.36	5.65	3	H	74	1.01	-
PK	5.1408G	59.07	74.00	-14.93	5.28	3	H	74	1.01	-
PK	5.3028G	106.98	Inf	-Inf	5.60	3	H	74	1.01	-
PK	5.350005G	73.92	74.00	-0.08	5.65	3	H	74	1.01	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5310MHz_TX

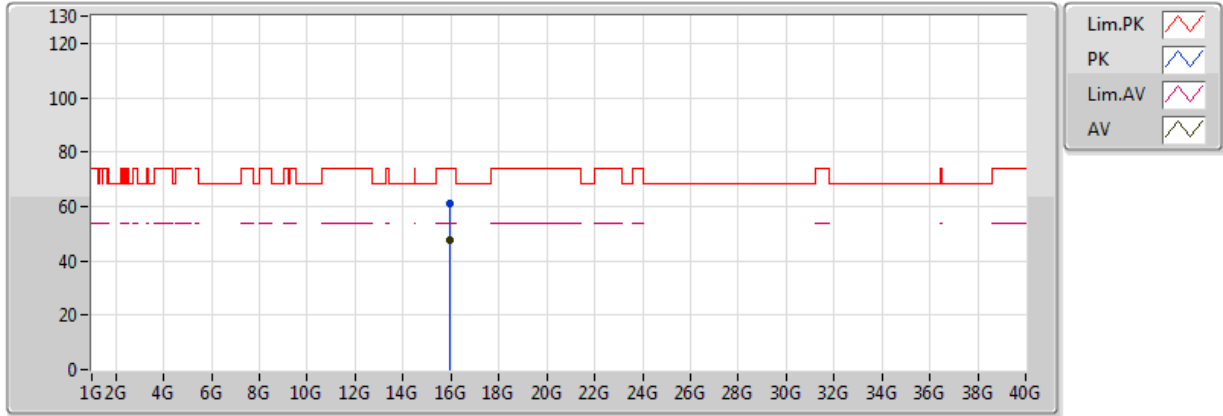


20170721
EUT_Z_4TX
Setting 66
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.94308G	47.51	54.00	-6.49	18.12	3	V	119	1.43	-
PK	15.94386G	61.13	74.00	-12.87	18.12	3	V	119	1.43	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5310MHz_TX

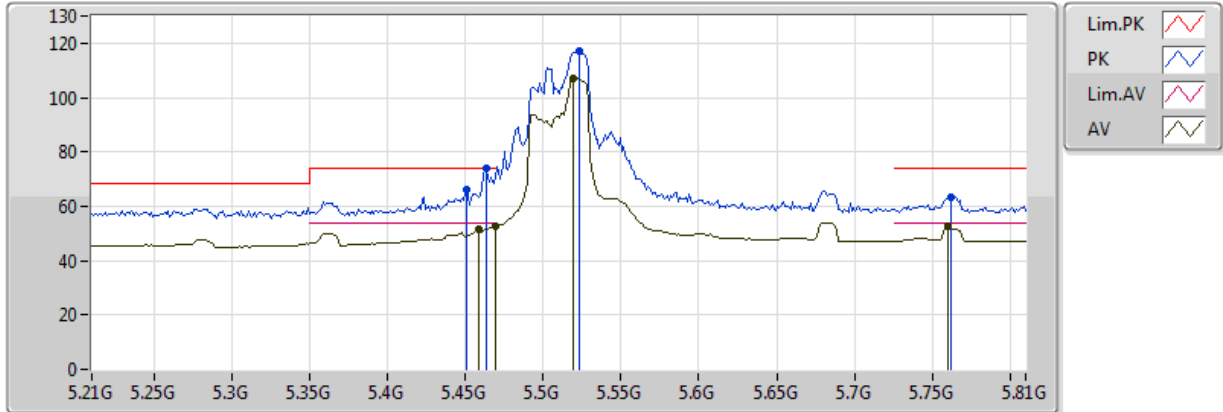


20170721
EUT_Z_4TX
Setting 66
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.94446G	47.62	54.00	-6.38	18.13	3	H	209	1.75	-
PK	15.93312G	61.04	74.00	-12.96	18.12	3	H	209	1.75	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5510MHz_TX

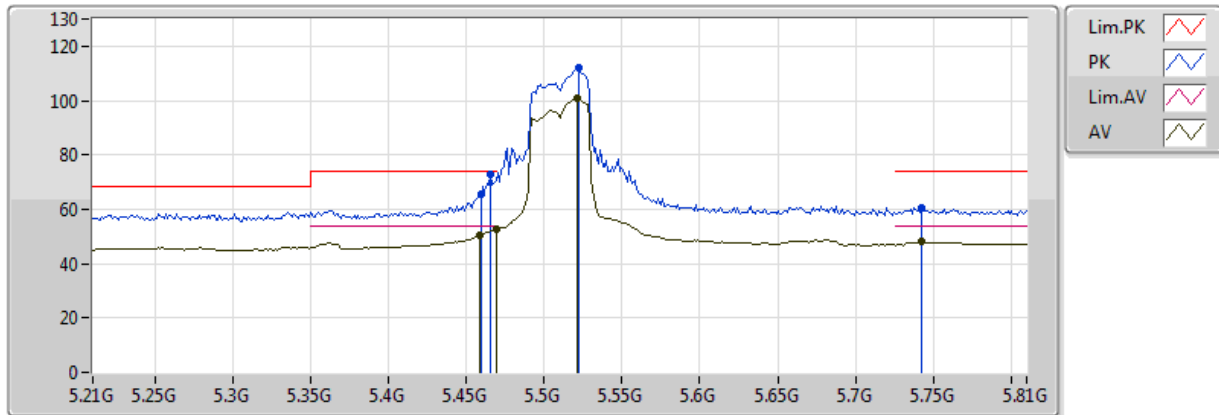


20170721
EUT_Z_4TX
Setting 65
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.4584G	51.38	54.00	-2.62	5.97	3	V	58	1.09	-
AV	5.4692G	52.73	54.00	-1.27	6.02	3	V	58	1.09	-
AV	5.5196G	107.22	Inf	-Inf	6.28	3	V	58	1.09	-
AV	5.7596G	52.42	54.00	-1.58	7.10	3	V	58	1.09	-
PK	5.4512G	66.31	74.00	-7.69	5.94	3	V	58	1.09	-
PK	5.4632G	73.86	74.00	-0.14	5.99	3	V	58	1.09	-
PK	5.5232G	116.94	Inf	-Inf	6.30	3	V	58	1.09	-
PK	5.762G	63.57	74.00	-10.43	7.10	3	V	58	1.09	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5510MHz_TX

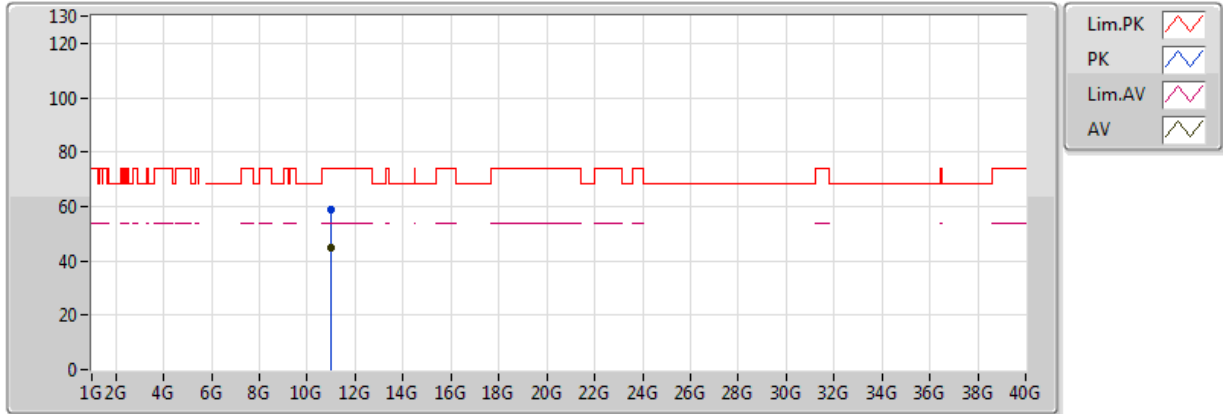


20170721
EUT_Z_4TX
Setting 65
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.4584G	50.31	54.00	-3.69	5.97	3	H	68	2.97	-
AV	5.4692G	52.90	54.00	-1.10	6.02	3	H	68	2.97	-
AV	5.5208G	100.77	Inf	-Inf	6.29	3	H	68	2.97	-
AV	5.7428G	48.11	54.00	-5.89	7.06	3	H	68	2.97	-
PK	5.459995G	65.47	74.00	-8.53	5.98	3	H	68	2.97	-
PK	5.4656G	72.68	74.00	-1.32	6.00	3	H	68	2.97	-
PK	5.522G	111.99	Inf	-Inf	6.30	3	H	68	2.97	-
PK	5.7428G	60.56	74.00	-13.44	7.06	3	H	68	2.97	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5510MHz_TX

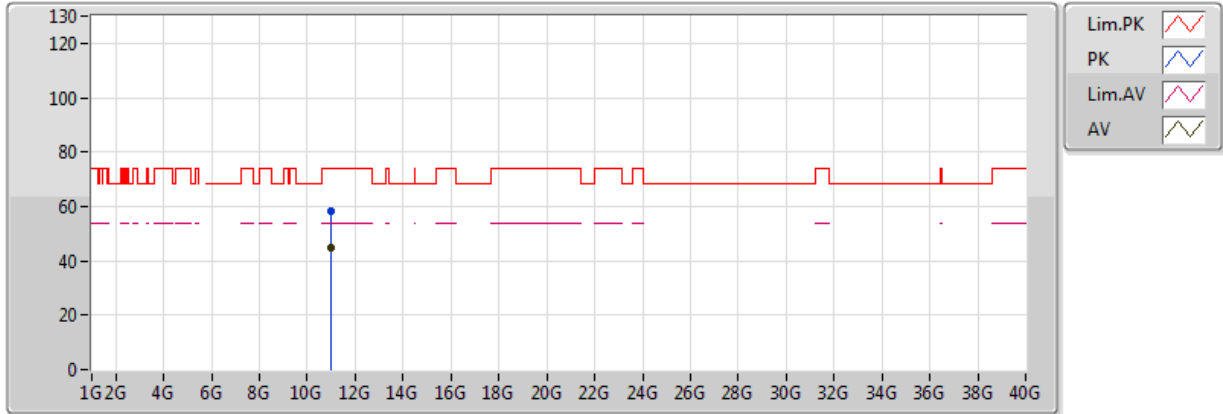


20170721
EUT_Z_4TX
Setting 65
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.00668G	45.02	54.00	-8.98	15.80	3	V	107	1.52	-
PK	11.01688G	59.06	74.00	-14.94	15.81	3	V	107	1.52	-

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5510MHz_TX

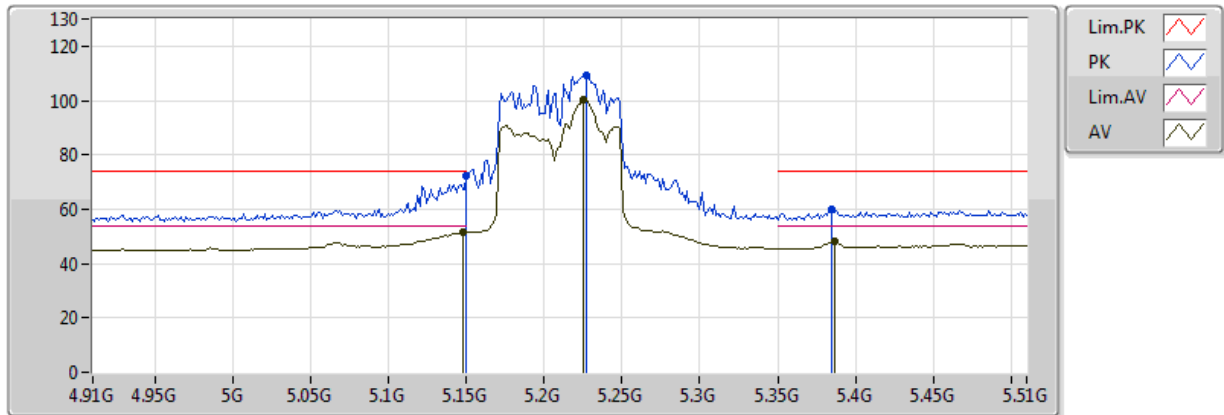


20170721
EUT_Z_4TX
Setting 65
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.00704G	44.91	54.00	-9.09	15.80	3	H	307	2.44	-
PK	11.0164G	58.34	74.00	-15.66	15.81	3	H	307	2.44	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5210MHz_TX

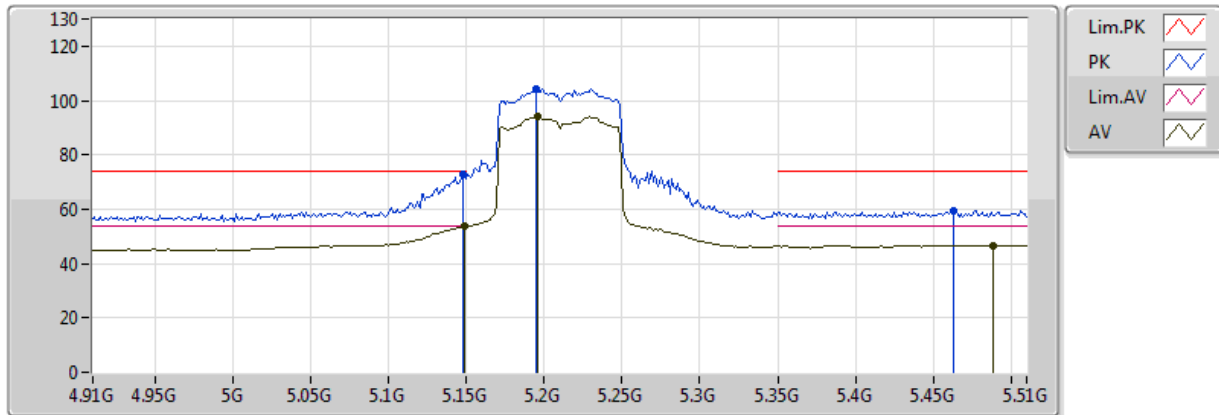


20170721
EUT_Z_4TX
Setting 60
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1476G	51.58	54.00	-2.42	5.31	3	V	75	1.02	-
AV	5.2256G	100.17	Inf	-Inf	5.52	3	V	75	1.02	-
AV	5.3864G	48.04	54.00	-5.96	5.69	3	V	75	1.02	-
PK	5.149995G	72.43	74.00	-1.57	5.31	3	V	75	1.02	-
PK	5.2268G	109.40	Inf	-Inf	5.52	3	V	75	1.02	-
PK	5.3852G	59.81	74.00	-14.19	5.69	3	V	75	1.02	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5210MHz_TX

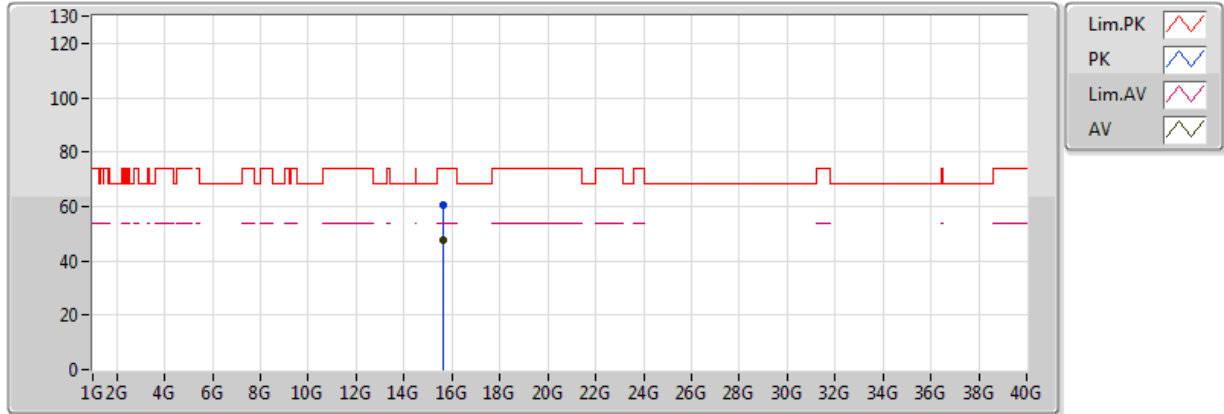


20170721
EUT_Z_4TX
Setting 60
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1488G	53.90	54.00	-0.10	5.31	3	H	73	1.04	-
AV	5.1956G	93.99	Inf	-Inf	5.47	3	H	73	1.04	-
AV	5.4884G	46.67	54.00	-7.33	6.11	3	H	73	1.04	-
PK	5.1476G	72.95	74.00	-1.05	5.31	3	H	73	1.04	-
PK	5.1944G	104.31	Inf	-Inf	5.47	3	H	73	1.04	-
PK	5.4632G	59.60	74.00	-14.40	5.99	3	H	73	1.04	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5210MHz_TX

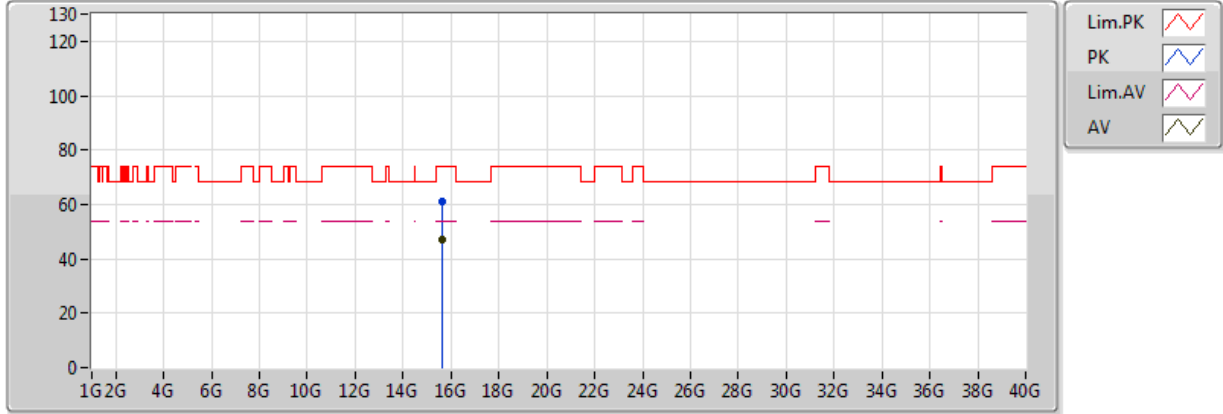


20170721
EUT_Z_4TX
Setting 60
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.64284G	47.43	54.00	-6.57	17.88	3	V	212	1.19	-
PK	15.62472G	60.64	74.00	-13.36	17.87	3	V	212	1.19	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5210MHz_TX

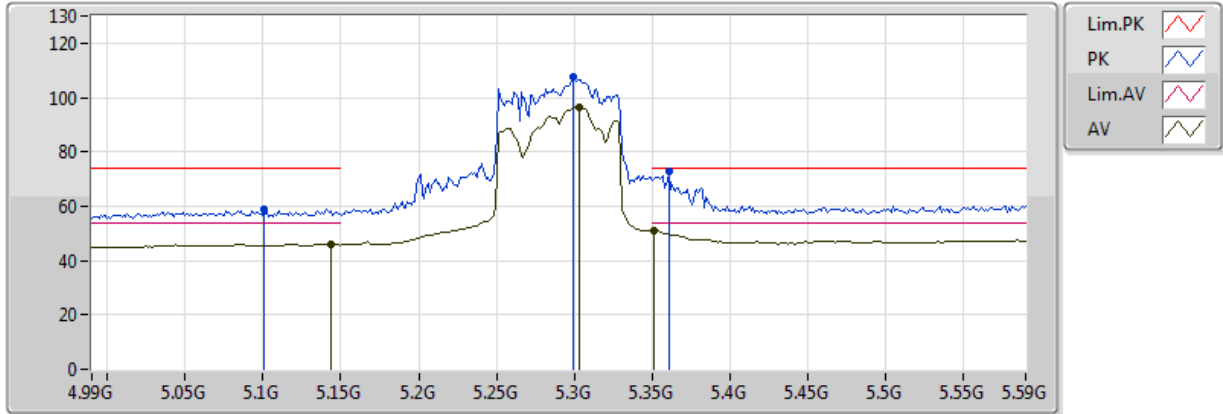


20170721
EUT_Z_4TX
Setting 60
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.64452G	47.33	54.00	-6.67	17.88	3	H	140	1.46	-
PK	15.6324G	61.17	74.00	-12.83	17.87	3	H	140	1.46	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5290MHz_TX

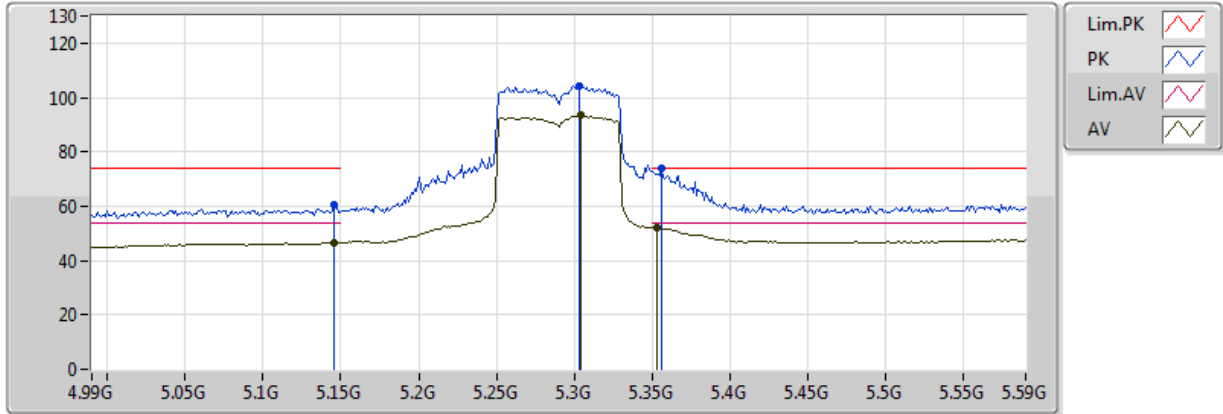


20170721
EUT_Z_4TX
Setting 65
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1436G	46.20	54.00	-7.80	5.29	3	V	247	1.04	-
AV	5.3032G	96.42	Inf	-Inf	5.60	3	V	247	1.04	-
AV	5.3512G	51.01	54.00	-2.99	5.65	3	V	247	1.04	-
PK	5.1004G	58.85	74.00	-15.15	5.14	3	V	247	1.04	-
PK	5.2996G	107.54	Inf	-Inf	5.60	3	V	247	1.04	-
PK	5.3608G	72.58	74.00	-1.42	5.66	3	V	247	1.04	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5290MHz_TX

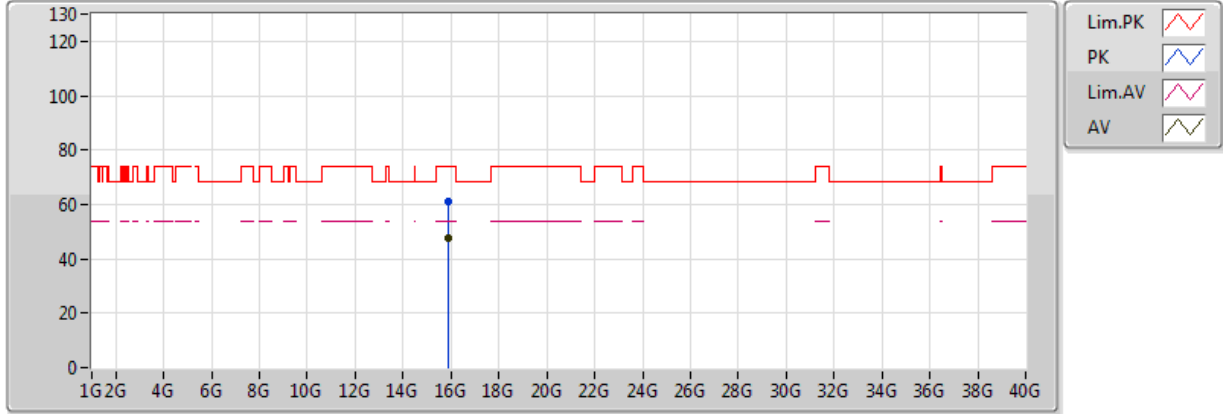


20170721
EUT_Z_4TX
Setting 65
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.146G	46.65	54.00	-7.35	5.30	3	H	70	1.03	-
AV	5.3044G	93.32	Inf	-Inf	5.60	3	H	70	1.03	-
AV	5.3536G	52.35	54.00	-1.65	5.65	3	H	70	1.03	-
PK	5.146G	60.28	74.00	-13.72	5.30	3	H	70	1.03	-
PK	5.3032G	104.31	Inf	-Inf	5.60	3	H	70	1.03	-
PK	5.356G	73.96	74.00	-0.04	5.66	3	H	70	1.03	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5290MHz_TX

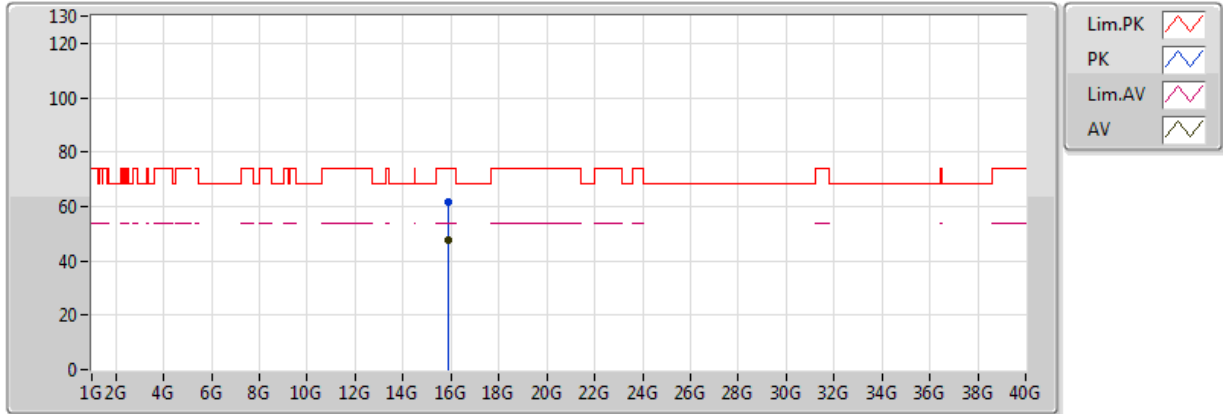


20170721
EUT_Z_4TX
Setting 65
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.8823G	47.68	54.00	-6.32	18.07	3	V	297	1.49	-
PK	15.87258G	61.32	74.00	-12.68	18.07	3	V	297	1.49	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5290MHz_TX

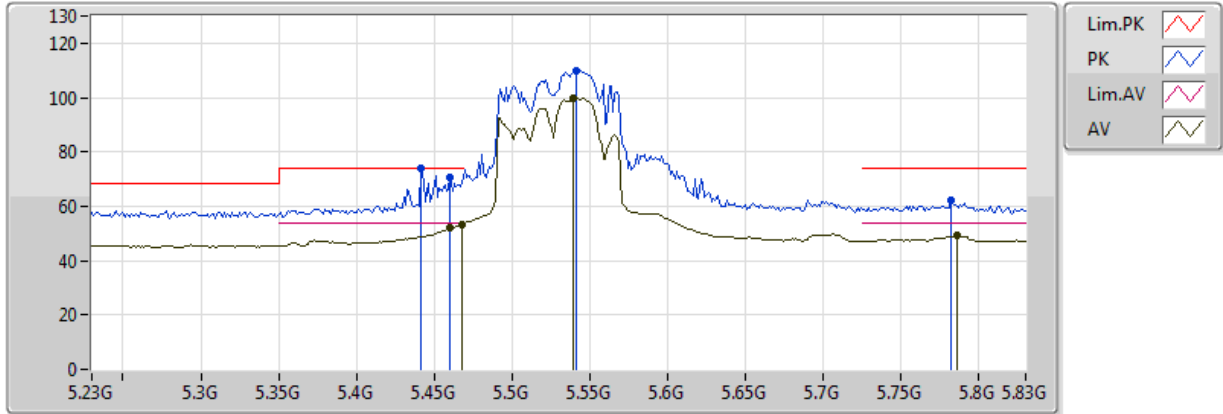


20170721
EUT_Z_4TX
Setting 65
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.8847G	47.67	54.00	-6.33	18.08	3	H	51	1.11	-
PK	15.8616G	61.51	74.00	-12.49	18.06	3	H	51	1.11	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5530MHz_TX

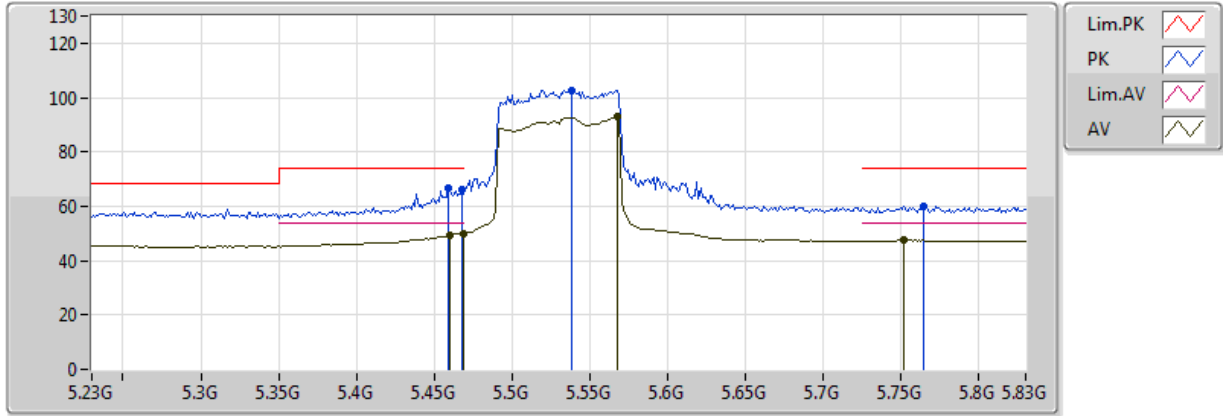


20170721
EUT_Z_4TX
Setting 60
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.459995G	51.85	54.00	-2.15	5.98	3	V	48	1.01	-
AV	5.4676G	53.47	54.00	-0.53	6.01	3	V	48	1.01	-
AV	5.5396G	100.00	Inf	-Inf	6.41	3	V	48	1.01	-
AV	5.7856G	49.35	54.00	-4.65	7.15	3	V	48	1.01	-
PK	5.4412G	73.98	74.00	-0.02	5.89	3	V	48	1.01	-
PK	5.4604G	70.35	74.00	-3.65	5.98	3	V	48	1.01	-
PK	5.5408G	109.91	Inf	-Inf	6.41	3	V	48	1.01	-
PK	5.782G	62.02	74.00	-11.98	7.14	3	V	48	1.01	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5530MHz_TX

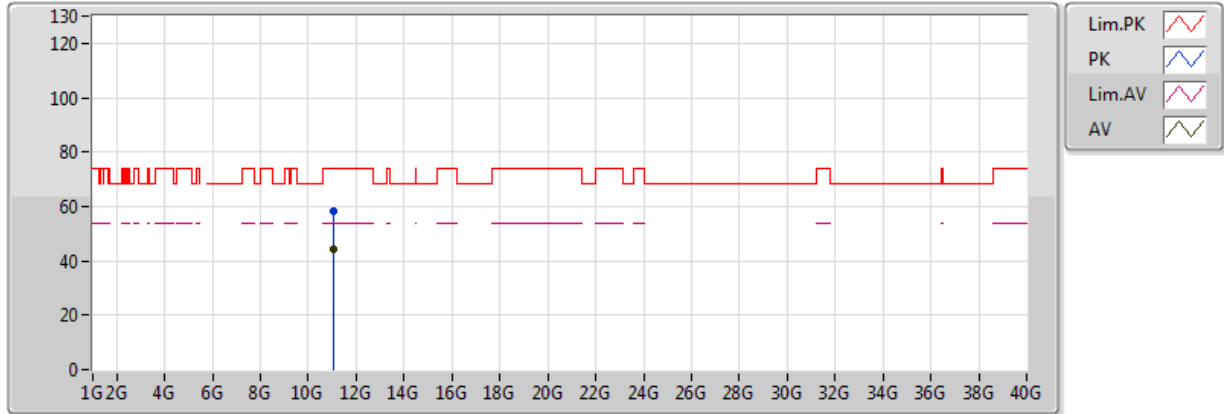


20170721
EUT_Z_4TX
Setting 60
04-J-5-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.459995G	49.44	54.00	-4.56	5.98	3	H	83	1.03	-
AV	5.4688G	49.98	54.00	-4.02	6.02	3	H	83	1.03	-
AV	5.5672G	93.15	Inf	-Inf	6.58	3	H	83	1.03	-
AV	5.752G	47.50	54.00	-6.50	7.08	3	H	83	1.03	-
PK	5.4592G	66.69	74.00	-7.31	5.97	3	H	83	1.03	-
PK	5.4676G	66.07	74.00	-7.93	6.01	3	H	83	1.03	-
PK	5.5384G	102.67	Inf	-Inf	6.40	3	H	83	1.03	-
PK	5.764G	60.21	74.00	-13.79	7.10	3	H	83	1.03	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5530MHz_TX

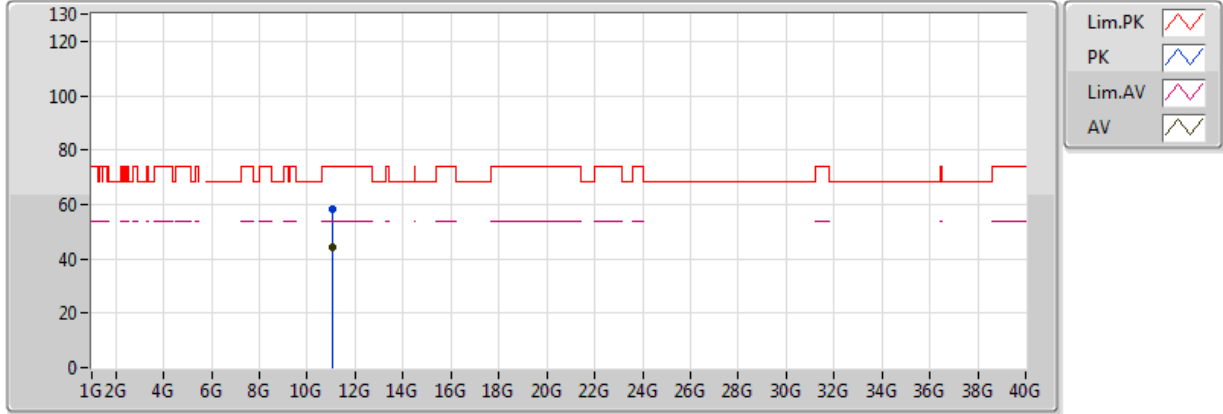


20170721
 EUT_Z_4TX
 Setting 60
 04-J-4
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.07344G	44.35	54.00	-9.65	15.85	3	V	311	2.48	-
PK	11.07362G	58.22	74.00	-15.78	15.85	3	V	311	2.48	-

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

5530MHz_TX



20170721
EUT_Z_4TX
Setting 60
04-J-4
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.07434G	44.37	54.00	-9.63	15.85	3	H	47	1.48	-
PK	11.07464G	58.21	74.00	-15.79	15.85	3	H	47	1.48	-