

FCC RF Test Report

Equipment : DBDC ROUTER
Brand Name : Charter
Model No. : RAC2V1K
FCC ID : H8NRAC2V1K
Standard : 47 CFR FCC Part 15.407
Operating Band : 5250 MHz – 5350 MHz
5470 MHz – 5725 MHz
Applicant : Askey Computer Corp.
10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW
TAIPEI CITY 23585, TAIWAN
Manufacturer : Askey Computer Corp.
10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW
TAIPEI CITY 23585, TAIWAN
Function : ☐ Outdoor; ☒ Indoor; ☐ Fixed P2P
☐ Client
TPC Function : ☒ With TPC ☐ Without TPC

The product sample received on Feb. 15, 2017 and completely tested on Jun. 05, 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
1.1.3	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



SPORTON INTERNATIONAL INC.
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FCC ID: H8NRAC2V1K

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5250-5350	a, n (HT20), ac (VHT20)	5260-5320	52-64 [4]
5470-5725		5500-5720	100-144 [12]
5250-5350	n (HT40), ac (VHT40)	5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5250-5350	ac (VHT80)	5290	58 [1]
5470-5725		5530-5690	106-138 [2]

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11a	20	4TX
5.25-5.35GHz	802.11n HT20	20	4TX
5.25-5.35GHz	802.11ac VHT20	20	4TX
5.25-5.35GHz	802.11n HT40	40	4TX
5.25-5.35GHz	802.11ac VHT40	40	4TX
5.25-5.35GHz	802.11ac VHT80	80	4TX
5.47-5.725GHz	802.11a	20	4TX
5.47-5.725GHz	802.11n HT20	20	4TX
5.47-5.725GHz	802.11ac VHT20	20	4TX
5.47-5.725GHz	802.11n HT40	40	4TX
5.47-5.725GHz	802.11ac VHT40	40	4TX
5.47-5.725GHz	802.11ac VHT80	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 Table for 80+80 MHz Mode

Type	Channel No.	Frequency
1	42+58	5210+5290 MHz
2	58+106	5290+5530 MHz
3	138+155	5690+5775 MHz

1.1.3 Antenna Information

Ant.	Brand	Part Number	Antenna Type	Connector	Gain (dBi)				Remark
					2.4G	5G B1	B2, B3	5G B4	
1	Airgain	N2420GS	PCB Antenna	I-PEX	1	-	-	-	2.4GHz TX/RX
2	Airgain	N2420GS	PCB Antenna	I-PEX	1	-	-	-	2.4GHz TX/RX
3	Airgain	N2420GS	PCB Antenna	I-PEX	1	-	-	-	2.4GHz TX/RX
4	Airgain	N2420GS	PCB Antenna	I-PEX	1	-	-	-	2.4GHz TX/RX
5	Airgain	M5x05C (Longer)	PCB Antenna	I-PEX	-	1.2	1.2	1.2	5GHz TX/RX
6	Airgain	M5x05C	PCB Antenna	I-PEX	-	1.2	1.2	1.2	5GHz TX/RX
7	Airgain	M5x05C	PCB Antenna	I-PEX	-	1.2	1.2	1.2	5GHz TX/RX
8	Airgain	M5x05C (Longer)	PCB Antenna	I-PEX	-	1.2	1.2	1.2	5GHz TX/RX

Note: The EUT has eight antennas.

For 2.4GHz function (4TX/4RX):

Ant. 1 (P1), Ant. 2 (P2), Ant. 3 (P3) and Ant. 4 (P4) could transmit/receive simultaneously.

For 5GHz function (4TX/4RX):

Ant. 5 (P1), Ant. 6 (P2), Ant. 7 (P3) and Ant. 8 (P4) could transmit/receive simultaneously.

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)
802.11ac VHT80+80	0.994	0.026
802.11ac VHT80+80-BF	0.63	2.007

1.1.5 EUT Operational Condition

EUT Power Type	From power adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for 802.11n/ac.			
Weather Band	☒	With 5600~5650MHz	☐	Without 5600~5650MHz
	Note: For 11ac 80+80 test mode without 5600~5650MHz.			

1.1.6 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR711935-02AA and FR711935-02AB

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Revising the Ant. Gain of 5GHz band 2/band 3 to 1.2dBi. 2. Removing Capacitor*3:(1000 pF: C1170 (bottom), C1173, C1176 (Top).	Do not effect the test results.
5. Adding three set 11ac 80+80 test mode. (for details refer to Section 1.1.2)	1. Emission Bandwidth 2. Maximum Conducted Output Power 3. Peak Power Spectral Density 4. Unwanted Emissions

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				
☐	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	
☒	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	Eddie Weng	22°C / 55%	Jun. 05, 2017
Radiated	03CH01-CB	Joy Tseng	22°C / 54%	Feb. 15, 2017 ~ May 11, 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	9.74×10^{-8}	Confidence levels of 95%
Frequency Stability	6.06×10^{-8}	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-
#5210MHz,5290MHz	18.5
#5290MHz,5530MHz	17.5
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-
5210MHz,#5290MHz	18.5
5290MHz,#5530MHz	17.5
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-
#5690MHz,#5775MHz Straddle 5.47-5.725GHz	22
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-
#5690MHz,#5775MHz Straddle 5.725-5.85GHz	22
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-
#5210MHz,5290MHz	25
#5290MHz,5530MHz	25
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-
5210MHz,#5290MHz	25
5290MHz,#5530MHz	25
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-
#5690MHz,#5775MHz Straddle 5.47-5.725GHz	23.5
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX	-
#5690MHz,#5775MHz Straddle 5.725-5.85GHz	23.5

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

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



2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting 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 98%.



2.4 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model No.	Rating
1	Adapter 1	Sunny	SYS1564-3012-W2	INPUT: 100-240Vac, 50-60Hz, 1.0A MAX. OUTPUT: 12Vdc, 2.5A
2	Adapter 2	Ktec	KSA-36W-120250HU	INPUT: 100-240Vac, 50/60Hz, 1.0A OUTPUT: 12Vdc, 2.5A

Note: The power adapter does not affect the test result of RF tests, so only adapter 1 was tested and recorded in this report.

2.5 Support Equipment

For Test Site No: 03CH01-CB (above 1GHz)

<For Non-Beamforming Mode>

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC

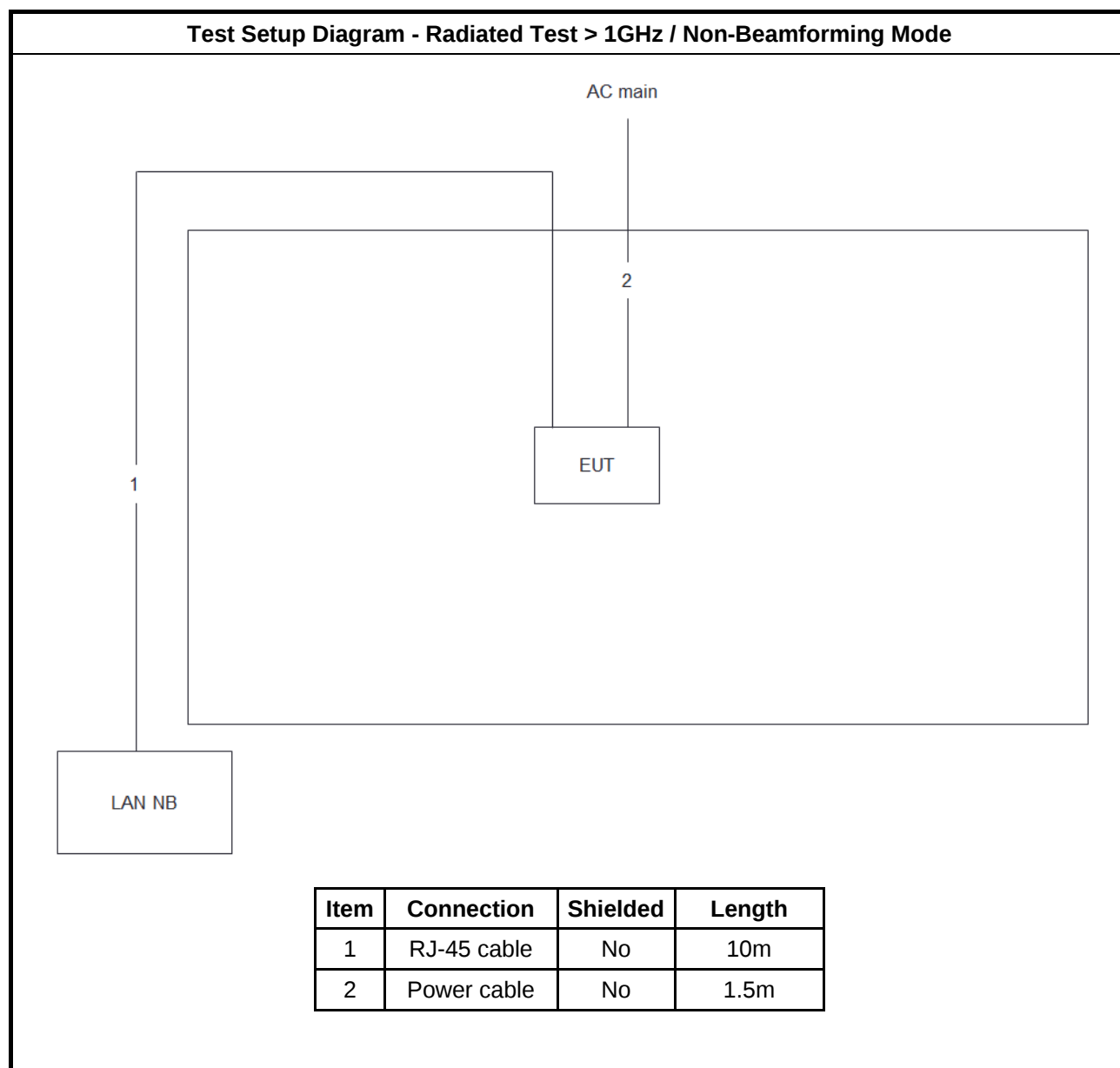
<For Beamforming Mode>

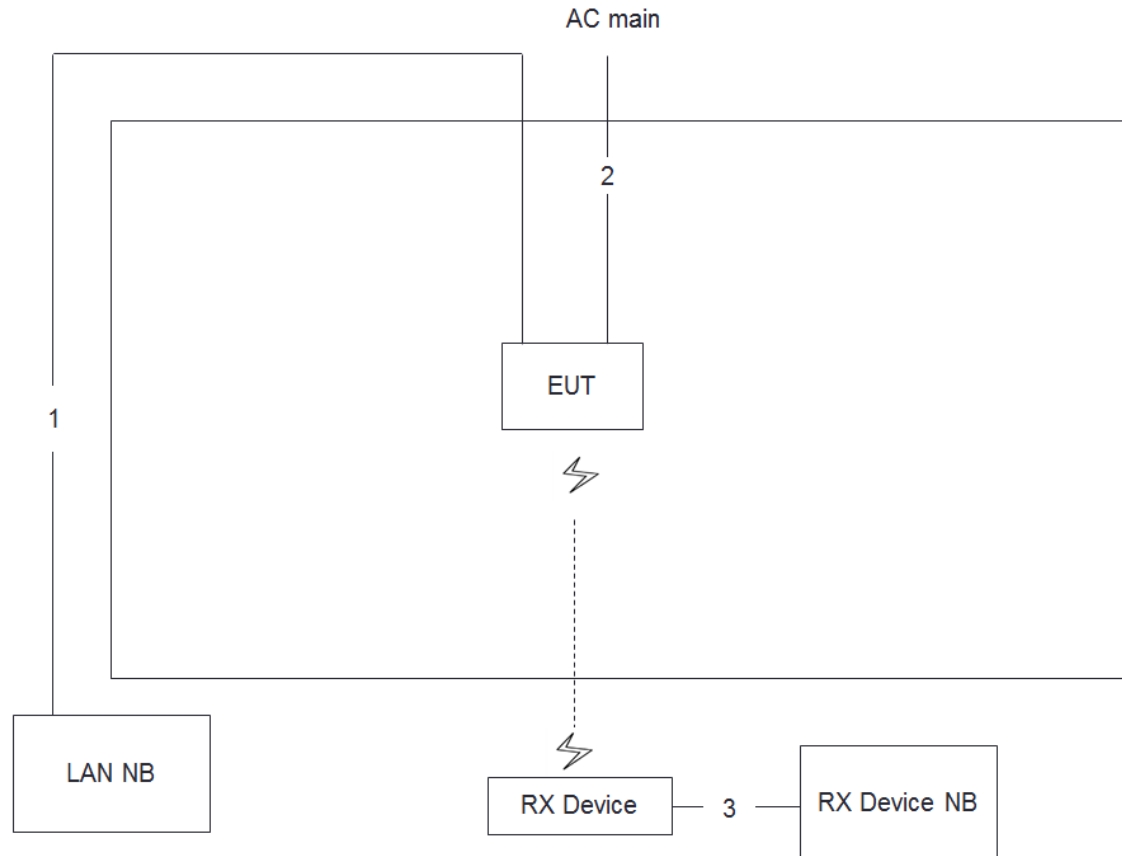
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook*2	DELL	E4300	DoC
2	RX Device	Charter	RAC2V1K	H8NRAC2V1K

For Test Site No: TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test > 1GHz / Beamforming Mode


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

3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 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.

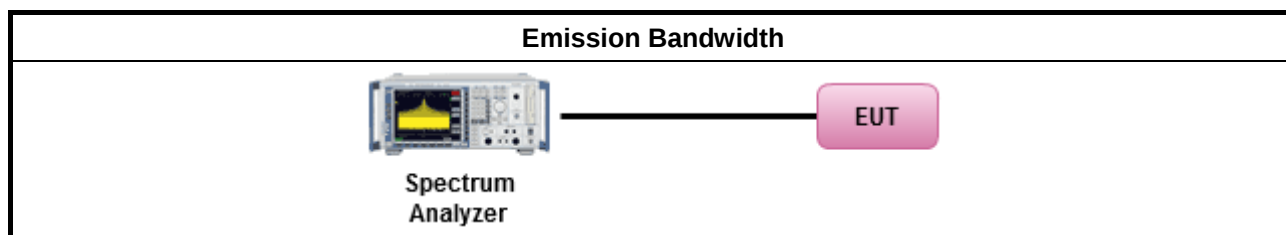
3.1.2 Measuring Instruments

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

3.1.3 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.

3.1.4 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	
☐ 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.	

3.2.2 Measuring Instruments

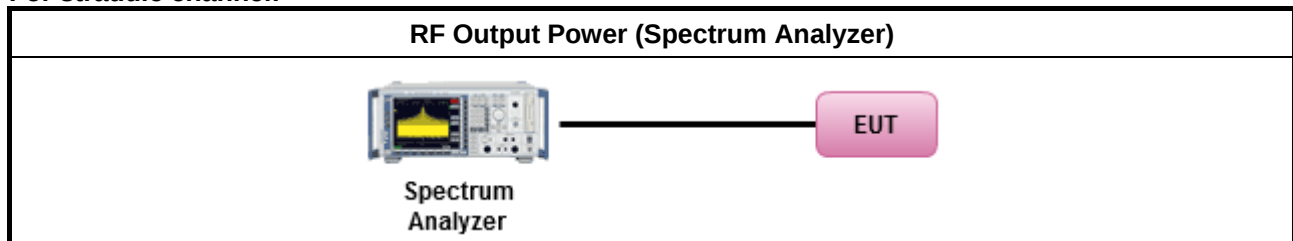
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

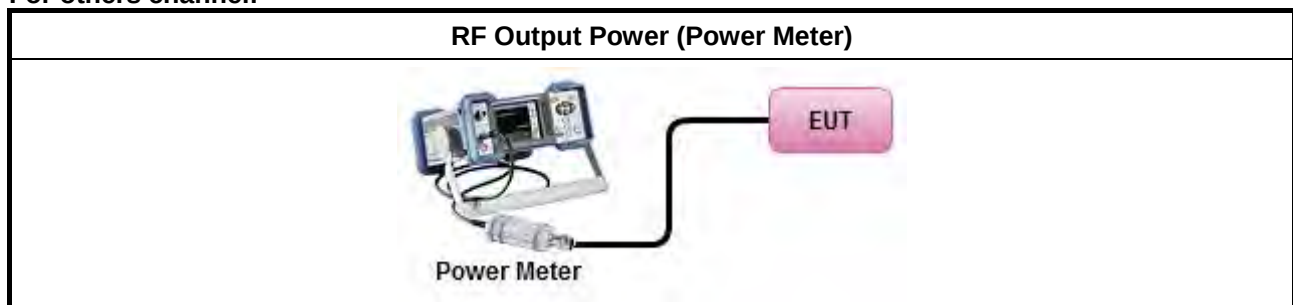
Test Method	
Maximum Conducted Output Power	
Average over on/off periods with duty factor	
☒	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
Wideband RF power meter and average over on/off 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]) $EIRP_{total} = P_{total} + DG$	

3.2.4 Test Setup

For straddle channel:



For others channel:



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	
☐ 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 peak power spectral density (PPSD) ≤ 4 dBm/MHz and 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 and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 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 and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 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.	

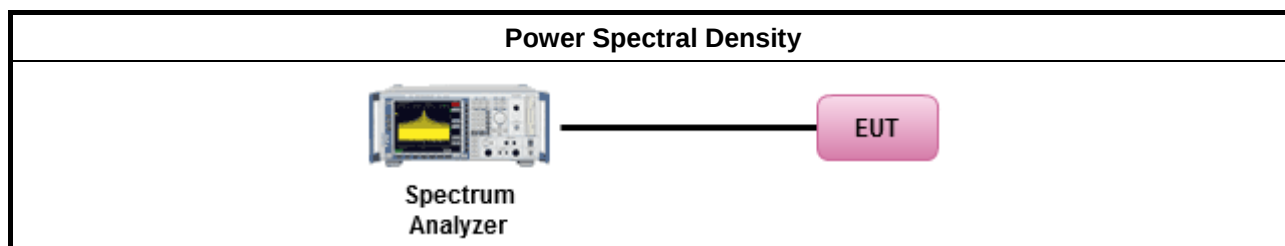
3.3.2 Measuring Instruments

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

3.3.3 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, 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]	
☒ 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]) $EIRP_{total} = PPSD_{total} + DG$	

3.3.4 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).

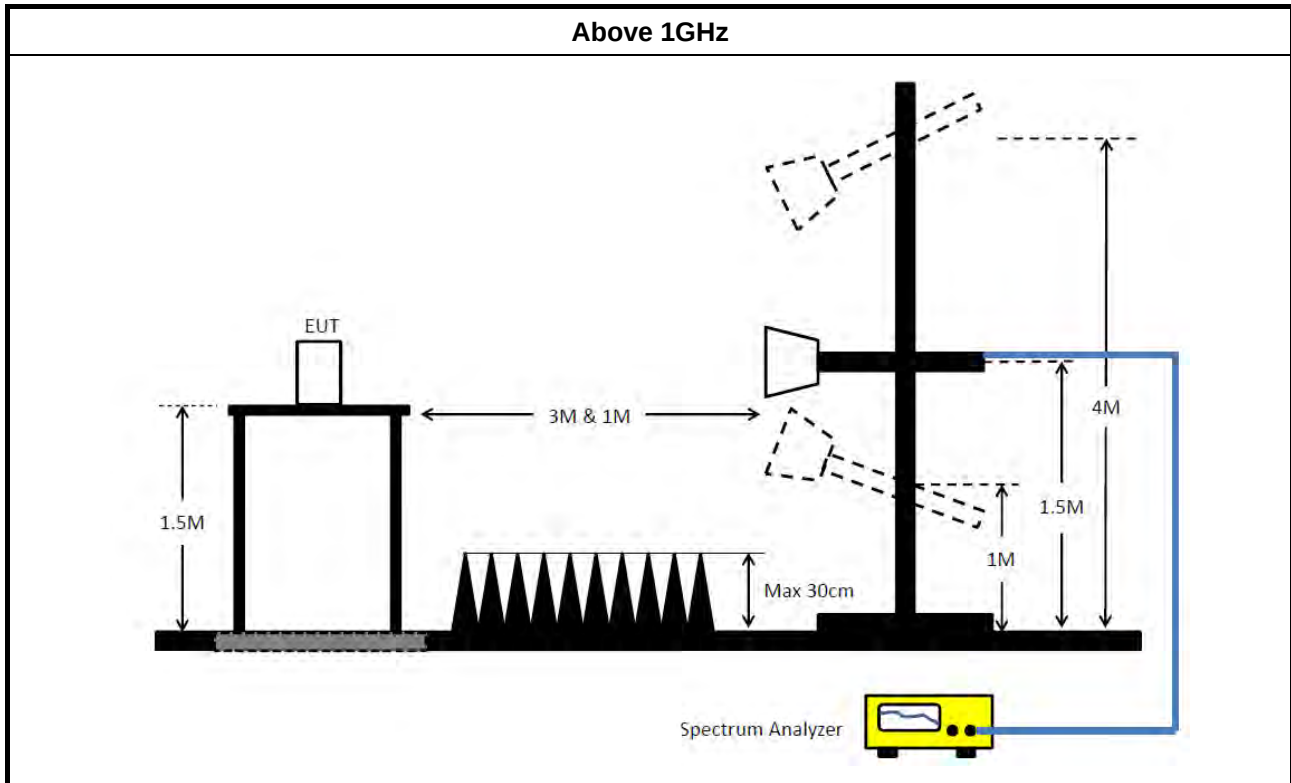
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
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:	
	Refer as FCC KDB 789033, clause H)2) for unwanted emissions into non-restricted bands.
	Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
	☒ Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW).
	☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq$ 1/T, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
	☒ Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit.
	☐ Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
	For radiated measurement.
	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
	The any unwanted emissions level shall not exceed the fundamental emission level.
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

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. 25, 2016	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	Jun. 28, 2016	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 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-I0-7	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 VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	83.5M	75.862M	75M9D1D	83.5M	75.762M
5.25-5.35GHz	83.5M	75.662M	75M7D1D	83.2M	75.562M
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-
5.25-5.35GHz	83.7M	75.862M	75M9D1D	83.4M	75.762M
5.47-5.725GHz	84M	75.762M	75M8D1D	83.6M	75.762M
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-
5.47-5.725GHz	76.95M	72.564M	72M6D1D	76.8M	72.489M
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-
5.725-5.85GHz	76.275M	75.862M	75M9D1D	3.075M	5.922M

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;

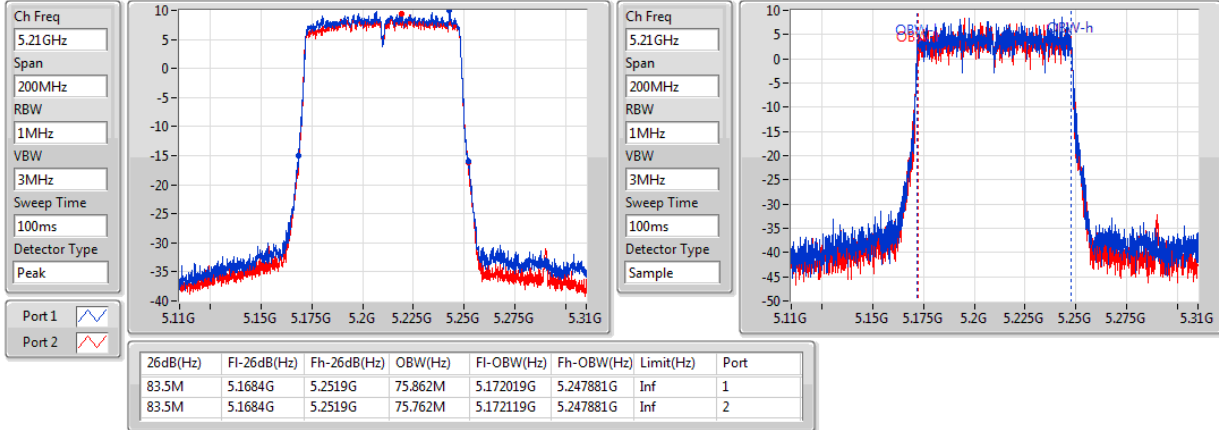
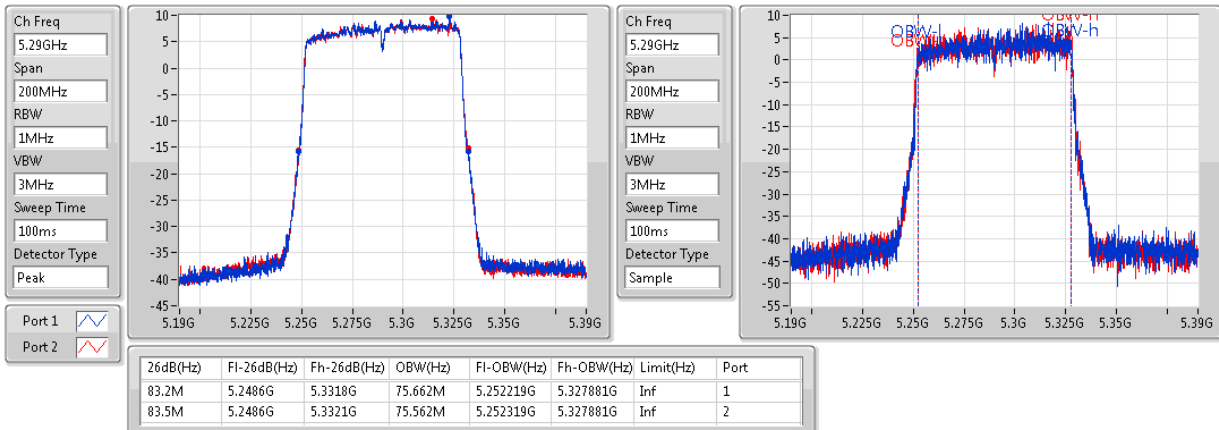
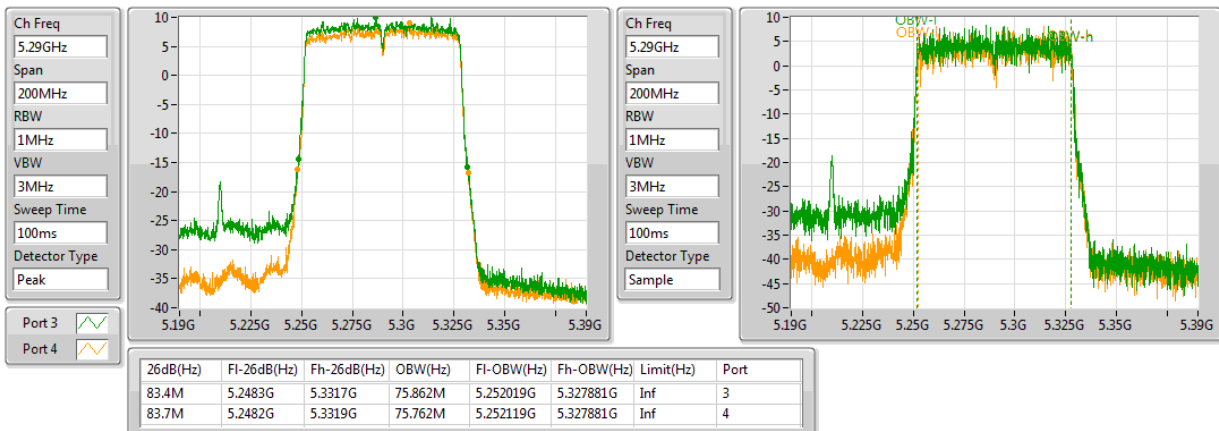
Min-OBW = Minimum 99% occupied bandwidth;

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 VHT80+80_Nss1,(MC S0)_4TX	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	Inf	83.5M	75.862M	83.5M	75.762M				
#5290MHz,5530MHz	Pass	Inf	83.2M	75.662M	83.5M	75.562M				
802.11ac VHT80+80_Nss1,(MC S0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	Inf					83.4M	75.862M	83.7M	75.762M
5290MHz,#5530MHz	Pass	Inf					84M	75.762M	83.6M	75.762M
802.11ac VHT80+80_Nss1,(MC S0)_4TX	-	-	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.47-5.725GHz	Pass	Inf	76.95M	72.489M	76.8M	72.564M				
802.11ac VHT80+80_Nss2,(MC S0)_4TX	-	-	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.725-5.85GHz	Pass	500k	3.075M	44.528M	3.15M	5.922M	75.75M	75.712M	76.275M	75.862M

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

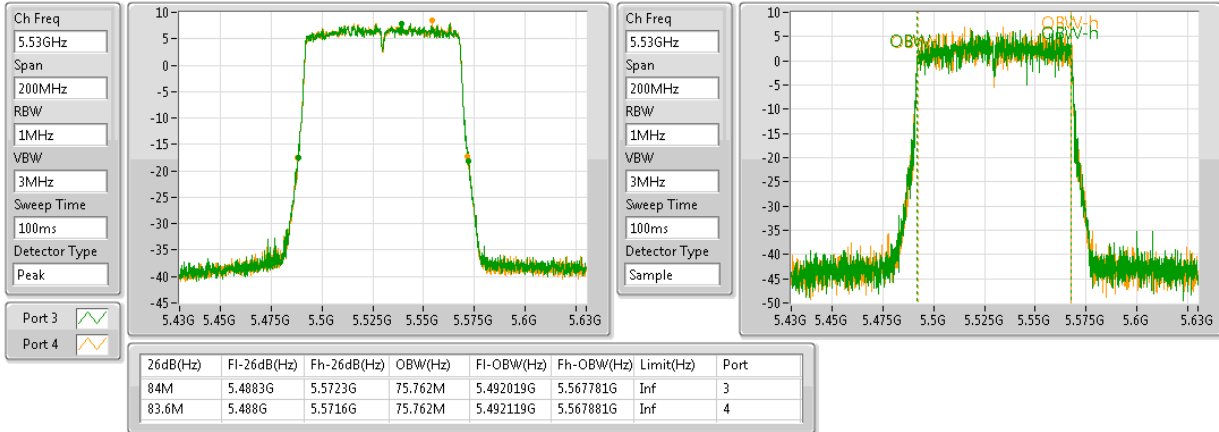
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80_Nss1,(MCS0)_4TX
EBW
#5210MHz,5290MHz

802.11ac VHT80+80_Nss1,(MCS0)_4TX
EBW
#5290MHz,5530MHz

802.11ac VHT80+80_Nss1,(MCS0)_4TX
EBW
5210MHz,#5290MHz


802.11ac VHT80+80_Nss1,(MCS0)_4TX

EBW

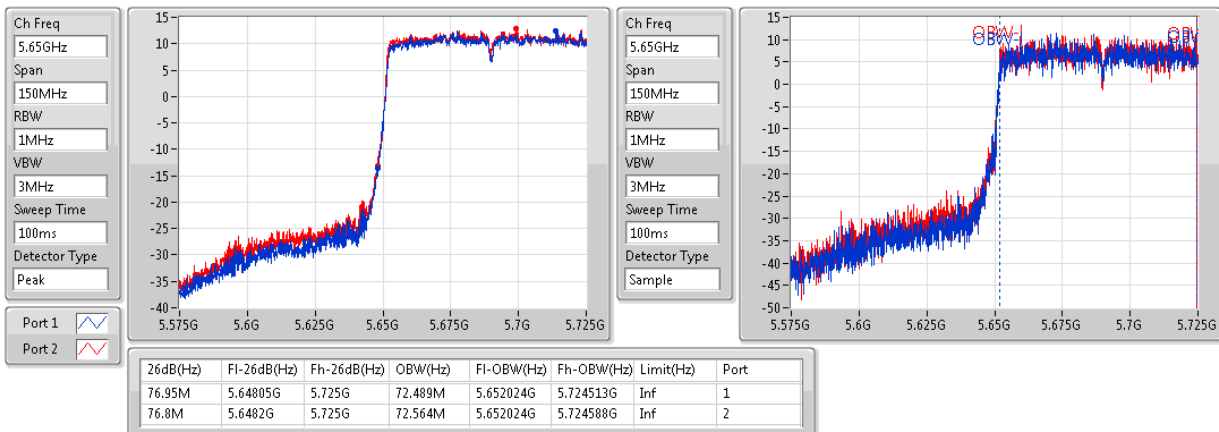
5290MHz,#5530MHz



802.11ac VHT80+80_Nss1,(MCS0)_4TX

EBW

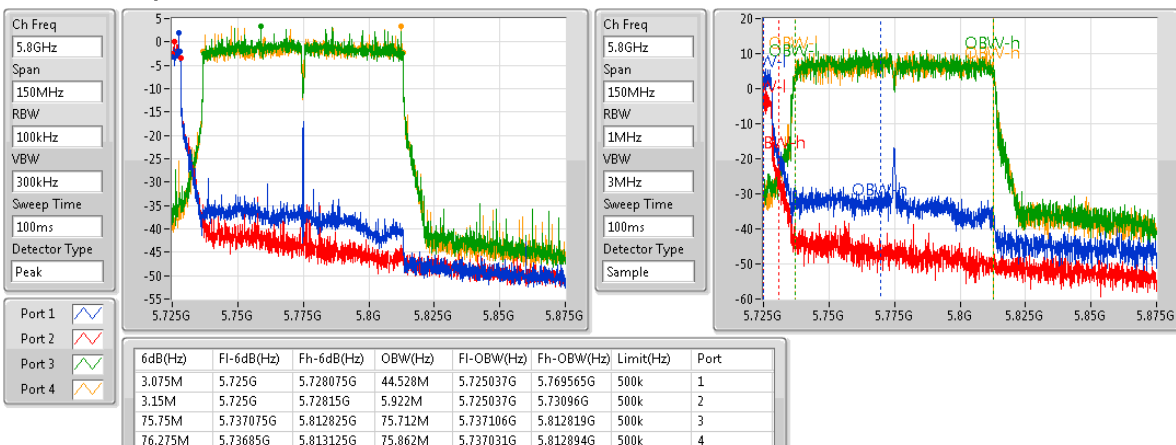
#5690MHz,#5775MHz Straddle 5.47-5.725GHz



802.11ac VHT80+80_Nss2,(MCS0)_4TX

EBW

#5690MHz,#5775MHz Straddle 5.725-5.85GHz



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-
5.15-5.25GHz	82.2M	75.762M	75M8D1D	81.9M	75.662M
5.25-5.35GHz	83.7M	75.862M	75M9D1D	82.6M	75.762M
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-
5.25-5.35GHz	83.9M	75.862M	75M9D1D	82M	75.562MM
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-
5.47-5.725GHz	75.75M	72.564M	72M6D1D	75.15M	72.489M
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-
5.47-5.725GHz	83.9M	75.862M	75M9D1D	83.1M	75.562M
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-
5.725-5.85GHz	74.4M	75.787M	75M8D1D	3.15M	8.921M

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;

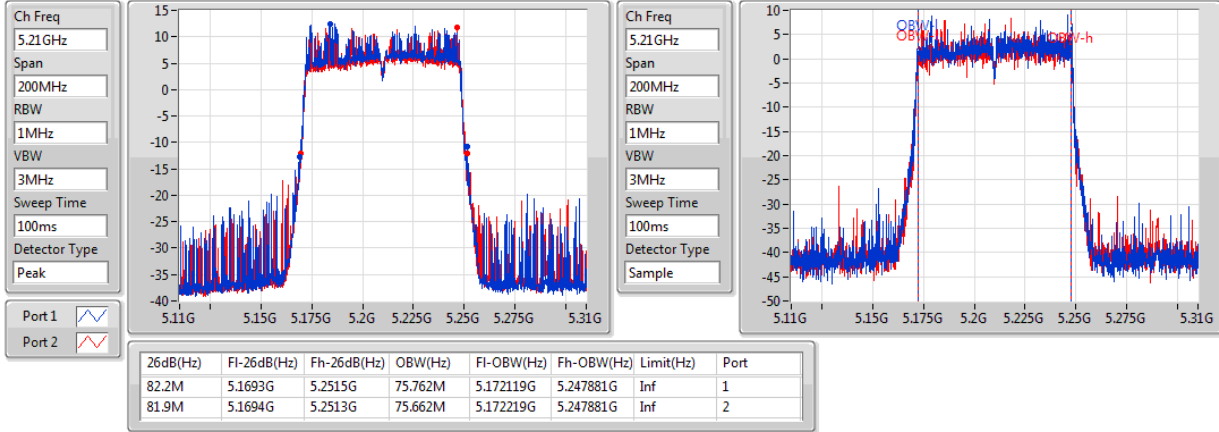
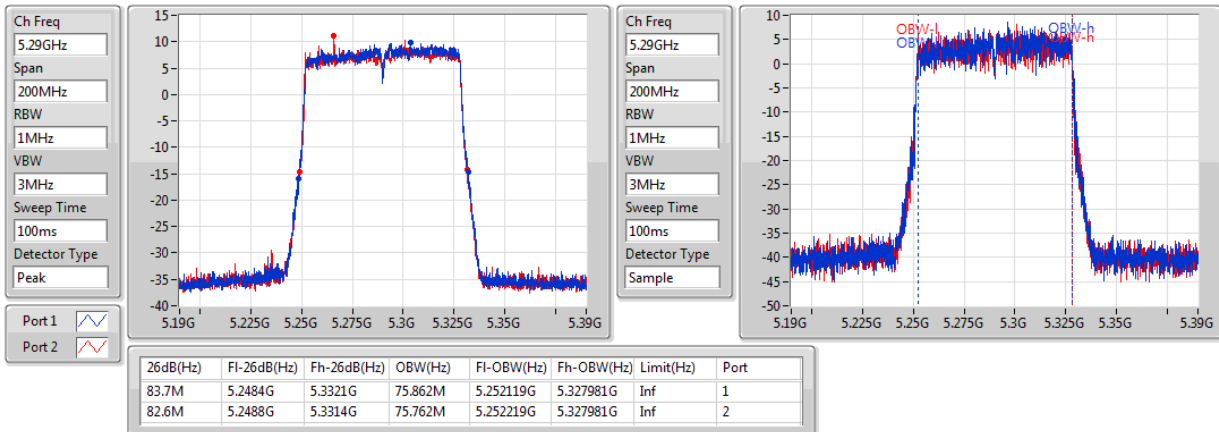
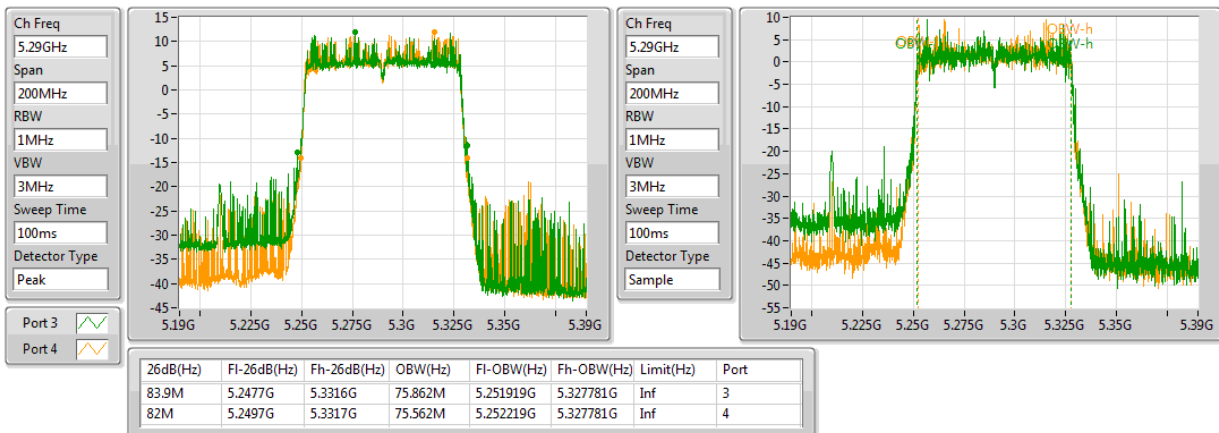
Min-OBW = Minimum 99% occupied bandwidth;

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 VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	Inf	82.2M	75.762M	81.9M	75.662M				
#5290MHz,5530MHz	Pass	Inf	83.7M	75.862M	82.6M	75.762M				
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	Inf					83.9M	75.862M	82M	75.562MM
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.47-5.725GHz	Pass	Inf	75.75M	72.564M	75.15M	72.489M				
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
5290MHz,#5530MHz	Pass	Inf					83.9M	75.862M	83.1M	75.562M
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.725-5.85GHz	Pass	500k	3.15M	32.459M	3.15M	8.921M	74.4M	75.637M	9.075M	75.787M

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

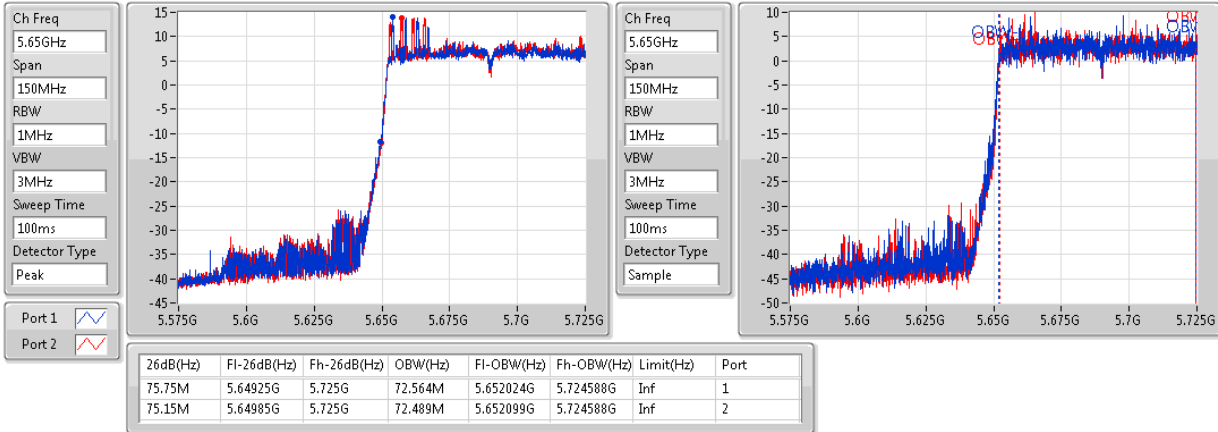
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX
EBW
#5210MHz,5290MHz

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX
EBW
#5290MHz,5530MHz

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX
EBW
5210MHz,#5290MHz


802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

EBW

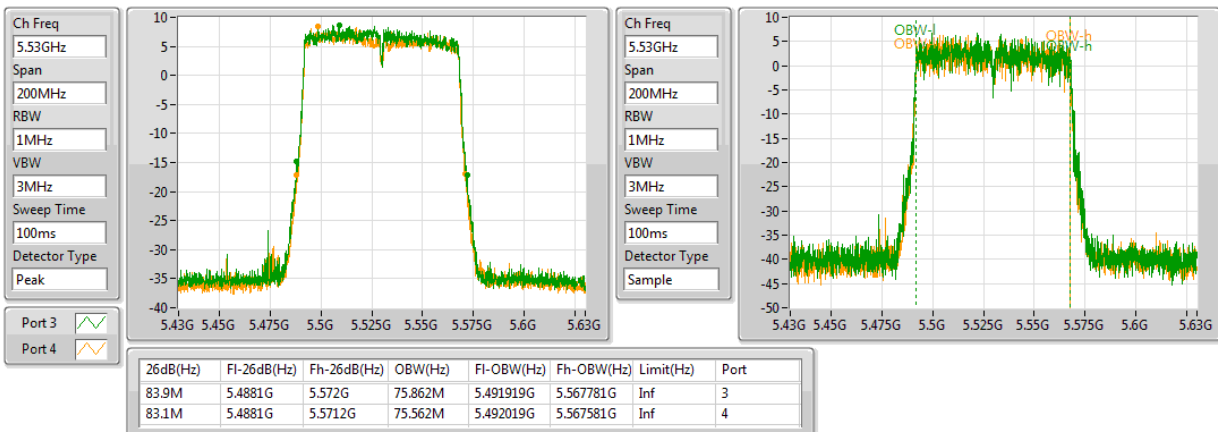
#5690MHz,#5775MHz Straddle 5.47-5.725GHz



802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

EBW

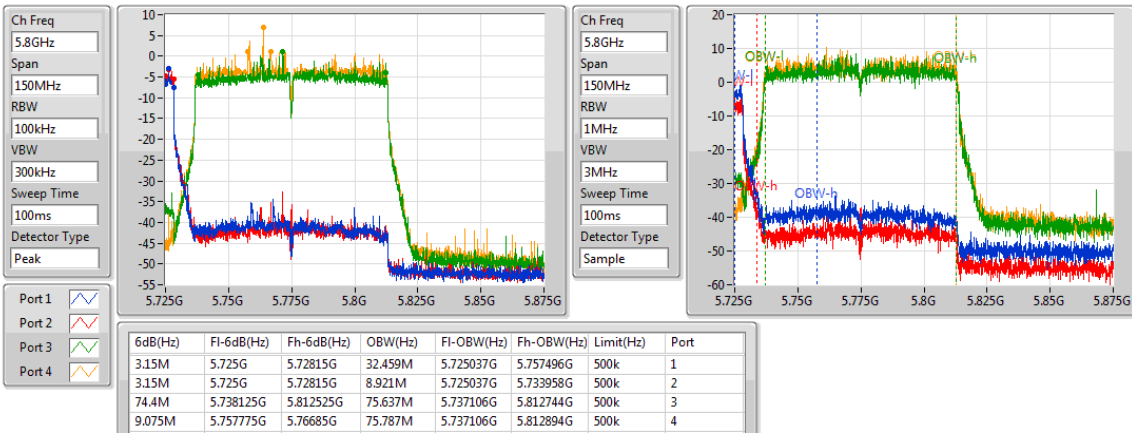
5290MHz,#5530MHz



802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX

EBW

#5690MHz,#5775MHz Straddle 5.725-5.85GHz



Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-
5.15-5.25GHz	21.03	0.12677	22.23	0.16711
5.25-5.35GHz	20.51	0.11246	21.71	0.14825
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	21.02	0.12647	22.22	0.16672
5.47-5.725GHz	19.48	0.08872	20.68	0.11695
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	23.79	0.23933	24.99	0.31550
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-
5.725-5.85GHz	24.18	0.26182	25.38	0.34514



Result

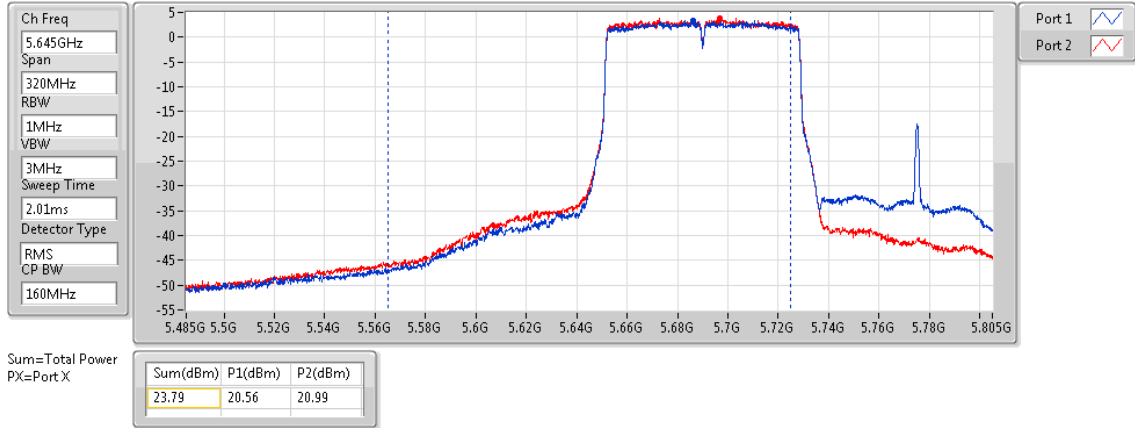
Mode	Result	DG	Port 1	Port 2	Port 3	Port 4	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	1.20	18.31	17.71			21.03	30.00
#5290MHz,5530MHz	Pass	1.20	17.52	17.47			20.51	23.98
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	1.20			18.45	17.52	21.02	23.98
5290MHz,#5530MHz	Pass	1.20			16.44	16.50	19.48	23.98
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.47-5.725GHz	Pass	1.20	20.56	20.99			23.79	23.98
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.725-5.85GHz	Pass	1.20	6.76	7.25	21.11	20.88	24.18	30.00

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

802.11ac VHT80+80_Nss1,(MCS0)_4TX

AV Power

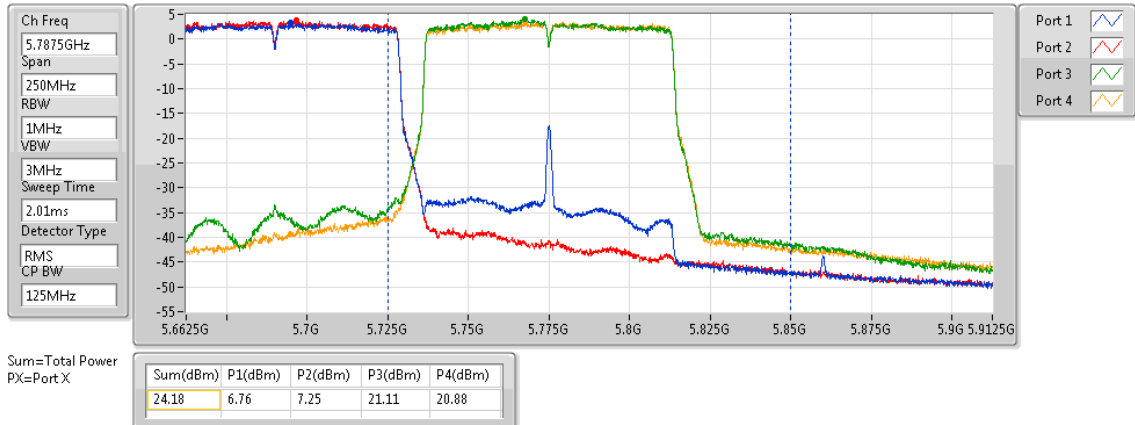
#5690MHz,#5775MHz Straddle 5.47-5.725GHz



802.11ac VHT80+80_Nss2,(MCS0)_4TX

AV Power

#5690MHz,#5775MHz Straddle 5.725-5.85GHz



**Summary**

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-
5.15-5.25GHz	19.87	0.09705	24.08	0.25586
5.25-5.35GHz	19.99	0.09977	24.20	0.26303
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-
5.25-5.35GHz	19.73	0.09397	23.94	0.24774
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-
5.47-5.725GHz	20.81	0.12050	25.02	0.31769
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-
5.47-5.725GHz	19.47	0.08851	23.68	0.23335
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX	-	-	-	-
5.725-5.85GHz	20.62	0.11535	24.83	0.30409



Result

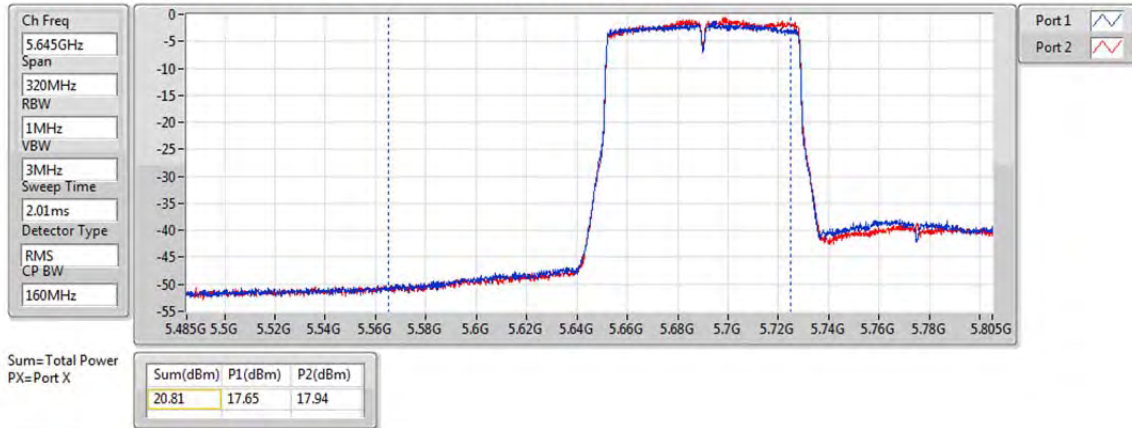
Mode	Result	DG	Port 1	Port 2	Port 3	Port 4	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	4.21	16.65	17.06			19.87	30.00
#5290MHz,5530MHz	Pass	4.21	16.74	17.2			19.99	23.98
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	4.21			16.63	16.81	19.73	23.98
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.47-5.725GHz	Pass	4.21	17.65	17.94			20.81	23.98
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5290MHz,#5530MHz	Pass	4.21			16.34	16.58	19.47	23.98
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.725-5.85GHz	Pass	4.21	4.01	3.92	17.23	17.6	20.62	30.00

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

802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX

AV Power

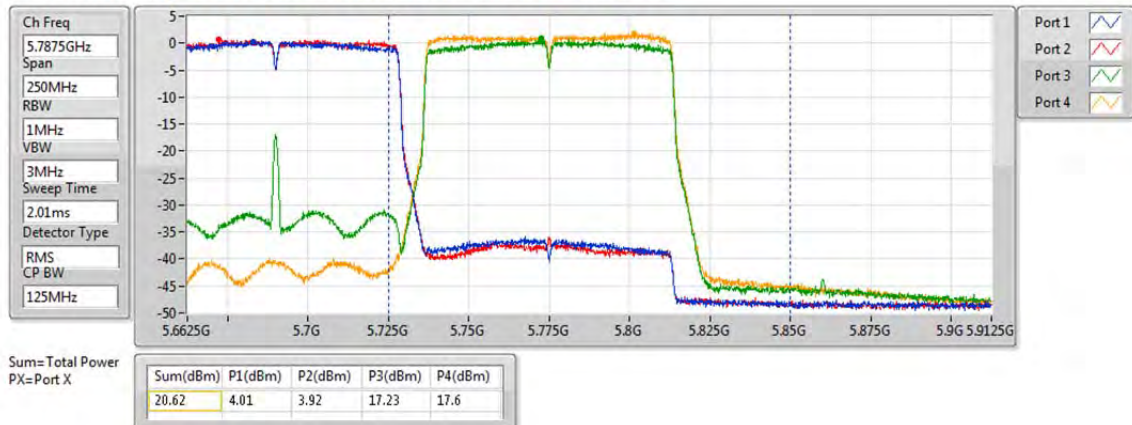
#5690MHz,#5775MHz Straddle 5.47-5.725GHz



802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX

AV Power

#5690MHz,#5775MHz Straddle 5.725-5.85GHz



Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	2.77	6.98
5.25-5.35GHz	1.66	5.87
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-
5.25-5.35GHz	2.33	6.54
5.47-5.725GHz	0.50	4.71
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-
5.47-5.725GHz	5.05	9.26
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-
5.725-5.85GHz	3.85	8.06

RBW = 500kHz 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 VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	4.21	-0.72	-1.10			2.77	17.00
#5290MHz,5530MHz	Pass	4.21	-1.01	-1.09			1.66	11.00
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	4.21			-0.49	-1.49	2.33	11.00
5290MHz,#5530MHz	Pass	4.21			-2.47	-2.33	0.50	11.00
802.11ac VHT80+80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.47-5.725GHz	Pass	4.21	2.02	2.18			5.05	11.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.725-5.85GHz	Pass	4.21	-0.79	-0.22	1.27	0.82	3.85	30.00

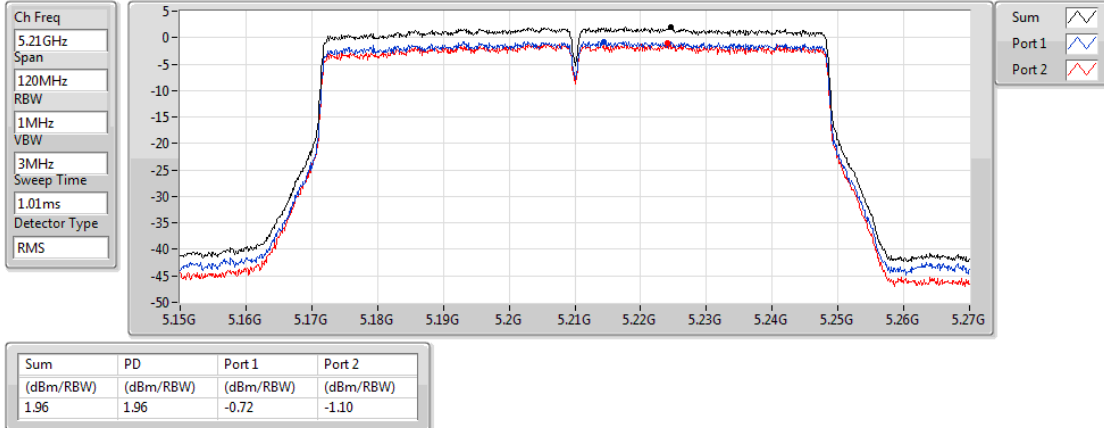
DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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

802.11ac VHT80+80_Nss1,(MCS0)_4TX

PSD

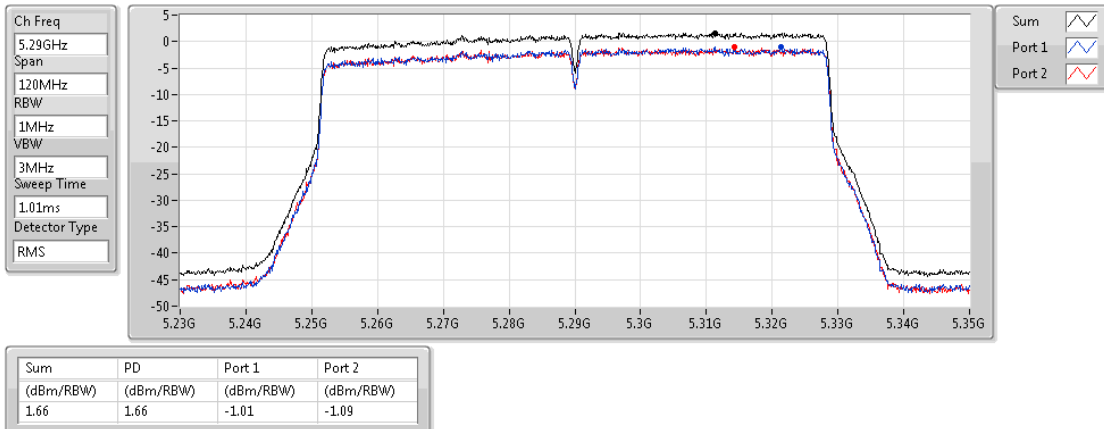
#5210MHz,5290MHz



802.11ac VHT80+80_Nss1,(MCS0)_4TX

PSD

#5290MHz,5530MHz



802.11ac VHT80+80_Nss1,(MCS0)_4TX

PSD

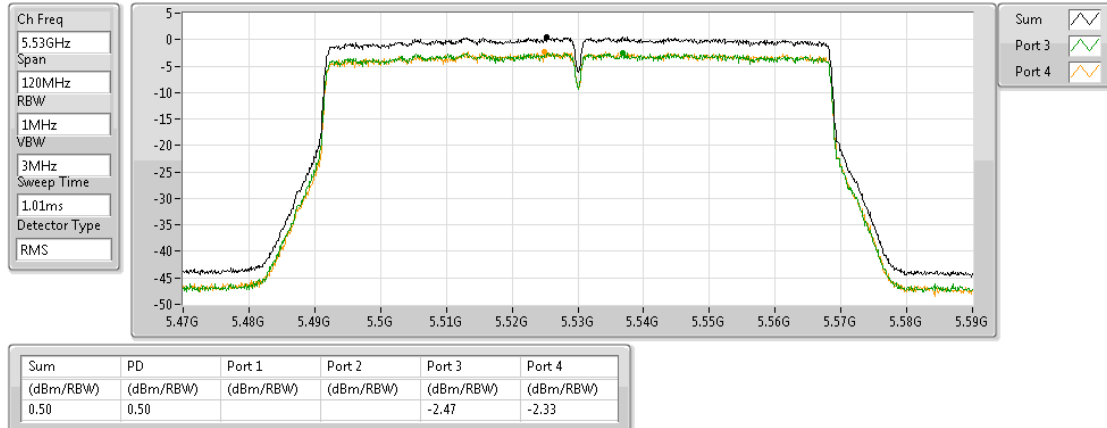
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802.11ac VHT80+80_Nss1,(MCS0)_4TX

PSD

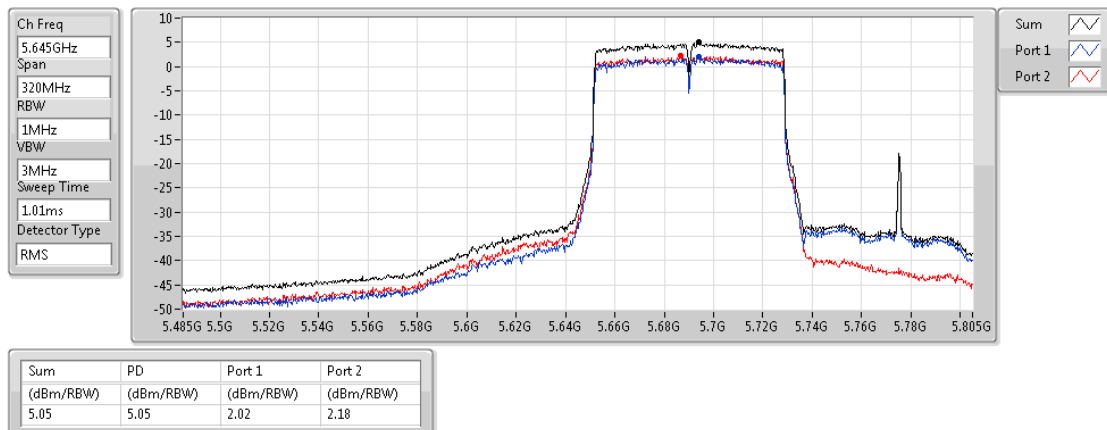
5290MHz,#5530MHz



802.11ac VHT80+80_Nss1,(MCS0)_4TX

PSD

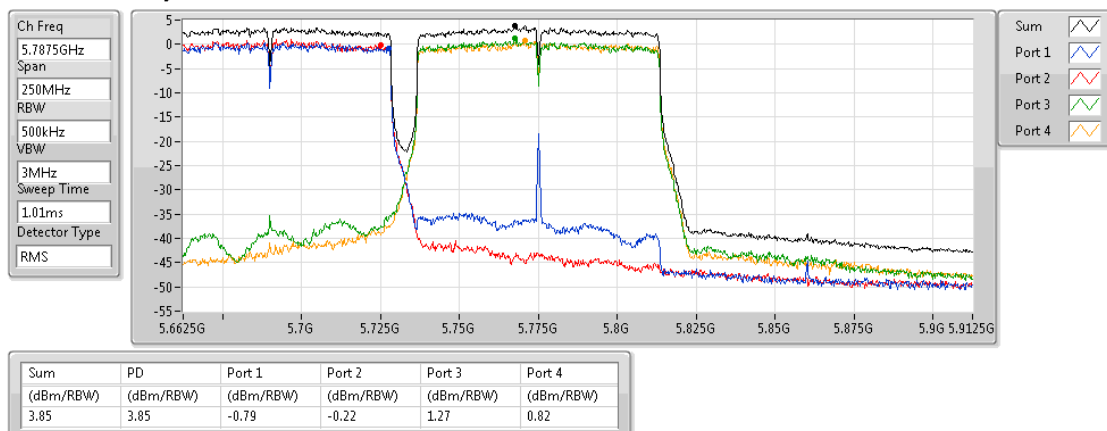
#5690MHz,#5775MHz Straddle 5.47-5.725GHz



802.11ac VHT80+80_Nss2,(MCS0)_4TX

PSD

#5690MHz,#5775MHz Straddle 5.725-5.85GHz



**Summary**

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-
5.15-5.25GHz	1.97	6.18
5.25-5.35GHz	-0.31	3.90
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-
5.25-5.35GHz	1.47	5.68
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-
5.47-5.725GHz	1.63	5.84
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-
5.47-5.725GHz	-1.3	2.91
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX	-	-
5.725-5.85GHz	0.95	5.16

RBW = 500kHz 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 VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	4.21	-0.06	-0.14			1.97	17.00
#5290MHz,5530MHz	Pass	4.21	-2.23	-3.03			-0.31	11.00
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	4.21			-0.17	-0.91	1.47	11.00
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.47-5.725GHz	Pass	4.21	-0.6	-0.71			1.63	11.00
802.11ac VHT80+80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5290MHz,#5530MHz	Pass	4.21			-3.53	-4.13	-1.30	11.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
#5690MHz,#5775MHz Straddle 5.725-5.85GHz	Pass	4.21	-3.41	-3.56	-1.80	-1.35	0.95	30.00

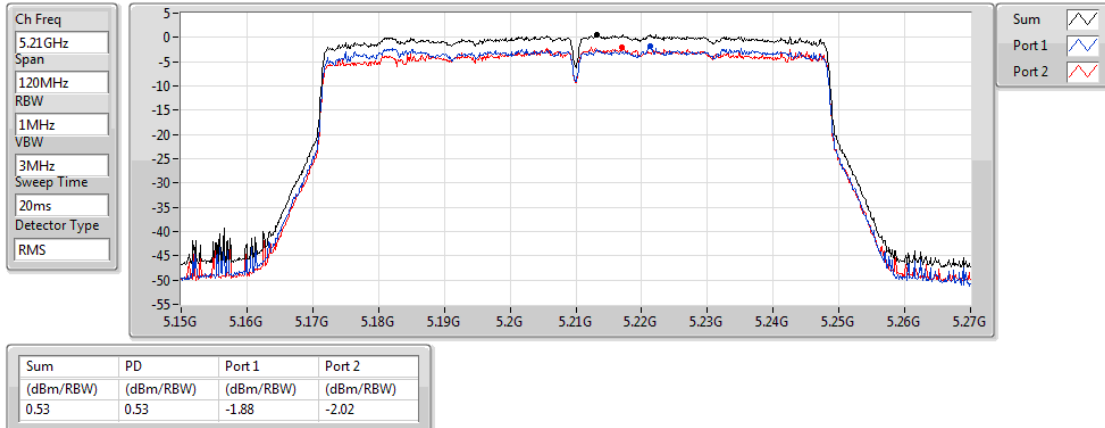
DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

PSD

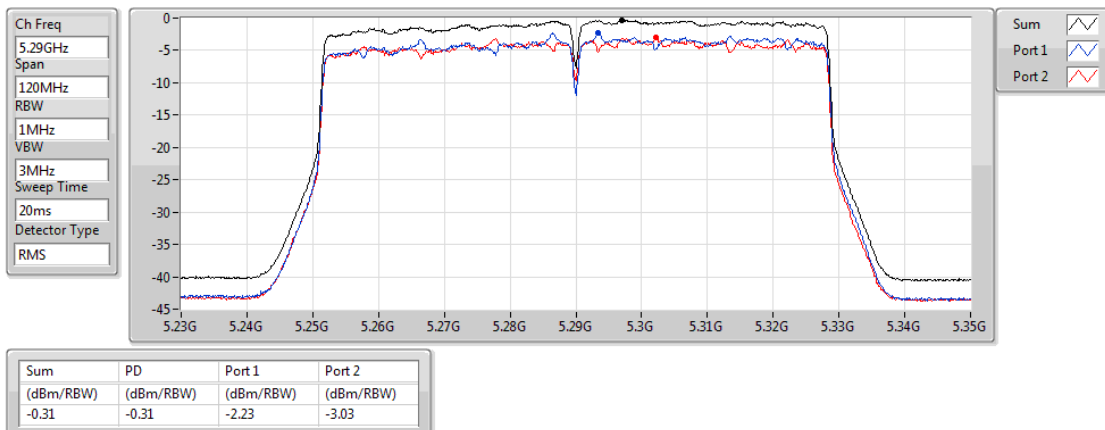
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802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

PSD

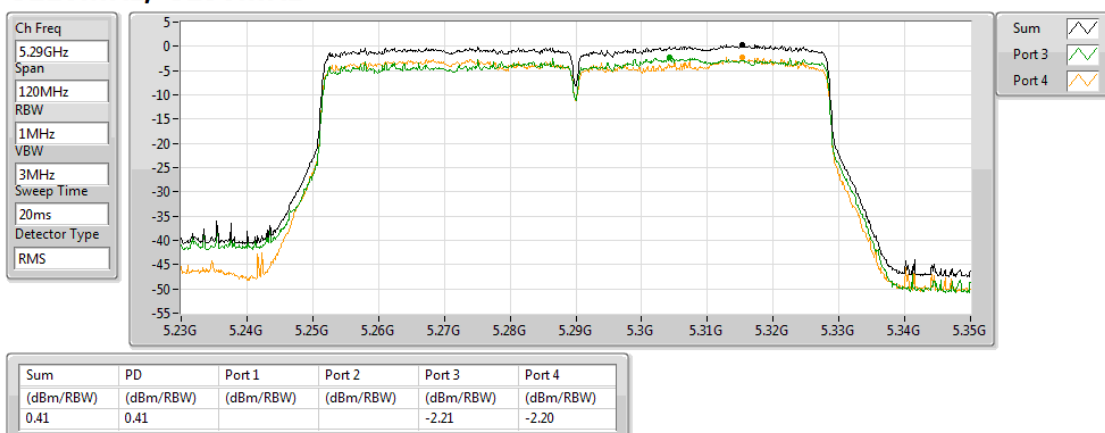
#5290MHz,5530MHz



802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

PSD

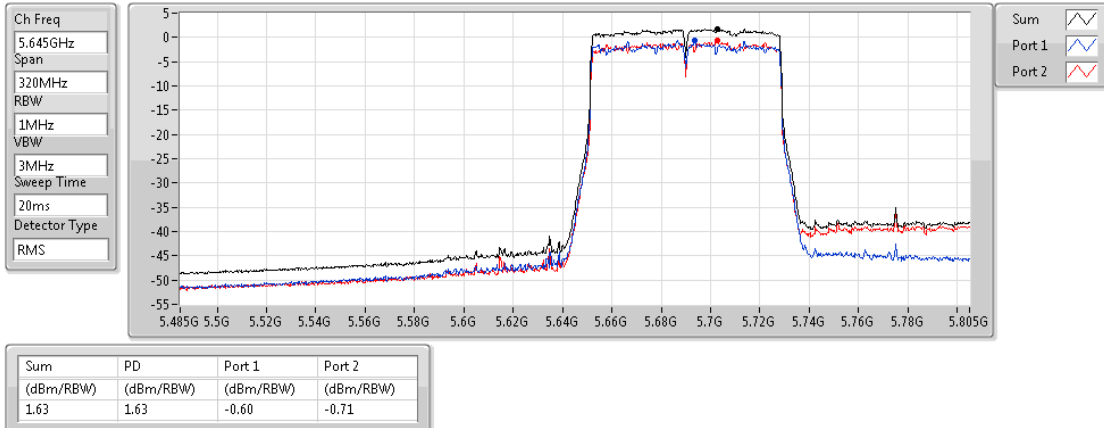
5210MHz,#5290MHz



802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

PSD

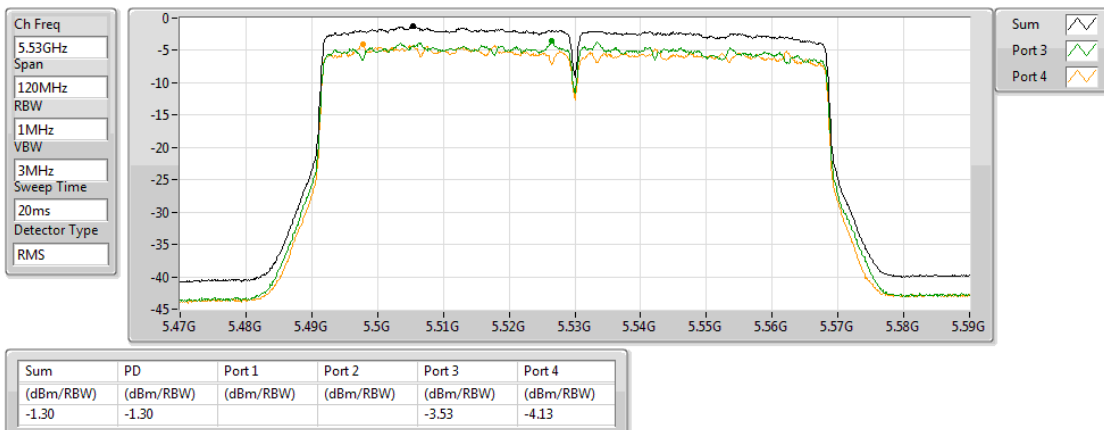
#5690MHz,#5775MHz Straddle 5.47-5.725GHz



802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

PSD

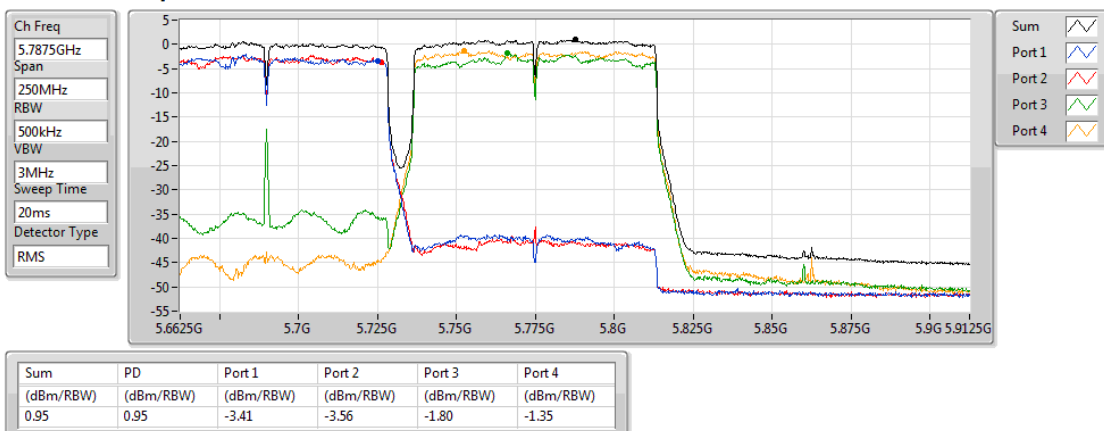
5290MHz,#5530MHz



802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX

PSD

#5690MHz,#5775MHz Straddle 5.725-5.85GHz





RSE TX above 1GHz Result

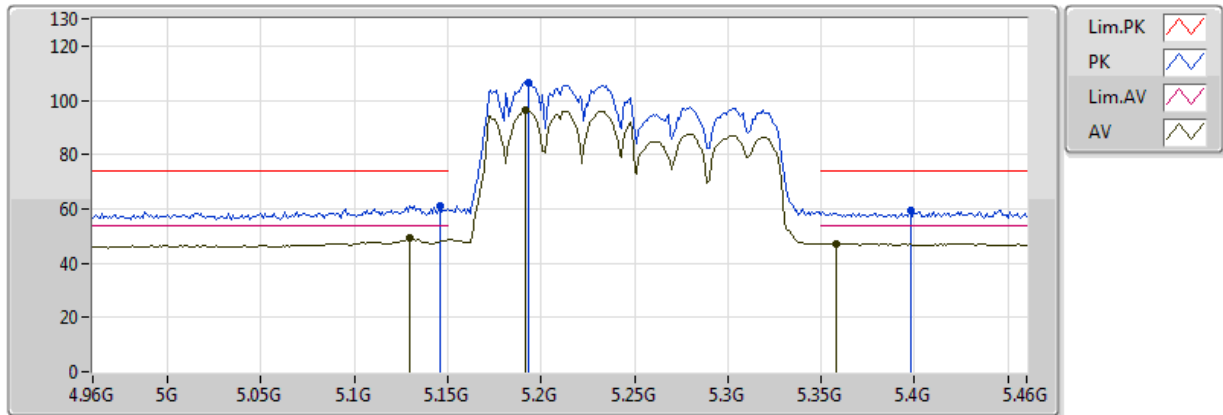
Appendix D

Summary

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+80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
5210,#5290	Pass	PK	5.377G	53.96	54.00	-0.04	9.39	3	V	176	1.35	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5210MHz,5290MHz_TX

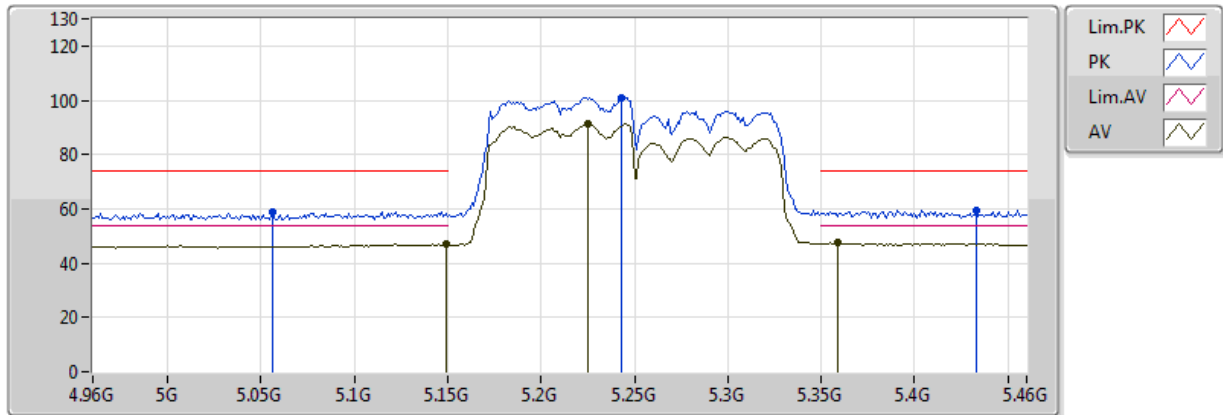


20170508
EUT Y 4TX
Setting 18
02-Z-1-10
FSU(100015)
Non-TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.13G	49.08	54.00	-4.92	8.88	3	V	360	1.50	-
AV	5.192G	96.58	Inf	-Inf	9.04	3	V	360	1.50	-
AV	5.358G	47.33	54.00	-6.67	9.35	3	V	360	1.50	-
PK	5.146G	61.13	74.00	-12.87	8.92	3	V	360	1.50	-
PK	5.193G	106.51	Inf	-Inf	9.04	3	V	360	1.50	-
PK	5.398G	59.32	74.00	-14.68	9.43	3	V	360	1.50	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5210MHz,5290MHz_TX

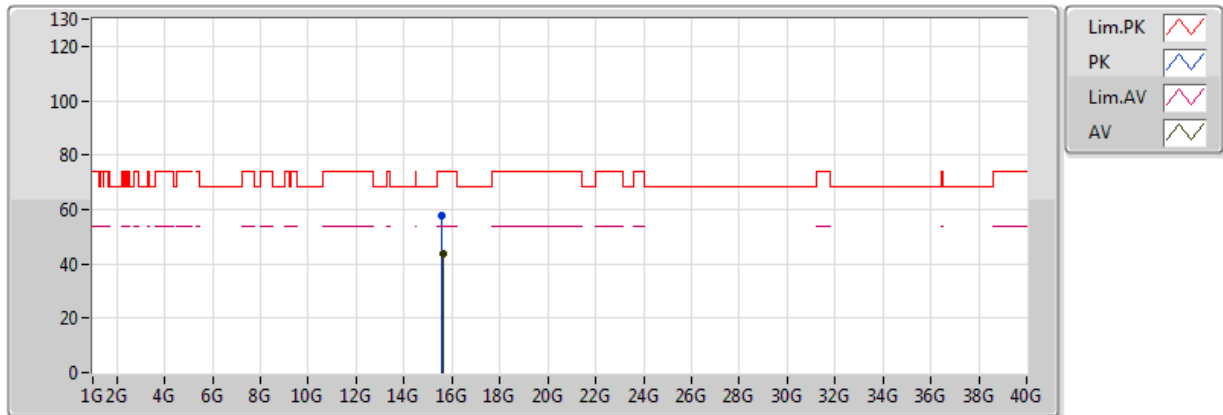


20170508
EUT Y 4TX
Setting 18
02-Z-1-10
FSU(100015)
Non-TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.149G	46.92	54.00	-7.08	8.93	3	H	234	1.53	-
AV	5.225G	91.38	Inf	-Inf	9.11	3	H	234	1.53	-
AV	5.359G	47.45	54.00	-6.55	9.36	3	H	234	1.53	-
PK	5.056G	59.00	74.00	-15.00	8.68	3	H	234	1.53	-
PK	5.243G	100.86	Inf	-Inf	9.14	3	H	234	1.53	-
PK	5.433G	59.65	74.00	-14.35	9.52	3	H	234	1.53	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5210MHz,5290MHz_TX

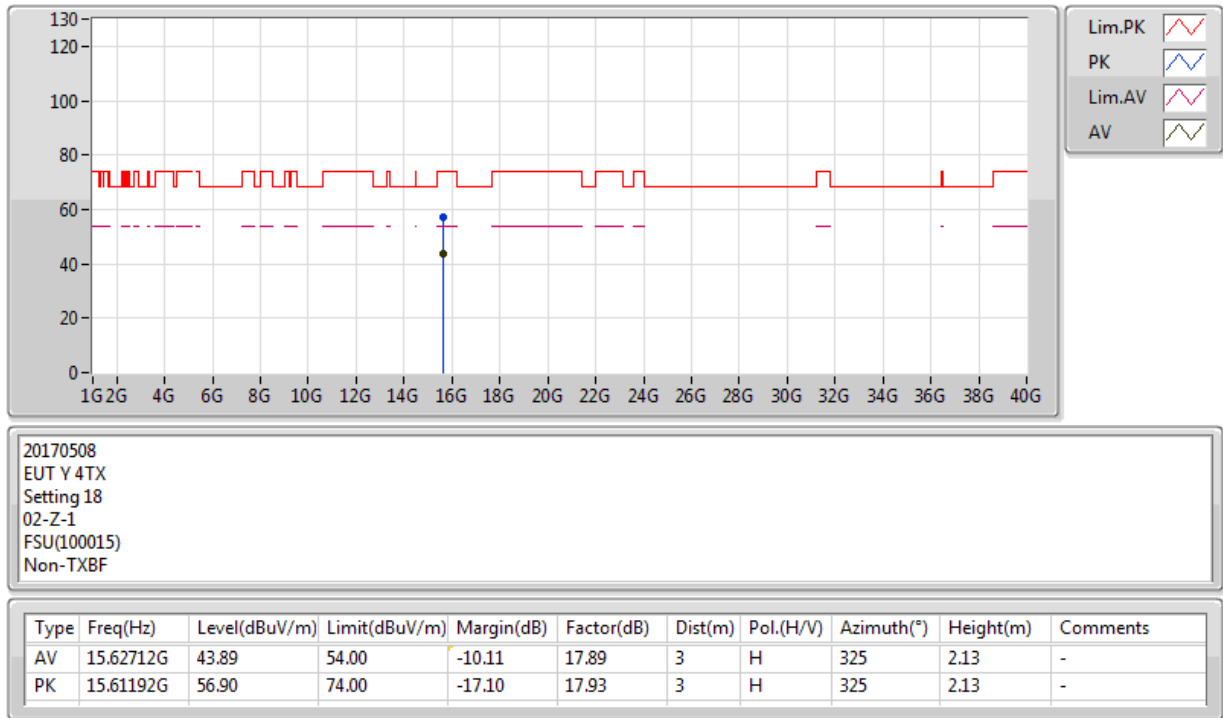


20170508
EUT Y 4TX
Setting 18
02-Z-1
FSU(100015)
Non-TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.61688G	43.81	54.00	-10.19	17.91	3	V	230	2.18	-
PK	15.59128G	57.53	74.00	-16.47	17.98	3	V	230	2.18	-

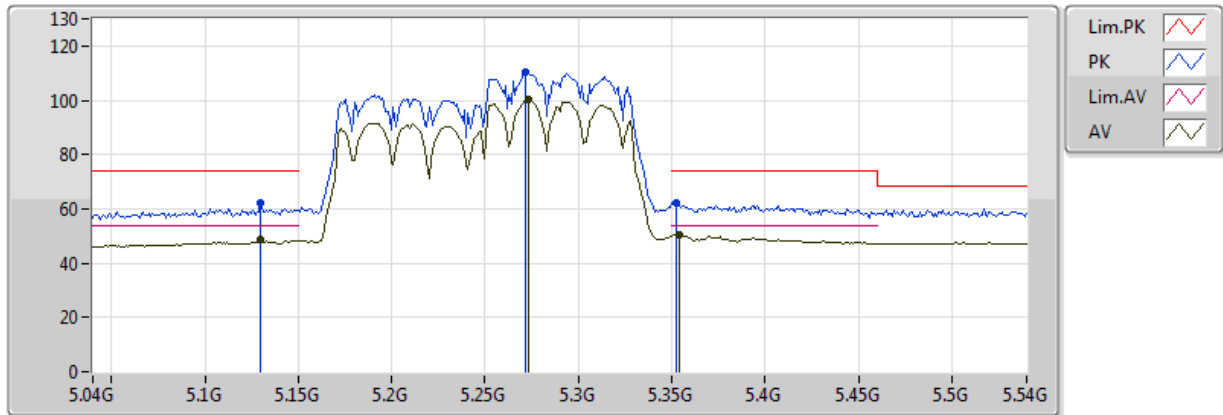
802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5210MHz,5290MHz_TX



802.11ac VHT80+80_Nss1,(MCS0)_4TX

5210MHz,#5290MHz_TX

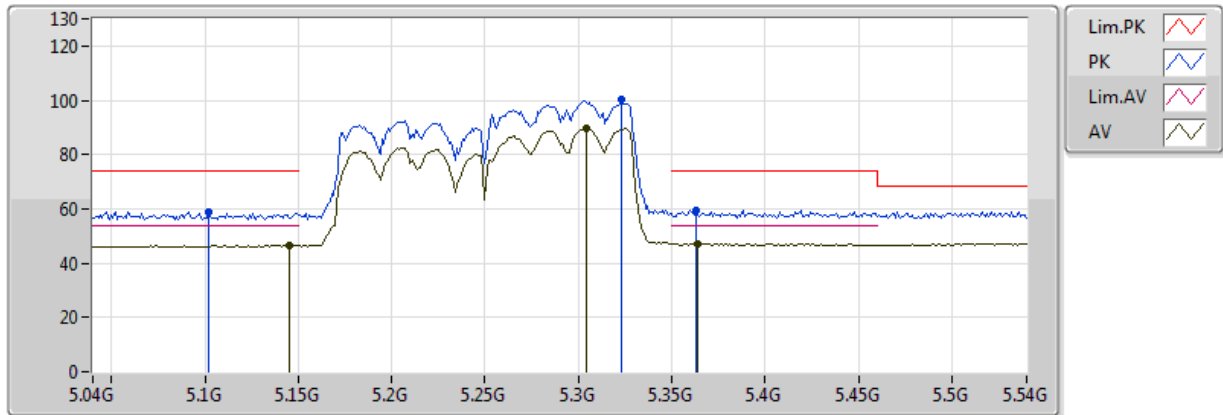


20170508
EUT Y 4TX
Setting 18
02-Z-1-10
FSU(100015)
Non-TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.13G	48.97	54.00	-5.03	8.88	3	V	199	2.40	-
AV	5.273G	100.50	Inf	-Inf	9.20	3	V	199	2.40	-
AV	5.354G	50.47	54.00	-3.53	9.35	3	V	199	2.40	-
PK	5.13G	62.13	74.00	-11.87	8.88	3	V	199	2.40	-
PK	5.272G	110.15	Inf	-Inf	9.20	3	V	199	2.40	-
PK	5.352G	62.45	74.00	-11.55	9.34	3	V	199	2.40	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5210MHz,#5290MHz_TX

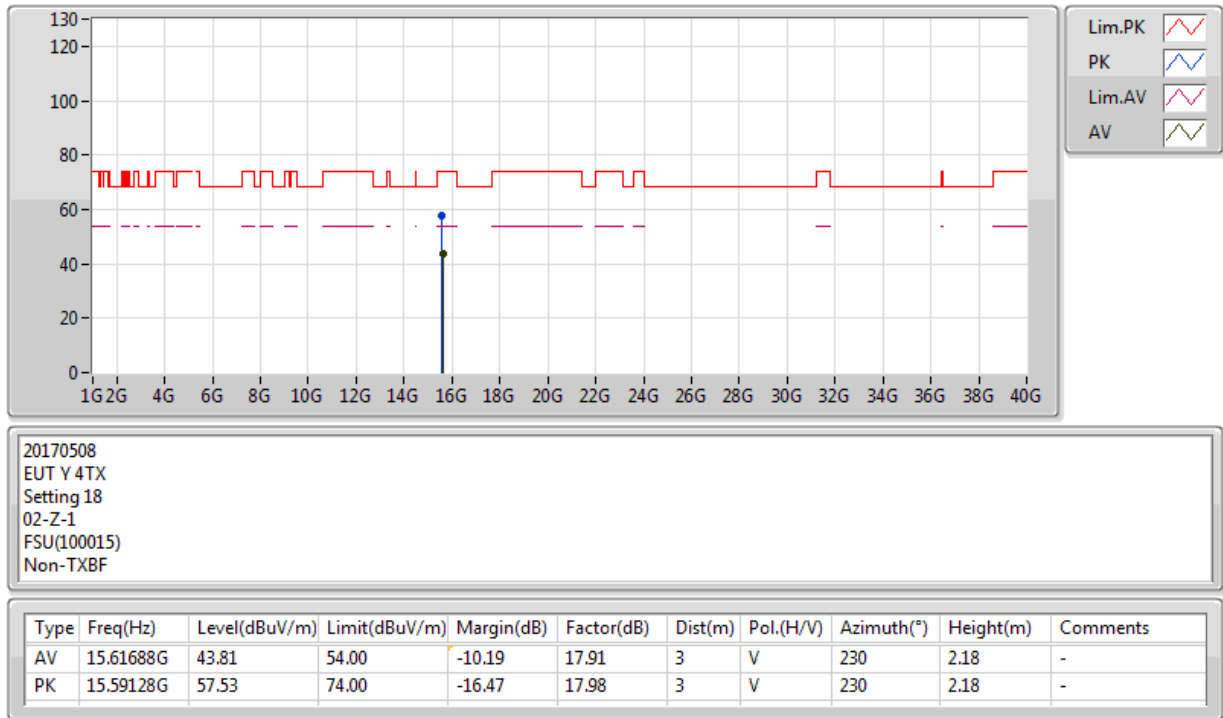


20170508
EUT Y 4TX
Setting 18
02-Z-1-10
FSU(100015)
Non-TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.145G	46.58	54.00	-7.42	8.92	3	H	198	1.49	-
AV	5.304G	89.72	Inf	-Inf	9.26	3	H	198	1.49	-
AV	5.364G	47.26	54.00	-6.74	9.37	3	H	198	1.49	-
PK	5.102G	58.99	74.00	-15.01	8.81	3	H	198	1.49	-
PK	5.323G	100.06	Inf	-Inf	9.29	3	H	198	1.49	-
PK	5.363G	59.66	74.00	-14.34	9.36	3	H	198	1.49	-

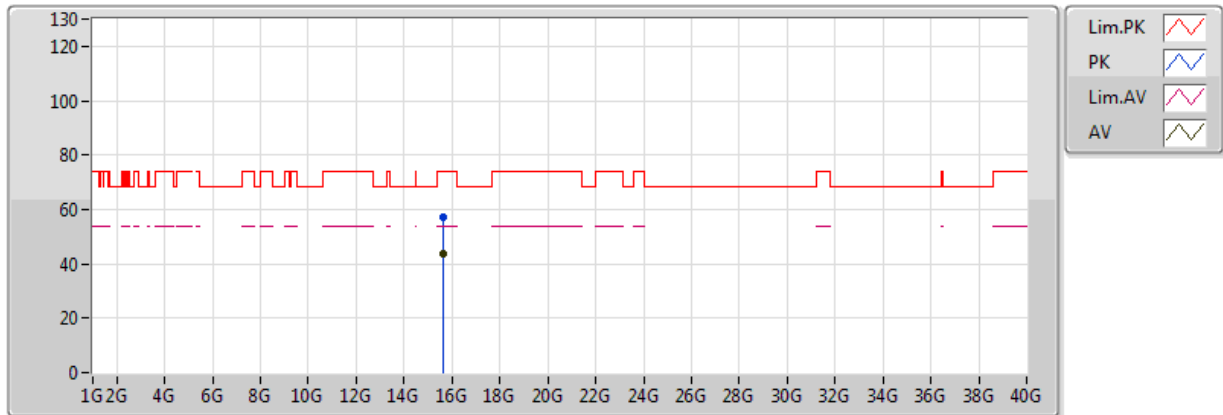
802.11ac VHT80+80_Nss1,(MCS0)_4TX

5210MHz,#5290MHz_TX



802.11ac VHT80+80_Nss1,(MCS0)_4TX

5210MHz,#5290MHz_TX

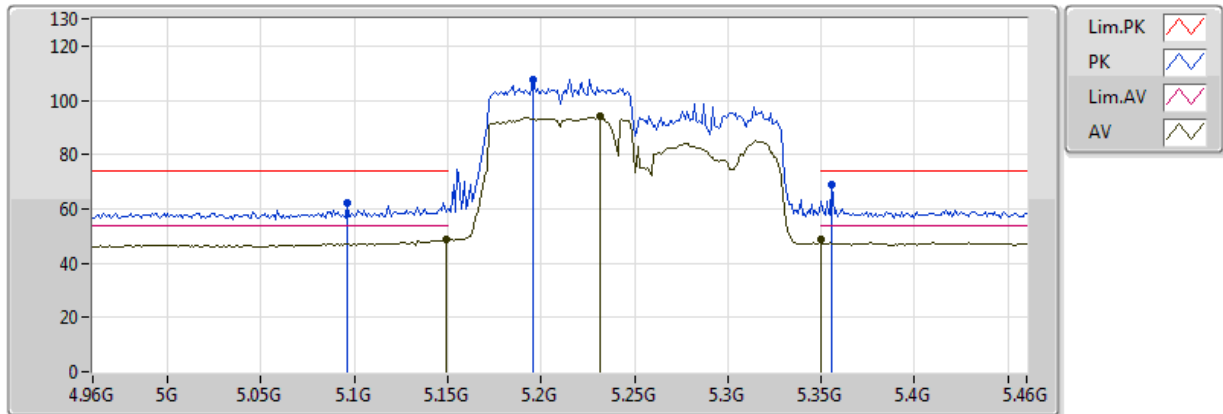


20170508
EUT Y 4TX
Setting 18
02-Z-1
FSU(100015)
Non-TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.62712G	43.89	54.00	-10.11	17.89	3	H	325	2.13	-
PK	15.61192G	56.90	74.00	-17.10	17.93	3	H	325	2.13	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5210MHz,5290MHz_TX

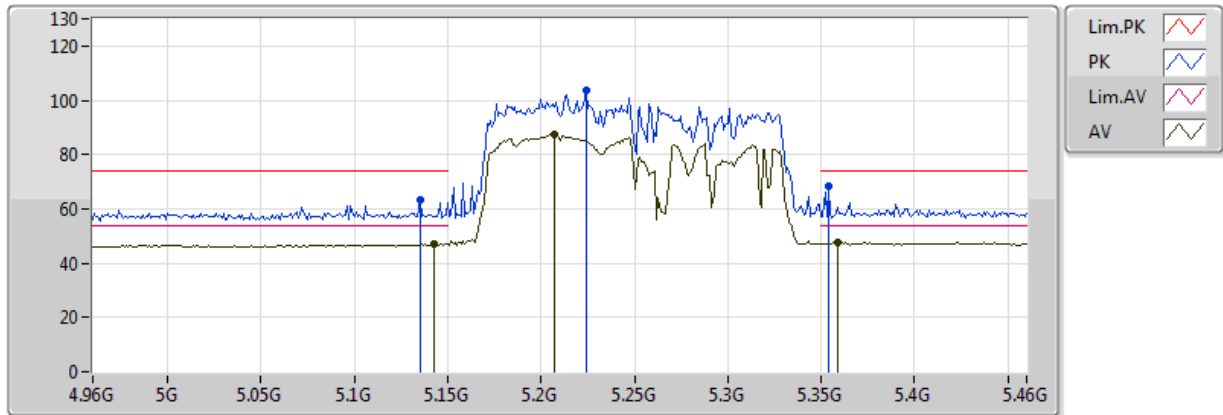


20170509
EUT Y 4TX
Setting 21.5
02-Z-1-10
FSU(100015)
TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.149G	48.69	54.00	-5.31	8.93	3	V	360	1.30	-
AV	5.232G	94.27	Inf	-Inf	9.12	3	V	360	1.30	-
AV	5.350005G	48.50	54.00	-5.50	9.34	3	V	360	1.30	-
PK	5.096G	62.40	74.00	-11.60	8.79	3	V	360	1.30	-
PK	5.196G	107.78	Inf	-Inf	9.05	3	V	360	1.30	-
PK	5.356G	68.77	74.00	-5.23	9.35	3	V	360	1.30	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5210MHz,5290MHz_TX

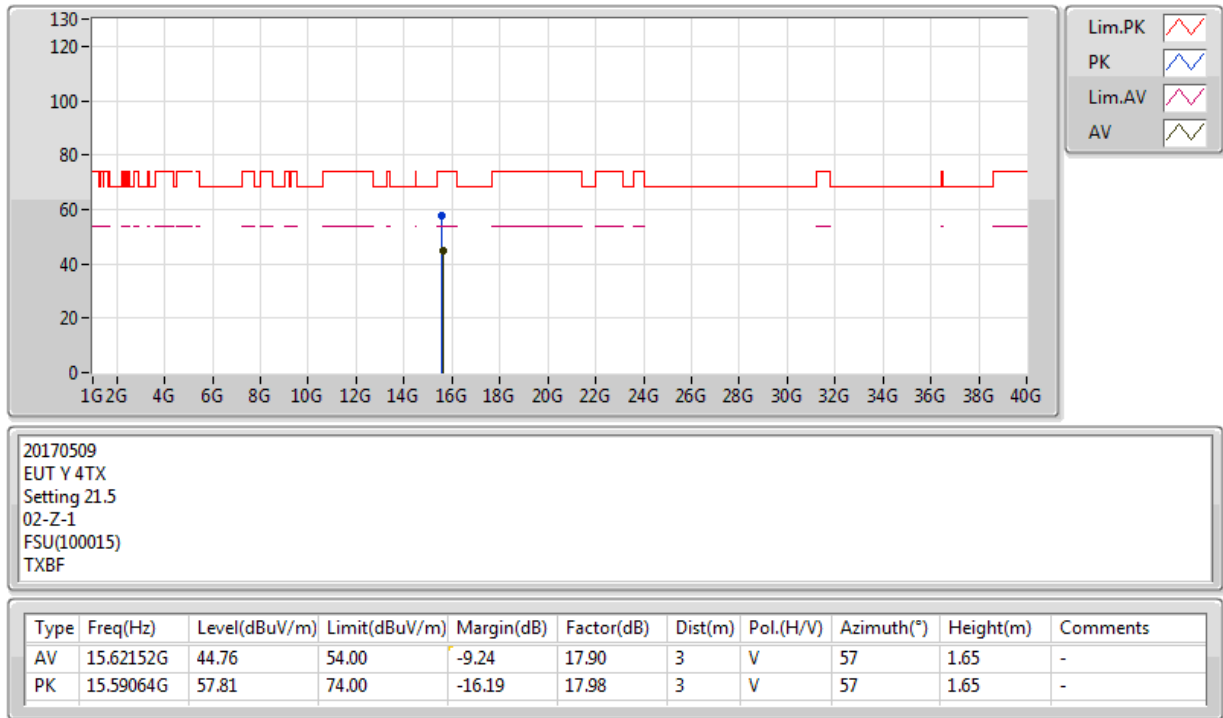


20170509
EUT Y 4TX
Setting 21.5
02-Z-1-10
FSU(100015)
TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.143G	47.29	54.00	-6.71	8.91	3	H	224	1.64	-
AV	5.207G	87.69	Inf	-Inf	9.07	3	H	224	1.64	-
AV	5.359G	47.78	54.00	-6.22	9.36	3	H	224	1.64	-
PK	5.135G	63.54	74.00	-10.46	8.89	3	H	224	1.64	-
PK	5.224G	103.65	Inf	-Inf	9.11	3	H	224	1.64	-
PK	5.354G	68.44	74.00	-5.56	9.35	3	H	224	1.64	-

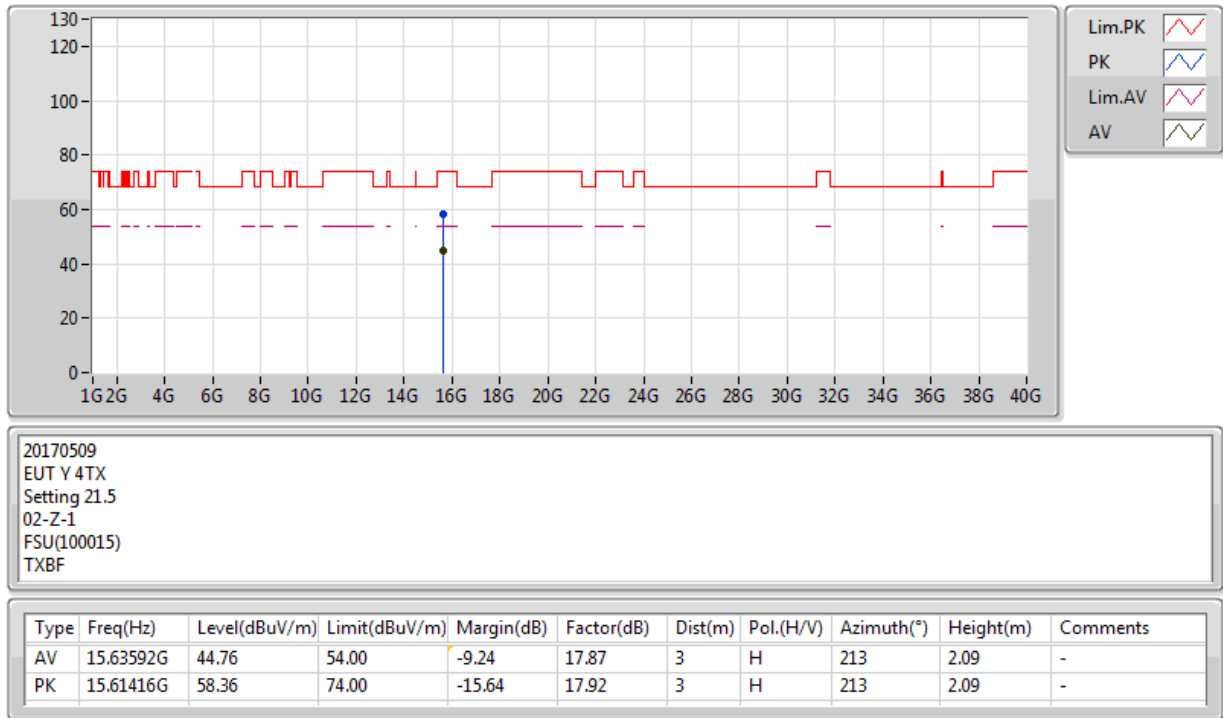
802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5210MHz,5290MHz_TX



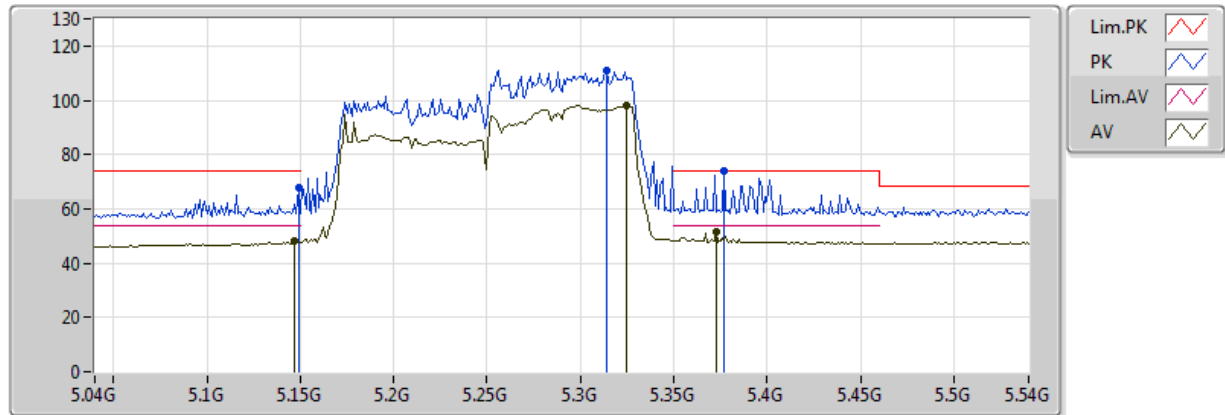
802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5210MHz,5290MHz_TX



802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5210MHz,#5290MHz_TX

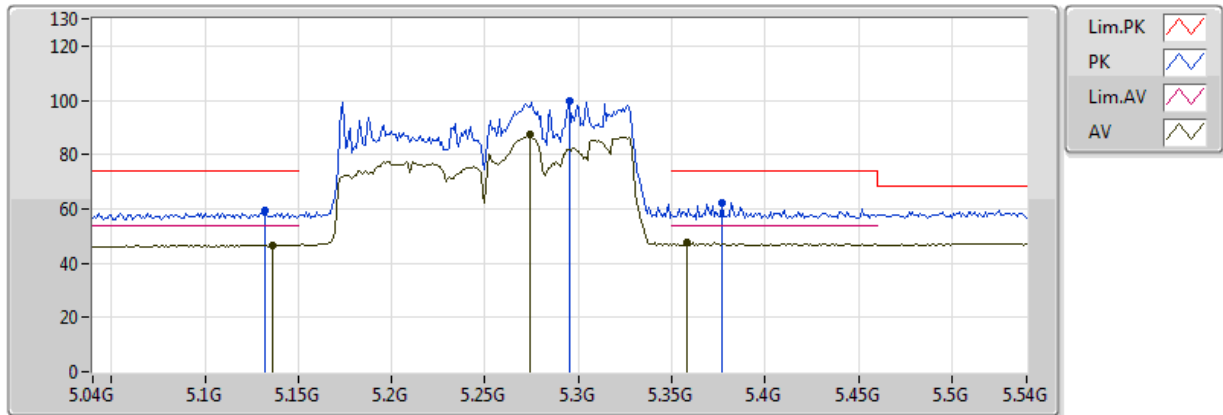


20170509
EUT Y 4TX
Setting 21.5
02-Z-1-10
FSU(100015)
TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.147G	48.37	54.00	-5.63	8.92	3	V	176	1.35	-
AV	5.325G	97.85	Inf	-Inf	9.29	3	V	176	1.35	-
AV	5.373G	51.30	54.00	-2.70	9.38	3	V	176	1.35	-
PK	5.149G	67.91	74.00	-6.09	8.93	3	V	176	1.35	-
PK	5.314G	111.15	Inf	-Inf	9.28	3	V	176	1.35	-
PK	5.377G	73.96	74.00	-0.04	9.39	3	V	176	1.35	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5210MHz,#5290MHz_TX

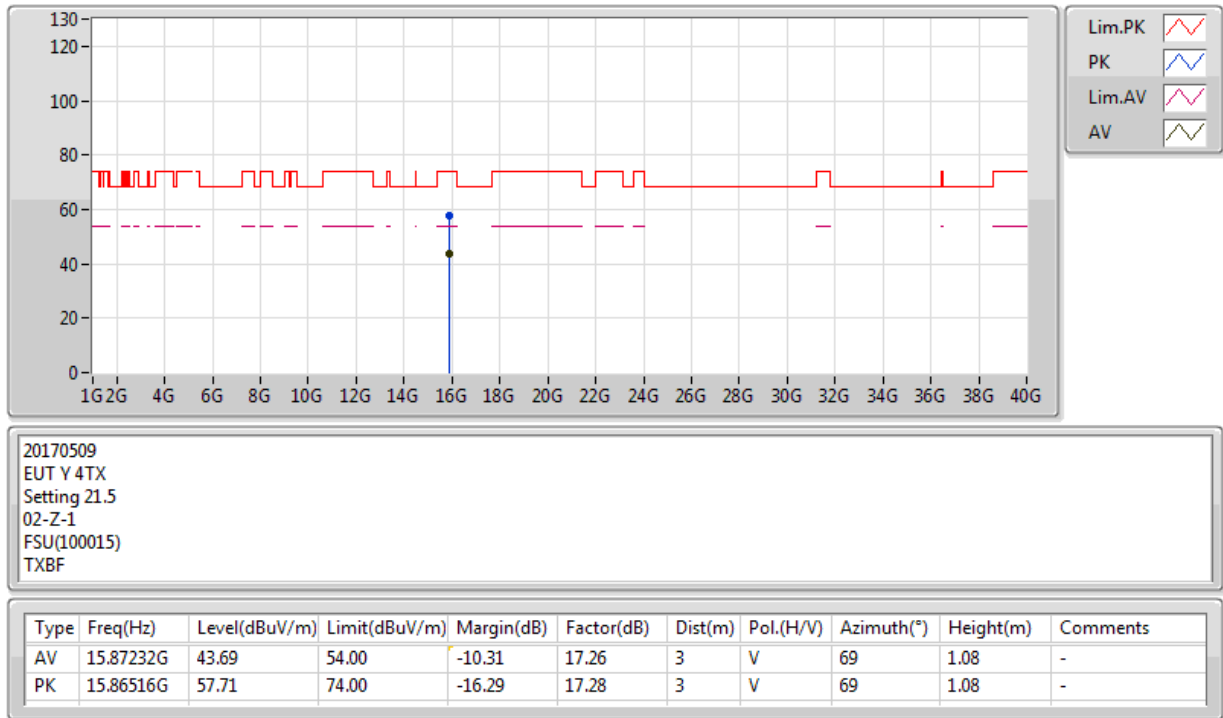


20170509
EUT Y 4TX
Setting 21.5
02-Z-1-10
FSU(100015)
TXBF

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.136G	46.73	54.00	-7.27	8.89	3	H	175	1.69	-
AV	5.274G	87.39	Inf	-Inf	9.20	3	H	175	1.69	-
AV	5.358G	47.65	54.00	-6.35	9.35	3	H	175	1.69	-
PK	5.132G	59.45	74.00	-14.55	8.88	3	H	175	1.69	-
PK	5.295G	99.92	Inf	-Inf	9.24	3	H	175	1.69	-
PK	5.377G	62.39	74.00	-11.61	9.39	3	H	175	1.69	-

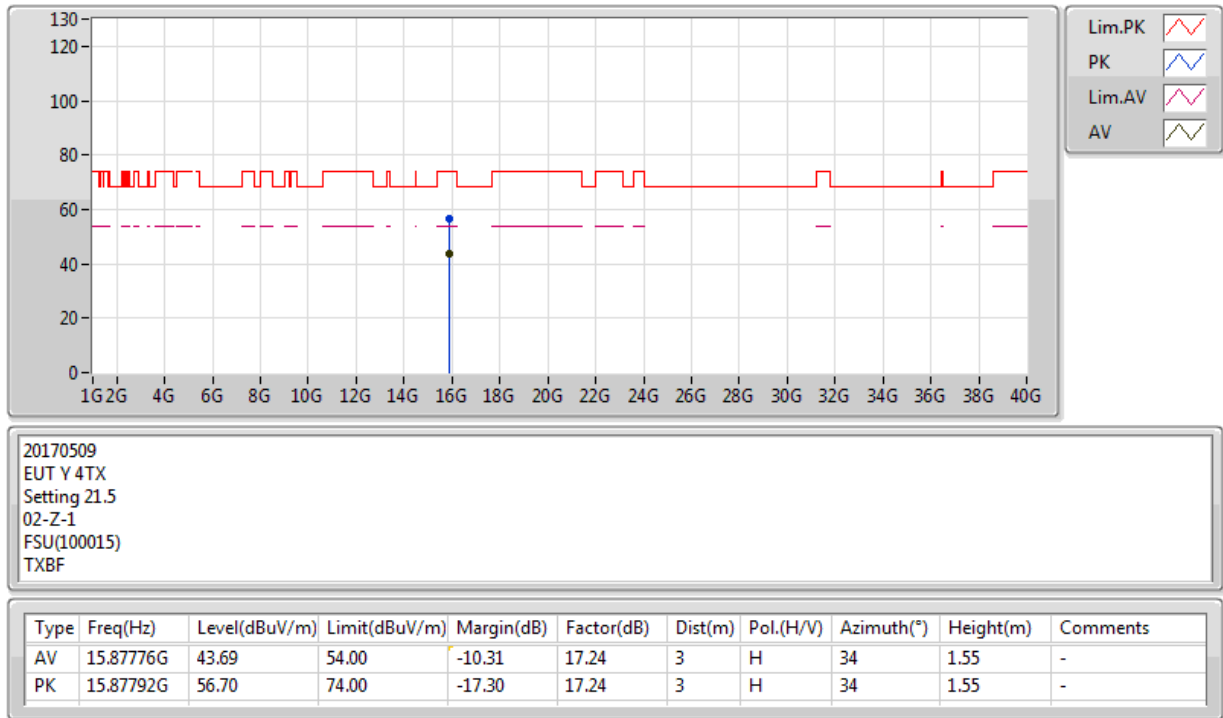
802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5210MHz,#5290MHz_TX



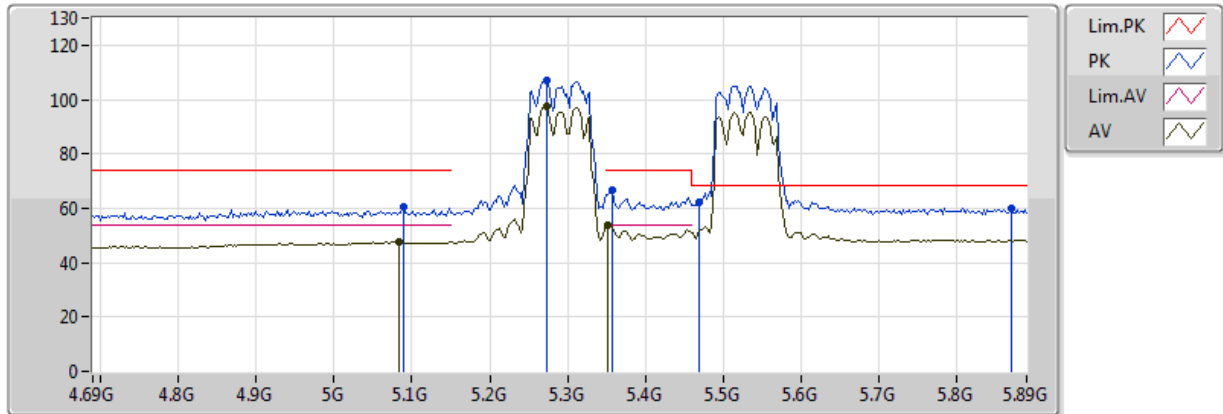
802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5210MHz,#5290MHz_TX



802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5290MHz,5530MHz_TX

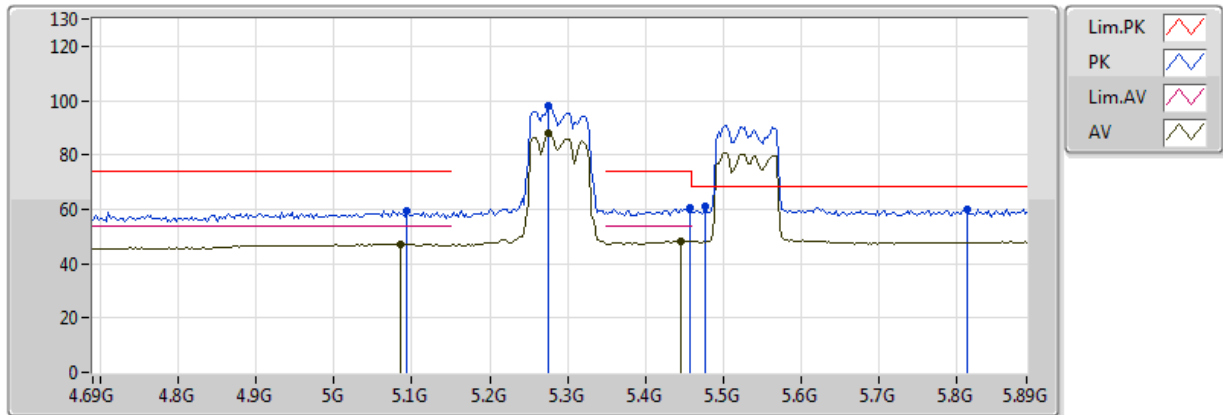


20170220
EUT_Y_4TX
Setting 19
02-P-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.0836G	47.52	54.00	-6.48	8.76	3	V	286	2.64	-
AV	5.2732G	97.65	Inf	-Inf	9.20	3	V	286	2.64	-
AV	5.3524G	53.65	54.00	-0.35	9.34	3	V	286	2.64	-
PK	5.0884G	60.29	74.00	-13.71	8.77	3	V	286	2.64	-
PK	5.2732G	107.04	Inf	-Inf	9.20	3	V	286	2.64	-
PK	5.3572G	66.69	74.00	-7.31	9.35	3	V	286	2.64	-
PK	5.47G	62.07	68.20	-6.13	9.61	3	V	286	2.64	-
PK	5.8708G	59.80	68.20	-8.40	9.92	3	V	286	2.64	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5290MHz,5530MHz_TX

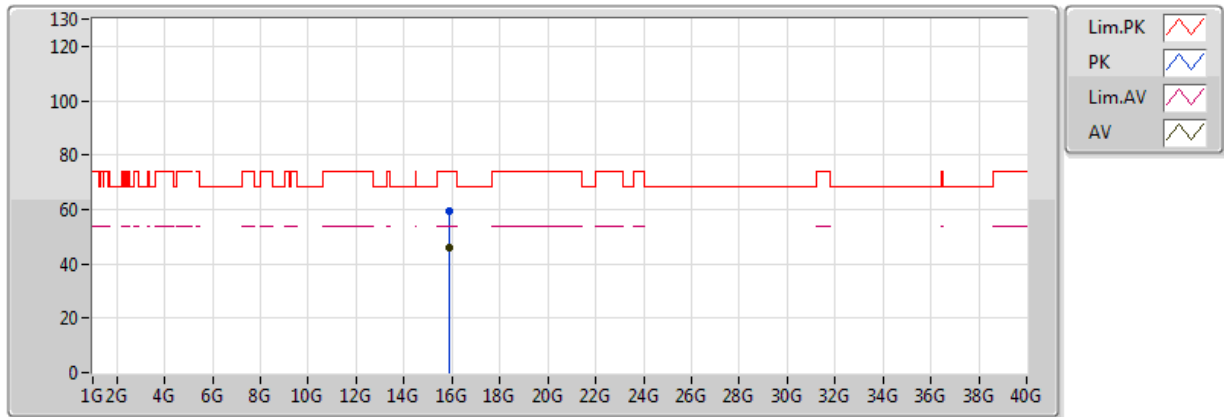


20170220
EUT Y_4TX
Setting 19
02-P-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.086G	47.22	54.00	-6.78	8.76	3	H	24	1.49	-
AV	5.2756G	87.96	Inf	-Inf	9.20	3	H	24	1.49	-
AV	5.446G	48.13	54.00	-5.87	9.55	3	H	24	1.49	-
PK	5.0932G	59.44	74.00	-14.56	8.78	3	H	24	1.49	-
PK	5.2756G	97.86	Inf	-Inf	9.20	3	H	24	1.49	-
PK	5.458G	60.64	74.00	-13.36	9.58	3	H	24	1.49	-
PK	5.4772G	60.99	68.20	-7.21	9.63	3	H	24	1.49	-
PK	5.8132G	60.08	68.20	-8.12	9.84	3	H	24	1.49	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5290MHz,5530MHz_TX

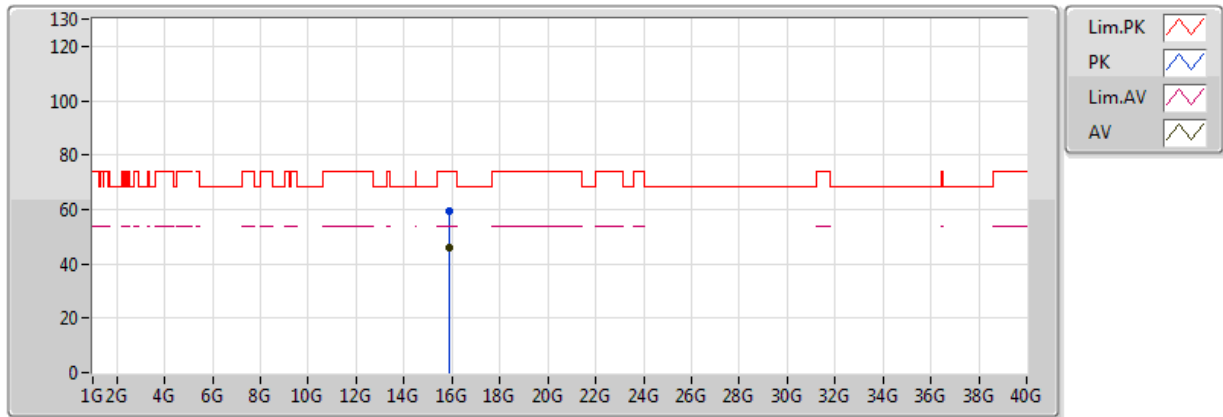


20170220
EUT_Y_4TX
Setting 19
02-P-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.86858G	45.99	54.00	-8.01	17.27	3	V	52	1.54	-
PK	15.8687G	59.52	74.00	-14.48	17.27	3	V	52	1.54	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5290MHz,5530MHz_TX

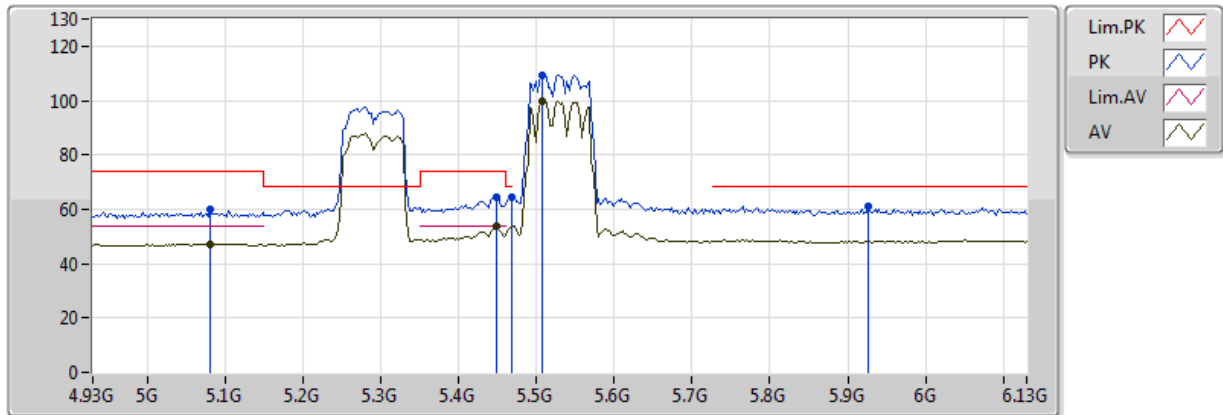


20170220
EUT_Y_4TX
Setting 19
02-P-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.87136G	45.99	54.00	-8.01	17.26	3	H	329	2.49	-
PK	15.87368G	59.32	74.00	-14.68	17.25	3	H	329	2.49	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5290MHz,#5530MHz_TX

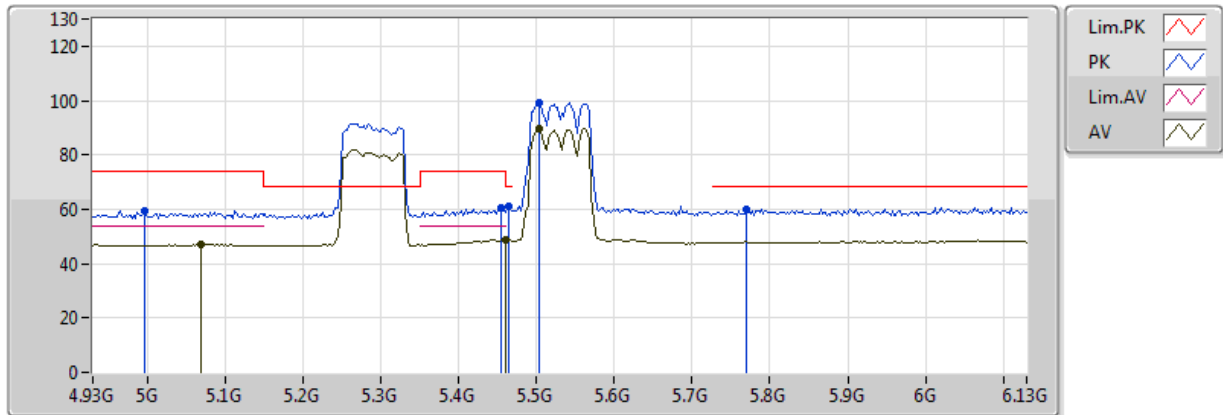


20170220
EUT_Y_4TX
Setting 17.5
02-P-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.0812G	47.30	54.00	-6.70	8.75	3	V	217	2.29	-
AV	5.4484G	53.57	54.00	-0.43	9.56	3	V	217	2.29	-
AV	5.5084G	99.91	Inf	-Inf	9.70	3	V	217	2.29	-
PK	5.0812G	60.15	74.00	-13.85	8.75	3	V	217	2.29	-
PK	5.4484G	64.70	74.00	-9.30	9.56	3	V	217	2.29	-
PK	5.4676G	64.44	68.20	-3.76	9.61	3	V	217	2.29	-
PK	5.5084G	109.47	Inf	-Inf	9.70	3	V	217	2.29	-
PK	5.926G	61.24	68.20	-6.96	10.00	3	V	217	2.29	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5290MHz,#5530MHz_TX

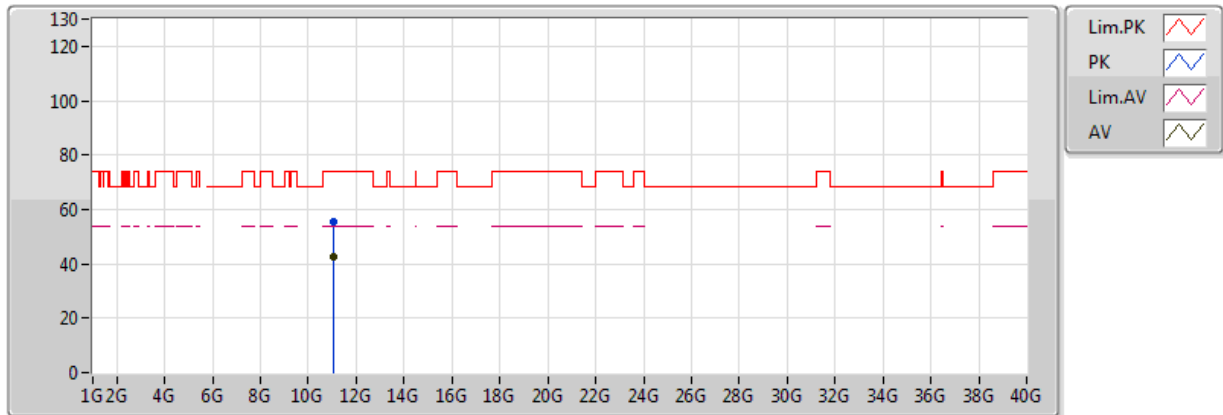


20170220
EUT Y_4TX
Setting 17.5
02-P-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.0692G	47.07	54.00	-6.93	8.72	3	H	231	1.85	-
AV	5.459995G	48.84	54.00	-5.16	9.59	3	H	231	1.85	-
AV	5.5036G	89.55	Inf	-Inf	9.69	3	H	231	1.85	-
PK	4.9972G	59.53	74.00	-14.47	8.52	3	H	231	1.85	-
PK	5.4556G	60.37	74.00	-13.63	9.57	3	H	231	1.85	-
PK	5.4652G	61.00	68.20	-7.20	9.60	3	H	231	1.85	-
PK	5.5036G	99.13	Inf	-Inf	9.69	3	H	231	1.85	-
PK	5.77G	60.11	68.20	-8.09	9.81	3	H	231	1.85	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5290MHz,#5530MHz_TX

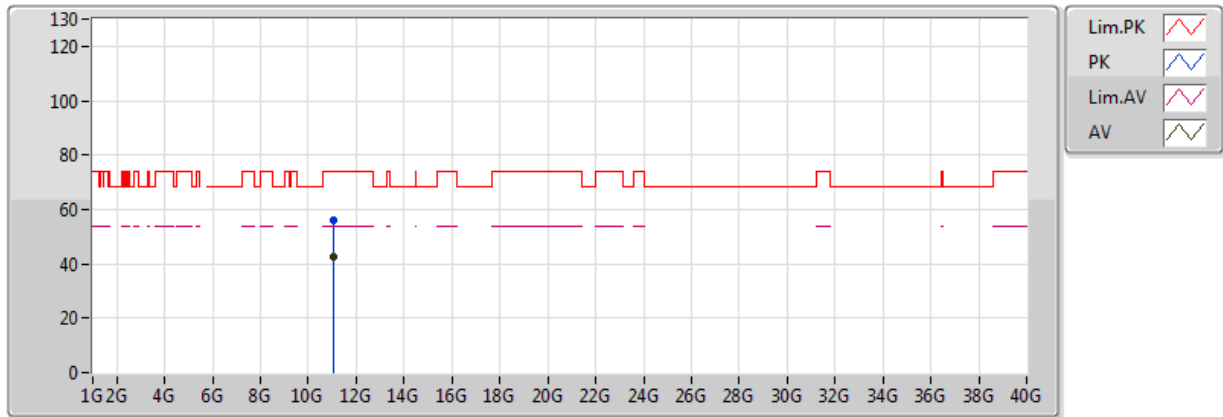


20170220
EUT_Y_4TX
Setting 17.5
02-P-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.0601G	42.46	54.00	-11.54	15.89	3	V	322	2.12	-
PK	11.05744G	55.56	74.00	-18.44	15.89	3	V	322	2.12	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5290MHz,#5530MHz_TX

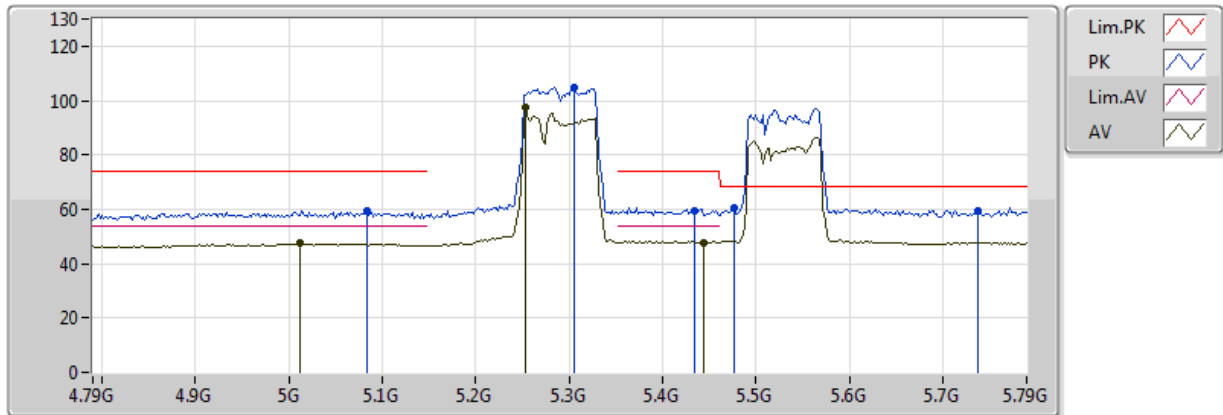


20170220
EUT_Y_4TX
Setting 17.5
02-P-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.05894G	42.45	54.00	-11.55	15.89	3	H	112	2.43	-
PK	11.06228G	55.77	74.00	-18.23	15.89	3	H	112	2.43	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5290MHz,5530MHz_TX

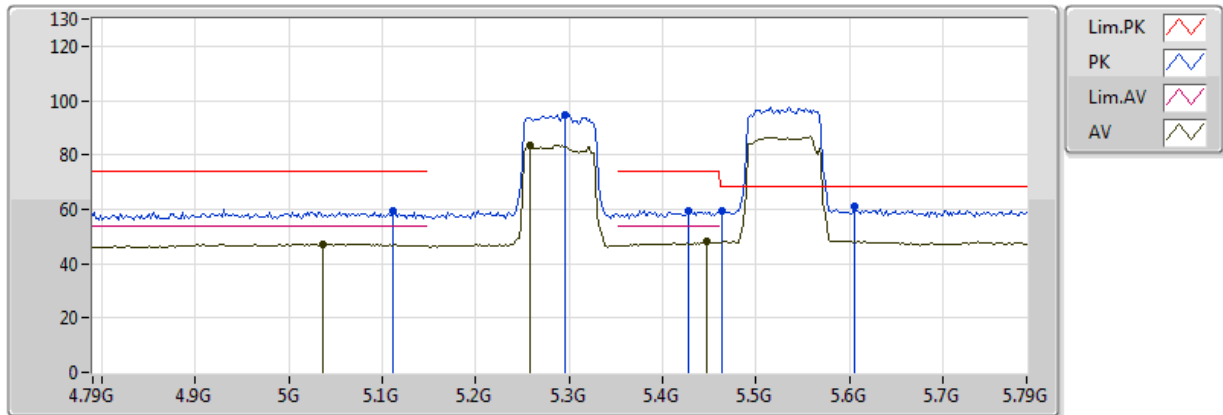


20170223
EUT Y_4TX_TXBF
Setting 25
06-S-6-10
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.012G	47.36	54.00	-6.64	7.10	3	V	346	1.67	-
AV	5.254G	97.49	Inf	-Inf	7.37	3	V	346	1.67	-
PK	5.084G	59.59	74.00	-14.41	7.17	3	V	346	1.67	-
PK	5.306G	105.04	Inf	-Inf	7.45	3	V	346	1.67	-
PK	5.434G	59.50	74.00	-14.50	7.67	3	V	346	1.67	-
PK	5.738G	59.12	68.20	-9.08	8.21	3	V	346	1.67	-
AV	5.444G	47.74	54.00	-6.26	7.69	3	V	346	1.67	-
PK	5.476G	60.43	68.20	-7.77	7.76	3	V	346	1.67	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5290MHz,5530MHz_TX

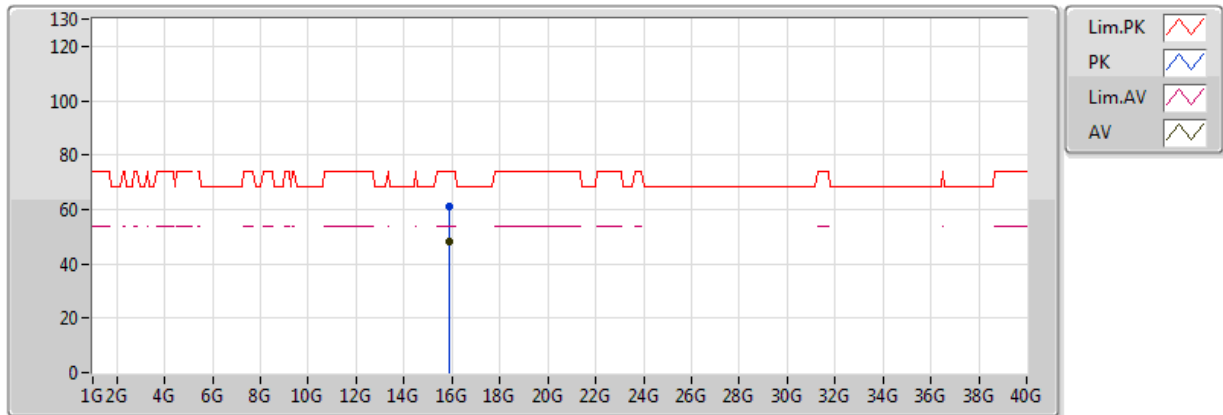


20170223
EUT Y_4TX_TXBF
Setting 25
06-S-6-10
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.036G	47.14	54.00	-6.86	7.13	3	H	154	1.50	-
AV	5.448G	48.00	54.00	-6.00	7.70	3	H	154	1.50	-
PK	5.112G	59.18	74.00	-14.82	7.20	3	H	154	1.50	-
PK	5.428G	59.22	74.00	-14.78	7.65	3	H	154	1.50	-
PK	5.464G	59.29	68.20	-8.91	7.74	3	H	154	1.50	-
PK	5.606G	61.04	68.20	-7.16	8.09	3	H	154	1.50	-
PK	5.296G	94.90	Inf	-Inf	7.43	3	H	154	1.50	-
AV	5.258G	83.44	Inf	-Inf	7.37	3	H	154	1.50	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5290MHz,5530MHz_TX

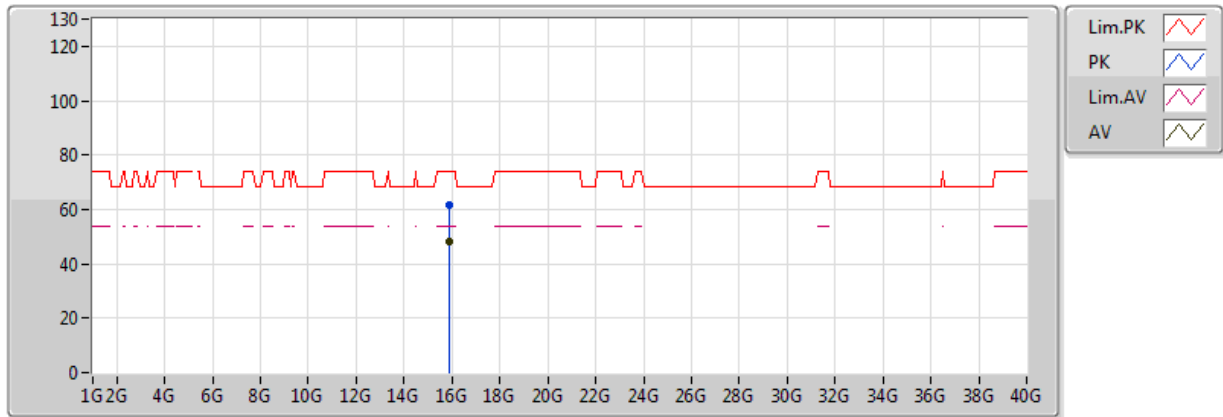


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.88446G	48.41	54.00	-5.59	16.96	3	V	328	1.15	-
PK	15.85674G	61.07	74.00	-12.93	17.04	3	V	328	1.15	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5290MHz,5530MHz_TX

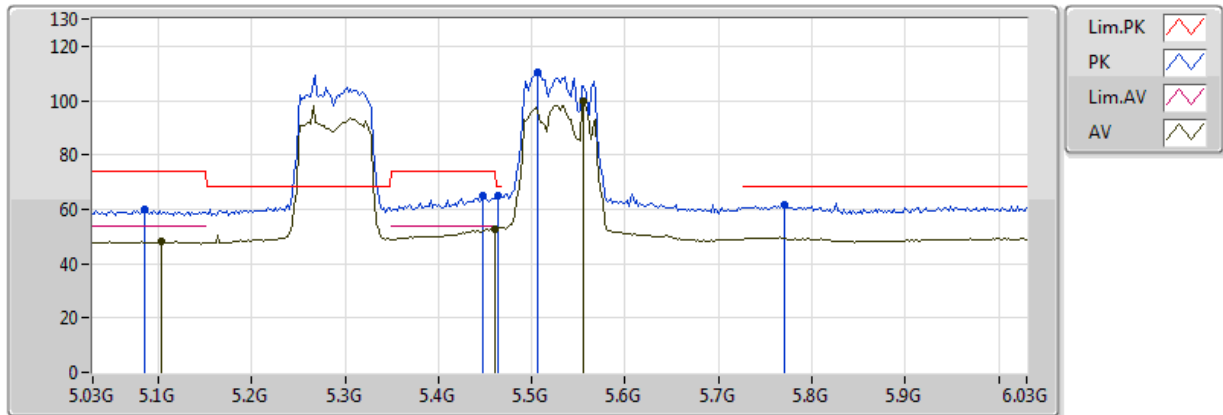


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.8691G	48.28	54.00	-5.72	17.00	3	H	113	1.73	-
PK	15.88458G	61.42	74.00	-12.58	16.96	3	H	113	1.73	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5290MHz,#5530MHz_TX

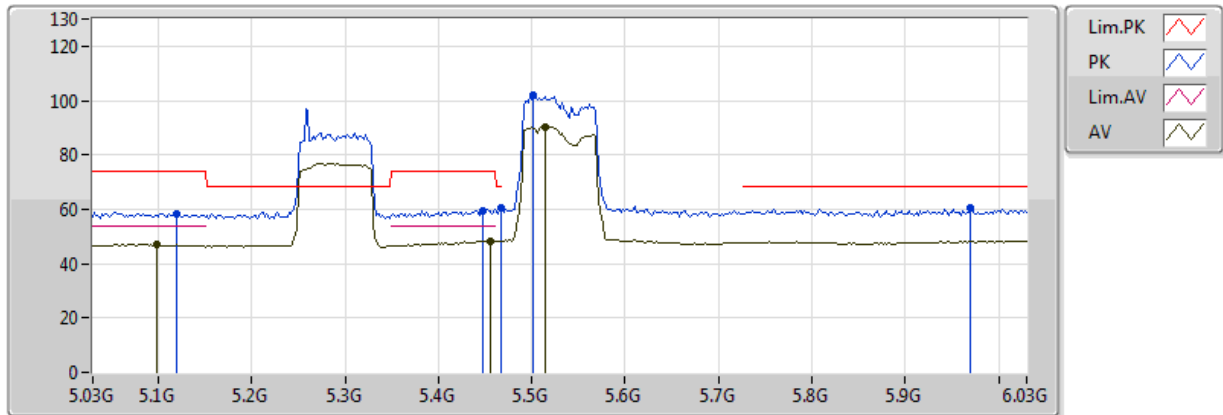


20170223
EUT_Y_4TX_TXBF
Setting 25
06-S-6-10
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.46G	52.56	54.00	-1.44	8.49	3	V	194	2.28	-
AV	5.556G	99.62	Inf	-Inf	8.74	3	V	194	2.28	-
PK	5.464G	64.92	68.20	-3.28	8.50	3	V	194	2.28	-
PK	5.506G	110.45	Inf	-Inf	8.60	3	V	194	2.28	-
PK	5.086G	59.94	74.00	-14.06	7.84	3	V	194	2.28	-
AV	5.104G	48.04	54.00	-5.96	7.85	3	V	194	2.28	-
PK	5.77G	61.80	68.20	-6.40	8.92	3	V	194	2.28	-
PK	5.448G	64.73	74.00	-9.27	8.46	3	V	194	2.28	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5290MHz,#5530MHz_TX

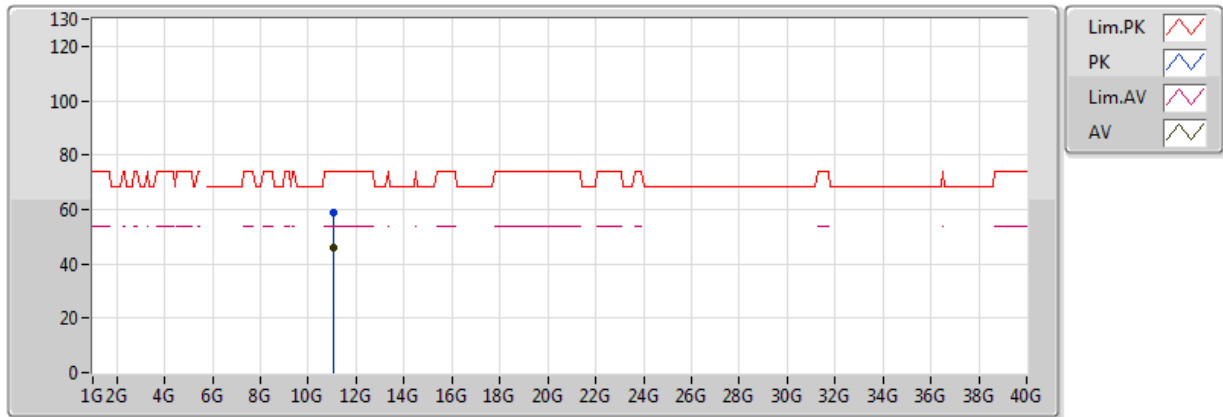


20170223
EUT Y_4TX_TXBF
Setting 25
06-S-6-10
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.456G	48.33	54.00	-5.67	7.72	3	H	215	1.69	-
AV	5.514G	90.41	Inf	-Inf	7.86	3	H	215	1.69	-
PK	5.468G	60.26	68.20	-7.94	7.75	3	H	215	1.69	-
PK	5.502G	101.96	Inf	-Inf	7.83	3	H	215	1.69	-
PK	5.97G	60.58	68.20	-7.62	8.65	3	H	215	1.69	-
PK	5.448G	59.55	74.00	-14.45	7.70	3	H	215	1.69	-
PK	5.12G	58.43	74.00	-15.57	7.21	3	H	215	1.69	-
AV	5.098G	46.83	54.00	-7.17	7.19	3	H	215	1.69	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5290MHz,#5530MHz_TX

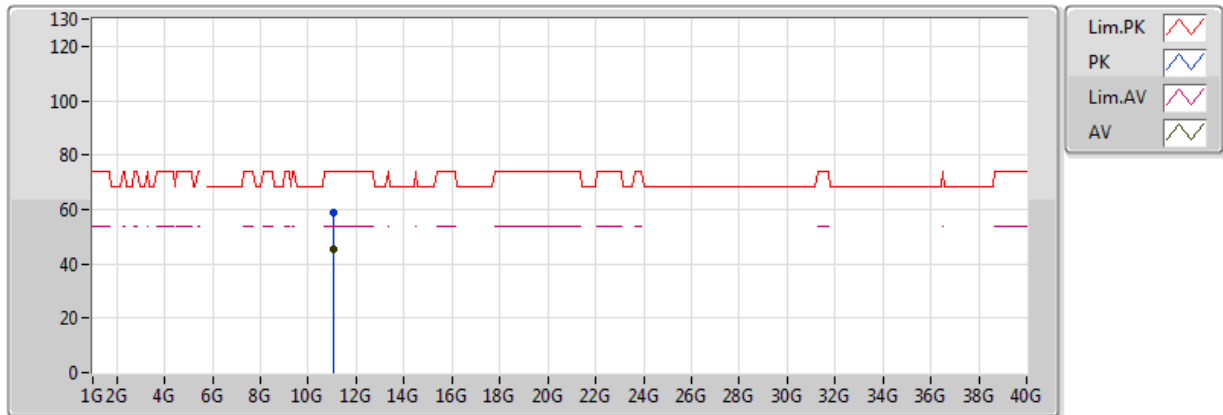


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.06384G	45.68	54.00	-8.32	17.17	3	V	134	1.75	-
PK	11.05454G	58.65	74.00	-15.35	17.18	3	V	134	1.75	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5290MHz,#5530MHz_TX

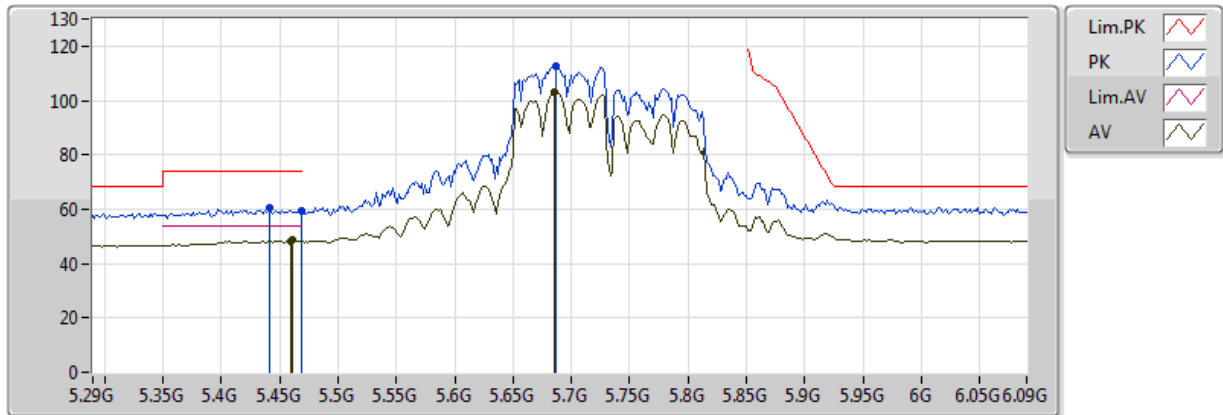


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.04962G	45.63	54.00	-8.37	17.18	3	H	337	1.49	-
PK	11.04662G	58.90	74.00	-15.10	17.18	3	H	337	1.49	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5690MHz,5775MHz Straddle 5.47-5.725GHz_TX

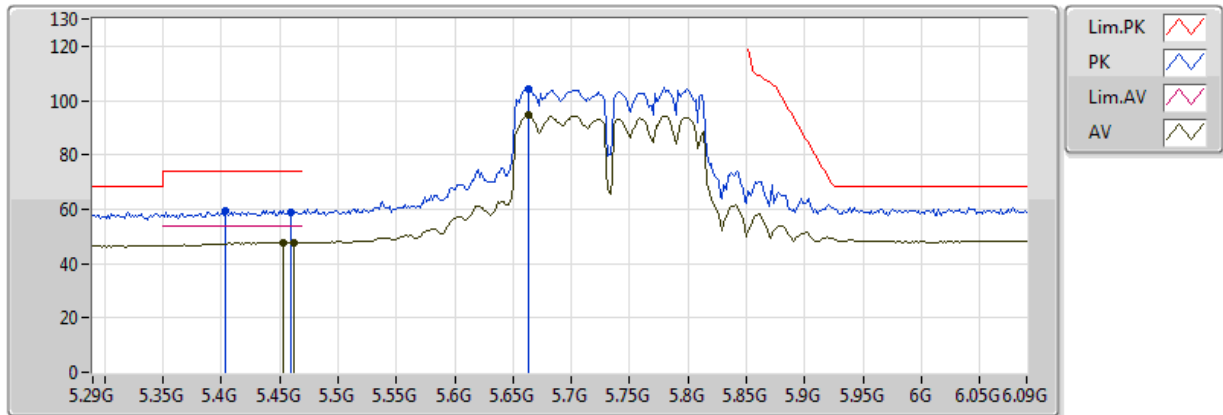


20170220
EUT Y_4TX
Setting 25
02-P-2-10
FSP(100142)

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	48.16	54.00	-5.84	9.59	3	V	355	1.50	-
AV	5.4612G	48.52	54.00	-5.48	9.59	3	V	355	1.50	-
AV	5.6852G	103.01	Inf	-Inf	9.80	3	V	355	1.50	-
PK	5.442G	60.73	74.00	-13.27	9.54	3	V	355	1.50	-
PK	5.4692G	59.65	74.00	-14.35	9.61	3	V	355	1.50	-
PK	5.6868G	112.49	Inf	-Inf	9.80	3	V	355	1.50	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

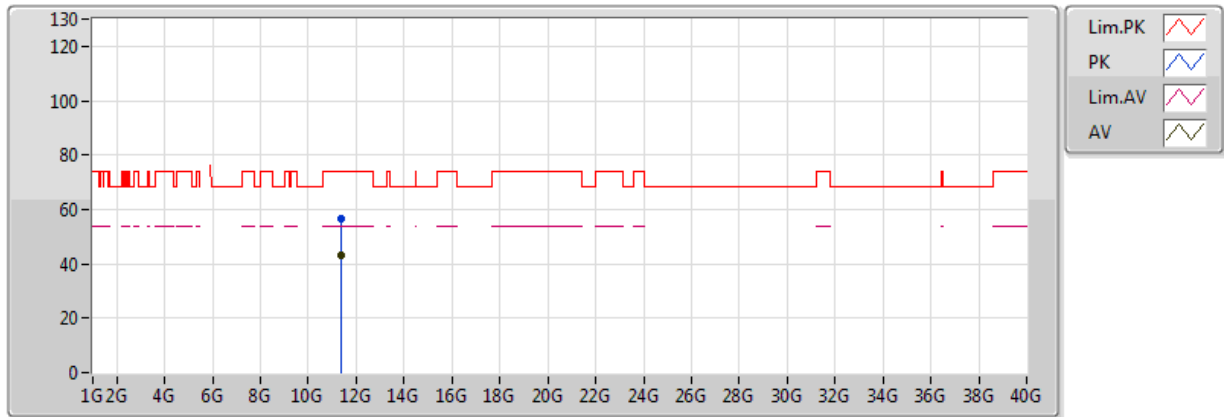
#5690MHz,5775MHz Straddle 5.47-5.725GHz_TX



Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.4532G	47.77	54.00	-6.23	9.57	3	H	237	1.49	-
AV	5.4628G	47.65	54.00	-6.35	9.59	3	H	237	1.49	-
AV	5.6628G	94.90	Inf	-Inf	9.79	3	H	237	1.49	-
PK	5.4036G	59.61	74.00	-14.39	9.44	3	H	237	1.49	-
PK	5.460005G	58.73	74.00	-15.27	9.59	3	H	237	1.49	-
PK	5.6628G	104.19	Inf	-Inf	9.79	3	H	237	1.49	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5690MHz,5775MHz Straddle 5.47-5.725GHz_TX

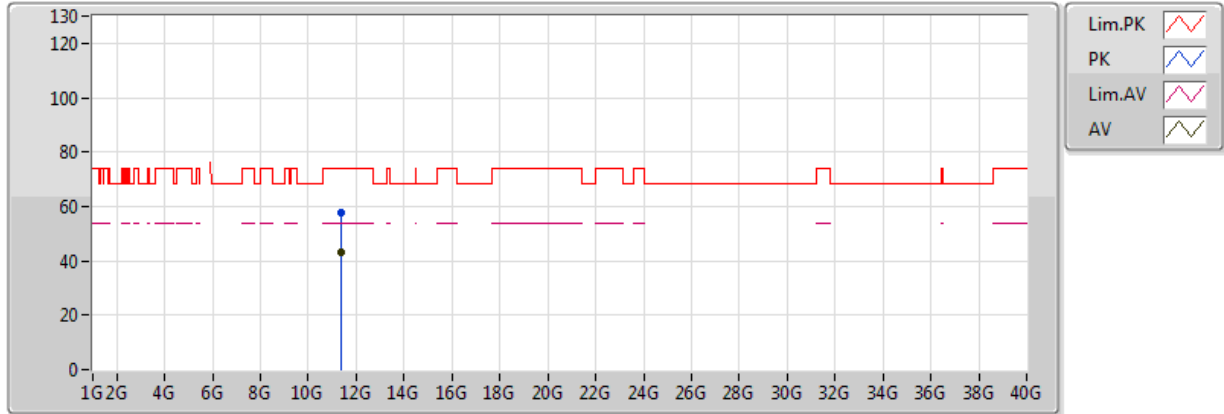


20170220
EUT_Y_4TX
Setting 25
02-P-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.38306G	43.37	54.00	-10.63	16.21	3	V	353	1.56	-
PK	11.3827G	56.64	74.00	-17.36	16.21	3	V	353	1.56	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5690MHz,5775MHz Straddle 5.47-5.725GHz_TX

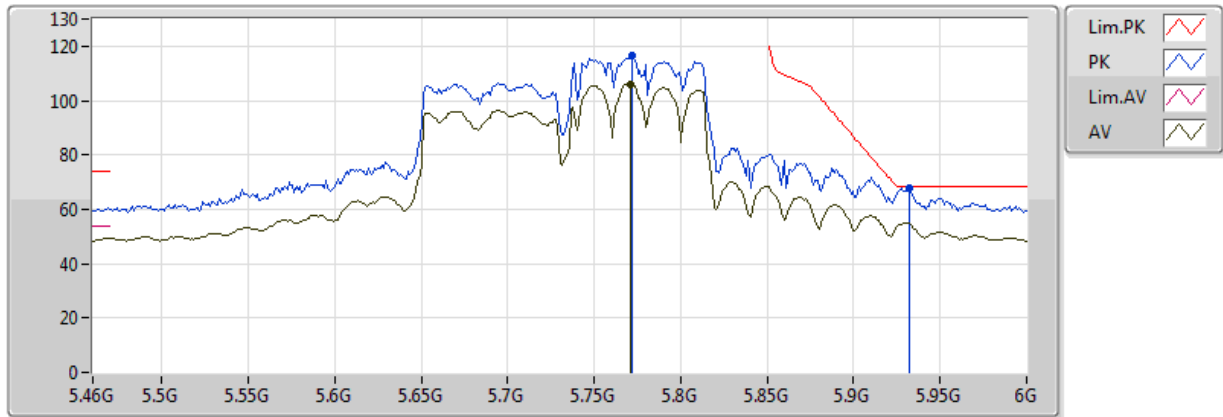


20170220
EUT_Y_4TX
Setting 25
02-P-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.38188G	43.35	54.00	-10.65	16.21	3	H	130	1.89	-
PK	11.38396G	57.56	74.00	-16.44	16.21	3	H	130	1.89	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5690MHz,#5775MHz Straddle 5.725-5.85GHz_TX

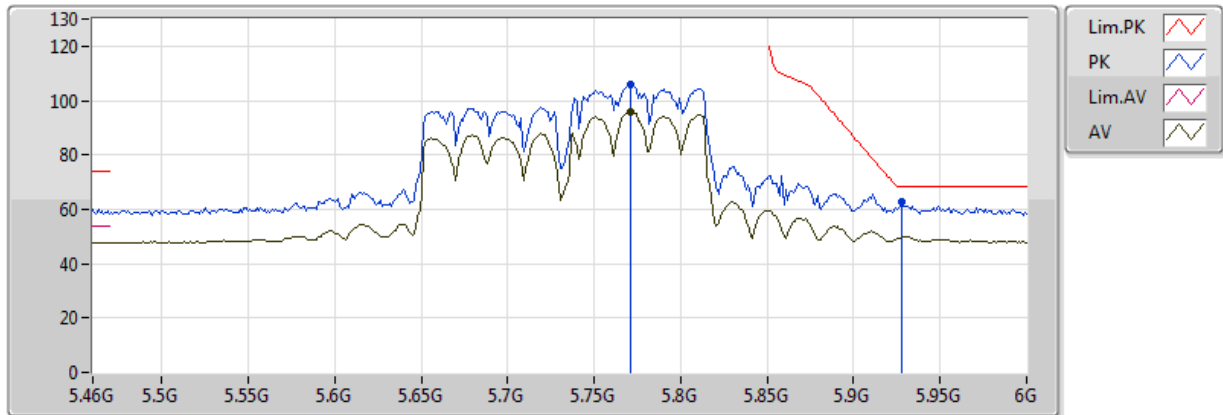


20170220
EUT_Y_4TX
Setting 25
02-P-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.77104G	106.14	Inf	-Inf	9.81	3	V	228	2.25	-
PK	5.77212G	116.43	Inf	-Inf	9.81	3	V	228	2.25	-
PK	5.93196G	67.89	68.20	-0.31	10.00	3	V	228	2.25	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5690MHz,#5775MHz Straddle 5.725-5.85GHz_TX

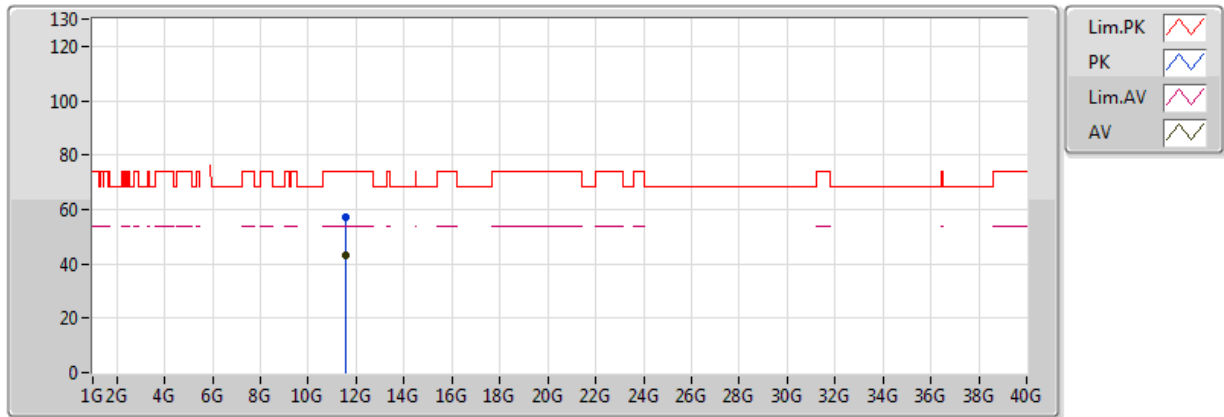


20170220
EUT_Y_4TX
Setting 25
02-P-2-10
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.77104G	95.81	Inf	-Inf	9.81	3	H	156	1.63	-
PK	5.77104G	106.06	Inf	-Inf	9.81	3	H	156	1.63	-
PK	5.92764G	62.96	68.20	-5.24	10.00	3	H	156	1.63	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5690MHz,#5775MHz Straddle 5.725-5.85GHz_TX

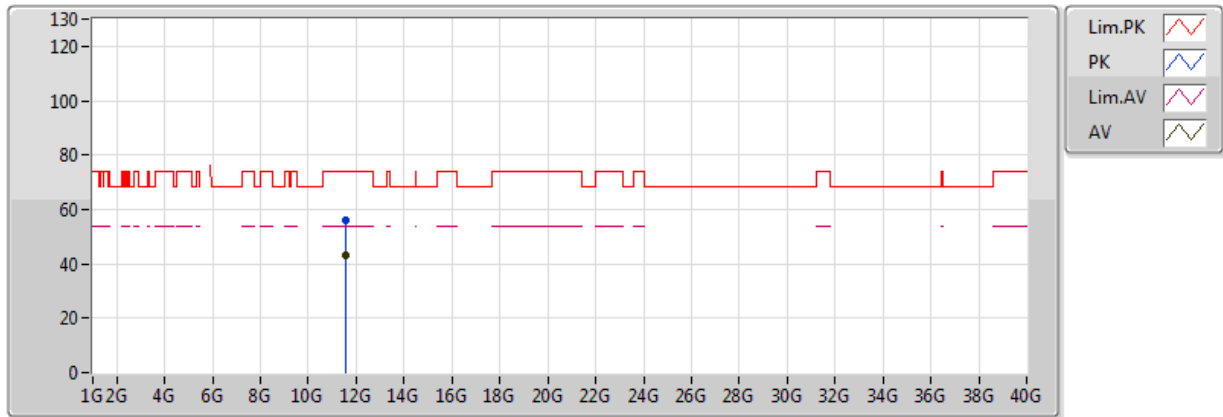


20170220
EUT_Y_4TX
Setting 25
02-P-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.55012G	43.14	54.00	-10.86	16.37	3	V	129	1.91	-
PK	11.5508G	57.19	74.00	-16.81	16.38	3	V	129	1.91	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

5690MHz,#5775MHz Straddle 5.725-5.85GHz_TX

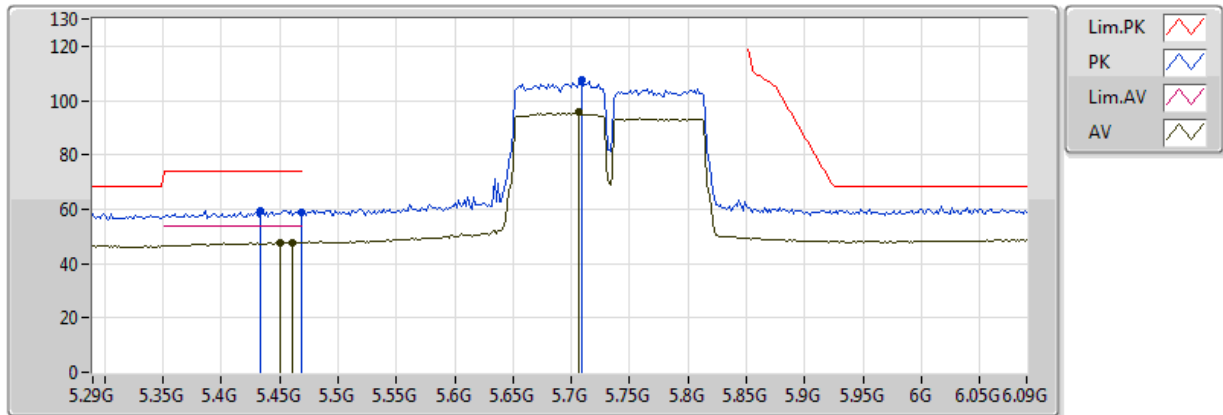


20170220
EUT_Y_4TX
Setting 25
02-P-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.5499G	43.08	54.00	-10.92	16.37	3	H	302	1.42	-
PK	11.55428G	56.13	74.00	-17.87	16.38	3	H	302	1.42	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5690MHz,5775MHz Straddle 5.47-5.725GHz_TX

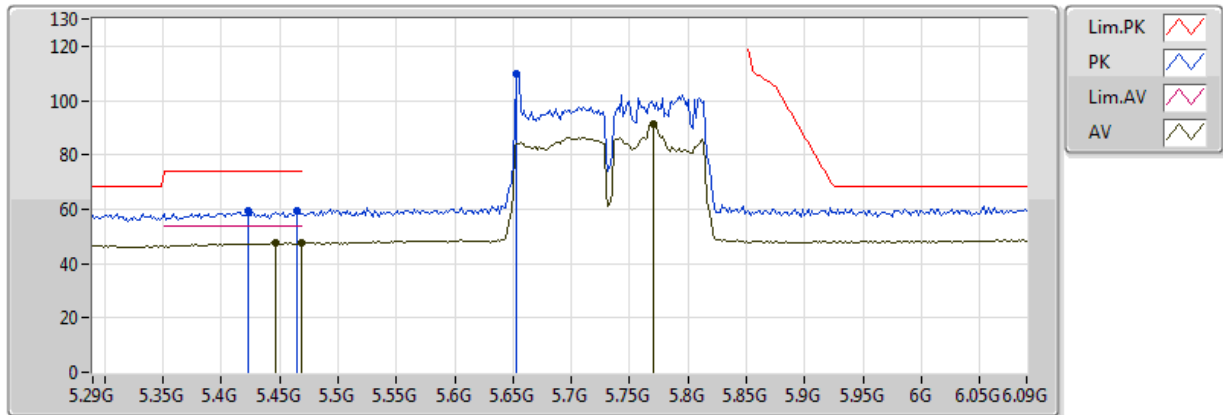


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4-10
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.45G	47.74	54.00	-6.26	7.70	3	V	275	1.64	-
AV	5.4612G	47.86	54.00	-6.14	7.73	3	V	275	1.64	-
AV	5.706G	95.85	Inf	-Inf	8.19	3	V	275	1.64	-
PK	5.434G	59.43	74.00	-14.57	7.67	3	V	275	1.64	-
PK	5.4692G	59.04	74.00	-14.96	7.75	3	V	275	1.64	-
PK	5.7092G	107.31	Inf	-Inf	8.19	3	V	275	1.64	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5690MHz,5775MHz Straddle 5.47-5.725GHz_TX

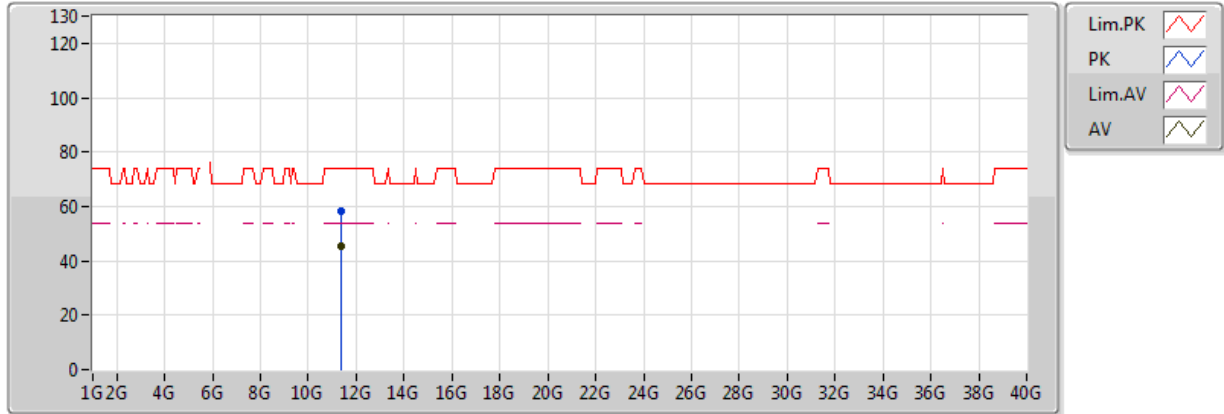


20170223
EUT Y_4TX_TXBF
Setting 25
06-J-4-10
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.4468G	47.50	54.00	-6.50	7.70	3	H	235	2.15	-
AV	5.4692G	47.51	54.00	-6.49	7.75	3	H	235	2.15	-
AV	5.77G	91.42	Inf	-Inf	8.24	3	H	235	2.15	-
PK	5.4228G	59.38	74.00	-14.62	7.64	3	H	235	2.15	-
PK	5.4644G	59.23	74.00	-14.77	7.74	3	H	235	2.15	-
PK	5.6532G	109.96	Inf	-Inf	8.13	3	H	235	2.15	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5690MHz,5775MHz Straddle 5.47-5.725GHz_TX

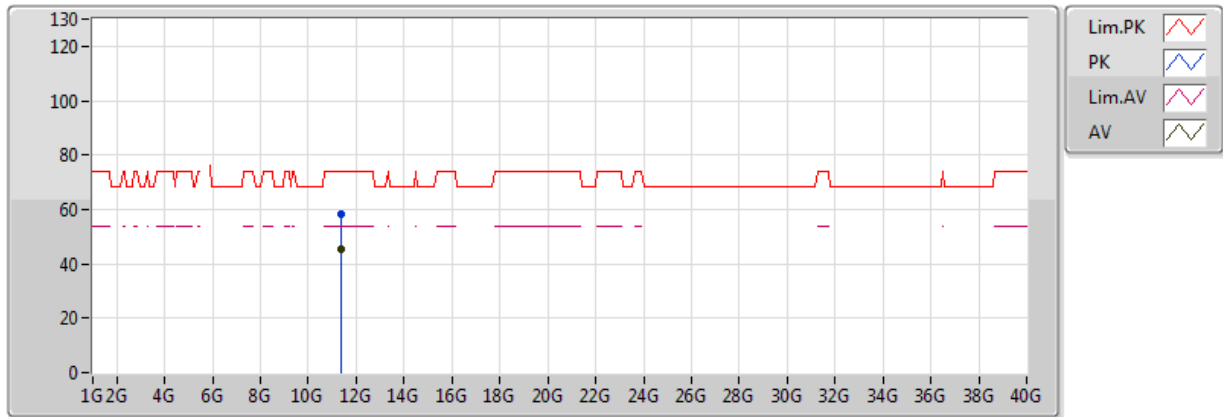


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.37796G	45.30	54.00	-8.70	16.92	3	V	347	2.01	-
PK	11.39182G	58.01	74.00	-15.99	16.91	3	V	347	2.01	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

#5690MHz,5775MHz Straddle 5.47-5.725GHz_TX

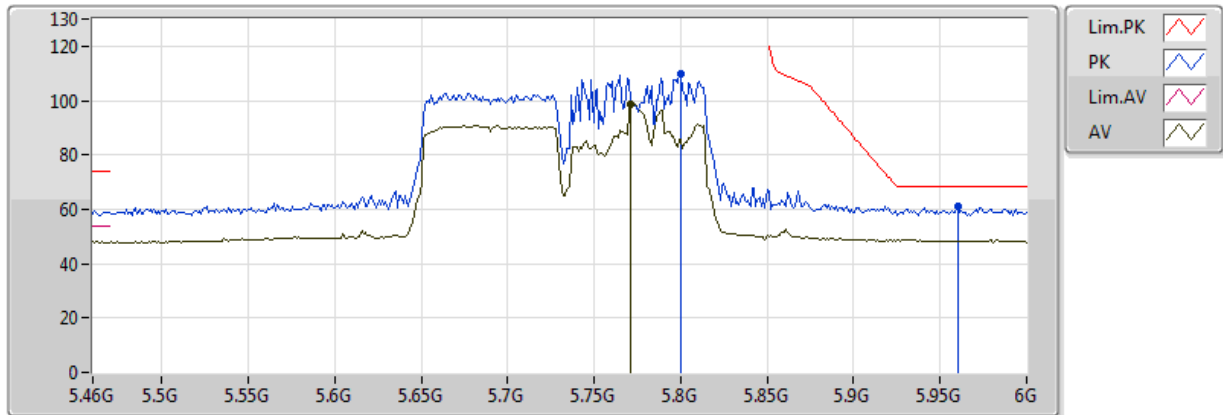


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.37046G	45.24	54.00	-8.76	16.93	3	H	15	1.37	-
PK	11.38708G	58.22	74.00	-15.78	16.91	3	H	15	1.37	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5690MHz,#5775MHz Straddle 5.725-5.85GHz_TX

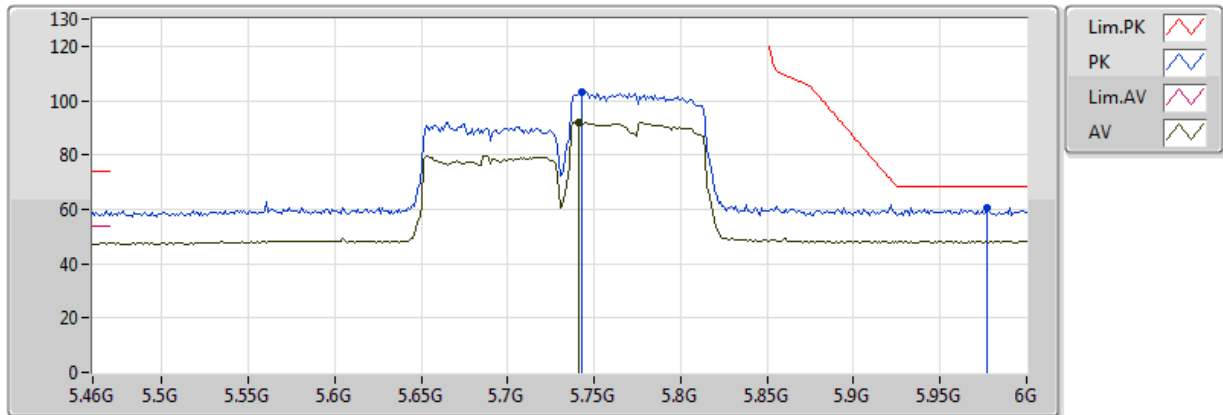


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4-10
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.77104G	98.88	Inf	-Inf	8.24	3	V	176	2.30	-
PK	5.8002G	110.09	Inf	-Inf	8.27	3	V	176	2.30	-
PK	5.96004G	60.98	68.20	-7.22	8.63	3	V	176	2.30	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5690MHz,#5775MHz Straddle 5.725-5.85GHz_TX

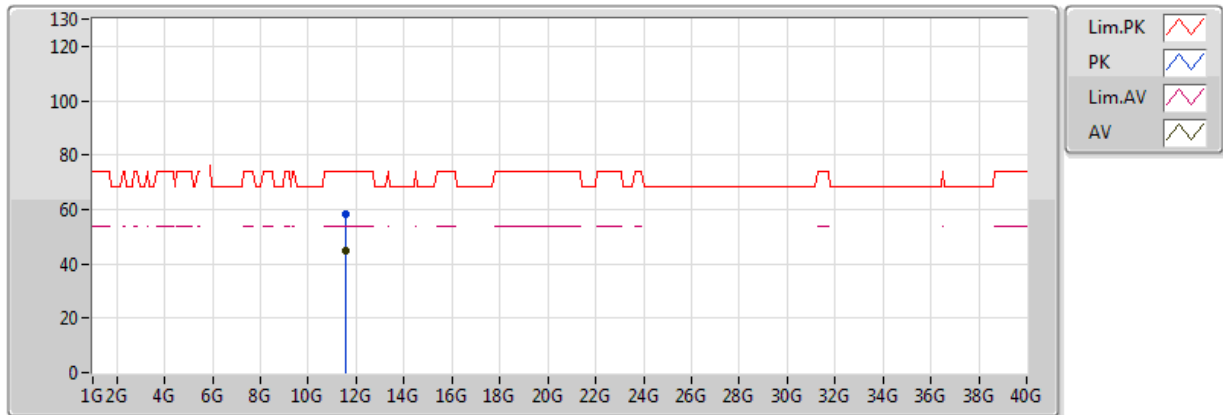


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4-10
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.7408G	91.89	Inf	-Inf	8.22	3	H	215	1.53	-
PK	5.74296G	103.26	Inf	-Inf	8.22	3	H	215	1.53	-
PK	5.97732G	60.25	68.20	-7.95	8.67	3	H	215	1.53	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5690MHz,#5775MHz Straddle 5.725-5.85GHz_TX

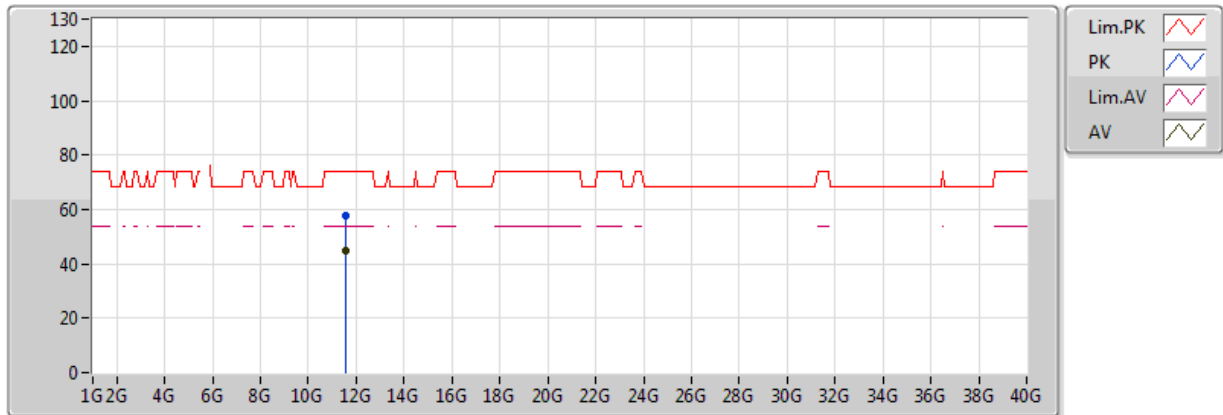


20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.559G	44.83	54.00	-9.17	16.78	3	V	131	1.88	-
PK	11.54652G	58.21	74.00	-15.79	16.79	3	V	131	1.88	-

802.11ac VHT80+80-BF_Nss1,(MCS0)_4TX

5690MHz,#5775MHz Straddle 5.725-5.85GHz_TX



20170223
EUT_Y_4TX_TXBF
Setting 25
06-J-4
FSP

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.56464G	44.80	54.00	-9.20	16.77	3	H	114	2.30	-
PK	11.55162G	57.86	74.00	-16.14	16.78	3	H	114	2.30	-