

FCC Test Report

Equipment : WiFi 5G Module
Brand Name : UBIQUITI
Model No. : 4x4-5GL
FCC ID : SWX-M445GL
Standard : 47 CFR FCC Part 15.407
Operating Band : 5150 MHz – 5250 MHz
5250 MHz – 5350 MHz
Applicant : Ubiquiti Networks, Inc.
685 Third Avenue, 27th Floor New York,
New York 10017 USA
Manufacturer : Ubiquiti Networks, Inc.
685 Third Avenue, 27th Floor New York,
New York 10017 USA
Function : ☒ Outdoor; ☒ Indoor; ☐ Fixed P2P
☒ Client
TPC Function : TPC

This report was evaluated for permissive change. The product sample received on Dec. 05, 2017 and completely tested on Jan. 18, 2018. 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.

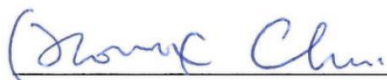

Phoenix Chen / Assistant Manager





Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Testing Applied Standards	7
1.3	Testing Location Information	7
1.4	Measurement Uncertainty	7
2	TEST CONFIGURATION OF EUT.....	8
2.1	Test Condition	8
2.2	Test Channel Mode	8
2.3	The Worst Case Measurement Configuration.....	9
2.4	Support Equipment.....	10
2.5	Test Setup Diagram	11
3	TRANSMITTER TEST RESULT	12
3.1	Emission Bandwidth	12
3.2	Maximum Conducted Output Power	13
3.3	Peak Power Spectral Density.....	15
3.4	Unwanted Emissions	17
4	TEST EQUIPMENT AND CALIBRATION DATA	22
APPENDIX A. TEST RESULTS OF EMISSION BANDWIDTH		
APPENDIX B. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER		
APPENDIX C. TEST RESULTS OF PEAK POWER SPECTRAL DENSITY		
APPENDIX D. TEST RESULTS OF UNWANTED EMISSIONS		
APPENDIX E. TEST PHOTOS		
PHOTOGRAPHS OF EUT V01		



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.
TEL : 886-3-327-3456
FAX : 886-3-327-0973
FCC ID: SWX-M445GL

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	ac (VHT80)	5210	42 [1]
5250-5350		5290	58 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11ac VHT80+80	80	4TX(Port 1/2)
5.25-5.35GHz	802.11ac VHT80+80	80	4TX(Port 3/4)

Note:

- ♦ VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Table for 80+80 MHz Mode

Type	Channel No.	Frequency
13	42+58	5210+5290 MHz

1.1.3 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	-	-	Internal Antenna	I-PEX	10
						15
2	2	-	-	Internal Antenna	I-PEX	10
						15
3	3	-	-	Internal Antenna	I-PEX	10
						15
4	4	-	-	Internal Antenna	I-PEX	10
						15

Note: 1: 802.11an/ac used four antennas are for signal transmitting and receiving.(4T4R Spatial Multiplexing MIMO configuration)

1.1.4 EUT Information

Operational Condition	
EUT Power Type	From Host System
RF Chip	QCA9984
Type of EUT	
☐	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device)
	Combined Equipment - Brand Name / Model No.: ...
☒	Plug-in radio (EUT intended for a variety of host systems)
	Host System - Brand Name / Model No.: UBIQUITI / UWB-XG, UWB-XG-BK
☐	Other:

1.1.5 Mode Test Duty Cycle

Non-Beamforming

<Antenna Gain 10 dBi>

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT80+80	0.974	0.114	2.241m	1k

<Antenna Gain 15 dBi>

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT80+80	0.963	0.164	2.23m	1k

Beamforming

<Antenna Gain 10 dBi>

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT80+80-BF	0.928	0.325	1.95m	1k

<Antenna Gain 15 dBi>

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT80+80-BF	0.928	0.325	1.95m	1k

1.1.6 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR661623-24

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

Modifications	Performance Checking
Enable VHT80+80 indoor and outdoor operations	All

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
- ♦ KDB 789033 D02 v02r01
- ♦ KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Barry	22.8°C / 65%	18/Jan/2018
Radiated	03CH09-HY	Eric	25.8°C / 55%	10/Jan/2018

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

Condition Item	Abbreviation/Remark	Remark
RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V
Freq. Stability	Abbreviation	Remark
-10°C	-	-
0°C	-	-
10°C	-	-
20°C	-	-
30°C	-	-
40°C	-	-
50°C	-	-
60°C	-	-
70°C	-	-
102V	-	-
120V	-	-
138V	-	-

2.2 Test Channel Mode

Non-Beamforming

Test Software Version	QDART 00037.27
-----------------------	----------------

Beamforming

Test Software Version	Dos,Lantest
-----------------------	-------------

2.3 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	PoE Mode (5G TXBF)		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT		V	

2.4 Support Equipment

Support Equipment – RF Conducted (Non-Beamforming)				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	PoE	UBIQUITI	GP-C500-120G	N/A
4	Adapter for PoE	D-Link	DSA-0421S-50	N/A
5	AC Source	GW	APS-9102	N/A
6	Test Fixture	N/A	N/A	N/A

Note: Support equipment No.6 was provided by customer.

Support Equipment – RF Conducted (Beamforming)				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook*2	DELL	E5410	DoC
2	Adapter for NB*2	DELL	HA65NM130	DoC
3	PoE*2	UBIQUITI	GP-C500-120G	N/A
4	Adapter for PoE*2	D-Link	DSA-0421S-50	N/A
5	AC Source	GW	APS-9102	N/A
6	Test Fixture	N/A	N/A	N/A

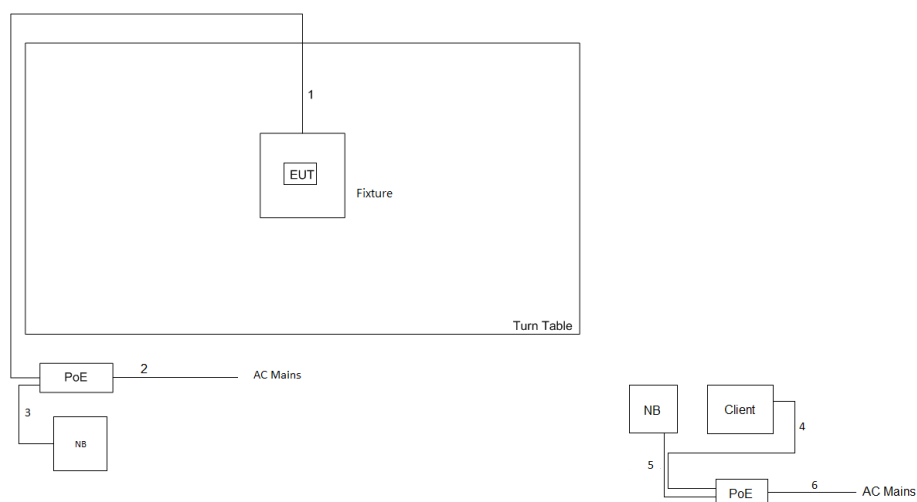
Note: Support equipment No.6 was provided by customer.

Support Equipment – Radiated Emission (Beamforming)				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Fixture	N/A	N/A	N/A
2	Client (Remote Workstation)	UBNT	4x4-5GH_C2PC	N/A
3	Notebook for EUT (Remote Workstation)	DELL	E4300	N/A
4	Notebook for Client (Remote Workstation)	DELL	E4300	N/A
5	PoE for Fixture (Remote Workstation)	UBIQUITI	GP-C500-120G	N/A
6	PoE for Client (Remote Workstation)	UBIQUITI	GP-C500-120G	N/A

Note: Support equipment No.1&4 was provided by customer.

2.5 Test Setup Diagram

Test Setup Diagram - Radiated Test (Beamforming)



Item	Connection	Shielded	Length(m)	Remark
1	RJ-45 Cable	No	10.0	-
2	AC power line	No	1.0	-
3	RJ-45Cable	No	1.0	-
4	RJ-45 Cable	No	1.0	-
5	RJ-45Cable	No	1.0	-
6	AC power line	No	1.8	-

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.

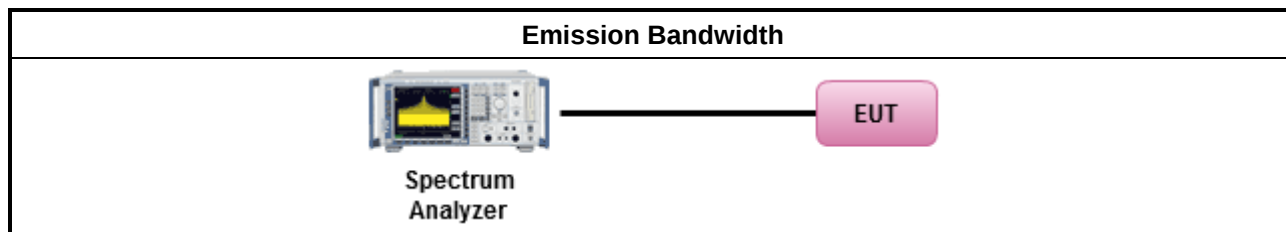
3.1.2 Measuring Instruments

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 KDB 789033, clause C for EBW and clause D for OBW measurement.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
☐	Refer as IC RSS-Gen, clause 6.6 for bandwidth testing.

3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix B

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.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

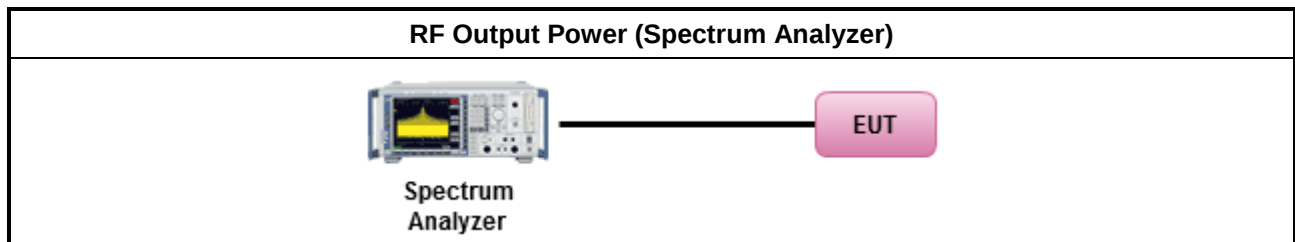
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
Maximum Conducted Output Power	
	Duty cycle $\geq 98\%$
☐	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
	Duty cycle $< 98\%$
☐	Refer as 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 KDB 789033, clause E Method PM (using an RF average power meter).
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as 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: $P_{\text{total}} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $\text{EIRP}_{\text{total}} = P_{\text{total}} + \text{DG}$	

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

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.
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.	

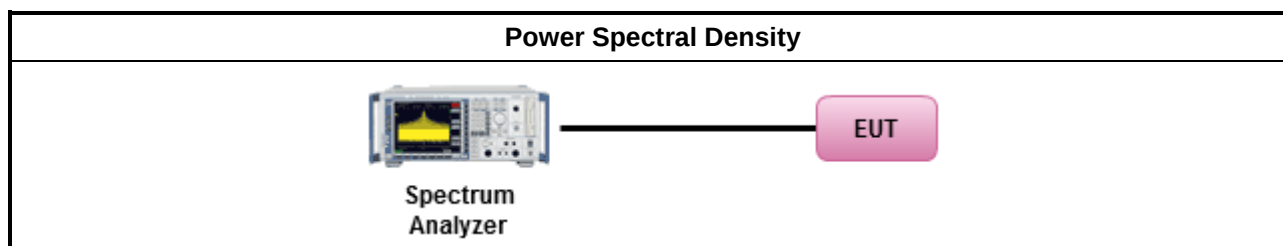
3.3.2 Measuring Instruments

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 KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth
Duty cycle ≥ 98%	
☒	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
Duty cycle < 98%	
☒	Refer as 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:	
Measure and sum the spectra across the outputs. Refer as 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.	
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 D

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.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.85 GHz	5.650-5700 GHz: e.i.r.p. -27 ~ 10 dBm [68.2 ~ 105.2 dBuV/m@3m] 5.700-5720 GHz: e.i.r.p. 10 ~ 15.6 dBm [105.2 ~ 110.8 dBuV/m@3m] 5.720-5725 GHz: e.i.r.p. 15.6 ~ 27 dBm [110.8 ~ 122.2 dBuV/m@3m] 5.850-5.855 GHz: e.i.r.p. 27 ~ 15.6 dBm [122.2 ~ 110.8 dBuV/m@3m] 5.855-5.875 GHz: e.i.r.p. 15.6 ~ 10 dBm [110.8 ~ 105.2 dBuV/m@3m] 5.875-5.925 GHz: e.i.r.p. 10 ~ -27 dBm [105.2 ~ 68.2dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
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).	

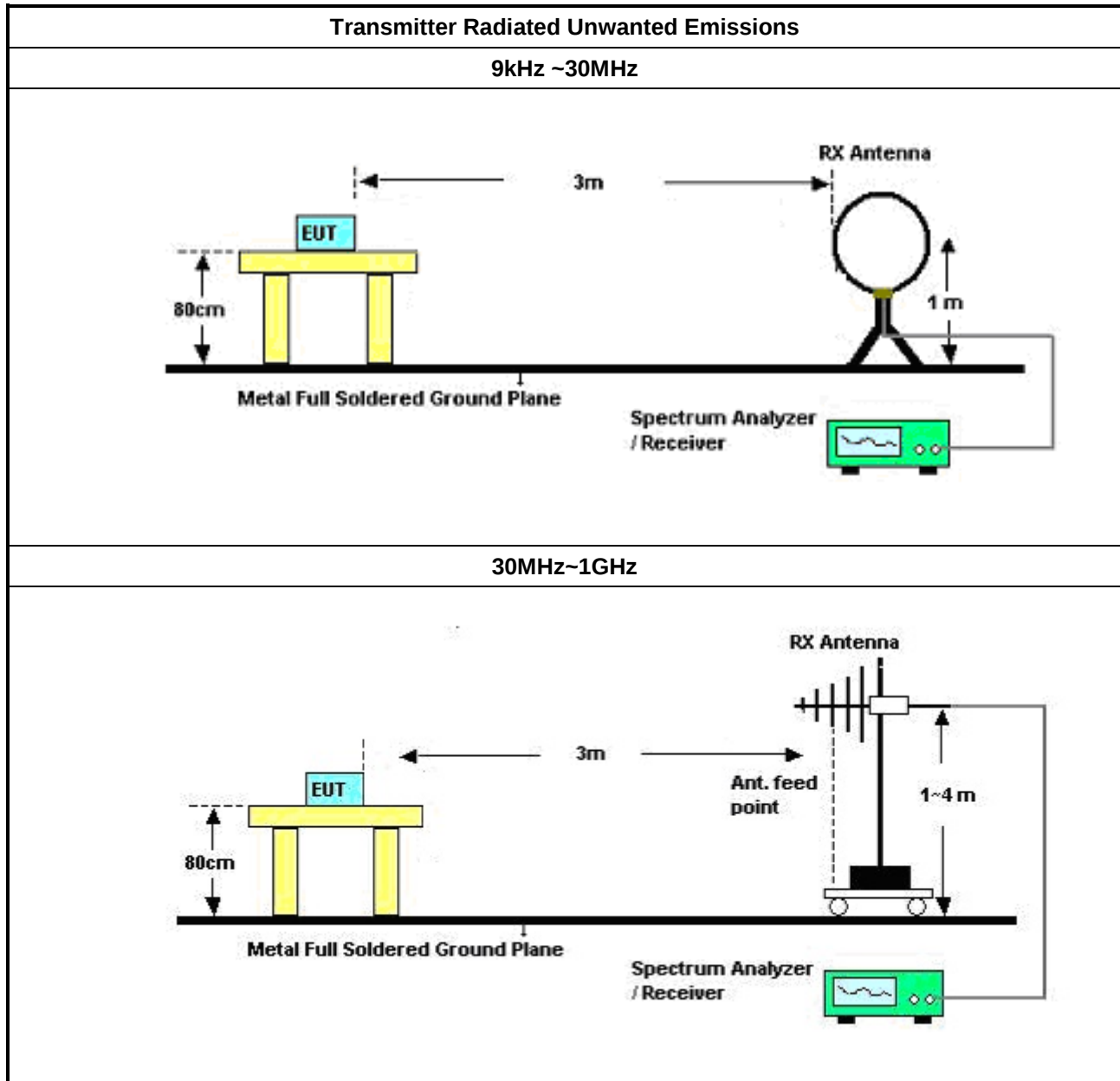
3.4.2 Measuring Instruments

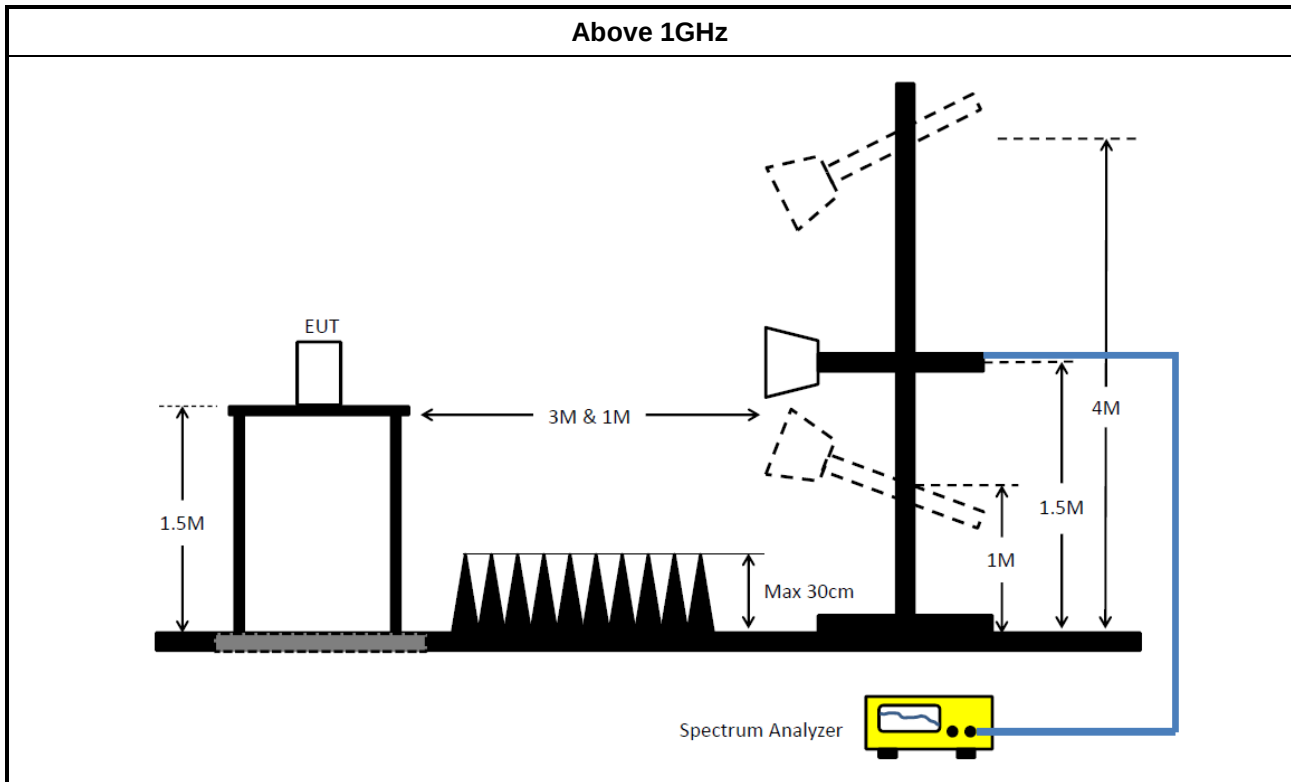
Refer a test equipment and calibration data table in this test report.

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 KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
	Refer as KDB 789033, clause G)1) for unwanted emissions into restricted bands.
	☒ Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.
	☒ Refer as KDB 789033, clause G)5) (ANSI C63.10, clause 4.1.4.2.2), measurement procedure peak limit.
For radiated measurement.	
	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
The any unwanted emissions level shall not exceed the fundamental emission level.	
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

3.4.4 Test Setup





3.4.5 Transmitter Unwanted Emissions (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.4.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

4 Test Equipment and Calibration Data

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz	25/Apr/2017	24/Apr/2018
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	21/Jun/2017	20/Jun/2018
Amplifier	Agilent	8449B	3008A02096	1GHz ~ 26.5GHz	25/Apr/2017	24/Apr/2018
Amplifier	EMC	EMC9135	980232	9KHz~1GHz	25/Apr/2017	24/Apr/2018
Spectrum Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	20/Jul/2017	19/Jul/2018
Bilog Antenna	TESEQ	CBL 6111D	35418	30MHz~1GHz	09/Sep/2017	08/Sep/2018
Horn Antenna	SCHWARZBECK	BBHA 9120D	BBHA9120D 1534	1GHz~18GHz	28/Apr/2017	27/Apr/2018
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170614	18GHz ~ 40GHz	06/Feb/2017	05/Feb/2018
Amplifier	MITEQ	JS44-18004000 -33-8P	1840917	18GHz ~ 40GHz	06/Feb/2017	05/Feb/2018
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	02/Feb/2017	01/Feb/2018
RF Cable-high	Jye Bao	RG142	03CH09-HY	1GHz ~ 40GHz	02/Feb/2017	01/Feb/2018
Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
Loop Antenna	TESEQ	HLA 6120	31244	9KHz-30MHz	02/Mar/2017	01/Mar/2018

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	30/Dec/2016	29/Dec/2017
Power Sensor	Anritsu	MA2411B	1027452	300MHz ~ 40GHz	24/Feb/2017	23/Feb/2018
Power Meter	Anritsu	ML2495A	1124009	300MHz ~ 40GHz	24/Feb/2017	23/Feb/2018
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
Temp. and Humidity Chamber	Giant Force	GTH-225-40-CP-AR	MAA1611-005	-40 ~ 100℃	21/Nov/2016	20/Nov/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY677/3	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY678/3	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10717/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12586/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018



EBW Result (Antenna Gain 10 dBi)
Non-Beamforming_Indoor Master

Appendix A.1

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	84.2M	75.762M	75M8D1D	83.4M	75.662M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	83.5M	75.862M	75M9D1D	83M	75.662M

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;



EBW Result (Antenna Gain 10 dBi) **Non-Beamforming_Indoor Master**

Appendix A.1

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_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	Inf	83.4M	75.662M	84.2M	75.762M				
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	Inf					83M	75.662M	83.5M	75.862M

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

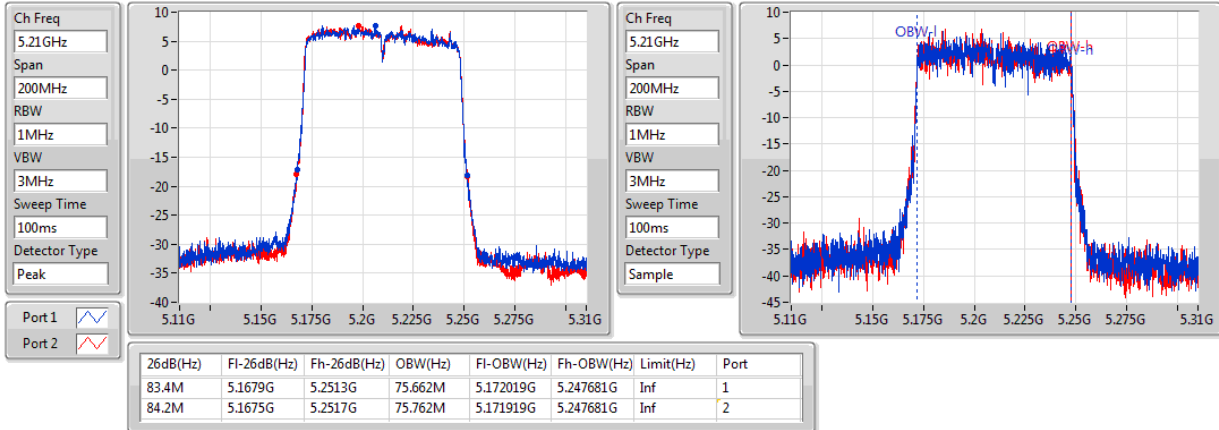
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

28/12/2017

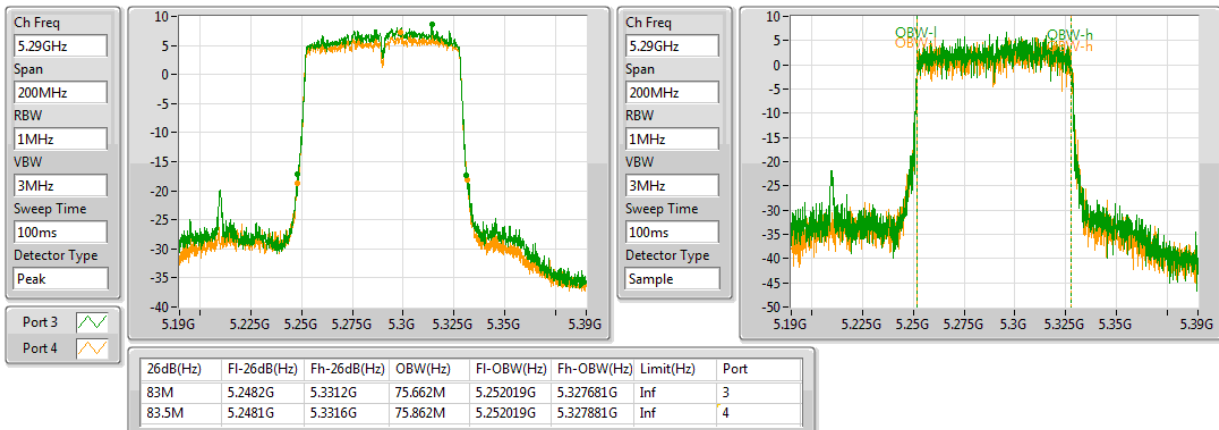


802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

28/12/2017





EBW Result (Antenna Gain 10 dBi)
Non-Beamforming_Outdoor Master

Appendix A.2

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
1802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	84.4M	75.962M	76M0D1D	83.8M	75.662M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	84.5M	75.762M	75M8D1D	81.9M	75.462M

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;



EBW Result (Antenna Gain 10 dBi)
Non-Beamforming_Outdoor Master

Appendix A.2

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_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	Inf	83.8M	75.662M	84.4M	75.962M				
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	Inf					84.5M	75.762M	81.9M	75.462M

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

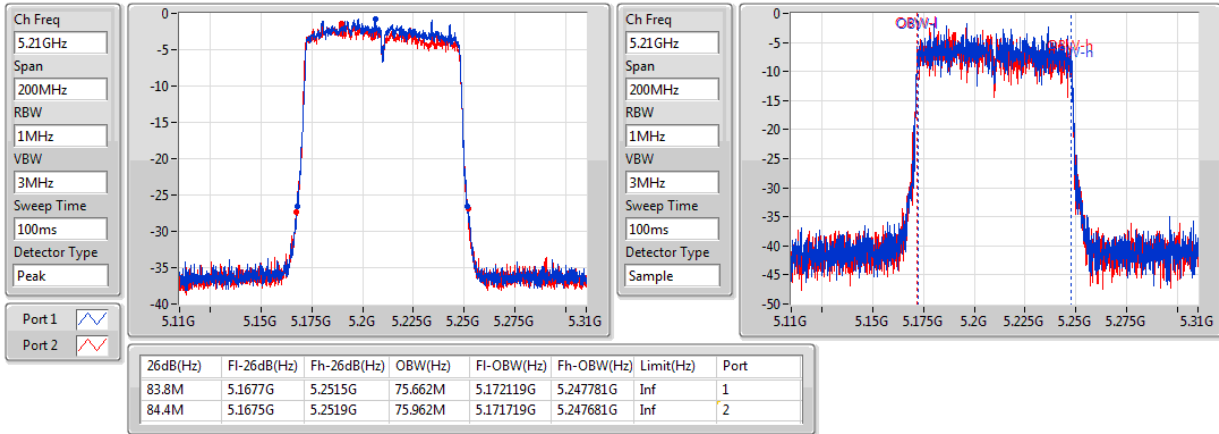
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

28/12/2017

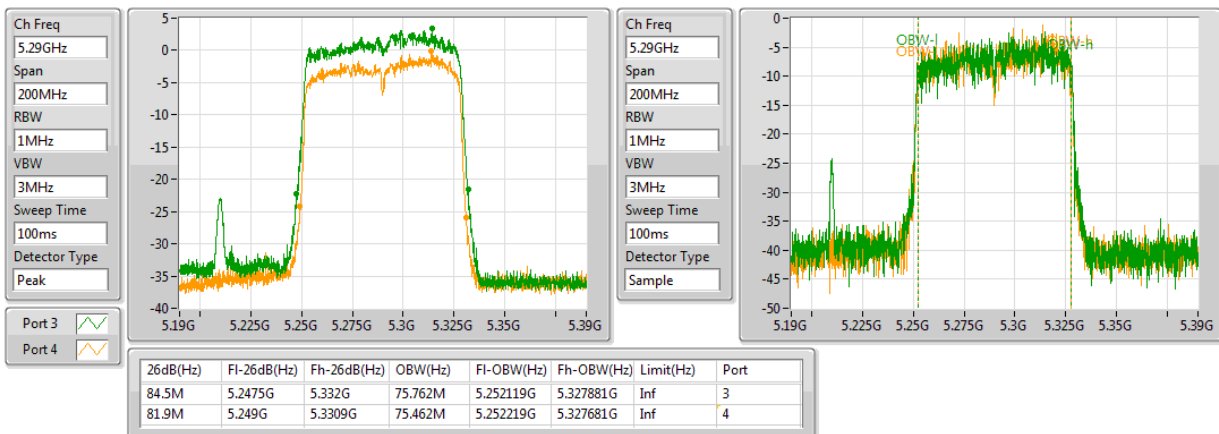


802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

28/12/2017





EBW Result (Antenna Gain 15 dBi)
Non-Beamforming_Indoor Master

Appendix A.3

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	83.4M	75.862M	75M9D1D	83.1M	75.562M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	84.8M	75.562M	75M6D1D	83.2M	75.562M

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;



EBW Result (Antenna Gain 15 dBi)
Non-Beamforming_Indoor Master

Appendix A.3

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_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	Inf	83.1M	75.562M	83.4M	75.862M				
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	Inf					84.8M	75.562M	83.2M	75.562M

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

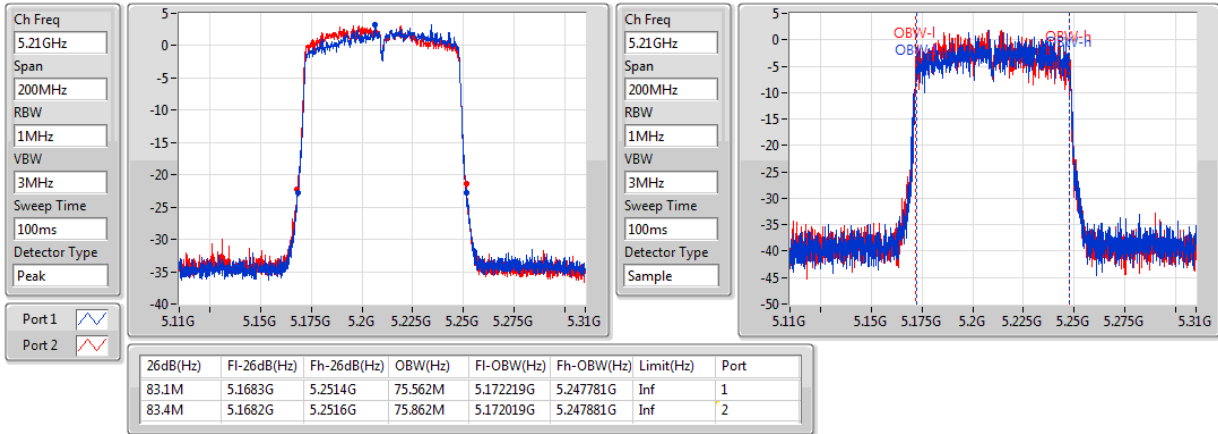
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

08/12/2017

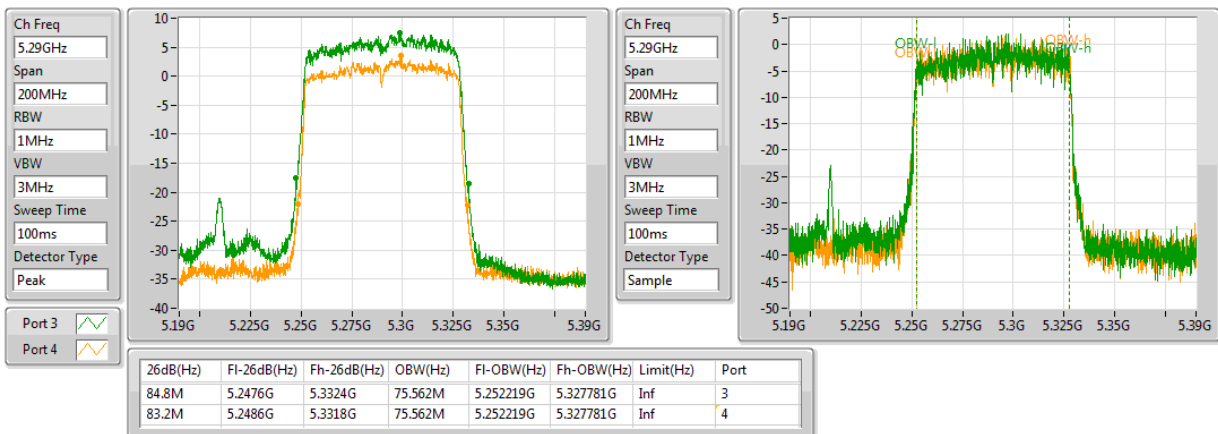


802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

08/12/2017





EBW Result (Antenna Gain 15 dBi)
Non-Beamforming_Outdoor Master

Appendix A.4

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	83.9M	75.862M	75M9D1D	82.9M	75.862M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	84.6M	75.662M	75M7D1D	82.6M	75.462M

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;



EBW Result (Antenna Gain 15 dBi)
Non-Beamforming_Outdoor Master

Appendix A.4

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_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	Inf	82.9M	75.862M	83.9M	75.862M				
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	Inf					84.6M	75.662M	82.6M	75.462M

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

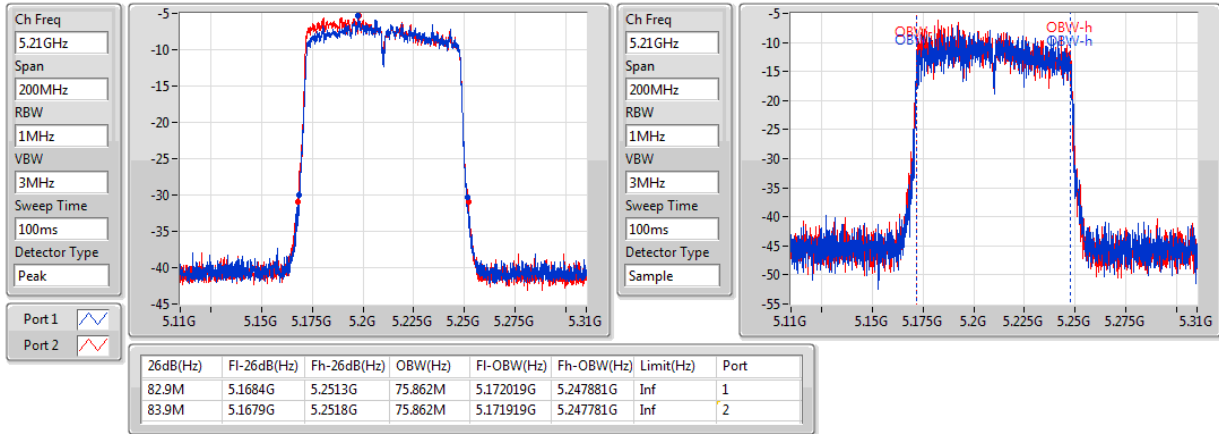
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

15/12/2017

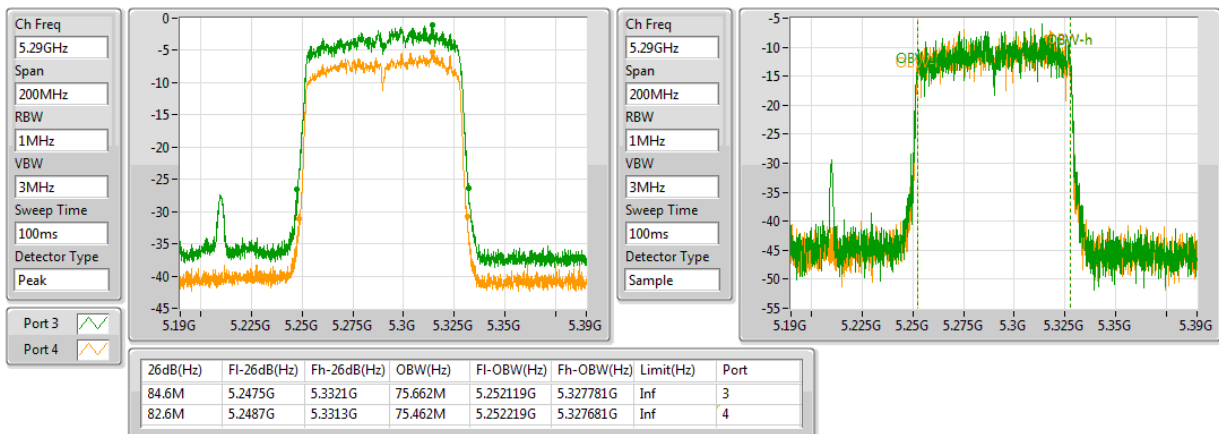


802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

15/12/2017





EBW Result (Antenna Gain 10 dBi) Beamforming_Client

Appendix A.5

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	81M	75.962M	76M0D1D	80.4M	75.762M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	85.3M	75.562M	75M6D1D	82M	75.262M

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;



EBW Result (Antenna Gain 10 dBi) **Beamforming_Client**

Appendix A.5

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_Nss2,(MCS0)_4TX(Port1& Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	Inf	80.4M	75.762M	81M	75.962M				
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3& Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	Inf					85.3M	75.562M	82M	75.262M

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

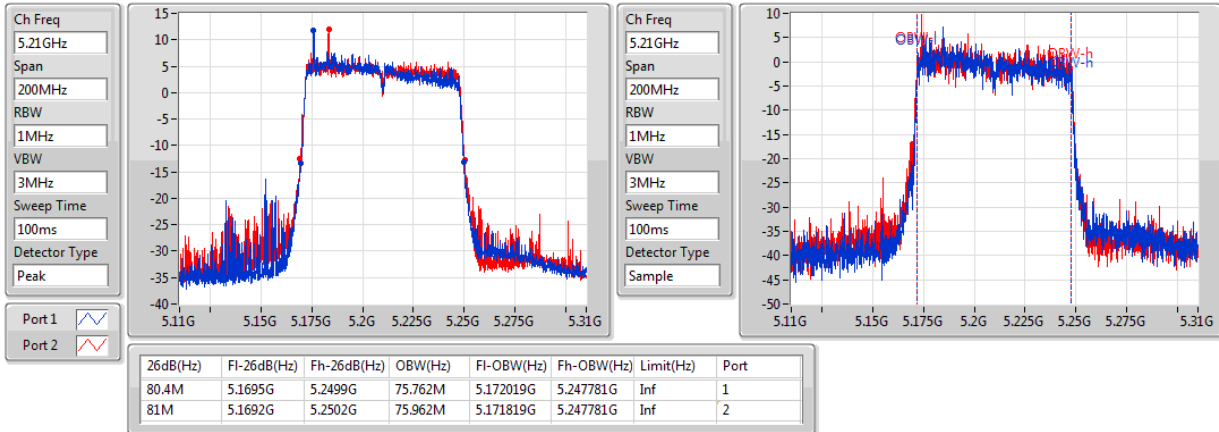
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

10/01/2018

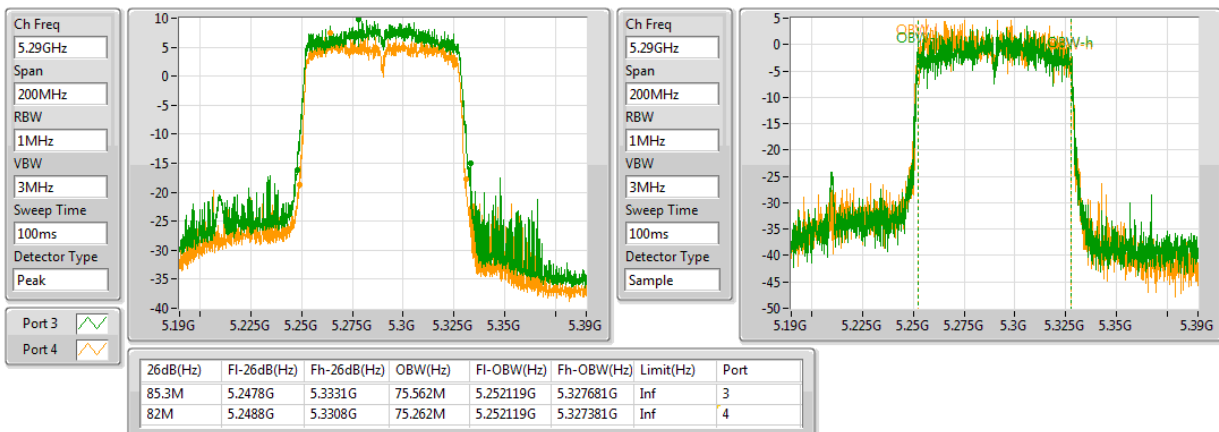


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

10/01/2018





EBW Result (Antenna Gain 10 dBi)
Beamforming_Indoor Master

Appendix A.6

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
J802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	81M	75.962M	76M0D1D	80.4M	75.762M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	85.3M	75.562M	75M6D1D	82M	75.262M

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;



EBW Result (Antenna Gain 10 dBi) **Beamforming_Indoor Master**

Appendix A.6

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_Nss2,(MCS0)_4TX(Port1& Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	Inf	80.4M	75.762M	81M	75.962M				
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3& Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	Inf					85.3M	75.562M	82M	75.262M

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

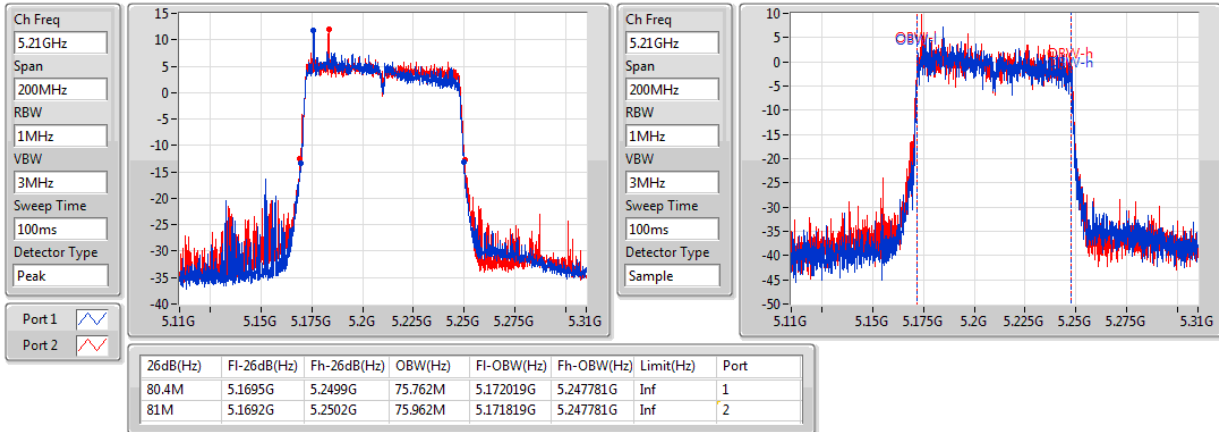
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

10/01/2018

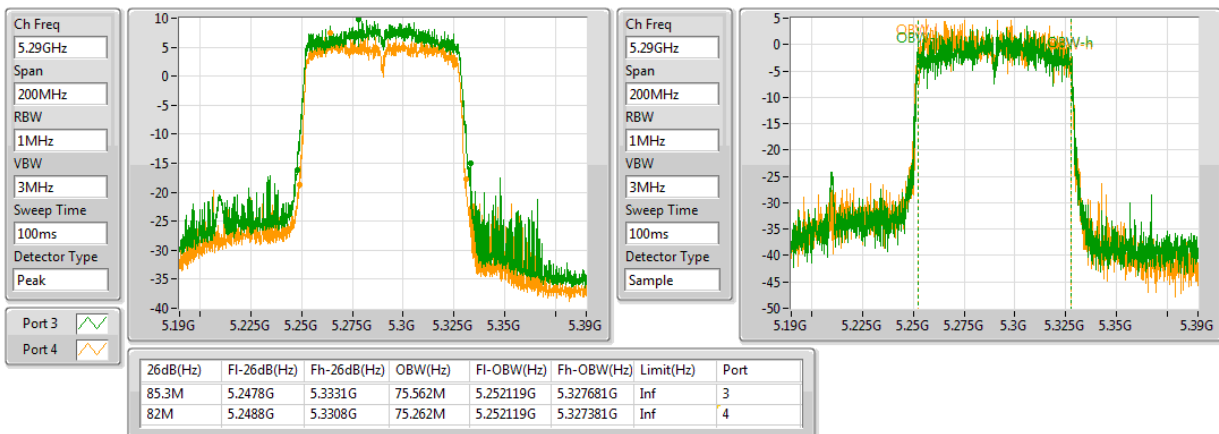


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

10/01/2018





EBW Result (Antenna Gain 10 dBi) Beamforming_Outdoor Master

Appendix A.7

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	83.3M	76.062M	76M1D1D	81.3M	75.662M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	85.2M	75.862M	75M9D1D	82.8M	75.262M

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;



EBW Result (Antenna Gain 10 dBi) **Beamforming_Outdoor Master**

Appendix A.7

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_Nss2,(MCS0)_4TX(Port1& Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	Inf	81.3M	75.662M	83.3M	76.062M				
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3& Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	Inf					85.2M	75.862M	82.8M	75.262M

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

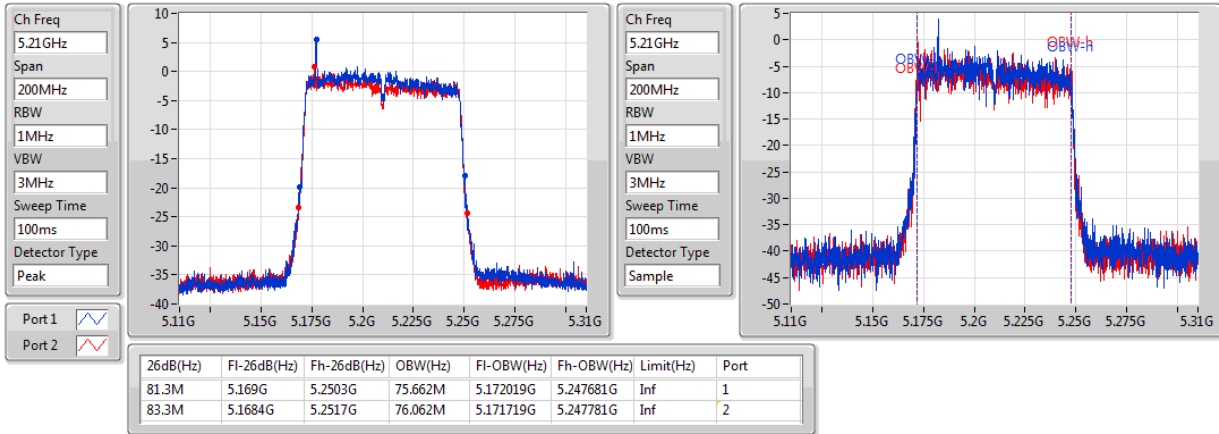
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

11/01/2018

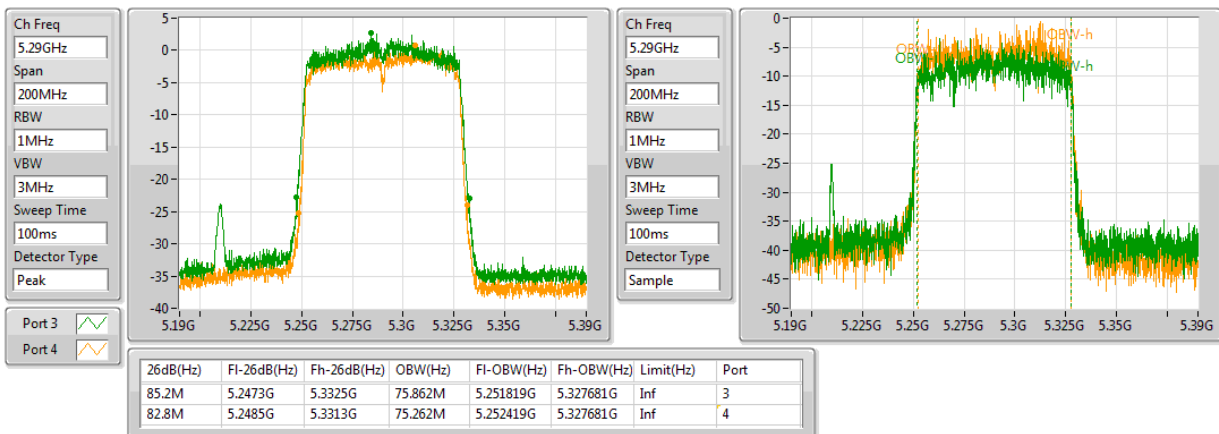


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

11/01/2018





EBW Result (Antenna Gain 15 dBi) Beamforming_Client

Appendix A.8

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	80.8M	75.862M	75M9D1D	80.5M	75.562M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	85.2M	75.762M	75M8D1D	83.5M	75.262M

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;



EBW Result (Antenna Gain 15 dBi)
Beamforming_Client

Appendix A.8

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_Nss2,(MCS0)_4TX(Port1& Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	Inf	80.5M	75.862M	80.8M	75.562M				
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3& Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	Inf					83.5M	75.262M	85.2M	75.762M

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

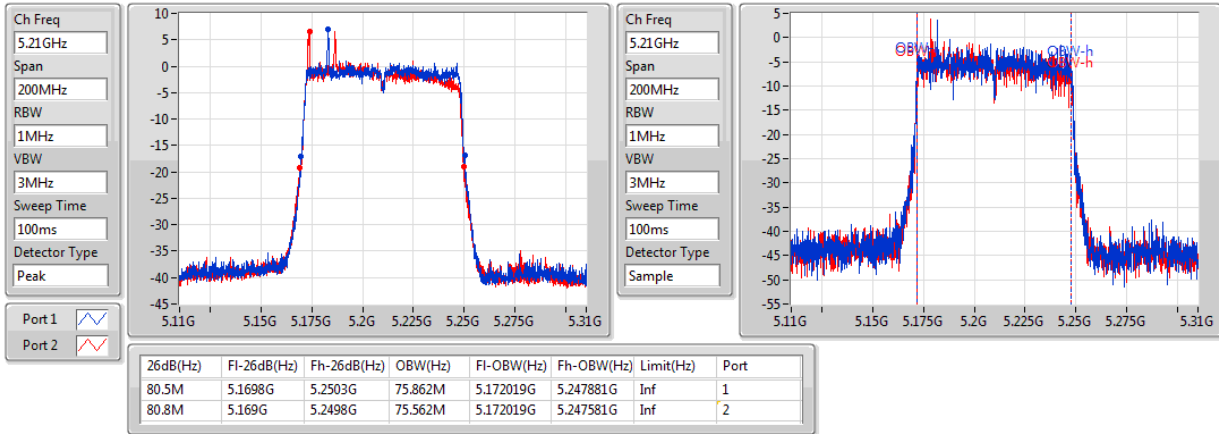
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

12/01/2018

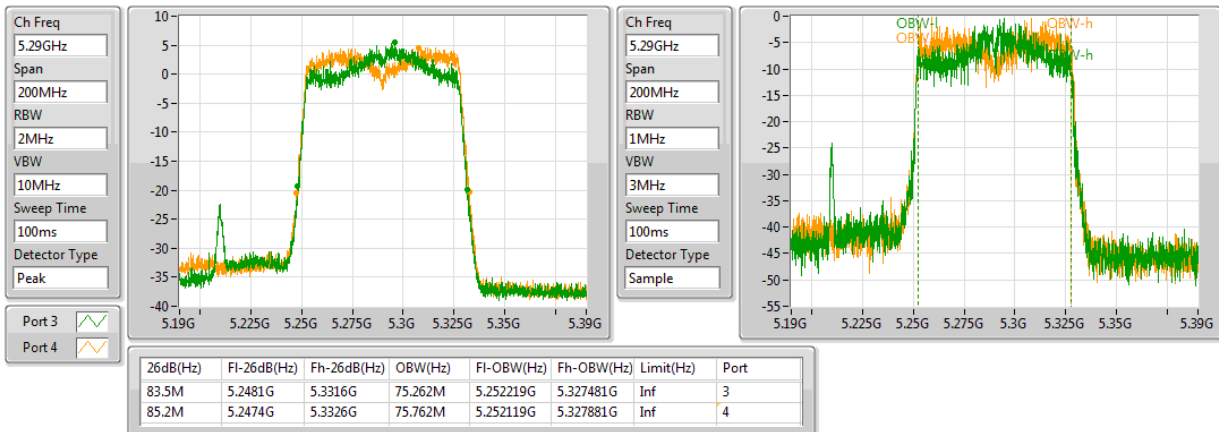


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

12/01/2018





EBW Result (Antenna Gain 15 dBi) Beamforming_Indoor Master

Appendix A.9

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	83.3M	76.062M	76M1D1D	80.6M	75.462M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	84.1M	75.662M	75M7D1D	83.5M	75.662M

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;



EBW Result (Antenna Gain 15 dBi) Beamforming_Indoor Master

Appendix A.9

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_Nss2,(MCS0)_4TX(Port1& Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	Inf	83.3M	76.062M	80.6M	75.462M				
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3& Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	Inf					84.1M	75.662M	83.5M	75.662M

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

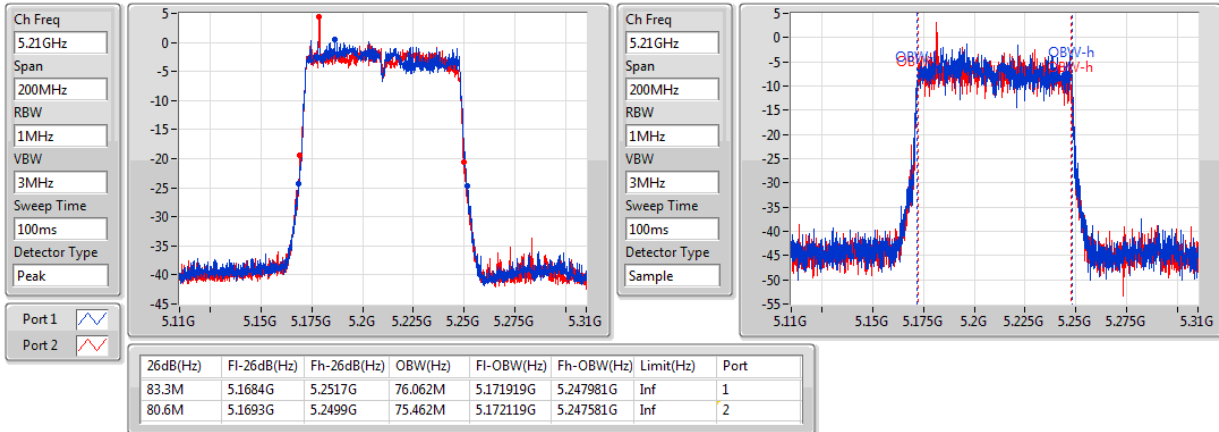
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

12/01/2018

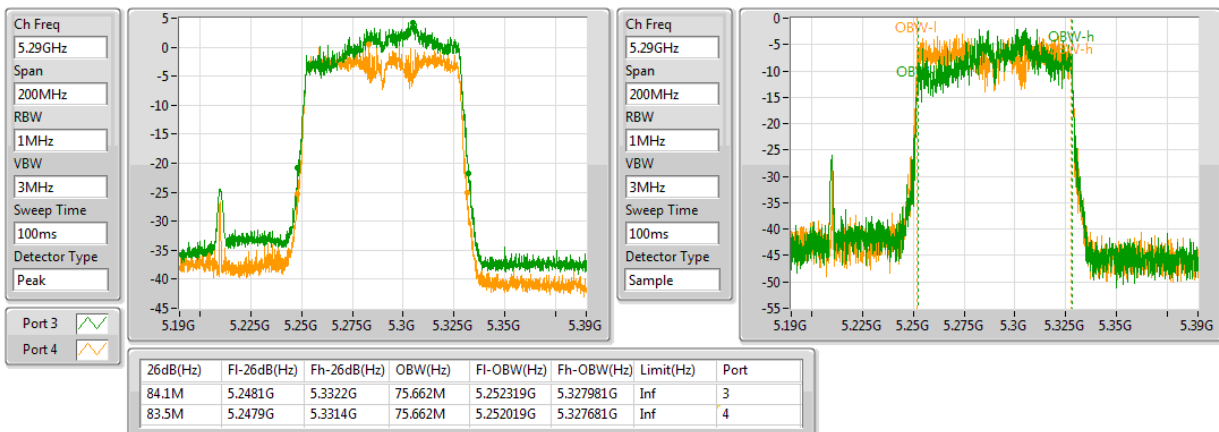


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

12/01/2018





EBW Result (Antenna Gain 15 dBi) Beamforming_Outdoor Master

Appendix A.10

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	83.2M	75.562M	75M6D1D	81.6M	75.462M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	123.2M	76.162M	76M2D1D	83.8M	75.562M

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;



EBW Result (Antenna Gain 15 dBi) Beamforming_Outdoor Master

Appendix A.10

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_Nss2,(MCS0)_4TX(Port1& Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	Inf	81.6M	75.462M	83.2M	75.562M				
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3& Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	Inf					123.2M	76.162M	83.8M	75.562M

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

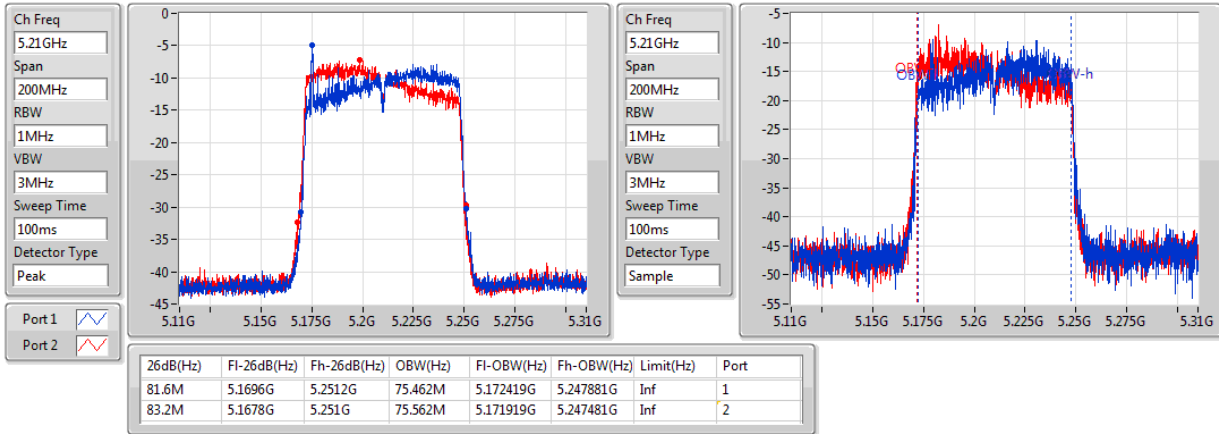
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

EBW

#5210MHz,5290MHz

18/01/2018

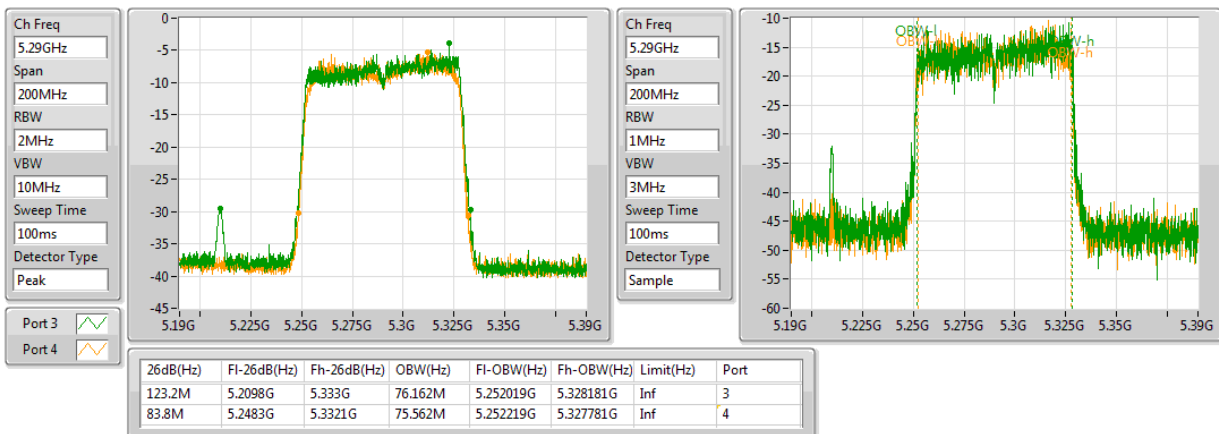


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

EBW

5210MHz,#5290MHz

18/01/2018





Power Result (Antenna Gain 10 dBi)
Non-Beamforming_Indoor Master

Appendix B.1

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	20.19	0.10447	30.19	1.04472
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	19.45	0.08810	29.45	0.88105



Power Result (Antenna Gain 10 dBi)
Non-Beamforming_Indoor Master

Appendix B.1

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	10.00	16.93	17.41			20.19	26.00	30.19	36.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	10.00			16.53	16.35	19.45	20.00	29.45	30.00

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



Power Result (Antenna Gain 10 dBi)
Non-Beamforming_Outdoor Master

Appendix B.2

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	10.67	0.01167	20.67	0.11668
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	10.65	0.01161	20.65	0.11614



Power Result (Antenna Gain 10 dBi)
Non-Beamforming_Outdoor Master

Appendix B.2

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	10.00	7.78	7.53			10.67	26.00	20.67	36.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	10.00			7.64	7.63	10.65	20.00	20.65	30.00

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



Power Result (Antenna Gain 15 dBi)
Non-Beamforming_Indoor Master

Appendix B.3

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	14.44	0.02780	29.44	0.87902
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	14.68	0.02938	29.68	0.92897



Power Result (Antenna Gain 15 dBi)
Non-Beamforming_Indoor Master

Appendix B.3

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	15.00	11.29	11.56			14.44	21.00	29.44	36.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	15.00			11.79	11.55	14.68	15.00	29.68	30.00

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



Power Result (Antenna Gain 15 dBi)
Non-Beamforming_Outdoor Master

Appendix B.4

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	5.64	0.00366	20.64	0.11588
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	5.91	0.00390	20.91	0.12331



Power Result (Antenna Gain 15 dBi)
Non-Beamforming_Outdoor Master

Appendix B.4

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	15.00	2.43	2.82			5.64	21.00	20.64	36.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	15.00			2.94	2.86	5.91	15.00	20.91	30.00

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



Power Result (Antenna Gain 10 dBi)
Beamforming_Client

Appendix B.5

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	16.81	0.04797	29.82	0.95940
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	16.85	0.04842	29.86	0.96828



Power Result (Antenna Gain 10 dBi)
Beamforming_Client

Appendix B.5

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	13.01	13.66	13.94			16.81	16.99	29.82	30.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	13.01			13.37	14.26	16.85	16.99	29.86	30.00

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



Power Result (Antenna Gain 10 dBi)
Beamforming_Indoor Master

Appendix B.6

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	16.81	0.04797	29.82	0.95940
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	16.85	0.04842	29.86	0.96828



Power Result (Antenna Gain 10 dBi) **Beamforming Indoor Master**

Appendix B.6

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	13.01	13.66	13.94			16.81	16.99	29.82	36.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	13.01			13.37	14.26	16.85	16.99	29.86	30.00

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



Power Result (Antenna Gain 10 dBi) Beamforming_Outdoor Master

Appendix B.7

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	7.68	0.00586	20.69	0.11722
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	7.55	0.00569	20.56	0.11376



Power Result (Antenna Gain 10 dBi)
Beamforming_Outdoor Master

Appendix B.7

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	13.01	3.61	5.52			7.68	22.99	20.69	36.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	13.01			4.33	4.74	7.55	16.99	20.56	30.00

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



Power Result (Antenna Gain 15 dBi)
Beamforming_Client

Appendix B.8

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	11.06	0.01276	29.07	0.80724
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	10.31	0.01074	28.32	0.67920



Power Result (Antenna Gain 15 dBi) Beamforming_Client

Appendix B.8

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	18.01	8.31	7.77			11.06	11.99	29.07	30.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	18.01			6.77	7.78	10.31	11.99	28.32	30.00

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



Power Result (Antenna Gain 15 dBi)
Beamforming_Indoor Master

Appendix B.9

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	12.29	0.01694	30.30	1.07152
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	11.27	0.01340	29.28	0.84723



Power Result (Antenna Gain 15 dBi)
Beamforming Indoor Master

Appendix B.9

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	18.01	9.65	8.87			12.29	17.99	30.30	36.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	18.01			7.89	8.60	11.27	11.99	29.28	30.00

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



Power Result (Antenna Gain 15 dBi)
Beamforming_Outdoor Master

Appendix B.10

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	2.20	0.00166	20.21	0.10495
5.25-5.35GHz	-	-	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	1.36	0.00137	19.37	0.08650



Power Result (Antenna Gain 15 dBi)
Beamforming_Outdoor Master

Appendix B.10

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	18.01	-1.23	-0.42			2.20	17.99	20.21	36.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	18.01			-1.46	-1.84	1.36	11.99	19.37	30.00

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



PSD Result (Antenna Gain 10 dBi)
Non-Beamforming_Indoor Master

Appendix C.1

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	0.36	13.37
5.25-5.35GHz	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	0.10	13.11

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



PSD Result (Antenna Gain 10 dBi)
Non-Beamforming_Indoor Master

Appendix C.1

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	13.01	-2.80	-2.44			0.36	9.99	13.37	23.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	13.01			-2.26	-3.65	0.10	3.99	13.11	17.00

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

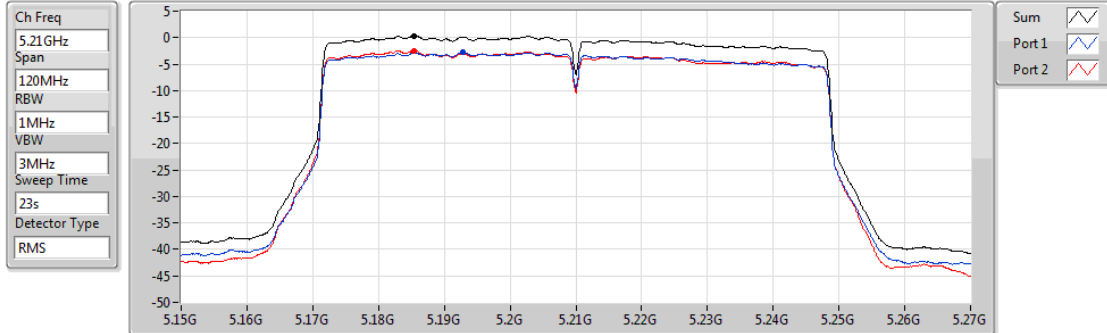
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

28/12/2017



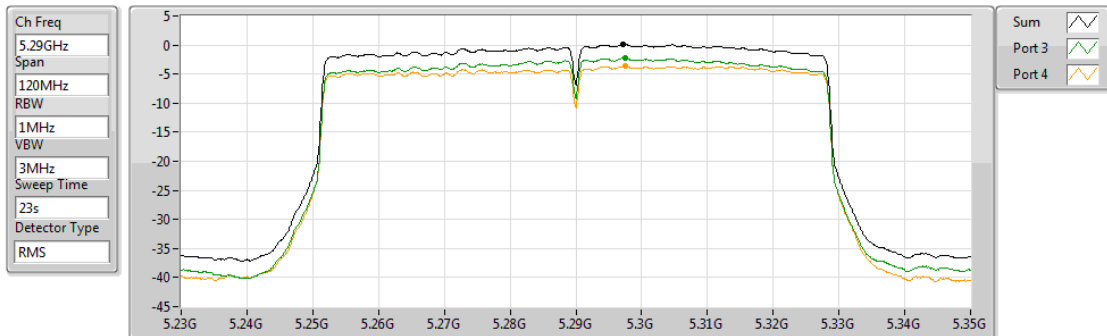
Sum	PD	Port 1	Port 2
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
0.36	0.36	-2.80	-2.44

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

28/12/2017



Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
0.10	0.10			-2.26	-3.65



PSD Result (Antenna Gain 10 dBi)
Non-Beamforming_Outdoor Master

Appendix C.2

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-8.62	4.39
5.25-5.35GHz	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-8.37	4.64

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



PSD Result (Antenna Gain 10 dBi)
Non-Beamforming_Outdoor Master

Appendix C.2

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	13.01	-11.36	-11.58			-8.62	9.99	4.39	23.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	13.01			-11.37	-11.11	-8.37	3.99	4.64	17.00

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

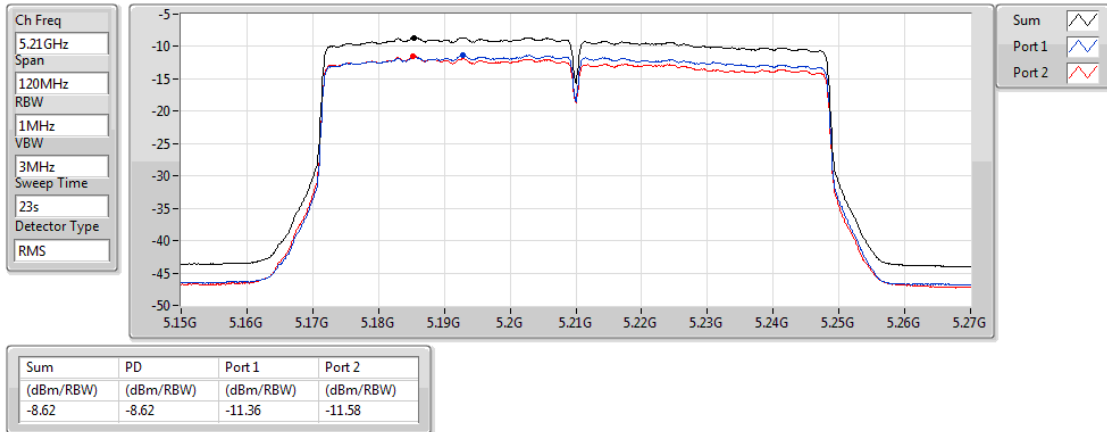
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

28/12/2017



802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

28/12/2017





PSD Result (Antenna Gain 15 dBi)
Non-Beamforming_Indoor Master

Appendix C.3

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-4.41	13.60
5.25-5.35GHz	-	-
802.11ac VHT80+80_Nss1,(MCS0)_4TX(Port3&Port4)	-4.22	13.79

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



PSD Result (Antenna Gain 15 dBi)
Non-Beamforming_Indoor Master

Appendix C.3

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	18.01	-7.61	-7.05			-4.41	4.99	13.60	23.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	18.01			-7.09	-7.36	-4.22	-1.01	13.79	17.00

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

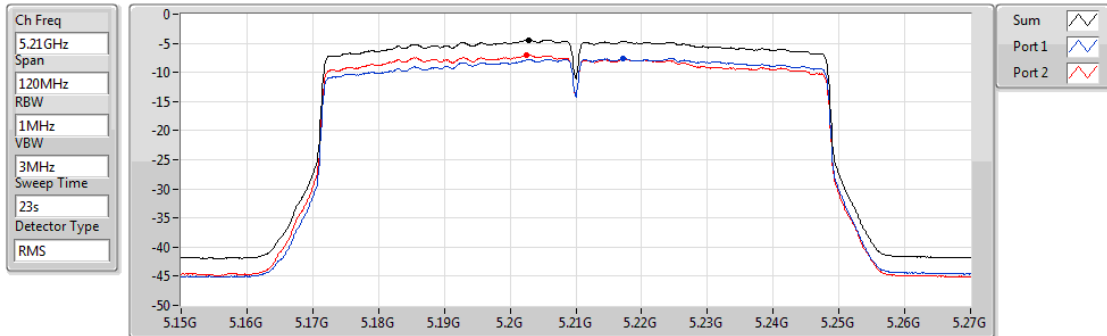
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

08/12/2017



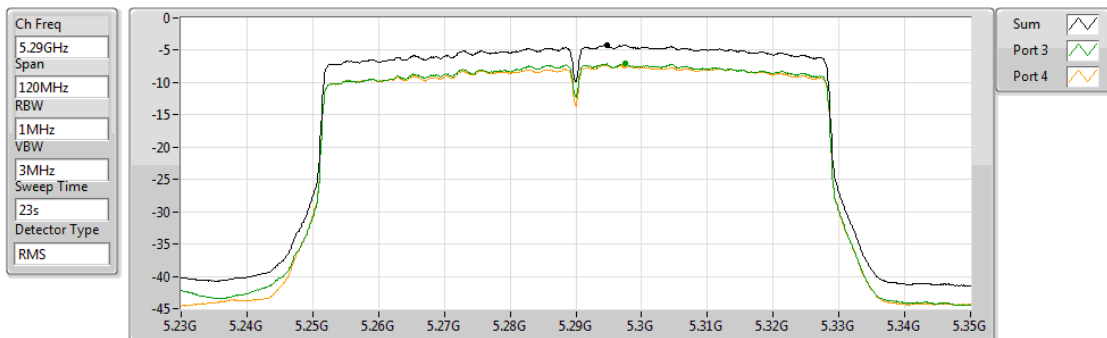
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.41	-4.41	-7.61	-7.05

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

08/12/2017



Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.22	-4.22			-7.09	-7.36



PSD Result (Antenna Gain 15 dBi)
Non-Beamforming_Outdoor Master

Appendix C.4

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-13.08	4.93
5.25-5.35GHz	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-12.99	5.02

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



PSD Result (Antenna Gain 15 dBi)
Non-Beamforming_Outdoor Master

Appendix C.4

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	18.01	-16.28	-15.63			-13.08	4.99	4.93	23.00
802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz	Pass	18.01			-15.85	-15.91	-12.99	-1.01	5.02	17.00

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

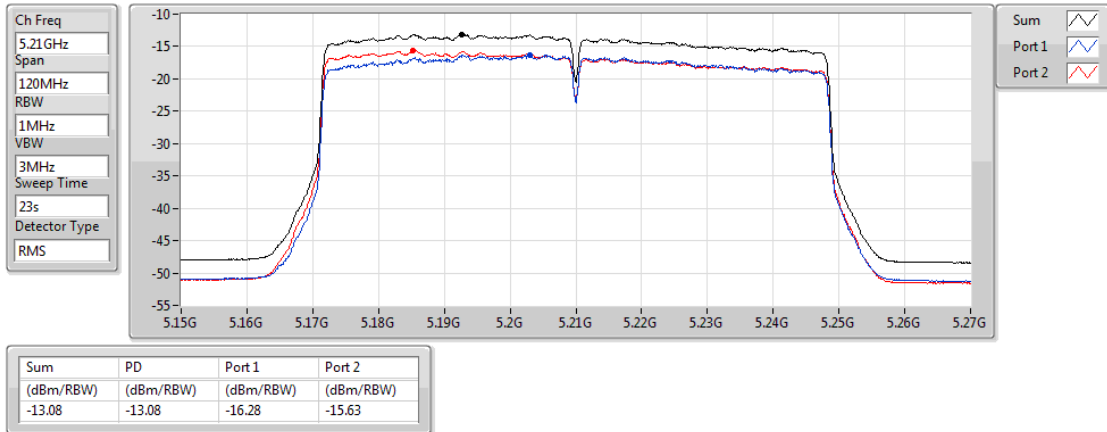
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

15/12/2017

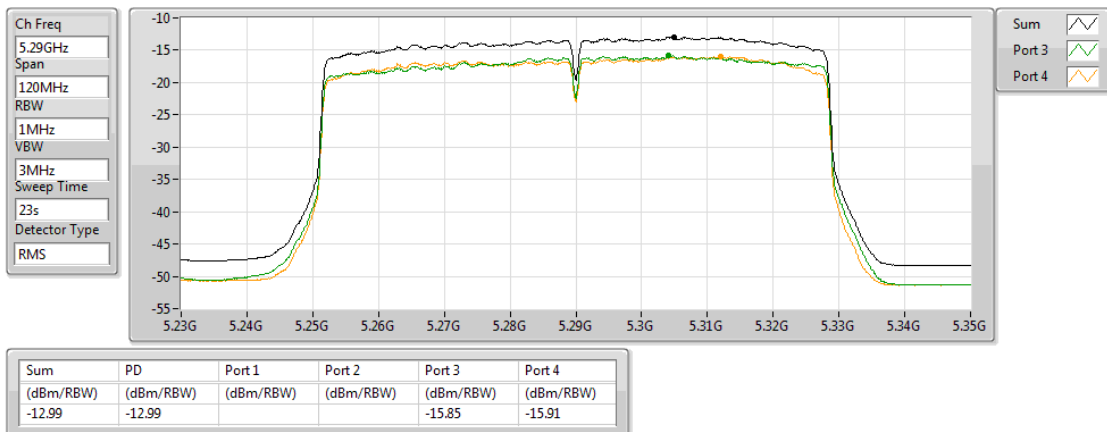


802.11ac VHT80+80_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

15/12/2017





PSD Result (Antenna Gain 10 dBi)
Beamforming_Client

Appendix C.5

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-1.54	11.47
5.25-5.35GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-2.52	10.49

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



PSD Result (Antenna Gain 10 dBi) **Beamforming_Client**

Appendix C.5

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	13.01	-4.18	-4.41			-1.54	3.99	11.47	17.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	13.01			-5.54	-4.51	-2.52	3.99	10.49	17.00

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 Xpower density;



PSD Result (Antenna Gain 10 dBi)
Beamforming_Client

Appendix C.5

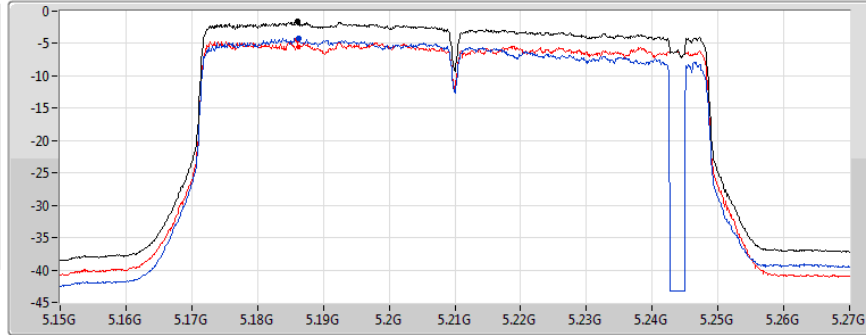
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

10/01/2018

Ch Freq
5.21GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
19.7s
Detector Type
RMS



Sum
Port 1
Port 2

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.54	-1.54	-4.18	-4.41

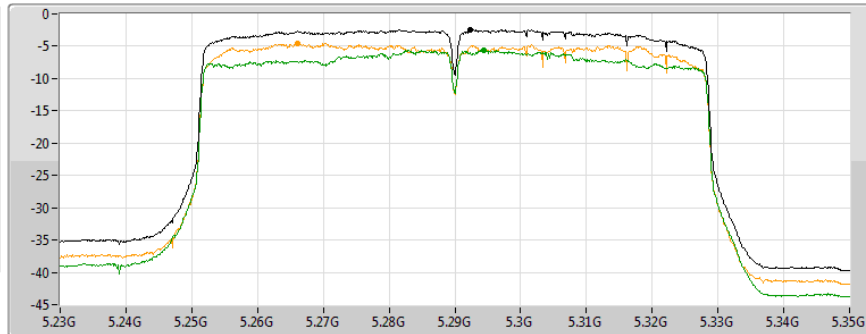
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

10/01/2018

Ch Freq
5.29GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
19.7s
Detector Type
RMS



Sum
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)
-2.52	-2.52			-5.54	-4.51



PSD Result (Antenna Gain 10 dBi)
Beamforming_Indoor Master

Appendix C.6

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-1.54	11.47
5.25-5.35GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-2.52	10.49

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



PSD Result (Antenna Gain 10 dBi) Beamforming_Indoor Master

Appendix C.6

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	13.01	-4.18	-4.41			-1.54	9.99	11.47	23.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	13.01			-5.54	-4.51	-2.52	3.99	10.49	17.00

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 Xpower density;

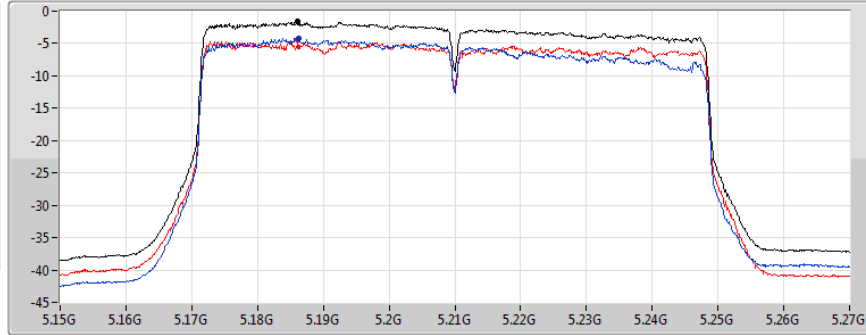
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

10/01/2018

Ch Freq
5.21GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
19.7s
Detector Type
RMS



Sum ☒
Port 1 ☒
Port 2 ☒

Sum	PD	Port 1	Port 2
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
-1.54	-1.54	-4.18	-4.41

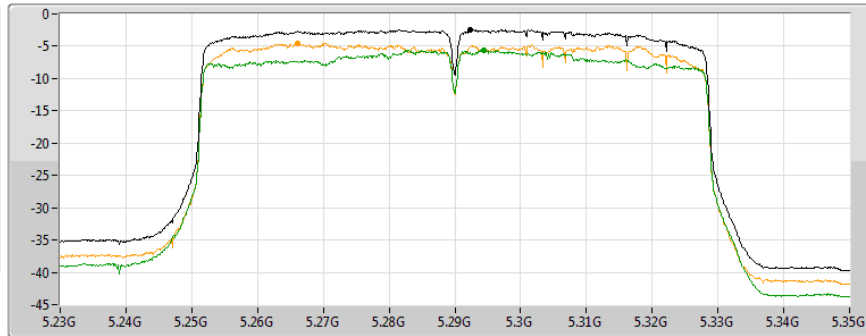
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

10/01/2018

Ch Freq
5.29GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
19.7s
Detector Type
RMS



Sum ☒
Port 3 ☒
Port 4 ☒

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
-2.52	-2.52			-5.54	-4.51



PSD Result (Antenna Gain 10 dBi)
Beamforming_Outdoor Master

Appendix C.7

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-11.58	1.43
5.25-5.35GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-11.68	1.33

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



PSD Result (Antenna Gain 10 dBi) Beamforming_Outdoor Master

Appendix C.7

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	13.01	-14.72	-13.97			-11.58	9.99	1.43	23.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	13.01			-14.28	-14.32	-11.68	3.99	1.33	17.00

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

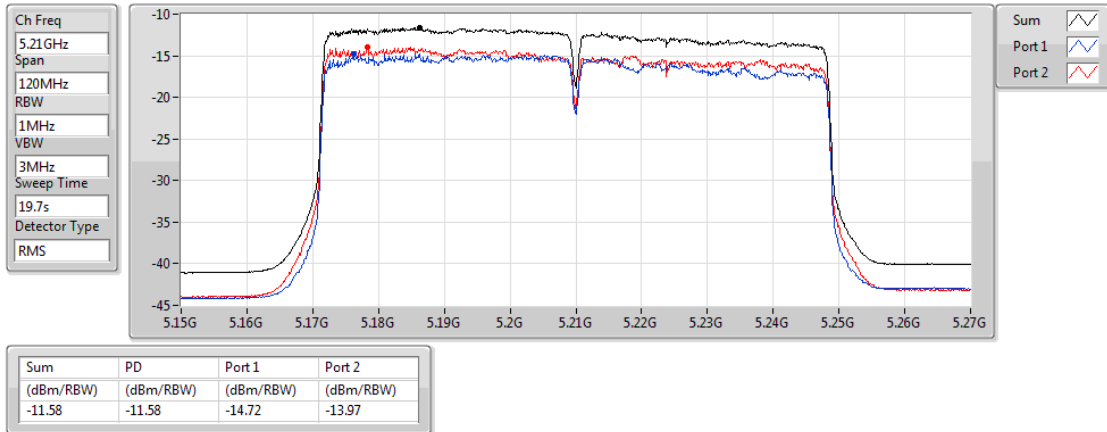
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

11/01/2018

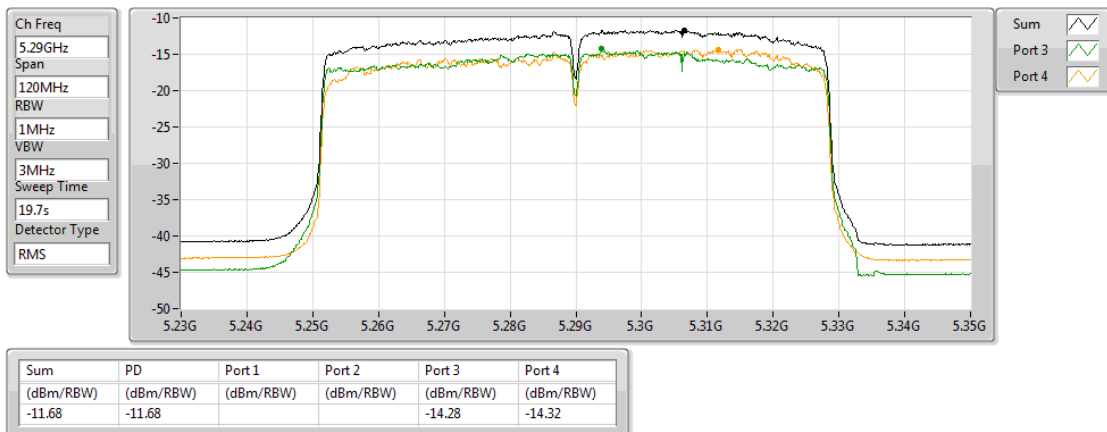


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

11/01/2018





PSD Result (Antenna Gain 15 dBi)
Beamforming_Client

Appendix C.8

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-7.33	10.68
5.25-5.35GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-7.73	10.28

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



PSD Result (Antenna Gain 15 dBi)
Beamforming_Client

Appendix C.8

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	18.01	-10.00	-9.98			-7.33	-1.01	10.68	17.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	18.01			-9.47	-9.87	-7.73	-1.01	10.28	17.00

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

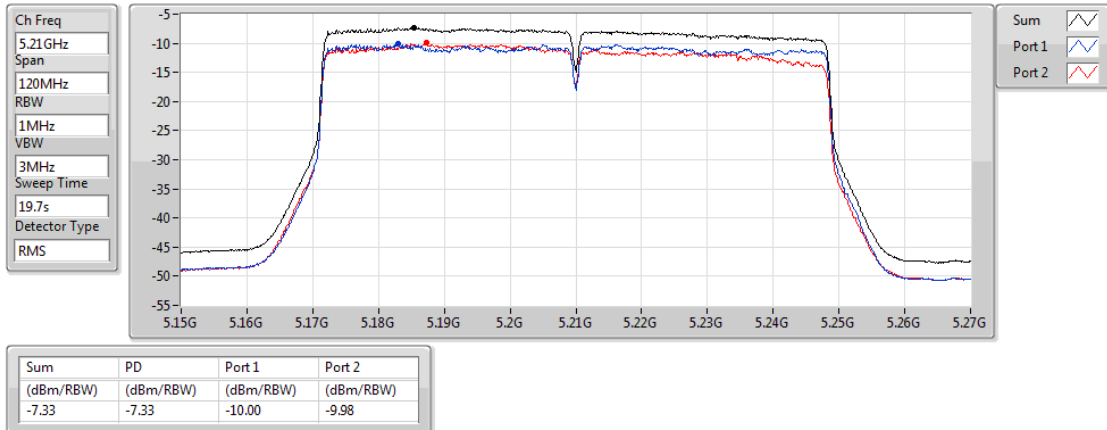
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

12/01/2018

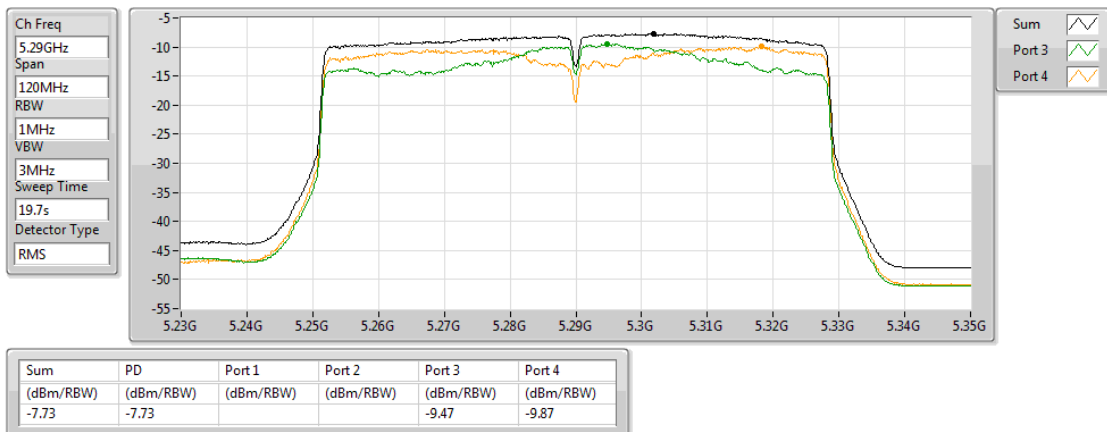


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

12/01/2018





PSD Result (Antenna Gain 15 dBi)
Beamforming_Indoor Master

Appendix C.9

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-6.25	11.76
5.25-5.35GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-6.74	11.27

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



PSD Result (Antenna Gain 15 dBi) Beamforming_Indoor Master

Appendix C.9

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port 1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	18.01	-8.17	-9.31			-6.25	4.99	11.76	23.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port 3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	18.01			-8.07	-9.67	-6.74	-1.01	11.27	17.00

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

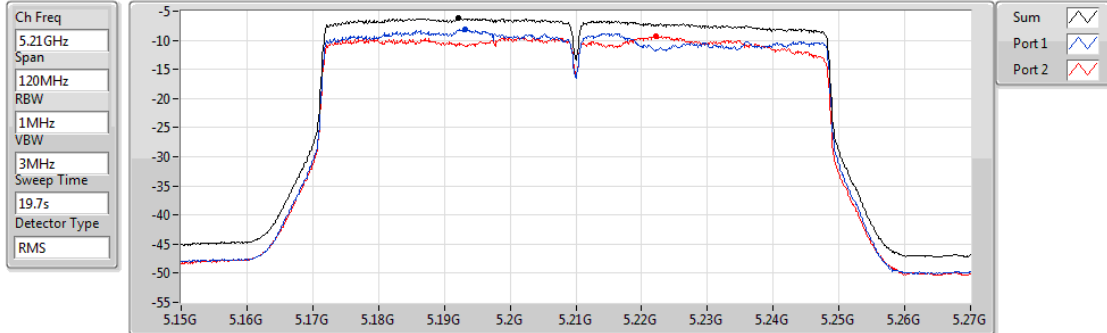
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

12/01/2018



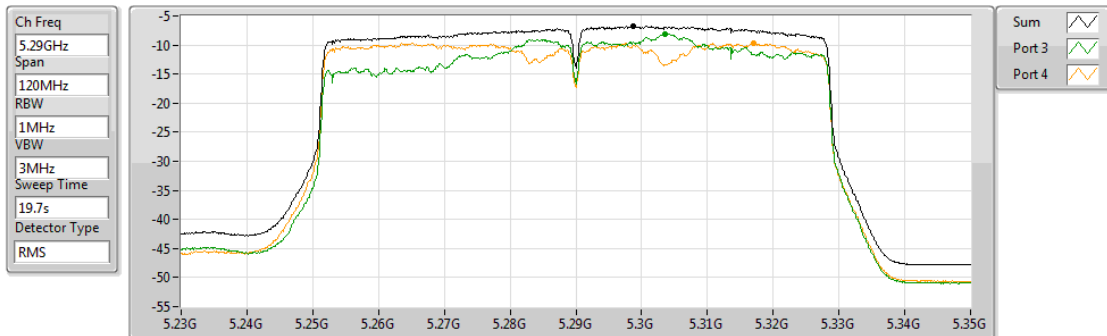
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.25	-6.25	-8.17	-9.31

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

12/01/2018



Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.74	-6.74			-8.07	-9.67



PSD Result (Antenna Gain 15 dBi)
Beamforming_Outdoor Master

Appendix C.10

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-16.60	1.41
5.25-5.35GHz	-	-
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-17.31	0.70

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



PSD Result (Antenna Gain 15 dBi) **Beamforming_Outdoor Master**

Appendix C.10

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)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz_TnomVnom	Pass	18.01	-18.89	-18.14			-16.60	4.99	1.41	23.00
802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)	-	-	-	-	-	-	-	-	-	-
5210MHz,#5290MHz_TnomVnom	Pass	18.01			-20.16	-19.58	-17.31	-1.01	0.70	17.00

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

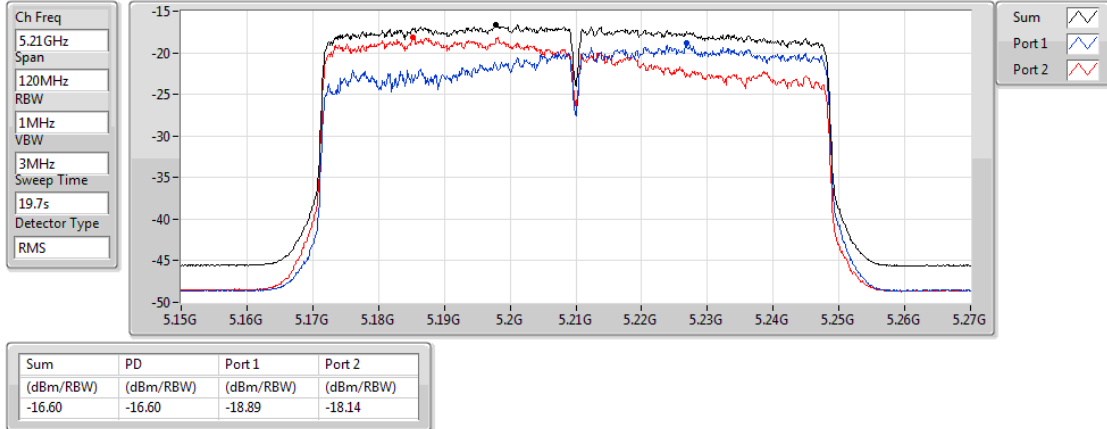
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port1&Port2)

PSD

#5210MHz,5290MHz

18/01/2018

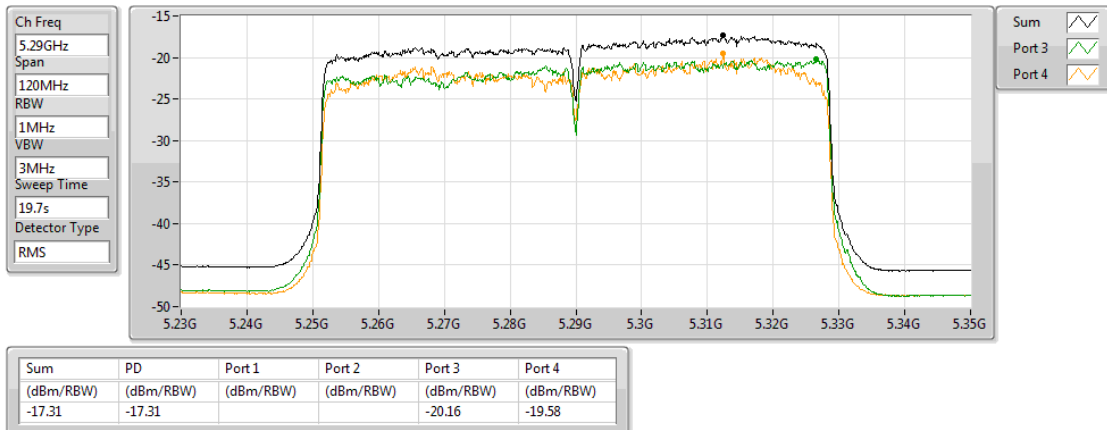


802.11ac VHT80+80-BF_Nss2,(MCS0)_4TX(Port3&Port4)

PSD

5210MHz,#5290MHz

18/01/2018





RSE TX below 1GHz Result (Antenna Gain 10 dBi)
Non-Beamforming

Appendix D.1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX	Pass	QP	41.64M	38.57	40.00	-1.43	-18.52	3	Vertical	328	1.00	-



RSE TX below 1GHz Result (Antenna Gain 10 dBi) Non-Beamforming

Appendix D.1

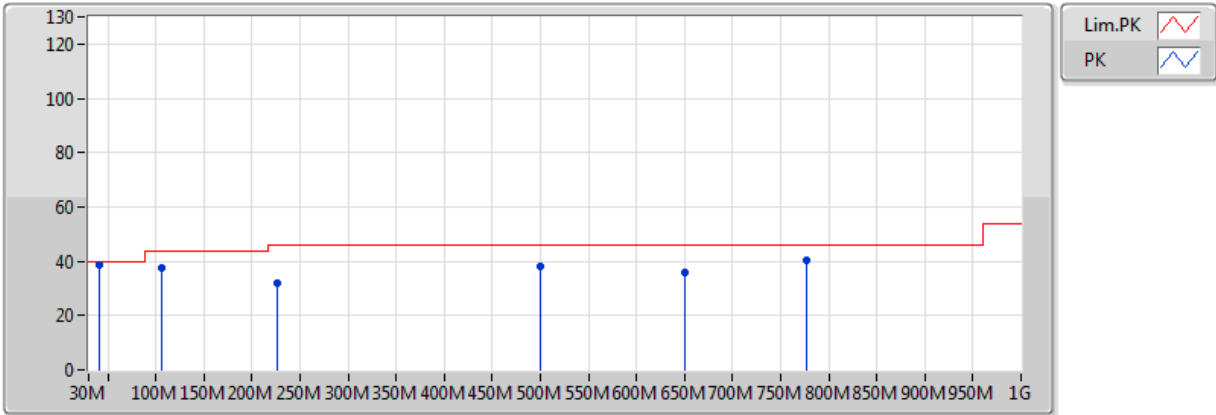
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
#5210#5290MHz	Pass	PK	220.12M	40.72	46.00	-5.28	-19.70	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	291.9M	42.75	46.00	-3.25	-15.28	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	410.24M	33.21	46.00	-12.79	-11.76	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	499.48M	33.74	46.00	-12.26	-9.76	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	579.02M	33.21	46.00	-12.79	-8.50	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	QP	105.66M	39.81	43.50	-3.69	-19.40	3	Horizontal	125	1.24	-
#5210#5290MHz	Pass	PK	105.66M	37.47	43.50	-6.03	-19.40	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	PK	225.94M	31.73	46.00	-14.27	-19.01	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	PK	499.48M	38.11	46.00	-7.89	-9.76	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	PK	650.8M	36.08	46.00	-9.92	-7.26	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	PK	776.9M	40.57	46.00	-5.43	-5.33	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	QP	41.64M	38.57	40.00	-1.43	-18.52	3	Vertical	328	1.00	-

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_PoE

20/12/2017

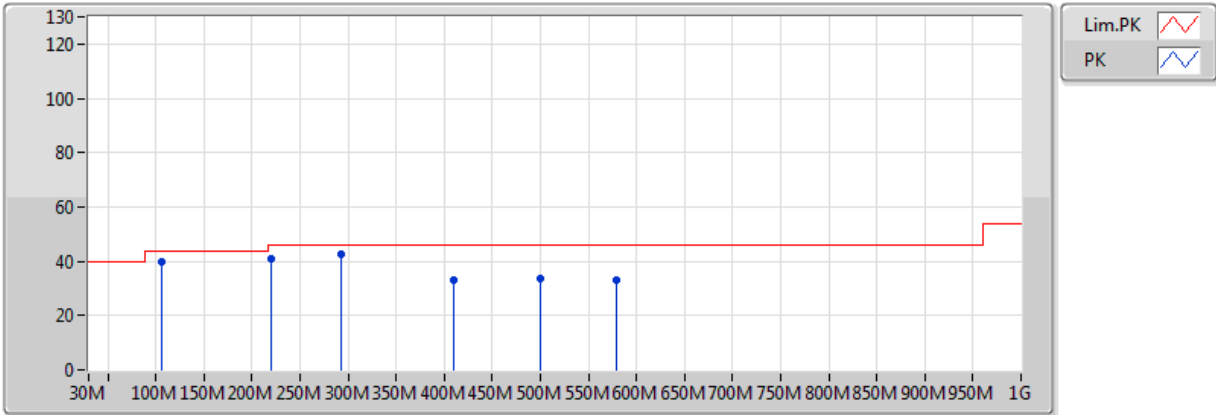


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	105.66M	37.47	43.50	-6.03	-19.40	3	Vertical	0	1.00	-	56.87	15.72	1.66	36.78
PK	225.94M	31.73	46.00	-14.27	-19.01	3	Vertical	0	1.00	-	50.74	14.95	2.44	36.40
PK	499.48M	38.11	46.00	-7.89	-9.76	3	Vertical	0	1.00	-	47.87	23.22	3.94	36.92
PK	650.8M	36.08	46.00	-9.92	-7.26	3	Vertical	0	1.00	-	43.34	25.59	4.42	37.27
PK	776.9M	40.57	46.00	-5.43	-5.33	3	Vertical	0	1.00	-	45.90	27.36	4.76	37.45
QP	41.64M	38.57	40.00	-1.43	-18.52	3	Vertical	328	1.00	-	57.09	17.63	1.08	37.22

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_PoE

20/12/2017



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	220.12M	40.72	46.00	-5.28	-19.70	3	Horizontal	360	1.00	-	60.42	14.29	2.40	36.39
PK	291.9M	42.75	46.00	-3.25	-15.28	3	Horizontal	360	1.00	-	58.03	18.23	2.92	36.43
PK	410.24M	33.21	46.00	-12.79	-11.76	3	Horizontal	360	1.00	-	44.97	21.52	3.36	36.64
PK	499.48M	33.74	46.00	-12.26	-9.76	3	Horizontal	360	1.00	-	43.50	23.22	3.94	36.92
PK	579.02M	33.21	46.00	-12.79	-8.50	3	Horizontal	360	1.00	-	41.71	24.54	4.09	37.14
QP	105.66M	39.81	43.50	-3.69	-19.40	3	Horizontal	125	1.24	-	59.21	15.72	1.66	36.78



RSE TX above 1GHz Result (Antenna Gain 10 dBi)
Non-Beamforming

Appendix D.2

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX	Pass	AV	5.350005G	53.29	54.00	-0.71	2.85	3	Horizontal	13	1.64	-



RSE TX above 1GHz Result (Antenna Gain 10 dBi) Non-Beamforming

Appendix D.2

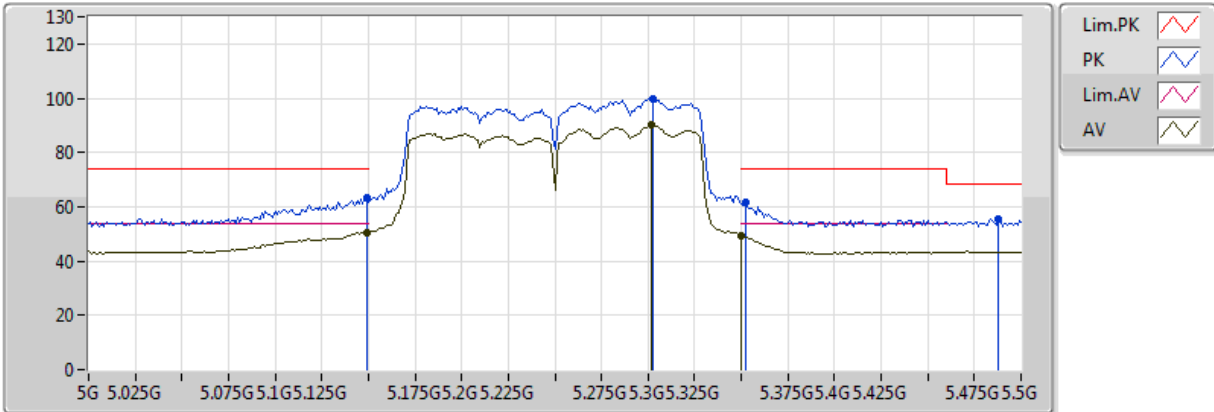
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
#5210#5290MHz	Pass	AV	5.149995G	51.85	54.00	-2.15	2.73	3	Horizontal	13	1.64	-
#5210#5290MHz	Pass	AV	5.285G	90.74	Inf	-Inf	2.81	3	Horizontal	13	1.64	-
#5210#5290MHz	Pass	AV	5.350005G	53.29	54.00	-0.71	2.85	3	Horizontal	13	1.64	-
#5210#5290MHz	Pass	PK	5.149G	64.64	74.00	-9.36	2.73	3	Horizontal	13	1.64	-
#5210#5290MHz	Pass	PK	5.287G	100.38	Inf	-Inf	2.81	3	Horizontal	13	1.64	-
#5210#5290MHz	Pass	PK	5.353G	65.12	74.00	-8.88	2.85	3	Horizontal	13	1.64	-
#5210#5290MHz	Pass	PK	5.464G	55.40	68.20	-12.80	2.91	3	Horizontal	13	1.64	-
#5210#5290MHz	Pass	AV	5.149G	50.67	54.00	-3.33	2.73	3	Vertical	22	1.26	-
#5210#5290MHz	Pass	AV	5.302G	90.02	Inf	-Inf	2.82	3	Vertical	22	1.26	-
#5210#5290MHz	Pass	AV	5.350005G	49.54	54.00	-4.46	2.85	3	Vertical	22	1.26	-
#5210#5290MHz	Pass	PK	5.149G	63.54	74.00	-10.46	2.73	3	Vertical	22	1.26	-
#5210#5290MHz	Pass	PK	5.303G	99.73	Inf	-Inf	2.82	3	Vertical	22	1.26	-
#5210#5290MHz	Pass	PK	5.352G	61.66	74.00	-12.34	2.85	3	Vertical	22	1.26	-
#5210#5290MHz	Pass	PK	5.488G	55.32	68.20	-12.88	2.92	3	Vertical	22	1.26	-
#5210#5290MHz	Pass	AV	10.51266G	41.21	54.00	-12.79	12.74	3	Horizontal	0	1.50	-
#5210#5290MHz	Pass	PK	10.5108G	53.95	74.00	-20.05	12.73	3	Horizontal	0	1.50	-
#5210#5290MHz	Pass	AV	10.51422G	41.01	54.00	-12.99	12.74	3	Vertical	360	1.50	-
#5210#5290MHz	Pass	PK	10.50876G	53.93	74.00	-20.07	12.73	3	Vertical	360	1.50	-

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_TX

20/12/2017

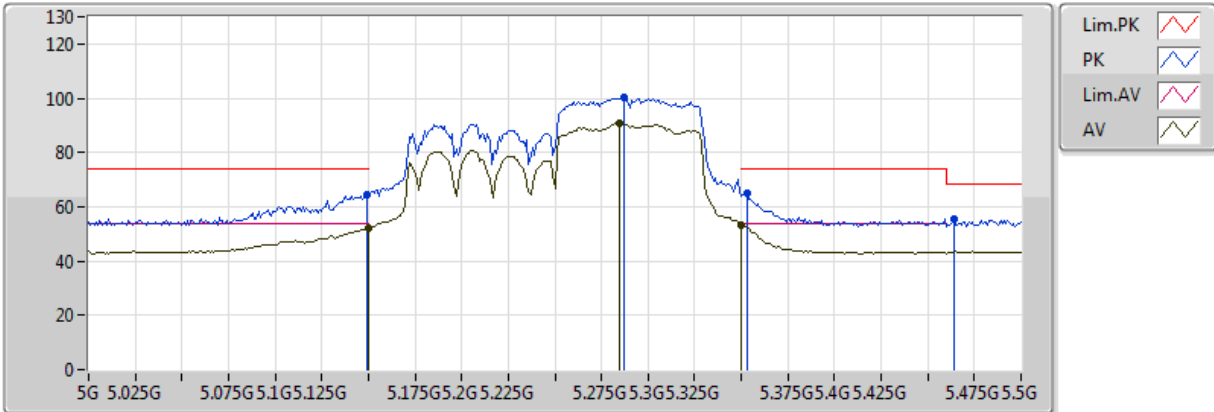


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.149G	50.67	54.00	-3.33	2.73	3	Vertical	22	1.26	-	47.94	31.66	5.62	34.55
AV	5.302G	90.02	Inf	-Inf	2.82	3	Vertical	22	1.26	-	87.20	31.72	5.64	34.54
AV	5.350005G	49.54	54.00	-4.46	2.85	3	Vertical	22	1.26	-	46.69	31.74	5.65	34.54
PK	5.149G	63.54	74.00	-10.46	2.73	3	Vertical	22	1.26	-	60.81	31.66	5.62	34.55
PK	5.303G	99.73	Inf	-Inf	2.82	3	Vertical	22	1.26	-	96.91	31.72	5.64	34.54
PK	5.352G	61.66	74.00	-12.34	2.85	3	Vertical	22	1.26	-	58.80	31.74	5.65	34.54
PK	5.488G	55.32	68.20	-12.88	2.92	3	Vertical	22	1.26	-	52.40	31.80	5.67	34.54

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_TX

20/12/2017

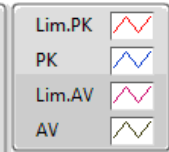
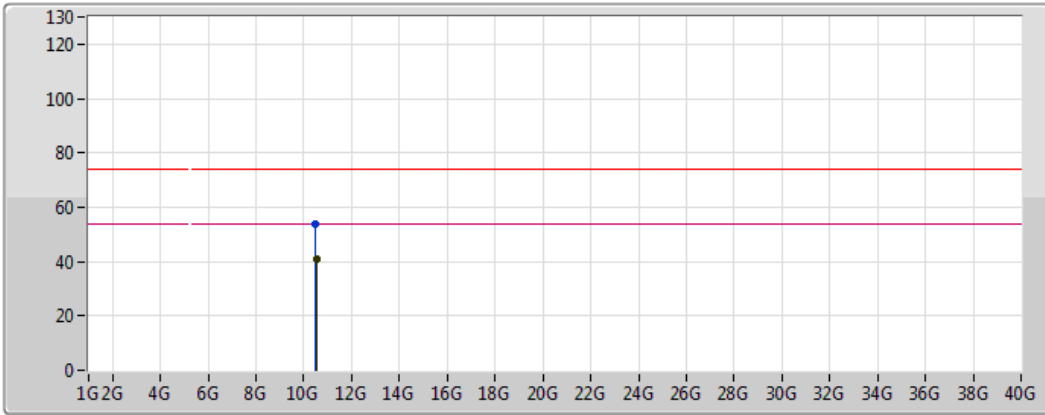


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.149995G	51.85	54.00	-2.15	2.73	3	Horizontal	13	1.64	-	49.12	31.66	5.62	34.55
AV	5.285G	90.74	Inf	-Inf	2.81	3	Horizontal	13	1.64	-	87.93	31.71	5.64	34.54
AV	5.350005G	53.29	54.00	-0.71	2.85	3	Horizontal	13	1.64	-	50.44	31.74	5.65	34.54
PK	5.149G	64.64	74.00	-9.36	2.73	3	Horizontal	13	1.64	-	61.92	31.66	5.62	34.55
PK	5.287G	100.38	Inf	-Inf	2.81	3	Horizontal	13	1.64	-	97.57	31.71	5.64	34.54
PK	5.353G	65.12	74.00	-8.88	2.85	3	Horizontal	13	1.64	-	62.27	31.74	5.65	34.54
PK	5.464G	55.40	68.20	-12.80	2.91	3	Horizontal	13	1.64	-	52.49	31.79	5.67	34.54

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_TX

20/12/2017

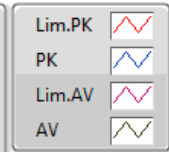
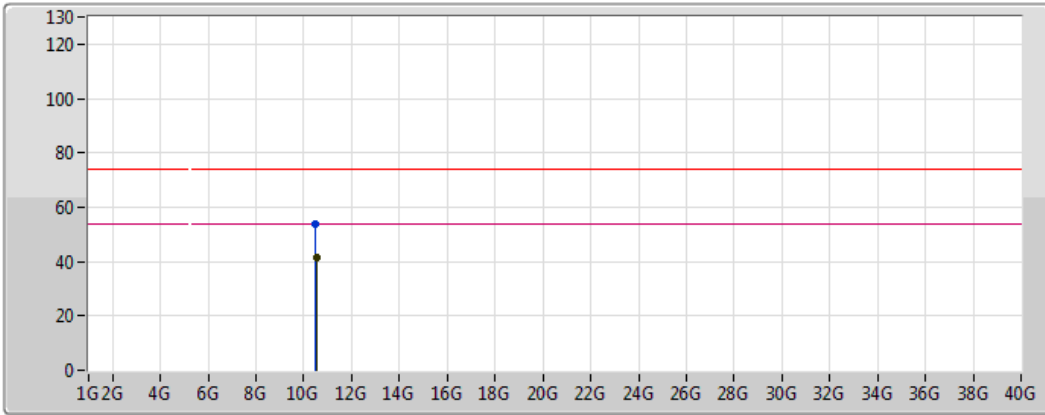


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	10.51422G	41.01	54.00	-12.99	12.74	3	Vertical	360	1.50	-	28.27	39.72	8.00	34.98
PK	10.50876G	53.93	74.00	-20.07	12.73	3	Vertical	360	1.50	-	41.20	39.71	8.00	34.98

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_TX

20/12/2017



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	10.51266G	41.21	54.00	-12.79	12.74	3	Horizontal	0	1.50	-	28.47	39.72	8.00	34.98
PK	10.5108G	53.95	74.00	-20.05	12.73	3	Horizontal	0	1.50	-	41.22	39.72	8.00	34.98



RSE TX below 1GHz Result (Antenna Gain 15 dBi)
Non-Beamforming

Appendix D.3

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX	Pass	PK	33.88M	35.27	40.00	-4.73	-5.95	3	Vertical	360	1.00	-



RSE TX below 1GHz Result (Antenna Gain 15 dBi) Non-Beamforming

Appendix D.3

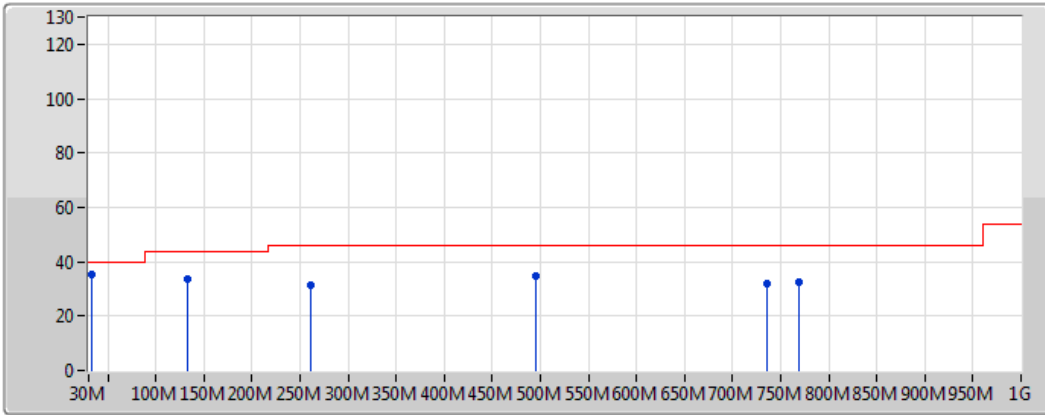
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
#5210#5290MHz	Pass	PK	101.78M	34.64	43.50	-8.86	-10.17	3	Horizontal	0	1.00	-
#5210#5290MHz	Pass	PK	134.76M	34.33	43.50	-9.17	-9.32	3	Horizontal	0	1.00	-
#5210#5290MHz	Pass	PK	239.52M	39.10	46.00	-6.90	-8.60	3	Horizontal	0	1.00	-
#5210#5290MHz	Pass	PK	652.74M	32.52	46.00	-13.48	-0.46	3	Horizontal	0	1.00	-
#5210#5290MHz	Pass	PK	714.82M	36.51	46.00	-9.49	0.15	3	Horizontal	0	1.00	-
#5210#5290MHz	Pass	PK	769.14M	36.28	46.00	-9.72	1.20	3	Horizontal	0	1.00	-
#5210#5290MHz	Pass	PK	33.88M	35.27	40.00	-4.73	-5.95	3	Vertical	360	1.00	-
#5210#5290MHz	Pass	PK	132.82M	33.57	43.50	-9.93	-9.21	3	Vertical	360	1.00	-
#5210#5290MHz	Pass	PK	260.86M	31.55	46.00	-14.45	-6.16	3	Vertical	360	1.00	-
#5210#5290MHz	Pass	PK	495.6M	34.61	46.00	-11.39	-2.33	3	Vertical	360	1.00	-
#5210#5290MHz	Pass	PK	736.16M	31.85	46.00	-14.15	0.75	3	Vertical	360	1.00	-
#5210#5290MHz	Pass	PK	769.14M	32.71	46.00	-13.29	1.20	3	Vertical	360	1.00	-

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_PoE

08/12/2017



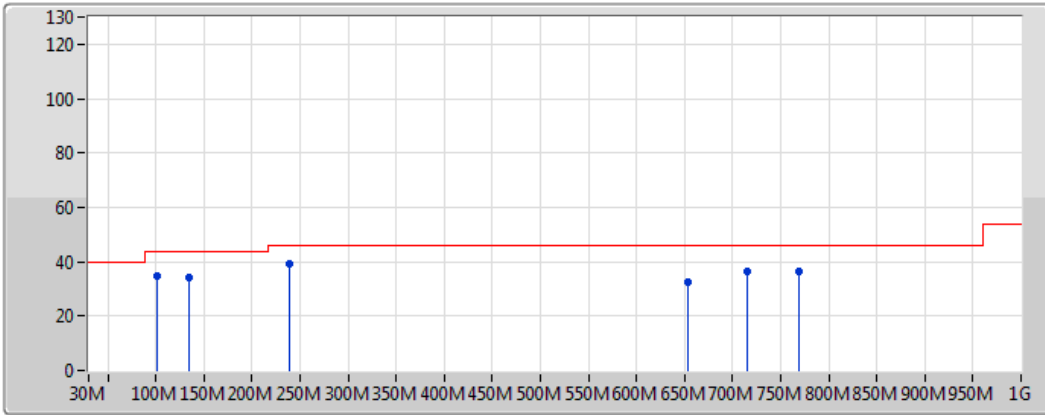
Lim.PK 
 PK 

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	33.88M	35.27	40.00	-4.73	-5.95	3	Vertical	360	1.00	-	41.22	21.11	0.74	27.80
PK	132.82M	33.57	43.50	-9.93	-9.21	3	Vertical	360	1.00	-	42.78	16.74	1.74	27.69
PK	260.86M	31.55	46.00	-14.45	-6.16	3	Vertical	360	1.00	-	37.71	18.86	2.28	27.30
PK	495.6M	34.61	46.00	-11.39	-2.33	3	Vertical	360	1.00	-	36.94	22.76	3.38	28.47
PK	736.16M	31.85	46.00	-14.15	0.75	3	Vertical	360	1.00	-	31.10	24.87	4.15	28.27
PK	769.14M	32.71	46.00	-13.29	1.20	3	Vertical	360	1.00	-	31.51	25.12	4.25	28.16

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_PoE

08/12/2017



Lim.PK 
 PK 

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	101.78M	34.64	43.50	-8.86	-10.17	3	Horizontal	0	1.00	-	44.81	16.19	1.44	27.80
PK	134.76M	34.33	43.50	-9.17	-9.32	3	Horizontal	0	1.00	-	43.65	16.61	1.75	27.68
PK	239.52M	39.10	46.00	-6.90	-8.60	3	Horizontal	0	1.00	-	47.70	16.53	2.21	27.34
PK	652.74M	32.52	46.00	-13.48	-0.46	3	Horizontal	0	1.00	-	32.98	24.24	3.77	28.46
PK	714.82M	36.51	46.00	-9.49	0.15	3	Horizontal	0	1.00	-	36.36	24.37	4.12	28.34
PK	769.14M	36.28	46.00	-9.72	1.20	3	Horizontal	0	1.00	-	35.08	25.12	4.25	28.16



RSE TX above 1GHz Result (Antenna Gain 15 dBi)
Non-Beamforming

Appendix D.4

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX	Pass	AV	5.144G	52.78	54.00	-1.22	4.78	3	Vertical	181	1.50	-



RSE TX above 1GHz Result (Antenna Gain 15 dBi) Non-Beamforming

Appendix D.4

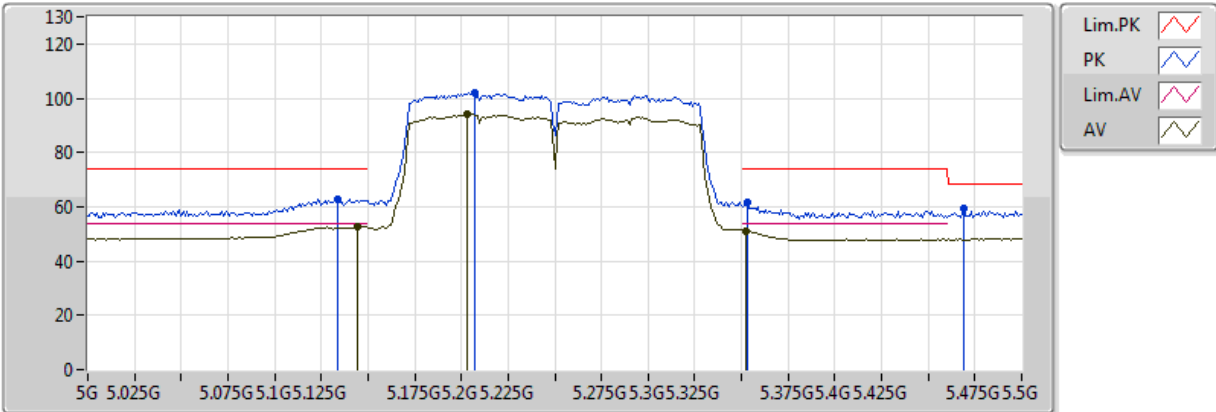
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
#5210#5290MHz	Pass	AV	5.13G	50.94	54.00	-3.06	4.76	3	Horizontal	181	1.48	-
#5210#5290MHz	Pass	AV	5.301G	92.47	Inf	-Inf	4.99	3	Horizontal	181	1.48	-
#5210#5290MHz	Pass	AV	5.352G	49.55	54.00	-4.45	5.06	3	Horizontal	181	1.48	-
#5210#5290MHz	Pass	PK	5.149G	61.08	74.00	-12.92	4.79	3	Horizontal	181	1.48	-
#5210#5290MHz	Pass	PK	5.283G	100.29	Inf	-Inf	4.97	3	Horizontal	181	1.48	-
#5210#5290MHz	Pass	PK	5.351G	59.58	74.00	-14.42	5.06	3	Horizontal	181	1.48	-
#5210#5290MHz	Pass	PK	5.494G	58.34	68.20	-9.86	5.25	3	Horizontal	181	1.48	-
#5210#5290MHz	Pass	AV	5.144G	52.78	54.00	-1.22	4.78	3	Vertical	181	1.50	-
#5210#5290MHz	Pass	AV	5.203G	94.29	Inf	-Inf	4.86	3	Vertical	181	1.50	-
#5210#5290MHz	Pass	AV	5.352G	51.16	54.00	-2.84	5.06	3	Vertical	181	1.50	-
#5210#5290MHz	Pass	PK	5.134G	62.96	74.00	-11.04	4.77	3	Vertical	181	1.50	-
#5210#5290MHz	Pass	PK	5.207G	102.20	Inf	-Inf	4.87	3	Vertical	181	1.50	-
#5210#5290MHz	Pass	PK	5.353G	61.75	74.00	-12.25	5.06	3	Vertical	181	1.50	-
#5210#5290MHz	Pass	PK	5.469G	59.16	68.20	-9.04	5.22	3	Vertical	181	1.50	-
#5210#5290MHz	Pass	AV	10.50846G	46.52	54.00	-7.48	15.49	3	Horizontal	0	1.50	-
#5210#5290MHz	Pass	PK	10.48812G	57.05	74.00	-16.95	15.45	3	Horizontal	0	1.50	-
#5210#5290MHz	Pass	AV	10.51254G	46.57	54.00	-7.43	15.50	3	Vertical	360	1.50	-
#5210#5290MHz	Pass	PK	10.51224G	56.73	74.00	-17.27	15.50	3	Vertical	360	1.50	-

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5210#5290MHz_TX

07/12/2017

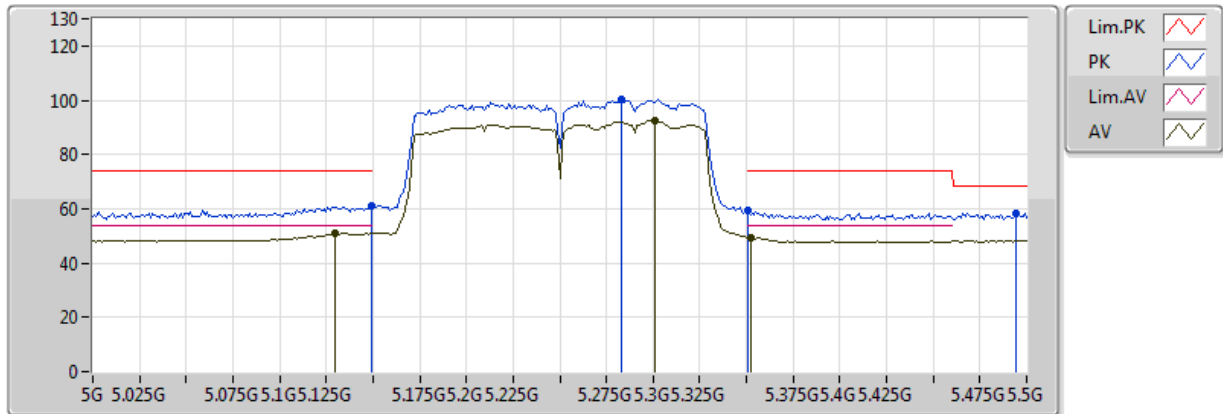


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.144G	52.78	54.00	-1.22	4.78	3	Vertical	181	1.50	-	47.99	31.62	8.37	35.21
AV	5.203G	94.29	Inf	-Inf	4.86	3	Vertical	181	1.50	-	89.42	31.66	8.40	35.20
AV	5.352G	51.16	54.00	-2.84	5.06	3	Vertical	181	1.50	-	46.10	31.78	8.47	35.18
PK	5.134G	62.96	74.00	-11.04	4.77	3	Vertical	181	1.50	-	58.20	31.61	8.37	35.21
PK	5.207G	102.20	Inf	-Inf	4.87	3	Vertical	181	1.50	-	97.33	31.67	8.40	35.20
PK	5.353G	61.75	74.00	-12.25	5.06	3	Vertical	181	1.50	-	56.69	31.78	8.47	35.18
PK	5.469G	59.16	68.20	-9.04	5.22	3	Vertical	181	1.50	-	53.94	31.88	8.52	35.17

802.11ac VHT80+80_Nss1,(MCS0)_4TX

#5210#5290MHz_TX

07/12/2017



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.13G	50.94	54.00	-3.06	4.76	3	Horizontal	181	1.48	-	46.18	31.60	8.37	35.21
AV	5.301G	92.47	Inf	-Inf	4.99	3	Horizontal	181	1.48	-	87.48	31.74	8.44	35.19
AV	5.352G	49.55	54.00	-4.45	5.06	3	Horizontal	181	1.48	-	44.48	31.78	8.47	35.18
PK	5.149G	61.08	74.00	-12.92	4.79	3	Horizontal	181	1.48	-	56.30	31.62	8.37	35.21
PK	5.283G	100.29	Inf	-Inf	4.97	3	Horizontal	181	1.48	-	95.32	31.73	8.43	35.19
PK	5.351G	59.58	74.00	-14.42	5.06	3	Horizontal	181	1.48	-	54.52	31.78	8.47	35.18
PK	5.494G	58.34	68.20	-9.86	5.25	3	Horizontal	181	1.48	-	53.09	31.90	8.53	35.17



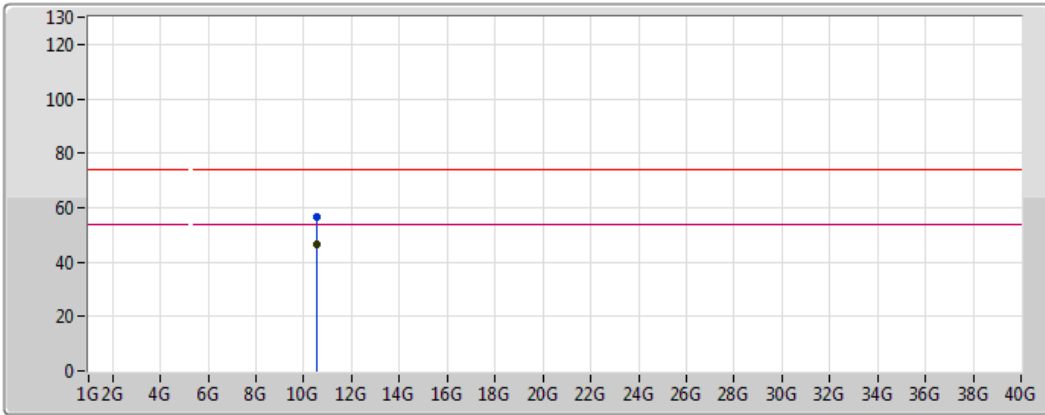
RSE TX above 1GHz Result (Antenna Gain 15 dBi) Non-Beamforming

Appendix D.4

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_TX

06/12/2017



Lim.PK	
PK	
Lim.AV	
AV	

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	10.51254G	46.57	54.00	-7.43	15.50	3	Vertical	360	1.50	-	31.07	39.62	11.59	35.71
PK	10.51224G	56.73	74.00	-17.27	15.50	3	Vertical	360	1.50	-	41.22	39.62	11.59	35.71



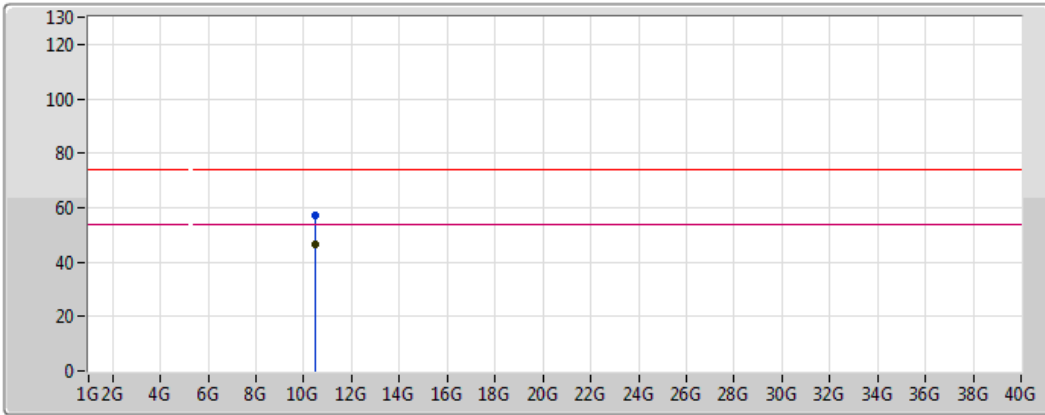
RSE TX above 1GHz Result (Antenna Gain 15 dBi) **Non-Beamforming**

Appendix D.4

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_TX

06/12/2017



Legend:

- Lim.PK (Red line)
- PK (Blue line)
- Lim.AV (Magenta line)
- AV (Green line)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	10.50846G	46.52	54.00	-7.48	15.49	3	Horizontal	0	1.50	-	31.03	39.61	11.59	35.71
PK	10.48812G	57.05	74.00	-16.95	15.45	3	Horizontal	0	1.50	-	41.60	39.58	11.59	35.72



RSE TX below 1GHz Result (Antenna Gain 10 dBi)

Beamforming

Appendix D.5

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX	Pass	QP	37.76M	39.71	40.00	-0.29	-16.56	3	Vertical	328	1.00	-



RSE TX below 1GHz Result (Antenna Gain 10 dBi) Beamforming

Appendix D.5

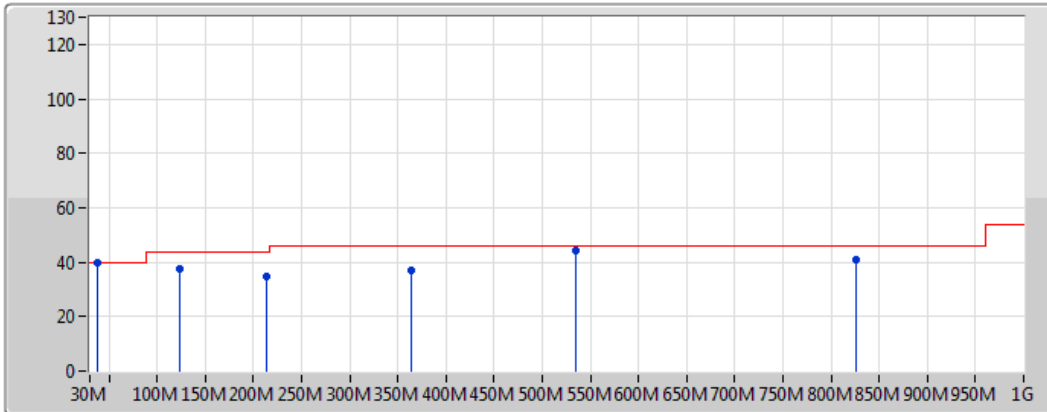
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
#5210#5290MHz	Pass	PK	39.7M	31.58	40.00	-8.42	-17.51	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	125.06M	33.57	43.50	-9.93	-18.11	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	247.28M	37.37	46.00	-8.63	-16.24	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	357.86M	35.12	46.00	-10.88	-13.60	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	474.26M	38.63	46.00	-7.37	-10.32	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	790.48M	42.23	46.00	-3.77	-5.24	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	123.12M	37.62	43.50	-5.88	-18.15	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	PK	214.3M	34.83	43.50	-8.67	-19.76	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	QP	37.76M	39.71	40.00	-0.29	-16.56	3	Vertical	328	1.00	-
#5210#5290MHz	Pass	QP	363.68M	37.07	46.00	-8.93	-13.44	3	Vertical	263	1.81	-
#5210#5290MHz	Pass	QP	534.4M	44.51	46.00	-1.49	-9.66	3	Vertical	353	1.16	-
#5210#5290MHz	Pass	QP	825.4M	40.83	46.00	-5.17	-4.81	3	Vertical	62	1.89	-

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_PoE

10/01/2018



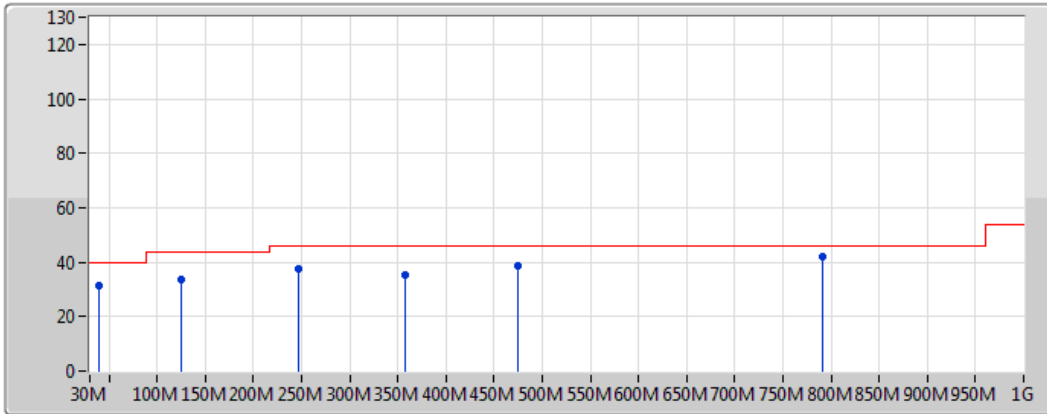
Lim.PK 
 PK 

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	123.12M	37.62	43.50	-5.88	-18.15	3	Vertical	0	1.00	-	55.77	16.75	1.81	36.70
PK	214.3M	34.83	43.50	-8.67	-19.76	3	Vertical	0	1.00	-	54.59	14.26	2.37	36.39
QP	37.76M	39.71	40.00	-0.29	-16.56	3	Vertical	328	1.00	-	56.27	19.67	1.03	37.26
QP	363.68M	37.07	46.00	-8.93	-13.44	3	Vertical	263	1.81	-	50.51	19.95	3.16	36.55
QP	534.4M	44.51	46.00	-1.49	-9.66	3	Vertical	353	1.16	-	54.17	23.34	4.02	37.01
QP	825.4M	40.83	46.00	-5.17	-4.81	3	Vertical	62	1.89	-	45.63	27.66	5.02	37.49

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_PoE

10/01/2018



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	39.7M	31.58	40.00	-8.42	-17.51	3	Horizontal	360	1.00	-	49.09	18.68	1.05	37.24
PK	125.06M	33.57	43.50	-9.93	-18.11	3	Horizontal	360	1.00	-	51.68	16.76	1.83	36.69
PK	247.28M	37.37	46.00	-8.63	-16.24	3	Horizontal	360	1.00	-	53.61	17.62	2.55	36.41
PK	474.26M	38.63	46.00	-7.37	-10.32	3	Horizontal	360	1.00	-	48.95	22.80	3.73	36.84
PK	521M	35.12	46.00	-10.88	-13.60	3	Horizontal	360	1.00	-	48.72	19.79	3.14	36.54
PK	529M	42.23	46.00	-3.77	-5.24	3	Horizontal	360	1.00	-	47.47	27.34	4.90	37.47



RSE TX above 1GHz Result (Antenna Gain 10 dBi)

Beamforming

Appendix D.6

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX	Pass	AV	5.137G	52.18	54.00	-1.82	4.77	3	Vertical	344	1.52	-



RSE TX above 1GHz Result (Antenna Gain 10 dBi) Beamforming

Appendix D.6

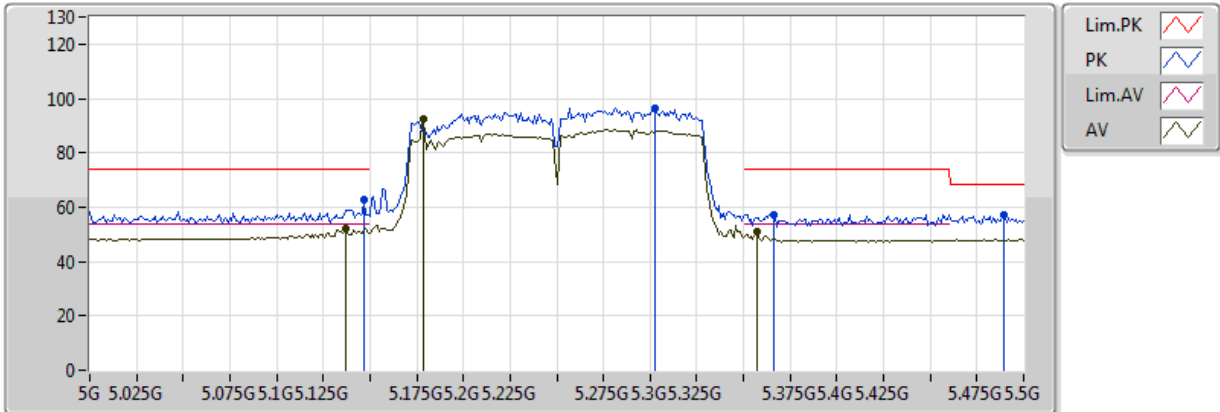
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
#5210#5290MHz	Pass	AV	5.135G	50.20	54.00	-3.80	4.77	3	Horizontal	355	1.50	-
#5210#5290MHz	Pass	AV	5.261G	87.26	Inf	-Inf	4.94	3	Horizontal	355	1.50	-
#5210#5290MHz	Pass	AV	5.351G	48.30	54.00	-5.70	5.06	3	Horizontal	355	1.50	-
#5210#5290MHz	Pass	PK	5.137G	63.82	74.00	-10.18	4.77	3	Horizontal	355	1.50	-
#5210#5290MHz	Pass	PK	5.174G	103.03	Inf	-Inf	4.82	3	Horizontal	355	1.50	-
#5210#5290MHz	Pass	PK	5.354G	58.31	74.00	-15.69	5.07	3	Horizontal	355	1.50	-
#5210#5290MHz	Pass	PK	5.479G	58.62	68.20	-9.58	5.23	3	Horizontal	355	1.50	-
#5210#5290MHz	Pass	AV	5.137G	52.18	54.00	-1.82	4.77	3	Vertical	344	1.52	-
#5210#5290MHz	Pass	AV	5.179G	92.46	Inf	-Inf	4.83	3	Vertical	344	1.52	-
#5210#5290MHz	Pass	AV	5.357G	51.14	54.00	-2.86	5.07	3	Vertical	344	1.52	-
#5210#5290MHz	Pass	PK	5.147G	62.75	74.00	-11.25	4.79	3	Vertical	344	1.52	-
#5210#5290MHz	Pass	PK	5.303G	96.41	Inf	-Inf	4.99	3	Vertical	344	1.52	-
#5210#5290MHz	Pass	PK	5.366G	57.30	74.00	-16.70	5.08	3	Vertical	344	1.52	-
#5210#5290MHz	Pass	PK	5.489G	57.25	68.20	-10.95	5.25	3	Vertical	344	1.52	-
#5210#5290MHz	Pass	AV	15.73542G	48.55	54.00	-5.45	16.48	3	Horizontal	61	1.29	-
#5210#5290MHz	Pass	PK	15.74406G	59.59	74.00	-14.41	16.45	3	Horizontal	61	1.29	-
#5210#5290MHz	Pass	AV	15.75486G	48.98	54.00	-5.02	16.41	3	Vertical	23	2.12	-
#5210#5290MHz	Pass	PK	15.76494G	59.42	74.00	-14.58	16.37	3	Vertical	23	2.12	-

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_BF

10/01/2018

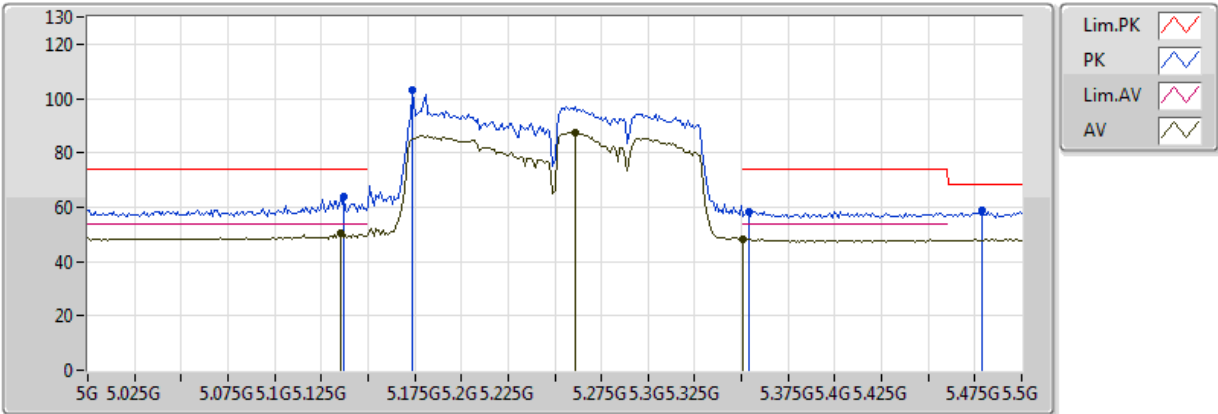


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.137G	52.18	54.00	-1.82	4.77	3	Vertical	344	1.52	-	47.41	31.61	8.37	35.21
AV	5.179G	92.46	Inf	-Inf	4.83	3	Vertical	344	1.52	-	87.63	31.64	8.39	35.20
AV	5.357G	51.14	54.00	-2.86	5.07	3	Vertical	344	1.52	-	46.07	31.79	8.47	35.18
PK	5.147G	62.75	74.00	-11.25	4.79	3	Vertical	344	1.52	-	57.96	31.62	8.37	35.21
PK	5.303G	96.41	Inf	-Inf	4.99	3	Vertical	344	1.52	-	91.41	31.74	8.44	35.19
PK	5.366G	57.30	74.00	-16.70	5.08	3	Vertical	344	1.52	-	52.22	31.79	8.47	35.18
PK	5.489G	57.25	68.20	-10.95	5.25	3	Vertical	344	1.52	-	52.00	31.89	8.53	35.17

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_BF

10/01/2018

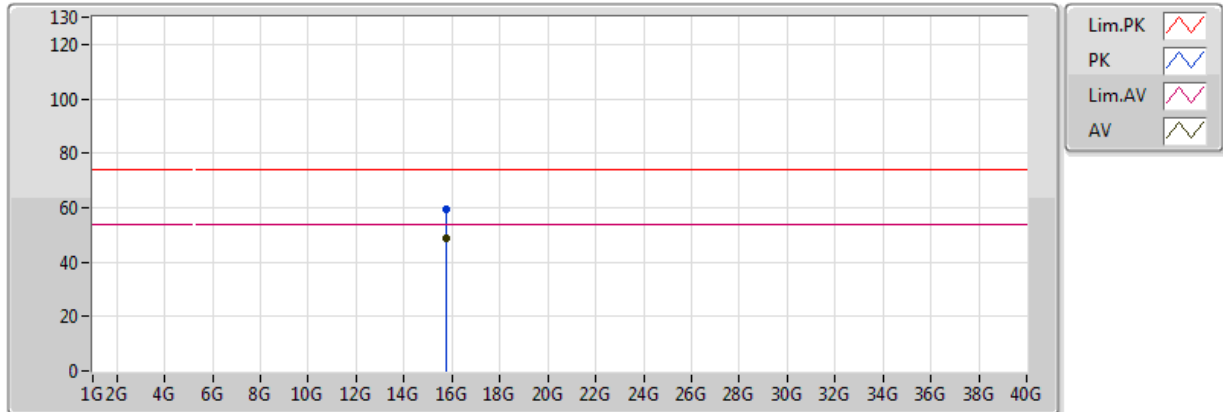


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	5.135G	50.20	54.00	-3.80	4.77	3	Horizontal	355	1.50	-	45.43	31.61	8.37	35.21
AV	5.261G	87.26	Inf	-Inf	4.94	3	Horizontal	355	1.50	-	82.32	31.71	8.42	35.19
AV	5.351G	48.30	54.00	-5.70	5.06	3	Horizontal	355	1.50	-	43.24	31.78	8.47	35.18
PK	5.137G	63.82	74.00	-10.18	4.77	3	Horizontal	355	1.50	-	59.05	31.61	8.37	35.21
PK	5.174G	103.03	Inf	-Inf	4.82	3	Horizontal	355	1.50	-	98.21	31.64	8.39	35.20
PK	5.354G	58.31	74.00	-15.69	5.07	3	Horizontal	355	1.50	-	53.24	31.78	8.47	35.18
PK	5.479G	58.62	68.20	-9.58	5.23	3	Horizontal	355	1.50	-	53.38	31.88	8.52	35.17

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_BF

10/01/2018

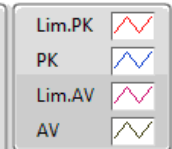
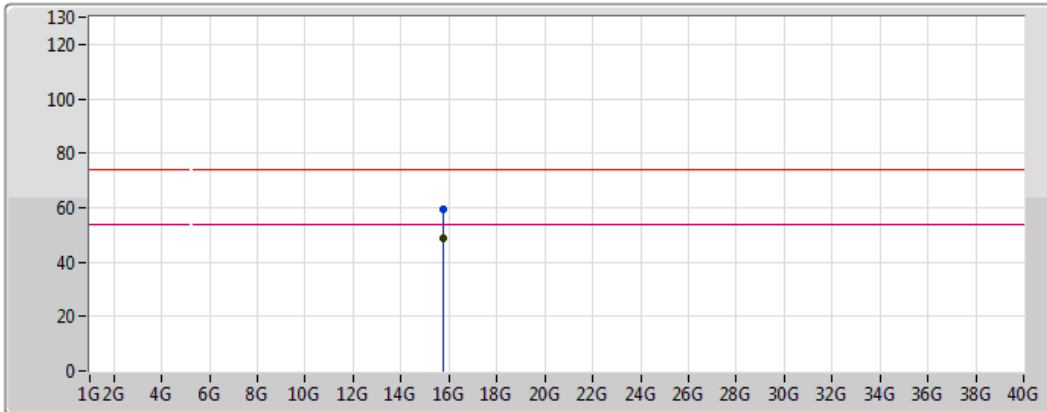


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	15.75486G	48.98	54.00	-5.02	16.41	3	Vertical	23	2.12	-	32.57	38.13	13.95	35.67
PK	15.76494G	59.42	74.00	-14.58	16.37	3	Vertical	23	2.12	-	43.04	38.10	13.96	35.68

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_BF

10/01/2018



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	15.73542G	48.55	54.00	-5.45	16.48	3	Horizontal	61	1.29	-	32.08	38.20	13.93	35.65
PK	15.74406G	59.59	74.00	-14.41	16.45	3	Horizontal	61	1.29	-	43.15	38.17	13.94	35.66



RSE TX below 1GHz Result (Antenna Gain 15 dBi) Beamforming

Appendix D.7

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX	Pass	QP	37.76M	39.51	40.00	-0.49	-16.56	3	Vertical	331	2.01	-



RSE TX below 1GHz Result (Antenna Gain 15 dBi) Beamforming

Appendix D.7

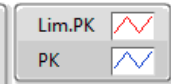
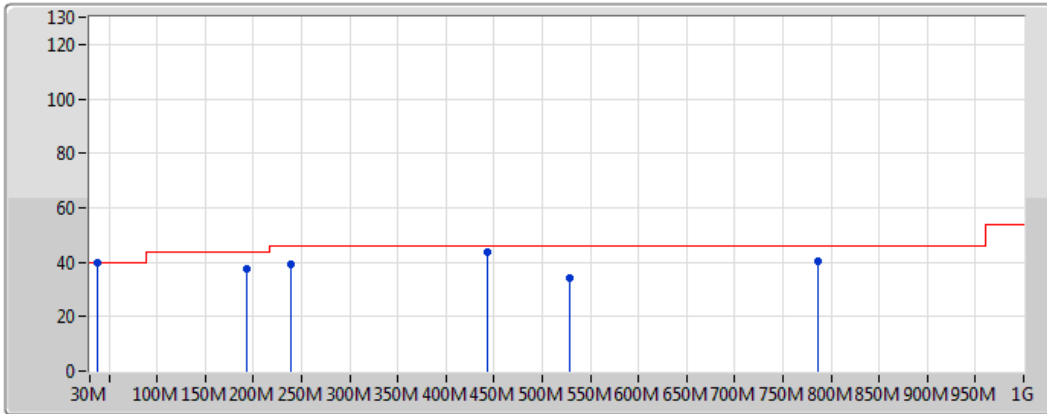
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
#5210#5290MHz	Pass	PK	37.76M	30.70	40.00	-9.30	-16.56	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	123.12M	32.37	43.50	-11.13	-18.15	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	262.8M	39.12	46.00	-6.88	-14.46	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	328.76M	42.56	46.00	-3.44	-14.49	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	PK	825.4M	41.85	46.00	-4.15	-4.81	3	Horizontal	360	1.00	-
#5210#5290MHz	Pass	QP	790.48M	27.16	46.00	-18.84	-5.24	3	Horizontal	328	2.27	-
#5210#5290MHz	Pass	PK	192.96M	37.72	43.50	-5.78	-20.12	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	PK	239.52M	39.34	46.00	-6.66	-17.41	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	PK	443.22M	43.61	46.00	-2.39	-11.01	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	PK	786.6M	40.60	46.00	-5.40	-5.25	3	Vertical	0	1.00	-
#5210#5290MHz	Pass	QP	37.76M	39.51	40.00	-0.49	-16.56	3	Vertical	331	2.01	-
#5210#5290MHz	Pass	QP	528.58M	34.13	46.00	-11.87	-9.69	3	Vertical	183	2.11	-

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_PoE

10/01/2018

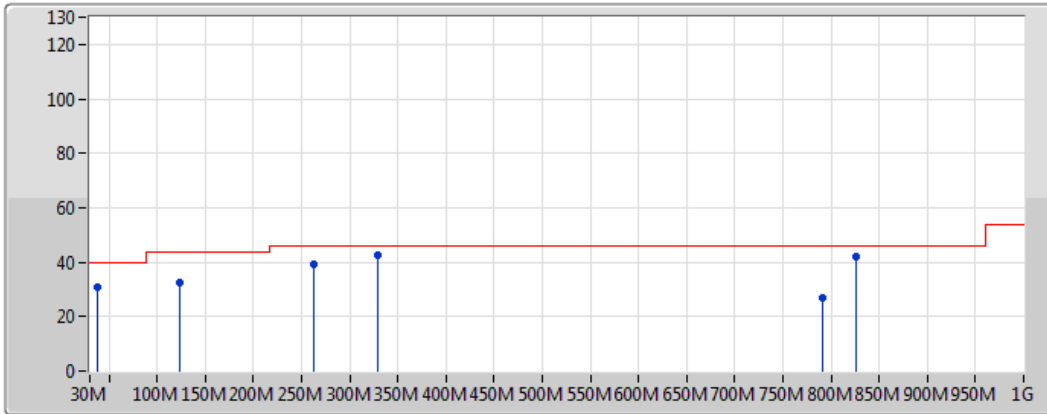


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	192.96M	37.72	43.50	-5.78	-20.12	3	Vertical	0	1.00	-	57.84	14.02	2.26	36.41
PK	239.52M	39.34	46.00	-6.66	-17.41	3	Vertical	0	1.00	-	56.75	16.49	2.51	36.40
PK	443.22M	43.61	46.00	-2.39	-11.01	3	Vertical	0	1.00	-	54.62	22.23	3.50	36.74
PK	786.6M	40.60	46.00	-5.40	-5.25	3	Vertical	0	1.00	-	45.85	27.35	4.86	37.46
QP	37.76M	39.51	40.00	-0.49	-16.56	3	Vertical	331	2.01	-	56.07	19.67	1.03	37.26
QP	528.58M	34.13	46.00	-11.87	-9.69	3	Vertical	183	2.11	-	43.82	23.30	4.01	37.00

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_PoE

10/01/2018



Lim.PK 
PK 

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	37.76M	30.70	40.00	-9.30	-16.56	3	Horizontal	360	1.00	-	47.26	19.67	1.03	37.26
PK	123.12M	32.37	43.50	-11.13	-18.15	3	Horizontal	360	1.00	-	50.52	16.75	1.81	36.70
PK	262.8M	39.12	46.00	-6.88	-14.46	3	Horizontal	360	1.00	-	53.58	19.29	2.67	36.42
PK	328.76M	42.56	46.00	-3.44	-14.49	3	Horizontal	360	1.00	-	57.05	18.94	3.06	36.49
PK	825.4M	41.85	46.00	-4.15	-4.81	3	Horizontal	360	1.00	-	46.66	27.66	5.02	37.49
QP	790.48M	27.16	46.00	-18.84	-5.24	3	Horizontal	328	2.27	-	32.40	27.34	4.90	37.47



RSE TX above 1GHz Result (Antenna Gain 15 dBi) Beamforming

Appendix D.8

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80+80_Nss2,(MCS0)_4TX	Pass	AV	5,149995G	53.42	54.00	-0.58	6.59	3	Vertical	1	1.72	-



RSE TX above 1GHz Result (Antenna Gain 15 dBi) Beamforming

Appendix D.8

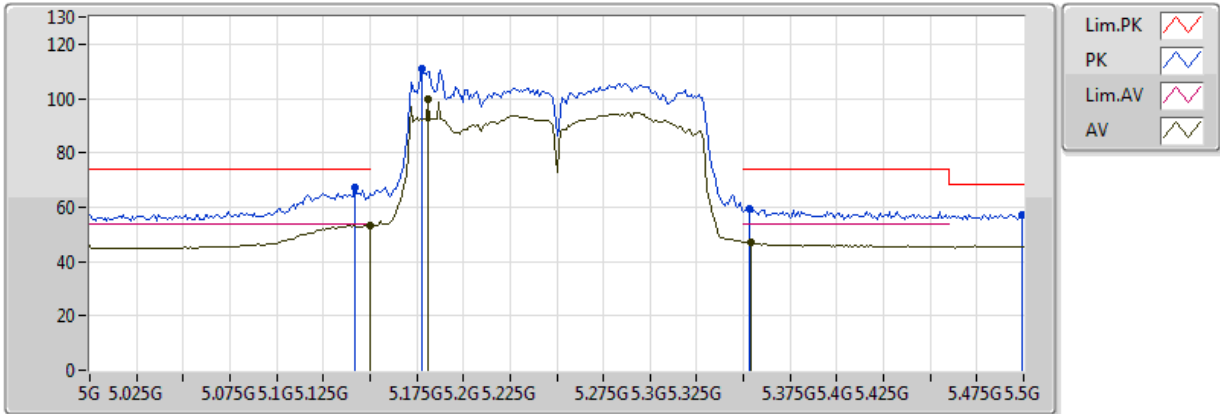
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80+80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
#5210#5290MHz	Pass	AV	5.149995G	50.37	54.00	-3.63	6.59	3	Horizontal	3	1.39	-
#5210#5290MHz	Pass	AV	5.179G	100.34	Inf	-Inf	6.65	3	Horizontal	3	1.39	-
#5210#5290MHz	Pass	AV	5.352G	47.23	54.00	-6.77	6.99	3	Horizontal	3	1.39	-
#5210#5290MHz	Pass	PK	5.124G	62.25	74.00	-11.75	6.54	3	Horizontal	3	1.39	-
#5210#5290MHz	Pass	PK	5.177G	106.29	Inf	-Inf	6.64	3	Horizontal	3	1.39	-
#5210#5290MHz	Pass	PK	5.358G	58.47	74.00	-15.53	7.01	3	Horizontal	3	1.39	-
#5210#5290MHz	Pass	PK	5.464G	57.83	68.20	-10.37	7.21	3	Horizontal	3	1.39	-
#5210#5290MHz	Pass	AV	5.149995G	53.42	54.00	-0.58	6.59	3	Vertical	1	1.72	-
#5210#5290MHz	Pass	AV	5.181G	99.96	Inf	-Inf	6.65	3	Vertical	1	1.72	-
#5210#5290MHz	Pass	AV	5.354G	46.99	54.00	-7.01	7.00	3	Vertical	1	1.72	-
#5210#5290MHz	Pass	PK	5.142G	67.21	74.00	-6.79	6.57	3	Vertical	1	1.72	-
#5210#5290MHz	Pass	PK	5.178G	110.97	Inf	-Inf	6.65	3	Vertical	1	1.72	-
#5210#5290MHz	Pass	PK	5.353G	59.53	74.00	-14.47	7.00	3	Vertical	1	1.72	-
#5210#5290MHz	Pass	PK	5.499G	57.05	68.20	-11.15	7.28	3	Vertical	1	1.72	-
#5210#5290MHz	Pass	AV	10.4058G	40.88	54.00	-13.12	12.46	3	Horizontal	74	1.50	-
#5210#5290MHz	Pass	PK	10.399G	54.10	74.00	-19.90	12.44	3	Horizontal	74	1.50	-
#5210#5290MHz	Pass	AV	10.4032G	41.35	54.00	-12.65	12.45	3	Vertical	249	1.50	-
#5210#5290MHz	Pass	PK	10.4088G	54.14	74.00	-19.86	12.46	3	Vertical	249	1.50	-

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_Beamforming

04/01/2018

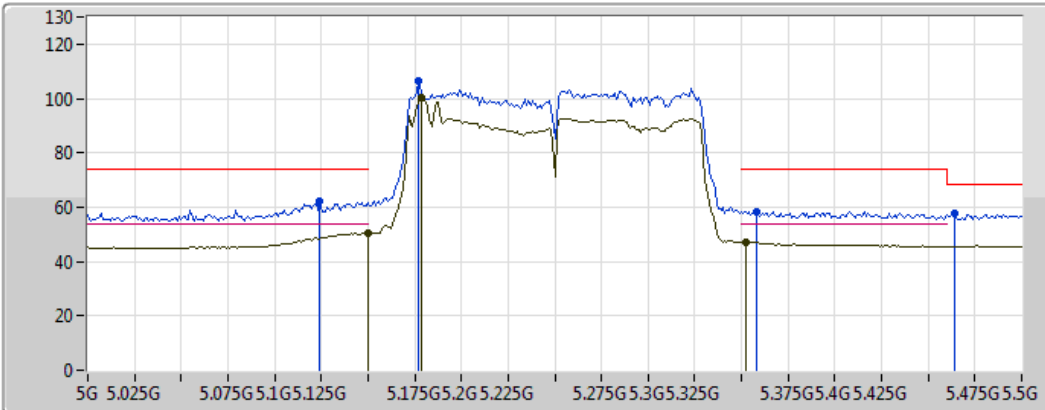


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.149995G	53.42	54.00	-0.58	6.59	3	Vertical	1	1.72	-	46.83	31.68	4.72	29.81
AV	5.181G	99.96	Inf	-Inf	6.65	3	Vertical	1	1.72	-	93.31	31.72	4.74	29.81
AV	5.354G	46.99	54.00	-7.01	7.00	3	Vertical	1	1.72	-	39.99	31.92	4.87	29.80
PK	5.142G	67.21	74.00	-6.79	6.57	3	Vertical	1	1.72	-	60.64	31.67	4.71	29.81
PK	5.178G	110.97	Inf	-Inf	6.65	3	Vertical	1	1.72	-	104.33	31.71	4.74	29.81
PK	5.353G	59.53	74.00	-14.47	7.00	3	Vertical	1	1.72	-	52.53	31.92	4.87	29.80
PK	5.499G	57.05	68.20	-11.15	7.28	3	Vertical	1	1.72	-	49.77	32.10	4.98	29.80

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_Beamforming

04/01/2018



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.149995G	50.37	54.00	-3.63	6.59	3	Horizontal	3	1.39	-	43.78	31.68	4.72	29.81
AV	5.179G	100.34	Inf	-Inf	6.65	3	Horizontal	3	1.39	-	93.69	31.71	4.74	29.81
AV	5.352G	47.23	54.00	-6.77	6.99	3	Horizontal	3	1.39	-	40.24	31.92	4.87	29.80
PK	5.124G	62.25	74.00	-11.75	6.54	3	Horizontal	3	1.39	-	55.71	31.65	4.70	29.81
PK	5.177G	106.29	Inf	-Inf	6.64	3	Horizontal	3	1.39	-	99.65	31.71	4.74	29.81
PK	5.358G	58.47	74.00	-15.53	7.01	3	Horizontal	3	1.39	-	51.46	31.93	4.88	29.80
PK	5.464G	57.83	68.20	-10.37	7.21	3	Horizontal	3	1.39	-	50.62	32.06	4.95	29.80



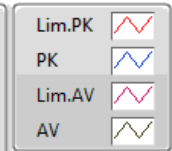
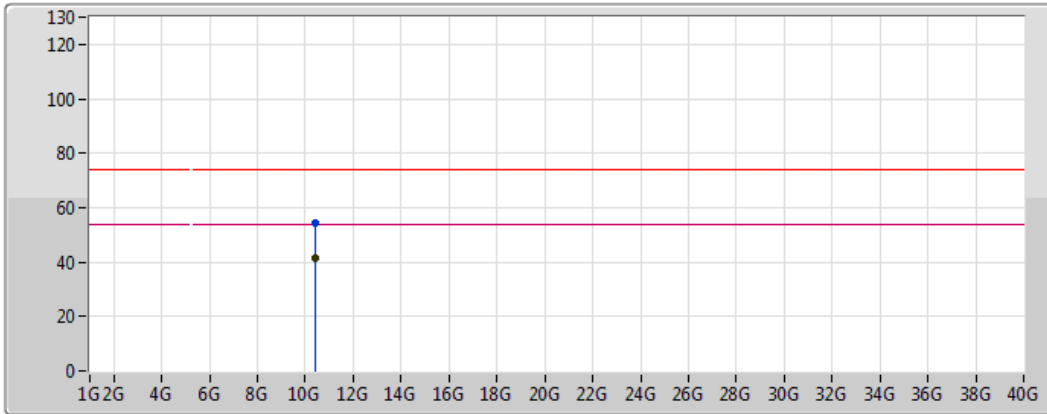
RSE TX above 1GHz Result (Antenna Gain 15 dBi) Beamforming

Appendix D.8

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_Beamforming

04/01/2018



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	10.4032G	41.35	54.00	-12.65	12.45	3	Vertical	249	1.50	-	28.90	39.56	7.95	35.07
PK	10.4088G	54.14	74.00	-19.86	12.46	3	Vertical	249	1.50	-	41.68	39.57	7.95	35.06



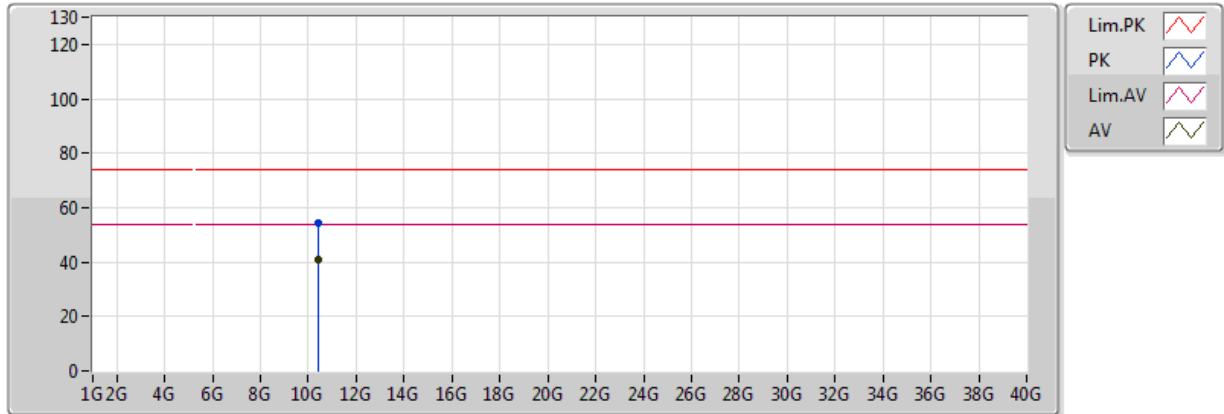
RSE TX above 1GHz Result (Antenna Gain 15 dBi) Beamforming

Appendix D.8

802.11ac VHT80+80_Nss2,(MCS0)_4TX

#5210#5290MHz_Beamforming

04/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	10.4058G	40.88	54.00	-13.12	12.46	3	Horizontal	74	1.50	-	28.42	39.57	7.95	35.07
PK	10.399G	54.10	74.00	-19.90	12.44	3	Horizontal	74	1.50	-	41.66	39.56	7.95	35.07