

FCC Test Report

Equipment : Wireless-AC1300 Dual Band Gigabit Router
Brand Name : ASUS
Model No. : RT-AC58U, RT-AC58MU, RT-ACRH00, RT-AC1300G+, RT-AC1300GPLUS, RT-AC1300G PLUS, RT-AC1300UHP, RT-AC1300HP, RT-AC58UHP, RT-AC58HP, RT-AC53HP, RT-ACRH13, RT-AC1300GPLUS_B1, RT-AC1200G+ B1
FCC ID : MSQ-RTACRH00
Standard : 47 CFR FCC Part 15.407
Operating Band : 5150 MHz – 5250 MHz
5725 MHz – 5850 MHz
Applicant / Manufacturer : ASUSTeK Computer Inc
4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan
Function : Outdoor; Indoor; Fixed P2P
 Client

This report was evaluated for permissive change. The product sample received on Dec. 27, 2017 and completely tested on Jan. 09, 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





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PHOTOGRAPHS OF EUT V01



Summary of Test Result

Conformance Test Specifications			
Report Clause	Ref. Std. Clause	Description	Result
1.1.2	15.203	Antenna Requirement	Complied
3.1	15.207	AC Power-line Conducted Emissions	Complied
3.2	15.407(a)	Emission Bandwidth	Complied
3.3	15.407(a)	Maximum Conducted Output Power	Complied
3.4	15.407(a)	Peak Power Spectral Density	Complied
3.5	15.407(b)	Unwanted Emissions	Complied



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	n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

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

Note:

- ♦ HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector
1	1	-	-	Dipole Antenna	I-PEX
2	2	-	-	Dipole Antenna	I-PEX
3	3	M.gear	C0959-510381-A	Dipole Antenna	I-PEX
4	4	M.gear	C0959-510382-A	Dipole Antenna	I-PEX
5	5	-	-	Dipole Antenna	I-PEX
6	6	-	-	Dipole Antenna	I-PEX
7	7	M.gear	C0959-510383-A	Dipole Antenna	I-PEX
8	8	M.gear	C0959-510384-A	Dipole Antenna	I-PEX

Ant.	Gain (dBi)	
	2.4G	5G
1	5.27	-
2	4.85	-
3	5.11	-
4	3.1	-
5	-	5.41
6	-	5.12
7	-	5.29
8	-	5.0

Note 1: The EUT has eight antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/gn mode (2TX/2RX)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11 an/ac mode (2TX/2RX)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.



1.1.3 EUT Information

Operational Condition	
EUT Power Type	From AC Adapter
Beamforming Function	<input checked="" type="checkbox"/> With beamforming <input type="checkbox"/> Without beamforming
Type of EUT	
<input checked="" type="checkbox"/>	Stand-alone
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)
	Combined Equipment - Brand Name / Model No.: ...
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)
	Host System - Brand Name / Model No.: ...
<input type="checkbox"/>	Other:

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT20-BF	0.92	0.362	1.822m	1k
802.11ac VHT40-BF	0.903	0.443	1.755m	1k
802.11ac VHT80-BF	0.916	0.381	2.009m	1k

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR5D1107-08

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

Modifications	Performance Checking
Add Beam-Forming function	AC power-line conducted emissions Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density Unwanted Emissions



1.2 Testing Applied Standards

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

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ KDB 789033 D02 v02r01
- ◆ KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location		
<input checked="" type="checkbox"/>	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.		
<input type="checkbox"/>	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	TH06-HY	Tim Chen	22.5°C / 65%	09/Jan/2018
Radiated	03CH02-HY	Jeff Lin	21.5°C / 54%	09/Jan/2018
AC Conduction	CO04-HY	Eric Lee	24.5°C / 55%	02/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

2.2 Test Channel Mode

Test Software	Dos
---------------	-----

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	25
5240MHz	25
5745MHz	26
5785MHz	26
5825MHz	23
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
5190MHz	20
5230MHz	25
5755MHz	26
5795MHz	26
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-
5210MHz	20
5775MHz	23

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	Adapter Mode

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	Adapter Mode
Operating Mode > 1GHz	CTX
Orthogonal Planes of EUT	Y Plane
	
Worst Planes of EUT	V



2.4 Accessories

Accessories				
AC Adapter 1	Brand Name	DVE	Model Name	DSA-18CB-12 FCA
	Part Number	-		
	Power Rating	I/P: 100 - 240Vac, 0.6A, O/P: 12Vdc, 1.5A		
	Power Cord	1. 45 meter, non-shielded cable, w/o ferrite core		
AC Adapter 2	Brand Name	APD	Model Name	WB-18D12R
	Part Number	4750-02600000-50U		
	Power Rating	I/P: 100 - 240Vac, 0.5A, O/P: 12Vdc, 1.5A		
	Power Cord	1. 5 meter, non-shielded cable, w/o ferrite core		
AC Adapter 3	Brand Name	DVE	Model Name	DSA-18PFM-12 FUS
	Part Number	4720-01600018-50Z		
	Power Rating	I/P: 100 - 240Vac, 0.6A, O/P: 12Vdc, 1.5A		
	Brand Name	DVE		
RJ45 Cable	Power Cord	1 meter, non-shielded cable		
AC Adapter 4	Brand Name	DVE	Model Name	DSA-18PFR-12 FUS 120150
	Power Rating	I/P:100 - 240 Vac,0.6A, O/P:12 Vdc,1.5A		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		

Reminder: Regarding to more detail and other information, please refer to user manual.



2.5 Support Equipment

Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	Notebook	DELL	E5410	DoC
4	Adapter for NB	DELL	HA65NM130	DoC
5	Client	ASUS	RT-AC58U	-

Note. Support equipment No.5 was provided by customer.

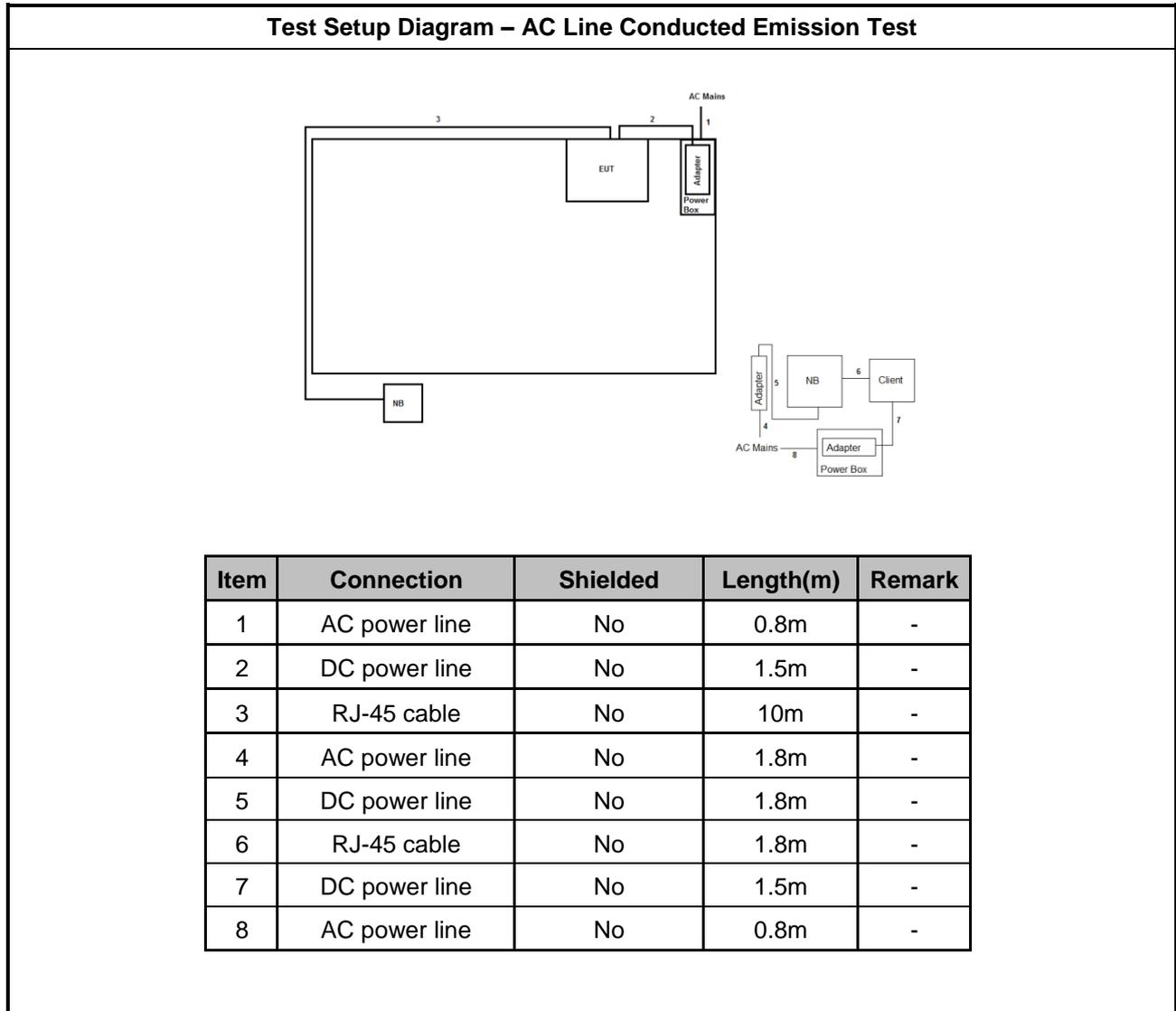
Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Client	ASUS	RT-AC58U	-
2	Notebook	DELL	E5410	DoC
3	Notebook	DELL	E5410	DoC
4	AC adaptor(for Client)	DVE	DSA-18PFM-12	-

Note. Support equipment No.1 was provided by customer.

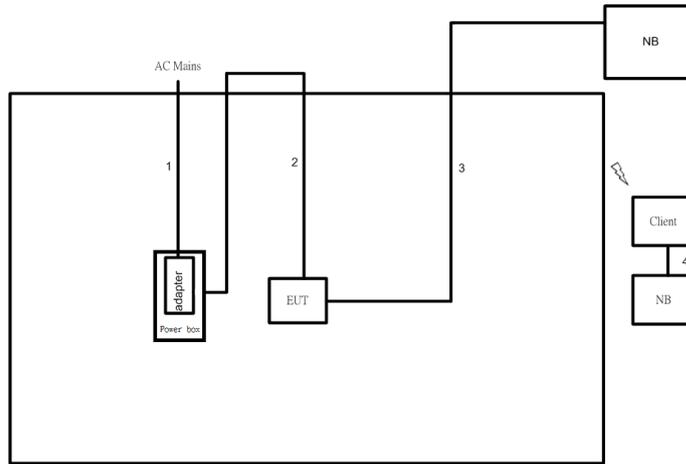
Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Client	ASUS	RT-AC58U	-
2	Notebook	DELL	E5410	DoC
3	Notebook	DELL	E5410	DoC
4	AC adaptor(for Client)	DVE	DSA-18PFM-12	-

Note. Support equipment No.1 was provided by customer.

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC power line	No	1.8m	-
2	DC power line	No	1.5m	-
3	RJ-45 Cable	No	10m	-
4	RJ-45 Cable	No	1.8m	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

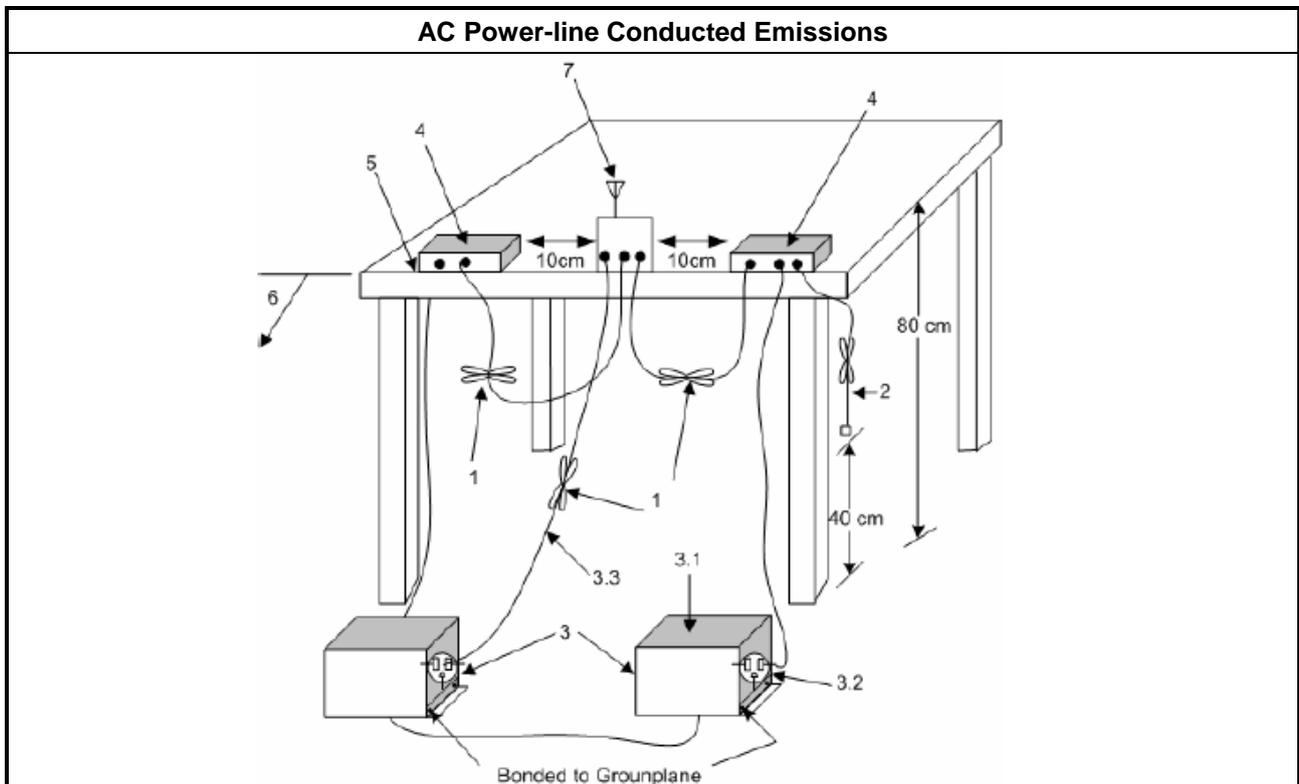
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band, N/A
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input type="checkbox"/>	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.

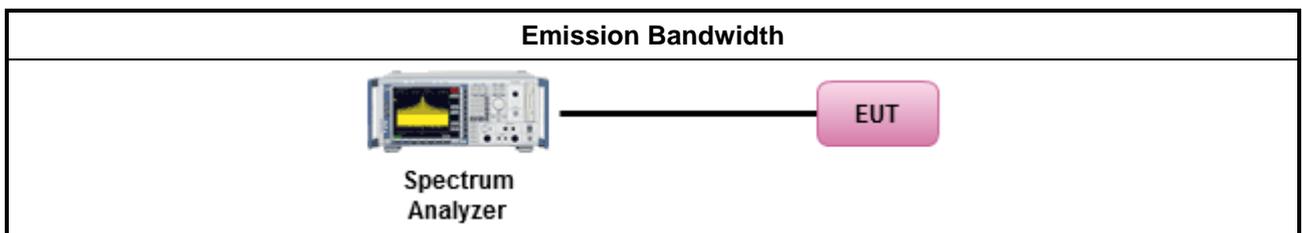
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> For the emission bandwidth shall be measured using one of the options below: 	
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause C for EBW and clause D for OBW measurement.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
<input checked="" type="checkbox"/>	Refer as IC RSS-Gen, clause 6.6 for bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
	<ul style="list-style-type: none"> ▪ Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees $\leq 125mW$ [21dBm] ▪ Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ ▪ Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. ▪ Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
<input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.47-5.725 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 $P_{Out} = 24 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. ▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
<p>P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	

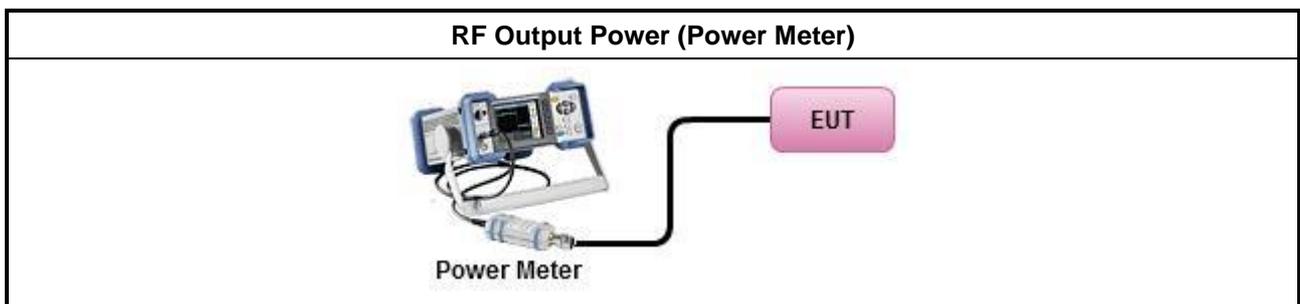
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Maximum Conducted Output Power 	
Duty cycle \geq 98%	
<input type="checkbox"/>	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
Duty cycle $<$ 98%	
<input type="checkbox"/>	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	
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause E Method PM (using an RF average power meter).
<ul style="list-style-type: none"> For conducted measurement. 	
<ul style="list-style-type: none"> If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. 	
<ul style="list-style-type: none"> If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$ 	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
	<ul style="list-style-type: none"> Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	<ul style="list-style-type: none"> Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	<ul style="list-style-type: none"> Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$.
	<ul style="list-style-type: none"> Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$.
	<ul style="list-style-type: none"> Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
<p>PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz</p> <p>G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	

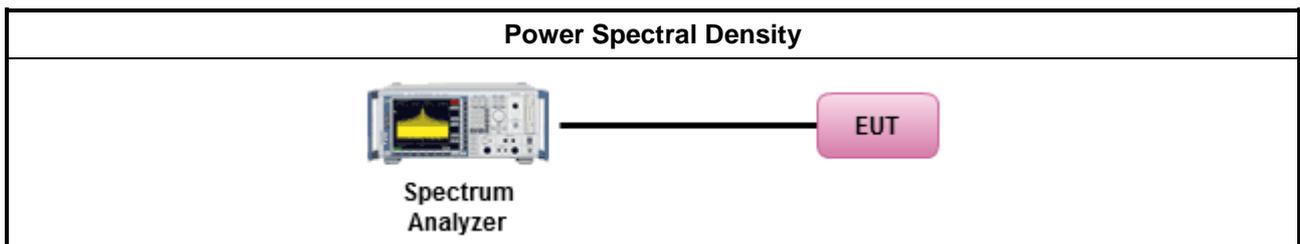
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options: 	
<input type="checkbox"/>	Refer as 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%	
<input type="checkbox"/>	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
Duty cycle < 98%	
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: <ul style="list-style-type: none"> ▪ 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]) $EIRP_{total} = PPSD_{total} + DG$ 	

3.4.4 Test Setup



3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D



3.5 Unwanted Emissions

3.5.1 Transmitter 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).

3.5.2 Measuring Instruments

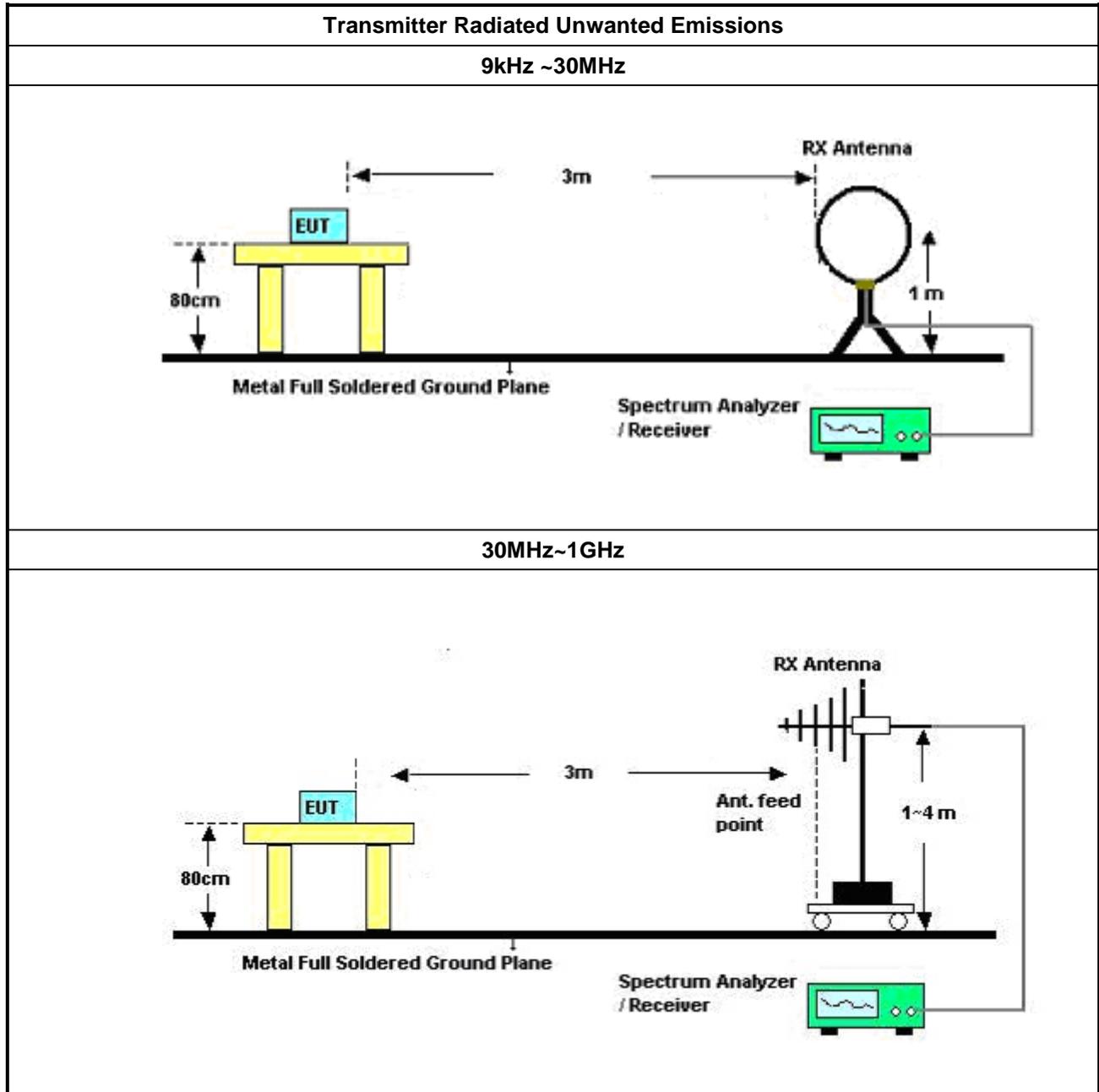
Refer a test equipment and calibration data table in this test report.

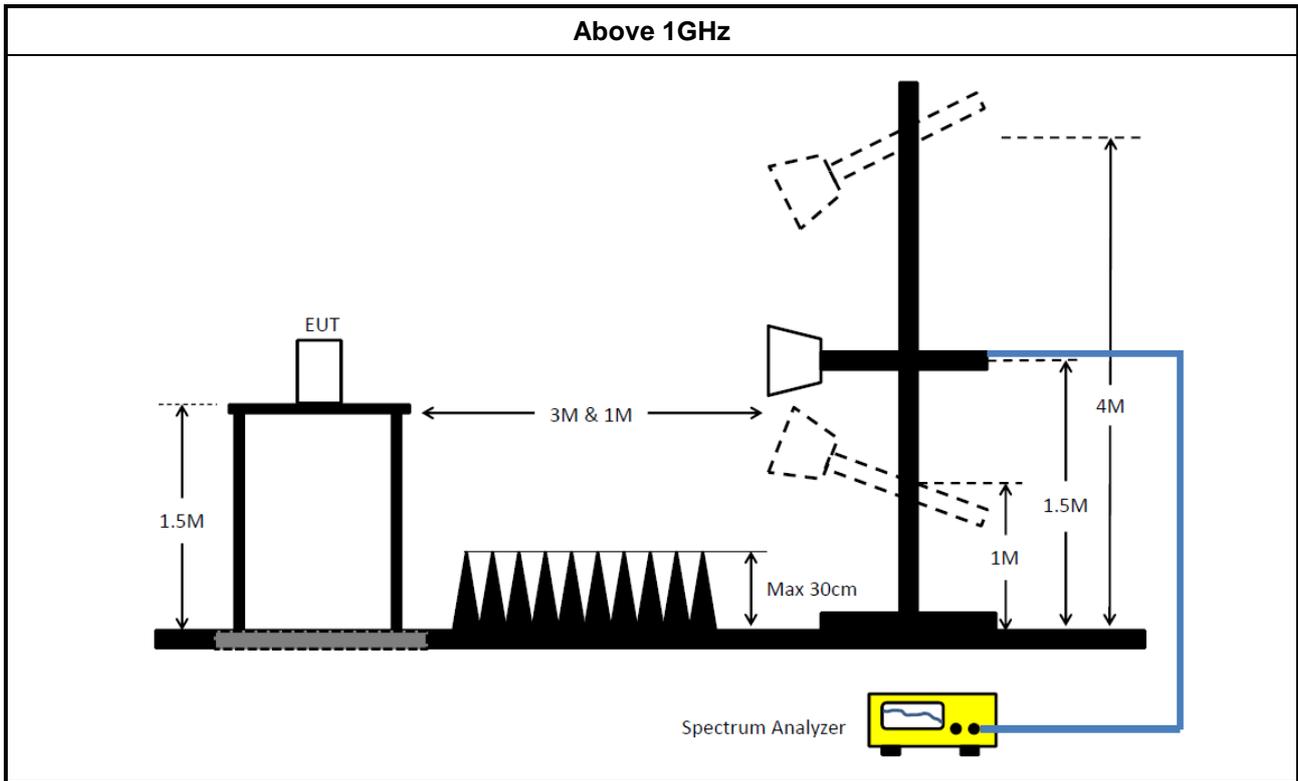


3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). 	
<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. 	
<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> ▪ Refer as KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
	<ul style="list-style-type: none"> ▪ Refer as KDB 789033, clause G)1) for unwanted emissions into restricted bands.
	<input checked="" type="checkbox"/> Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.
	<input checked="" type="checkbox"/> Refer as KDB 789033, clause G)5) (ANSI C63.10, clause 4.1.4.2.2), measurement procedure peak limit.
<ul style="list-style-type: none"> ▪ For radiated measurement. 	
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
<ul style="list-style-type: none"> ▪ The any unwanted emissions level shall not exceed the fundamental emission level. 	
<ul style="list-style-type: none"> ▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported. 	

3.5.4 Test Setup





3.5.5 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.

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E



4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	06/Oct/2017	05/Oct/2018
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2017	11/Oct/2018
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/2018

NCR : Non-Calibration Require

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSP40	100305	9KHz - 40GHz	12/Dec/2017	11/Dec/2018
3m Semi Anechoic	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz-1GHz	20/Oct/2017	19/Oct/2018
3m Semi Anechoic	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz	27/Oct/2017	26/Oct/2018
Amplifier	Agilent	8447D	2944A11149	100KHz-1.3GHz	29/Jun/2017	28/Jun/2018
Amplifier	Ketsight	8449B	3008A02602	1GHz-26.5GHz	19/Sep/2017	18/Sep/2018
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA9120D 01531	1GHz-18GHz	11/May/2017	10/May/2018
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	18GHz-40GHz	06/Feb/2017	05/Feb/2018
Bilog Antenna	SCHAFFNER	CBL6112B	2723	30MHz-1GHz	09/Sep/2017	08/Sep/2018
Amplifier	MITEQ	JS44-18004000 -33-8P	1840917	18GHz-40GHz	06/Feb/2017	05/Feb/2018
Loop Antenna	TESEQ	HLA 6120	31244	9KHz-30MHz	02/Mar/2017	01/Mar/2018
RF Cable-high	SUHNER	SUCOFLEX104	MY34918/4	1GHz ~ 40GHz	26/Jan/2017	25/Jan/2018
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz ~ 1GHz	26/Jan/2017	25/Jan/2018
Receiver	R&S	ESU3	102052	9kHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018



Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101515	9kHz~40GHz	08/Dec/2017	07/Dec/2018
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
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-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY23000/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018



AC Power-line Conducted Emissions Result																																																																																																																																	
Operating Mode	1	Power Phase	Neutral																																																																																																																														
Operating Function	Adapter Mode																																																																																																																																
<div style="text-align: right;">Date: 2018-01-02</div> <p>The graph displays the AC power-line conducted emissions. The y-axis represents Level in dBuV, ranging from 0 to 80. The x-axis represents Frequency in MHz, ranging from 0.1502 to 30. Two red lines indicate the applicable limits: NCC/IC/FCC-B (upper limit) and NCC/IC/FCC-B-AV (lower limit). The blue line represents the measured emission level, which generally stays below the NCC/IC/FCC-B-AV limit, with a notable peak at 2.0549 MHz (marked as 7 MAX) that exceeds the NCC/IC/FCC-B-AV limit but remains below the NCC/IC/FCC-B limit.</p> <table border="1"> <thead> <tr> <th></th> <th>Freq</th> <th>Level</th> <th>Over Limit</th> <th>Limit Line</th> <th>Read Level</th> <th>LISN Factor</th> <th>Cable Loss</th> <th>Remark</th> </tr> <tr> <th></th> <th>MHz</th> <th>dBuV</th> <th>dB</th> <th>dBuV</th> <th>dBuV</th> <th>dB</th> <th>dB</th> <th></th> </tr> </thead> <tbody> <tr><td>1</td><td>0.1557</td><td>21.72</td><td>-33.97</td><td>55.69</td><td>12.05</td><td>9.63</td><td>0.04</td><td>Average</td></tr> <tr><td>2</td><td>0.1557</td><td>43.64</td><td>-22.05</td><td>65.69</td><td>33.97</td><td>9.63</td><td>0.04</td><td>QP</td></tr> <tr><td>3</td><td>0.3483</td><td>25.04</td><td>-23.96</td><td>49.00</td><td>15.35</td><td>9.61</td><td>0.08</td><td>Average</td></tr> <tr><td>4</td><td>0.3483</td><td>31.70</td><td>-27.30</td><td>59.00</td><td>22.01</td><td>9.61</td><td>0.08</td><td>QP</td></tr> <tr><td>5</td><td>0.5238</td><td>21.70</td><td>-24.30</td><td>46.00</td><td>12.02</td><td>9.61</td><td>0.07</td><td>Average</td></tr> <tr><td>6</td><td>0.5238</td><td>28.32</td><td>-27.68</td><td>56.00</td><td>18.64</td><td>9.61</td><td>0.07</td><td>QP</td></tr> <tr><td>7 MAX</td><td>2.0549</td><td>24.22</td><td>-21.78</td><td>46.00</td><td>14.59</td><td>9.63</td><td>0.00</td><td>Average</td></tr> <tr><td>8</td><td>2.0549</td><td>30.24</td><td>-25.76</td><td>56.00</td><td>20.61</td><td>9.63</td><td>0.00</td><td>QP</td></tr> <tr><td>9</td><td>3.6611</td><td>22.92</td><td>-23.08</td><td>46.00</td><td>13.20</td><td>9.64</td><td>0.08</td><td>Average</td></tr> <tr><td>10</td><td>3.6611</td><td>29.03</td><td>-26.97</td><td>56.00</td><td>19.31</td><td>9.64</td><td>0.08</td><td>QP</td></tr> <tr><td>11</td><td>7.4071</td><td>25.33</td><td>-24.67</td><td>50.00</td><td>15.50</td><td>9.67</td><td>0.16</td><td>Average</td></tr> <tr><td>12</td><td>7.4071</td><td>31.30</td><td>-28.70</td><td>60.00</td><td>21.47</td><td>9.67</td><td>0.16</td><td>QP</td></tr> </tbody> </table>					Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark		MHz	dBuV	dB	dBuV	dBuV	dB	dB		1	0.1557	21.72	-33.97	55.69	12.05	9.63	0.04	Average	2	0.1557	43.64	-22.05	65.69	33.97	9.63	0.04	QP	3	0.3483	25.04	-23.96	49.00	15.35	9.61	0.08	Average	4	0.3483	31.70	-27.30	59.00	22.01	9.61	0.08	QP	5	0.5238	21.70	-24.30	46.00	12.02	9.61	0.07	Average	6	0.5238	28.32	-27.68	56.00	18.64	9.61	0.07	QP	7 MAX	2.0549	24.22	-21.78	46.00	14.59	9.63	0.00	Average	8	2.0549	30.24	-25.76	56.00	20.61	9.63	0.00	QP	9	3.6611	22.92	-23.08	46.00	13.20	9.64	0.08	Average	10	3.6611	29.03	-26.97	56.00	19.31	9.64	0.08	QP	11	7.4071	25.33	-24.67	50.00	15.50	9.67	0.16	Average	12	7.4071	31.30	-28.70	60.00	21.47	9.67	0.16	QP
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Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	27.95M	17.766M	17M8D1D	24.625M	17.716M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	47.1M	36.382M	36M4D1D	43M	36.282M
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	84.5M	76.162M	76M2D1D	83.3M	75.962M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	17.575M	17.866M	17M9D1D	17.325M	17.716M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	36.45M	36.532M	36M5D1D	35.85M	36.382M
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	75.8M	76.362M	76M4D1D	73.8M	76.062M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

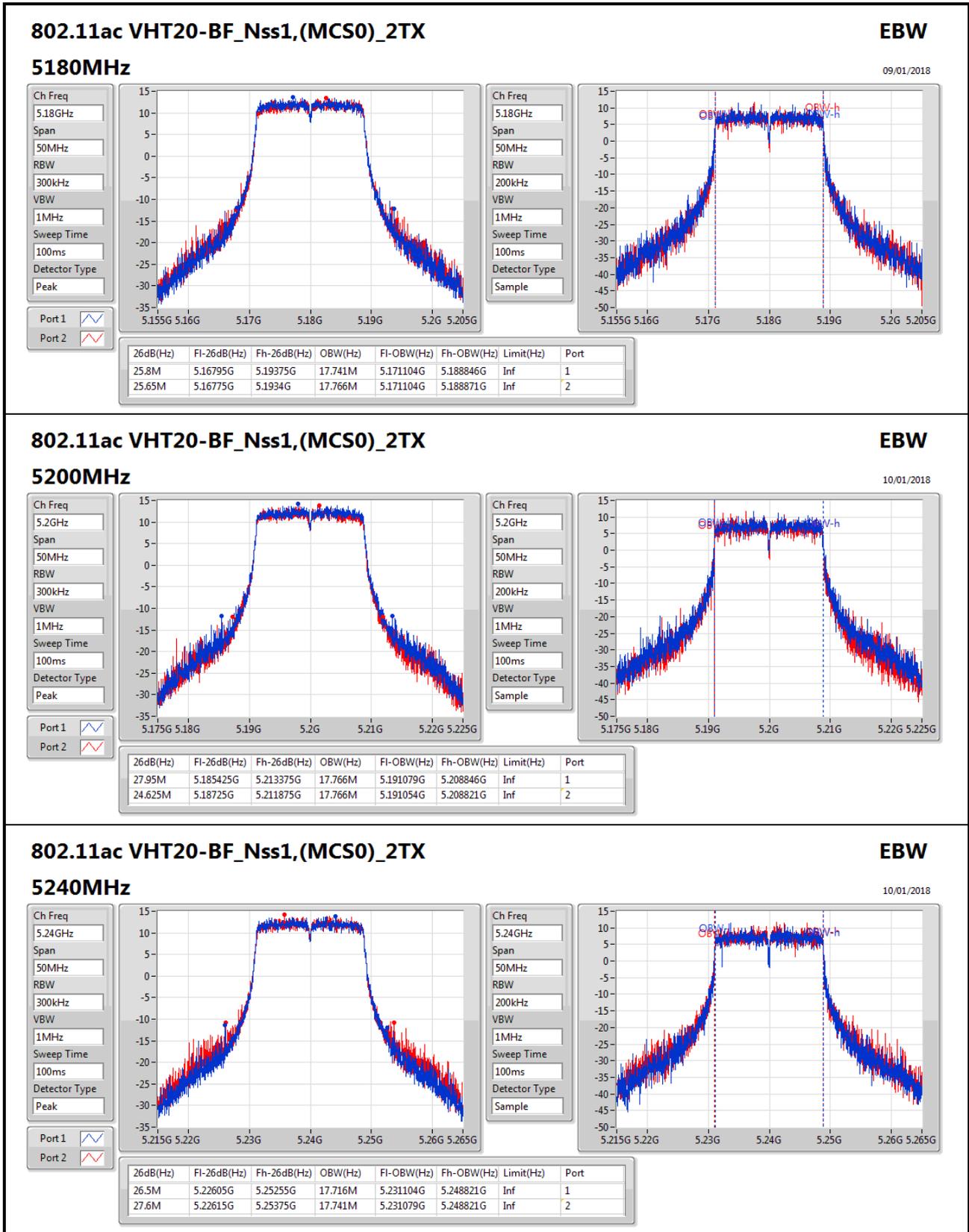


Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	25.8M	17.741M	25.65M	17.766M
5200MHz_TnomVnom	Pass	Inf	27.95M	17.766M	24.625M	17.766M
5240MHz_TnomVnom	Pass	Inf	26.5M	17.716M	27.6M	17.741M
5745MHz_TnomVnom	Pass	500k	17.375M	17.741M	17.55M	17.866M
5785MHz_TnomVnom	Pass	500k	17.325M	17.766M	17.55M	17.841M
5825MHz_TnomVnom	Pass	500k	17.575M	17.716M	17.575M	17.741M
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	43M	36.282M	43.55M	36.382M
5230MHz_TnomVnom	Pass	Inf	46.2M	36.332M	47.1M	36.282M
5755MHz_TnomVnom	Pass	500k	35.85M	36.382M	36.2M	36.432M
5795MHz_TnomVnom	Pass	500k	36M	36.432M	36.45M	36.532M
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	83.3M	75.962M	84.5M	76.162M
5775MHz_TnomVnom	Pass	500k	75.8M	76.362M	73.8M	76.062M

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

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


802.11ac VHT20-BF_Nss1,(MCS0)_2TX
EBW

10/01/2018

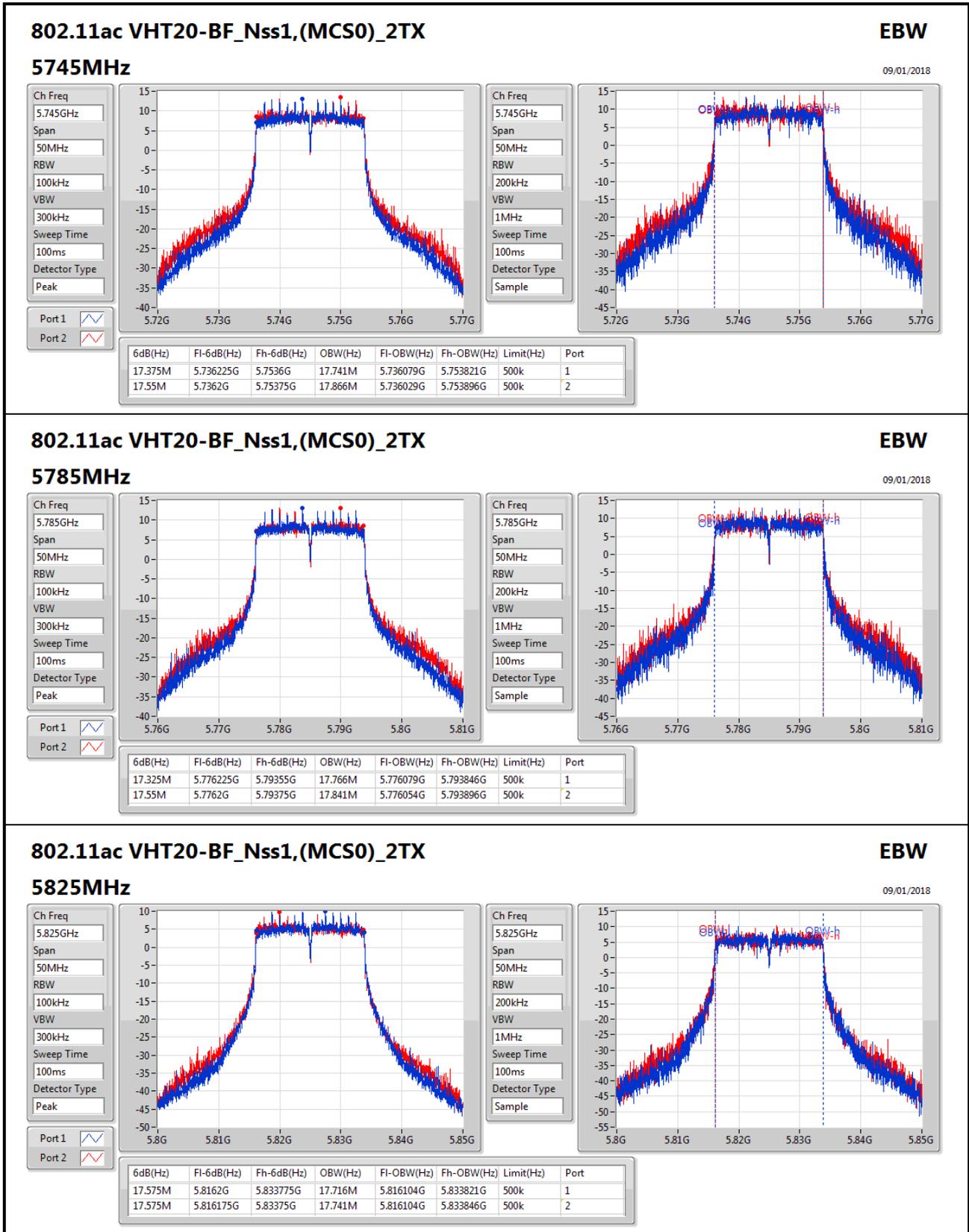
5240MHz

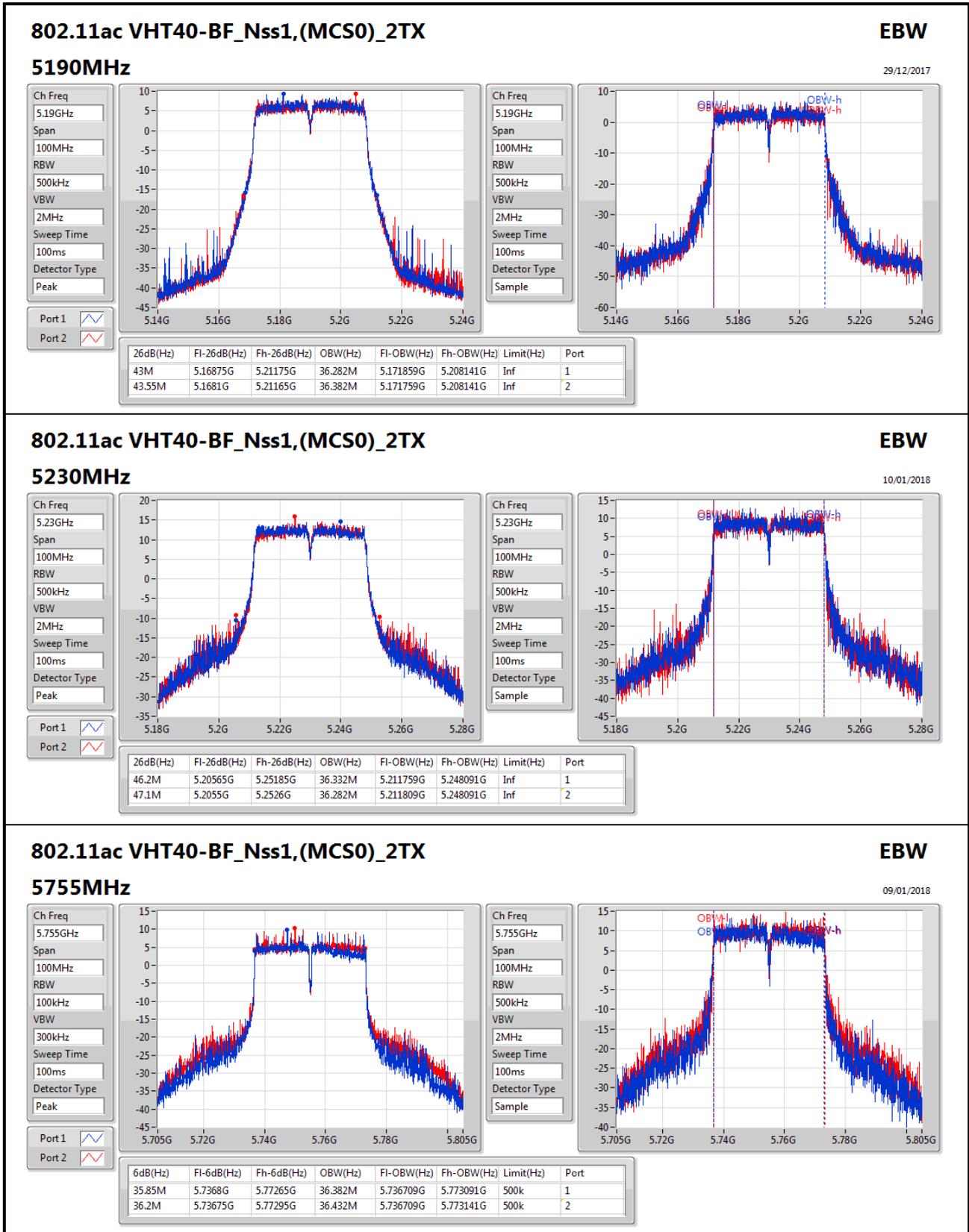
Ch Freq: 5.24GHz
Span: 50MHz
RBW: 300kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Peak

Port 1:
Port 2:

Ch Freq: 5.24GHz
Span: 50MHz
RBW: 200kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Sample

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
26.5M	5.22605G	5.25255G	17.716M	5.231104G	5.248821G	Inf	1
27.6M	5.22615G	5.25375G	17.741M	5.231079G	5.248821G	Inf	2




802.11ac VHT40-BF_Nss1,(MCS0)_2TX
EBW

09/01/2018

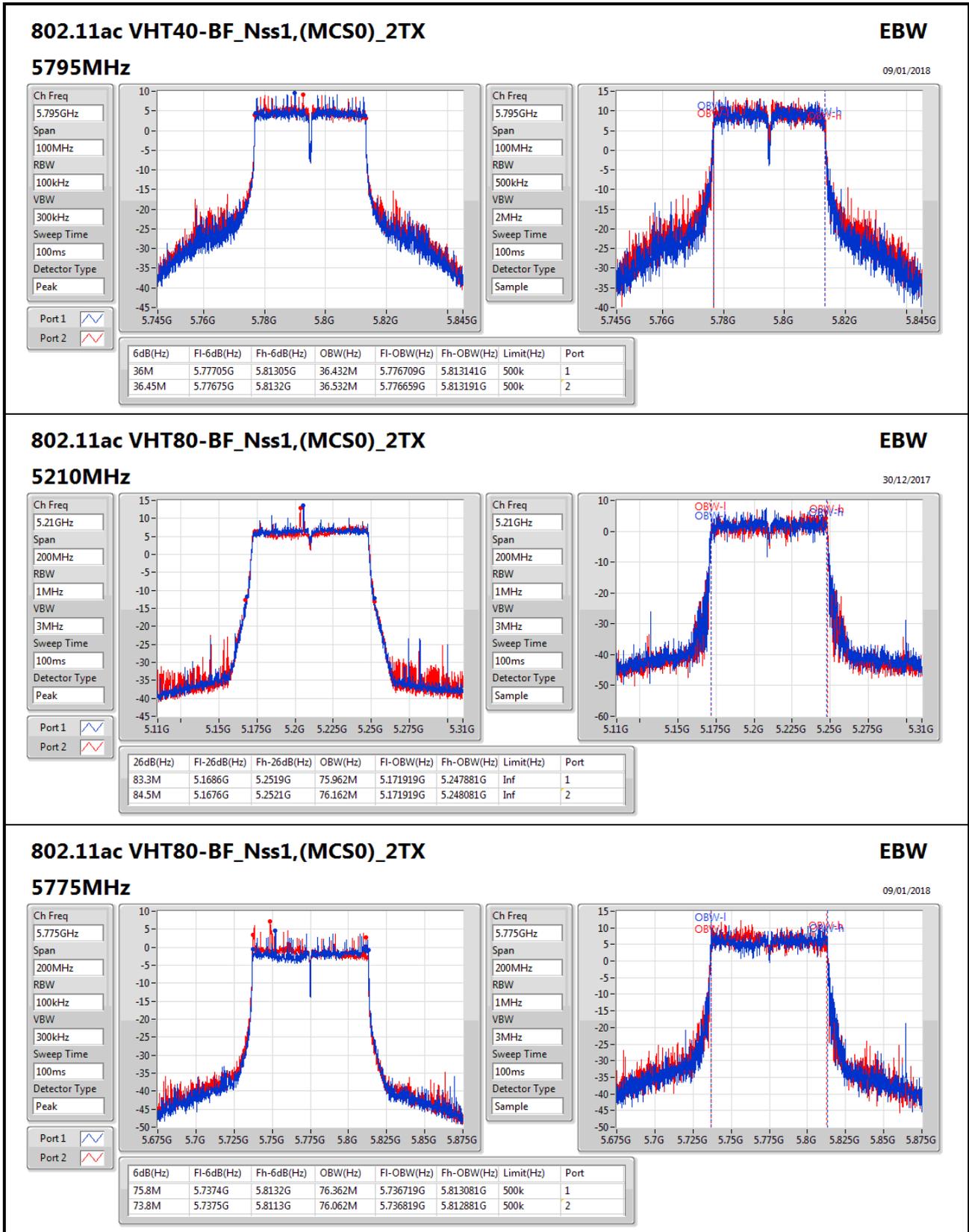
5755MHz

Ch Freq: 5.755GHz
Span: 100MHz
RBW: 100kHz
VBW: 300kHz
Sweep Time: 100ms
Detector Type: Peak

Port 1:
Port 2:

Ch Freq: 5.755GHz
Span: 100MHz
RBW: 500kHz
VBW: 2MHz
Sweep Time: 100ms
Detector Type: Sample

6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.85M	5.7368G	5.77265G	36.382M	5.736709G	5.773091G	500k	1
36.2M	5.73675G	5.77295G	36.432M	5.736709G	5.773141G	500k	2





Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	25.72	0.37325	34.14	2.59418
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	25.68	0.36983	34.10	2.57040
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	19.52	0.08954	27.94	0.62230
5.725-5.85GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	27.07	0.50933	35.49	3.53997
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	26.62	0.45920	35.04	3.19154
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	23.31	0.21429	31.73	1.48936



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	8.42	22.77	22.59	25.69	27.58	34.11	36.00
5200MHz_TnomVnom	Pass	8.42	22.70	22.51	25.62	27.58	34.04	36.00
5240MHz_TnomVnom	Pass	8.42	22.52	22.89	25.72	27.58	34.14	36.00
5745MHz_TnomVnom	Pass	8.42	23.86	24.24	27.06	27.58	35.48	36.00
5785MHz_TnomVnom	Pass	8.42	23.88	24.24	27.07	27.58	35.49	36.00
5825MHz_TnomVnom	Pass	8.42	20.92	21.39	24.17	27.58	32.59	36.00
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	8.42	17.23	17.31	20.28	27.58	28.70	36.00
5230MHz_TnomVnom	Pass	8.42	22.64	22.70	25.68	27.58	34.10	36.00
5755MHz_TnomVnom	Pass	8.42	23.28	23.86	26.59	27.58	35.01	36.00
5795MHz_TnomVnom	Pass	8.42	23.40	23.81	26.62	27.58	35.04	36.00
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	8.42	16.67	16.34	19.52	27.58	27.94	36.00
5775MHz_TnomVnom	Pass	8.42	20.01	20.58	23.31	27.58	31.73	36.00

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



Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	13.09	21.51
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	9.87	18.29
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	0.19	8.61
5.725-5.85GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	12.74	21.16
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	9.17	17.59
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	3.27	11.69

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

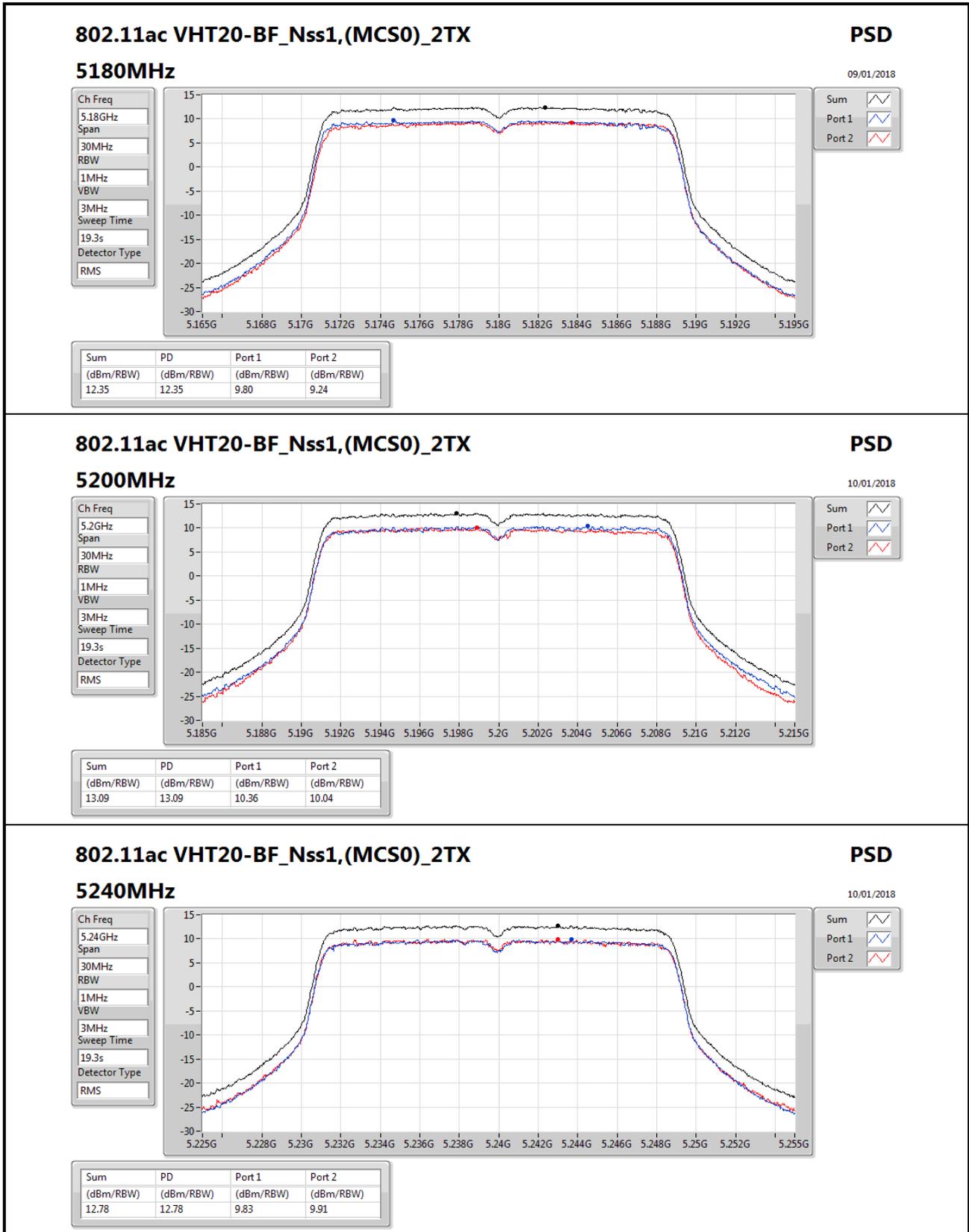


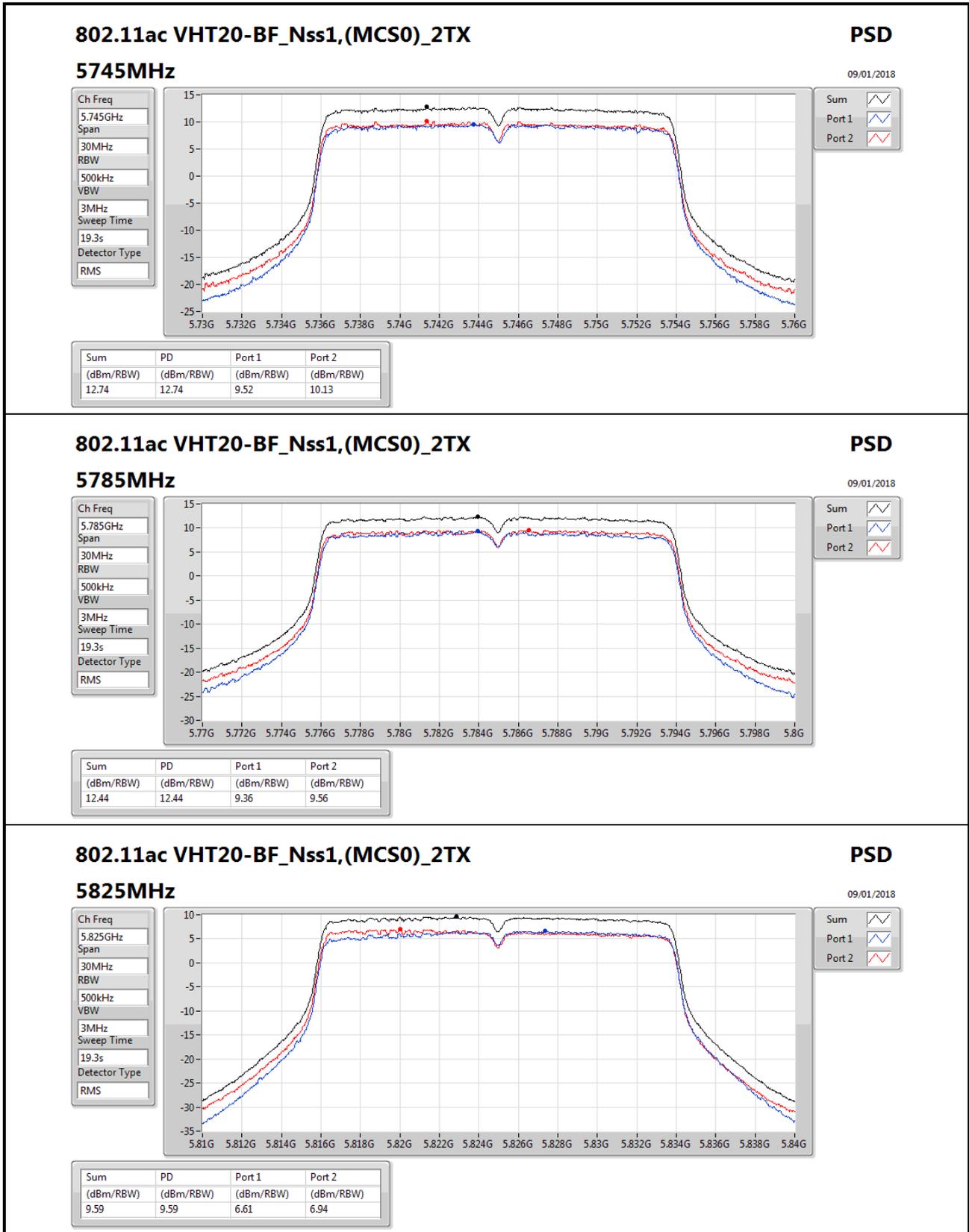
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	8.42	9.80	9.24	12.35	14.58	20.77	Inf
5200MHz_TnomVnom	Pass	8.42	10.36	10.04	13.09	14.58	21.51	Inf
5240MHz_TnomVnom	Pass	8.42	9.83	9.91	12.78	14.58	21.20	Inf
5745MHz_TnomVnom	Pass	8.42	9.52	10.13	12.74	27.58	21.16	Inf
5785MHz_TnomVnom	Pass	8.42	9.36	9.56	12.44	27.58	20.86	Inf
5825MHz_TnomVnom	Pass	8.42	6.61	6.94	9.59	27.58	18.01	Inf
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	8.42	1.13	0.87	3.78	14.58	12.20	Inf
5230MHz_TnomVnom	Pass	8.42	7.03	7.16	9.87	14.58	18.29	Inf
5755MHz_TnomVnom	Pass	8.42	6.29	6.29	9.17	27.58	17.59	Inf
5795MHz_TnomVnom	Pass	8.42	5.94	6.34	9.04	27.58	17.46	Inf
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	8.42	-2.84	-2.54	0.19	14.58	8.61	Inf
5775MHz_TnomVnom	Pass	8.42	0.30	0.41	3.27	27.58	11.69	Inf

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 VHT20-BF_Nss1,(MCS0)_2TX

5825MHz

PSD

09/01/2018

Ch Freq
5.825GHz

Span
30MHz

RBW
500kHz

VBW
3MHz

Sweep Time
19.3s

Detector Type
RMS

Sum

Port 1

Port 2



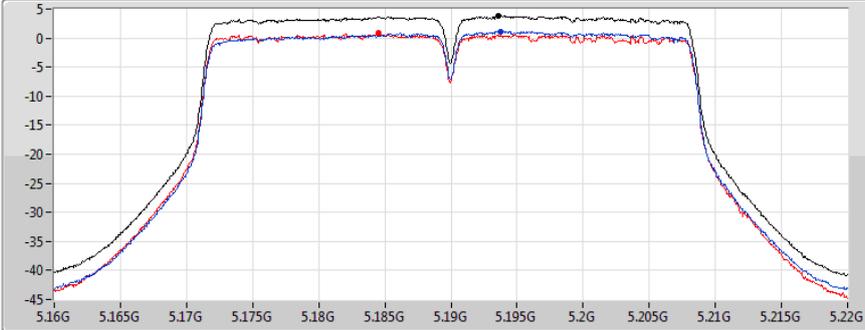
802.11ac VHT40-BF_Nss1,(MCS0)_2TX

PSD

5190MHz

29/12/2017

Ch Freq
5.19GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS



Sum
Port 1
Port 2

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.78	3.78	1.13	0.87

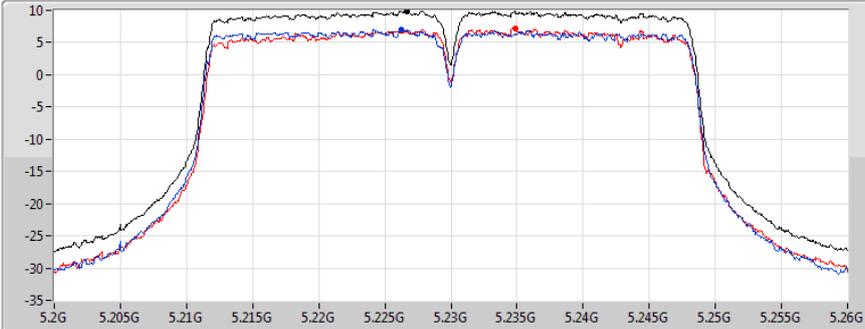
802.11ac VHT40-BF_Nss1,(MCS0)_2TX

PSD

5230MHz

10/01/2018

Ch Freq
5.23GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS



Sum
Port 1
Port 2

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.87	9.87	7.03	7.16

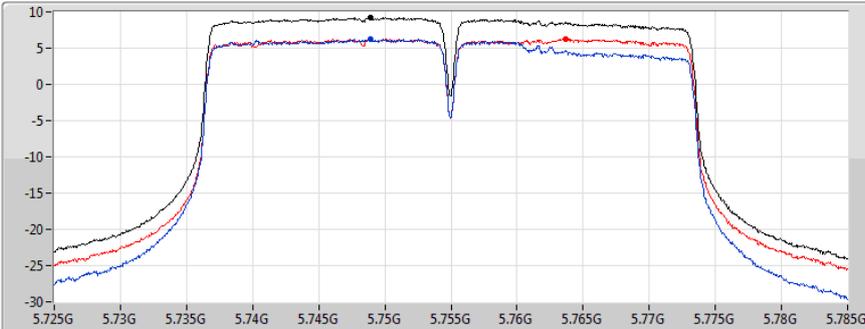
802.11ac VHT40-BF_Nss1,(MCS0)_2TX

PSD

5755MHz

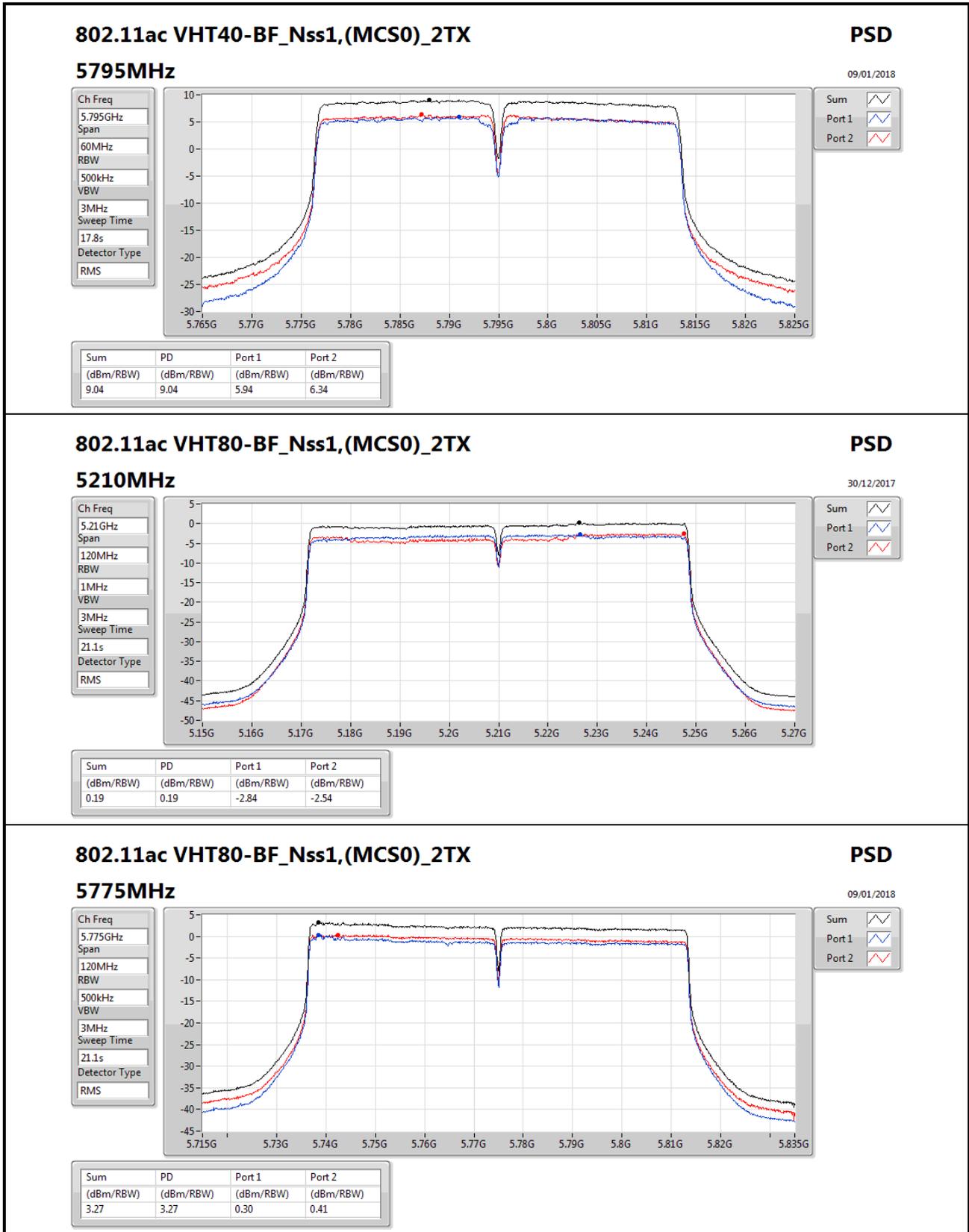
09/01/2018

Ch Freq
5.755GHz
Span
60MHz
RBW
500kHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS



Sum
Port 1
Port 2

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.17	9.17	6.29	6.29





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_Nss1,(MCS0)_2TX	Pass	PK	41.64M	35.72	40.00	-4.28	-9.98	3	Vertical	0	1.00	-



Result

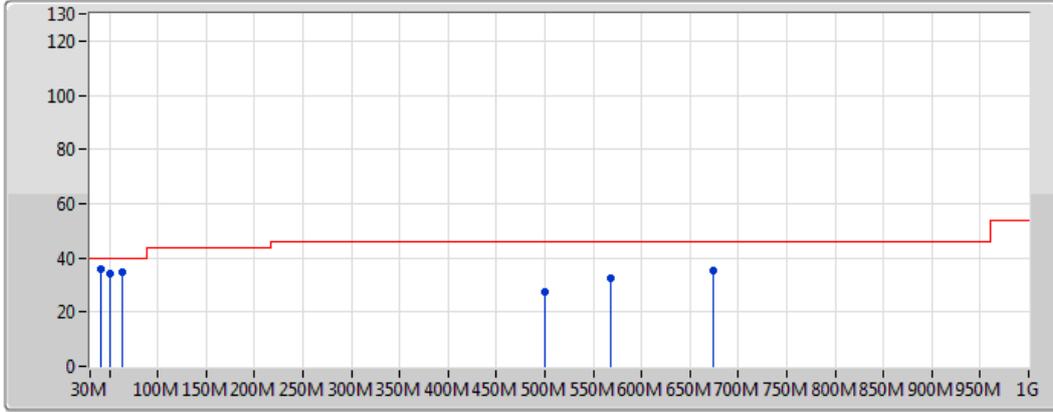
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	PK	41.64M	32.98	40.00	-7.02	-9.98	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	62.98M	30.67	40.00	-9.33	-14.93	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	148.34M	29.51	43.50	-13.99	-10.30	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	355.92M	26.21	46.00	-19.79	-5.16	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	441.28M	29.46	46.00	-16.54	-3.09	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	559.62M	33.78	46.00	-12.22	-0.91	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	41.64M	35.72	40.00	-4.28	-9.98	3	Vertical	0	1.00	-
5210MHz	Pass	PK	51.34M	34.01	40.00	-5.99	-13.86	3	Vertical	0	1.00	-
5210MHz	Pass	PK	62.98M	34.74	40.00	-5.26	-14.93	3	Vertical	0	1.00	-
5210MHz	Pass	PK	499.48M	27.67	46.00	-18.33	-2.37	3	Vertical	0	1.00	-
5210MHz	Pass	PK	567.38M	32.63	46.00	-13.37	-1.00	3	Vertical	0	1.00	-
5210MHz	Pass	QP	674.08M	35.34	46.00	-10.66	-0.34	3	Vertical	135	1.25	-



802.11ac VHT80_Nss1,(MCS0)_2TX

5210MHz_Adapter

29/12/2017



Legend for the spectrum plot:

- Lim.PK: Red stepped line
- PK: Blue vertical line

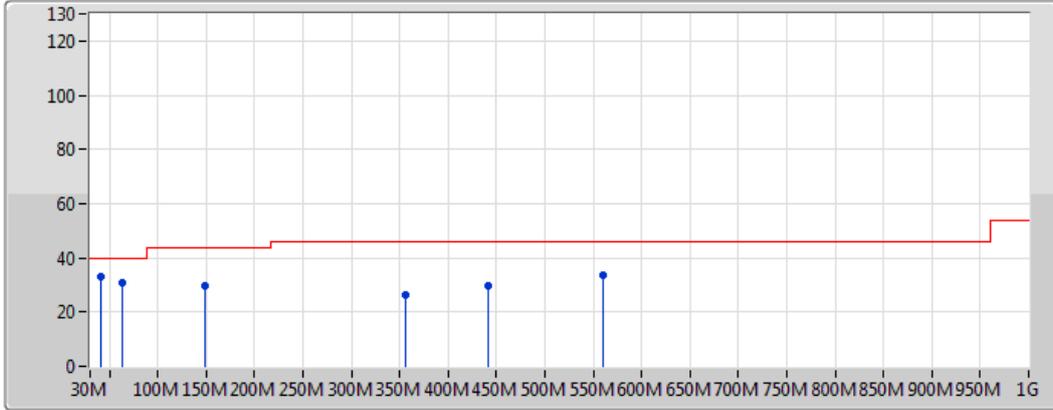
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	41.64M	35.72	40.00	-4.28	-9.98	3	Vertical	0	1.00	-
PK	51.34M	34.01	40.00	-5.99	-13.86	3	Vertical	0	1.00	-
PK	62.98M	34.74	40.00	-5.26	-14.93	3	Vertical	0	1.00	-
PK	499.48M	27.67	46.00	-18.33	-2.37	3	Vertical	0	1.00	-
PK	567.38M	32.63	46.00	-13.37	-1.00	3	Vertical	0	1.00	-
QP	674.08M	35.34	46.00	-10.66	-0.34	3	Vertical	135	1.25	-



802.11ac VHT80_Nss1,(MCS0)_2TX

5210MHz_Adapter

29/12/2017



Legend:
 Lim.PK
 PK

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	41.64M	32.98	40.00	-7.02	-9.98	3	Horizontal	360	1.00	-
PK	62.98M	30.67	40.00	-9.33	-14.93	3	Horizontal	360	1.00	-
PK	148.34M	29.51	43.50	-13.99	-10.30	3	Horizontal	360	1.00	-
PK	355.92M	26.21	46.00	-19.79	-5.16	3	Horizontal	360	1.00	-
PK	441.28M	29.46	46.00	-16.54	-3.09	3	Horizontal	360	1.00	-
PK	559.62M	33.78	46.00	-12.22	-0.91	3	Horizontal	360	1.00	-



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 VHT20_Nss1,(MCS0)_2TX	Pass	AV	5.148G	52.72	54.00	-1.28	6.59	3	Vertical	179	1.49	-
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	AV	5.149995G	51.74	54.00	-2.26	2.75	3	Vertical	109	1.56	-
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	AV	5.149995G	52.75	54.00	-1.25	2.73	3	Vertical	263	1.50	-
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	AV	11.6517G	51.47	54.00	-2.53	15.65	3	Vertical	334	3.02	-
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	PK	5.621G	65.25	68.20	-2.95	7.55	3	Vertical	159	1.82	-
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	PK	5.6442G	66.04	68.20	-2.16	7.60	3	Vertical	156	1.27	-



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 VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	AV	5.148G	52.72	54.00	-1.28	6.59	3	Vertical	179	1.49	-
5180MHz	Pass	AV	5.173G	110.30	Inf	-Inf	6.64	3	Vertical	179	1.49	-
5180MHz	Pass	PK	5.1486G	72.09	74.00	-1.91	6.59	3	Vertical	179	1.49	-
5180MHz	Pass	PK	5.1724G	120.92	Inf	-Inf	6.63	3	Vertical	179	1.49	-
5180MHz	Pass	AV	10.36982G	43.22	54.00	-10.78	15.31	3	Horizontal	333	1.83	-
5180MHz	Pass	PK	10.362236G	56.52	74.00	-17.48	15.30	3	Horizontal	333	1.83	-
5180MHz	Pass	AV	10.361238G	43.36	54.00	-10.64	15.30	3	Vertical	147	1.06	-
5180MHz	Pass	PK	10.359721G	57.02	74.00	-16.98	15.30	3	Vertical	147	1.06	-
5200MHz	Pass	AV	5.149995G	48.84	54.00	-5.16	6.59	3	Vertical	161	1.50	-
5200MHz	Pass	AV	5.192G	112.14	Inf	-Inf	6.67	3	Vertical	161	1.50	-
5200MHz	Pass	PK	5.148G	65.66	74.00	-8.34	6.59	3	Vertical	161	1.50	-
5200MHz	Pass	PK	5.1964G	123.21	Inf	-Inf	6.68	3	Vertical	161	1.50	-
5200MHz	Pass	AV	10.400748G	41.18	54.00	-12.82	12.10	3	Horizontal	340	2.44	-
5200MHz	Pass	PK	10.400304G	54.37	74.00	-19.63	12.10	3	Horizontal	340	2.44	-
5200MHz	Pass	AV	10.400519G	43.60	54.00	-10.40	15.35	3	Vertical	223	1.50	-
5200MHz	Pass	PK	10.403194G	57.76	74.00	-16.24	15.36	3	Vertical	223	1.50	-
5240MHz	Pass	AV	5.1356G	47.30	54.00	-6.70	6.56	3	Vertical	180	1.55	-
5240MHz	Pass	AV	5.2442G	113.02	Inf	-Inf	6.78	3	Vertical	180	1.55	-
5240MHz	Pass	AV	5.3762G	47.64	54.00	-6.36	7.04	3	Vertical	180	1.55	-
5240MHz	Pass	PK	5.1386G	63.00	74.00	-11.00	6.57	3	Vertical	180	1.55	-
5240MHz	Pass	PK	5.2454G	124.15	Inf	-Inf	6.78	3	Vertical	180	1.55	-
5240MHz	Pass	PK	5.3582G	61.14	74.00	-12.86	7.01	3	Vertical	180	1.55	-
5240MHz	Pass	AV	10.481597G	43.25	54.00	-10.75	15.46	3	Horizontal	337	2.02	-
5240MHz	Pass	PK	10.475888G	57.09	74.00	-16.91	15.45	3	Horizontal	337	2.02	-
5240MHz	Pass	AV	10.48016G	42.54	54.00	-11.46	15.46	3	Vertical	152	1.38	-
5240MHz	Pass	PK	10.479242G	56.99	74.00	-17.01	15.46	3	Vertical	152	1.38	-
5745MHz	Pass	AV	5.7534G	112.72	Inf	-Inf	7.84	3	Vertical	154	1.61	-
5745MHz	Pass	PK	5.625G	60.84	68.20	-7.36	7.55	3	Vertical	154	1.61	-
5745MHz	Pass	PK	5.751G	123.60	Inf	-Inf	7.84	3	Vertical	154	1.61	-
5745MHz	Pass	PK	5.9694G	60.64	68.20	-7.56	8.32	3	Vertical	154	1.61	-
5745MHz	Pass	AV	11.490998G	43.97	54.00	-10.03	15.77	3	Horizontal	159	1.10	-
5745MHz	Pass	PK	11.486208G	57.91	74.00	-16.09	15.78	3	Horizontal	159	1.10	-
5745MHz	Pass	AV	11.48988G	45.86	54.00	-8.14	15.77	3	Vertical	222	1.06	-
5745MHz	Pass	PK	11.485968G	59.97	74.00	-14.03	15.78	3	Vertical	222	1.06	-
5785MHz	Pass	AV	5.7838G	112.86	Inf	-Inf	7.91	3	Vertical	178	2.06	-
5785MHz	Pass	PK	5.5834G	60.84	68.20	-7.36	7.46	3	Vertical	178	2.06	-
5785MHz	Pass	PK	5.7802G	124.33	Inf	-Inf	7.90	3	Vertical	178	2.06	-
5785MHz	Pass	PK	5.9374G	60.83	68.20	-7.37	8.25	3	Vertical	178	2.06	-
5785MHz	Pass	AV	11.5709G	44.19	54.00	-9.81	15.71	3	Horizontal	155	1.33	-
5785MHz	Pass	PK	11.5688G	58.45	74.00	-15.55	15.71	3	Horizontal	155	1.33	-
5785MHz	Pass	AV	11.5693G	50.13	54.00	-3.87	15.71	3	Vertical	34	2.46	-
5785MHz	Pass	PK	11.57569G	64.81	74.00	-9.19	15.71	3	Vertical	34	2.46	-
5825MHz	Pass	AV	5.8178G	112.63	Inf	-Inf	7.99	3	Vertical	161	1.50	-
5825MHz	Pass	PK	5.6438G	63.92	68.20	-4.28	7.60	3	Vertical	161	1.50	-
5825MHz	Pass	PK	5.8178G	123.53	Inf	-Inf	7.99	3	Vertical	161	1.50	-
5825MHz	Pass	PK	5.939G	60.76	68.20	-7.44	8.26	3	Vertical	161	1.50	-
5825MHz	Pass	AV	11.6518G	45.76	54.00	-8.24	15.65	3	Horizontal	29	1.64	-



RSE TX above 1GHz Result_Beamforming

Appendix E.2

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5825MHz	Pass	PK	11.6506G	59.67	74.00	-14.33	15.65	3	Horizontal	29	1.64	-
5825MHz	Pass	AV	11.6517G	51.47	54.00	-2.53	15.65	3	Vertical	334	3.02	-
5825MHz	Pass	PK	11.66118G	66.16	74.00	-7.84	15.64	3	Vertical	334	3.02	-
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	AV	5.149995G	51.74	54.00	-2.26	2.75	3	Vertical	109	1.56	-
5190MHz	Pass	AV	5.1876G	102.20	Inf	-Inf	2.80	3	Vertical	109	1.56	-
5190MHz	Pass	PK	5.14G	68.25	74.00	-5.75	2.74	3	Vertical	109	1.56	-
5190MHz	Pass	PK	5.1872G	112.49	Inf	-Inf	2.80	3	Vertical	109	1.56	-
5190MHz	Pass	AV	15.55692G	46.70	54.00	-7.30	14.06	3	Horizontal	46	1.04	-
5190MHz	Pass	PK	15.56634G	60.02	74.00	-13.98	14.02	3	Horizontal	46	1.04	-
5190MHz	Pass	AV	15.55542G	45.70	54.00	-8.30	14.07	3	Vertical	13	2.20	-
5190MHz	Pass	PK	15.57132G	59.57	74.00	-14.43	13.99	3	Vertical	13	2.20	-
5230MHz	Pass	AV	5.1476G	51.41	54.00	-2.59	6.59	3	Vertical	333	1.50	-
5230MHz	Pass	AV	5.228G	108.51	Inf	-Inf	6.75	3	Vertical	333	1.50	-
5230MHz	Pass	PK	5.1476G	65.87	74.00	-8.13	6.59	3	Vertical	333	1.50	-
5230MHz	Pass	PK	5.2312G	119.38	Inf	-Inf	6.75	3	Vertical	333	1.50	-
5230MHz	Pass	AV	10.461198G	42.19	54.00	-11.81	15.43	3	Horizontal	357	1.47	-
5230MHz	Pass	PK	10.46016G	56.29	74.00	-17.71	15.43	3	Horizontal	357	1.47	-
5230MHz	Pass	AV	10.460679G	42.04	54.00	-11.96	15.43	3	Vertical	222	1.50	-
5230MHz	Pass	PK	10.461028G	56.29	74.00	-17.71	15.43	3	Vertical	222	1.50	-
5755MHz	Pass	AV	5.7586G	109.07	Inf	-Inf	7.85	3	Vertical	156	1.68	-
5755MHz	Pass	PK	5.6434G	64.91	68.20	-3.29	7.60	3	Vertical	156	1.68	-
5755MHz	Pass	PK	5.7514G	120.05	Inf	-Inf	7.84	3	Vertical	156	1.68	-
5755MHz	Pass	PK	5.9722G	64.53	68.20	-3.67	8.33	3	Vertical	156	1.68	-
5755MHz	Pass	AV	11.52856G	43.07	54.00	-10.93	15.74	3	Horizontal	158	1.50	-
5755MHz	Pass	PK	11.50421G	55.65	74.00	-18.35	15.76	3	Horizontal	158	1.50	-
5755MHz	Pass	AV	11.52836G	42.89	54.00	-11.11	15.74	3	Vertical	20	1.50	-
5755MHz	Pass	PK	11.50441G	55.82	74.00	-18.18	15.76	3	Vertical	20	1.50	-
5795MHz	Pass	AV	5.7986G	112.55	Inf	-Inf	7.95	3	Vertical	159	1.82	-
5795MHz	Pass	PK	5.621G	65.25	68.20	-2.95	7.55	3	Vertical	159	1.82	-
5795MHz	Pass	PK	5.7974G	120.69	Inf	-Inf	7.94	3	Vertical	159	1.82	-
5795MHz	Pass	PK	5.9306G	65.07	68.20	-3.13	8.24	3	Vertical	159	1.82	-
5795MHz	Pass	AV	11.60916G	46.23	54.00	-7.77	15.68	3	Horizontal	14	1.90	-
5795MHz	Pass	PK	11.60737G	58.11	74.00	-15.89	15.68	3	Horizontal	14	1.90	-
5795MHz	Pass	AV	11.60557G	47.60	54.00	-6.40	15.69	3	Vertical	331	1.46	-
5795MHz	Pass	PK	11.60617G	60.02	74.00	-13.98	15.69	3	Vertical	331	1.46	-
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	AV	5.149995G	52.75	54.00	-1.25	2.73	3	Vertical	263	1.50	-
5210MHz	Pass	AV	5.222G	95.76	Inf	-Inf	2.77	3	Vertical	263	1.50	-
5210MHz	Pass	AV	5.350005G	43.24	54.00	-10.76	2.85	3	Vertical	263	1.50	-
5210MHz	Pass	PK	5.149G	65.82	74.00	-8.18	2.73	3	Vertical	263	1.50	-
5210MHz	Pass	PK	5.216G	110.65	Inf	-Inf	2.77	3	Vertical	263	1.50	-
5210MHz	Pass	PK	5.38G	55.69	74.00	-18.31	2.87	3	Vertical	263	1.50	-
5210MHz	Pass	AV	10.4299G	41.75	54.00	-12.25	12.52	3	Horizontal	168	2.34	-
5210MHz	Pass	PK	10.42204G	54.85	74.00	-19.15	12.50	3	Horizontal	168	2.34	-
5210MHz	Pass	AV	10.42594G	41.80	54.00	-12.20	12.51	3	Vertical	125	1.50	-
5210MHz	Pass	PK	10.40602G	55.20	74.00	-18.80	12.46	3	Vertical	125	1.50	-
5775MHz	Pass	AV	5.763G	102.04	Inf	-Inf	7.86	3	Vertical	156	1.27	-
5775MHz	Pass	PK	5.6442G	66.04	68.20	-2.16	7.60	3	Vertical	156	1.27	-



RSE TX above 1GHz Result_Beamforming

Appendix E.2

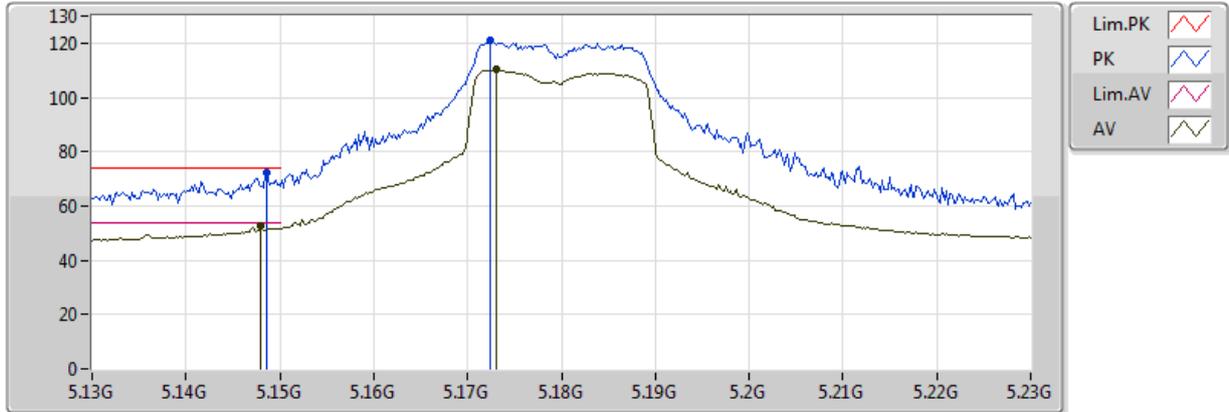
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5775MHz	Pass	PK	5.7906G	115.93	Inf	-Inf	7.93	3	Vertical	156	1.27	-
5775MHz	Pass	PK	5.9298G	62.40	68.20	-5.80	8.24	3	Vertical	156	1.27	-
5775MHz	Pass	AV	11.56766G	41.45	54.00	-12.55	15.71	3	Horizontal	107	1.01	-
5775MHz	Pass	PK	11.52705G	55.11	74.00	-18.89	15.74	3	Horizontal	107	1.01	-
5775MHz	Pass	AV	11.56876G	43.74	54.00	-10.26	15.71	3	Vertical	335	1.01	-
5775MHz	Pass	PK	11.57395G	56.75	74.00	-17.25	15.71	3	Vertical	335	1.01	-



802.11ac VHT20_Nss1,(MCS0)_2TX

5180MHz_BF TX

08/01/2018



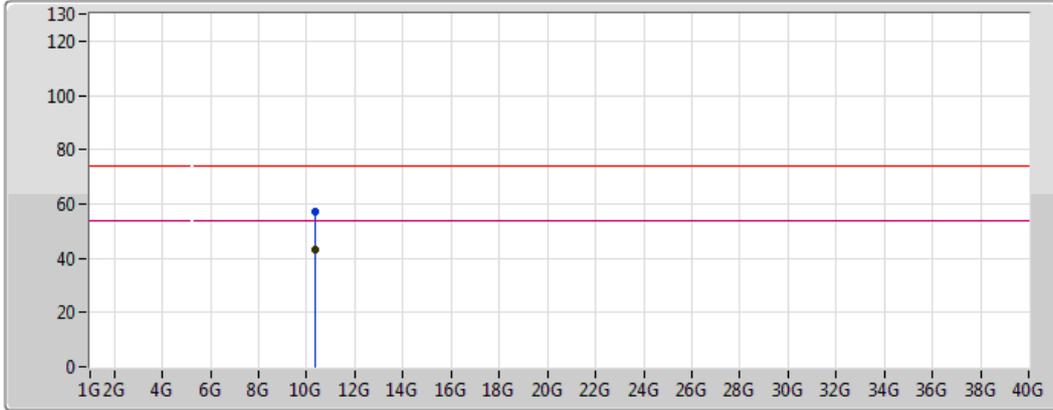
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AV	5.148G	52.72	54.00	-1.28	6.59	3	Vertical	179	1.49	-	46.13	31.68	4.72	29.81
AV	5.173G	110.30	Inf	-Inf	6.64	3	Vertical	179	1.49	-	103.67	31.71	4.74	29.81
PK	5.1486G	72.09	74.00	-1.91	6.59	3	Vertical	179	1.49	-	65.50	31.68	4.72	29.81
PK	5.1724G	120.92	Inf	-Inf	6.63	3	Vertical	179	1.49	-	114.28	31.71	4.74	29.81



802.11ac VHT20_Nss1,(MCS0)_2TX

5180MHz_BF TX

08/01/2018



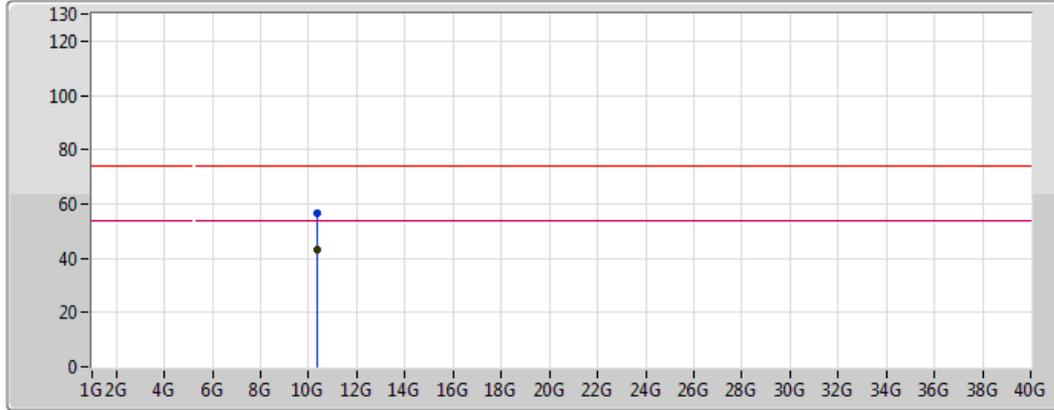
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AV	

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AV	10.361238G	43.36	54.00	-10.64	15.30	3	Vertical	147	1.06	-	28.05	39.17	7.16	31.03
PK	10.359721G	57.02	74.00	-16.98	15.30	3	Vertical	147	1.06	-	41.71	39.17	7.16	31.03

802.11ac VHT20_Nss1,(MCS0)_2TX

5180MHz_BF TX

08/01/2018



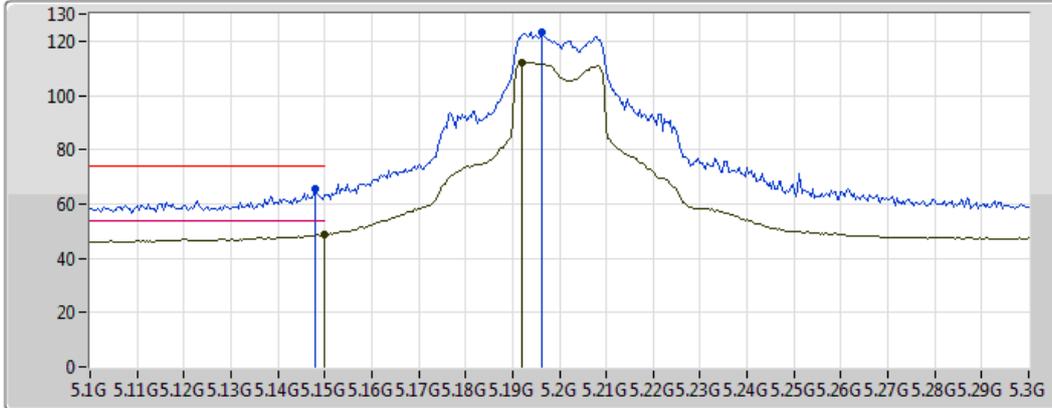
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Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	10.36982G	43.22	54.00	-10.78	15.31	3	Horizontal	333	1.83	-	27.91	39.18	7.17	31.03
PK	10.362236G	56.52	74.00	-17.48	15.30	3	Horizontal	333	1.83	-	41.22	39.17	7.16	31.03

802.11ac VHT20_Nss1,(MCS0)_2TX

5200MHz_BF TX

08/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

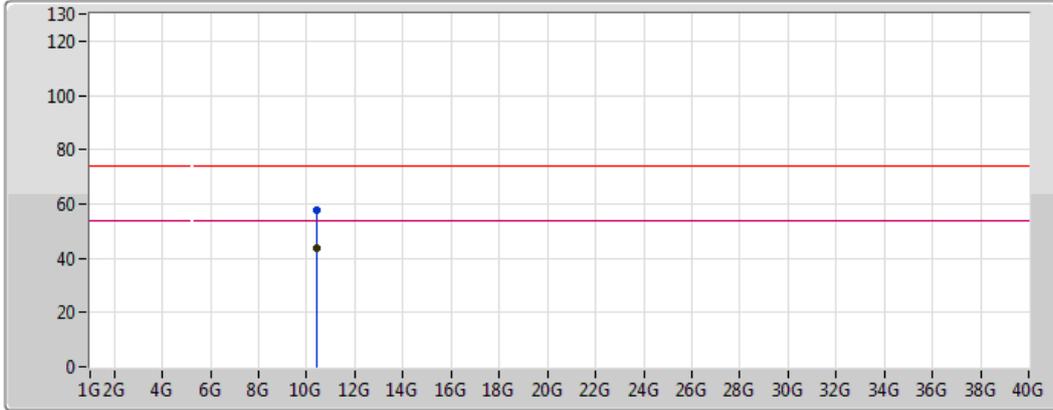
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AV	5.149995G	48.84	54.00	-5.16	6.59	3	Vertical	161	1.50	-	42.25	31.68	4.72	29.81
AV	5.192G	112.14	Inf	-Inf	6.67	3	Vertical	161	1.50	-	105.47	31.73	4.75	29.81
PK	5.148G	65.66	74.00	-8.34	6.59	3	Vertical	161	1.50	-	59.08	31.68	4.72	29.81
PK	5.1964G	123.21	Inf	-Inf	6.68	3	Vertical	161	1.50	-	116.53	31.74	4.76	29.81



802.11ac VHT20_Nss1,(MCS0)_2TX

5200MHz_BF TX

08/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

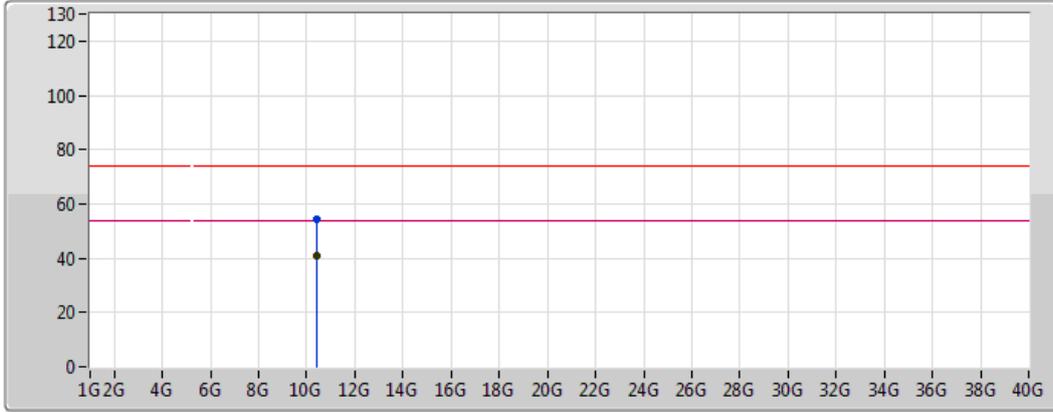
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AV	10.400519G	43.60	54.00	-10.40	15.35	3	Vertical	223	1.50	-	28.25	39.22	7.17	31.04
PK	10.403194G	57.76	74.00	-16.24	15.36	3	Vertical	223	1.50	-	42.41	39.22	7.17	31.04



802.11ac VHT20_Nss1,(MCS0)_2TX

5200MHz_BF TX

08/01/2018



Legend for the spectrum plot:

- Lim.PK: Red line with a peak icon
- PK: Blue line with a peak icon
- Lim.AV: Pink line with a peak icon
- AV: Green line with a peak icon

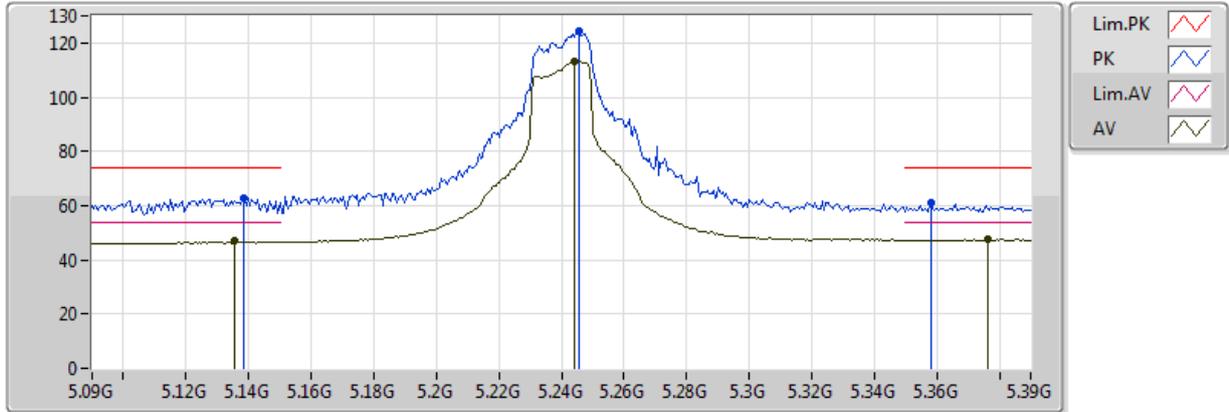
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AV	10.400748G	41.18	54.00	-12.82	12.10	3	Horizontal	340	2.44	-	29.08	39.22	7.95	35.07
PK	10.400304G	54.37	74.00	-19.63	12.10	3	Horizontal	340	2.44	-	42.27	39.22	7.95	35.07



802.11ac VHT20_Nss1,(MCS0)_2TX

5240MHz_BF TX

08/01/2018



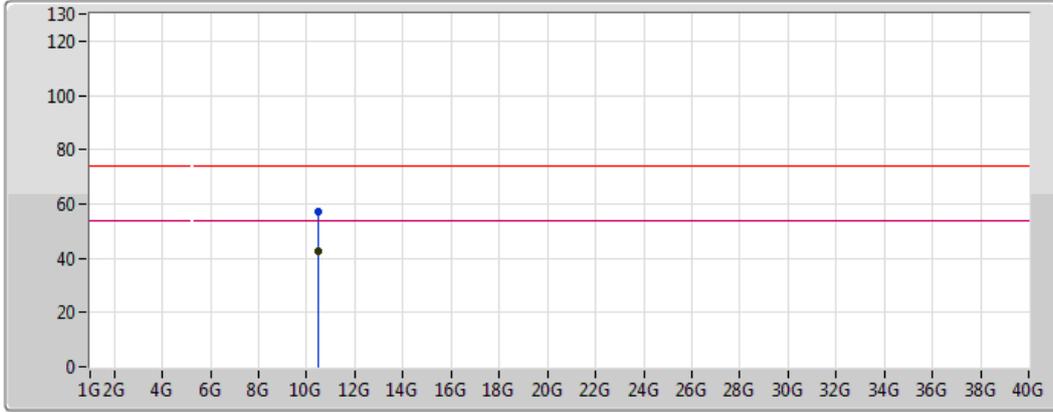
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AV	5.1356G	47.30	54.00	-6.70	6.56	3	Vertical	180	1.55	-	40.74	31.66	4.71	29.81
AV	5.2442G	113.02	Inf	-Inf	6.78	3	Vertical	180	1.55	-	106.24	31.79	4.79	29.81
AV	5.3762G	47.64	54.00	-6.36	7.04	3	Vertical	180	1.55	-	40.59	31.95	4.89	29.80
PK	5.1386G	63.00	74.00	-11.00	6.57	3	Vertical	180	1.55	-	56.43	31.67	4.71	29.81
PK	5.2454G	124.15	Inf	-Inf	6.78	3	Vertical	180	1.55	-	117.37	31.79	4.79	29.81
PK	5.3582G	61.14	74.00	-12.86	7.01	3	Vertical	180	1.55	-	54.13	31.93	4.88	29.80



802.11ac VHT20_Nss1,(MCS0)_2TX

5240MHz_BF TX

08/01/2018



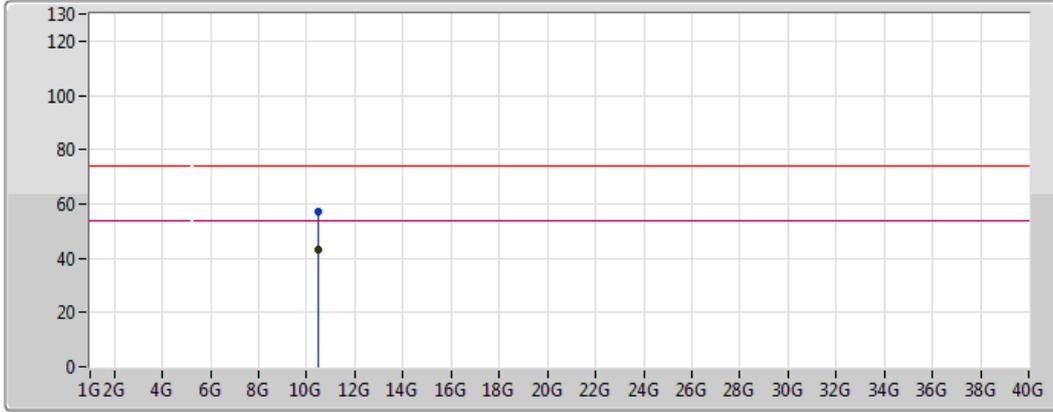
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Lim.AV	
AV	

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	10.48016G	42.54	54.00	-11.46	15.46	3	Vertical	152	1.38	-	27.08	39.32	7.19	31.06
PK	10.479242G	56.99	74.00	-17.01	15.46	3	Vertical	152	1.38	-	41.53	39.32	7.19	31.06

802.11ac VHT20_Nss1,(MCS0)_2TX

5240MHz_BF TX

08/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

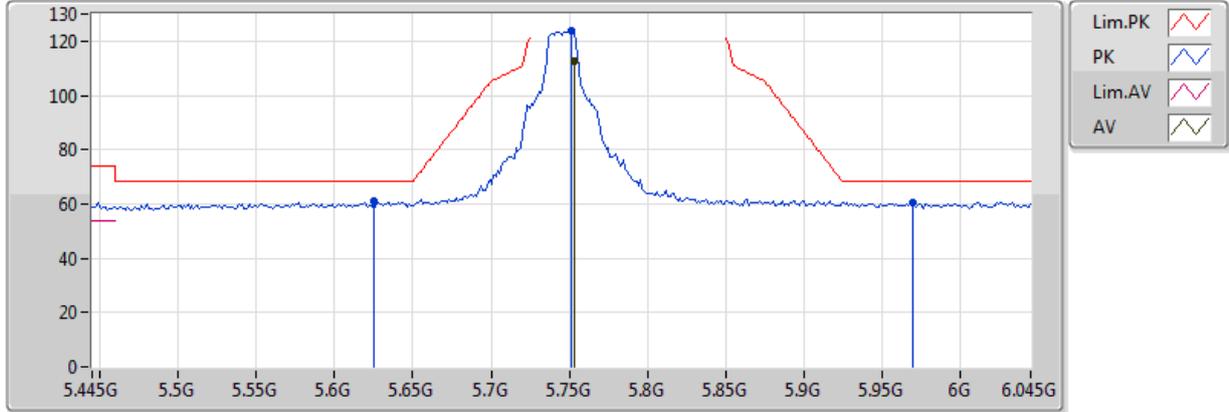
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AV	10.481597G	43.25	54.00	-10.75	15.46	3	Horizontal	337	2.02	-	27.79	39.33	7.19	31.06
PK	10.475888G	57.09	74.00	-16.91	15.45	3	Horizontal	337	2.02	-	41.63	39.32	7.19	31.05



802.11ac VHT20_Nss1,(MCS0)_2TX

5745MHz_BF TX

08/01/2018



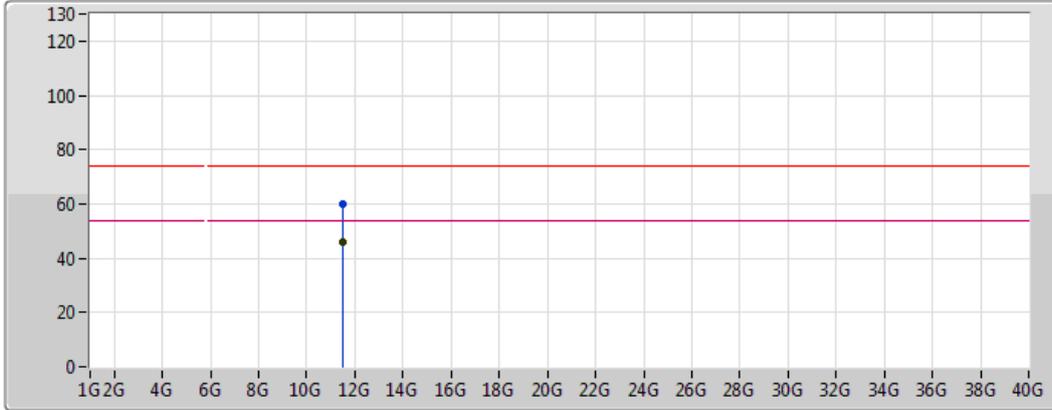
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AV	5.7534G	112.72	Inf	-Inf	7.84	3	Vertical	154	1.61	-	104.88	32.40	5.31	29.87
PK	5.625G	60.84	68.20	-7.36	7.55	3	Vertical	154	1.61	-	53.28	32.25	5.14	29.84
PK	5.751G	123.60	Inf	-Inf	7.84	3	Vertical	154	1.61	-	115.76	32.40	5.31	29.87
PK	5.9694G	60.64	68.20	-7.56	8.32	3	Vertical	154	1.61	-	52.32	32.66	5.59	29.93



802.11ac VHT20_Nss1,(MCS0)_2TX

5745MHz_BF TX

08/01/2018



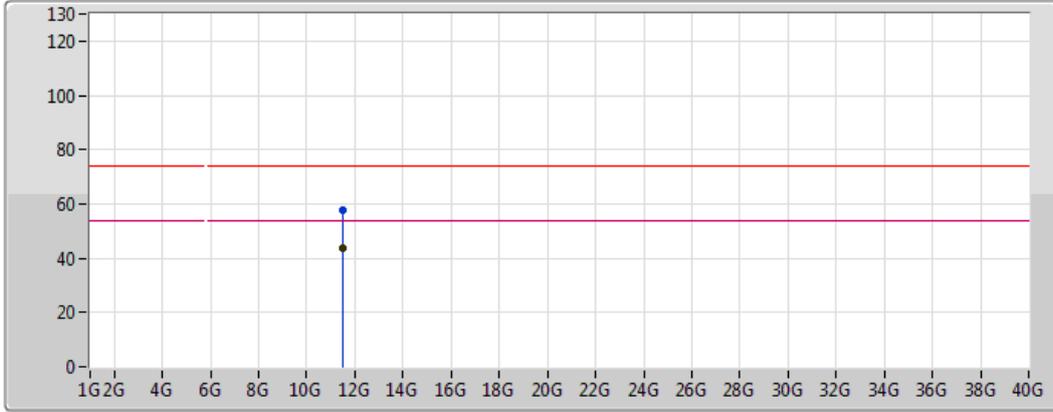
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AV	11.48988G	45.86	54.00	-8.14	15.77	3	Vertical	222	1.06	-	30.09	39.41	7.47	31.11
PK	11.485968G	59.97	74.00	-14.03	15.78	3	Vertical	222	1.06	-	44.19	39.42	7.47	31.11



802.11ac VHT20_Nss1,(MCS0)_2TX

5745MHz_BF TX

08/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

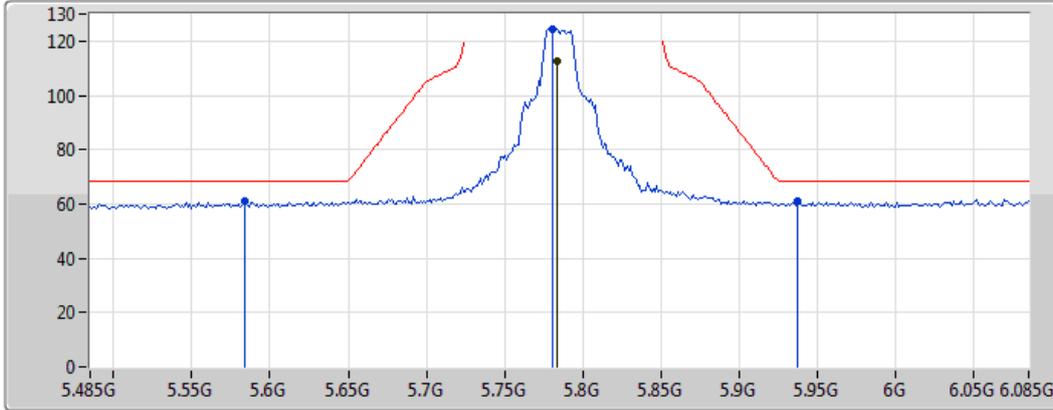
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AV	11.490998G	43.97	54.00	-10.03	15.77	3	Horizontal	159	1.10	-	28.20	39.41	7.47	31.11
PK	11.486208G	57.91	74.00	-16.09	15.78	3	Horizontal	159	1.10	-	42.14	39.42	7.47	31.11



802.11ac VHT20_Nss1,(MCS0)_2TX

5785MHz_BF TX

08/01/2018



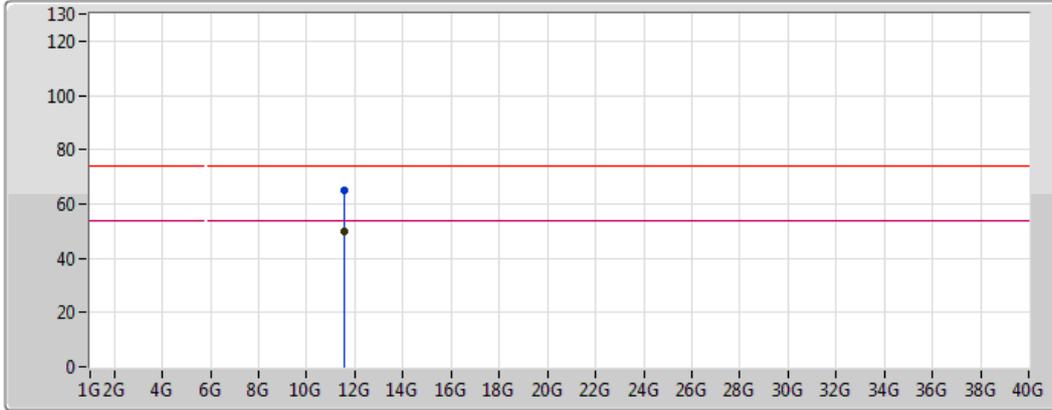
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AV	5.7838G	112.86	Inf	-Inf	7.91	3	Vertical	178	2.06	-	104.95	32.44	5.35	29.88
PK	5.5834G	60.84	68.20	-7.36	7.46	3	Vertical	178	2.06	-	53.38	32.20	5.09	29.83
PK	5.7802G	124.33	Inf	-Inf	7.90	3	Vertical	178	2.06	-	116.42	32.44	5.34	29.88
PK	5.9374G	60.83	68.20	-7.37	8.25	3	Vertical	178	2.06	-	52.58	32.62	5.55	29.92



802.11ac VHT20_Nss1,(MCS0)_2TX

5785MHz_BF TX

08/01/2018



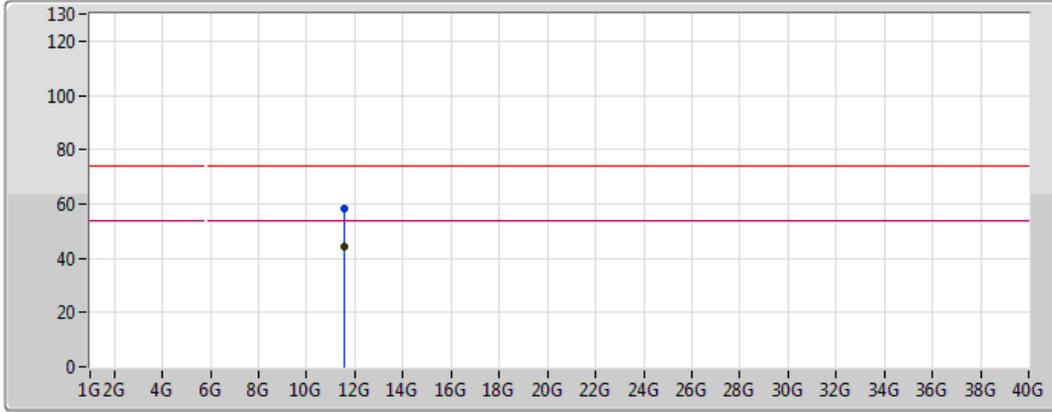
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AV	11.5693G	50.13	54.00	-3.87	15.71	3	Vertical	34	2.46	-	34.41	39.32	7.50	31.10
PK	11.57569G	64.81	74.00	-9.19	15.71	3	Vertical	34	2.46	-	49.10	39.31	7.50	31.10



802.11ac VHT20_Nss1,(MCS0)_2TX

5785MHz_BF TX

08/01/2018



Legend:

- Lim.PK
- PK
- Lim.AV
- AV

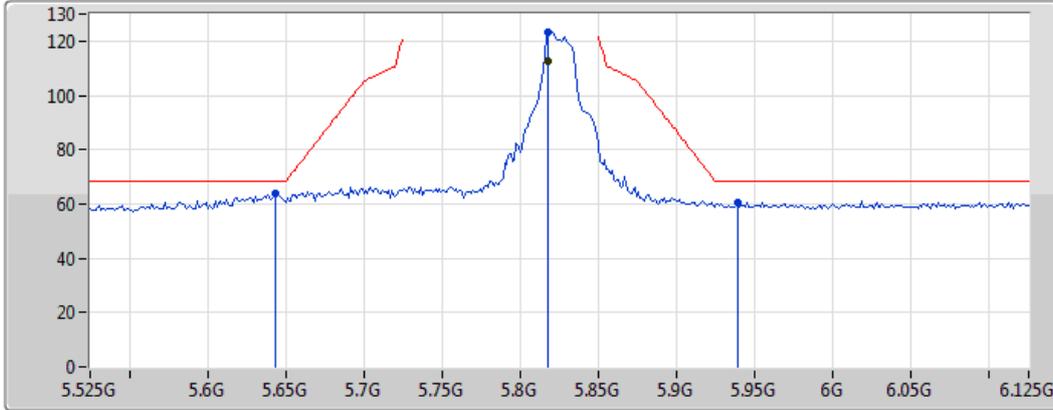
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AV	11.5709G	44.19	54.00	-9.81	15.71	3	Horizontal	155	1.33	-	28.47	39.31	7.50	31.10
PK	11.5688G	58.45	74.00	-15.55	15.71	3	Horizontal	155	1.33	-	42.74	39.32	7.50	31.10



802.11ac VHT20_Nss1,(MCS0)_2TX

5825MHz_BF TX

08/01/2018



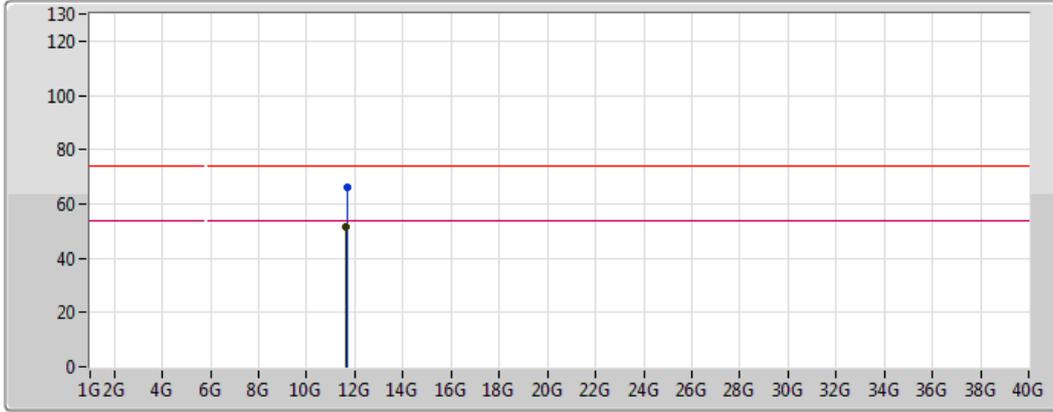
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AV	5.8178G	112.63	Inf	-Inf	7.99	3	Vertical	161	1.50	-	104.65	32.48	5.39	29.89
PK	5.8178G	123.53	Inf	-Inf	7.99	3	Vertical	161	1.50	-	115.54	32.48	5.39	29.89
PK	5.6438G	63.92	68.20	-4.28	7.60	3	Vertical	161	1.50	-	56.32	32.27	5.17	29.84
PK	5.939G	60.76	68.20	-7.44	8.26	3	Vertical	161	1.50	-	52.51	32.63	5.55	29.92



802.11ac VHT20_Nss1,(MCS0)_2TX

5825MHz_BF TX

08/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

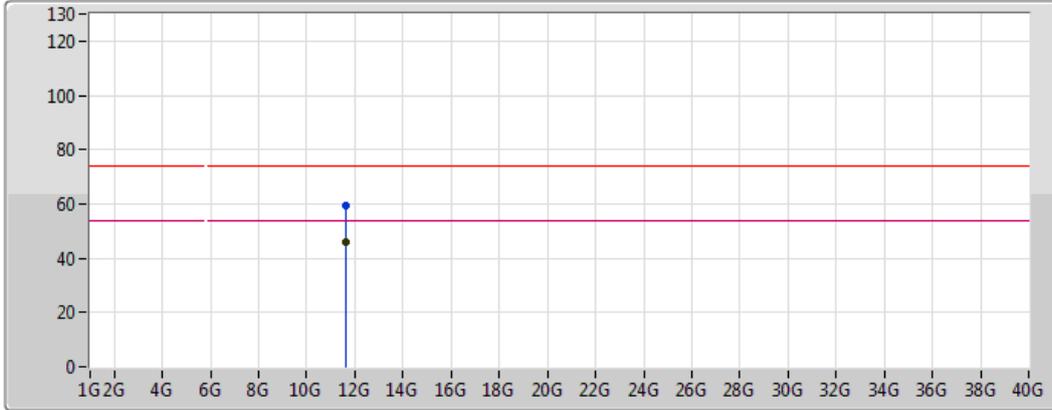
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AV	11.6517G	51.47	54.00	-2.53	15.65	3	Vertical	334	3.02	-	35.82	39.22	7.53	31.09
PK	11.66118G	66.16	74.00	-7.84	15.64	3	Vertical	334	3.02	-	50.52	39.21	7.53	31.09



802.11ac VHT20_Nss1,(MCS0)_2TX

5825MHz_BF TX

08/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

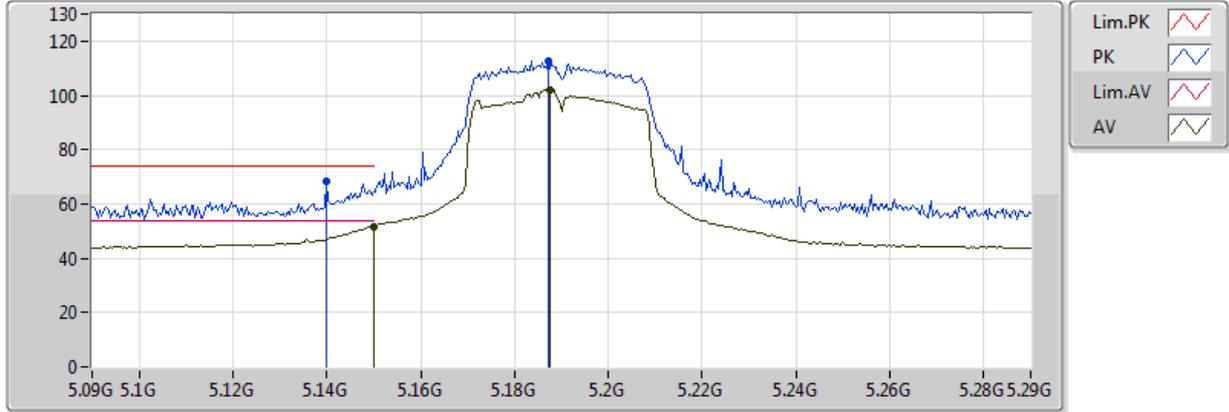
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AV	11.6518G	45.76	54.00	-8.24	15.65	3	Horizontal	29	1.64	-	30.11	39.22	7.53	31.09
PK	11.6506G	59.67	74.00	-14.33	15.65	3	Horizontal	29	1.64	-	44.02	39.22	7.52	31.09



802.11ac VHT40_Nss1,(MCS0)_2TX

5190MHz_BF TX

09/01/2018



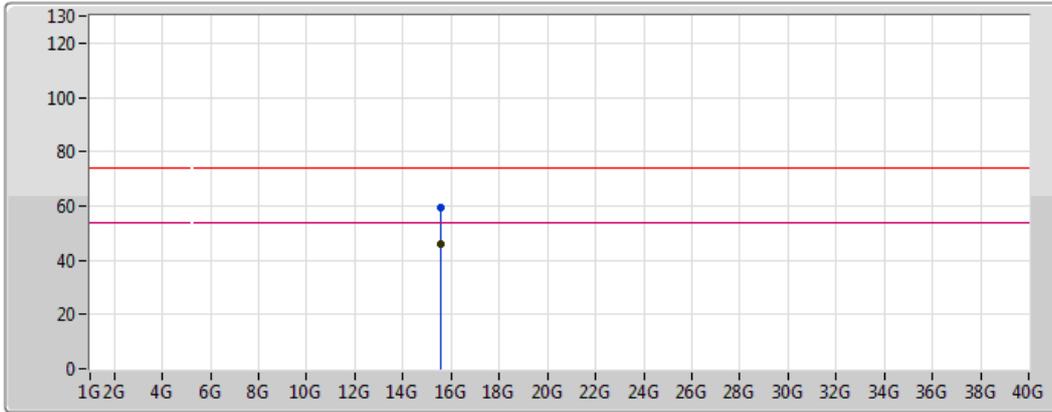
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AV	5.149995G	51.74	54.00	-2.26	2.75	3	Vertical	109	1.56	-	48.99	31.68	5.62	34.55
AV	5.1876G	102.20	Inf	-Inf	2.80	3	Vertical	109	1.56	-	99.40	31.73	5.63	34.55
PK	5.14G	68.25	74.00	-5.75	2.74	3	Vertical	109	1.56	-	65.51	31.67	5.62	34.55
PK	5.1872G	112.49	Inf	-Inf	2.80	3	Vertical	109	1.56	-	109.69	31.72	5.63	34.55



802.11ac VHT40_Nss1,(MCS0)_2TX

5190MHz_BF TX

09/01/2018



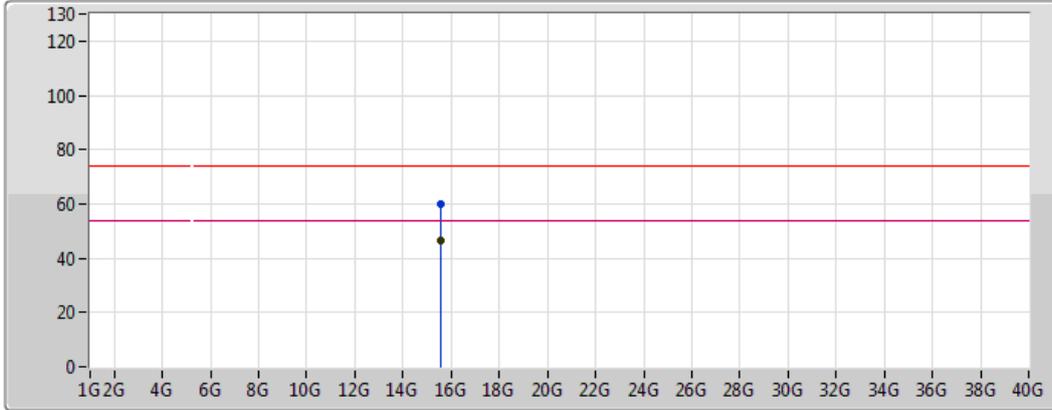
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AV	15.55542G	45.70	54.00	-8.30	14.07	3	Vertical	13	2.20	-	31.63	38.83	9.96	34.72
PK	15.57132G	59.57	74.00	-14.43	13.99	3	Vertical	13	2.20	-	45.58	38.77	9.96	34.74



802.11ac VHT40_Nss1,(MCS0)_2TX

5190MHz_BF TX

09/01/2018



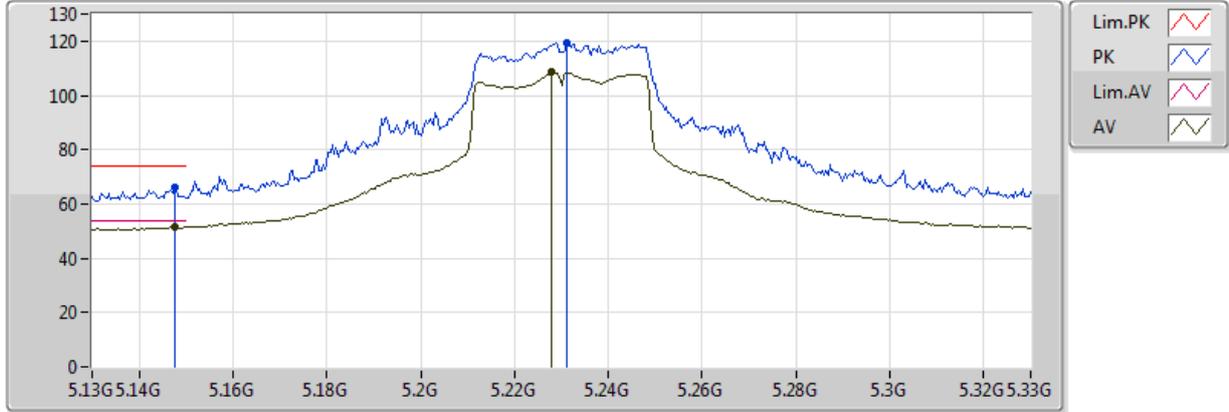
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PK	
Lim.AV	
AV	

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	15.55692G	46.70	54.00	-7.30	14.06	3	Horizontal	46	1.04	-	32.64	38.83	9.96	34.72
PK	15.56634G	60.02	74.00	-13.98	14.02	3	Horizontal	46	1.04	-	46.00	38.79	9.96	34.73

802.11ac VHT40_Nss1,(MCS0)_2TX

5230MHz_BF TX

09/01/2018

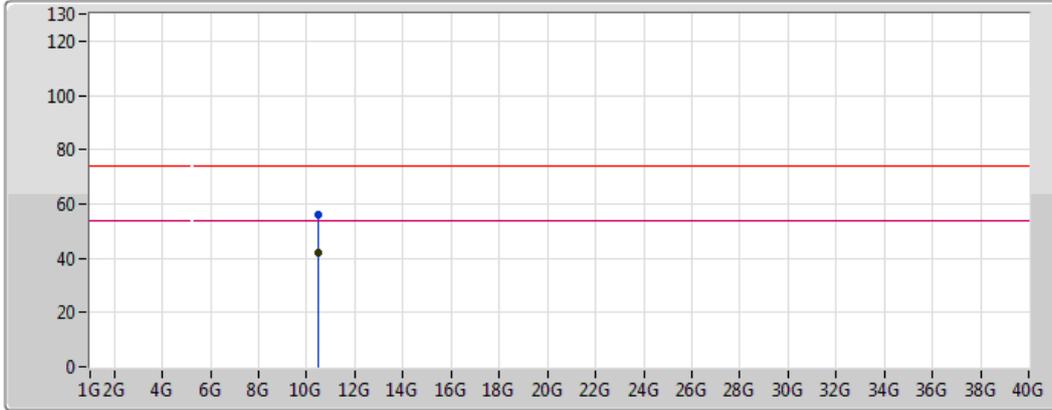


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.1476G	51.41	54.00	-2.59	6.59	3	Vertical	333	1.50	-	44.83	31.68	4.72	29.81
AV	5.228G	108.51	Inf	-Inf	6.75	3	Vertical	333	1.50	-	101.77	31.77	4.78	29.81
PK	5.1476G	65.87	74.00	-8.13	6.59	3	Vertical	333	1.50	-	59.28	31.68	4.72	29.81
PK	5.2312G	119.38	Inf	-Inf	6.75	3	Vertical	333	1.50	-	112.63	31.78	4.78	29.81

802.11ac VHT40_Nss1,(MCS0)_2TX

5230MHz_BF TX

09/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

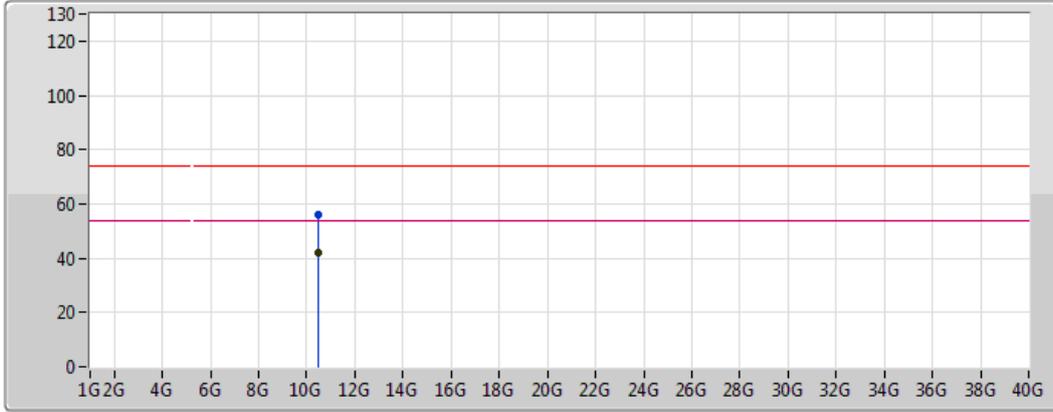
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AV	10.460679G	42.04	54.00	-11.96	15.43	3	Vertical	222	1.50	-	26.60	39.30	7.19	31.05
PK	10.461028G	56.29	74.00	-17.71	15.43	3	Vertical	222	1.50	-	40.85	39.30	7.19	31.05



802.11ac VHT40_Nss1,(MCS0)_2TX

5230MHz_BF TX

09/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

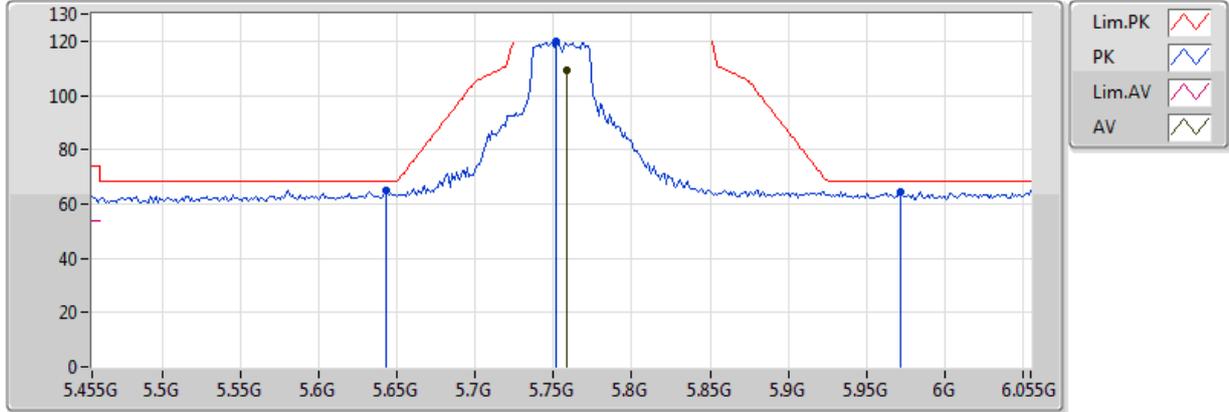
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AV	10.461198G	42.19	54.00	-11.81	15.43	3	Horizontal	357	1.47	-	26.76	39.30	7.19	31.05
PK	10.46016G	56.29	74.00	-17.71	15.43	3	Horizontal	357	1.47	-	40.86	39.30	7.19	31.05



802.11ac VHT40_Nss1,(MCS0)_2TX

5755MHz_BF TX

09/01/2018

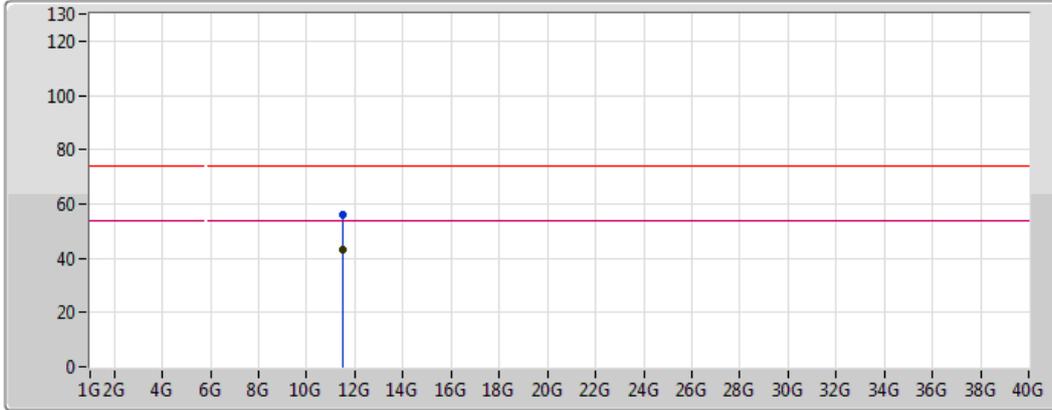


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	5.7586G	109.07	Inf	-Inf	7.85	3	Vertical	156	1.68	-	101.21	32.41	5.32	29.87
PK	5.6434G	64.91	68.20	-3.29	7.60	3	Vertical	156	1.68	-	57.31	32.27	5.17	29.84
PK	5.7514G	120.05	Inf	-Inf	7.84	3	Vertical	156	1.68	-	112.22	32.40	5.31	29.87
PK	5.9722G	64.53	68.20	-3.67	8.33	3	Vertical	156	1.68	-	56.20	32.67	5.59	29.93

802.11ac VHT40_Nss1,(MCS0)_2TX

5755MHz_BF TX

09/01/2018



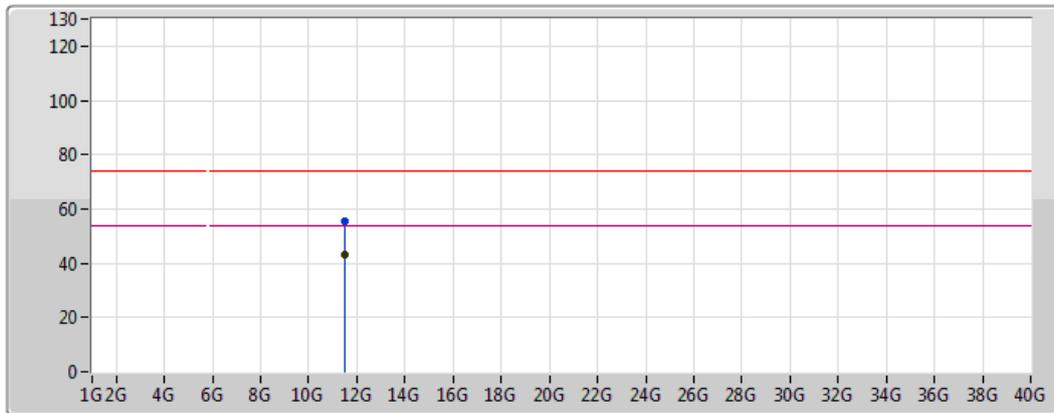
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AV	

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	11.52836G	42.89	54.00	-11.11	15.74	3	Vertical	20	1.50	-	27.15	39.37	7.48	31.11
PK	11.50441G	55.82	74.00	-18.18	15.76	3	Vertical	20	1.50	-	40.06	39.39	7.48	31.11

802.11ac VHT40_Nss1,(MCS0)_2TX

5755MHz_BF TX

09/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

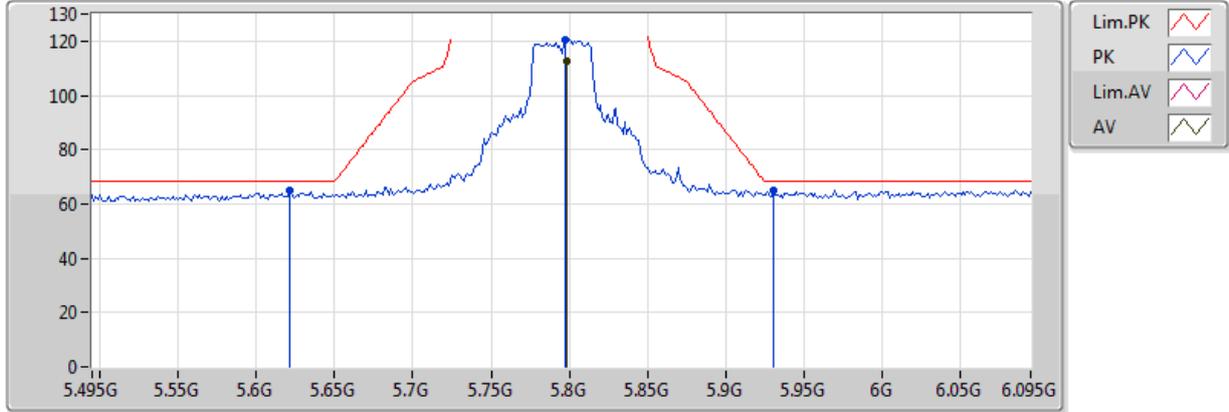
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AV	11.52856G	43.07	54.00	-10.93	15.74	3	Horizontal	158	1.50	-	27.33	39.37	7.48	31.11
PK	11.50421G	55.65	74.00	-18.35	15.76	3	Horizontal	158	1.50	-	39.89	39.39	7.48	31.11



802.11ac VHT40_Nss1,(MCS0)_2TX

5795MHz_BF TX

09/01/2018



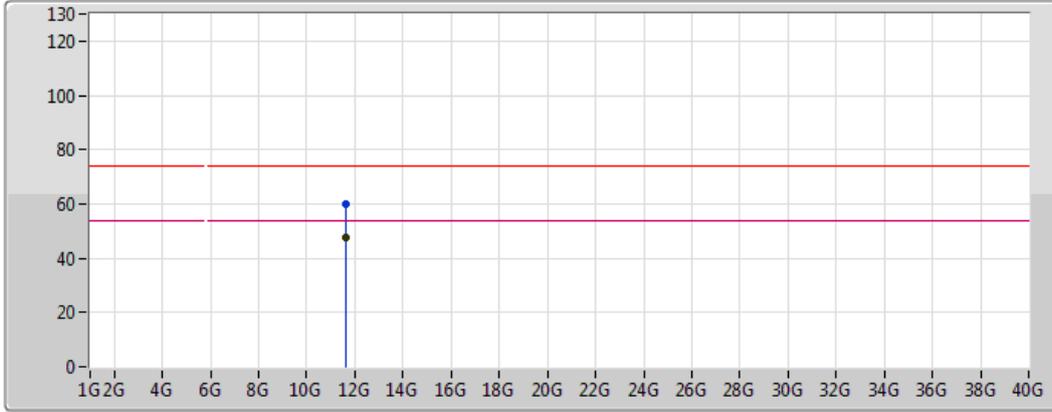
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AV	5.7986G	112.55	Inf	-Inf	7.95	3	Vertical	159	1.82	-	104.60	32.46	5.37	29.88
PK	5.621G	65.25	68.20	-2.95	7.55	3	Vertical	159	1.82	-	57.70	32.25	5.14	29.84
PK	5.7974G	120.69	Inf	-Inf	7.94	3	Vertical	159	1.82	-	112.75	32.46	5.37	29.88
PK	5.9306G	65.07	68.20	-3.13	8.24	3	Vertical	159	1.82	-	56.83	32.62	5.54	29.92



802.11ac VHT40_Nss1,(MCS0)_2TX

5795MHz_BF TX

09/01/2018

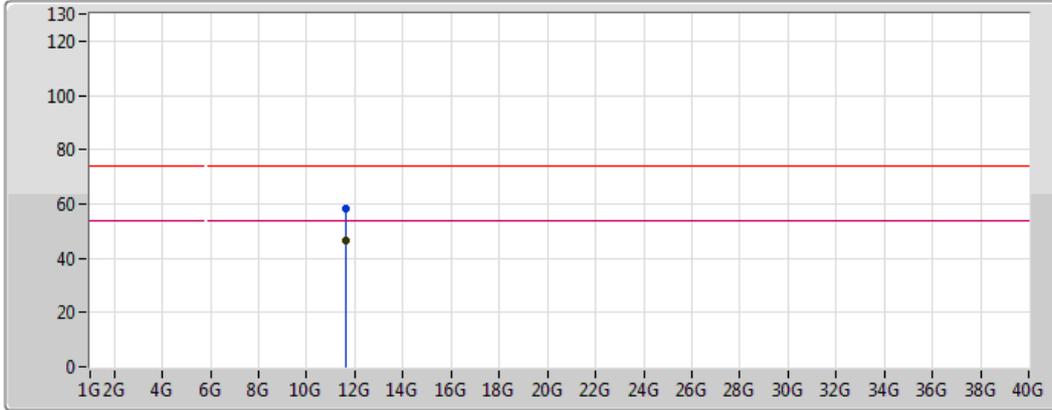


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AV	11.60557G	47.60	54.00	-6.40	15.69	3	Vertical	331	1.46	-	31.91	39.27	7.51	31.10
PK	11.60617G	60.02	74.00	-13.98	15.69	3	Vertical	331	1.46	-	44.34	39.27	7.51	31.10

802.11ac VHT40_Nss1,(MCS0)_2TX

5795MHz_BF TX

09/01/2018



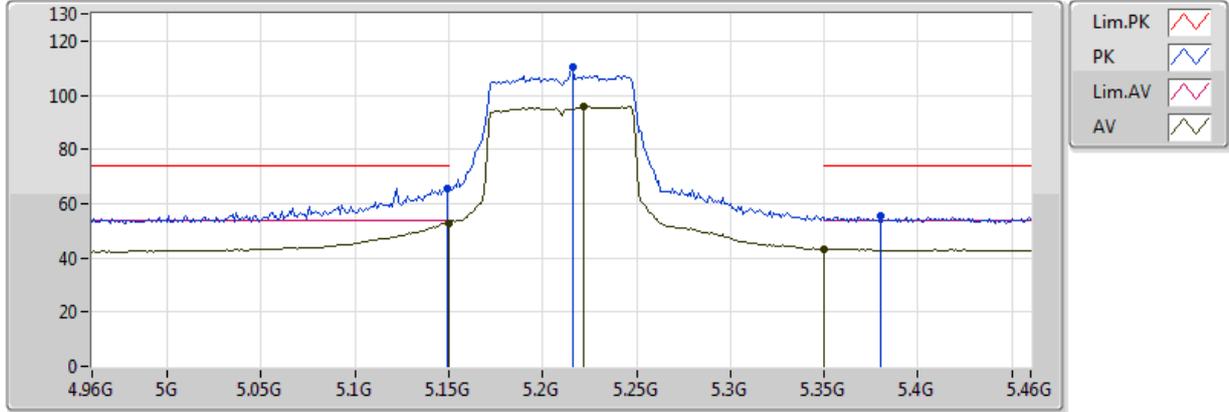
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PK	
Lim.AV	
AV	

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	11.60916G	46.23	54.00	-7.77	15.68	3	Horizontal	14	1.90	-	30.55	39.27	7.51	31.10
PK	11.60737G	58.11	74.00	-15.89	15.68	3	Horizontal	14	1.90	-	42.43	39.27	7.51	31.10

802.11ac VHT80_Nss1,(MCS0)_2TX

5210MHz_BF TX

09/01/2018



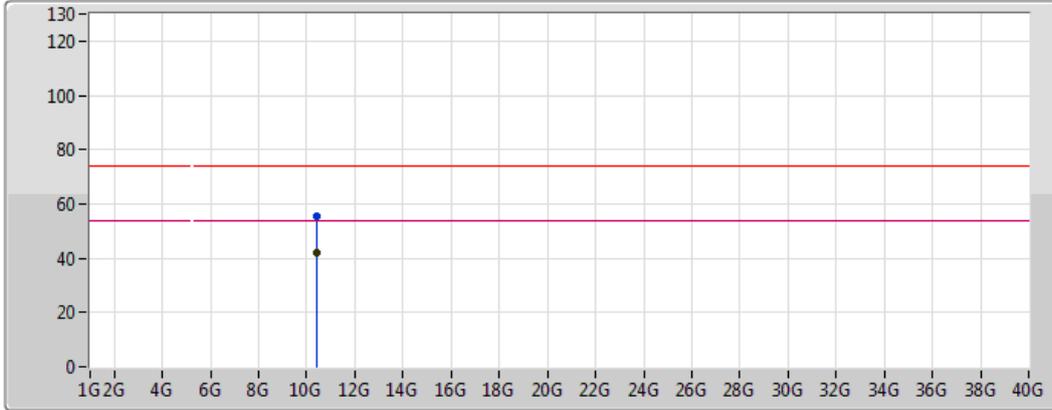
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AV	5.149995G	52.75	54.00	-1.25	2.73	3	Vertical	263	1.50	-	50.02	31.66	5.62	34.55
AV	5.222G	95.76	Inf	-Inf	2.77	3	Vertical	263	1.50	-	92.99	31.69	5.63	34.55
AV	5.350005G	43.24	54.00	-10.76	2.85	3	Vertical	263	1.50	-	40.39	31.74	5.65	34.54
PK	5.149G	65.82	74.00	-8.18	2.73	3	Vertical	263	1.50	-	63.09	31.66	5.62	34.55
PK	5.216G	110.65	Inf	-Inf	2.77	3	Vertical	263	1.50	-	107.88	31.69	5.63	34.55
PK	5.38G	55.69	74.00	-18.31	2.87	3	Vertical	263	1.50	-	52.82	31.75	5.66	34.54



802.11ac VHT80_Nss1,(MCS0)_2TX

5210MHz_BF TX

09/01/2018



Legend:

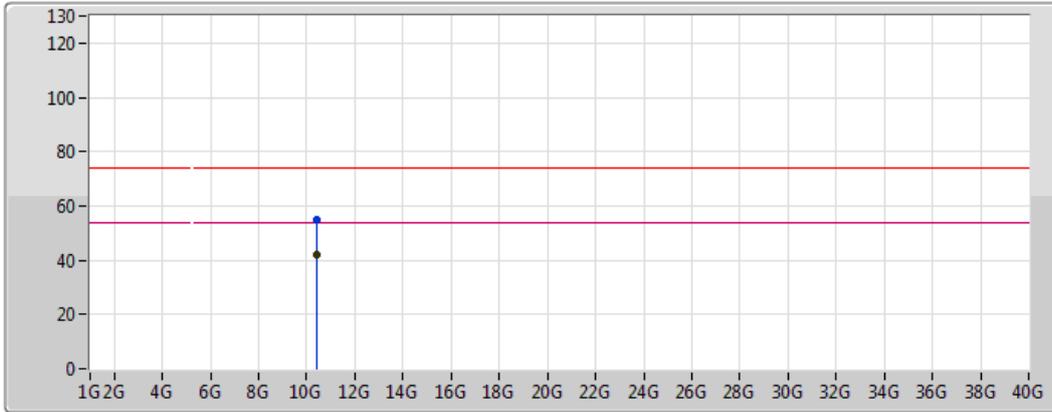
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- AV

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	10.42594G	41.80	54.00	-12.20	12.51	3	Vertical	125	1.50	-	29.29	39.60	7.96	35.05
PK	10.40602G	55.20	74.00	-18.80	12.46	3	Vertical	125	1.50	-	42.75	39.57	7.95	35.07

802.11ac VHT80_Nss1,(MCS0)_2TX

5210MHz_BF TX

09/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

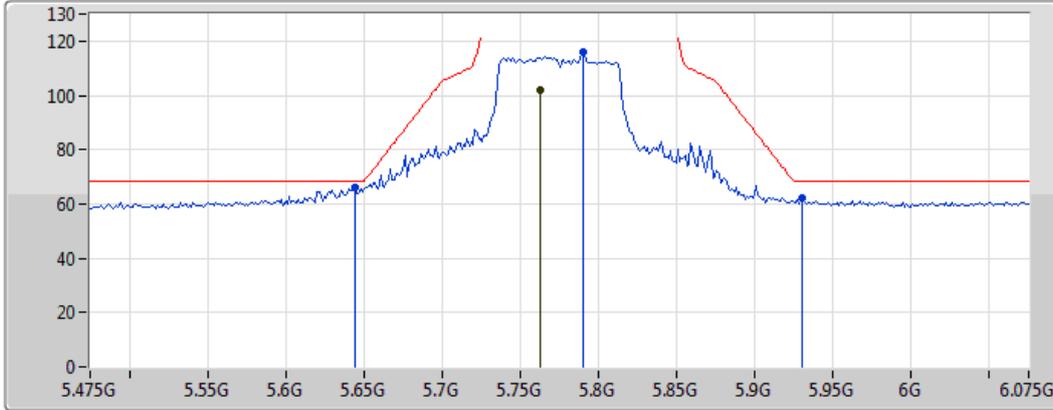
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AV	10.4299G	41.75	54.00	-12.25	12.52	3	Horizontal	168	2.34	-	29.24	39.60	7.96	35.05
PK	10.42204G	54.85	74.00	-19.15	12.50	3	Horizontal	168	2.34	-	42.35	39.59	7.96	35.05



802.11ac VHT80_Nss1,(MCS0)_2TX

5775MHz_BF TX

09/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

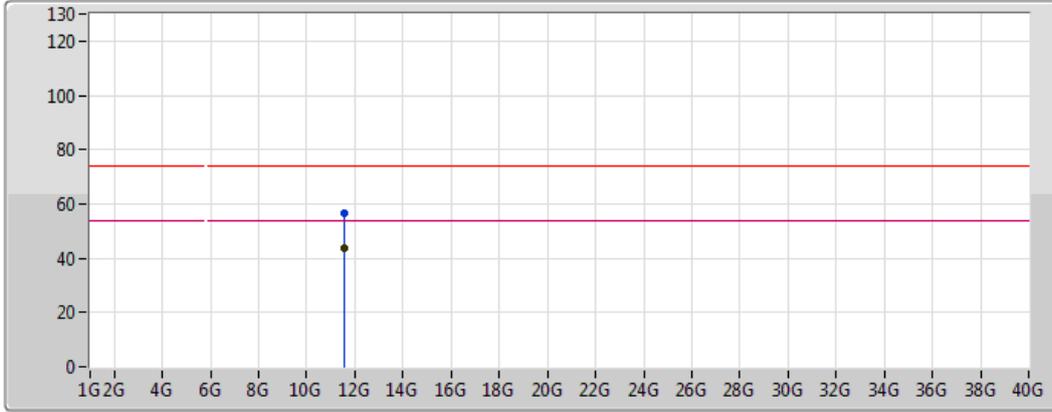
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AV	5.763G	102.04	Inf	-Inf	7.86	3	Vertical	156	1.27	-	94.18	32.42	5.32	29.87
PK	5.6442G	66.04	68.20	-2.16	7.60	3	Vertical	156	1.27	-	58.45	32.27	5.17	29.84
PK	5.7906G	115.93	Inf	-Inf	7.93	3	Vertical	156	1.27	-	108.00	32.45	5.36	29.88
PK	5.9298G	62.40	68.20	-5.80	8.24	3	Vertical	156	1.27	-	54.16	32.62	5.54	29.92



802.11ac VHT80_Nss1,(MCS0)_2TX

5775MHz_BF TX

09/01/2018



Lim.PK	
PK	
Lim.AV	
AV	

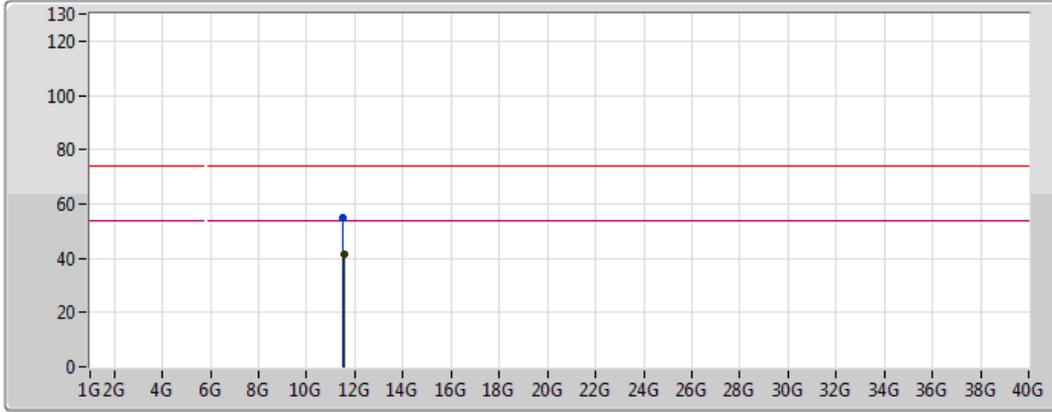
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	11.56876G	43.74	54.00	-10.26	15.71	3	Vertical	335	1.01	-	28.03	39.32	7.50	31.10
PK	11.57395G	56.75	74.00	-17.25	15.71	3	Vertical	335	1.01	-	41.04	39.31	7.50	31.10



802.11ac VHT80_Nss1,(MCS0)_2TX

5775MHz_BF TX

09/01/2018



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	11.56766G	41.45	54.00	-12.55	15.71	3	Horizontal	107	1.01	-	25.74	39.32	7.50	31.10
PK	11.52705G	55.11	74.00	-18.89	15.74	3	Horizontal	107	1.01	-	39.36	39.37	7.48	31.11