



FCC Test Report

FCC ID : SWX-UAPIWHD
Equipment : UniFi HD IN-WALL
Brand Name : UBIQUITI
Model Name : UAP-IW-HD
Applicant / Manufacturer : Ubiquiti Networks, Inc.
685 Third Avenue, 27th Floor New York,
New York 10017 USA
Standard : 47 CFR FCC Part 15.407

The product was received on Oct. 30, 2017, and testing was started from Nov. 13, 2017 and completed on Mar. 30, 2018. We, SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

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



Approved by: Allen Lin

SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory

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History of this test report

[illegible]

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Conducted Output Power	PASS	-
3.4	15.407(a)	Peak Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-
3.6	15.407(g)	Frequency Stability	PASS	-

Reviewed by: Sam Tsai

Report Producer: Ivy Yuan

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Non-Beamforming

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4TX
5.725-5.85GHz	802.11a	20	4TX
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.725-5.85GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX

Beamforming

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11ac VHT20-BF	20	4TX
5.725-5.85GHz	802.11ac VHT20-BF	20	4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	4TX

Note:

- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40, 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	-	-	internal antenna	Murata
2	2	-	-	internal antenna	i-Pex
3	3	-	-	internal antenna	i-Pex
4	4	-	-	internal antenna	i-Pex
5	1	-	-	internal antenna	fixed on board

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	1.8	4	-
2	2			
3	3	-	4	-
4	4			
5	1	-	-	1.4

Note 1: The EUT has three antennas.

For 2.4GHz function:

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

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

For 5GHz function:

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

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

For Bluetooth function:

For Bluetooth mode (1TX/1RX)

Only Ant. 5 can be used as transmitting/receiving antenna.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From PoE		
Beamforming Function	☒ With beamforming	☐ Without beamforming	
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.:		...
☐	Other:		

1.1.4 Mode Test Duty Cycle
Non-Beamforming

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.798	0.98	1.397m	1k
802.11ac VHT20	0.791	1.018	1.317m	1k
802.11ac VHT40	0.649	1.878	657.813u	3k
802.11ac VHT80	0.49	3.098	328.125u	10k
802.11ac VHT80+80	0.364	4.389	193.75u	10k

Beamforming

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF	0.985	0.066	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ac VHT40-BF	0.98	0.088	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ac VHT80-BF	0.959	0.182	1.134m	1k

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	Tim	22.5°C / 65%	23/Mar/2018
Radiated	03CH03-HY	Jeff	25°C / 59%	24/Mar/2018
AC Conduction	CO04-HY	Jeff	25°C / 59%	30/Mar/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%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

Non-Beamforming

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	-	-
138V	-	-
120V	-	-
102V	-	-

Beamforming

Condition Item	Abbreviation/Remark	Remark
RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
	Vnom	120V

2.2 Test Channel Mode

Non-Beamforming

Test Software Version	MT7603 QA 0.0.1.58
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Beamforming

Test Software	Dos
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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	PoE mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density Frequency Stability
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		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT	V		

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	2.4G+5G;EUT =Z
Refer to Sporton Test Report No.: FA7O2609-03 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.4 Support Equipment

Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	R33002 / DOC
2	Adapter for NB	DELL	HA65NM130	R35737 / DOC
3	Notebook	DELL	E5410	R33002 / DOC
4	Adapter for NB	DELL	HA65NM130	R35737 / DOC
5	AC Source	GW	APS-9102	-
6	PoE for EUT	CERIO	POE-S48G	-
7	Client	UBNT	UAP-HD-Nano_Tier 1	-
8	PoE for client	UBNT	GP-H480-050G	-

Note. Support equipment No.7 was provided by customer.

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	PoE for EUT	CERIO	POE-S48G	-
2	PoE for client	CERIO	POE-S48G	-
3	client	UBNT	UAP-HD-Nano_Tier 1	-
4	AC adapter	EDACPOWER	EA10681E-520	-

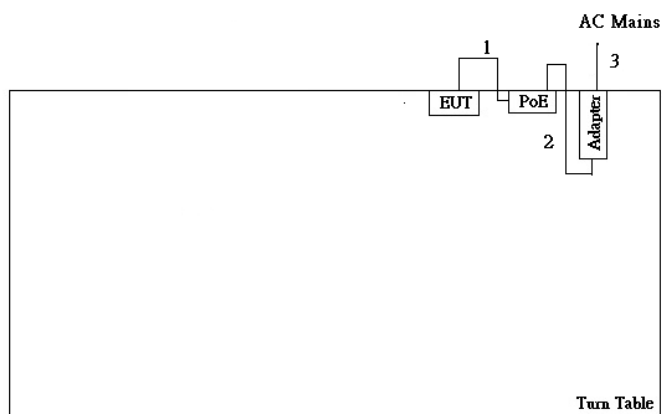
Note. Support equipment No.3 was provided by customer.

Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	PoE for EUT	CERIO	POE-S48G	-
2	PoE for client	CERIO	POE-S48G	-
3	client	UBNT	UAP-HD-Nano_Tier 1	-
4	Notebook	Dell	E4300	-
5	AC adapter	EDACPOWER	EA10681E-520	-

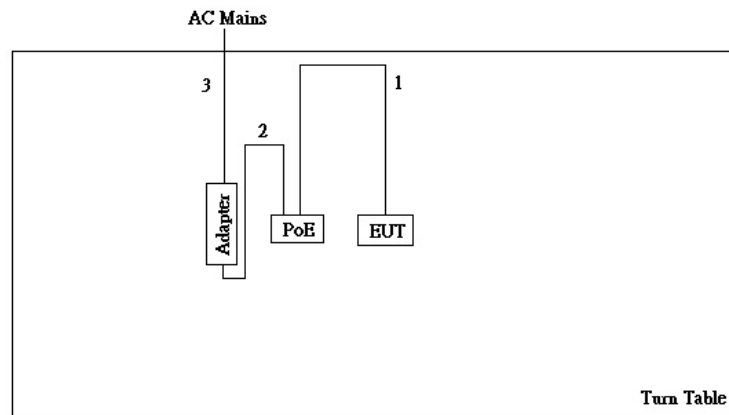
Note. Support equipment No.3 was provided by customer.

2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



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

Test Setup Diagram - Radiated Test


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

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

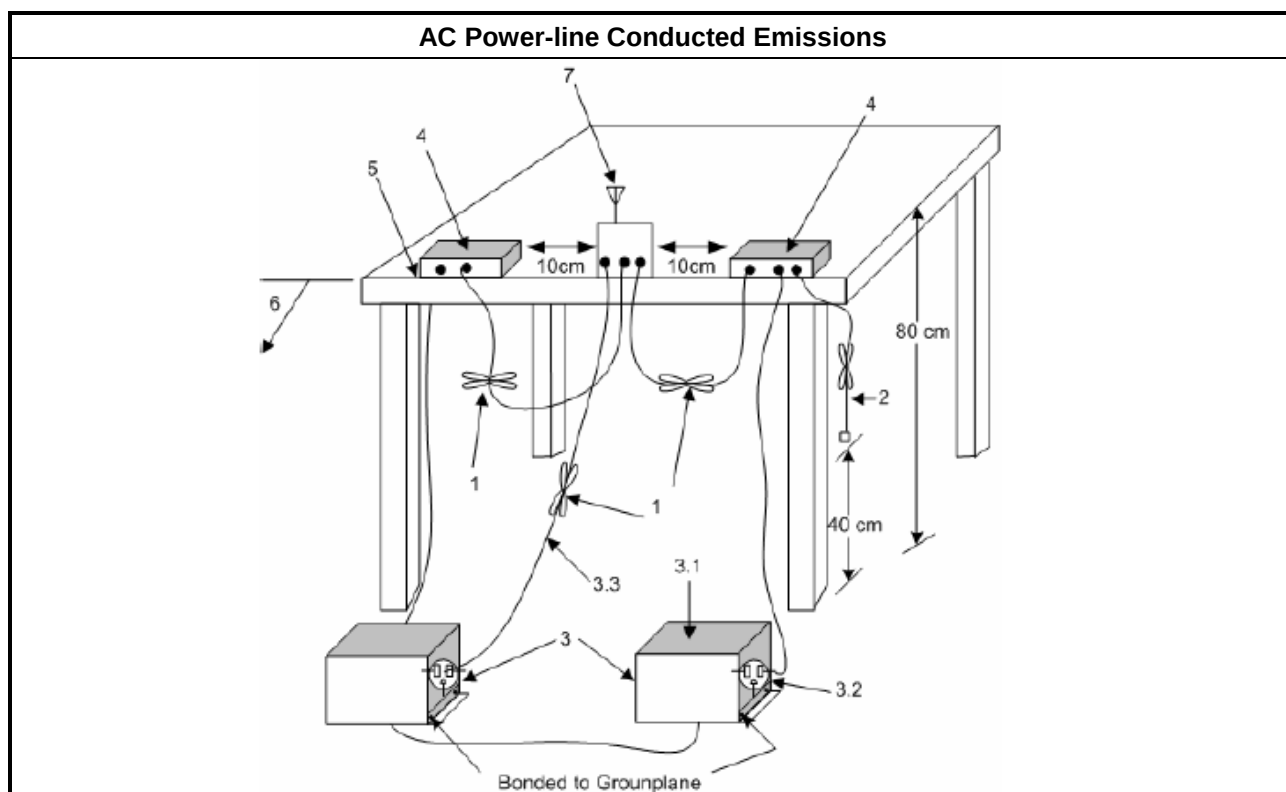
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

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

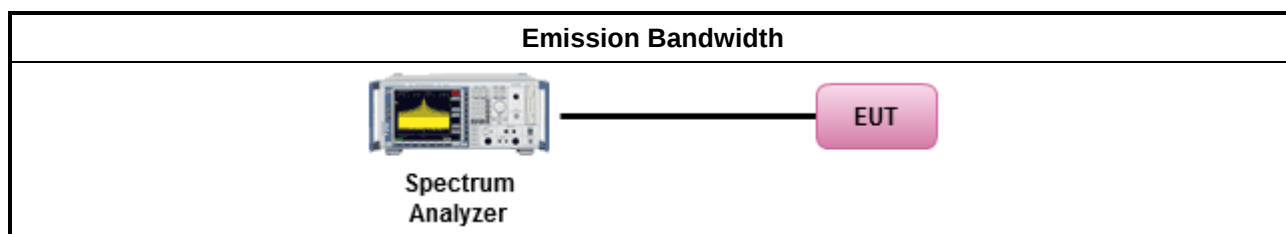
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
For the emission bandwidth shall be measured using one of the options below:	
☒	Refer as 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 6.7 for bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
	- Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm] - Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ - Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. - Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐ For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
☐ For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
☒ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

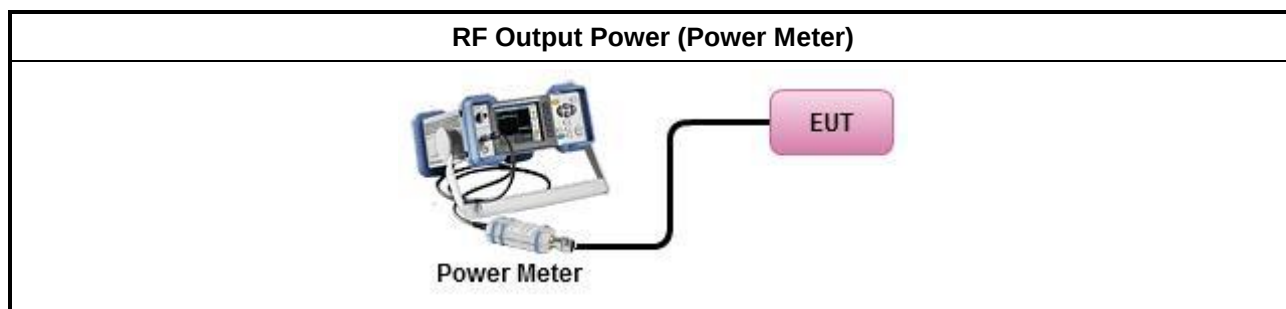
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Conducted Output Power	
	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]) $\text{EIRP}_{\text{total}} = P_{\text{total}} + \text{DG}$

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
	Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$.
	Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☐ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
☐ For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
☒ For the 5.725-5.85 GHz band:	
	Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$.
	Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

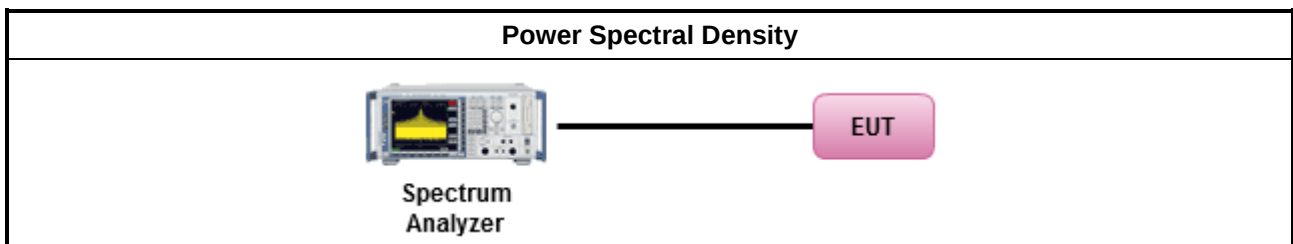
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:	
☐	Refer as 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]) $EIRP_{total} = PPSD_{total} + DG$	

3.4.4 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).

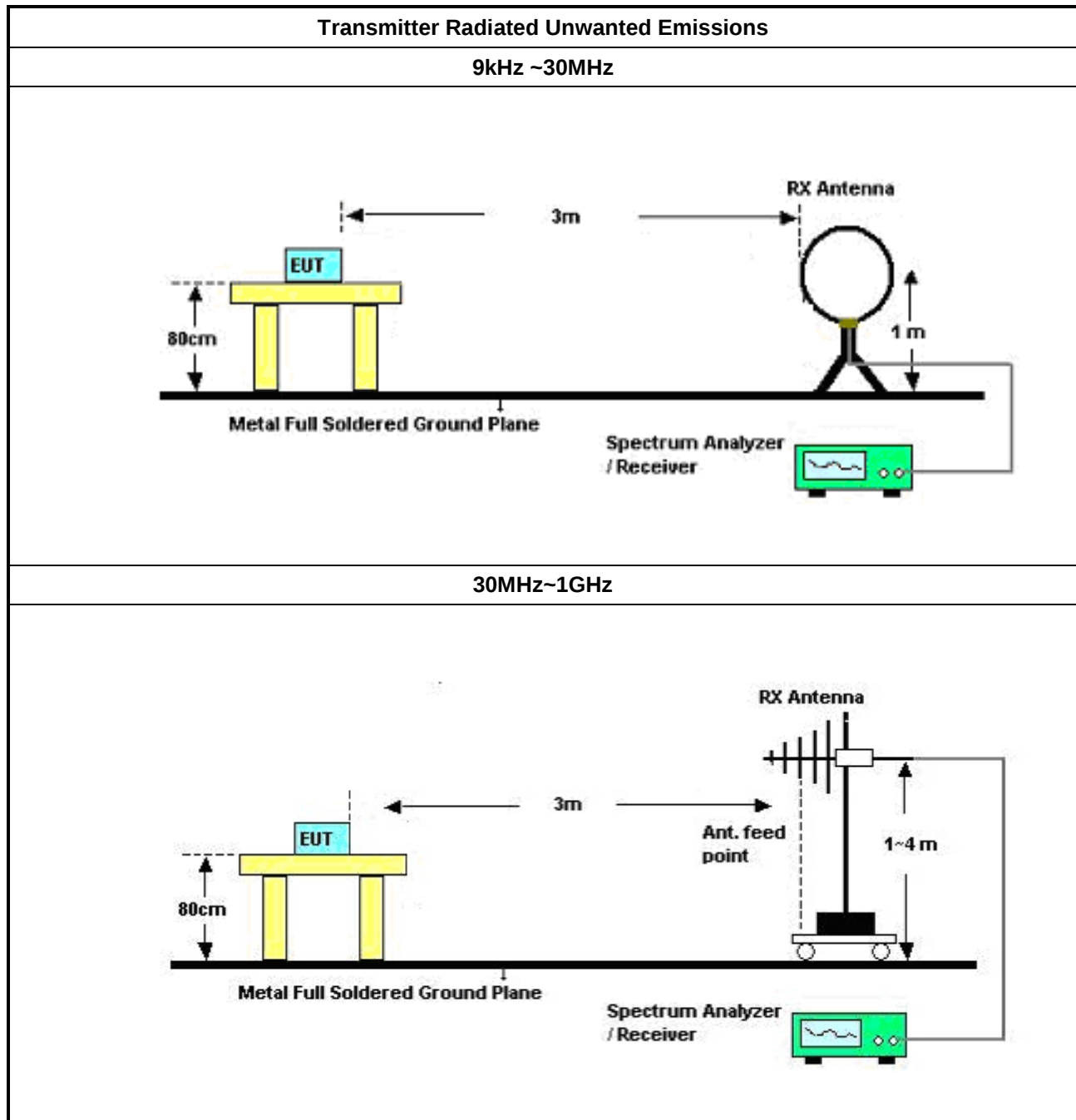
3.5.2 Measuring Instruments

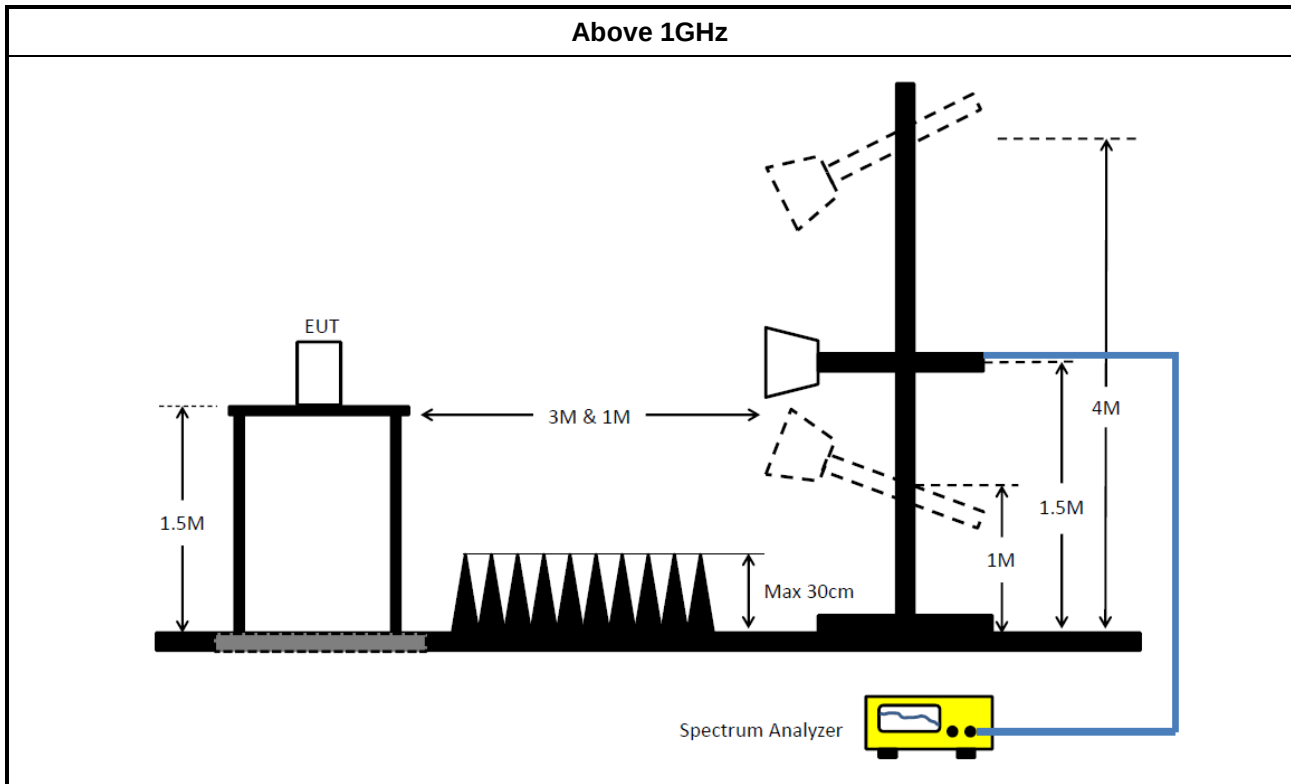
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method				
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.			
	<table border="1"> <tr> <td>☒</td><td>Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.</td></tr> <tr> <td>☒</td><td>Refer as KDB 789033, clause G)5) (ANSI C63.10, clause 4.1.4.2.2), measurement procedure peak limit.</td></tr> </table>	☒	Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.	☒
☒	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.				

3.5.4 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

3.6 Frequency Stability

3.6.1 Frequency Stability Limit

Frequency Stability Limit	
UNII Devices	
In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.	
IEEE Std. 802.11	
The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band.	

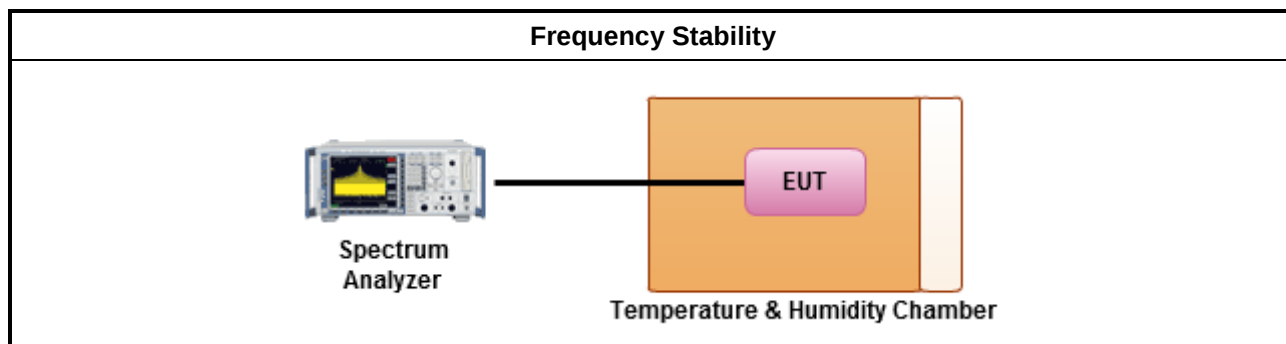
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method	
Refer as ANSI C63.10, clause 6.8 for frequency stability tests	
	Frequency stability with respect to ambient temperature
	Frequency stability when varying supply voltage

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Refer as Appendix F

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
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/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

NCR : Non-Calibration Require

Instrument for Radiated Test

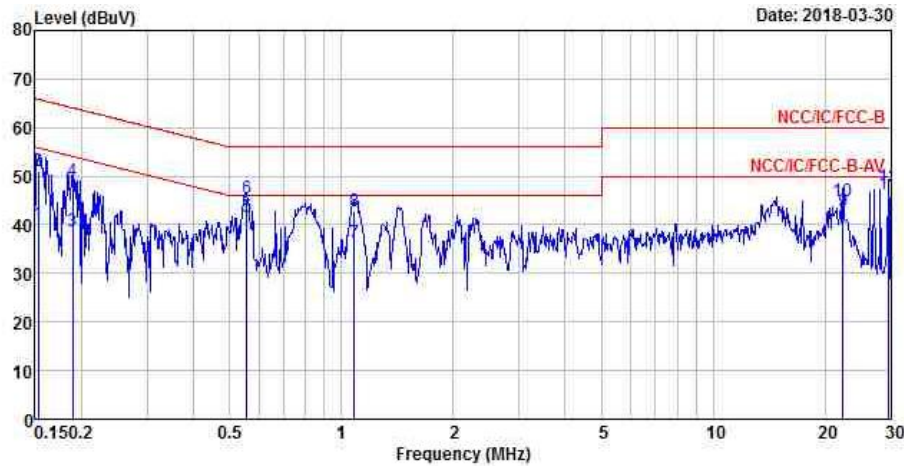
Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	31/Oct/2017	30/Oct/2018
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	01/Nov/2017	31/Oct/2018
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	19/Apr/2017	18/Apr/2018
Amplifier	Keysight	83017A	MY53270196	1GHz ~ 26.5GHz	31/Aug/2017	30/Aug/2018
Spectrum	R&S	FSV40	101500	9kHz ~ 40GHz	28/Jun/2017	27/Jun/2018
Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	26/Jan/2018	25/Jan/2019
RF Cable-high	SUHNER	SUCOFLEX106	CB222	1GHz ~ 40GHz	26/Jan/2018	25/Jan/2019
Bilog Antenna	SCHAFFNER	CBL 6112B	22237	30MHz ~ 1GHz	08/Jul/2017	07/Jul/2018
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	18GHz ~ 40GHz	09/Feb/ 2018	08/Feb/2019
Horn Antenna	SCHWARZBECK	BBHA9120D	1531	1GHz ~ 18GHz	25/Apr/ 2017	24/Apr/2018
Amplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	24/Aug/2017	23/Aug/2018
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz~30 MHz	16/Mar/2018	15/Mar/2019

**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
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP-SD	MAA1112-007	-20 ~ 100℃	10/May/2017	09/May/2018
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12582/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12583/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12581/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12584/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10712/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	10/May/2017	09/May/2018
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	06/Nov/2017	05/Nov/2018

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	PoE mode		

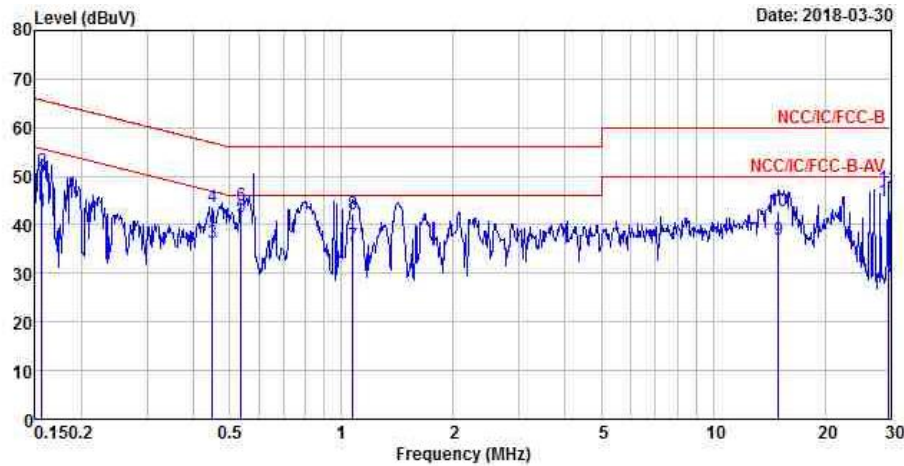


	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1532	40.04	-15.78	55.82	30.37	9.63	0.04	Average
2	0.1532	51.04	-14.78	65.82	41.37	9.63	0.04	QP
3	0.1894	38.77	-15.29	54.06	29.14	9.62	0.01	Average
4	0.1894	48.96	-15.10	64.06	39.33	9.62	0.01	QP
5	0.5552	41.62	-4.38	46.00	31.95	9.61	0.06	Average
6	0.5552	45.44	-10.56	56.00	35.77	9.61	0.06	QP
7	1.0824	36.17	-9.83	46.00	26.55	9.62	0.00	Average
8	1.0824	42.66	-13.34	56.00	33.04	9.62	0.00	QP
9	22.3966	42.77	-7.23	50.00	32.97	9.70	0.10	Average
10	22.3966	44.87	-15.13	60.00	35.07	9.70	0.10	QP
11 MAX	29.6150	46.33	-3.67	50.00	36.36	9.69	0.28	Average
12	29.6150	47.69	-12.31	60.00	37.72	9.69	0.28	QP

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	PoE mode		

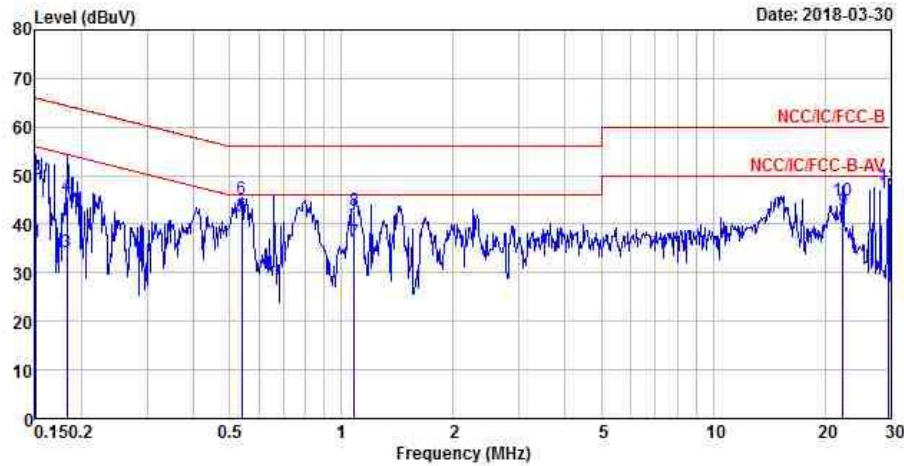


	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.1565	42.81	-12.84	55.65	33.15	9.62	0.04	Average
2	0.1565	51.04	-14.61	65.65	41.38	9.62	0.04	QP
3	0.4492	36.41	-10.48	46.89	26.71	9.61	0.09	Average
4	0.4492	43.60	-13.29	56.89	33.90	9.61	0.09	QP
5 MAX	0.5378	41.55	-4.45	46.00	31.87	9.61	0.07	Average
6	0.5378	44.11	-11.89	56.00	34.43	9.61	0.07	QP
7	1.0710	35.73	-10.27	46.00	26.12	9.61	0.00	Average
8	1.0710	42.33	-13.67	56.00	32.72	9.61	0.00	QP
9	14.9860	36.88	-13.12	50.00	27.24	9.64	0.00	Average
10	14.9860	42.77	-17.23	60.00	33.13	9.64	0.00	QP
11	29.6088	44.79	-5.21	50.00	35.01	9.50	0.28	Average
12	29.6088	47.45	-12.55	60.00	37.67	9.50	0.28	QP

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	PoE mod		

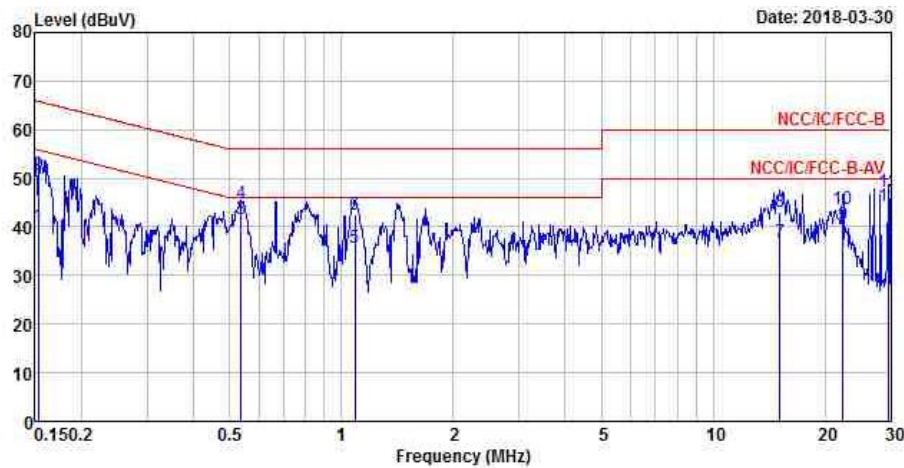


	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.1508	36.44	-19.52	55.96	26.77	9.63	0.04	Average
2	0.1508	49.29	-16.67	65.96	39.62	9.63	0.04	QP
3	0.1825	34.17	-20.20	54.37	24.54	9.62	0.01	Average
4	0.1825	45.87	-18.50	64.37	36.24	9.62	0.01	QP
5	0.5382	41.77	-4.23	46.00	32.09	9.61	0.07	Average
6	0.5382	45.09	-10.91	56.00	35.41	9.61	0.07	QP
7	1.0824	36.28	-9.72	46.00	26.66	9.62	0.00	Average
8	1.0824	42.72	-13.28	56.00	33.10	9.62	0.00	QP
9	22.3966	42.77	-7.23	50.00	32.97	9.70	0.10	Average
10	22.3966	44.73	-15.27	60.00	34.93	9.70	0.10	QP
11 MAX	29.6150	46.29	-3.71	50.00	36.32	9.69	0.28	Average
12	29.6150	47.69	-12.31	60.00	37.72	9.69	0.28	QP

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	PoE mod		



	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1532	40.16	-15.66	55.82	30.50	9.62	0.04	Average
2	0.1532	50.63	-15.19	65.82	40.97	9.62	0.04	QP
3 MAX	0.5378	41.70	-4.30	46.00	32.02	9.61	0.07	Average
4	0.5378	45.01	-10.99	56.00	35.33	9.61	0.07	QP
5	1.0881	35.67	-10.33	46.00	26.06	9.61	0.00	Average
6	1.0881	42.45	-13.55	56.00	32.84	9.61	0.00	QP
7	15.1457	36.99	-13.01	50.00	27.34	9.64	0.01	Average
8	15.1457	43.19	-16.81	60.00	33.54	9.64	0.01	QP
9	22.3954	40.41	-9.59	50.00	30.72	9.59	0.10	Average
10	22.3954	43.70	-16.30	60.00	34.01	9.59	0.10	QP
11	29.6138	44.29	-5.71	50.00	34.51	9.50	0.28	Average
12	29.6138	47.15	-12.85	60.00	37.37	9.50	0.28	QP

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	29.95M	16.567M	16M6D1D	19.6M	16.342M
802.11ac VHT20_Nss1,(MCS0)_4TX	34.05M	17.741M	17M7D1D	19.95M	17.566M
802.11ac VHT40_Nss1,(MCS0)_4TX	71.65M	36.232M	36M2D1D	40.05M	35.932M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.1M	75.162M	75M2D1D	79.7M	74.863M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	15.275M	22.614M	22M6D1D	13.825M	16.517M
802.11ac VHT20_Nss1,(MCS0)_4TX	15.925M	19.74M	19M7D1D	14.925M	17.891M
802.11ac VHT40_Nss1,(MCS0)_4TX	35.1M	39.38M	39M4D1D	33.2M	36.732M
802.11ac VHT80_Nss1,(MCS0)_4TX	75M	75.462M	75M5D1D	61.3M	75.162M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	19.6M	16.367M	24.425M	16.442M	19.975M	16.367M	19.875M	16.342M
5200MHz_TnomVnom	Pass	Inf	29.95M	16.492M	28.25M	16.492M	27.025M	16.417M	28.625M	16.442M
5240MHz_TnomVnom	Pass	Inf	26.725M	16.467M	28.525M	16.567M	26.775M	16.392M	27M	16.442M
5745MHz_TnomVnom	Pass	500k	15M	17.191M	13.825M	18.266M	15.05M	17.316M	15.1M	17.316M
5785MHz_TnomVnom	Pass	500k	15.05M	16.692M	15.075M	19.215M	14.95M	17.091M	14.4M	22.614M
5825MHz_TnomVnom	Pass	500k	15M	16.517M	15.075M	16.792M	15.05M	16.542M	15.275M	16.742M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	20.525M	17.566M	19.95M	17.566M	19.95M	17.591M	20.25M	17.591M
5200MHz_TnomVnom	Pass	Inf	33.75M	17.641M	34.05M	17.741M	31.225M	17.641M	28.975M	17.641M
5240MHz_TnomVnom	Pass	Inf	30.3M	17.641M	33.325M	17.691M	27.575M	17.591M	27.725M	17.641M
5745MHz_TnomVnom	Pass	500k	14.975M	17.891M	15.575M	18.216M	14.925M	18.091M	15.025M	17.891M
5785MHz_TnomVnom	Pass	500k	15.1M	17.941M	15.925M	19.74M	15.075M	18.266M	15.1M	18.341M
5825MHz_TnomVnom	Pass	500k	15.025M	17.916M	15.925M	19.315M	15.075M	17.966M	15.9M	18.266M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.4M	35.932M	40.05M	35.982M	40.15M	35.932M	40.25M	35.932M
5230MHz_TnomVnom	Pass	Inf	68M	36.132M	71.65M	36.232M	54.8M	36.132M	69.15M	36.132M
5755MHz_TnomVnom	Pass	500k	35.1M	37.831M	35.1M	37.781M	35.1M	37.381M	35.05M	36.932M
5795MHz_TnomVnom	Pass	500k	35M	36.732M	34.4M	39.38M	35.1M	36.882M	33.2M	37.981M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.1M	75.062M	79.7M	75.162M	80.1M	75.162M	79.9M	74.863M
5775MHz_TnomVnom	Pass	500k	68.9M	75.462M	66.2M	75.162M	61.3M	75.262M	75M	75.462M

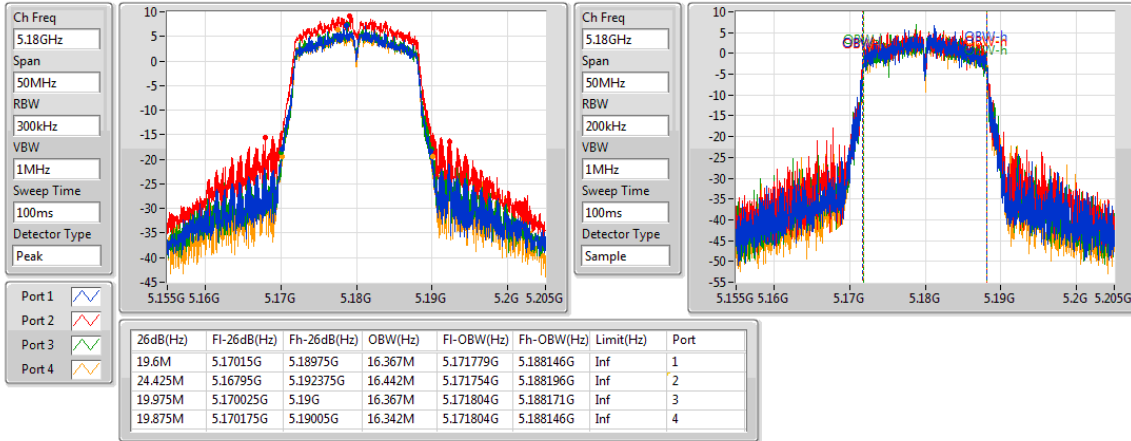
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX

EBW

5180MHz

20/03/2018

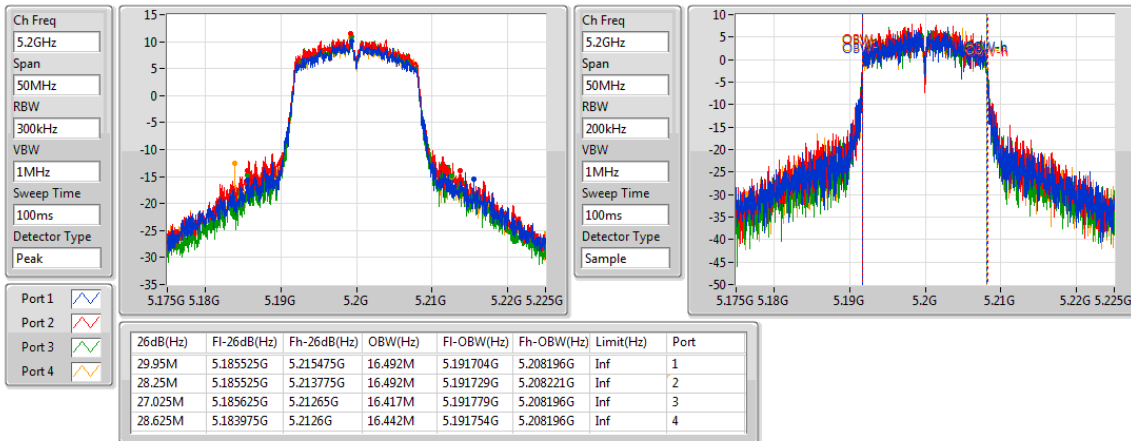


802.11a_Nss1,(6Mbps)_4TX

EBW

5200MHz

14/03/2018

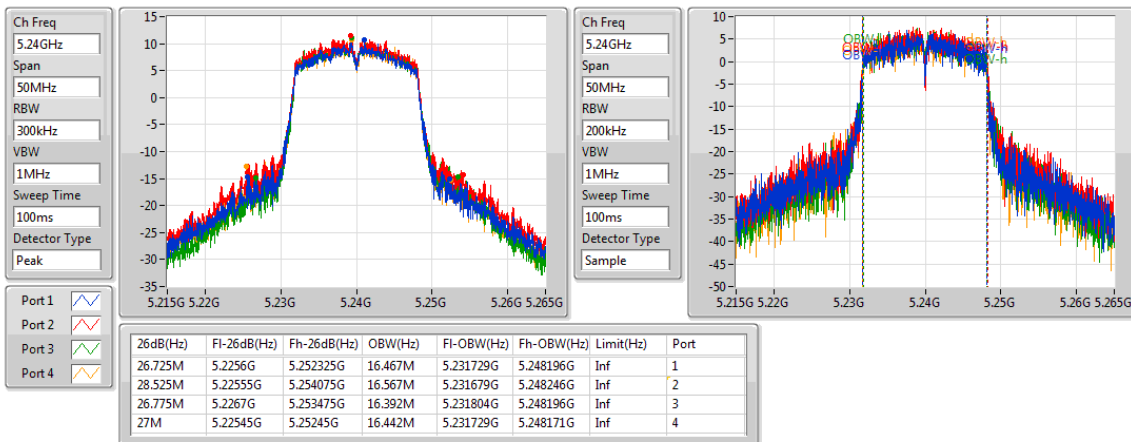


802.11a_Nss1,(6Mbps)_4TX

EBW

5240MHz

14/03/2018

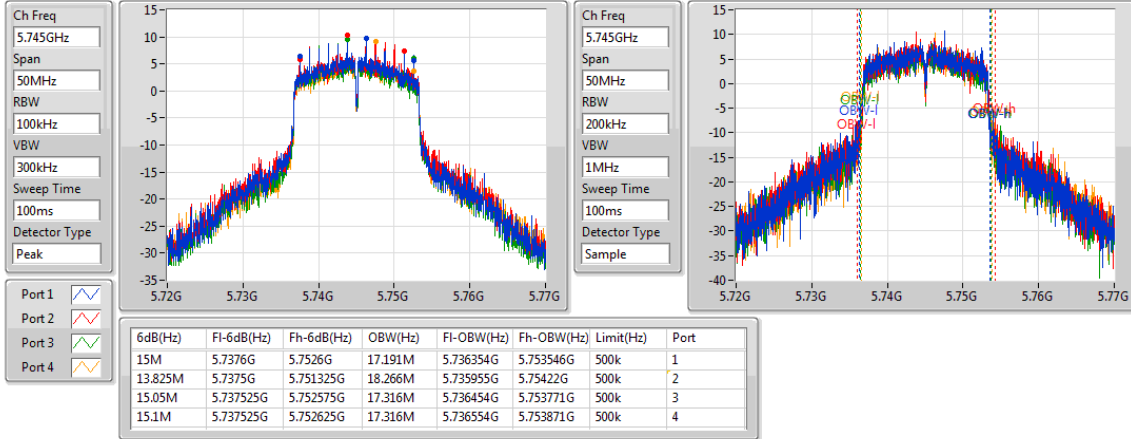


802.11a_Nss1,(6Mbps)_4TX

EBW

5745MHz

14/03/2018

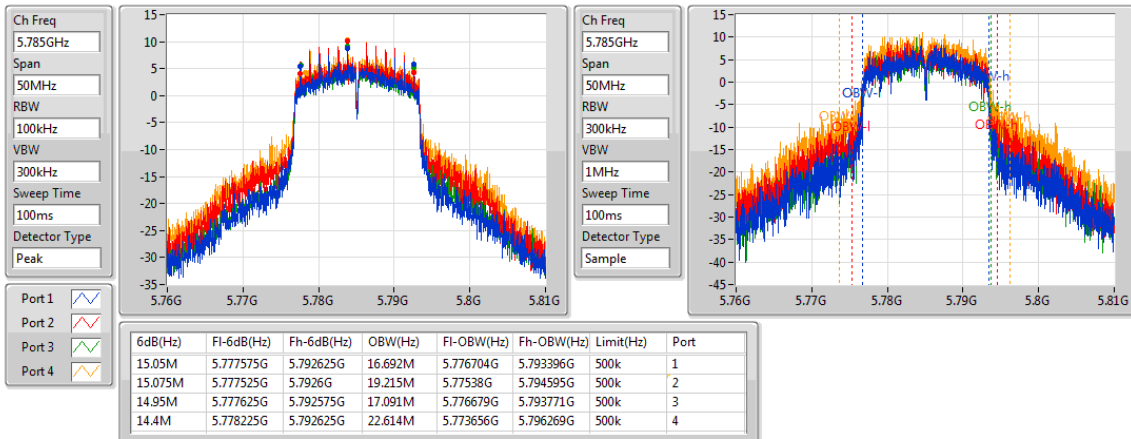


802.11a_Nss1,(6Mbps)_4TX

EBW

5785MHz

14/03/2018

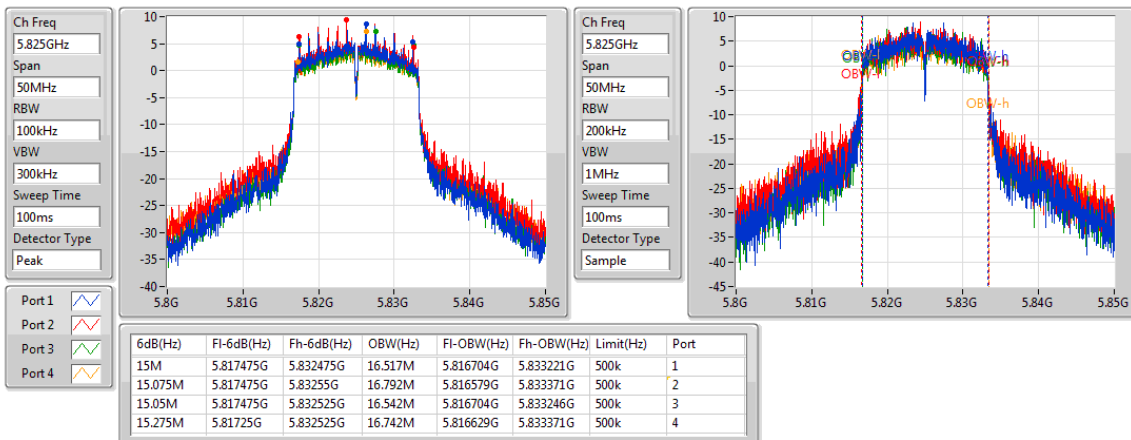


802.11a_Nss1,(6Mbps)_4TX

EBW

5825MHz

20/03/2018

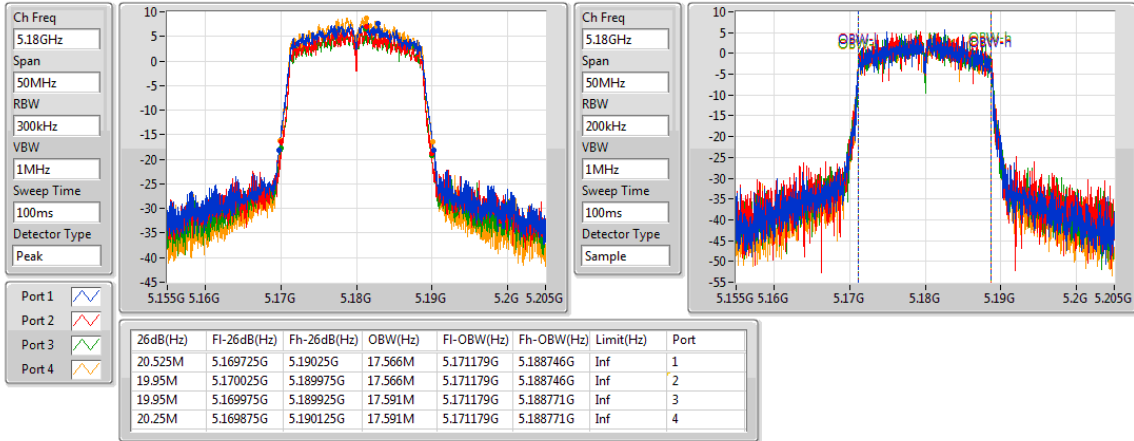


802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

5180MHz

20/03/2018

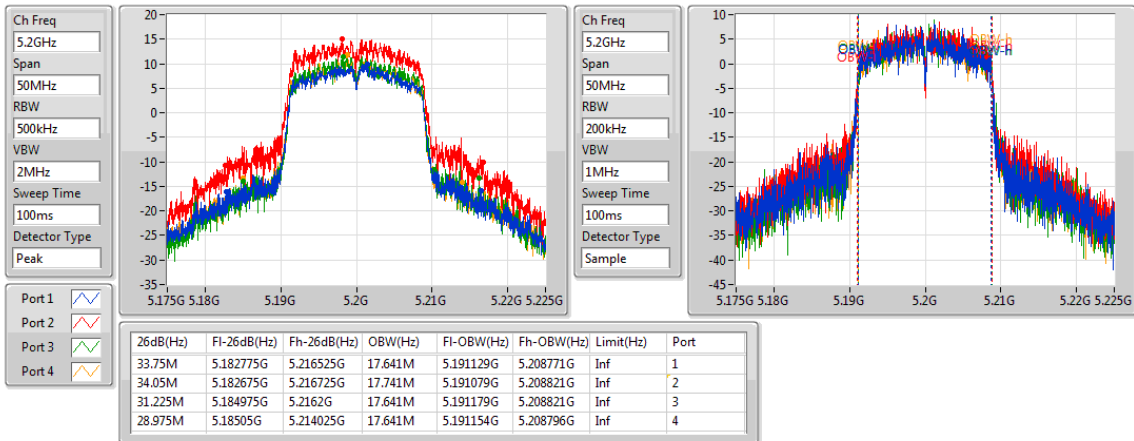


802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

5200MHz

14/03/2018

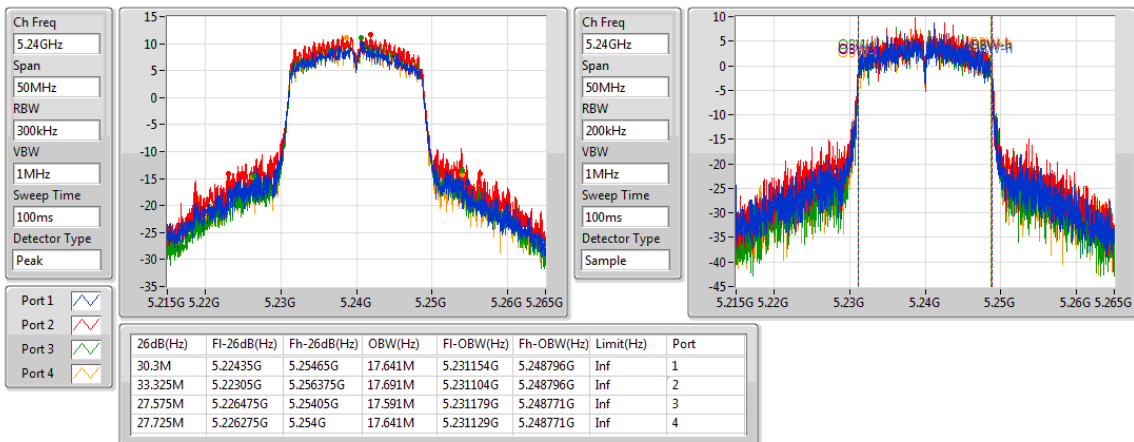


802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

5240MHz

14/03/2018

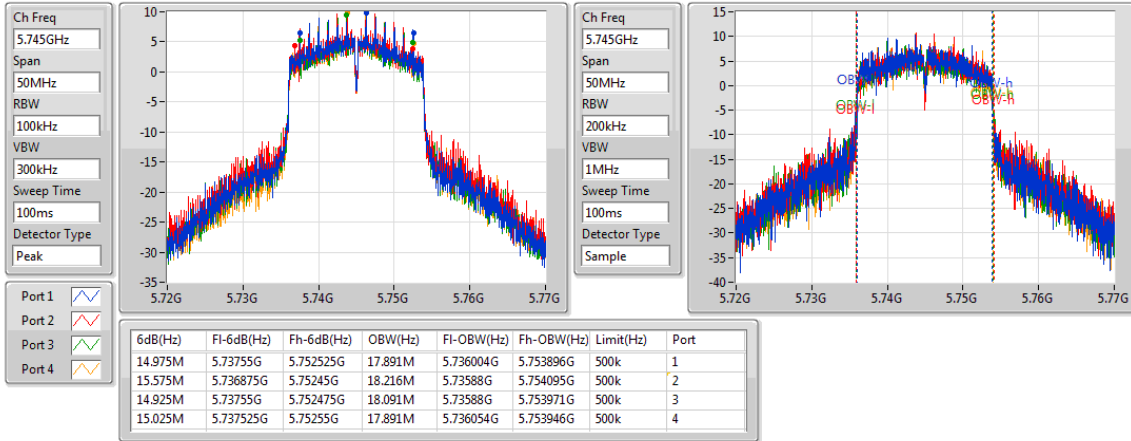


802.11ac VHT20_Nss1,(MCS0)_4TX

5745MHz

EBW

14/03/2018

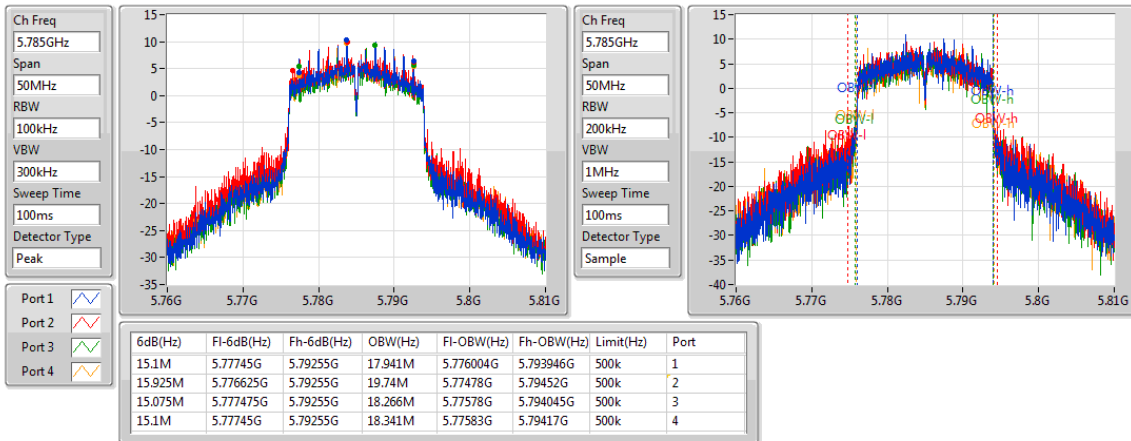


802.11ac VHT20_Nss1,(MCS0)_4TX

5785MHz

EBW

14/03/2018

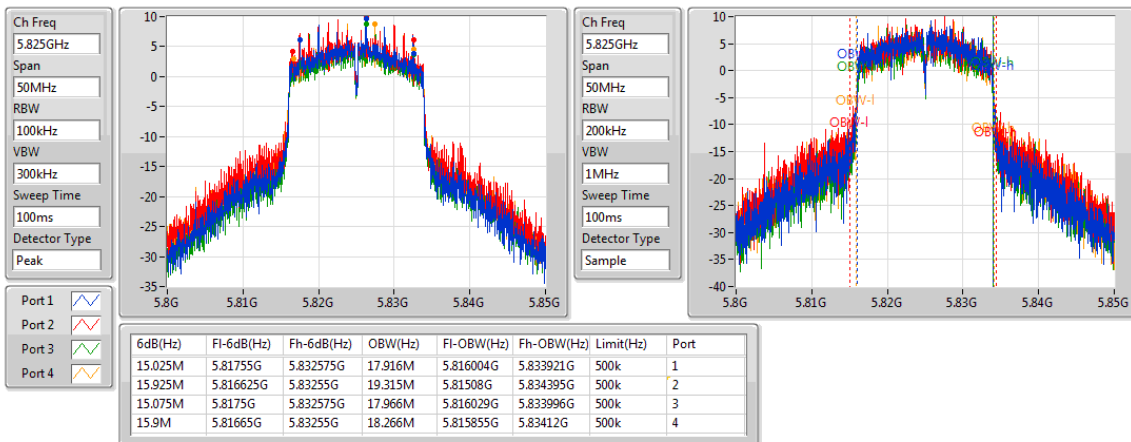


802.11ac VHT20_Nss1,(MCS0)_4TX

5825MHz

EBW

14/03/2018

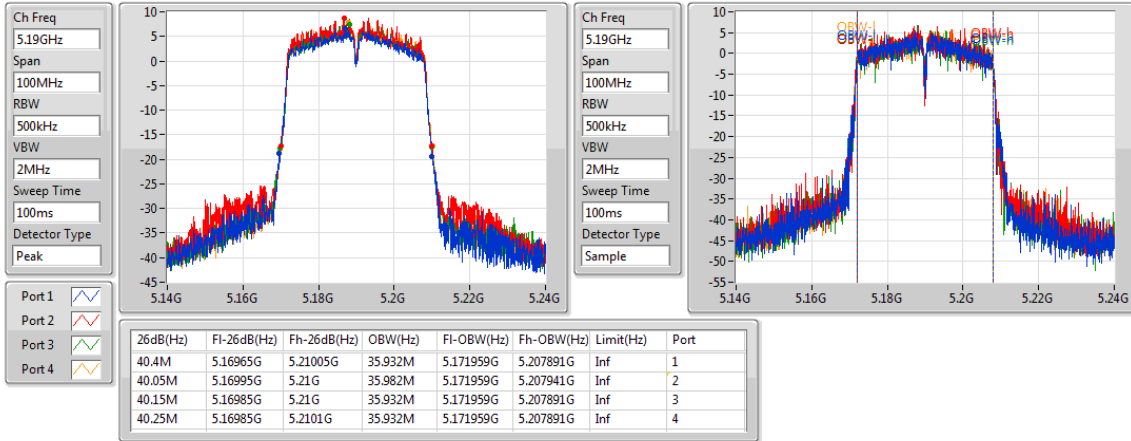


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5190MHz

20/03/2018

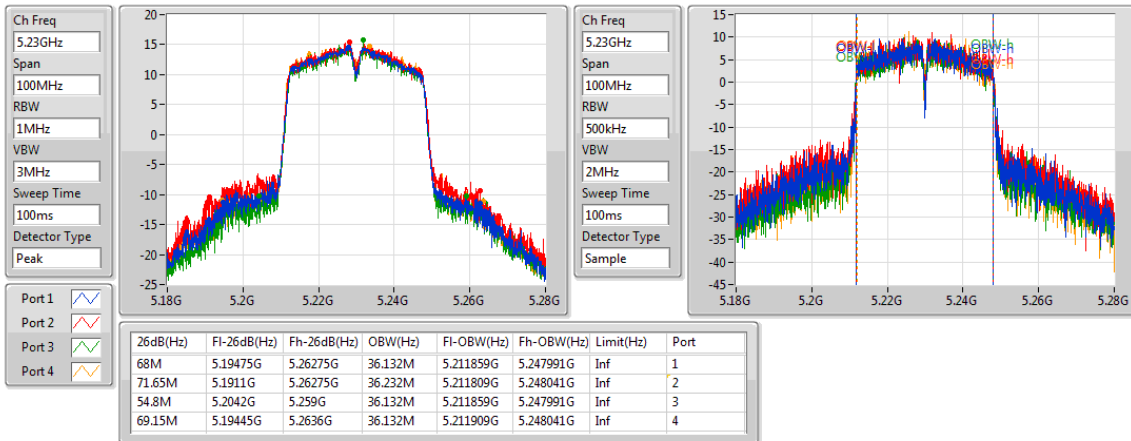


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5230MHz

20/03/2018

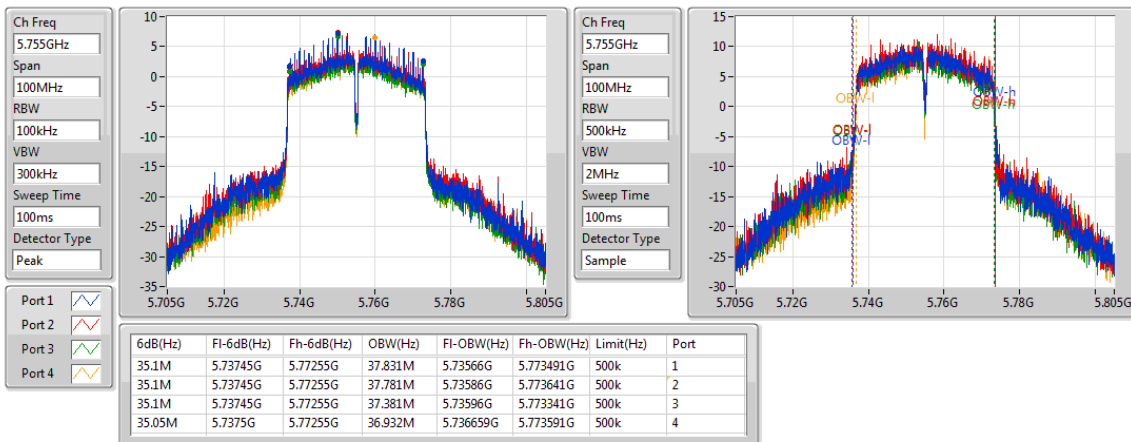


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

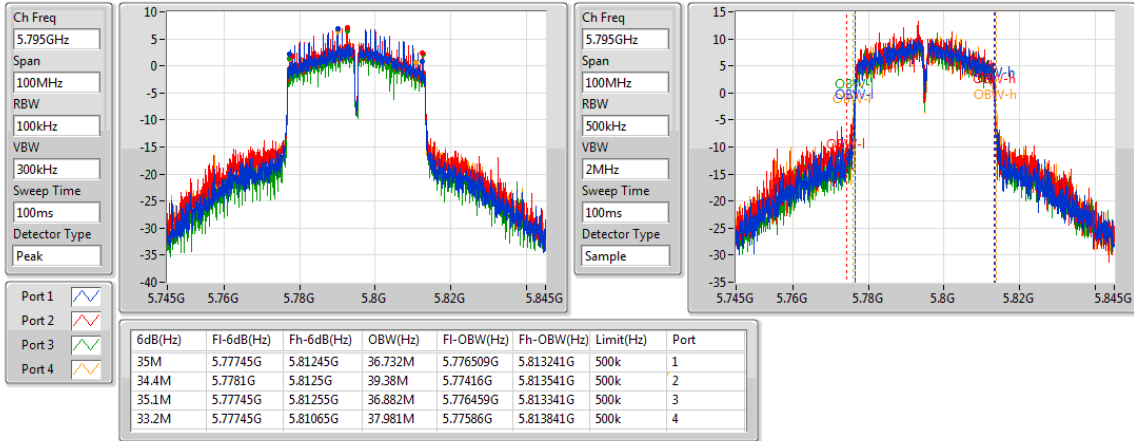
5755MHz

14/03/2018

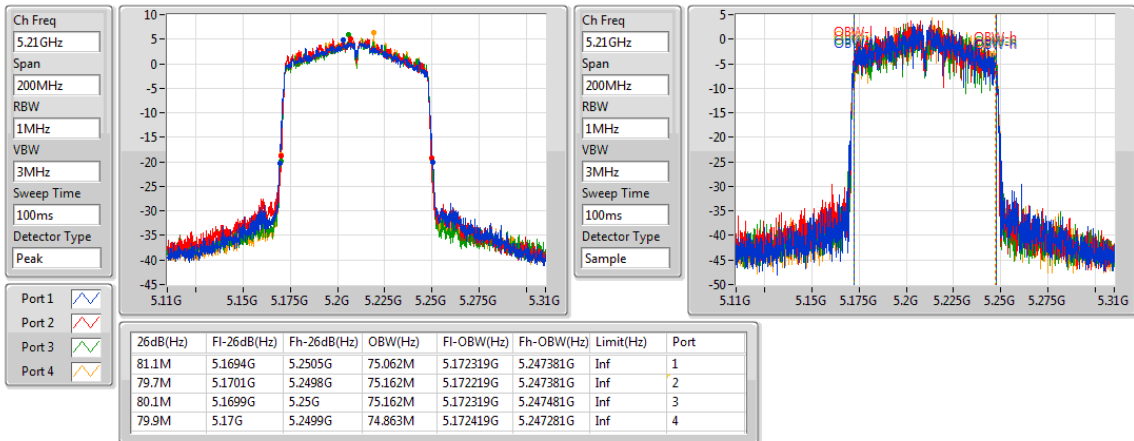


802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5795MHz

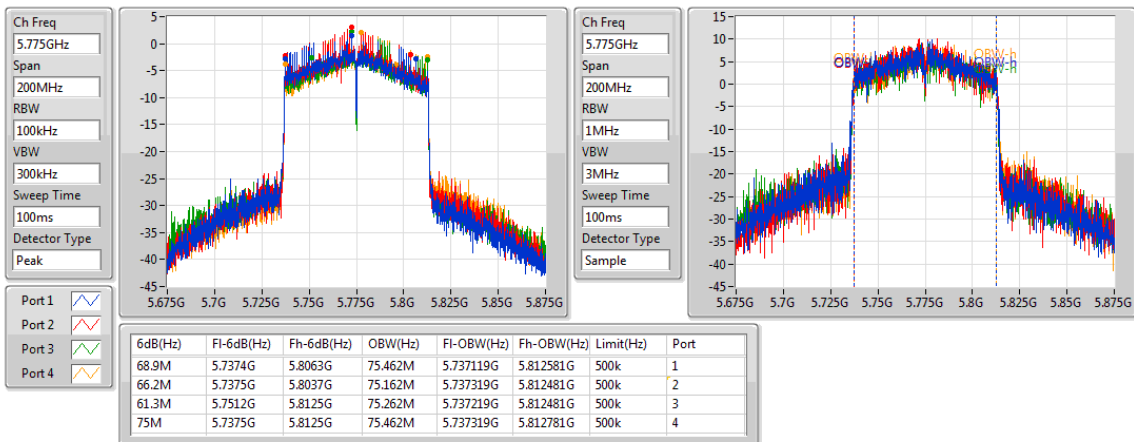
14/03/2018


802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5210MHz

20/03/2018


802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5775MHz

20/03/2018



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)_4TX	42.225M	17.991M	18M0D1D	26.775M	17.691M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	75.5M	36.582M	36M6D1D	41.05M	36.182M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	84.4M	76.062M	76M1D1D	82M	75.662M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	17.6M	18.191M	18M2D1D	15.05M	17.791M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	35.1M	36.432M	36M4D1D	33.8M	36.182M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	75.4M	76.162M	76M2D1D	66.3M	75.762M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	41.9M	17.866M	42.225M	17.991M	40.3M	17.891M	41.5M	17.841M
5200MHz	Pass	Inf	38.225M	17.741M	42.05M	17.791M	34.45M	17.841M	32.15M	17.716M
5240MHz	Pass	Inf	30.175M	17.766M	38.35M	17.741M	26.775M	17.691M	32.55M	17.766M
5745MHz	Pass	500k	15.925M	17.791M	16.325M	17.916M	16.05M	17.891M	17.575M	18.016M
5785MHz	Pass	500k	15.05M	17.816M	17.6M	18.066M	15.425M	17.916M	17.575M	18.191M
5825MHz	Pass	500k	16.05M	17.816M	15.35M	17.841M	15.325M	17.816M	15.35M	17.941M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	41.4M	36.232M	41.15M	36.232M	41.15M	36.182M	41.05M	36.182M
5230MHz	Pass	Inf	74.25M	36.482M	75.5M	36.582M	72.65M	36.382M	73.75M	36.332M
5755MHz	Pass	500k	33.8M	36.232M	35M	36.282M	35M	36.282M	34.2M	36.332M
5795MHz	Pass	500k	34.95M	36.182M	35.05M	36.332M	35.1M	36.282M	33.8M	36.432M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	84.4M	75.862M	82M	76.062M	82M	76.062M	82M	75.662M
5775MHz	Pass	500k	75M	76.062M	75.1M	76.162M	75.4M	76.062M	66.3M	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;