FCC Co-location Test Report

Equipment	:	**GRAPHICS TABLET COMPUTER**
Brand Name	:	**Wacom**
Model No.	:	**DTH-W1320**
FCC ID	:	**HV4DTHW1320**
Standard	:	**47 CFR FCC Part 15**
Applicant / Manufacturer	:	**Wacom Co., Ltd.** 2-510-1 Toyonodai, Kazo-shi, Saitama 349-1148 Japan

The product sample received on Jul. 13, 2016 and completely tested on Sep. 21, 2016. 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.

Reviewed by:

Kevin Liang / Assistant Manager

Testing Laboratory
1190

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Revision History

Report No.	Version	Description	Issued Date
FR662239CO	Rev. 01	Initial issue of report	Oct. 03, 2016

1 CO-LOCATION

1.1 Transmitter Radiated Unwanted Emissions

1.1.1 Transmitter Radiated Unwanted Emissions Limit

Restricted Band Emissions 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 30 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Un-restricted Band Emissions Limit	
RF output power procedure	**Limit (dB)**
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

1.1.2 Measuring Instruments

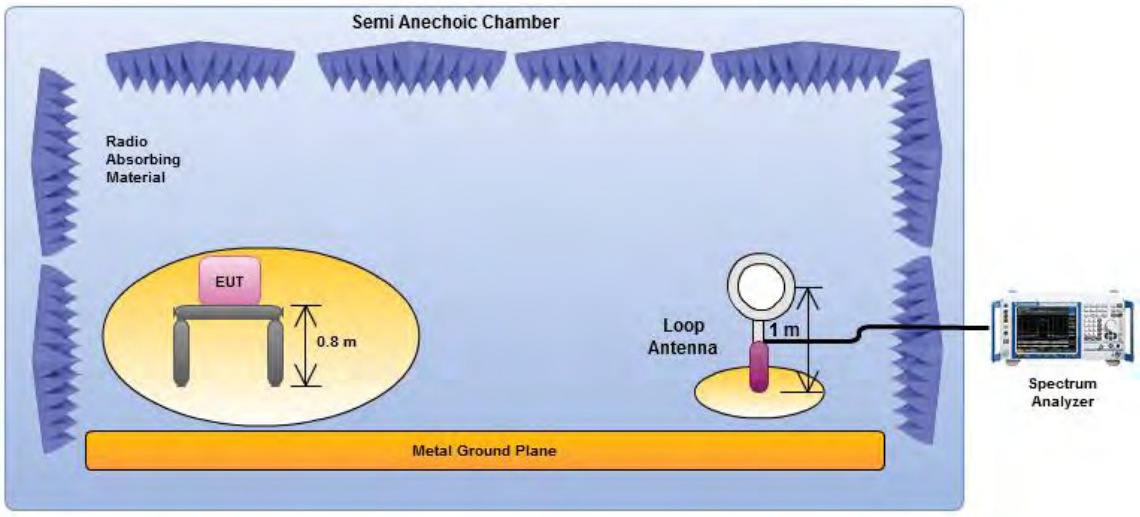
Refer a test equipment and calibration data table in this test report.

1.1.3 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. 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 ≥ 98 or duty factor].		
☒	For the transmitter unwanted emissions shall be measured using following options below:		
	☒	Refer as KDB 558074, clause 11 for unwanted emissions into non-restricted bands.	
	☒	Refer as KDB 558074, clause 12 for unwanted emissions into restricted bands.	
		☐	Refer as KDB 558074, clause 12.2.5.1 and 9.2.1 Option 1 (spectral trace averaging)
		☐	Refer as KDB 558074, clause 12.2.5.2 and 9.2.1 Option 2 (slow sweep speed).
		☒	Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐	Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions.
		☒	Refer as KDB 558074, clause 12.2.4 and 9.1.1 measurement procedure peak limit.
		☐	Refer as KDB 558074, clause 12.2.3 measurement procedure Quasi-Peak limit.
☒	For radiated measurement, refer as KDB 558074, clause 12.1.		
	☒	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 1 GHz and test distance is 3m.	
☐	For conducted and cabinet radiation measurement, refer as KDB 558074, clause 12.2.2.		
	☐	For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains: Refer as KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding 10 log(N) if the measurements are made relative to the in-band emissions on the individual outputs.	
	☐	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB	

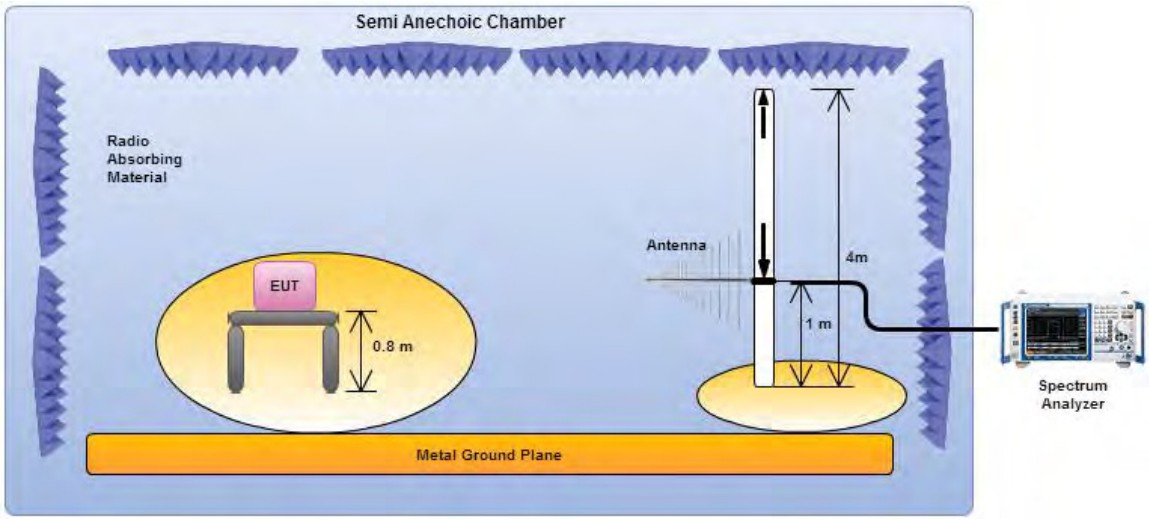
1.1.4 Test Setup

Transmitter Spurious and Out of Band Emissions (9 kHz - 30 MHz)



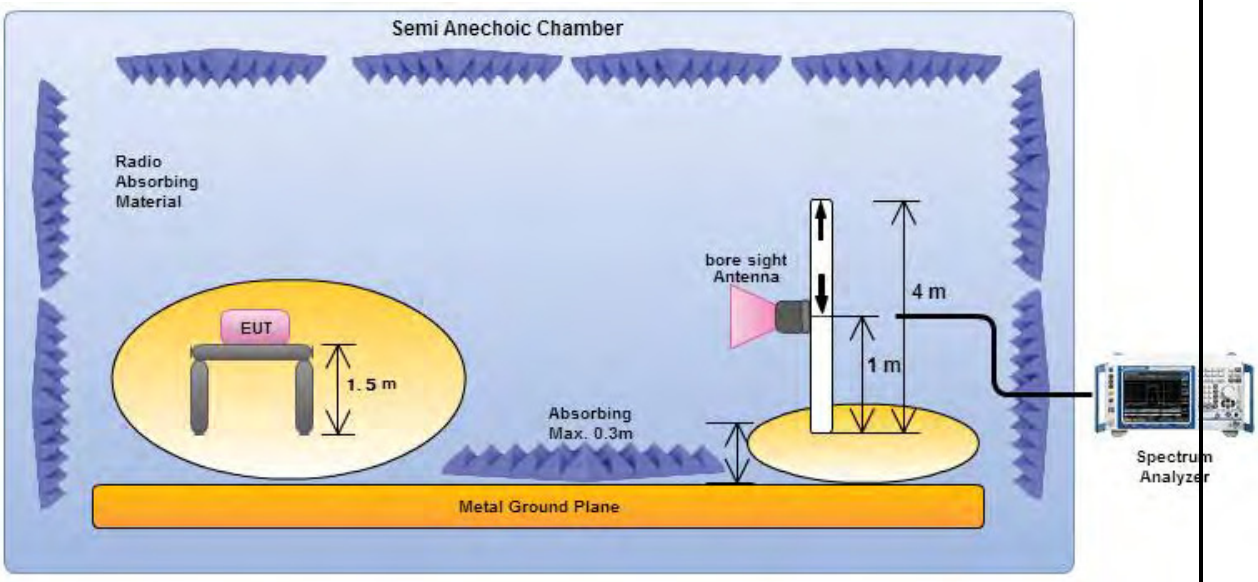
Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna.

Transmitter Radiated Unwanted Emissions (below 1GHz)



Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna.

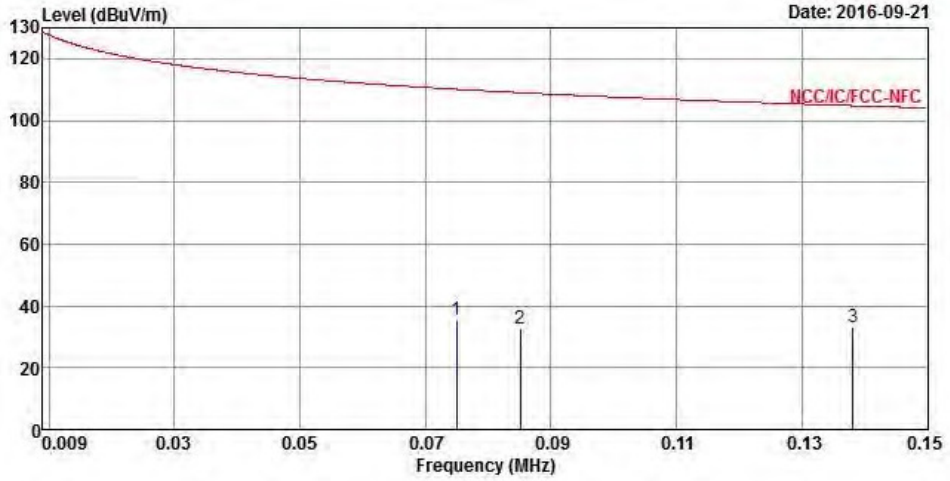
Transmitter Radiated Unwanted Emissions (Above 1GHz)



Electric field tests shall be performed in the frequency range of 1 GHz to 10th harmonic of highest fundamental frequency or 40 GHz using a calibrated horn antenna.

1.1.5 Radiated Unwanted Emissions (Below 30MHz)

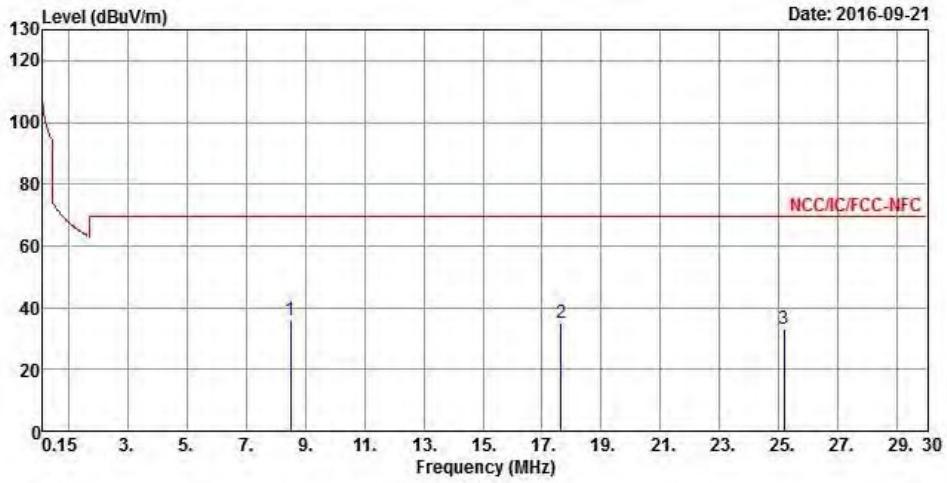
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	V
Operating Function	2.4GHz WiFi 2TX 11g (2437MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	0.0750	35.68	-74.43	110.11	14.63	21.00	0.05	0.00	Peak
2	0.0851	32.76	-76.25	109.01	11.60	21.10	0.06	0.00	Peak
3	0.1382	32.89	-71.91	104.80	11.75	21.06	0.08	0.00	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

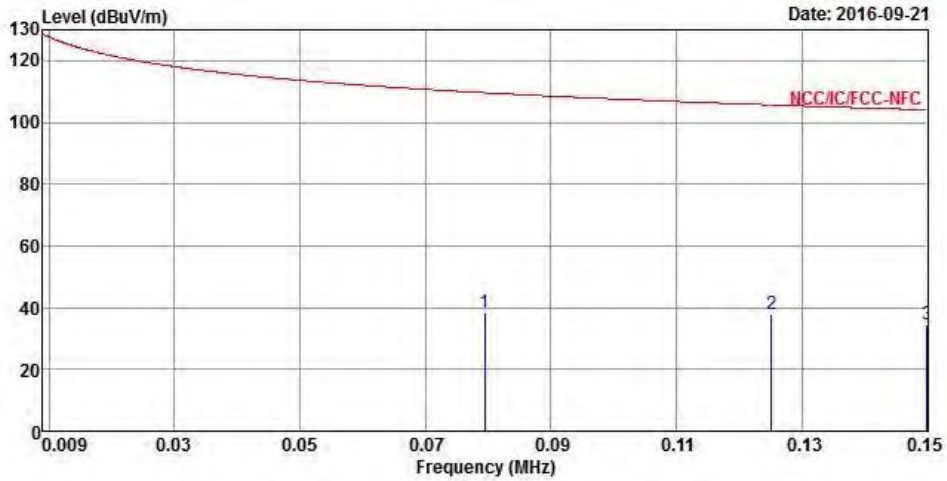
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	H
Operating Function	2.4GHz WiFi 2TX 11g (2437MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8.5080	36.12	-33.42	69.54	14.50	21.18	0.44	0.00	Peak
2	17.6421	34.84	-34.70	69.54	12.79	21.45	0.60	0.00	Peak
3	25.1643	32.92	-36.62	69.54	10.61	21.60	0.71	0.00	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

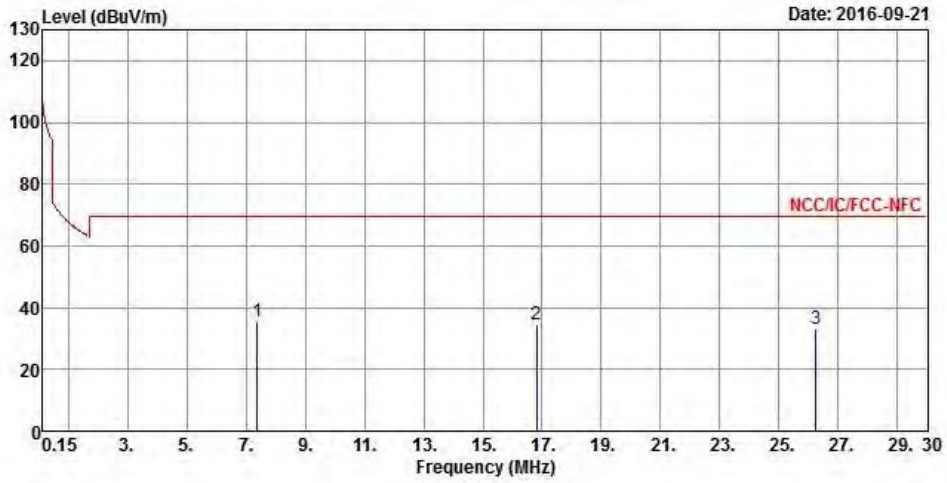
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	V
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-2 (5300MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	0.0795	38.41	-71.19	109.60	17.35	21.00	0.06	0.00	Peak
2	0.1252	37.73	-67.93	105.66	16.59	21.06	0.08	0.00	Peak
3	0.1500	34.66	-69.43	104.09	13.57	21.01	0.08	0.00	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

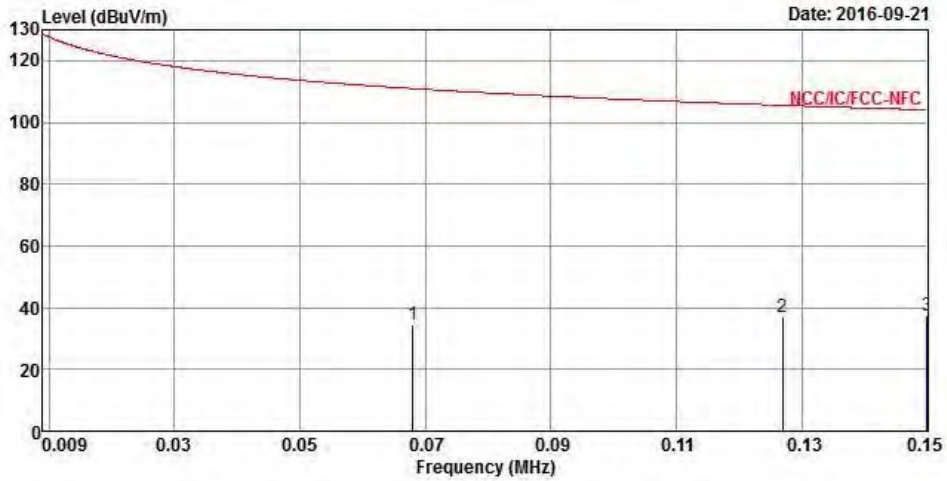
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	H
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-2 (5300MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7.3737	35.40	-34.14	69.54	13.90	21.09	0.41	0.00	Peak
2	16.8063	34.41	-35.13	69.54	12.38	21.44	0.59	0.00	Peak
3	26.2389	33.29	-36.25	69.54	10.97	21.62	0.70	0.00	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

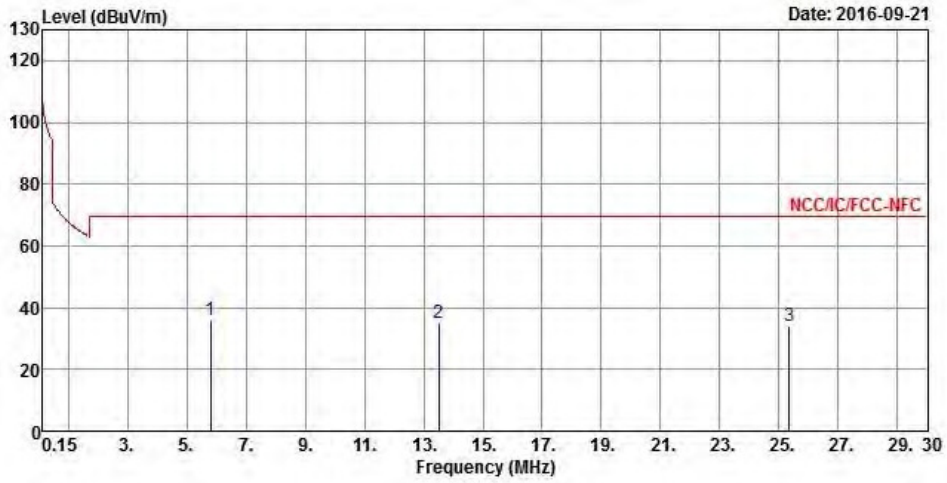
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	V
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-4 (5825MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	0.0679	34.66	-76.31	110.97	13.61	21.00	0.05	0.00	Peak
2	0.1269	37.14	-68.40	105.54	16.00	21.06	0.08	0.00	Peak
3	0.1500	37.31	-66.78	104.09	16.22	21.01	0.08	0.00	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	H
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-4 (5825MHz) + 667kHz		

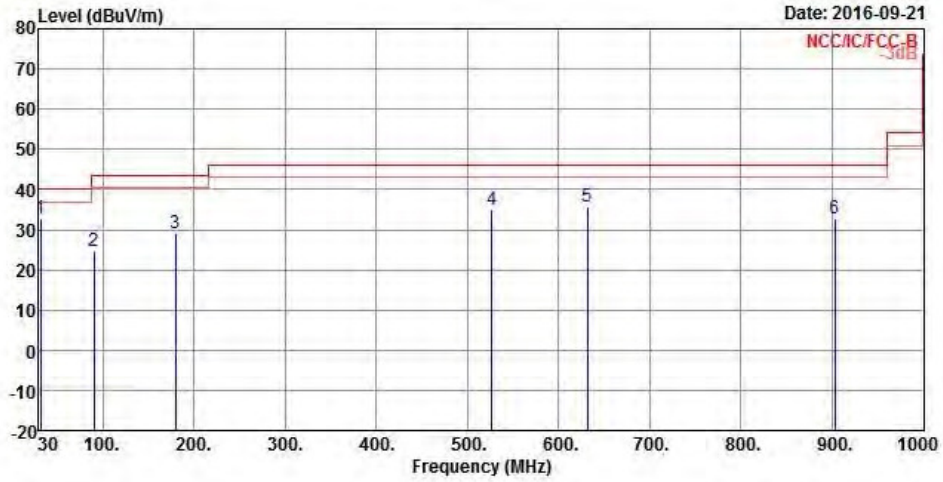


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5.8215	36.03	-33.51	69.54	14.70	20.97	0.36	0.00	Peak
2	13.5228	34.83	-34.71	69.54	12.92	21.37	0.54	0.00	Peak
3	25.3434	33.93	-35.61	69.54	11.61	21.61	0.71	0.00	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

1.1.6 Radiated Unwanted Emissions (Below 1GHz)

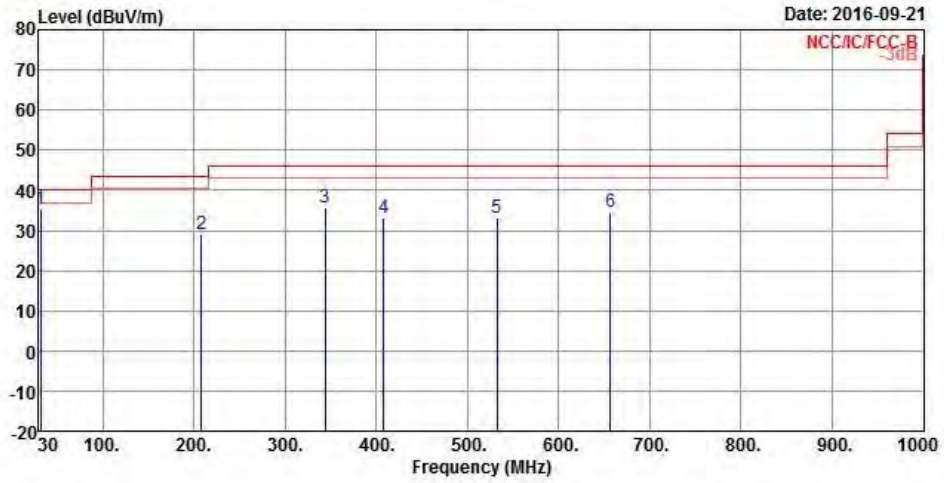
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	V
Operating Function	2.4GHz WiFi 2TX 11g (2437MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	31.9400	32.75	-7.25	40.00	35.47	23.67	0.71	27.10	Peak
2	90.1400	24.73	-18.77	43.50	36.92	14.26	1.35	27.80	Peak
3	179.3800	28.95	-14.55	43.50	39.62	14.87	1.96	27.50	Peak
4	526.6400	34.95	-11.05	46.00	36.36	23.48	3.50	28.39	QP
5	631.4000	35.60	-10.40	46.00	35.83	24.50	3.72	28.45	QP
6	903.0000	32.90	-13.10	46.00	28.65	26.64	5.18	27.57	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

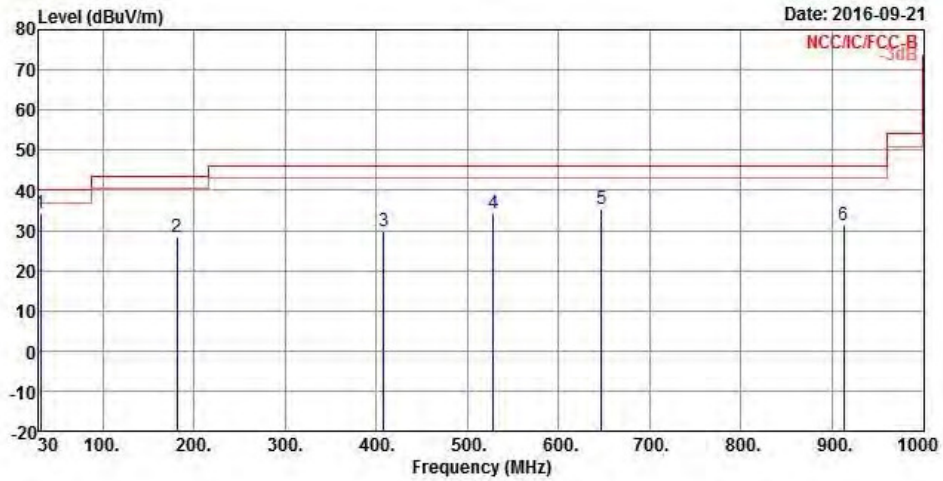
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	H
Operating Function	2.4GHz WiFi 2TX 11g (2437MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	31.9400	35.27	-4.73	40.00	37.99	23.67	0.71	27.10	Peak
2	208.4800	29.12	-14.38	43.50	38.57	15.72	2.23	27.40	Peak
3	344.2800	35.84	-10.16	46.00	40.41	20.26	2.59	27.42	Peak
4	408.3000	33.25	-12.75	46.00	36.30	21.83	3.04	27.92	Peak
5	532.4600	33.31	-12.69	46.00	34.59	23.57	3.53	28.38	Peak
6	656.6200	34.65	-11.35	46.00	34.58	24.68	3.80	28.41	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

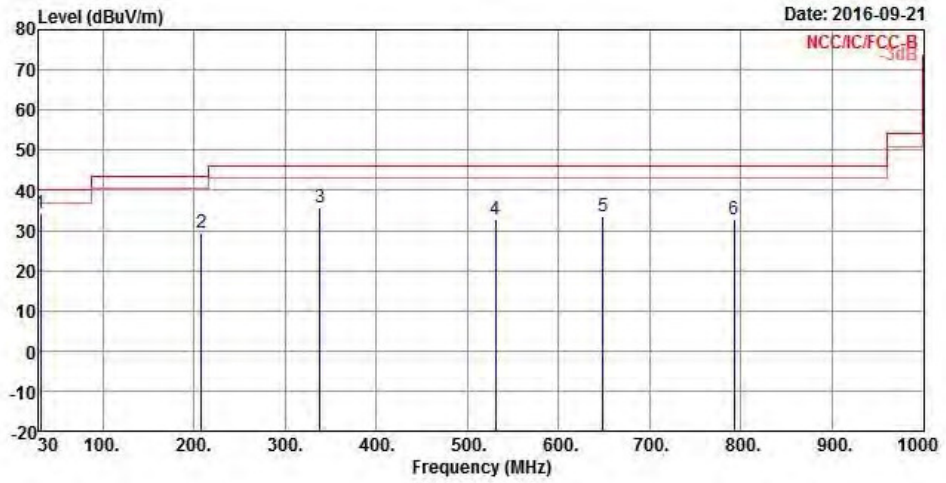
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	V
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-2 (5300MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	31.9400	34.13	-5.87	40.00	36.85	23.67	0.71	27.10	Peak
2	181.3200	28.21	-15.29	43.50	38.91	14.83	1.96	27.49	Peak
3	408.3000	29.69	-16.31	46.00	32.74	21.83	3.04	27.92	Peak
4	528.5800	34.24	-11.76	46.00	35.60	23.51	3.51	28.38	QP
5	646.9200	35.36	-10.64	46.00	35.41	24.63	3.74	28.42	QP
6	912.7000	31.46	-14.54	46.00	27.16	26.72	5.10	27.52	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

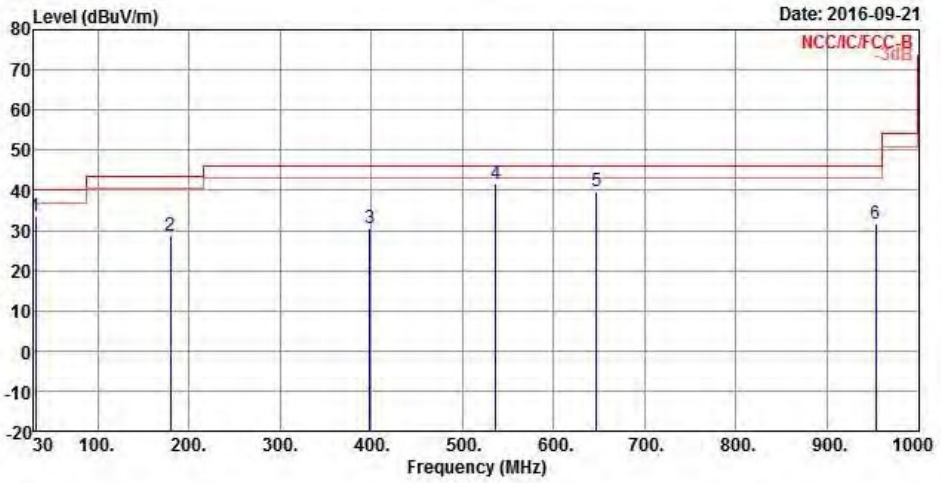
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	H
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-2 (5300MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	31.9400	34.27	-5.73	40.00	36.99	23.67	0.71	27.10	Peak
2	208.4800	29.27	-14.23	43.50	38.72	15.72	2.23	27.40	Peak
3	338.4600	35.82	-10.18	46.00	40.53	20.10	2.58	27.39	Peak
4	530.5200	32.64	-13.36	46.00	33.96	23.54	3.52	28.38	Peak
5	648.8600	33.67	-12.33	46.00	33.69	24.64	3.75	28.41	Peak
6	792.4200	32.81	-13.19	46.00	30.78	25.79	4.34	28.10	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

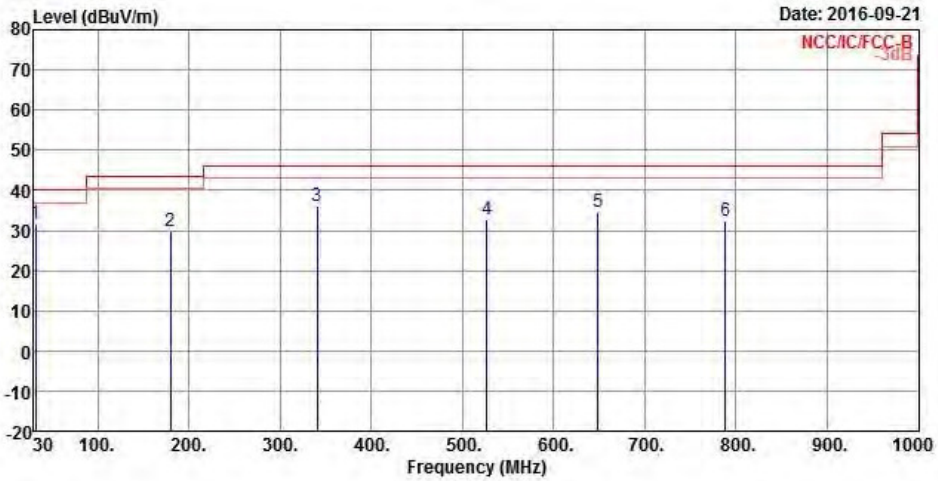
Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	V
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-4 (5825MHz) + 667kHz		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	31.9400	33.63	-6.37	40.00	36.35	23.67	0.71	27.10	Peak
2	179.3800	28.69	-14.81	43.50	39.36	14.87	1.96	27.50	Peak
3	398.6000	30.39	-15.61	46.00	33.56	21.71	2.99	27.87	Peak
4	536.3400	41.47	-4.53	46.00	42.67	23.63	3.54	28.37	QP
5	646.9200	39.95	-6.05	46.00	40.00	24.63	3.74	28.42	QP
6	953.4400	31.76	-14.24	46.00	27.24	27.02	4.79	27.29	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Transmitter Radiated Unwanted Emissions			
Operating Mode	Adapter Mode and Transmit	**Polarization**	H
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-4 (5825MHz) + 667kHz		

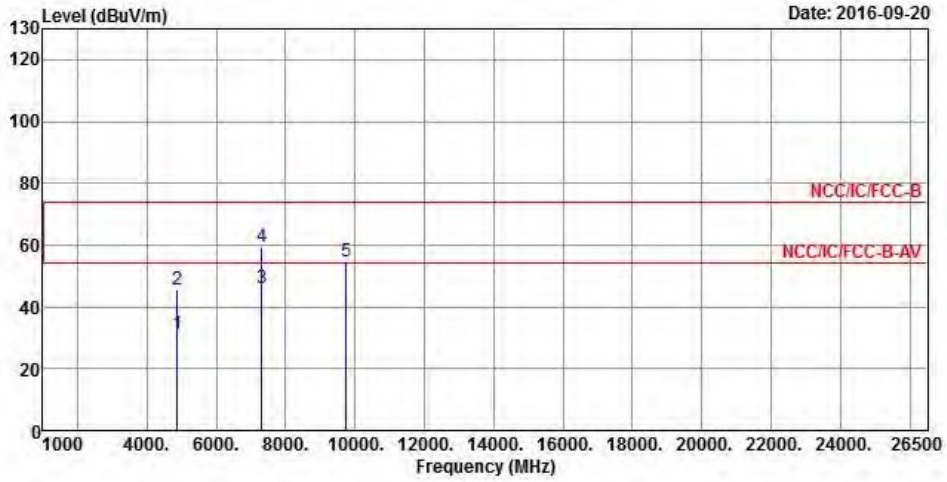


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	31.9400	31.67	-8.33	40.00	34.39	23.67	0.71	27.10	Peak
2	179.3800	29.86	-13.64	43.50	40.53	14.87	1.96	27.50	Peak
3	340.4000	36.24	-9.76	46.00	40.90	20.15	2.59	27.40	Peak
4	526.6400	32.91	-13.09	46.00	34.32	23.48	3.50	28.39	Peak
5	648.8600	34.51	-11.49	46.00	34.53	24.64	3.75	28.41	Peak
6	788.5400	32.22	-13.78	46.00	30.25	25.75	4.32	28.10	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

1.1.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)

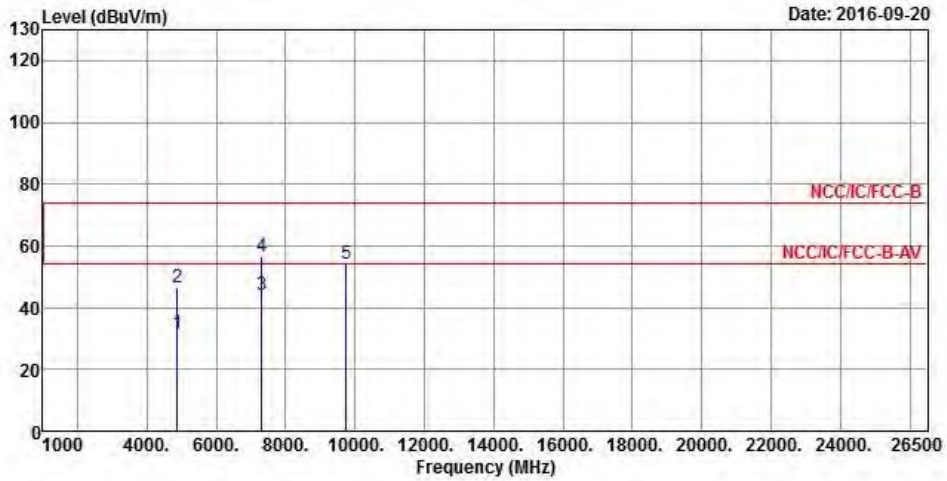
Transmitter Radiated Unwanted Emissions	
Operating Function	2.4GHz WiFi 2TX 11g (2437MHz) + 667kHz
Polarization	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4874.0000	30.99	-23.01	54.00	30.23	31.22	4.35	34.81	Average
2	4874.0000	45.55	-28.45	74.00	44.79	31.22	4.35	34.81	Peak
3	7311.0000	45.94	-8.06	54.00	39.73	35.88	5.40	35.07	Average
4	7311.0000	59.65	-14.35	74.00	53.44	35.88	5.40	35.07	Peak
5	9748.0000	54.64	-19.36	74.00	45.20	38.70	6.13	35.39	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Transmitter Radiated Unwanted Emissions	
Operating Function	2.4GHz WiFi 2TX 11g (2437MHz) + 667kHz
Polarization	H

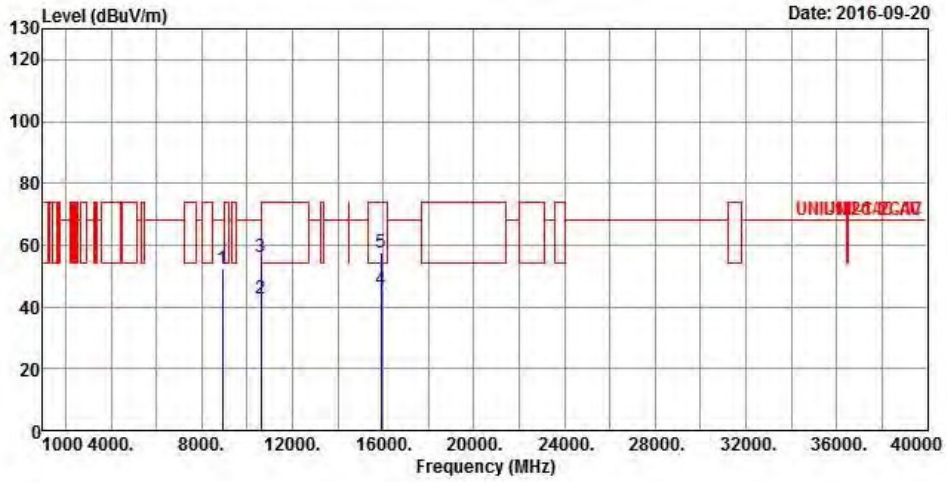


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	4874.0000	31.77	-22.23	54.00	31.01	31.22	4.35	34.81	Average
2	4874.0000	46.47	-27.53	74.00	45.71	31.22	4.35	34.81	Peak
3	7311.0000	44.15	-9.85	54.00	37.94	35.88	5.40	35.07	Average
4	7311.0000	56.81	-17.19	74.00	50.60	35.88	5.40	35.07	Peak
5	9748.0000	54.34	-19.66	74.00	44.90	38.70	6.13	35.39	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

1.1.8 Results for Radiated Emissions (1GHz~40GHz)

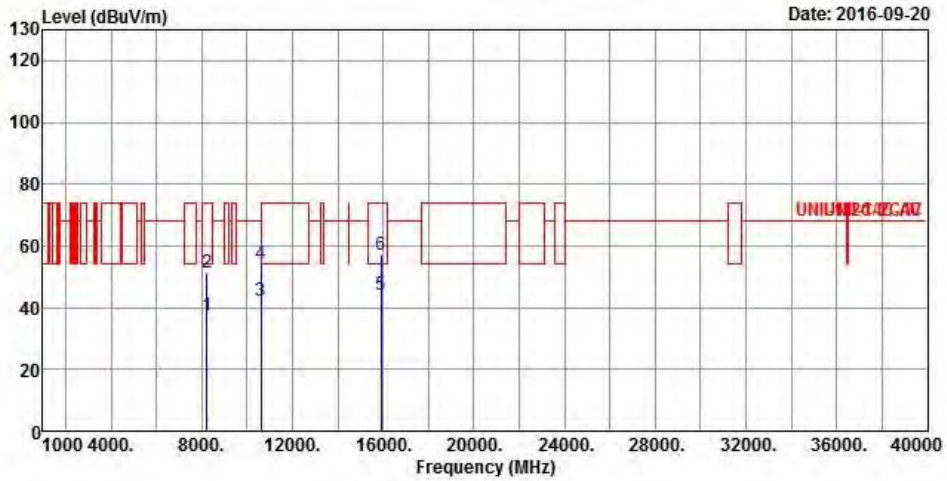
Transmitter Radiated Unwanted Emissions	
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-2 (5300MHz) + 667kHz
Polarization	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8904.0000	52.30	-15.90	68.20	44.40	37.18	5.97	35.25	Peak
2	10600.000	42.91	-11.09	54.00	31.86	39.64	6.29	34.88	Average
3	10600.000	56.11	-17.89	74.00	45.06	39.64	6.29	34.88	Peak
4	15900.000	45.52	-8.48	54.00	35.04	37.44	8.11	35.07	Average
5	15900.000	57.74	-16.26	74.00	47.26	37.44	8.11	35.07	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

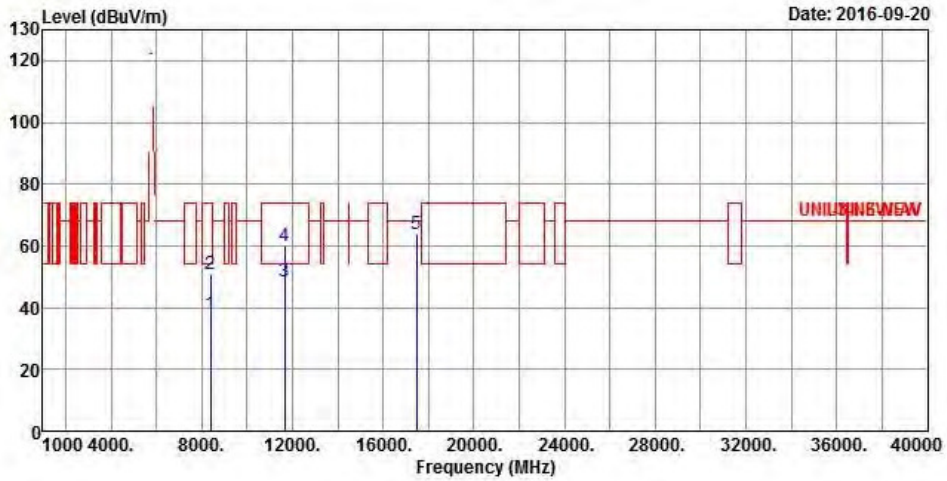
Transmitter Radiated Unwanted Emissions	
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-2 (5300MHz) + 667kHz
Polarization	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8220.0000	37.52	-16.48	54.00	29.98	36.92	5.72	35.10	Average
2	8220.0000	51.26	-22.74	74.00	43.72	36.92	5.72	35.10	Peak
3	10600.000	42.10	-11.90	54.00	31.05	39.64	6.29	34.88	Average
4	10600.000	54.41	-19.59	74.00	43.36	39.64	6.29	34.88	Peak
5	15900.000	44.00	-10.00	54.00	33.52	37.44	8.11	35.07	Average
6	15900.000	57.13	-16.87	74.00	46.65	37.44	8.11	35.07	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

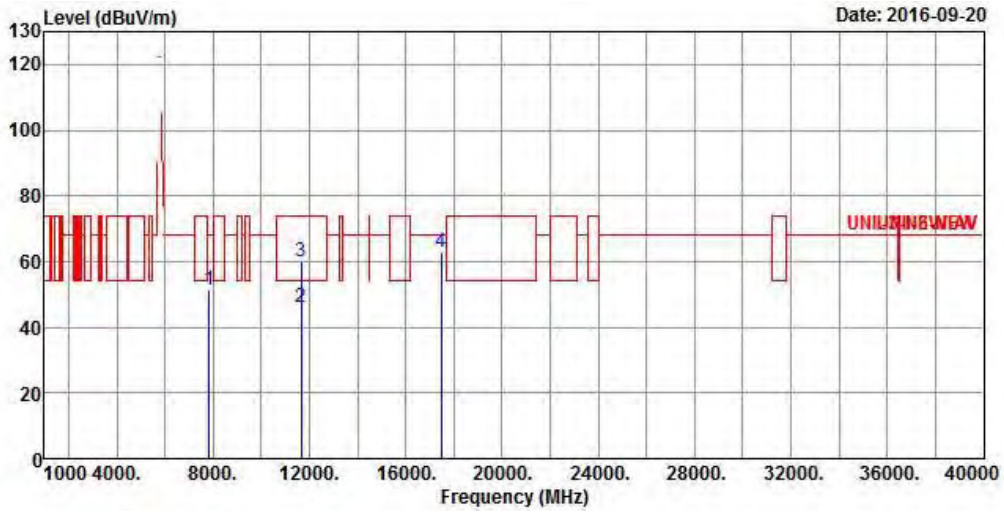
Transmitter Radiated Unwanted Emissions	
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-4 (5825MHz) + 667kHz
Polarization	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8380.0000	37.96	-16.04	54.00	30.47	36.80	5.78	35.09	Average
2	8380.0000	50.82	-23.18	74.00	43.33	36.80	5.78	35.09	Peak
3	11650.000	48.26	-5.74	54.00	36.30	39.74	6.87	34.65	Average
4	11650.000	60.14	-13.86	74.00	48.18	39.74	6.87	34.65	Peak
5	17475.000	63.85	-4.35	68.20	47.60	41.70	8.50	33.95	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Transmitter Radiated Unwanted Emissions	
Operating Function	5GHz WiFi 2TX 11ac20M U-NII-4 (5825MHz) + 667kHz
Polarization	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7830.0000	51.40	-16.80	68.20	44.10	36.83	5.58	35.11	Peak
2	11650.000	46.06	-7.94	54.00	34.10	39.74	6.87	34.65	Average
3	11650.000	59.79	-14.21	74.00	47.83	39.74	6.87	34.65	Peak
4	17475.000	62.83	-5.37	68.20	46.58	41.70	8.50	33.95	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

2 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSP 40	100593	9KHz~40GHz	19/10/2015	18/10/2016
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	*03CH02-HY*	*30MHz ~ 1GHz 3m*	03/06/2016	02/06/2017
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz 3m	03/06/2016	02/06/2017
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	01/07/2016	30/06/2017
Amplifier	Agilent	8449B	3008A02602	1GHz ~ 26.5GHz	04/11/2015	03/11/2016
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 01543	1GHz ~ 18GHz	22/04/2016	21/04/2017
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	18GHz ~ 40GHz	29/01/2016	28/01/2017
Bilog Antenna	SCHAFFNER	CBL 6112B	2723	30MHz ~ 1GHz	05/10/2015	04/10/2016