

6.7 RADIATED UNDESIABLE EMISSION

6.7.1 LIMIT

 According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

2. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBµV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

FCC ID: ZVAOH00004 Page 146 / 261
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

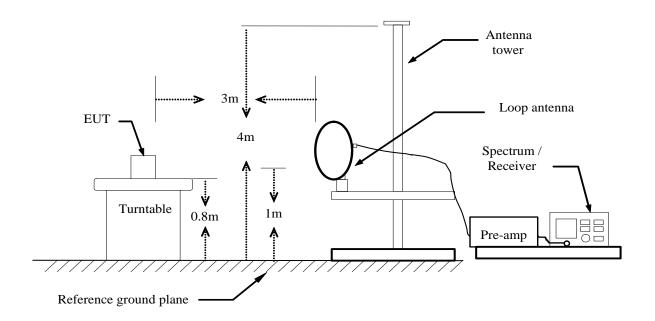
6.7.2 TEST INSTRUMENTS

	Radiated I	Emission Test	Site 966(2)		
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	02/21/2016	02/20/2017
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017
Amplifier	EMEC	EM330	060661	03/18/2016	03/17/2017
High Noise Amplifier	Agilent	8449B	3008A01838	02/21/2016	02/20/2017
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2016	02/27/2017
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2016	02/20/2017
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2016	02/27/2017
Loop Antenna	COM-POWER	AL-130	121044	09/25/2016	09/24/2017
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	СТ	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2016	02/20/2017
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAD		LZ-RF / CCS	S-SZ-3A2	

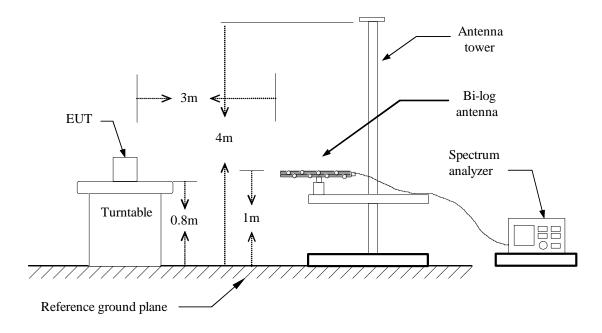
Report No.: C160621Z01-RP1-4

6.7.3 TEST CONFIGURATION

Below 30MHz

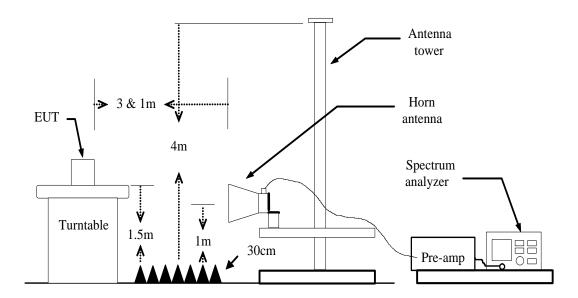


Below 1 GHz



Report No.: C160621Z01-RP1-4

Above 1 GHz



For the actual test configuration, please refer to the related item – Photographs of the TEST CONFIGURATION.

FCC ID: ZVAOH00004 Page 148 / 261
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6.7.4 MEASURING SETTING

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted	1MHz / 1MHz for Peak, 1 MHz / 10Hz for
band)	Average
RB / VB (Emission in non-restricted	1MHz / 1MHz for Peak, 1 MHz / 10Hz for
band)	Average

Report No.: C160621Z01-RP1-4

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP/AVG
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP/AVG
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

6.7.5TEST PROCEDURE

1) Sequence of testing 9 kHz to 30 MHz

Setup:

- --- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- --- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- --- If the EUT is a floor standing device, it is placed on the ground.
- --- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- --- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- --- The measurement distance is 3 meter.
- --- The EUT was set into operation.

Pre measurement:

- --- The turntable rotates from 0° to 315° using 45° steps.
- --- The antenna height is 0.8 meter.
- --- At each turntable position the analyzer sweeps with peak detection to find the

FCC ID: ZVAOH00004 Page 149 / 261

maximum of all emissions

Final measurement:

- --- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).
- --- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.

Report No.: C160621Z01-RP1-4

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz

Setup:

- --- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- --- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- --- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- --- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- --- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- --- The measurement distance is 3 meter.
- --- The EUT was set into operation.

Pre measurement:

- --- The turntable rotates from 0° to 315° using 45° steps.
- --- The antenna is polarized vertical and horizontal.
- --- The antenna height changes from 1 to 3 meter.
- --- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

FCC ID: ZVAOH00004 Page 150 / 261

Final measurement:

- --- The final measurement will be performed with minimum the six highest peaks.
- --- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter.

Report No.: C160621Z01-RP1-4

- --- The final measurement will be done with QP detector with an EMI receiver.
- --- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1 GHz to 18 GHz

Setup:

- --- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- --- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- --- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- --- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- --- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- --- The measurement distance is 3 meter.
- --- The EUT was set into operation.

Pre measurement:

- --- The turntable rotates from 0° to 315° using 45° steps.
- --- The antenna is polarized vertical and horizontal.
- --- The antenna height scan range is 1 meter to 2.5 meter.
- --- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

FCC ID: ZVAOH00004 Page 151 / 261

Final measurement:

- --- The final measurement will be performed with minimum the six highest peaks.
- --- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

Report No.: C160621Z01-RP1-4

- --- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- --- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18 GHz Setup:

- --- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- --- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- --- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- --- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- --- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- --- The measurement distance is 1 meter.
- --- The EUT was set into operation.

Pre measurement:

--- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

- --- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
- --- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

FCC ID: ZVAOH00004 Page 152 / 261

6.7.6 DATA SAPLE

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXX.XXXX	36.37	-12.20	24.17	40.00	-15.83	V	QP

Report No.: C160621Z01-RP1-4

Frequency (MHz) = Emission frequency in MHz

Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correct Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)

Q.P. = Quasi-peak Reading

Above 1GHz

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXXX.XXXX	62.09	-11.42	50.67	74.00	-23.33	V	Peak
XXXX.XXXX	49.78	-11.42	38.36	54.00	-15.64	V	AVG

Frequency (MHz) = Emission frequency in MHz

Reading (dBuV) = Uncorrected Analyzer / Receiver reading Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)

Peak = Peak Reading AVG = Average Reading

Calculation Formula

Margin (dB) = Result (dBuV/m) – Limits (dBuV/m) Result (dBuV/m) = Reading (dBuV) + Correction Factor

FCC ID: ZVAOH00004 Page 153 / 261

6.7.7 TEST RESULTS

Below 1 GHz

Test Mode: TX / IEEE 802.11a / 5180MHz /(CH Low)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 31, 2016

Report No.: C160621Z01-RP1-4

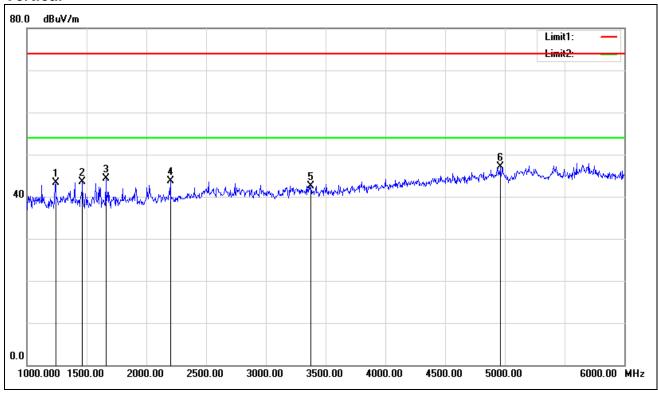
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
37.7600	48.35	-15.48	32.87	40.00	-7.13	V	QP
103.7200	43.94	-22.99	20.95	43.50	-22.55	V	QP
197.8100	49.47	-22.76	26.71	43.50	-16.79	V	QP
457.7700	44.30	-15.24	29.06	46.00	-16.94	V	QP
545.0700	42.08	-13.19	28.89	46.00	-17.11	V	QP
570.2900	41.31	-13.02	28.29	46.00	-17.71	V	QP
37.7600	48.90	-15.48	33.42	40.00	-6.58	Н	QP
197.8100	56.19	-22.76	33.43	43.50	-10.07	Н	QP
332.6400	43.81	-18.33	25.48	46.00	-20.52	Н	QP
405.3900	41.80	-15.83	25.97	46.00	-20.03	Н	QP
476.2000	42.08	-14.50	27.58	46.00	-18.42	Н	QP
545.0700	39.75	-13.19	26.56	46.00	-19.44	Н	QP

Pre-scan all mode and recorded the worst case results in this report (802.11a (Low Mid)). **Remark:**

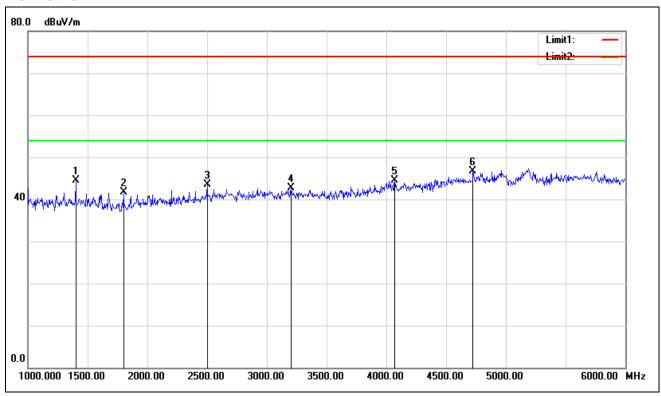
- 1. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz)
- 2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.
- 3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Quasi-peak limit (dBuV/m).

FCC ID: ZVAOH00004 Page 154 / 261

Vertical



Horizontal



Above 1 GHz 1GHz~6GHz

Test Mode: TX / IEEE 802.11a / 5180MHz /(CH Low)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1240.000	51.00	-7.64	43.36	74.00	-30.64	V	peak
1465.000	50.54	-6.94	43.60	74.00	-30.40	V	peak
1660.000	50.82	-6.57	44.25	74.00	-29.75	V	peak
2200.000	47.61	-3.90	43.71	74.00	-30.29	V	peak
3375.000	43.28	-0.73	42.55	74.00	-31.45	V	peak
4960.000	42.16	4.85	47.01	74.00	-26.99	V	peak
1400.000	51.66	-7.06	44.60	74.00	-29.40	Н	Peak
1800.000	47.88	-6.27	41.61	74.00	-32.39	Н	Peak
2500.000	45.84	-2.26	43.58	74.00	-30.42	Н	Peak
3200.000	43.65	-1.02	42.63	74.00	-31.37	Н	peak
4070.000	42.60	1.84	44.44	74.00	-29.56	Н	peak
4725.000	42.55	4.08	46.63	74.00	-27.37	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 156 / 261



Compliance Certification Services (Shenzhen) Inc.

Report No.: C160621Z01-RP1-4

Above 6GHz

Antenna 0

Test Mode: TX / IEEE 802.11a / 5180MHz /(CH Low)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.72	9.17	40.89	74.00	-33.11	V	peak
8376.000	31.74	9.44	41.18	74.00	-32.82	V	peak
10776.000	29.47	14.39	43.86	74.00	-30.14	V	peak
11844.000	30.44	14.71	45.15	74.00	-28.85	V	peak
12996.000	28.97	17.94	46.91	74.00	-27.09	V	peak
15540.000	34.68	18.70	53.38	74.00	-20.62	V	peak
15540.000	31.44	18.70	50.14	54.00	-3.86	V	AVG
8352.000	31.58	9.46	41.04	74.00	-32.96	Н	Peak
9612.000	30.77	10.86	41.63	74.00	-32.37	Н	Peak
10764.000	29.21	14.35	43.56	74.00	-30.44	Н	Peak
11820.000	29.97	14.72	44.69	74.00	-29.31	Н	peak
13008.000	28.75	17.97	46.72	74.00	-27.28	Н	peak
15540.000	31.26	18.70	49.96	74.00	-24.04	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 157 / 261



Test Mode: TX / IEEE 802.11a / 5200MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7728.000	31.14	9.12	40.26	74.00	-33.74	V	peak
8364.000	31.40	9.45	40.85	74.00	-33.15	V	peak
11316.000	29.74	14.94	44.68	74.00	-29.32	V	peak
12960.000	28.87	17.82	46.69	74.00	-27.31	V	peak
14196.000	28.17	20.69	48.86	74.00	-25.14	V	peak
15600.000	34.23	18.43	52.66	74.00	-21.34	V	peak
15600.000	30.29	18.43	48.72	54.00	-5.28	V	AVG
7764.000	31.36	9.19	40.55	74.00	-33.45	Н	Peak
8376.000	31.43	9.44	40.87	74.00	-33.13	Н	Peak
10296.000	30.32	12.90	43.22	74.00	-30.78	Н	Peak
11208.000	29.87	14.99	44.86	74.00	-29.14	Н	peak
12960.000	28.98	17.82	46.80	74.00	-27.20	Н	peak
15600.000	32.46	18.43	50.89	74.00	-23.11	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 158 / 261



Test Mode: TX / IEEE 802.11a / 5240MHz /(CH High)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7740.000	31.63	9.14	40.77	74.00	-33.23	V	peak
8352.000	31.72	9.46	41.18	74.00	-32.82	V	peak
10944.000	29.89	14.91	44.80	74.00	-29.20	V	peak
13548.000	27.85	19.39	47.24	74.00	-26.76	V	peak
14280.000	28.07	20.74	48.81	74.00	-25.19	V	peak
15720.000	34.08	17.88	51.96	74.00	-22.04	V	peak
7908.000	31.35	9.47	40.82	74.00	-33.18	Н	Peak
8448.000	31.56	9.40	40.96	74.00	-33.04	Н	Peak
11196.000	29.64	14.99	44.63	74.00	-29.37	Н	Peak
12984.000	28.57	17.90	46.47	74.00	-27.53	Н	peak
14316.000	28.56	20.76	49.32	74.00	-24.68	Н	peak
15720.000	32.55	17.88	50.43	74.00	-23.57	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11a / 5260MHz /(CH Low)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.55	7.64	39.19	74.00	-34.81	V	peak
7752.000	31.40	9.17	40.57	74.00	-33.43	V	peak
8376.000	31.44	9.44	40.88	74.00	-33.12	V	peak
9192.000	31.47	9.65	41.12	74.00	-32.88	V	peak
10164.000	31.16	12.49	43.65	74.00	-30.35	V	peak
11040.000	30.18	15.06	45.24	74.00	-28.76	V	peak
7188.000	30.91	8.07	38.98	74.00	-35.02	Н	Peak
7764.000	31.53	9.19	40.72	74.00	-33.28	Н	Peak
8340.000	31.45	9.46	40.91	74.00	-33.09	Н	Peak
9156.000	31.64	9.55	41.19	74.00	-32.81	Н	peak
10788.000	30.01	14.42	44.43	74.00	-29.57	Н	peak
11292.000	30.27	14.95	45.22	74.00	-28.78	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 160 / 261



Test Mode: TX / IEEE 802.11a / 5300MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.40	7.62	39.02	74.00	-34.98	V	peak
7740.000	31.48	9.14	40.62	74.00	-33.38	V	peak
8364.000	31.41	9.45	40.86	74.00	-33.14	V	peak
9360.000	31.07	10.14	41.21	74.00	-32.79	V	peak
9936.000	30.57	11.80	42.37	74.00	-31.63	V	peak
10512.000	30.58	13.57	44.15	74.00	-29.85	V	peak
6936.000	31.61	7.60	39.21	74.00	-34.79	Н	Peak
7740.000	31.34	9.14	40.48	74.00	-33.52	Н	Peak
8364.000	31.66	9.45	41.11	74.00	-32.89	Н	Peak
9852.000	30.55	11.55	42.10	74.00	-31.90	Н	peak
10524.000	30.78	13.60	44.38	74.00	-29.62	Н	peak
10944.000	30.00	14.91	44.91	74.00	-29.09	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 161 / 261



Test Mode: TX / IEEE 802.11a / 5320MHz /(CH High)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6936.000	31.33	7.60	38.93	74.00	-35.07	V	peak
7644.000	30.89	8.96	39.85	74.00	-34.15	V	peak
8376.000	31.56	9.44	41.00	74.00	-33.00	V	peak
9240.000	30.84	9.79	40.63	74.00	-33.37	V	peak
10176.000	30.71	12.53	43.24	74.00	-30.76	V	peak
11304.000	30.21	14.95	45.16	74.00	-28.84	V	peak
6972.000	31.23	7.65	38.88	74.00	-35.12	Н	Peak
7752.000	31.56	9.17	40.73	74.00	-33.27	Н	Peak
8352.000	31.61	9.46	41.07	74.00	-32.93	Н	Peak
9852.000	30.64	11.55	42.19	74.00	-31.81	Н	peak
10512.000	30.51	13.57	44.08	74.00	-29.92	Н	peak
11304.000	30.23	14.95	45.18	74.00	-28.82	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 162 / 261



Test Mode: TX / IEEE 802.11a / 5500MHz /(CH Low)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6972.000	31.56	7.65	39.21	74.00	-34.79	V	peak
7740.000	31.17	9.14	40.31	74.00	-33.69	V	peak
8364.000	31.95	9.45	41.40	74.00	-32.60	V	peak
9312.000	31.47	10.00	41.47	74.00	-32.53	V	peak
10068.000	31.62	12.19	43.81	74.00	-30.19	V	peak
11052.000	30.14	15.06	45.20	74.00	-28.80	V	peak
6948.000	31.65	7.62	39.27	74.00	-34.73	Н	Peak
7764.000	31.34	9.19	40.53	74.00	-33.47	Н	Peak
8364.000	31.48	9.45	40.93	74.00	-33.07	Н	Peak
9156.000	31.47	9.55	41.02	74.00	-32.98	Н	peak
9624.000	30.70	10.90	41.60	74.00	-32.40	Н	peak
10512.000	30.70	13.57	44.27	74.00	-29.73	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 163 / 261



Test Mode: TX / IEEE 802.11a / 5580MHz /(CH Mid)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6936.000	31.28	7.60	38.88	74.00	-35.12	V	peak
7752.000	31.52	9.17	40.69	74.00	-33.31	V	peak
8352.000	31.50	9.46	40.96	74.00	-33.04	V	peak
9360.000	31.33	10.14	41.47	74.00	-32.53	V	peak
10296.000	31.14	12.90	44.04	74.00	-29.96	V	peak
11028.000	30.01	15.07	45.08	74.00	-28.92	V	peak
6924.000	31.51	7.58	39.09	74.00	-34.91	Н	Peak
7752.000	31.52	9.17	40.69	74.00	-33.31	Н	Peak
8436.000	31.54	9.41	40.95	74.00	-33.05	Н	peak
9972.000	31.21	11.90	43.11	74.00	-30.89	Н	peak
10848.000	29.80	14.61	44.41	74.00	-29.59	Н	peak
11832.000	30.99	14.71	45.70	74.00	-28.30	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11a / 5700MHz /(CH High)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.54	7.64	39.18	74.00	-34.82	V	peak
7752.000	31.20	9.17	40.37	74.00	-33.63	V	peak
8340.000	31.42	9.46	40.88	74.00	-33.12	V	peak
9348.000	31.38	10.10	41.48	74.00	-32.52	V	peak
10512.000	30.39	13.57	43.96	74.00	-30.04	V	peak
10872.000	30.98	14.68	45.66	74.00	-28.34	V	peak
6912.000	31.49	7.56	39.05	74.00	-34.95	Н	Peak
7752.000	31.29	9.17	40.46	74.00	-33.54	Н	Peak
8364.000	31.52	9.45	40.97	74.00	-33.03	Н	Peak
10512.000	30.68	13.57	44.25	74.00	-29.75	Н	peak
11052.000	30.18	15.06	45.24	74.00	-28.76	Н	peak
11688.000	30.55	14.78	45.33	74.00	-28.67	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 165 / 261

Test Mode: TX / IEEE 802.11a / 5745MHz /(CH Low)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.25	9.19	40.44	74.00	-33.56	V	peak
8340.000	31.35	9.46	40.81	74.00	-33.19	V	peak
11016.000	29.94	15.07	45.01	74.00	-28.99	V	peak
11844.000	30.46	14.71	45.17	74.00	-28.83	V	peak
12912.000	29.14	17.66	46.80	74.00	-27.20	V	peak
14964.000	28.59	21.14	49.73	74.00	-24.27	V	peak
7752.000	31.44	9.17	40.61	74.00	-33.39	Н	Peak
8340.000	31.73	9.46	41.19	74.00	-32.81	Н	Peak
10512.000	30.06	13.57	43.63	74.00	-30.37	Н	Peak
11016.000	29.55	15.07	44.62	74.00	-29.38	Н	peak
12684.000	29.22	16.90	46.12	74.00	-27.88	Н	peak
14736.000	28.73	21.01	49.74	74.00	-24.26	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 166 / 261



Test Mode: TX / IEEE 802.11a / 5785MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8364.000	31.63	9.45	41.08	74.00	-32.92	V	peak
10296.000	30.83	12.90	43.73	74.00	-30.27	V	peak
11208.000	29.92	14.99	44.91	74.00	-29.09	V	peak
11844.000	30.33	14.71	45.04	74.00	-28.96	V	peak
13008.000	28.76	17.97	46.73	74.00	-27.27	V	peak
14244.000	28.57	20.72	49.29	74.00	-24.71	V	peak
7740.000	31.50	9.14	40.64	74.00	-33.36	Н	Peak
8352.000	31.65	9.46	41.11	74.00	-32.89	Н	Peak
10500.000	30.31	13.53	43.84	74.00	-30.16	Н	Peak
11052.000	29.75	15.06	44.81	74.00	-29.19	Н	peak
12984.000	29.01	17.90	46.91	74.00	-27.09	Н	peak
14964.000	28.90	21.14	50.04	74.00	-23.96	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 167 / 261



Test Mode: TX / IEEE 802.11a / 5825MHz /(CH High)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.62	9.19	40.81	74.00	-33.19	V	peak
8376.000	31.57	9.44	41.01	74.00	-32.99	V	peak
10932.000	29.78	14.87	44.65	74.00	-29.35	V	peak
11832.000	30.00	14.71	44.71	74.00	-29.29	V	peak
13008.000	29.15	17.97	47.12	74.00	-26.88	V	peak
14244.000	28.33	20.72	49.05	74.00	-24.95	V	peak
7752.000	31.39	9.17	40.56	74.00	-33.44	Н	Peak
8328.000	31.68	9.47	41.15	74.00	-32.85	Н	Peak
10524.000	29.99	13.60	43.59	74.00	-30.41	Н	Peak
11316.000	30.11	14.94	45.05	74.00	-28.95	Н	peak
12984.000	28.83	17.90	46.73	74.00	-27.27	Н	peak
14088.000	28.36	20.63	48.99	74.00	-25.01	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 168 / 261

Antenna 1

Test Mode: TX / IEEE 802.11a / 5180MHz /(CH Low)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.49	9.17	40.66	74.00	-33.34	V	peak
8364.000	31.78	9.45	41.23	74.00	-32.77	V	peak
11040.000	29.74	15.06	44.80	74.00	-29.20	V	peak
12984.000	29.04	17.90	46.94	74.00	-27.06	V	peak
13596.000	28.23	19.52	47.75	74.00	-26.25	V	peak
15540.000	32.19	18.70	50.89	74.00	-23.11	V	peak
7740.000	31.67	9.14	40.81	74.00	-33.19	Н	Peak
8364.000	31.66	9.45	41.11	74.00	-32.89	Н	Peak
10296.000	30.46	12.90	43.36	74.00	-30.64	Н	Peak
11052.000	29.63	15.06	44.69	74.00	-29.31	Н	peak
13032.000	29.05	18.03	47.08	74.00	-26.92	Н	peak
14472.000	28.12	20.85	48.97	74.00	-25.03	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 169 / 261



Test Mode: TX / IEEE 802.11a / 5200MHz /(CH Mid)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7788.000	31.39	9.24	40.63	74.00	-33.37	V	peak
8364.000	31.44	9.45	40.89	74.00	-33.11	V	peak
10944.000	29.63	14.91	44.54	74.00	-29.46	V	peak
11844.000	30.35	14.71	45.06	74.00	-28.94	V	peak
13008.000	29.19	17.97	47.16	74.00	-26.84	V	peak
15600.000	34.04	18.43	52.47	74.00	-21.53	V	peak
15600.000	29.99	18.43	48.42	54.00	-5.58	V	AVG
7788.000	31.68	9.24	40.92	74.00	-33.08	Н	Peak
8352.000	31.46	9.46	40.92	74.00	-33.08	Н	Peak
10272.000	30.51	12.82	43.33	74.00	-30.67	Н	Peak
11052.000	29.65	15.06	44.71	74.00	-29.29	Н	peak
12912.000	28.96	17.66	46.62	74.00	-27.38	Н	peak
14244.000	28.17	20.72	48.89	74.00	-25.11	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 170 / 261



Test Mode: TX / IEEE 802.11a / 5240MHz /(CH High)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8352.000	31.92	9.46	41.38	74.00	-32.62	V	peak
10476.000	31.21	13.46	44.67	74.00	-29.33	V	peak
10944.000	29.84	14.91	44.75	74.00	-29.25	V	peak
12960.000	28.96	17.82	46.78	74.00	-27.22	V	peak
14244.000	28.37	20.72	49.09	74.00	-24.91	V	peak
15720.000	35.21	17.88	53.09	74.00	-20.91	V	peak
15720.000	31.77	17.88	49.65	54.00	-4.35	V	AVG
7752.000	31.55	9.17	40.72	74.00	-33.28	Н	Peak
8376.000	31.64	9.44	41.08	74.00	-32.92	Н	Peak
10896.000	29.53	14.76	44.29	74.00	-29.71	Н	Peak
12912.000	29.02	17.66	46.68	74.00	-27.32	Н	peak
14088.000	27.80	20.63	48.43	74.00	-25.57	Н	peak
15000.000	28.48	21.16	49.64	74.00	-24.36	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 171 / 261



Test Mode: TX / IEEE 802.11a / 5260MHz /(CH Low)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6924.000	31.66	7.58	39.24	74.00	-34.76	V	peak
7764.000	31.43	9.19	40.62	74.00	-33.38	V	peak
8352.000	31.75	9.46	41.21	74.00	-32.79	V	peak
9852.000	30.78	11.55	42.33	74.00	-31.67	V	peak
10908.000	29.89	14.79	44.68	74.00	-29.32	V	peak
11328.000	30.61	14.94	45.55	74.00	-28.45	V	peak
6972.000	31.69	7.65	39.34	74.00	-34.66	Н	Peak
7776.000	31.26	9.21	40.47	74.00	-33.53	Н	Peak
8328.000	31.50	9.47	40.97	74.00	-33.03	Н	Peak
10488.000	30.41	13.49	43.90	74.00	-30.10	Н	peak
10884.000	30.14	14.72	44.86	74.00	-29.14	Н	peak
11304.000	30.65	14.95	45.60	74.00	-28.40	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 172 / 261



Test Mode: TX / IEEE 802.11a / 5300MHz /(CH Mid)

Ambient temperature: 24°C Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6984.000	31.33	7.67	39.00	74.00	-35.00	V	peak
7728.000	31.38	9.12	40.50	74.00	-33.50	V	peak
8460.000	31.40	9.40	40.80	74.00	-33.20	V	peak
9360.000	30.99	10.14	41.13	74.00	-32.87	V	peak
10164.000	31.08	12.49	43.57	74.00	-30.43	V	peak
10872.000	30.13	14.68	44.81	74.00	-29.19	V	peak
6960.000	31.34	7.64	38.98	74.00	-35.02	Н	Peak
7740.000	31.60	9.14	40.74	74.00	-33.26	Н	Peak
8496.000	31.61	9.38	40.99	74.00	-33.01	Н	Peak
10044.000	31.43	12.12	43.55	74.00	-30.45	Н	peak
10860.000	30.37	14.65	45.02	74.00	-28.98	Н	peak
11844.000	30.89	14.71	45.60	74.00	-28.40	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 173 / 261



Test Mode: TX / IEEE 802.11a / 5320MHz /(CH High)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6984.000	31.35	7.67	39.02	74.00	-34.98	V	peak
7752.000	31.28	9.17	40.45	74.00	-33.55	V	peak
8364.000	31.74	9.45	41.19	74.00	-32.81	V	peak
9396.000	31.07	10.24	41.31	74.00	-32.69	V	peak
10176.000	30.74	12.53	43.27	74.00	-30.73	V	peak
10512.000	30.59	13.57	44.16	74.00	-29.84	V	peak
7200.000	31.00	8.09	39.09	74.00	-34.91	Н	Peak
7776.000	31.19	9.21	40.40	74.00	-33.60	Н	Peak
8460.000	31.44	9.40	40.84	74.00	-33.16	Н	Peak
9156.000	31.54	9.55	41.09	74.00	-32.91	Н	peak
10164.000	31.03	12.49	43.52	74.00	-30.48	Н	peak
10860.000	30.28	14.65	44.93	74.00	-29.07	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 174 / 261



Test Mode: TX / IEEE 802.11a / 5500MHz /(CH Low)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.41	7.62	39.03	74.00	-34.97	V	peak
7788.000	31.26	9.24	40.50	74.00	-33.50	V	peak
8388.000	31.53	9.44	40.97	74.00	-33.03	V	peak
9612.000	30.75	10.86	41.61	74.00	-32.39	V	peak
10512.000	30.78	13.57	44.35	74.00	-29.65	V	peak
10776.000	30.02	14.39	44.41	74.00	-29.59	V	peak
6960.000	31.42	7.64	39.06	74.00	-34.94	Н	Peak
7764.000	31.24	9.19	40.43	74.00	-33.57	Н	Peak
8364.000	31.71	9.45	41.16	74.00	-32.84	Н	Peak
9720.000	30.49	11.17	41.66	74.00	-32.34	Н	peak
10140.000	31.56	12.41	43.97	74.00	-30.03	Н	peak
10968.000	29.86	14.98	44.84	74.00	-29.16	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 175 / 261



Test Mode: TX / IEEE 802.11a / 5580MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.56	7.64	39.20	74.00	-34.80	V	peak
7740.000	31.60	9.14	40.74	74.00	-33.26	V	peak
8448.000	31.83	9.40	41.23	74.00	-32.77	V	peak
9624.000	30.58	10.90	41.48	74.00	-32.52	V	peak
10020.000	31.66	12.04	43.70	74.00	-30.30	V	peak
11004.000	29.84	15.08	44.92	74.00	-29.08	V	peak
6960.000	31.81	7.64	39.45	74.00	-34.55	Н	Peak
7740.000	31.40	9.14	40.54	74.00	-33.46	Н	Peak
8304.000	31.46	9.48	40.94	74.00	-33.06	Н	Peak
10080.000	31.23	12.23	43.46	74.00	-30.54	Н	peak
11184.000	30.45	15.00	45.45	74.00	-28.55	Н	peak
12360.000	29.90	15.83	45.73	74.00	-28.27	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 176 / 261



Test Mode: TX / IEEE 802.11a / 5700MHz /(CH High)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.43	7.64	39.07	74.00	-34.93	V	peak
7764.000	31.31	9.19	40.50	74.00	-33.50	V	peak
8436.000	31.78	9.41	41.19	74.00	-32.81	V	peak
9612.000	30.66	10.86	41.52	74.00	-32.48	V	peak
10164.000	30.80	12.49	43.29	74.00	-30.71	V	peak
11052.000	29.88	15.06	44.94	74.00	-29.06	V	peak
7740.000	31.35	9.14	40.49	74.00	-33.51	Н	Peak
8364.000	31.61	9.45	41.06	74.00	-32.94	Н	Peak
9384.000	30.70	10.21	40.91	74.00	-33.09	Н	Peak
10056.000	31.45	12.15	43.60	74.00	-30.40	Н	peak
10512.000	30.39	13.57	43.96	74.00	-30.04	Н	peak
11352.000	30.22	14.93	45.15	74.00	-28.85	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in freq
- 3. uency above 1000MHz were made with an instrument using peak/average detector mode.
- 4. Average test would be performed if the peak result were greater than the average limit.
- 5. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 6. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 7. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 177 / 261



Test Mode: TX / IEEE 802.11a / 5745MHz /(CH Low)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.31	9.19	40.50	74.00	-33.50	V	peak
8364.000	31.86	9.45	41.31	74.00	-32.69	V	peak
11064.000	29.49	15.05	44.54	74.00	-29.46	V	peak
11856.000	30.39	14.70	45.09	74.00	-28.91	V	peak
12768.000	29.65	17.18	46.83	74.00	-27.17	V	peak
14052.000	27.82	20.61	48.43	74.00	-25.57	V	peak
7728.000	31.15	9.12	40.27	74.00	-33.73	Н	Peak
8364.000	31.51	9.45	40.96	74.00	-33.04	Н	Peak
10296.000	30.23	12.90	43.13	74.00	-30.87	Н	Peak
11088.000	29.56	15.04	44.60	74.00	-29.40	Н	peak
12960.000	28.96	17.82	46.78	74.00	-27.22	Н	peak
13944.000	27.58	20.43	48.01	74.00	-25.99	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 178 / 261



Test Mode: TX / IEEE 802.11a / 5785MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.51	9.19	40.70	74.00	-33.30	V	peak
8424.000	31.61	9.42	41.03	74.00	-32.97	V	peak
10272.000	30.39	12.82	43.21	74.00	-30.79	V	peak
11124.000	29.55	15.03	44.58	74.00	-29.42	V	peak
11844.000	30.25	14.71	44.96	74.00	-29.04	V	peak
13008.000	28.91	17.97	46.88	74.00	-27.12	V	peak
8412.000	31.47	9.42	40.89	74.00	-33.11	Н	Peak
9360.000	30.56	10.14	40.70	74.00	-33.30	Н	Peak
10944.000	29.68	14.91	44.59	74.00	-29.41	Н	Peak
12456.000	28.88	16.15	45.03	74.00	-28.97	Н	peak
12924.000	29.12	17.70	46.82	74.00	-27.18	Н	peak
14316.000	28.13	20.76	48.89	74.00	-25.11	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 179 / 261



Test Mode: TX / IEEE 802.11a / 5825MHz /(CH High)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7788.000	31.38	9.24	40.62	74.00	-33.38	V	peak
8352.000	31.33	9.46	40.79	74.00	-33.21	V	peak
10908.000	29.52	14.79	44.31	74.00	-29.69	V	peak
11844.000	29.89	14.71	44.60	74.00	-29.40	V	peak
12936.000	28.97	17.74	46.71	74.00	-27.29	V	peak
13944.000	27.75	20.43	48.18	74.00	-25.82	V	peak
7752.000	31.39	9.17	40.56	74.00	-33.44	Н	Peak
8400.000	31.51	9.43	40.94	74.00	-33.06	Н	Peak
10512.000	30.15	13.57	43.72	74.00	-30.28	Н	Peak
11304.000	29.86	14.95	44.81	74.00	-29.19	Н	peak
12960.000	29.19	17.82	47.01	74.00	-26.99	Н	peak
14280.000	28.36	20.74	49.10	74.00	-24.90	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 180 / 261

Combine with Antenna 0 and Antenna 1 and Antenna 2

Test Mode: TX / IEEE 802.11n HT 20 MHz / 5180MHz /(CH Low) Tested by: Eve Wang Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8364.000	31.59	9.45	41.04	74.00	-32.96	V	peak
10368.000	31.19	13.12	44.31	74.00	-29.69	V	peak
11184.000	29.37	15.00	44.37	74.00	-29.63	V	peak
11820.000	30.06	14.72	44.78	74.00	-29.22	V	peak
12936.000	28.88	17.74	46.62	74.00	-27.38	V	peak
15540.000	31.73	18.70	50.43	74.00	-23.57	V	peak
7728.000	31.63	9.12	40.75	74.00	-33.25	Н	Peak
8328.000	31.80	9.47	41.27	74.00	-32.73	Н	Peak
10296.000	30.74	12.90	43.64	74.00	-30.36	Н	Peak
10980.000	29.67	15.02	44.69	74.00	-29.31	Н	peak
11844.000	30.26	14.71	44.97	74.00	-29.03	Н	peak
13008.000	28.83	17.97	46.80	74.00	-27.20	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range s
- 5. hown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 7. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 181 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5200MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.70	9.17	40.87	74.00	-33.13	V	peak
8340.000	31.83	9.46	41.29	74.00	-32.71	V	peak
10404.000	32.19	13.23	45.42	74.00	-28.58	V	peak
12000.000	30.17	14.64	44.81	74.00	-29.19	V	peak
12960.000	28.90	17.82	46.72	74.00	-27.28	V	peak
15600.000	32.53	18.43	50.96	74.00	-23.04	V	peak
6948.000	31.58	7.62	39.20	74.00	-34.80	Н	Peak
8364.000	31.56	9.45	41.01	74.00	-32.99	Н	Peak
10824.000	29.24	14.53	43.77	74.00	-30.23	Н	Peak
11064.000	29.62	15.05	44.67	74.00	-29.33	Н	peak
12960.000	29.37	17.82	47.19	74.00	-26.81	Н	peak
15600.000	32.64	18.43	51.07	74.00	-22.93	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 182 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5240MHz /(CH High)

Tested by: Ad Gan

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7716.000	31.53	9.10	40.63	74.00	-33.37	V	peak
8352.000	31.36	9.46	40.82	74.00	-33.18	V	peak
10476.000	31.82	13.46	45.28	74.00	-28.72	V	peak
13008.000	29.29	17.97	47.26	74.00	-26.74	V	peak
14316.000	28.36	20.76	49.12	74.00	-24.88	V	peak
15720.000	36.72	17.88	54.60	74.00	-19.40	V	peak
15720.000	32.99	17.88	50.87	54.00	-3.13	V	AVG
7752.000	31.31	9.17	40.48	74.00	-33.52	Н	Peak
8376.000	31.58	9.44	41.02	74.00	-32.98	Н	Peak
9372.000	30.61	10.17	40.78	74.00	-33.22	Н	Peak
10488.000	30.37	13.49	43.86	74.00	-30.14	Н	peak
11844.000	30.45	14.71	45.16	74.00	-28.84	Н	peak
15720.000	34.20	17.88	52.08	74.00	-21.92	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 183 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5260MHz /(CH Low)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.43	7.64	39.07	74.00	-34.93	V	peak
7764.000	31.38	9.19	40.57	74.00	-33.43	V	peak
8364.000	31.42	9.45	40.87	74.00	-33.13	V	peak
9840.000	30.87	11.52	42.39	74.00	-31.61	V	peak
10512.000	30.65	13.57	44.22	74.00	-29.78	V	peak
11328.000	30.24	14.94	45.18	74.00	-28.82	V	peak
6936.000	31.50	7.60	39.10	74.00	-34.90	Н	Peak
7728.000	31.92	9.12	41.04	74.00	-32.96	Н	Peak
8364.000	31.52	9.45	40.97	74.00	-33.03	Н	Peak
9384.000	30.83	10.21	41.04	74.00	-32.96	Н	peak
10056.000	31.20	12.15	43.35	74.00	-30.65	Н	peak
11064.000	30.30	15.05	45.35	74.00	-28.65	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 184 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5300MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.42	7.64	39.06	74.00	-34.94	V	peak
7728.000	31.64	9.12	40.76	74.00	-33.24	V	peak
8412.000	31.60	9.42	41.02	74.00	-32.98	V	peak
10260.000	30.75	12.79	43.54	74.00	-30.46	V	peak
10812.000	30.41	14.50	44.91	74.00	-29.09	V	peak
11304.000	30.22	14.95	45.17	74.00	-28.83	V	peak
6948.000	31.38	7.62	39.00	74.00	-35.00	Н	Peak
7740.000	31.61	9.14	40.75	74.00	-33.25	Н	Peak
8352.000	31.59	9.46	41.05	74.00	-32.95	Н	Peak
10128.000	31.28	12.38	43.66	74.00	-30.34	Н	peak
11052.000	29.96	15.06	45.02	74.00	-28.98	Н	peak
11832.000	30.84	14.71	45.55	74.00	-28.45	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 185 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5320MHz /(CH High) Tested by: Eve Wang Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6984.000	31.44	7.67	39.11	74.00	-34.89	V	peak
7728.000	31.58	9.12	40.70	74.00	-33.30	V	peak
8556.000	31.94	9.34	41.28	74.00	-32.72	V	peak
9612.000	31.20	10.86	42.06	74.00	-31.94	V	peak
10032.000	31.42	12.08	43.50	74.00	-30.50	V	peak
11040.000	30.27	15.06	45.33	74.00	-28.67	V	peak
6960.000	31.79	7.64	39.43	74.00	-34.57	Н	Peak
7752.000	31.85	9.17	41.02	74.00	-32.98	Н	Peak
8364.000	31.80	9.45	41.25	74.00	-32.75	Н	Peak
9384.000	30.93	10.21	41.14	74.00	-32.86	Н	peak
10848.000	30.18	14.61	44.79	74.00	-29.21	Н	peak
11844.000	31.30	14.71	46.01	74.00	-27.99	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5500MHz /(CH Low) Tested by: Eve Wang

Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6972.000	31.39	7.65	39.04	74.00	-34.96	V	peak
7740.000	31.64	9.14	40.78	74.00	-33.22	V	peak
8352.000	31.60	9.46	41.06	74.00	-32.94	V	peak
10008.000	30.83	12.00	42.83	74.00	-31.17	V	peak
10500.000	30.49	13.53	44.02	74.00	-29.98	V	peak
11064.000	30.08	15.05	45.13	74.00	-28.87	V	peak
6948.000	31.43	7.62	39.05	74.00	-34.95	Н	Peak
7788.000	30.94	9.24	40.18	74.00	-33.82	Н	Peak
8496.000	31.57	9.38	40.95	74.00	-33.05	Н	Peak
9156.000	31.63	9.55	41.18	74.00	-32.82	Н	peak
10140.000	30.84	12.41	43.25	74.00	-30.75	Н	peak
10956.000	30.06	14.94	45.00	74.00	-29.00	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5580MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6972.000	31.32	7.65	38.97	74.00	-35.03	V	peak
7752.000	31.37	9.17	40.54	74.00	-33.46	V	peak
8364.000	31.59	9.45	41.04	74.00	-32.96	V	peak
10056.000	31.45	12.15	43.60	74.00	-30.40	V	peak
10512.000	30.62	13.57	44.19	74.00	-29.81	V	peak
11844.000	30.66	14.71	45.37	74.00	-28.63	V	peak
6972.000	31.31	7.65	38.96	74.00	-35.04	Н	Peak
7788.000	31.25	9.24	40.49	74.00	-33.51	Н	Peak
8364.000	31.23	9.45	40.68	74.00	-33.32	Н	Peak
9984.000	31.67	11.93	43.60	74.00	-30.40	Н	peak
10920.000	30.41	14.83	45.24	74.00	-28.76	Н	peak
11304.000	30.26	14.95	45.21	74.00	-28.79	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 188 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5700MHz /(CH High) Tested by: Eve Wang Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.69	7.64	39.33	74.00	-34.67	V	peak
7776.000	31.48	9.21	40.69	74.00	-33.31	V	peak
8364.000	31.59	9.45	41.04	74.00	-32.96	V	peak
10296.000	31.29	12.90	44.19	74.00	-29.81	V	peak
10980.000	29.87	15.02	44.89	74.00	-29.11	V	peak
11316.000	30.23	14.94	45.17	74.00	-28.83	V	peak
6960.000	31.49	7.64	39.13	74.00	-34.87	Н	Peak
7752.000	31.58	9.17	40.75	74.00	-33.25	Н	Peak
8364.000	31.81	9.45	41.26	74.00	-32.74	Н	Peak
10140.000	31.22	12.41	43.63	74.00	-30.37	Н	peak
11316.000	30.18	14.94	45.12	74.00	-28.88	Н	peak
11832.000	30.86	14.71	45.57	74.00	-28.43	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 189 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5745MHz /(CH Low) Tested by: Eve Wang

Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8496.000	31.90	9.38	41.28	74.00	-32.72	V	peak
11088.000	29.80	15.04	44.84	74.00	-29.16	V	peak
11844.000	30.77	14.71	45.48	74.00	-28.52	V	peak
12960.000	28.72	17.82	46.54	74.00	-27.46	V	peak
14880.000	28.28	21.09	49.37	74.00	-24.63	V	peak
17244.000	30.08	23.34	53.42	74.00	-20.58	V	peak
17244.000	27.14	23.34	50.48	54.00	-3.52	V	AVG
7704.000	31.29	9.07	40.36	74.00	-33.64	Н	Peak
8340.000	31.63	9.46	41.09	74.00	-32.91	Н	Peak
10968.000	29.66	14.98	44.64	74.00	-29.36	Н	Peak
11820.000	30.22	14.72	44.94	74.00	-29.06	Н	peak
12960.000	28.88	17.82	46.70	74.00	-27.30	Н	peak
14880.000	28.54	21.09	49.63	74.00	-24.37	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 190 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5785MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8352.000	31.56	9.46	41.02	74.00	-32.98	V	peak
10296.000	30.40	12.90	43.30	74.00	-30.70	V	peak
11064.000	29.67	15.05	44.72	74.00	-29.28	V	peak
11844.000	30.07	14.71	44.78	74.00	-29.22	V	peak
14952.000	28.80	21.13	49.93	74.00	-24.07	V	peak
17352.000	29.33	23.32	52.65	74.00	-21.35	V	peak
17352.000	26.55	23.32	49.87	54.00	-4.13	V	AVG
7740.000	31.37	9.14	40.51	74.00	-33.49	Н	Peak
8352.000	31.41	9.46	40.87	74.00	-33.13	Н	Peak
10284.000	30.34	12.86	43.20	74.00	-30.80	Н	Peak
11316.000	29.65	14.94	44.59	74.00	-29.41	Н	peak
12996.000	28.65	17.94	46.59	74.00	-27.41	Н	peak
15000.000	28.37	21.16	49.53	74.00	-24.47	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 191 / 261



Test Mode: TX / IEEE 802.11n HT 20 MHz / 5825MHz /(CH High) Tested by: Eve Wang Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.51	9.17	40.68	74.00	-33.32	V	peak
8376.000	31.66	9.44	41.10	74.00	-32.90	V	peak
10068.000	30.35	12.19	42.54	74.00	-31.46	V	peak
11040.000	29.57	15.06	44.63	74.00	-29.37	V	peak
11820.000	30.02	14.72	44.74	74.00	-29.26	V	peak
12984.000	29.37	17.90	47.27	74.00	-26.73	V	peak
7776.000	31.29	9.21	40.50	74.00	-33.50	Н	Peak
8364.000	31.90	9.45	41.35	74.00	-32.65	Н	Peak
10968.000	29.51	14.98	44.49	74.00	-29.51	Н	Peak
11856.000	30.40	14.70	45.10	74.00	-28.90	Н	peak
13524.000	27.87	19.33	47.20	74.00	-26.80	Н	peak
15012.000	28.14	21.11	49.25	74.00	-24.75	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Combine with Antenna 0 and Antenna 1 and Antenna 2

Test Mode: TX / IEEE 802.11n HT 40 MHz / 5190MHz /(CH Low) Tested by: Eve Wang Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.90	7.62	39.52	74.00	-34.48	V	peak
7752.000	31.30	9.17	40.47	74.00	-33.53	V	peak
8328.000	31.67	9.47	41.14	74.00	-32.86	V	peak
11040.000	29.80	15.06	44.86	74.00	-29.14	V	peak
11844.000	30.24	14.71	44.95	74.00	-29.05	V	peak
15576.000	32.86	18.54	51.40	74.00	-22.60	V	peak
7752.000	31.77	9.17	40.94	74.00	-33.06	Н	Peak
8376.000	31.44	9.44	40.88	74.00	-33.12	Н	Peak
10908.000	29.85	14.79	44.64	74.00	-29.36	Н	Peak
12960.000	29.68	17.82	47.50	74.00	-26.50	Н	peak
14808.000	29.09	21.05	50.14	74.00	-23.86	Н	peak
15576.000	31.44	18.54	49.98	74.00	-24.02	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 193 / 261



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5230MHz /(CH High) Tested by: Eve Wang Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.81	9.19	41.00	74.00	-33.00	V	peak
8484.000	31.52	9.38	40.90	74.00	-33.10	V	peak
10452.000	31.03	13.38	44.41	74.00	-29.59	V	peak
11844.000	30.32	14.71	45.03	74.00	-28.97	V	peak
12984.000	29.16	17.90	47.06	74.00	-26.94	V	peak
15684.000	32.30	18.05	50.35	74.00	-23.65	V	peak
7764.000	31.13	9.19	40.32	74.00	-33.68	Н	Peak
8364.000	31.41	9.45	40.86	74.00	-33.14	Н	Peak
10296.000	30.21	12.90	43.11	74.00	-30.89	Н	Peak
11040.000	29.66	15.06	44.72	74.00	-29.28	Н	peak
12840.000	29.49	17.42	46.91	74.00	-27.09	Н	peak
15684.000	31.92	18.05	49.97	74.00	-24.03	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 194 / 261



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5270MHz /(CH Low) Tested by: Eve Wang

Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.41	7.64	39.05	74.00	-34.95	V	peak
7776.000	31.26	9.21	40.47	74.00	-33.53	V	peak
8448.000	32.05	9.40	41.45	74.00	-32.55	V	peak
9600.000	31.12	10.83	41.95	74.00	-32.05	V	peak
10872.000	30.35	14.68	45.03	74.00	-28.97	V	peak
11868.000	30.77	14.70	45.47	74.00	-28.53	V	peak
6948.000	31.56	7.62	39.18	74.00	-34.82	Н	Peak
7752.000	31.32	9.17	40.49	74.00	-33.51	Н	Peak
8376.000	31.51	9.44	40.95	74.00	-33.05	Н	Peak
9360.000	30.90	10.14	41.04	74.00	-32.96	Н	peak
10296.000	30.94	12.90	43.84	74.00	-30.16	Н	peak
11016.000	30.15	15.07	45.22	74.00	-28.78	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 195 / 261



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5310MHz /(CH High) Tested by: Eve Wang

Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6984.000	31.36	7.67	39.03	74.00	-34.97	V	peak
7740.000	31.21	9.14	40.35	74.00	-33.65	V	peak
8328.000	31.60	9.47	41.07	74.00	-32.93	V	peak
10152.000	30.85	12.45	43.30	74.00	-30.70	V	peak
10968.000	30.09	14.98	45.07	74.00	-28.93	V	peak
11316.000	30.24	14.94	45.18	74.00	-28.82	V	peak
6972.000	31.69	7.65	39.34	74.00	-34.66	Н	Peak
7752.000	31.50	9.17	40.67	74.00	-33.33	Н	Peak
8376.000	31.40	9.44	40.84	74.00	-33.16	Н	Peak
9372.000	31.18	10.17	41.35	74.00	-32.65	Н	peak
10524.000	30.34	13.60	43.94	74.00	-30.06	Н	peak
11052.000	30.03	15.06	45.09	74.00	-28.91	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5510MHz /(CH Low) Tested by: Eve Wang

Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.26	7.62	38.88	74.00	-35.12	V	peak
7752.000	31.55	9.17	40.72	74.00	-33.28	V	peak
8448.000	31.48	9.40	40.88	74.00	-33.12	V	peak
9624.000	30.80	10.90	41.70	74.00	-32.30	V	peak
10512.000	30.61	13.57	44.18	74.00	-29.82	V	peak
11832.000	30.90	14.71	45.61	74.00	-28.39	V	peak
6936.000	31.75	7.60	39.35	74.00	-34.65	Н	Peak
7764.000	31.37	9.19	40.56	74.00	-33.44	Н	Peak
8328.000	31.63	9.47	41.10	74.00	-32.90	Н	Peak
10044.000	31.75	12.12	43.87	74.00	-30.13	Н	peak
10992.000	29.95	15.06	45.01	74.00	-28.99	Н	peak
12912.000	29.68	17.66	47.34	74.00	-26.66	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 197 / 261



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5550MHz /(CH Mid)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6696.000	30.78	7.21	37.99	74.00	-36.01	V	peak
7860.000	30.60	9.38	39.98	74.00	-34.02	V	peak
9336.000	30.68	10.07	40.75	74.00	-33.25	V	peak
10584.000	30.55	13.79	44.34	74.00	-29.66	V	peak
11292.000	30.31	14.95	45.26	74.00	-28.74	V	peak
13236.000	28.49	18.57	47.06	74.00	-26.94	V	peak
7044.000	30.95	7.79	38.74	74.00	-35.26	Н	Peak
8148.000	30.84	9.57	40.41	74.00	-33.59	Н	Peak
9456.000	31.06	10.41	41.47	74.00	-32.53	Н	Peak
10656.000	30.35	14.01	44.36	74.00	-29.64	Н	peak
11676.000	30.69	14.78	45.47	74.00	-28.53	Н	peak
13284.000	28.54	18.70	47.24	74.00	-26.76	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 198 / 261



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5670MHz /(CH High) Tested by: Eve Wang

Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7116.000	31.10	7.93	39.03	74.00	-34.97	V	peak
7740.000	31.27	9.14	40.41	74.00	-33.59	V	peak
8364.000	31.58	9.45	41.03	74.00	-32.97	V	peak
10080.000	31.11	12.23	43.34	74.00	-30.66	V	peak
11304.000	30.20	14.95	45.15	74.00	-28.85	V	peak
11832.000	30.99	14.71	45.70	74.00	-28.30	V	peak
6948.000	31.85	7.62	39.47	74.00	-34.53	Н	Peak
7752.000	31.23	9.17	40.40	74.00	-33.60	Н	Peak
8376.000	31.40	9.44	40.84	74.00	-33.16	Н	Peak
10056.000	31.36	12.15	43.51	74.00	-30.49	Н	peak
10524.000	30.56	13.60	44.16	74.00	-29.84	Н	peak
10992.000	30.10	15.06	45.16	74.00	-28.84	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 199 / 261



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5755MHz /(CH Low) Tested by: Eve Wang

Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8364.000	31.56	9.45	41.01	74.00	-32.99	V	peak
10056.000	30.74	12.15	42.89	74.00	-31.11	V	peak
11316.000	29.86	14.94	44.80	74.00	-29.20	V	peak
14172.000	28.35	20.68	49.03	74.00	-24.97	V	peak
14844.000	28.52	21.07	49.59	74.00	-24.41	V	peak
17280.000	29.01	23.34	52.35	74.00	-21.65	V	peak
17280.000	25.18	23.34	48.52	54.00	-5.48	V	AVG
6924.000	31.93	7.58	39.51	74.00	-34.49	Н	Peak
7764.000	31.33	9.19	40.52	74.00	-33.48	Н	Peak
8340.000	31.62	9.46	41.08	74.00	-32.92	Н	Peak
9336.000	30.83	10.07	40.90	74.00	-33.10	Н	peak
11316.000	29.96	14.94	44.90	74.00	-29.10	Н	peak
12960.000	29.41	17.82	47.23	74.00	-26.77	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 200 / 261



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5795MHz /(CH High) Tested by: Eve Wang Ambient temperature: 24°C Relative humidity: 52% RH Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7644.000	31.07	8.96	40.03	74.00	-33.97	V	peak
8448.000	31.28	9.40	40.68	74.00	-33.32	V	peak
10296.000	30.12	12.90	43.02	74.00	-30.98	V	peak
12696.000	28.76	16.94	45.70	74.00	-28.30	V	peak
14832.000	28.24	21.06	49.30	74.00	-24.70	V	peak
17376.000	29.01	23.32	52.33	74.00	-21.67	V	peak
17376.000	25.40	23.32	48.72	54.00	-5.28	V	AVG
6996.000	31.62	7.69	39.31	74.00	-34.69	Н	Peak
7752.000	31.32	9.17	40.49	74.00	-33.51	Н	Peak
8352.000	31.66	9.46	41.12	74.00	-32.88	Н	Peak
10944.000	29.62	14.91	44.53	74.00	-29.47	Н	peak
11820.000	30.43	14.72	45.15	74.00	-28.85	Н	peak
13008.000	28.76	17.97	46.73	74.00	-27.27	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 201 / 261



Combine with Antenna 0 and Antenna 1 and Antenna 2

Test Mode: TX / IEEE 802. 11ac 80 / 5210MHz /(CH Low)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6972.000	31.63	7.65	39.28	74.00	-34.72	V	peak
7764.000	31.10	9.19	40.29	74.00	-33.71	V	peak
8448.000	31.63	9.40	41.03	74.00	-32.97	V	peak
9360.000	30.86	10.14	41.00	74.00	-33.00	V	peak
10176.000	30.91	12.53	43.44	74.00	-30.56	V	peak
10824.000	30.35	14.53	44.88	74.00	-29.12	V	peak
7212.000	30.90	8.11	39.01	74.00	-34.99	Н	Peak
7776.000	31.48	9.21	40.69	74.00	-33.31	Н	Peak
8376.000	31.91	9.44	41.35	74.00	-32.65	Н	Peak
9732.000	30.60	11.21	41.81	74.00	-32.19	Н	peak
10296.000	31.14	12.90	44.04	74.00	-29.96	Н	peak
11304.000	30.46	14.95	45.41	74.00	-28.59	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 202 / 261



Test Mode: TX / IEEE 802. 11ac 80 / 5290MHz /(CH High)

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.48	7.62	39.10	74.00	-34.90	V	peak
7752.000	31.75	9.17	40.92	74.00	-33.08	V	peak
8364.000	31.46	9.45	40.91	74.00	-33.09	V	peak
10032.000	31.36	12.08	43.44	74.00	-30.56	V	peak
10824.000	29.87	14.53	44.40	74.00	-29.60	V	peak
11856.000	30.99	14.70	45.69	74.00	-28.31	V	peak
7752.000	31.57	9.17	40.74	74.00	-33.26	Н	Peak
8340.000	31.38	9.46	40.84	74.00	-33.16	Н	Peak
10284.000	30.56	12.86	43.42	74.00	-30.58	Н	Peak
10884.000	30.33	14.72	45.05	74.00	-28.95	Н	peak
11280.000	30.24	14.96	45.20	74.00	-28.80	Н	peak
11844.000	30.77	14.71	45.48	74.00	-28.52	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 203 / 261



Test Mode: TX / IEEE 802. 11ac 80 / 5530MHz

Tested by: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.14	7.64	38.78	74.00	-35.22	V	peak
7752.000	31.61	9.17	40.78	74.00	-33.22	V	peak
8412.000	31.45	9.42	40.87	74.00	-33.13	V	peak
9288.000	30.74	9.93	40.67	74.00	-33.33	V	peak
10416.000	30.43	13.27	43.70	74.00	-30.30	V	peak
10992.000	30.16	15.06	45.22	74.00	-28.78	V	peak
6960.000	31.53	7.64	39.17	74.00	-34.83	Н	Peak
7752.000	31.55	9.17	40.72	74.00	-33.28	Н	Peak
8460.000	31.46	9.40	40.86	74.00	-33.14	Н	Peak
10056.000	31.26	12.15	43.41	74.00	-30.59	Н	peak
10668.000	30.70	14.05	44.75	74.00	-29.25	Н	peak
11052.000	29.96	15.06	45.02	74.00	-28.98	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11ac 80 / 5775MHz

Tested by: Eve Wang

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: October 28, 2016

Report No.: C160621Z01-RP1-4

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7008.000	31.29	7.72	39.01	74.00	-34.99	V	peak
7752.000	31.23	9.17	40.40	74.00	-33.60	V	peak
8424.000	31.46	9.42	40.88	74.00	-33.12	V	peak
10248.000	30.79	12.75	43.54	74.00	-30.46	V	peak
10932.000	30.16	14.87	45.03	74.00	-28.97	V	peak
11220.000	30.20	14.98	45.18	74.00	-28.82	V	peak
6936.000	31.58	7.60	39.18	74.00	-34.82	Н	Peak
7752.000	31.37	9.17	40.54	74.00	-33.46	Н	Peak
8436.000	31.50	9.41	40.91	74.00	-33.09	Н	Peak
10500.000	30.61	13.53	44.14	74.00	-29.86	Н	peak
11316.000	30.34	14.94	45.28	74.00	-28.72	Н	peak
11832.000	31.10	14.71	45.81	74.00	-28.19	Н	peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit.
- 4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

FCC ID: ZVAOH00004 Page 205 / 261

6.8 CONDUCTED UNDESIRABLE EMISSION

6.8.1 LIMIT

According to 15.407(b),

- (1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Report No.: C160621Z01-RP1-4

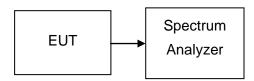
(3) The provisions of §15.205 apply to intentional radiators operating under this section.

6.8.2 MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2016	02/20/2017

Remark: Each piece of equipment is scheduled for calibration once a year.

6.8.3 TEST CONFIGURATION



6.8.4 TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1MHz. The video bandwidth is set to 3MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

FCC ID: ZVAOH00004 Page 206 / 261

6.8.5 TEST RESULTS

No non-compliance noted

Test Plot

