

# Test Mode: TX / IEEE 802.11n HT 20 MHz / 5200MHz /(CH Mid)Ambient temperature: 24°CRelative humidity: 52% RH

Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.23	9.17	40.40	74.00	-33.60	V	peak
8364.000	31.42	9.45	40.87	74.00	-33.13	V	peak
10404.000	35.92	13.23	49.15	74.00	-24.85	V	peak
12936.000	29.09	17.74	46.83	74.00	-27.17	V	peak
13980.000	27.85	20.53	48.38	74.00	-25.62	V	peak
15012.000	28.74	21.11	49.85	74.00	-24.15	V	peak
6924.000	31.48	7.58	39.06	74.00	-34.94	н	Peak
8304.000	31.02	9.48	40.50	74.00	-33.50	н	Peak
10404.000	34.43	13.23	47.66	74.00	-26.34	н	Peak
11304.000	30.01	14.95	44.96	74.00	-29.04	н	peak
12912.000	29.33	17.66	46.99	74.00	-27.01	н	peak
14244.000	28.47	20.72	49.19	74.00	-24.81	Н	peak

- 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 / 5240MHz /(CH High)Ambient temperature: 24°CRelative humidity: 52% RH

**Tested by:** <u>Ad Gan</u> **Date:** May 19, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7788.000	30.67	9.24	39.91	74.00	-34.09	V	peak
8424.000	30.88	9.42	40.30	74.00	-33.70	V	peak
10476.000	38.34	13.46	51.80	74.00	-22.20	V	peak
13008.000	28.19	17.97	46.16	74.00	-27.84	V	peak
14256.000	27.83	20.73	48.56	74.00	-25.44	V	peak
14928.000	28.01	21.12	49.13	74.00	-24.87	V	peak
	•						
8388.000	30.96	9.44	40.40	74.00	-33.60	н	Peak
9360.000	30.46	10.14	40.60	74.00	-33.40	н	Peak
10476.000	40.87	13.46	54.33	74.00	-19.67	н	Peak
10476.000	39.99	13.46	53.45	54.00	-0.55	н	AVG
13440.000	27.26	19.11	46.37	74.00	-27.63	н	peak
14952.000	28.20	21.13	49.33	74.00	-24.67	Н	peak
15720.000	31.96	17.88	49.84	74.00	-24.16	Н	peak

- 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 / 5745MHz /(CH Low) Test

Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>

Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.55	9.17	40.72	74.00	-33.28	V	peak
11484.000	32.66	14.87	47.53	74.00	-26.47	V	peak
12984.000	29.18	17.90	47.08	74.00	-26.92	V	peak
14244.000	28.36	20.72	49.08	74.00	-24.92	V	peak
15000.000	28.84	21.16	50.00	74.00	-24.00	V	peak
17244.000	28.88	23.34	52.22	74.00	-21.78	V	peak
7728.000	31.53	9.12	40.65	74.00	-33.35	Н	Peak
8424.000	31.42	9.42	40.84	74.00	-33.16	Н	Peak
10944.000	29.89	14.91	44.80	74.00	-29.20	н	Peak
11316.000	29.98	14.94	44.92	74.00	-29.08	н	peak
14052.000	28.16	20.61	48.77	74.00	-25.23	Н	peak
14952.000	28.52	21.13	49.65	74.00	-24.35	Н	peak

- 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 / 5785MHz /(CH Mid)Ambient temperature: 24°CRelative humidity: 52% RH

Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6924.000	31.93	7.58	39.51	74.00	-34.49	V	peak
7776.000	31.46	9.21	40.67	74.00	-33.33	V	peak
11568.000	34.17	14.83	49.00	74.00	-25.00	V	peak
12984.000	28.97	17.90	46.87	74.00	-27.13	V	peak
14208.000	28.31	20.70	49.01	74.00	-24.99	V	peak
17352.000	29.32	23.32	52.64	74.00	-21.36	V	peak
							•
6972.000	31.99	7.65	39.64	74.00	-34.36	Н	Peak
7740.000	31.30	9.14	40.44	74.00	-33.56	Н	Peak
8448.000	31.86	9.40	41.26	74.00	-32.74	Н	Peak
11568.000	31.26	14.83	46.09	74.00	-27.91	н	peak
12936.000	29.18	17.74	46.92	74.00	-27.08	Н	peak
14460.000	28.41	20.85	49.26	74.00	-24.74	Н	peak

- 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 / 5825MHz /(CH High)Ambient temperature: 24°CRelative humidity: 52% RH

Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.75	9.17	40.92	74.00	-33.08	V	peak
11016.000	30.09	15.07	45.16	74.00	-28.84	V	peak
11652.000	34.26	14.79	49.05	74.00	-24.95	V	peak
14220.000	28.20	20.71	48.91	74.00	-25.09	V	peak
15000.000	28.56	21.16	49.72	74.00	-24.28	V	peak
17472.000	29.80	23.30	53.10	74.00	-20.90	V	peak
7764.000	31.45	9.19	40.64	74.00	-33.36	Н	Peak
10032.000	30.95	12.08	43.03	74.00	-30.97	Н	Peak
10284.000	30.40	12.86	43.26	74.00	-30.74	Н	Peak
11652.000	32.21	14.79	47.00	74.00	-27.00	н	peak
13980.000	27.95	20.53	48.48	74.00	-25.52	н	peak
14856.000	28.35	21.08	49.43	74.00	-24.57	Н	peak

- 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)

Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>

Tested by: <u>Darry Wu</u> Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.76	9.19	40.95	74.00	-33.05	V	peak
10380.000	34.46	13.16	47.62	74.00	-26.38	V	peak
11076.000	30.00	15.05	45.05	74.00	-28.95	V	peak
12936.000	28.97	17.74	46.71	74.00	-27.29	V	peak
14280.000	28.30	20.74	49.04	74.00	-24.96	V	peak
14880.000	28.58	21.09	49.67	74.00	-24.33	V	peak
6924.000	31.97	7.58	39.55	74.00	-34.45	Н	Peak
8364.000	31.43	9.45	40.88	74.00	-33.12	Н	Peak
10392.000	31.21	13.20	44.41	74.00	-29.59	Н	Peak
12420.000	29.71	16.03	45.74	74.00	-28.26	н	peak
14508.000	28.35	20.87	49.22	74.00	-24.78	Н	peak
15000.000	28.49	21.16	49.65	74.00	-24.35	Н	peak

- 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 / 5230MHz /(CH High) **Ambient temperature:** 24°C **Relative humidity:** 52% RH Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.49	9.19	40.68	74.00	-33.32	V	peak
10056.000	31.08	12.15	43.23	74.00	-30.77	V	peak
10464.000	33.02	13.42	46.44	74.00	-27.56	V	peak
11088.000	30.07	15.04	45.11	74.00	-28.89	V	peak
13008.000	29.00	17.97	46.97	74.00	-27.03	V	peak
15000.000	28.44	21.16	49.60	74.00	-24.40	V	peak
7752.000	31.64	9.17	40.81	74.00	-33.19	Н	Peak
8340.000	31.76	9.46	41.22	74.00	-32.78	Н	Peak
10464.000	30.99	13.42	44.41	74.00	-29.59	н	Peak
12984.000	29.11	17.90	47.01	74.00	-26.99	н	peak
14316.000	28.51	20.76	49.27	74.00	-24.73	н	peak
14964.000	28.63	21.14	49.77	74.00	-24.23	н	peak

- 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).



Ambient temperature: 24°C

# **Test Mode:** TX / IEEE 802.11n HT 40 MHz / 5755MHz /(CH Low) **Test**

Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6216.000	33.54	6.43	39.97	74.00	-34.03	V	peak
7680.000	31.38	9.03	40.41	74.00	-33.59	V	peak
8568.000	31.75	9.34	41.09	74.00	-32.91	V	peak
11508.000	30.71	14.86	45.57	74.00	-28.43	V	peak
13008.000	29.37	17.97	47.34	74.00	-26.66	V	peak
14952.000	28.53	21.13	49.66	74.00	-24.34	V	peak
							·
7752.000	31.72	9.17	40.89	74.00	-33.11	Н	Peak
9840.000	30.71	11.52	42.23	74.00	-31.77	Н	Peak
11508.000	31.00	14.86	45.86	74.00	-28.14	н	Peak
11844.000	30.62	14.71	45.33	74.00	-28.67	н	peak
12984.000	29.08	17.90	46.98	74.00	-27.02	Н	peak
14760.000	28.17	21.02	49.19	74.00	-24.81	Н	peak

Relative humidity: 52% RH

- 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 / 5795MHz /(CH High)Ambient temperature: 24°CRelative humidity: 52% RH

Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6264.000	34.09	6.51	40.60	74.00	-33.40	V	peak
7728.000	31.51	9.12	40.63	74.00	-33.37	V	peak
10968.000	29.68	14.98	44.66	74.00	-29.34	V	peak
11592.000	32.47	14.82	47.29	74.00	-26.71	V	peak
12912.000	28.66	17.66	46.32	74.00	-27.68	V	peak
14880.000	28.29	21.09	49.38	74.00	-24.62	V	peak
7752.000	31.39	9.17	40.56	74.00	-33.44	Н	Peak
9612.000	30.62	10.86	41.48	74.00	-32.52	н	Peak
10500.000	30.39	13.53	43.92	74.00	-30.08	н	Peak
11592.000	30.55	14.82	45.37	74.00	-28.63	н	peak
13008.000	29.08	17.97	47.05	74.00	-26.95	н	peak
14928.000	28.21	21.12	49.33	74.00	-24.67	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).



# Combine with Antenna 0 and Antenna 1 and Antenna 2

Test Mode: TX / IEEE 802. 11ac 80 / 5210MHz /(CH Low)Ambient temperature: 24°CRelative humidity: 52% RH

Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.33	9.19	40.52	74.00	-33.48	V	peak
8352.000	31.55	9.46	41.01	74.00	-32.99	V	peak
10824.000	29.52	14.53	44.05	74.00	-29.95	V	peak
11844.000	30.75	14.71	45.46	74.00	-28.54	V	peak
13068.000	28.71	18.13	46.84	74.00	-27.16	V	peak
15000.000	28.38	21.16	49.54	74.00	-24.46	V	peak
7740.000	31.39	9.14	40.53	74.00	-33.47	н	Peak
8364.000	31.70	9.45	41.15	74.00	-32.85	н	Peak
10428.000	30.77	13.31	44.08	74.00	-29.92	н	Peak
10932.000	29.32	14.87	44.19	74.00	-29.81	н	peak
12912.000	28.92	17.66	46.58	74.00	-27.42	Н	peak
15024.000	28.26	21.05	49.31	74.00	-24.69	н	peak

- 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

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

Tested by: Darry Wu Date: June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6228.000	36.64	6.45	43.09	74.00	-30.91	V	peak
7752.000	31.30	9.17	40.47	74.00	-33.53	V	peak
10512.000	30.52	13.57	44.09	74.00	-29.91	V	peak
11556.000	31.67	14.84	46.51	74.00	-27.49	V	peak
12936.000	29.53	17.74	47.27	74.00	-26.73	V	peak
14880.000	28.77	21.09	49.86	74.00	-24.14	V	peak
6228.000	36.90	6.45	43.35	74.00	-30.65	Н	Peak
8340.000	31.23	9.46	40.69	74.00	-33.31	н	Peak
10512.000	30.45	13.57	44.02	74.00	-29.98	Н	Peak
11544.000	31.02	14.84	45.86	74.00	-28.14	Н	peak
13776.000	28.35	19.99	48.34	74.00	-25.66	Н	peak
14220.000	28.31	20.71	49.02	74.00	-24.98	н	peak

- 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).



# 6.8 CONDUCTED UNDESIRABLE EMISSION

### 6.8.1 LIMIT

According to 15.407(b),

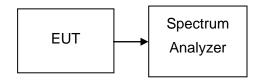
- (1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) For transmitters operating in the 5.725–5.850 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of –17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of –27 dBm/MHz.
- (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 1 MHz. The video bandwidth is set to 1 MHz. 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.

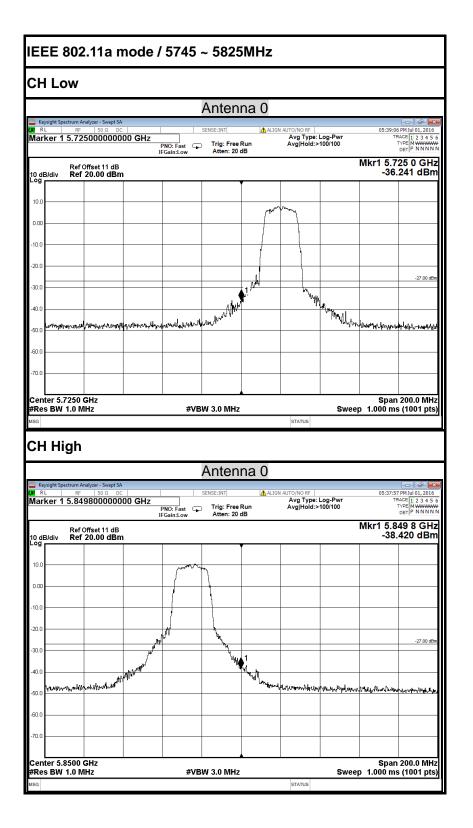


# 6.8.5 TEST RESULTS

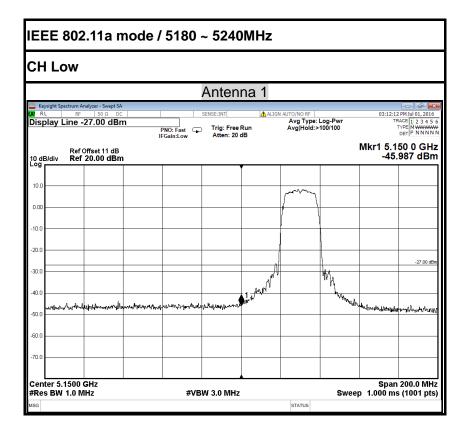
No non-compliance noted

#### **Test Plot** IEEE 802.11a mode / 5180 ~ 5240MHz CH Low Antenna 0 Keysight Spectrum Analyzer - Swept SA ALIGN 5:44:43 PM Marker 1 5.150000000000 GHz Avg Type: Log-Pwr Avg|Hold:>100/100 TYPE M WWWW DET P N N N N PNO: Fast Trig: Free Run IFGain:Low Atten: 20 dB Mkr1 5.150 0 GHz -42.542 dBm Ref Offset 11 dB Ref 20.00 dBm 10 dB/div 10 0.0 10. 20. η N<sup>h</sup> -27.00 30 11 40. الاتعداد الأبار Whater a 50 -60. 70. Center 5.1500 GHz #Res BW 1.0 MHz Span 200.0 MHz Sweep 1.000 ms (1001 pts) #VBW 3.0 MHz STATUS

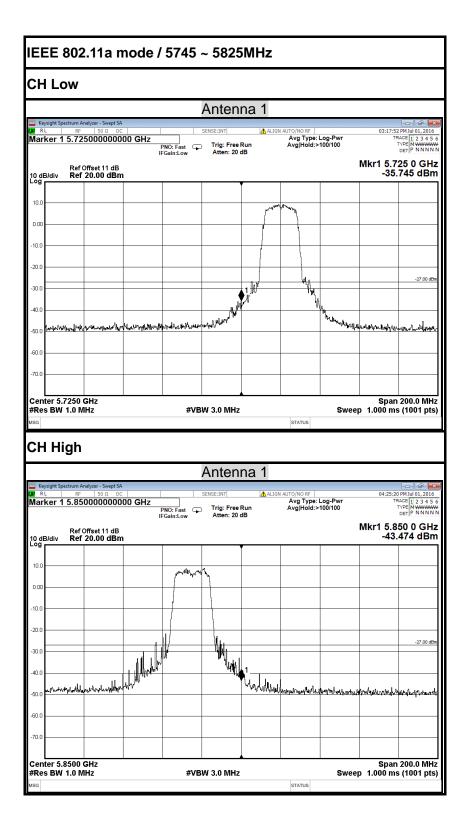




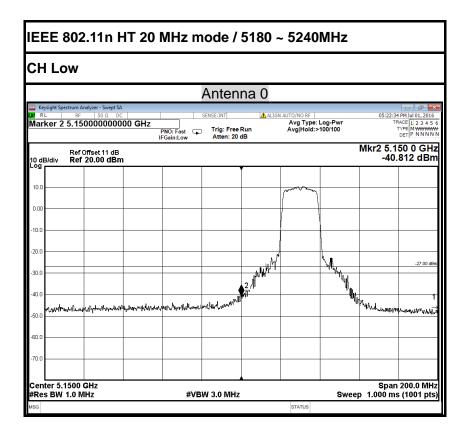




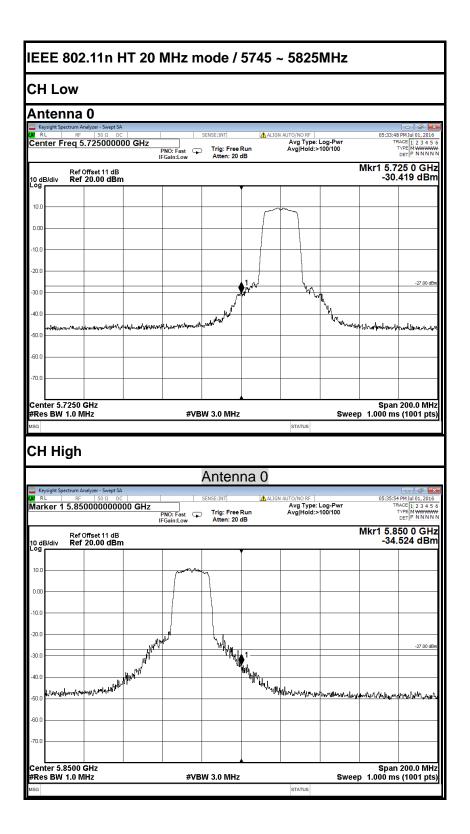




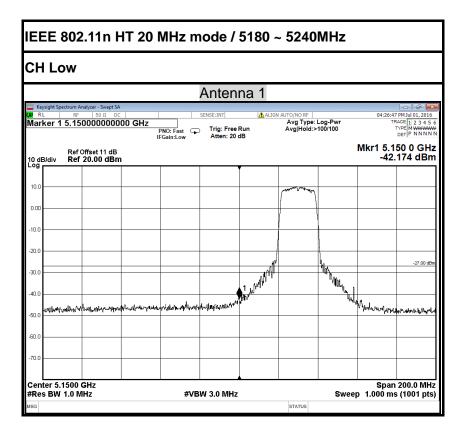




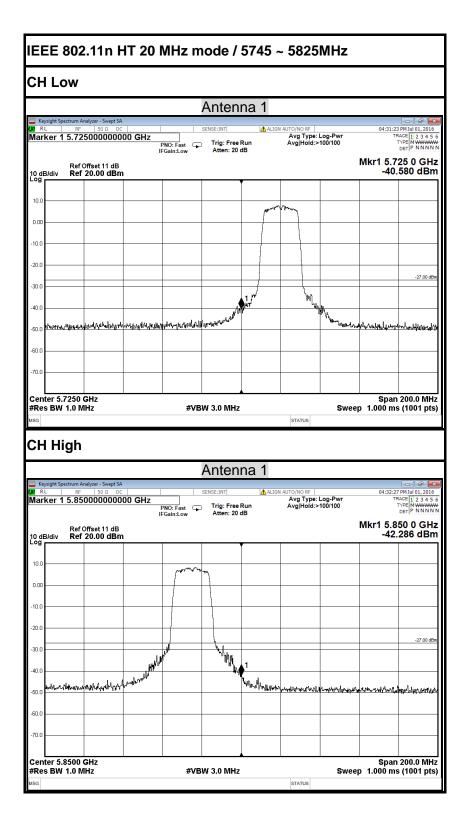




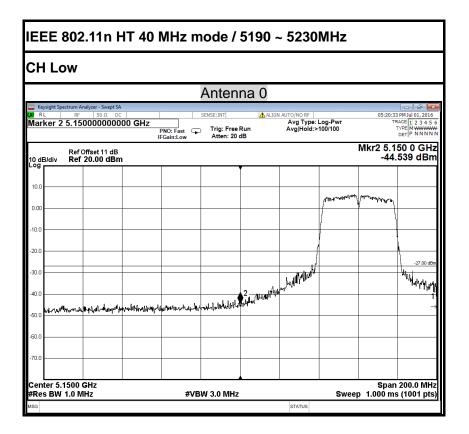




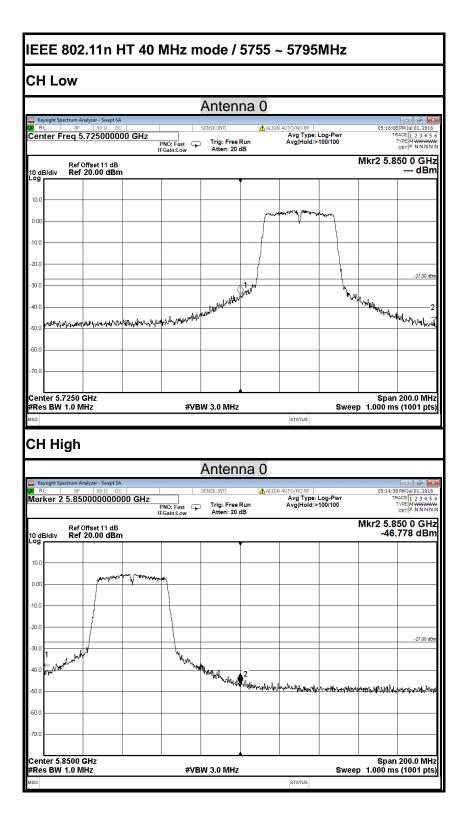




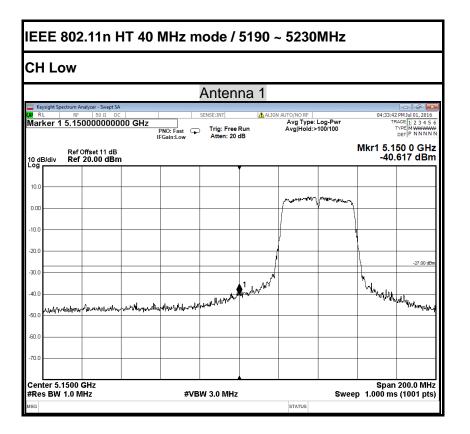




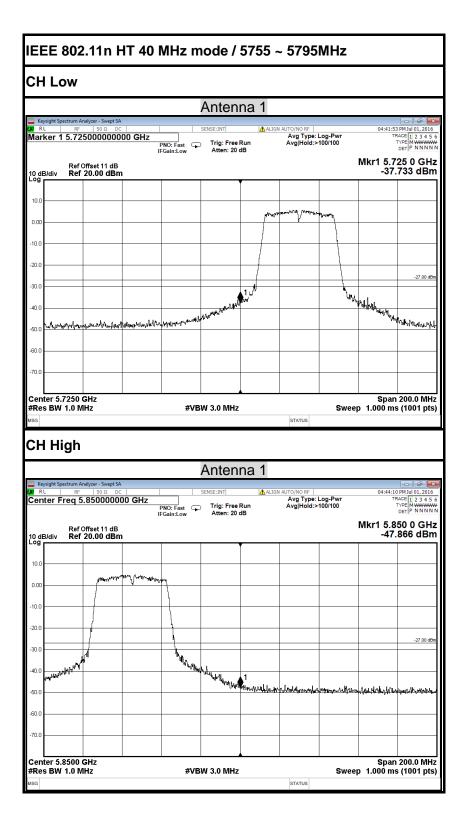






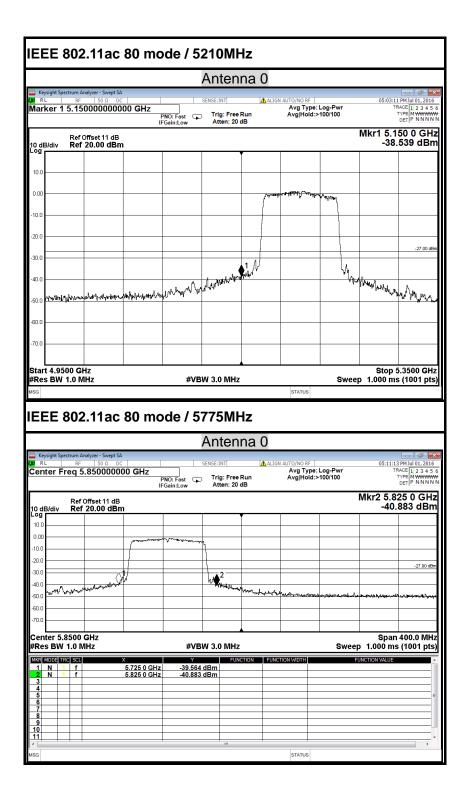
















Antenna 1							
Keysight Spectrum An RL RF arker 1 5.150	alyzer - Swept SA 50 Ω DC 10000000000 GHz	PNO: Fast IFGain:Low	ISE:INT Trig: Free Run Atten: 20 dB	ALIGN AUTO/N Avg Avg	D RF Type: Log-Pwr Hold:>100/100		D5:00:42 PM Jul 01, 201 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N
dBidiy Ref	ffset 11 dB 20.00 dBm	ii dainizon				Mkr1	5.150 0 GH -40.454 dBr
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Res BW 1.0 M			3.0 MHz 75MHz	STAT			
Res BW 1.0 M	Hz	node / 57					
Res BW 1.0 Ml           G           EEE 802           , Keysight Spectrum An           RL         RF	Hz .11ac 80 m alyzer - Swept SA	node / 57 <sup>-</sup> A	75MHz		D RF	weep 1.00	00 ms (1001 pt
Res BW 1.0 Ml           G           EEE 802           , Keysight Spectrum An           RL         RF	Hz .11ac 80 m alyzer - Swept SA	node / 57 A	75MHz ntenna	ALIGN AUTO/NI Avg	rus	weep 1.00	00 ms (1001 pt
Res BW 1.0 MI SG EEE 802 Keysight Spectrum An RL RF Renter Freq 5. Ref C Ord Ruddiv. Ref	Hz .11ac 80 m alyzer - Swept SA [50 Q DC ] 850000000 GHz		75MHz Intenna	ALIGN AUTO/NI Avg	DRF Type: Log-Pwr	weep 1.00	00 ms (1001 pt )5:1246 PH JU 01, 201 TRACE [1 2 3 4 1 TPRE [WWWM OETP N NNI 5.825 0 GH
Res BW 1.0 MI EEE 802 Keysight Spectrum An Rt RF enter Freq 5. 0 dB/div Ref C	Hz .11ac 80 m aver - Sweet SA 50 0 DC   850000000 GHz		75MHz Intenna	ALIGN AUTO/NI Avg	DRF Type: Log-Pwr	weep 1.00	00 ms (1001 pt )5:1246 PH JU 01, 201 TRACE [1 2 3 4 1 TPRE [WWWM OETP N NNI 5.825 0 GH
Keysight Spectrum An RL RF enter Freq 5. Ref C	Hz .11ac 80 m alyzer - Swept SA [50 Q DC ] 850000000 GHz		75MHz Intenna	ALIGN AUTO/NI Avg	DRF Type: Log-Pwr	weep 1.00	00 ms (1001 pt )5:1246 PH JU 01, 201 TRACE [1 2 3 4 1 TPRE [WWWM OETP N NNI 5.825 0 GH
Res BW 1.0 MI SG EEE 802 Keysight Spectrum An RL BF enter Freq 5. Ref C 0 dB/div Ref 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Hz .11ac 80 m alyzer - Swept SA [50 Q DC ] 850000000 GHz		75MHz ntenna se:INT  Trig: Free Run Atten: 20 dB	ALIGN AUTO/NI Avg	DRF Type: Log-Pwr	weep 1.00	00 ms (1001 pt 05:12:46 PM/Jul 01, 201 TRACE [12 3 4 Tryee] 5.8225 0 GH -40.624 dBr
Res BW 1.0 MI GEEE 802 Resign Spectrum Ann RL NF enter Freq 5. Ref C 0 dB/div Ref 00 0.0	Hz .11ac 80 m alver - Swept SA [50 Q DC ] 850000000 GHz 20.00 dBm	node / 57 A PNO: Fast IFGain:Low	75MHz ntenna sse:INT] Trig: Free Run Atten: 20 dB	ALIGN AUTO/NU Avg	2016   Type:Log-Pwr Hold:>100/100	Mkr2	00 ms (1001 pt 05:12:46 PMJd 01, 201 1746 E 12 3 4 1 1746 E 12 3 4 1 1747 E 12
Res BW 1.0 MI           BG           EEE 802           Keysight Spectrum An           RL Spectrum An           Ret Ref C           O dB/div           Ref C           90           0.00	Hz .11ac 80 m alver - Swept SA [50 Q DC ] 850000000 GHz 20.00 dBm	node / 57 A PNO: Fast IFGain:Low	75MHz ntenna sse:INT] Trig: Free Run Atten: 20 dB	ALIGN AUTO/NI Avg	2016   Type:Log-Pwr Hold:>100/100	Mkr2	100 ms (1001 pt 100 ms (100 ms (1
Res BW 1.0 MI SEEE 802	Hz .11ac 80 m alyzer - Swept SA [50 G DC ] 850000000 GHz 975set 11 dB 20.00 dBm	node / 57 A PNO: Fast IFGain:Low	75MHz ntenna sse:INT] Trig: Free Run Atten: 20 dB	ALIGN AUTO/NU Avg	2016   Type:Log-Pwr Hold:>100/100	Mkr2	00 ms (1001 pt 55.12-46 PM Jul 01, 201 TR-4C 11 2 3 4 4 Tree II 2 3 4 4
Res BW 1.0 Mi           EEE 802           Keynight Spectrum An           RL         RF           enter Freq 5.           0 dB/div         Ref 0           0.00         0           0.00         0           0.00         0           0.00         0           0.00         0           0.00         0           0.00         0           0.00         0           0.00         0	Hz .11ac 80 m alyzer - Swept SA I S0 Q DC BS	PNO: Fast PNO: Fast FGGin:Low	75MHz ntenna sse:INT] Trig: Free Run Atten: 20 dB	ALIGN AUTO/NU Avg	2285	Mkr2	00 ms (1001 pt 05:12:46 PMJd 01, 201 1746 E 12 3 4 1 1746 E 12 3 4 1 1747 E 12
Res BW 1.0 MI           SEEE 802           Rexist Spectrum An           Rexist Spectrum An           Rexist Spectrum An           Rexist Spectrum An           B           Code Spectrum An           B           Code Spectrum An           B           Code Spectrum An           B           Code Spectrum An           Code Spectrum An           Code Spectrum An           Code Spectrum An           Spectrum An           Code Spectrum An	Hz .11ac 80 m alyzer - Swept SA ISO Q DC BS0000000 GHz mfset 11 dB 20.00 dBm 	PNO: Fast PRO: Fast FGGin:Low #VBW	75MHz ntenna se:INT Trig: Free Run Atten: 20 dB	ALIGN AUTO/NU Avg	226   Type: Log-Pwr Hold:>100/100	Mkr2	00 ms (1001 pt 05:12:46 PM Jul 01, 201 TRACE [1 2 3 4 1 TAPE [P N N H 5.825 0 GH -40.624 dBr -27:00 df -27:00 df
Res BW 1.0 MI S EEE 802 Res BV 1.0 MI Res BV 1.0 MI	Hz .11ac 80 m alyzer - Swept SA 50 a DC   850000000 GHz //ffset 11 dB 20.00 dBm 	PNO: Fast PRO: Fast FGGin:Low #VBW	75MHz ntenna se:INT Trig: Free Run Atten: 20 dB		226   Type: Log-Pwr Hold:>100/100	Mkr2	00 ms (1001 pt 05:12:46 PM Jul 01, 201 TRACE [1 2 3 4 1 TAPE [P N N H 5.825 0 GH -40.624 dBr -27:00 df -27:00 df
Res BW 1.0 MI           SEEE 802           Revisit Spectrum An           Baldiu           Revisit Spectrum An           Baldiu           Revisit Spectrum An           Od Baldiu           Od Baldiu           Baldiu <td< td=""><td>Hz .11ac 80 m alyzer - Swept SA ISO Q DC BS0000000 GHz mfset 11 dB 20.00 dBm </td><td>PNO: Fast PRO: Fast FGGin:Low #VBW</td><td>75MHz ntenna se:INT Trig: Free Run Atten: 20 dB</td><td></td><td>226   Type: Log-Pwr Hold:&gt;100/100</td><td>Mkr2</td><td>00 ms (1001 pt 05:12:46 PM Jul 01, 201 TRACE [1 2 3 4 1 TAPE [P N N H 5.825 0 GH -40.624 dBr -27:00 df -27:00 df</td></td<>	Hz .11ac 80 m alyzer - Swept SA ISO Q DC BS0000000 GHz mfset 11 dB 20.00 dBm 	PNO: Fast PRO: Fast FGGin:Low #VBW	75MHz ntenna se:INT Trig: Free Run Atten: 20 dB		226   Type: Log-Pwr Hold:>100/100	Mkr2	00 ms (1001 pt 05:12:46 PM Jul 01, 201 TRACE [1 2 3 4 1 TAPE [P N N H 5.825 0 GH -40.624 dBr -27:00 df -27:00 df



# 6.9 POWERLINE CONDUCTED EMISSIONS

# 6.9.1 LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range	Limits (dBµV)					
(MHz)	Quasi-peak	Average				
0.15 to 0.50	66 to 56*	56 to 46*				
0.50 to 5	56	46				
5 to 30	60	50				

\* Decreases with the logarithm of the frequency.

# 6.9.2 TEST INSTRUMENTS

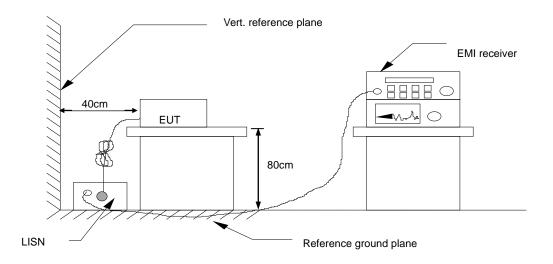
	Conducted Emission Test Site									
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration					
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017					
LISN(EUT)	ROHDE&SCHWARZ	ENV216	101543-WX	02/21/2016	02/20/2017					
LISN	EMCO	3825/2	8901-1459	02/21/2016	02/20/2017					
Temp. / Humidity Meter	VICTOR	HTC-1	N/A	02/21/2016	02/20/2017					
Test S/W	FARAD	EZ-EMC/ CCS-3A1-CE								

**NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request.



# 6.9.3 TEST CONFIGURATION



# 6.9.4 TEST PROCEDURE

- 1. The EUT was placed on a table, which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all frequency measured were complete.

# 6.9.5 DATA SAMPLE

Frequency (MHz)		Average Reading (dBuV)		QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Margin	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss

Result = Quasi-peak Reading/ Average Reading + Factor

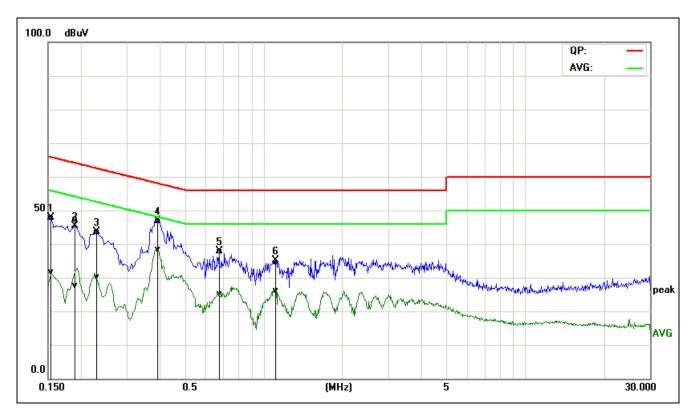
Limit = Limit stated in standard

Margin = Result (dBuV) – Limit (dBuV)



# 6.9.6 TEST RESULTS

		RBW,VBW	9 kHz
Environmental Conditions	22°C, 45% RH	Test Mode	Mode 1
Tested by	Darry Wu	Line	L1
Test Date	June 23, 2016		

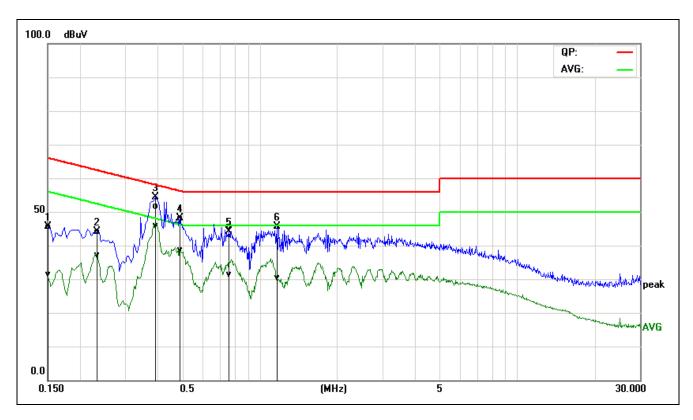


Frequency (MHz)		Average Reading (dBuV)		QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Margin	Remark (Pass/Fail)	Line (L1/L2)
0.1539	38.32	21.94	9.59	47.91	31.53	65.78	55.79	-17.87	-24.26	Pass	L1
0.1904	37.81	17.98	9.67	47.48	27.65	64.01	54.02	-16.53	-26.37	Pass	L1
0.2300	33.82	20.40	9.69	43.51	30.09	62.45	52.45	-18.94	-22.36	Pass	L1
0.3940	37.15	28.74	9.68	46.83	38.42	57.98	47.98	-11.15	-9.56	Pass	L1
0.6780	28.15	15.47	9.78	37.93	25.25	56.00	46.00	-18.07	-20.75	Pass	L1
1.1100	24.96	16.54	9.71	34.67	26.25	56.00	46.00	-21.33	-19.75	Pass	L1

**REMARKS:** L1 = Line One (Live Line)



		RBW,VBW	9 kHz
Environmental Conditions	22°C, 45% RH	Test Mode	Mode 1
Tested by	Darry Wu	Line	L2
Test Date	June 23, 2016		



Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)		QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Margin	Remark (Pass/Fail)	Line (L1/L2)
0.1500	35.73	21.55	9.78	45.51	31.33	65.99	56.00	-20.48	-24.67	Pass	L2
0.2340	34.24	27.25	9.78	44.02	37.03	62.30	52.31	-18.28	-15.28	Pass	L2
0.3902	41.90	36.11	9.72	51.62	45.83	58.06	48.06	-6.44	-2.23	Pass	L2
0.4900	38.50	28.98	9.68	48.18	38.66	56.17	46.17	-7.99	-7.51	Pass	L2
0.7620	35.80	21.62	9.71	45.51	31.33	56.00	46.00	-10.49	-14.67	Pass	L2
1.1660	35.72	20.60	9.79	45.51	30.39	56.00	46.00	-10.49	-15.61	Pass	L2

**REMARKS:** L2 = Line Two (Neutral Line)



# 6.10 FREQUENCY STABILITY

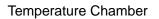
### 6.10.1 LIMIT

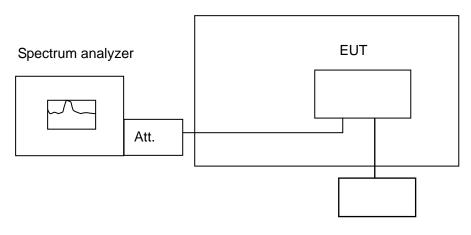
According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the operational description.

# 6.10.2 TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2016	02/20/2017
DC Power Supply	DAZHENG	PS-605D	20018978	N.C.R	N.C.R
AC POWER SOUCE	UMART	HPA1010	N/A	N.C.R	N.C.R
Power Meter	Anritsu	ML2495A	1204003	02/21/2016	02/20/2017
Power Sensor	Anritsu	MA2411B	1126150	02/21/2016	02/20/2017
Temperature Chamber	TERCHY	MHG-800N	E21104	11/18/2015	11/17/2016
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2016	02/20/2017

# 6.10.3 TEST CONFIGURATION





Variable Power Supply

Remark: Measurement setup for testing on Antenna connector



# 6.10.4 TEST PROCEDURE

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT  $20^{\circ}$ C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to  $-20^{\circ}$ C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with  $10^{\circ}$ C increased per stage until the highest temperature of +50°C reached.

# 6.10.5 TEST RESULTS

No non-compliance noted.



Test Data Antenna 0

IEEE 802.11a MHz mode / 51	IEEE 802.11a MHz mode / 5180 ~ 5240MHz (Low)								
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result					
50	120	5179.965826	5150-5250	PASS					
40	120	5179.955608	5150-5250	PASS					
30	120	5179.950657	5150-5250	PASS					
20	120	5179.996300	5150-5250	PASS					
10	120	5179.972114	5150-5250	PASS					
0	120	5179.995574	5150-5250	PASS					
-10	120	5179.967652	5150-5250	PASS					
-20	120	5179.998247	5150-5250	PASS					

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5179.962180	5150-5250	PASS
	120	5179.996300	5150-5250	PASS
	132	5179.981615	5150-5250	PASS

IEEE 802.11a MHz mode / 5180 ~ 5240MHz (High)								
Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result				
50	120	5239.958872	5150-5250	PASS				
40	120	5239.985886	5150-5250	PASS				
30	120	5239.954575	5150-5250	PASS				
20	120	5240.035000	5150-5250	PASS				
10	120	5239.971878	5150-5250	PASS				
0	120	5239.952544	5150-5250	PASS				
-10	120	5239.959285	5150-5250	PASS				
-20	120	5239.981572	5150-5250	PASS				

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5239.966130	5150-5250	PASS
20	120	5240.035000	5150-5250	PASS
	132	5239.971157	5150-5250	PASS



IEEE 802.11a mode / 5745 ~	5825MHz	z (Low)		
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5744.958754	5725-5850	PASS
40	120	5744.998993	5725-5850	PASS
30	120	5744.949441	5725-5850	PASS
20	120	5744.998281	5725-5850	PASS
10	120	5744.983033	5725-5850	PASS
0	120	5744.984692	5725-5850	PASS
-10	120	5744.973267	5725-5850	PASS
-20	120	5744.999296	5725-5850	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5744.965296	5725-5850	PASS
20	120	5744.998281	5725-5850	PASS
	132	5744.962922	5725-5850	PASS

IEEE 802.11a mode / 5745 ~	5825MHz	: (High)		
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5824.949165	5725-5850	PASS
40	120	5824.951793	5725-5850	PASS
30	120	5824.979630	5725-5850	PASS
20	120	5824.997520	5725-5850	PASS
10	120	5824.959510	5725-5850	PASS
0	120	5824.950675	5725-5850	PASS
-10	120	5824.951882	5725-5850	PASS
-20	120	5824.992134	5725-5850	PASS

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5824.993722	5725-5850	PASS
20	120	5824.997520	5725-5850	PASS
	132	5824.973839	5725-5850	PASS



IEEE 802.11a MHz mode / 51				
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5179.975755	5150-5250	PASS
40	120	5179.952529	5150-5250	PASS
30	120	5179.959918	5150-5250	PASS
20	120	5179.992000	5150-5250	PASS
10	120	5179.990765	5150-5250	PASS
0	120	5179.981398	5150-5250	PASS
-10	120	5179.961615	5150-5250	PASS
-20	120	5179.981534	5150-5250	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5179.967982	5150-5250	PASS
20	120	5179.992000	5150-5250	PASS
	132	5179.992031	5150-5250	PASS

IEEE 802.11a MHz mode / 5180 ~ 5240MHz	(High)
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Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5239.986205	5150-5250	PASS
40	120	5239.953450	5150-5250	PASS
30	120	5239.960456	5150-5250	PASS
20	120	5240.003000	5150-5250	PASS
10	120	5239.965222	5150-5250	PASS
0	120	5239.957708	5150-5250	PASS
-10	120	5239.957183	5150-5250	PASS
-20	120	5239.964318	5150-5250	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5239.977367	5150-5250	PASS
20	120	5240.003000	5150-5250	PASS
	132	5239.990743	5150-5250	PASS



IEEE 802.11a mode / 5745 ~	5825MHz	z (Low)		
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5744.961685	5725-5850	PASS
40	120	5744.993148	5725-5850	PASS
30	120	5744.959902	5725-5850	PASS
20	120	5744.997930	5725-5850	PASS
10	120	5744.959032	5725-5850	PASS
0	120	5744.952709	5725-5850	PASS
-10	120	5744.955626	5725-5850	PASS
-20	120	5744.980828	5725-5850	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5744.992037	5725-5850	PASS
20	120	5744.997930	5725-5850	PASS
	132	5744.974012	5725-5850	PASS

IEEE 802.11a mode / 5745 ~	5825MHz	: (High)		
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5824.989897	5725-5850	PASS
40	120	5824.971459	5725-5850	PASS
30	120	5824.969307	5725-5850	PASS
20	120	5824.996200	5725-5850	PASS
10	120	5824.976399	5725-5850	PASS
0	120	5824.997602	5725-5850	PASS
-10	120	5824.979660	5725-5850	PASS
-20	120	5824.964827	5725-5850	PASS

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5824.950909	5725-5850	PASS
20	120	5824.996200	5725-5850	PASS
	132	5824.964609	5725-5850	PASS



IEEE 802.11n HT 20 MHz mc				
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5179.985151	5150-5250	PASS
40	120	5179.988000	5150-5250	PASS
30	120	5179.973873	5150-5250	PASS
20	120	5179.998500	5150-5250	PASS
10	120	5179.970133	5150-5250	PASS
0	120	5179.957315	5150-5250	PASS
-10	120	5179.995371	5150-5250	PASS
-20	120	5179.962872	5150-5250	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5179.969756	5150-5250	PASS
	120	5179.998500	5150-5250	PASS
	132	5179.962910	5150-5250	PASS

#### IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz (High)

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5239.996464	5150-5250	PASS
40	120	5239.989695	5150-5250	PASS
30	120	5239.953255	5150-5250	PASS
20	120	5239.993000	5150-5250	PASS
10	120	5239.996044	5150-5250	PASS
0	120	5239.956081	5150-5250	PASS
-10	120	5239.960133	5150-5250	PASS
-20	120	5239.996849	5150-5250	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5239.990380	5150-5250	PASS
20	120	5239.993000	5150-5250	PASS
	132	5239.977376	5150-5250	PASS



IEEE 802.11n HT 20 MHz mc				
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5744.969203	5725-5850	PASS
40	120	5744.973541	5725-5850	PASS
30	120	5744.973976	5725-5850	PASS
20	120	5744.998160	5725-5850	PASS
10	120	5744.992125	5725-5850	PASS
0	120	5744.983377	5725-5850	PASS
-10	120	5744.956601	5725-5850	PASS
-20	120	5744.957924	5725-5850	PASS

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Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5744.993341	5725-5850	PASS
20	120	5744.998160	5725-5850	PASS
	132	5744.978132	5725-5850	PASS

#### IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz (High)

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5824.968259	5725-5850	PASS
40	120	5824.973336	5725-5850	PASS
30	120	5824.955017	5725-5850	PASS
20	120	5824.997630	5725-5850	PASS
10	120	5824.998030	5725-5850	PASS
0	120	5824.983433	5725-5850	PASS
-10	120	5824.967146	5725-5850	PASS
-20	120	5824.991628	5725-5850	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5824.956069	5725-5850	PASS
20	120	5824.997630	5725-5850	PASS
	132	5824.973798	5725-5850	PASS



IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz (Low)					
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result	
50	120	5179.972786	5150-5250	PASS	
40	120	5179.991586	5150-5250	PASS	
30	120	5179.998200	5150-5250	PASS	
20	120	5179.998500	5150-5250	PASS	
10	120	5179.998503	5150-5250	PASS	
0	120	5179.991347	5150-5250	PASS	
-10	120	5179.966536	5150-5250	PASS	
-20	120	5179.968259	5150-5250	PASS	

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5179.973087	5150-5250	PASS
20	120	5179.998500	5150-5250	PASS
	132	5179.957277	5150-5250	PASS

#### IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz (High)

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5239.959260	5150-5250	PASS
40	120	5239.954498	5150-5250	PASS
30	120	5239.991169	5150-5250	PASS
20	120	5240.002700	5150-5250	PASS
10	120	5239.969407	5150-5250	PASS
0	120	5239.983637	5150-5250	PASS
-10	120	5239.967604	5150-5250	PASS
-20	120	5239.952537	5150-5250	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5239.986262	5150-5250	PASS
20	120	5240.002700	5150-5250	PASS
	132	5239.980944	5150-5250	PASS



#### IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz (Low)

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5744.992311	5725-5850	PASS
40	120	5744.956596	5725-5850	PASS
30	120	5744.961536	5725-5850	PASS
20	120	5744.995000	5725-5850	PASS
10	120	5744.953160	5725-5850	PASS
0	120	5744.967045	5725-5850	PASS
-10	120	5744.993849	5725-5850	PASS
-20	120	5744.959483	5725-5850	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5744.998451	5725-5850	PASS
20	120	5744.995000	5725-5850	PASS
	132	5744.953344	5725-5850	PASS

#### IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz (High)

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5824.974165	5725-5850	PASS
40	120	5824.969167	5725-5850	PASS
30	120	5824.964292	5725-5850	PASS
20	120	5824.996800	5725-5850	PASS
10	120	5824.969843	5725-5850	PASS
0	120	5824.986063	5725-5850	PASS
-10	120	5824.997484	5725-5850	PASS
-20	120	5824.950813	5725-5850	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5824.987928	5725-5850	PASS
	120	5824.996800	5725-5850	PASS
	132	5824.978440	5725-5850	PASS



IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz (Low)					
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result	
50	120	5189.966240	5150-5250	PASS	
40	120	5189.958765	5150-5250	PASS	
30	120	5189.959529	5150-5250	PASS	
20	120	5189.995300	5150-5250	PASS	
10	120	5189.957107	5150-5250	PASS	
0	120	5189.978519	5150-5250	PASS	
-10	120	5189.957366	5150-5250	PASS	
-20	120	5189.966120	5150-5250	PASS	

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5189.987371	5150-5250	PASS
20	120	5189.995300	5150-5250	PASS
	132	5189.980539	5150-5250	PASS

### IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz (High)

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result	
50	120	5229.973566	5150-5250	PASS	
40	120	5229.999991	5150-5250	PASS	
30	120	5229.985639	5150-5250	PASS	
20	120	5230.005200	5150-5250	PASS	
10	120	5229.986477	5150-5250	PASS	
0	120	5229.968584	5150-5250	PASS	
-10	120	5229.951758	5150-5250	PASS	
-20	120	5229.956655	5150-5250	PASS	

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5229.980358	5150-5250	PASS
20	120	5230.005200	5150-5250	PASS
	132	5229.988378	5150-5250	PASS



IEEE 802.11n HT 40 MHz mo	<u>~ 5795MHz (Low)</u>			
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5754.969638	5725-5850	PASS
40	120	5754.990674	5725-5850	PASS
30	120	5754.951960	5725-5850	PASS
20	120	5754.996310	5725-5850	PASS
10	120	5754.961932	5725-5850	PASS
0	120	5754.995675	5725-5850	PASS
-10	120	5754.958066	5725-5850	PASS
-20	120	5754.953047	5725-5850	PASS

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Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5754.968761	5725-5850	PASS
20	120	5754.996310	5725-5850	PASS
	132	5754.957162	5725-5850	PASS

#### IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz (High)

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5794.957785	5725-5850	PASS
40	120	5794.998799	5725-5850	PASS
30	120	5794.969618	5725-5850	PASS
20	120	5794.998200	5725-5850	PASS
10	120	5794.971594	5725-5850	PASS
0	120	5794.998827	5725-5850	PASS
-10	120	5794.983916	5725-5850	PASS
-20	120	5794.972833	5725-5850	PASS

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5794.964732	5725-5850	PASS
	120	5794.998200	5725-5850	PASS
	132	5794.980032	5725-5850	PASS



IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz (Low)					
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result	
50	120	5189.971826	5150-5250	PASS	
40	120	5189.963590	5150-5250	PASS	
30	120	5189.983923	5150-5250	PASS	
20	120	5189.998000	5150-5250	PASS	
10	120	5189.995556	5150-5250	PASS	
0	120	5189.995865	5150-5250	PASS	
-10	120	5189.953219	5150-5250	PASS	
-20	120	5189.969395	5150-5250	PASS	

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5189.966535	5150-5250	PASS
20	120	5189.998000	5150-5250	PASS
	132	5189.981979	5150-5250	PASS

### IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz (High)

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result	
50	120	5229.979034	5150-5250	PASS	
40	120	5229.993016	5150-5250	PASS	
30	120	5229.991814	5150-5250	PASS	
20	120	5230.005800	5150-5250	PASS	
10	120	5229.979795	5150-5250	PASS	
0	120	5229.982415	5150-5250	PASS	
-10	120	5229.980562	5150-5250	PASS	
-20	120	5229.985065	5150-5250	PASS	

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5229.984063	5150-5250	PASS
	120	5230.005800	5150-5250	PASS
	132	5229.950730	5150-5250	PASS



	IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz (Lo				
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result	
50	120	5754.983985	5725-5850	PASS	
40	120	5754.969848	5725-5850	PASS	
30	120	5754.979282	5725-5850	PASS	
20	120	5754.997820	5725-5850	PASS	
10	120	5754.979235	5725-5850	PASS	
0	120	5754.954646	5725-5850	PASS	
-10	120	5754.951599	5725-5850	PASS	
-20	120	5754.970574	5725-5850	PASS	

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Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5754.984548	5725-5850	PASS
20	120	5754.997820	5725-5850	PASS
	132	5754.950415	5725-5850	PASS

#### IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz (Hiah)

	/			
Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5794.962490	5725-5850	PASS
40	120	5794.992985	5725-5850	PASS
30	120	5794.949961	5725-5850	PASS
20	120	5794.996100	5725-5850	PASS
10	120	5794.963722	5725-5850	PASS
0	120	5794.983097	5725-5850	PASS
-10	120	5794.979887	5725-5850	PASS
-20	120	5794.952905	5725-5850	PASS

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
	108	5794.957917	5725-5850	PASS
20	120	5794.996100	5725-5850	PASS
	132	5794.998005	5725-5850	PASS



#### IEEE 802.11ac 80 mode / 5210MHz

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5209.978460	5150-5250	PASS
40	120	5209.963734	5150-5250	PASS
30	120	5209.953070	5150-5250	PASS
20	120	5209.989300	5150-5250	PASS
10	120	5209.955970	5150-5250	PASS
0	120	5209.958454	5150-5250	PASS
-10	120	5209.997169	5150-5250	PASS
-20	120	5209.954191	5150-5250	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5209.954747	5150-5250	PASS
	120	5209.989300	5150-5250	PASS
	132	5209.963708	5150-5250	PASS

#### IEEE 802.11ac 80 mode / 5775MHz

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5774.974982	5725-5850	PASS
40	120	5774.954144	5725-5850	PASS
30	120	5774.976628	5725-5850	PASS
20	120	5774.998000	5725-5850	PASS
10	120	5774.953439	5725-5850	PASS
0	120	5774.990944	5725-5850	PASS
-10	120	5774.977717	5725-5850	PASS
-20	120	5774.983356	5725-5850	PASS

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5774.987057	5725-5850	PASS
	120	5774.998000	5725-5850	PASS
	132	5774.961855	5725-5850	PASS



### IEEE 802.11ac 80 mode / 5210MHz

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5209.988020	5150-5250	PASS
40	120	5209.997773	5150-5250	PASS
30	120	5209.952789	5150-5250	PASS
20	120	5209.997100	5150-5250	PASS
10	120	5209.998347	5150-5250	PASS
0	120	5209.988788	5150-5250	PASS
-10	120	5209.959499	5150-5250	PASS
-20	120	5209.994457	5150-5250	PASS

Environment Temperature ( °C )	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5209.997215	5150-5250	PASS
	120	5209.997100	5150-5250	PASS
	132	5209.972998	5150-5250	PASS

#### IEEE 802.11ac 80 mode / 5775MHz

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
50	120	5774.972711	5725-5850	PASS
40	120	5774.962937	5725-5850	PASS
30	120	5774.978689	5725-5850	PASS
20	120	5774.998000	5725-5850	PASS
10	120	5774.953840	5725-5850	PASS
0	120	5774.974411	5725-5850	PASS
-10	120	5774.966188	5725-5850	PASS
-20	120	5774.961139	5725-5850	PASS

Environment Temperature (°C)	Volage (V)	Measured Frequency (MHz)	limit Range	Test Result
20	108	5774.990150	5725-5850	PASS
	120	5774.998000	5725-5850	PASS
	132	5774.977616	5725-5850	PASS