Test Mode: <u>1X / IEEE 802.11h H120 MHZ (CH Mid)</u> Tested by: <u>Eve Wai</u>							
Ambient temperature: 24°CRelative humidity: 52% RHDate: June 26, 20							
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2584.000	45.63	-2.11	43.52	74.00	-30.48	V	Peak
3349.000	42.90	-0.77	42.13	74.00	-31.87	V	Peak
4555.000	42.71	3.53	46.24	74.00	-27.76	V	Peak
5338.000	40.57	5.58	46.15	74.00	-27.85	V	Peak
6346.000	40.28	6.64	46.92	74.00	-27.08	V	Peak
7192.000	40.46	8.07	48.53	74.00	-25.47	V	Peak
2539.000	45.20	-2.19	43.01	74.00	-30.99	Н	Peak
4015.000	41.70	1.64	43.34	74.00	-30.66	Н	Peak
4906.000	41.20	4.67	45.87	74.00	-28.13	Н	Peak
5590.000	40.80	5.91	46.71	74.00	-27.29	Н	Peak
6490.000	40.50	6.87	47.37	74.00	-26.63	Н	Peak
6949.000	40.92	7.62	48.54	74.00	-25.46	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 or as required by the applicant.
- 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 / EEE 802.11n HT20 MHz (CH High)

Tested by: Eve Wang Date: June 26, 2016

•					· · · · · ·		
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2566.000	45.14	-2.14	43.00	74.00	-31.00	V	Peak
3349.000	43.02	-0.77	42.25	74.00	-31.75	V	Peak
3907.000	41.82	1.20	43.02	74.00	-30.98	V	Peak
4888.000	41.13	4.61	45.74	74.00	-28.26	V	Peak
5968.000	40.53	6.07	46.60	74.00	-27.40	V	Peak
7246.000	40.64	8.18	48.82	74.00	-25.18	V	Peak
2521.000	45.25	-2.22	43.03	74.00	-30.97	Н	Peak
3853.000	42.63	0.97	43.60	74.00	-30.40	Н	Peak
4258.000	42.06	2.50	44.56	74.00	-29.44	Н	Peak
5086.000	41.05	5.13	46.18	74.00	-27.82	Н	Peak
6229.000	40.07	6.45	46.52	74.00	-27.48	Н	Peak
6931.000	40.17	7.59	47.76	74.00	-26.24	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 or as required by the applicant.
- 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:		Tested by: E	<u>ve Wang</u>				
Ambient ten	Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>						
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2566.000	45.66	-2.14	43.52	74.00	-30.48	V	Peak
3205.000	44.20	-1.02	43.18	74.00	-30.82	V	Peak
4258.000	42.11	2.50	44.61	74.00	-29.39	V	Peak
4798.000	41.62	4.32	45.94	74.00	-28.06	V	Peak
6013.000	40.40	6.10	46.50	74.00	-27.50	V	Peak
7093.000	40.89	7.88	48.77	74.00	-25.23	V	Peak
2521.000	45.74	-2.22	43.52	74.00	-30.48	Н	Peak
2854.000	45.02	-1.62	43.40	74.00	-30.60	Н	Peak
3394.000	44.68	-0.70	43.98	74.00	-30.02	Н	Peak
4978.000	41.08	4.91	45.99	74.00	-28.01	Н	Peak
5842.000	41.87	6.01	47.88	74.00	-26.12	Н	Peak
6949.000	41.30	7.62	48.92	74.00	-25.08	н	Peak

# Combine with Antenna 0 and Antenna 1

- 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 or as required by the applicant.
- 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 HT40 MHz (CH Mid)

Tested by: Eve Wang Date: June 26, 2016

	•						
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2512.000	44.74	-2.24	42.50	74.00	-31.50	V	Peak
2836.000	44.00	-1.66	42.34	74.00	-31.66	V	Peak
4195.000	41.38	2.28	43.66	74.00	-30.34	V	Peak
4870.000	40.80	4.56	45.36	74.00	-28.64	V	Peak
5491.000	41.03	5.85	46.88	74.00	-27.12	V	Peak
7003.000	41.06	7.71	48.77	74.00	-25.23	V	Peak
		•					
2530.000	45.14	-2.21	42.93	74.00	-31.07	Н	Peak
3664.000	41.70	0.17	41.87	74.00	-32.13	Н	Peak
4348.000	41.78	2.81	44.59	74.00	-29.41	Н	Peak
5473.000	40.21	5.82	46.03	74.00	-27.97	Н	Peak
6346.000	40.49	6.64	47.13	74.00	-26.87	Н	Peak
6994.000	40.43	7.69	48.12	74.00	-25.88	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 or as required by the applicant.
- 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:	Tested by:Eve WaTested by:Eve Wa						
Ambient temperature: 24°CRelative humidity: 52% RHDate: June 2							<u>26, 2016</u>
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2548.000	45.23	-2.17	43.06	74.00	-30.94	V	Peak
4105.000	41.93	1.96	43.89	74.00	-30.11	V	Peak
4600.000	42.21	3.68	45.89	74.00	-28.11	V	Peak
4960.000	41.26	4.85	46.11	74.00	-27.89	V	Peak
6004.000	40.77	6.09	46.86	74.00	-27.14	V	Peak
6931.000	41.40	7.59	48.99	74.00	-25.01	V	Peak
2242.000	44.38	-3.67	40.71	74.00	-33.29	Н	Peak
2557.000	44.91	-2.16	42.75	74.00	-31.25	Н	Peak
3241.000	43.50	-0.96	42.54	74.00	-31.46	Н	Peak
4312.000	42.06	2.69	44.75	74.00	-29.25	Н	Peak
4870.000	43.18	4.56	47.74	74.00	-26.26	Н	Peak
6409.000	40.72	6.74	47.46	74.00	-26.54	Н	Peak
DEMA DIZO.							

- 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 or as required by the applicant.
- 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).



## 7.3. 6dB BANDWIDTH MEASUREMENT

### 7.3.1. LIMITS

According to §15.247(a) (2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz.

### 7.3.2. TEST INSTRUMENTS

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

#### 7.3.3. TEST PROCEDURES (please refer to measurement standard)

8.1 Option 2:

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW  $\geq$  3 RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be  $\geq$  6 dB.

#### 7.3.4. TEST SETUP





### 7.3.5. TEST RESULTS

#### No non-compliance noted

## Test Data

#### Test mode: IEEE 802.11b

Channel	Frequency	Band (kł	Bandwidth (kHz)		Test Result
	(MHZ)	Antenna 0	Antenna 1	(KHZ)	
Low	2412	10140	10130		PASS
Mid	2437	10130	10140	>500	PASS
High	2462	10140	10140		PASS

### Test mode: IEEE 802.11g

Channel	Frequency	Band (kl	width Hz)	Limit	Test Result
	(MHZ)	Antenna 0	Antenna 1	(KHZ)	
Low	2412	16550	16540		PASS
Mid	2437	16550	16550	>500	PASS
High	2462	16550	16560		PASS

#### Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency	Band (kł	Bandwidth (kHz)		Test Result
	(MHZ)	Antenna 0	nna 0 Antenna 1 (kHz)		
Low	2412	17760	17760		PASS
Mid	2437	17750	17760	>500	PASS
High	2462	17730	17720		PASS

#### Test mode: IEEE 802.11n HT40 MHz

Channel	Frequency	Band (kl	width Hz)	Limit	Test Result
	(MHZ)	Antenna 0	Antenna 1	(KHZ)	
Low	2422	36530	36520		PASS
Mid	2437	36530	36520	>500	PASS
High	2452	36530	36520		PASS



#### Test Plot

























IEEE 802.11n HT20 MHz mode (Antenna 0) 6dB Bandwidth (CH Low) 10:16:54 AM Jul 19, 2016 Radio Std: None Center Freq: 2.41200000 GHz Canter Freq: 2.412000000 GHz Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB Center Freq 2.412000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm dB/div Span 30 MHz Sweep 2.933 ms Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Total Power 17.4 dBm **Occupied Bandwidth** 17.637 MHz 17.034 kHz 99.00 % Transmit Freq Error **OBW Power** x dB Bandwidth 17.76 MHz x dB -6.00 dB STATUS 6dB Bandwidth (CH Mid) ISENSE-PULSE ALIGNAUTO Center Freq: 2.437000000 GHz Trig: Free Run #Atten: 20 dB Avg|Hold>10/10 10:17:53 AM Jul 19, 2016 Radio Std: None Center Freq 2.437000000 GHz Radio Device: BTS Ref 20.00 dBm 0 dB/div Span 30 MHz Sweep 2.933 ms Center 2.437 GHz #Res BW 100 kHz #VBW\_300 kHz Occupied Bandwidth Total Power 18.5 dBm 17.638 MHz Transmit Freq Error 15.176 kHz **OBW Power** 99.00 % x dB Bandwidth 17.75 MHz x dB -6.00 dB











IEEE 802.11n HT40 MHz mode (Antenna 0) 6dB Bandwidth (CH Low) 10:26:21 AM Jul 19, 2016 Radio Std: None Center Freq: 2.42200000 GHz Canter Freq: 2.42200000 GHz Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB Center Freq 2.422000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm dB/div Span 60 MHz Sweep 5.8 ms Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Total Power 17.3 dBm **Occupied Bandwidth** 36.145 MHz 59.227 kHz 99.00 % Transmit Freq Error **OBW Power** x dB Bandwidth 36.53 MHz x dB -6.00 dB STATUS 6dB Bandwidth (CH Mid) ISENSE-PULSE ALIGNAUTO Center Freq: 2.437000000 GHz Trig: Free Run #Atten: 20 dB Avg|Hold>10/10 10:24:14 AM Jul 19, 2016 Radio Std: None Center Freq 2.437000000 GHz Radio Device: BTS Ref 20.00 dBm 0 dB/div Span 60 MHz Sweep 5.8 ms Center 2.437 GHz #Res BW 100 kHz #VBW\_300 kHz Total Power 17.9 dBm Occupied Bandwidth 36.150 MHz Transmit Freq Error 55.030 kHz OBW Power 99.00 % x dB Bandwidth 36.53 MHz x dB -6.00 dB











## 7.4. ANTENNA GAIN

## **MEASUREMENT**

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal WLAN devices, the DSSS mode is used.

## **MEASUREMENT PARAMETERS**

Measurement parameter			
Detector	Peak		
Sweep time	Auto		
Resolution bandwidth	3 MHz		
Video bandwidth	3 MHz		
Trace-Mode	Max hold		

## **LIMITS**

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Antenna	a Gain
6 dl	Ві



## TEST RESULTS

### Antenna 0

T <sub>nom</sub>	V <sub>nom</sub>	Lowest channel 2412MHz	Middle channel 2437MHz	Highest channel 2462MHz		
Conducted power Measured with DS	[dBm/MHz] SSS modulation	6.58	7.63	8.37		
Radiated power [dBm/MHz] Measured with DSSS modulation		8.21	8.59	9.65		
Gain [dBi] Calculated		1.63	0.96	1.28		
Measurement und	certainty	± 1.5 dB (cond.) / ± 3 dB (rad.)				

### Antenna 1

T <sub>nom</sub>	V <sub>nom</sub>	Lowest channel 2412MHz	Middle channel 2437MHz	Highest channel 2462MHz		
Conducted power Measured with DS	[dBm/MHz] SSS modulation	7.42	7.50	9.22		
Radiated power [o Measured with DS	dBm/MHz] SSS modulation	9.16	8.67	9.87		
Gain [dBi] Calculated		1.74	1.17	0.65		
Measurement und	certainty	± 1.5 dB (cond.) / ± 3 dB (rad.)				



## 7.5. PEAK OUTPUT POWER

### 7.5.1. LIMITS

The maximum peak output power of the intentional radiator shall not exceed the following:

- 1. According to \$15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
- 2. According to \$15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 7.5.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Power Meter	Anritsu	ML2495A	1204003	02/21/2016	02/20/2017
Power Sensor	Anritsu	MA2411B	1126150	02/21/2016	02/20/2017

7.5.3. TEST PROCEDURES (please refer to measurement standard)

#### 9.1.1 RBW ≥ DTS bandwidth

This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the *DTS bandwidth*.

a) Set the RBW  $\geq$  *DTS* bandwidth.

- b) Set VBW  $\geq$  3 RBW.
- c) Set span ≥ 3 x RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

#### 9.1.2 PKPM1 Peak power meter method

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

#### 7.5.4. TEST SETUP





### 7.5.5. TEST RESULTS

#### No non-compliance noted

## Test Data

### Test mode: IEEE 802.11b (Antenna 0)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Peak / AVG	Limit (W)	Result
Low	2412	18.35	0.06839			PASS
Mid	2437	19.39	0.08690	Peak	1	PASS
High	2462	20.13	0.10304			PASS
Low	2412	16.12	0.04093			PASS
Mid	2437	17.06	0.05082	AVG	1	PASS
High	2462	17.57	0.05715			PASS

#### Test mode: IEEE 802.11b (Antenna 1)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Peak / AVG	Limit (W)	Result
Low	2412	19.18	0.08279			PASS
Mid	2437	19.27	0.08453	Peak	1	PASS
High	2462	20.98	0.12531			PASS
Low	2412	17.46	0.05572			PASS
Mid	2437	17.97	0.06266	AVG	1	PASS
High	2462	18.28	0.06730			PASS

## Test mode: IEEE 802.11g (Antenna 0)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Peak / AVG	Limit (W)	Result
Low	2412	22.25	0.16788			PASS
Mid	2437	23.40	0.21878	Peak	1	PASS
High	2462	24.02	0.25235			PASS
Low	2412	12.40	0.01738			PASS
Mid	2437	13.57	0.02275	AVG	1	PASS
High	2462	14.29	0.02685			PASS



Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Peak / AVG	Limit (W)	Result
Low	2412	22.63	0.18323			PASS
Mid	2437	21.52	0.14191	Peak	1	PASS
High	2462	23.46	0.22182			PASS
Low	2412	13.05	0.02018			PASS
Mid	2437	12.03	0.01596	AVG	1	PASS
High	2462	13.82	0.02410			PASS

#### Test mode: IEEE 802.11g (Antenna 1)

#### Test mode: IEEE 802.11n HT20 MHz(Combine with Antenna 0 and Antenna 1)

Channel		C	Output Powe (dBm)	r	Output Power	Peak /	Limit	Result
		Antenna 0	Antenna 1	Total	(W)	AVG	(**)	
Low	2412	21.56	21.05	24.32	0.27057			PASS
Mid	2437	22.84	21.82	25.37	0.34436	Peak	1	PASS
High	2462	23.26	22.61	25.96	0.39423			PASS
Low	2412	12.54	12.29	15.43	0.03489		1	PASS
Mid	2437	13.93	13.04	16.52	0.04485	AVG		PASS
High	2462	14.16	13.75	16.97	0.04978			PASS

#### Test mode: IEEE 802.11n HT40 MHz(Combine with Antenna 0 and Antenna 1)

Channel	Frequency	C	Output Powe (dBm)	er	Output Power	Peak /	Peak / Limit	
		Antenna 0	Antenna 1	Total	(W)	AVG	(**)	
Low	2422	20.75	20.66	23.72	0.23526			PASS
Mid	2437	21.57	21.23	24.41	0.27629	Peak	1	PASS
High	2452	22.05	21.71	24.89	0.30858			PASS
Low	2422	11.88	11.48	14.69	0.02948		1	PASS
Mid	2437	12.79	12.13	15.48	0.03534	AVG		PASS
High	2452	13.03	12.65	15.85	0.03850			PASS



## 7.6. BAND EDGES MEASUREMENT

### 7.6.1. LIMITS

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

	Radiated Er	mission Test S	ite 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
Loop Antenna	COM-POWER	AL-130	121044	09/25/2016	09/24/2017
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2016	02/20/2017
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2016	02/27/2017
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2016	02/27/2017
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller CT		N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2016	02/20/2017
Test S/W	FARAD		LZ-RF / CCS	S-SZ-3A2	

#### 7.6.2. TEST INSTRUMENTS

**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. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.



#### 7.6.3. TEST PROCEDURES (please refer to measurement standard)

- 1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO / Detector=PEAK
- 5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are

#### 7.6.4. TEST SETUP





### 7.6.5. TEST RESULTS

<u>Test Plot</u>

#### IEEE 802.11b mode (Antenna 0)

Band Edges (CH Low)



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	59.41	-2.86	56.55	74.00	-17.45	Peak	Vertical
2	2390.0000	46.07	-2.86	43.21	54.00	-10.79	Average	Vertical





No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	58.32	-2.86	55.46	74.00	-18.54	Peak	Horizontal
2	2390.0000	47.35	-2.86	44.49	54.00	-9.51	Average	Horizontal



## Band Edges (CH High)



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	59.24	-2.35	56.89	74.00	-17.11	Peak	Vertical
2	2483.5000	49.69	-2.35	47.34	54.00	-6.66	Average	Vertical





No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	62.20	-2.35	59.85	74.00	-14.15	Peak	Horizontal
2	2483.5000	53.67	-2.35	51.32	54.00	-2.68	Average	Horizontal

### IEEE 802.11b mode (Antenna 1)

**Band Edges (CH Low)** 



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	59.21	-2.86	56.35	74.00	-17.65	Peak	Vertical
2	2390.0000	46.27	-2.86	43.41	54.00	-10.59	Average	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	58.35	-2.86	55.49	74.00	-18.51	Peak	Horizontal
2	2390.0000	46.54	-2.86	43.68	54.00	-10.32	Average	Horizontal

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## Band Edges (CH High)



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	56.25	-2.35	53.90	74.00	-20.10	Peak	Vertical
2	2483.5000	45.78	-2.35	43.43	54.00	-10.57	Average	Vertical





No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	57.97	-2.35	55.62	74.00	-18.38	Peak	Horizontal
2	2483.5000	48.23	-2.35	45.88	54.00	-8.12	Average	Horizontal

#### IEEE 802.11g mode (Antenna 0)





No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	65.44	-2.86	62.58	74.00	-11.42	Peak	Vertical
2	2390.0000	49.76	-2.86	46.90	54.00	-7.10	Average	Vertical





No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	69.27	-2.86	66.41	74.00	-7.59	Peak	Horizontal
2	2390.0000	51.88	-2.86	49.02	54.00	-4.98	Average	Horizontal



### Band Edges (CH High)



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	59.98	-2.35	57.63	74.00	-16.37	Peak	Vertical
2	2483.5000	47.49	-2.35	45.14	54.00	-8.86	Average	Vertical





### IEEE 802.11g mode (Antenna 1)



### **Band Edges (CH Low)**

No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	60.93	-2.86	58.07	74.00	-15.93	Peak	Vertical
2	2390.0000	47.72	-2.86	44.86	54.00	-9.14	Average	Vertical





No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	69.53	-2.86	66.67	74.00	-7.33	Peak	Horizontal
2	2390.0000	53.55	-2.86	50.69	54.00	-3.31	Average	Horizontal