



# 6.7 RADIATED UNDESIABLE EMISSION

## 6.7.1 LIMIT

1. 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:

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

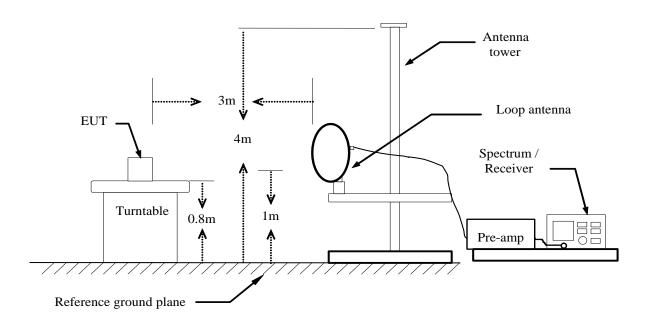


### 6.7.2 TEST INSTRUMENTS

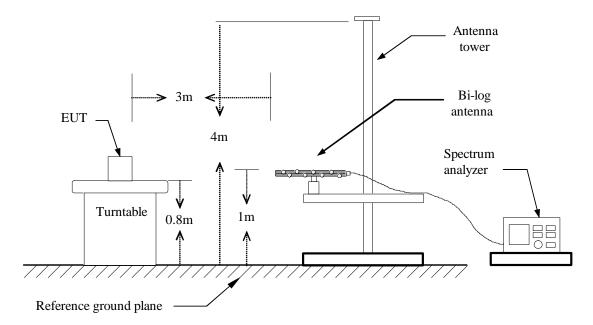
Radiated Emission Test Site 966(2)									
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration				
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	02/21/2016	02/20/2017				
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017				
Amplifier	EMEC	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					

# 6.7.3 TEST CONFIGURATION

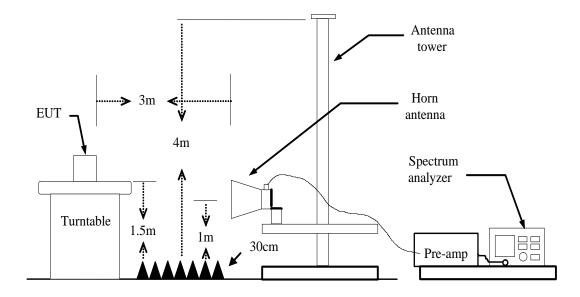
### Below 30MHz



### Below 1 GHz



## Above 1 GHz



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



# 6.7.4 TEST PROCEDURE

- 1. The EUT is placed on a turntable, which is 0.8m or 1.5m above 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 emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO / Detector=Peak

7. Repeat above procedures until the measurements for all frequencies are complete.



## 6.7.5 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

Frequency (MHz)= Emission frequency in MHzReading (dBuV)= Uncorrected Analyzer / Receiver readingCorrect Factor (dB/m)= Antenna factor + Cable loss - Amplifier gainResult (dBuV/m)= Reading (dBuV) + Corr. Factor (dB/m)Limit (dBuV/m)= Limit stated in standardMargin (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) Reading (dBuV) Correction Factor (dB/m) Result (dBuV/m)	<ul> <li>= Emission frequency in MHz</li> <li>= Uncorrected Analyzer / Receiver reading</li> <li>= Antenna factor + Cable loss – Amplifier gain</li> <li>= Reading (dBuV) + Corr. Factor (dB/m)</li> </ul>
Limit (dBuV/m) Margin (dB) Peak	= Limit stated in standard = Result (dBuV/m) – Limit (dBuV/m) = Peak Reading
AVG	= Average Reading

### Calculation Formula

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

### 6.7.6 TEST RESULTS

### **Below 1 GHz**

Test Mode: <u>TX / IEEE 802.11a / 5180MHz /(CH Low)</u> Ambient temperature: 24°C Relative humidity: 52% RH Tested by: Darry Wu Date: June 29, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
39.7000	47.12	-16.11	31.01	40.00	-8.99	V	QP
61.0400	60.88	-24.15	36.73	40.00	-3.27	V	QP
123.1200	48.90	-21.02	27.88	43.50	-15.62	V	QP
375.3200	45.35	-16.82	28.53	46.00	-17.47	V	QP
500.4500	42.94	-14.35	28.59	46.00	-17.41	V	QP
1000.0000	39.54	-9.36	30.18	54.00	-23.82	V	QP
39.7000	47.12	-16.11	31.01	40.00	-8.99	Н	QP
61.0400	60.88	-24.15	36.73	40.00	-3.27	Н	QP
123.1200	48.90	-21.02	27.88	43.50	-15.62	Н	QP
375.3200	45.35	-16.82	28.53	46.00	-17.47	Н	QP
500.4500	42.94	-14.35	28.59	46.00	-17.41	Н	QP
1000.0000	39.54	-9.36	30.18	54.00	-23.82	Н	QP

#### 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.

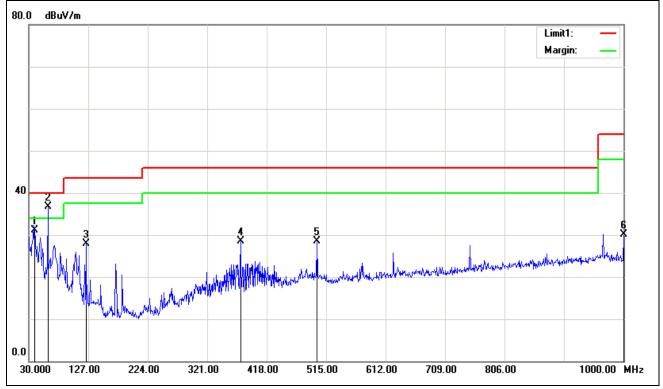
4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

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.

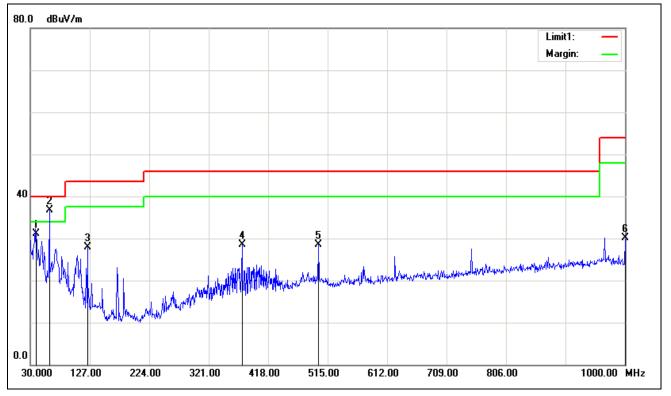
6. Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).



### Vertical



#### Horizontal



# Above 1 GHz

<u>1GHz~6GHz</u>

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

Tested by: Darry Wu

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

Date: <u>December 26, 2016</u>

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1440.000	44.88	-6.99	37.89	74.00	-36.11	V	peak
2400.000	43.34	-2.81	40.53	74.00	-33.47	V	peak
2900.000	43.04	-1.54	41.50	74.00	-32.50	V	peak
3475.000	42.28	-0.56	41.72	74.00	-32.28	V	peak
4470.000	40.90	3.24	44.14	74.00	-29.86	V	peak
4995.000	40.28	4.96	45.24	74.00	-28.76	V	peak
1140.000	44.99	-8.02	36.97	74.00	-37.03	Н	Peak
1445.000	44.04	-6.98	37.06	74.00	-36.94	Н	Peak
2565.000	43.83	-2.14	41.69	74.00	-32.31	Н	Peak
3725.000	43.29	0.43	43.72	74.00	-30.28	Н	peak
4395.000	41.53	2.98	44.51	74.00	-29.49	Н	peak
4850.000	40.28	4.49	44.77	74.00	-29.23	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).

#### Above 6GHz

#### <u>Antenna 0</u>

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

Tested by: Darry Wu

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

Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6888.000	31.66	7.52	39.18	74.00	-34.82	V	peak
7764.000	31.42	9.19	40.61	74.00	-33.39	V	peak
8364.000	31.31	9.45	40.76	74.00	-33.24	V	peak
10356.000	33.33	13.08	46.41	74.00	-27.59	V	peak
11316.000	30.09	14.94	45.03	74.00	-28.97	V	peak
14304.000	28.19	20.76	48.95	74.00	-25.05	V	peak
7656.000	31.16	8.98	40.14	74.00	-33.86	Н	Peak
8352.000	31.10	9.46	40.56	74.00	-33.44	н	Peak
10500.000	30.02	13.53	43.55	74.00	-30.45	Н	Peak
11832.000	30.12	14.71	44.83	74.00	-29.17	Н	peak
12936.000	28.91	17.74	46.65	74.00	-27.35	н	peak
14268.000	28.03	20.74	48.77	74.00	-25.23	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).

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

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December</u> 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7740.000	31.42	9.14	40.56	74.00	-33.44	V	peak
8364.000	31.21	9.45	40.66	74.00	-33.34	V	peak
10404.000	35.40	13.23	48.63	74.00	-25.37	V	peak
11040.000	29.78	15.06	44.84	74.00	-29.16	V	peak
13008.000	28.63	17.97	46.60	74.00	-27.40	V	peak
14244.000	28.21	20.72	48.93	74.00	-25.07	V	peak
7740.000	31.33	9.14	40.47	74.00	-33.53	Н	Peak
8340.000	31.31	9.46	40.77	74.00	-33.23	н	Peak
10404.000	31.02	13.23	44.25	74.00	-29.75	н	Peak
12492.000	29.41	16.27	45.68	74.00	-28.32	н	peak
14244.000	28.20	20.72	48.92	74.00	-25.08	н	peak
15072.000	28.79	20.83	49.62	74.00	-24.38	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5240MHz /(CH High)

Tested by: Darry Wu

Ambient ter	mperature:	<u>24°C</u>	Re
-------------	------------	-------------	----

lative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6888.000	32.16	7.52	39.68	74.00	-34.32	V	peak
7764.000	30.92	9.19	40.11	74.00	-33.89	V	peak
8364.000	30.81	9.45	40.26	74.00	-33.74	V	peak
10356.000	33.33	13.08	46.41	74.00	-27.59	V	peak
11856.000	29.99	14.70	44.69	74.00	-29.31	V	peak
12780.000	29.48	17.22	46.70	74.00	-27.30	V	peak
6948.000	31.89	7.62	39.51	74.00	-34.49	Н	Peak
7764.000	31.40	9.19	40.59	74.00	-33.41	Н	Peak
10476.000	30.63	13.46	44.09	74.00	-29.91	Н	Peak
10944.000	29.55	14.91	44.46	74.00	-29.54	Н	peak
14460.000	28.35	20.85	49.20	74.00	-24.80	Н	peak
14844.000	28.41	21.07	49.48	74.00	-24.52	Н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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)

Tested by: Darry Wu

Ambient	temperature:	<u>24°C</u> R
---------	--------------	---------------

elative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7728.000	31.18	9.12	40.30	74.00	-33.70	V	peak
9960.000	30.83	11.86	42.69	74.00	-31.31	V	peak
10524.000	33.10	13.60	46.70	74.00	-27.30	V	peak
12912.000	29.20	17.66	46.86	74.00	-27.14	V	peak
14244.000	28.30	20.72	49.02	74.00	-24.98	V	peak
14460.000	28.32	20.85	49.17	74.00	-24.83	V	peak
7764.000	31.24	9.19	40.43	74.00	-33.57	Н	Peak
10524.000	31.48	13.60	45.08	74.00	-28.92	н	Peak
11316.000	29.67	14.94	44.61	74.00	-29.39	н	Peak
13008.000	28.64	17.97	46.61	74.00	-27.39	н	peak
14052.000	28.05	20.61	48.66	74.00	-25.34	н	peak
14280.000	28.30	20.74	49.04	74.00	-24.96	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5300MHz /(CH Mid)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December</u> 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7908.000	30.68	9.47	40.15	74.00	-33.85	V	peak
10056.000	31.16	12.15	43.31	74.00	-30.69	V	peak
10596.000	30.98	13.83	44.81	74.00	-29.19	V	peak
12012.000	30.17	14.68	44.85	74.00	-29.15	V	peak
12792.000	28.83	17.26	46.09	74.00	-27.91	V	peak
14832.000	28.41	21.06	49.47	74.00	-24.53	V	peak
		· · · · · · · · · · · · · · · · · · ·					
7728.000	31.19	9.12	40.31	74.00	-33.69	н	Peak
8424.000	31.59	9.42	41.01	74.00	-32.99	Н	Peak
11040.000	29.48	15.06	44.54	74.00	-29.46	н	Peak
12960.000	28.66	17.82	46.48	74.00	-27.52	Н	peak
14232.000	28.00	20.71	48.71	74.00	-25.29	н	peak
14880.000	28.12	21.09	49.21	74.00	-24.79	Н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5320MHz /(CH High)

Tested by: Darry Wu

Ambient temper	ature: <u>24°C</u> F
----------------	----------------------

Relative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7740.000	31.30	9.14	40.44	74.00	-33.56	V	peak
10644.000	32.18	13.98	46.16	74.00	-27.84	V	peak
11040.000	29.59	15.06	44.65	74.00	-29.35	V	peak
11844.000	30.19	14.71	44.90	74.00	-29.10	V	peak
12900.000	28.66	17.62	46.28	74.00	-27.72	V	peak
14232.000	28.56	20.71	49.27	74.00	-24.73	V	peak
6960.000	31.76	7.64	39.40	74.00	-34.60	Н	Peak
7716.000	31.56	9.10	40.66	74.00	-33.34	н	Peak
8304.000	31.19	9.48	40.67	74.00	-33.33	н	Peak
10956.000	29.42	14.94	44.36	74.00	-29.64	н	peak
11832.000	30.23	14.71	44.94	74.00	-29.06	н	peak
14244.000	28.29	20.72	49.01	74.00	-24.99	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5500MHz /(CH Low)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>	Rela
----------------------------------	------

ative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8448.000	31.35	9.40	40.75	74.00	-33.25	V	peak
8448.000	31.35	9.40	40.75	74.00	-33.25	V	peak
10056.000	30.86	12.15	43.01	74.00	-30.99	V	peak
10500.000	30.06	13.53	43.59	74.00	-30.41	V	peak
11004.000	31.09	15.08	46.17	74.00	-27.83	V	peak
14916.000	28.37	21.11	49.48	74.00	-24.52	V	peak
7752.000	31.11	9.17	40.28	74.00	-33.72	Н	Peak
8448.000	31.43	9.40	40.83	74.00	-33.17	н	Peak
10428.000	29.82	13.31	43.13	74.00	-30.87	н	Peak
11016.000	29.57	15.07	44.64	74.00	-29.36	н	peak
12960.000	28.67	17.82	46.49	74.00	-27.51	н	peak
14808.000	28.57	21.05	49.62	74.00	-24.38	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5580MHz /(CH Mid)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December</u> 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6972.000	31.48	7.65	39.13	74.00	-34.87	V	peak
7728.000	31.32	9.12	40.44	74.00	-33.56	V	peak
11160.000	30.56	15.01	45.57	74.00	-28.43	V	peak
11856.000	30.57	14.70	45.27	74.00	-28.73	V	peak
14880.000	28.49	21.09	49.58	74.00	-24.42	V	peak
16740.000	28.77	21.63	50.40	74.00	-23.60	V	peak
7200.000	31.17	8.09	39.26	74.00	-34.74	Н	Peak
8304.000	31.11	9.48	40.59	74.00	-33.41	н	Peak
11040.000	29.75	15.06	44.81	74.00	-29.19	н	peak
11844.000	30.11	14.71	44.82	74.00	-29.18	н	peak
12840.000	28.65	17.42	46.07	74.00	-27.93	н	peak
14988.000	28.46	21.15	49.61	74.00	-24.39	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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)

Tested by: Darry Wu

Ambient	temperature:	24°C	Re

elative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8364.000	31.50	9.45	40.95	74.00	-33.05	V	peak
10524.000	29.90	13.60	43.50	74.00	-30.50	V	peak
11040.000	29.75	15.06	44.81	74.00	-29.19	V	peak
11400.000	30.57	14.90	45.47	74.00	-28.53	V	peak
13440.000	27.61	19.11	46.72	74.00	-27.28	V	peak
17100.000	28.98	23.37	52.35	74.00	-21.65	V	peak
7752.000	31.40	9.17	40.57	74.00	-33.43	Н	Peak
9624.000	30.37	10.90	41.27	74.00	-32.73	н	Peak
10524.000	30.14	13.60	43.74	74.00	-30.26	н	Peak
11844.000	30.37	14.71	45.08	74.00	-28.92	н	peak
12864.000	29.08	17.50	46.58	74.00	-27.42	н	peak
14880.000	28.41	21.09	49.50	74.00	-24.50	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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).

Compliance Certification Services (Shenzhen) Inc.

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

Tested by: Darry Wu

	Ambient	temperature:	24°C
--	---------	--------------	------

Relative humidity: <u>52% RH</u>D

Date:	December	26,	2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.68	7.62	39.30	74.00	-34.70	V	peak
7752.000	31.14	9.17	40.31	74.00	-33.69	V	peak
11484.000	31.02	14.87	45.89	74.00	-28.11	V	peak
13008.000	28.77	17.97	46.74	74.00	-27.26	V	peak
14808.000	28.21	21.05	49.26	74.00	-24.74	V	peak
17244.000	28.92	23.34	52.26	74.00	-21.74	V	peak
7764.000	31.10	9.19	40.29	74.00	-33.71	Н	Peak
8364.000	31.62	9.45	41.07	74.00	-32.93	Н	Peak
11484.000	29.81	14.87	44.68	74.00	-29.32	Н	Peak
13596.000	27.73	19.52	47.25	74.00	-26.75	Н	peak
14088.000	28.04	20.63	48.67	74.00	-25.33	Н	peak
14988.000	28.63	21.15	49.78	74.00	-24.22	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 802.11a / 5785MHz /(CH Mid)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u> Date: <u>December 26, 2016</u>

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.66	7.62	39.28	74.00	-34.72	V	peak
8364.000	31.34	9.45	40.79	74.00	-33.21	V	peak
10056.000	30.58	12.15	42.73	74.00	-31.27	V	peak
11568.000	32.59	14.83	47.42	74.00	-26.58	V	peak
14304.000	28.29	20.76	49.05	74.00	-24.95	V	peak
15036.000	28.53	21.00	49.53	74.00	-24.47	V	peak
6948.000	31.79	7.62	39.41	74.00	-34.59	Н	Peak
7764.000	31.84	9.19	41.03	74.00	-32.97	н	Peak
10524.000	30.14	13.60	43.74	74.00	-30.26	н	Peak
11040.000	29.78	15.06	44.84	74.00	-29.16	н	peak
13776.000	27.96	19.99	47.95	74.00	-26.05	н	peak
15108.000	28.93	20.67	49.60	74.00	-24.40	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5825MHz /(CH High)

Tested by: Darry Wu

Ambient	temperature:	<u>24°C</u>	R
---------	--------------	-------------	---

elative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.67	9.17	40.84	74.00	-33.16	V	peak
11040.000	29.37	15.06	44.43	74.00	-29.57	V	peak
11652.000	34.07	14.79	48.86	74.00	-25.14	V	peak
13512.000	27.57	19.30	46.87	74.00	-27.13	V	peak
14736.000	28.54	21.01	49.55	74.00	-24.45	V	peak
17472.000	29.21	23.30	52.51	74.00	-21.49	V	peak
							•
8364.000	31.65	9.45	41.10	74.00	-32.90	н	Peak
11652.000	30.31	14.79	45.10	74.00	-28.90	н	Peak
12792.000	29.31	17.26	46.57	74.00	-27.43	н	Peak
13008.000	28.66	17.97	46.63	74.00	-27.37	Н	peak
14316.000	28.36	20.76	49.12	74.00	-24.88	н	peak
15000.000	28.46	21.16	49.62	74.00	-24.38	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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).

Compliance Certification Services (Shenzhen) Inc.

# Antenna 1

Test Mode: TX / IEEE 802 11a / 5180MHz /(CH Low)

Tested by: Darry Wu

st woue.	t <b>Mode:</b> T <u>X / IEEE 802.11a / 5180MHz /(CH Low)</u>						Jarry W
mbient tem	perature: 2	<u>24°C</u> <b>Rela</b>	ative humid	ity: <u>52% RH</u>	Date:	December	26, 201
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remar
6744.000	31.19	7.29	38.48	74.00	-35.52	V	peak
10356.000	33.52	13.08	46.60	74.00	-27.40	V	peak
11052.000	29.55	15.06	44.61	74.00	-29.39	V	peak
12792.000	29.41	17.26	46.67	74.00	-27.33	V	peak
14160.000	28.03	20.67	48.70	74.00	-25.30	V	peak
14916.000	28.17	21.11	49.28	74.00	-24.72	V	peak
8448.000	31.15	9.40	40.55	74.00	-33.45	Н	Peak
10524.000	32.01	13.60	45.61	74.00	-28.39	Н	Peak
11328.000	29.73	14.94	44.67	74.00	-29.33	н	Peak
12888.000	28.49	17.58	46.07	74.00	-27.93	Н	peak
13632.000	27.93	19.61	47.54	74.00	-26.46	н	peak
14436.000	27.89	20.83	48.72	74.00	-25.28	Н	peak

- Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental 1. 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. З.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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 / 5200MHz /(CH Mid)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December</u> 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7572.000	31.42	8.82	40.24	74.00	-33.76	V	peak
10404.000	33.63	13.23	46.86	74.00	-27.14	V	peak
11040.000	29.82	15.06	44.88	74.00	-29.12	V	peak
12960.000	29.06	17.82	46.88	74.00	-27.12	V	peak
14460.000	28.01	20.85	48.86	74.00	-25.14	V	peak
15024.000	28.65	21.05	49.70	74.00	-24.30	V	peak
8364.000	31.78	9.45	41.23	74.00	-32.77	Н	Peak
10404.000	32.94	13.23	46.17	74.00	-27.83	н	Peak
11844.000	30.30	14.71	45.01	74.00	-28.99	Н	Peak
14244.000	28.43	20.72	49.15	74.00	-24.85	Н	peak
14736.000	28.66	21.01	49.67	74.00	-24.33	н	peak
17100.000	28.27	23.37	51.64	74.00	-22.36	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5240MHz /(CH High)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December 26, 2016</u>

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.92	7.62	39.54	74.00	-34.46	V	peak
8352.000	31.56	9.46	41.02	74.00	-32.98	V	peak
9840.000	31.15	11.52	42.67	74.00	-31.33	V	peak
10476.000	33.57	13.46	47.03	74.00	-26.97	V	peak
12936.000	29.10	17.74	46.84	74.00	-27.16	V	peak
14244.000	28.42	20.72	49.14	74.00	-24.86	V	peak
6948.000	31.88	7.62	39.50	74.00	-34.50	Н	Peak
7752.000	31.65	9.17	40.82	74.00	-33.18	н	Peak
10476.000	32.04	13.46	45.50	74.00	-28.50	н	Peak
11844.000	30.44	14.71	45.15	74.00	-28.85	н	peak
14460.000	28.37	20.85	49.22	74.00	-24.78	н	peak
15000.000	28.26	21.16	49.42	74.00	-24.58	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December 26, 2016</u>

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6972.000	31.51	7.65	39.16	74.00	-34.84	V	peak
7740.000	31.78	9.14	40.92	74.00	-33.08	V	peak
10524.000	33.80	13.60	47.40	74.00	-26.60	V	peak
11844.000	30.16	14.71	44.87	74.00	-29.13	V	peak
14388.000	28.43	20.81	49.24	74.00	-24.76	V	peak
14952.000	28.37	21.13	49.50	74.00	-24.50	V	peak
7764.000	31.85	9.19	41.04	74.00	-32.96	Н	Peak
8400.000	31.89	9.43	41.32	74.00	-32.68	н	Peak
10524.000	33.59	13.60	47.19	74.00	-26.81	н	Peak
11304.000	29.93	14.95	44.88	74.00	-29.12	Н	peak
14280.000	28.45	20.74	49.19	74.00	-24.81	н	peak
15036.000	28.76	21.00	49.76	74.00	-24.24	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5300MHz /(CH Mid)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December</u> 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.48	9.17	40.65	74.00	-33.35	V	peak
8352.000	31.58	9.46	41.04	74.00	-32.96	V	peak
10596.000	33.06	13.83	46.89	74.00	-27.11	V	peak
11316.000	30.01	14.94	44.95	74.00	-29.05	V	peak
12684.000	29.13	16.90	46.03	74.00	-27.97	V	peak
14472.000	28.36	20.85	49.21	74.00	-24.79	V	peak
7200.000	31.11	8.09	39.20	74.00	-34.80	Н	Peak
7764.000	31.55	9.19	40.74	74.00	-33.26	н	Peak
10596.000	32.60	13.83	46.43	74.00	-27.57	н	Peak
11160.000	29.89	15.01	44.90	74.00	-29.10	Н	peak
13800.000	28.01	20.05	48.06	74.00	-25.94	н	peak
14988.000	28.62	21.15	49.77	74.00	-24.23	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5320MHz /(CH High)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>	R
----------------------------------	---

elative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8340.000	31.33	9.46	40.79	74.00	-33.21	V	peak
10644.000	33.98	13.98	47.96	74.00	-26.04	V	peak
11304.000	30.56	14.95	45.51	74.00	-28.49	V	peak
11844.000	30.97	14.71	45.68	74.00	-28.32	V	peak
12960.000	29.50	17.82	47.32	74.00	-26.68	V	peak
14772.000	28.62	21.03	49.65	74.00	-24.35	V	peak
6156.000	32.09	6.33	38.42	74.00	-35.58	Н	Peak
6948.000	31.87	7.62	39.49	74.00	-34.51	н	Peak
7788.000	31.66	9.24	40.90	74.00	-33.10	н	Peak
10644.000	33.10	13.98	47.08	74.00	-26.92	н	peak
12936.000	29.96	17.74	47.70	74.00	-26.30	н	peak
14820.000	28.53	21.06	49.59	74.00	-24.41	Н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5500MHz /(CH Low)

Tested by: Darry Wu

Ambient	temperature:	24°C	Re

elative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.42	9.17	40.59	74.00	-33.41	V	peak
10524.000	30.23	13.60	43.83	74.00	-30.17	V	peak
11004.000	33.34	15.08	48.42	74.00	-25.58	V	peak
13548.000	27.64	19.39	47.03	74.00	-26.97	V	peak
14880.000	28.60	21.09	49.69	74.00	-24.31	V	peak
16500.000	29.65	20.00	49.65	74.00	-24.35	V	peak
							•
7752.000	31.59	9.17	40.76	74.00	-33.24	н	Peak
8400.000	31.21	9.43	40.64	74.00	-33.36	Н	Peak
11004.000	29.53	15.08	44.61	74.00	-29.39	Н	Peak
13152.000	28.47	18.35	46.82	74.00	-27.18	Н	peak
14316.000	28.20	20.76	48.96	74.00	-25.04	н	peak
14880.000	28.60	21.09	49.69	74.00	-24.31	Н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5580MHz /(CH Mid)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December</u> 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6948.000	31.53	7.62	39.15	74.00	-34.85	V	peak
7764.000	31.66	9.19	40.85	74.00	-33.15	V	peak
8448.000	31.49	9.40	40.89	74.00	-33.11	V	peak
10512.000	30.13	13.57	43.70	74.00	-30.30	V	peak
11160.000	32.71	15.01	47.72	74.00	-26.28	V	peak
14916.000	28.32	21.11	49.43	74.00	-24.57	V	peak
							•
6960.000	31.99	7.64	39.63	74.00	-34.37	н	Peak
10500.000	30.23	13.53	43.76	74.00	-30.24	н	Peak
10944.000	29.90	14.91	44.81	74.00	-29.19	Н	Peak
11160.000	30.31	15.01	45.32	74.00	-28.68	Н	peak
14064.000	27.79	20.62	48.41	74.00	-25.59	н	peak
14928.000	28.45	21.12	49.57	74.00	-24.43	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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)

Tested by: Darry Wu

Ambient	temperature:	<u>24°C</u>	R
---------	--------------	-------------	---

Relative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.68	9.17	40.85	74.00	-33.15	V	peak
8364.000	31.37	9.45	40.82	74.00	-33.18	V	peak
10056.000	31.00	12.15	43.15	74.00	-30.85	V	peak
11052.000	29.68	15.06	44.74	74.00	-29.26	V	peak
11400.000	32.09	14.90	46.99	74.00	-27.01	V	peak
14244.000	28.33	20.72	49.05	74.00	-24.95	V	peak
7644.000	31.43	8.96	40.39	74.00	-33.61	Н	Peak
8448.000	31.49	9.40	40.89	74.00	-33.11	Н	Peak
10644.000	29.86	13.98	43.84	74.00	-30.16	Н	Peak
11400.000	30.46	14.90	45.36	74.00	-28.64	Н	peak
12792.000	29.47	17.26	46.73	74.00	-27.27	Н	peak
14772.000	28.19	21.03	49.22	74.00	-24.78	Н	peak

- 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.
- 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 5. 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, 6. 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).

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

Tested by: Darry Wu

Ambient	temperature:	<u>24°C</u>	Rela
---------	--------------	-------------	------

ative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.70	9.17	40.87	74.00	-33.13	V	peak
10500.000	30.21	13.53	43.74	74.00	-30.26	V	peak
11484.000	30.94	14.87	45.81	74.00	-28.19	V	peak
12912.000	29.37	17.66	47.03	74.00	-26.97	V	peak
14316.000	28.16	20.76	48.92	74.00	-25.08	V	peak
14904.000	28.78	21.10	49.88	74.00	-24.12	V	peak
7752.000	31.48	9.17	40.65	74.00	-33.35	Н	Peak
8376.000	31.76	9.44	41.20	74.00	-32.80	н	Peak
10872.000	29.66	14.68	44.34	74.00	-29.66	н	Peak
11316.000	29.89	14.94	44.83	74.00	-29.17	Н	peak
11820.000	30.21	14.72	44.93	74.00	-29.07	н	peak
14244.000	28.34	20.72	49.06	74.00	-24.94	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5785MHz /(CH Mid)

Tested by: Darry Wu

Ambient temperature: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December</u> 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7740.000	31.67	9.14	40.81	74.00	-33.19	V	peak
8352.000	31.79	9.46	41.25	74.00	-32.75	V	peak
10512.000	30.50	13.57	44.07	74.00	-29.93	V	peak
10908.000	29.56	14.79	44.35	74.00	-29.65	V	peak
11568.000	32.30	14.83	47.13	74.00	-26.87	V	peak
14880.000	28.53	21.09	49.62	74.00	-24.38	V	peak
							•
7752.000	31.38	9.17	40.55	74.00	-33.45	н	Peak
10500.000	29.98	13.53	43.51	74.00	-30.49	н	Peak
11568.000	30.44	14.83	45.27	74.00	-28.73	н	Peak
11856.000	30.42	14.70	45.12	74.00	-28.88	Н	peak
12984.000	28.66	17.90	46.56	74.00	-27.44	н	peak
14988.000	28.40	21.15	49.55	74.00	-24.45	н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 / 5825MHz /(CH High)

Tested by: Darry Wu

Ambient	temperature: 24°	<u>C</u> Re
---------	------------------	-------------

elative humidity: 52% RH Date: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7740.000	31.24	9.14	40.38	74.00	-33.62	V	peak
8352.000	31.33	9.46	40.79	74.00	-33.21	V	peak
10500.000	30.42	13.53	43.95	74.00	-30.05	V	peak
11652.000	33.79	14.79	48.58	74.00	-25.42	V	peak
11844.000	31.00	14.71	45.71	74.00	-28.29	V	peak
14268.000	28.17	20.74	48.91	74.00	-25.09	V	peak
8424.000	31.56	9.42	40.98	74.00	-33.02	н	Peak
10500.000	30.34	13.53	43.87	74.00	-30.13	Н	Peak
11064.000	29.66	15.05	44.71	74.00	-29.29	Н	Peak
11652.000	31.06	14.79	45.85	74.00	-28.15	Н	peak
14244.000	28.56	20.72	49.28	74.00	-24.72	Н	peak
17244.000	28.40	23.34	51.74	74.00	-22.26	Н	peak

- 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 2. instrument using peak/average detector mode.
- Average test would be performed if the peak result were greater than the average limit. 3.
- Data of measurement within this frequency range shown " --- " in the table above means 4. 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, 5. 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 20 MHz / 5180MHz /(CH Low)Tested by: Darry WuAmbient temperature: 24°CRelative humidity: 52% RHDate: December 26, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.25	9.19	40.44	74.00	-33.56	V	peak
10356.000	36.73	13.08	49.81	74.00	-24.19	V	peak
11052.000	29.57	15.06	44.63	74.00	-29.37	V	peak
11844.000	30.31	14.71	45.02	74.00	-28.98	V	peak
12840.000	29.50	17.42	46.92	74.00	-27.08	V	peak
14280.000	28.42	20.74	49.16	74.00	-24.84	V	peak
	·			·			
7752.000	31.32	9.17	40.49	74.00	-33.51	Н	Peak
10356.000	33.87	13.08	46.95	74.00	-27.05	н	Peak
11016.000	29.87	15.07	44.94	74.00	-29.06	Н	Peak
12936.000	29.03	17.74	46.77	74.00	-27.23	Н	peak
14352.000	28.46	20.78	49.24	74.00	-24.76	Н	peak
15108.000	28.86	20.67	49.53	74.00	-24.47	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: <u>24°C</u>

Relative humidity: <u>52% RH</u> Date: <u>December 26, 2016</u>

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

eading (dBuV)	Correction Factor	Result	1.1		Antenna	
	(dB/m)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pole (V/H)	Remark
31.23	9.17	40.40	74.00	-33.60	V	peak
31.42	9.45	40.87	74.00	-33.13	V	peak
35.92	13.23	49.15	74.00	-24.85	V	peak
29.09	17.74	46.83	74.00	-27.17	V	peak
27.85	20.53	48.38	74.00	-25.62	V	peak
28.74	21.11	49.85	74.00	-24.15	V	peak
31.48	7.58	39.06	74.00	-34.94	Н	Peak
31.02	9.48	40.50	74.00	-33.50	н	Peak
34.43	13.23	47.66	74.00	-26.34	Н	Peak
30.01	14.95	44.96	74.00	-29.04	Н	peak
29.33	17.66	46.99	74.00	-27.01	н	peak
28.47	20.72	49.19	74.00	-24.81	Н	peak
	31.42 35.92 29.09 27.85 28.74 31.48 31.02 34.43 30.01 29.33	31.23       9.17         31.42       9.45         35.92       13.23         29.09       17.74         27.85       20.53         28.74       21.11         31.48       7.58         31.02       9.48         34.43       13.23         30.01       14.95         29.33       17.66	31.23       9.17       40.40         31.42       9.45       40.87         35.92       13.23       49.15         29.09       17.74       46.83         27.85       20.53       48.38         28.74       21.11       49.85         31.02       9.48       40.50         34.43       13.23       47.66         30.01       14.95       44.96         29.33       17.66       46.99	31.23 $9.17$ $40.40$ $74.00$ $31.42$ $9.45$ $40.87$ $74.00$ $35.92$ $13.23$ $49.15$ $74.00$ $29.09$ $17.74$ $46.83$ $74.00$ $27.85$ $20.53$ $48.38$ $74.00$ $28.74$ $21.11$ $49.85$ $74.00$ $31.48$ $7.58$ $39.06$ $74.00$ $31.02$ $9.48$ $40.50$ $74.00$ $34.43$ $13.23$ $47.66$ $74.00$ $30.01$ $14.95$ $44.96$ $74.00$ $29.33$ $17.66$ $46.99$ $74.00$	31.23 $9.17$ $40.40$ $74.00$ $-33.60$ $31.42$ $9.45$ $40.87$ $74.00$ $-33.13$ $35.92$ $13.23$ $49.15$ $74.00$ $-24.85$ $29.09$ $17.74$ $46.83$ $74.00$ $-27.17$ $27.85$ $20.53$ $48.38$ $74.00$ $-25.62$ $28.74$ $21.11$ $49.85$ $74.00$ $-24.15$ $31.48$ $7.58$ $39.06$ $74.00$ $-34.94$ $31.02$ $9.48$ $40.50$ $74.00$ $-33.50$ $34.43$ $13.23$ $47.66$ $74.00$ $-26.34$ $30.01$ $14.95$ $44.96$ $74.00$ $-29.04$ $29.33$ $17.66$ $46.99$ $74.00$ $-27.01$	31.23       9.17       40.40       74.00       -33.60       V         31.42       9.45       40.87       74.00       -33.13       V         35.92       13.23       49.15       74.00       -24.85       V         29.09       17.74       46.83       74.00       -27.17       V         27.85       20.53       48.38       74.00       -25.62       V         28.74       21.11       49.85       74.00       -24.15       V         31.48       7.58       39.06       74.00       -33.50       H         31.43       13.23       47.66       74.00       -34.94       H         31.02       9.48       40.50       74.00       -33.50       H         34.43       13.23       47.66       74.00       -26.34       H         30.01       14.95       44.96       74.00       -29.04       H         29.33       17.66       46.99       74.00       -27.01       H

- 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)

Tested by: Ad Gan

Ambient tem	Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>						<u>19, 2016</u>
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 / 5260MHz /(CH Low)

Ambient temperature: 24°C

Tested by: <u>Ad Gan</u> Date: March 24, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6960.000	31.15	7.64	38.79	74.00	-35.21	V	peak
7728.000	31.70	9.12	40.82	74.00	-33.18	V	peak
8340.000	31.60	9.46	41.06	74.00	-32.94	V	peak
10176.000	31.20	12.53	43.73	74.00	-30.27	V	peak
11004.000	30.21	15.08	45.29	74.00	-28.71	V	peak
11844.000	30.96	14.71	45.67	74.00	-28.33	V	peak
6948.000	31.08	7.62	38.70	74.00	-35.30	Н	Peak
7728.000	31.45	9.12	40.57	74.00	-33.43	н	Peak
8364.000	31.71	9.45	41.16	74.00	-32.84	н	Peak
9384.000	31.42	10.21	41.63	74.00	-32.37	Н	peak
9828.000	30.75	11.48	42.23	74.00	-31.77	н	peak
11040.000	30.23	15.06	45.29	74.00	-28.71	н	peak

Relative humidity: <u>52% RH</u>

- 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).