



## FCC Test Report

**Report No.:** TAOL17JU0237LTSSB-1-A1

**FCC ID:** 2AMETWFESP01

**Product:** LED portable lamp

**Model:** SPIWZ-01/US,HERWZ-01/US,QUEWZ-01/US

**Received Date:** Jun.12, 2017

**Test Date:** Jun.12 to Jul.01, 2017

**Issued Date:** Jul.07, 2017

**Applicant:** TAO LIGHT CO., LTD

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**Issued By:** BUREAU VERITAS ADT (Shanghai) Corporation

**Lab Address:** 2F, Building C, No.1618, Yishan Rd., 201103, Shanghai, China

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### Release Control Record

Issue No.	Description	Date Issued
TAOL17JU0237LTSSB-1	Original release	Jul.05, 2017
TAOL17JU0237LTSSB-1-A1	Original release	Jul.07, 2017

Special comments: This report is updated report based on history report TAOL17JU0237LTSSB-1 for adding models: SPIWZ-01/US, HERWZ-01/US, QUEWZ-01/US. The new models have same RF module with original models. So we performed disturbance voltage and radiated emission test on SPIWZ-01/US, HERWZ-01/US, QUEWZ-01/US. The other test results can be based on history report TAOL17JU0237LTSSB-1.

## 1 Certificate of Conformity

**Product:** LED portable lamp

**Brand:** --

**Model:** SPIWZ-01/US,HERWZ-01/US,QUEWZ-01/US

**Applicant:** TAO LIGHT CO., LTD

**Test Date:** Jun.12 to Jul.01, 2017

**Standards:** 47 CFR FCC Part 15, Subpart C (Section 15.247)  
ANSI C63.10:2013

The above equipment has been tested by **BUREAU VERITAS ADT (Shanghai) Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** Bing YE, **Date:** Jul.07, 2017  
Bing YE  
Testing Engineer

**Approved by :** Joy ZHU, **Date:** Jul.07, 2017  
Joy ZHU  
Testing Manager

## 2 Summary of Test Results

The EUT has been tested according to the following specifications:

47 CFR FCC Part 15, Subpart C (SECTION 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
15.209	Radiated Emissions Measurement	PASS	Meet the requirement of limit.

## 2.1 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Hybrid antenna(25MHz-1.5GHz)	Schwarzbeck	VULB9168	E1A1012	Sep.01, 15	Aug.31, 17
Horn Antenna(1GHz -18GHz)	Schwarzbeck	BBHA9120D	E1A1017	Sep.01, 15	Aug.31, 17
Pre-Amplifier(100kHz-1.3GHz)	Agilent	8447D	E1A2001	Sep.28, 16	Sep.27, 17
Pre-Amplifier(1GHz-26.5GHz)	Agilent	8449B	E1A2002	Mar. 27, 17	Mar. 26, 19
EMI test recerver	R&S	ESR7	E1R1005	Nov.29, 16	Nov.28, 17
Spectrum Analyzer	Keysight	N9030B	E1S1003	Jun. 13, 17	Jun. 12, 18
EMI test recerver	R&S	ESCS30	E1R1001	Mar.27, 17	Mar.26, 18
LISN	R&S	ENV216	E1L1011	Aug.01, 16	Jul.31, 18
Humidity&Temp Tester	Baolima	WS508	E1H1011	Oct. 26, 16	Oct. 25, 17
Test Software	ADT	ADT_Radiated_V7.5.14	N/A	N/A	N/A
Test Software	Keysight	V1.01.10	N/A	N/A	N/A

## 2.2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Measurement	Frequency	Expanded Uncertainty ( $k=2$ ) ( $\pm$ )
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.36 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.47 dB
	6GHz ~ 18GHz	3.75 dB
	18GHz ~ 40GHz	3.30 dB

## 2.3 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	LED portable lamp
Brand	--
Test Model	SPIWZ-01/US,HERWZ-01/US,QUEWZ-01/US
Model Difference	SPIWZ-01/US,HERWZ-01/US,QUEWZ-01/US:12.5W
Power Rating	100-130Vac, 50/60Hz
Modulation Type	CCK, DQPSK, DBPSK
Modulation Technology	DSSS
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	11
Antenna Type	PCB antenna
Antenna Connector	--
Antenna Gain	2dBi

Note:

1. The EUT incorporated a MIMO function. Physically, the EUT provides one completed transmitter and one receivers.

Modulation Mode	TX /RX Function
802.11b	1TX / 1RX



### 3.2 Description of Test Modes

11 channels are provided for 802.11b:

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz	-	-

#### 3.2.1 Test Mode Applicability:

EUT Configure Mode	Applicable to				Description
	RE ≥ 1G	RE < 1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz

**RE≤1G**: Radiated Emission below 1GHz

**PLC**: Power Line Conducted Emission

**APCM**: Antenna Port Conducted Measurement

#### Radiated Emission Test (Above 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0

#### Radiated Emission Test (Below 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1	DSSS	DBPSK	1.0

### Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1	DSSS	DBPSK	1.0

### Antenna Port Conducted Measurement

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

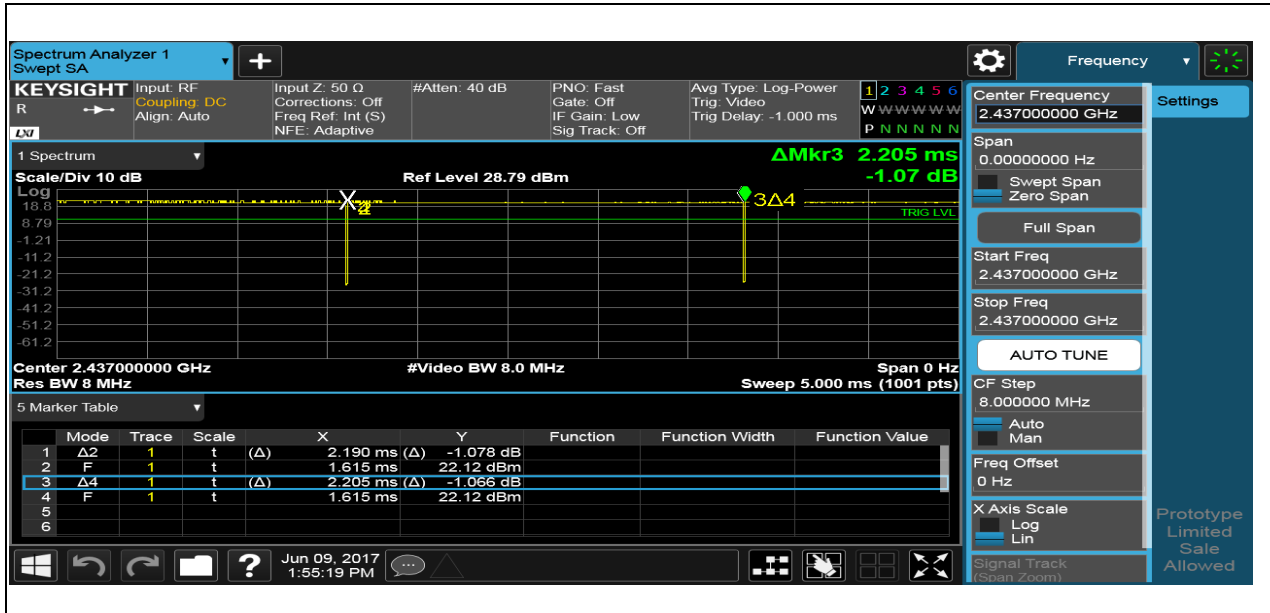
EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0

### 3.2.2 Test Condition:

Applicable to	Normal Environmental Conditions	Normal Input Power
RE $\geq$ 1G	25deg. C, 60%RH	120Vac, 60Hz
RE < 1G	25deg. C, 60%RH	120Vac, 60Hz
PLC	25deg. C, 60%RH	120Vac, 60Hz
APCM	25deg. C, 60%RH	120Vac, 60Hz

### 3.3 Duty Cycle of Test Signal

Modulation	Test Freq (MHz)	Duty Cycle (%)
802.11 b	2412	99.32



### 3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

### 3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standard:

**FCC Part 15, Subpart C (15.247)**

**KDB 558074 D01 DTS Meas Guidance v04**

**ANSI C63.10:2013**

All relaxed test items have been performed and recorded as per the above standard.

## 4 Test Procedure and Results

### 4.1 Radiated Emission Measurement

#### 4.1.1 Limits

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

#### NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

#### 4.1.2 Test Procedures

##### For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degree to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Both X and Y axes of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotate table was turned from 0 degree to 360 degree to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

#### Note:

The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

#### **For Radiated emission above 30MHz**

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

#### **Note:**

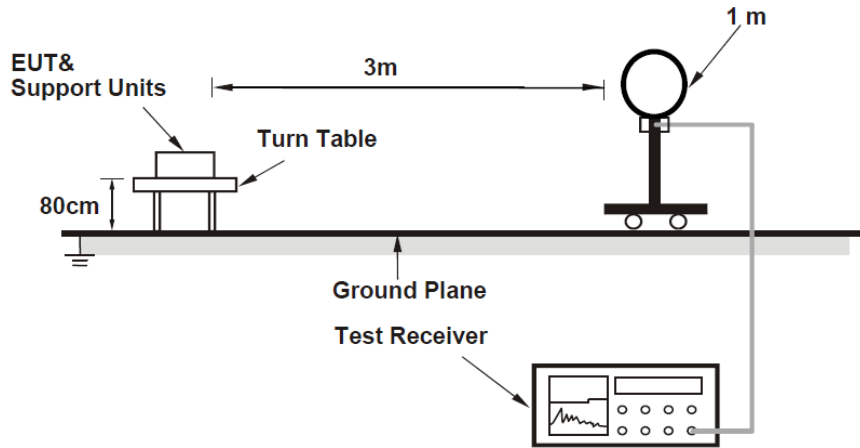
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz & 360 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1/T for RMS Average (Duty cycle < 98 %) for Peak detection at frequency above 1 GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle  $\geq$  98 %) for Average detection (AV) at frequency above 1 GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

#### **4.1.3 Deviation from Test Standard**

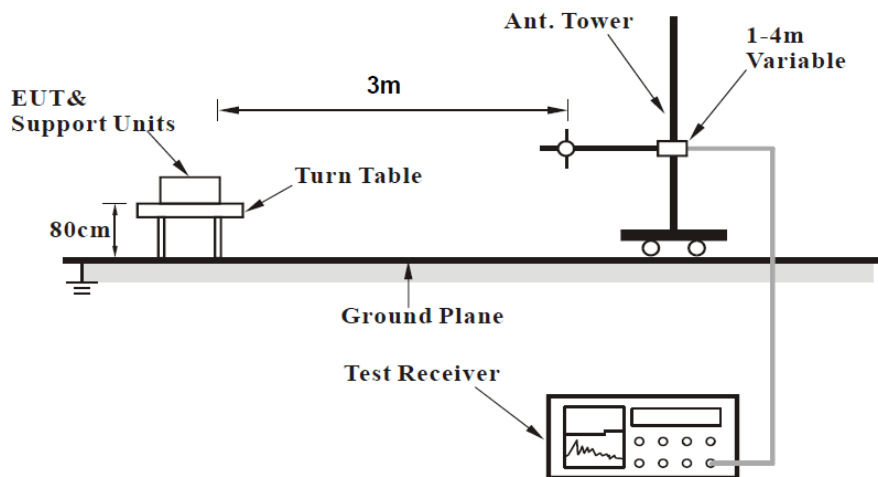
No deviation.

#### 4.1.4 Test Setup

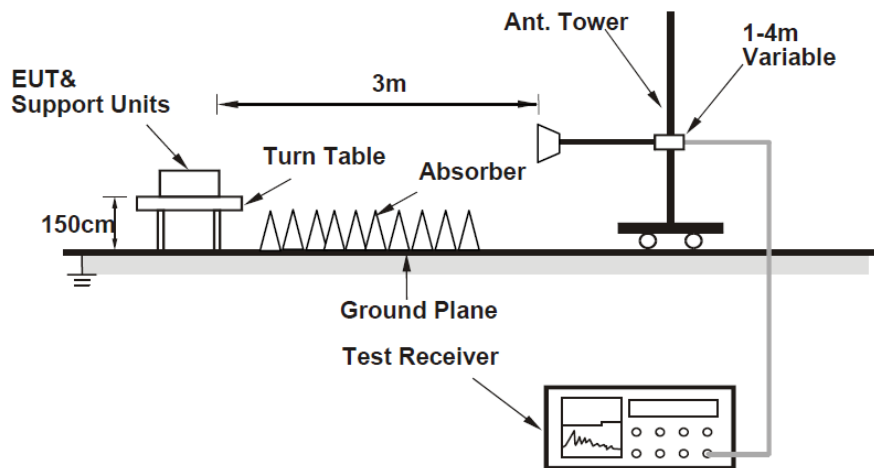
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.1.5 EUT Operating Conditions

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.

#### 4.1.6 Test Results

##### Radiated Emissions Range 9kHz~30MHz

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

##### Radiated Emissions Range 30MHz~1GHz

For model SPIWZ-01/US

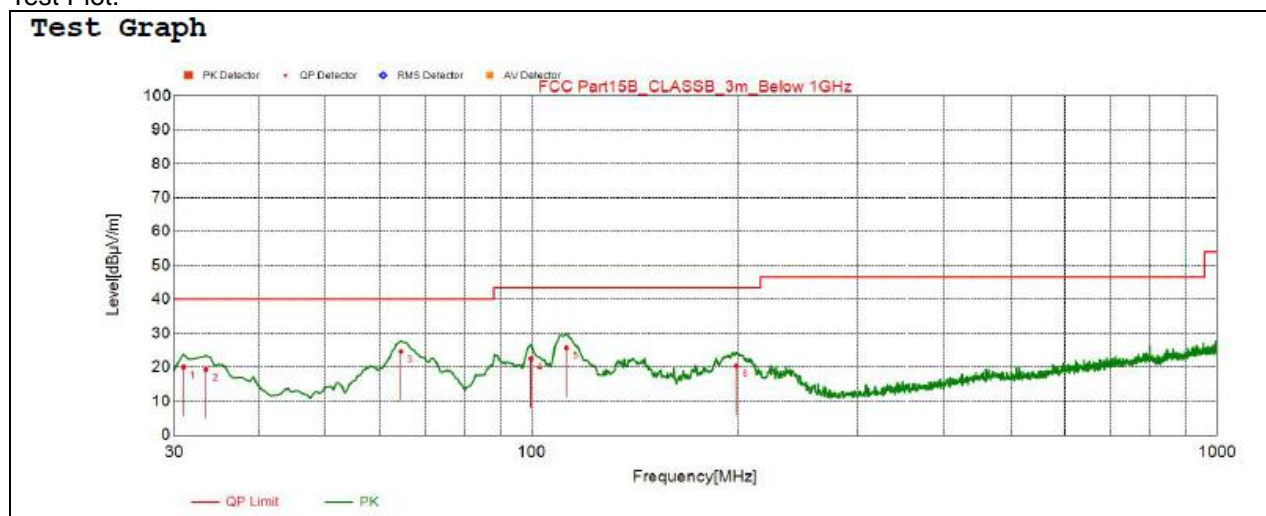
Channel	TX Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz	Antenna Polarity	Horizontal

Spurious Emission Level					
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Correction Factor (dB/m)
1	30.97	20.07	40	-19.93	-15.9
2	33.39	19.36	40	-20.64	-15.78
3	64.43	24.71	40	-15.29	-16.21
4	99.84	22.55	43.5	-20.95	-18.77
5	112.45	25.73	43.5	-17.77	-17.68
6	199.26	20.40	43.5	-23.10	-17.27

#### REMARKS:

- Emission Level(dBuV/m) = Spectrum reading (dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value

Test Plot:





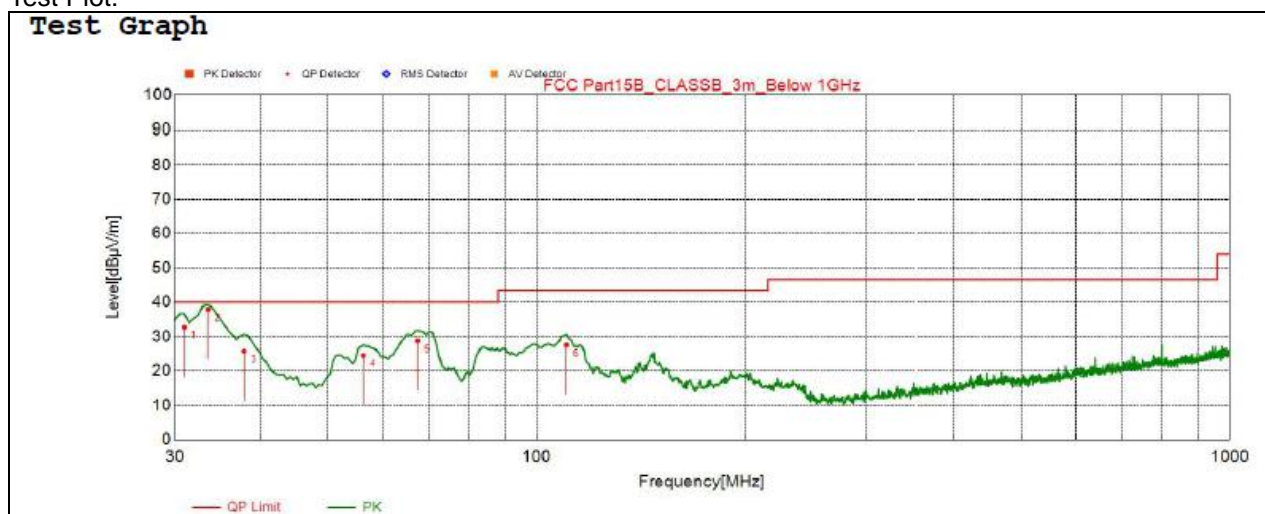
Channel	TX Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz	Antenna Polarity	Vertical

Spurious Emission Level					
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Correction Factor (dB/m)
1	30.97	32.70	40	- 7.30	-15.9
2	33.52	37.98	40	- 2.02	-15.78
3	37.76	25.75	40	- 14.25	-15.39
4	56.19	24.52	40	- 15.48	-15.76
5	67.34	28.77	40	- 11.23	-16.72
6	110.51	27.57	43.5	- 15.93	-17.83

#### REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

Test Plot:



**For model HERWZ-01/US**

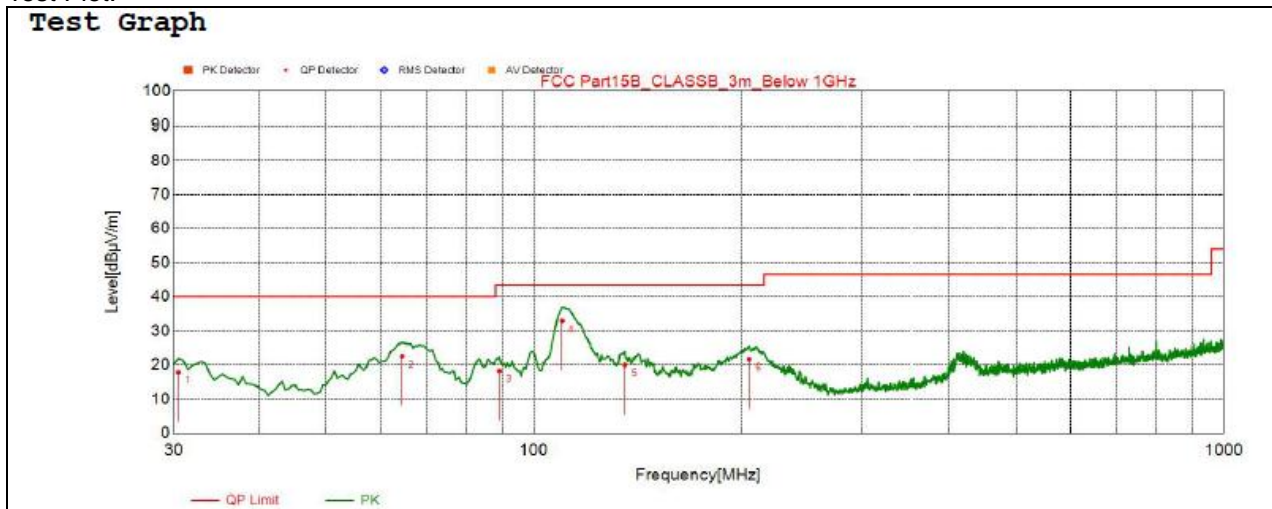
<b>Channel</b>	TX Channel 1	<b>Detector Function</b>	Quasi-Peak (QP)
<b>Frequency Range</b>	30MHz ~ 1GHz	<b>Antenna Polarity</b>	Horizontal

Spurious Emission Level					
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Correction Factor (dB/m)
1	30.48	17.86	40	- 22.14	-15.92
2	64.43	22.54	40	- 17.46	-16.21
3	89.17	18.29	43.5	- 25.21	-19.42
4	110.02	32.90	43.5	- 10.60	-17.87
5	135.73	20.02	43.5	- 23.48	-15.84
6	205.57	21.60	43.5	- 21.90	-17.3

**REMARKS:**

1. Emission Level(dBuV/m) = Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

Test Plot:



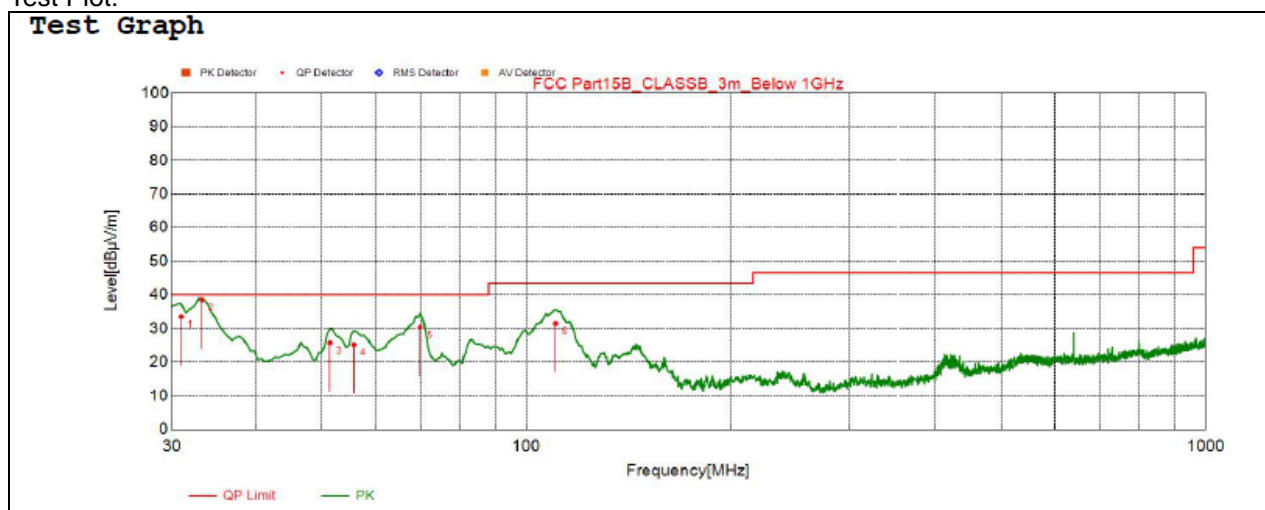
Channel	TX Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz	Antenna Polarity	Vertical

Spurious Emission Level					
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Correction Factor (dB/m)
1	30.97	33.46	40	- 6.54	-15.9
2	33.23	38.51	40	- 1.49	- 15.79
3	51.34	25.79	40	- 14.21	- 15.52
4	55.70	25.24	40	- 14.76	- 15.74
5	69.77	30.41	40	- 9.59	- 17.18
6	110.51	31.54	43.5	- 11.96	-17.83

#### REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

Test Plot:



For model QUEWZ-01/US

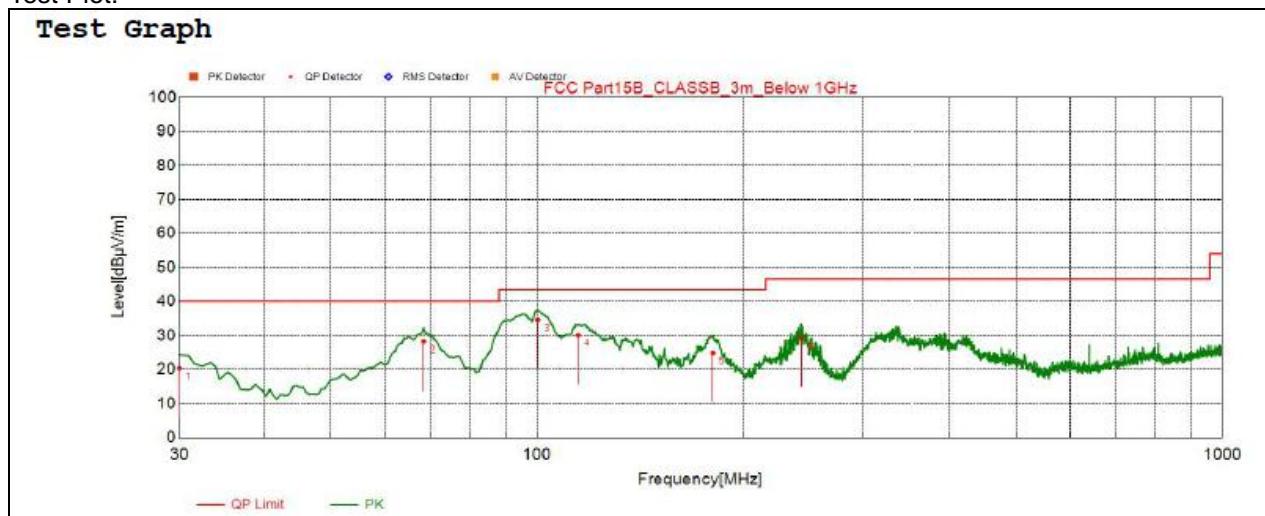
Channel	TX Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz	Antenna Polarity	Horizontal

Spurious Emission Level					
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Correction Factor (dB/m)
1	30.00	20.36	40	- 19.64	-15.94
2	68.31	28.22	40	- 11.78	-16.9
3	100.32	34.55	43.5	- 8.95	-18.73
4	114.87	30.12	43.5	- 13.38	-17.49
5	180.83	24.92	43.5	- 18.58	-16.34
6	243.40	29.23	43.5	- 17.27	-16.44

**REMARKS:**

1. Emission Level(dBuV/m) = Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

Test Plot:



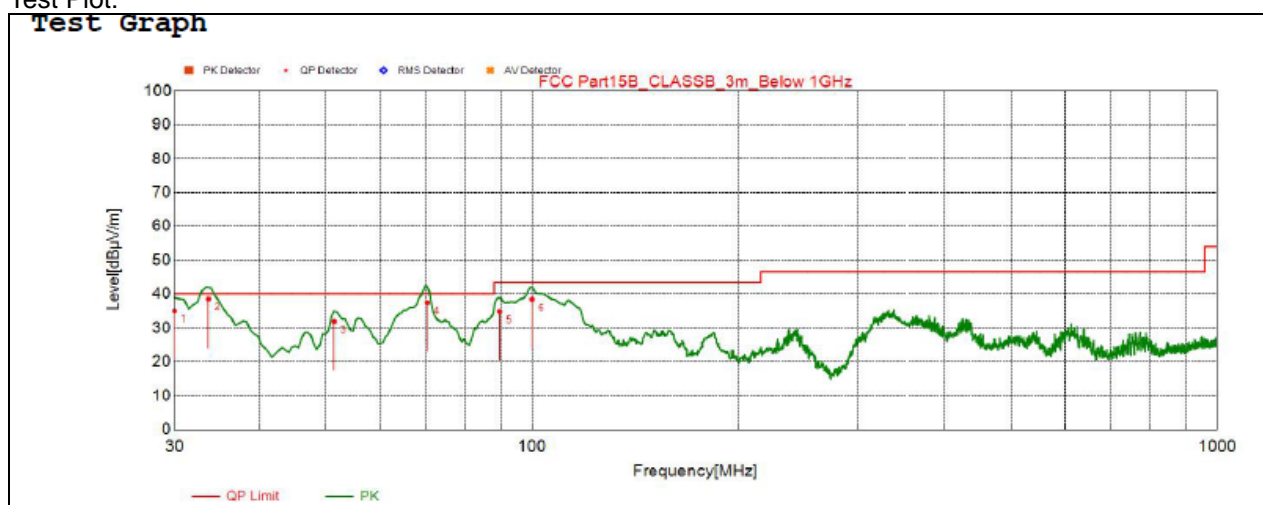
Channel	TX Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz	Antenna Polarity	Vertical

Spurious Emission Level					
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Correction Factor (dB/m)
1	30.00	34.99	40	- 5.01	-15.94
2	33.62	38.56	40	- 1.44	-15.78
3	51.34	31.91	40	- 8.09	-15.52
4	70.26	37.51	40	- 2.49	-17.29
5	89.65	34.85	43.5	- 8.65	-19.43
6	100.04	38.46	43.5	- 5.04	-18.76

#### REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

Test Plot:



## 4.2 Conducted Emission Measurement

### 4.2.1 Limits

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.2.2 Test Procedures

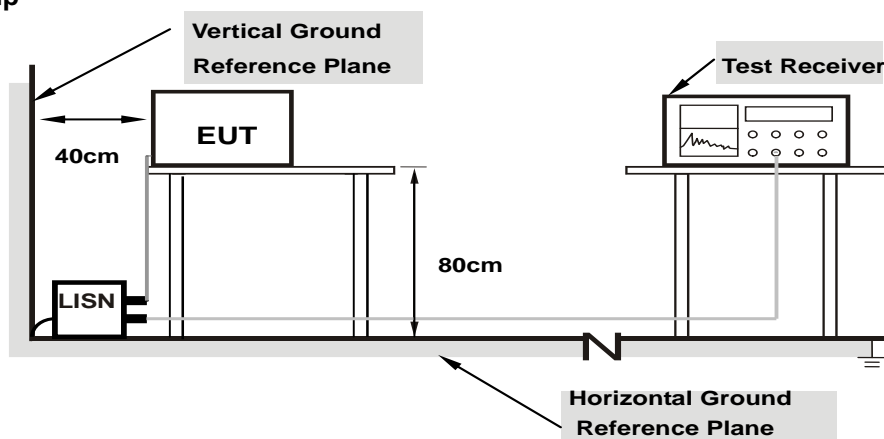
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

**NOTE:** The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

### 4.2.3 Deviation from Test Standard

No deviation.

### 4.2.4 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.2.5 EUT Operating Conditions

Same as 4.1.6.

#### 4.2.6 Test Results

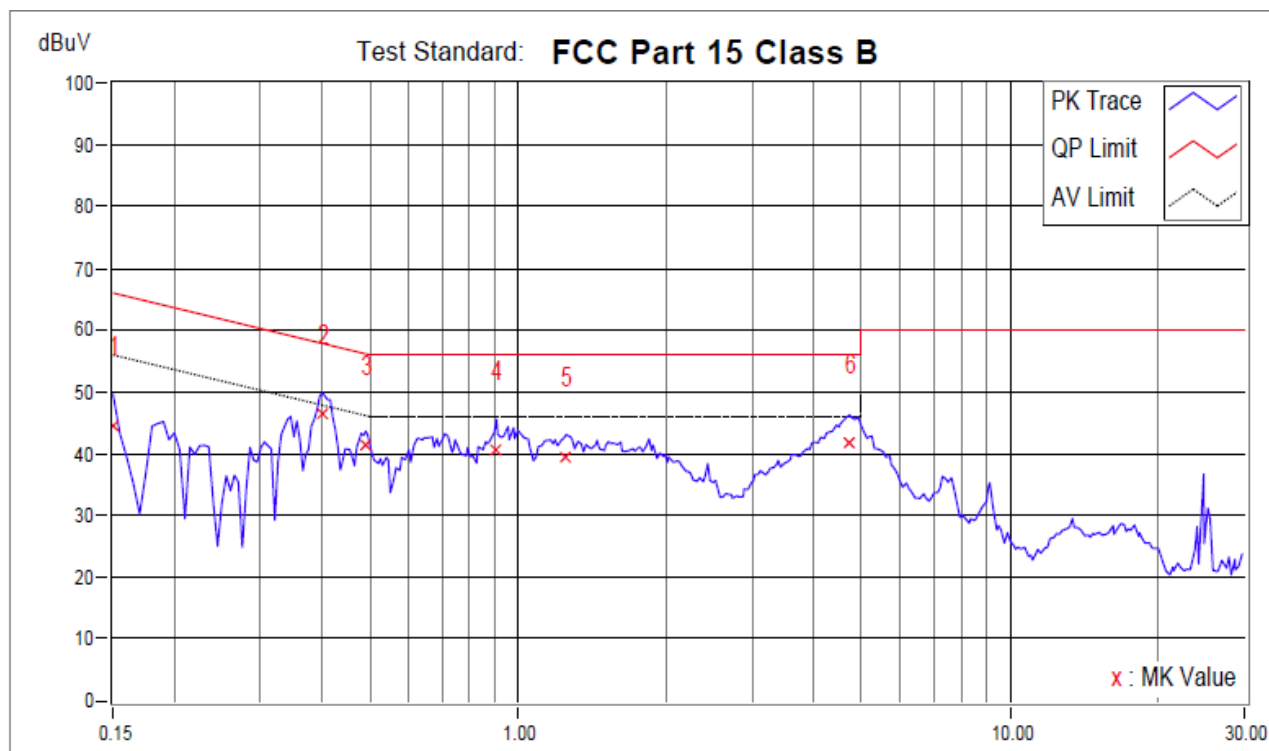
For model SPIWZ-01/US

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	----------	-------------------	-----------------------------------

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.06	34.62	29.46	44.68	39.52	66.00	56.00	- 21.32	-16.48
2	0.40000	10.04	36.62	22.00	46.66	32.04	57.85	47.85	-11.19	-15.81
3	0.49000	10.06	31.35	23.76	41.41	33.82	56.17	46.17	-14.76	- 12.35
4	0.90500	10.13	30.50	21.42	40.63	31.55	56.00	46.00	- 15.37	- 14.45
5	1.25500	10.13	29.48	20.55	39.61	30.68	56.00	46.00	-16.39	- 15.32
6	4.73500	10.20	31.74	25.17	41.94	35.37	56.00	46.00	-14.06	-10.63

#### REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

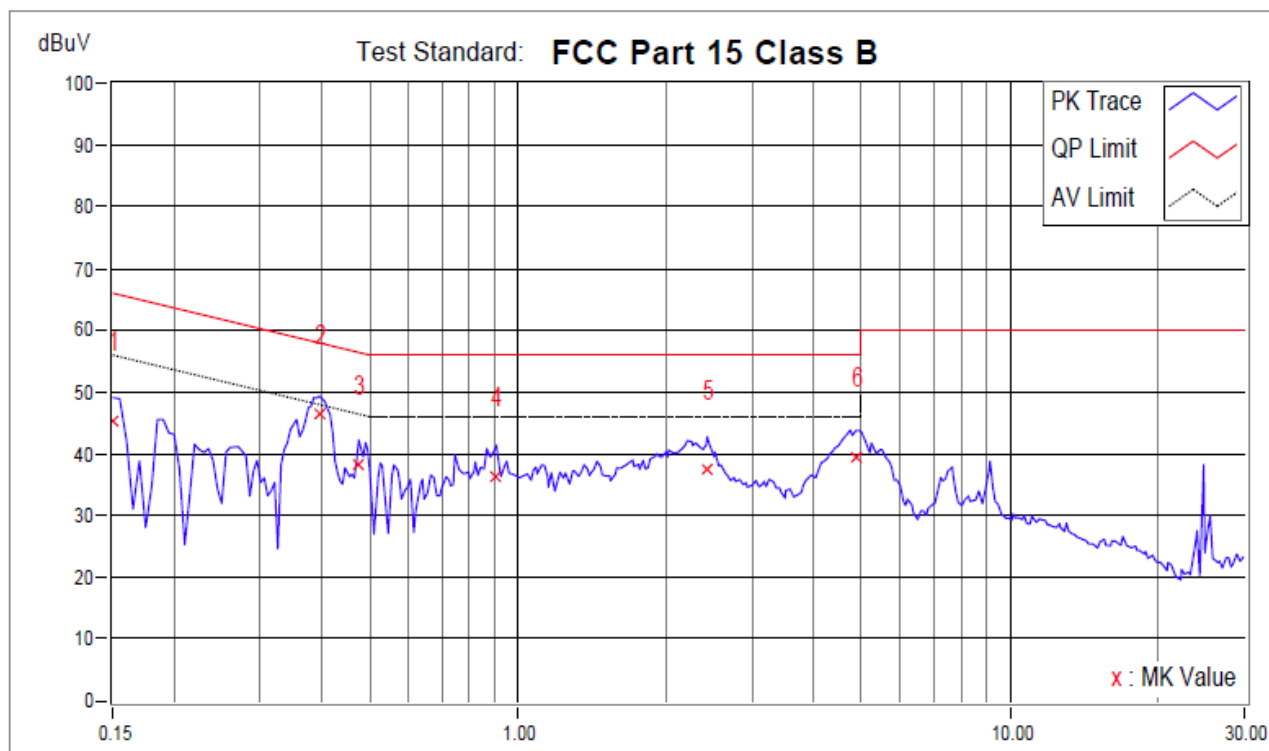


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.96	35.25	26.60	45.21	36.56	66.00	56.00	-20.79	-19.44
2	0.39500	10.03	36.62	22.00	46.65	32.03	57.96	47.96	-11.31	-15.93
3	0.47500	10.04	28.13	15.91	38.17	25.95	56.43	46.43	-18.26	-20.48
4	0.90500	10.06	26.30	17.40	36.36	27.46	56.00	46.00	-19.64	-18.54
5	2.43000	10.11	27.21	19.77	37.32	29.88	56.00	46.00	-18.68	-16.12
6	4.87500	10.14	29.22	22.19	39.36	32.33	56.00	46.00	-16.64	-13.67

#### REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.





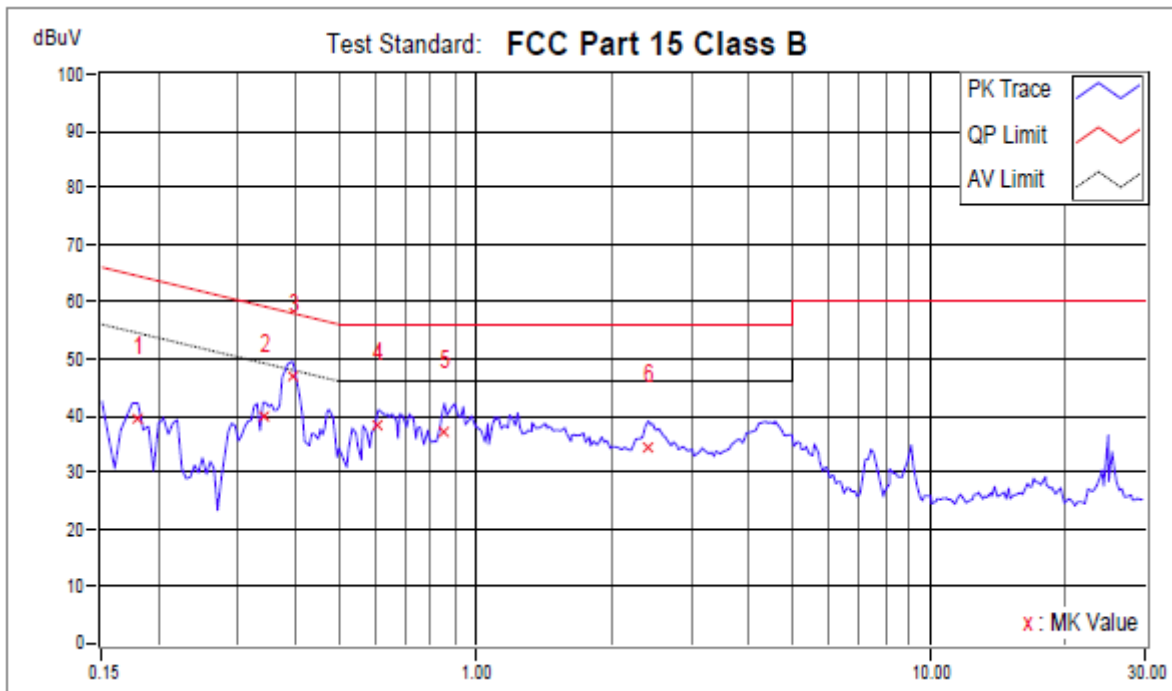
# For model HERWZ-01/US

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18000	10.03	29.36	23.96	39.39	33.99	64.49	54.49	-25.10	- 20.50
2	0.34000	10.03	29.78	14.58	39.81	24.61	59.20	49.20	-19.39	- 24.59
3	0.39500	10.04	37.01	29.29	47.05	39.33	57.96	47.96	-10.91	- 8.63
4	0.61000	10.09	28.06	18.37	38.15	28.46	56.00	46.00	-17.85	- 17.54
5	0.85500	10.13	26.84	17.79	36.97	27.92	56.00	46.00	-19.03	- 18.08
6	2.40500	10.11	24.21	16.72	34.32	26.83	56.00	46.00	-21.68	-19.17

## REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

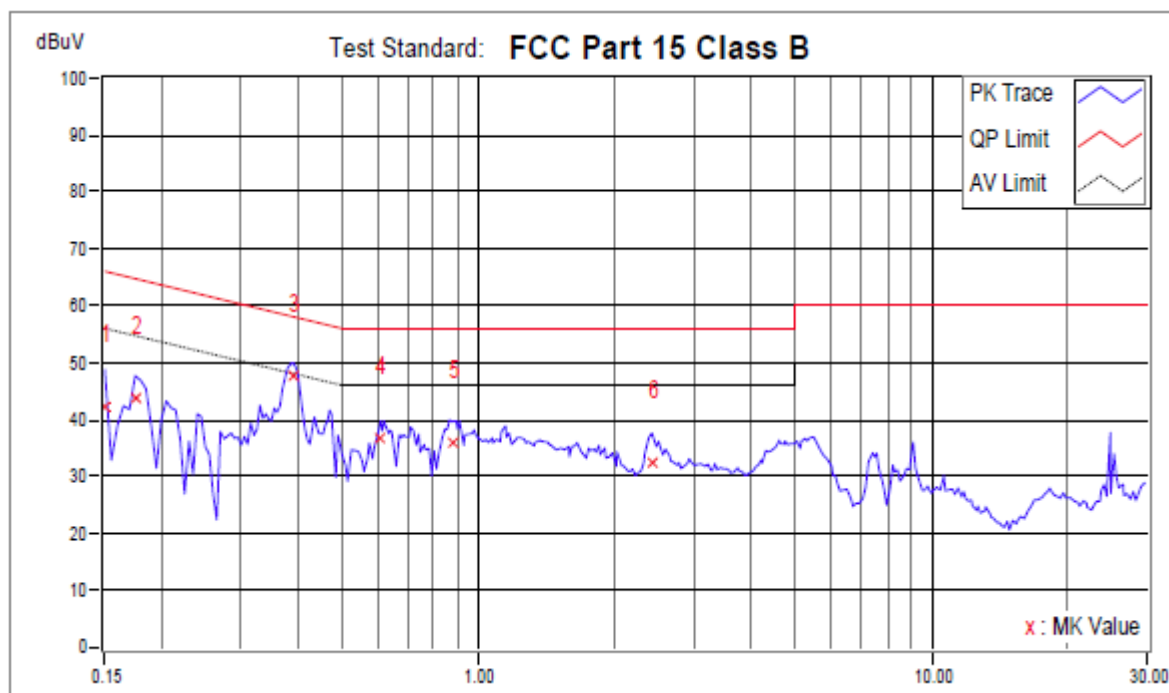


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.96	32.42	20.79	42.38	30.75	66.00	56.00	-23.62	-25.25
2	0.17500	9.99	33.74	22.66	43.73	32.65	64.72	54.72	-20.99	-22.07
3	0.39000	10.03	37.46	28.59	47.49	38.62	58.06	48.06	-10.57	-9.44
4	0.61000	10.06	26.80	16.44	36.86	26.50	56.00	46.00	-19.14	-19.50
5	0.88000	10.06	25.86	17.19	35.92	27.25	56.00	46.00	-20.08	-18.75
6	2.42000	10.11	22.37	15.39	32.48	25.50	56.00	46.00	-23.52	-20.50

#### REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



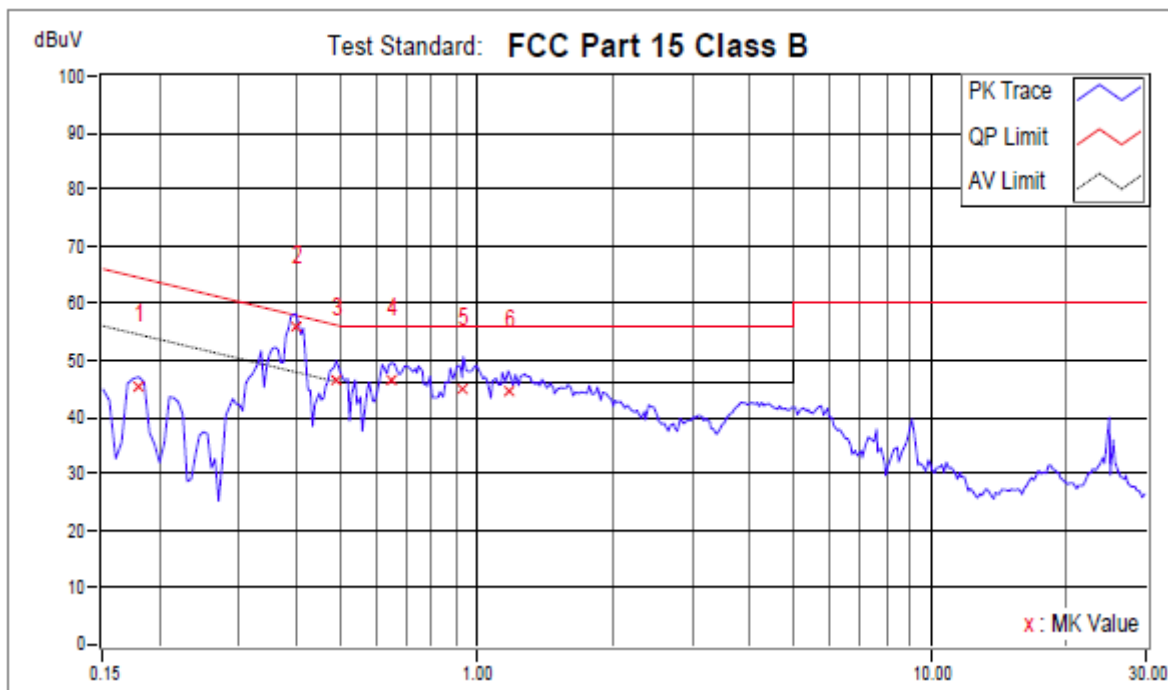
# For model QUEWZ-01/US

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18000	10.03	35.28	30.57	45.31	40.60	64.49	54.49	-19.18	-13.89
2	0.40000	10.04	45.67	37.36	55.71	47.40	57.85	47.85	-2.14	-0.45
3	0.49000	10.06	36.36	22.91	46.42	32.97	56.17	46.17	-9.75	-13.20
4	0.65000	10.10	36.23	25.03	46.33	35.13	56.00	46.00	-9.67	-10.87
5	0.93500	10.13	34.95	25.67	45.08	35.80	56.00	46.00	-10.92	-10.20
6	1.17500	10.13	34.29	23.21	44.42	33.34	56.00	46.00	-11.58	-12.66

## REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

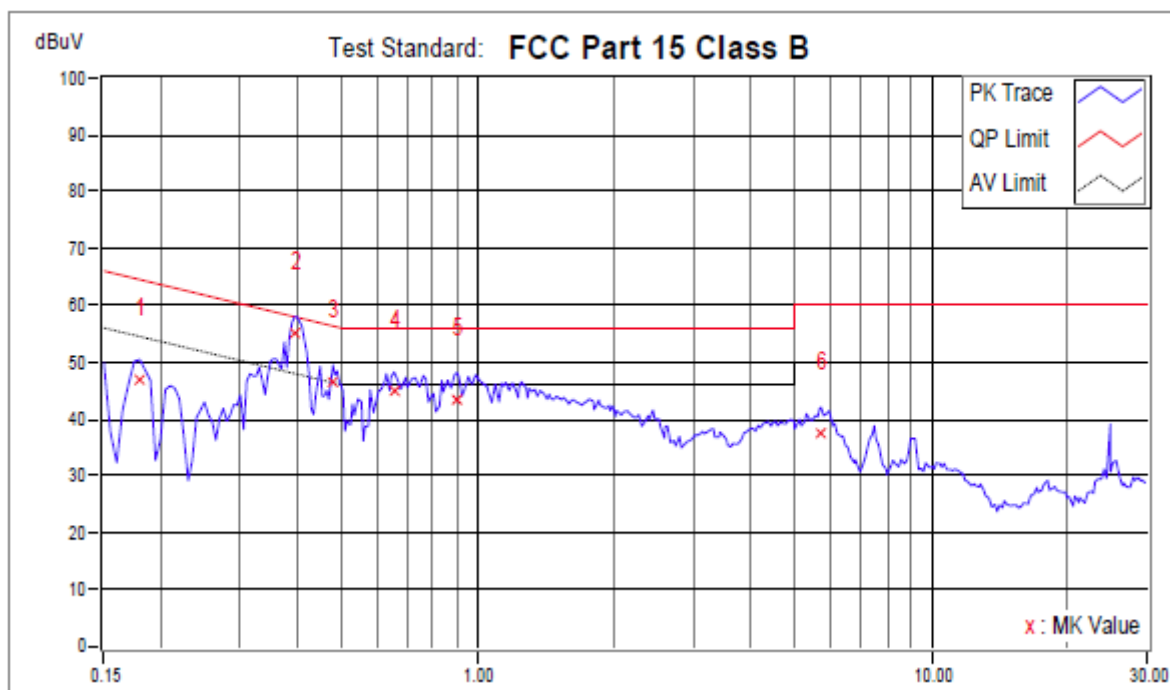


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18000	9.99	36.98	30.01	46.97	40.00	64.49	54.49	-17.52	-14.49
2	0.39500	10.03	45.01	35.19	55.04	45.22	57.96	47.96	-2.92	-2.74
3	0.48000	10.04	36.31	24.83	46.35	34.87	56.34	46.34	-9.99	-11.47
4	0.65500	10.06	35.01	24.72	45.07	34.78	56.00	46.00	-10.93	-11.22
5	0.90000	10.06	33.46	23.84	43.52	33.90	56.00	46.00	-12.48	-12.10
6	5.73500	10.11	27.54	21.63	37.65	31.74	56.00	50.00	-22.35	-18.26

#### REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

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