

TEST REPORT**Report No.: 21110263HKG-001**

Qivation Company Limited

Application For Certification
(Original Grant)**FCC ID: 2A3PK-WQ10002**

Wireless Power Transfer Device - Transmitter

Prepared and Checked by:**Approved by:**

Signed On File

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Assistant EngineerWong Kwok Yeung, Kenneth
Assistant Supervisor
Date: February 23, 2022

TEST REPORT

GENERAL INFORMATION

Grantee:	Qivation Company Limited
Grantee Address:	Flat/Rm 907, Silvercord Tower 2, 30 Canton Road, Tsim Sha Tsui, Hong Kong.
Contact Person:	Hon Bun Andre Lee
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e-mail:	product@qivation.com
Manufacturer:	Qivation Company Limited
Manufacturer Address:	Flat/Rm 907, Silvercord Tower 2, 30 Canton Road, Tsim Sha Tsui, Hong Kong.
Brand Name:	Qivation
Model:	WQ10002
Type of EUT:	Wireless Power Transfer Device - Transmitter
Description of EUT:	Qivation TiO2 Wireless Charging Pad
Serial Number:	N/A
FCC ID:	2A3PK-WQ10002
Date of Sample Submitted:	November 05, 2021
Date of Test:	November 05, 2021 to November 30, 2021
Report No.:	21110263HKG-001
Report Date:	February 23, 2022
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%
Conclusion:	Test was conducted by client submitted sample. The submitted sample as received complied with the 47 CFR Part 15 Certification.

TEST REPORT**SUMMARY OF TEST RESULT**

Test Specification	Reference	Results
Transmitter Power Line Conducted Emissions	15.207	Pass
Radiated Emission	15.209	Pass
Radiated Emission on the Bandedge		
Radiated Emission in Restricted Bands	15.205	Pass

The equipment under test is found to be complying with the following standards:

FCC Part 15, October 1, 2020 Edition

Note: 1. The EUT uses a permanently attached antenna which, in accordance to section 15.203, is considered sufficient to comply with the provisions of this section.
2. Pursuant to FCC part 15 Section 15.215(c), the 20 dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

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1.0 GENERAL DESCRIPTION

1.1 Product Description

The Equipment Under Test (EUT), is a wireless charger with LED lamp that is designed to work on table. The EUT is powered DC 5.0V/9.0V adaptor input, which is operated at 142.4kHz – 155.8kHz for 10W wireless power transmission. The Mobile phone can be placed on the charging Pad for wireless battery charging. The LED can be ON once the button is pressed.

Antenna Type: Internal, Integral

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

1.2 Related Submittal(s) Grants

This is a single application for certification of a transceiver.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013). All radiated measurements were performed in an 3m Chamber. Preliminary scans were performed in the 3m Chamber only to determine worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the “**Justification Section**” of this Application.

1.4 Test Facility

The 3m Chamber and conducted measurement facility used to collect the radiated data is located at Workshop No. 3, G/F., World-Wide Industrial Centre, 43-47 Shan Mei Street, Fo Tan, Sha Tin, N.T., Hong Kong SAR, China. This test facility and site measurement data have been placed on file with the FCC.

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2.0 SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.10 (2013).

The device was powered by Input: 100-240VAC 50/60Hz 0.5A, Output: 5.0VDC 2.5A /9VDC 2A / 12VDC 1.5A Xiaomi Adaptor (Model: MDY-08-EJ).

For maximizing emissions below 30 MHz, the EUT was rotated through 360°, the centre of the loop antenna was placed 1 meter above the ground, and the antenna polarization was changed. For maximizing emission at and above 30 MHz, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data report in Exhibit 3.0.

The rear of unit shall be flushed with the rear of the table.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was mounted to a plastic stand if necessary and placed on the wooden turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

There was no special software to exercise the device. Once the unit is powered up, it transmits the RF signal continuously.

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Measurement Uncertainty

Decision Rule for compliance: For FCC/IC standard, the measured value must be within the limits of applicable standard without accounting for the measurement uncertainty. For EN/IEC/HKTA/HKTC standard, conformity rules will be used as per standard directly excepted EN/IEC 61000-3-2, EN/IEC 61000-3-3, HKTA1004, HKCA1008, HKTA1019, HKTA1020, HKTA1041 and HKTA1044. For these excepted or not mentioned standards, Cl 4.2.2 of ILAC-G8:09/2019 decision rules will be reference and guard band will be equal to our measurement uncertainty with 95% confidence level (k=2). In case, the measured value is within guard band region, undetermined decision will be used.

Uncertainty and Compliance - Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

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2.5 Support Equipment List and Description

- 1) 10W Loading (Provided by Intertek)
- 2) 1 x USB cable with length of 1.20m (Provided by Applicant)
- 3) AC/DC Adaptor with port (Provided by Intertek)
Model: MDY-08-EJ (Xiaomi)
Input: 100-240VAC 0.5A 50-60Hz
Output: 5.0VDC 2.5A / 9VDC 2A / 12VDC 1.5A

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3.0 EMISSION RESULTS

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any), Average Factor (optional) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG - AV$$

where FS = Field Strength in $\text{dB}\mu\text{V}/\text{m}$

RA = Receiver Amplitude (including preamplifier) in $\text{dB}\mu\text{V}$

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

AV = Average Factor in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

$$FS = RR + LF$$

where FS = Field Strength in $\text{dB}\mu\text{V}/\text{m}$

RR = RA - AG - AV in $\text{dB}\mu\text{V}$

LF = CF + AF in dB

Assume a receiver reading of 52.0 $\text{dB}\mu\text{V}$ is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 27 $\text{dB}\mu\text{V}/\text{m}$. This value in $\text{dB}\mu\text{V}/\text{m}$ was converted to its corresponding level in $\mu\text{V}/\text{m}$.

$$RA = 52.0 \text{ dB}\mu\text{V}/\text{m}$$

$$AF = 7.4 \text{ dB}$$

$$RR = 18.0 \text{ dB}\mu\text{V}$$

$$CF = 1.6 \text{ dB}$$

$$LF = 9.0 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$AV = 5.0 \text{ dB}$$

$$FS = RR + LF$$

$$FS = 18 + 9 = 27 \text{ dB}\mu\text{V}/\text{m}$$

$$\text{Level in } \mu\text{V}/\text{m} = \text{Common Antilogarithm } [(27 \text{ dB}\mu\text{V}/\text{m})/20] = 22.4 \mu\text{V}/\text{m}$$

TEST REPORT

3.2 Radiated Emission Configuration Photograph

The worst case in radiated emission was found at 87.66 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Passed by 1.06 dB

3.4 Conducted Emission Configuration Photograph

The worst case in line-conducted emission was found at 13.722 MHz

For electronic filing, the worst case line-conducted configuration photographs are saved with filename: conducted photo.pdf.

3.5 Conducted Emission Data

For electronic filing, the graph and data table of conducted emission is saved with filename: conducted.pdf.

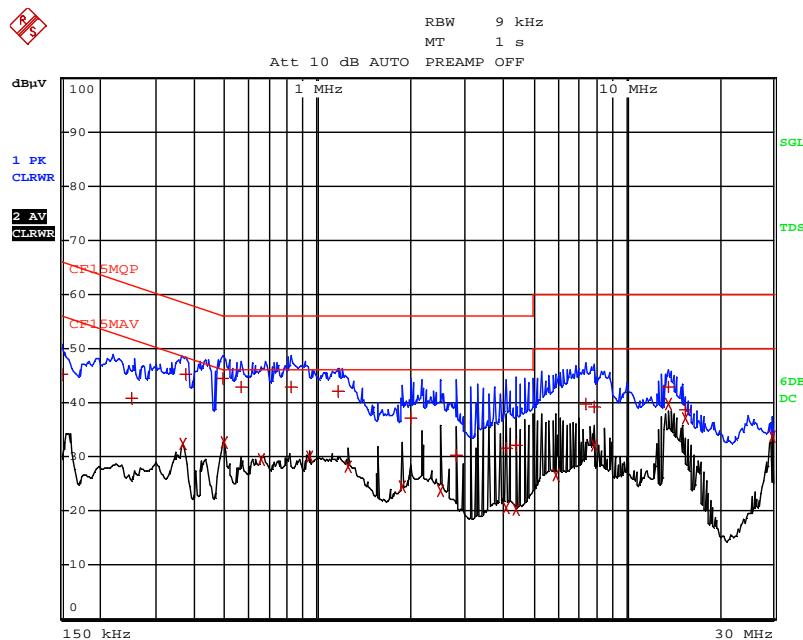
Judgment: Pass by 10.2 dB

TEST REPORT**CONDUCTED EMISSION**

Model: WQ10002

Date of Test: November 30, 2021

Worst-Case Operating Mode: 10W Loading with LED ON



Note: Measurement Uncertainty is ± 4.2 dB at a level of confidence 95%.

TEST REPORT

Model: WQ10002

Date of Test: November 30, 2021

Worst-Case Operating Mode: 10W Loading with LED ON

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	CF15MQP	LEVEL dB μ V	DELTA LIMIT dB	
Trace2:	CF15MAV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dB μ V	DELTA LIMIT dB	
1	Quasi Peak 150 kHz	45.31 N	-20.68	
1	Quasi Peak 253.5 kHz	40.72 L1	-20.91	
2	CISPR Average 366 kHz	32.44 L1	-16.14	
1	Quasi Peak 375 kHz	45.28 L1	-13.10	
1	Quasi Peak 492 kHz	44.59 N	-11.53	
2	CISPR Average 496.5 kHz	32.68 L1	-13.37	
1	Quasi Peak 568.5 kHz	42.95 N	-13.04	
2	CISPR Average 658.5 kHz	29.53 L1	-16.47	
1	Quasi Peak 820.5 kHz	42.84 N	-13.15	
2	CISPR Average 942 kHz	29.95 L1	-16.05	
1	Quasi Peak 1.1715 MHz	42.03 N	-13.96	
2	CISPR Average 1.2525 MHz	28.16 L1	-17.83	
2	CISPR Average 1.8825 MHz	24.61 L1	-21.38	
1	Quasi Peak 2.0175 MHz	37.25 L1	-18.74	
2	CISPR Average 2.508 MHz	23.73 L1	-22.26	
1	Quasi Peak 2.8185 MHz	30.28 L1	-25.71	
1	Quasi Peak 4.074 MHz	31.71 L1	-24.28	
2	CISPR Average 4.074 MHz	20.65 L1	-25.34	
1	Quasi Peak 4.389 MHz	32.04 L1	-23.95	
2	CISPR Average 4.389 MHz	20.26 N	-25.73	

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	CF15MQP	LEVEL dB μ V	DELTA LIMIT dB	
Trace2:	CF15MAV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dB μ V	DELTA LIMIT dB	
2	CISPR Average 5.955 MHz	26.53 L1	-23.46	
1	Quasi Peak 7.4085 MHz	39.70 L1	-20.29	
1	Quasi Peak 7.9935 MHz	39.19 L1	-20.80	
2	CISPR Average 7.9935 MHz	32.18 L1	-17.81	
1	Quasi Peak 13.722 MHz	42.82 L1	-17.17	
2	CISPR Average 13.722 MHz	39.79 N	-10.20	
1	Quasi Peak 15.6165 MHz	38.75 L1	-21.24	
2	CISPR Average 15.6165 MHz	37.08 N	-12.91	
2	CISPR Average 29.8095 MHz	33.72 L1	-16.28	

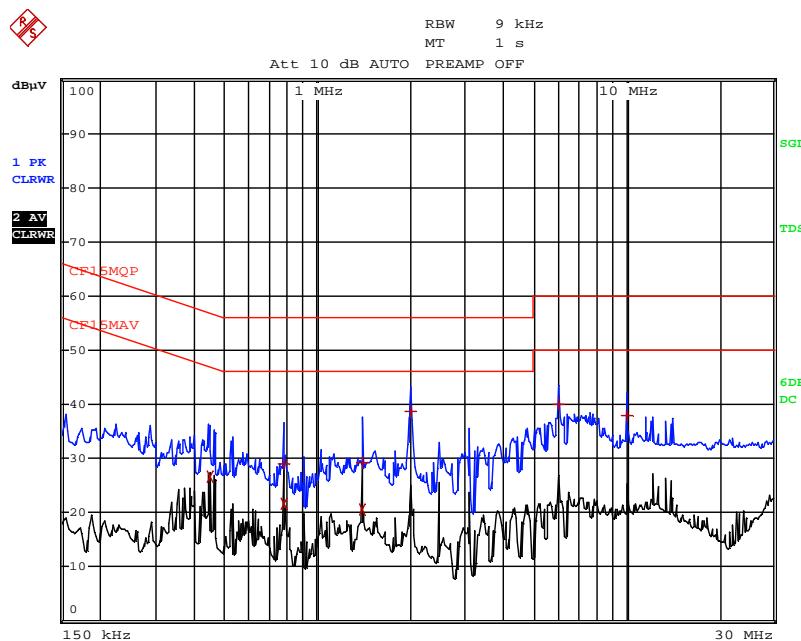
 Note: Measurement Uncertainty is ± 4.2 dB at a level of confidence of 95%.

TEST REPORT

Model: WQ10002

Date of Test: November 30, 2021

Worst-Case Operating Mode: Standby



EDIT PEAK LIST (Final Measurement Results)					
Trace1:	CF15MQP	Trace2:	CF15MAV	Trace3:	---
TRACE	FREQUENCY	LEVEL dBµV	DELTA	LIMIT dB	
2	CISPR Average 447 kHz	26.73	L1	-20.19	
1	Quasi Peak 780 kHz	29.08	L1	-26.91	
2	CISPR Average 780 kHz	21.59	L1	-24.40	
1	Quasi Peak 1.401 MHz	29.33	L1	-26.66	
2	CISPR Average 1.401 MHz	20.49	L1	-25.50	
1	Quasi Peak 2.013 MHz	38.74	L1	-17.26	
1	Quasi Peak 6.045 MHz	40.03	L1	-19.96	
1	Quasi Peak 10.0725 MHz	37.79	L1	-22.20	

 Note: Measurement Uncertainty is $\pm 4.2\text{dB}$ at a level of confidence of 95%.

TEST REPORT

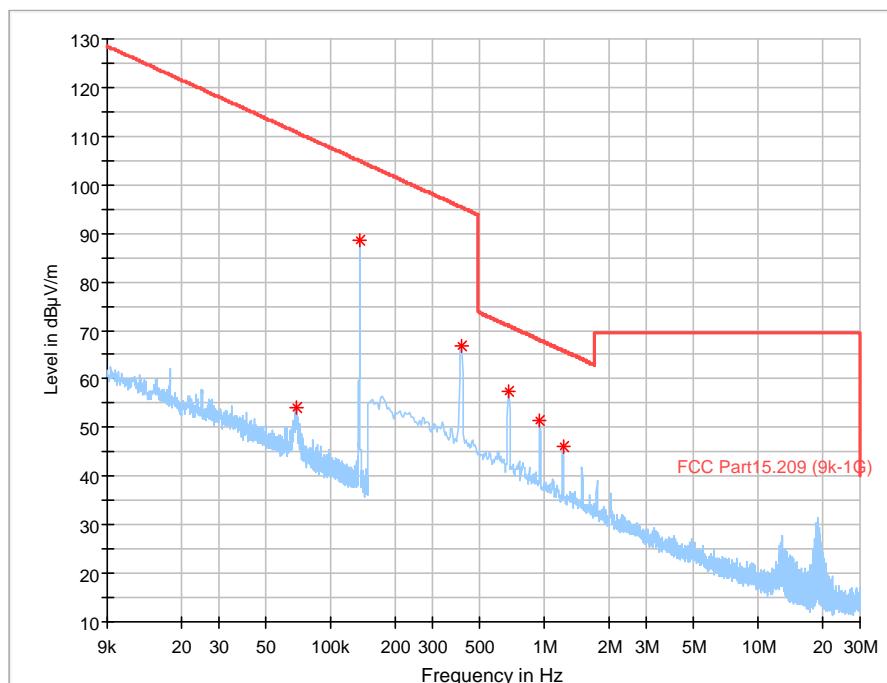
RADIATED EMISSIONS

Model: WQ10002

Date of Test: November 30, 2021

Worst-Case Operating Mode: Charging Mode of Load with LED ON

Table 1
 Pursuant to FCC Part 15 Section 15.209 Requirement



Frequency (MHz)	Read Level (dB μ V)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.069154	42.33	54.23	110.81	-56.58	100.0	O	29.0	11.9
0.142041	77.03	88.43	104.93	-16.50	100.0	O	319.0	11.4
0.407456	55.37	66.97	95.40	-28.43	100.0	O	308.0	11.6
0.679838	46.00	57.50	70.95	-13.45	100.0	O	315.0	11.5
0.952219	39.80	51.30	68.03	-16.73	100.0	O	324.0	11.5
1.224600	34.54	46.04	65.84	-19.81	100.0	O	315.0	11.5

NOTES:

1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.
4. Loop antenna is used for the emissions below 30MHz.
5. Emissions within the restricted band meets the requirement of FCC Part 15 Section 15.205.
6. Measurement Uncertainty is ± 5.3 dB at a level of confidence of 95%.
7. Corr. (dB/m) = Antenna Factor (dB) + Cable Loss (dB)

Max Peak (dB μ V/m) = Corr. (dB/m) + Read Level (dB μ V)

Margin (dB) = Max Peak (dB μ V/m) – Limit (dB μ V/m)

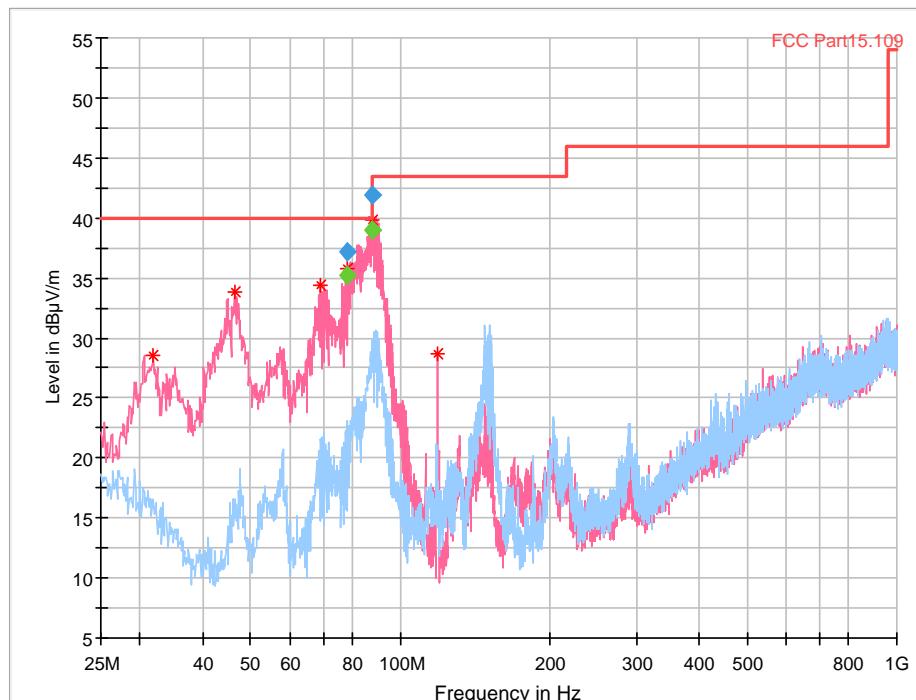
TEST REPORT

Model: WQ10002

Date of Test: November 30, 2021

Worst-Case Operating Mode: Charging Mode of Load with LED ON

Table 2
 Pursuant to FCC Part 15 Section 15.209 Requirement



Frequency (MHz)	MaxPeak (dB μ V/m)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Corr. (dB/m)
78.235355	37.17	---	40.00	-2.83	100.0	V	7.9
78.235355	---	35.16	40.00	-4.84	100.0	V	7.9
87.655040	---	38.94	40.00	-1.06	100.0	V	8.1

Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.825000	28.49	40.00	-11.51	100.0	V	330.0	15.6
46.450000	33.81	40.00	-6.19	100.0	V	224.0	9.0
69.118750	34.32	40.00	-5.68	100.0	V	1.0	8.1
78.235355	35.76	40.00	-4.24	100.0	V	51.0	7.9
118.965625	28.71	43.50	-14.79	100.0	V	268.0	9.0

NOTES:

1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.
4. Loop antenna is used for the emissions below 30MHz.
5. Emissions within the restricted band meets the requirement of FCC Part 15 Section 15.205.
6. Measurement Uncertainty is ± 5.3 dB at a level of confidence of 95%.
7. Corr. (dB/m) = Antenna Factor (dB) + Cable Loss (dB)
 $\text{Max Peak (dB}\mu\text{V/m)} = \text{Corr. (dB/m)} + \text{Read Level (dB}\mu\text{V)}$
 $\text{Margin (dB)} = \text{Max Peak (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}$

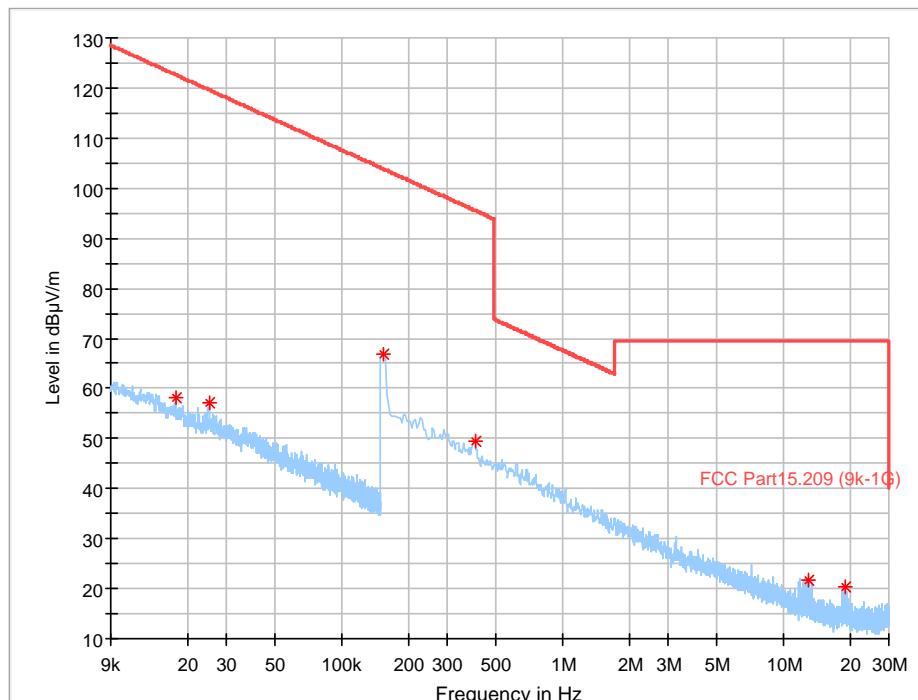
TEST REPORT

Model: WQ10002

Date of Test: November 30, 2021

Worst-Case Operating Mode: Standby Mode

Table 3
Pursuant to FCC Part 15 Section 15.209 Requirement



Frequency (MHz)	Read Level (dB μ V)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.017707	42.76	58.26	122.65	-64.38	100.0	O	145.0	15.5
0.025092	43.17	57.27	119.62	-62.35	100.0	O	42.0	14.1
0.153731	55.50	66.90	103.87	-36.97	100.0	O	298.0	11.4
0.399994	37.70	49.30	95.56	-46.26	100.0	O	57.0	11.6
12.925800	10.79	21.59	69.54	-47.95	100.0	O	320.0	10.8
19.156988	9.68	20.28	69.54	-49.26	100.0	O	60.0	10.6

NOTES:

1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.
4. Loop antenna is used for the emissions below 30MHz.
5. Emissions within the restricted band meets the requirement of FCC Part 15 Section 15.205.
6. Measurement Uncertainty is ± 5.3 dB at a level of confidence of 95%.
7. Corr. (dB/m) = Antenna Factor (dB) + Cable Loss (dB)
 $\text{Max Peak (dB}\mu\text{V/m)} = \text{Corr. (dB/m)} + \text{Read Level (dB}\mu\text{V)}$
 $\text{Margin (dB)} = \text{Max Peak (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}$

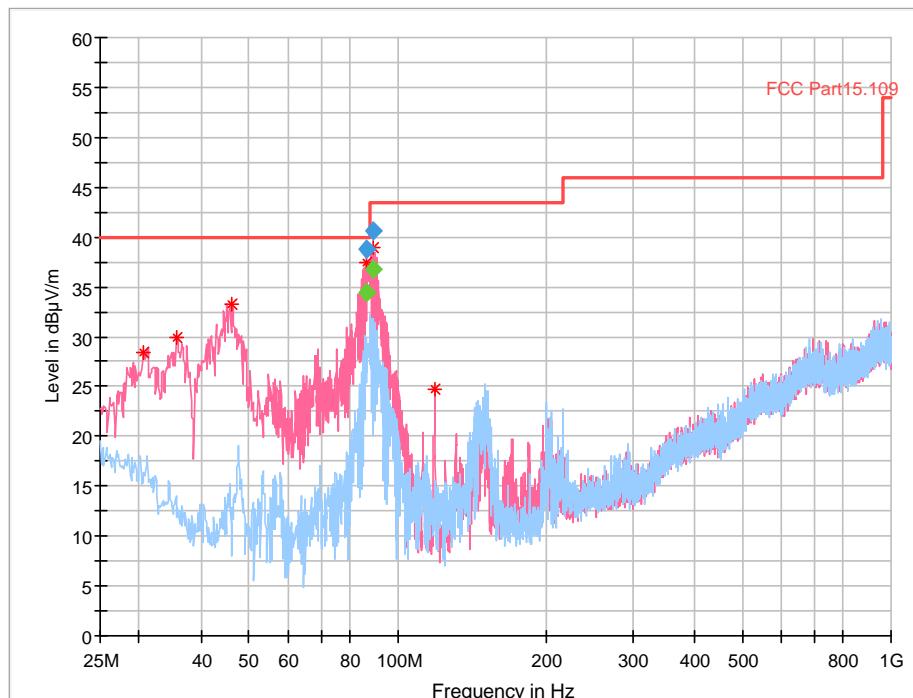
TEST REPORT

Model: WQ10002

Date of Test: November 30, 2021

Worst-Case Operating Mode: Standby Mode

Table 4
 Pursuant to FCC Part 15 Section 15.209 Requirement



Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Corr. (dB/m)
86.900630	---	34.39	40.00	-5.61	100.0	V	8.1
86.900630	38.83	---	40.00	-1.17	100.0	V	8.1
89.547125	---	36.71	43.50	-6.79	200.0	V	8.2
89.547125	40.58	---	43.50	-2.92	200.0	V	8.2

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.606250	28.48	40.00	-11.52	100.0	V	104.0	16.3
35.603125	29.84	40.00	-10.16	100.0	V	176.0	14.0
46.328125	33.32	40.00	-6.68	100.0	V	284.0	9.1
86.900630	37.45	40.00	-2.55	100.0	V	230.0	8.1
89.547125	38.98	43.50	-4.52	200.0	V	292.0	8.2
118.965625	24.71	43.50	-18.79	200.0	V	265.0	9.0

NOTES: 1. Peak Detector Data unless otherwise stated.
 2. All measurements were made at 3 meters.
 3. Negative value in the margin column shows emission below limit.
 4. Loop antenna is used for the emissions below 30MHz.
 5. Emissions within the restricted band meets the requirement of FCC Part 15 Section 15.205.
 6. Measurement Uncertainty is ± 5.3 dB at a level of confidence of 95%.
 7. Corr. (dB/m) = Antenna Factor (dB) + Cable Loss (dB)
 $\text{Max Peak (dB}\mu\text{V/m)} = \text{Corr. (dB/m)} + \text{Read Level (dB}\mu\text{V)}$
 $\text{Margin (dB)} = \text{Max Peak (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}$

TEST REPORT

4.0 EQUIPMENT PHOTOGRAPHS

For electronic filing, the photographs are saved with filename: external photos.pdf and internal photos.pdf.

5.0 PRODUCT LABELLING

For electronic filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

6.0 TECHNICAL SPECIFICATIONS

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

7.0 INSTRUCTION MANUAL

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

TEST REPORT

8.0 MISCELLANEOUS INFORMATION

The miscellaneous information includes details of the test procedure and measured bandwidth.

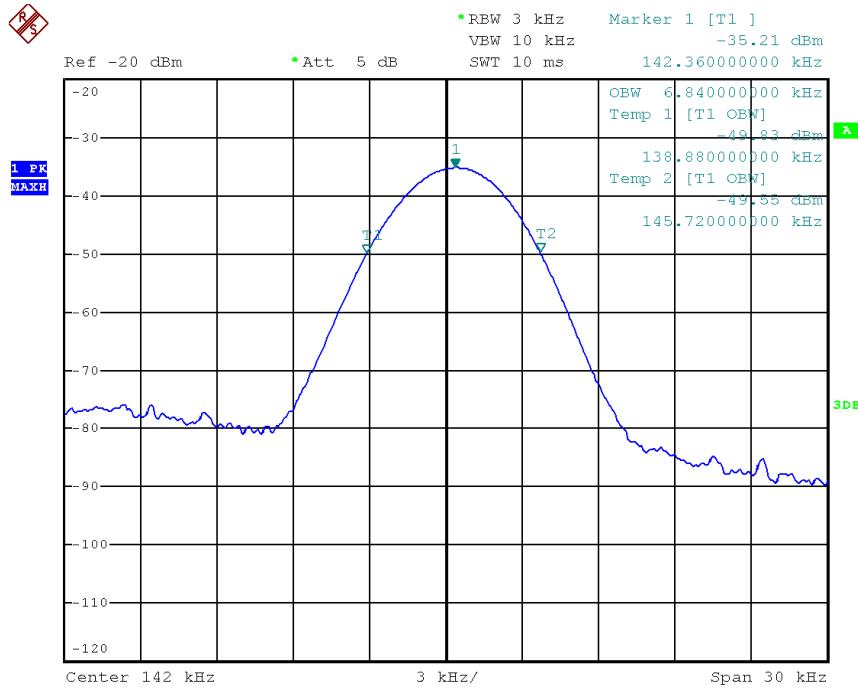
8.1 Measured Bandwidth / Radiated Emission on the Bandedge

Pursuant to FCC Part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designed (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

Occupied Bandwidth Results: (10W Loading)

Occupied Bandwidth (kHz)	
142.4kHz	6.84

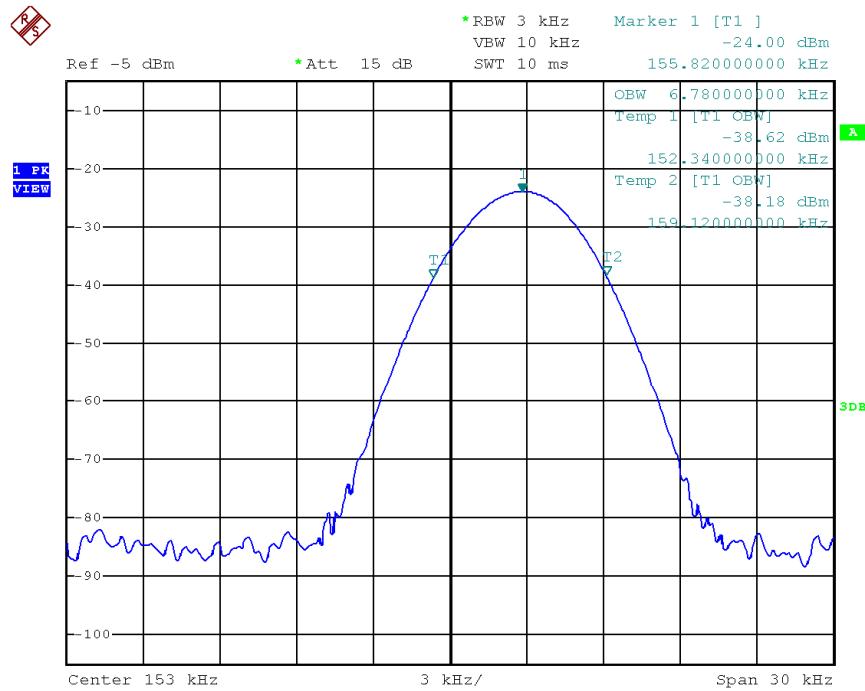
The worst case is shown as below



TEST REPORT**Occupied Bandwidth Results: (Standby)**

Occupied Bandwidth (kHz)	
155.8kHz	6.78

The worst case is shown as below



TEST REPORT

8.2 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services Hong Kong Ltd. in the measurements of transmitter operating under the Part 15, Subpart C rules.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately 0.8m in height above the ground plane for emission measurement at or below 1GHz and 1.5m in height above the ground plane for emission measurement above 1GHz. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axis to obtain maximum emission levels. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements were made as described in ANSI C63.10 (2013).

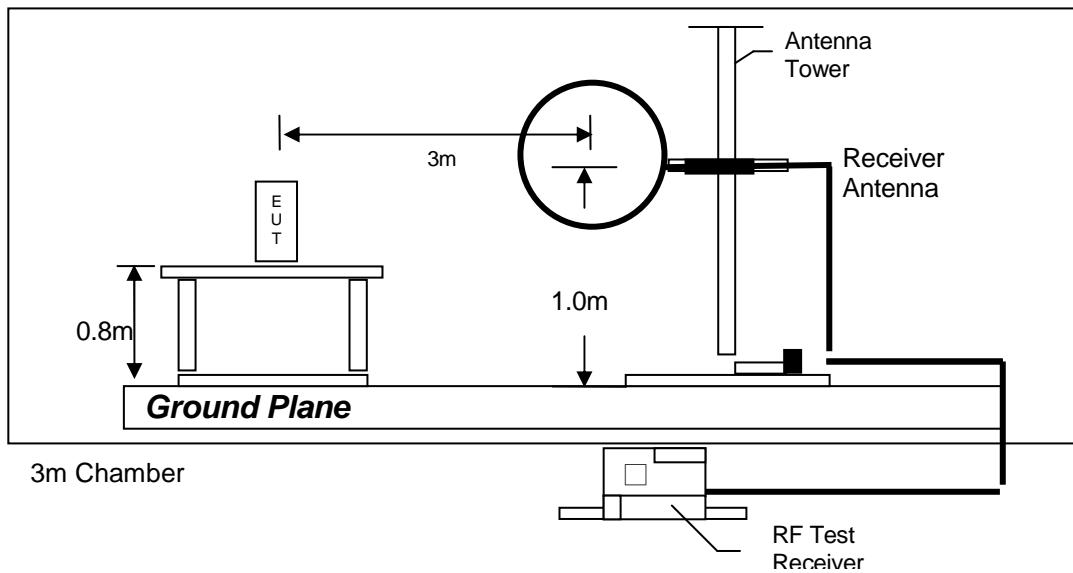
The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.1). Above 1000 MHz, a resolution bandwidth of 3 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the forbidden bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.

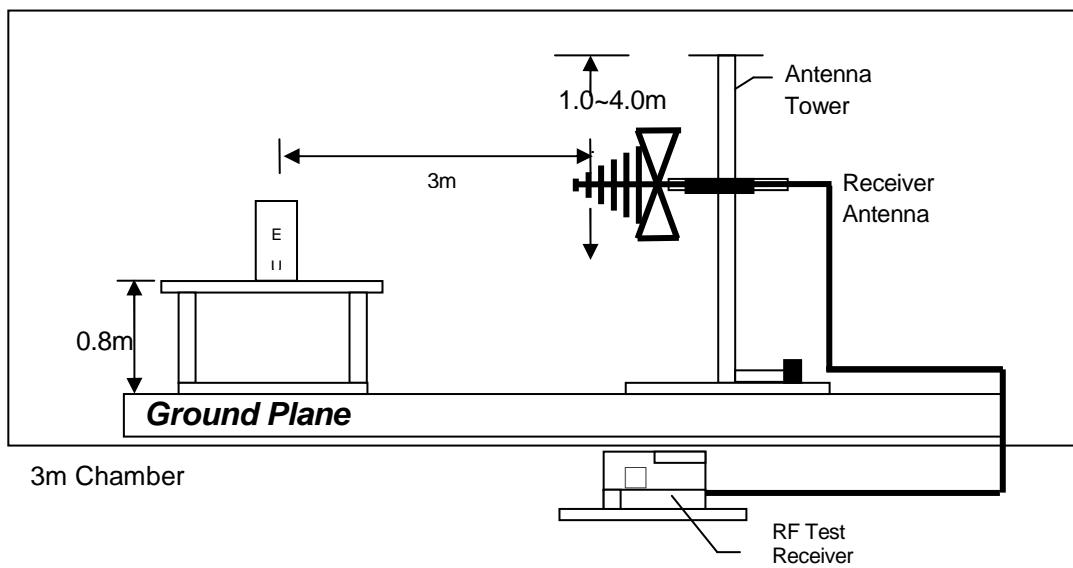
TEST REPORT

8.2.1 Radiated Emission Test Setup

The figure below shows the test setup, which is utilized to make these measurements.



Test setup of radiated emissions up to 30MHz



Test setup of radiated emissions above 1GHz

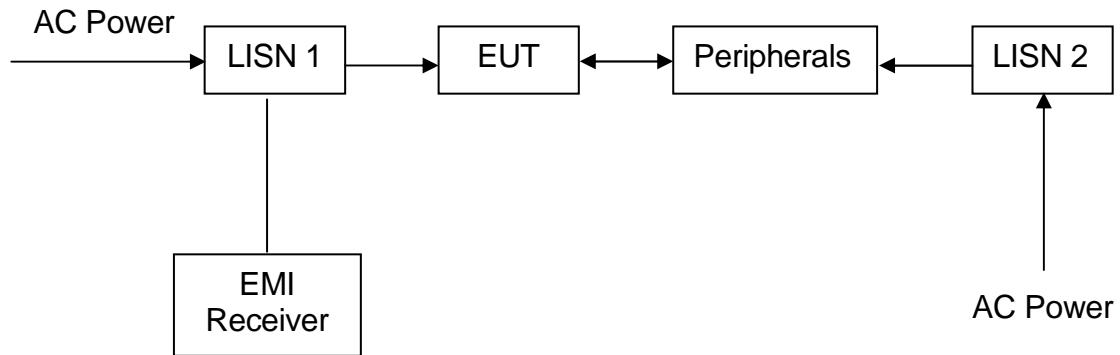
TEST REPORT

8.2.2 Conducted Emission Test Procedures

For tabletop equipment, the EUT along with its peripherals were placed on a 1.0m(W)×1.5m(L) and 0.8m in height wooden table. For floor-standing equipment, the EUT and all cables were insulated, if required, from the ground plane by up to 12 mm of insulating material. The EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled.

All connecting cables of EUT and peripherals were moved to find the maximum emission.

8.2.3 Conducted Emission Test Setup



TEST REPORT

9.0 EQUIPMENT LIST

1) Radiated Emissions Test

Equipment	EMI Test Receiver (9kHz to 26.5GHz)	Spectrum Analyzer	Biconical Antenna (20MHz to 200MHz)
Registration No.	EW-3156	EW-3016	EW-3061
Manufacturer	ROHDE SCHWARZ	ROHDE SCHWARZ	EMCO
Model No.	ESR26	FSV40	3142E
Calibration Date	January 25, 2021	October 29, 2021	February 02, 2021
Calibration Due Date	January 25, 2022	October 29, 2022	August 02, 2022

Equipment	Log Periodic Antenna	Active Loop H-field (9kHz to 30MHz)
Registration No.	EW-3243	EW-3302
Manufacturer	EMCO	EMCO
Model No.	3148B	6502
Calibration Date	June 30, 2021	December 13, 2021
Calibration Due Date	December 30, 2022	June 13, 2023

Equipment	RF Preamplifier (9kHz to 6000MHz)	14m Double Shield RF Cable (20MHz to 6GHz)
Registration No.	EW-3006b	EW-2074
Manufacturer	SCHWARZBECK	RADIALL
Model No.	BBV9718	N(m)-RG142-BNC(m) L=14M
Calibration Date	November 25, 2019	November 14, 2019
Calibration Due Date	June 25, 2022	August 14, 2022

2) Conducted Emissions Test

Equipment	RF Cable 240cm (RG142) (9kHz to 30MHz)	Artificial Mains Network	EMI Test Receiver)
Registration No.	EW-2454	EW-2501	EW-2500
Manufacturer	RADIALL	ROHDE SCHWARZ	ROHDE SCHWARZ
Model No.	Bnc m st / 142 / bnc mra 240cm	ENV-216	ESCI
Calibration Date	November 10, 2021	January 24, 2021	March 29, 2021
Calibration Due Date	November 10, 2022	January 24, 2022	March 29, 2022

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3) OBW Measurement

Equipment	Spectrum Analyzer
Registration No.	EW-2466
Manufacturer	ROHDE SCHWARZ
Model No.	FSP30
Calibration Date	November 18, 2019
Calibration Due Date	August 18, 2022

4) Control Software for Radiated Emission

Software Information	
Software Name	EMC32
Manufacturer	ROHDE SCHWARZ
Software version	10.50.40

END OF TEST REPORT