



## FCC Test Report

**Report No.:** CAIJ-ESH-P21050315B-3  
**FCC ID:** 2AZX2-BV000001  
**Product:** 15W Car Wireless Charging Module  
**Test Model:** W015CN-01,W015CN-10,W015CN-XX  
**Received:** May.08, 2021  
**ISSUED:** May.31, 2021

**Applicant:** An Energy Technology Co., Ltd  
**Address:** No. 139 Huaye Road, Jintan,Changzhou, Jiangsu, China

**Issued By:** BUREAU VERITAS ADT (Shanghai) Corporation  
**Lab Location:** No. 829, Xinzhuan Road, Shanghai, P.R.China (201612)

This test report consists of 31 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by A2LA, CNAS, or any government agency. The test results in the report only apply to the tested item. The test results in this report are traceable to the national or international standards.





# Contents

<b>1. TEST PROGRAM .....</b>	<b>3</b>
<b>2. Summary of Test Procedure and Test Results .....</b>	<b>4</b>
<b>3. Test Configuration of Equipment under Test .....</b>	<b>5</b>
3.1 Manufacturer information .....	5
3.2 Feature of Equipment under Test.....	5
3.3 Measurement Uncertainty .....	6
<b>4 Test of Conducted Emission .....</b>	<b>7</b>
4.1 Test Limit .....	7
4.2 Test Procedures .....	8
4.3 Typical Test Setup .....	8
4.4 Measurement Equipment.....	9
4.5 Test Result and Data .....	10
<b>5 Test of Radiated Emission .....</b>	<b>11</b>
5.1 Test Limit .....	11
5.2 Test Procedures .....	12
5.3 Typical Test Setup .....	12
5.4 Measurement Equipment.....	13
5.5 Test Result and Data (30MHz ~ 1GHz).....	14
5.6 Test Photographs (30MHz ~ 1000MHz).....	16



# 1. TEST PROGRAM

**PRODUCT:** 15W Car Wireless Charging Module

**TEST MODEL:** W015CN-01,W015CN-10,W015CN-XX

**APPLICANT:** An Energy Technology Co., Ltd

**TESTED:** May.08 to May.31, 2021

**STANDARDS:** 47 CFR FCC Part15, Subpart B, Class B  
ANSI C63.4:2014

We, BUREAU VERITAS ADT (Shanghai) Corporation, declare that the equipment above has been tested and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

**PREPARED BY :** Yuan Zhang, **DATE:** May.31, 2021  
Yuan ZHANG  
Project Engineer

**APPROVED BY :** Daniel Sun, **DATE:** May.31, 2021  
Daniel Sun  
EMC Lab Manager





**BUREAU  
VERITAS**

## 2. Summary of Test Procedure and Test Results

<b>EMISSION (47 CFR FCC Part15, Subpart B)</b>		
<b>Test Item</b>	<b>Normative References</b>	<b>Test Result</b>
Conducted Emission	47 CFR FCC Part15, Subpart B 15.107	The EUT is powered by DC source
Radiated Emission	47 CFR FCC Part15, Subpart B 15.109	Meets the Class B requirements

### 3. Test Configuration of Equipment under Test

#### 3.1 Manufacturer information

Manufacturer : An Energy Technology Co., Ltd

Address : No. 139 Huaye Road, Jintan, Changzhou, Jiangsu, China

#### 3.2 Feature of Equipment under Test

<b>Product Name:</b>	15W Car Wireless Charging Module
<b>Brand:</b>	--
<b>Test Model:</b>	W015CN-01,W015CN-10,W015CN-XX
<b>Model Discrepancy:</b>	All these models are same except appearance.
<b>EUT Power Rating:</b>	Input:16-20Vdc, 2A(max)

Note: For more details, please refer to the User's manual of the EUT.

### 3.3 Measurement Uncertainty

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

This listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement		Value
Conducted emissions		2.55 dB
Radiated emissions	30 MHz ~ 1GHz	3.22 dB
	Above 1GHz	2.89 dB

## 4 Test of Conducted Emission

### 4.1 Test Limit

**TEST STANDARD:**

**CFR 47 FCC Part 15, Subpart B (Section: 15.107)**

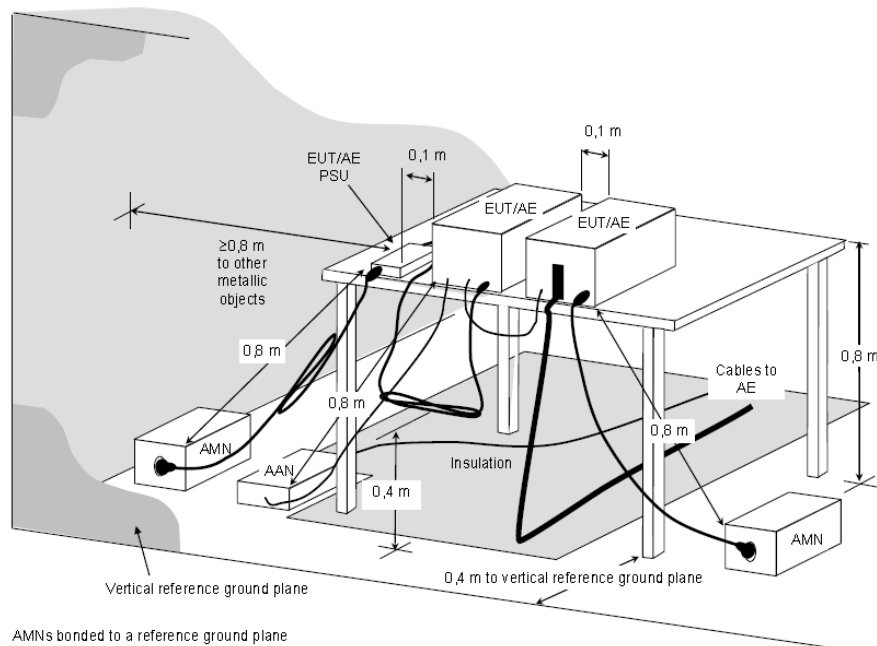
FREQUENCY (MHz)	Class A (dB $\mu$ V)		Class B (dB $\mu$ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

- NOTES:**
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.
  3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

## 4.2 Test Procedures

1. The EUT was placed on a desk 0.8 meter height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
2. Connect EUT to the power mains through a Artificial Mains Network (AMN).
3. All the support units are connecting to the other AMN.
4. The AMN provides 50 ohm coupling impedance for the measuring instrument.
5. The CISPR states that a 50 ohm, 50 micro-Henry AMN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched
8. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

## 4.3 Typical Test Setup



NOTE The 0,8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be  $\geq 0,8$  m.

**Figure D.2 – Example measurement arrangement for table-top EUT  
(Conducted emission measurement – alternative 1)**





#### 4.4 Measurement Equipment

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1001	May.10, 2022
LISN ROHDE & SCHWARZ	ENV216	E1L1011	May.10, 2022
Software ADT	ADT_Cond_V7.3.0	N/A	N/A



**BUREAU  
VERITAS**

#### **4.5 Test Result and Data**

Not applicable. The EUT is powered by DC source.

## 5 Test of Radiated Emission

### 5.1 Test Limit

**TEST STANDARD:**

**CFR 47 FCC Part 15, Subpart B (Section: 15.109)**

### FOR FREQUENCY BELOW 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 – 88	90	39.1	100	40.0
88 – 216	150	43.5	150	43.5
216 – 960	210	46.4	200	46.0
960 – 1000	300	49.5	500	54.0

### LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

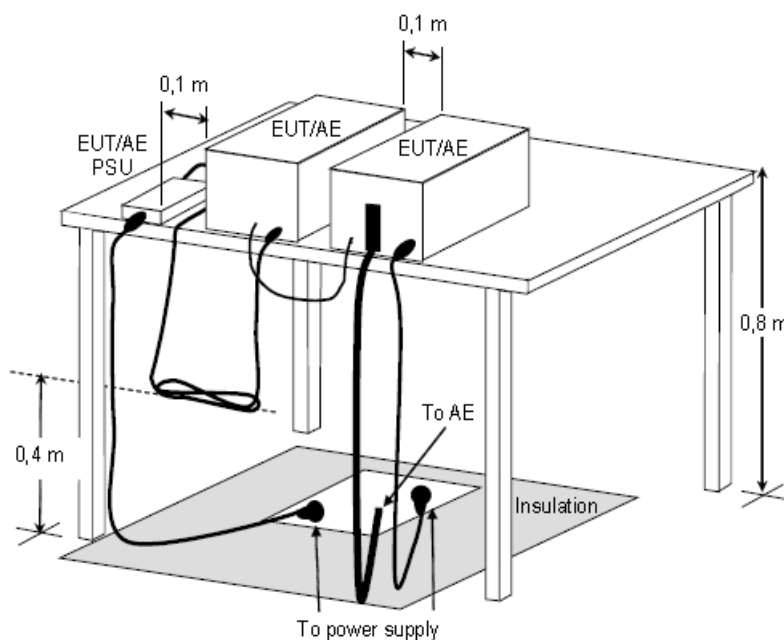
FREQUENCY (MHz)	Class A ( $\text{dB}\mu\text{V/m}$ ) (at 3m)		Class B ( $\text{dB}\mu\text{V/m}$ ) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

- Note:**
1. The lower limit shall apply at the transition frequencies.
  2. Emission level ( $\text{dB}\mu\text{V/m}$ ) =  $20 \log$  Emission level ( $\mu\text{V/m}$ ).
  3. All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

## 5.2 Test Procedures

1. The EUT was placed on a rotatable table top 0.8 meter above ground.
2. The EUT was set 3/10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
5. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

## 5.3 Typical Test Setup



**Figure D.8 – Example measurement arrangement for table-top EUT  
(Radiated emission measurement)**



**BUREAU  
VERITAS**

## 5.4 Measurement Equipment

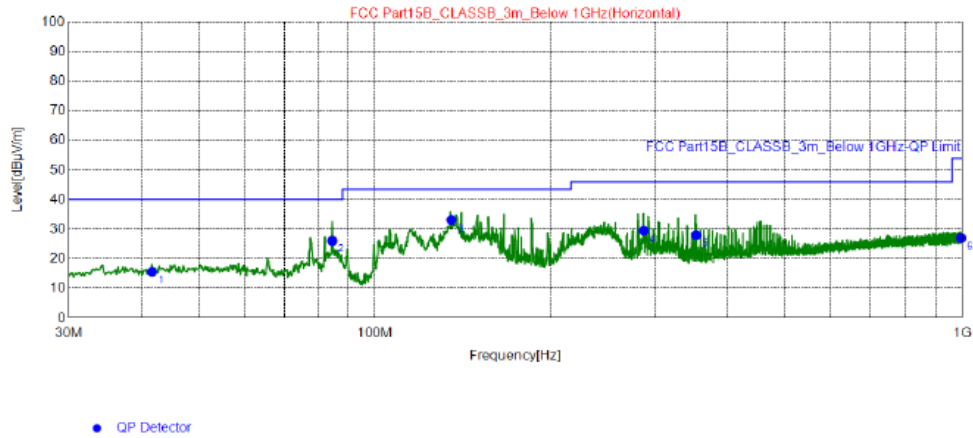
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
EMI Test Spectrum ROHDE & SCHWARZ	ESR7	E1R1005	May.10, 2022
Spectrum Analyzer Keysight	N9030B	E1S1003	Aug.03, 2021
Broad-Band Antenna Schwarzbeck	VULB9168	E1A1012	Jul.27, 2021
Double Riaged Vroadband Horn Antenna Schwarzbeck	BBHA9120D	E1A1017	Jan.24, 2022
Preamplifier Agilent	8447D	E1A2001	Apr.18, 2022
Preamplifier Agilent	EMC051845SE	E1A2009	Jul.05, 2021



BUREAU  
VERITAS

## 5.5 Test Result and Data (30MHz ~ 1GHz)

Position: Horizontal



### Final Data List

NO.	Freq. [MHz]	QP Reading [dB µV/m]	Factor [dB]	QP Value [dB µV/m]	QP Limit [dB µV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	41.64	25.98	-10.31	15.67	40.00	24.33	200	250	Horizontal
2	84.51	41.12	-15.03	26.09	40.00	13.91	200	258	Horizontal
3	134.9	44.03	-10.87	33.16	43.50	10.34	200	287	Horizontal
4	287.4	38.51	-8.98	29.53	46.00	16.47	200	175	Horizontal
5	353.2	35.4	-7.35	28.05	46.00	17.95	200	164	Horizontal
6	994.3	24.74	2.29	27.03	54.00	26.97	200	227	Horizontal

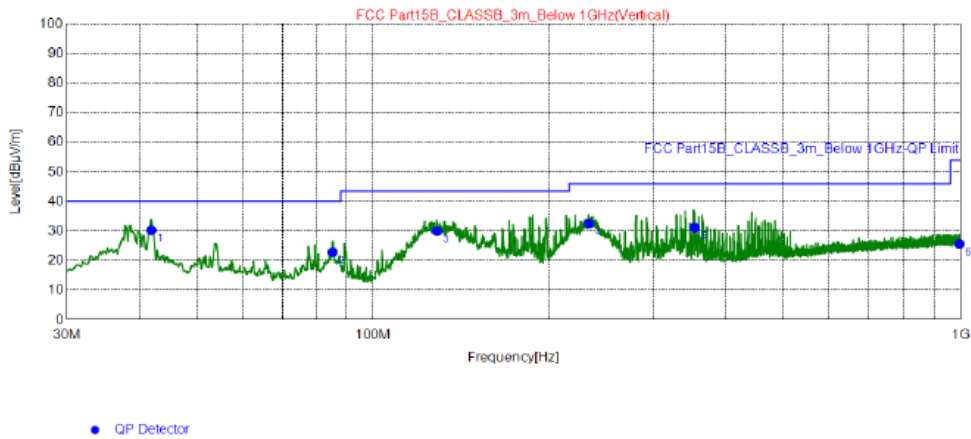
### REMARKS:

1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value.
4. Factor = Antenna Factor + Amplifier Factor + Cable loss.
5. QP value = Factor + Reading Value.



BUREAU  
VERITAS

Position: Vertical



**Final Data List**

NO.	Freq. [MHz]	QP Reading [dB µV/m]	Factor [dB]	QP Value [dB µV/m]	QP Limit [dB µV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	41.83	40.64	-10.30	30.34	40.00	9.66	100	356	Vertical
2	85.29	38.08	-15.15	22.93	40.00	17.07	100	319	Vertical
3	128.5	41.6	-11.57	30.03	43.50	13.47	100	181	Vertical
4	233.5	43.81	-11.28	32.53	46.00	13.47	100	289	Vertical
5	353.3	38.51	-7.35	31.16	46.00	14.84	100	51	Vertical
6	994.1	23.41	2.29	25.70	54.00	28.30	100	118	Vertical

**REMARKS:**

1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value
4. Factor = Antenna Factor + Amplifier Factor + Cable loss
5. QP value = Factor + Reading Value.



**BUREAU  
VERITAS**

## 5.6 Test Photographs (30MHz ~ 1000MHz)

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

**--- END ---**