



Report No.: TW2106014E File Reference No.: 2021-06-10

Applicant: LEADER PREMIUMS LTD.

Product: WIRELESS CHARGER

Model No.: AB0297

Trademark: N/A

Test Standards: FCC Part 15 Subpart C

Test Result: It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.4&FCC Part 15 Subpart C,

for the evaluation of electromagnetic compatibility



Dated: June 10, 2021

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

## SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com

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## **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meets with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

## **CNAS-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

## FCC-Registration No.: 744189

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

## Industry Canada (IC) — Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

## A2LA (Certification Number: 5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

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## **Test Report Conclusion**

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#### 1.0 General Details

#### 1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le

Village, Nanshan District, Shenzhen, China

Telephone: +86 755 83448688 Fax: +86 755 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 744189 For 3m Anechoic Chamber

## 1.2 Applicant Details

Applicant: LEADER PREMIUMS LTD.

Address: 9/F., Hengfu Mansion, NO.858. Fuming Road, Ningbo, China

Telephone: --Fax: --

1.3 Description of EUT

Product: WIRELESS CHARGER

Manufacturer: LEADER PREMIUMS LTD.

Address: 9/F., Hengfu Mansion, NO.858. Fuming Road, Ningbo, China

Brand Name: N/A
Model Number: AB0297
Additional Model Name N/A
Additional Trade Name N/A

Rating: Input: DC5V, 2A or DC9V, 2A; Wireless Output: DC5V, 1A or DC9V, 1.1A

Hardware Version: wirelesscharging- AB0297

Software Version: leader.2021.03

Serial No.: AB0297

Operation Frequency: See below table

Channel	Frequency (MHz)						
01	0.1115	06	0.140	11	0.165	16	0.190
02	0.120	07	0.145	12	0.170	17	0.195
03	0.125	08	0.150	13	0.175	18	0.200

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04	0.130	09	0.155	14	0.180	19	0.205
05	0.135	10	0.160	15	0.185		
Teas channel		Frequency (MHz)					
CH13		0.17	75 MHz				

Modulation Type: MSK

Antenna Designation Inductive Loop Antenna with Gain 0dBi

Note: Wireless Output: 5V 1A and 9V 1.1A mode all have been tested, only worse case mode Wireless Output 9V 1.1A is reported.

## 1.4 Submitted Sample

1 Samples

#### 1.5 Test Duration

2021-06-02 to 2021-06-10

## 1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions below 9kHz-30MHz Uncertainty =4.3dB

Radiated Emissions below 30MHz-1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty =6.0dB

Occupied Channel Bandwidth Uncertainty =5%

## 1.7 Test Engineer

The sample tested by



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2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2020-06-23	2021-06-22
LISN	R&S	EZH3-Z5	100294	2020-06-23	2021-06-22
LISN	R&S	EZH3-Z5	100253	2020-06-23	2021-06-22
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2020-06-23	2021-06-22
Loop Antenna	EMCO	6507	00078608	2018-06-25	2021-06-24
Spectrum	R&S	FSIQ26	100292	2020-06-23	2021-06-22
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2020-06-23	2021-06-22
Horn Antenna	R&S	BBHA 9120D	9120D-631	2018-07-09	2021-07-08
Power meter	Anritsu	ML2487A	6K00003613	2020-06-23	2021-06-22
Power sensor	Anritsu	MA2491A	32263	2020-06-23	2021-06-22
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2018-07-04	2021-07-03
9*6*6 Anechoic			N/A	2020-07-06	2021-07-05
EMI Test Receiver	RS	ESVB	826156/011	2020-06-23	2021-06-22
EMI Test Receiver	RS	ESH3	860904/006	2020-06-23	2021-06-22
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2020-06-23	2021-06-22
Spectrum	HP/Agilent	E4407B	MY50441392	2020-06-23	2021-06-22
Spectrum	RS	FSP	1164.4391.38	2021-01-16	2022-01-15
RF Cable	Zhengdi	ZT26-NJ-NJ-8 M/FA		2020-06-23	2021-06-22
RF Cable	Zhengdi	7m		2020-06-23	2021-06-22
RF Switch	EM	EMSW18	060391	2020-06-23	2021-06-22
Pre-Amplifier	Schwarebeck	BBV9743	#218	2020-06-23	2021-06-22
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2020-06-23	2021-06-22
LISN	SCHAFFNER	NNB42	00012	2021-01-06	2022-01-05

## 2.2 Automation Test Software

## For Conducted Emission Test

Name	Version		
EZ-EMC	Ver.EMC-CON 3A1.1		

## For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

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#### 3.0 Technical Details

## 3.1 Summary of test results

## The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna	PASS	Compliant
	requirements		
FCC Part 15, Paragraph 15.207	Conducted	PASS	Compliant
	Emission Test		
ECC Part 15 Paragraph 15 200 (a) (f)	General	PASS	Compliant
FCC Part 15, Paragraph 15.209 (a) (f)	Requirement	PASS	Compliant
FCC Part 15, Paragraph 15.215	20dB	PASS	Compliant
	Bandwidth		
	Testing		

#### 3.2 Test Standards

FCC Part 15 Subpart C, ANSI C63.4:2014 and ANSI C63.10:2013

## 4.0 EUT Modification

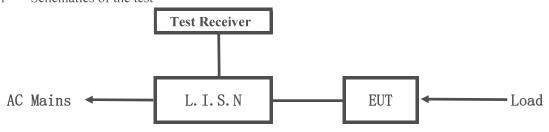
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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#### 5. Power Line Conducted Emission Test

#### 5.1 Schematics of the test

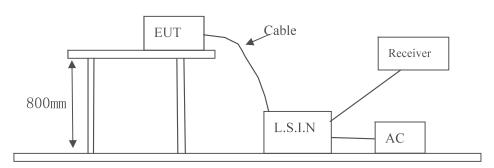


**EUT: Equipment Under Test** 

## 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10 –2013. Test voltage: AC120V 60Hz

## Block diagram of Test setup



#### 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2014. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

## A. EUT

Device	Manufacturer	Model	FCC ID	
WIRELESS	LEADER PREMIUMS LTD.	AB0297	2APYY-AB0297	
CHARGER	LEADER PREMIUMS LID.	AB0297		

## B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

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## C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	Chenyang	UP0920	Input: 100-240V~, 50-60Hz, 0.5A;
			Output: DC5V or DC9V, 2A

## 5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10 -2013.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

## 5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency	Limits (dB $\mu$ V)			
(MHz)	Quasi-peak Level	Average Level		
$0.15 \sim 0.50$	66.0~56.0*	56.0~46.0*		
0.50 ~ 5.00	56.0	46.0		
5.00 ~ 30.00	60.0	50.0		

Notes:

- 1. \*Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

## 5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz. (The average detector is necessary when the Quasi-peak emission level beyond the average Limit.)

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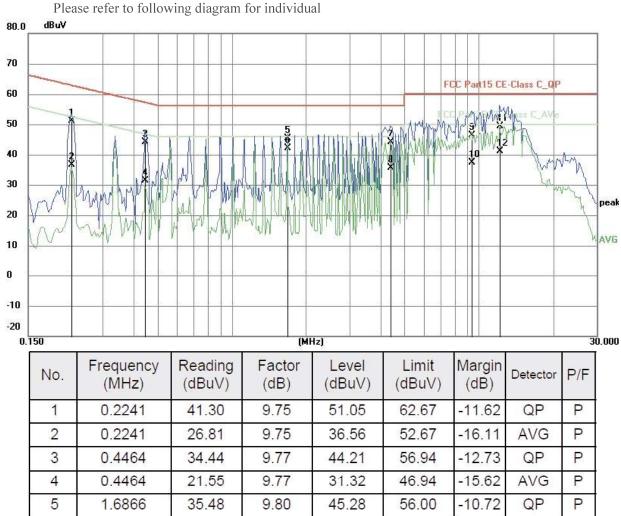
#### A: Conducted Emission on Live Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting and Charging** 

**Results: Pass** 



110.	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)		3.21
1	0.2241	41.30	9.75	51.05	62.67	-11.62	QP	Р
2	0.2241	26.81	9.75	36.56	52.67	-16.11	AVG	Р
3	0.4464	34.44	9.77	44.21	56.94	-12.73	QP	Р
4	0.4464	21.55	9.77	31.32	46.94	-15.62	AVG	Р
5	1.6866	35.48	9.80	45.28	56.00	-10.72	QP	Р
6	1.6866	32.23	9.80	42.03	46.00	-3.97	AVG	Р
7	4.4001	34.11	9.90	44.01	56.00	-11.99	QP	Р
8	4.4001	25.84	9.90	35.74	46.00	-10.26	AVG	Р
9	9.3336	36.27	10.13	46.40	60.00	-13.60	QP	Р
10	9.3336	27.31	10.13	37.44	50.00	-12.56	AVG	Р
11	12.1455	39.11	10.25	49.36	60.00	-10.64	QP	Р
12	12.1455	30.94	10.25	41.19	50.00	-8.81	AVG	Р

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## B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

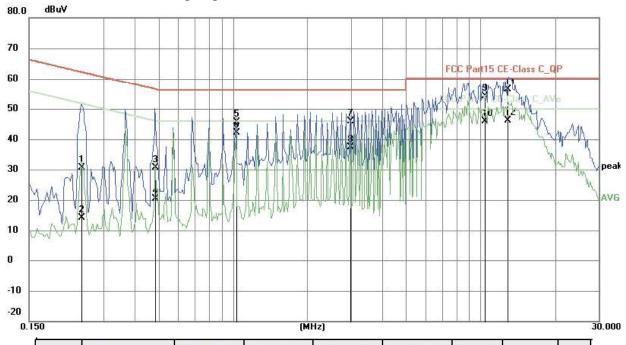
## **EUT Operating Environment**

Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting and Charging** 

**Results: Pass** 

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2436 20.98 9.75		30.73	61.97	-31.24	QP	Р	
2	0.2436	4.38	9.75	14.13	51.97	-37.84	AVG	Р
3	0.4854	20.76	9.77	30.53	56.25	-25.72	QP	Р
4	0.4854	10.66	9.77	20.43	46.25	-25.82	AVG	Р
5	1.0275	35.82	9.79	45.61	56.00	-10.39	QP	Р
6	1.0275	32.31	9.79	42.10	46.00	-3.90	AVG	Р
7	2.9697	36.15	9.84	45.99	56.00	-10.01	QP	Р
8	2.9697	27.64	9.84	37.48	46.00	-8.52	AVG	Р
9	10.3944	43.84	10.18	54.02	60.00	-5.98	QP	Р
10	10.3944	35.71	10.18	45.89	50.00	-4.11	AVG	Р
11	12.9060	46.05	10.29	56.34	60.00	-3.66	QP	Р
12	12.9060	35.75	10.29	46.04	50.00	-3.96	AVG	Р

Note: only the worst case recorded in the test report.

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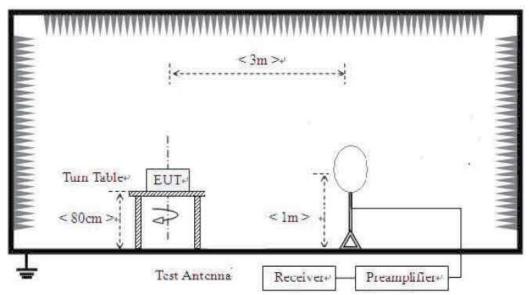
#### 6 Radiated Emission Test

6.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at TIMEWAY EMC Laboratory. This site is on file with the FCC laboratory division, Registration No.744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 9 kHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with RBW=120 kHz/VBW=300 kHz; All readings from 9 kHz to 30 MHz are quasi-peak values with RBW=10 kHz/VBW=30 kHz. For the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission test in these three bands are based on measurements employing an average detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization: Vertical polarization and Horizontal polarization.

## **Block diagram of Test setup**

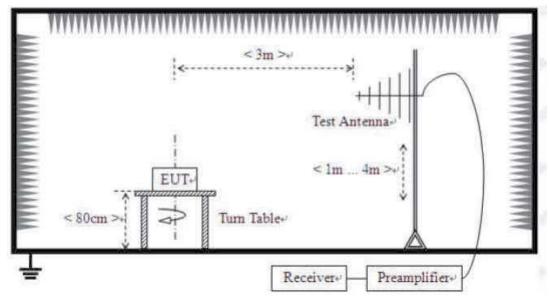
#### 9kHz-30MHz



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#### 30MHz-1000MHz



- 6.2 Configuration of The EUT

  Same as section 5.3 of this report
- 6.3 EUT Operating Condition
  Same as section 5.4 of this report.

#### 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

# B. Frequencies in restricted band are compiled to limit on Paragraph 15.209. Limits for frequency below 30MHz

Frequency Range (MHz)	Distance (m)	Field strength (V/m)		
0.009-0.490	300	2400/F(kHz)		
0.490-1.705	30	24000/F(kHz)		
1.705-30	30	30		

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## Limits for frequency above 30MHz

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)		
30-88	3	40.0		
88-216	3	43.5		
216-960	3	46.0		
Above 960	3	54.0		

Note:

- 1. RF Voltage  $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 2. In the Above Table, the tighter limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

#### 6.5 Test result

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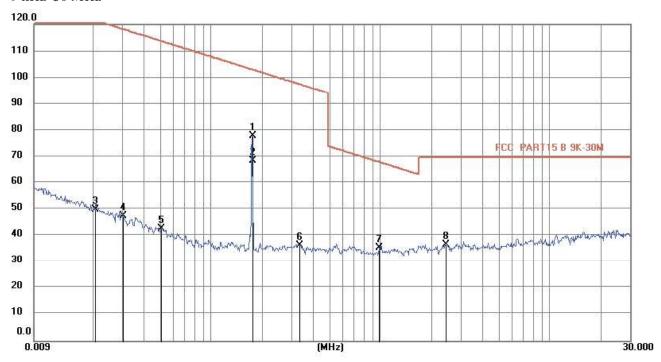


#### Measurement data:

Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80

Limit dBuV/m @3m = Limit dBuV/m @30m + 40

#### 9 kHz~30 MHz



No.	Frequency (MHz)	Reading ()	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	0.1753	68.06	9.77	77.83	102.68	-24.85	PEAK	Р
2	0.1753	58.67	9.77	68.44	102.68	-34.24	AVG	Р
3	0.0206	39.57	10.35	49.92	121.17	-71.25	peak	Р
4	0.0303	37.35	10.17	47.52	117.84	-70.32	peak	Р
5	0.0509	32.87	9.80	42.67	113.36	-70.69	peak	Р
6	0.3351	26.62	9.76	36.38	97.08	-60.70	peak	Р
7	0.9837	25.77	9.79	35.56	67.76	-32.20	peak	Р
8	2.4350	26.94	9.82	36.76	69.51	-32.75	peak	Р

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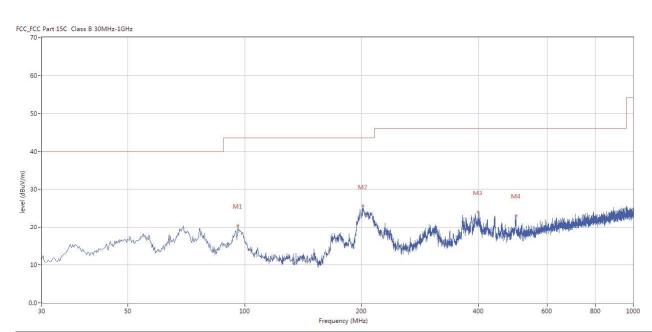


# A. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Transmitting

**Results:** Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	95.944	20.48	-14.16	43.5	<b>-</b> 23.02	Peak	0.00	100	Horizontal	Pass
2	201.405	25.60	-13.42	43.5	<b>-</b> 17.90	Peak	89.00	100	Horizontal	Pass
3	398.265	23.99	-8.67	46.0	<b>-</b> 22.01	Peak	156.00	100	Horizontal	Pass
4	498.878	23.08	<b>-</b> 7.04	46.0	<b>-</b> 22.92	Peak	129.00	100	Horizontal	Pass