

Applicant: Shenzhen Juku Intelligent Technology Co., Ltd.

Product: Wake-up Light with Wireless Charger

Model No.: SRWW, SRWW-S, SRWW-B

Trademark: Dekala

Test Standards: FCC Part 15 Subpart C

Test Result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.10 & FCC Part 15 Subpart C,

for the evaluation of electromagnetic compatibility

Approved By

Terry Tang

Manager

Dated: May 30, 2023

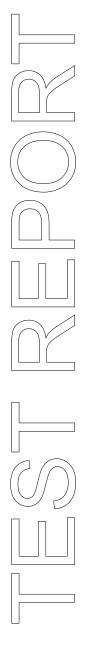
Results appearing herein relate only to the sample tested

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



Date: 2023-05-30



Page 2 of 23

## **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 17025:2017 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

Date: 2023-05-30



## **Test Report Conclusion**

### Content

1.0	General Details	4
1.1	Test Lab Details.	4
1.2	Applicant Details	4
1.3	Description of EUT	4
1.4	Submitted Sample	5
1.5	Test Duration.	5
1.6	Test Uncertainty.	5
1.7	Test By	5
2.0	List of Measurement Equipment	6
3.0	Technical Details	7
3.1	Summary of Test Results	7
3.2	Test Standards.	7
4.0	EUT Modification	7
5.0	Power Line Conducted Emission Test	8
5.1	Schematics of the Test.	8
5.2	Test Method and Test Procedure.	8
5.3	Configuration of the EUT	8
5.4	EUT Operating Condition.	9
5.5	Conducted Emission Limit.	9
5.6	Test Result.	9
6.0	Radiated Emission test	12
5.1	Test Method and Test Procedure.	12
6.2	Configuration of the EUT	13
6.3	EUT Operation Condition.	13
6.4	Radiated Emission Limit	13
6.5	Test Result.	14
7.0	20dB Bandwidth Test	18
8.0	Antenna Requirement	20
9.0	FCC Label	21
10.0	Photo of Testing	22

Date: 2023-05-30



#### 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: Shenzhen Juku Intelligent Technology Co., Ltd.

Address: Room 1009, Building 11, Tianan Yungu, Gangtou Community, Bantian Street, Longgang

District, Shenzhen, Guangdong, China

Telephone: -Fax: --

#### 1.3 Description of EUT

Product: Wake-up Light with Wireless Charger

Manufacturer: Shenzhen Juku Intelligent Technology Co., Ltd.

Address: Room 1009, Building 11, Tianan Yungu, Gangtou Community, Bantian Street,

Longgang District, Shenzhen, Guangdong, China

Trademark: Dekala Model Number: SRWW

Additional Model Name SRWW-S, SRWW-B

Additional Trade Name N/A

Rating: Input: DC12V, 2A; Wireless Output: 15W

Power Supply: Model: YC-R66U120200K; Input: 100-240V~ 50/60Hz, 0.65A Max;

Output: DC12V, 2A

Hardware Version: SRWW Main v1.0

Software Version: 1.0.1 Serial No.: N/A

Operation Frequency: 111.5kHz-205kHz

Test Frequency: 175kHz Modulation Type: MSK

Antenna Designation Inductive Loop Antenna with gain 0dBi Max (Declared by the applicant)

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Report No: TW2305182-03E Page 5 of 23

Date: 2023-05-30



1.4 Submitted Sample

2 Samples

1.5 Test Duration

2023-05-16 to 2023-05-30

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

Print Name: Andy Xing

Date: 2023-05-30



2.0 Test Equipment							
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date		
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14		
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17		
LISN	R&S	EZH3-Z5	100253	2022-07-18	2023-07-17		
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2022-07-18	2023-07-17		
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17		
Spectrum	R&S	FSIQ26	100292	2022-07-15	2023-07-14		
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17		
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2024-07-17		
Power meter	Anritsu	ML2487A	6K00003613	2022-07-18	2023-07-17		
Power sensor	Anritsu	MA2491A	32263	2022-07-18	2023-07-17		
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17		
9*6*6 Anechoic			N/A	2022-07-26	2025-07-25		
EMI Test Receiver	RS	ESVB	826156/011	2022-07-15	2023-07-14		
EMI Test Receiver	RS	ESCS 30	834115/006	2022-07-15	2023-07-14		
Spectrum	HP/Agilent	E4407B	MY50441392	2022-07-15	2023-07-14		
Spectrum	RS	FSP	1164.4391.38	2022-07-15	2023-07-14		
RF Cable	Zhengdi	ZT26-NJ-NJ-8		2022-07-15	2023-07-14		
KI Cable	Zileligui	M/FA		2022-07-13	2023-07-14		
RF Cable	Zhengdi	7m		2022-07-15	2023-07-14		
Pre-Amplifier	Schwarebeck	BBV9743	#218	2022-07-15	2023-07-14		
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2022-07-15	2023-07-14		
LISN	SCHAFFNER	NNB42	00012	2022-08-18	2023-07-17		
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14		
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17		

## 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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Report No: TW2305182-03E Page 7 of 23

Date: 2023-05-30



### 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	Dagg	Commliant
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

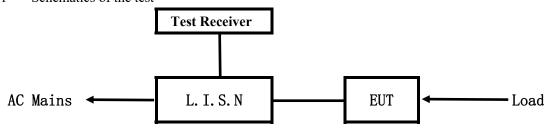
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

Date: 2023-05-30



## 5.0 Power Line Conducted Emission Test

#### 5.1 Schematics of the test

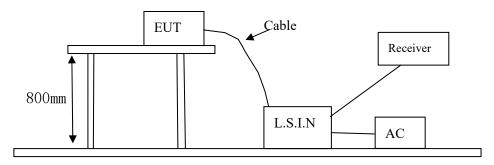


**EUT: Equipment Under Test** 

### 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: 120V~, 60Hz Block diagram of Test setup



### 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

#### A. EUT

Device	Manufacturer	Model	FCC ID
Wake-up Light with	Shenzhen Juku Intelligent	SRWW, SRWW-S,	2ARPE-SRWW
Wireless Charger	Technology Co., Ltd.	SRWW-B	ZAKPE-SKW W

## B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

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Report No: TW2305182-03E Page 9 of 23

Date: 2023-05-30



### C. Peripherals

Device	Manufacturer	Model	Rating
N/A			

## 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*			
$0.50 \sim 5.00$	56.0	46.0			
$5.00 \sim 30.00$	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.)

Date: 2023-05-30



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

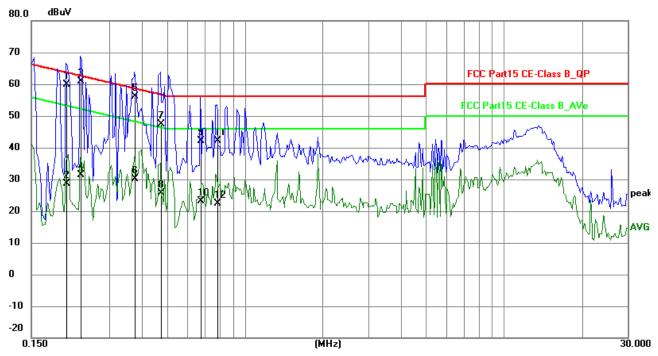
**EUT Operating Environment** 

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

**EUT set Condition: Keep Transmitting** 

**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	0.2046	50.08	9.75	59.83	63.42	-3.59	QP	Р
2	0.2046	19.00	9.75	28.75	53.42	-24.67	AVG	Р
3	0.2319	51.10	9.75	60.85	62.38	-1.53	QP	Р
4	0.2319	21.52	9.75	31.27	52.38	-21.11	AVG	Р
5	0.3762	46.36	9.76	56.12	58.36	-2.24	QP	Р
6	0.3762	20.27	9.76	30.03	48.36	-18.33	AVG	Р
7	0.4737	37.56	9.77	47.33	56.45	-9.12	QP	Р
8	0.4737	15.83	9.77	25.60	46.45	-20.85	AVG	Р
9	0.6726	32.38	9.78	42.16	56.00	-13.84	QP	Р
10	0.6726	13.41	9.78	23.19	46.00	-22.81	AVG	Р
11	0.7818	32.38	9.78	42.16	56.00	-13.84	QP	Р
12	0.7818	12.63	9.78	22.41	46.00	-23.59	AVG	Р

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

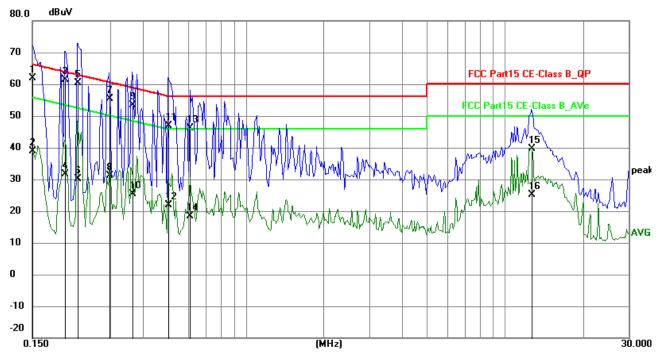
**EUT Operating Environment** 

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

**EUT set Condition: Keep Transmitting** 

**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	0.1500	52.21	9.79	62.00	66.00	-4.00	QP	Р
2	0.1500	29.15	9.79	38.94	56.00	-17.06	AVG	Р
3	0.2007	51.72	9.75	61.47	63.58	-2.11	QP	Р
4	0.2007	21.99	9.75	31.74	53.58	-21.84	AVG	Р
5	0.2241	50.55	9.75	60.30	62.67	-2.37	QP	Р
6	0.2241	20.38	9.75	30.13	52.67	-22.54	AVG	Р
7	0.2982	45.50	9.76	55.26	60.29	-5.03	QP	Р
8	0.2982	21.39	9.76	31.15	50.29	-19.14	AVG	Р
9	0.3645	43.51	9.76	53.27	58.63	-5.36	QP	Р
10	0.3645	15.50	9.76	25.26	48.63	-23.37	AVG	Р
11	0.5010	37.05	9.77	46.82	56.00	-9.18	QP	Р
12	0.5010	12.18	9.77	21.95	46.00	-24.05	AVG	Р
13	0.6102	36.41	9.78	46.19	56.00	-9.81	QP	Р
14	0.6102	8.65	9.78	18.43	46.00	-27.57	AVG	Р

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Report No: TW2305182-03E Page 12 of 23

Date: 2023-05-30



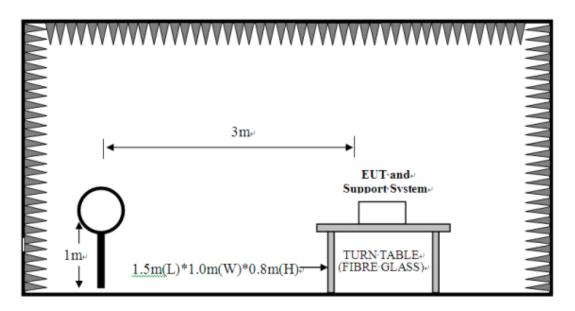
#### **6.0** Radiated Emission Test

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

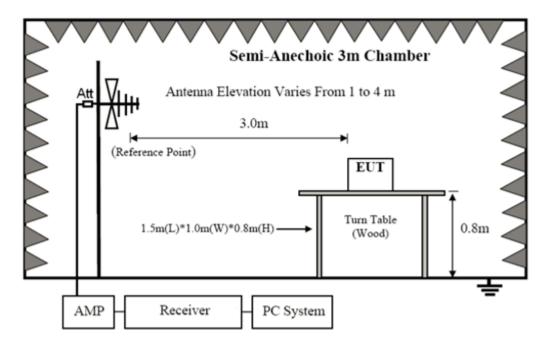


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Date: 2023-05-30



#### 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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Date: 2023-05-30



Page 14 of 23

## Limits for frequency above 30MHz

Frequency Range (MHz)	Distance (m)	Field strength (dB μ 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 two bands are based on measurements employing an average detector.

#### 6.5 Test result

Report No: TW2305182-03E Page 15 of 23

Date: 2023-05-30

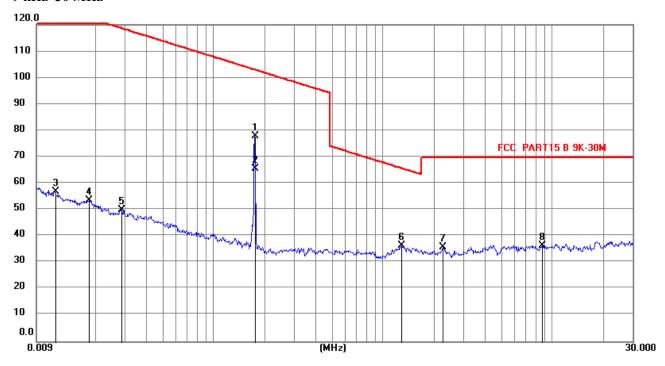


#### Measurement data:

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	55.64	9.77	65.41	102.68	-37.27	AVG	Б
3	0.0117	46.83	10.06	56.89	126.06	-69.17	peak	Р
4	0.0183	43.37	10.30	53.67	122.20	-68.53	peak	J
5	0.0286	39.80	10.20	50.00	118.34	-68.34	peak	J
6	1.2874	26.57	9.79	36.36	65.43	-29.07	peak	Р
7	2.2659	26.08	9.81	35.89	69.51	-33.62	peak	Р
8	8.7500	26.37	10.10	36.47	69.56	-33.09	peak	Р

Date: 2023-05-30



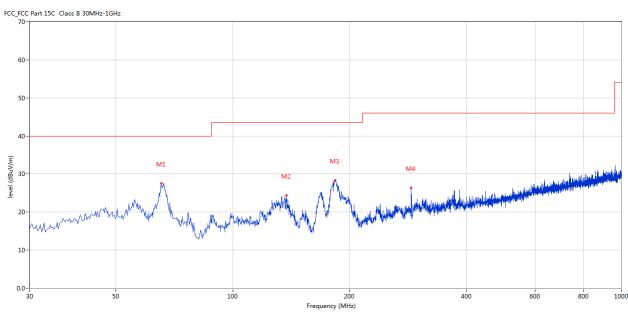
### A. General Radiated Emission Data

## 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	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	65.396	27.50	-13.71	40.0	-12.50	Peak	201.00	100	Horizontal	Pass
2	137.401	24.34	-17.23	43.5	-19.16	Peak	27.00	100	Horizontal	Pass
3	183.464	28.40	-14.96	43.5	-15.10	Peak	238.00	100	Horizontal	Pass
4	287.956	26.40	-11.27	46.0	-19.60	Peak	319.00	100	Horizontal	Pass

Date: 2023-05-30



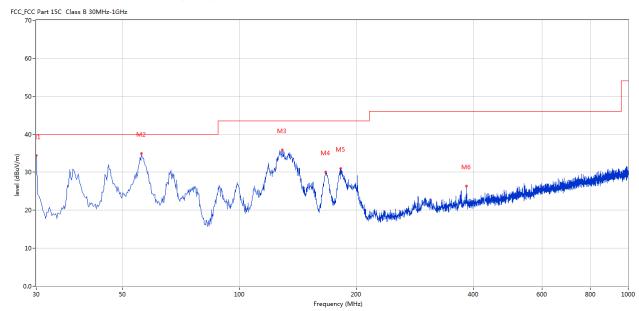
### **B.** General Radiated Emission Data

## Radiated Emission In Vertical (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	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(0)	(cm)		
1	30.000	34.35	-14.19	40.0	-5.65	Peak	304.00	100	Vertical	Pass
2	55.941	34.99	-12.00	40.0	-5.01	Peak	288.00	100	Vertical	Pass
3	128.915	35.82	-16.80	43.5	-7.68	Peak	67.00	100	Vertical	Pass
4	166.493	30.07	-16.05	43.5	-13.43	Peak	107.00	100	Vertical	Pass
5	182.252	31.01	-15.00	43.5	-12.49	Peak	14.00	100	Vertical	Pass
6	383.962	26.32	-9.16	46.0	-19.68	Peak	140.00	100	Vertical	Pass

Report No: TW2305182-03E Page 18 of 23

Date: 2023-05-30



## 7.0 20dB Bandwidth Testing

### 7.1 Test Procedure

With the EUT's antenna attached, the EUT's 20dB Bandwidth was received by the test antenna which was connected to the spectrum analyzer with the START and STOP frequencies set to the EUT's operation band.

#### 7.3 Test Data

Frequency (MHz)	20dB Bandwidth Emission (kHz)	Limit (kHz)	Result
0.175	3.357		Pass

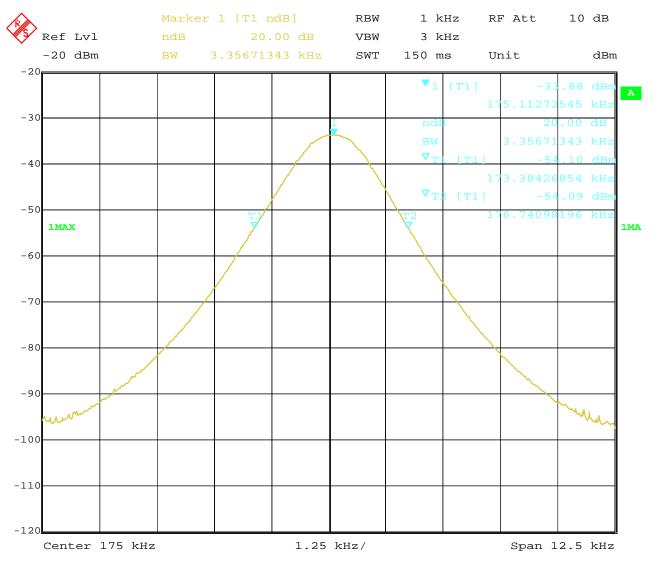
Refer to attached plots:

Report No: TW2305182-03E Page 19 of 23

Date: 2023-05-30



### 20dB Bandwidth



Date: 29.MAY.2023 10:02:11

Date: 2023-05-30



Page 20 of 23

## 8.0 Antenna Requirement

## 8.1 Standard Applicable

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

#### 8.2 Antenna Connected constructions

The antenna is Inductive Loop Antenna. The antenna gain is 0dBi. So it meets the requirement of 15.203

Report No: TW2305182-03E Page 21 of 23

Date: 2023-05-30



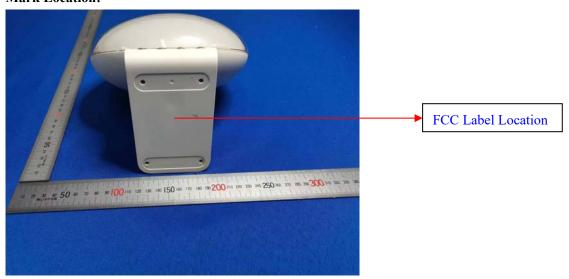
### 9.0 FCC ID Label

#### FCC ID: 2ARPE-SRWW

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

#### Mark Location:



Page 22 of 23

Report No: TW2305182-03E

Date: 2023-05-30



#### 10.0 Photo of testing

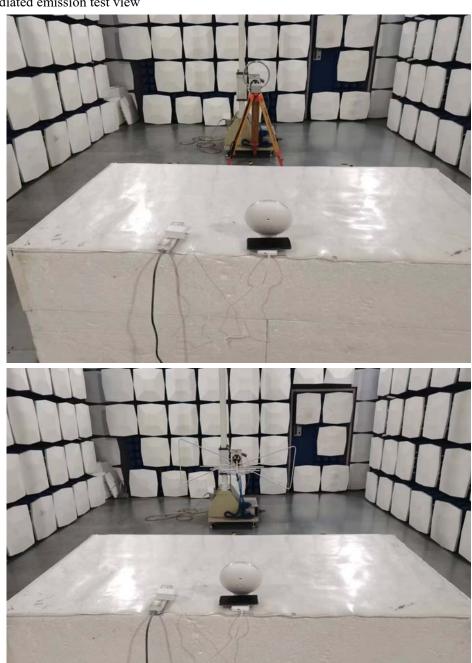
#### 10.1 Conducted test View



Date: 2023-05-30



#### 10.2 Radiated emission test view



Photographs - EUT

Please refer test report TW2305182-01E

### -End of the report-

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