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TEST REPORT

Report No. .....:	**CHTEW21080150**
Project No. .....:	**SHT2106042104EW**
FCC ID ..... :	**2AAR8TD103A**
Applicant's name ..... :	**Henan Eshow Electronic Commerce Co., Ltd.**
Address.....:	Room 722, Sanjiang Building, No.170 Nanyang Road, Huiji District,Zhengzhou, Henan, China
Test item description ..... :	**Wireless Calling System**
Trade Mark .....:	RETEKESS
Model/Type reference.....:	TD103
Listed Model(s) .....:	T118,T119,TD156,TD158,TD159,TD161,TD162,TD163,TD164, TD165,TD183,TD166,TD167,TD168,TD169,TD170,TD171
Standard ..... :	**47 CFR FCC Part 15 Subpart B**
Date of receipt of test sample.....:	Jun.28, 2021
Date of testing.....:	Jun.29, 2021- Aug.20, 2021
Date of issue.....:	Aug.24, 2021
Result..... .....:	**Pass**

Report verification :

Compiled by (position+printed name+signature)..:	File administrators Fanghui Zhu	Fanghui Zhu
Supervised by (position+printed name+signature)..:	Project Engineer Cheng Xiao	ChengXiao
Approved by (position+printed name+signature)..:	RF Manager Hans Hu	Hans Hu

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address.....:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

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The test report merely corresponds to the test sample.

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1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:

47 CFR FCC Part 15 Subpart B - Unintentional Radiators

ANSI C63.4: 2014 – American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2021-08-24	Original

2. TEST DESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
Conducted Emissions	15.107(a)	PASS	Quanhai Deng
Radiated Emissions	15.109(a)	PASS	Hongbin Zhong

Note: The measurement uncertainty is not included in the test result.

3. SUMMARY

3.1. Client Information

Applicant:	Henan Eshow Electronic Commerce Co., Ltd.
Address:	Room 722, Sanjiang Building, No.170 Nanyang Road, Huiji District,Zhengzhou, Henan, China
Manufacturer:	Henan Eshow Electronic Commerce Co., Ltd.
Address:	Room 722, Sanjiang Building, No.170 Nanyang Road, Huiji District,Zhengzhou, Henan, China
Factory:	Shenzhen Retevis Technology Co., Ltd.
Address:	7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen, China

3.2. Product Description

Name of EUT:	Wireless Calling System
Trade Mark:	RETEKESS
Model No.:	TD103
Listed Model(s)	T118,T119,TD156,TD158,TD159,TD161,TD162,TD163,TD164, TD165,TD183,TD166,TD167,TD168,TD169,TD170,TD171
Power supply:	DC12V for adapter
Adapter Information:	Model: DSA-12PFU-12 FUS 120100 Input: 100-240V, 50/60Hz, 0.5A Output: 12V, 1A Manufacturer:DEE VAN ENTERPRISE CO.,LTD.
Antenna type:	PCB
Hardware version:	JT938_V24
Software version:	JT938_V20

3.3. EUT operation mode

Test mode	Describe
Charging mode	Keep the EUT in Charging
Receive mode	Keep the EUT in receiving mode, but don’t charging.

Receive frequency: 433.92MHz.
Only show the test data for worse case mode(Charging mode) on the test report.

4. TEST ENVIRONMENT

4.1. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.	
Laboratory Location	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China	
Connect information:	Tel: 86-755-26715499 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn	
Qualifications	Type	Accreditation Number
	FCC	762235

4.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

4.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emissions	30~1000MHz	4.90 dB	(1)
Radiated Emissions	1~18GHz	4.96 dB	(1)
Conducted Disturbance	0.15~30MHz	3.02 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

4.4. Equipments Used during the Test

● Conducted Emission							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Shielded Room	Albatross projects	HTWE0114	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2020/10/19	2021/10/18
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2020/10/15	2021/10/14
●	Pulse Limiter	R&S	HTWE0033	ESH3-Z2	100499	2020/10/15	2021/10/14
●	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLEX_142	EF-NM-BNCM-2M	2020/10/15	2021/10/14
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated Emission-6th test site							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0127	SAC-3m-02	C11121	2018/09/30	2021/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2020/10/19	2021/10/18
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0119	VULB9163	546	2020/04/28	2023/04/27
●	Pre-Amplifer	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2020/11/13	2021/11/12
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2021/02/26	2022/02/25
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2021/02/26	2022/02/25
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated emission-7th test site							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0122	SAC-3m-01	N/A	2018/09/27	2021/09/26
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2020/10/20	2021/10/19
●	Horn Antenna	SCHWARZBECK	HTWE0126	9120D	1011	2020/04/01	2023/03/31
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2021/03/05	2022/03/04
●	RF Connection Cable	HUBER+SUHNER	HTWE0126-01	RE-7-FH	N/A	2021/03/05	2022/03/04
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A

5. TEST CONDITIONS AND RESULTS

5.1. Conducted Emissions Test

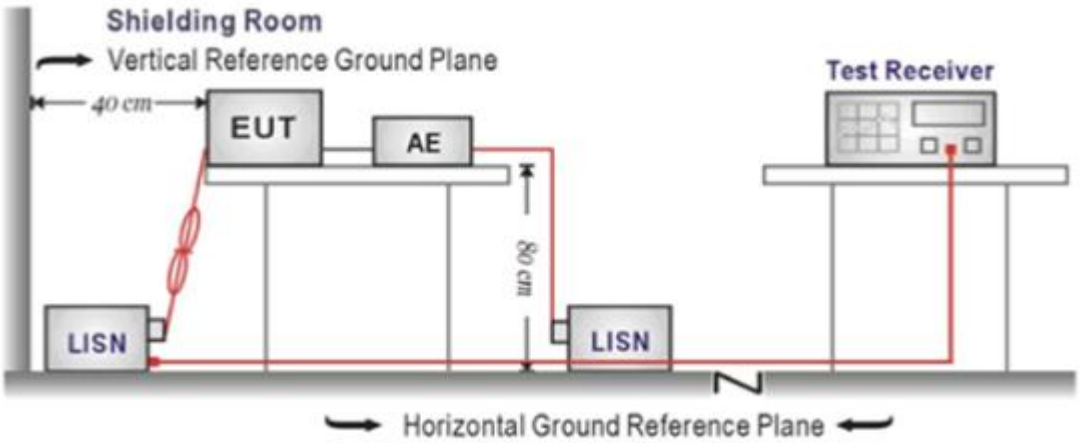
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.107:

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was setup according to ANSI C63.4:2014
2. The EUT was placed on a plat form of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50ohm / 50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor,was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

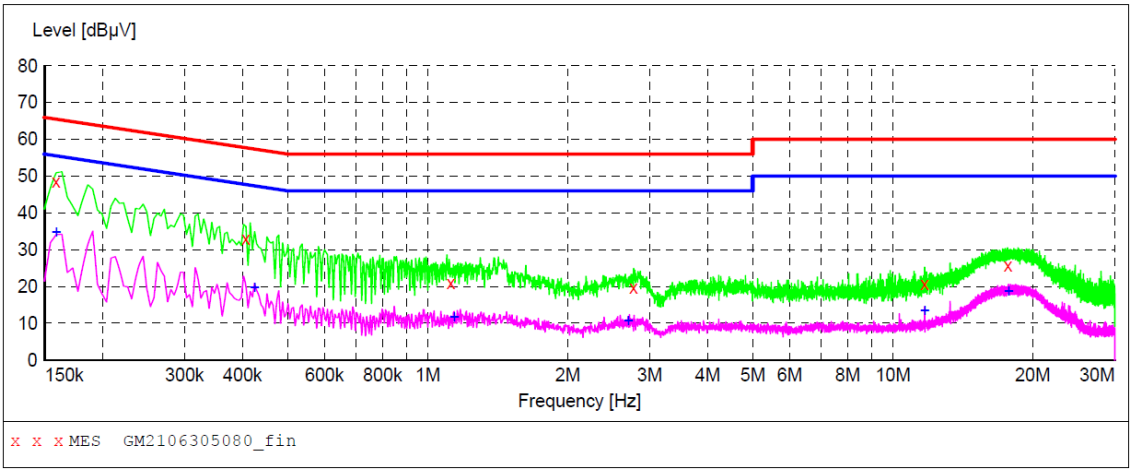
TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Test Line:	L



MEASUREMENT RESULT: "GM2106305080_fin"

6/30/2021 6:36PM

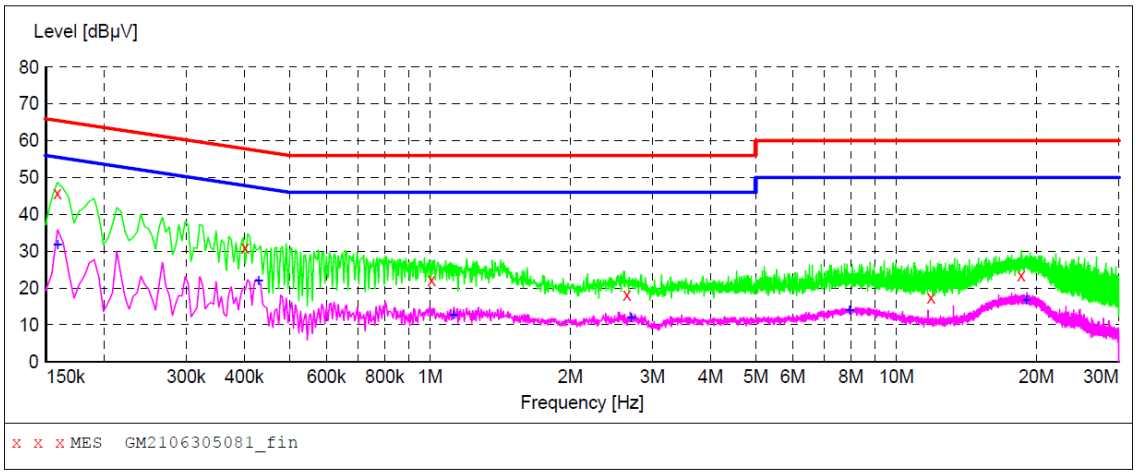
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	48.60	10.2	66	16.9	QP	L1	GND
0.406500	33.10	10.2	58	24.6	QP	L1	GND
1.122000	21.00	10.2	56	35.0	QP	L1	GND
2.773500	19.80	10.2	56	36.2	QP	L1	GND
11.706000	20.60	10.5	60	39.4	QP	L1	GND
17.682000	25.60	10.4	60	34.4	QP	L1	GND

MEASUREMENT RESULT: "GM2106305080_fin2"

6/30/2021 6:36PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	34.80	10.2	56	20.7	AV	L1	GND
0.424500	19.60	10.2	47	27.8	AV	L1	GND
1.140000	11.60	10.2	46	34.4	AV	L1	GND
2.697000	10.60	10.2	46	35.4	AV	L1	GND
11.706000	13.50	10.5	50	36.5	AV	L1	GND
17.722500	18.70	10.4	50	31.3	AV	L1	GND

Test Line:	N



MEASUREMENT RESULT: "GM2106305081_fin"

6/30/2021 6:39PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	45.90	10.2	66	19.6	QP	N	GND
0.402000	31.10	10.2	58	26.7	QP	N	GND
1.009500	22.20	10.2	56	33.8	QP	N	GND
2.647500	18.30	10.2	56	37.7	QP	N	GND
11.881500	17.40	10.5	60	42.6	QP	N	GND
18.550500	23.50	10.5	60	36.5	QP	N	GND

MEASUREMENT RESULT: "GM2106305081_fin2"

6/30/2021 6:39PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	31.80	10.2	56	23.7	AV	N	GND
0.429000	21.90	10.2	47	25.4	AV	N	GND
1.122000	12.60	10.2	46	33.4	AV	N	GND
2.701500	12.00	10.2	46	34.0	AV	N	GND
7.953000	13.90	10.3	50	36.1	AV	N	GND
19.027500	16.80	10.5	50	33.2	AV	N	GND

5.2. Radiated Emissions Test

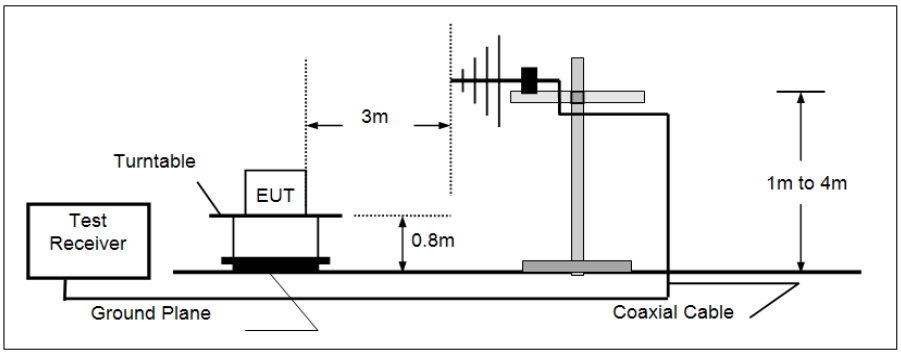
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109

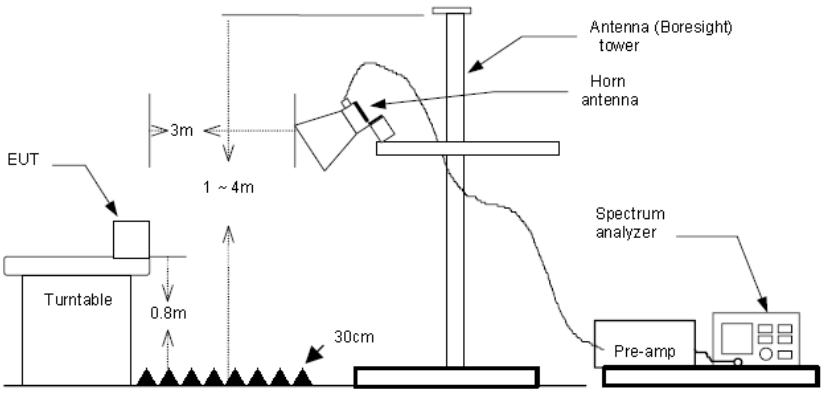
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

- 30MHz ~ 1GHz



- Above 1GHz



TEST PROCEDURE

1. The EUT was tested according to ANSI C63.4:2014.
2. The EUT is placed on a turn table which is 0.8 meter above ground.
3. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
4. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
5. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna.
6. Use the following spectrum analyzer settings
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Below 1GHz,
   RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold;
   If the emission level of the EUT measured by the peak detectoris 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, theemission measurement will be repeated using the quasi-peak detector and reported.
   (3) From 1GHz to 5th harmonic, RBW=1MHz, VBW=3MHz

TEST MODE:

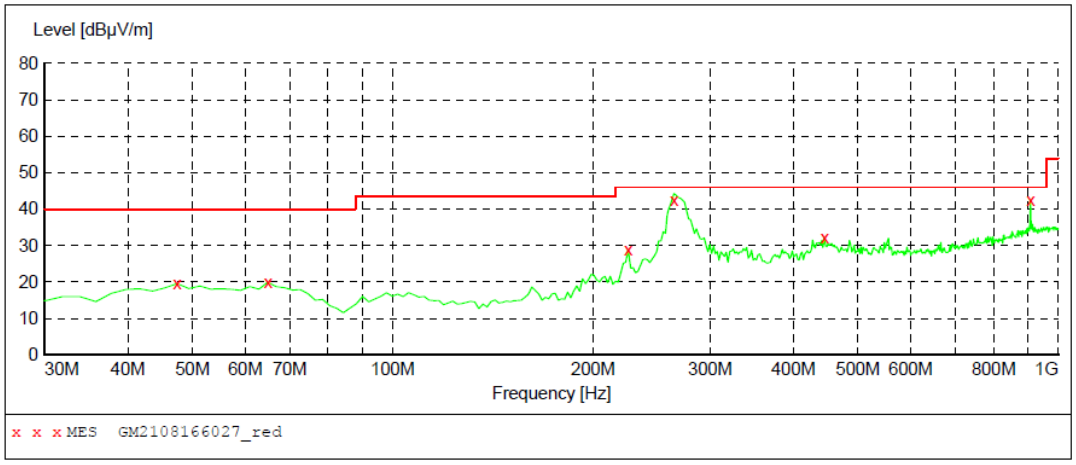
Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note: Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
The emission levels of frequency above 6GHz are very lower than limit and not show in test report.

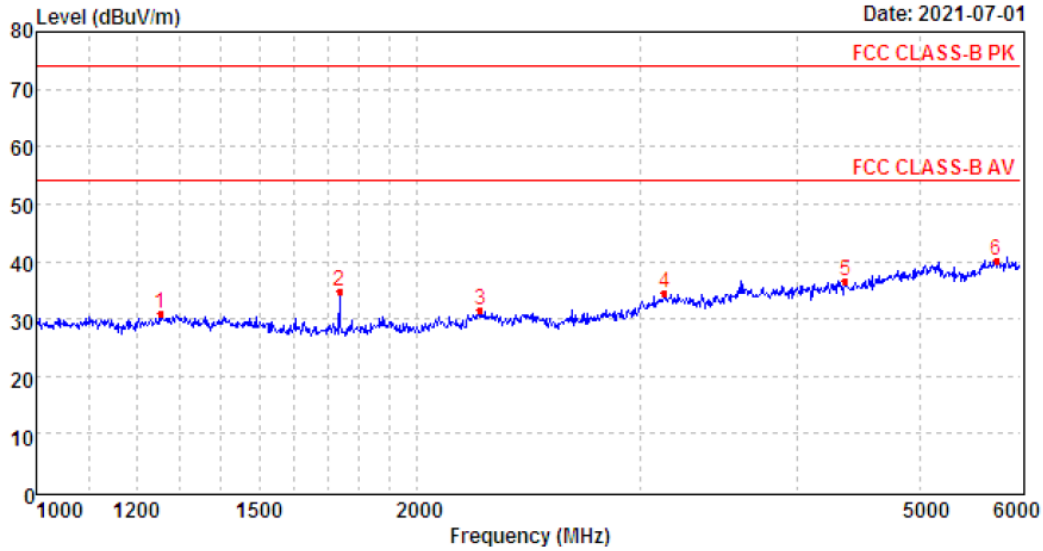
Polarization:	Horizontal



MEASUREMENT RESULT: "GM2108166027_red"

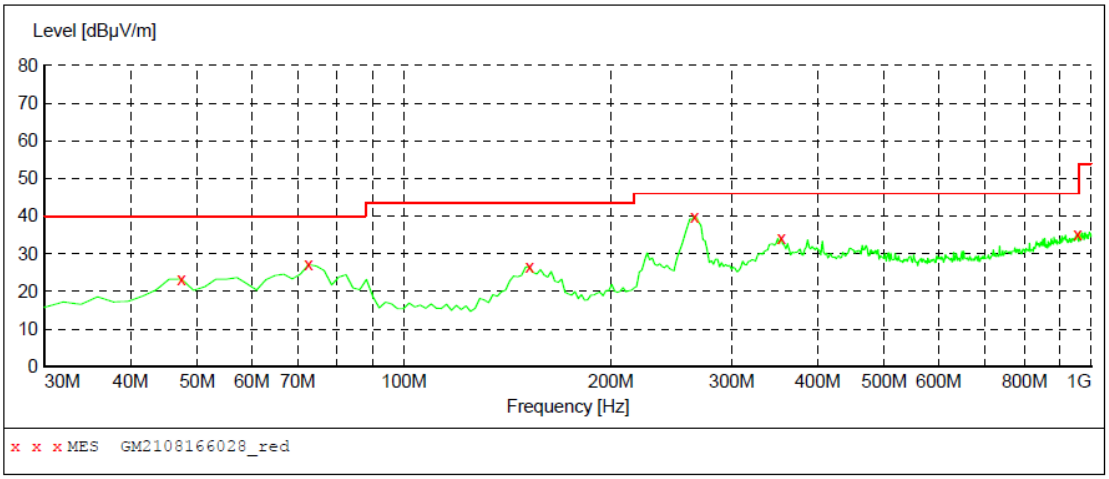
8/16/2021 11:02AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	19.60	-8.6	40.0	20.4	QP	100.0	0.00	HORIZONTAL
64.920000	19.90	-11.2	40.0	20.1	QP	300.0	260.00	HORIZONTAL
225.940000	28.80	-9.6	46.0	17.2	QP	100.0	249.00	HORIZONTAL
264.740000	42.20	-7.9	46.0	3.8	QP	100.0	98.00	HORIZONTAL
445.160000	32.20	-2.9	46.0	13.8	QP	100.0	174.00	HORIZONTAL
908.820000	42.60	7.3	46.0	3.4	QP	300.0	19.00	HORIZONTAL



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1253.28	36.13	25.91	5.27	36.49	30.82	74.00	-43.18	Peak
2	1736.48	40.47	25.17	6.29	37.16	34.77	74.00	-39.23	Peak
3	2243.60	33.63	28.11	7.22	37.42	31.54	74.00	-42.46	Peak
4	3136.61	34.07	29.00	8.66	37.25	34.48	74.00	-39.52	Peak
5	4361.55	31.68	30.52	10.68	36.17	36.71	74.00	-37.29	Peak
6	5737.17	30.68	31.90	12.40	34.84	40.14	74.00	-33.86	Peak

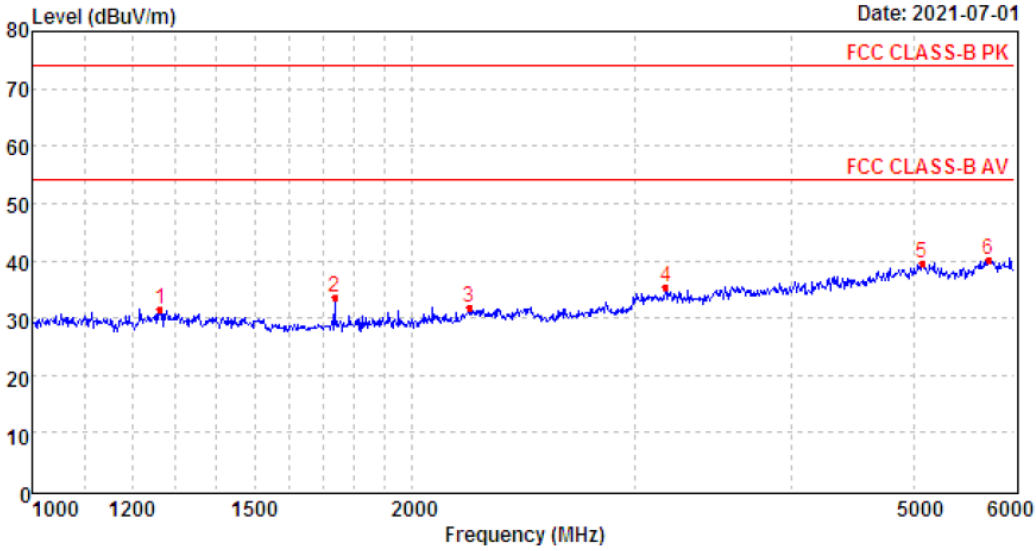
Polarization:	Vertical



MEASUREMENT RESULT: "GM2108166028_red"

8/16/2021 11:05AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	23.30	-8.6	40.0	16.7	QP	100.0	12.00	VERTICAL
72.680000	27.10	-14.0	40.0	12.9	QP	100.0	122.00	VERTICAL
152.220000	26.70	-13.8	43.5	16.8	QP	100.0	86.00	VERTICAL
264.740000	40.00	-7.9	46.0	6.0	QP	100.0	0.00	VERTICAL
353.980000	34.20	-5.0	46.0	11.8	QP	100.0	3.00	VERTICAL
955.380000	35.10	7.7	46.0	10.9	QP	100.0	159.00	VERTICAL



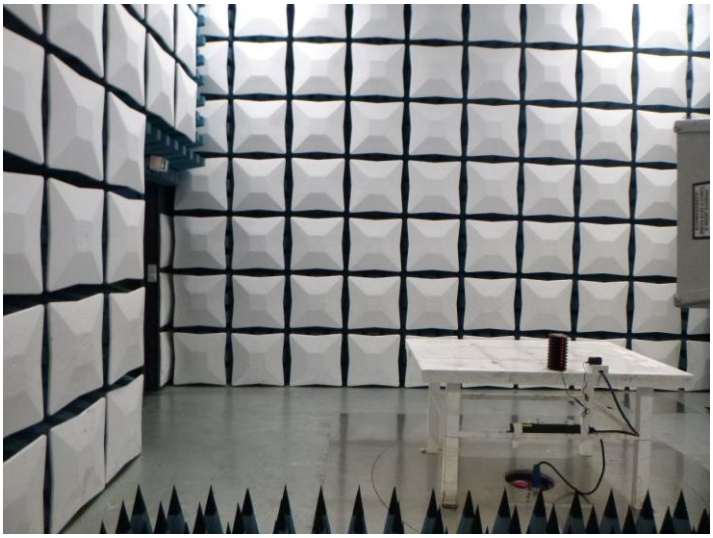
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1262.29	36.81	25.92	5.30	36.45	31.58	74.00	-42.42	Peak
2	1736.48	39.34	25.17	6.29	37.16	33.64	74.00	-40.36	Peak
3	2219.61	33.98	28.16	7.21	37.41	31.94	74.00	-42.06	Peak
4	3176.20	34.77	28.95	8.70	37.09	35.33	74.00	-38.67	Peak
5	5069.97	31.35	32.20	11.47	35.43	39.59	74.00	-34.41	Peak
6	5726.90	30.78	31.90	12.42	34.86	40.24	74.00	-33.76	Peak

6. TEST SETUP PHOTOS OF THE EUT

Conducted Emissions (AC Mains)

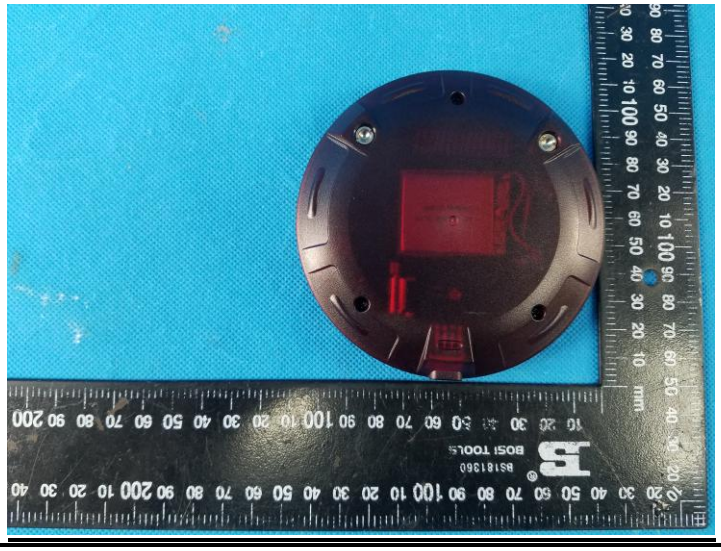
Radiated Emissions (30MHz-1GHz)

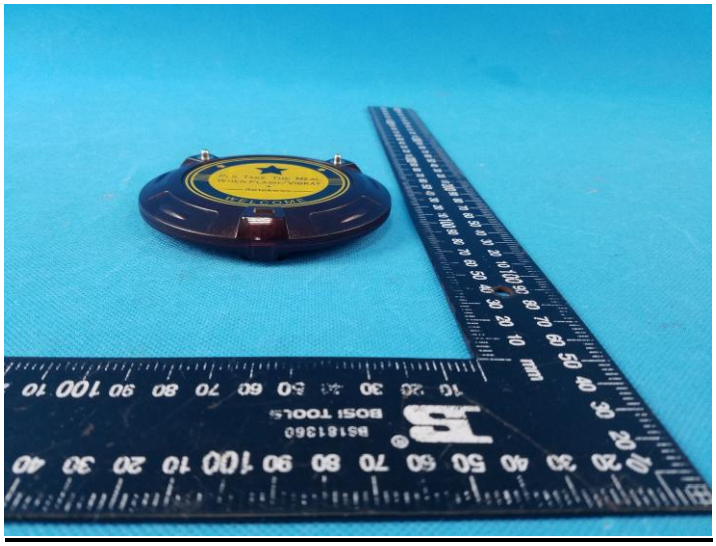
Radiated Emissions (Above 1GHz)

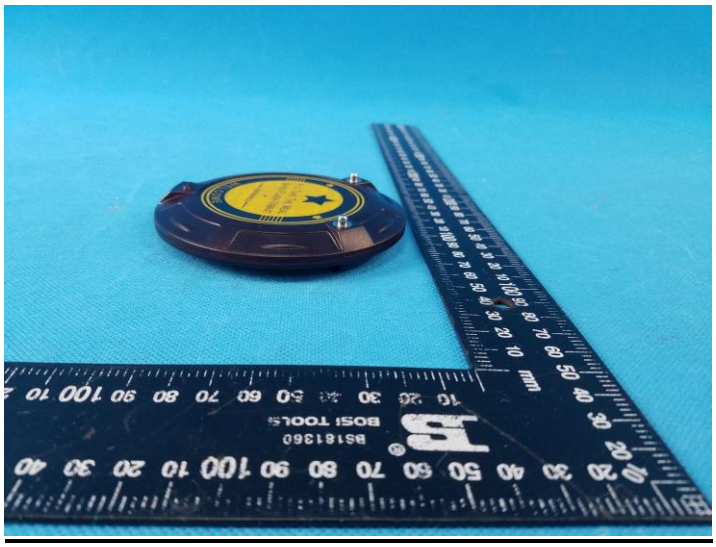


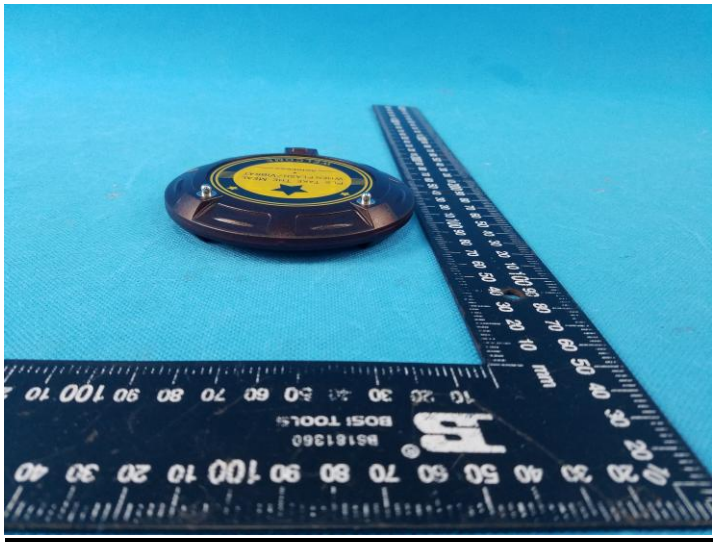
7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

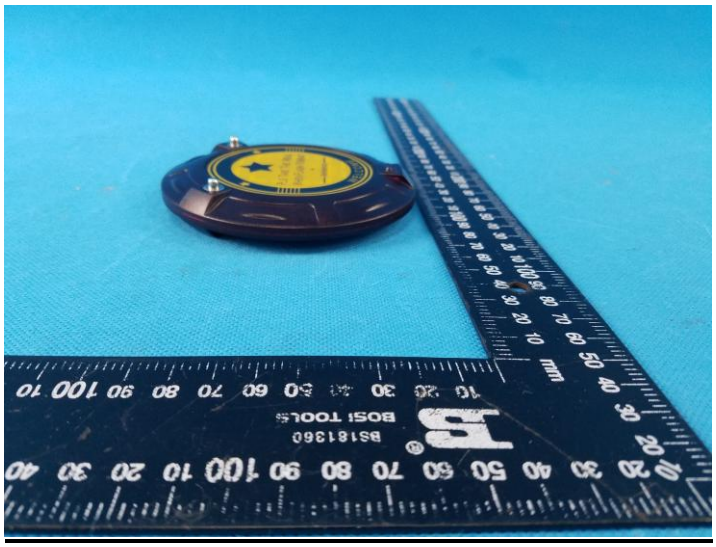
External photos







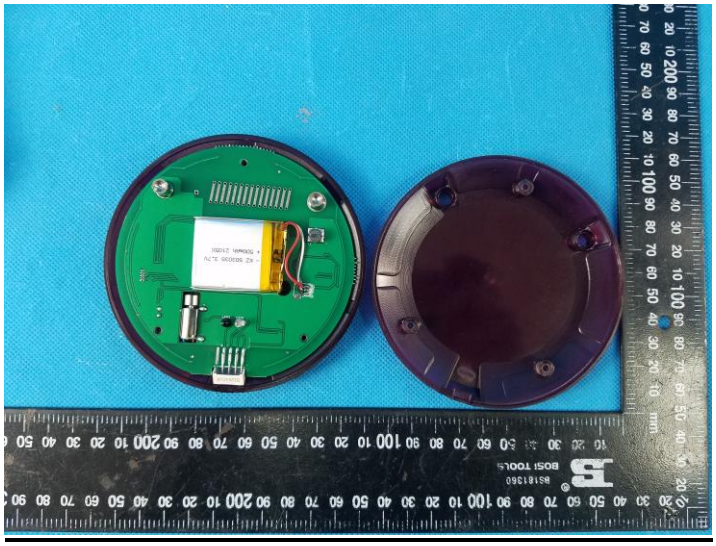


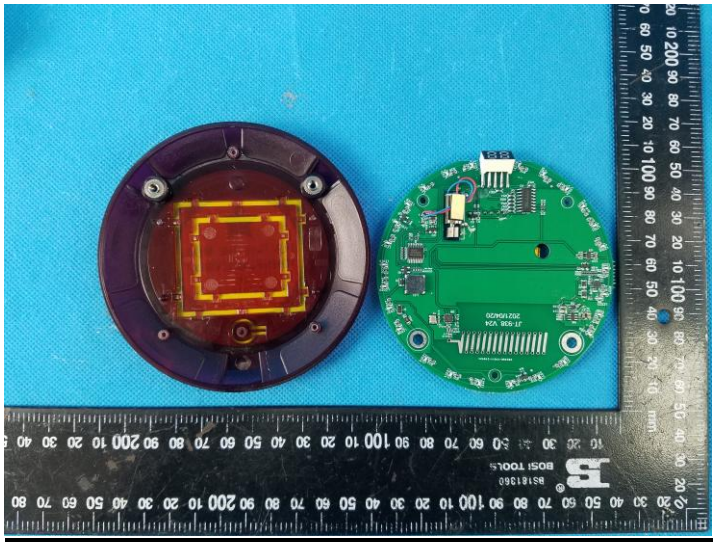


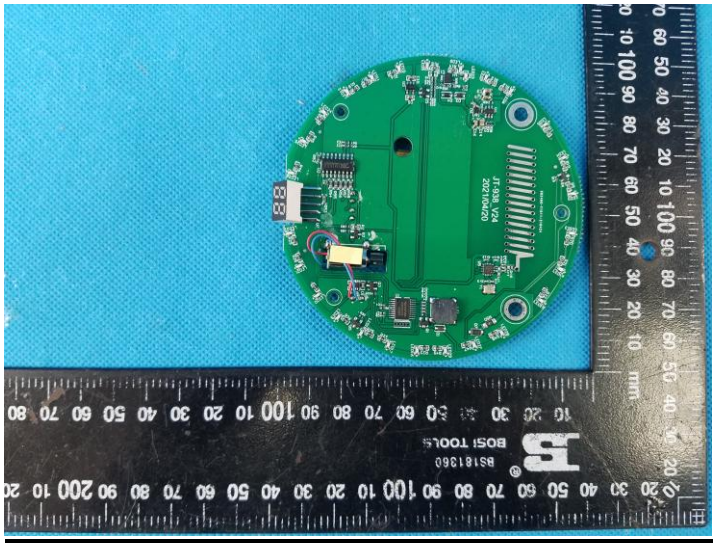
Switching Adapter
MODEL: DSA-12PFU-12 FUS 120100
INPUT: 100-240V ~ 50/60Hz 0.5A
OUTPUT: +12V ⎓ 1A
EFFICIENCY LEVEL: VI
I.T.E. L.P.S.
81GJ
E135856
c UL us
LISTED
Made In China
DEE VAN ENTERPRISE CO., LTD.

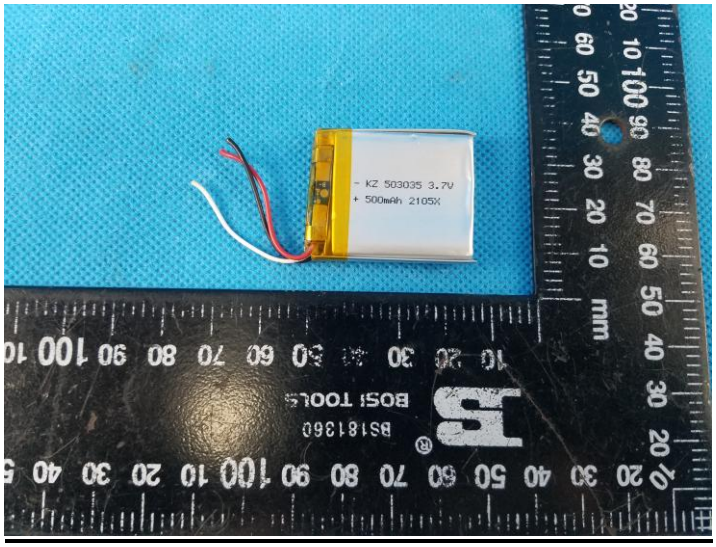
PLS TAKE THE MEAL
WHEN FLASH/VIBRAT
WELCOME

Internal Photos









--------End of Report--------