

Report No.: UNIA21102209R-061

# FCC RADIO TEST REPORT

## FCC ID:2A3GS-BJQ

Product : Bed Wetting Alarm Trade Name : / Model Name : BJQ Serial Model : BJQ-02 Report No. : UNIA21102209ER-61

## **Prepared for**

Dongguan Caiyun Technology Co., Ltd.

Room 501,No.3,Yanwu Hankeng Street, Dalingshan Town, Dongguan City, Guangdong Province

## **Prepared by**

Shenzhen United Testing Technology Co., Ltd.

2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd, Tiegang Community, Xixiang Str, Bao'an District, Shenzhen, China

深圳市优耐检测技术有限公司 Shenzhen United Testing Technology Co.,Ltd. United Testing Technology(Hong Kong) Limited

## TEST RESULT CERTIFICATION

Applicant's name:	Dongguan Caiyun Technology Co., Ltd.
Address: Manufacture's Name:	Room 501,No.3,Yanwu Hankeng Street, Dalingshan Town, Dongguan City, Guangdong Province Dongguan Caiyun Technology Co., Ltd.
Address:	Room 501,No.3,Yanwu Hankeng Street, Dalingshan Town, Dongguan City, Guangdong Province
Product description	
Product name:	Bed Wetting Alarm
Trade Mark:	i v v i
Model and/or type reference :	BJQ, BJQ-02

This device described above has been tested by Shenzhen United Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test	
Date (s) of performance of tests:	S
Date of Issue	C
Test Result	F

Approved & Authorized Signer:

Sep. 28, 2021 ~ Oct. 19, 2021 Oct. 19, 2021 Pass

Prepared by:

**Reviewer:** 

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#### Page 3 of 27

	Table of Contents	Page
1.	TEST SUMMARY	4
2.	GENERAL INFORMATION	6
	2.1 GENERAL DESCRIPTION OF EUT	6
	2.2 Operation of EUT during testing	6
	2.3 DESCRIPTION OF TEST SETUP	7
	2.4 MEASUREMENT INSTRUMENTS LIST	7
3.	CONDUCTED EMISSIONS TEST	9
	3.1 Conducted Power Line Emission Limit	9
	3.2 Test Setup	9
	3.3 Test Procedure	9
	3.4 Test Result	9
4 F	RADIATED EMISSION TEST	12
	4.1 Radiation Limit	12
	4.2 Test Setup	13
	4.3 Test Procedure	15
5		15
5 (		21
	5.1 Test Procedure 5.2 TEST SETUP	21 21
	5.3 Test Result	21
6 7		
6	TRANSMITTER TIMEOUT	23
	6.1 REQUIREMENTS 6.2 TEST RESULT	23 23
7/		
	ANTENNA REQUIREMENT	25
8 F	PHOTO OF TEST	26

Report No.: UNIA21102209R-061

## 1. TEST SUMMARY

#### 1.1 TEST PROCEDURES AND RESULTS

**DESCRIPTION OF TEST** 

STANDARD

RESULT

Conducted Emission Radiated Spurious Emission Occupied Bandwidth Transmitter Timeout Antenna Requirement FCC Part 15.207 FCC Part 15.231(b) FCC Part 15.209 FCC Part 15.231(c) FCC Part 15.231(a)(3) FCC Part 15.203 COMPLIANT COMPLIANT COMPLIANT COMPLIANT

### 1.2 TEST FACILITY

Test Firm

Address

Shenzhen United Testing Technology Co., Ltd.

2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd, Tiegang Community, Xixiang Str, Bao'an District, Shenzhen, China

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. This approval result is accepted by MRA of APLAC.

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

A2LA Certificate Number: 4747.01

The EMC Laboratory has been accredited by A2LA, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

FCC Registration Number: 674885

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission.

IC Registration Number: 21947

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada.

### **1.3 MEASUREMENT UNCERTAINTY**

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

rtainty

Measurement Uncertainty	
Conducted Emission Expanded II	n

Conducted Emission Expanded Oncertainty
Radiated emission expanded uncertainty(9kHz-30MHz)
Radiated emission expanded uncertainty(30MHz-1000MHz)
Radiated emission expanded uncertainty (Above 1GHz)

- = 2.23dB, k=2 = 3.08dB, k=2
  - 4.42dB, k=2
- = 4.06dB, k=2

Report No.: UNIA21102209R-061

2. GENERAL INFORMATION

## 2.1 GENERAL DESCRIPTION OF EUT

Equipment	Bed Wetting Alarm			
Trade Mark				
Model Name	BJQ			
Serial No.	BJQ-02			
Model Difference	All the model are the same circuit and RF module, except the model name and colour			
FCC ID	2A3GS-BJQ			
Antenna Type	PCB Antenna			
Antenna Gain	2.0dBi			
Frequency Range	433.92 MHz			
Modulation Type	ASK			
Battery	DC3.7V, 55mAh			
Power Source	DC3.7V from battery			
Adapter	N/A			

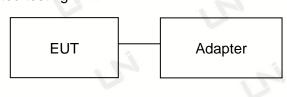
## 2.2 Operation of EUT during testing

Operating Mode The mode is used: Transmitting mode for TX running at 433.92 MHz

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2.3 DESCRIPTION OF TEST SETUP Operation of EUT during Conducted testing:



Operation of EUT during Radiation and Above1GHz Radiation testing:



Table for auxiliary equipment:

Equipment Description	Manufacturer	Model	Calibration Due Date
Adapter	NOKIA	FC0302	N/A

## 2.4 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
ĺ.	_	CONDUCTED	EMISSIONS TEST		
1	AMN	Schwarzbeck	NNLK8121	8121370	2022.9.9
2	AMN	ETS	3810/2	00020199	2022.9.9
3	EMI TEST RECEIVER	Rohde&Schwarz	ESCI	101210	2022.9.9
4	AAN	TESEQ	T8-Cat6	38888	2022.9.9
	1	RADIATED	EMISSION TEST		V
1	Horn Antenna	Sunol	DRH-118	A101415	2022.9.9
2	BicoNILog Antenna	Sunol	JB1 Antenna	A090215	2022.9.9
3	PREAMP	HP	8449B	3008A00160	2022.9.9
4	PREAMP	HP	8447D	2944A07999	2022.9.9
5	EMI TEST RECEIVER	Rohde&Schwarz	ESR3	101891	2022.9.9
6	VECTOR Signal Generator	Rohde&Schwarz	SMU200A	101521	2022.9.28
7	Signal Generator	Agilent	E4421B	MY4335105	2022.9.28
8	MXA Signal Analyzer	Agilent	N9020A	MY50510140	2022.9.28
9	MXA Signal Analyzer	Agilent	N9020A	MY51110104	2022.9.9
10	ANT Tower&Turn table Controller	Champro	EM 1000	60764	2022.9.28
11	Anechoic Chamber	Taihe Maorui	9m*6m*6m	966A0001	2022.9.9
12	Shielding Room	Taihe Maorui	6.4m*4m*3m	643A0001	2022.9.9
13	RF Power sensor	DARE	RPR3006W	15100041SNO88	2022.3.14

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14	RF Power sensor	DARE	RPR3006W	15100041SNO89	2022.3.14
15	RF power divider	Anritsu	K241B	992289	2022.9.28
16	Wideband radio communication tester	Rohde&Schwarz	CMW500	154987	2022.9.28
17	Biconical antenna	Schwarzbeck	VHA 9103	91032360	2022.9.8
18	Biconical antenna	Schwarzbeck	VHA 9103	91032361	2022.9.8
19	Broadband Hybrid Antennas	Schwarzbeck	VULB9163	VULB9163#958	2022.9.8
20	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1680	2022.1.12
21	Active Receive Loop Antenna	Schwarzbeck	FMZB 1919B	00023	2022.9.8
22	🔪 Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170651	2022.03.14
23	Microwave Broadband Preamplifier	Schwarzbeck	BBV 9721	100472	2022.9.8
24	Active Loop Antenna	Com-Power	AL-130R	10160009	2022.05.10
25	Power Meter	KEYSIGHT	N1911A	MY50520168	2022.05.10
26	Frequency Meter	VICTOR	VC2000	997406086	2022.05.10
27	DC Power Source	HYELEC	HY5020E	055161818	2022.05.10
24*	Active Loop Antenna	Com-Power	AL-130R	10160009	2022.05.09
25*	Power Meter	KEYSIGHT	N1911A	MY50520168	2022.05.09
26*	Frequency Meter	VICTOR	VC2000	997406086	2022.05.09
27*	DC Power Source	HYELEC	HY5020E	055161818	2022.05.09

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## CONDUCTED EMISSIONS TEST

#### 3.1 Conducted Power Line Emission Limit

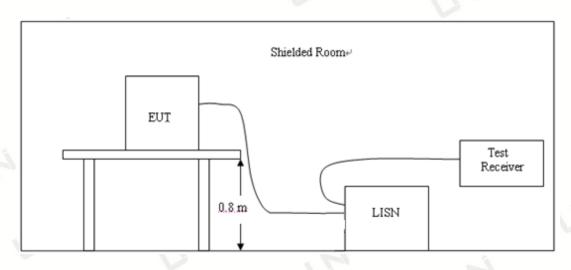
For unintentional device, according to § 15.207(a) Line Conducted Emission Limits is as following

		Maximum RF L	ine Voltage(dB V)	2.
Frequency	CLA	CLASS A CLASS		ASS B
(MHz)	Q.P.	Ave.	Q.P.	Ave.
0.15~0.50	79	66	66~56*	56~46*
0.50~5.00	73	60	56	46
5.00~30.0	73	60	60	50

Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

#### 3.2 Test Setup



#### 3.3 Test Procedure

- 1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. A wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2, Support equipment, if needed, was placed as per ANSI C63.10.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5, All support equipments received AC power from a second LISN, if any.
- 6, The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7, Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

#### 3.4 Test Result

#### Pass

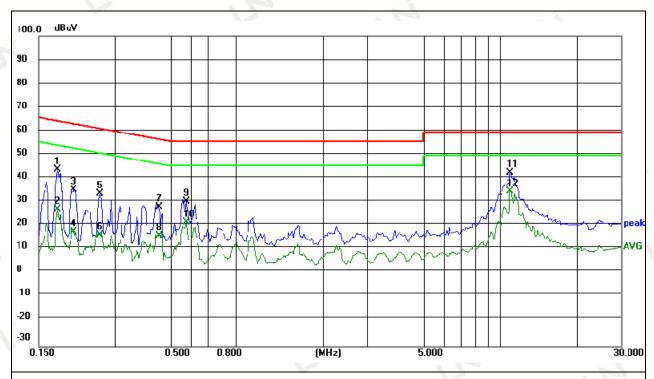
#### Remark:

All modes were tested at AC 120V and 240V, only the worst result of AC 120V was reported.

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United Testing Technology(Hong Kong) Limited	深圳市宝安区西乡街道铁岗社区宝田一路365号嘉皇源科技园附楼2楼 邮编:518102 Tel:+86-755-86180996 Fax:+86-755-86180156



r			
Temperature:	<b>24</b> ℃	Relative Humidity:	48%
Test Date:	2021-10-11	Pressure:	1010hPa
Test Voltage:	AC 120V/60Hz for Adapter	Phase:	Line
Test Mode:	Charging		



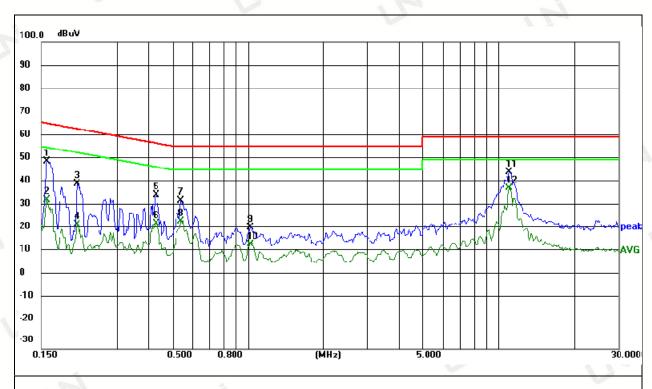
Remark: Factor = Insertion Loss + Cable Loss, Result = Reading + Factor, Margin = Result – Limit.

						4 6			
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	
1	0.1776	34.35	9.77	44.12	64.60	-20.48	peak	Р	_
2	0.1776	18.06	9.77	27.83	54.60	-26.77	AVG	Р	
3	0.2071	26.21	9.75	35.96	63.32	-27.36	peak	Р	
4	0.2071	8.50	9.75	18.25	53.32	-35.07	AVG	Р	
5	0.2631	24.52	9.75	34.27	61.33	-27.06	peak	Р	
6	0.2631	7.24	9.75	16.99	51.33	-34.34	AVG	Р	
7	0.4501	18.92	9.77	28.69	56.87	-28.18	peak	Р	
8	0.4501	6.99	9.77	16.76	46.87	-30.11	AVG	Р	
9	0.5786	21.29	9.77	31.06	56.00	-24.94	peak	Р	
10	0.5786	12.26	9.77	22.03	46.00	-23.97	AVG	Р	
11	10.9946	21.82	21.19	43.01	60.00	-16.99	peak	Р	
12 *	10.9946	13.87	21.19	35.06	50.00	-14.94	AVG	Р	
		100							

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Temperature:	24°C	Relative Humidity:	48%
Test Date:	2021-10-11	Pressure:	1010hPa
Test Voltage:	AC 120V/60Hz for Adapter	Phase:	Neutral
Test Mode:	Charging		



Remark: Factor = Insertion Loss + Cable Loss, Result = Reading + Factor, Margin = Result – Limit.

Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
0.1580	39.72	9.78	49.50	65.57	-16.07	peak	Р
0.1580	23.37	9.78	33.15	55.57	-22.42	AVG	Р
0.2084	30.35	9.75	40.10	63.27	-23.17	peak	Р
0.2084	13.10	9.75	22.85	53.27	-30.42	AVG	Р
0.4308	25.46	9.77	35.23	57.24	-22.01	peak	Р
0.4308	13.38	9.77	23.15	47.24	-24.09	AVG	Р
0.5403	23.08	9.77	32.85	56.00	-23.15	peak	Р
0.5403	14.27	9.77	24.04	46.00	-21.96	AVG	Р
1.0236	11.62	9.79	21.41	56.00	-34.59	peak	Р
1.0236	4.67	9.79	14.46	46.00	-31.54	AVG	Р
11.0652	23.78	21.28	45.06	60.00	-14.94	peak	Р
11.0652	16.65	21.28	37.93	50.00	-12.07	AVG	Р
	(MHz) 0.1580 0.1580 0.2084 0.2084 0.2084 0.4308 0.4308 0.5403 0.5403 1.0236 1.0236 11.0652	(MHz)(dBuV)0.158039.720.158023.370.208430.350.208413.100.430825.460.430813.380.540323.080.540314.271.023611.621.02364.6711.065223.78	(MHz)(dBuV)(dB)0.158039.729.780.158023.379.780.208430.359.750.208413.109.750.430825.469.770.430813.389.770.540323.089.770.540314.279.791.023611.629.791.023623.7821.28	(MHz)(dBuV)(dB)(dBuV)0.158039.729.7849.500.158023.379.7833.150.208430.359.7540.100.208413.109.7522.850.430825.469.7735.230.430813.389.7723.150.540323.089.7732.850.540314.279.7724.041.023611.629.7921.411.02364.679.7914.4611.065223.7821.2845.06	(MHz)(dBuV)(dB)(dBuV)(dBuV)0.158039.729.7849.5065.570.158023.379.7833.1555.570.208430.359.7540.1063.270.208413.109.7522.8553.270.430825.469.7735.2357.240.430813.389.7723.1547.240.540323.089.7732.8556.000.540314.279.7724.0446.001.023611.629.7921.4156.0011.065223.7821.2845.0660.00	(MHz)(dBuV)(dB)(dBuV)(dBuV)(dB)0.158039.729.7849.5065.57-16.070.158023.379.7833.1555.57-22.420.208430.359.7540.1063.27-23.170.208413.109.7522.8553.27-30.420.430825.469.7735.2357.24-22.010.430813.389.7723.1547.24-24.090.540323.089.7732.8556.00-23.150.540314.279.7724.0446.00-21.961.023611.629.7921.4156.00-34.591.02364.679.7914.4646.00-31.5411.065223.7821.2845.0660.00-14.94	(MHz)(dBuV)(dB)(dBuV)(dBuV)(dB)Detector0.158039.729.7849.5065.57-16.07peak0.158023.379.7833.1555.57-22.42AVG0.208430.359.7540.1063.27-23.17peak0.208413.109.7522.8553.27-30.42AVG0.430825.469.7735.2357.24-22.01peak0.430813.389.7723.1547.24-24.09AVG0.540323.089.7732.8556.00-23.15peak0.540314.279.7724.0446.00-21.96AVG1.023611.629.7921.4156.00-34.59peak1.02364.679.7914.4646.00-31.54AVG11.065223.7821.2845.0660.00-14.94peak

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## 4 RADIATED EMISSION TEST

#### 4.1 Radiation Limit

For unintentional device, according to § 15.209(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/m )	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F (kHz)	-	Quasi-peak	300
0.490MHz-1.705MHz	24000/F (kHz)	-	Quasi-peak	30
1.705MHz-30MHz	30	-	Quasi-peak	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
	500	54.0	Average	3
Above 1GHz	500	74.0	Peak	3

Limit calculation and transfer to 3m distance as showed in the following table:

Frequency	Limit	Distance
(MHz)	(dBuV/m)	(m)
0.009-0.490	20log(2400/F(KHz))+40log(300/3)	3
0.490-1.705	20log(24000/F(KHz))+40log(30/3)	3
1.705-30.0	69.5	3
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

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#### LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.231)

Fundamental Frequency	Field Strength of	Field Strength of Unwanted
(MHz)	fundamental (microvolts/meter)	Emissions (microvolts/meter)
40.66 - 40.70	2250.00	225.00
70 - 130	1250.00	125.00
130 - 174	1,250 to 3,750 **	125 to 375 **
174 - 260	3750.00	375.00
260 - 470	3,750 to 12,500 **	375 to 1,250 **
Above 470	12500.00	1250.00

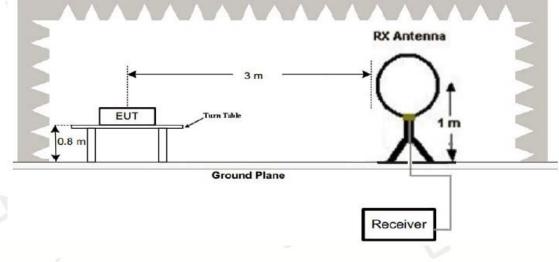
Notes: \*\* linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, uV/m at 3 meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, uV/m at 3 meters = 41.6667(F) - 7083.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in 93 Section 15.209, whichever limit permits a higher field strength.

4.2 Test Setup

#### 1. Radiated Emission Test-Up Frequency Below 30MHz

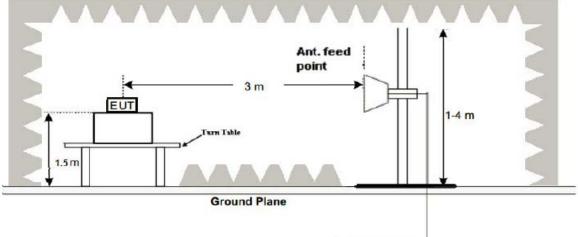


2. Radiated Emission Test-Up Frequency 30MHz~1GHz

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Page 14 of 27 Report No.: UNIA21102209R-061

3. Radiated Emission Test-Up Frequency Above 1GHz



Receiver \_\_\_\_ Amp.

Receiver

Amp.

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#### 4.3 Test Procedure

- 1. Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.

#### Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

#### 4.4 Test Result

#### PASS

#### Remark:

1. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "Z axis" position was the worst, and test data recorded in this report.

#### Below 30M

Temperature:	<b>22°</b> C	Relative Humidity:	48%
Test Date:	2021-10-11	Pressure:	1010hPa
Test Voltage:	DC3.7V from battery	Polarization:	Horizontal
Test Mode:	ТХ		5

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
	5		<u> </u>	P
	5-	2	ц, <del>-</del>	Р

#### Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible

value has no need to be reported.

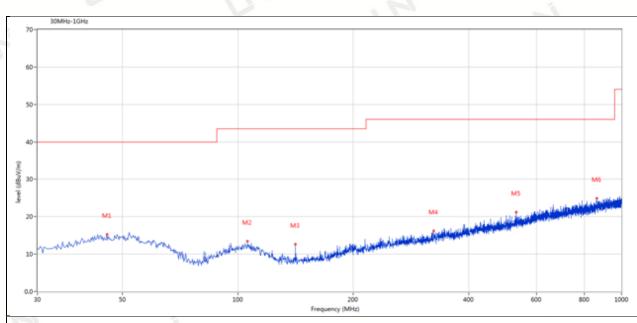
Distance extrapolation factor =20 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor

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United Testing Technology(Hong Kong) Limited	深圳市宝安区西乡街道铁岗社区宝田一路365号嘉皇源科技园附楼2楼 邮编:518102 Tel:+86-755-86180996 Fax:+86-755-86180156

## Page 16 of 27 BETWEEN 30 – 1000 MHz Test Results:

Temperature:	<b>22</b> ℃	Relative Humidity:	48%
Test Date:	2021-10-11	Pressure:	1010hPa
Test Voltage:	DC3.7V from battery	Polarization:	Horizontal
Test Mode:	ТХ		



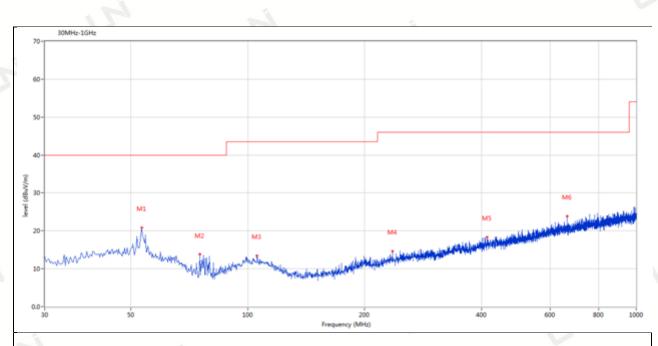
#### Remark:

#### 1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	ANT	Verdict
1	45.516	15.30	-11.39	40.0	-24.70	Peak	Horizontal	Pass
2	105.884	13.51	-13.29	43.5	-29.99	Peak	Horizontal	Pass
3	141.280	12.65	-17.27	43.5	-30.85	Peak	Horizontal	Pass
4	324.079	16.19	-10.47	46.0	-29.81	Peak	Horizontal	Pass
5	532.334	21.25	-6.40	46.0	-24.75	Peak	Horizontal	Pass
6	861.082	24.93	-2.32	46.0	-21.07	Peak	Horizontal	Pass



Temperature:	<b>22</b> ℃	Relative Humidity:	48%
Test Date:	2021-10-11	Pressure:	1010hPa
Test Voltage:	DC3.7V from battery	Polarization:	Vertical
Test Mode:	ТХ	U.	15



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	ANT	Verdict
1	53.274	20.85	-11.51	40.0	-19.15	Peak	Vertical	Pass
2	75.336	13.78	-17.38	40.0	-26.22	Peak	Vertical	Pass
3	105.641	13.48	-13.27	43.5	-30.02	Peak	Vertical	Pass
4	235.589	14.59	-12.48	46.0	-31.41	Peak	Vertical	Pass
5	412.812	18.33	-8.35	46.0	-27.67	Peak	Vertical	Pass
6	664.706	23.88	-4.40	46.0	-22.12	Peak	Vertical	Pass



Report No.: UNIA21102209R-061

Temperature:	<b>22</b> °C	Relative Humidity:	48%
Test Date:	2021-10-11	Pressure:	1010hPa
Test Voltage:	DC3.7V from battery	Polarization:	Horizontal
Test Mode:	ТХ	5	í,

	-	Average	Field	Field			
	Frequency	Factor	Strength	Strength	Limit(PK)	Limit(AV)	01.1
	MU 1-	JD	dBuV/m	dBuV/m			State
1	MHz	dB	(PK)	(AV)	dBuV/m	dBuV/m	
	433.92	-8.64	82.10	73.46	100.83	80.83	pass
	867.84	-8.64	38.07	29.43	80.83	60.83	pass
	1301.76	-8.64	34.76	26.12	80.83	60.83	pass
	1735.68	-8.64	34.74	26.10	80.83	60.83	pass
_	2						

Temperature:	<b>22</b> °C	Relative Humidity:	48%
Test Date:	2021-10-11	Pressure:	1010hPa
Test Voltage:	DC3.7V from battery	Polarization:	Vertical
Test Mode:	ТХ	in .	6

					-		
1	Fraguanay	Average	Field	Field	Limit/DK)	Limit(A)()	
Ì	Frequency	Factor	Strength	Strength	Limit(PK)	Limit(AV)	
		ī	dBuV/m	dBuV/m			State
	MHz	dB	(PK)	(AV)	dBuV/m	dBuV/m	
	433.92	-8.64	79.56	70.92	100.83	80.83	pass
	867.84	-8.64	36.81	28.17	80.83	60.83	pass
	1301.76	-8.64	37.02	28.38	80.83	60.83	pass
	1735.68	-8.64	35.10	26.46	80.83	60.83	pass

Remark: Absolute Level = Reading Level + Factor, Margin = Absolute Level – Limit Factor = Ant. Factor + Cable Loss – Pre-amplifier

Note: 1. EUT Pre-scan X/Y/Z orientation, only worst case is presented in the report(Z orientation).

- \*Calculate Average value based on Duty Cycle correction factor: Duty Cycle=Ton/(Ton+Toff)= (0.84msx33+1.76 msx5)/100ms =0.37=37% Duty Cycle factor=20lg(Duty Cycle)=20lg(0.37)= -8.64dB Average=Peak+ Duty Cycle factor
- 3. Pulse Desensitization Correction Factor Pulse Width(PW)=36.52ms 2/PW=2/36.52ms=0.05kHz RBW(100kHz)>2/PW (0.05KHz) Therefore PDCF is not needed

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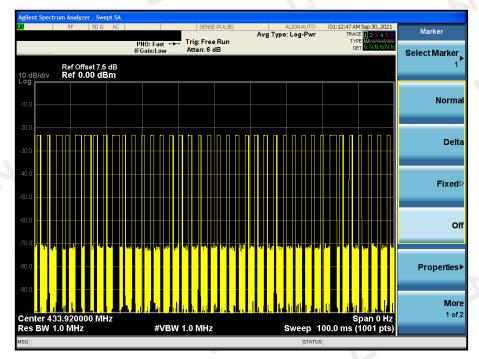
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#### Page 19 of 27

Duty Cycle:

The duty cycle is simply the on time divided by the period: The duration of one cycle = 100ms Effective period of the cycle =  $0.84ms \times 33+1.76ms \times 5=36.52ms$ Duty Cycle = 36.52ms/100ms = 0.37

### The duration of one cycle



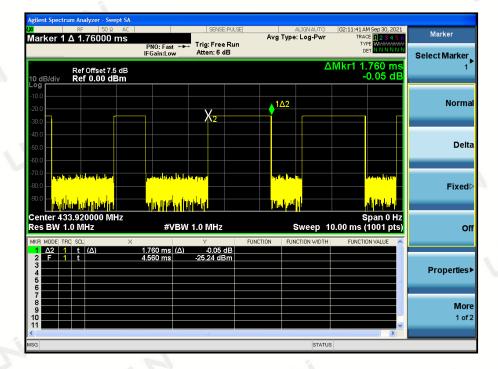
arker 1 ∆ 840.00	Ω AC AC	SENSE:PULSE	ALIGNAUTO Avg Type: Log-Pwr	02:11:18 AM Sep 30, 2021 TRACE 1 2 3 4 5 6	Marker
arker 1 Δ 640.00	PNO: Fas IFGain:Los		Avg Type. Logi wi	TYPE WWWWWWW DET NNNNN	Select Marke
Ref Offsei dB/div Ref 0.00	:7.5 dB I <b>dBm</b>		Ĺ	∆Mkr1 840.0 µs -0.06 dB	
		1Δ2 X2			Norm
0.0					De
	ale selen tele her tere Tota de la factoria	n de la companya de l La companya de la comp			Fixed
enter 433.920000 es BW 1.0 MHz	MHz #\	/BW 1.0 MHz	Sweep 1	Span 0 Hz 0.00 ms (1001 pts)	c
KR MODE TRC SCL 1 Δ2 1 t (Δ) 2 F 1 t 4 Δ 4 5 Δ 6 6 Δ 4 4 4 Δ 4 4	× 840.0 µs 3.960 ms		INCTION FUNCTION WIDTH	FUNCTION VALUE	Properties
7 8 9 0 1				<u> </u>	<b>М</b> о 1 о

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#### Page 20 of 27

#### Report No.: UNIA21102209R-061



深圳市优耐检测技术有限公司 Shenzhen United Testing Technology Co.,Ltd. United Testing Technology(Hong Kong) Limited

#### **5 OCCUPIED BANDWIDTH MEASUREMENT**

#### 5.1 Test Procedure

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier. Limit: 433.92MHz\*0.25%=1084.8KHz

#### 5.2 TEST SETUP

	SPECTRUM ANALYZER	
Test Result		
PASS		

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Page 22 of 27

Report No.: UNIA21102209R-061

Mada	Freq	20dB	Limit
Mode	(MHz)	(kHz)	(kHz)
ТХ	433.92	201.5	1084.8

gilent Spectrum Analyzer - Occupied	BW			
RF 50 Ω AC		SENSE:PULSE	ALIGN AUTO 10:09:29 PM Sep 29, 2021	Trace/Detector
enter Freq 433.920000		er Freq: 433.920000 MHz Free Run Avg Hol	Radio Std: None d>1/1	Theorem
		en: 14 dB	Radio Device: BTS	
0 dB/div Ref 10.00 dB	m			
og				
1.00				Clear Write
0.0				Clear Will
0.0				
0.0				
0.0				Averag
			<u></u>	
				Max Hol
0.0				
enter 433.9 MHz			Span 1 MHz	
Res BW 30 kHz		#VBW 100 kHz	Sweep 1.067 ms	
				WIIT HOI
Occupied Bandwid	th	Total Power	-20.6 dBm	
3	356.12 kHz			Detecto
				Peak
Transmit Freq Error	-28.512 kHz	OBW Power	99.00 %	Auto <u>Ma</u>
x dB Bandwidth	201.5 kHz	x dB	-20.00 dB	

STATUS

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## **6 TRANSMITTER TIMEOUT**

#### **6.1 REQUIREMENTS**

- A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.
  Result: The EUT does not have a automatically activated transmitter .
- 2 A transmitter activated automatically shall cease transmission within 5 seconds after activation.
  - **Result:** The EUT has a automatically activated transmitter, please refer to below detail data.
- 3 Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour

Result: The EUT does not employ periodic transmission.

- 4 Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition. **Result:**The section is not applicable to EUT.
- 6.2 TEST RESULT

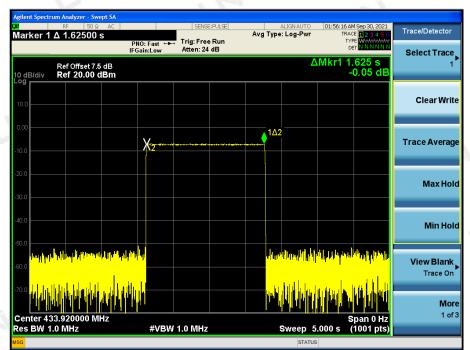
PASS

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### Page 24 of 27

Test data



THE DURATION OF EACH TRANSMISSION	Limit	RESULT
1.625s	<5s	PASS

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## 7 ANTENNA REQUIREMENT

#### Standard Applicable:

For intentional device, according to FCC 47 CFR Section 15.203, 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.

#### Antenna Connected Construction

The antenna used in this product is a PCB Antenna, The directional gains of antenna used for transmitting is 2.0dBi.

#### ANTENNA:



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Page 26 of 27

Report No.: UNIA21102209R-061

8.1 RADIATED EMISSION





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\*\*\*End of Report\*\*\*

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