FCC TEST REPORT

FCC ID: 2AF5SKP-TWT01

Product Name:	**milestone I**
Trademark:	**KUPIIN**
Model Number:	**KP-TWT01**
Prepared For : Address :	**Shenzhen Billion-digital Co.,LTD** R909 Jiaxiye Plaza,Minzhi Rd,Longhua new District,Shenzhen,China
Prepared By : Address :	**Shenzhen BCTC Technology Co., Ltd.** A. Floor 3, 44 Building, Tanglang Industrial Park B, Taoyuan Street, Nanshan District, Shenzhen, China
Test Date:	**Mar. 14 - Mar. 21, 2016**
Date of Report :	**Mar. 21, 2016**
Report No.:	**BCTC-151114095**

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TEST REPORT DECLARATION

Applicant	:	Shenzhen Billion-digital Co.,LTD
Address	:	R909 Jiaxiye Plaza,Minzhi Rd,Longhua new District,Shenzhen,China
EUT Description	:	**milestone I**
Model Number	:	**KP-TWT01**

Test Standards:

FCC Part 15 C: 2015

This device described above has been tested by BCTC, and the test results show that the equipment under And it is applicable only to the tested sample identified in the report.
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Testing Engineer : Eric Yang
(Eric Yang)

Technical Manager : Sophie Lu
(Sophia Lee)

Authorized Signatory : Carson. Zhang
(Carson. Zhang)

1. GENERAL INFORMATION

1.1.Report information

1.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BCTC approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BCTC in any way guarantees the later performance of the product/equipment.

1.1.2.The sample/s mentioned in this report is/are supplied by Applicant, BCTC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

1.1.3.Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BCTC, unless the applicant has authorized BCTC in writing to do so.

1.2.Measurement Uncertainty

Available upon request.

1.3.Test Facility

Site Description

Name of Firm	:	Shenzhen BCTC Technology Co., Ltd.
Site Location	:	A. Floor 3, 44 Building, Tanglang Industrial Park B, Taoyuan Street, Nanshan District, Shenzhen, China

1.4.Test Uncertainty

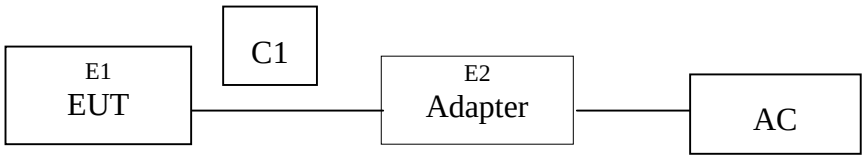
Conducted Emission Uncertainty	=	±2.66dB
Radiated Emission Uncertainty	=	±4.15dB

2. PRODUCT DESCRIPTION

2.1.EUT Description

Description	:	**milestone I**
Applicant	:	**Shenzhen Billion-digital Co.,LTD** R909 Jiaxiye Plaza,Minzhi Rd,Longhua new District,Shenzhen,China
Manufacturer	:	**Shenzhen Billion-digital Co.,LTD** R909 Jiaxiye Plaza,Minzhi Rd,Longhua new District,Shenzhen,China
Model Number	:	KP-TWT01
Serial Model	:	N/A
Model Difference	:	N/A
Work Frequency	:	100-200KHz

2.2.Block Diagram of EUT Configuration



2.3.Test Conditions

Temperature: 23~25℃

Relative Humidity: 55~63 %

2.4.Description Of Support Units (Conducted Mode)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	**milestone I**	N/A	KP-TWT01	N/A	EUT
E-2	**Adapter**	N/A	JX-B0502000-H	N/A	AC100-240V~50/60Hz 0.2A Output: 5.0V⎓ 2.0A
	Mobile phone	N/A	iPhone 5	N/A	
	Battery model	N/A	AE4026	N/A	electric quantity:45%

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	1.0M	USB cable unshielded

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".

3. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

Remark: "N/A" means "Not applicable."

4. TEST EQUIPMENT USED

4.1.For Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	Rohde & Schwarz	ESHS30	828985/018	Aug. 25, 15	1 Year
2	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	Aug. 25, 15	1 Year
3	L.I.S.N.	Rohde & Schwarz	ESH2-Z5	834549/005	Aug. 25, 15	1 Year
4	Conical	Emtek	N/A	N/A	N/A	N/A
5	Voltage Probe	Schwarzbeck	TK9416	N/A	Aug. 25, 15	1 Year
6	Coaxial Switch	Anritsu	MP59B	6100214550	Aug. 25, 15	1 Year

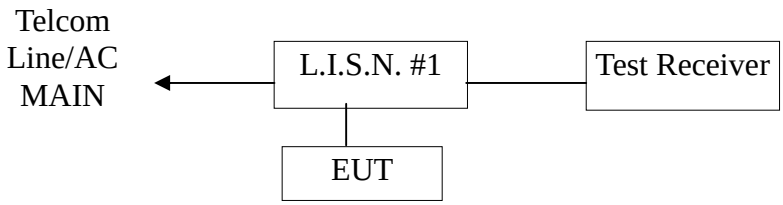
4.2.For Radiated Emission Measurement

Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	Aug. 25, 15	1 Year
2	Test Receiver	Rohde&Schwarz	ESHS30	828985/018	Aug. 25, 15	1 Year
3	Bilog Antenna	Schwarzbeck	VULB9163	142	Aug. 25, 15	1 Year
4	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	Aug. 25, 15	1 Year
5	Cable	Schwarzbeck	AK9513	ACRX1	Aug. 25, 15	1 Year
6	Cable	Rosenberger	N/A	FR2RX2	Aug. 25, 15	1 Year
7	Cable	Schwarzbeck	AK9513	CRRX2	Aug. 25, 15	1 Year
8	Cable	Schwarzbeck	AK9513	CRRX2	Aug. 25, 15	1 Year
9	Single Phase Power Line Filter	MPE	23332C	N/A	Aug. 25, 15	1 Year
10	Single Phase Power Line Filter	MPE	23333C	N/A	Aug. 25, 15	1 Year
11	Signal Generator	HP	864A	3625U00573	Aug. 25, 15	1 Year
12	Loop Antenna	ARA	PLA-1030/B	1029	Jun. 08, 15	1 Year

5. CONDUCTED EMISSION TEST

5.1.Block Diagram of Test Setup



(EUT: **milestone I**)

5.2.Test Standard

FCC Part 15 C: 2015

5.3.Conducted Emission Limit (Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

5.4.EUT Configuration on Test

The following equipments are installed on conducted emission test to meet Part 15 B requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.1.**milestone dual**

Model Number: **KP-TWT01**

5.5.Operating Condition of EUT

5.5.1.Setup the EUT and simulators as shown in Section 5.1.

5.5.2.Turn on the power of all equipments.

5.5.3.Let the EUT work in test modes (EUT Working) and test it.

5.6.Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESHS30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver (R&S Test Receiver ESHS30) is set at 10KHz.

5.7.Test Result

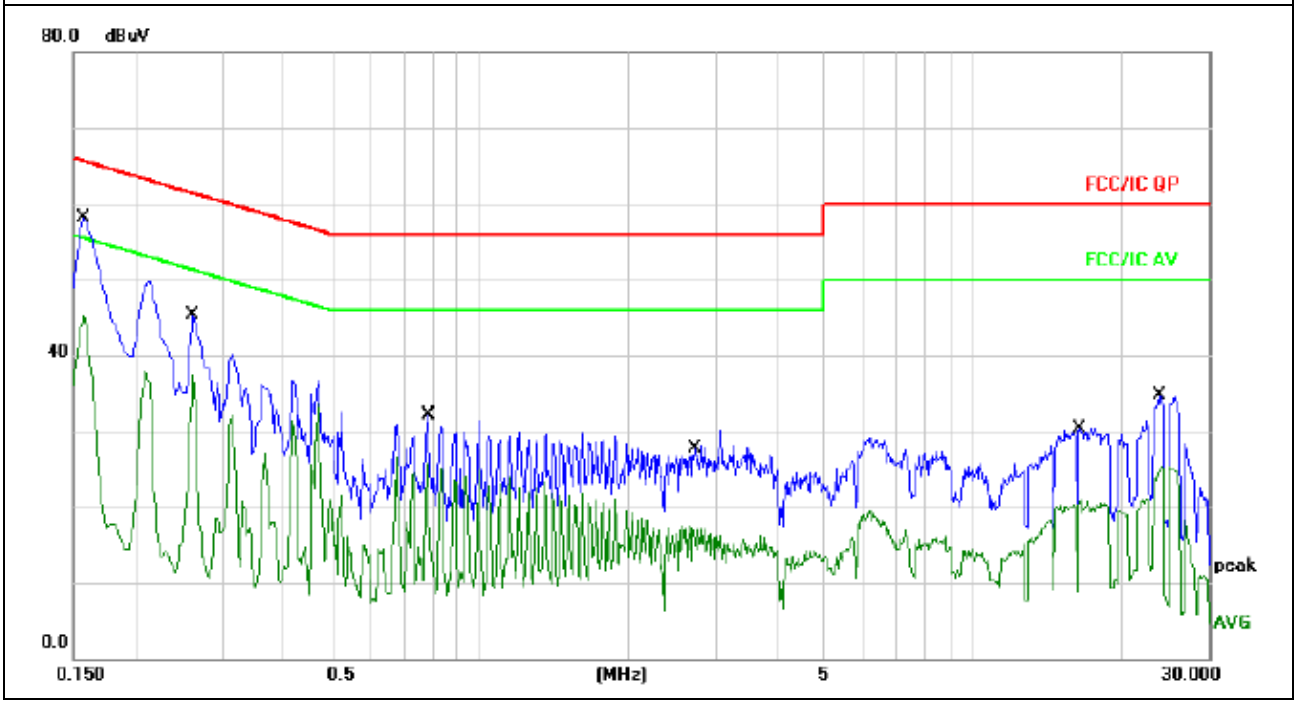
PASS

Please refer to the following pages.

EUT:	milestone I	Model Name :	KP-TWT01
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	Normal Link

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
0.1580	48.13	10.05	58.18	65.56	-7.38	QP
0.1580	35.17	10.05	45.22	55.56	-10.34	AVG
0.2620	35.31	10.08	45.39	61.36	-15.97	QP
0.2620	27.37	10.08	37.45	51.36	-13.91	AVG
0.7860	21.91	10.14	32.05	56.00	-23.95	QP
0.7860	15.72	10.14	25.86	46.00	-20.14	AVG
2.7060	17.83	10.19	28.02	56.00	-27.98	QP
2.7060	7.03	10.19	17.22	46.00	-28.78	AVG
16.4300	20.08	10.15	30.23	60.00	-29.77	QP
16.4300	10.70	10.15	20.85	50.00	-29.15	AVG
23.8220	24.52	10.19	34.71	60.00	-25.29	QP
23.8220	15.06	10.19	25.25	50.00	-24.75	AVG

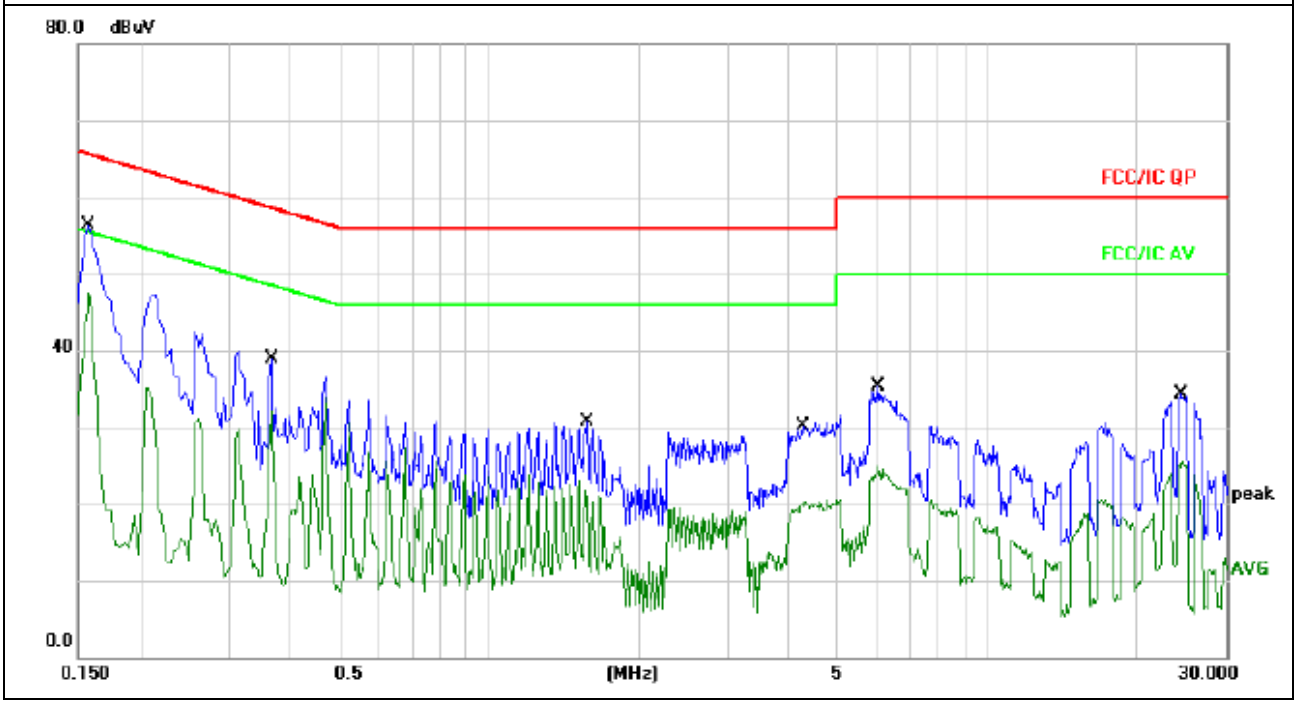
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT:	milestone I	Model Name. :	KP-TWT01
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	Normal Link

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
0.1580	46.32	10.05	56.37	65.56	-9.19	QP
0.1580	37.36	10.05	47.41	55.56	-8.15	AVG
0.3660	28.79	10.10	38.89	58.59	-19.70	QP
0.3660	22.10	10.10	32.20	48.59	-16.39	AVG
1.5660	20.46	10.18	30.64	56.00	-25.36	QP
1.5660	11.42	10.18	21.60	46.00	-24.40	AVG
4.2780	20.31	10.16	30.47	56.00	-25.53	QP
4.2780	10.21	10.16	20.37	46.00	-25.63	AVG
6.0380	25.20	10.09	35.29	60.00	-24.71	QP
6.0380	14.74	10.09	24.83	50.00	-25.17	AVG
24.3660	24.10	10.19	34.29	60.00	-25.71	QP
24.3660	14.79	10.19	24.98	50.00	-25.02	AVG

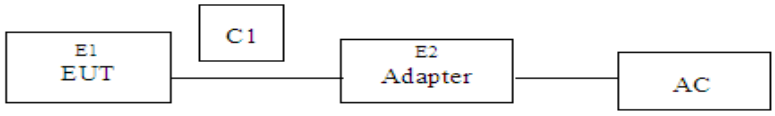
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



6. RADIATED EMISSION MEASUREMENT

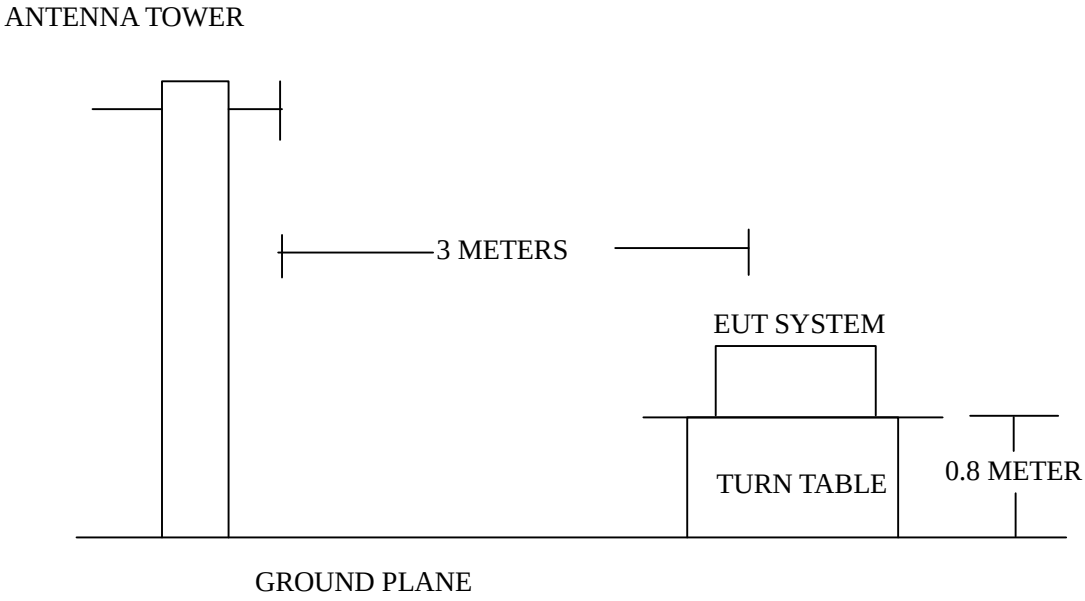
6.1.Block Diagram of Test Setup

6.1.1.Block Diagram of connection between the EUT and the simulators



(EUT: **milestone I**)

6.1.2.Anechoic Chamber Test Setup Diagram



6.2.Test Standard

FCC Part 15 C: 2014

6.3.Radiated Emission Limit(Class B)

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBμV/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

Note**:**(1) The smaller limit shall apply at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.

6.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

Operating Condition of EUT

6.4.1.Setup the EUT as shown on Section 6.1

6.4.2.Turn on the power of all equipments.

6.4.3.Let the EUT work in test mode(EUT working) and measure it.

6.5.Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

The bandwidth setting on the test receiver is 120 KHz.

The EUT is tested in Anechoic Chamber. The frequency range from 30MHz to 1000MHz is checked. All the test results are listed in Section 6.6.

6.6.Test Result

PASS

Please refer to the following pages.

9KHz-30MHz

EUT:	milestone I	Model Name :	KP-TWT01
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC5V For Adapter		
Test Mode :	Normal Link		

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

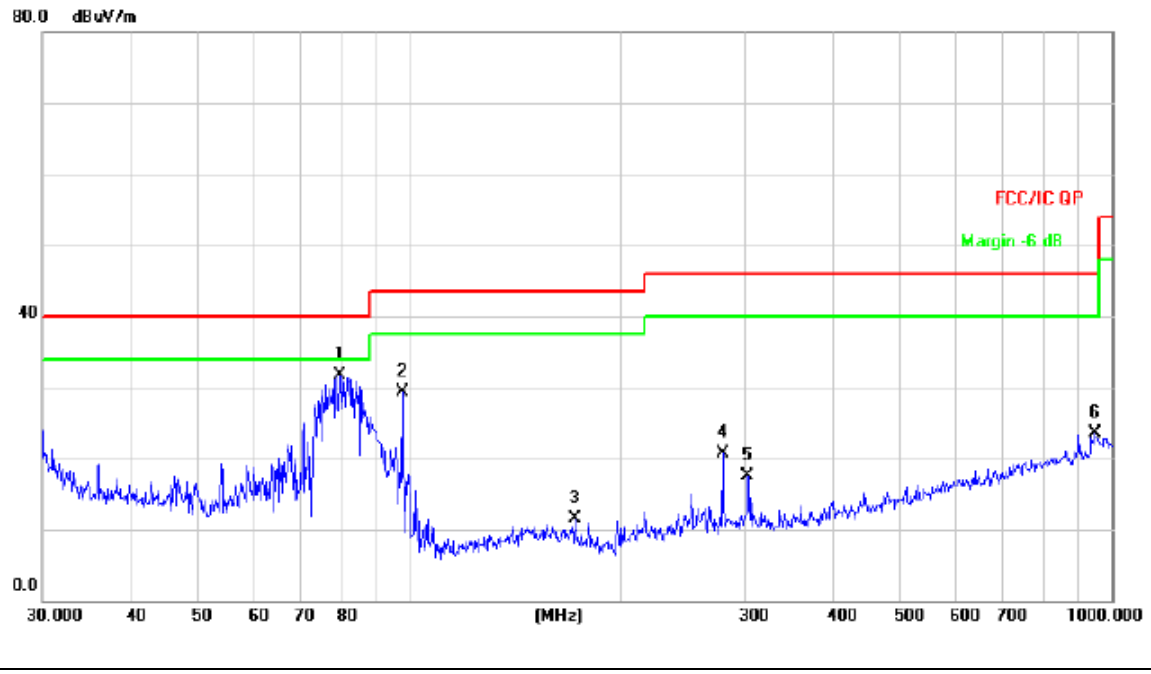
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

30MHz-1GHz

EUT:	milestone I	Model Name :	KP-TWT01
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC5V For Adapter		
Test Mode :	Normal Link		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
79.5209	49.62	-17.91	31.71	40.00	-8.29	QP
97.4560	46.11	-16.76	29.35	43.50	-14.15	QP
171.9946	25.10	-13.64	11.46	43.50	-32.04	QP
279.0436	33.79	-13.13	20.66	46.00	-25.34	QP
302.4812	30.08	-12.52	17.56	46.00	-28.44	QP
945.4399	24.15	-0.56	23.59	46.00	-22.41	QP

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
All interfaces was connected, and BT TX mode was link.



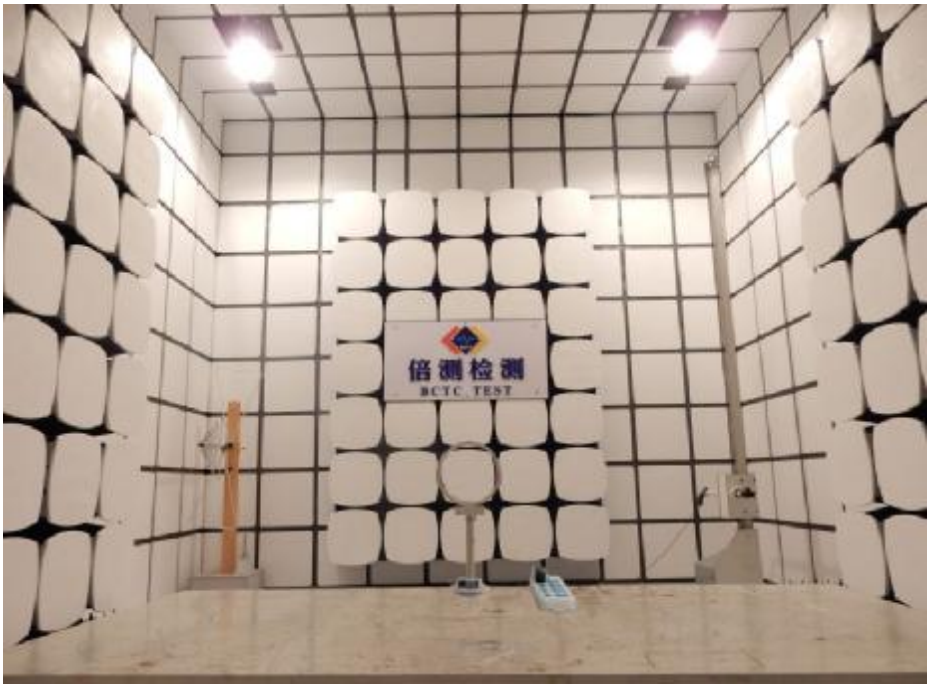
EUT:	milestone I	Model Name :	KP-TWT01
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage :	DC5V For Adapter		
Test Mode :	Normal Link		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
30.1054	31.26	-8.03	23.23	40.00	-16.77	QP
80.0806	37.78	-18.09	19.69	40.00	-20.31	QP
97.4560	47.69	-16.76	30.93	43.50	-12.57	QP
175.0368	42.77	-13.89	28.88	43.50	-14.62	QP
316.5890	41.67	-12.15	29.52	46.00	-16.48	QP
381.2487	38.55	-10.64	27.91	46.00	-18.09	QP

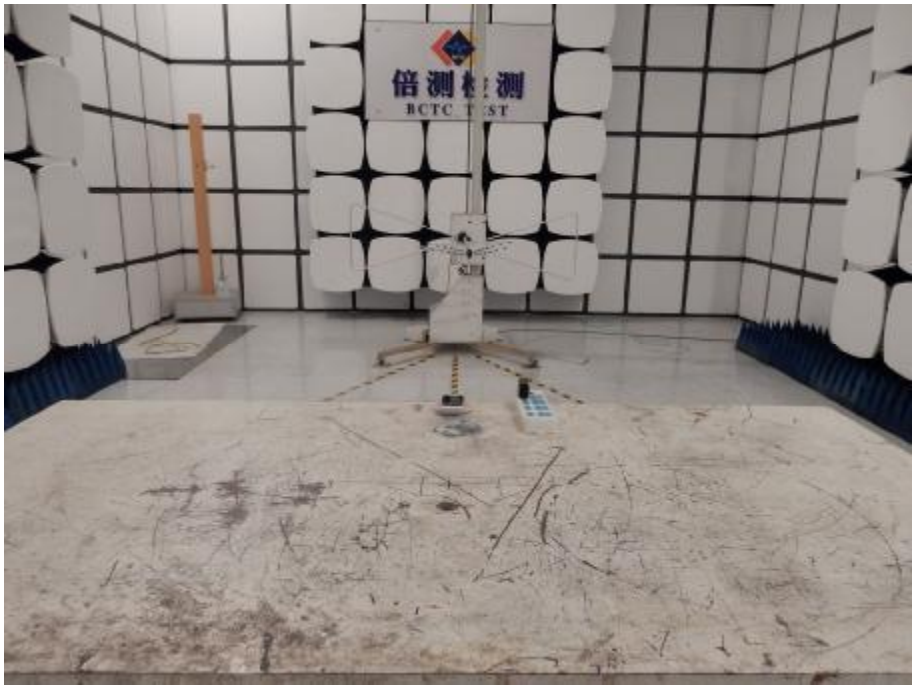
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
All interfaces was connected, and BT TX mode was link.

7. EUT TEST PHOTO

9KHz-30MHz

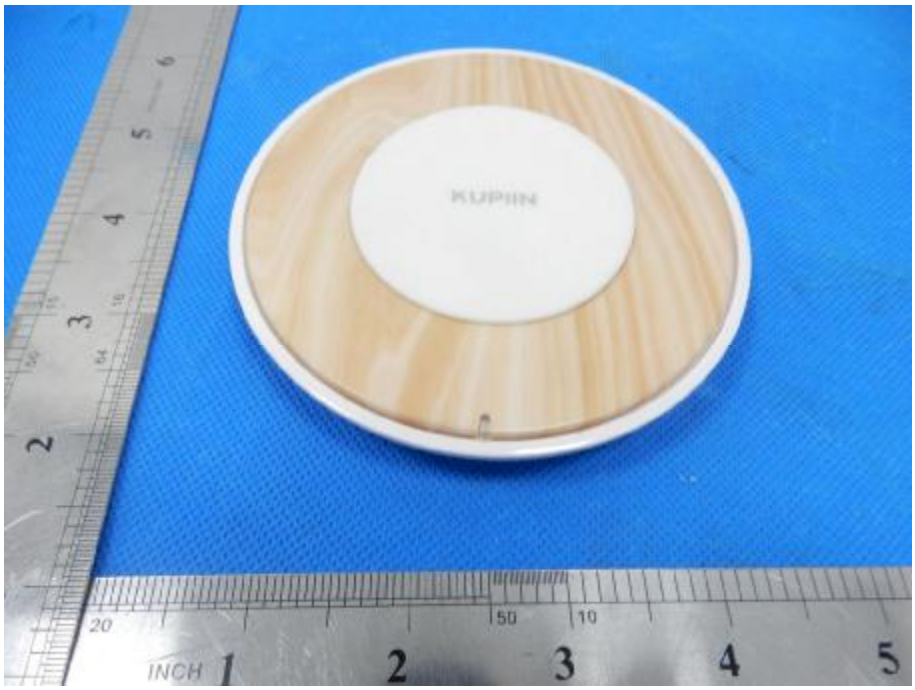


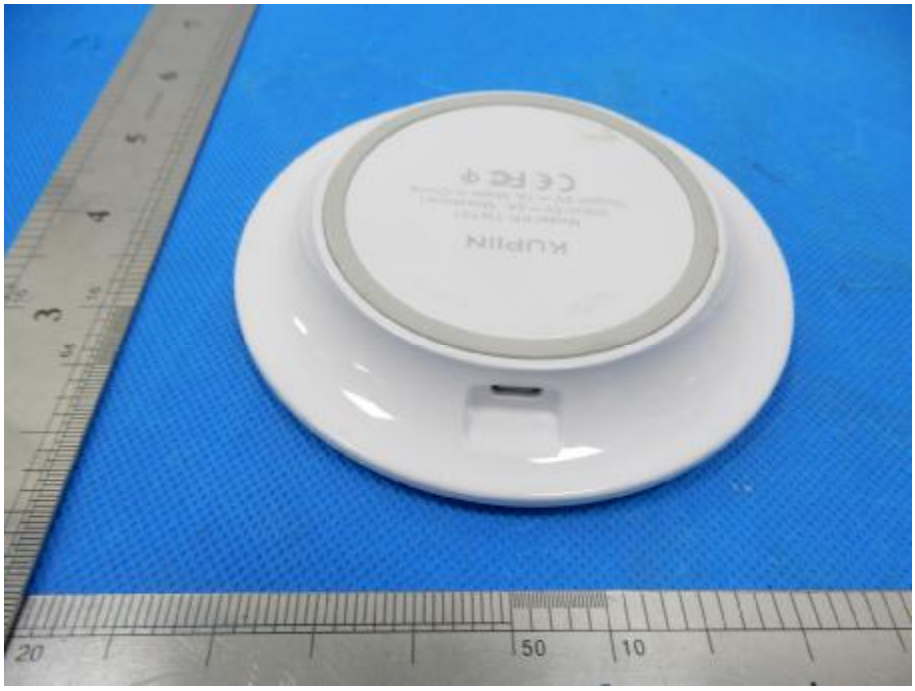
30MHz-1GHz



conducted Emission

8. EUT PHOTO





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