FCC 47 CFR PART 15 SUBPART C 15.247

TEST REPORT

FOR

Tire Pressure Monitoring System

Model : K3000A-X, K3001A-X, K3002A-X, K3003A-X, K3004A-X, K3005A-X

Issued to

SHENZHEN KINGTOUDA TECHNOLOGY CO.,LTD.

3th Floor, Block B2 Xixiang Crane Island Hengfeng Industrial Park, Bao'an District Shenzhen City

Issued by

WH Technology Corp.

Open Site		**No.120, Ln. 5, Hudong St., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)**
EMC Test Site	**Xizhi Office and Lab**	**7F., No.262, Sec. 3, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)**
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Contents

1. General Information

Applicant	:	SHENZHEN KINGTOUDA TECHNOLOGY CO.,LTD.
Address	:	3th Floor, Block B2 Xixiang Crane Island Hengfeng Industrial Park, Bao'an District Shenzhen City
Manufacturer	:	SHENZHEN KINGTOUDA TECHNOLOGY CO.,LTD.
Address	:	3th Floor, Block B2 Xixiang Crane Island Hengfeng Industrial Park, Bao'an District Shenzhen City
EUT	:	Tire Pressure Monitoring System
Model Name	:	K3000A-X, K3001A-X, K3002A-X, K3003A-X, K3004A-X, K3005A-X
Model Differences	:	All the same except color and model name

Is here with confirmed to comply with the requirements set out in the FCC Rules and Regulations Part 15 Subpart C and the measurement procedures were according to ANSI C63.10-2013. The said equipment in the configuration described in this report shows the maximum emission levels emanating

FCC part 15 subpart C

Receipt Date : 11/05/2017 Final Test Date : 11/17/2017

Tested By: **Reviewed by:**

Nov 17, 2017 Nov 18, 2017

Date Bell Wei/ Engineer **Date** Mike Lee / Manager

Designation Number: TW1083

2. Report of Measurements and Examinations

2.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
Radiated Emissions	FCC Part 15:Section 15.209,15.231(e)	Pass
Occupied Bandwidth	FCC Part 15:Section 15.231(c)	Pass
Transmit time	FCC Part 15:Section 15.231(a) (e)	Pass
Antenna requirement	FCC Part 15: 15.203	Pass

3. Test Configuration of Equipment under Test

3.1 Description of the tested samples

EUT Name	:	Tire Pressure Monitoring System
Model Number	:	K3000A-X
FCCID	:	2AJTL-K3000A-X
Receipt Date	:	11/05/2017
Power From	:	☑Inside ☐Outside ☐Adaptor ☑Battery ☐AC Power Source ☐DC Power Source ☐Support Unit PC or NB
Operate Frequency	:	433.92MHz
Modulation Technique	:	FSK
Number of Channels	:	1
Channel spacing	:	☑N/A
Operating Mode	:	☑Simplex
Antenna Type	:	Integral Antenna
Antenna gain		0 dBi

3.2 Carrier Frequency of Channels

Channel	Frequency (MHz)
00	433.92

3.3 Test Mode and Test Software

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
b. The complete test system included Notebook and EUT for RF test.
c. Test Software: Radio Test.exe
d. New Battery was used for all testing and the worst radiated emission case from X,Y and Z axis evaluation was selected for testing.
e. For battery operated equipment, the equipment tests shall be performed using a new battery.
f. The following test modes were performed for test:
   - CH00: 433.92MHz

3.4 TEST Methodology & General Test Procedures

All testing as described bellowed were performed in accordance with ANSI C63.4:2014 and ANSI C63.10:2013.

Conducted Emissions

The EUT is placed on a wood table, which is at 0.8 m above ground plane acceding to clause 15.207 and requirements of ANSI C63.4:2014. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz are using CISPR Quasi-Peak / Average detectors.

Radiated Emissions

The EUT is a placed on a turn table, which is 0.8 m above ground plane. The turntable was rotated through 360 degrees to determine the position of maximum emission level. The EUT is placed at 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

1) Putting the EUT on the platform and turning on the EUT (on/off button on the bottom of the EUT).
2) Setting test channel described as “Channel setting and operating condition”, and testing channel by channel.
3) For the maximum output power measurement, we followed the method of measurement KDB558074 D01.
4) For the spurious emission test based on ANSI(2014), at the frequency where below 1GHz used quasi-peak detector mode; where above 1GHz used the peak and average detector mode. IF the peak value may be under average limit, the average mode will not be performed.

3.5 Measurement Uncertainty

Measurement Item	Uncertainty
Peak Output Power(conducted)	±1.345dB
Power Spectral Density	±1.347dB
Radiated emission(1G-25GHz)	±5.00dB
Radiated emission(30M-1GHz)	±3.89dB
Conducted emission	±1.81dB

3.6 Description of the Support Equipments

Setup Diagram

See test photographs attached in appendix 1 for the actual connections between EUT and support equipment.

Support Equipment

Peripherals Devices:

OUTSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: All the above equipment /cable were placed in worse case position to maximize emission signals during emission test

Grounding: Grounding was in accordance with the manufacturer's requirement and conditions for the intended use.

4. Test and measurement equipment

4.1 calibration

The measuring equipment utilized to perform the tests documented in the report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2 equipment

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and. Other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.

TABLELIST OF TEST AND MEASUREMENT EQUIPMENT

Test Site	Instrument	Manufacturer	Model No.	S/N	Next Cal. Date
Conduction	Spectrum (9K--3GHz)	R&S	FSP3	833387/010	2018/09/20
	EMI Receiver	R&S	ESHS10	830223/008	2018/05/22
	LISN	Rolf Heine Hochfrequenztechnik	NNB-2/16z	98062	2018/05/25
	ISN	Schwarzbeck	8-Wire ISN CAT5	CAT5-8158-0094	2018/09/21
	RF Cable	N/A	N/A	EMI-3	2018/10/19
Radiation	Bilog antenna(30M-1G)	ETC	MCTD2786B	BLB16M04004/JB-5-004	2018/05/03
	Double Ridged Guide Horn antenna(1G-18G)	ETC	MCTD 1209	DRH15N02009	2017/11/23
	Horn antenna (18G-26G)	com-power	AH-826	81000	2018/08/15
	LOOP Antenna (Below 30M)	com-power	AL-130	17117	2018/10/04
	Pre amplifier (30M-1G)	EMC INSTRUMENT	EMC9135	980334	2018/05/04
	Microwave Preamplifier (1G-18G)	EMC INSTRUMENT	EMC051845	980108&AT-18001	2018/10/23
	Pre amplifier (18G~26G)	MITEQ	JS4-18002600-30-5A	808329	2018/08/10
	EMI Test	R&S	ESVS30	826006/002	2017/11/28

	Receiver		(20M-1000MHz)		
	RF Cable (open site)	EMCI	N male on end of both sides (EMI4)	30m	2018/10/19
	RF CABLE (1~26.5G)	HARBOUT INDUSTRIES	LL142MI(4M+4M)	NA	2018/03/08
	RF CABLE (1~26.5G)	HARBOUR INDUSTRIES	LL142MI(7M)	NA	2018/08/11
	Spectrum (9K--7GHz)	R&S	FSP7	830180/006	2018/03/25
	Spectrum (9K--40GHz)	AGILENT	8564EC	4046A0032	2018/03/01
Software	e3	AUDIX	N/A	N/A	N/A

***CALIBRATION INTERVAL OF INSTRUMENTS LISTED ABOVE IS ONE YEAR**

5. Antenna Requirements

5.1 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.2 Antenna Construction and Directional Gain

Antenna Type: Integral Antenna
Antenna Gain: 0 dBi

6. Transmit time

6.1 Test Limit

a. Regulation 15.231 (e) In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

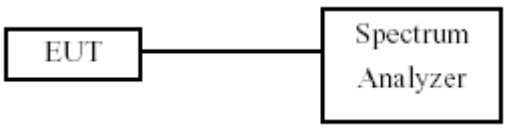
b. Regulation 15.231 (a) (5) Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.

6.2 Test Procedures

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

b. Spectrum Setting: RBW=100kHz, VBW≧RBW, Sweep time=10s, Detector Function=Peak.

6.3 Typical Test Setup

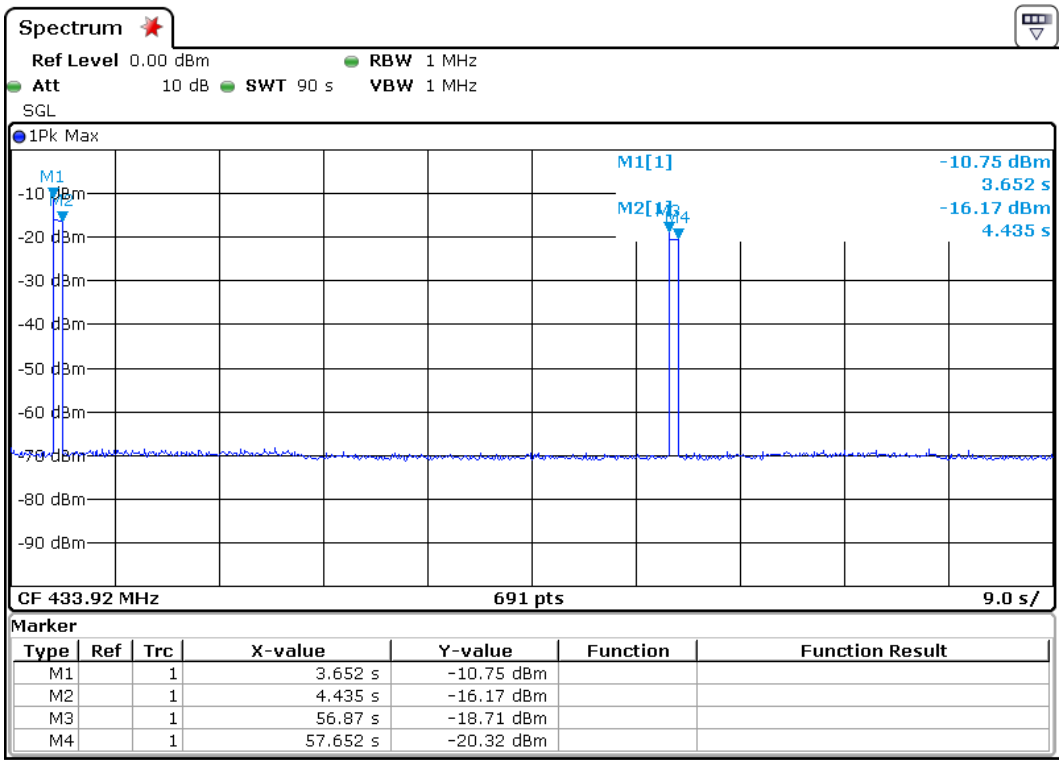


6.4 Test Result and Data

Temperature：	23 ℃	Relative Humidity：	60%
Pressure：	1010 hPa	Test Power ：	DC 3.0V
Test Mode ：	TX CH00		

Item	Duration of each transmission (Td)	Silent period between transmissions(Ts)
Time	0.783s	52.435s
Limit	⩽1 s	⩾10 s and 30*Td

Channel 01: 433.92MHz



7. Test of Radiated Emission

7.1 Test Limit

Test Requirement:	FCC Part15 C section 15.231(e)	
Test Method:	ANSI C63.10: Clause 6.4, 6.5 and 6.6	
Measurement Distance:	3 m (Open Area Test Site)	
Test Status:	Test in transmitting mode.	
Requirements:	the field strength of emissions from intentional radiators operated under this Section shall not exceed the following:	
Fundamental Frequency MHz	Field Strength of Fundamental (dBµV/m @ 3 m)	Field Strength of Harmonics and Spurious Emissions (dBµV/m @ 3 m)
40.66 to 40.70	60.00	40.00
70 to 130	53.98	33.98
130 to 174	53.98 to 63.52	33.98 to 43.52
174 to 260	63.52	43.52
260 to 470	63.52 to 73.98	43.52 to 53.98
Above 470	73.98	53.98
Detector:	Peak for pre-scan	
	QP for 30MHz to1000 MHz:120 kHz resolution bandwidth Peak for Above 1 GHz: 1 MHz resolution bandwidth	
** 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, µV/m at 3 meters = 22.72727(F) - 2454.545; for the band 260-470 MHz, µV/m at 3 meters = 16.6667(F) - 2833.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level The fundamental frequency of the EUT is 433.92 MHz The limit for average or QP field strength dBuv/m for the fundamental emission= 72.86 dBµV/m No fundamental is allowed in the restricted bands. The limit for average field strength dBuv/m for the spurious emission=52.86 dBuV/m.Spurious in the restricted bands must be less than 52.86 dBuV/m or 15.209, whichever limit permits a higher field strength.		

And according 15.35(a)

15.35(a) On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a CISPR quasi-peak detector function and related measurement bandwidths, unless otherwise specified. The specifications for the measuring instrument using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Interference (CISPR) of the International Electrotechnical Commission. As an alternative to CISPR quasi-peak measurements, the responsible party, at its option, may demonstrate compliance with the emission limits using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, as long as the same bandwidths as indicated for CISPR quasi-peak measurements are employed.

Note: For pulse modulated devices with a pulse-repetition frequency of 20 Hz or less and for which CISPR quasi-peak measurements are specified, compliance with the regulations shall be demonstrated using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, using the same measurement bandwidths that are indicated for CISPR quasi-peak measurements.

According to 15.35 (b) Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz. When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, e.g., see §§ 15.250, 15.252, 15.255, and 15.509-15.519 of this part, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device, e.g., the total peak power level. Note that the use of a pulse desensitization correction factor may be needed to determine the total peak emission level. The instruction manual or application note for the measurement instrument should be consulted for determining pulse desensitization factors, as necessary.

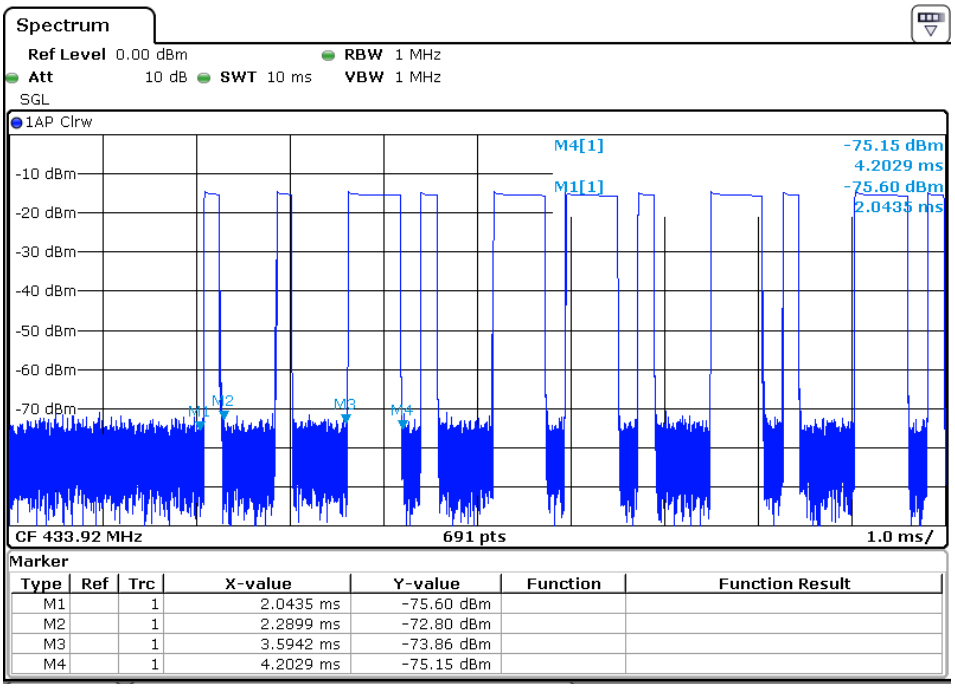
The average correction factor is computed by analyzing the on time in 100ms over one complete pulse train. Analysis of the remote transmitter on time in one complete pulse train, therefore the average value of fundamental frequency is: Average = Peak value + 20log (Duty cycle), where the duty factor is calculated from following formula:

20log (Duty cycle) = 20log(T_{pulse}(9.4207/24.753)) =20log(0.3805)= -8.390dB

Here T_{pulse}=(0.2464 x 16+ 0.6087 x 9)= 9.4207(ms)

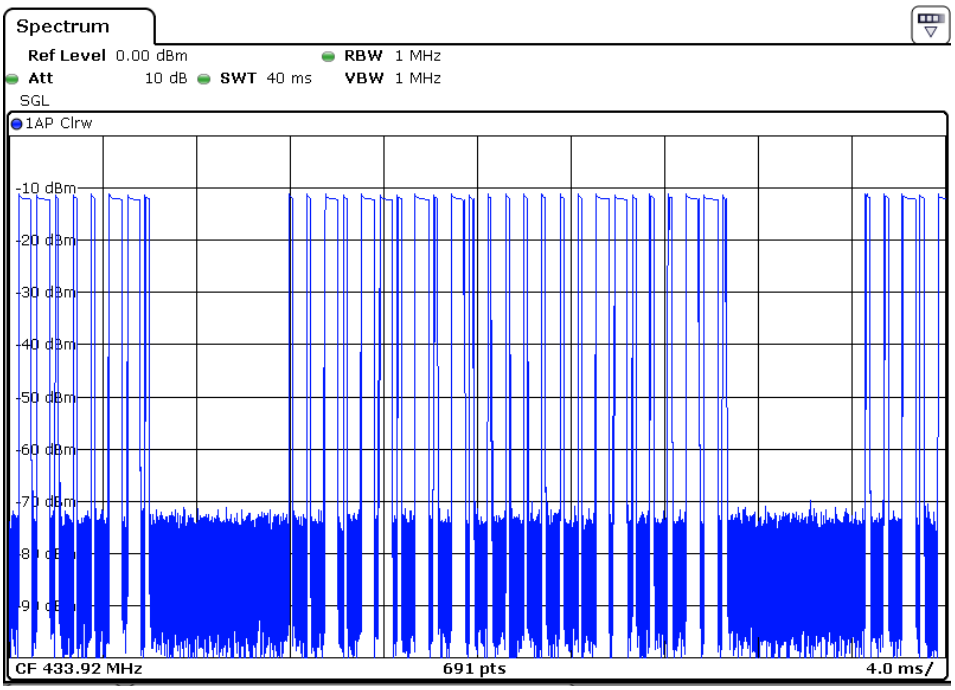
Please refer to below plots for more details.

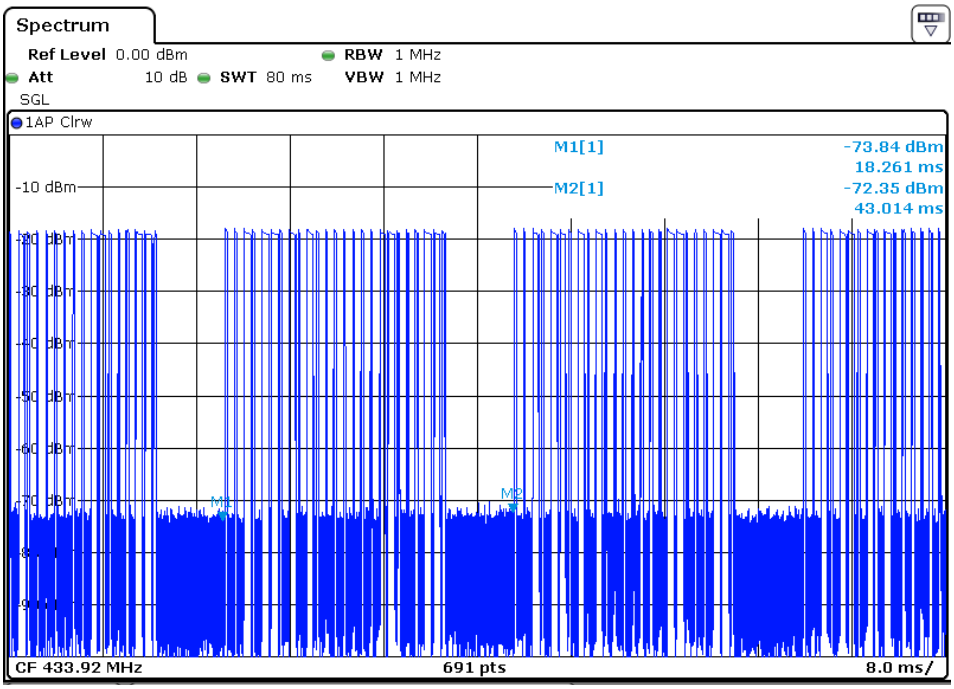
Temperature：	23 ℃	Relative Humidity：	60%
Pressure：	1010 hPa	Test Power ：	DC 3.0V
Test Mode ：	TX CH00		



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.0435 ms	-75.60 dBm		
M2		1	2.2899 ms	-72.80 dBm		
M3		1	3.5942 ms	-73.86 dBm		
M4		1	4.2029 ms	-75.15 dBm		




Spectrum
Ref Level 0.00 dBm
RBW 1 MHz
Att 10 dB SWT 80 ms VBW 1 MHz
SGL
1AP Clrw
M1[1]
-73.84 dBm
18.261 ms
M2[1]
-72.35 dBm
43.014 ms
-10 dBm
CF 433.92 MHz
691 pts
8.0 ms/

7.2 Test Procedures

Test Procedure:

1)9 kHz to 30 MHz emissions:

For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.10. The centre of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT, During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

2)30 MHz to 1 GHz emissions:

For testing performed with the bi-log type antenna, testing was performed in accordance to ANSI C63.10. The measurement is performed with the EUT rotated 360º, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

3)1 GHz to 25 GHz emissions:

Test site with RF absorbing material covering the ground plane that met the site validation criterion called out in CISPR 16-1-4:2007 was used to perform radiated emission test above 1 GHz.

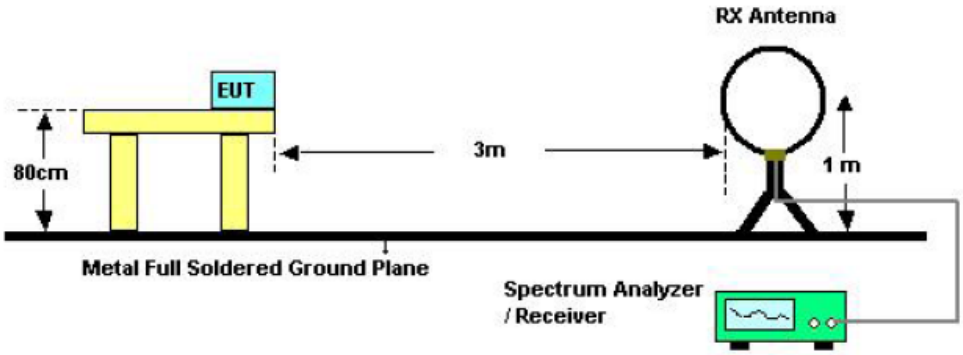
For testing performed with the horn antenna, testing was performed in accordance to ANSI C63.10. The measurement is performed with the EUT rotated 360º, the antenna height scan between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

For the radiated emission test above 1GHz:

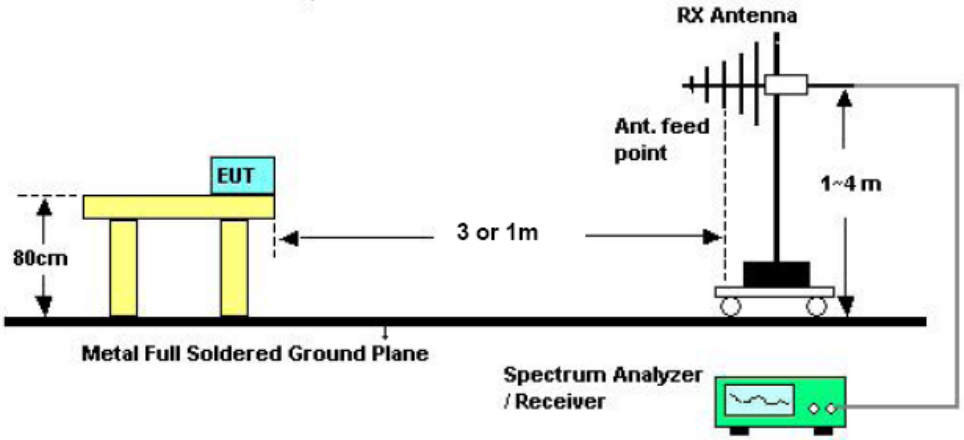
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

7.3 Typical Test Setup

For radiated emissions below 30MHz

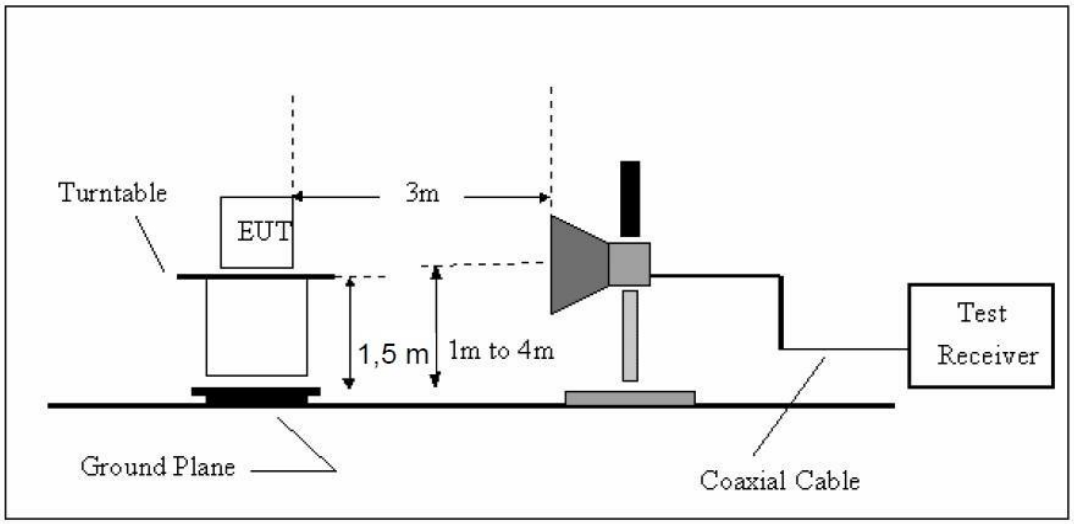


For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB);
Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

For radiated emissions frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

Temperature：	23 ℃	Relative Humidity：	60%
Pressure：	1010 hPa	Test Power ：	DC 3.0V
Test Mode ：	TX CH00		
RBW/VBW	100KHz / 300KHz for spectrum, RBW=120KHz for receiver.		

Fundamental emission:

Antenna polarization: Horizontal:

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
433.92	57.43	-6.61	50.82	92.86	-42.04	Peak
433.92	-	-	42.43	72.86	-30.43	Average

Antenna polarization: Vertical

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
433.92	59.49	-6.61	52.88	92.86	-39.98	Peak
433.92	-	-	44.49	72.86	-28.37	Average

Y: rotate EUT by 90° vertically.

X: rotate EUT by 90° clockwise.

Z: EUT as Radiated Emission test setup photograph in section 6 of this report.

Remark: Radiated Emission test setup photograph in section 6 of this report is the worst case and reported.

other emissions:

The receive was scanned from the lowest frequency generated within the EUT to 5 GHz.When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. The worst case emissions were reported.

An initial pre-scan was performed in the 3 m chamber using the spectrum analyzer in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bilog antenna with 2 orthogonal polarities.

The field strength is calculated by adding the Antenna Factor, Cable Factor & Peramplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Peramplifier Factor.

The following test results were performed on the EUT.

Since the peak emission level is lower than the average limit, the average emission level does not need to show.

Test the EUT in transmitting mode.

Temperature：	23 ℃	Relative Humidity：	60%
Pressure：	1010 hPa	Test Power ：	DC 3.0V
Test Mode ：	TX CH00		
RBW/VBW	100KHz / 300KHz for spectrum, RBW=120KHz for receiver.		

(a) Antenna polarization: Horizontal

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
49.8814	28.96	-14.19	14.77	40.00	-25.23	QUASIPEAK
105.6415	30.51	-15.54	14.97	43.50	-28.53	QUASIPEAK
183.8440	32.07	-11.72	20.35	43.50	-23.15	QUASIPEAK
287.9904	30.16	-10.45	19.71	46.00	-26.29	QUASIPEAK
480.5276	32.54	-5.90	26.64	46.00	-19.36	QUASIPEAK
724.2611	**31.61**	**-0.46**	**31.15**	**46.00**	**-14.85**	**QUASIPEAK**

(b) Antenna polarization: Vertical

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
39.9942	29.93	-16.60	13.33	40.00	-26.67	QUASIPEAK
104.5361	31.30	-13.59	17.71	43.50	-25.79	QUASIPEAK
159.7844	31.74	-15.01	16.73	43.50	-26.77	QUASIPEAK
290.0172	30.68	-10.18	20.50	46.00	-25.50	QUASIPEAK
434.0651	31.19	-6.61	24.58	46.00	-21.42	QUASIPEAK
796.1830	**29.69**	**3.01**	**32.70**	**46.00**	**-13.30**	QUASIPEAK

Temperature：	23 ℃	Relative Humidity：	60%
Pressure：	1010 hPa	Test Power ：	DC 3.0V
Test Mode ：	TX CH00		
RBW/VBW	100KHz / 300KHz for spectrum, RBW=120KHz for receiver.		

(a) Antenna polarization: Horizontal

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
1301.76	53.27	-10.33	42.94	72.86	-29.92	PEAK
1735.68	45.91	-9.52	36.39	72.86	-36.47	PEAK
2169.60	**54.36**	**-7.69**	**46.67**	**72.86**	**-26.19**	**PEAK**
3037.44	47.86	-1.59	46.27	72.86	-26.59	PEAK

Frequency (MHz)	**20log (Duty cycle) (dB)**	**Peak Level (dBμV)**	**Average Level (dBμV/m)**	**Limit (dBμV/m)**	**Margin (dB)**	**Antenna polarization**
1301.76	-8.39	42.94	34.55	52.86	-18.31	AVG
1735.68		36.39	28.00	52.86	-24.86	AVG
2169.60		**46.67**	**38.28**	**52.86**	**-14.58**	**AVG**
3037.44		46.27	37.88	52.86	-14.98	AVG

(b) Antenna polarization: Vertical

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
1301.76	55.39	-10.33	45.06	72.86	-27.80	PEAK
1735.68	46.63	-9.52	37.11	72.86	-35.75	PEAK
2169.60	**55.18**	**-7.69**	**47.49**	**72.86**	**-25.37**	**PEAK**
3037.44	46.20	-1.59	44.61	72.86	-28.25	PEAK

Frequency (MHz)	**20log (Duty cycle) (dB)**	**Peak Level (dBμV)**	**Average Level (dBμV/m)**	**Limit (dBμV/m)**	**Margin (dB)**	**Antenna polarization**
1301.76	-8.39	45.06	36.67	52.86	-18.31	AVG
1735.68		37.11	28.72	52.86	-24.86	AVG
2169.60		**47.49**	**39.10**	**52.86**	**-14.58**	**AVG**
3037.44		44.61	36.22	52.86	-14.98	AVG

Note: Measurement Level = Reading Level + Factor

Average Correct Factor= Ant Factor + Cable Loss+ Averaging factor

Factor=Ant Factor + Cable Loss

Channel 00: 433.92 MHz

Remark:

According to 15.35 (b) When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules, e.g., see Section 15.255.

8. Bandwidth Measurement Data

8.1 Test Limit

15.231(c) 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.

Bandwidth (20dB) Limit = 0.25% * f(MHz) = 0.25% * 433.92MHz = 1084.8kHz

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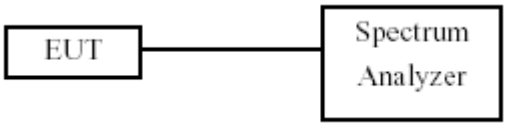
8.2 Test Procedures

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

b. Spectrum Setting: RBW= 30KHz, VBW≧RBW, Sweep time = Auto.

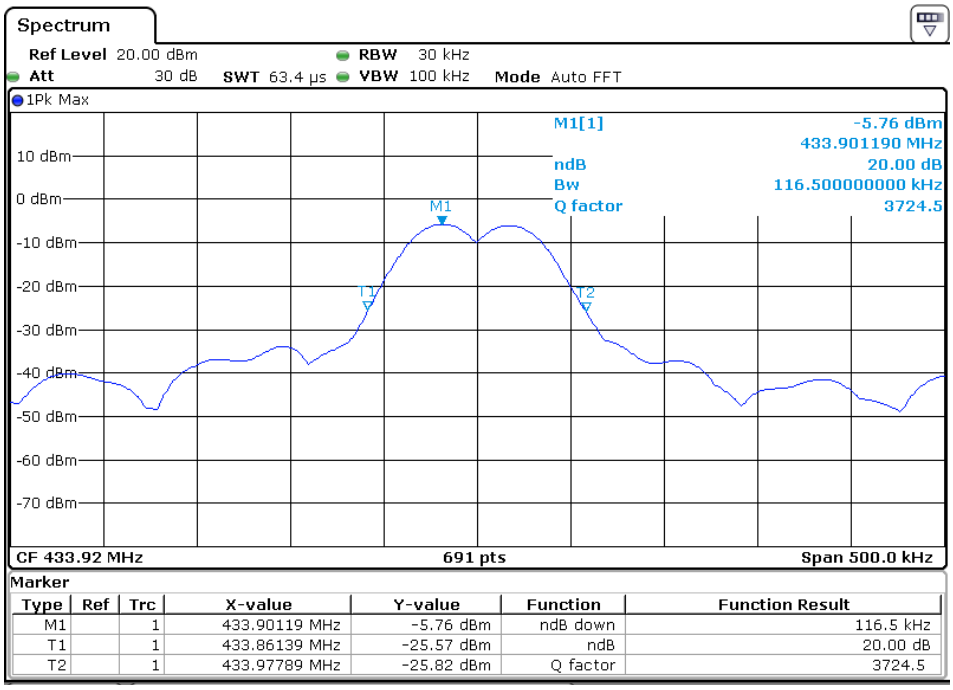
8.3 Test Setup Layout



8.4 Test Result and Data

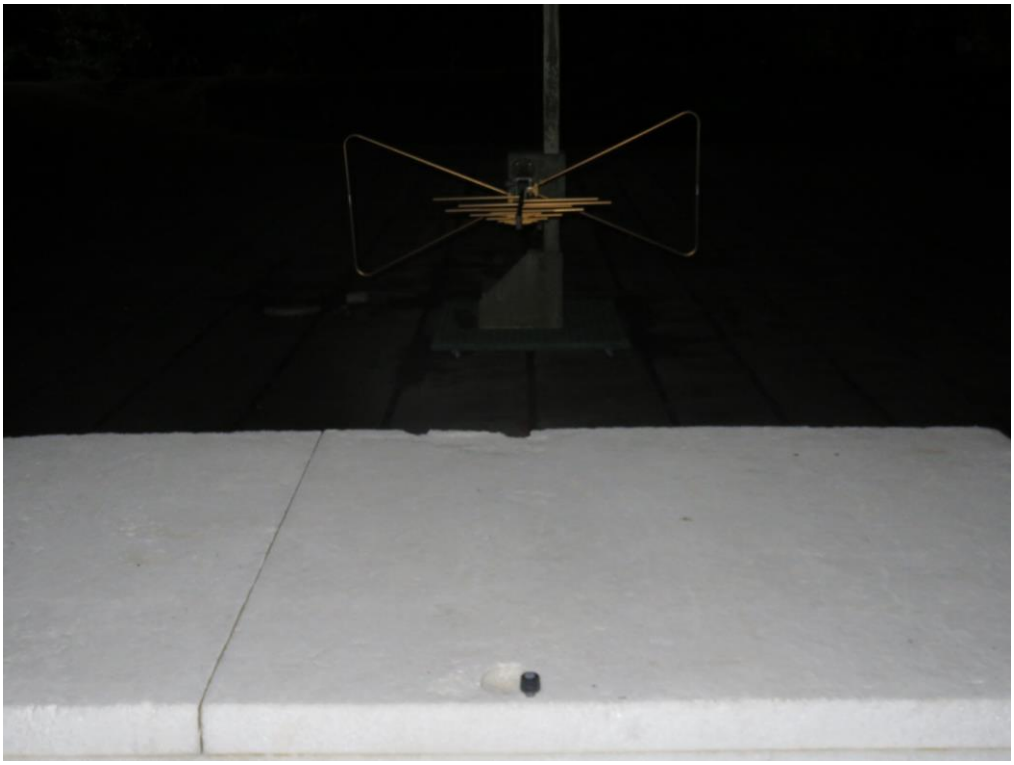
Test Mode	Test Channel	Frequency (MHz)	20 dB Bandwidth (KHz)	Limit （kHz）	**Result**
TX	CH00	433.92	116.5	1084.8	Pass

Channel 00: 433.92MHz



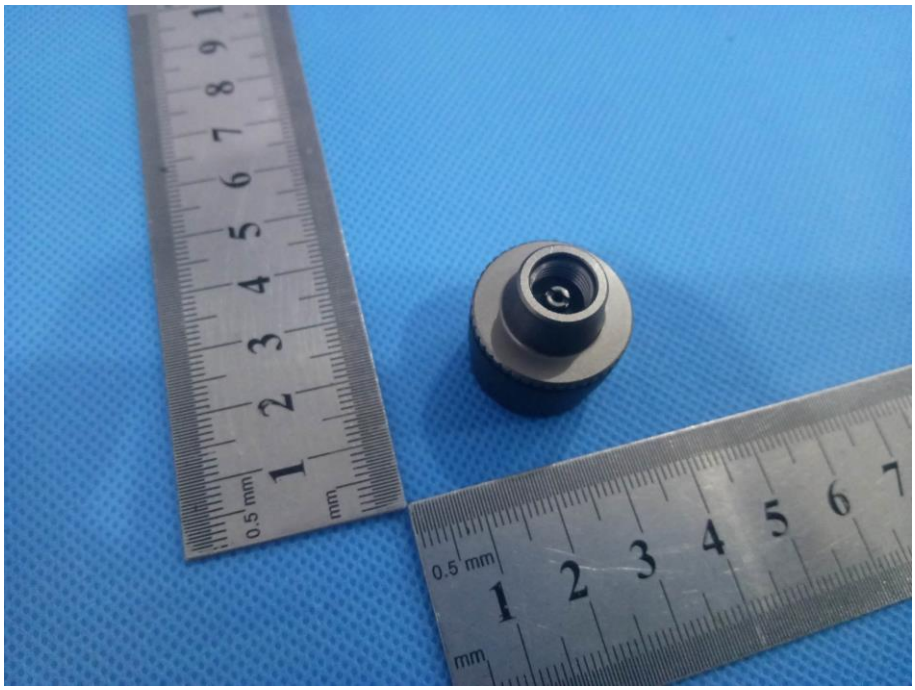
APPENDIX 1 PHOTOS OF TEST CONFIGURATION

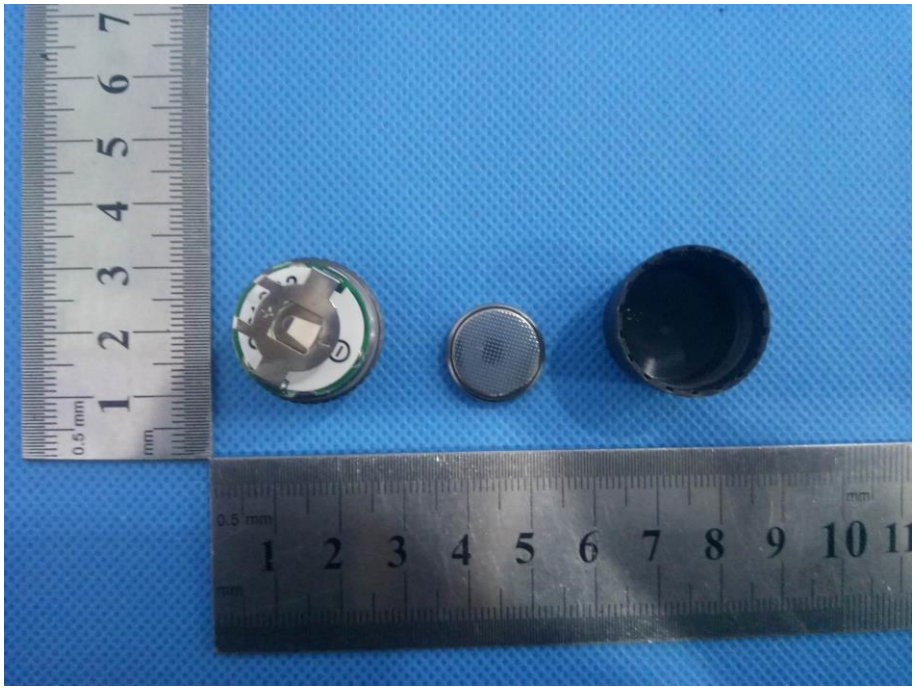
Below 1G

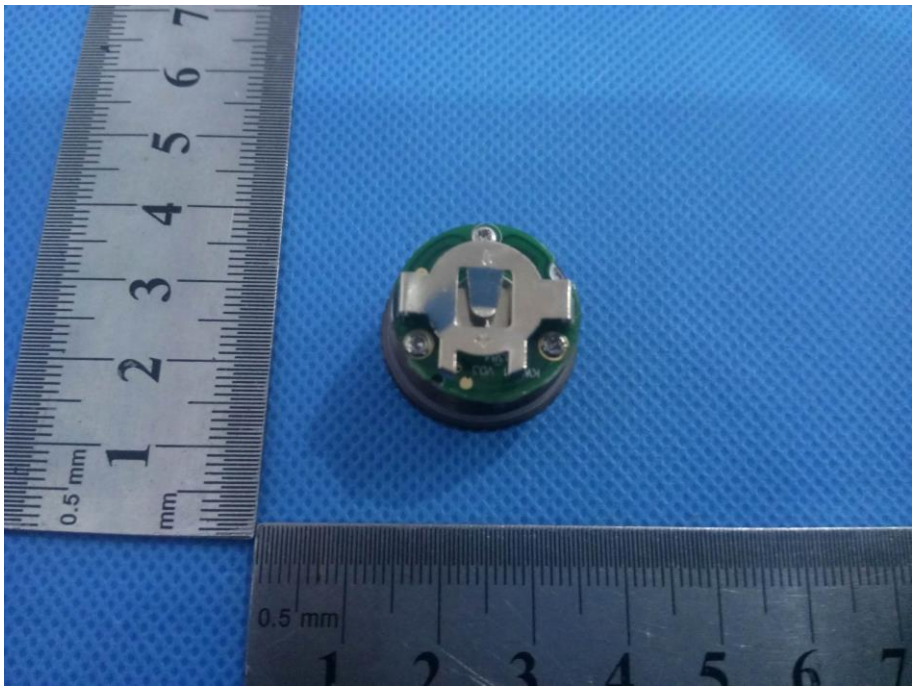


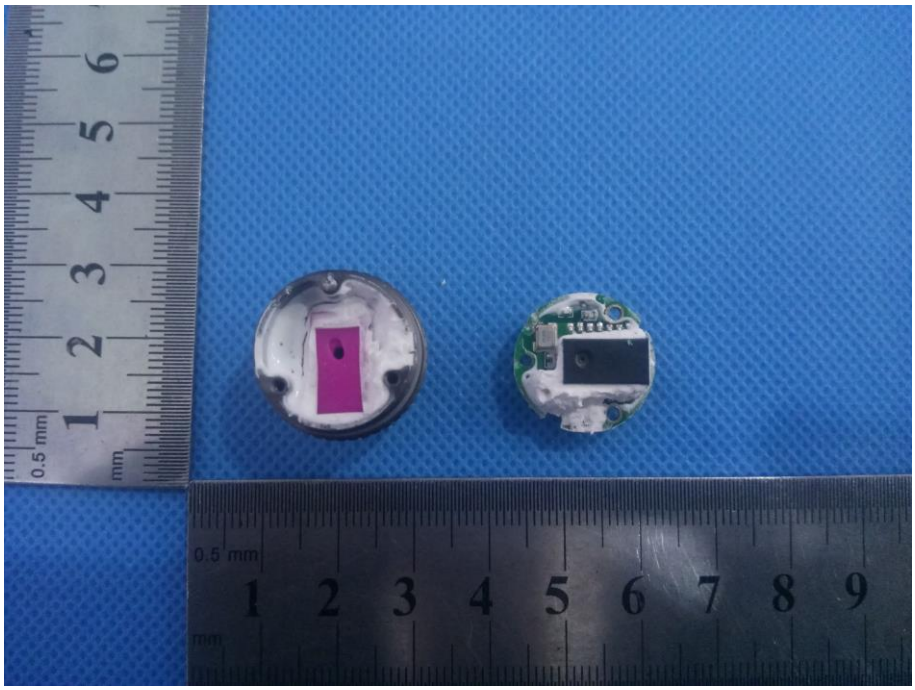
Above 1G

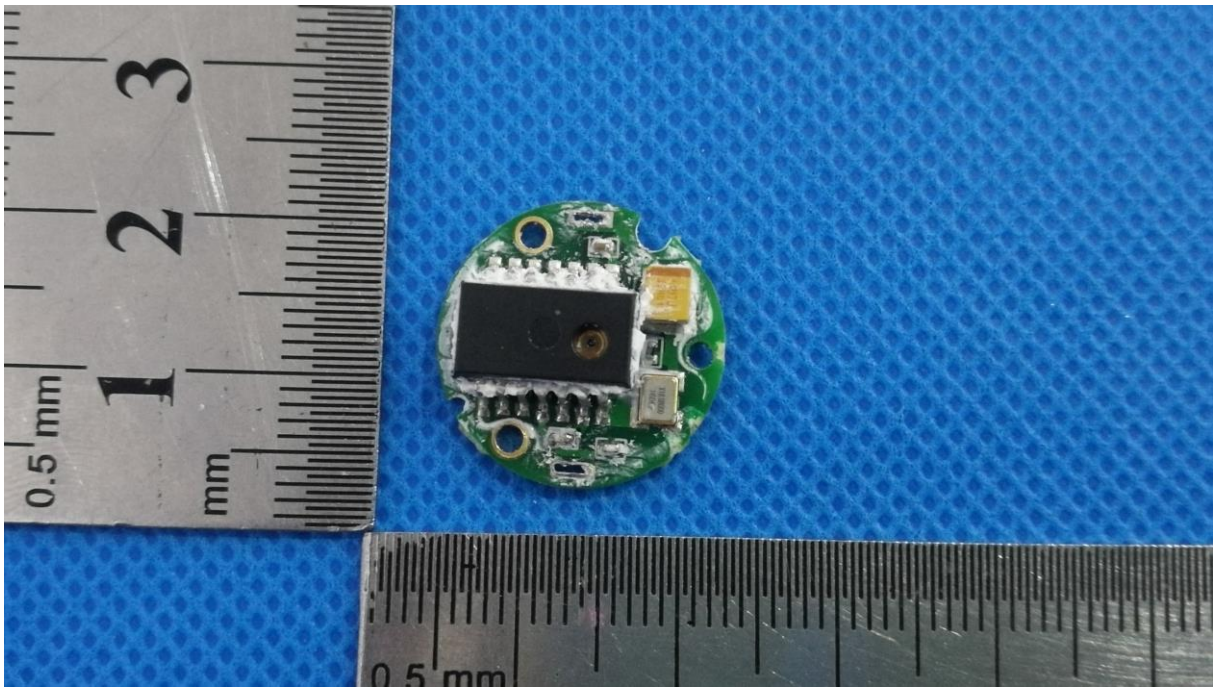
PHOTOS OF EUT

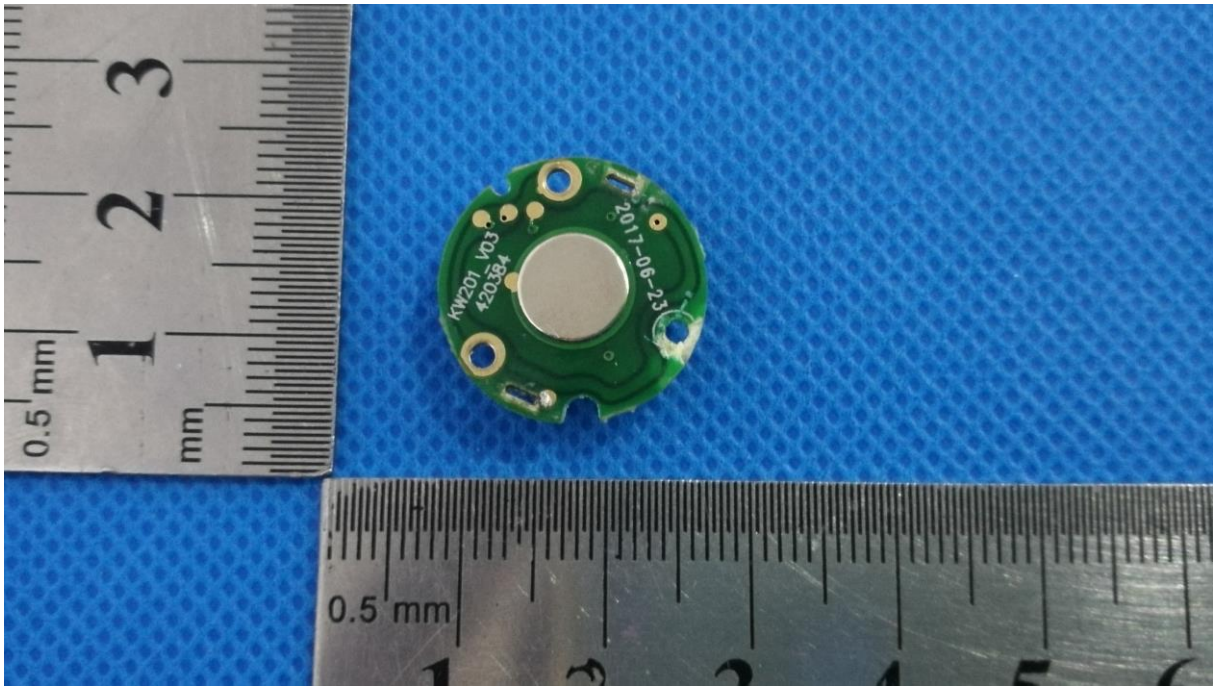





0.5 mm
mm
0.5 mm


0.5 mm
mm
0.5 mm





**** End of report ****