

EN 50130-4:2011/A1:2014  
 EN 55032:2015  
 EN 55024:2010/A1:2015  
 EN 61000-3-2: 2014  
 EN 61000-3-3:2013

## TEST REPORT

For

**Hangzhou Hikvision Digital Technology Co., Ltd.**

No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China

**Tested Model: DS-PD1-MC-WWS**

<b>Report Type:</b> Amended Report	<b>Product Type:</b> Wireless Magnetic Contact
<b>Test Engineer:</b> Lee Li	<i>Lee Li</i>
<b>Report Number:</b> RKSA180727004-01A	
<b>Report Date:</b> 2018-07-31	
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FINAL

**Report Revision**

<b>Report Number</b>	<b>Report Date</b>	<b>Contents</b>
RKSA180418003-01A	2018-05-09	Original Report Invalidated
RKSA180727004-01A	2018-07-31	Amended Report

FINAL

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

Applicant	Hangzhou Hikvision Digital Technology Co., Ltd.
Test Model	DS-PD1-MC-WWS
Product Name	Wireless Magnetic Contact
Rate Voltage	Battery Voltage DC 3V
Highest Operation Frequency	433MHz
Dimension	84 mm (L) * 25mm (W) *21 mm (H)

*\*All measurement and test data in this report was gathered from production sample serial number: 20180418003. (Assigned by BACL, Kunshan).The EUT supplied by the applicant was received on 2018-04-18.*

### Objective

This test report is prepared on behalf of Hangzhou Hikvision Digital Technology Co., Ltd. in accordance with

EN 50130: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems.

EN 55032: Electromagnetic compatibility of multimedia equipment —Emission requirements.

EN 55024: Information technology equipment- Immunity characteristics – Limits and methods of measurement.

EN 61000-3-2, Limits – Limits for harmonic current emissions (equipment input current up to and including 16 A per phase), and also in accordance with EN 61000-3-3, Limits Section 3; Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current <16A.

The objective of the manufacturer is to determine compliance with EN 50130-4, EN 55032, EN 55024, EN 61000-3-2 and EN 61000-3-3.

### Related Submittal(s)/Grant(s)

No related submittal(s).

### Test Methodology

CISPR 16-1-1:2015, Specification for radio disturbance and immunity measuring apparatus and methods Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus.

CISPR 16-1-4:2010+A2:2017, Specification for radio disturbance and immunity measuring apparatus and methods-Part 1-4: Radio disturbance and immunity measuring apparatus -Antennas and test sites for radiated disturbance measurements

CISPR 16-2-1:2014, Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-1: Methods of measurement of disturbance and immunity - Conducted disturbance measurements.

CISPR 16-2-3:2016, Specification for radio disturbance and immunity measuring apparatus and methods- Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements.

CISPR 16-4-2:2011+A1-2014, Specification for radio disturbance and immunity measuring apparatus and methods-Part 4-2: Uncertainties, statistics and limit modeling-Measurement instrumentation uncertainty.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan).

### **Test Facility**

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

F I N A L

## SYSTEM TEST CONFIGURATION

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### Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user)

*Test mode: Alarm functions open*

### Equipment Software

No software was used to test.

### Equipment Modifications

No modifications were made to the EUT.

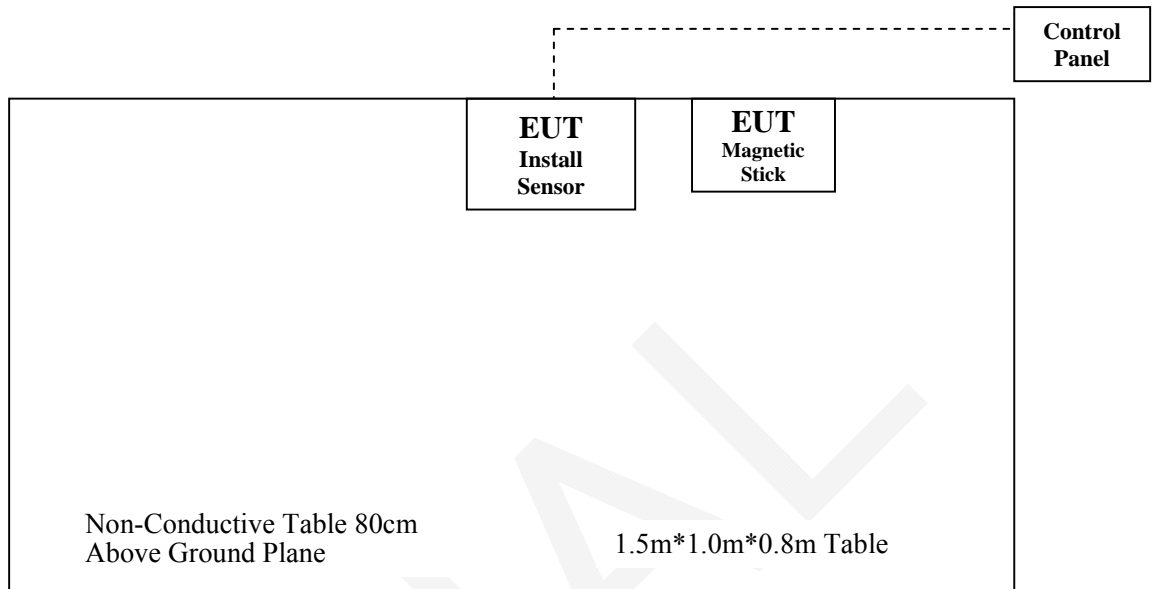
### Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Hangzhou Hikvision Digital Technology Co., Ltd.	Control Panel	DS-PD2-P10P-W	Q00057177

### External I/O Cable

Cable Description	Length (m)	From/Port	To
/	/	/	/

### Block Diagram of Radiated Test Setup





## SUMMARY OF TEST RESULTS

### EN 55032

RULE	DESCRIPTION	RESULTS
§ 5	Requirements ,Refer to Annex A A.3 Requirements for conducted emissions	Not Applicable
§ 5	Requirements ,Refer to Annex A A.2 Requirements for radiated emissions	Compliance

### EN 55024

RULE	DESCRIPTION	RESULTS
§4.2.1	Electrostatic Discharge IEC 61000-4-2	Compliance
§4.2.2	Electrical Fast Transient IEC 61000-4-4	Not Applicable
§4.2.3.2	Continuous Radiated Disturbances IEC 61000-4-3	Compliance
§4.2.3.3	Continuous Conducted Disturbances IEC 61000-4-6	Not Applicable
§4.2.4	Power Frequency Magnetic Field IEC 61000-4-8	Compliance
§4.2.5	Surge IEC 61000-4-5	Not Applicable
§4.2.6	Voltage Dips And Interruptions IEC 61000-4-11	Not Applicable

Note: Immunity test performance criteria: Reference to clauses EN 55024 § 7.

### EN 50130-4

Rule	Description	Results
§ 8	Mains Supply Voltage Dips and Short Interruptions (EN 61000-4-11)	Not Applicable
§ 9	Electrostatic Discharge (EN 61000-4-2)	Compliance
§ 10	Radiated Electromagnetic Fields (EN 61000-4-3)	Compliance
§ 11	Conducted Disturbances Induced By Electromagnetic Fields (EN 61000-4-6)	Not Applicable
§ 12	Fast Transient Bursts (EN 61000-4-4)	Not Applicable
§ 13	Slow High Energy Voltage Surge (EN 61000-4-5)	Not Applicable

Note: Immunity test performance criteria: Reference to clauses EN 50130-4.

**EN 61000-3-2**

<b>RULE</b>	<b>DESCRIPTION</b>	<b>RESULTS</b>
	Harmonic Current Emissions	Not Applicable

**EN 61000-3-3**

<b>RULE</b>	<b>DESCRIPTION</b>	<b>RESULTS</b>
	Voltage Fluctuations and Flicker	Not Applicable

Note: Not Applicable: The EUT was powered by battery.

**EN 55032 §5 Requirements ,Refer to Annex A A.2 Requirements for Radiated Emissions**

**Measurement Uncertainty**

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If  $U_{lab}$  is less than or equal to  $U_{cispr}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If  $U_{lab}$  is greater than  $U_{cispr}$  of Table 1, then:

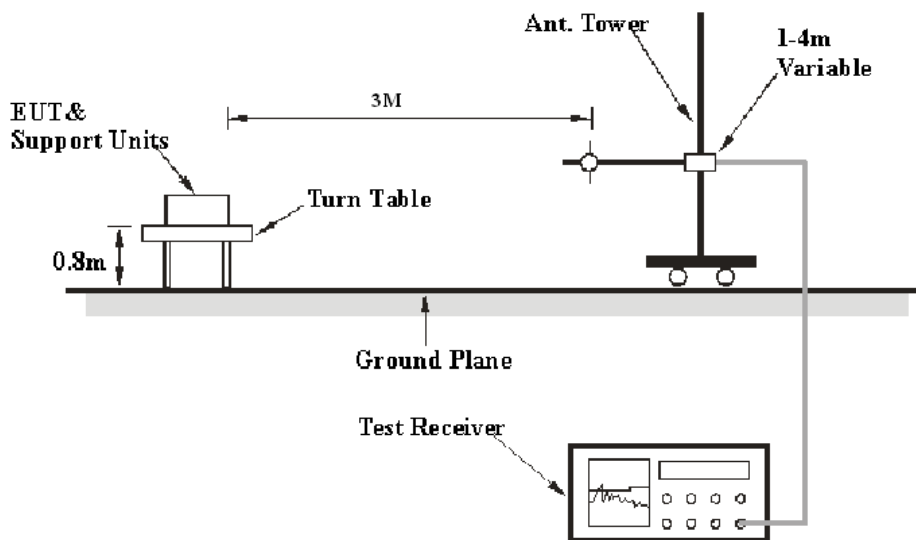
- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit.

Table 1 – Values of  $U_{cispr}$

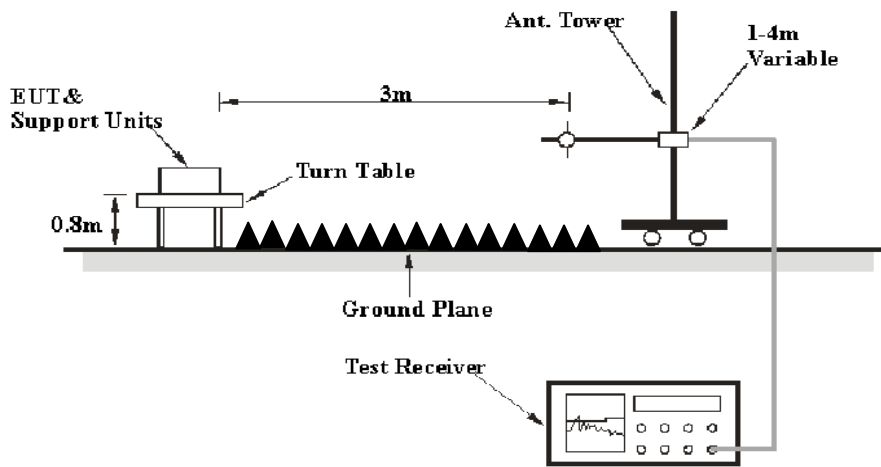
Item	Measurement Uncertainty	$U_{cispr}$
Radiated Emission	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB

**Test System Setup**

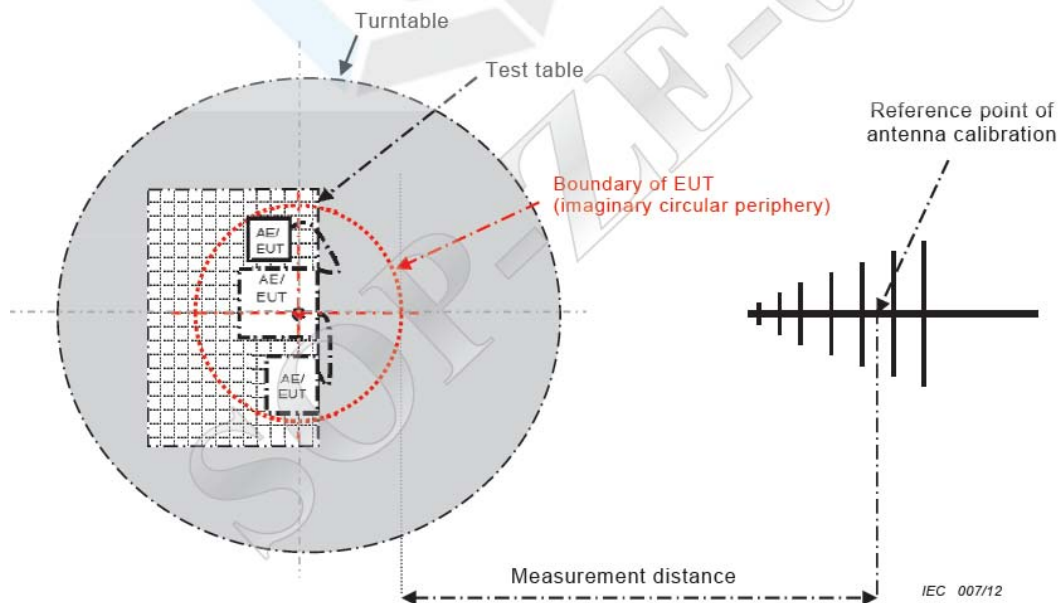
Below 1GHz:



Above 1GHz:



Radiated Top View:



The radiated emission tests below 1GHz was performed in the 3 meters chamber test site, above 1GHz were performed in the 3 meters chamber test site, using the setup accordance with the CISPR 16-1-1:2015, CISPR 16-1-4:2010+A2:2017, CISPR 16-2-3:2014. The specification used was EN 55032 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

## EMI Test Receiver Setup

The system was investigated from 30 MHz to 6 GHz.

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	120kHz	QP
Above 1 GHz	1MHz	3 MHz	/	Peak
	1MHz	3 MHz	1MHz	AVG

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sonoma Instrument	Amplifier	310N	171205	2017-08-14	2018-08-13
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2017-11-12	2018-11-11
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
Champrotek	Chamber	Chamber A	T-KSEMC049	-	-
Champrotek	Chamber	Chamber B	T-KSEMC080	-	-
R&S	Auto test Software	EMC32	100361	-	-
ETS	Horn Antenna	3115	6229	2016-01-11	2019-01-10
Rohde & Schwarz	EMI Receiver	ESU40	100207	2017-08-27	2018-08-26
Narda	Pre-amplifier	AFS42-00101800	2001270	2017-12-12	2018-12-11
MICRO-COAX	Coaxial Cable	Cable-8	008	2017-08-15	2018-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2017-08-15	2018-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2017-08-15	2018-08-14
MICRO-COAX	Coaxial Cable	Cable-4	004	2017-12-12	2018-12-11
MICRO-COAX	Coaxial Cable	Cable-5	005	2017-12-12	2018-12-11

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

## Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30MHz to 1GHz, Peak and average detection mode above 1 GHz.

### Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter reading. The basic equation is as follows:

$$\text{Corr. Amp.} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amp}$$

### Test Data

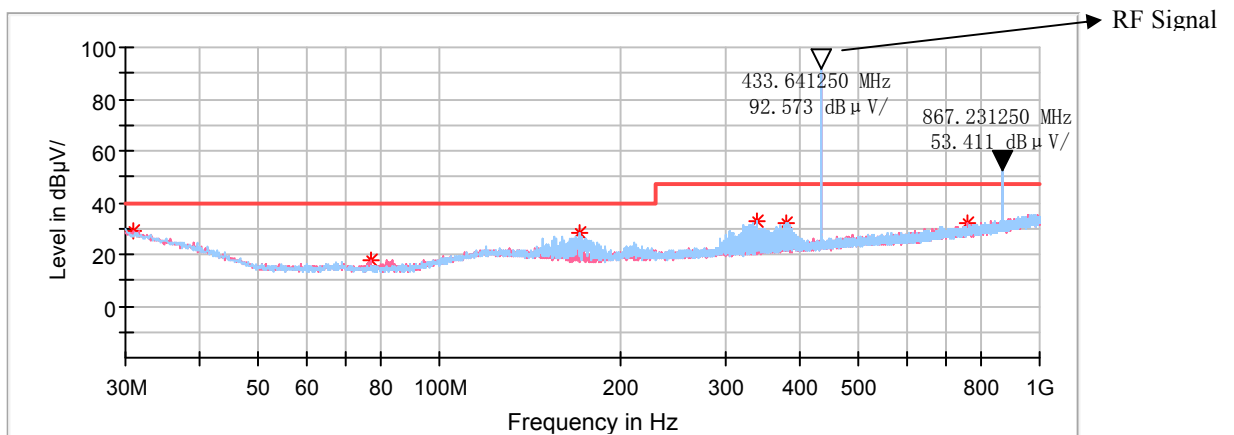
#### Environmental Conditions

<b>Temperature:</b>	24.1°C
<b>Relative Humidity:</b>	55%
<b>ATM Pressure:</b>	101.2 kPa-

\* The testing was performed by Lee Li on 2018-04-27.

Test mode: Alarm functions open

#### Below 1GHz



Frequency (MHz)	Peak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB /m)
30.970000	28.77	40.00	11.23	200.0	V	0.0	-4.6
76.681250	17.95	40.00	22.05	100.0	V	270.0	-17.6
171.741250	28.43	40.00	11.57	200.0	H	88.0	-13.2
339.066250	32.89	47.00	14.11	100.0	H	261.0	-9.6
377.987500	32.09	47.00	14.91	100.0	H	235.0	-8.6
756.166250	31.87	47.00	15.13	100.0	V	141.0	-2.4

**Above 1 GHz:**

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1430.050000	---	23.06	50.00	26.94	100.0	H	14.0	-8.8
1430.050000	34.95	---	70.00	35.05	200.0	H	44.0	-8.8
1949.400000	---	25.65	50.00	24.35	200.0	V	31.0	-5.9
1949.400000	38.15	---	70.00	31.85	100.0	V	353.0	-5.9
2400.600000	---	27.09	50.00	22.91	200.0	H	235.0	-4.3
2400.600000	39.86	---	70.00	30.14	100.0	H	87.0	-4.3
2858.850000	---	28.73	50.00	21.27	100.0	H	5.0	-2.3
2858.850000	41.57	---	70.00	28.43	200.0	H	298.0	-2.3
3770.650000	---	31.75	54.00	22.25	200.0	H	156.0	0.3
3770.650000	42.32	---	74.00	31.68	200.0	H	156.0	0.3
4609.600000	---	33.72	54.00	20.28	100.0	H	0.0	2.0
4609.600000	43.08	---	74.00	30.92	100.0	H	0.0	2.0

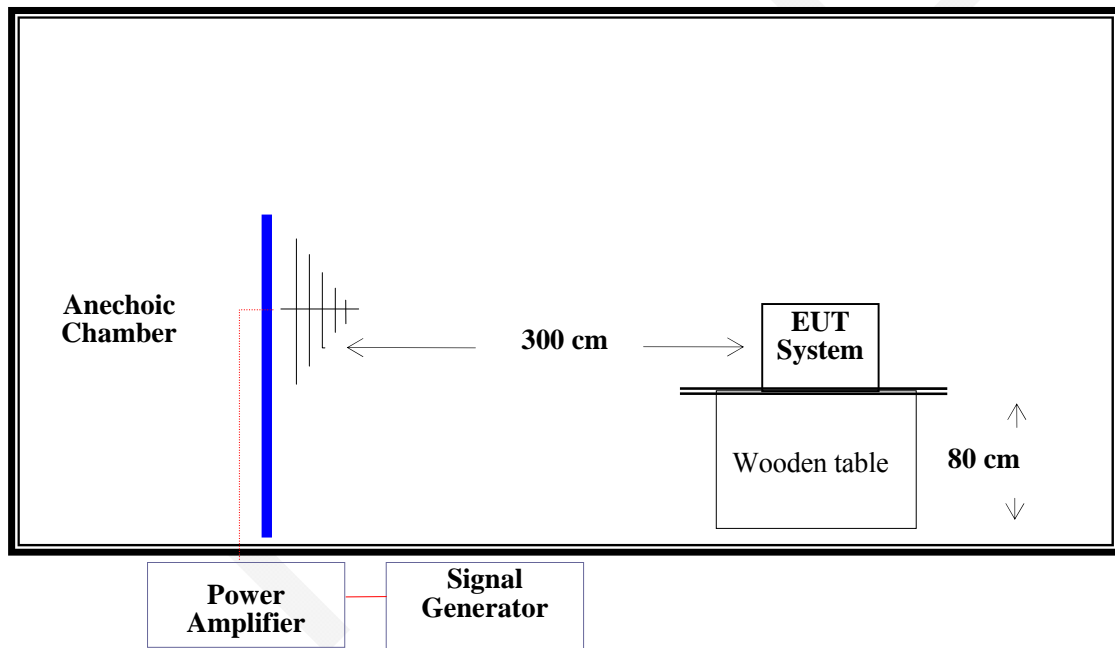
**IEC 61000-4-3/EN 61000-4-3 CONTINUOUS RADIATED DISTURBANCES  
(EN 55024 §4.2.3/EN 50130-4 §10)**

**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Signal Generator	E4428C	MY49070179	NCR	NCR
Amplifier Research	Power Amplifier	200W1000M3A	18062	NCR	NCR
A&R	Bi-log Antenna	ATL80M1G	0350122	NCR	NCR

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

**Test System Setup**



**Test Standard**

EN 55024:2010/A1:2015 (IEC 61000-4-3:2006 + A1:2007 + A2:2010)  
Test level 2 at 3V / m

EN 50130-4-2011+A1-2014 (EN 61000-4-3:2006 + A2:2010 (E))  
Test level 3 at 10V / m



**Test Level**

Level	Field Strength (V/m)
1.	1
2.	3
3.	10
X.	Special

**Performance criteria: A**

**Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarizations of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera and artificial station are used to monitor the Control Panel.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	3 V/m (Test Level 2)
2. Radiated Signal	AM 80% , 1kHz sin wave
3. Scanning Frequency	80 - 1000 MHz
4. Dwell Time	3 Sec.
5. Test step	1%
6. Field Strength	10 V/m (Test Level 3)
7. Radiated Signal	AM 80% , 1kHz sin wave/Pulse modulation
8. Scanning Frequency	80 - 2700 MHz
9. Dwell Time	3 Sec
10. Test step	1%
11. Field Strength	10 V/m (Test Level 3)
12. Radiated Signal	Pulse modulation
13. Scanning Frequency	80 - 2700 MHz
14. Dwell Time	0.5s on 0.5s off
15. Test step	1%

**Test Data and Setup Photo**

**Environmental Conditions**

<b>Temperature:</b>	19 °C
<b>Relative Humidity:</b>	47 %
<b>ATM Pressure:</b>	101.0 kPa

The testing was performed by Lee Li 2018-07-31.

Test mode: Alarm functions open

Frequency Range (MHz)	Front Side (3 V/m)		Rear Side (3 V/m)		Left Side (3 V/m)		Right Side (3 V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	A	A	A	A	A	A	A	A

Frequency Range (MHz)	Front Side (AM 10 V/m)		Rear Side (AM 10V/m)		Left Side (AM 10V/m)		Right Side (AM 10V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-2700	A	A	A	A	A	A	A	A

Frequency Range (MHz)	Front Side (PM 10 V/m)		Rear Side (PM 10V/m)		Left Side (PM 10V/m)		Right Side (PM 10V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-2700	A	A	A	A	A	A	A	A

Note: "A" stand for, during and after the test the EUT shall continue to operate as intended without operator intervention.

**IEC 61000-4-2/EN 61000-4-2 ELECTROSTATIC DISCHARGE (EN 55024 §4.2.1/EN 50130-4 §9)**

**Measurement Uncertainty**

$U_{lab}$  (measurement uncertainty of lab) and  $U_{EN}$  (measurement uncertainty of EN 61000-4-2) please refer to the following:

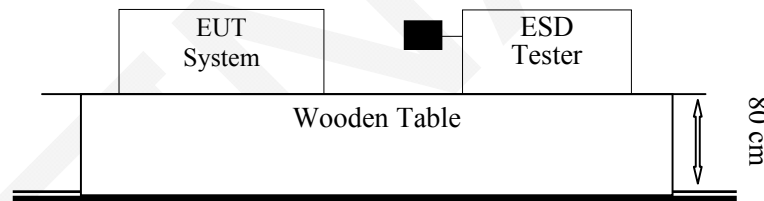
Parameter	$U_{EN}$	$U_{lab}$
Rise time $t_r$	$\leq 15\%$	15%
Peak current $I_p$	$\leq 7\%$	6.30%
Current at 30 ns	$\leq 7\%$	6.30%
Current at 60 ns	$\leq 7\%$	6.30%

**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM Test	ESD Simulator	Dito	V0824103870	2017-10-11	2018-10-11

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**Test System Setup**



Remark: ■ is the tip of the electrode

IEC 61000-4-2 specifies that a tabletop EUT shall be placed on a non-conducting table which is 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on a insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.6 by 0.8-meter metal sheet (HCP) is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by 0.5-millimeter thick insulating material. A Vertical Coupling Plane (VCP) grounded on the ground plane through the same configuration as in the HCP is used.

**Test Standard**

- EN 55024:2010/A1:2015 (IEC 61000-4-2:2008)
- Test level 3 for Air Discharge at  $\pm 8$  kV
- Test level 2 for Contact Discharge at  $\pm 4$  Kv

EN 50130-4-2011+A1-2014 (EN 61000-4-2:2009)

Test level 3 for Air Discharge at  $\pm 8$  kV

Test level 3 for Contact Discharge at  $\pm 6$  kV

### Test Level

Level	Test Voltage Contact Discharge ( $\pm$ kV)	Test Voltage Air Discharge ( $\pm$ kV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

### Performance criteria: B

### Test Procedure

#### Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

#### Contact Discharge:

All the procedure shall be same as Section 8.3.1 of IEC 61000-4-2, except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

#### Indirect discharge for horizontal coupling plane:

At least 50 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1 m from the EUT and with the discharge electrode touching the coupling plane.

#### Indirect discharge for vertical coupling plane:

At least 50 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m  $\times$  0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

**Test Data and Setup Photo**

**Environmental Conditions**

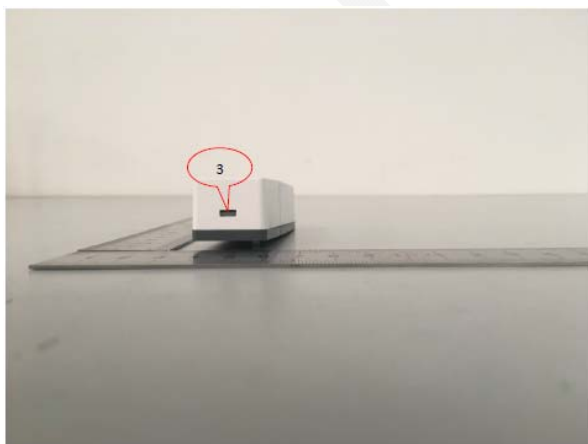
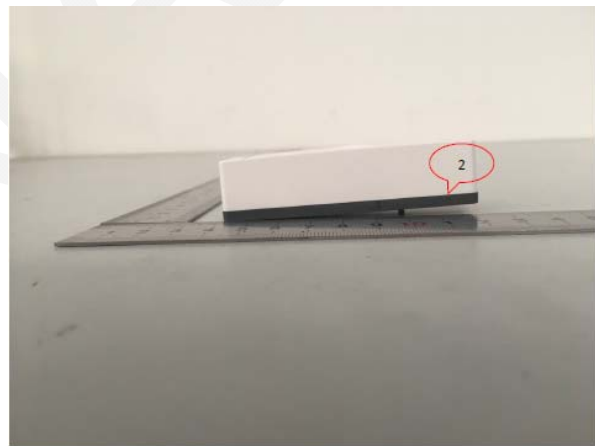
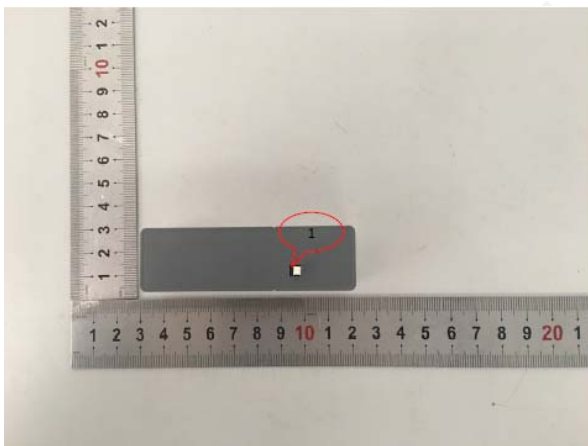
<b>Temperature:</b>	23 °C
<b>Relative Humidity:</b>	55%
<b>ATM Pressure:</b>	100.7 kPa

The testing was performed by Lee Li on 2018-07-31.

Test mode: Alarm functions open

TestPoints	Contact discharge				Air discharge			
	±2kV	±4kV	±6kV	±8kV	±2kV	±4kV	±8kV	±15kV
<b>VCP</b>	A	A	/	/	/	/	/	/
<b>HCP</b>	A	A	/	/	/	/	/	/
<b>1~3</b>	/	/	/	/	A	A	A	/

Test point as follows:



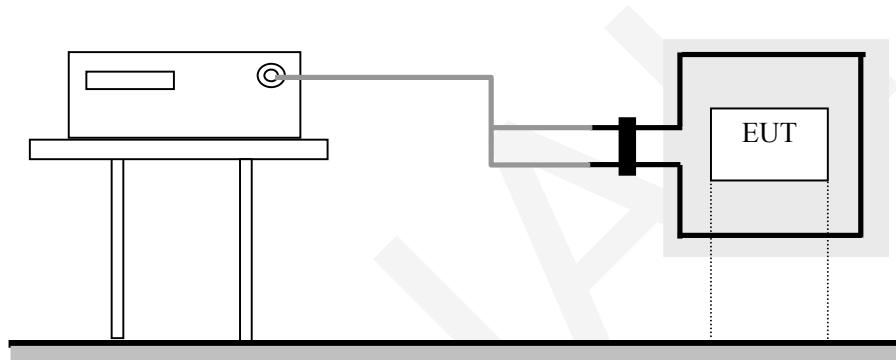
**IEC 61000-4-8 POWER FREQUENCY MAGNETIC FIELD (EN 55024 §4.2.4)**

**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Loop Antenna	MS100	P1334123835	2016-01-11	2019-01-10
EM TEST	Current Transformer	MC2630	P1303109259	2016-01-11	2019-01-10
EM TEST	AC Power Source	ACS 500N	P1251107475	2017-11-21	2018-11-20

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**Test Setup**



**Test Standard**

EN 55024:2010/A1:2015 (IEC 61000-4-8:2009)  
 Test level 1 at 1A/m

**Test Level**

Level	Magnetic Field Strength A/m
1	1
2	3
3	10
4	30
5	100
X.	Special

**Performance criteria: A**

## Test Procedure

The EUT shall be subjected to the test magnetic field by using the induction coil of standard dimensions (1 m\*1 m). The induction coil shall then be rotated by 90° in order to expose the EUT to the test field with different orientations.

## Test Data and Setup Photo

### Environmental Conditions

<b>Temperature:</b>	23 °C
<b>Relative Humidity:</b>	56%
<b>ATM Pressure:</b>	100.0 kPa

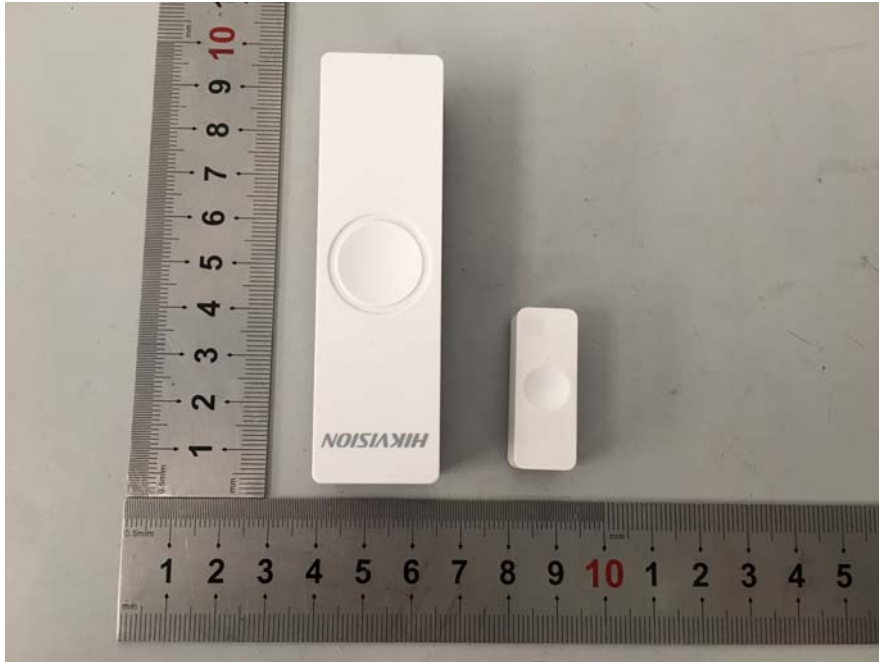
*The testing was performed by Lee Li on 2018-07-31.*

*Test mode: Alarm functions open*

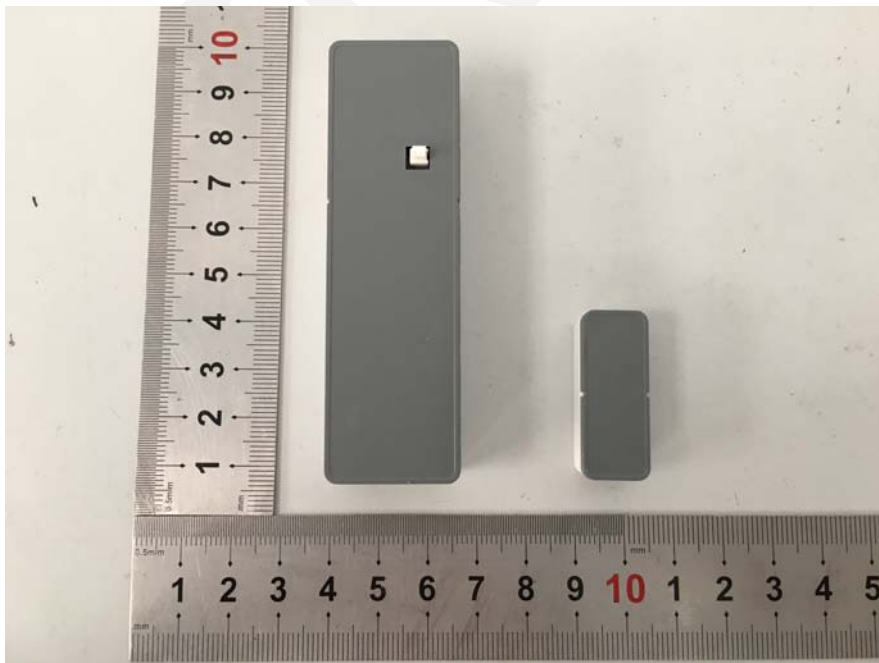
Level	Magnetic Field Strength A/M	X (Horizontal)	Y (Vertical)	Z (Special)
1	1	A	A	A
2	3	/	/	/
3	10	/	/	/
4	30	/	/	/
5	100	/	/	/
X	Special	/	/	/

## EXHIBIT B - EUT PHOTOGRAPHS

EUT-Top View

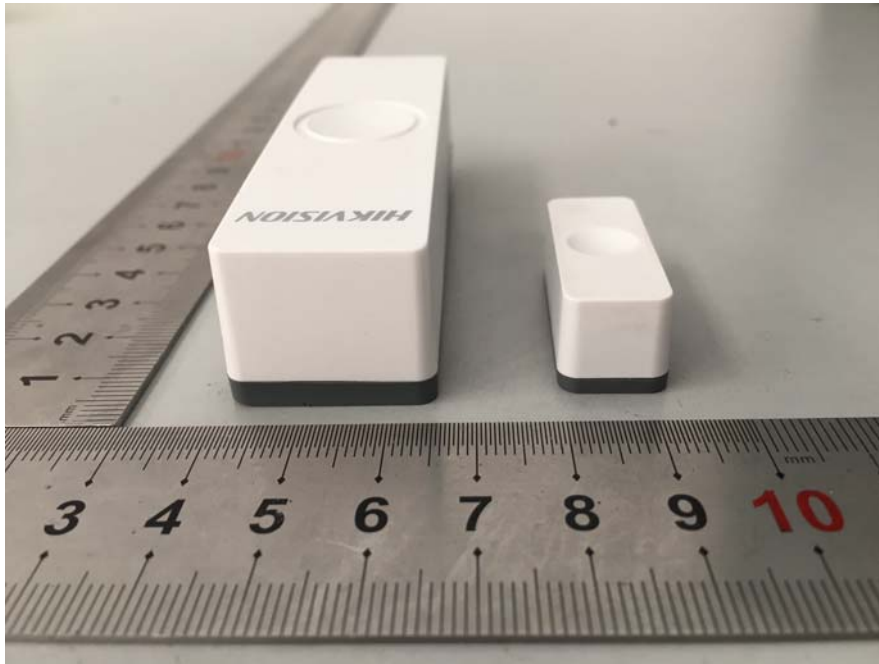


EUT-Bottom View

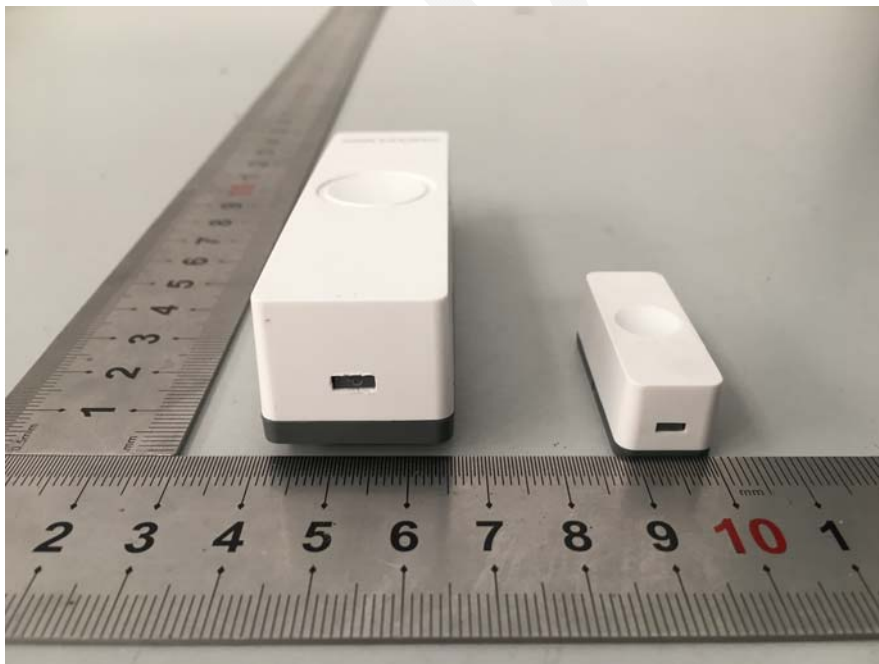




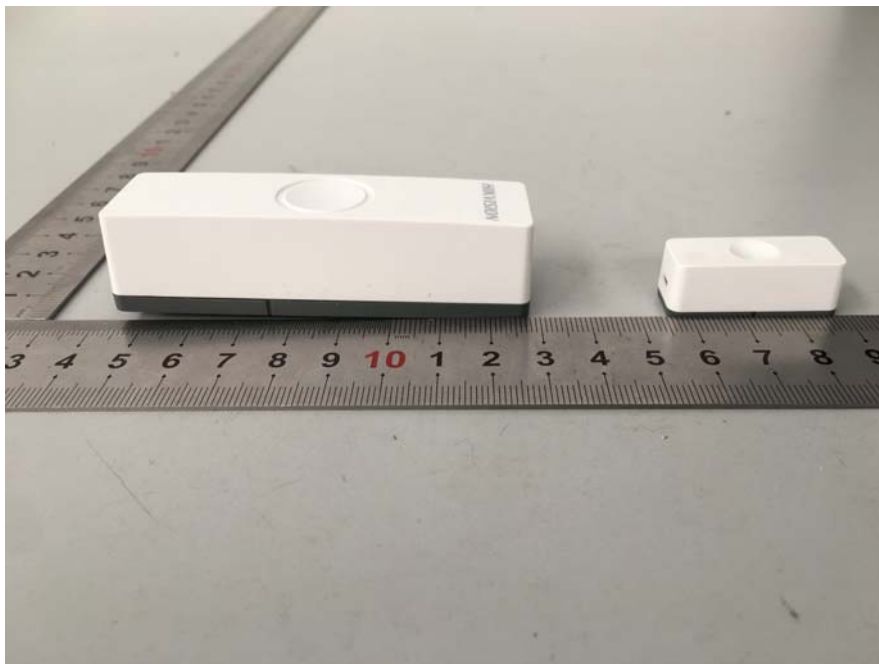
**EUT-Front View**



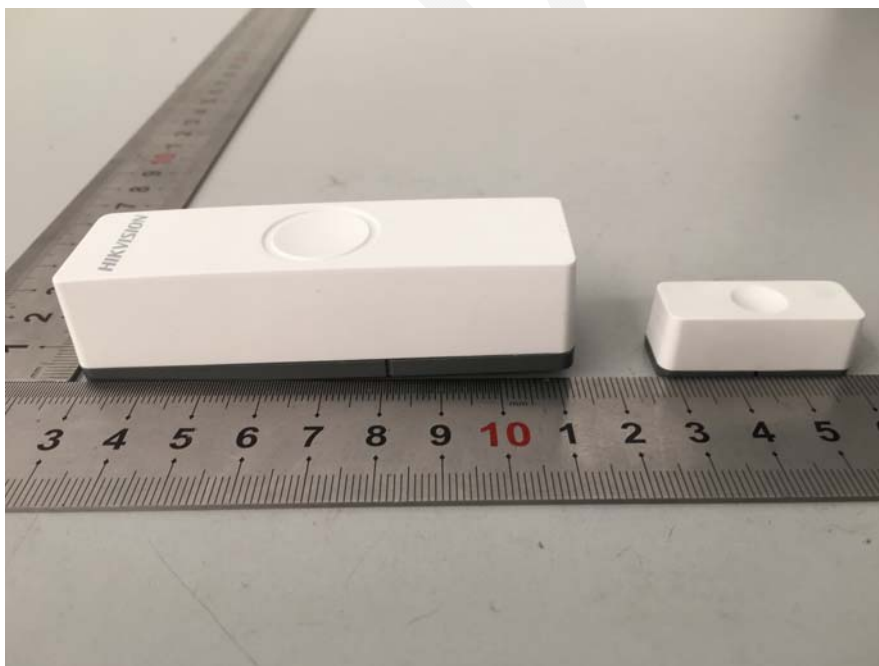
**EUT-Rear View**



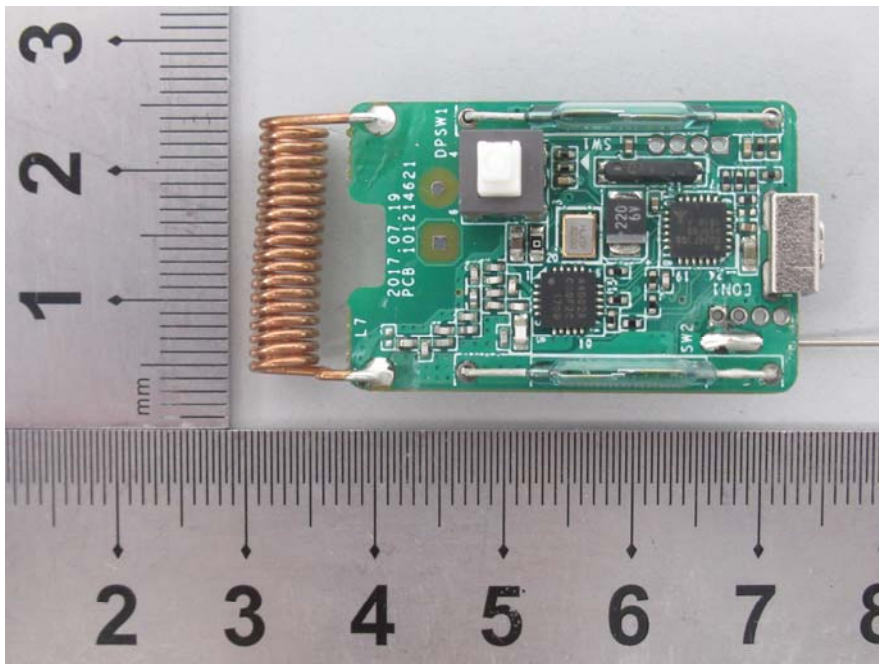
**EUT-Left View**



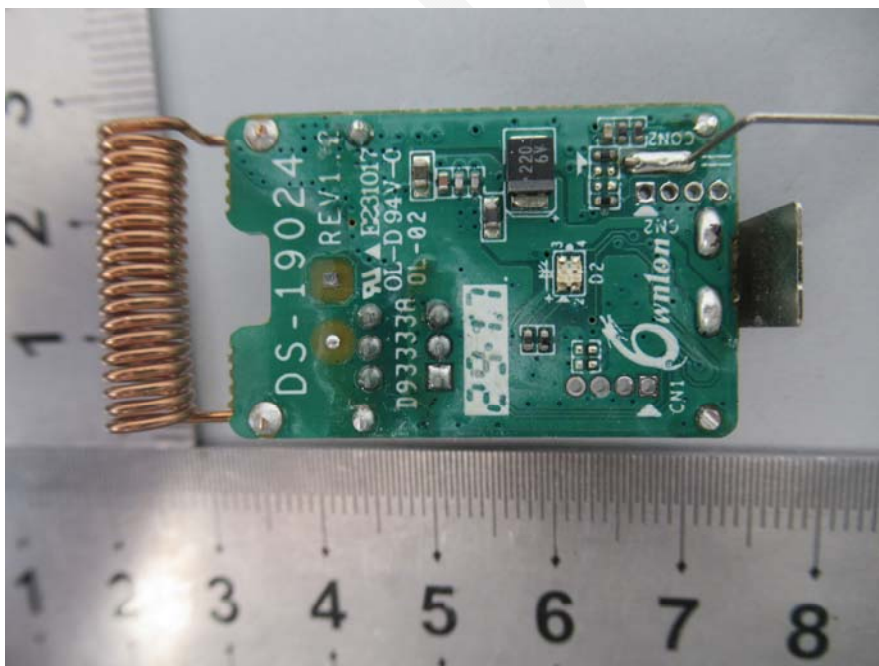
**EUT-Right View**



**EUT –PCB Top View**



**EUT –PCB Bottom View**



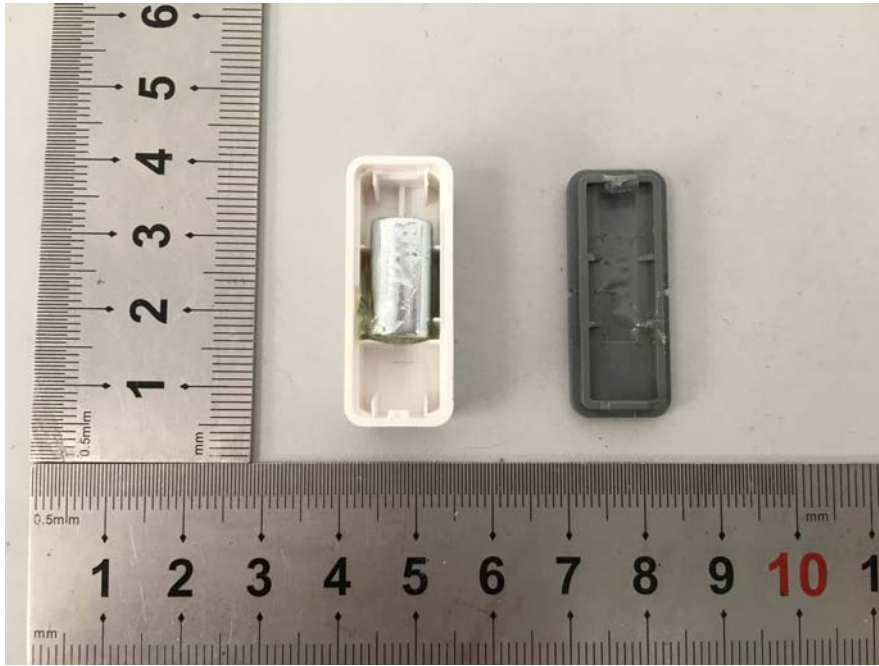
**EUT –Battery Top View**



**EUT –Battery Bottom View**



**EUT –Cover off View -1**



**EUT –Cover off View -2**





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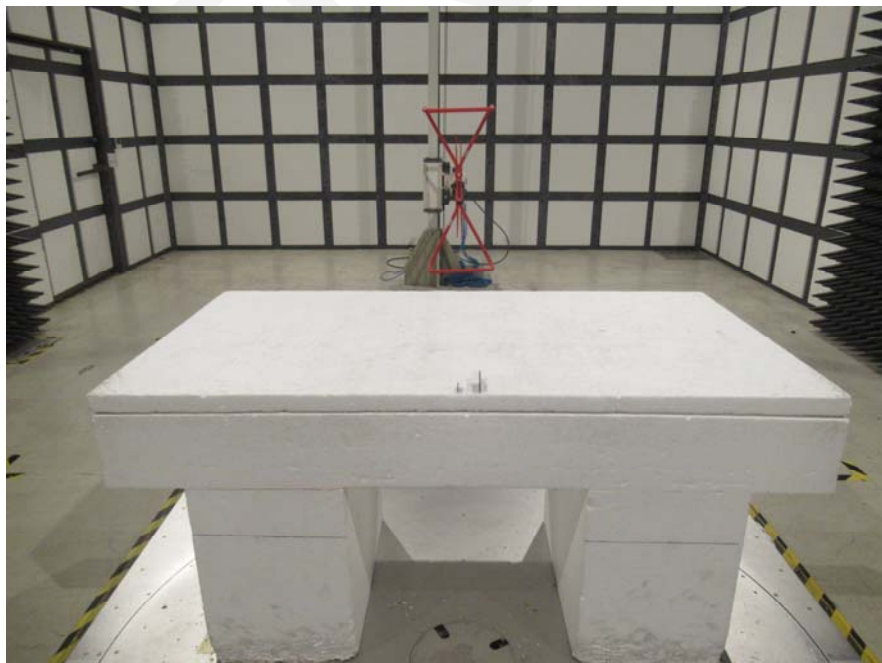
## **EXHIBIT B - TEST SETUP PHOTOGRAPHS**

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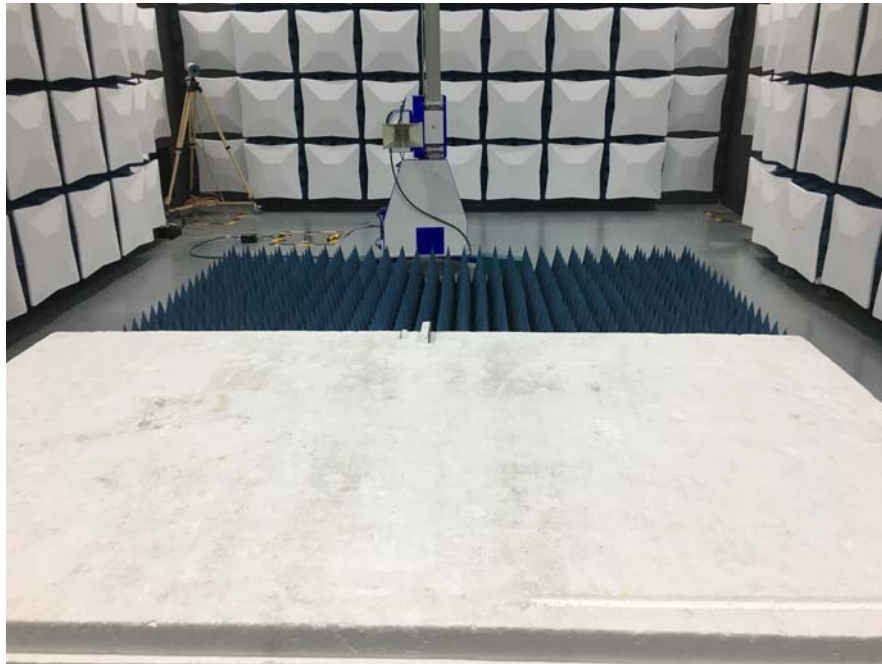
**Radiated Disturbances -Front Side (Below 1GHz)**



**Radiated Disturbances -Rear Side (Below 1GHz)**



**Radiated Disturbances -Front Side (Above 1GHz )**



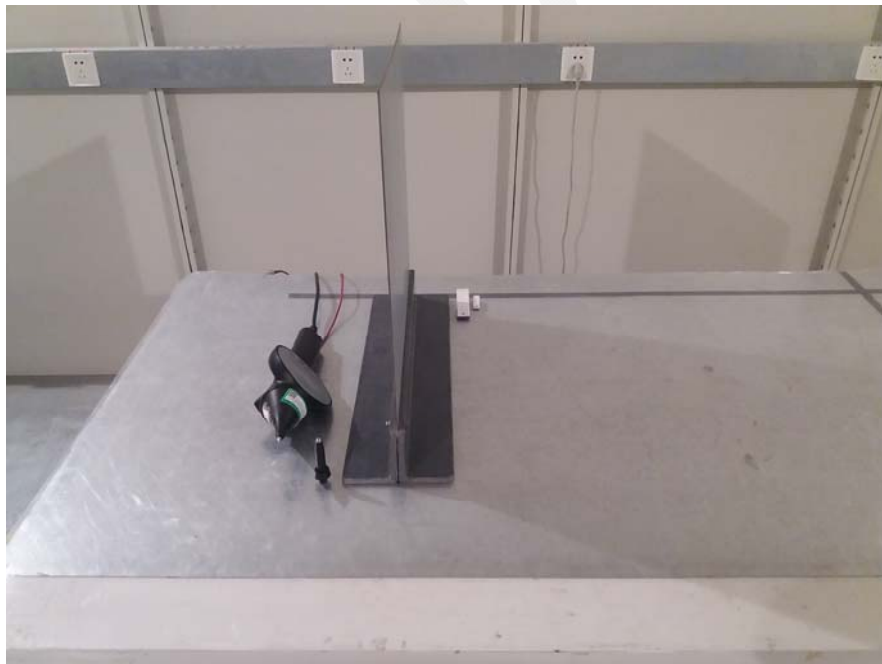
**Radiated Disturbances -Rear Side (Above 1GHz )**



**RS Test Setup Photo**



**ESD Test Setup Photo**





**PFMF Test Setup Photo**



**\*\*\*\*\* END OF REPORT \*\*\*\*\***