

# TEST REPORT

**Application No.:** SHEM1906013765CR  
**Applicant:** Hangzhou Hikvision Digital Technology Co., Ltd.  
**Address of Applicant:** No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China  
**Manufacturer:** Hangzhou Hikvision Digital Technology Co., Ltd.  
**Address of Manufacturer:** No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China  
**Factory:** 1. Hangzhou Hikvision Technology Co., Ltd.  
 2. Hangzhou Hikvision Electronics Co., Ltd.  
**Address of Factory:** 1. No.700, Dongliu Road, Binjiang District, Hangzhou City, Zhejiang, 310052, China  
 2. No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 310052, China.

**Equipment Under Test (EUT):**

**EUT Name:** LED Wireless Keypad  
**Model No.:** DS-PKA-WLM-868, DS-PKA-WLM-868UHK, DS-PKA-WLM-868CKV, DS-PKA-WLM-868UVS, DS-PKA-WLM-868KVO, DS-PKA-WLM-868HUN ☐  
 ☐ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

**Trade mark:** HIKVISION  
**Standard(s) :** AS/NZS CISPR 32:2015  
**Date of Receipt:** 2019-06-03  
**Date of Test:** 2019-06-05 to 2019-06-10  
**Date of Issue:** 2019-07-03

<b>Test Result:</b>	<b>Pass*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

*Parlam Zhan*

Parlam Zhan  
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.





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**Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**



Revision Record			
Version	Description	Date	Remark
00	Original	2019-07-03	/

<b>Authorized for issue by:</b>			
			
		_____ <b>Vincent Zhu / Project Engineer</b>	
			
		_____ <b>Eddy Zong / Reviewer</b>	

## 2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions (30MHz-1GHz)	AS/NZS CISPR 32:2015	AS/NZS CISPR 32:2015	Class B	Pass
Radiated Emissions (above 1GHz)	AS/NZS CISPR 32:2015	AS/NZS CISPR 32:2015	Class B	Pass

InternalSource	UpperFrequency
Below 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5 times the highest frequency or 6 GHz, whichever is less

### Declaration of EUT Family Grouping:

Note: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. Only the model DS-PKA-WLM-868 was tested since their differences were the model number and appearance.

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## 4 General Information

### 4.1 Details of E.U.T.

Power supply: DC 3V by 4\*battery

Test voltage: DC 3V

### 4.2 Description of Support Units

The EUT has been tested as an independent unit.

### 4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted Emission at mains port using AMN	±2.6dB (9kHz to 150kHz)
		±2.3dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	±1.9 dB (9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	±4.1 dB (150kHz to 30MHz)
4	Radiated Power	±3.0dB
5	Radiated emission	±4.4dB (30MHz-1GHz)
		±4.8dB (1GHz-6GHz)
		±5.2dB (6GHz-18GHz)

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

#### 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

#### 4.5 Test Facility

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

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **NVLAP (Certificate No. 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Certificate No. 201034-0.

- **FCC –Designation Number: CN5033**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

Designation Number: CN5033. Test Firm Registration Number: 479755.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

IC Registration No.: 8617A-1. CAB identifier: CN0020.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

#### 4.6 Deviation from Standards

None

#### 4.7 Abnormalities from Standard Conditions

None

#### 4.8 Monitoring of EUT for All Immunity Test

Visual: Working status of EUT

## 5 Equipment List

<b>Radiated Emissions (30MHz-1GHz)</b>					
<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Inventory No</b>	<b>Cal Date</b>	<b>Cal Due Date</b>
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2018-12-20	2019-12-19
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2017-02-28	2020-02-27
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2017-07-22	2020-07-21
Low Amplifier	CLAVIIO	BDLNA-0001-412010	SHEM164-1	2018-08-13	2019-08-12

<b>Radiated Emissions (above 1GHz)</b>					
<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Inventory No</b>	<b>Cal Date</b>	<b>Cal Due Date</b>
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2018-12-20	2019-12-19
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Double ridged broadband horn ANTENNA	SCHWARZBECK	BBHA9120D	SHEM050-1	2017-01-14	2020-01-13
High-amplifier	SCHWARZBECK	SCU-F0118-G40-BZ4-CS	SHEM050-2	2018-12-20	2019-12-19
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2017-07-22	2020-07-21
High Amplifier	CLAVIIO	BDLNA-0118-352810	SHEM165-1	2018-08-13	2019-08-12

<b>General used equipment</b>					
<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Inventory No</b>	<b>Cal Date</b>	<b>Cal Due Date</b>
Digital pressure meter	YONGZHI	DYM3-01	SHEM082-1	2018-01-25	2021-01-24
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-1~6	2018-08-31	2019-08-30
Digital Multimeter	FLUKE	17B	SHEM043-3	2018-09-03	2019-09-02
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	316	SHEM001-1	2018-12-20	2019-12-19

## 6 Emission Test Results

### 6.1 Radiated Emissions (30MHz-1GHz)

Test Requirement:	AS/NZS CISPR 32:2015
Test Method:	AS/NZS CISPR 32:2015
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Limit:	
30MHz-230MHz	40 dB( $\mu$ V/m) quasi-peak
230MHz-1GHz	47 dB( $\mu$ V/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

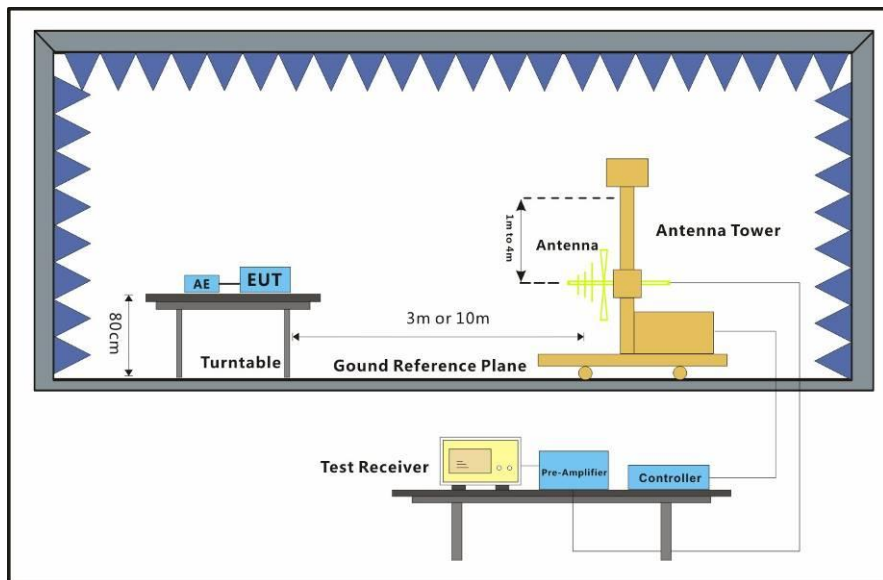
#### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C      Humidity: 50 % RH      Atmospheric Pressure: 1020 mbar

Test mode      a: Alarm mode\_ Establish communication between EUT and HUB via wireless function, and then keep EUT in monitoring mode.

#### 6.1.2 Test Setup Diagram

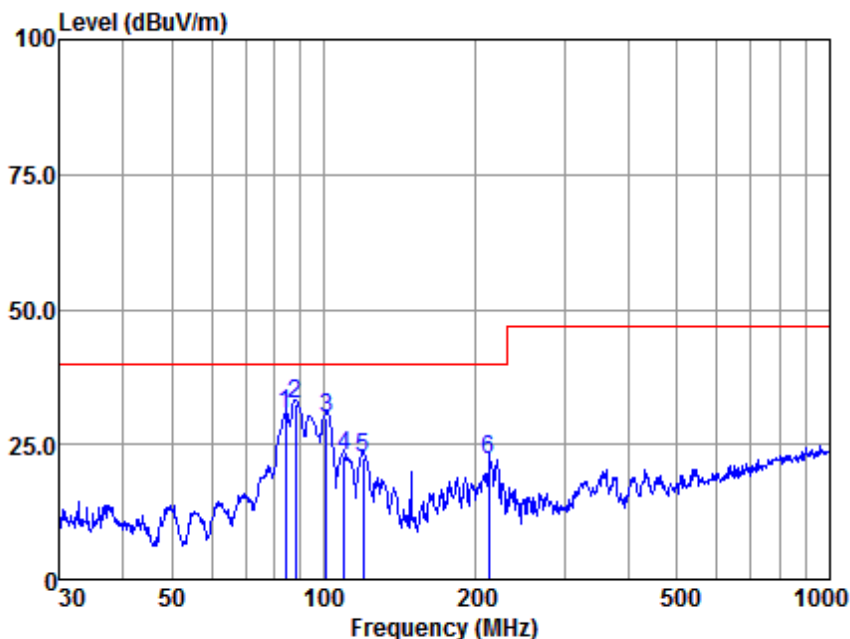


#### 6.1.3 Measurement Data

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



Mode:a; Polarization:Horizontal

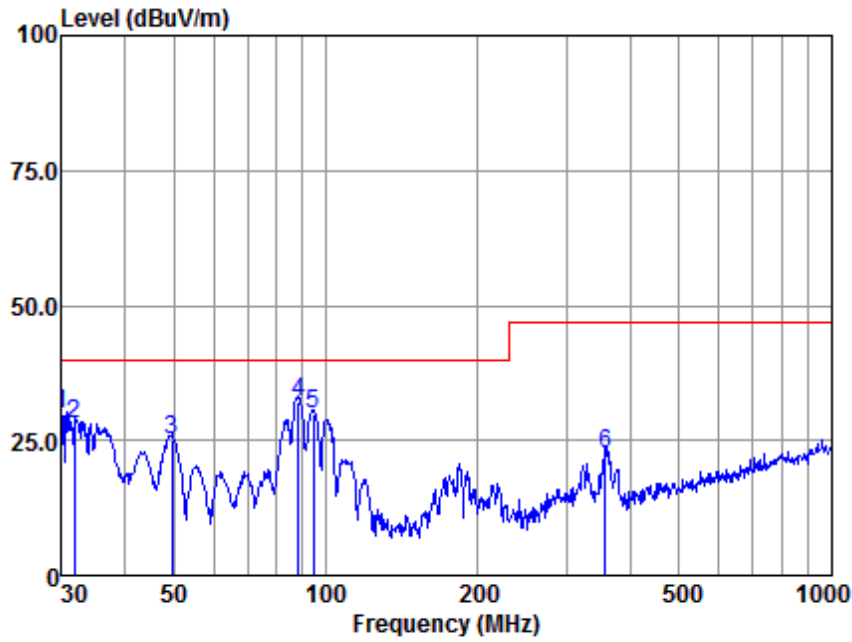


Antenna Polarity :HORIZONTAL  
 EUT/Project :3764CR  
 Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	84.110	64.06	8.04	0.86	42.28	30.68	40.00	-9.32	QP
2	87.725	65.64	8.08	0.94	42.29	32.37	40.00	-7.63	QP
3	100.934	61.54	9.51	1.13	42.32	29.86	40.00	-10.14	QP
4	109.796	54.36	9.60	1.21	42.30	22.87	40.00	-17.13	QP
5	119.856	53.46	10.00	1.33	42.28	22.51	40.00	-17.49	QP
6	212.270	52.57	9.96	1.86	42.16	22.23	40.00	-17.77	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL  
EUT/Project :3764CR  
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.000	56.50	15.30	0.44	42.38	29.86	40.00	-10.14	QP
2	31.843	54.43	15.51	0.45	42.37	28.02	40.00	-11.98	QP
3	49.533	56.23	10.83	0.47	42.33	25.20	40.00	-14.80	QP
4	88.342	65.31	8.08	0.97	42.29	32.07	40.00	-7.93	QP
5	94.428	62.25	8.74	1.06	42.30	29.75	40.00	-10.25	QP
6	357.929	47.17	14.36	3.00	41.94	22.59	47.00	-24.41	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

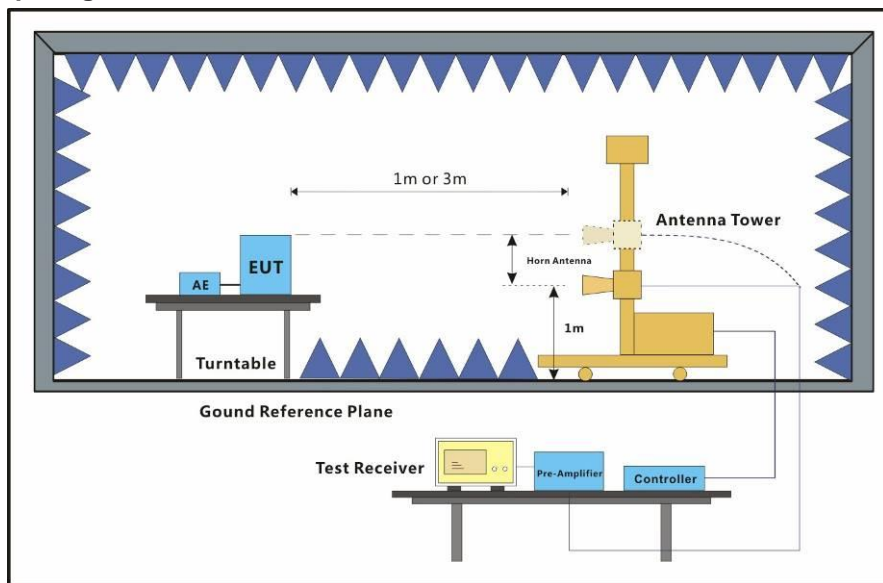
## 6.2 Radiated Emissions (above 1GHz)

Test Requirement:	AS/NZS CISPR 32:2015
Test Method:	AS/NZS CISPR 32:2015
Frequency Range:	Above 1GHz
Measurement Distance:	3m
Limit:	
1GHz-3GHz	70 dB( $\mu$ V/m) peak, 50 dB( $\mu$ V/m) average
3GHz-6GHz	74 dB( $\mu$ V/m) peak, 54dB( $\mu$ V/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 1000M to 6000MHz

### 6.2.1 E.U.T. Operation

Operating Environment:			
Temperature:	22 °C	Humidity:	50 % RH
		Atmospheric Pressure:	1020 mbar
Test mode	a:Alarm mode_Establish communication between EUT and HUB via wireless function, and then keep EUT in monitoring mode.		

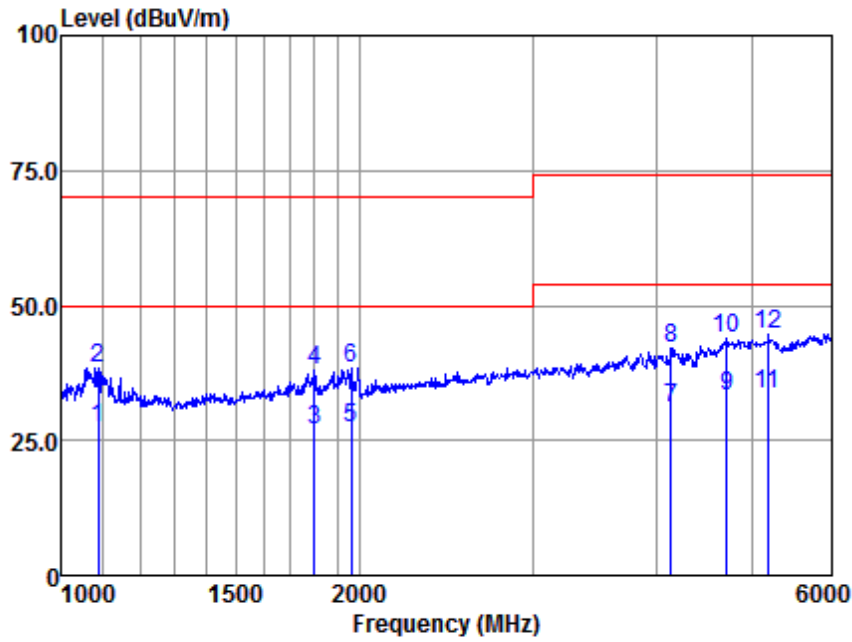
### 6.2.2 Test Setup Diagram



### 6.2.3 Measurement Data

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

Mode:a; Polarization:Horizontal

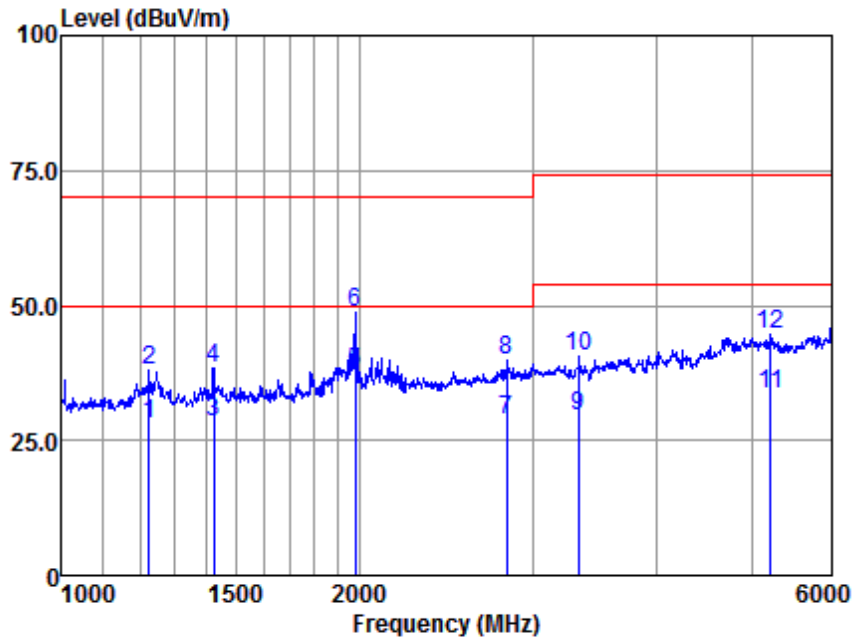


Antenna Polarity :HORIZONTAL  
EUT/Project :3764CR  
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1089.811	40.68	24.34	4.72	42.48	27.26	50.00	-22.74	Average
2	1089.811	51.87	24.34	4.72	42.48	38.45	70.00	-31.55	Peak
3	1803.067	37.34	25.71	6.45	42.39	27.11	50.00	-22.89	Average
4	1803.067	48.31	25.71	6.45	42.39	38.08	70.00	-31.92	Peak
5	1965.002	37.06	25.95	6.56	42.38	27.19	50.00	-22.81	Average
6	1965.002	48.24	25.95	6.56	42.38	38.37	70.00	-31.63	Peak
7	4133.289	32.06	29.95	11.49	42.43	31.07	54.00	-22.93	Average
8	4133.289	43.13	29.95	11.49	42.43	42.14	74.00	-31.86	Peak
9	4702.434	31.55	31.03	13.10	42.48	33.20	54.00	-20.80	Average
10	4702.434	42.42	31.03	13.10	42.48	44.07	74.00	-29.93	Peak
11	5180.156	31.76	31.71	12.59	42.53	33.53	54.00	-20.47	Average
12	5180.156	42.73	31.71	12.59	42.53	44.50	74.00	-29.50	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL  
EUT/Project :3764CR  
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1226.618	40.61	24.66	5.25	42.46	28.06	50.00	-21.94	Average
2	1226.618	50.73	24.66	5.25	42.46	38.18	70.00	-31.82	Peak
3	1425.850	40.16	25.07	5.61	42.44	28.40	50.00	-21.60	Average
4	1425.850	50.26	25.07	5.61	42.44	38.50	70.00	-31.50	Peak
5	1979.136	47.35	25.97	6.69	42.38	37.63	50.00	-12.37	Average
6	1979.136	58.27	25.97	6.69	42.38	48.55	70.00	-21.45	Peak
7	2816.900	34.78	28.12	8.27	42.31	28.86	50.00	-21.14	Average
8	2816.900	45.71	28.12	8.27	42.31	39.79	70.00	-30.21	Peak
9	3333.632	33.95	28.71	9.30	42.34	29.62	54.00	-24.38	Average
10	3333.632	44.83	28.71	9.30	42.34	40.50	74.00	-33.50	Peak
11	5217.416	31.85	31.74	12.60	42.54	33.65	54.00	-20.35	Average
12	5217.416	42.76	31.74	12.60	42.54	44.56	74.00	-29.44	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

## 7 Photographs

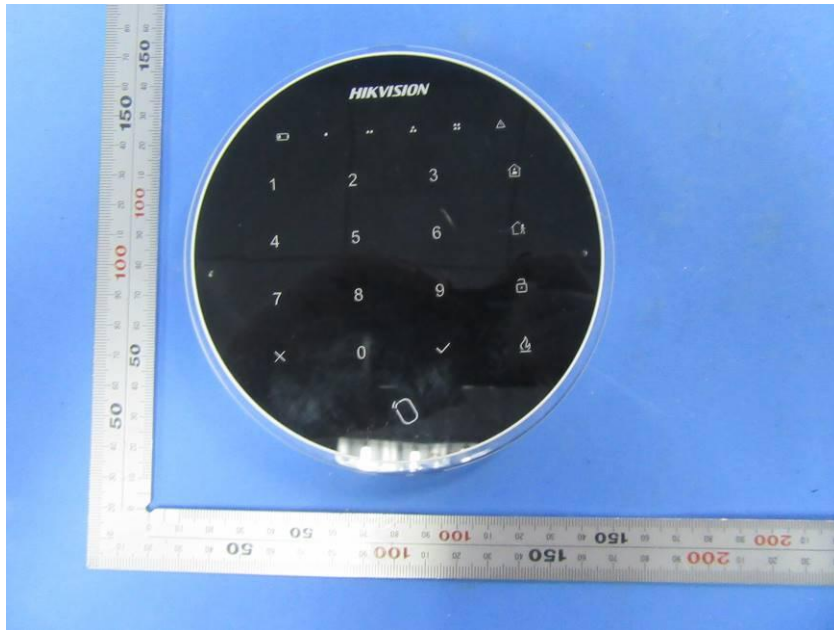
### 7.1 Radiated Emissions (30MHz-1GHz) Test Setup

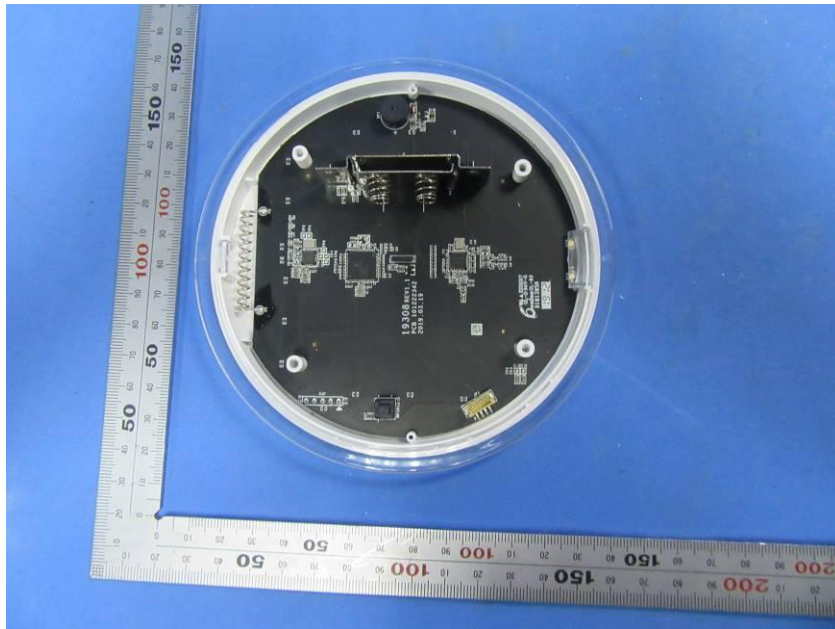


### 7.2 Radiated Emissions (above 1GHz) Test Setup

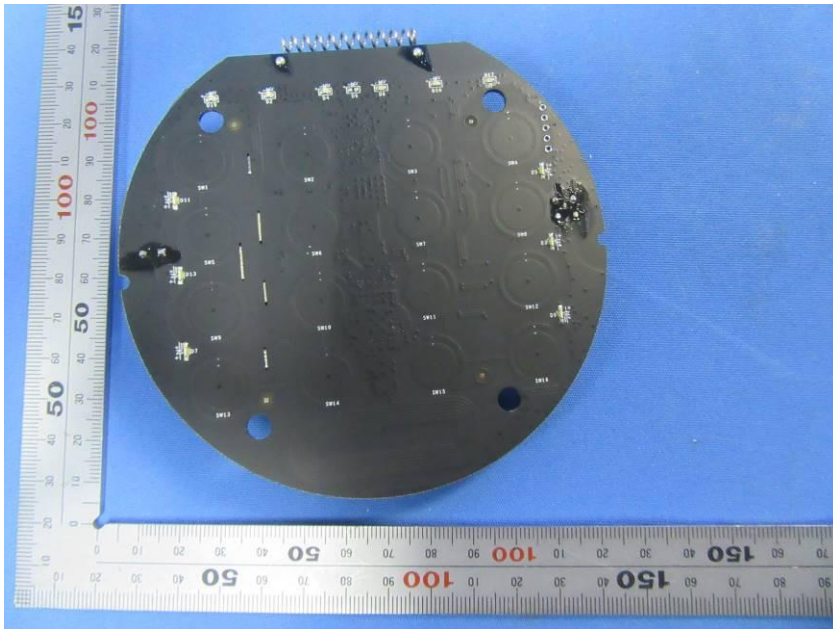
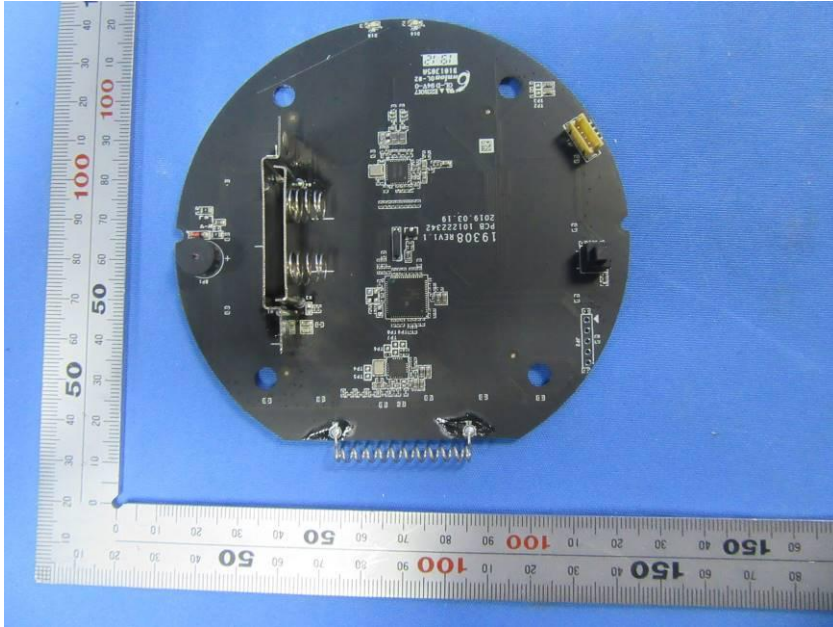


### 7.3 EUT Constructional Details (EUT Photos)









- End of the Report -