

<b>Prüfbericht-Nr.:</b> <i>Test report no.:</i>	<b>NN204TLC 001</b>	<b>Auftrags-Nr.:</b> <i>Order no.:</i>	168283743	Seite 1 von 18 <i>Page 1 of 18</i>
<b>Kunden-Referenz-Nr.:</b> <i>Client reference no.:</i>	N/A	<b>Auftragsdatum:</b> <i>Order date:</i>	2020-09-24	
<b>Auftraggeber:</b> <i>Client:</i>	<b>Hangzhou Hikvision Digital Technology Co.,Ltd.</b> No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China			
<b>Prüfgegenstand:</b> <i>Test item:</i>	Wireless Magnet Shock Detector			
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type no.:</i>	DS-PDMCK-EG2-WB, DS-PDMCK-EG2-WBUHK, DS-PDMCK-EG2-WBCKV, DS-PDMCK-EG2-WBUVS, DS-PDMCK-EG2-WBKVO, DS-PDMCK-EG2-WBHUN			
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	FCC approval			
<b>Prüfgrundlage:</b> <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.231 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 2: Subpart J Section 2.1093			
<b>Wareneingangsdatum:</b> <i>Date of sample receipt:</i>	2020-09-25			
<b>Prüfmuster-Nr.:</b> <i>Test sample no.:</i>	A002908557-001 to 008			
<b>Prüfzeitraum:</b> <i>Testing period:</i>	2020-09-26 - 2020-10-19			
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
<b>Prüfergebnis*:</b> <i>Test result*:</i>	Pass			
<b>geprüft von:</b> <i>tested by:</i>	<u>Bell Hu</u>	<b>genehmigt von:</b> <i>authorized by:</i>	<u>Winnie Hou</u>	
<b>Datum:</b> <i>Date:</i>	Bell Hu	<b>Ausstellungsdatum:</b> <i>Issue date:</i>	2020-10-20	
<b>Stellung / Position</b>	Project Manager	<b>Stellung / Position</b>	Technical Certifier	
<b>Sonstiges / Other:</b> FCC ID: 2ADTD-D1343091				
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged:</i>		
<p>* Legende: 1 = sehr gut      2 = gut      3 = befriedigend      4 = ausreichend      5 = mangelhaft                  P(ass) = entspricht o.g. Prüfgrundlage(n)      F(ail) = entspricht nicht o.g. Prüfgrundlage(n)      N/A = nicht anwendbar      N/T = nicht getestet</p> <p>Legend: 1 = very good      2 = good      3 = satisfactory      4 = sufficient      5 = poor                  P(ass) = passed a.m. test specifications(s)      F(ail) = failed a.m. test specifications(s)      N/A = not applicable      N/T = not tested</p>				
<p><b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b>  <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				

V05

## ***Test Summary***

**5.1.1 ANTENNA REQUIREMENT**

*RESULT: Pass*

**5.1.2 DEACTIVATION OF THE TRANSMISSION**

*RESULT: Pass*

**5.1.3 20dB BANDWIDTH**

*RESULT: Pass*

**5.1.4 99% BANDWIDTH**

*RESULT: Pass*

**5.1.5 FIELD STRENGTH OF FUNDAMENTAL AND UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN**

*RESULT: Pass*

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**5.1.1 ANTENNA REQUIREMENT**

*RESULT: Pass*

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**5.1.4 99% BANDWIDTH**

*RESULT: Pass*

**5.1.5 FIELD STRENGTH OF FUNDAMENTAL AND UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN**

*RESULT: Pass*

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# 1 General Remarks

## 1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-Up

Appendix B: Test Results.

## 2 Test Sites

### 2.1 Test Facilities

**TÜV Rheinland (Shenzhen) Co., Ltd.**

362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

### 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

**TÜV Rheinland (Shenzhen) Co., Ltd.**

<b>Unwanted Emission Testing (TS9975)</b>				
<b>Equipment</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial No.</b>	<b>Cal. until</b>
EMI Test Receiver	R&S	ESR 7	102021	2021-08-11
Signal Analyzer	R&S	FSV 40	101439	2021-08-10
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2021-08-10
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2021-08-10
Amplifier	R&S	SCU-18F	180070	2021-08-10
Amplifier	R&S	SCU40A	100475	2021-09-10
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2022-08-08
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2022-08-08
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2022-08-08
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2022-09-13
Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18313	2021-09-02
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2021-07-06

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Item	Extended Uncertainty
Conducted Emission	± 2.68 dB
Radiated Emission (30-1000MHz)	Field strength (dBµV/m) ± 5.16 dB
Radiated Emission (above 1000MHz)	Field strength (dBµV/m) ± 2.22 dB
Radio Spectrum	± 4.51 dB

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

## 3 General Product Information

### 3.1 Product Function and Intended Use

The EUT is a Wireless Magnet Shock Detector.

According to the declaration of the applicant, the electrical circuit design, PCB layout and construction Design are identical for all models, only the model No. are different.

For details refer to the User Manual, Technical Description and Circuit Diagram.

### 3.2 Ratings and System Details

**Table 2: Technical Specification of EUT**

General Information of EUT	Value
Kind of Equipment	Wireless Magnet Shock Detector
Type Designation	DS-PDMCK-EG2-WB, DS-PDMCK-EG2-WBUHK, DS-PDMCK-EG2-WBCKV, DS-PDMCK-EG2-WBUVS, DS-PDMCK-EG2-WBKVO, DS-PDMCK-EG2-WBHUN
FCC ID	2ADTD-D1343091
Extreme Temperature Range	-10°C - +55°C
Operating Voltage	DC 3V (Battery)
Testing Voltage	Fully charged battery
Technical Specification	
Frequency Range	433.1 MHz
Type of Modulation	FSK
Channel Number	1 channel
Antenna Type	Integral Antenna
Antenna Gain	-10.7 dBi



### **3.3 Independent Operation Modes**

The basic operation modes are:

- A. On, Transmitting mode
- B. Off

### **3.4 Noise Generating and Noise Suppressing Parts**

Refer to Circuit Diagram for further details.

### **3.5 Submitted Documents**

- Application Form

## 4 Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

**Radio Spectrum:** The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5&6. All testing were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model DS-PDMCK-EG2-WB in this report.

### 4.3 Special Accessories and Auxiliary Equipment

Table 3: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
-	-	-	-	-

### 4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

## 4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

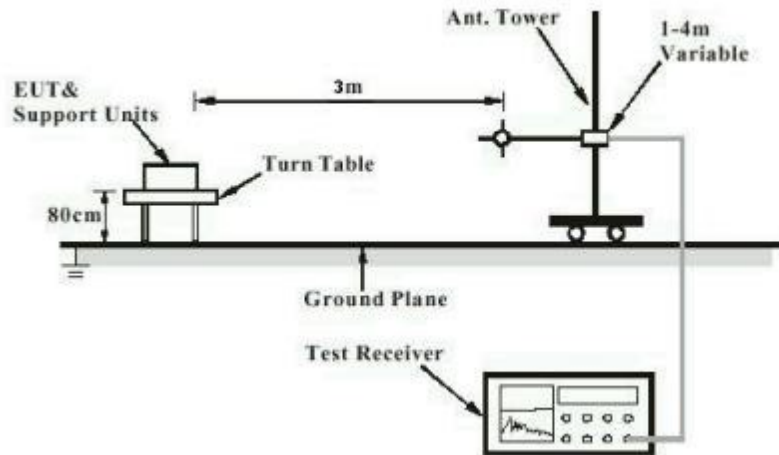
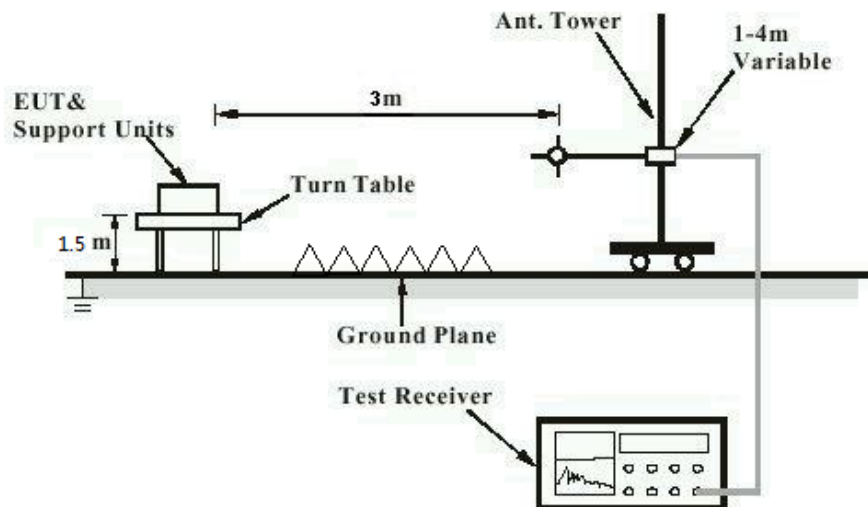
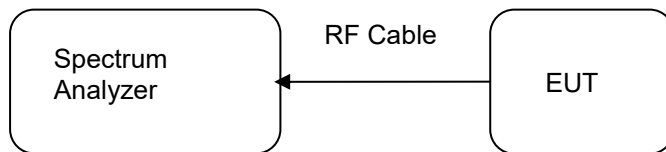


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)



**Diagram of Measurement Equipment Configuration for Transmitter Measurement**



## 5 Test Results

### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Antenna Requirement

**RESULT:****Pass****Test Specification**

Test standard	:	Part 15.203
	:	RSS-Gen Clause 6.7
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an integral antenna, the directional gain of antenna is -10.7 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

## 5.1.2 Deactivation of the Transmission

**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.31(a)(1) RSS-210 Issue 9 Table B
Basic standard	: ANSI C63.10: 2013
Limit	: A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of after released.
Kind of test site	: Shielded Room

**Test Setup**

Date of testing	: 2020-10-19
Input voltage	: Fully charged battery
Operation mode	: A
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

### 5.1.3 20dB Bandwidth

**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.231(c) RSS-Gen Issue 5
Basic standard	: ANSI C63.10: 2013
Limit	: FCC Part 15.231(c)
Kind of test site	: Shielded Room

**Test Setup**

Date of testing	: 2020-10-16
Input voltage	: Fully charged battery
Operation mode	: A
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

### 5.1.4 99% Bandwidth

**RESULT:****Pass****Test Specification**

Test standard : RSS-Gen Clause 6.6  
Basic standard : ANSI C63.10: 2013  
Kind of test site : Shielded Room

**Test Setup**

Date of testing : 2020-10-16  
Input voltage : Fully charged battery  
Operation mode : A  
Ambient temperature : 25 °C  
Relative humidity : 56 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.



### 5.1.5 Field strength of fundamental and Unwanted Emissions in the Spurious Domain

**RESULT:****Pass****Test Specification**

Test standard	FCC Part 15.231(b) (1)(2)(3) FCC Part 15.205 FCC Part 15.209 RSS-Gen Issue 5 RSS-210 Issue 9
Basic standard	ANSI C63.10: 2013
Limits	FCC Part 15.231(b)
Kind of test site	3m Semi-anechoic Chamber

**Test Setup**

Date of testing	2020-10-19
Input voltage	Fully charged battery
Operation mode	A
Ambient temperature	Refer to test result
Relative humidity	Refer to test result
Atmospheric pressure	101 kPa

For the measurement records, refer to the appendix B.

## 6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

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