

1-4F, Huafeng Science Park, Xin'an Sixth Road, 82<sup>th</sup> District, Bao'an,

Shenzhen, China.

Telephone: +86-755-29451282, Fax: +86-755-22639141

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# **TEST REPORT**

Applicant: Shenzhen Dinsafe Intelligence Technology Co., Ltd

Address of Applicant: Room 721, Zone A Of Hua Mei Ju, Xin Hu Rd., Baoan Dist.,

Shenzhen, China

**Equipment Under Test (EUT)** 

Product Name: MATIGARD SMART ALARM SYSTEM

Brand Name: MatiGard

Model No.: G-1, G2-1, G3-1, Gfence, Mini-1, AirX, I, X-1, X2-1

Test Model No.: AirX

FCC ID: 2ADXQMTGAIR

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart B:2013

**Date of sample receipt:** February 27, 2015

**Date of Test:** February 27, 2015 To March 05, 2015

**Date of report issue:** March 05, 2015

Test Result: PASS \*

Authorized Signature:

Kevin Yu Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the EBO product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. 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 EBO International Electrical Approvals or testing done by EBO International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by EBO International Electrical Approvals in writing.

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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



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#### 2 Version

Version No.	Date	Description
00	March 05, 2015	Original

Prepared By:	Jason	Date:	March 05, 2015
	Project Engineer		
Check By:	Canyo	Date:	March 05, 2015
	Reviewer		



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# 4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	PASS
Radiated Emissions	Part15.109	PASS

PASS: The EUT complies with the essential requirements in the standard.

N/A: not applicable.



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### 5 General Information

#### 5.1 Client Information

Applicant:	SHENZHEN DINSAFE INTELLIGENCE TECHNOLOGY CO., LTD		
Address of Applicant:	Room 721, Zone A Of Hua Mei Ju, Xin Hu Rd., Baoan Dist., Shenzhen, China		
Manufacturer:	SHENZHEN DINSAFE INTELLIGENCE TECHNOLOGY CO., LTD		
Address of Manufacturer:	Room 721, Zone A Of Hua Mei Ju, Xin Hu Rd., Baoan Dist., Shenzhen, China		
Factory:	SHENZHEN DINSAFE INTELLIGENCE TECHNOLOGY CO., LTD		
Address of Factory:	Room 721, Zone A Of Hua Mei Ju, Xin Hu Rd., Baoan Dist., Shenzhen, China		

### 5.2 General Description of EUT

Product Name:	MATIGARD SMART ALARM SYSTEM
Brand Name:	MatiGard
Model No.:	G-1, G2-1, G3-1, Gfence, Mini-1, AirX, I, X-1, X2-1
Test Model No.:	AirX
Power supply:	RX: AC Adapter: Input:100-240V~,50/60Hz,0.35A, Output:5V, 2A

#### 5.3 Test mode

Receiving mode	Keep the EUT in Receiving mode.
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#### 5.4 Test Facility

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

#### • CNAS —Registration No.: CNAS L5775

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 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.

#### • FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully

described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter

from the FCC is maintained in files. Registration 600491, June 28, 2013.

#### • Industry Canada (IC) —Registration No.: 9079A-2

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

#### 5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

#### 5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
SHENZHEN DINSAFE INTELLIGENCE TECHNOLOGY CO., LTD	Wireless Thermometer	G	N/A	FCC ID: 2ADXQMTGACS

#### 5.7 Deviation from Standards

None.

### 5.8 Abnormalities from Standard Conditions

None.

#### 5.9 Other Information Requested by the Customer

None.



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#### 6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 29 2014	Mar. 28 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	July 01 2014	June 30 2015
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	July 01 2014	June 30 2015
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	June 27 2014	June 26 2015
6	RF Amplifier	HP	8347A	GTS204	July 01 2014	June 30 2015
7	Preamplifier	HP	8349B	GTS206	July 01 2014	June 30 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015
11	Thermo meter	N/A	N/A	GTS256	Mar. 29 2014	Mar. 28 2015

Con	Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	July 01 2014	June 30 2015	
2	<b>EMI Test Receiver</b>	Rohde & Schwarz	ESCS30	GTS223	July 01 2014	June 30 2015	
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	July 01 2014	June 30 2015	
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	July 01 2014	June 30 2015	
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	July 01 2014	June 30 2015	
6	Coaxial Cable	GTS	N/A	GTS227	July 01 2014	June 30 2015	
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	

Gen	General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 07 2015	



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### 7 Test Results and Measurement Data

#### 7.1 Conducted Emissions

 1 Conducted Emissions						
Test Requirement:	FCC Part15 B Section 15.107					
Test Method:	ANSI C63.4:2009					
Test Frequency Range:	150KHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto				
Limit:	Fraguency range (MHz)	Limit (c	dBuV)			
	Frequency range (MHz)  Quasi-peak  Average					
	0.15-0.5	66 to 56*	56 to 46*			
	0.5-5	56	46			
	5-30	60	50			
	* Decreases with the logarithn	n of the frequency.				
Test setup:	Reference Plane					
	AUX Equipment  Remark  E.U.T  Remark  E.U.T: Equipment Under Test  LISN: Line Impedence Stabilization Network  Test table height=0.8m					
Test procedure:	<ol> <li>The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2009 on conducted measurement.</li> </ol>					
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.3 for details.					
Test results:	Pass					
	•					

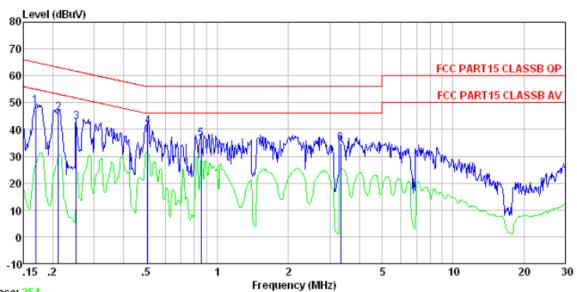


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#### **Measurement Data**





Trace: 254

Site

: Shielded room

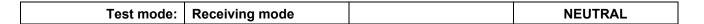
Condition : FCC PART15 CLASSB QP LISN-2013 LINE

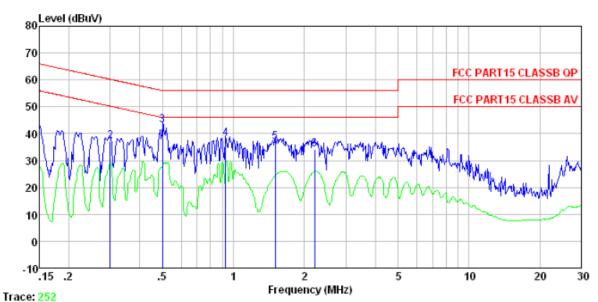
	Freq		LISN Factor					Remark
	MHz	dBu₹	dB	dB	dBuV	dBuV	dB	
1 2 3 4 5 6	0. 212 0. 252 0. 507 0. 853		0.13 0.12 0.12 0.14	0.11 0.11	46. 29 42. 90 41. 23 36. 38	63.14 61.69 56.00 56.00	-16.85 -18.79 -14.77 -19.62	QP QP QP QP



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Site

: Shielded room

Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL

	Freq		Factor			Limit	Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1 2 3			0.06		37.21	60.24		QP
3 4 5	0.928	43.00 38.00 36.51		0.11 0.13 0.14	38.20	56.00	-17.80	QP
6	2.213	33.88	0.09	0.15	34.12	56.00	-21.88	QP

#### Notes:

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss
- 4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.



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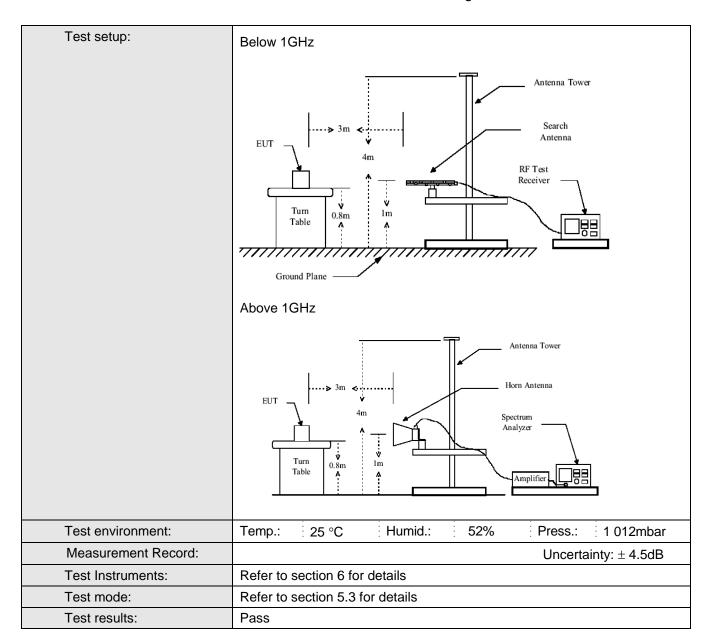
### 7.2 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109							
Test Method:	ANSI C63.4:2009							
Test Frequency Range:	30MHz to 2GHz							
Test site:	Measurement Dis	Measurement Distance: 3m (Semi-Anechoic Chamber)						
Receiver setup:	measurement since on (com / modificio chambor)							
·	Frequency	Detector		VBW	Remark			
	30MHz-1GHz	· ·		300kHz	Quasi-peak Value			
	Above 1GHz	Peak	1MHz	3MHz	Peak Value			
		Peak	1MHz 10Hz		Average Value			
Limit:								
Liffiit.	Frequen	icv	Limit (dBuV	/m @3m)	Remark			
	30MHz-88	-	40.0		Quasi-peak Value			
	88MHz-216		43.5		Quasi-peak Value			
	216MHz-96		46.0		Quasi-peak Value			
	960MHz-1		54.00		Quasi-peak Value			
			54.00		Average Value			
	Above 10	SHz	74.0		Peak Value			
	L		74.00		1 oak valdo			
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.							
	<ol> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenwer.</li> <li>The antenna height is varied from one meter to four meters above ground to determine the maximum value of the field strength. Be horizontal and vertical polarizations of the antenna are set to maximum easurement.</li> </ol>							
	<ol> <li>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> </ol>							



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#### Note:

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

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

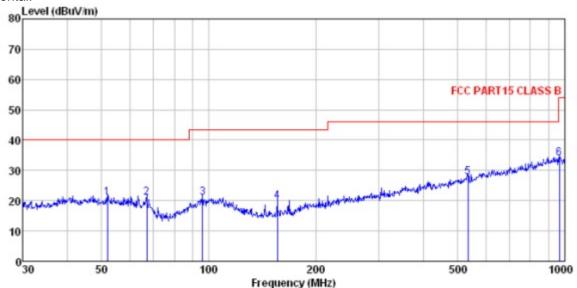


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#### **Measurement Data**

Below 1GHz Horizontal:



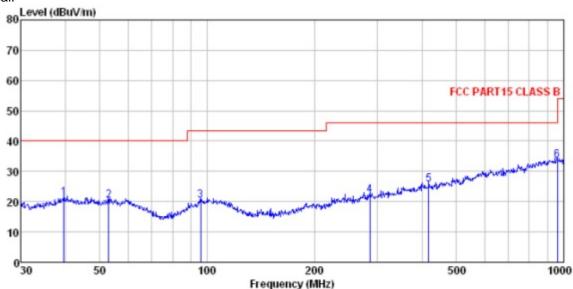
: 3m chamber : FCC PART15 CLASS B 3m\_VULB9163-2013M\_HORIZONTAL Site Condition ReadAntenna Cable Preamp Limit Over Loss Factor Level Limit Remark Freq Level Factor Line ₫B MHz dBu∀ dB/m dB dBuV/n dBuV/n dB 40.00 -18.94 QP 40.00 -18.92 QP 51.843 37.07 15.16 0.79 31.96 21.06 2 31.90 21.08 66.967 40.17 11.89 0.92 20.96 96.099 36.65 14.90 1.16 43.50 -22.54 QP 31.75 4 39.70 43.50 -23.69 QP 155.910 10.51 1.60 32.00 19.81 5 533.832 36.52 19.26 3.46 31.38 27.86 46.00 -18.14 QP 965.542 36.42 23.52 5.09 31.22 33.81 54.00 -20.19 QP



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#### Vertical:



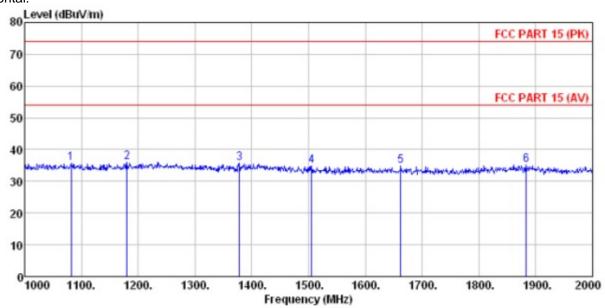
: 3m chamber : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL ReadAntenna Cable Preamp Limit O Site Condition Over Freq Level Factor Loss Factor Level Line Limit Remark dB MHz dBu∀ dB/m dB dBuV/m dBuV/m ₫B 32.06 31.95 40.00 -18.89 QP 39.715 37.02 0.66 15.49 21.11 2 52.945 36.50 15.11 0.80 20.46 40.00 -19.54 QP 36.17 37.30 95.762 31.74 20.49 22.19 3 14.90 1.16 43.50 -23.01 QP 2.29 4 5 285.978 32.18 46.00 -23.81 QP 14.78 417.641 46.00 -20.30 QP 46.00 -12.21 QP 25.70 17.43 37.17 31.83 958.794 5.08 36.44 23.49 31.22 33.79



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Above 1GHz Horizontal:



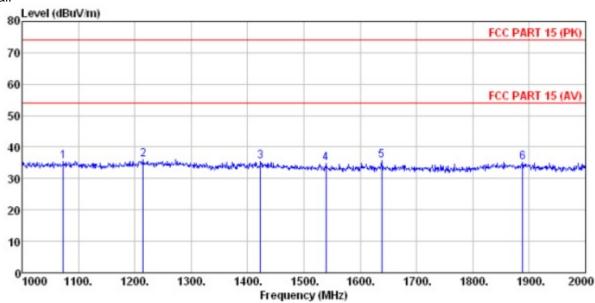
Site 3m chamber FCC PART 15 (PK) 3m BBHA9120D ANT (>1GHZ) HORIZONTAL Condition ReadAntenna Cable Preamp Limit Over Level Freq Level Factor Loss Factor Line Limit Remark dBuV ₫B dB dBuV/n dBuV/n MHz dB/m dB 1082.000 39.52 24.71 4.37 32.89 35.71 74.00 -38.29 Peak 74.00 -37.98 Peak 74.00 -38.40 Peak 2 33.07 36.02 1180.000 39.39 25.25 4.45 25.64 35.60 1378.000 38.75 4.60 33.39 1505.000 38.54 25.21 4.68 33.62 34.81 74.00 -39.19 Peak 74.00 -39.19 Peak 74.00 -38.98 Peak 1662.000 5 39.03 24.88 4.78 33.88 34.81 38.71 25.67 1883.000 4.90 34.26 35.02



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#### Vertical:



		3m chamber FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL ReadAntenna Cable Preamp Limit Over								
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark	
	MHz	dBu₹	dB/n	dB	dB	dBuV/m	dBuV/n	dB		
1 2	1073.000 1215.000		24.68 25.42	4.36	32.87 33.13	35.57 35.91		-38.43 -38.09		
2	1423.000	38.80	25.47		33.47	35.43	74.00	-38.57	Peak	
4	1539.000			4.71				-39.12		
5	1638.000				33.85					
6	1888.000	38.83	25.70	4.90	34.26	35.17	74.00	-38.83	Peak	

Remark: If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.



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# 8 Test Setup Photo

Refer to test setup photos.

### 9 EUT Constructional Details

Refer to EUT external and internal photos.