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No.: DM123686

**Applicant:** NIMA Labs

2121 Harrison Street, San Francisco, CA 94110, USA

**Description of Sample(s):** Submitted sample(s) said to be

Product: Portable Gluten Sensor Device

Model Number: 300-00015 Brand Name: NIMA

**Date Sample(s) Received:** 2016-05-18

**Date Tested:** 2016-05-23

**Investigation Requested:** FCC Part 15 Subpart B

**Conclusion(s):** The submitted product <u>COMPLIED</u> with the requirements of

Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this

Test Report.

**Remark**(s): ----



ElectroMagnetic Compatibility Department
For and on behalf of
STC (Dongguan) Company Limited



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### 1.0 General Details

# 1.1 Equipment Under Test [EUT] Description of Sample(s)

Product: Portable Gluten Sensor Device

Manufacturer: Healthcare Technology International Ltd.

Yin Yang Industrial Zone, Zhang Mu Tou, Dong Guan City

Brand Name: NIMA
Model Number: 300-00015

Rating: 5Vd.c. by USB port

### 1.1.1 Description of EUT Operation

The Equipment Under Test (EUT) is a Portable Gluten Sensor Device. During the test, the EUT was conducted under Charge mode/Test mode function to simulate the normal operating condition.

### 1.2 Date of Order

2016-05-18

### 1.3 Submitted Sample(s):

1 Sample

### 1.4 Test Duration

2016-05-23

### 1.5 Country of Origin

China

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### **2.0** Technical Details

## 2.1 Investigations Requested

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2015 and ANSI C63.4: 2009 for FCC Verification.

## 2.2 Test Standards and Results Summary Tables

EMISSION						
	Res	ults Summary				
Test Condition	Test Requirement	Test Method	Class /	Т	est Result	ţ
			Severity	Pass	Failed	N/A
Radiated Emissions	FCC 47CFR 15.109	ANSI C63.4:2009	Class B			
Conducted Emissions on AC, 0.15MHz to 30MHz	FCC 47CFR 15.107	ANSI C63.4:2009	Class B			

Note: N/A - Not Applicable



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#### 3.0 Test Results

#### 3.1 Emission

#### 3.1.1 Radiated Emissions (30 – 1000MHz)

Test Requirement: FCC 47CFR 15.109 Class B

Test Method: ANSI C63.4:2009

Test Date: 2016-05-23

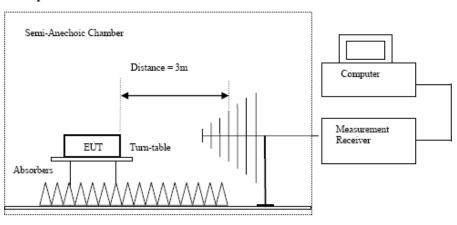
Mode of Operation: Charge mode/Test mode

#### **Test Method:**

The sample was placed 0.8m above the ground plane of semi-anechoic chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

\*: Semi-anechoic chamber located on the G/F of DGSTC with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 629686.

#### **Test Setup:**



Ground Plane

- Absorbers placed on top of the ground plane are for measurements above 1000MHz only
- Measurements between 30MHz to 1000MHz made with Bi-log antenna, above 1000MHz hom antenna is used.



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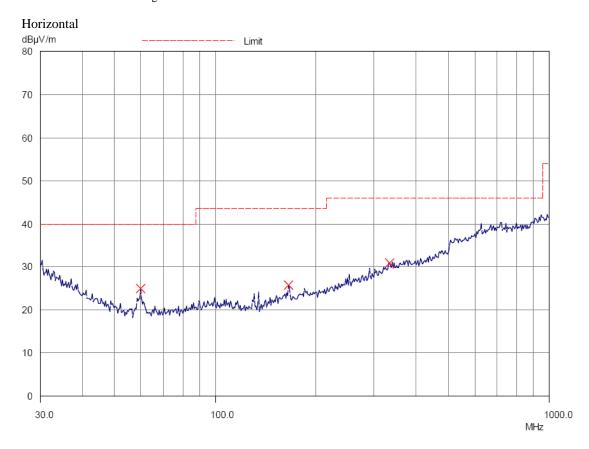
### Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:

Frequency Range	Quasi-Peak Limits	
[MHz]	$[\mu V/m]$	$[dB\mu V/m]$
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above960	500	54.0

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

### **Results of Charge mode: PASS**

Please refer to the following table for result details





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**Results of Charge mode: PASS** 

Radiated Emissions Quasi-Peak						
Emission	E-Field	Level	Limit	Level	Limit	
Frequency	Polarity	@3m	@3m	@3m	@3m	
MHz		dBμV/m	dBμV/m	μV/m	μV/m	
59.7	Horizontal	24.9	40.0	15.1	100	
166.0	Horizontal	25.8	43.5	17.7	150	
332.1	Horizontal	30.9	46.0	15.1	200	



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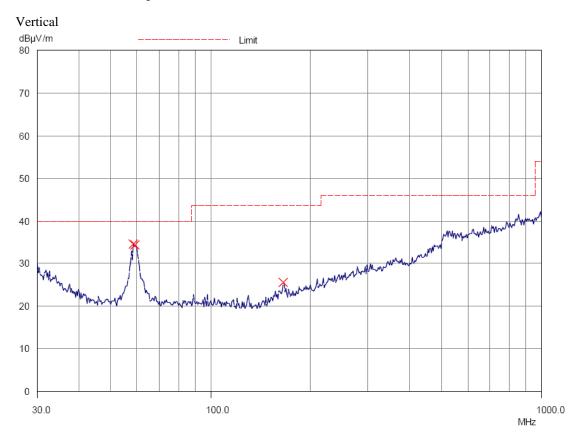
## Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:

Frequency Range	Quasi-Peak Limits	
[MHz]	$[\mu V/m]$	$[dB\mu V/m]$
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above960	500	54.0

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

## Results of Charge mode: PASS

Please refer to the following table for result details





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**Results of Charge mode: PASS** 

Radiated Emissions Ouasi-Peak						
Emission	E-Field	Level	Limit	Level	Limit	
Frequency	Polarity	@3m	@3m	@3m	@3m	
MHz		dBμV/m	dBμV/m	μV/m	μV/m	
58.4	Vertical	34.6	40.0	53.7	100	
59.1	Vertical	34.4	40.0	52.5	100	
165.9	Vertical	25.5	43.5	18.8	150	



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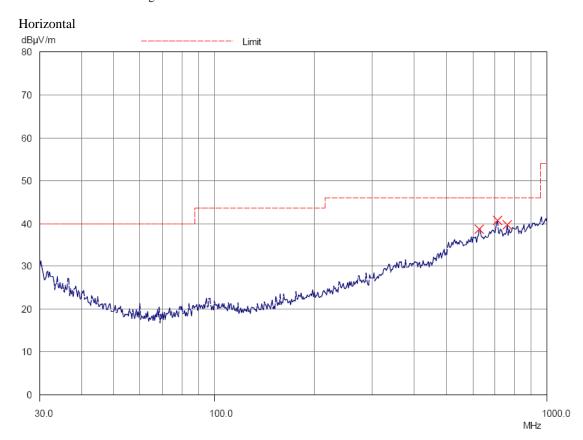
### Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:

Frequency Range	Quasi-Peak Limits	
[MHz]	$[\mu V/m]$	$[dB\mu V/m]$
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above960	500	54.0

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

### **Results of Test mode: PASS**

Please refer to the following table for result details





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**Results of Test mode: PASS** 

Radiated Emissions Quasi-Peak							
Emission	Emission E-Field Level Limit Level Limit						
Frequency	Polarity	@3m	@3m	@3m	@3m		
MHz	·	dBμV/m	dBμV/m	μV/m	μV/m		
623.9	Horizontal	38.7	46.0	86.1	200		
711.3	Horizontal	40.8	46.0	109.6	200		
758.2	Horizontal	39.8	46.0	97.7	200		



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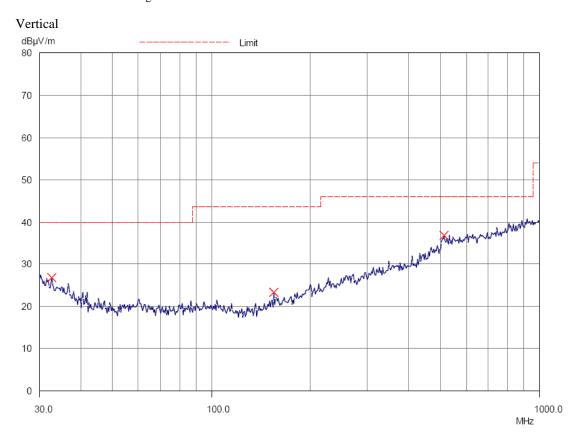
### Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:

Frequency Range	Quasi-Peak Limits	
[MHz]	$[\mu V/m]$	$[dB\mu V/m]$
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above960	500	54.0

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

### **Results of Test mode: PASS**

Please refer to the following table for result details





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**Results of Test mode: PASS** 

Radiated Emissions Quasi-Peak							
Emission	Emission E-Field Level Limit Level Limit						
Frequency	Polarity	@3m	@3m	@3m	@3m		
MHz		dBμV/m	dBμV/m_	μV/m	μV/m		
32.6	Vertical	26.8	40.0	21.9	100		
155.4	Vertical	23.3	43.5	14.6	150		
511.9	Vertical	36.8	46.0	69.2	200		

#### Remarks:

Calculated measurement uncertainty (30MHz - 1GHz): 4.6dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.



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### 3.1.2 Conducted Emissions (0.15MHz to 30MHz)

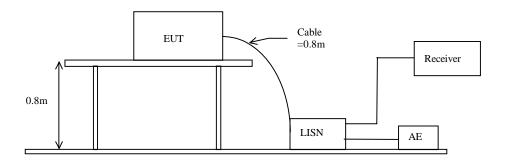
Test Requirement: FCC 47CFR 15.107 Class B

Test Method: ANSI C63.4:2009
Test Date: 2016-05-23
Mode of Operation: Charge mode

#### **Test Method:**

The test was performed in accordance with ANSI C63.4: 2009, with the following: initial measurements were performed in peak and average detection modes on the live line, any emissions recorded within 30dB of the relevant limit lines were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

### **Test Setup:**





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### **Limits for Conducted Emissions (FCC 47 CFR 15.107):**

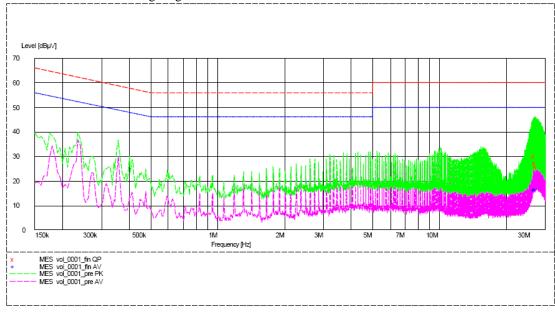
Frequency Range	Quasi-Peak Limits	Average
[MHz]	[dBµV]	[dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

<sup>\*</sup> Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

## Results of Charge mode (L): PASS

Please refer to the following diagram for individual results.





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## MEASUREMENT RESULT: "vol 0001 fin QP"

5/	/23/2016 2:0	2PM					
	Frequency	Level	Transd	Limit	Margin	Line	PΕ
	MHz	dBµV	dB	dΒμV	dB		
	26.705000	29.90	10.1	60	30.1	L1	GND
	26.830000	27.20	10.1	60	32.8	L1	GND
	27.200000	26.00	10.1	60	34.0	T.1	GND

## MEASUREMENT RESULT: "vol\_0001\_fin AV"

5/2	23/2016 2:0	02PM					
	Frequency MHz	Level dBµV		Limit dBµV	Margin dB	Line	PE
	26.705000	16.30	10.1	50	33.7	L1	GND
	26.830000	16.30	10.1	50	33.7	L1	GND
	27.075000	16.50	10.1	50	33.5	L1	GND



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### Limits for Conducted Emissions (FCC 47 CFR 15.107):

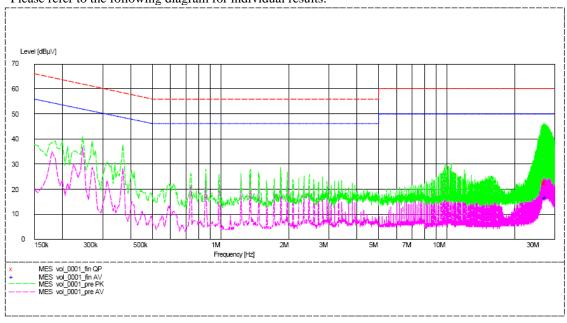
Frequency Range	Quasi-Peak Limits	Average
[MHz]	[dBµV]	[dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

<sup>\*</sup> Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

### Results of Charge mode (N): PASS

Please refer to the following diagram for individual results.





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## MEASUREMENT RESULT: "vol 0001 fin QP"

5/23/2016	2:05	PM					
Freque	ncy	Level	Transd	Limit	Margin	Line	PΕ
	MHz	dΒμV	dB	dBµV	dB		
26.845	000	23.00	10.1	60	37.0	N	GND
27.340	000	22.70	10.1	60	37.3	N	GND
27.465	000	22.70	10.1	60	37.3	N	GND

# MEASUREMENT RESULT: "vol\_0001\_fin AV"

5/23/2016 2:0 Frequency MHz				Margin dB	Line	PE
27.215000	16.40	10.1	50	33.6		GND
27.340000	16.50	10.1	50	33.5		GND
27.465000	16.60	10.1	50	33.4		GND

### Remark:

Calculated measurement uncertainty (0.15MHz - 30MHz): 3.2dB



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## Appendix A

## List of Measurement Equipment

### RADIATED EMISSION

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EMD036	EMI Test Receiver	ROHDE & SCHWARZ	ESIB26	100388	2016.03.29
EMD061	BICONILOG ANTENNA	ETS.LINDGREN	3142C	00060439	2014.11.29
EMD084	MULTI-DVICE CONTROLLER	ETS.LINDGREN	2090	00060107	N/A
EMD088	VIDEO CONTOL UNIT	ETS.LINDGREN	Y21953A	2601073	N/A
EMD093	MONITOR	VIEWSONIC	VA9036	Q8X064201876	N/A
EMD102	INTELLIGENT FREQUENCY	AINUO LNSTRUMENT CO., LTD	AN97005SS	79707454	N/A
EMD105	FACT-3 EMC CHAMBER	ETS.LINDGREN	FACT-3	3803	N/A

## CONDUCTED EMISSION

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EMD003	IMPULSEGRENZER PULSE LIMITER	ROHDE & SCHWARZ	ESH3-Z2	100071	2016.03.29
EMD004	ZWEILEITER-V- NETZNACHBILDUNG TWO- LINE V-NETWORK	ROHDE & SCHWARZ	ESH3-Z5	100102	2016.03.29
EMD036	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB26	100388	2016.03.29
EMD041	TWO-LINE V-NETWORK	ROHDE & SCHWARZ	ENV216	100261	2016.03.29
EMD103	INTELLIGENT FREQUENCY	AINUO LNSTRUMENT CO., LTD	AN97005SS	79707455	N/A
EMD106	SHIELDING ROOM #1	ETS.LINDGREN	RFD-100	3802	N/A

Remark:

N/A Not Applicable



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## APPENDIX B

Photograph (S) Of Product





**Rear View of The Product** 



STC (Dongguan) Company Limited

68 Furnin Nan Road, Dalang, Dongguan, China. (Zip Code : 523 770)
Tel : (86 769) 8111 9888 Fax : (86 769) 8111 6222 E-mail : dgstc@dgstc.org Homepage : www.dgstc.org



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## Photograph (S) Of Product





**Inside View of The Product** 

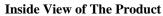


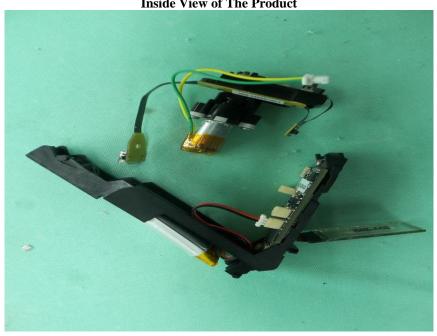


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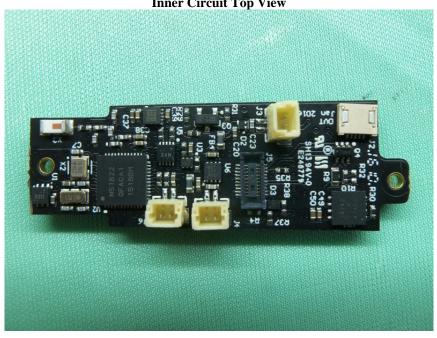
No.: DM123686

## Photograph (S) Of Product





**Inner Circuit Top View** 



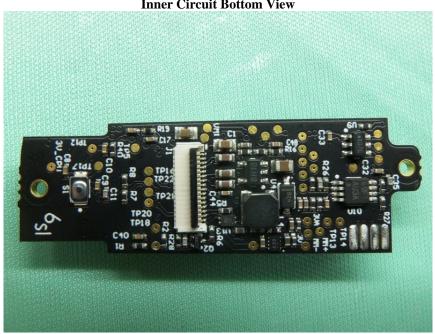


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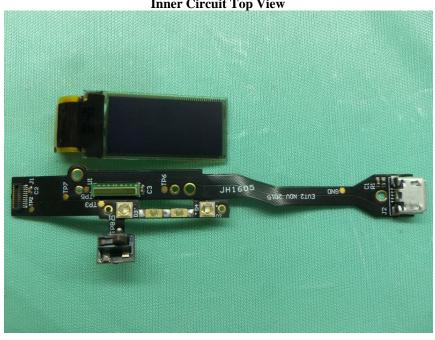
No.: DM123686

## Photograph (S) Of Product





**Inner Circuit Top View** 



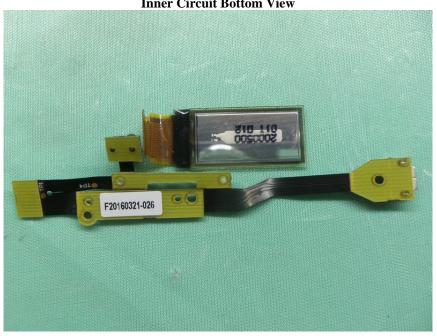


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## Photograph (S) Of Product

### **Inner Circuit Bottom View**



**Radiated Emission Test Set Up** 

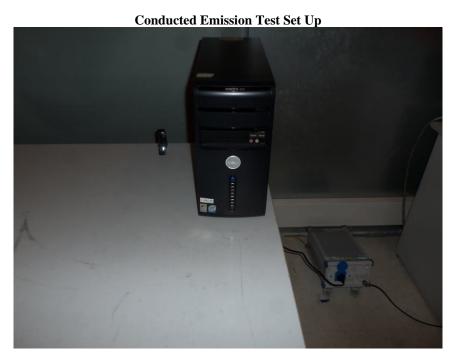




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## Photograph (S) Of Product



\*\*\*\*\* End of Test Report \*\*\*\*\*