

FCC - TEST REPORT

Report Number : **60.790.16.012.01** Date of Issue : February 20, 2016

Model : **RPWL400**

Product Type : **Door Push**

Applicant : Honeywell International Inc.

Address : 1985 Douglas Drive North, Golden Valley, U.S.A

Production Facility : Ansen Electronics Company

Address : Chen Tung Industrial Zone, Ning Tau Administrative District,
Qiao Tau Zhen, Dongguan, Guangdong, China

Test Result : ☒ **Positive** ☐ **Negative**

Total pages including Appendices : 22

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2 Description of Equipment Under Test

Description of the Equipment Under Test

Product:	Door Push
Model no.:	RPWL400
FCC ID:	HS9-RPWL400
Rating:	3.0VDC (1 x 3.0VDC size "CR2032" batteries)
Frequency:	916.8MHz
Antenna gain:	0 dBi
Number of operated channel:	1
Modulation:	FSK

3 Summary of Test Standards

Test Standards
FCC Part 15 Subpart C 10-1-14 Edition Federal Communications Commission, PART 15 — Radio Frequency Devices, Subpart C — Unintentional Radiators

4 Details about the Test Laboratory

Site 1

Company name: TÜV SÜD Hong Kong Ltd.
3/F, West Wing, Lakeside 2,
10 Science Park West Avenue,
Science Park, Shatin, Hong Kong

Site 2

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13 Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2,
Shenzhen 518052, P.R.China
FCC Registration Number: 502708

Emission Tests	
Test Item	Test Site
FCC Part 15 Subpart C	
FCC Title 47 Part 15.249 & 15.209 Radiated Emission	Site 2
FCC Title 47 Part 15.249 & 15.207 Conduct Emission	NIL
FCC Title 47 Part 15.249 Bandedge Emission	Site 2
FCC Title 47 Part 15.215 20dB Bandwidth	Site 2

4.1 Test Equipment Site List

Radiated emission Test, Bandedge Emission – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	17-Aug-16
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	17-Aug-17
Horn Antenna	Rohde & Schwarz	HF907	102294	17-Aug-17
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	17-Aug-16
3m Semi-anechoic chamber	TDK	9X6X6	----	29-May-19

20dB Bandwidth – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Signal Generator	Rohde & Schwarz	SMB100A	108272	17-Aug-16
Signal Analyzer	Rohde & Schwarz	FSV40	101030	17-Aug-16
Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	17-Aug-16
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	101226/100851	17-Aug-16

4.2 Measurement System Uncertainty

Measurement System Uncertainty Emissions

System Measurement Uncertainty	
Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 9kHz-30MHz	4.54dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.83dB; Vertical: 4.91dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-25000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;
Uncertainty for Conducted RF test	2.04dB

5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart C				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
FCC Title 47 Part 15.249 & 15.209 Radiated Emission	10-11	☒	☐	☐
FCC Title 47 Part 15.249 & 15.207 Conduct Emission	NIL	☐	☐	☒
FCC Title 47 Part 15.249 Bandedge Emission	12-13	☒	☐	☐
FCC Title 47 Part 15.215 20dB Bandwidth	14	☒	☐	☐

6 General Remarks

Remarks

NIL

SUMMARY:

- All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

- The Equipment Under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: January 26, 2016

Testing Start Date: January 27, 2016

Testing End Date: February 11, 2016

- TÜV SÜD HONG KONG LTD. -

Reviewed by:



TSENG Chi Kit
EMC Project Engineer



Prepared by:



CHAN Kwong Ngai
EMC Test Engineer

7 Emission Test Results

7.1 Radiated Emission

EUT: RPWL400
 Op Condition: Operated, TX Mode
 Test Specification: FCC15.249 & 15.209, Antenna: Horizontal
 Comment: 3.0VDC
 Remark: 9kHz to 10GHz

Test Result	
☒	Passed
☐	Not Passed

Frequency MHz	Result dBμV/m	Limit dBμV/m	Margin dB	Detector
49.885	18.02	40	-11.98	Quasi Peak
93.103	12.21	43.5	-31.29	Quasi Peak
281.661	19.22	46	-26.78	Quasi Peak
847.925	25.84	46	-20.16	Quasi Peak
*916.816	72.41	114	-41.59	Peak
*916.816	53.98	94	-40.02	Average
1584.416	34.52	74	-39.48	Peak
1833.625	50.37	74	-23.63	Peak
1833.625	35.58	54	-18.42	Average
2750.800	42.72	74	-31.28	Peak
2750.800	36.01	54	-17.99	Average
3668.120	38.21	74	-35.79	Peak
3668.120	36.23	54	-17.77	Average
4584.280	36.54	74	-37.46	Peak
4584.280	36.32	54	-17.68	Average

* 916.8MHz is fundamental frequency.

Radiated Emission

EUT: RPWL400
 Op Condition: Operated, TX Mode
 Test Specification: FCC15.249 & 15.209, Antenna: Vertical
 Comment: 3.0VDC
 Remark: 9kHz to 10GHz

Test Result	
☒	Passed
☐	Not Passed

Frequency MHz	Result dBμV/m	Limit dBμV/m	Margin dB	Detector
46.032	17.52	40	-22.48	Quasi Peak
59.040	16.02	40	-23.98	Quasi Peak
108.270	15.13	43.5	-28.37	Quasi Peak
299.850	19.56	43.5	-23.94	Quasi Peak
846.520	30.98	46	-15.02	Quasi Peak
*916.816	72.41	114	-41.59	Peak
*916.816	52.72	94	-41.38	Average
1584.416	34.52	74	-39.48	Peak
1833.625	50.37	74	-23.63	Peak
1833.625	35.58	54	-18.42	Average
2750.800	42.72	74	-31.28	Peak
2750.800	36.01	54	-17.99	Average
3668.120	38.21	74	-35.79	Peak
3668.120	36.23	54	-17.77	Average
4584.280	36.54	74	-37.46	Peak
4584.280	36.32	54	-17.68	Average

* 916.8MHz is fundamental frequency.

7.2 Bandedge Emission

EUT: RPWL400
Op Condition: Operated, TX Mode
Test Specification: FCC15.249, Antenna: Horizontal
Comment: 3.0VDC

Test Result☒ Passed☐ Not Passed

Band	Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
Low	902.000	32.43	46	-13.57	Quasi Peak
High	928.000	33.56	46	-12.44	Quasi Peak

Bandedge Emission

EUT: RPWL400
Op Condition: Operated, TX Mode
Test Specification: FCC15.249, Antenna: Vertical
Comment: 3.0VDC

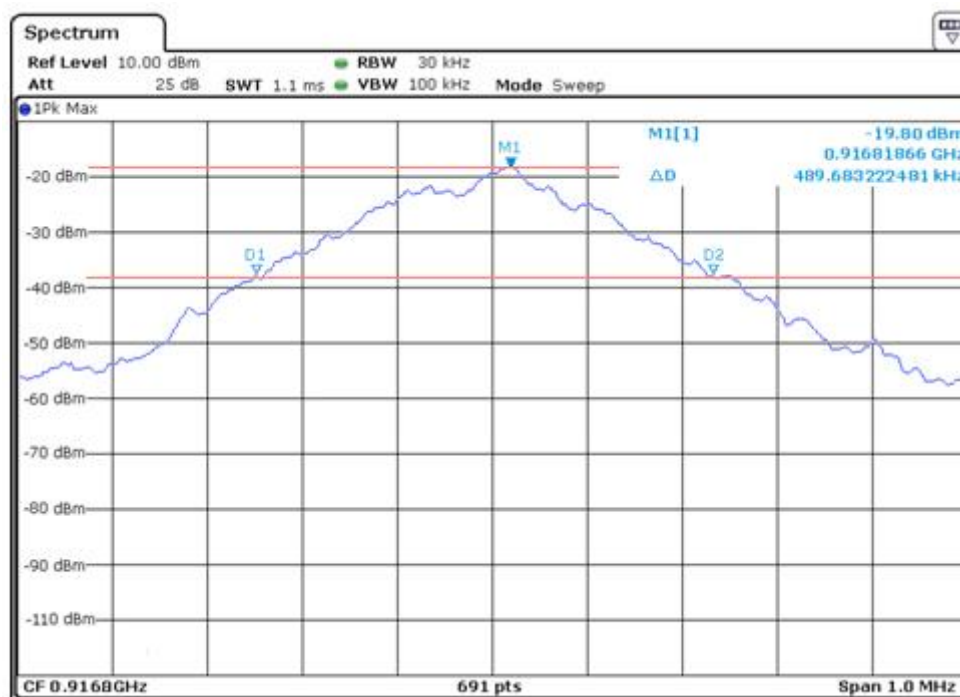
Test Result	
☒	Passed
☐	Not Passed

Band	Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
Low	902.000	32.07	46	-13.93	Quasi Peak
High	928.000	33.05	46	-12.95	Quasi Peak

7.3 20dB Bandwidth

EUT: RPWL400
 Op Condition: Operated, TX Mode
 Test Specification: FCC15.215, 20dB Bandwidth
 Comment: 3.0VDC
 Remark: 20dB bandwidth is within frequency band 902MHz-928MHz

Test Result

☒ Passed☐ Not Passed

20dB bandwidth

489.683kHz

8 Appendix A - Photographs of EUT



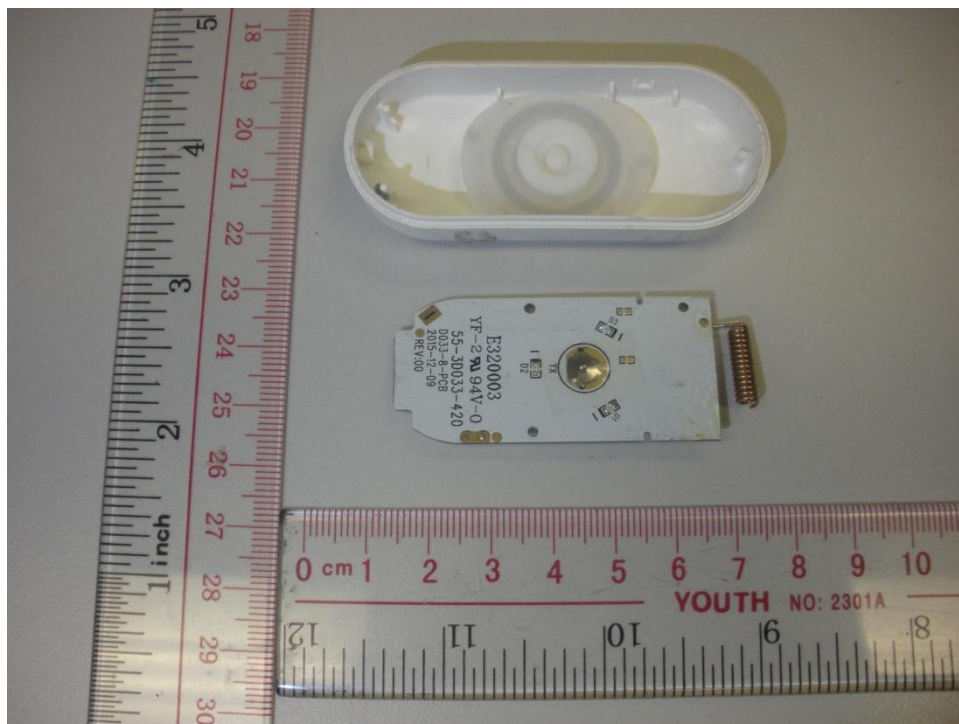
Appendix A



Appendix A



Appendix A

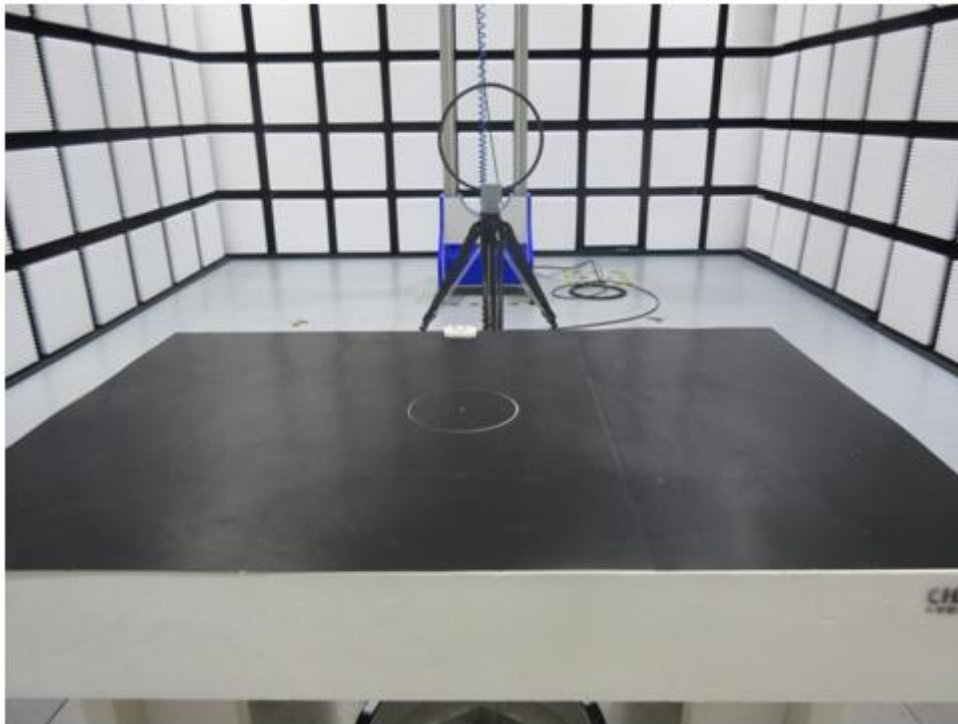


Appendix A

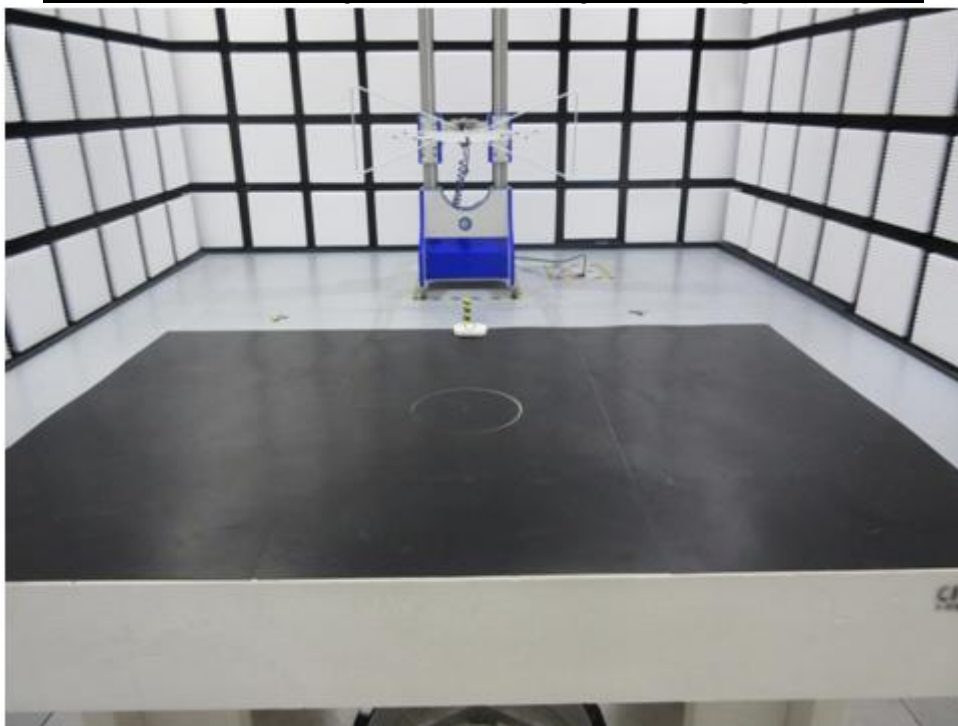


9 Appendix B - Setup Photographs of EUT

Radiated Emission (9kHz to 30MHz)



Radiated Emission (30MHz to 1GHz) / Bandedge Emission

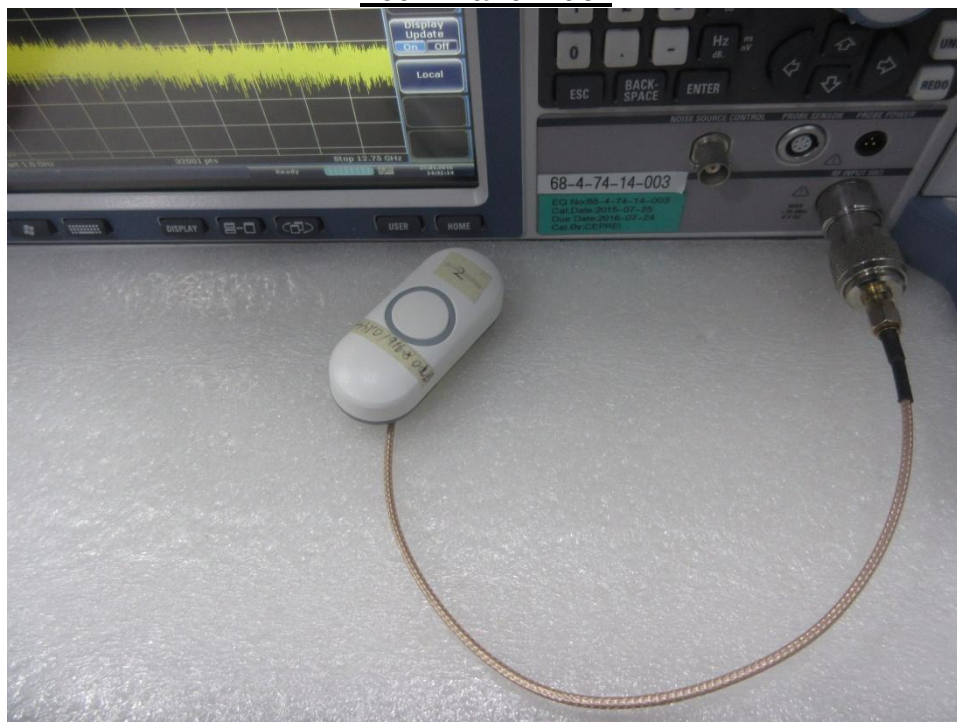


Appendix B

Radiated Emission (1GHz to 10GHz)



20dB Bandwidth



10 Appendix C - General Product Information

Radiofrequency radiation exposure evaluation

According to KDB 447498 D01v06 section 4.3.1,

>> The 1-g SAR test exclusion thresholds, for 100MHz to 6GHz, at test separation distances ≤ 50 mm are determined by:

Power at 0.9168GHz = 0.0104 mW EIRP

$[(0.0104 \text{ mW}) / (20 \text{ mm})] \cdot [\text{sqrt}(0.9168 \text{ GHz})] = 0.000498$ which is ≤ 3.0 for 1-g SAR.

Therefore the device is exempt from stand-alone SAR test requirements.

>> The fundamental frequency of the EUT is 916.8MHz, the test separation distance is smaller than 50mm. (Manufacturer specified the separation distance is 20mm)

>> The power of EUT measured is:

- For 916.8MHz: $0.0104\text{mW} = 10 \log(0.0104) \text{ dBm} \sim -19.80\text{dBm}$