

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

TÜV SÜD HONG KONG LTD. is a subcontractor to TÜV SÜD Product Service GmbH according to the principles outlined in ISO 17025. TÜV SÜD HONG KONG LTD. reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations TÜV SÜD HONG KONG LTD. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD HONG KONG LTD. issued reports. This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval.

1 Table of Contents

1 Table of Contents.....	2
2 Description of Equipment Under Test	3
3 Summary of Test Standards	4
4 Details about the Test Laboratory	5
4.1 Test Equipment Site List.....	6
4.2 Measurement System Uncertainty	7
5 Summary of Test Results.....	8
6 General Remarks.....	9
7 Emission Test Results	10
7.1 Radiated Emission.....	10
7.2 Bandedge Emission.....	12
7.3 20dB Bandwidth.....	14
8 Appendix A - Photographs of EUT	15
9 Appendix B - Setup Photographs of EUT.....	20
10 Appendix C - General Product Information	22

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 dBμV/m	Limit dBμV/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

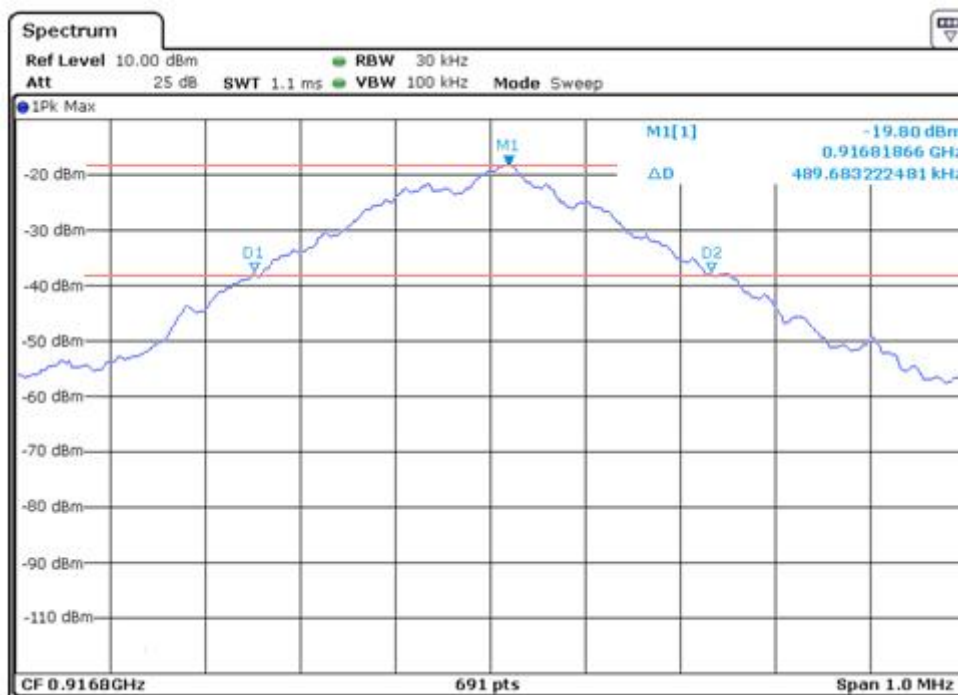
Test Result	
☒	Passed
☐	Not Passed

Band	Frequency MHz	Result dBμV/m	Limit dBμV/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

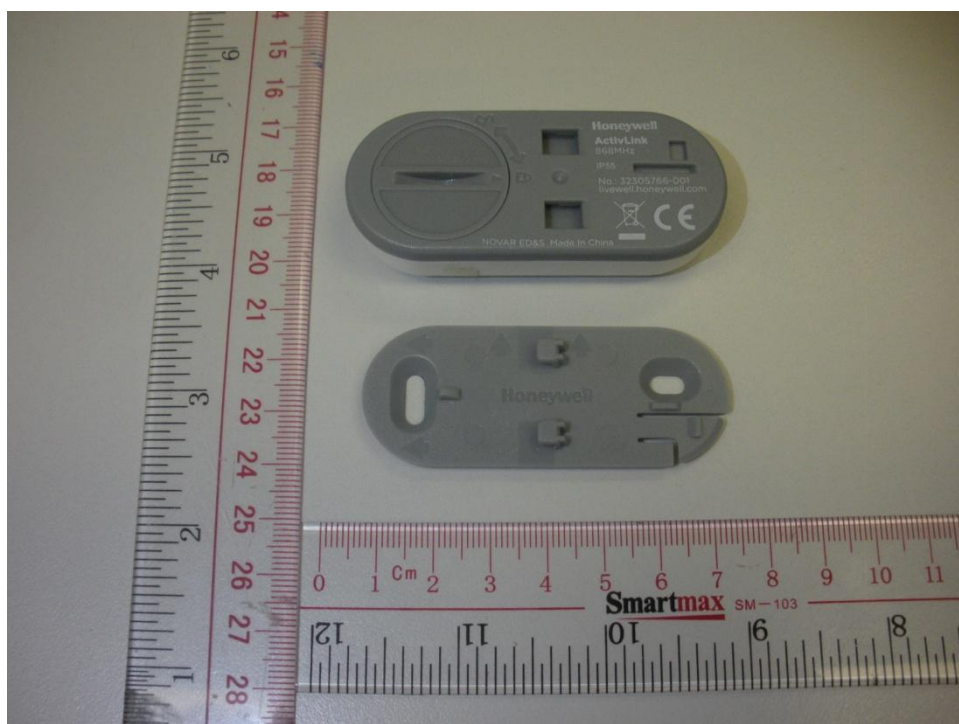
☒ Passed☐ Not Passed**20dB bandwidth**

489.683kHz

8 Appendix A - Photographs of EUT



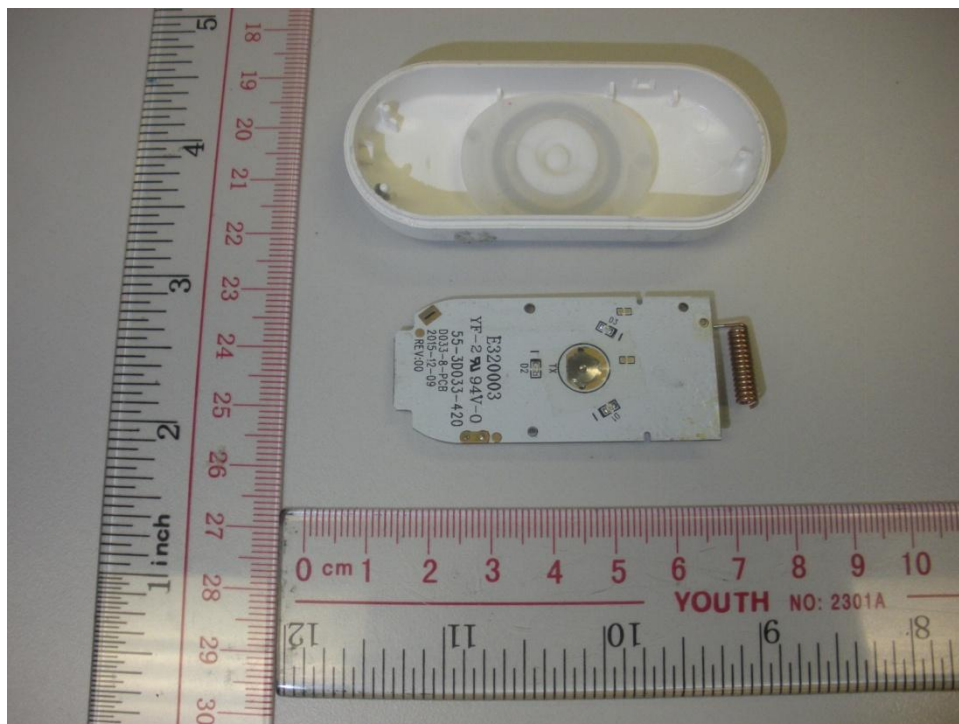
Appendix A



Appendix A



Appendix A

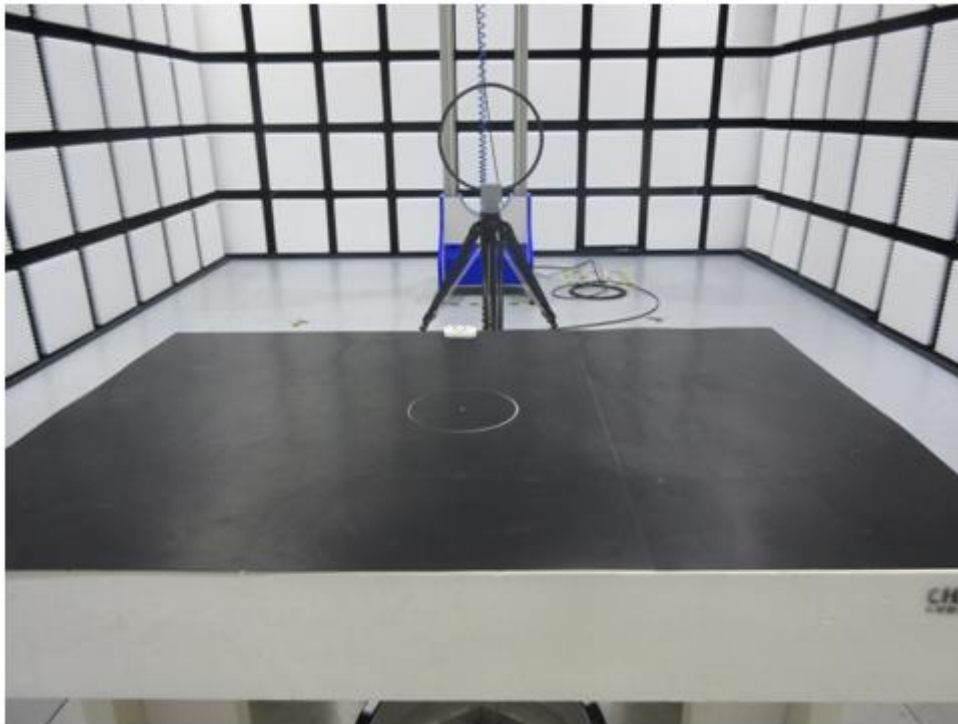


Appendix A

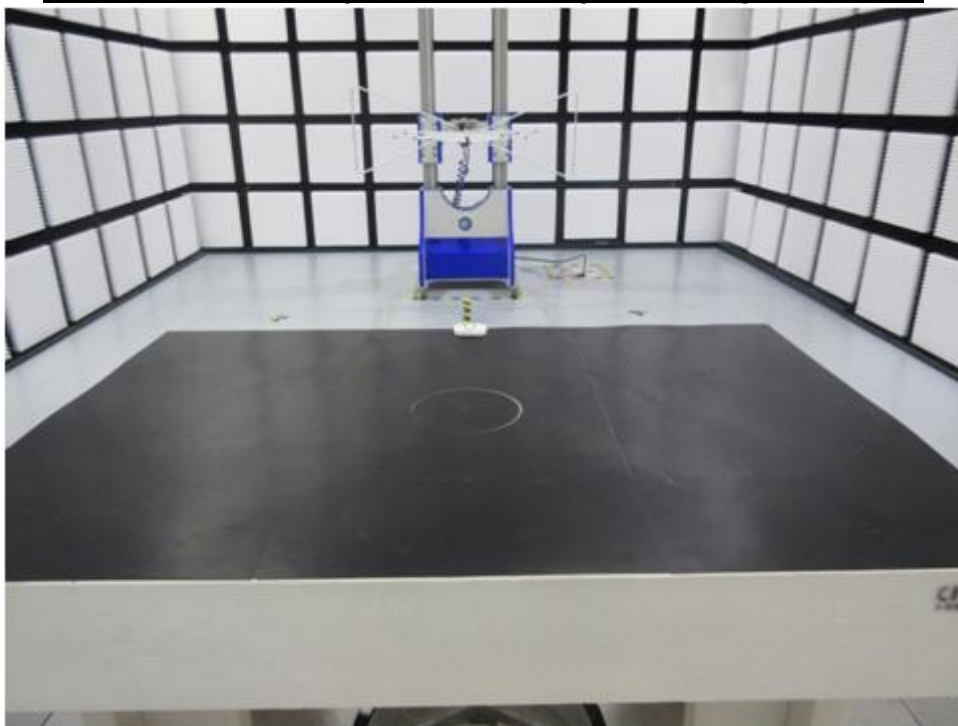


9 Appendix B - Setup Photographs of EUT

Radiated Emission (9kHz to 30MHz)



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

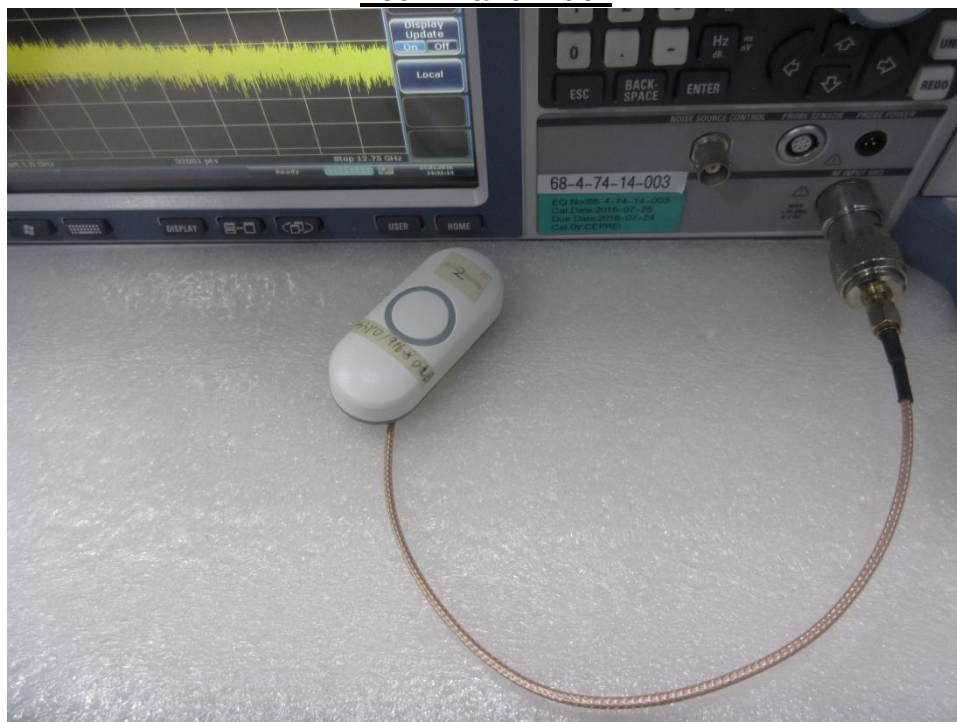


Appendix B

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