RF MEASUREMENT REPORT

FCC ID:	HD5-CT4XVDWLSPK
Applicant:	Honeywell International Inc Honeywell Safety and Productivity Solutions
Product:	Vehicle Dock
Model No.:	CT4X-VD-WL-SPK
Brand Name:	Honeywell
FCC Rule Part(s):	FCC Part 2.1091
Result:	Complies
Test Date:	2024-03-22 ~ 2024-04-05

Reviewed By: Jame Yuan

Approved By: Robin Wu

Revision History

Report No.	Version	Description	Issue Date	Note
2403RSU013-U5	V01	Initial Report	2024-04-07	Valid

CONTENTS

1. General Information

1.1. Applicant

Honeywell International Inc
Honeywell Safety and Productivity Solutions

9680 Old Bailes Rd. Fort Mill, SC 29707 United States

1.2. Manufacturer

Honeywell International Inc
Honeywell Safety and Productivity Solutions

9680 Old Bailes Rd. Fort Mill, SC 29707 United States

1.3. Testing Facility

☒	**Test Site – MRT Suzhou Laboratory**				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**Test Site – MRT Shenzhen Laboratory**				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
	FCC: CN1284		ISED: CN0105		
☐	**Test Site – MRT Taiwan Laboratory**				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: 3261				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	Vehicle Dock
Model No.	CT4X-VD-WL-SPK
EUT Identification No.	20240307Sample#07
Brand Name	Honeywell
WPT Specification	144kHz
NFC Specification	13.56MHz(tag)
Bluetooth Specification	V5.0 (Dual Mode)
Antenna Information	Refer to Section 1.5
Power Voltage	12/24VDC
Operating Temperature	-20 ~ 50°C
Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification

Frequency Range	144kHz
Modulation	ASK
Antenna Type	Coil Antenna

Note: For other features of this EUT, test report will be issued separately.

2. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Broadband Field Meter	narda	NBM 550	MRTSUE06897	3 years	2026-10-26	SIP-AC1
B-Field Probe	narda	100 cm²	MRTSUE06919	3 years	2026-10-29	SIP-AC1
Exposure Level Tester	narda	ELT-400	MRTSUE06920	3 years	2026-10-29	SIP-AC1
H-Field Probe	narda	HF 3061	MRTSUE06921	3 years	2026-10-26	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06616	1 year	2024-10-28	SIP-AC1

3. Measurement Uncertainty

Magnetic Field Emissions (A/m)
1Hz-10Hz: 12.74%
10Hz-120kHz: 2.91%
120kHz-400kHz: 3.98%
Electric Field Emissions (V/m)
100kHz-6.5GHz: 39.42%

4. Test Result

4.1. Test Limits

§1.1310 Radiofrequency radiation exposure limits.

Below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f2	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f2	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1500	30
1,500-100,000	--	--	1.0	30

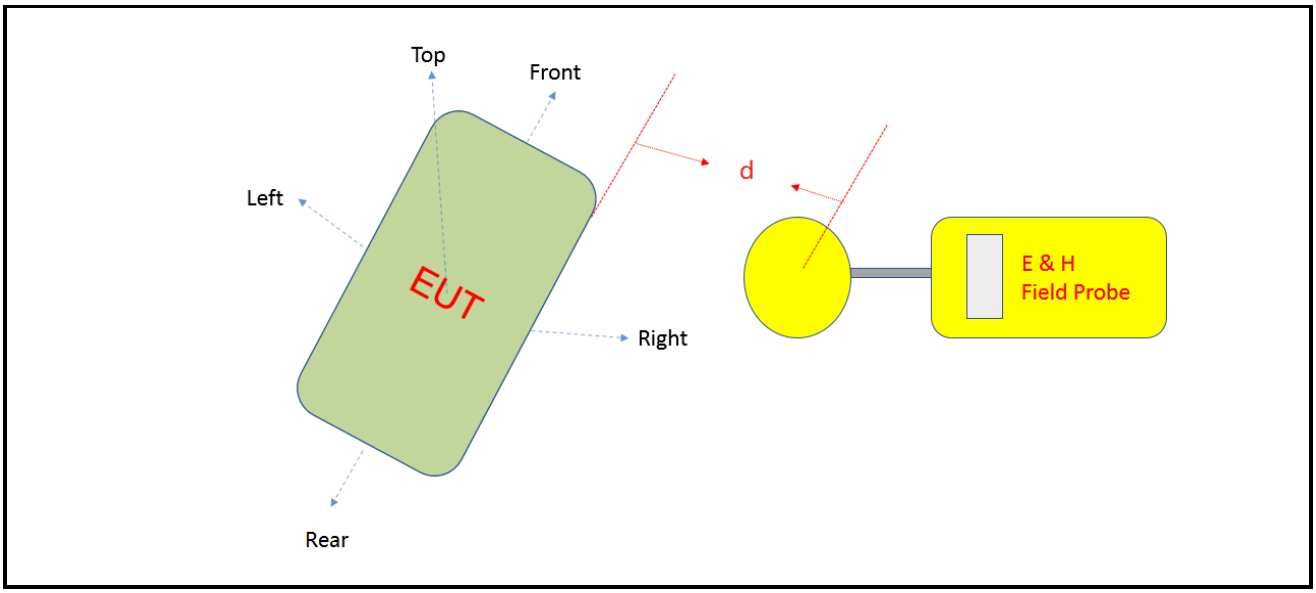
f= Frequency in MHz

* = Plane-wave equivalent power density

4.2. Test Mode

Test Mode
Mode 1: Standby, Idle mode
Mode 2: Charge the Load

4.3. Test Setup



Notes:

1. This shall be measured as the distance from the edge of the device to the center of the measurement probe.
2. d= 5, 6, 8, 10, 20 cm.

4.4. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

4.5. Test Result

Test Site	SIP-AC1	Test Engineer	Chase Zhu
Test Date	2024-03-22 ~ 2024-04-05	Test Mode	Mode 1

Electric Field Emissions				
Test Position	Test Distance (d) (cm)	Measure Value (V/m)	Limit (V/m)	Result
Front	20	0.25	614	Pass
Rear	20	0.22	614	Pass
Left	20	0.23	614	Pass
Right	20	0.19	614	Pass
Top	20	0.20	614	Pass
Magnetic Field Emissions				
Test Position	Test Distance (d) (cm)	Measure Value (A/m)	Limit (A/m)	Result
Front	5(contact)	0.222	1.63	Pass
Rear	5(contact)	0.238	1.63	Pass
Left	5(contact)	0.238	1.63	Pass
Right	5(contact)	0.232	1.63	Pass
Top	5(contact)	0.229	1.63	Pass
Front	6	0.219	1.63	Pass
Rear	6	0.227	1.63	Pass
Left	6	0.216	1.63	Pass
Right	6	0.223	1.63	Pass
Top	6	0.228	1.63	Pass
Front	8	0.221	1.63	Pass
Rear	8	0.233	1.63	Pass
Left	8	0.226	1.63	Pass
Right	8	0.222	1.63	Pass
Top	8	0.218	1.63	Pass
Front	10	0.222	1.63	Pass
Rear	10	0.231	1.63	Pass
Left	10	0.218	1.63	Pass
Right	10	0.219	1.63	Pass
Top	10	0.225	1.63	Pass

Test Site	SIP-AC1	Test Engineer	Chase Zhu
Test Date	2024-03-22 ~ 2024-04-05	Test Mode	Mode 2

Electric Field Emissions				
Test Position	Test Distance (d) (cm)	Measure Value (V/m)	Limit (V/m)	Result
Front	20	0.39	614	Pass
Rear	20	0.37	614	Pass
Left	20	0.33	614	Pass
Right	20	0.40	614	Pass
Top	20	0.32	614	Pass
Magnetic Field Emissions				
Test Position	Test Distance (d) (cm)	Measure Value (A/m)	Limit (A/m)	Result
Front	5(contact)	0.274	1.63	Pass
Rear	5(contact)	0.695	1.63	Pass
Left	5(contact)	0.330	1.63	Pass
Right	5(contact)	0.338	1.63	Pass
Top	5(contact)	0.333	1.63	Pass
Front	6	0.294	1.63	Pass
Rear	6	0.501	1.63	Pass
Left	6	0.310	1.63	Pass
Right	6	0.310	1.63	Pass
Top	6	0.279	1.63	Pass
Front	8	0.271	1.63	Pass
Rear	8	0.474	1.63	Pass
Left	8	0.299	1.63	Pass
Right	8	0.291	1.63	Pass
Top	8	0.269	1.63	Pass
Front	10	0.300	1.63	Pass
Rear	10	0.378	1.63	Pass
Left	10	0.277	1.63	Pass
Right	10	0.253	1.63	Pass
Top	10	0.262	1.63	Pass

4.6. Simultaneous Exposure Analysis

In the case of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^{a}\frac{P_i}{P_{th,i}}+\sum_{j=1}^{b}\frac{ERP_j}{ERP_{th,j}}+\sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}\leq 1$$

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using the § 1.1307(b)(3)(i)(B) formula for P_{th}, including existing exempt transmitters and those being added.

b = number of fixed, mobile, or portable RF sources claiming exemption using the applicable § 1.1307(b)(3)(i)(C) Table 1 formula for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance.

P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

$P_{th,i}$ = the exemption threshold power (P_{th}) according to the § 1.1307(b)(3)(i)(B) formula for fixed, mobile, or portable RF source i.

ERP_j = the available maximum time-averaged power or the ERP, whichever is greater, of fixed, mobile, or portable RF source j.

$ERP_{th,j}$ = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least λ/2π, according to the applicable § 1.1307(b)(3)(i)(C) Table 1 formula at the location in question.

$Evaluated_k$ = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation.

$Exposure\ Limit_k$ = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable sources, as applicable.

WPT						Bluetooth			Worst Total Ratio
Max E-field (V/m)	Limit (V/m)	Ratio	Max H-field (A/m)	Limit (A/m)	Ratio	Tune-up ERP (mW)	Thresholds ERP (mW)	Ratio	
0.40	614	0.01	0.695	1.63	0.43	2.16	768	0.01	0.44

Note: BLE evaluation result come from report: 2403RSU013-U4

Conclusion:

The sum of the ratios is less than 1. Therefore, the above analysis is sufficient to determine that simultaneous exposure cases will not exceed the limit and the device is compliance with exposure requirement.

The End