

Maximum Permissible Exposure

FCC ID : U4GSX53SD
Equipment : Wireless Power Transmission System
Brand Name : Datalogic
Model Name : SKORPIO X5 3 SLOT DOCK WIRELESS CHARGING
SKORPIO X5 3 SLOT DOCK WLC LOCKING
Applicant : Datalogic S.r.l.
Via S. Vitalino 13, 40012 Lippo di Calderara di Reno (BO) - Italy
Manufacturer : Datalogic S.r.l.
Via S. Vitalino 13, 40012 Lippo di Calderara di Reno (BO) - Italy
Standard : 47 CFR Part 2.1091

The product was received on Sep. 01, 2020, and testing was started from Sep. 04, 2020 and completed on Sep. 22, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in KDB680106 D01 RF Exposure Wireless Charging Apps v03 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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APPENDIX A. TEST PHOTOS

PHOTOGRAPHS OF EUT V01



History of this test report

Report No.	Version	Description	Issued Date
FA040814-01	01	Initial issue of report	Jan. 22, 2021
FA040814-01	02	Add chapter 1.1	Jan. 27, 2021



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.8	-	Maximum Permissible Exposure	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

None.

Reviewed by: Sam Tsai

Report Producer: Ann Hou



1 Human Exposure Assessment

1.1 Information

1.1.1 General Information

Wireless Power Transfer General Information			
Frequency Range	Modulation Mode		
112-145 kHz	FSK		
Power Transfer Method	Output power from each primary coil	That may have multiple primary coils	Charging Method
Multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	<15W	Yes	Client directly contact

1.2 Maximum Permissible Exposure

1.2.1 Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	F/300	6
1500-100,000	-	-	5	6
Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	F/1500	30
1500-100,000	-	-	1.0	30
Note 1: f = frequency in MHz ; *Plane-wave equivalent power density				
Note 2: For the applicable limit, see FCC 1.1310				



1.3 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 2.1091

The following reference test guidance is not within the scope of accreditation of TAF:

- ♦ KDB680106 D01 RF Exposure Wireless Charging Apps v03

1.4 Testing Location Information

Testing Location				
<input checked="" type="checkbox"/>	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)		
		TEL : 886-3-327-3456	FAX : 886-3-327-0973	
Test site Designation No. TW1190 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Gary	22.3.~24.5°C / 60~69%	04/Sep/2020~ 22/Sep/2020

1.5 Accessories

Accessories Information				
AC Adapter	Brand Name	EDACPOWER ELEC.	Model Name	EA10681U-120
	Power Rating	I/P: 100-240Vac, 2A, O/P: 12Vdc, 6A		
	Power Cord	1.2 meter, Shielded cable, with ferrite core		
Power Cable	Power Cord	0.8 meter, non-Shielded cable, without ferrite core		

Note: Regarding to more detail and other information, please refer to user manual.

1.6 Support Equipment

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Mobile Computer *6	Datalogic	Skorpio X5	U4GSX5WB

Note: Support equipment No.1 was provided by customer.

1.7 Table for Multiple Listing

Sample No.	Variant	Difference
Sample 1	SKORPIO X5 3 SLOT DOCK WLC LOCKING	related to the variant WITH locking system for the Skorpio X5 mobile computer
Sample 2	SKORPIO X5 3 SLOT DOCK WIRELESS CHARGING	related to the variant WITHOUT locking system for the Skorpio X5 mobile computer

Note: The information from manufacturer.

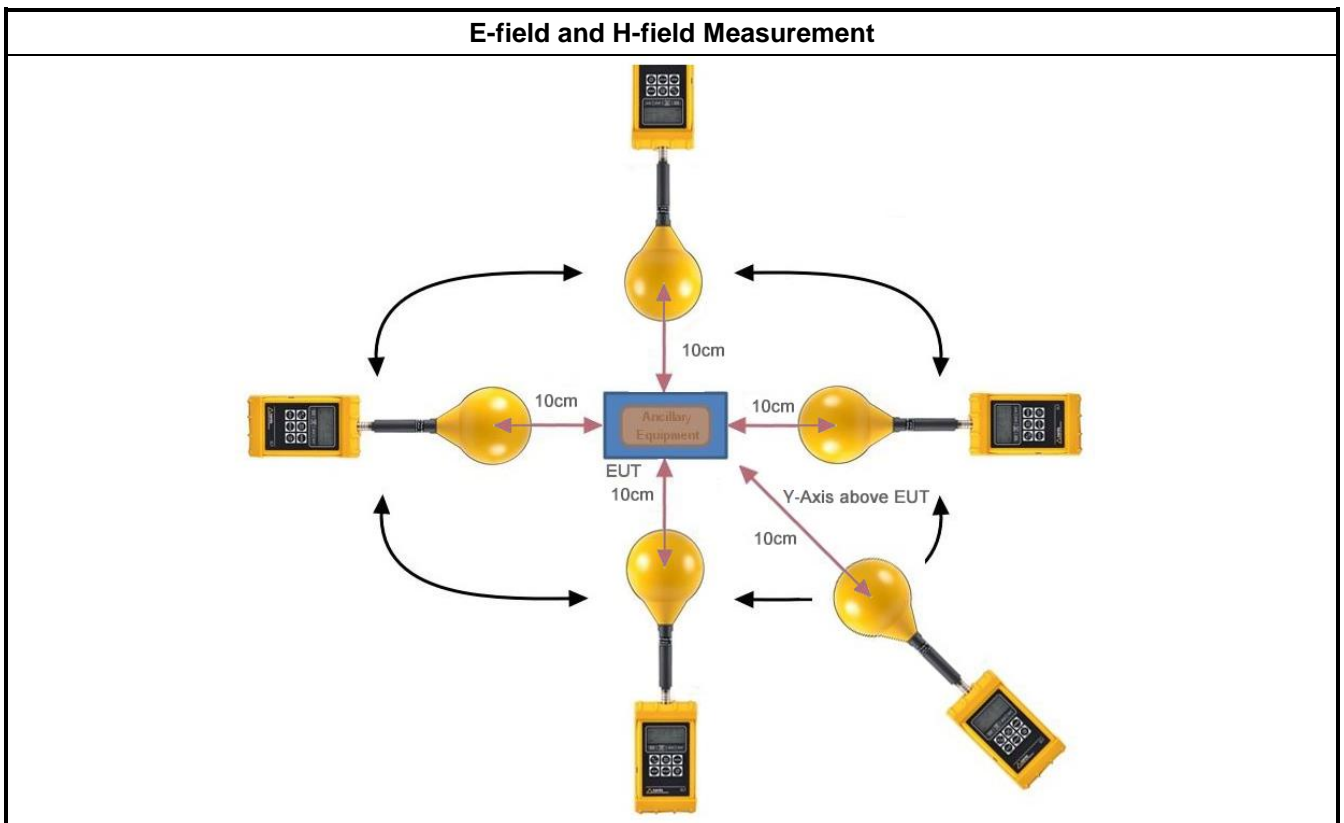
1.8 The Worst Condition

Ancillary Equipment	Charging Condition	Worst Charging Condition
Mobile Computer	Charging Mode	Low power<25%

1.8.1 Test Method

Test Method	
<input checked="" type="checkbox"/>	Performed aggregate both leakage E-field and H-field at surrounding the device from all simultaneous transmitting coils.
<input checked="" type="checkbox"/>	During testing, the EUT was placed on a non-conductive table top and the ancillary equipment (e.g., mobile phone) was placed on the EUT for charging. Maximum E-field and H-field measurements were tested 10cm from each side of the EUT. Along the side of the EUT to center of E-field probe and H-field probe were positioned at the location to search maximum field strength.
<input checked="" type="checkbox"/>	E-field transfer to H-field
-	$E\text{-field} = Z_0 \times H\text{-field}$ $H\text{-field} = E\text{-field} \div Z_0$ Where $Z_0 = \text{Free Space Impedance} = 377\Omega$

1.8.2 Test Setup



Note1 : find worst position for each axis.

Note2 : This shall be measured as the distance from the edge of the device to the center of the measurement probe.



1.8.3 Result of Maximum Permissible Exposure

Mode 1: Cradle 1 fully occupied, slot 1 of the second cradle occupied

Maximum Permissible Exposure				
Charging Condition	Separation	Probe from EUT Side	E-field (V/m)	H-field (A/m)
Low power<25%	10cm	Left	6.0031	0.0938
Low power<25%	10cm	Right	1.775	0.0156
Low power<25%	10cm	Top	7.2438	0.0456
Low power<25%	10cm	Bottom	6.8719	0.0481
Low power<25%	10cm	Y-axis above EUT	2.9469	0.0300
Limit			614	1.63
Margin Limit (%)			1.18	5.75

Mode 2: Cradle 1 fully occupied, slots 1 and 2 of the second cradle occupied

Maximum Permissible Exposure				
Charging Condition	Separation	Probe from EUT Side	E-field (V/m)	H-field (A/m)
Low power<25%	10cm	Left	6.5500	0.1088
Low power<25%	10cm	Right	8.5563	0.0806
Low power<25%	10cm	Top	7.0844	0.0744
Low power<25%	10cm	Bottom	8.5563	0.1144
Low power<25%	10cm	Y-axis above EUT	5.6313	0.0525
Limit			614	1.63
Margin Limit (%)			1.39	7.02

Mode 3: Cradle 1 fully occupied, cradle 2 fully occupied

Maximum Permissible Exposure				
Charging Condition	Separation	Probe from EUT Side	E-field (V/m)	H-field (A/m)
Low power<25%	10cm	Left	7.5469	0.117
Low power<25%	10cm	Right	4.3281	0.105
Low power<25%	10cm	Top	8.9906	0.091
Low power<25%	10cm	Bottom	9.3156	0.137
Low power<25%	10cm	Y-axis above EUT	8.2438	0.079
Limit			614	1.63
Margin Limit (%)			1.52	8.40



2 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Electric and Magnetic field Probe - Analyzer	Narda S.T.S. / PMM	EHP 200AC	170WX80309	3kHz~30MHz	08/May/2019	07/May/2021