

TEST REPORT

of

FCC CFR 47 part1, 1.1307(b), 1.1310

FCC ID: SKU-WIT-DYC-0152A

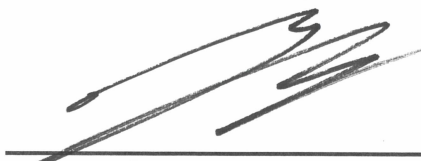
Equipment Under Test : WIRELESS CHARGER
Model Name : WIT-DYC-0152A
Variant Model Name(s) : -
Applicant : DONGYANG E&P Inc.
Manufacturer : DONG YANG E&P VIETNAM CO.,LTD
Date of Receipt : 2022.08.09
Date of Test(s) : 2022.08.16 ~ 2022.09.13
Date of Issue : 2022.09.13

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

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- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
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- 4) The data marked ※ in this report was provided by the customer and may affect the validity of the test results.

We are responsible for all the information of this test report except for the data(※) provided by the customer.

Tested by:


Murphy Kim

Technical
Manager:


Jinhyoung Cho

SGS Korea Co., Ltd. Gunpo Laboratory



SGS Korea Co., Ltd.

4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

<http://www.sgsgroup.kr>

Report Number: F690501-RF-RTL003401-1

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

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Phone No. : +82 31 688 0901

Fax No. : +82 31 688 0921

1.2. Details of Applicant

Applicant : DONGYANG E&P Inc.

Address : 31B 3-1, Jinwi Industrial Estate, Cheongho-Ri, Jinwi-Myeon, Pyeongtaek-Si,
 Gyeonggi-do, South Korea, 451-862

Contact Person : Kim, Jin-bum

Phone No. : +82 31 370 6801

1.3. Details of Manufacturer

Company : DONG YANG E&P VIETNAM CO.,LTD

Address : Nguyen Xa Street Residential Group, Nhan Hoa Ward, My Hao Town, Hung Yen
 Province, 17000, Vietnam

1.4. Description of EUT

Kind of Product	WIRELESS CHARGER	
Model Name	WIT-DYC-0152A	
Serial Number	WIT-DYC-0152A #1	
Power Supply	DC 9 V	
Operation Mode	15 W, 2W	
Frequency Range	Ant 1	126.2 kHz ~ 129.2 kHz (15 W)
	Ant 2	138.5 kHz ~ 141.5 kHz (2 W)
Antenna Type	Loop Coil Antenna	
Antenna Serial Number	Ant 1	A11 #1
	Ant 2	#1
H/W Version	Ver0.3	
S/W Version	cps8100_duo_v1.3.7	

1.5. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Electric and Magnetic field Probe analyzer	NARDA	EHP 200AC	170WX91017	Dec. 02, 2021	Annual	Dec. 02, 2022
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.6 m)	N/A	N.C.R.	N/A	N.C.R.

Support Equipment

Description	Manufacturer	Model	FCC ID
Smart Wearable Device	Samsung Electronics Co., Ltd.	SM-R890	A3LSMR890
Mobile Phone	Samsung Electronics Co., Ltd.	SM-N976B	A3LSMN976B
TRAVEL ADAPTER	RFTECH THAI NGUYEN CO.,LTD	EP-TA800 001	-
Lap top	Dell	Latitude 3510	-

1.6. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 1 Subpart I		
Section	Test Item(s)	Result
1.1307(b) 1.1310(e)(1)	Electronic Field, Magnetic Field	Complied

1.7. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL003401	2022.09.01	Initial
1	F690501-RF-RTL003401-1	2022.09.13	Added the 20 cm H-Field data of E position

1.8. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Electric Field	19.78 %
Magnetic Field	13.66 %

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicate a 95 % level of confidence.

1.9. Worst Case of Test Configurations

In order to check all kinds of possible configurations, EUT was evaluated with appropriate client and under each charging condition as below table.

Charging mode with client device	Mode			Description
Model: SM-R890 FCC ID: A3LSMR890 Model: SM-N976B FCC ID: A3LSMN976B	15 W	2 W	15 W + 2 W	1 % of battery 50 % of battery 99 % of battery
	Ant 1	Ant 2	Ant 1 + Ant 2	
	SM-N976B	SM-R890	SM-N976B & SM-R890	
	126.2 kHz ~ 129.2 kHz	138.5 kHz ~ 141.5 kHz	126.2 kHz ~ 129.2 kHz, 138.5 kHz ~ 141.5 kHz	

Mode	Battery	Frequency (kHz)	E-field Strength (V/m)	H-field Strength (A/m)
15 W	1 %	128	<u>2.58</u>	<u>0.197</u>
	50 %		2.57	0.195
	99 %		2.50	0.194
2 W	1 %	140	<u>1.58</u>	<u>0.191</u>
	50 %		1.55	0.190
	99 %		1.54	0.189
15 W & 2W Ant 1	1 %	128	<u>2.75</u>	<u>0.191</u>
	50 %		2.74	0.190
	99 %		2.73	0.190
15 W & 2W Ant 2	1 %	140	<u>1.73</u>	<u>0.187</u>
	50 %		1.70	0.185
	99 %		1.69	0.185

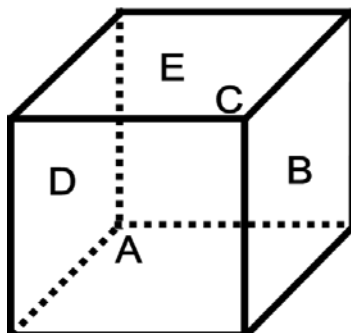
Note;

- EUT was investigated with client device under normal charging condition as above then worst value was only reported.

2.1. Test Result

2.1.1. Isotropic Probe Test Setup

The measurement probe (EHP-200AC) is a regular hexahedron and supports 3-axis isotropic probe.



A: Front of measurement probe

B: Right of measurement probe

C: Rear of measurement probe

D: Left of measurement probe

E: Top of measurement probe

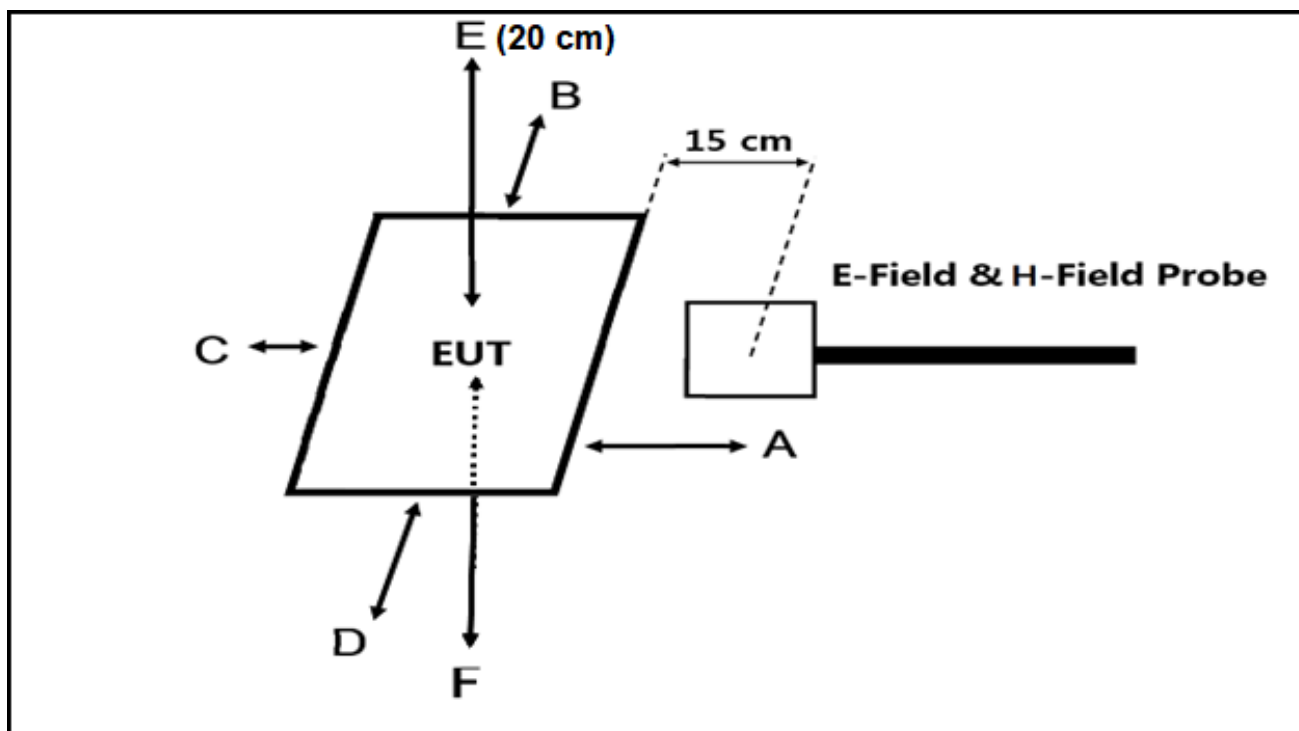
*Bottom of measurement probe is not used to measure RF exposure condition owing to connection with a stick.

- At 0 cm distance, measurement isotropic probe was investigated by rotating the probe through various angles for one of the EUT's sides as below.

Measurement Point	A	B	C	D	E
Direction	Front	Right	Rear	Left	Top
Measurement Point	A to B	B to C	C to D	D to A	N/A
Direction	Front to Right	Right to Rear	Rear to Left	Left to Front	-
Measurement Point	A to E	B to E	C to E	D to E	N/A
Direction	Front to Top	Right to Top	Rear to Top	Left to Top	-

- When the worst angle among all angles was found, RF exposure measurement should be adjusted from worst angle.

2.1.2. EUT Test Setup



2.1.3. Measurement procedure

- The RF exposure test was performed in anechoic chamber.
- The measurement probe was placed at test distance (15 cm) which is between the edge of the charger and the geometric center of probe.
- E-side was further measured at a distance of 20 cm.
- Measurement was performed on each side of the EUT as described above picture (A, B, C, D, E, F).
- The EUT was measured according to the dictates of KDB 680106 D01 RF Exposure Wireless Charging Apps v03.

2.2. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310.

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to § 1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
(i) Limits for Occupational /Control Exposures				
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
300-1 500	-	-	f/300	<6
1 500-100 000	-	-	5	<6
(ii) Limits for General Population/Uncontrolled Exposures				
<u>0.3-1.34</u>	<u>614</u>	<u>1.63</u>	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1 500	-	-	f/1 500	<30
1 500-100 000	-	-	1.0	<30

f = frequency in MHz. * = Plane wave equivalent power density.

2.3. E and H field strength

Ambient temperature : (23 ± 1) °C
Relative humidity : 47 % R.H.

2.3.1. E-Field Strength at from the edges surrounding the EUT

Test Condition: 15 W Operating mode with client device (1 % battery status of client device)

Frequency Range (kHz)	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Probe Position F (V/m)	Limits (V/m)
Ant. 1							
126.2 ~ 129.2	1.39	0.55	1.02	<u>2.58</u>	0.97	0.30	614

Test Condition: 2 W Operating mode with client device (1 % battery status of client device)

Frequency Range (kHz)	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Probe Position F (V/m)	Limits (V/m)
Ant. 2							
138.5 ~ 141.5	1.21	<u>1.58</u>	1.09	0.38	1.37	1.31	614

Test Condition: 15 W & 2W Operating mode with client device (1 % battery status of client device)

Frequency Range (kHz)	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Probe Position F (V/m)	Limits (V/m)
Ant. 1							
126.2 ~ 129.2	2.46	0.80	<u>2.75</u>	1.58	2.52	0.79	614
Ant. 2							
138.5 ~ 141.5	1.55	<u>1.73</u>	0.54	0.40	1.33	0.66	614

Remark;

- Worst Case: one of the several angles was found as D-side of isotropic probe.

2.3.2. H-Field Strength at from the edges surrounding the EUT

Test Condition: 15 W Operating mode with client device (1 % battery status of client device)

Frequency Range (kHz)	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Probe Position F (A/m)	Probe Position E 20 cm (A/m)	Limits (A/m)
Ant. 1								
126.2 ~ 129.2	<u>0.197</u>	0.191	0.191	0.189	0.183	0.191	0.179	1.63

Test Condition: 2 W Operating mode with client device (1 % battery status of client device)

Frequency Range (kHz)	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Probe Position F (A/m)	Probe Position E 20 cm (A/m)	Limits (A/m)
Ant. 2								
138.5 ~ 141.5	0.183	<u>0.191</u>	0.183	0.185	0.189	0.191	0.179	1.63

Test Condition: 15 W & 2 W Operating mode with client device (1 % battery status of client device)

Frequency Range (kHz)	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Probe Position F (A/m)	Probe Position E 20 cm (A/m)	Limits (A/m)
Ant. 1								
126.2 ~ 129.2	<u>0.191</u>	0.185	0.187	0.183	0.185	0.185	0.179	1.63
Ant. 2								
138.5 ~ 141.5	0.186	0.183	0.185	0.179	0.185	0.187	0.183	1.63

Remark;

- Worst Case: one of the several angles was found as A-side of isotropic probe.

- End of the Test Report -