

## RF Exposure Evaluation 2A2NS-GY-Z8A

### 1 Measuring Standard

KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01

### 2 Requirements

According to KDB680106 clause 5,b

(1) Power transfer frequency is less than 1 MHz.

--Yes, the device operated in the frequency range from 115 KHz to 205KHz

(2) Output power from each primary coil is less than or equal to 15 watts.

--Yes, the maximum output power of the primary coil is 15 W

(3) The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pair may be powered on at the same time.

--Yes, the product has a plurality of coil, and support the same coil hair.

(4) Client device is placed directly in contact with the transmitter.

--Yes, Client device is placed directly in contact with the transmitter

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

--Yes

(6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

--Yes, the EUT field strength level are 50% x MPE limit.

### 3 Limits

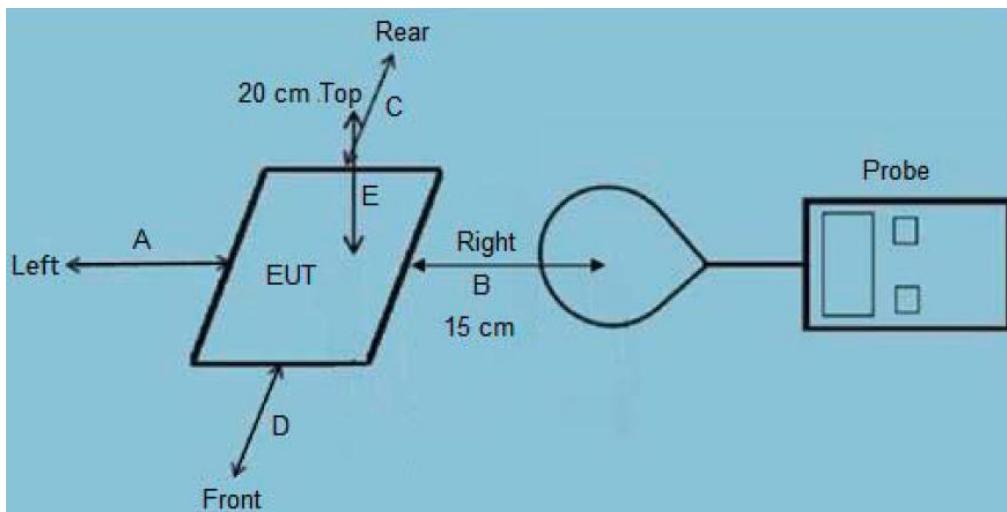
The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz  
\*=Plane-wave equivalent power density  
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

## 4 Test Setup



## 5 Test Procedure

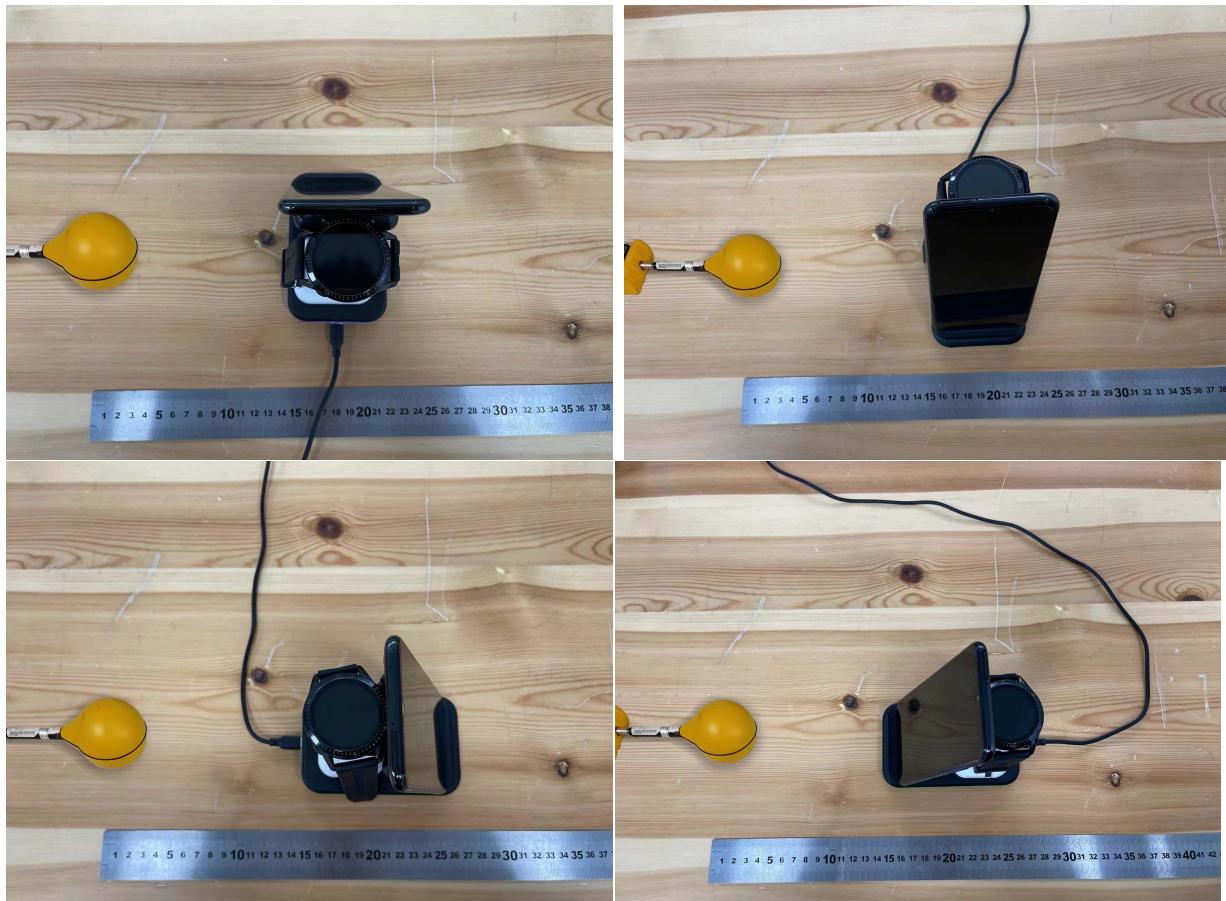
- 1) The RF exposure test was performed in anechoic chamber.
- 2) The measurement probe was placed at test distance (15 cm from all sides and 20 cm from the top) which is between the edge of the charger and the geometric center of probe.
- 3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed
- 4) The EUT was measured according to the dictates of KDB 680106 D01v03r01

Remark: The EUT's test position A, B, C, D and E is valid for the E and H field measurements

## 6 Equipment list

Test Equipment	Manufacturer	Model No.	SN.	Last calibration	Calibrated until
Exposure Level Tester	Narda	ELT-400	N03565	Jul 28,2021	Jul 28,2022
Electric and Magnetic field probe 100cm <sup>2</sup>	Narda	ELT probe 100cm <sup>2</sup>	M8976	Jul 28,2021	Jul 28,2022

## 7 Photo





## 8 Test mode

- Mode 1 Phone 5W, Watch 2.5W, Headset 3W
- Mode 2 Phone 7.5W, Watch 2.5W, Headset 3W
- Mode 3 Phone 10W, Watch 2.5W, Headset 3W
- Mode 4 Phone 15W, Watch 2.5W, Headset 3W
- Mode 5 Phone 5W
- Mode 6 Phone 7.5W
- Mode 7 Phone 10W
- Mode 8 Phone 15W
- Mode 9 Watch 2.5W
- Mode 10 Headset 3W

## 9 Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
1	Adapter	HW	0789SK	N/A	This adapter is for testing only in report.
2	Phone	HW	Mate 20	N/A	This phone is for testing only in report.
3	Headset	iHome	XT-12	N/A	This phone is for testing only in report.
4	Watch	MedicTec	WA001	N/A	This phone is for testing only in report.

## 10 Test Result

### Mode 4 (worst)

E-Filed Strength at 15 cm from the edges surrounding the EUT (V/m)

Battery power	Frequency Range(MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Limits (V/m)
1%	0.115-0.205	1.43	1.64	0.51	0.52	614
50%	0.115-0.205	1.61	1.22	0.42	0.67	614
95%	0.115-0.205	1.24	1.51	0.45	0.58	614
Stand-by	0.115-0.205	1.42	1.27	0.53	0.53	614

E-Filed Strength at 20 cm from the top of the EUT (V/m)

Battery power	Frequency Range(MHz)	Test Position E	Limits (V/m)
1%	0.115-0.205	1.36	614
50%	0.115-0.205	1.33	614
95%	0.115-0.205	1.45	614
Stand-by	0.115-0.205	1.57	614

H-Filed Strength at 15 cm from the edges surrounding the EUT (A/m)

Battery power	Frequency Range(MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Limits (A/m)
1%	0.115-0.205	0.71	0.62	0.72	0.64	1.63
50%	0.115-0.205	0.62	0.64	0.63	0.55	1.63
95%	0.115-0.205	0.65	0.63	0.57	0.58	1.63
Stand-by	0.115-0.205	0.57	0.61	0.66	0.51	1.63

H-Filed Strength at 20 cm from the top of the EUT (A/m)

Battery power	Frequency Range(MHz)	Test Position E	Limits (A/m)
1%	0.115-0.205	0.57	1.63
50%	0.115-0.205	0.43	1.63
95%	0.115-0.205	0.48	1.63
Stand-by	0.115-0.205	0.56	1.63

Single mode: Mode 8 (Worst)

E-Filed Strength at 15 cm from the edges surrounding the EUT (V/m)

Battery power	Frequency Range(MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Limits (V/m)
1%	0.115-0.205	1.22	1.54	0.41	0.51	614
50%	0.115-0.205	1.13	1.32	0.38	0.57	614
95%	0.115-0.205	1.17	1.41	0.37	0.52	614
Stand-by	0.115-0.205	1.22	1.17	0.41	0.56	614

E-Filed Strength at 20 cm from the top of the EUT (V/m)

Battery power	Frequency Range(MHz)	Test Position E	Limits (V/m)
1%	0.115-0.205	1.24	614
50%	0.115-0.205	1.35	614
95%	0.115-0.205	1.31	614
Stand-by	0.115-0.205	1.43	614

H-Filed Strength at 15 cm from the edges surrounding the EUT (A/m)

Battery power	Frequency Range(MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Limits (A/m)
1%	0.115-0.205	0.63	0.59	0.62	0.54	1.63
50%	0.115-0.205	0.57	0.54	0.53	0.45	1.63
95%	0.115-0.205	0.53	0.53	0.51	0.58	1.63
Stand-by	0.115-0.205	0.62	0.51	0.56	0.47	1.63

H-Filed Strength at 20 cm from the top of the EUT (A/m)

Battery power	Frequency Range(MHz)	Test Position E	Limits (A/m)
1%	0.115-0.205	0.48	1.63
50%	0.115-0.205	0.42	1.63
95%	0.115-0.205	0.47	1.63
Stand-by	0.115-0.205	0.51	1.63

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Reviewed by: Kait Chen

\*\*\*\*\*END OF THE REPORT\*\*\*\*\*