



## RF EXPOSURE EVALUATION

**FCC ID:2BB8Q-Y18**

Product Name:	Magnetic wireless charging (five-in-one multi-functional Little Swan)
Model No.:	Y18
Serial No.:	N/A
Model Difference:	N/A
Operation Frequency:	ANT 1: 115kHz ~ 205kHz ANT 2: 300kHz ~ 360kHz
Modulation Type:	ASK
Antenna Type:	Loop Coil Antenna
Antenna Gain:	0dBi
Power Supply:	Input: 9V---3A Output current: 9V---1.5A Mobile phone output power: 5W/7.5W/10W/15W Watch output power: 2.5W
Transmitting Mode:	Keep the EUT in continuously wireless charging mode
Date of Test:	Aug. 23, 2025 to Aug. 29, 2025
Date of issue:	Aug. 29, 2025



Test Modes:	Test Coil:	Description:
Mode 1		AC/DC Adapter (9V/3A) + EUT + Phone (Battery Status: <1%)
Mode 2	ANT 1	AC/DC Adapter (9V/3A) + EUT + Phone (Battery Status: 50%)
Mode 3		AC/DC Adapter (9V/3A) + EUT + Phone (Battery Status: >98%)
Mode 4		AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: <1%)
Mode 5	ANT 2	AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: 50%)
Mode 6		AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: >98%)
Mode 7	ANT 1	AC/DC Adapter (9V/3A) + EUT + Phone + Watch (Battery Status: <1%)
Mode 8	+ ANT2	AC/DC Adapter (9V/3A) + EUT + Phone + Watch (Battery Status: 50%)
Mode 9		AC/DC Adapter (9V/3A) + EUT + Phone + Watch (Battery Status: >98%)



## 1 Measuring Standard

1.1 According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1091 RF exposure is calculated. According KDB 680106 D01 Wireless Power Transfer v04.

## 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	H-filed	$\pm 0.93\text{dB}$
2	E-filed	$\pm 0.51\text{dB}$

## 2.1 Requirements

The EUT does comply with item 5.2 of KDB 680106 D01 V04:

a) The power transfer frequency is below 1 MHz.

Yes. The device operates in the frequency from ANT 1 is 115kHz to 205kHz, ANT 2 is 300kHz to 360kHz.

b) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.

Yes, The maximum output power of the primary coil is 15watts.

c) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact).

Yes. Client device is placed directly in contact with the transmitter.

d) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).

Yes, the EUT is a Mobile Wireless Charger.

e) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes.

The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures

Yes. The EUT coil is evaluated at maximum output power and the test results are less than 50% of the limit.

f) For systems with more than one radiating structure, the conditions specified in (e) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. .

Yes, the EUT has two coil, all test modes met the conditions specified in (e).



## 2.2 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):

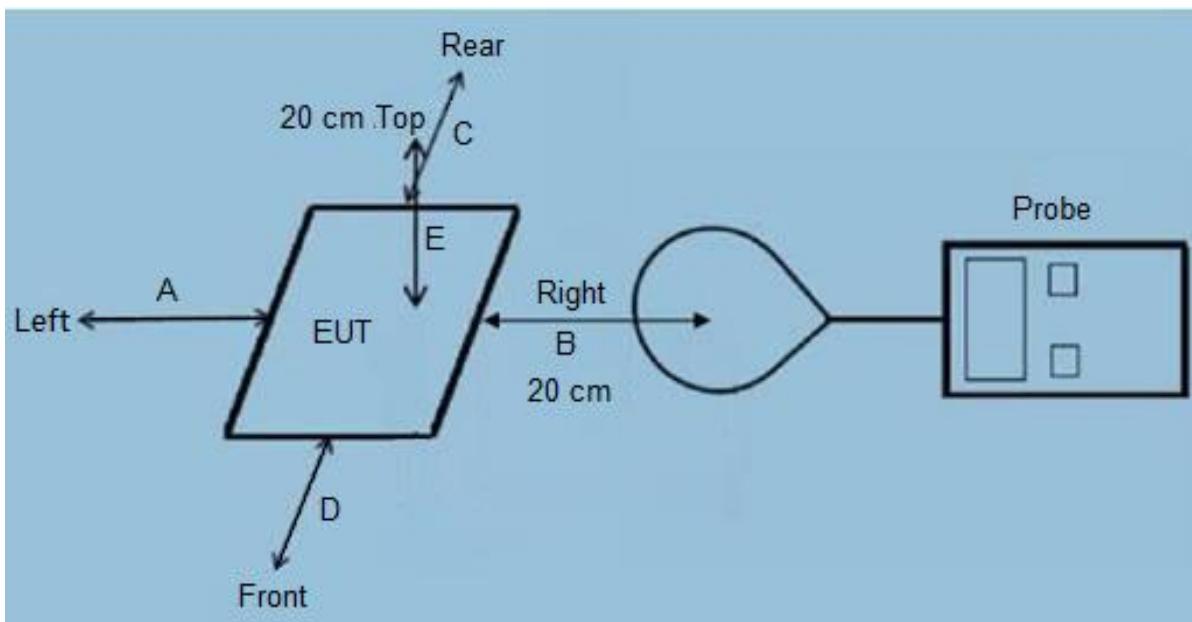
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	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).

## 2.3 Test Setup





### 3 Test Procedure

- 1) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- 2) The measurement probe was placed at test distance (20 cm and above from all sides and Top) which is between the edge of the charger and the geometric centre of probe.
- 3) The turn table was rotated 360d degree to search of highest strength.
- 4) The highest emission level was recorded and compared with limit as soon as measurement of each points were completed.
- 5) The EUT were measured according to the dictates of KDB 680106 D01 V04.

### 4. Test instrument and equipment list

#### 4.1 Test Instruments list

Test Equipment	Manufacturer	Model No.	SN.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
Exposure Level Tester	Narda	ELT-400	180ZX10220	Sep. 29, 2024	Sep. 28, 2025
Magnetic field probe 100cm <sup>2</sup>	Narda	ELT probe 100cm <sup>2</sup>	M0675	Sep. 29, 2024	Sep. 28, 2025

#### 4.2 Test auxiliary equipment list

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Magnetic wireless charging (five-in-one multi-functional Little Swan)	N/A	Y18	N/A	EUT
E-2	AC/DC Adapter	SAMSUNG	EP-T4510	N/A	Auxiliary
E-3	Phone	APPLE	iPhone 13 Pro Max	N/A	Auxiliary
E-4	Watch	BASEUS	E3	N/A	Auxiliary



## 5 Test Result

### Test Mode 1~3: H-Field Strength at (distance from 20cm) surrounding the EUT (A/m):

distance (cm)	Battery Level:	Frequency (kHz)	Position Left (uT)	Position Right (uT)	Position Rear (uT)	Position Front (uT)	Position Top (uT)
20	<1%	115~205	0.46	0.45	0.47	0.44	0.43
20	50%	115~205	0.40	0.41	0.42	0.39	0.38
20	>98%	115~205	0.30	0.29	0.31	0.28	0.26

distance (cm)	Battery Level:	Frequency (kHz)	Position Left (A/m)	Position Right (A/m)	Position Rear (A/m)	Position Front (A/m)	Position Top (A/m)	50% Limits (A/m)	Limits (A/m)
20	<1%	115~205	0.37	0.36	0.38	0.35	0.34	0.815	1.63
20	50%	115~205	0.32	0.33	0.34	0.31	0.30	0.815	1.63
20	>98%	115~205	0.24	0.23	0.25	0.22	0.21	0.815	1.63

### Test Mode 4~6: H-Field Strength at (distance from 20cm) surrounding the EUT (A/m):

distance (cm)	Battery Level:	Frequency (kHz)	Position Left (uT)	Position Right (uT)	Position Rear (uT)	Position Front (uT)	Position Top (uT)
20	<1%	300~360	0.44	0.43	0.41	0.42	0.40
20	50%	300~360	0.35	0.36	0.34	0.35	0.32
20	>98%	300~360	0.26	0.24	0.25	0.24	0.23

distance (cm)	Battery Level:	Frequency (kHz)	Position Left (A/m)	Position Right (A/m)	Position Rear (A/m)	Position Front (A/m)	Position Top (A/m)	50% Limits (A/m)	Limits (A/m)
20	<1%	300~360	0.35	0.34	0.33	0.34	0.32	0.815	1.63
20	50%	300~360	0.28	0.29	0.27	0.28	0.26	0.815	1.63
20	>98%	300~360	0.21	0.19	0.20	0.19	0.18	0.815	1.63

**Test Mode 7~9: H-Field Strength at (distance from 20cm) surrounding the EUT (A/m):**

distance (cm)	Battery Level:	Position Left (uT)	Position Right (uT)	Position Rear (uT)	Position Front (uT)	Position Top (uT)
20	<1%	0.79	0.77	0.76	0.75	0.74
20	50%	0.72	0.73	0.71	0.70	0.68
20	>98%	0.63	0.62	0.61	0.62	0.60

distance (cm)	Battery Level:	Position Left (A/m)	Position Right (A/m)	Position Rear (A/m)	Position Front (A/m)	Position Top (A/m)	50% Limits (A/m)	Limits (A/m)
20	<1%	0.63	0.62	0.61	0.60	0.59	0.815	1.63
20	50%	0.58	0.58	0.57	0.56	0.54	0.815	1.63
20	>98%	0.50	0.50	0.49	0.50	0.48	0.815	1.63

Note: A/m = uT/1.25

**Test Mode 1~3: E-Field strength at (distance from 20cm) surrounding the EUT (V/m):**

distance (cm)	Battery Level:	Frequency (kHz)	Position Left (V/m)	Position Right (V/m)	Position Rear (V/m)	Position Front (V/m)	Position Top (V/m)	50% Limits (V/m)	Limits (V/m)
20	<1%	115~205	1.65	1.63	1.61	1.62	1.61	307	614
20	50%	115~205	1.53	1.54	1.52	1.51	1.50	307	614
20	>98%	115~205	1.45	1.46	1.44	1.45	1.43	307	614

**Test Mode 4~6: E-Field strength at (distance from 20cm) surrounding the EUT (V/m):**

distance (cm)	Battery Level:	Frequency (kHz)	Position Left (V/m)	Position Right (V/m)	Position Rear (V/m)	Position Front (V/m)	Position Top (V/m)	50% Limits (V/m)	Limits (V/m)
20	<1%	300~360	1.57	1.56	1.55	1.54	1.52	307	614
20	50%	300~360	1.45	1.47	1.43	1.46	1.44	307	614
20	>98%	300~360	1.35	1.33	1.34	1.32	1.31	307	614

**Test Mode 7~9: E-Field strength at (distance from 20cm) surrounding the EUT (V/m):**

distance (cm)	Battery Level:	Position Left (V/m)	Position Right (V/m)	Position Rear (V/m)	Position Front (V/m)	Position Top (V/m)	50% Limits (V/m)	Limits (V/m)
20	<1%	1.86	1.87	1.85	1.84	1.83	307	614
20	50%	1.78	1.77	1.76	1.74	1.75	307	614
20	>98%	1.65	1.62	1.63	1.64	1.61	307	614



## 6 Test Set-up Photo

Probe	Length	Width	Radius
	11cm	11cm	5.5cm

Reference to the appendix III for details.

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