RF Exposure Evaluation
FCC ID: 2A7YG-CF-WC06-BL

1. Client Information

Applicant	:	Shenzhen Shi ChangfengXinwei Keji Youxian Gongsi
Address	:	Mei Lan Shang Wu Zhong Xin 1009 Xi Xiang Jie Dao Fu Hua She Qu Bao Yun Da Wu Liu Zhong Xin Shen Zhen Guang Dong,China 816000
Manufacturer	:	Shenzhen Shi ChangfengXinwei Keji Youxian Gongsi
Address	:	Mei Lan Shang Wu Zhong Xin 1009 Xi Xiang Jie Dao Fu Hua She Qu Bao Yun Da Wu Liu Zhong Xin Shen Zhen Guang Dong,China 816000

2. General Description of EUT

EUT Name	:	3 in 1 wireless charging station	
Models No.	:	CF-WC06-BL, CF-WC06-WH, CF-WC06-RG, CF-WC06-GL, CF-WC06-GR, CF-WC06-SG, CF-WC06-BU, CF-WC06-DG, CF-WC06-CO, CF-WC06-PK	
Model Different	:	All these models are the same in the same PCB, layout and circuit, the only difference is the model name and appearance color.	
Product Description	:	Operation Frequency:	113-205KHz for phone 300-350KHz for watch
		Modulation Type:	ASK
		Antenna:	Coil Antenna
Power Rating		Adapter:CA-25 Input: AC 100-240V 50/60Hz~0.5A Output: DC3.6V~6.5V,3A; DC6.5V~9V,2A; DC9V~12V,1.5A Wireless charging output: Phone: 10W(mAX), Watch: 2.5W(Max) Earphone output: 2.5W(Max)	
Software Version	:	V.5.2	
Hardware Version	:	V.5.3	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

Note: More test information about the EUT please refer the RF Test Report.

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RF Exposure Considerations

1. Measuring Standard

KDB 680106 D01 RF Exposure Wireless Charging App v03.

2. Requirements

According to the item 5.2 of KDB 680106 D01v03:
Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation:

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

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

(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 pairs may be powered on at the same time.

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

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

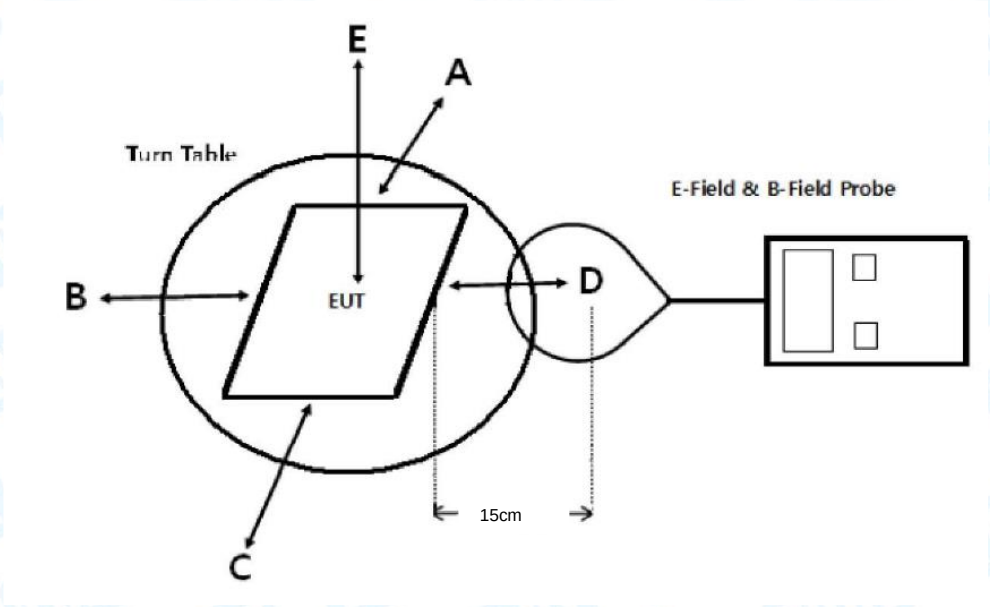
(6) The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.

Limits For Maximum Permissible Exposure (MPE)

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/Controlled 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
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

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).

3. Test Setup



Note: The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface.

4.Test Procedure

1) The RF exposure test was performed in anechoic chamber.
2) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface.
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 D01 v03.

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

5. Test Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Magnetic field meter	NARDA	ELT-400	O-0449	Aug. 27, 2021	Aug. 26, 2022
Magnetic field probe	NARDA	ELT- probe 100cm^2	M-1850	Aug. 27, 2021	Aug. 26, 2022
Field intensity probe	NARDA	EP-601	811ZX01000	Mar. 02, 2022	Mar. 01, 2023

6. Deviation From Test Standard

No deviation

7.Equipment Approval Considerations

The EUT does comply with item 5.2 of KDB 680106 D01v02 as follows table;

Requirements of KDB 680106 D01	Yes / No	Description
Power transfer frequency is less than 1 MHz	Yes	The device operate in the frequency range 113KHz-205KHz and 300KHz -350KHz
Output power from each primary coil is less than 15 watts	Yes	The maximum output power of the primary coil is 10W.
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 pairs may be powered on at the same time.	Yes	The transfer system includes only single primary and secondary coils. Charging systems have two primary coils and clients that are able to detect and allow coupling only between individual pairs of coilsand the coil pairs powered on at the same time.
Client device is placed directly in contact with the transmitter.	Yes	Client device is placed directly in contact with the transmitter.
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes	Mobile exposure conditions
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 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.

In all other cases, unless excluded above, an RF exposure evaluation report must be reviewed and accepted through a KDB or PBA inquiry to enable authorization of the equipment. When evaluation is required to show compliance; for example, using field strength, power density, SAR measurements or computational modeling etc., the specific authorization requirements will be determined based on the results of the RF exposure evaluation

8. Mode of operation during the test / Test peripherals used

Test Modes:		
TM1	AC/DC Adapter + EUT + Phone+ Watch (Battery Status: <1%)	record
TM2	AC/DC Adapter + EUT + Phone+ Watch (Battery Status: <50%)	record
TM3	AC/DC Adapter + EUT + Phone + Watch (Battery Status: <99%)	record

9. Test Result

Watch:

H-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface

Charging Battery Level	unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m) Test Position					H-Field Strength 50% Limits (A/m)	H-Field Strength Limits (A/m)
			A	B	C	D	E		
1%	uT	0.322	0.221	0.232	0.333	0.261	0.235	--	--
1%	A/m	0.322	0.177	0.186	0.266	0.209	0.189	0.815	1.63
50%	uT	0.322	0.230	0.212	0.216	0.242	0.233	--	--
50%	A/m	0.322	0.184	0.170	0.173	0.193	0.184	0.815	1.63
99%	uT	0.322	0.232	0.224	0.225	0.258	0.212	--	--
99%	A/m	0.322	0.186	0.179	0.180	0.206	0.170	0.815	1.63

H-Field Strength at 20cm from the top surface of the EUT

Charging Battery Level	Unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m) Test Position E	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
1%	uT	0.322	0.226	--	--
1%	A/m	0.322	0.181	0.815	1.63
50%	uT	0.322	0.232	--	--
50%	A/m	0.322	0.186	0.815	1.63
99%	uT	0.322	0.262	--	--
99%	A/m	0.322	0.210	0.815	1.63

Note: A/m=uT/1.25

phone:

H-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface

Charging Battery Level	unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m) Test Position					H-Field Strength 50% Limits (A/m)	H-Field Strength Limits (A/m)
			A	B	C	D	E		
1%	uT	0.149	0.213	0.256	0.213	0.266	0.230	--	--
1%	A/m	0.149	0.103	0.205	0.170	0.213	0.184	0.815	1.63
50%	uT	0.149	0.224	0.253	0.255	0.249	0.223	--	--
50%	A/m	0.149	0.179	0.202	0.204	0.199	0.178	0.815	1.63
99%	uT	0.149	0.224	0.214	0.232	0.251	0.246	--	--
99%	A/m	0.149	0.179	0.171	0.186	0.201	0.208	0.815	1.63

H-Field Strength at 20cm from the top surface of the EUT

Charging Battery Level	Unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m) Test Position E	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
1%	uT	0.149	0.225	--	--
1%	A/m	0.149	0.180	0.815	1.63
50%	uT	0.149	0.253	--	--
50%	A/m	0.149	0.205	0.815	1.63
99%	uT	0.149	0.239	--	--
99%	A/m	0.149	0.191	0.815	1.63

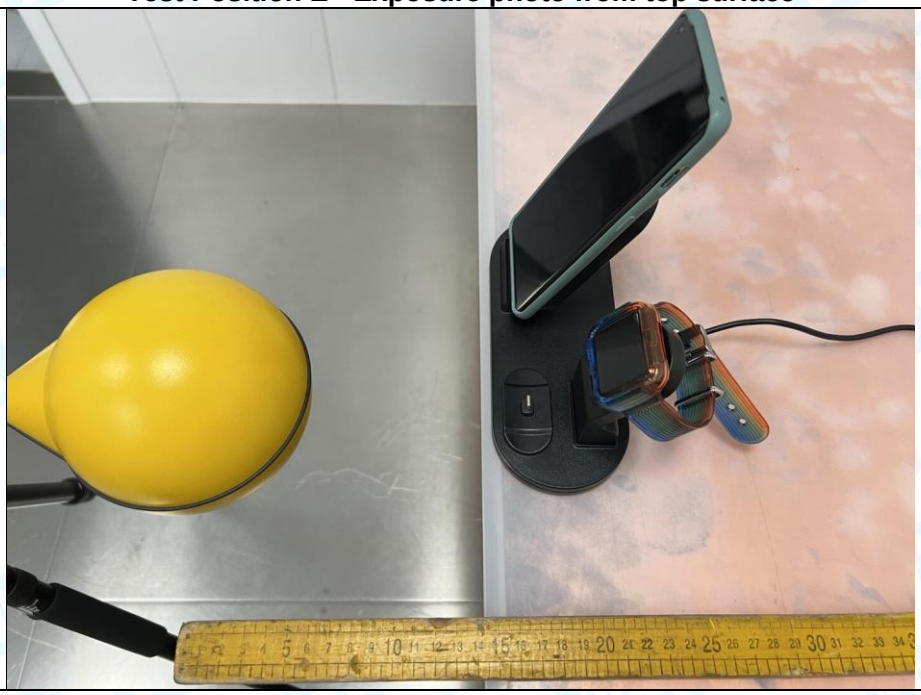
Note: A/m=uT/1.25

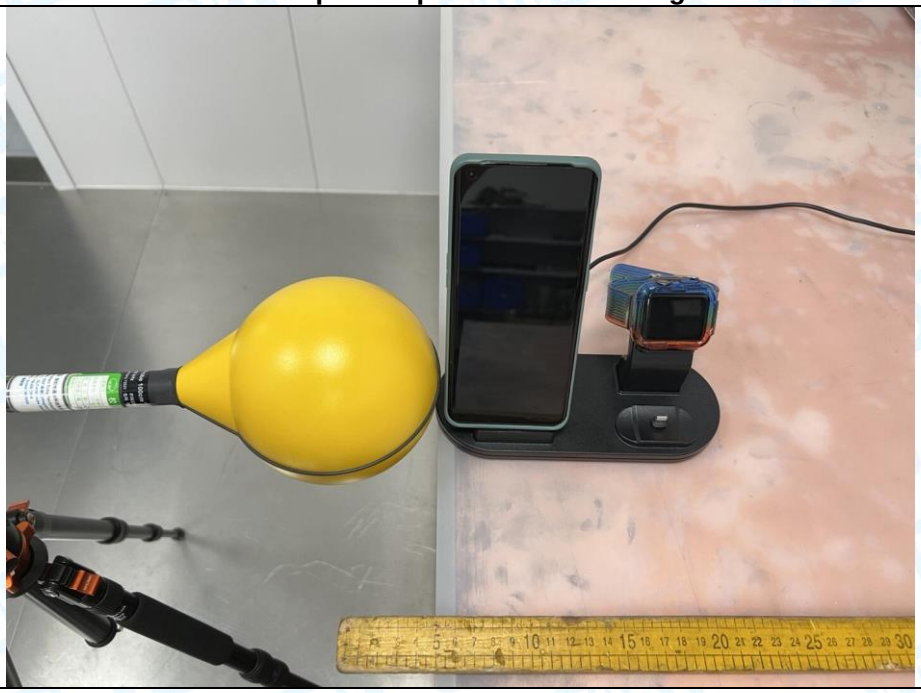
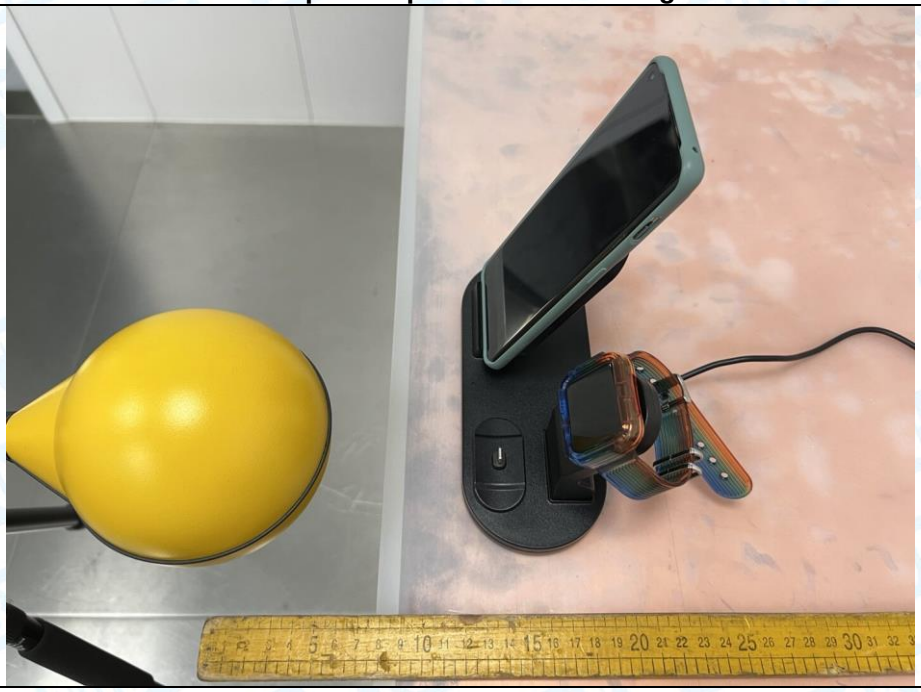
H-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface

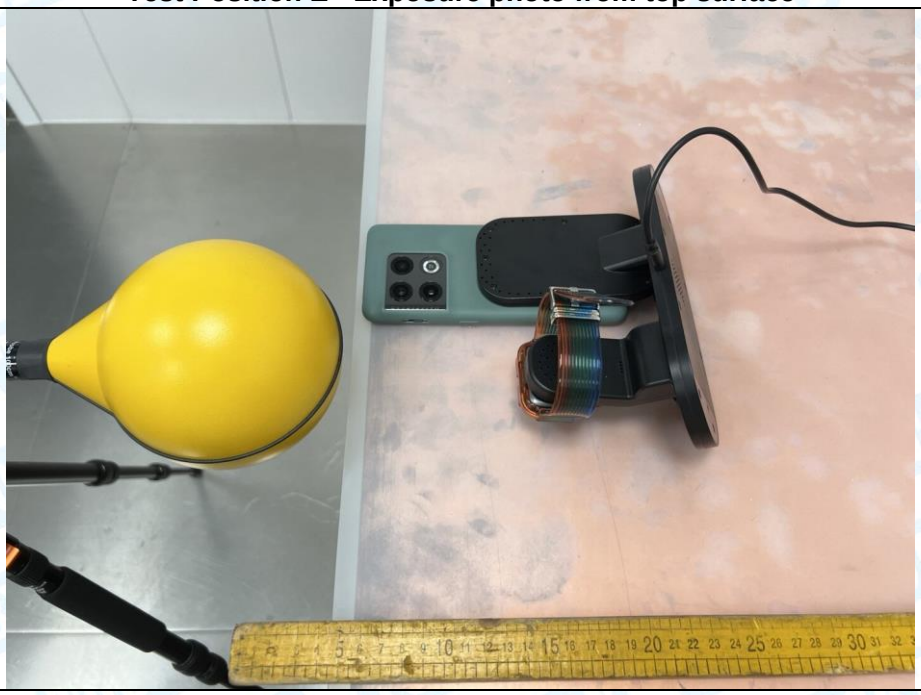
Note	Charging Battery Level	unit	Measured H-Field Strength Values (A/m) Test Position					H-Field Strength 50% Limits (A/m)	H-Field Strength Limits (A/m)
			A	B	C	D	E		
SUM	1%	A/m	0.280	0.391	0.436	0.422	0.373	0.815	1.63
SUM	50%	A/m	0.363	0.372	0.377	0.392	0.362	0.815	1.63
SUM	99%	A/m	0.365	0.350	0.366	0.407	0.378	0.815	1.63

H-Field Strength at 20cm from the top surface of the EUT

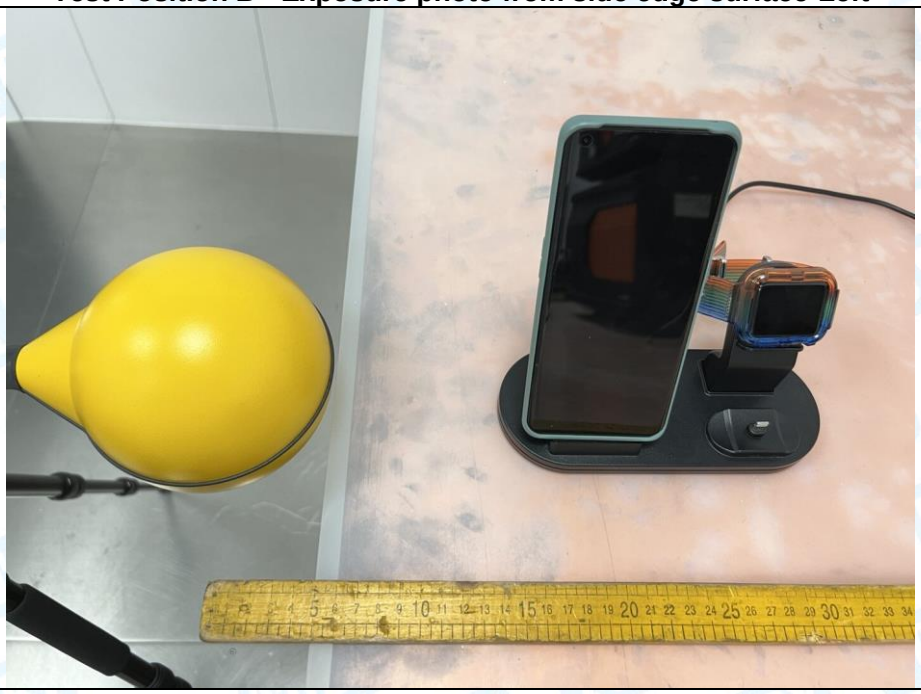
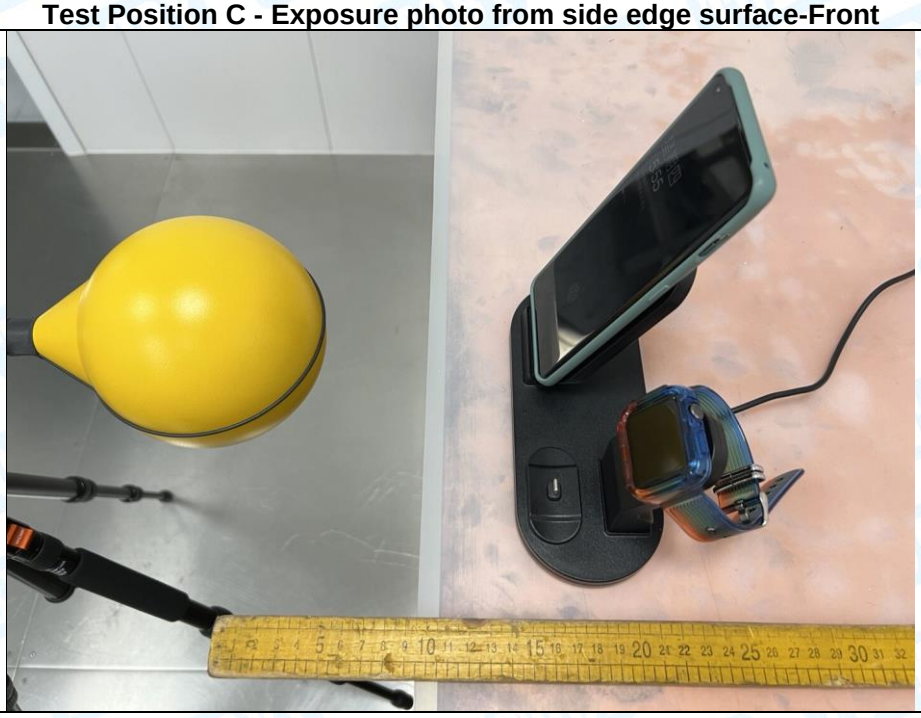
Note	Charging Battery Level	Unit	Measured H-Field Strength Values (A/m) Test Position E	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
SUM	1%	A/m	0.361	0.815	1.63
SUM	50%	A/m	0.391	0.815	1.63
SUM	99%	A/m	0.401	0.815	1.63

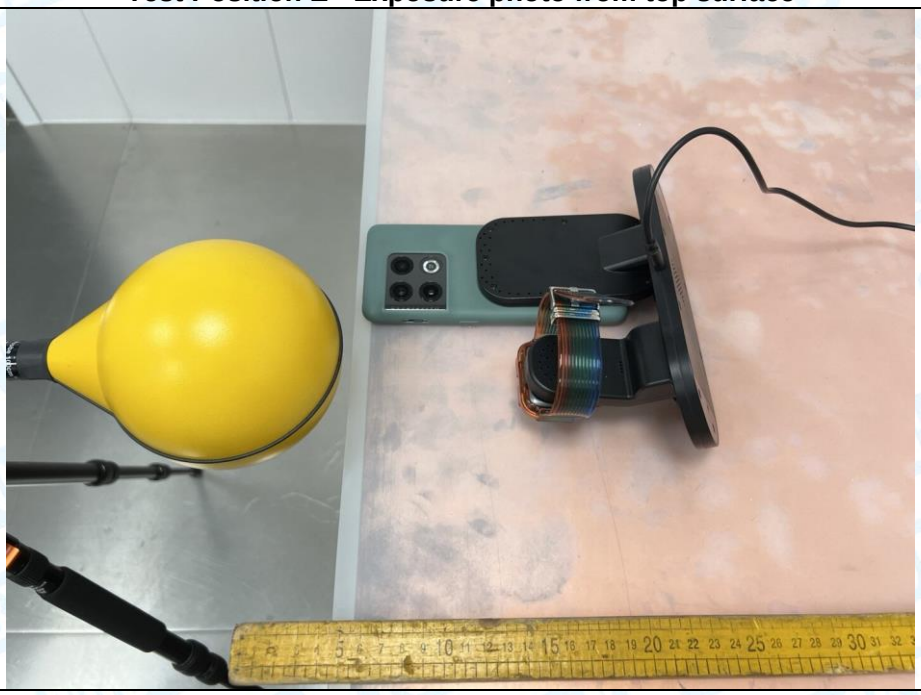
H-Field Strength-20cm
Test Position E - Exposure photo from top surface

H-Field Strength-15cm
Test Position A - Exposure photo from side edge surface-Rear

H-Field Strength-15cm
Test Position B - Exposure photo from side edge surface-Left

H-Field Strength-15cm
Test Position C - Exposure photo from side edge surface-Front


H-Field Strength-15cm
Test Position D - Exposure photo from side edge surface-Right
H-Field Strength- 15 cm
Test Position E - Exposure photo from top surface


H-Field Strength-20cm
Test Position E - Exposure photo from top surface
H-Field Strength-15cm
Test Position A - Exposure photo from side edge surface-Rear

H-Field Strength-15cm
Test Position B - Exposure photo from side edge surface-Left

H-Field Strength-15cm
Test Position C - Exposure photo from side edge surface-Front


H-Field Strength-15cm
Test Position D - Exposure photo from side edge surface-Right
H-Field Strength- 15 cm
Test Position E - Exposure photo from top surface


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