Shenzhen Global Test Service Co.,Ltd.
No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong

TEST REPORT

Report Reference No......:	**GTS20200109007-1-18-2**
FCC ID..... **:**	**2AODN-T3**
Compiled by (position+printed name+signature)..:	File administrators Jimmy Wang
Supervised by (position+printed name+signature)..:	Test Engineer Aaron Tan
Approved by (position+printed name+signature)..:	Manager Jason Hu
Date of issue.....:	Jan. 08, 2020

Representative Laboratory Name .:	**Shenzhen Global Test Service Co., Ltd.**
Address .....:	No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong

Applicant's name.....:	**CYSPO Technology (Shenzhen) Co., Ltd.**
Address .....:	Floor 2, Building A, Jin Chi Industry Park, Jiu Wei, Baoan District , Shenzhen, Guangdong, China

Test specification .....**:**	
Standard .....:	**FCC Rules and Regulations part 2.1091** **KDB680106 D01v03**
TRF Originator.....:	Shenzhen Global Test Service Co.,Ltd.
Master TRF.....:	Dated 2014-12

Test item description .....:	3-in-1 Wireless Charging Station
Trade Mark .....:	N/A
Manufacturer .....:	CYSPO TECHNOLOGY(SHENZHEN) CO.,LTD.
Model/Type reference.....:	T3
Listed Models .....:	N/A
Modulation Type .....:	ASK
Operation Frequency.....:	From 110KHz~205KHz
Rating .....:	9V⎓2A
Result.....:	**PASS**

T E S T R E P O R T

Test Report No. :	**GTS20200109007-1-18-2**	Jan. 08, 2020 Date of issue

Equipment under Test	:	3-in-1 Wireless Charging Station
Model /Type	:	T3
Listed Models	:	N/A
Applicant	:	**CYSPO TECHNOLOGY(SHENZHEN) CO.,LTD.**
Address	:	Floor 2, Building A, Jin Chi Industry Park, Jiu Wei, Baoan District , Shenzhen, Guangdong, China
Manufacturer	:	**CYSPO TECHNOLOGY(SHENZHEN) CO.,LTD.**
Address	:	Floor 2, Building A, Jin Chi Industry Park, Jiu Wei, Baoan District , Shenzhen, Guangdong, China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1 SUMMARY

1.1 General Remarks

Date of receipt of test sample	:	Dec. 24, 2019
Testing commenced on	:	Dec. 25, 2019
Testing concluded on	:	Jan. 07, 2020

1.2 Product Description

Product Name:	3-in-1 Wireless Charging Station
Model/Type reference:	T3
Power supply:	DC 9 from adapter
Wireless Charger	
Antenna Type	Coil Antenna
Antenna Gain	0.0dBi
Operation frequency	110KHz~205KHz
Modulation Type	ASK

1.3 Description of the test mode

Equipment under test was operated during the measurement under the following conditions:
☒ Charging and communication mode

Test Conditions	Description	
TM1	AC/DC Adapter (9V/2A) + EUT + Mobile Phone (Battery Status: <1%)	Pre-tested
TM2	AC/DC Adapter (9V/2A) + EUT + Mobile Phone (Battery Status: <50%)	Pre-tested
TM3	AC/DC Adapter (9V/2A) + EUT + Mobile Phone (Battery Status: 100%)	Pre-tested
TM4	AC/DC Adapter (9V/2A) + EUT + iWatch(Battery Status: <1%)	Pre-tested
TM5	AC/DC Adapter (9V/2A) + EUT + iWatch(Battery Status: <50%)	Pre-tested
TM6	AC/DC Adapter (9V/2A) + EUT + iWatch(Battery Status: 100%)	Pre-tested
TM7	AC/DC Adapter (9V/2A) + EUT + AirPods(Battery Status: <1%)	Pre-tested
TM8	AC/DC Adapter (9V/2A) + EUT + AirPods(Battery Status: <50%)	Pre-tested
TM9	AC/DC Adapter (9V/2A) + EUT + AirPods(Battery Status: 100%)	Pre-tested
TM10	AC/DC Adapter (9V/2A) + EUT + Mobile Phone + iWatch(Battery Status: <1%)	Pre-tested
TM11	AC/DC Adapter (9V/2A) + EUT + Mobile Phone + iWatch(Battery Status: <50%)	Pre-tested
TM12	AC/DC Adapter (9V/2A) + EUT + Mobile Phone + iWatch(Battery Status: 100%)	Pre-tested
TM13	AC/DC Adapter (9V/2A) + EUT + Mobile Phone + AirPods(Battery Status: <1%)	Pre-tested
TM14	AC/DC Adapter (9V/2A) + EUT + Mobile Phone + AirPods(Battery Status: <50%)	Pre-tested
TM15	AC/DC Adapter (9V/2A) + EUT + Mobile Phone + AirPods(Battery Status: 100%)	Pre-tested
TM16	AC/DC Adapter (9V/2A) + EUT + iWatch+ AirPods(Battery Status: <1%)	Pre-tested
TM17	AC/DC Adapter (9V/2A) + EUT + iWatch+ AirPods(Battery Status: <50%)	Pre-tested
TM18	AC/DC Adapter (9V/2A) + EUT + iWatch+ AirPods(Battery Status: 100%)	Pre-tested
TM19	AC/DC Adapter (9V/2A) + EUT + Mobile Phone +IWatch+ AirPods(Battery Status: <1%)	Record
TM20	AC/DC Adapter (9V/2A) + EUT + Mobile Phone +IWatch+ AirPods(Battery Status: <50%)	Record
TM21	AC/DC Adapter (9V/2A) + EUT + Mobile Phone +IWatch+ AirPods(Battery Status: 100%)	Record
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		

1.4 Modifications

No modifications were implemented to meet testing criteria.

2 TEST ENVIRONMENT

2.1 Address of the test laboratory

Shenzhen Global Test Service Co.,Ltd.
No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

2.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 165725

Shenzhen Global Test Service Co.,Ltd EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

A2LA-Lab Cert. No.: 4758.01

Shenzhen Global Test Service Co.,Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

CNAS-Lab Code: L8169

Shenzhen Global Test Service Co.,Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories. Date of Registration: Dec. 11, 2015. Valid time is until Dec. 10, 2024.

2.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

2.4 Summary of measurement results

Test Item	Result
Electric Field Strength (E) (V/m)	Compliant
Magnetic Field Strength (H) (A/m)	Compliant

2.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Global Test Service Co.,Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen GTS laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10 dB	(1)
Radiated Emission	1~18GHz	4.32 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.12 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.6 Equipments Used during the Test

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Dec. 27, 2019	Dec. 26, 2020
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Dec. 27, 2019	Dec. 26, 2020
Magnetic Probe	NARDA	HF-3061	300kHz – 30MHz	Dec. 27, 2019	Dec. 26, 2020
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Dec. 27, 2019	Dec. 26, 2020
Broadband Field Meter	NARDA	NBM-550	-	Dec. 27, 2019	Dec. 26, 2020
Electric Field Meter	COMBINOVA	EFM 200	5Hz – 400kHz	Dec. 27, 2019	Dec. 26, 2020
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Dec. 27, 2019	Dec. 26, 2020
E-Field Probe	NARDA	EF-6091	100MHz – 60GHz	Dec. 27, 2019	Dec. 26, 2020

Note: The Cal.Interval was one year.

3 TEST CONDITIONS AND RESULTS

3.1 Applicable Standard

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 RF Exposure Wireless Charging App v03

3.2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

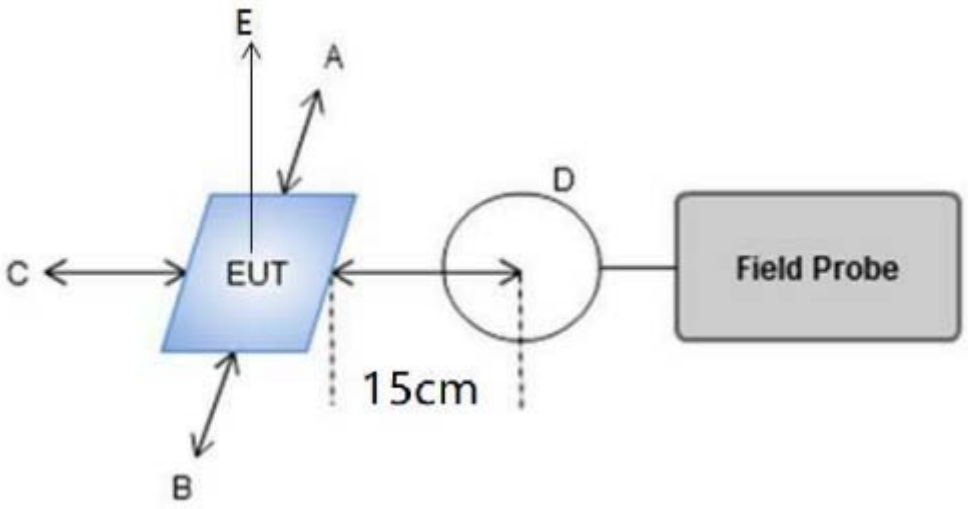
Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f)*	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

3.3 Test Setup



Note: A, B, C, D, E, F for six surfaces of the product.

The surfaces of each charge port is defined as figure below:

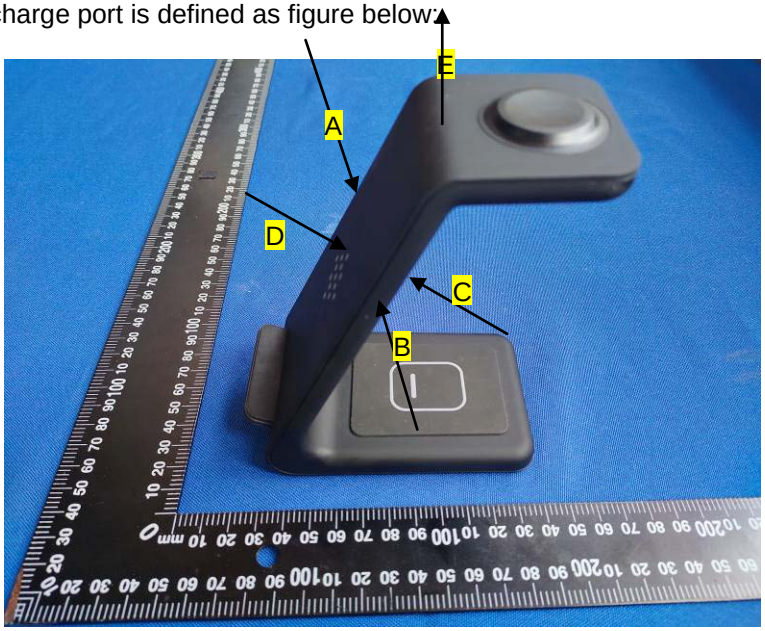


Figure1 , surface define of phone port

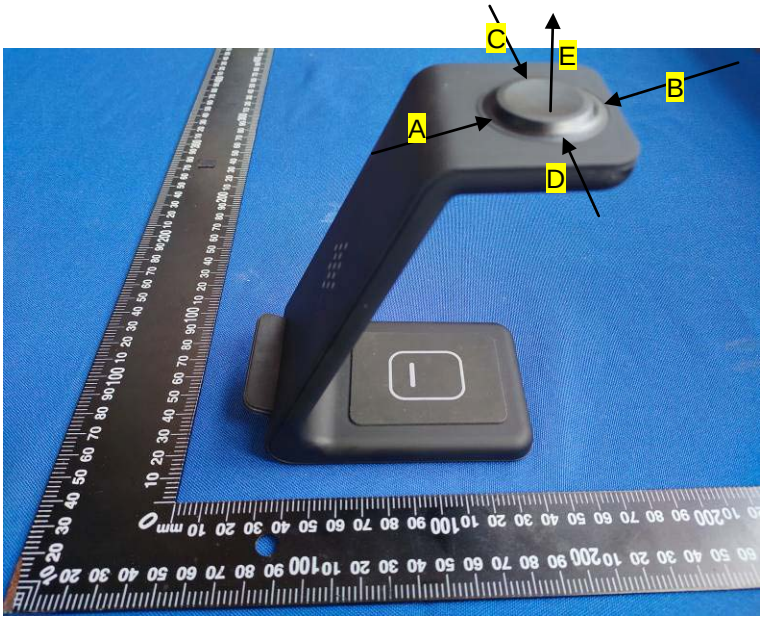


Figure2 , surface define of iWatch port

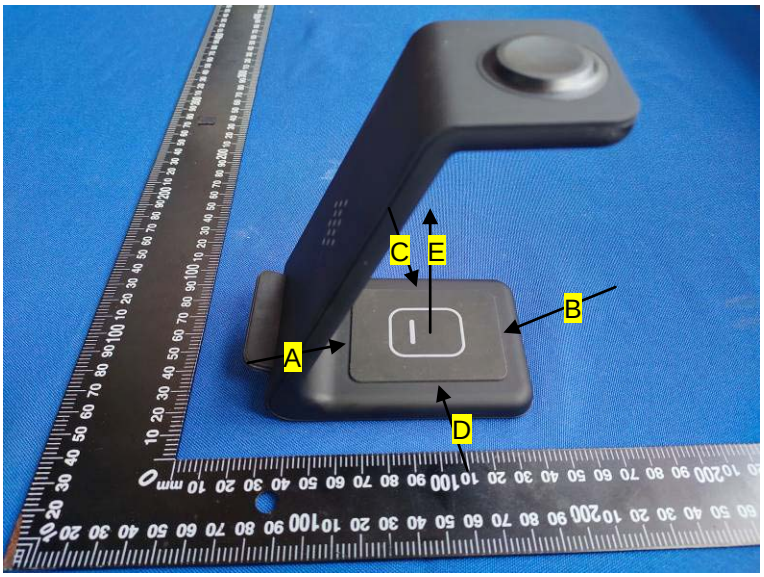


Figure3 , surface define of Airpods port

3.4 Measurement Procedure

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
b) The measurement probe was placed at test distance (10cm) which is between the edge of the charger and the geometric centre of probe.
c) The turn table was rotated 360d degree to search of highest strength.
d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
e) The EUT were measured according to the dictates of KDB 680106 D01 RF Exposure Wireless Charging App v03.

3.5 Test Result of E and H field Strength

E-Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

Test port	Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (V/m)					FCC E-Field Strength 50% Limits (V/m)	FCC E-Field Strength Limits (V/m)
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
Phone port	1%	0.135	0.76	0.81	1.24	**1.35**	0.59	307.0	614.0
	50%	0.135	0.64	0.69	1.11	1.21	0.45	307.0	614.0
	99%	0.135	0.50	0.58	1.01	1.09	0.34	307.0	614.0
iWatch port	1%	0.135	0.42	0.47	0.45	0.42	**0.69**	307.0	614.0
	50%	0.135	0.32	0.34	0.35	0.29	0.54	307.0	614.0
	99%	0.135	0.22	0.20	0.22	0.14	0.44	307.0	614.0
AirPods port	1%	0.135	0.57	0.55	0.53	0.59	**0.77**	307.0	614.0
	50%	0.135	0.47	0.43	0.39	0.46	0.64	307.0	614.0
	99%	0.135	0.33	0.28	0.28	0.34	0.52	307.0	614.0

H-Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

Test port	Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (A/m)					FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
Phone port	1%	0.135	0.231	0.229	0.337	**0.369**	0.205	0.815	1.63
	50%	0.135	0.202	0.204	0.315	0.342	0.179	0.815	1.63
	99%	0.135	0.175	0.176	0.286	0.312	0.144	0.815	1.63
iWatch port	1%	0.135	0.185	0.183	0.187	0.185	**0.221**	0.815	1.63
	50%	0.135	0.158	0.159	0.157	0.157	0.186	0.815	1.63
	99%	0.135	0.138	0.130	0.124	0.135	0.156	0.815	1.63
AirPods port	1%	0.135	0.198	0.196	0.194	0.195	**0.274**	0.815	1.63
	50%	0.135	0.175	0.175	0.171	0.164	0.246	0.815	1.63
	99%	0.135	0.144	0.144	0.141	0.142	0.221	0.815	1.63

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

Test port	Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (A/m)	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
			Test Position E		
Phone port	1%	0.135	**0.307**	0.815	1.63
	50%	0.135	0.281	0.815	1.63
	99%	0.135	0.261	0.815	1.63
iWatch port	1%	0.135	**0.197**	0.815	1.63
	50%	0.135	0.158	0.815	1.63
	99%	0.135	0.122	0.815	1.63
AirPods port	1%	0.135	**0.254**	0.815	1.63
	50%	0.135	0.214	0.815	1.63
	99%	0.135	0.187	0.815	1.63

3.6 Simultaneous E-Filed Strength and H-Filed Strength

KDB 447498 points for simultaneous transmission on far-filed measurement, while for below 30 MHz usually measured at near-filed. KDB680106 require aggregate leakage fields at 15 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit;
KDB680106 can accept 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.
Test labs suggest use Computational modelling to calculate Nerve Stimulation BRs;
Computational modelling, such as finite-difference time-domain (FDTD) may be used to demonstrate compliance with FCC § 1.1310 limits requirement,
Basic Calculations - The following calculations may be used to evaluate systems without consideration for the effects of phase resulting from multiple frequency and/or multiple antennas co-located in the measurement space, which may overestimate the actual result. If the result exceeds the limits, the advanced calculations described in follows may be used.

$$E_{AVG} = \frac{1}{n}\sum_{i=1}^{n}(E_{MaxRMS})_i$$

Where:
E-field measurements
E_{AVG} = Spatial average
E_{MaxRMS} = E-field at a measurement point
N = Number of spatially averaged points

And

$$H_{AVG} = \frac{1}{n}\sum_{i=1}^{n}(H_{MaxRMS})_i$$

Where:
H-field levels of magnetic field strength
H_{AVG} = Spatial average
H_{MaxRMS} = H-field at a measurement point
N = Number of spatially averaged points

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

Simultaneous combination	Frequency Range (MHz)	Max.Measured E-Field Strength Values (V/m)			Spatial Average E_{AVG} (V/m)	FCC E-Field Strength 50% Limits (V/m)	FCC E-Field Strength Limits (V/m)
		Phone port	iWatch port	AirPods port			
Phone+iWatch	0.135	1.35	0.69	--	1.02	307.0	614.0
Phone+AirPods	0.135	1.35	--	0.77	1.06	307.0	614.0
iWatch+AirPods	0.135	--	0.69	0.77	0.73	307.0	614.0
Phone+AirPods +iWatch	0.135	1.35	0.69	0.77	0.94	307.0	614.0

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

Simultaneous combination	Frequency Range (MHz)	Max. Measured H-Field Strength Values (A/m)			Spatial Average H_{AVG} (A/m)	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
		Phone port	iWatch port	AirPods port			
Phone+iWatch	0.135	0.369	0.221	--	0.295	0.815	1.63
Phone+AirPods	0.135	0.369	--	0.274	0.322	0.815	1.63
iWatch+AirPods	0.135	--	0.221	0.274	0.248	0.815	1.63
Phone+AirPods +iWatch	0.135	0.369	0.221	0.274	0.288	0.815	1.63

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

Simultaneous combination	Frequency Range (MHz)	Max. Measured H-Field Strength Values (A/m)			Spatial Average H_{AVG} (A/m)	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
		Phone port	iWatch port	AirPods port			
Phone+iWatch	0.135	0.307	0.197	--	0.252	0.815	1.63
Phone+AirPods	0.135	0.307	--	0.254	0.281	0.815	1.63
iWatch+AirPods	0.135	--	0.197	0.254	0.226	0.815	1.63
Phone+AirPods +iWatch	0.135	0.307	0.197	0.254	0.253	0.815	1.63

3.7 Equipment Approval Considerations

The EUT does comply with KDB 680106 D01 as follow 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 110KHz~205KHz
Output power from each primary coil is less than 15 watts	Yes	The maximum output power for each primary coil is 3W/5W/10W.
The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	No	The transfer system includes 3 primary coils.
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 only
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.

3.8 Conclusion

The detected emissions with a distance of 15cm surrounding the device and 20 cm above the top surface of the device are below the FCC E-Field Strength & H-Field Strength limits; The detected emissions are below the limitations according FCC KDB 680106 and confirmed by the FCC according to KDB Inquire.

4 Test Setup Photos of the EUT

********** End of Report **********