RF EXPOSURE
Test Report

Report No.:	MTi241101018-01E2
Date of issue:	2024-12-02
Applicant:	ShenZhen ShengChuang Electronic co.,ltd
Product:	Smart socket
Model(s):	P04-US
FCC ID:	2BMET-P04-US

Shenzhen Microtest Co., Ltd.

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Test Result Certification	
Applicant:	ShenZhen ShengChuang Electronic co.,ltd
Address:	Room 4-22, Building 5,Baimenqian Industry Park, Nanwan Street, Longgang District, Shenzhen China
Manufacturer:	ShenZhen ShengChuang Electronic co.,ltd
Address:	Room 4-22, Building 5,Baimenqian Industry Park, Nanwan Street, Longgang District, Shenzhen China
Product description	
Product name:	Smart socket
Trademark:	N/A
Model name:	P04-US
Serial Model:	N/A
Standards:	N/A
Test procedure:	KDB 447498 D01 v06 47 CFR PART 2.1091
Date of Test	
Date of test:	2024-11-26 to 2024-11-29
Test result:	Pass

Test Engineer	:	Maleah Deng
		(Maleah Deng)
Reviewed By	:	David. Lee
		(David Lee)
Approved By	:	Leon chen
		(Leon Chen)

RF EXPOSURE EVALUATION

According to FCC 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)

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 Exposure				
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
(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
300-1,500			f/1500	30
1,500-100,000			1.0	30

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

MPE Calculation Method

Friis transmission formula: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm^2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1415926

R= distance between observation point and center of the radiator in cm(20cm)

Pd the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

2.4G WIFI:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz, 802.11n HT40: 2422-2452MHz

ANT Gain: 0.04dBi

Power density limited: 1mW/ cm^2

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm^2)	(mW/cm^2)
				(dBm)	(mW)	Numeric		
2412	802.11b	16.93	17±1	18	63.096	1.01	0.01267	1
2437		17.17	17±1	18	63.096	1.01	0.01267	1
2462		16.61	16±1	17	50.119	1.01	0.01006	1
2412	802.11g	14.53	14±1	15	31.623	1.01	0.00635	1
2437		13.46	13±1	14	25.119	1.01	0.00504	1
2462		10.72	10±1	11	12.589	1.01	0.00253	1
2412	802.11n H20	14.29	14±1	15	31.623	1.01	0.00635	1
2437		14.53	14±1	15	31.623	1.01	0.00635	1
2462		11.34	11±1	12	15.849	1.01	0.00318	1
2422	802.11n H40	11.53	11±1	12	15.849	1.01	0.00318	1
2437		11.43	11±1	12	15.849	1.01	0.00318	1
2452		9.11	9±1	10	10.000	1.01	0.00201	1

Conclusion:

For the max result: 0.01267≤ 1.0 test exclusion threshold, No SAR is required.

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