

# MPE REPORT

FCC ID:SYW-PLUGWIFIG21

Date of issue: Aug. 12, 2020

Report number: MTi20061208-4E2

Sample description: Wifi Relocatable Power Taps

Model(s): POWERSTRIP/WIFI

Applicant: Feit Electric Company

Address: 4901 Gregg Road, Pico Rivera, CA90660, USA

Date of test: July 25, 2020 to Aug. 01, 2020

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

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TEST RESULT CERTIFICATION	
Applicant's name:	Feit Electric Company
Address:	4901 Gregg Road, Pico Rivera, CA90660, USA
Manufacture's name:	Kingtec (vietnam) technologies Co., Ltd.
Address:	HAISHAN INDUSTRIAL ZONE, PINGQIAN VILLAGE, HEXIA, DEHE COUNTY, Long An Province, Vietnam
Product name:	Wifi Relocatable Power Taps
Trademark:	FEIT
Model and/or type reference:	POWERSTRIP/WIFI
Serial model:	N/A
RF exposure procedures:	KDB 447498 D01 v06

This device described above has been tested by Shenzhen Microtest Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Tested by:

Danny Xu

Aug. 01, 2020

Reviewed by:

Leo Su

Aug. 12, 2020

Approved by:

Tom Xue

Aug. 12, 2020



## 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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			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:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = 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)

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. 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

### WIFI:

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

802.11n HT40: 2422-2452MHz,

Power density limited: 1mW/ cm<sup>2</sup>

Antenna Type: Wifi Antenna: PCB Antenna;

WIFI antenna gain: 1.5dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(1.5/10)}=1.41$

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 <sup>2</sup> )	(mW/cm <sup>2</sup> )
		Ant A	Ant A	Ant A	Ant A	Numeric		
2412	802.11b	13.42	14±1	15	31.62	1.41	0.00887	1
2437		14.04	14±1	15	31.62	1.41	0.00887	1
2462		14.13	14±1	15	31.62	1.41	0.00887	1
2412	802.11g	13.24	13±1	14	25.12	1.41	0.00705	1
2437		13.12	13±1	14	25.12	1.41	0.00705	1
2462		13.98	13±1	14	25.12	1.41	0.00705	1
2412	802.11n H20	12.11	12±1	13	19.95	1.41	0.00560	1
2437		11.96	12±1	13	19.95	1.41	0.00560	1
2462		12.86	12±1	13	19.95	1.41	0.00560	1
2422	802.11n H40	11.57	12±1	13	19.95	1.41	0.00560	1
2437		11.84	12±1	13	19.95	1.41	0.00560	1
2452		12.59	12±1	13	19.95	1.41	0.00560	1

### Conclusion:

For the max result:  $0.00887 \leq 1.0$  for 1g SAR, No SAR is required.

----END OF REPORT----