MPE Calculation / RF Exposure

Product: Mini-H
Applicant: bitsensing Inc.
Model: MOD611
Address: 4,5F, 4, Godeung-ro, Sujeong-gu, Seongnam-si, Gyeonggi-do, South Korea
FCC ID: 2AVBK-MOD611

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from the device to the body of the user. According to §2.1091, §2.1093 and §1.1307(b), 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.

Classfication The antenna of this product is at least 20 cm away from the body of the user. So this product is classified as mobile device.

$S = EIRP/4 \pi R^2$

Where S = Power density

EIRP = Effective Isotropically Radiated Power

R = distance to the centre of radiation of the antenna

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled "Limits for Maximum Permissible Exposure(MPE), Limits for General Population/Uncontrolled Exposure"

Frequency Range (MHz)	Power Density (mW/cm^2)	Averaging Time (minutes)
300 - 1500	f/1500	30
1500 - 100000	1.0	30

Where f = Frequency (MHz)

Prediction: worst case

	Frequency	60 800	MHz
PG	Declared max power (EIRP)	11.82	dBm
R	Distance	20	cm
S	MPE limit for uncontrolled exposure	1	mW/cm^2
	Calculated power density	0.003 03	mW/cm^2

-Collocated Power Density Calculation
Certificated module's Power density: 0.218 3 mW/cm^2 (Report No.: RSHD200116001-00A)
0.003 03 mW/cm^2 + 0.218 3 mW/cm^2 = 0.221 33 mW/cm^2

Conclusion **This confirms compliance to the required radio frequency radiation exposure limit of 1.0 mW/cm^2 at 20 cm operation.**