

FCC: 2AMTV-103838; XMR201606EC21A
IC: 22810-103838; 10224A-201611EC21A

Device is a WiFi transmitter that also uses a cellular transmitter. In normal installation, its antennas are more than 20cm away from users and therefore considered as a mobile device for RF exposure.

Maximum Permissible Exposure (MPE) can be calculated as follows:

<u>Prediction of MPE limit at a given distance</u>			
Equation from page 18 of OET Bulletin 65, Edition 97-01			
$S = \frac{PG}{4\pi R^2}$			
where:	S = power density		
	P = power input to the antenna		
	G = power gain of the antenna in the direction of interest relative to an isotropic radiator		
	R = distance to the center of radiation of the antenna		
	Maximum peak output power at the antenna terminal:	20.70	(dBm)
	Maximum peak output power at the antenna terminal:	117.4897555	(mW)
	Antenna gain(typical):	1.1	(dBi)
	Maximum antenna gain:	1.288249552	(numeric)
	Prediction distance:	20	(cm)
	Prediction frequency:	2412	(MHz)
	MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)
	Power density at prediction frequency:	0.030111	(mW/cm^2)
	Maximum allowable antenna gain:	16.31269855	(dBi)

Radia	Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit (mW/Cm2)	Radiated Power (mw)	Antenna Gain (dBi)	Antenna Gain (mw eq)	Distance (cm)	Power Density (mW/cm^2)
A	2412	20.7	1	117.49	1.1	1.288	20	0.030
B	1850.7	24	1	251.19	2	1.585	20	0.079
C	1710.7	24	1	251.19	2	1.585	20	0.079
D	826.4	23.5	0.55	223.87	0.2	1.047	20	0.047
E	715.3	24	0.48	251.19	0.2	1.047	20	0.052

Scenario 1 Summation of MPE Ratio

Radio A	0.030111344
Radio B	0.079200905
Total	0.109312249

Total = Radio A + Radio B

Scenario 2 Summation of MPE Ratio

Radio A	0.030111344
Radio C	0.079200905
Total	0.109312249

Total = Radio A + Radio C

Scenario 3 Summation of MPE Ratio

Radio A	0.030111344
Radio D	0.084650806
Total	0.11476215

Total = Radio A + Radio D

Scenario 4 Summation of MPE Ratio (Worst case scenario)

Radio A	0.030111344
Radio E	0.109731971
Total	0.139843315

Total = Radio A + Radio E

Therefore device complies with FCC RF radiation exposure limits
for general population in mobile exposure category (distance > 20cm)