MPE CALCULATION (FCC ID: U6YRDAA8190)

RF Exposure Requirements: 47 CFR §1.1307(b)
RF Radiation Exposure Limits: 47 CFR §1.1310
RF Radiation Exposure Guidelines: FCC OST/OET Bulletin Number 65
EUT Frequency Band: 801.11b/g/n: 2412-2462MHz
802.11a/n/ac: 5150-5825MHz
WCDMA/LTE B2: 1850-1910MHz
WCDMA/LTE B4: 1710-1755MHz
WCDMA/LTE B5: 824-849MHz
LTE B7: 2500-2570MHz
LTE B12: 699-716MHz
LTE B13: 777-787MHz
LTE B25: 1850-1915MHz
LTE B26: 814-849MHz
LTE B30: 2305-2315MHz
LTE B41: 2496-2690MHz
Limits for General Population/Uncontrolled Exposure in the band of: 300 - 1500 MHz,
Power Density Limit: f/1500 mW/cm2
Limits for General Population/Uncontrolled Exposure in the band of: 1500 - 100,000 MHz
Power Density Limit: 1 mW / cm^2

Equation: $S = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

Where, S = Power Density

P = Power Input to Antenna

G = Antenna Gain

R = distance to the center of radiated antenna

Prediction distance 20 cm

Radio	Frequency (MHz)	Max Conducted Output Power (dBm)	Antenna Gain (dBi)	Separation distance (cm)	Power Density (mW/ cm^2)	MPE Limit (mW/ cm^2)
2.4GHz WLAN	2412-2462	24.41	3	20	0.110	1
5.2GHz WLAN	2412-2462	23.32	5	20	0.135	1
5.3GHz WLAN	2412-2462	23.16	5	20	0.130	1
5.6GHz WLAN	2422-2452	23.39	5	20	0.137	1
5.8GHz WLAN	5150-5825	24.70	5	20	0.186	1
WCDMA/LTE B2	1850-1910	24	1	20	0.063	1
WCDMA/LTE B4	1710-1755	24	1	20	0.063	1
WCDMA/LTE B5	824-849	24	1	20	0.063	0.549
LTE B7	2500-2570	23	1	20	0.050	1
LTE B12	699-716	24	1	20	0.063	0.466
LTE B13	777-787	24	1	20	0.063	0.518
LTE B25	1850-1915	24	1	20	0.063	1
LTE B26	814-849	24	1	20	0.063	0.542
LTE B30	2305-2315	23	1	20	0.050	1
LTE B41	2496-2690	23	1	20	0.050	1

The above results show that the device complies with the MPE requirement.

The WLAN is able to transmit simultaneously with WCDMA/LTE.

The worst-case ratio = 0.186/1 + 0.063/0.466 = 0.321 < 1.0

The above results show that the device complies with the simultaneous transmission MPE requirement.