

MPE CALCULATION (FCC ID: 2ALBDPT40Q)

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: BLE: 2402-2480MHz
 LTE Cat-M1 Band 2: 1850.7-1909.3MHz
 LTE Cat-M1 Band 4: 1710.7-1754.3MHz
 LTE Cat-M1 Band 5: 824.7-836.5MHz
 LTE Cat-M1 Band 12: 699.7-715.3MHz
 LTE Cat-M1 Band 13: 777.7-786.3MHz

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 / cm²

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

EUT: Telematics Device

Radio	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Antenna Gain (dBi)	Tune up tolerance (dB)	Max Tune up output power (dBm)	Separation distance (cm)	Power Density (mW/ cm ²)	MPE Limit (mW/ cm ²)
BLE	2402-2480	-3.38	2	±0.5	-0.88	20	0.0002	1
LTE Band2	1850.7-1909.3	22	-2.2	±1	23	20	0.04	1
LTE Band4	1710.7-1754.3	22	-2.3	±1	23	20	0.04	1
LTE Band5	824.7-848.3	22	-4.8	±1	23	20	0.04	0.550
LTE Band12	699.7-715.3	22	-5.7	±1	23	20	0.04	0.466
LTE Band13	779.5-784.5	22	-5.4	±1	23	20	0.04	0.518

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

The BLE is able to transmit simultaneously with LTE.

The ratio = $0.0002/1 + 0.04/0.466 = 0.086 < 1.0$

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

Completed By: Devin Tai

Vista Laboratories, Inc.

1261 Puerta Del Sol, San Clemente, CA 92673

Date: 04/27/2023