

Product name: DCIW387 ATN
 Manufacturer: SAGEMCOM BROADBAND SAS
 FCC Id: VW3DCIW387

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2} \quad (\text{formula 1}) \qquad PG = \frac{(Ed)^2}{30} \quad (\text{formula 2})$$

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

PG = Effective Isotropic Radiated Power (EIRP)
 E = Electric field measured at distance R distance
 d = measurement distance

Transmitter n°1 (Wi-Fi: 5150-5850 MHz)

Maximum peak output power at the antenna terminal: 28,10 (dBm)
 Maximum peak output power at the antenna terminal: 645,654229 (mW)
 Antenna gain(typical): 7,64 (dBi)
 Maximum antenna gain: 5,807644175 (numeric)
 Prediction distance: 30 (cm)
 Prediction frequency: 5150 (MHz)
 MPE limit for uncontrolled exposure at prediction frequency (limit table FCC §1.1310): 1 (mW/cm²)
 Power density at prediction frequency: 0,331549 (mW/cm²) (formula 1)

Transmitter n°2 (Bluetooth EDR: 2400-2483,5 MHz)

Maximum peak output power at the antenna terminal: 4,01 (dBm)
 Maximum peak output power at the antenna terminal: 2,517676928 (mW)
 Antenna gain(typical): 3,6 (dBi)
 Maximum antenna gain: 2,290867653 (numeric)
 Prediction distance: 30 (cm)
 Prediction frequency: 2402 (MHz)
 MPE limit for uncontrolled exposure at prediction frequency (limit table FCC §1.1310): 1 (mW/cm²)
 Power density at prediction frequency: 0,000510 (mW/cm²) (formula 1)

Transmitter n°3 (Bluetooth BLE: 2400-2483,5 MHz)

Maximum peak output power at the antenna terminal: 2,49 (dBm)
 Maximum peak output power at the antenna terminal: 1,774189481 (mW)
 Antenna gain(typical): 3,6 (dBi)
 Maximum antenna gain: 2,290867653 (numeric)
 Prediction distance: 30 (cm)
 Prediction frequency: 2402 (MHz)
 MPE limit for uncontrolled exposure at prediction frequency (limit table FCC §1.1310): 1 (mW/cm²)
 Power density at prediction frequency: 0,000359 (mW/cm²) (formula 1)

Transmitter n°1 + Transmitter n°2 + Transmitter n°3 :

$[Pd(1)/LPd(1)] + [Pd(2)/LPd(2)] + [Pd(3)/LPd(3)] = 0,33 < 1$
