

Product name: Sound Box SBDV01
 Manufacturer: SAGEMCOM BROADBAND SAS
 FCC ID: **VW3SBDV01**

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: 2400-2483,5 MHz)

Maximum output power (including tune up tolerance) at the antenna terminal : 23,70 (dBm)
 Maximum output power (including tune up tolerance) at the antenna terminal : 234,4228815 (mW)
 Antenna gain(typical): 4,719 (dBi)
 Maximum antenna gain: 2,96414879 (numeric)
 Prediction distance: 30 (cm)
 Prediction frequency: 2412 (MHz)
 MPE limit for uncontrolled exposure at prediction frequency (limit table FCC §1.1310): 1 (mW/cm²)

Power density at prediction frequency: 0,061439 (mW/cm²) (formula 1)

Transmitter n°2 (Wi-Fi: 5150-5850 MHz)

Maximum output power (including tune up tolerance) at the antenna terminal : 23,70 (dBm)
 Maximum output power (including tune up tolerance) at the antenna terminal : 234,4228815 (mW)
 Antenna gain(typical): 5,1 (dBi)
 Maximum antenna gain: 3,235936569 (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: 0,067073 (mW/cm²) (formula 1)

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

Maximum output power (including tune up tolerance) at the antenna terminal : 12,99 (dBm)
 Maximum output power (including tune up tolerance) at the antenna terminal : 19,90673339 (mW)
 Antenna gain(typical): 3 (dBi)
 Maximum antenna gain: 1,995262315 (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: 0,003512 (mW/cm²) (formula 1)

Transmitter n°4 (Bluetooth LE: 2400-2483,5 MHz)

Maximum output power (including tune up tolerance) at the antenna terminal : 12,84 (dBm)
 Maximum output power (including tune up tolerance) at the antenna terminal : 19,23091729 (mW)
 Antenna gain(typical): 3 (dBi)
 Maximum antenna gain: 1,995262315 (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: 0,003393 (mW/cm²) (formula 1)

Transmitter n°1 + Transmitter n°2 + Transmitter n°3 + Transmitter n°4 :

$[Pd(1)/LPd(1)] + [Pd(2)/LPd(2)] + [Pd(3)/LPd(3)] + [Pd(4)/LPd(4)] = 0,14 < 1$
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