

RF EXPOSURE EVULATION**1.1 Limit**

According to §1.1310 and §2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength	Magnetic field Strength	Power density	Averaging time
1.34 - 30.....	824/f	2.19/f	*(180/ f ²)	30
30 - 300.....	27.5	0.073	0.2	30
300 - 1500.....			f/1500	30
1500 - 100.000.....			<u>1.0</u>	30

F = frequency in MHz

* = Plane-wave equivalent power density

1.2 MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

Power density at the specific separation:

$S = PG/(4R^2 \pi)$ $S = (9.33 * 2.79) / (4 * 5^2 * \pi)$ $S = 0.083 \text{ mW/cm}^2$	Where, S = Maximum power density (mW/cm²) P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20 cm = limit for MPE)
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1.3 MAXIMUM PERMISSIBLE EXPOSURE Prediction

- Calculated under the worst-case conditions of each mode.

(Measured power 1.90 dBm $\pm$ 0.5dB)

3-1. BT Mode_Port 1

Max Peak output Power at antenna input terminal	1.90	dBm
Max Peak output Power at antenna input terminal	1.55	mW
Prediction distance	5	cm
Prediction frequency	2,402	MHz
Antenna Gain(typical)	1.62	dBi
Antenna Gain(numeric)	1.45	-
Power density at prediction frequency(S)	0.07	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.02	mW/cm ²

3-2. BT Mode_Port 2

Max Peak output Power at antenna input terminal	1.15	dBm
Max Peak output Power at antenna input terminal	1.30	mW
Prediction distance	5	cm
Prediction frequency	2,480	MHz
Antenna Gain(typical)	-5.58	dBi
Antenna Gain(numeric)	0.28	-
Power density at prediction frequency(S)	0.03	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.02	mW/cm ²

Simultaneous transmission operations

BT_Port1

SAR Test exclusion thresholds for 100MHz to 6GHz at test separation distance ≤ 50 mm = **Used**

$$\begin{aligned} &[(\text{max.power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}] \\ &= [1.55 / 5] * [\sqrt{2.402}] = 0.31 \leq 7.5, \text{ for 10g SAR} \end{aligned}$$

Thus, SAR for this device is not required.

BT_Pprt2

SAR Test exclusion thresholds for 100MHz to 6GHz at test separation distance ≤ 50 mm = **Used**

$$\begin{aligned} &[(\text{max.power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}] \\ &= [1.15 / 5] * [\sqrt{2.480}] = 0.23 \leq 7.5, \text{ for 10g SAR} \end{aligned}$$

Thus, SAR for this device is not required.

Simultaneous transmission SAR test exclusion considerations

$$0.31 + 0.23 = 0.54 \leq 7.5 \text{ for 10g SAR}$$

Thus, SAR for this device is not required.