

## RF Exposure Calculation

Applicant: Peiker Acoustic GmbH & Co. KG  
FCC ID: QWY-BT-PSC

This transmitter is a very low power configurations, approved for use with mobile phones and may operate in conjunction with other mobile and portable transmitters; provided, the other mobile and portable transmitters have satisfied the appropriate RF exposure requirements contained in the FCC rules.

For portable applications installers need no SAR evaluation. The max source-based time-averaged output of 0.89mW is below the low threshold of 24mW for  $d < 2.5$  cm.

*integral Antenna requirement § 15.203).*

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The Following calculation is the reference data for 0.266cm minimal distance.

name		nature	value	log value	
max conducted power			1,06 mW	0,27 dBm	
max Antenna gain dBi			1,29	1,10 dBi	
max Antenna gain dBd			0,79	-1,05 dBd	
calculated radiated power		EIRP	1,37 mW	1,37 dBm	
measured radiated power		EIRP	1,95 mW	2,89 dBm	
<b>duty cycle factor</b>					
frequency		2400 MHz			
dwell time			2,9 ms		
Time of occupancy/puls-train time			6,41 ms		
duty cycle factor		$10\log(\text{dwell time}/100 \text{ ms})$	45,55%	-3,41 dB	
<b>max source-based time-averaged power</b>					
conducted power			0,48 mW	-3,14 dB	
calculated radiated power		EIRP	0,62 mW	-2,04 dB	
measured radiated power		EIRP	0,89 mW	-0,52 dB	
<b>M P E</b>					
$S = \frac{PG}{4\pi R^2}$		calculated with max source-based time-averaged power measured conducted power			
		r [cm]	20	2,5	1,5
		S [mW/cm <sup>2</sup> ]	0,0001		1,0
Limit general population		[mW/cm <sup>2</sup> ]	1,0		
Limit occupational population		[mW/cm <sup>2</sup> ]	5,0	for f = 2400 MHz	
$S = \frac{EIRP}{4\pi R^2} = \frac{1.64 ERP}{4\pi R^2} = \frac{0.41 ERP}{\pi R^2}$		calculated with max source-based time-averaged power measured radiated power			
		r [cm]	20	2,5	1,5
		S [mW/cm <sup>2</sup> ]	0,0002		1,0