RF Exposure evaluation

Applicant Data: Emerson Commercial & Residential Solutions
Boeletvej 1
8680 Ry
Denmark

Product Data: BLE Reefer Data collector
REFCON Wireless Hub
Emerson

with Bluetooth Low Energy

FCC ID: 2ARHA-C00030

Standards
OET Bulletin 65 Edition 97-01 August 1997
FCC 47 CFR §1.1307
FCC 47 CFR §1.1310

Maximum Permissible Exposure

As specified in Table 1(ii) of 47 CFR 1.1310(e)(1) – Limits for Maximum Permissible Exposure (MPE), Limits for General Population/ Uncontrolled Exposure

Frequency range (MHz)	Power density (mW/cm^2)
300 – 1500	f/1500
1500 - 100000	1.0

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Calculations

Equation OET bulletin 65, page 18, edition 97-01: $S = P * G / (4 \pi R^2)$

S = power density
P = power input to the antenna
G = power gain of the antenna
R = distance to the centre of radiation of the antenna

Assessment

With:

G = -3.0 dBi
R = 20 cm
P = -3.7 dBm @ 2402 MHz

			G		P		P*G		S	
Operational Bands	Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain -numeric- (mW/cm²)	Output Power -conducted- (dBm)	Output Power -conducted- (mW)	Output power (EIRP) (dBm)	Output Power (EIRP) (mW)	FCC Limit (mW/cm²)	Power Density value (mW/cm²)	Margin to FCC Limit (mW/cm²)
Bluetooth Low Energy	2402	-3	0,5012	-3,70	0,43	-6,70	0,21	1,00	0,0000	1,0000

Note 1: only worst-case values are listed in the table above
Note 2: the duty cycle correction factor is already included in the measurement values