

## MPE Calculation

Applicant:	Coulisse B.V.
Address:	Vonderweg 48, 7468 DC Enter, THE NETHERLANDS
Product:	Tubular motor
FCC ID:	ZY4CM05B
Model No.:	CM-05
Reference RF report #	709502228908-00C

According to subpart 15.247(i) and subpart §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

### Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1,500	/	/	f/1500	30
1,500–100,000	/	/	1.0	30

f = frequency in MHz; \* = Plane-wave equivalent power density;

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

#### Calculated Formulary:

Predication of MPE limit at a given distance

$S = PG/4 \pi R^2$  = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);



Calculated Data: Line Antenna

For 2.4GHz BLE (Report number: 709502228908-00C)

Maximum peak output power at antenna input terminal (dBm):	-2.85
Maximum peak output power at antenna input terminal (mW):	0.52
Prediction distance (cm):	20
Antenna Gain, typical (dBi):	0
Maximum Antenna Gain (numeric):	1
The worst case is power density at predication frequency at 20 cm (mW/cm <sup>2</sup> ):	0.0001
MPE limit for general population exposure at prediction frequency (mW/cm <sup>2</sup> ):	1.00

The max power density 0.0001 (mW/cm<sup>2</sup>) < 1 (mW/cm<sup>2</sup>)

Result: Compliant

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

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Date: 4-22, 2022

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