

# Maximum Permissible Exposure Evaluation

## **FCC ID: 2APB4-FTS20CW**

### 1. Client Information

**Applicant** : Cooper Lighting, LLC  
**Address** : 1121 Highway 74 South Peachtree City, GA 30269, USA.  
**Manufacturer** : Cooper Lighting, LLC  
**Address** : 1121 Highway 74 South Peachtree City, GA 30269, USA.

### 2. General Description of EUT

<b>EUT Name</b>	:	LED FIXED LUMINAIRE	
<b>Models No.</b>	:	FTS20CW, FTS20CB	
<b>Model Difference</b>	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is appearance and color.	
<b>Product Description</b>	:	Operation Frequency:	Bluetooth 4.2(BLE): 2402MHz~2480MHz
	:	Number of Channel:	40 channels
	:	RF Output Power:	-1.224dBm(Max)
	:	Antenna Gain:	2dBi Internal Antenna
	:	Modulation Type:	GFSK
	:	Bit Rate of Transmitter:	1 Mbps
<b>Power Supply</b>	:	AC Voltage supplied	
<b>Power Rating</b>	:	Input: AC 120~277V, 50/60Hz	
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual	
Note: More information about the RF function, please refer the RF test reports.			

### MPE Calculations for BLE

**1. Antenna Gain:**

Internal Antenna: 2dBi.

**2. EUT Operation Condition:**

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

**3. Exposure Evaluation:**

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=(PG)/4\pi R^2$$

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

**4. Test Result:**

Worst Maximum MPE Result								
Mode	N <sub>TX</sub>	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm <sup>2</sup> ) [S]
BLE	1	2402	-2.469	-2±1	-1	2	20	0.00025
		2442	-1.224	-1±1	0	2	20	0.00032
		2480	-1.629	-1±1	0	2	20	0.00032

**Note:**  
 (1) N<sub>TX</sub>= Number of Transmit Antennas  
 (2) RF Output power specifies that Maximum Conducted Peak Output Power.

**5. Conclusion:**

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

**Limits for General Population/ Uncontrolled Exposure**

Frequency Range (MHz)	Power density (mW/ cm <sup>2</sup> )
300-1,500	F/1500
1,500-100,000	1.0

For BLE (2402~2480 MHz)

MPE limit S: 1mW/ cm<sup>2</sup>

The MPE is calculated as **0.00032**mW / cm<sup>2</sup> < limit 1 mW / cm<sup>2</sup>. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

**Note**

For a more detailed features description, please refer to the RF Test Report.

-----END OF REPORT-----