

## RF EXPOSURE REPORT



**FCC Applicant:** Opticon sensors Europé B.V.  
Opaallaan 35, 2132 XV Hoofddorp, The Netherlands

**FCC Manufacturer:** Opticon sensors Europé B.V.  
Opaallaan 35, 2132 XV Hoofddorp, The Netherlands

**Product Name:** ESL Base station

**Brand Name:** Opticon

**Model No.:** EBS-50

**Model Difference:** N/A

**Report Number:** E2/2021/20063

**FCC ID** Q2Q-EBS50

**Issue Date:** April 29, 2021

**Date of Test:** March 2, 2021 ~ April 22, 2021

**Date of EUT Received:** March 2, 2021

Approved By \_\_\_\_\_

John Teh

John Yeh

**We hereby certify that:**

The above equipment was verified by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091.

The results of this report relate only to the sample identified in this report.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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## Revision History

Report Number	Revision	Description	Issue Date	Revised By
E2/2021/20063	00	Original.	April 29, 2021	Elle Chang

**Note:**

- 1、Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

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# 1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

## 1.1 Product Description

Product Name:	ESL Base station
Brand Name:	Opticon
Model No.:	EBS-50
Model Difference:	N/A
Hardware Version:	N/A
Firmware Version:	N/A
Power Supply:	Adapter 12Vdc

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## 1.2 Antenna Information:

### 1.2.1 Zigbee

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
1/4-dipole	Opticon	N/A	2.4G	2.00

## 1.3 Rated Power

### 1.3.1 Zigbee

Mode	Freq. Range (MHz)	Channels	Max Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)
Zigbee	2405-2480	16	5.98	2.00	7.98

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## 2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### 2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission’s guideline.

This is a Mobile device, the MPE is required.

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

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
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
300-1500	/	/	f/1500	30
1500-100000	/	/	1.0	30

f = frequency in MHz

\* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

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

Where: S = Power density

P = Power input to 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

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## 2.2 Power Density Calculation (Worst Case)

### FCC Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Max. output Power EIRP (mW)	Power Density (PD) (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Pass / Fail	Power Density / Limit
Zigbee	2405.00	20	5.98	2.00	6.28	0.0013	1.000	Pass	0.001

~ End of Report ~

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