

## RF EXPOSURE REPORT



**Applicant:** Opticon sensors Europé B.V.  
Opaallaan 35, 2132 XV Hoofddorp, The Netherlands  
**Manufacturer:** Opticon sensors Europé B.V.  
Opaallaan 35, 2132 XV Hoofddorp, The Netherlands  
**Product Name:** ESL Base station  
**Brand Name:** Opticon  
**Model No.:** EBS-41  
**FCC ID** Q2Q-EBS41  
**Date of EUT Received:** Apr. 22, 2025  
**Issue Date:** May 28, 2025

Approved By

John Yeh

**We hereby certify that:**

The above equipment was evaluated by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091, KDB 447498 D01 v06.

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

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## Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2504000355E5	00	Original	May 28, 2025	Cindy Chou	

**Note:**

- 1、The remark "\*" indicates modification of the report upon requests from certification body.

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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-41

### 1.2 Evaluation site

Laboratory	Site Address		FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	<input type="checkbox"/>	No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	<input checked="" type="checkbox"/>	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	<input type="checkbox"/>	1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Neihu District, Taipei City, 222 Taiwan.	TW0029	23862	

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**1.3 Antenna Information:**

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Dipole	Qantas	QT-RA-10016	2.4GHz	2.00

**Note:** Antenna information is provided by the applicant.

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#### 1.4 Rated Power

Mode	Freq. Range (MHz)	Channels	Max Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
Zigbee	2405-2480	16	-1.05	2.00	0.95	V

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## 2 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)

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. Output Power Include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (mW)	Power Density (PD) (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Pass / Fail	Power Density / Limit
Zigbee	2480.00	20	-1.05	2.00	1.24	0.0002	1.000	Pass	0.000

Conclusion: The maximum power density is below MPE thresholds, therefore the device is compliant FCC RF exposure requirement.

*~ End of Report ~*

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