



Global Product Certification  
EMC-EMF Safety Approvals

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## **FCC RF Exposure Report**

### **Envision Wireless Area Controller**

**Model: LFC8400**

**FCC ID: VBO-LFC8400**

**Performed For: Philips Dynalite**

**Report Number**

**M150113-3**

**Issue Date: 17 June 2015**

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**FCC RF Exposure Report,  
Envision Wireless Area Controller Model: LFC8400**

**Report Number: M150113-3**

|               |                                       |
|---------------|---------------------------------------|
| Test Sample:  | Envision Wireless Area Controller     |
| Model Number: | LFC8400                               |
| Manufacturer: | Philips Dynalite                      |
| FCC ID:       | VBO-LFC8400                           |
| Tested For:   | Philips Dynalite                      |
| Address:      | 6/691 Gardeners Road. Mascot NSW 2020 |
| Phone:        | 02 9019 8939                          |
| Contact:      | Rana Singh                            |
| Email:        | rana.singh@philips.com                |

**Test Standard/s:** **FCC KDB 447498 D01 General RF Exposure Guidance v05r02**  
Mobile and Portable Devices RF Exposure Procedures and  
Equipment Authorization Policies.

**FCC Title 47, Part 2.1093**

**Result of Test:** **SAR test is not required based on the procedure in KDB  
447498 D01 clause 4.3.1 and 4.3.2**

**Test Dates** 22<sup>nd</sup> April 2015



**Test Engineer:** **Emad Mansour**



**Authorised Signature:**  
**Chris Zombolas**  
**Technical Director**  
**EMC Technologies Pty Ltd**

## 1 INTRODUCTION

This report shows the SAR test exclusion on Envision Wireless Area Controller, Model No. LFC8400, in accordance with the Federal Communications Commission (FCC) regulations as detailed in KDB 447498 D01 clause 4.3.1.

The test sample was provided by the Client. The conclusion herein is based on the information provided by the client.

## 2 EXPOSURE EVALUATION FOR PORTABLE DEVICE

Human exposure to RF emissions from portable devices (47 CFR §2.1093), as defined by the FCC, must be evaluated with respect to the FCC-adopted limits for SAR.

## 3 GENERAL INFORMATION

(Information supplied by the Client)

The Equipment Under Test (EUT) was identified as follows:

|                            |                                   |
|----------------------------|-----------------------------------|
| <b>Test Sample:</b>        | Envision Wireless Area Controller |
| <b>Model Number:</b>       | LFC8400                           |
| <b>Serial Number:</b>      | -                                 |
| <b>Manufacturer:</b>       | Philips Dynalite                  |
| <b>Radio Module:</b>       | ZigBee Wireless                   |
| <b>Operating frequency</b> | 2405 MHz to 2480 MHz              |
| <b>Conducted power</b>     | 4.5 dBm                           |
| <b>Antenna Gain</b>        | - 7 dBi                           |

#### 4 SAR TEST EXCLUSION THRESHOLD FOR 100MHz to 6GHz and ≤50mm

| Frequency (MHz) | 5  | 10 | 15  | 20  | 25  | mm                                |
|-----------------|----|----|-----|-----|-----|-----------------------------------|
| 150             | 39 | 77 | 116 | 155 | 194 | SAR Test Exclusion Threshold (mW) |
| 300             | 27 | 55 | 82  | 110 | 137 |                                   |
| 450             | 22 | 45 | 67  | 89  | 112 |                                   |
| 435             | 16 | 33 | 49  | 66  | 82  |                                   |
| 900             | 16 | 32 | 47  | 63  | 79  |                                   |
| 1500            | 12 | 24 | 37  | 49  | 61  |                                   |
| 1900            | 11 | 22 | 33  | 44  | 54  |                                   |
| 2450            | 10 | 19 | 29  | 38  | 48  |                                   |
| 3600            | 8  | 16 | 24  | 32  | 40  |                                   |
| 5200            | 7  | 13 | 20  | 26  | 33  |                                   |
| 5400            | 6  | 13 | 19  | 26  | 32  |                                   |
| 5800            | 6  | 12 | 19  | 25  | 31  |                                   |

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\frac{\text{max. power of channel, including tune – up tolerance (mW)}}{\text{min. test separation distance (mm)}} * \sqrt{f(\text{GHz})} \leq 3.0$$

Where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz.
- When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test

## 5 EVALUATION RESULT

The standalone transmitter is exempted from SAR if the below condition satisfied in conjunction with threshold power condition

$$\frac{\text{max. power of channel, including tune – up tolerance (mW)}}{\text{min. test separation distance (mm)}} * \sqrt{f(\text{GHz})} \leq 3.0$$

Where

Minimum test separation distance (*mm*):

The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures to the outer surface of the device

Maximum power of channel (*mW*):

Time-averaged maximum conducted output power

| Radio Module | Frequency (MHz) | Maximum Conducted Average power (mW) | Minimum test separation distance (mm) |
|--------------|-----------------|--------------------------------------|---------------------------------------|
| ZigBee       | 2480            | 2.82                                 | 5                                     |

ZigBee module calculation:

$$\frac{\text{max. power of channel, including tune – up tolerance (mW)}}{\text{min. test separation distance (mm)}} * \sqrt{f(\text{GHz})} = 0.89 \leq 3.0$$

## 6 CONCLUSION

The EUT is exempted from SAR testing based on the test exclusion guidance in KDB 447498 D01 clause 4.3.1 and 4.3.2.