



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 22nd 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:

Test Sample:	Envision Wireless Area Controller
Model Number:	LFC8400
Serial Number:	-
Manufacturer:	Philips Dynalite
Radio Module:	ZigBee Wireless
Operating frequency	2405 MHz to 2480 MHz
Conducted power	4.5 dBm
Antenna Gain	- 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.