

APPLICATION FOR CERTIFICATION
On Behalf of
SuZhou BesCon Electronics Co., Ltd.
RF4CE Dongle

Model No. : RCN1008

Brand : Optelec

FCC ID : 2AB9RRCN1008

Prepared for

SuZhou BesCon Electronics Co., Ltd.
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Prepared by

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Date of Test : Apr.17, 2014
Date of Report : May 13, 2014

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TEST REPORT CERTIFICATION

Applicant : SuZhou BesCon Electronics Co., Ltd.
 Manufacturer : Optelec Limited
 EUT Description : RF4CE Dongle
 (A) Model No. : RCN1008
 (B) Serial No. : 695900081
 (C) Brand : Optelec
 (D) Power Supply : DC 3.3V
 (E) Test Voltage : DC 3.3V

Applicable Standards:

FCC OET Bulletin 65 August 1997

The device described above was tested by Audix Technology (Wujiang) Co., Ltd. EMC Dept. to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC OET Bulletin 65.

The measurement results are contained in this test report and Audix Technology (Wujiang) Co., Ltd. EMC Dept. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Wujiang) Co., Ltd. EMC Dept.

Date of Test: Apr.17, 2014

Date of Report: May 13, 2014

Prepared by :

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(Tina Zhang/Assistant Administrator)

Reviewer :

Jingo Lin

(Jingo Lin/Section Manager)

Approved & Authorized Signer :

Ken Lu

(Ken Lu/ Assistant General Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	RF4CE Dongle
Model No.	:	RCN1008
Serial No.	:	695900081
FCC ID	:	2AB9RRCN1008
Brand	:	Optelec
Applicant	:	SuZhou BesCon Electronics Co., Ltd. Building 2405, Qingjianhu Science & Technology Park, No.58 Weixin Road, Suzhou Industrial Park
Manufacturer	:	Optelec Limited Breslau 4 2993 LT Barendrecht The Netherlands
Radio Technology	:	IEEE 802.15.4 (ZigBee®)
Antenna Gain	:	-1.8dBi
Fundamental Range	:	2400 MHz -2480MHz
Tested Frequency	:	2425MHz (CH15) 2450MHz (CH20) 2475MHz (CH25)
Working Frequency	:	2.4 GHz
Modulation type	:	O-QPSK
Date of Receipt of Sample	:	Apr.17, 2014
Date of Test	:	Apr.17, 2014

1.2. Tested Supporting System Details

1.2.1. PC

Manufacturer : DELL
 Model Number : PP26L
 Serial Number : JX193A01
 Power Cord : Unshielded, Detachable, 1.5 m
 AC Adapter : M/N: LA65NS1-00
 Brand: DELL
 Input: AC 100-240V, 50-60Hz, 1.5A
 Output: DC 19.5V,3.34A
 DC Cord: Unshielded, Undetachable, 2.0m, 1 ferrite core.

1.3. Description of Test Facility

Name of Firm : **Audix Technology (Wujiang) Co., Ltd. EMC Dept.**
 Site Location : No. 1289 Jiangxing East Road, the Eastern Part of
 Wujiang Economic Development Zone
 Jiangsu China 215200
 Test Facilities : **RF Fully Chamber**
 NVLAP Lab Code : 200786-0
 (NVLAP is a NATA accredited body under Mutual
 Recognition Agreement)
 Valid until on Sep.30, 2014

1.4. Measurement Uncertainty

Test Item	Uncertainty
Maximum Peak Output Power	± 0.30dB

Remark: Uncertainty = $ku_c(y)$

2. SUMMARY OF STADARDS AND RESULTS

2.1. Applicable Standard

FCC OET Bulletin 65:1997

2.2. Specification Limits

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/150	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

NOTE: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The limit value 1.0mW/cm² is available for this EUT.

2.3. MPE Calculator Method

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

$$R = [PG/(4\pi S)]^{0.5}$$

where: S = power density (in appropriate units, e.g. mW/ cm²)

P = power input to the antenna (in appropriate units, e.g., mW) (the measured power value see Report: F12124 Section 6.6)

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 (appropriate units, e.g., cm)

2.4. Calculated Result

Radio Frequency Radiation Exposure Evaluation

Frequency (MHz)	Output Power to Antenna (mW)	Antenna Gain		Power Density (mW/cm ²)	Limit (mW/cm ²)
2425	1.51	2.2	1.68	0.000505	1.
2450	1.43	2.2	1.68	0.000478	1.
2475	1.35	2.2	1.68	0.000451	1.

Frequency (MHz)	Output Power to Antenna (mW)	Antenna Gain		Limit (mW/cm ²)	Distance (cm)
2425	1.51	2.26	1.68	1.0	0.521
2450	1.43	2.26	1.68	1.0	0.507
2475	1.35	2.26	1.68	1.0	0.493

The antenna used for this transmitter must be installed to provide a separation distance of at least 0.521cm from all persons