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## RF Exposure Evaluation Report

<b>APPLICANT</b>	KODEN ELECTRONICS CO., LTD.
	5278 UENOHARA UENOHARA-SHI YAMANASHI JAPAN 409-0112
<b>FCC ID</b>	O5VRB805
<b>IC</b>	8477A-RB805
<b>MODEL NUMBER</b>	RB805
<b>PRODUCT DESCRIPTION</b>	X BAND MARINE RADAR
<b>STANDARD APPLIED</b>	CFR 47 Part 2.1091
<b>PREPARED BY</b>	Christian Pawlak

We, TIMCO ENGINEERING, INC. would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and meets the requirements.

The attached report shall not be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

## GENERAL REMARKS

### Attestations

This equipment has been evaluated in accordance with the standards identified in this report. To the best of my knowledge and belief, these evaluations were performed using the procedures described in this report.

I attest that the necessary evaluations were made, under my supervision, at:

**Timco Engineering Inc.**  
**849 NW State Road 45**  
**Newberry, FL 32669**



**Authorized Signatory Name:**

Christian Pawlak

Engineering Project Manager

**Date: 01/26/2017**

Applicant: KODEN ELECTRONICS CO., LTD.

FCC ID: O5VRB805

IC: 8477A-RB805

Report: V:\K\KODEN\_O5V\1246AUT16\1246AUT16RF EXP MPE.DOCX

## RF Exposure Requirements

### General information

Device type: X BAND MARINE RADAR

Devices that operate under Part 80, 90 of this chapter are subject to RF exposure evaluation prior to equipment authorization or use.

### MPE Calculation:

The minimum separation distance is calculated as follows:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$$

The limit for general uncontrolled exposure environment is shown in FCC rule Part 1.11310, Table 1.

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**Minimum Separation Distance for Mobile or Fixed Devices  
General Population/Uncontrolled Exposure**

**Insert values in yellow highlighted boxes to determine Minimum Separation Distance**

Max Power	4000	W	<i>equals</i>	Max Power	4000000	mW
Duty Cycle	0.05	%	<i>equals</i>	Duty Factor	0.0005	numeric
Antenna Gain	24	dBi	<i>equals</i>	Gain numeric	251.1886	numeric
Coax Loss	0	dB		Gain - Coax Loss	251.1886	numeric
Power Density	1	mW/cm <sup>2</sup>				
Frequency	9440	MHz				

**Enter power Density from the chart to the right**

**Rule Part 1.1310, Table 1 (B)**

Frequency range	Power den	Enter this value
MHz	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>
0.3-1.34	100	<b>100</b>
1.34-30	180/f <sup>2</sup>	<b>0.0</b>
30-300	0.2	<b>0.2</b>
300-1,500	f/1500	<b>6.3</b>
1,500-100,000	1	<b>1</b>

f = frequency in MHz

<b>Minimum Separation Distance</b>	<b>200 cm</b>	<b>2.00 m</b>
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Minimum Separation in Inches      78.65828 Inches

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