



849 NW STATE ROAD 45
NEWBERRY, FL 32669 USA
PH: 888.472.2424 OR
352.472.5500
FAX: 352.472.2030
EMAIL: INFO@TIMCOENGR.COM
[HTTP://WWW.TIMCOENGR.COM](http://WWW.TIMCOENGR.COM)

RF Exposure Evaluation Report

| | |
|----------------------------|---|
| APPLICANT | KODEN ELECTRONICS CO., LTD. |
| | 5278 UENOHARA UENOHARA-SHI YAMANASHI JAPAN 409-0112 |
| FCC ID | O5VRB809P |
| IC | 8477A-RB809P |
| MODEL NUMBER | RB809P, RB809 |
| PRODUCT DESCRIPTION | X BAND MARINE RADAR |
| STANDARD APPLIED | CFR 47 Part 2.1091 |
| PREPARED BY | 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: O5VRB809P

IC: 8477A-RB809P

Report: V:\K\KODEN_O5V\1245AZUT16\1245AZUT16RF EXP MPE REV.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:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d}$$

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.

Applicant: KODEN ELECTRONICS CO., LTD.
FCC ID: O5VRB809P
IC: 8477A-RB809P
Report: V:\K\KODEN_O5V\1245AZUT16\1245AZUT16RF EXP MPE REV.DOCX

| Insert values in yellow highlighted boxes to determine Minimum Separation Distance | | | | | | |
|--|--------------------|--------------------|--------|-----------------|----------|---------|
| Max Power | 25000 | W | equals | Max Power | 25000000 | mW |
| Duty Cycle | 0.1 | % | equals | Duty Factor | 0.001 | numeric |
| Antenna Gain | 30 | dBi | equals | Gain numeric | 1000 | numeric |
| Coax Loss | 0 | dB | | Gain - Coax Los | 1000 | numeric |
| Power Density | 1 | mW/cm ² | | | | |
| Enter power Density from the chart to the right | | | | | | |
| Frequency | 9440 | MHz | | | | |
| Rule Part 1.1310, Table 1 (B) | | | | | | |
| Frequency rang | Power der | Enter this value | | | | |
| MHz | mW/cm ² | mW/cm ² | | | | |
| 0.3-1.34 | 100 | 100 | | | | |
| 1.34-30 | 180/f ² | 0.0 | | | | |
| 30-300 | 0.2 | 0.2 | | | | |
| 300-1,500 | f/1500 | 6.3 | | | | |
| 1,500-100,000 | 1 | 1 | | | | |

f = frequency in MHz

| Minimum Separation Distance | 1410 cm | 14.10 m |
|-----------------------------|---------|---------|
|-----------------------------|---------|---------|

Minimum Separation in Inches 554.8805 Inches

Applicant: KODEN ELECTRONICS CO., LTD.
FCC ID: O5VRB809P
IC: 8477A-RB809P
Report: V:\K\KODEN_O5V\1245AZUT16\1245AZUT16RF EXP MPE REV.DOCX