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## RF Exposure Evaluation Report

<b>APPLICANT</b>	GUIDANCE MARINE LIMITED
	5 TIBER WAY MERIDIAN BUSINESS PARK LEICESTER LE19 1QP UNITED KINGDOM
<b>FCC ID</b>	VYMVALIDATOR
<b>MODEL NUMBER</b>	VALIDATOR
<b>PRODUCT DESCRIPTION</b>	X BAND 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

Project Manager

**Date: 3/ 21/ 2017**

Applicant: GUIDANCE MARINE LIMITED  
FCC ID: VYMLVALIDATOR  
Report: 2171BUT16RF EXP MPE RPT REV2.DOCX

## RF Exposure Requirements

### General information

Device type: X BAND RADAR

### Antenna

The manufacturer does not specify an antenna, but a typical antenna has a gain of 0 dBi.

Configuration	Antenna p/n	Type	Max. Gain (dBi)
Fixed mounted	Any	omni	0

### 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.

Insert values in yellow highlighted boxes to determine Minimum Separation Distance						
Max Power	0.024	W	equals	Max Power	24	mW
Duty Cycle	100	%	equals	Duty Factor	1	numeric
Antenna Gain	6	dBi	equals	Gain numeric	3.981072	numeric
Coax Loss	0	dB		Gain - Coax Los	3.981072	numeric
Power Density	1	mW/cm <sup>2</sup>				
Enter power Density from the chart to the right						
Frequency	9230	MHz				
Rule Part 1.1310, Table 1 (B)						
Frequency rang	Power der	Enter this value				
MHz	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>				
0.3-1.34	100	100				
1.34-30	180/f <sup>2</sup>	0.0				
30-300	0.2	0.2				
300-1,500	f/1500	6.2				
1,500-100,000	1	1				

f = frequency in MHz

Minimum Separation Distance	3 cm	0.03 m
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Minimum Separation in Inches      1.084763 Inches