



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](mailto:INFO@TIMCOENGR.COM)  
[HTTP://WWW.TIMCOENGR.COM](http://WWW.TIMCOENGR.COM)

---

## RF Exposure Evaluation Report

<b>APPLICANT</b>	UNIDEN AMERICA CORPORATION
	3001 GATEWAY DRIVE SUITE 130 IRVING TEXAS 75063 USA
<b>FCC ID</b>	AMWUT655
<b>IC</b>	513C-UT655D
<b>MODEL NUMBER</b>	VHF490
<b>PRODUCT DESCRIPTION</b>	FIXED MOUNTED VHF MARINE TRANSCEIVER
<b>STANDARD APPLIED</b>	CFR 47 Part 2.1091
<b>PREPARED BY</b>	Cory Leverett

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:**

Cory Leverett

Engineering Project Manager

**Date: 4/10/2017**

Applicant: UNIDEN AMERICA CORPORATION  
FCC ID: AMWUT655  
IC: 513C-UT655  
Report: 332AUT17RF Exp MPE Rpt.docx

## RF Exposure Requirements

### General information

Device type: FIXED MOUNTED VHF MARINE TRANSCEIVER

### Antenna

Configuration	Antenna p/n	Type	Max. Gain (dBi)
Fixed mounted	Any	omni	9

### 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.

Applicant: UNIDEN AMERICA CORPORATION  
 FCC ID: AMWUT655  
 IC: 513C-UT655  
 Report: 332AUT17RF Exp MPE Rpt.docx

**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	<b>25</b>	W	<i>equals</i>	Max Power	<b>25000</b>	mW
Duty Cycle	<b>100</b>	%	<i>equals</i>	Duty Factor	<b>1</b>	numeric
Antenna Gain	<b>9</b>	dBi	<i>equals</i>	Gain numeric	<b>7.943282347</b>	numeric
Coax Loss	<b>0</b>	dB		Gain - Coax Loss	<b>7.943282347</b>	numeric
Power Density	<b>0.1291</b>	mW/cm <sup>2</sup>				
Frequency	<b>162</b>	MHz				

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

**RSS-102 (i5) § 4 Table 3 General Public Use Limits**

Frequency Range	Power density	Enter this value
MHz	W/M <sup>2</sup>	mW/cm <sup>2</sup>
10 -20	2	0.2
20-48	$8.944/f^{0.5}$	0.070270701
48-300	1.291	0.1291
300-6000	$0.02619 f^{0.6834}$	0.085
6000-15000	10	1
15000-150000	10	1
150000-300000	$6.67 \times 10^{-5} f$	0.00108054

*f* = Frequency in MHz

<b>Minimum Separation Distance</b>	<b>350 cm</b>	<b>3.50 m</b>
------------------------------------	---------------	---------------

Minimum Separation in Inches      137.6374 Inches