



849 NW State Road 45  
Newberry, Fl 32669 USA  
Phone: 888.472.2424 or 352.472.5500  
Fax: 352.472.2030  
Email: [info@timcoengr.com](mailto:info@timcoengr.com)  
Website: [www.timcoengr.com](http://www.timcoengr.com)

## FCC PART 15 SUB PART B

Applicant	UNIDEN AMERICA CORPORATION
Address	181 N. COUNTRY CLUB RD. / P. O. BOX 580 LAKE CITY SC 29560
Model Number	VHF650
Product Description	MARINE TRANSCEIVER - RECEIVER
Date Sample Received	1/23/2007
Date Tested	1/25/2007
Tested By	JOSEPH SCOGLIO
Approved By	MARIO DE ARANZETA
Report Number	189BUT7TestReport.doc
Total Pages	10
Test Results	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**



Certificate # 0955-01

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## STATEMENT OF COMPLIANCE

This equipment has been tested in accordance with the standards identified in the referenced test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report and demonstrate that the equipment complies with the appropriate standards.

I attest that the necessary measurements were made by me or under my supervision, at TIMCO ENGINEERING, INC. located at 849 N.W. State Road 45, Newberry, Florida 32669 USA.

**Authorized by:** Mario de Aranzeta

**Signature:** <Mario de Aranzeta>

**Function:** Engineer

**DATE:** **JANUARY 25, 2007**

## GENERAL INFORMATION

The test results relate only to the items tested.	
<b>DUT Description</b>	MARINE TRANSCEIVER - RECEIVER
<b>Model Number</b>	VHF650
<b>DUT Power Source</b>	<input type="checkbox"/> 110-120Vac/50- 60Hz
	<input checked="" type="checkbox"/> DC Power
	<input type="checkbox"/> Battery Operated Exclusively
<b>Test Item</b>	<input type="checkbox"/> Prototype
	<input checked="" type="checkbox"/> Pre-Production
	<input type="checkbox"/> Production
<b>Modifications to DUT</b>	None
<b>Test Standards</b>	FCC Part 15, Subpart B, ANSI C63.4-2003

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 REPORT: U\UNIDEN AMW\189BUT7\189BUT7TestReport.doc

## TEST EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/27/04	3/26/07
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/06	1/10/09
Antenna: Biconnical	Eaton	94455-1	1057	CAL 12/12/05	12/12/07
Antenna: Biconnical	Eaton	94455-1	1096	CAL 10/11/06	10/11/08
Antenna: Biconnical	Electro-Metrics	BIA-25	1171	CAL 4/29/05	4/29/07
Analyzer Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/13/05	4/13/07
Analyzer Blue Tower RF Preselector	HP	85685A	2926A00983	CAL 9/5/05	9/5/07
Analyzer Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/13/05	4/13/07
LISN	Electro-Metrics	ANS-25/2	2604	CAL 10/5/06	10/5/08
LISN	Electro-Metrics	EM-7820	2682	CAL 4/28/05	4/28/07
Antenna: Log- Periodic	Eaton	96005	1243	CAL 12/14/05	12/14/07

## TEST PROCEDURE

**General:** This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

**Radiation Interference:** The test procedure used was ANSI C63.4-2003 using a spectrum analyzer with a pre-selector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The video bandwidth was always greater than or equal to the RBW.

**Formula Of Conversion Factors:** The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

**Example:**

Freq (MHz)	Meter Reading	+ ACF	+CL	= FS
33	20 dBuV	+ 10.36 dB/m	+0.40 dB	=30.36 dBuV/m @ 3m

**ANSI C63.4-2003 Section 10.1.7 Measurement Procedures:** The unit under test was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

If powerline conducted testing was required for this device, the situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI C63.4-2003 with the EUT 40 cm from the vertical ground wall.

## RADIATED SPURIOUS EMISSIONS

Rules Part No.: 15.109

### Requirements:

Frequency	Limits
30 – 88	40.0 dB $\mu$ V/m measured @ 3 meters
80 – 216	43.5 dB $\mu$ V/m measured @ 3 meters
216 – 960	46.0 dB $\mu$ V/m measured @ 3 meters
Above 960	54.0 dB $\mu$ V/m measured @ 3 meters

**Test Procedure:** The procedure used was ANSI C63.4-2003. The frequency was scanned from 30 MHz to 1.0 GHz. When an emission was found, the table was rotated to produce the maximum signal strength.

### Test Data:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Pol	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
156.0	114.10	19.9	V	1.49	10.84	32.23	11.27
156.0	114.10	25.1	H	1.49	10.14	36.73	6.77
156.0	228.20	16.2	V	2.53	11.25	29.98	16.02
156.0	228.20	21.3	H	2.53	11.48	35.31	10.69
156.0	342.30	10.4	V	3.01	14.45	27.86	18.14
156.0	342.30	15.2	H	3.01	14.65	32.86	13.14
161.9	120.00	20.3	V	1.55	11.10	32.95	10.55
161.9	120.00	25.3	H	1.55	10.50	37.35	6.15
161.9	240.10	23.9	V	2.57	12.00	38.47	7.53
161.9	240.10	29.0	H	2.57	12.01	43.58	2.42
161.9	360.10	14.4	V	3.10	14.80	32.30	13.70
161.9	360.10	20.5	H	3.10	15.00	38.60	7.40
162.5	120.50	19.3	V	1.56	11.21	32.07	11.44
162.5	120.50	23.7	H	1.56	10.60	35.86	7.64
162.5	241.10	23.5	V	2.57	12.04	38.11	7.89
162.5	241.10	29.3	H	2.57	12.07	43.94	2.06
162.5	361.70	15.2	V	3.11	14.82	33.13	12.87
162.5	361.70	21.3	H	3.11	15.02	39.43	6.57

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## POWER LINE CONDUCTED INTERFERENCE

**Rules Part No.:** Part 15.107

**Requirements:**

<b>Frequency (MHz)</b>	<b>Quasi Peak Limits (dBuV)</b>	<b>Average Limits (dBuV)</b>
0.15 – 0.5	66 – 56	56 – 46
0.5 – 5.0	56	46
5.0 – 30	60	50

**Test Procedure:** ANSI Standard C63.4-2003. The spectrum was scanned from 0.15 to 30 MHz.

**Test Data:** Not applicable to this device.

**RADIATED EMISSIONS TEST SETUP PHOTO**



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## RECEIVER CERTIFICATE OF COMPLIANCE

The responsible party declares that this device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Responsible Party:** UNIDEN AMERICA CORP.

**Address:** 181 N. COUNTRY CLUB ROAD, PO BOX 580  
LAKE CITY, SC 29560

**Tel:** 843-374-3852

**Fax:** 843-374-8393

**Printed Name/Title:**

**Signature:**

**Product Description:** MARINE TRANSCEIVER - RECEIVER

**Model Name:** VHF650

**Trade/Brand Name:** UNIDEN

**Report Number:** 189BUT7TestReport.doc

**Date:** 1/25/2007