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RF Exposure Evaluation Report

APPLICANT	VERTEX STANDARD USA, INC.
	8000 WEST SUNRISE BLVD. FT. LAUDERDALE FL 33322 USA
FCC ID	AXI11143030
MODEL NUMBER	EVX-5300-DO-25, EVX-5400-DO-25
PRODUCT DESCRIPTION	VHF MOBILE RADIO
STANDARD APPLIED	CFR 47 Part 2.1091
PREPARED BY	Nam Nguyen
APPROVED BY	Sid Sanders
TIMCO REPORT NO.	397AUT14RF Exposure Rpt.docx

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 ENGINEERIN, INC.

GENERAL REMARKS

Attestations

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

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

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:

Nam Nguyen
Engineering Project Manager

Date: 3/26/2014

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FCC ID: AXI11144730
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GENERAL INFORMATION

EUT Specification

EUT Description	VHF MOBILE TRANSCEIVER
FCC ID	AXI11143030
IC	10239A-11143030
Model Number	EVX-5300-D0-25, EVX-5400-D0-25
Frequency Range	138-174 MHz
Type of Emission	11K0F3E, 7K60F1D, 7K60F1E 7K60F1W, 7K60FXE, 7K60FXD
Modulation	FM
EUT Power Source	<input type="checkbox"/> 110-120Vac/50- 60Hz
	<input checked="" type="checkbox"/> DC Power 12V
	<input type="checkbox"/> Battery Operated Exclusively
Test Item	<input type="checkbox"/> Prototype
	<input checked="" type="checkbox"/> Pre-Production
	<input type="checkbox"/> Production
Type of Equipment	<input type="checkbox"/> Fixed
	<input checked="" type="checkbox"/> Mobile
	<input type="checkbox"/> Portable
Test Conditions	The temperature was 26°C with a relative humidity of 50%.
Revision History to the EUT	None
Test Facility	Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA.

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RF Exposure Requirements

General information

Device type: Part 90 RF amplifier designed to increase the RF output power of a mobile push to talk type of radio.

Device category: Mobile

Environment: Controlled Exposure

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

Antenna

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

Operating configuration and exposure conditions:

The conducted output power is 25 Watts. Typical use qualifies for a maximum duty cycle factor of 50%.

- Mobile operation: A typical installation consists of an antenna system with a coaxial cable of the type RG 213/ U type which has a loss of 1dB for a length of 30 feet at UHF frequencies.

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 population/uncontrolled exposure environment below 300 MHz is 0.2 mW/cm².

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Frequency: 138-174 MHz

The conducted power output is 25 watt.

50% talk time in 30 minutes

Minimum Separation Distance for Mobile or Fixed Devices General Population/Uncontrolled Exposure									
Max Power	25	W	<i>equals</i>	Max Power	25000 mW				
Duty Cycle	50	%	<i>equals</i>	Duty Factor	0.5 numeric				
Antenna Gain	0	dBi		Gain numeric	0.794328 numeric				
Coax Loss	1	dB							
Power Density	0.2	mW/cm ²							
(use chart below)									
Frequency range (MHz)	Power density								
0.3-1.34	100								
1.34-30	180/f ²								
30-300	0.2								
300-1,500	f/1500								
1,500-100,000	1								
f = frequency in MHz									
Minimum Separation Distance		63 cm							
		0.63 m							
24.80315 Inches									

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