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RF Exposure Evaluation Report

APPLICANT	VERTEX STANDARD USA, INC.
	8000 WEST SUNRISE BLVD. FT. LAUDERDALE FL 33322 USA
FCC ID	AXI11144730
MODEL NUMBER	EVX-5300-G7-25, EVX-5400-G7-25
PRODUCT DESCRIPTION	UHF MOBILE RADIO
STANDARD APPLIED	CFR 47 Part 2.1091
PREPARED BY	Cory Leverett
APPROVED BY	Sid Sanders
TIMCO REPORT NO.	502AUT14RF 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:

Cory Leverett
Engineering Project Manager

Date: 10/14/2014

Applicant: VERTEX STANDARD USA, INC.
FCC ID: AXI11144730
Report: V:\V\VERTEX STANDARD USA\502AUT14\EXTRA502AUT14\502AUT14RF
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GENERAL INFORMATION

EUT Specification

EUT Description	UHF MOBILE TRANSCEIVER
FCC ID	AXI11144730
IC	10239A-11144730
Model Number	EVX-5300-G7-25, EVX-5400-G7-25
Frequency Range	450-512 MHz
Type of Emission	16K0F3E/11K0F3E/ 7K60F1D/ 7K60F1E 7K60FXD/ 7K60FXE/ 7K60F1W
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 UHF Transceiver

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

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

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 VHF frequencies.

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

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Frequency: 450-512 MHz

The conducted power output is 25 watt.
50% talk time in 30 minutes

Insert values in yellow highlighted boxes to determine Minimum Separation Distance					
Max Power	25	W	equals	Max Power	25000 mW
Duty Cycle	50	%	equals	Duty Factor	0.5 numeric
Antenna Gain	0	dBi		Gain numeric	0.794328 numeric
Coax Loss	1	dB			
Power Density	0.3	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	51 cm				
	0.51 m				
	20.787 Inches				

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