849 NW STATE ROAD 45
NEWBERRY, FL 32669 USA

PHONE: 888.472.2424 OR 352.472.5500
EMAIL: INFO@TIMCOENGR.COM
WEB: HTTP://WWW.TIMCOENGR.COM

TIMCO ENGINEERING, Inc.

An IIA Company

RF Exposure Evaluation Report

APPLICANT	Radio Solutions, Inc.
ADDRESS	2101 NW 79th Ave. MIAMI FL 33122 USA
FCC ID	2AHVPSB400M3A, 2AHVPSB400M3B
IC	21503-SB400M3
MODEL NUMBER	SB400M3, NF-BDA-400-M3, HON-BDA-400M3
PRODUCT DESCRIPTION	UHF Industrial Booster
DATE SAMPLE RECEIVED	07/22/2020
FINAL TEST DATE	07/30/2020
PREPARED BY	Franklin Rose
TEST RESULTS	☒ PASS ☐ FAIL

Report Number	Report Version	Description	Issue Date
2571-20 MPE_TestReport_	Rev1	Initial Issue	08/06/2019

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

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GENERAL REMARKS

Summary

The device under test does:

☒ Fulfill the general approval requirements as identified in this test report and was selected by the customer.

☐ Not fulfill the general approval requirements as identified in this test report

Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests 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 measurements were made at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, FL 32669
Designation #: US1070

Prepared by:

Name and Title	Franklin Rose, Project Manager / EMC Specialist
Date	08/06/2020

EUT INFORMATION

EUT Description	UHF Industrial Booster		
Model Number	SB400M3, NF-BDA-400-M3, HON-BDA-400M3		
Modified for Testing	☐		
Modification			
Antenna Connector	☐ UHF	☐ BNC	☒ N
	☐ TNC	☐ SMA	☐ Other
EUT Power Source	☐ AC Power (110-120 V)	☒ DC Power (28 V)	☐ DC Battery (7.4 V)
Test Item	☐ Engineering Prototype	☒ Pre-Production	☐ Post-Production
Type of Equipment	☒ Fixed	☐ Mobile	☐ Portable

ANTENNA INFORMATION

Manufacturer Provides Antenna	Type	Max Gain (dBi)
No	Unspecified	**0 dBi**

FCC MPE SEPARATION

EUT Parameters		
Parameter	**Value**	**Unit**
EUT Form Factor	Fixed	
Lowest Frequency	406.100	MHz
Highest Frequency	512.000	MHz
Maximum Power	5.000	W
Tune Up Tolerance	0.000	+/- W
Duty Cycle	100%	%
Antenna Gain	0.000	dBi EIRP
Coax Loss	0.000	dB
EIRP	5.000	W

Uncontrolled Public RF Exposure/MPE Guideline	
Separation Distance (cm)	38.34 cm
Power Density (mW/cm^2)	0.271 mW/cm2

Controlled Occupational RF Exposure/MPE Guideline	
Separation Distance (cm)	20 cm
Power Density (mW/cm^2)	0.995 mW/cm2

FCC MPE CALCULATION

Calculations

RF Exposure Field Strength Limits

Public Persons may be exposed up to:

Worst-Case RF Field Strength Limit for the General Public (Uncontrolled Environment)	**0.271 mW/cm2**

Occupational Persons may be exposed up to:

Worst-Case RF Field Strength Limit for Controlled Use (Controlled Environment)	**1.354 mW/cm2**

Separation Distance

Mandatory distance from radiating element:

Calculation Method	**Distance from Radiating Element (cm) = SQRT (P(mW) / 4π S(mW/cm^2))**
Uncontrolled Sep. Distance @ 0.271 mW/cm2	**38.34 cm**
Controlled Sep. Distance @ 1.354 mW/cm2	**17.14 cm**

EUT Power Density at 20 cm

Calculation Method	**Power Density (mW/cm^2) = P(mW) / 4π R(cm)^2**
EUT Power Density @ 20 cm	**0.995 mW/cm2**

ISED MPE SEPARATION

EUT Parameters		
Parameter	**Value**	**Unit**
EUT Form Factor	Fixed	
Lowest Frequency	406.100	MHz
Highest Frequency	470.000	MHz
Maximum Power	5.000	W
Tune Up Tolerance	0.000	+/- W
Duty Cycle	100%	%
Antenna Gain	0.000	dBi EIRP
Coax Loss	0.000	dB
EIRP	5.000	W

Uncontrolled Public RF Exposure/MPE Guideline	
Separation Distance (cm)	50.05 cm
Power Density (W/m^2)	1.588 W/m2

Controlled Occupational RF Exposure/MPE Guideline	
Separation Distance (cm)	20 cm
Power Density (W/m^2)	9.95 W/m2

ISED MPE CALCULATION

Calculations

RF Exposure Field Strength Limits

Public Persons may be exposed up to:

Worst-Case RF Field Strength Limit for the General Public (Uncontrolled Environment)	**1.588 W/m2**

Occupational Persons may be exposed up to:

Worst-Case RF Field Strength Limit for Controlled Use (Controlled Environment)	**13.01 W/m2**

Separation Distance

Mandatory distance from radiating element:

Calculation Method	**Distance from Radiating Element (cm) = SQRT (P(mW) / 4π S(mW/cm^2))**
Uncontrolled Sep. Distance @ 1.588 W/m2	**50.05 cm**
Controlled Sep. Distance @ 13.01 W/m2	**17.49 cm**

EUT Power Density at 20 cm

Calculation Method	**Power Density (mW/cm^2) = P(mW) / 4π R(cm)^2**
EUT Power Density @ 20 cm	**9.95 W/m2**

END OF REPORT