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RF Exposure Evaluation Report

APPLICANT	RADIO SOLUTIONS, INC.
	70 ACCORD PARK DRIVE NORWELL MA 02061 USA
FCC ID	2AHVPSB400M1A
MODEL NUMBER	UHF (450-490MHz)
PRODUCT DESCRIPTION	UHF INDUSTRIAL BOOSTER
STANDARD APPLIED	CFR 47 Part 2.1091
PREPARED BY	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: 05/20/2016

Report reviewed and approved by:

Sid Sanders

Engineer

Date: 05/20/2016

Applicant: RADIO SOLUTIONS, INC.
FCC ID: 2AHVPSB400M1A
Report: V:\R\RADIO SOLUTIONS\673AUT16\673AUT16RF EXP MPE RPT_REV2.DOCX

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RF Exposure Requirements

General information

Device type: UHF INDUSTRIAL BOOSTER

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, based on the 5 Watt ERP requirement and the 32 dBm conducted output power of this device antennas with a gain of up to ≤ 7.13 dBi may be used.

Configuration	Antenna p/n	Type	Max. Gain (dBi)
Fixed mounted	Any	Yagi	7.13

Operating configuration and exposure conditions:

The conducted output power is shown in the table below. Typical use qualifies for a maximum duty cycle factor of 100%.

MPE Calculation:

The minimum separation distance is calculated as follows:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$$

The limit for general uncontrolled exposure environment is shown in FCC rule Part 1.11310, Table 1.

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	1.58	W	equals	Max Power	1580	mW
Duty Cycle	100	%	equals	Duty Factor	1	numeric
Antenna Gain	7.13	dBi	equals	Gain numeric	5.164164	numeric
Coax Loss	0	dB		Gain - Coax Lo	5.164164	numeric
Power Density	0.3	mW/cm^2				

Enter power Density from the chart to the right

Rule Part 1.1310, Table 1 (B)

| Frequency | 490 | MHz |

Frequency ran	Power de	Enter this value
MHz	mW/cm^2	mW/cm^2
0.3-1.34	100	**100**
1.34-30	180/f^2	**0.0**
30-300	0.2	**0.2**
300-1,500	f/1500	**0.3**
1,500-100,000	1	**1**

f = frequency in MHz

| **Minimum Separation Distance** | **47 cm** | **0.47 m** |

| Minimum Seperation in Inches | 18.30195 | Inches |

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