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RF Exposure Evaluation Report

APPLICANT	RADIO SOLUTIONS, INC.
	55 ACCORD PARK DRIVE NORWELL, MA. 02061 USA
FCC ID	2AHVPSB400M2A
MODEL NUMBER	SB400M2A
PRODUCT DESCRIPTION	UHF SIGNAL BOOSTER
STANDARD APPLIED	CFR 47 Part 2.1091
PREPARED BY	Franklin Rose

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:

Franklin Rose, Testing Technician/Project Manager

Date: 11/29/2017

Applicant: RADIO SOLUTIONS, INC.
FCC ID: 2AHVPSB400M2A
Report: 1702AUT17RF Exp MPE Rpt

RF Exposure Requirements

General information

Device type: UHF SIGNAL BOOSTER

Antenna

The manufacturer does not provide an antenna, but a 2.15 dBi dipole will be assumed as FCC Rule Part 90.219(e)(1) limits output power to 5 Watts ERP.

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 uncontrolled exposure environment is shown in FCC rule Part 1.1310, 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	<i>equals</i>	Max Power	1580 mW																								
Duty Cycle	100	%	<i>equals</i>	Duty Factor	1 numeric																								
Antenna Gain	2.15	dBi	<i>equals</i>	Gain numeric	1.64059 numeric																								
Coax Loss	0	dB		Gain - Coax Loss	1.64059 numeric																								
Power Density	0.3	mW/cm ²																											
Enter power Density from the chart to the right			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">Rule Part 1.1310, Table 1 (B)</th> </tr> <tr> <th style="text-align: center;">Frequency range</th> <th style="text-align: center;">Power density</th> <th style="text-align: center; color: red;">Enter this value</th> </tr> <tr> <th style="text-align: center;">MHz</th> <th style="text-align: center;">mW/cm²</th> <th style="text-align: center;">mW/cm²</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0.3-1.34</td> <td style="text-align: center;">100</td> <td style="text-align: center; border: 2px solid red;">100</td> </tr> <tr> <td style="text-align: center;">1.34-30</td> <td style="text-align: center;">180/f²</td> <td style="text-align: center; border: 2px solid red;">0.0</td> </tr> <tr> <td style="text-align: center;">30-300</td> <td style="text-align: center;">0.2</td> <td style="text-align: center; border: 2px solid red;">0.2</td> </tr> <tr> <td style="text-align: center;">300-1,500</td> <td style="text-align: center;">f/1500</td> <td style="text-align: center; border: 2px solid red;">0.3</td> </tr> <tr> <td style="text-align: center;">1,500-100,000</td> <td style="text-align: center;">1</td> <td style="text-align: center; border: 2px solid red;">1</td> </tr> </tbody> </table> f = frequency in MHz			Rule Part 1.1310, Table 1 (B)			Frequency range	Power density	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
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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																											
Frequency			490	MHz																									
Minimum Separation Distance			26 cm		0.26 m																								
Minimum Separation in Inches			10.31567 Inches																										

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