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## RF Exposure Evaluation Report

<b>APPLICANT</b>	BARON SERVICES INC.
	4930 Research Dr. Huntsville, Alabama 35805
<b>FCC ID</b>	NX5-GEN3-1000HSK
<b>MODEL NUMBER</b>	GEN3-1000HSK
<b>PRODUCT DESCRIPTION</b>	S BAND RADAR
<b>STANDARD APPLIED</b>	CFR 47 Part 2.1091
<b>PREPARED BY</b>	Tim Royer

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:**



Sr. EMC Engineer  
EMC-003838-NE



Tested by:

Name and Title: Tim Royer, Project Manager/Testing Engineer

**Date: 02/26/2018**

Applicant: BARON SERVICES INC.  
FCC ID: NX5-GEN3-1000HSK  
Report: 1677AUT17RF EXP MPE RPT.DOCX

## RF Exposure Requirements

### General information

Device type: S BAND RADAR

### 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	1,000,000	W	<i>equals</i>	Max Power	1000000000 mW																								
Duty Cycle	0.11	%	<i>equals</i>	Duty Factor	0.0011 numeric																								
Antenna Gain	45	dBi	<i>equals</i>	Gain numeric	31622.7766 numeric																								
Coax Loss	2.5	dB		Gain - Coax Lo	17782.7941 numeric																								
Power Density	1	mW/cm <sup>2</sup>																											
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;">Enter this value</th> </tr> <tr> <th style="text-align: center;">MHz</th> <th style="text-align: center;">mW/cm<sup>2</sup></th> <th style="text-align: center;">mW/cm<sup>2</sup></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/f<sup>2</sup></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;">2.4</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> <p style="font-size: small;">f = frequency in MHz</p>			Rule Part 1.1310, Table 1 (B)			Frequency range	Power density	Enter this value	MHz	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	0.3-1.34	100	100	1.34-30	180/f <sup>2</sup>	0.0	30-300	0.2	0.2	300-1,500	f/1500	2.4	1,500-100,000	1	1
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30-300	0.2	0.2																											
300-1,500	f/1500	2.4																											
1,500-100,000	1	1																											
Frequency	3550	MHz																											
<b>Minimum Separation Distance</b>		<b>39454 cm</b>		<b>394.54 m</b>																									
Minimum Separation in Inches		15521.22 Inches																											