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## **SAR EXEMPTION REPORT**

**Manufacturer:** Sports Sensors, Inc.  
7260 Edington Drive  
Cincinnati, Ohio 45249-1063 USA

**Applicant:** Same as Above

**Product Name:** Swing Speed Radar RDL;  
Swing Speed Radar with Tempo Timer RDL

**Product Description:** Multi-Sports Doppler Speed Measuring Device with  
Bluetooth Data Link

**Model(s):** **RDL-SSR364\***  
*\*Denotes actual model tested as worst-case representative  
of product family that includes Swing Speed Radar RDL  
model RDL-SSR364 and Swing Speed Radar with Tempo  
Timer RDL model RDL-SSRTT364.*

**FCC ID:** **NVE364BT**

**Standard(s):**

- KDB447498 D04 Interim General RF Exposure Guidance v01
- FCC Rule Part 1.1307(b)(3)(i)(a)

**Report Constructed by:**

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## TABLE OF CONTENTS

1	<a href="#"><u>ADMINISTRATIVE INFORMATION</u></a>
2	<a href="#"><u>SUMMARY OF TEST RESULTS/MODIFICATIONS</u></a>
3	<a href="#"><u>ENGINEERING STATEMENT</u></a>
4	<a href="#"><u>EUT INFORMATION AND DATA</u></a>



## 1 ADMINISTRATIVE INFORMATION

### 1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

### 1.2 Document History

Document Number	Description	Issue Date	Approved By
F2P31012-03E	First Issue	2024-01-24	K. Littell



## 2 SUMMARY OF RESULTS

	Standard(s)	Results
SAR Exemption	- KDB447498 D04 Interim General RF Exposure Guidance v01 - FCC Rule Part 1.1307(b)(3)(i)(a)	Complies

Modifications Made to the Equipment
None



### 3 ENGINEERING STATEMENT

This report has been prepared on behalf of Sports Sensors, Inc., to provide documentation for the SAR Exclusion herein. This equipment has been found to comply with the SAR Exclusion levels listed in FCC Rule Part 1.1307(b)(3)(i)(a).

*“(3) Determination of exemption.*

*(i) For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:*

*(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);”*

#### **FCC SAR test exclusion:**

According to KDB 447498 D01 General RF Exposure Guidance v05r02, Appendix A requirement, “*The equation and threshold in section 4.3.1 must be applied to determine SAR test exclusion.*”

#### **4.3.1. Standalone SAR test exclusion considerations:**

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander. To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, typically in the SAR measurement or SAR analysis report, according to the required published RF exposure KDB procedures. When no other RF exposure testing or reporting is required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for the SAR test exclusion. When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops & tablets etc.



- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances 50 mm are determined by:  $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [f(\text{GHz})]$  3.0 for 1-g SAR and 7.5 for 10-g extremity SAR, where;

$f$  (GHz) is the RF channel transmit frequency in GHz

- Power and distance are rounded to the nearest mW and mm before calculation/
- The result is rounded to one decimal place for comparison.
- 3.0 and 7.5 are referred to as the numeric thresholds.

The test exclusions are applicable only when the minimum test separation distance is 50 mm and for transmission frequencies between 100 MHz and 6 GHz.

When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

For multiple Transmitters, the combined ratio must not exceed 1.0.

#### Results:

The highest power for Bluetooth was High Channel 2480 MHz = -18.46dBm (0.014mW). The EIRP is -16.60dBm (0.022mW). **The ratio of the exclusion for the Bluetooth power to the 1mW limit, is 0.022.**

The highest power for the 10545.7 MHz Radar was 86.2dB $\mu$ V/m; = - 9.03dBm (0.13mW).

$$P(\text{dBm}) = E(\text{dB}\mu\text{V}/\text{m}) + 20\text{LOG}(d) - G - 104.77$$
$$86.2 + 9.542425 - 0 - 104.77 = - 9.03\text{dBm} (0.13\text{mW}).$$

**The ratio of the exclusion for the Radar power to the 1mW limit is 0.13.**

**The combined ratio (0.152) is less than 1.**



#### 4 EUT INFORMATION AND DATA

##### 4.1 Equipment Under Test:

Product: Swing Speed Radar with Tempo Timer RDL

Model: RDL-SSR364\*

*\*Denotes actual model tested as worst-case representative of product family that includes Swing Speed Radar RDL model RDL-SSR364 and Swing Speed Radar with Tempo Timer RDL model RDL-SSRTT364.*

Serial No.: 7CBB36

BT Firmware: v0.14

BT Hardware: v0.10

SSR Firmware: 66781901

SSR Hardware: V1.0

FCC ID: NVE364BT

##### 4.2 Trade Name:

Sports Sensors, Inc.

##### 4.3 Power Supply:

Battery-Operated

##### 4.4 Applicable Rules:

KDB447498

##### 4.5 Equipment Category:

Radio Transmitter

##### 4.6 Antenna:

Integral Antennas

##### 4.7 Accessories: N/A