



Date: June 22, 2016

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Rd
Columbia MD 21046-1609

Subject: SAR Report Rider
FCC ID: **WR2-FLEX-T5300**

To whom it may concern:

Spirent Communications formally requests that you accept this document as a rider to SAR report number FA621931. The SAR report was issued by SPORTON INTERNATIONAL INC. (the SAR laboratory used for the evaluation of T5300 Tech-X Flex NG2 with Spectrum).

The system level FCC ID to which the SAR testing corresponds is WR2-FLEX-T5300. As per the report, testing was conducted on the T5300 Tech-X Flex NG2 with Spectrum containing the SparkLAN WPEA-352ACN Wi-Fi module.

Secondary radio, Redpine Signals RS9113 with Molex Dual Band antenna (MPN 047951001), was excluded from testing at the SAR laboratory on direction by Spirent. Spirent concluded that SAR testing was not necessary based on calculations for SAR exclusion defined in KDB 447498 D01 v06 "RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES".

Specifically, the exclusion is based on the following measured maximum values of 2.4 GHz band 19.98 dBm, UNII-1 band 12.04 dBm and UNII-3 13.35 dBm which can be found in reports "EMC88304-FCC247", "EMC88304-FCC407 UNII 1" and "EMC88304-FCC407 UNII 3" respectively. With these maximum values applied to the exclusion equation and based on 76mm separation to human hand, the Redpine Signals RS9113 can be excluded from SAR testing.

The following information details the SAR test exclusion for Redpine radio RS9113 contained in T5300 Tech-X Flex NG2 FCC ID WR2-FLEX-T5300.

Spirent established the following minimum and test separation distances from the Redpine RS9113 antenna (see Figure 1 and Figure 2).

- Minimum distance from Redpine RS9113 antenna to the exterior of the EUT is **8mm**
- Minimum test separation distance from human hand to Redpine RS9113 antenna is **76mm**

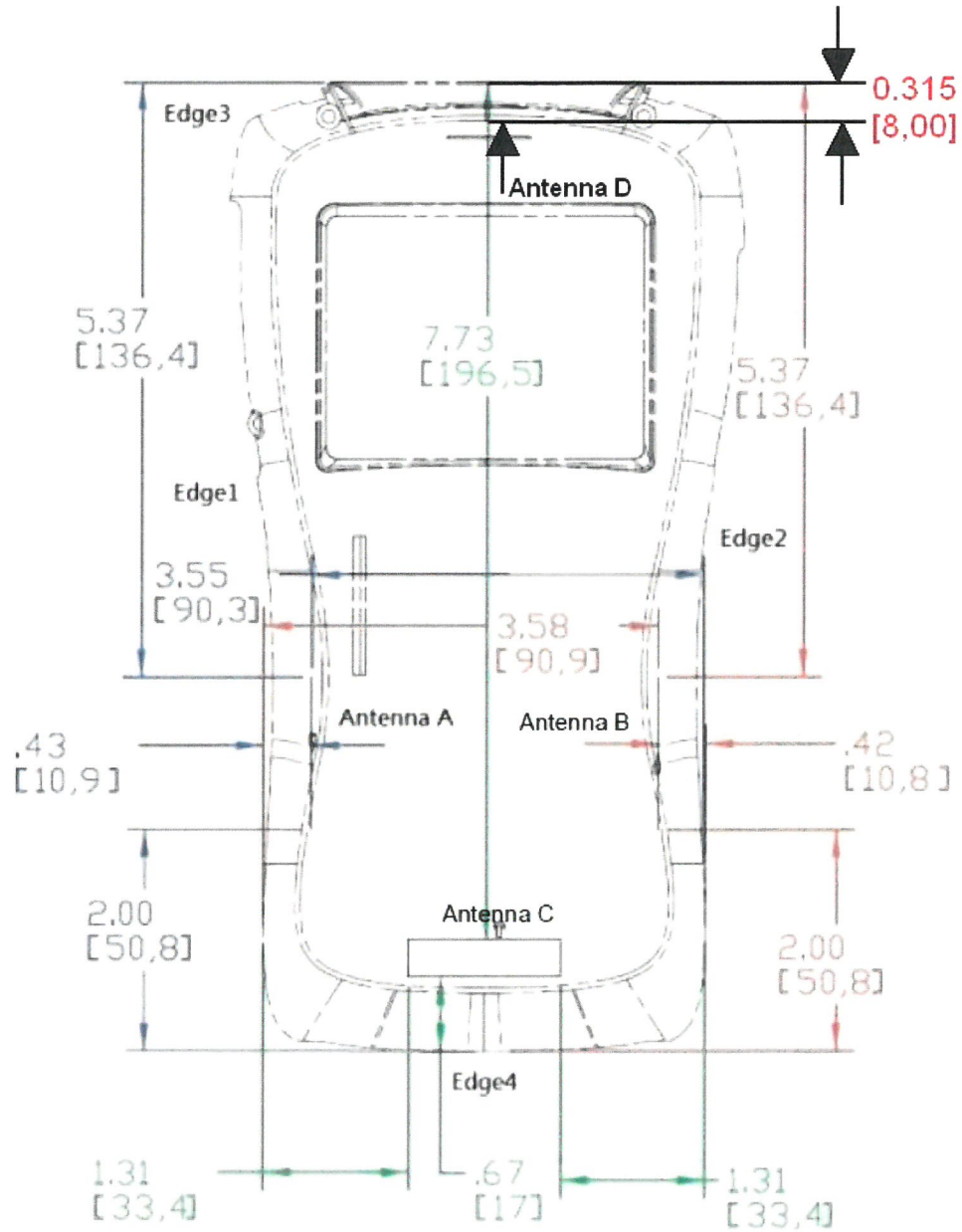


Figure 1 – Antenna Locations (Redpine RS9113 is Antenna D with 8mm to exterior plastic)

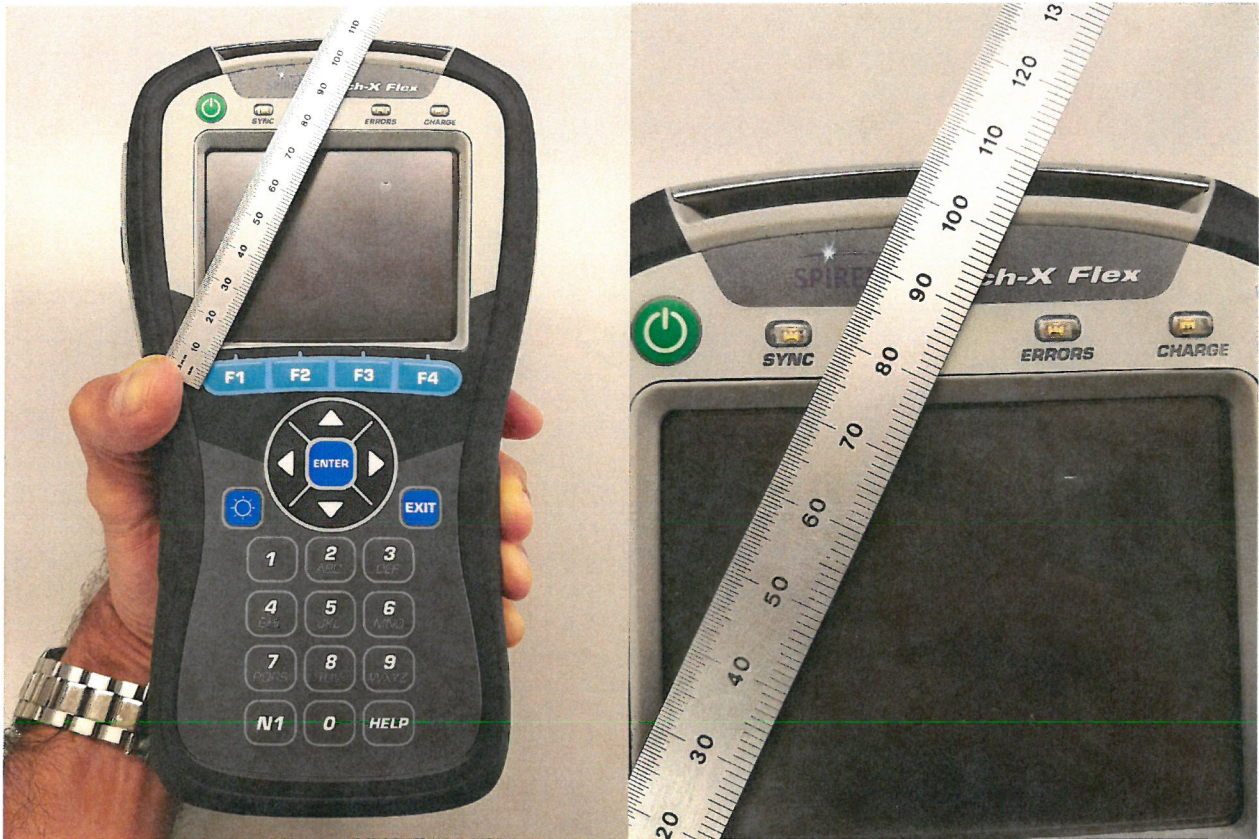


Figure 2 – Test separation (hand location versus very conservative 76mm distance used for calculations)

According to KDB 447498 D01 v06 SAR exclusion calculations are based on the following equations.

- a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot \sqrt{f(\text{GHz})}$$
- b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):32
 - $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
 - $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

Report	Max dBm	Calculated max mW
EMC88304-FCC247	19.98	99.54054174
EMC88304-FCC407 UNII 1	12.04	15.99558029
EMC88304-FCC407 UNII 3	13.35	21.62718524

Table 1 – maximum power readings measured for Redpine RS9113

"KDB 447498 D01 v06" step A 4.3.1 calculated with min separation of 8mm and max power from RF reports	
19.47569906 mW	@ 2450MHz
4.559441888 mW	@ 5200MHz
6.510644913 mW	@ 5800MHz

Table 2 – minimum separation threshold values calculated from maximum power readings measured for Redpine RS9113

MHz	Extrapolated Threshold from table (mW)	Calculated Threshold (mW)	Max mW measured	Note
100	491.2	21.26801873		Not valid Tx freq for radio
150	413	30.81898576		Not valid Tx freq for radio
300	326	58.81507501		Not valid Tx freq for radio
450	302	86.34672817		Not valid Tx freq for radio
835	308.6	156.1031445		Not valid Tx freq for radio
900	314	167.8040562		Not valid Tx freq for radio
1500	382	275.238971		Not valid Tx freq for radio
1900	369	277.150896		Not valid Tx freq for radio
2450	356	279.4756991	99.540542	Meets exclusion criteria
3600	339	283.6081124		Not valid Tx freq for radio
5200	326	288.3734199		Not valid Tx freq for radio
5400	325	288.9139145	15.99558	Meets exclusion criteria
5800	322	289.9656712	21.627185	Meets exclusion criteria

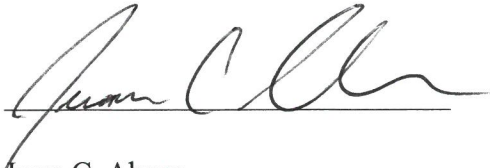
Table 3 – Exclusion thresholds based on >50mm separation

Explanation of Table 3 is as follows:

- Extrapolated Threshold is shown only for reference (from Appendix B of KDB 447498 D01 v06)
- Calculated Threshold uses the minimum thresholds from Table 2 in conjunction with the appropriate equation. For example:
 - At 2450 MHz the calculated min spacing threshold is 19.47569906 mW. Using 76mm separation for the min hand spacing we have the following equation:
 - $(19.47569906 \text{ mW}) + ((76\text{mm} - 50\text{mm}) * 10) = 279.4757 \text{ mW}$ exclusion threshold.
 - ✓ Maximum measured power of 99.540542 mW is well below the calculated threshold.

Note that both SparkLAN WPEA-352ACN and Redpine Signals RS9113 (both radios internal to FCC ID WR2-FLEX-T5300) do not and cannot transmit simultaneously as defined by Spirent firmware control. Additionally, the T5300 Tech-X Flex NG2 with Spectrum is not body worn equipment.

Thank you for your consideration in this matter.

A handwritten signature in black ink, appearing to read "Juan C. Abreu", written over a horizontal line.

Juan C. Abreu

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