



RF Exposure Evaluation Declaration

FCC ID: BRWAR9130T
Applicant: Horizon Hobby, LLC
Application Type: Certification
Product: PowerSafe Receiver
Model No.: SPMAR12310T
Brand Name: Spektrum
FCC Classification: Digital Transmission System (DTS)
Test Procedure(s): KDB 447498 D01v06

Reviewed By: *Sunny Sun*

(Sunny Sun)

Approved By: *Robin Wu*

(Robin Wu)



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
1909RSU008-U2	Rev. 01	Initial Report	11-12-2019	Valid

General Information

Applicant:	Horizon Hobby, LLC
Applicant Address:	4105 Fieldstone Rd., Champaign, IL 61822 USA
Manufacturer:	Horizon Hobby, LLC
Manufacturer Address:	4105 Fieldstone Rd., Champaign, IL 61822 USA
Test Site:	MRT Technology (Suzhou) Co., Ltd
Test Site Address:	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



1. PRODUCT INFORMATION

1.1. Feature of Equipment under Test

Product Name:	PowerSafe Receiver
Model No.:	SPMAR12310T
Brand Name:	Spektrum
Frequency Range:	2402 ~ 2478 MHz
Channel Number:	23
Antenna Gain:	Ant 1: 1.5dBi Ant 2: 1.5dBi

Note: Two antennas cannot be simultaneously transmitted.

1.2. Working Frequencies

Example of a 23 pseudo-random hopping frequency list:

Channel	Frequency	Channel	Frequency
00	2404 MHz	12	2442 MHz
01	2412 MHz	13	2446 MHz
02	2411 MHz	14	2450 MHz
03	2414 MHz	15	2452 MHz
04	2417 MHz	16	2456 MHz
05	2420 MHz	17	2459 MHz
06	2424 MHz	18	2463 MHz
07	2427 MHz	19	2466 MHz
08	2430 MHz	20	2469 MHz
09	2433 MHz	21	2473 MHz
10	2437 MHz	22	2476 MHz
11	2440 MHz	--	--

2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation

Product	PowerSafe Receiver
Test Item	RF Exposure Evaluation

Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
2404 ~ 2476	20.68	0.0233	1

Note : EIRP (dBm) = Conducted Power(dBm) + Antenna Gain (dBi)

CONCLUSION:

The max Power Density at R (20 cm) = 0.0233mW/cm² < 1 mW/cm² for 2.4G Radio Frequency..

_____ The End _____

Appendix - EUT Photograph

Refer to "1909RSU008-UE" file.