RF Exposure Evaluation Report

Product	:	Spark Plug
Trade mark	:	Scalextric®
Model/Type reference	:	SA00528
Product	:	N/A
Report Number	:	EED32L00061002
FCC ID	:	2ACUF-SA00528
Date of Issue	:	Jun. 26, 2019
Test Standards	:	47 CFR Part 1.1307(2015) 47 CFR Part 1.1310(2015) KDB 447498 D01v06
Test result	:	PASS

Prepared for:

Hornby Hobbies Ltd
Enterprise Road Westwood Industrial Estate, CT9 4JX, United Kingdom

Prepared by:

Centre Testing International Group Co., Ltd.
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	Ware Xin		Kevin yang
Date:	Jun. 26, 2019		Check No.: 1022573910

2 Version

Version No.	Date	Description
00	Jun. 26, 2019	Original

3 Contents

4 General Information

4.1 Client Information

Applicant:	Hornby Hobbies Ltd
Address of Applicant:	Enterprise Road Westwood Industrial Estate Margate, Kent CT9 4JX United Kingdom Of Great Britain And Northern Ireland
Manufacturer:	Hornby Hobbies Ltd
Address of Manufacturer:	Enterprise Road Westwood Industrial Estate Margate, Kent CT9 4JX United Kingdom Of Great Britain And Northern Ireland
Factory:	Jianhui Plastic & Electronic Industry (Shenzhen) Co. Ltd.
Address of Factory:	No. 127, Sili Road, Guanlan Zhen, Longhua District, Shenzhen, China

4.2 General Description of EUT

Product Name:	Spark Plug
Model No.:	SA00528
Trade mark:	Scalextric®
EUT Supports Radios application:	BT4.0 Single Mode; 2402-2480MHz

4.3 Product Specification subjective to this standard

Frequency Range:	2402-2480MHz
Modulation Type:	GFSK
Hardware Version:	C(manufacturer declare)
Firmware Version:	1(manufacturer declare)
Test Power Grade:	P_m4dbm(manufacturer declare)
Test Software of EUT:	wtcdb
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	AC Adapter MODEL No.: P9403W INPUT: 120V AC 60Hz 0.5A OUTPUT: 15V DC 1.2A
Max Conducted Peak Output Power:	-7.298dBm The Max Conducted Peak Output Power data refer to the report EED32L00061001.
Sample Received Date:	Mar. 22, 2019
Sample tested Date:	Apr. 16, 2019 to Jun. 14, 2019
Reamrk: The tested sample(s) and the sample information are provided by the client.	

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f^2)	6
30–300	61.4	0.163	1.0	6
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30
30–300	27.5	0.073	0.2	30
300–1500	.....	.....	f/1500	30
1500–100,000	.....	.....	1.0	30

A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation:

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R= distance to the centre of radiation of the antenna

EIRP = P*G

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user. Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. Therefore, the S of the device is calculated with R=20cm, and if it is below the limit S, then we can conclude the device complies with the rules.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually.

5.1.3 EUT RF Exposure Evaluation

Antenna Gain: 0Bi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Frequency (MHz)	Max Conducted Peak Output Power(dBm)	Gain (dBi)	EIRP* (dBm)	EIRP (mW)	R (cm)	S (mW/cm^2)	Limit (mW/cm^2)	Result
Highest	2480	-7.298	0	-7.298	0.19	20	0.00004	1.0	Pass

Note: Refer to report No. EED32L00061001 for EUT test Max Conducted Peak Output Power value.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00061001 for EUT external and internal photos.

*** End of Report ***