



No. 1 Workshop, M-10, Middle section, Science & Technology Park,
Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: ee.shenzhen@sgs.com

Report No.: SZEM171001094302

Page: 1 of 8

SAR Evaluation Report

Applicant: Hextronik Limited
Address of Applicant: Office A1, 20th Floor, MG Tower, 133 Hoi Bun Road, Kowloon, Hong Kong
Manufacturer: Hextronik Limited
Address of Manufacturer: Office A1, 20th Floor, MG Tower, 133 Hoi Bun Road, Kowloon, Hong Kong
Factory: Dongguan Flysky RC Model Technology Co., Ltd
Address of Factory: West building 3, Huangjinyuan Ind Park, Qiaoli North Gate, Changping Town, Dongguan, China

Equipment Under Test (EUT):

EUT Name: OrangeRX T6i 2.4GHz DM2 DSMX 6CH Transmitter
Model No.: 9171001327-0, 9171001328-0, 9171001329-0, 9171001330-0 ♣

Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Trade mark: hobbyking
FCC ID: 2AOCYI6X00

Standard(s) : 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06

Date of Receipt: 2017-10-25
Date of Test: 2017-10-27 to 2017-11-03
Date of Issue: 2017-11-06

Test Result:	Pass*
---------------------	--------------

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang
EMC Laboratory Manager



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2017-11-06		Original

Authorized for issue by:				
				
		Harry Wu /Project Engineer		
				
		Eric Fu /Reviewer		



3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 GENERAL INFORMATION	4
4.1 GENERAL DESCRIPTION OF EUT	4
4.2 TEST LOCATION	6
4.3 TEST FACILITY	6
4.4 DEVIATION FROM STANDARDS	6
4.5 ABNORMALITIES FROM STANDARD CONDITIONS	6
4.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER	6
5 EQUIPMENT LIST	7
6 SAR EVALUATION	8
6.1 RF EXPOSURE COMPLIANCE REQUIREMENT	8
6.1.1 <i>Standard Requirement</i>	8
6.1.2 <i>Limits</i>	8
6.1.3 <i>EUT RF Exposure</i>	8



4 General Information

4.1 General Description of EUT

Power supply:	DC 6.0V (4 x 1.5V "AA" batteries)
Modulation technique:	DSSS
Operation Frequency:	2404MHz~2480MHz
Modulation Type:	GFSK
Channel Space:	1MHz
Number of Channel:	77
Antenna Type:	Integral
Antenna Gain:	Antenna 1: 2dBi; Antenna 2: 2dBi Two antennas can not synchronous transmission.



Operation Frequency each of channel

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2404MHz	20	2424MHz	40	2444MHz	60	2464MHz
1	2405MHz	21	2425MHz	41	2445MHz	61	2465MHz
2	2406MHz	22	2426MHz	42	2446MHz	62	2466MHz
3	2407MHz	23	2427MHz	43	2447MHz	63	2467MHz
4	2408MHz	24	2428MHz	44	2448MHz	64	2468MHz
5	2409MHz	25	2429MHz	45	2449MHz	65	2469MHz
6	2410MHz	26	2430MHz	46	2450MHz	66	2470MHz
7	2411MHz	27	2431MHz	47	2451MHz	67	2471MHz
8	2412MHz	28	2432MHz	48	2452MHz	68	2472MHz
9	2413MHz	29	2433MHz	49	2453MHz	69	2473MHz
10	2414MHz	30	2434MHz	50	2454MHz	70	2474MHz
11	2415MHz	31	2435MHz	51	2455MHz	71	2475MHz
12	2416MHz	32	2436MHz	52	2456MHz	72	2476MHz
13	2417MHz	33	2437MHz	53	2457MHz	73	2477MHz
14	2418MHz	34	2438MHz	54	2458MHz	74	2478MHz
15	2419MHz	35	2439MHz	55	2459MHz	75	2479MHz
16	2420MHz	36	2440MHz	56	2460MHz	76	2480MHz
17	2421MHz	37	2441MHz	57	2461MHz		
18	2422MHz	38	2442MHz	58	2462MHz		
19	2423MHz	39	2443MHz	59	2463MHz		

Remark:

Model No.: 9171001327-0, 9171001328-0, 9171001329-0, 9171001330-0

Only the model 9171001327-0 was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, only the model is different.



4.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.



5 Equipment List

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-27
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-27
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-27
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-27



6 SAR Evaluation

6.1 RF Exposure Compliance Requirement

6.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

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 Exclusion Threshold condition, listed below, is satisfied.

6.1.2 Limits

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:

$$\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \cdot \sqrt{f(\text{GHz})} \right] \leq 3.0$$
 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 calculation¹⁷

The result is rounded to one decimal place for comparison

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 is applied to determine SAR test exclusion

6.1.3 EUT RF Exposure

The Max Averaged output power is	9.47	dBm on the lowest channel	2.404	GHz
9.47 dBm logarithmic terms convert to numeric result is nearly 8.85 mW				
According to the formula. calculate the test exclusion thresholds:				
$\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \cdot \sqrt{f(\text{GHz})} \right]$				
General RF Exposure = $(8.85 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.404 \text{ GHz}} = 2.74$			(1)	
SAR requirement:				
S = 3.0			(2)	
(1) < (2)				
So the SAR report is not required.				

Remark: Max Averaged output power is included the tune-up tolerance.