

RF EXPOSURE REPORT



Report No.: 16021314-FCC-H1

Supersede Report No.: N/A

Applicant	FrSky Electronic Co., Ltd.	
Product Name	Digital Telemetry Radio System	
Main Model	Taranis Q X7	
Serial Model	Taranis Q X7D 、 Taranis Q X7S	
Test Standard	FCC 2.1093	
Test Date	October 12 to December 07, 2016	
Issue Date	December 07, 2016	
Test Result	☒ Pass ☐ Fail	
Equipment complied with the specification	☒	
Equipment did not comply with the specification	☐	
<i>Deon Dai</i>	<i>Miro Bao</i>	
Deon Dai Test Engineer	Miro Bao Checked By	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

Issued by:
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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1 Report Revision History

Report No.	Report Version	Description	Issue Date
16021314-FCC-H1	NONE	Original	December 07, 2016

2 Customer information

Applicant Name	FrSky Electronic Co., Ltd.
Applicant Add	No.100 Jinxi Road ,Wuxi,Jiangsu,China
Manufacturer	FrSky Electronic Co., Ltd.
Manufacturer Add	No.100 Jinxi Road ,Wuxi,Jiangsu,China

3 Test site information

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	986914
IC Test Site No.	4842B-1
Test Software	EZ EMC

4 Equipment under Test (EUT) Information

Description of EUT:	Digital Telemetry Radio System
Main Model:	Taranis Q X7
Serial Model:	Taranis Q X7D 、 Taranis Q X7S
Date EUT received:	October 09, 2016
Test Date(s):	October 12 to December 07, 2016
Antenna Gain:	2 dBi
Type of Modulation:	2-FSK
RF Operating Frequency (ies):	2408-2477.5 MHz(TX/RX)
Number of Channels:	47CH
Port:	Micro USB Port, SD Card Port
Input Power:	6~15V(9V@160mA)
Trade Name :	FrSky
FCC ID:	XYFX7QDS

5 FCC §2.1093 - RF Exposure

Standard Requirement:

According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

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:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f_{\text{(GHz)}}}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}^{16} \text{ where}$$

- $f_{\text{(GHz)}}$ 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 ≤ 50 mm, a distance of 50mm is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

Test Result:

Type	Test mode	CH	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)
Output power	2-FSK	Low	2408	16.446	15.5±1
		Mid	2442.5	16.222	
		High	2477.5	15.886	

One antenna is available for the EUT (2.4G antenna).

2.4G Mode:

The maximum average output power(turn-up power) in low channel of 2.4G is 16.5 dBm=44.67mW

The calculation results= $44.67/50 \cdot \sqrt{2.408} = 1.39 < 3$

The maximum average output power(turn-up power) in middle channel of 2.4G is 16.5 dBm=44.67mW

The calculation results= $44.67/50 \cdot \sqrt{2.442.5} = 1.39 < 3$

The maximum average output power(turn-up power) in high channel of 2.4G is 19 dBm=44.67mW

The calculation results= $44.67/50 \cdot \sqrt{2.477.5} = 1.41 < 3$

Test Result: Pass



The distance of antenna to user

FrSky Electronic Co., Ltd

To: SIEMIC INC.

Declaration letter

Dear Sir,

For our business issue and marketing requirement, we would like to list different models numbers on the CE/FCC certificates and reports, as following:

FCC ID: XYFX7QDS

Model No.: Taranis Q X7

The difference between Taranis Q X7D , Taranis Q X7S
are as follows:

The Serial Model Name Taranis Q X7D Taranis Q X7S. Different model name only, like all the other.

Thank you!

Signature:

Bryanshaw

Printed name/title:

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