
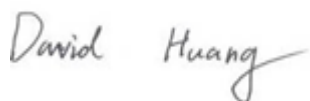



# RF EXPOSURE REPORT



Report No.: 17070148-FCC-H

Supersede Report No.: N/A

Applicant	3Dconnexion	
Product Name	CadMouse Wireless	
Model No.	3DX-600054	
Serial No.	3DX-700062	
Test Standard	FCC 2.1093:2016	
Test Date	August 05 to October 30, 2017	
Issue Date	October 31, 2017	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification <input checked="" type="checkbox"/>		
Equipment did not comply with the specification <input type="checkbox"/>		
		
Loren Luo Test Engineer	David Huang 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:

**SIEMIC (SHENZHEN-CHINA) LABORATORIES**

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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
17070148-FCC-H	NONE	Original	October 31, 2017

## 2. Customer information

Applicant Name	3Dconnexion
Applicant Add	33, Rue du Portier, 98000 Monaco
Manufacturer	3Dconnexion
Manufacturer Add	33, Rue du Portier, 98000 Monaco

## 3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

#### 4. Equipment under Test (EUT) Information

Description of EUT:	CadMouse Wireless
Main Model:	3DX-600054
Serial Model:	3DX-700062
Date EUT received:	August 04, 2017
Test Date(s):	August 05 to October 30, 2017
Antenna Gain:	BLE: -2.72dBi 2.4G: -2.72dBi
Antenna Type:	Patch antenna
Type of Modulation:	BLE/2.4G: GFSK
RF Operating Frequency (ies):	2.4G: 2404-2477 MHz BLE: 2402-2480 MHz
Number of Channels:	40CH
Port:	USB Port
Input Power:	Battery: Model: 603450 Spec: 3.7V, 4.07Wh, 1100mAh Voltage: 4.2V
Trade Name :	3Dconnexion
FCC ID:	2AAHQ-CMW

## 5. FCC §2.1093 - Radiofrequency radiation exposure evaluation: portable devices.

### 5.1 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*  $\leq 50$  mm are determined by:

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

- $f_{\text{(GHz)}}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq 50$  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.

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.

$$\text{result} = P\sqrt{F} / D$$

P= Maximum turn-up power in mW

F= Channel frequency in GHz

D= Minimum test separation distance in mm

## 5.2 Test Result

### BLE Mode:

Modulation	CH	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2402	-5.432	-5.5±1	-4.5	0.355	0.11	3
	Mid	2440	-4.971	-5.5±1	-4.5	0.355	0.11	3
	High	2480	-6.187	-5.5±1	-4.5	0.355	0.11	3

### 2.4G Mode:

Modulation	CH	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2404	-9.325	-9.5±1	-8.5	0.141	0.04	3
	Mid	2442	-9.625	-9.5±1	-8.5	0.141	0.04	3
	High	2477	-9.579	-9.5±1	-8.5	0.141	0.04	3

**Result:** Compliance

No SAR measurement is required.