

RF EXPOSURE REPORT



Report No.: 16020248-FCC-H1

Supersede Report No.: N/A

Applicant	Rosgol-Rostech Technologies Inc	
Product Name	2.4GHz Wireless Barn Camera	
Model No.	RS2400	
Serial Model No.	RS2400-2812, RS2400-2812HD, RS2400-550, RS2400-550HD	
Test Standard	FCC 2.1091	
Test Date	May 06 to May 09, 2016	
Issue Date	May 13, 2016	
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"/>	
<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
16020248-FCC-H1	NONE	Original	May 13, 2016

2 Customer information

Applicant Name	Rosgol-Rostech Technologies Inc
Applicant Add	346 Isabey Street, Montreal, Quebec, H4T 1W1 (Canada)
Manufacturer	Shenzhen Sectronics Technology Co., Ltd
Manufacturer Add	A1001, F10, Tiangong Security Plaza, Minzhi, Longhua District, Shenzhen

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	Labview of SIEMIC version 1.0

4 Equipment under Test (EUT) Information

Description of EUT:	2.4GHz Wireless Barn Camera
Main Model:	RS2400
Serial Model:	RS2400-2812, RS2400-2812HD, RS2400-550, RS2400-550HD
Date EUT received:	March 18, 2016
Test Date(s):	May 06 to May 09, 2016
Antenna Gain:	3 dBi
Type of Modulation:	FSK
RF Operating Frequency (ies):	2414-2468 MHz
Number of Channels:	4CH
Port:	N/A
Input Power:	100-240V、 1A
Trade Name :	N/A
FCC ID:	2AHRS-RS2400

5 FCC §2.1091 - Maximum Permissible exposure (MPE)

Applicable Standard

According to §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.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
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

f = frequency in MHz

* = Plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Type	Test Mode	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)
Output power	Transmit	2414	24.18	23.5±1
		2432	24.25	
		2450	24.37	
		2468	23.92	

For the antenna manufacturer provide only used limited to ERP/EIRP or radiated spurious emission test. The MPE evaluation as below:

The maximum peak output power (turn-up power) in 2414MHz is 24.5dBm
 Maximum peak output power (turn-up power) at antenna input terminal: 281.8383 (mW)
 Prediction distance: >20 (cm)
 Predication frequency: 2414(MHz)
 Antenna Gain (typical): 3 (dBi)

Antenna Gain (typical): 1.995 (numeric)
 The worst case is power density at predication frequency at 20 cm: 0.1119 (mW/cm²)
 MPE limit for general population exposure at prediction frequency: 1 (mW/cm²)

$$0.1119 \text{ (mW/cm}^2\text{)} < 1 \text{ (mW/cm}^2\text{)}$$

The maximum peak output power (turn-up power) in 2432MHz is 24.5dBm
 Maximum peak output power (turn-up power) at antenna input terminal: 281.8383 (mW)
 Prediction distance: >20 (cm)
 Predication frequency: 2432(MHz)
 Antenna Gain (typical): 3 (dBi)

Antenna Gain (typical): 1.995 (numeric)
 The worst case is power density at predication frequency at 20 cm: 0.1119 (mW/cm²)
 MPE limit for general population exposure at prediction frequency: 1 (mW/cm²)

$$0.1119 \text{ (mW/cm}^2\text{)} < 1 \text{ (mW/cm}^2\text{)}$$

The maximum peak output power (turn-up power) in 2450MHz is 24.5dBm
 Maximum peak output power (turn-up power) at antenna input terminal: 281.8383 (mW)
 Prediction distance: >20 (cm)
 Predication frequency: 2450(MHz)
 Antenna Gain (typical): 3 (dBi)

Antenna Gain (typical): 1.995 (numeric)
 The worst case is power density at predication frequency at 20 cm: 0.1119 (mW/cm²)
 MPE limit for general population exposure at prediction frequency: 1 (mW/cm²)

$$0.1119 \text{ (mW/cm}^2\text{)} < 1 \text{ (mW/cm}^2\text{)}$$

The maximum peak output power (turn-up power) in 2468MHz is 24.5dBm
Maximum peak output power (turn-up power) at antenna input terminal: 281.8383 (mW)
Prediction distance: >20 (cm)
Predication frequency: 2468(MHz)
Antenna Gain (typical): 3 (dBi)
Antenna Gain (typical): 1.995 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.1119 (mW/cm²)
MPE limit for general population exposure at prediction frequency: 1 (mW/cm²)

$$0.1119 \text{ (mW/cm}^2\text{)} < 1 \text{ (mW/cm}^2\text{)}$$

Result: Pass