RF EXPOSURE REPORT

Report No.: 17021187-FCC-H1
Supersede Report No.: N/A

Applicant	Radiocontrolli S.R.L.
Product Name	Transceiver Module
Model No.	RC-CC1310-915
Serial Model	N/A
Test Standard	FCC 2.1091
Test Date	September 14 to November 02, 2017
Issue Date	November 03, 2017
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Trety Lu	Deon Dai	
Trety Lu Test Engineer	Deon Dai Engineer Reviewer	

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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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CONTENTS

1 Report Revision History

Report No.	Report Version	Description	Issue Date
17021187-FCC-H1	NONE	Original	November 03, 2017

2 Customer information

Applicant Name	Radiocontrolli S.R.L.
Applicant Add	Via Carditello 10, P.co Nuovo Villaggio int. 6, 81050 San Tammaro (CE) ITALY,P.IVA 03939360610 ITALY
Manufacturer	Beijing Jia An Electronics Technology Co., Ltd.
Manufacturer Add	Main building, No.19, Gucheng West Street, Shijingshan District, Beijing, 100043, 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.	694825
IC Test Site No.	4842B-1
Test Software	EZ_EMC (Ver.ICP-03A1)

4 Equipment under Test (EUT) Information

Description of EUT:	Transceiver Module
Main Model:	RC-CC1310-915
Serial Model:	N/A
Date EUT received:	September 12, 2017
Test Date(s):	September 14 to November 02, 2017
Antenna Gain:	2 dBi
Type of Modulation:	GFSK/FSK/OOK
RF Operating Frequency (ies):	913 MHz (Tx/Rx) 915 MHz (Tx/Rx) 917 MHz (Tx/Rx)
Number of Channels:	3 CH
Port:	Power Port
Input Power:	1.8V to 3.8V
Trade Name :	N/A
FCC ID:	2ANH5-RC-CC1310-915

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	CH	Conducted Power (dBm)	Tune Up Power (dBm)
Output power	913MHz	Low	10.798	10±1
	915MHz	Middle	10.776	
	917MHz	High	10.754	

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

913MHz:
The maximum peak output power (turn-up power) in low channel of DTS is 11dBm
Maximum peak output power (turn-up power) at antenna input terminal: 12.589 (mW)
Prediction distance: >20 (cm)
Antenna Gain (typical): 2 (dBi)
Antenna Gain (typical): 1.585(numeric)
The worst case is power density at predication frequency at 20 cm: 0.00397 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 0.60867 (mW/cm^2)

0.00397 (mW/cm^2) < 0.60867(mW/cm^2)

915MHz:
The maximum peak output power (turn-up power) in Middle channel of DTS is11dBm
Maximum peak output power (turn-up power) at antenna input terminal: 12.589 (mW)
Prediction distance: >20 (cm)
Antenna Gain (typical): 2 (dBi)
Antenna Gain (typical): 1.585 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.00397 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 0.61 (mW/cm^2)

0.00397 (mW/cm^2) < 0.61(mW/cm^2)

917MHz:
The maximum peak output power (turn-up power) in High channel of DTS is 11 dBm
Maximum peak output power (turn-up power) at antenna input terminal: 12.598 (mW)
Prediction distance: >20 (cm)
Antenna Gain (typical): 2 (dBi)
Antenna Gain (typical): 1.585 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.00397(mW/cm^2)
MPE limit for general population exposure at prediction frequency: 0.61133(mW/cm^2)

0.00397(mW/cm^2) < 0.61133(mW/cm^2)

Result: Pass