

TEST REPORT

Applicant: Shanghai Wenheng Electronics Technology Co., Ltd.
Address of Applicant: Room 611, Building5, Xizi International Center No.898 Xiuwen Street, Minhang District, ShangHai

Equipment Under Test (EUT)

Product Name: Serial to Bluetooth Module
Model No.: WH-BLE102, WH-BLE103, WH-BLE104, WH-BLE105, WH-BLE106, WH-BLE107, WH-BLE108, WH-BLE109, WH-BLE201, WH-BLE202, WH-BLE203, WH-BLE204, WH-BLE205, WH-BLE206, WH-BLE207, WH-BLE208, WH-BLE209, WH-BT200, WH-BT201, WH-BT202, WH-BT203, WH-BT204, WH-BT205, WH-BT206, WH-BT207, WH-BT208, WH-BT209

Applicable standards: EN 62479:2010
Date of sample receipt: 08 Aug., 2018
Date of Test: 08 Aug., to 28 Aug., 2018
Date of report issue: 29 Aug., 2018
Test Result: PASS*

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

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives. The protection requirements with respect to electromagnetic compatibility contained in Directive 2014/53/EU are considered.



Bruce Zhang
Laboratory Manager



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. 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.

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2 Version

Version No.	Date	Description
00	29 Aug., 2018	Original

Tested by:

YT Yang

Test Engineer

Date:

29 Aug., 2018

Reviewed by:

Wimer Zhang

Project Engineer

Date:

29 Aug., 2018

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4 General Information

4.1 Client Information

Applicant:	Shanghai Wenheng Electronics Technology Co., Ltd.
Address:	Room 611, Building5, Xizi International Center No.898 Xiuwen Street, Minhang District, ShangHai
Manufacturer:	Shanghai Wenheng Electronics Technology Co., Ltd.
Address:	Room 611, Building5, Xizi International Center No.898 Xiuwen Street, Minhang District, ShangHai

4.2 General Description of E.U.T.

Product Name:	Serial to Bluetooth Module
Model No.:	WH-BLE102, WH-BLE103, WH-BLE104, WH-BLE105, WH-BLE106, WH-BLE107, WH-BLE108, WH-BLE109, WH-BLE201, WH-BLE202, WH-BLE203, WH-BLE204, WH-BLE205, WH-BLE206, WH-BLE207, WH-BLE208, WH-BLE209, WH-BT200, WH-BT201, WH-BT202, WH-BT203, WH-BT204, WH-BT205, WH-BT206, WH-BT207, WH-BT208, WH-BT209
Hardware version:	V1.1
Software version:	V1.0.5
BLE Specification	
Operation Frequency:	2402MHz-2480MHz
Channel number:	40
Channel separation:	2MHz
Modulation	GFSK
Antenna Type:	Internal Antenna
Antenna gain:	0.5 dBi (declare by Applicant)

4.3 Test Mode

Operating mode	Detail description
BLE mode	Keep the EUT in continuously transmitting in BLE mode

4.4 Description of Support Units

The EUT has been tested as an independent unit.

4.5 Laboratory Facility

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

- **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

- **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

4.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

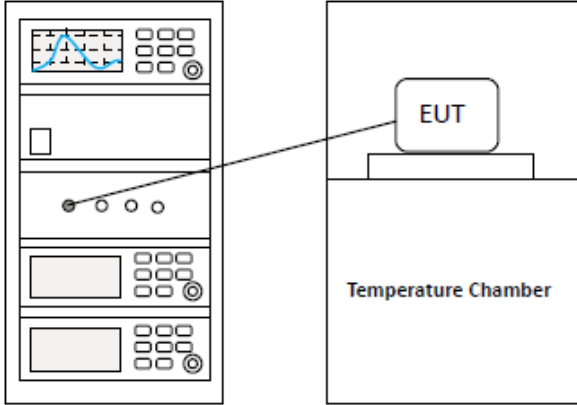
Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: <http://www.ccis-cb.com>

4.7 Test Instruments list

Conducted method:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
Spectrum Analyzer	Agilent	N9020A	MY50510123	11-10-2017	11-09- 2018
Vector Signal Generator	Agilent	N5182A	MY49060014	11-10-2017	11-09- 2018
Signal Generator	R&S	SMR20	1008100050	03-07-2018	03-06-2019
Power Sensor	D.A.R.E	RPR3006W	17I00015SNO27	11-10-2017	11-09- 2018
Power Sensor	D.A.R.E	RPR3006W	17I00015SNO28	11-10-2017	11-09- 2018
RF Switch Unit	Ascentest	AT890-RFB	N/A	N/A	N/A
Test Software	MWRFTTEST	MTS 8310	Version: 2.0.0.0		

5 Technical Requirements Specification

Test standard:	EN 62479
Limit:	20mW
Test setup:	 <p>The diagram illustrates the test setup. On the left is a power sensor unit with a display showing a blue waveform. A line connects the sensor to a Temperature Chamber on the right. Inside the chamber, the Equipment Under Test (EUT) is shown on a platform.</p>
Test procedure:	<ol style="list-style-type: none"> 1. Use a fast power sensor suitable for 2,4 GHz and capable of 1 MS/s. 2. Connect the power sensor to the transmit port, sample the transmit signal and store the raw data, every channel 25 bursts. Use these stored samples in all following steps. 3. Find the start and stop times of each burst in the stored measurement samples. 4. Between the start and stop times of each individual burst calculate the RMS power over the burst. Save these P_{burst} values, as well as the start and stop times for each burst. 5. The highest of all P_{burst} values (value "A" in dBm) will be used for maximum e.i.r.p. calculations. 6. Add the (stated) antenna assembly gain "G" in dBi of the individual antenna. The RF Output Power (P) shall be calculated using the formula below: $P = A + G$
Test Instruments:	See the section 4.7
Test Result:	Pass

Measurement Data

Modulation	EIRP Level (dBm)	EIRP Level (mW)	Limit (mW)	Result
Maximum Emissions Level of BLE				
2402	6.58	4.55	20	Pass
2440	5.78	3.78	20	Pass
2480	5.97	3.95	20	Pass

-----End of report-----