

NovaComm Technologies Inc

Bluetooth module

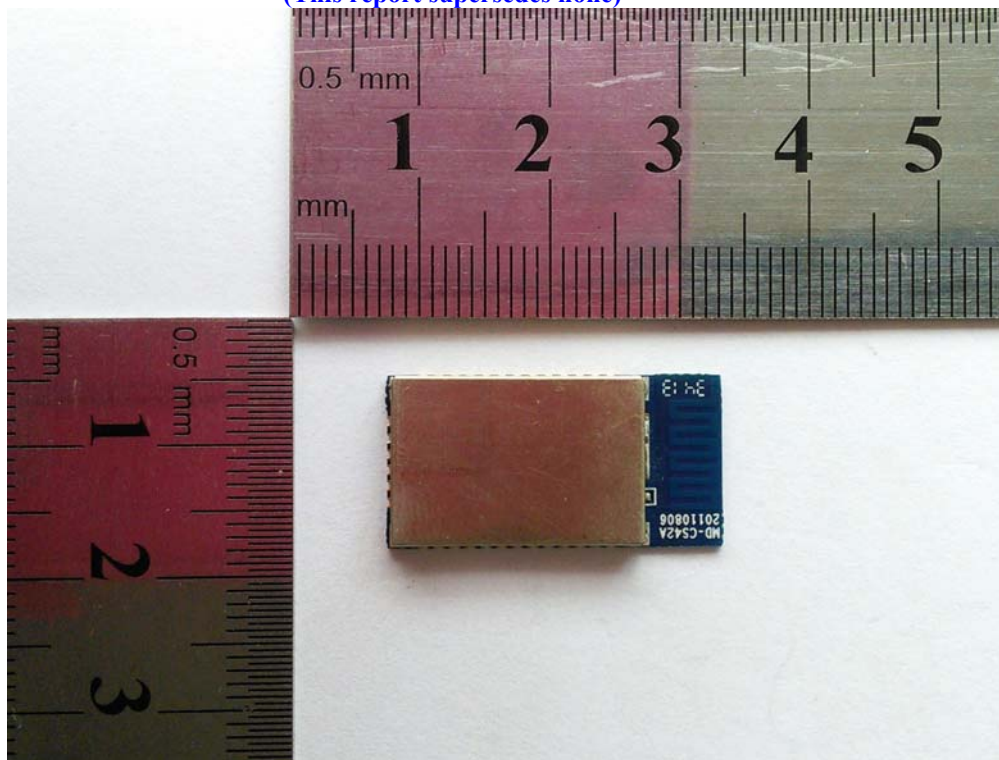
Main Model: NVC-MDCS42

Serial Model: N/A

February 09, 2014

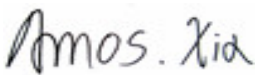
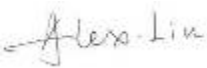
Report No.: 14020065-FCC-H1

(This report supersedes none)



Modifications made to the product : None

This Test Report is Issued Under the Authority of:

		
Amos Xia Compliance Engineer	Alex Liu Technical Manager	

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Test result presented in this test report is applicable to the representative sample only.

RF Exposure Evaluation Report
To: §15.247 (i), §2.1093

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Accreditations for Conformity Assessment

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

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1 EXECUTIVE SUMMARY & EUT INFORMATION

The purpose of this test programme was to demonstrate compliance of the NovaComm Technologies Inc, Bluetooth module and model: NVC-MDCS42 against the current Stipulated Standards. The Bluetooth module has demonstrated compliance with the §15.247 (i), §2.1093.

EUT Information

EUT Description	Bluetooth module
Main Model	NVC-MDCS42
Serial Model	N/A
Antenna Gain	Bluetooth: 1 dBi
Input Power	The control board power supply: DC 2.7V-3.7V
Classification Per Stipulated Test Standard	§15.247 (i), §2.1093

2 TECHNICAL DETAILS

Purpose	Compliance testing of Bluetooth module with stipulated standard
Applicant / Client	NovaComm Technologies Inc 902A, #560 Shengxia Rd., ZJ Inno Park, Shanghai 201203, China
Manufacturer	NovaComm Technologies Inc 902A, #560 Shengxia Rd., ZJ Inno Park, Shanghai 201203, China
Laboratory performing the tests	SIEMIC (Nanjing-China) Laboratories NO.2-1, Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel: +86(25)86730128/86730129 Fax: +86(25)86730127 Email: China@siemic.com
Test report reference number	14020065-FCC-H1
Date EUT received	January 23, 2014
Standard applied	§15.247 (i), §2.1093
Dates of test (from – to)	January 27 to January 29, 2014
No of Units :	#1
Equipment Category :	Spread Spectrum System/Device
Trade Name :	
RF Operating Frequency (ies)	Bluetooth: 2402-2480 MHz
Number of Channels	Bluetooth: 79CH
Modulation	Bluetooth: GFSK & $\pi/4$-DQPSK & 8DPSK
Port	N/A
FCC ID	OC3BM1842

3 MODIFICATION

NONE

4 TEST SUMMARY

The product was tested in accordance with the following specifications.
All testing has been performed according to below product classification:

Test Results Summary

FCC Rules	Description of Test	Result
§15.247 (i), §2.1093	RF Exposure	Compliance

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

5.1 §15.247 (i) and §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 < 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.

BT Mode:

One antenna is available for the EUT (BT antenna). The minimum separation distances is 5 mm.

The maximum average output power (turn-up power) in low channel of BT is 3.64 dBm = 2.31 mW

The calculation results = $2.31/5 \cdot \sqrt{2.402} = 0.72 < 3$

The maximum average output power (turn-up power) in middle channel of BT is 3.27 dBm = 2.12 mW

The calculation results = $2.12/5 \cdot \sqrt{2.441} = 0.66 < 3$

The maximum average output power (turn-up power) in high channel of BT is 3.19 dBm = 2.08 mW

The calculation results = $2.08/5 \cdot \sqrt{2.480} = 0.66 < 3$

According to KDB 447498, no stand-alone required for BT antenna, and no simultaneous SAR measurement is required.

Test Result: Pass