

# RF Exposure Report

**Project Number:** 4166661

**Report Number:** 4166661EMC01      **Revision Level:** 0

**Client:** Sanmina Corporation

**Equipment Under Test:** LoRa Module

**Model:** NIMBUS

**FCC ID:** 2AMS3NIMBUS

**Applicable Standards:** 47 C.F.R. §§ 2.1091 and 2.1093; FCC KDB 447498

**FCC OET Bulletin 65 Supplement**

**Report issued on:** 22 August 2017

**Test Result:** Compliant

**Remarks:**

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. 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. Any mention of SGS International Electrical Approvals or Testing done by SGS International Electrical Approvals in connection with distribution or use of the product described in this report must be approved by SGS international Electrical Approvals in writing.

## TABLE OF CONTENTS

<b>1</b>	<b>GENERAL INFORMATION</b> .....	<b>3</b>
1.1	CLIENT INFORMATION .....	3
1.2	TEST LABORATORY .....	3
1.3	GENERAL INFORMATION OF EUT .....	3
1.4	OPERATING MODES AND CONDITIONS .....	3
<b>2</b>	<b>RF EXPOSURE</b> .....	<b>4</b>
2.1	TEST RESULT.....	4
2.2	TEST METHOD.....	4
2.3	SINGLE TRANSMISSION RF EXPOSURE LEVELS.....	4
<b>3</b>	<b>REVISION HISTORY</b> .....	<b>5</b>

## 1 General Information

### 1.1 Client Information

Name: Sanmina Corp  
Address: 13000 Memorial Parkway SW  
City, State, Zip, Country: Huntsville, AL 35803, USA

### 1.2 Test Laboratory

Name: SGS North America, Inc.  
Address: 620 Old Peachtree Road NW, Suite 100  
City, State, Zip, Country: Suwanee, GA 30024, USA

Accrediting Body: A2LA  
Type of lab: Testing Laboratory  
Certificate Number: 3212.01

### 1.3 General Information of EUT

EUT: LoRa Module  
Model Number: NIMBUS  
Serial Number: Not labeled

Frequency Range: 125kHz Channel: 902.3-914.9MHz  
500kHz Channel: 903.0-914.2MHz  
Number of channels: 125kHz Channel: 64  
500kHz Channel: 8  
Modulation type: LoRa  
Channel spacing: 125kHz Channel: 200kHz  
500kHz Channel: 1.6MHz  
Antenna: SMT Loop Antenna (taoglas, P/N: ILA.01), 1dBi Peak Gain

Rated Voltage: 3.7Vdc Internal Battery

Sample Received Date: 13 July 2017  
Dates of testing: 17 – 18 July 2017

### 1.4 Operating Modes and Conditions

For this assessment, the EUT's maximum conducted power was considered.

## 2 RF Exposure

### 2.1 Test Result

Test Description	Product Specific Standard	Test Result
RF Exposure	FCC Part 1.1310	Compliant

### 2.2 Test Method

Using the maximum conducted power and maximum peak antenna gain, the power density was calculated.

### 2.3 Single transmission RF Exposure Levels

Band of Operation		Conducted Power w/tolerance dBm	Antenna Gain	Cable Loss	Average EIRP		Distance (R) cm	Power Density EIRP <sub>Avg</sub> /(4πR <sup>2</sup> ) mW/cm <sup>2</sup>	FCC mW/cm <sup>2</sup>	% of Limit	Verdict
Type	MHz				dBm	mW					
LoRa	902-915	18.7	1.0	0.0	19.7	94	20	0.019	0.60	3%	Pass

### 3 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	22 August 2017