



MRT Technology (Suzhou) Co., Ltd  
Phone: +86-512-66308358  
Fax: +86-512-66308368  
Web: www.mrt-cert.com

Report No.: 1609RSU01002  
Report Version: V02  
Issue Date: 11-23-2016

## RF Exposure Evaluation Declaration

**FCC ID:** 2AKCE-S83GESNB

**APPLICANT:** Suzhou SmartChip Semiconductor Co.,Ltd

**Application Type:** Certification

**Product:** WIFI Module

**Model No.:** S-83-GESNB

**FCC Classification:** Digital Transmission System (DTS)

Reviewed By :   
( Robin Wu )

Approved By :   
( Marlin Chen )



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

## Revision History

Report No.	Version	Description	Issue Date	Note
1609RSU01002	Rev. 01	Initial report	10-10-2016	Invalid
1609RSU01002	Rev. 02	Add the antenna spec	11-23-2016	Valid

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name	WIFI Module
Model No.	S-83-GESNB
<b>Wi-Fi Specification</b>	
Frequency Range	802.11b/g/n-HT20: 2412 ~ 2462 MHz 802.11n-HT40: 2422 ~ 2452 MHz
Type of Modulation	802.11b: DSSS 802.11g/n: OFDM
Max Average Output Power	19.13dBm

### 1.2. Antenna Description

Antenna Type	Manufacturer	M/N	Max Peak Gain
Dipole Antenna	Cortec Technology Inc.	AN2400-1761BRS	3dBi

## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula:  $Pd = (Pout * G) / (4 * \pi * r^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

## 2.2. Test Result of RF Exposure Evaluation

Product	WIFI Module
Test Item	RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 3.0dBi for Wi-Fi in logarithm scale.

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
Wi-Fi	2412 ~ 2462	19.13	0.0325	1

### CONCLUSION:

The Max Power Density at R (20 cm) = 0.0325mW/cm<sup>2</sup> < 1mW/cm<sup>2</sup>. So the EUT complies with the requirement.

---

The End

---