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Report No.: 1609RSU00902 Report Version: Issue Date: 11-23-2016

# **RF Exposure Evaluation Declaration**

FCC ID: 2AKCE-S82GESNC

APPLICANT: Suzhou SmartChip Semiconductor Co.,Ltd

Application Type: Certification

**Product:** WIFI Module

Model No.: S-82-GESNC

FCC Classification: Digital Transmission System (DTS)

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( Marlin Chen )





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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.

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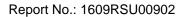
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## **Revision History**

Report No.	Version	Description	Issue Date	Note
1609RSU00902	Rev. 01	Initial report	11-10-2016	Invalid
1609RSU00902	Rev. 02	Add the antenna spec	11-23-2016	Valid





## 1. PRODUCT INFORMATION

## 1.1. Equipment Description

Product Name	WIFI Module	
Model No.	S-82-GESNC	
Wi-Fi Specification		
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	16.85dBm	

### 1.2. Antenna Description

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

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### 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	Electric Field	Magnetic Field	Power Density	Average Time
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm <sup>2</sup> )	(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	Maximum Average	Power Density at	Limit
	(MHz)	Output Power	R = 20 cm	(mW/cm <sup>2</sup> )
		(dBm)	(mW/cm <sup>2</sup> )	
Wi-Fi	2412 ~ 2462	16.85	0.0192	1

#### **CONCULISON:**

The Max Power Density at R  $(20 \text{ cm}) = 0.0192 \text{mW/cm}^2 < 1 \text{mW/cm}^2$ . So the EUT complies with the requirement.