

RF EXPOSURE REPORT



Report No.: 14070737-FCC-H

Supersede Report No.: N/A

Applicant	Guangzhou Gaoke Communications Technology Co., Ltd.	
Product Name	IP-PBX	
Model No.	BG9008W	
Serial No.	BG9000W/BG9002W/BG9004W	
Test Standard	FCC 2.1091	
Test Date	January 05 to June 10, 2015	
Issue Date	June 10, 2015	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification	<input checked="" type="checkbox"/>	
Equipment did not comply with the specification	<input type="checkbox"/>	
		
Dustin Wang Test Engineer	Chris You Checked By	
<p>This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only</p>		

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

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

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
14070737-FCC-H	NONE	Original	June 10, 2015

2. Customer information

Applicant Name	Guangzhou Gaoke Communications Technology Co., Ltd.
Applicant Add	GAOKE SCI-TEC Park, No.168 Gaopu Road, Tianhe District
Manufacturer	Guangzhou Gaoke Communications Technology Co., Ltd.
Manufacturer Add	GAOKE SCI-TEC Park, No.168 Gaopu Road, Tianhe District

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	718246
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

4. Equipment under Test (EUT) Information

Description of EUT:	IP-PBX
Main Model:	BG9008W
Serial Model:	BG9000W/BG9002W/BG9004W
Date EUT received:	January 05, 2015
Test Date(s):	January 05 to June 10, 2015
Antenna Gain:	WiFi: 5 dBi
Type of Modulation:	802.11b/g/n: DSSS, OFDM
RF Operating Frequency (ies):	WiFi:802.11b/g/n(20M): 2412-2462 MHz WiFi:802.11n(40M): 2422-2452 MHz
Number of Channels:	WiFi :802.11b/g/n(20M): 11CH WiFi :802.11n(40M): 7CH
Port:	USB Port, WAN Port, LAN Port, RJ11 Port, SFP Port
Input Power:	BG9002W Powered by adaptor; Model:G0616U-120-100; Input:100-240V~1.0 A 50/60Hz 0.5A MAX Output:12.0V 1A
	BG9008W Powered by adaptor; Model:GP304U-120-200; Input:100-240V~1A MAX 50/60Hz Output:12.0V 2.0A
Trade Name :	GAOKE
FCC ID:	2AD5JBG900X

5. FCC §2.1091 - Maximum Permissible exposure (MPE)

6.1 Applicable Standard

According to §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.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

6.2 Test Result

Type	Test mode	CH	Freq (MHz)	Conducted Power (dBm)				Max. Power (b, g mode) and Total Power (n20, n40)
				Antenna 1	Antenna 2	Antenna 1 Tune Up Power (dBm)	Antenna 2 Tune Up Power (dBm)	
Output power	802.11b	Low	2412	13.44	12.88	13.0±1	13.0±1	14.0
		Mid	2437	16.16	14.25	16.0±1	14.0±1	17.0
		High	2462	16.76	13.15	16.0±1	13.0±1	17.0
	802.11g	Low	2412	7.26	8.20	8.0±1	8.0±1	9.0
		Mid	2437	10.39	8.38	10.0±1	9.0±1	11.0
		High	2462	9.95	7.41	10.0±1	7.0±1	11.0
	802.11n (20M)	Low	2412	7.00	7.59	7.0±1	7.0±1	11.0
		Mid	2437	10.26	9.76	10.0±1	10.0±1	14
		High	2462	10.15	7.38	10.0±1	7.0±1	12.76
	802.11n (40M)	Low	2422	8.34	4.43	8.0±1	4.0±1	10.46
		Mid	2437	7.52	6.99	7.0±1	6.0±1	10.54
		High	2452	6.84	6.82	6.0±1	6.0±1	10

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For the antenna manufacturer provide only used limited to ERP/EIRP or radiated spurious emission test. The MPE evaluation as below:

b, g mode:

Maximum output power at antenna input terminal: 17.00 dBm

Maximum output power at antenna input terminal: 50.12 (mW)

Prediction distance: >20 (cm)

Predication frequency: 2462 (MHz) High frequency

Antenna Gain (typical): 5 (dBi)

Antenna Gain (typical):3.162(numeric)

The worst case is power density at predication frequency at 20 cm: (0.032mW/cm²)

MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm²)

$0.032(\text{mW}/\text{cm}^2) < 1.0 (\text{mW}/\text{cm}^2)$

n(20), n(40) mode

Maximum output power at antenna input terminal: 14.0dBm

Maximum output power at antenna input terminal: 25.12 (mW)

Prediction distance: >20 (cm)

Predication frequency: 2437 (MHz) High frequency

Antenna Gain (typical): 5(dBi)

Antenna Gain (typical): 3.162(numeric)

The worst case is power density at predication frequency at 20 cm: (0.0158mW/cm²)

MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm²)

$0.0158(\text{mW}/\text{cm}^2) < 1.0 (\text{mW}/\text{cm}^2)$

Result: Pass