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Report No.: SZEM141000589203
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RF Exposure Evaluation Report

Application No.: SZEM1410005892CR
Applicant: Flyingvoice Technology Co., Ltd.
Manufacturer/ Factory: Flyingvoice Technology Co., Ltd.
Product Name: VoIP Wireless Router
Model No.(EUT): G902P
Add Model No.: APX9122P, APX9122, APX9120, APX9100, G902, G901P, G901, G900P, G900
FCC ID: 2AATVG902
Standards: 47 CFR Part 1.1307(2014)
47 CFR Part 1.1310(2014)
Date of Receipt: 2014-11-04
Date of Test: 2014-11-13 to 2015-01-04
Date of Issue: 2015-01-09

Test Result :	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. 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.

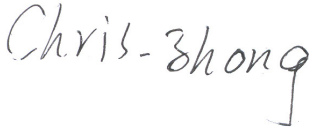


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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2015-01-09		Original

Authorized for issue by:			
Tested By			2015-01-04
	<hr/>		<hr/>
	(Chris Zhong) /Project Engineer		Date
Prepared By			2015-01-09
	<hr/>		<hr/>
	(Sade Luo) /Clerk		Date
Checked By			2015-01-09
	<hr/>		<hr/>
	(Emen Li) /Reviewer		Date



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4 General Information

4.1 Client Information

Applicant:	Flyingvoice Technology Co., Ltd.
Address of Applicant:	Room 202, Chuangxin Bldg A#, No.12 Hongda North Rd, BDA, Beijing, China
Manufacturer:	Flyingvoice Technology Co., Ltd.
Address of Manufacturer:	Room 202, Chuangxin Bldg A#, No.12 Hongda North Rd, BDA, Beijing, China
Factory:	Flyingvoice Technology Co., Ltd.
Address of Factory:	Room 202, Chuangxin Bldg A#, No.12 Hongda North Rd, BDA, Beijing, China

4.2 General Description of EUT

Product Name:	VoIP Wireless Router		
Model No.:	G902P (Only the model G902P was tested, since the circuitry design, PCB layout, electrical components used, internal wiring and functions were identical for all above models. Only different on model No., color and decorations.)		
Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz		
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels		
Channel Separation:	5MHz		
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK,BPSK)		
Sample Type:	Fixed production		
Test Power Grade:	11B :15dBm 11G :16 dBm 11N(20) :15 dBm 11N(40) :15 dBm (manufacturer declare)		
Antenna Type and Gain:	Type: Integral Gain:5dBi		
Power Supply:	Adapter:	M/N : S24B12-120A200-Y4 Input: AC 100V-240V 50-60Hz 0.7A Output: DC 12V 2A	
	Alternative adapter:	M/N : SW36-12003000-W Input: AC 100V-240V 50-60Hz 1.5A Output: DC 12V 3.0A	
	Alternative adapter:	M/N : WHF-1200300T3 Input: AC 100V-240V 50-60Hz 1.0A Output: DC 12V 3.0A	



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Remark:

Model No.: G902P, APX9122P, APX9122, APX9120, APX9100, G902, G901P, G901, G900P, G900

Only the model G902P was tested, since the circuitry design, PCB layout, electrical components used, internal wiring and functions were identical for all above models. Only different on model No., color and decorations.



4.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1 & 4620C-2.

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.



5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is the limit of MPE, 1 mW/cm². 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.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.



5.1.3 EUT RF Exposure Evaluation

Antenna Gain: 5dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 5 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

For 2.4GHz

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Lowest	2412	20.16	103.753	0.0653	1.0	PASS

Note: Refer to report No. SZEM141000589202 for EUT test Max Conducted Peak Output Power value.

For 5GHz

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Lowest	5240	16.09	40.644	0.0256	1.0	PASS

Note: Refer to report No. SZEM141000589201 for EUT test Max Conducted Output Power value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.