
TEST REPORT

Report No.: SRTC2017-9003(F)-0006
Product Name: Smic Wireless Panoramic Microphone
Model Name: SMIC-1
Applicant: Sabine Technologies Co.,Ltd.
Manufacturer: Sabine Technologies Co.,Ltd.
Specification: FCC Part15B (Certification)
(October 1, 2016 edition)
FCC ID: 2AK54-SABINE6100

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

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1. General information

1.1 Notes of the test report

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The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
Address: 15th Building, No.30 Shixing Street, Shijingshan District
City: Beijing
Country or Region: China
Contacted person: Liu Jia
Tel: +86 10 57996183
Fax: +86 10 57996388
Email: liujiaf@srtc.org.cn

1.3 Applicant's details

Company: Sabine Technologies Co.,Ltd.
Address: No.447 of Room 02C, 2nd floor, Building C, No.28 XinXi Road,
Haidian district, Beijing.
City: Beijing
Country or Region: CHINA
Contacted person: Nan yang
Tel: 86-10-64336241
Fax: 86-10-64336241
Email: yangnan@sabinetek.com

1.4 Manufacturer's details

Company: Sabine Technologies Co., Ltd
Address: F14 HONGYUAN Building, jiuxianqiao Rd., Chaoyang, Beijing,
China
City: Beijing
Country or Region: CHINA
Contacted person: Nan yang
Tel: 86-10-64336241
Fax: 86-10-64336241
Email: yangnan@sabinetek.com

1.5 Application details

Date of reception of test sample: 29th March 2017

Date of test: 29th March 2017 to 6th April 2017

1.6 Reference specification

FCC Part 15B October 1, 2016 (Certification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	SMIC-1
FCC ID	2AK54-SABINE6100
Power Supply	Battery
Nominal Voltage	3.7V
Extreme Voltage	Minimum: 3.4V Maximum: 4.2V
HW Version	V3.1
SW Version	0.1.8

1.7.2 EUT details

Product Name	Model Name	IMEI
Smic Wireless Panoramic Microphone	SMIC-1	---

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Battery

Equipment	Li-Lon
Manufacturer	YJ POWER GROUP LIMITED
Model Number	YJ-18650
S/N	---
Capacity	2600mAh
Nominal Voltage	3.7V

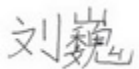
AE (Auxiliary Equipment) 2#: USB Cable

Equipment	USB Cable
Manufacturer	AZUNE GROUP LIMITED
Model Number	AZUNE-USB-A003

2. Test information

2.1 Summary of the test results

No.	Test case	FCC reference	Verdict
1	Conducted emissions	15.107	Pass
2	Radiated emissions	15.109	Pass

This Test Report Is Issued By: Mr. Liu Wei 	Checked By: Mr. He Jia 
Tested By: Mr. Lv Youyou 	Issued date: 2017.04.08

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
21.3	37.5%	101.1kPa

Test Setup with laptop:

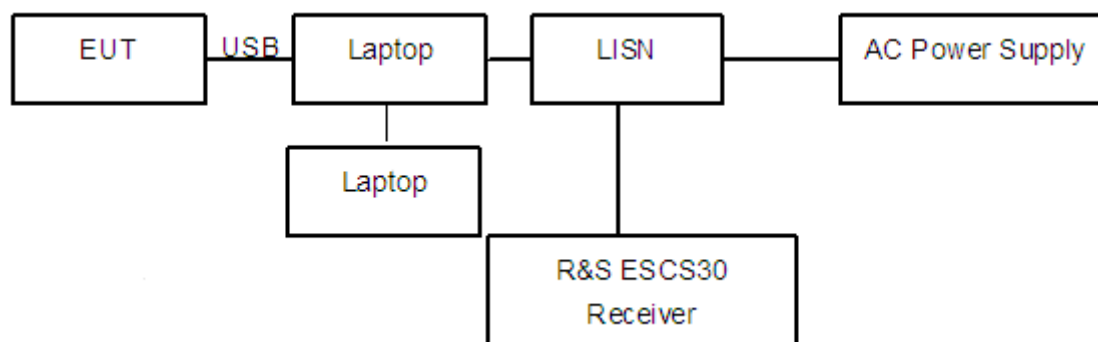


Figure 1

Test Procedure:

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The accessories of the EUT are connected with the EUT such as headset etc. The EUT was exercised during the testing by data read and write cycles repeated with internal storages connecting with a laptop via the USB cable. The laptop's LAN port is connected with another laptop via cable. And the data transferring between two laptops is maintained.

The AC main power supply of the laptop is connected to LISN and LISN is connected to the reference ground. The test set-up and the test methods are performed according to ANSI C63.4:2014

Then start the test software ES-K1. Sweep the whole frequency band through the range from 150 KHz to 30 MHz. The measurement should be done for both L line and N line. During pre-test, the receiver uses both peak detector and average detector. And the final test, the receiver uses both average detector and Quasi-peak detector.

The data of cable loss has been calibrated in full testing frequency range before the testing.

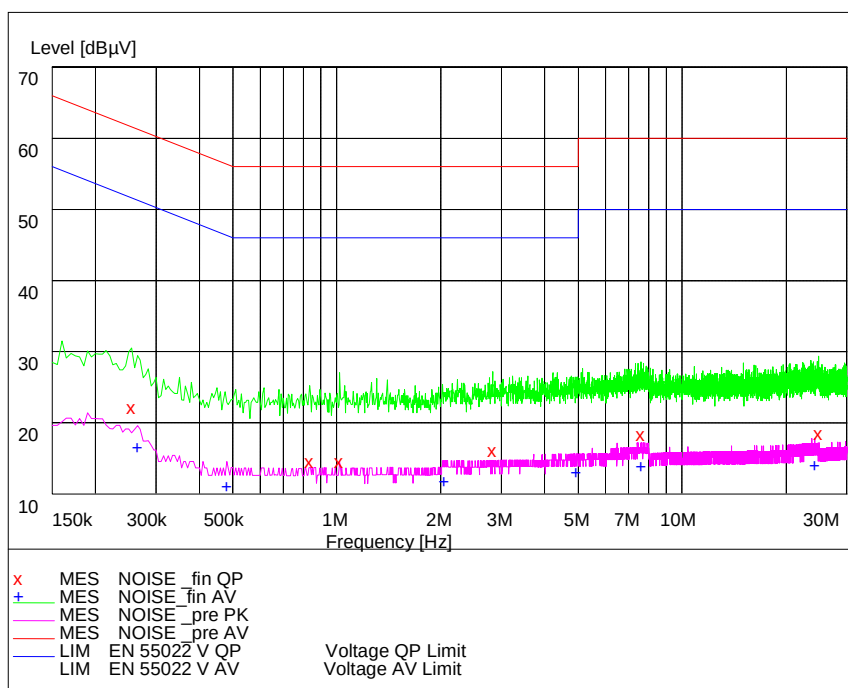
Limit:

Frequency of Emission(MHz)	Limits(dB μ V)	
	Quasi-peak	Average
0.15~0.5	66 to 56*	56 to 46*
0.5~5	56	46
5~30	60	50

Note: * Decreases with the logarithm of the frequency

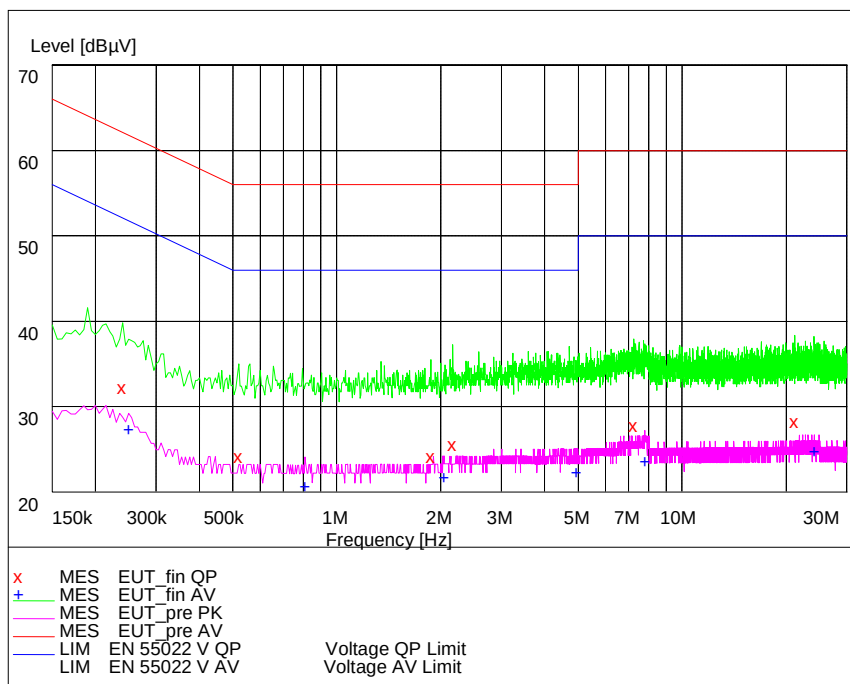
Test result:

Noise Level of the Measuring Instrument

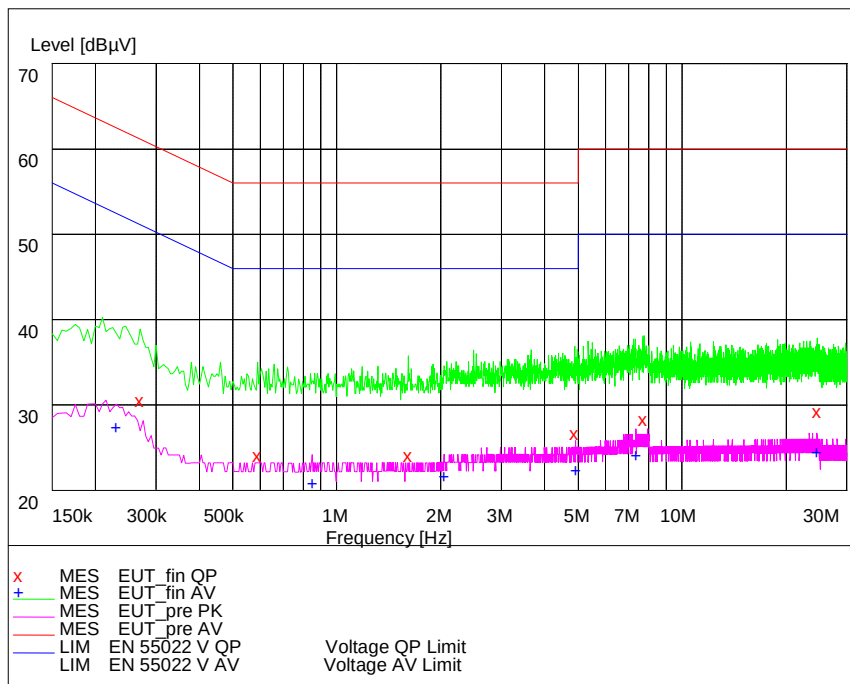


Pic1. Conducted emission L and N Line

EUT+Laptop:



Pic2. Conducted emission L Line



Pic3. Conducted emission N Line

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
21.2°C	35.1%	100.9kPa

Test Setup:

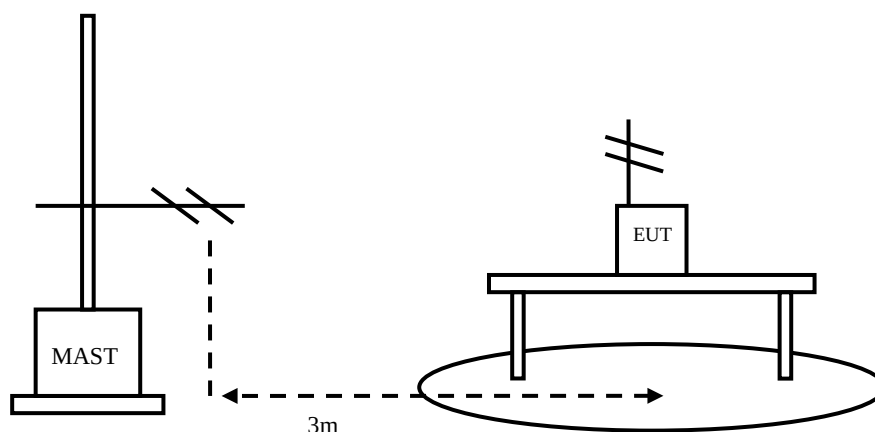


Figure 3

Test Procedure:

EUT+Laptop:

The EUT should be placed on a non-metallic table 80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.

The accessories of the EUT are connected with the EUT such as headset etc. The EUT was exercised during the testing by data read and write cycles repeated with internal storages connecting with a laptop via the USB cable. The laptop's LAN port is connected with another laptop via cable. And the data transferring between two laptops is maintained. The test set-up and the test methods are performed according to ANSI C63.4:2014

Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with

orthogonal polarization of the test antenna. The EUT is laid in two modes as follow:
1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.
The data of cable loss and antenna factor have been calibrated in full testing frequency range before the testing.

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{mea}} + A_{Rpl}$$

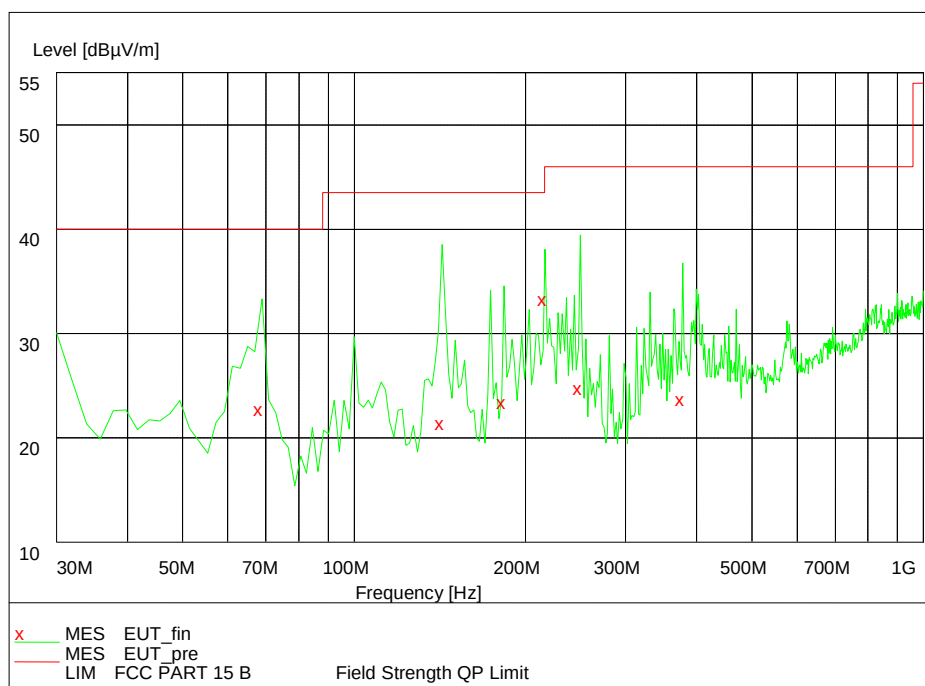
Limit:

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dB μ V/m)
30~88	Quasi-peak	40
88~216	Quasi-peak	43.5
216~960	Quasi-peak	46
960~1000	Quasi-peak	54
1000~5th harmonic of the highest frequency or 40GHz, whichever is lower	Average	54
	Peak	74

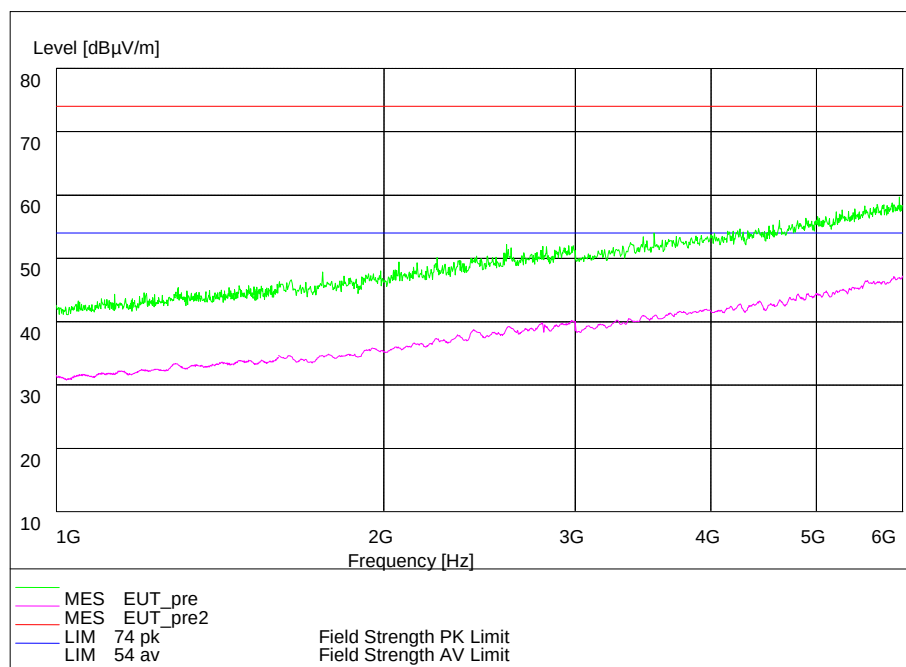
Test result:
EUT+Laptop

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity
30.00	30.20	15.80	14.40	Vertical
152.46	29.00	15.90	13.10	Horizontal
185.51	22.50	16.10	6.40	Horizontal
210.78	25.40	16.10	9.30	Horizontal
214.66	25.60	16.20	9.40	Horizontal
395.45	27.50	16.40	11.10	Horizontal

EUT+Laptop:



Pic4. Radiated emission (30MHz – 1GHz)



Pic5. Radiated emission (1GHz – 6GHz)

2.3. List of test equipments

No.	Name/Model	Manufacturer	S/N	Calibration Due Date
1	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	-----	20 th Aug. 2017
2	ESI 40 EMI test receiver	R&S	100015	20 th Aug. 2017
3	E5515C(8960) Mobile Station Tester	Agilent	GB44050904	20 th Aug. 2017
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	20 th Aug. 2017
5	ESCS30 EMI test receiver	R&S	100029	20 th Aug. 2017
6	HL562 Ultra log test antenna	R&S	100016	20 th Aug. 2017
7	ESH3-Z2 Pulse limiter	R&S	10002	20 th Aug. 2017
8	LS16C AMN	AFJ	16011306281	20 th Aug. 2017
9	ESH2Z11 LISN	R&S	50FH-020-10	20 th Aug. 2017
10	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	20 th Aug. 2017
11	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	20 th Aug. 2017
12	PS2000 Turn Table	FRANKONIA	-----	20 th Aug. 2017
13	MA260 Antenna Master	FRANKONIA	-----	20 th Aug. 2017
14	ES-K1EMI test software	R&S	-----	20 th Aug. 2017
15	HL562 Receive antenna	R&S	100167	20 th Aug. 2017

Appendix

Appendix1 Test Setup

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Appendix1 Test Setup



Radiated Emissions Test Setup (with laptop)



Conducted Emissions Test Setup (with laptop)