FCC RF Test Report

APPLICANT	:	**Sonim Technologies, Inc.**
EQUIPMENT	:	**LTE Phone**
BRAND NAME	:	**Sonim**
MODEL NAME	:	**XP5800(PG2112)**
FCC ID	:	**WYPPG2132**
STANDARD	:	**FCC Part 15 Subpart E §15.407**
CLASSIFICATION	:	**(NII) Unlicensed National Information Infrastructure**

This is a variant report which is only valid together with the original test report. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.

James Huang

Approved by: James Huang / Manager

NVLAP TESTING
NVLAP LAB CODE 600155-0

Sporton International (Kunshan) Inc.
No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335
China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR792101-07A	Rev. 01	Initial issue of report	Dec. 19, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
–	2.1049 15.403(i)	26dB & 99% Bandwidth	-	Not Required	-
2.1	15.407(a)	Maximum Conducted Output Power	FCC ≤ 24 dBm (depend on band)	Pass	-
–	15.407(a)	Power Spectral Density	FCC ≤ 11 dBm (depend on band)	Not Required	-
–	15.407(b)	Unwanted Emissions	15.407(b) 15.209(a)	Not Required	-
–	15.207	AC Conducted Emission	15.207(a)	Not Required	-
–	15.407(g)	Frequency Stability	Within Operation Band	Not Required	-
–	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Not Required	-
–	15.203 & 15.407(a)	Antenna Requirement	N/A	Not Required	-

1 General Description

1.1 Applicant

Sonim Technologies, Inc.
1825 S. Grant St., Suite 200., San Mateo, CA, 94402

1.2 Manufacturer

Sonim Technologies (Shenzhen) Limited
2nd Floor, No. 2 Building Phase B, Daqian Industrial park, Longchang Road, 67 District, Baoan, Shenzhen, P. R. China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	LTE Phone
Brand Name	Sonim
Model Name	XP5800(PG2112)
FCC ID	WYPPG2132
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+ (16QAM uplink is not supported)/LTE WLAN2.4G 802.11b/g/n HT20/HT40 WLAN5G 802.11a/n HT20/HT40 WLAN5G 802.11a/c VHT20/VHT40 Bluetooth v3.0 + EDR/ Bluetooth v4.0 LE/ Bluetooth v4.2 LE
HW Version	A
SW Version	5SA.0.0-00-7.1.2-10.36.01
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. This is a variant report for XP5800(PG2112). The difference between the previous and current is added ac mode(VHT20/VHT40) for WLAN by SW. Based on the similarity between two models, only the conducted power of WLAN 5GHz 802.11ac from original test report (Sporton Report Number FR792101-01D) was verified for difference.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5720 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** 802.11ac VHT20 : 15.22 dBm / 0.0333 W 802.11ac VHT40 : 13.05 dBm / 0.0202 W **<5260 MHz ~ 5320 MHz>** 802.11ac VHT20 : 15.23 dBm / 0.0333 W 802.11ac VHT40 : 13.14 dBm / 0.0206 W **<5500 MHz ~ 5720 MHz>** 802.11ac VHT20 : 14.72 dBm / 0.0296 W 802.11ac VHT40 : 13.03 dBm / 0.0201 W
Antenna Gain / Gain	**<5180 MHz ~ 5240 MHz>** PIFA Antenna with gain 2.00 dBi **<5260 MHz ~ 5320 MHz >** PIFA Antenna with gain 2.00 dBi **<5500 MHz ~ 5720 MHz>** PIFA Antenna with gain 2.00 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

Note:

1. WLAN operation in 5600 MHz ~ 5650 MHz is notched.
2. Refer to original test report, the added 802.11ac mode conducted power is lower, relevant test item is covered by 802.11an mode from original test report as Appendix B.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No. is CN5013.

Test Site	Sporton International (Kunshan) Inc.	
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL : +86-512-57900158 FAX : +86-512-57900958	
Test Site No.	**Sporton Site No.**	**FCC Test Firm Registration No.**
	TH01-KS	630927

Note: The test site complies with ANSI C63.4 2014 requirement.

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02
- ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Result

2.1 Maximum Conducted Output Power Measurement

2.1.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW.

For the 5.25–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

2.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

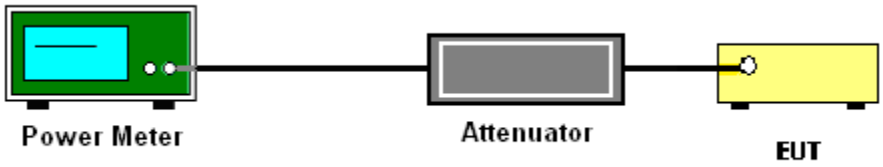
2.1.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

2.1.4 Test Setup



2.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 19, 2017	Dec. 12, 2017	Jan. 18, 2018	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 19, 2017	Dec. 12, 2017	Jan. 18, 2018	Conducted (TH01-KS)

Appendix A. Conducted Test Results

Report Number : FR792101-07A

Test Engineer:	Silent Hai	Temperature:	21~25	°C
Test Date:	2017/12/12	Relative Humidity:	51~55	%

TEST RESULTS DATA
Average Power Table

FCC Band I										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
VHT20	MCS0	1	36	5180	0.79	15.01	24.00	2.00		Pass
VHT20	MCS0	1	44	5220	0.79	15.22	24.00	2.00		Pass
VHT20	MCS0	1	48	5240	0.79	14.91	24.00	2.00		Pass
VHT40	MCS0	1	38	5190	1.49	12.74	24.00	2.00		Pass
VHT40	MCS0	1	46	5230	1.49	13.05	24.00	2.00		Pass

TEST RESULTS DATA
Average Power Table

FCC Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
VHT20	MCS 0	1	52	5260	0.79	15.23	23.98	2.00	26.99	Pass
VHT20	MCS 0	1	60	5300	0.79	15.21	23.98	2.00	26.99	Pass
VHT20	MCS 0	1	64	5320	0.79	14.73	23.98	2.00	26.99	Pass
VHT40	MCS 0	1	54	5270	1.49	13.14	23.98	2.00	26.99	Pass
VHT40	MCS 0	1	62	5310	1.49	12.91	23.98	2.00	26.99	Pass

TEST RESULTS DATA
Average Power Table

FCC Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
VHT20	MCS 0	1	100	5500	0.79	14.52	23.98	2.00	26.99	Pass
VHT20	MCS 0	1	116	5580	0.79	14.67	23.98	2.00	26.99	Pass
VHT20	MCS 0	1	140	5700	0.79	14.72	23.98	2.00	26.99	Pass
VHT20	MCS0	1	144	5720	0.79	13.91	23.98	2.00	26.99	Pass
VHT40	MCS 0	1	102	5510	1.49	12.81	23.98	2.00	26.99	Pass
VHT40	MCS 0	1	110	5550	1.49	13.03	23.98	2.00	26.99	Pass
VHT40	MCS 0	1	134	5670	1.49	12.67	23.98	2.00	26.99	Pass
VHT40	MCS0	1	142	5710	1.49	12.75	23.98	2.00	26.99	Pass

Appendix B.Original Report

Please refer to Sporton report number FR792101-01D which is issued separately.