

RF Exposure Evaluation Report

APPLICANT : Sonim Technologies, Inc.

EQUIPMENT : Mobile Hotspot

BRAND NAME : Sonim

MODEL NAME : H700B

FCC ID : WYPH700B

STANDARD : 47 CFR Part 2.1091

FCC KDB 447498 D01 v06

The product evaluation date was started from May 08, 2025 and completed on May 08, 2025. We, Sporton International Inc. (Shenzhen), would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.

Hank Huang



Approved by: Hank Huang

Sporton International Inc. (Shenzhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China



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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA480204C	Rev. 01	Initial issue of report.	May 23, 2025



1. Administration Data

1.1. Testing Laboratory

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR01-SZ	CN1256	421272

Applicant	
Company Name	Sonim Technologies, Inc.
Address	4445 Eastgate Mall, Suite200, San Diego, CA92121, USA

Manufacturer	
Company Name	Sonim Technologies, Inc.
Address	4445 Eastgate Mall, Suite200, San Diego, CA92121, USA



2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Mobile Hotspot
Brand Name	Sonim
Model Name	H700B
FCC ID	WYPH700B
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz LTE Band 42: 3450 MHz ~ 3550 MHz, 3550 MHz ~ 3600 MHz LTE Band 43: 3600 MHz ~ 3700 MHz LTE Band 48: 3550 MHz ~ 3700 MHz 5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n12: 699 MHz ~ 716 MHz 5G NR n13: 777 MHz ~ 787 MHz 5G NR n14: 788 MHz ~ 798 MHz 5G NR n25: 1850 MHz ~ 1915 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n30: 2305 MHz ~ 2315 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n48: 3550 MHz ~ 3700 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ac/ax VHT20/VHT40/HE20/HE40 WLAN 2.4GHz 802.11be EHT20/EHT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac/ax VHT20/VHT40/VHT80/HE20/HE40/HE80 WLAN 5GHz 802.11be EHT20/EHT40/EHT80
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna



HW Version	V3.0
SW Version	H70.0-01-22.3.0-10.25.00
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. 5GNR n2/5/66/77 supports NSA mode.
3. 5GNR n2/5/7/12/13/14/25/26/30/38/41/48/66/71/77/78 supports SA mode.
4. The intra-band/inter-band ULCA, UL MIMO and EN-DC mode combination could be referred to the product spec.
5. This device supports intra-band ULCA, due to intra-band ULCA and non-CA power is same, so non-CA MPE analysis can represent ULCA MPE analysis.
6. This device supports HPUE mode for 5GNR n77/78 with class 2 and LTE B14 with class 1, so HPUE mode has been performed to do MPE analysis.
7. 5GNR n41 /n77/n78 support SISO/MIMO mode, only MIMO tune up power was chosen to perform MPE calculation conservatively for MIMO power is higher.
8. WLAN2.4GHz/WLAN5GHz/WLAN6GHz all support SISO and MIMO mode, MIMO tune up power was chosen to perform MPE calculation conservatively.

Comments and Explanations:

1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.
2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.

WWAN Antenna Gian:

Band	Maximum Single Antenna gain (dBi)
WCDMA Band II	4.50
WCDMA Band IV	4.00
WCDMA Band V	5.00
LTE Band 2	4.50
LTE Band 4	4.00
LTE Band 5	5.00
LTE Band 7	4.50
LTE Band 12	3.50
LTE Band 13	5.00
LTE Band 14	3.00
LTE Band 25	4.50
LTE Band 26	5.00
LTE Band 30	0.00
LTE Band 66	4.00
LTE Band 71	3.50
LTE Band 38	4.50
LTE Band 41	4.50
LTE Band 42	-0.60
LTE Band 43	-0.60
LTE Band 48	0.00



Band	Maximum Single Antenna gain (dBi)
5G NR n2	4.50
5G NR n5	5.00
5G NR n7	4.50
5G NR n12	3.50
5G NR n13	5.00
5G NR n14	3.00
5G NR n25	4.50
5G NR n26	5.00
5G NR n30	0.00
5G NR n66	4.00
5G NR n71	3.50
5G NR n38	4.50
5G NR n41	4.50
5G NR n48	0.00
5G NR n77	2.50
5G NR n78	2.50

WLAN Antenna Gain:

Band	Maximum Single Antenna gain (dBi)	
	ANT6	ANT7
WLAN 2.4GMHz	0.34	0
WLAN 5.2GMHz	3.35	1.67
WLAN 5.8GMHz	3.14	2.79

3. Maximum RF average output tune up power among production units**<WCDMA>**

Mode		Maximum Average power(dBm)
WCDMA	Band II	24.0
	Band IV	24.0
	Band V	24.0

<LTE>

Mode		Maximum Average power(dBm)
LTE	Band 2	24.0
	Band 4	24.0
	Band 5	24.0
	Band 7	24.0
	Band 12	24.0
	Band 13	24.0
	Band 14	32.0
	Band 25	24.0
	Band 26	24.0
	Band 30	24.0
	Band 38	24.0
	Band 41	24.0
	Band 42	23.0
	Band 43	23.0
	Band 48	23.0



	Band 66	24.0
	Band 71	24.0

<5G NR>

Mode		Maximum Average power(dBm)
5G NR	n2	24.0
	n5	24.0
	n7	24.0
	n12	24.0
	n13	24.0
	n14	24.0
	n25	24.0
	n26	24.0
	n30	24.0
	n38	24.0
	n41	24.0
	n48	23.0
	n66	24.0
	n71	24.0
	n77 PC3	24.0
	n77 PC2	27.0
	n78 PC3	24.0
	n78 PC2	27.0

<MIMO>

Mode		Maximum Average power(dBm)
5G NR	n41	24.0
	n77	27.0
	n78	27.0

Note: WWAN support SISO/MIMO mode, only MIMO tune up power was chosen to perform MPE calculation conservatively for MIMO power is higher.

<2.4GHz WLAN >

Mode		Maximum Average Power (dBm)
		Ant.6+7
2.4GHz	802.11b	20.00
	802.11g	20.00
	802.11n-HT20	19.00
	802.11n-HT40	19.00
	802.11ac-VHT20	17.00
	802.11ac-VHT40	17.00
	802.11ax-HE20	17.00
	802.11ax-HE40	17.00
	802.11be-EHT20	14.00
	802.11be-EHT40	14.00

<5GHz WLAN >

Mode		Maximum Average Power (dBm)
		Ant.6+7
5.2GHz	802.11a	20.00
	802.11n-HT20	19.00
	802.11n-HT40	19.00
	802.11ac-VHT20	17.00
	802.11ac-VHT40	17.00
	802.11ac-VHT80	17.00
	802.11ax-HE20	17.00
	802.11ax-HE40	17.00
	802.11ax-HE80	17.00
	802.11be-EHT20	14.00
	802.11be-EHT40	14.00
	802.11be-EHT80	14.00
5.8GHz	802.11a	20.00
	802.11n-HT20	19.00
	802.11n-HT40	19.00
	802.11ac-VHT20	17.00
	802.11ac-VHT40	17.00
	802.11ac-VHT80	17.00
	802.11ax-HE20	17.00
	802.11ax-HE40	17.00
	802.11ax-HE80	17.00
	802.11be-EHT20	14.00
	802.11be-EHT40	14.00
	802.11be-EHT80	14.00

Note: WLAN2.4GHz/WLAN5GHz/WLAN6GHz all support SISO/MIMO mode, MIMO tune up power was chosen to perform MPE calculation conservatively for MIMO power is higher.



4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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

The MPE was calculated at 23 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Average EIRP (dBm)	Average EIRP (mW)	Power Density at 23cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	1852.4	4.50	24.00	28.500	707.946	0.107	1.000	0.107
WCDMA Band 4	1712.4	4.00	24.00	28.000	630.957	0.095	1.000	0.095
WCDMA Band 5	826.4	5.00	24.00	29.000	794.328	0.120	0.551	0.217
LTE Band 2	1850.0	4.50	24.00	28.500	707.946	0.107	1.000	0.107
LTE Band 4	1710.0	4.00	24.00	28.000	630.957	0.095	1.000	0.095
LTE Band 5	824.0	5.00	24.00	29.000	794.328	0.120	0.549	0.218
LTE Band 7	2500.0	4.50	24.00	28.500	707.946	0.107	1.000	0.107
LTE Band 12	699.0	3.50	24.00	27.500	562.341	0.085	0.466	0.182
LTE Band 13	777.0	5.00	24.00	29.000	794.328	0.120	0.518	0.231
LTE Band 14	788.0	3.00	32.00	35.000	3162.278	0.476	0.525	0.906
LTE Band 25	1850.0	4.50	24.00	28.500	707.946	0.107	1.000	0.107
LTE Band 26	814.0	5.00	24.00	29.000	794.328	0.120	0.543	0.220
LTE Band 30	2305.0	0.00	24.00	24.000	251.189	0.038	1.000	0.038
LTE Band 38	2570.0	4.50	24.00	28.500	707.946	0.107	1.000	0.107
LTE Band 41	2496.0	4.50	24.00	28.500	707.946	0.107	1.000	0.107
LTE Band 42	3450.0	-0.60	23.00	22.400	173.780	0.026	1.000	0.026
LTE Band 43	3600.0	-0.60	23.00	22.400	173.780	0.026	1.000	0.026
LTE Band 48	3550.0	0.00	23.00	23.000	199.526	0.030	1.000	0.030
LTE Band 66	1710.0	4.00	24.00	28.000	630.957	0.095	1.000	0.095
LTE Band 71	663.0	3.50	24.00	27.500	562.341	0.085	0.442	0.191
5G NR n2	1850.0	4.50	24.00	28.500	707.946	0.107	1.000	0.107
5G NR n5	824.00	5.00	24.00	29.000	794.328	0.120	0.549	0.218
5G NR n7	2500.00	4.50	24.00	28.500	707.946	0.107	1.000	0.107
5G NR n12	699.00	3.50	24.00	27.500	562.341	0.085	0.466	0.182
5G NR n13	777.00	5.00	24.00	29.000	794.328	0.120	0.518	0.231
5G NR n14	788.00	3.00	24.00	27.000	501.187	0.075	0.525	0.144
5G NR n25	1850.00	4.50	24.00	28.500	707.946	0.107	1.000	0.107
5G NR n26	814.00	5.00	24.00	29.000	794.328	0.120	0.543	0.220
5G NR n30	2305.00	0.00	24.00	24.000	251.189	0.038	1.000	0.038
5G NR n38	2570.00	4.50	24.00	28.500	707.946	0.107	1.000	0.107
5G NR n41	2496.00	4.50	24.00	28.500	707.946	0.107	1.000	0.107
5G NR n48	3550.00	0.00	23.00	23.000	199.526	0.030	1.000	0.030
5G NR n66	1710.00	4.00	24.00	28.000	630.957	0.095	1.000	0.095
5G NR n71	663.00	3.50	24.00	27.500	562.341	0.085	0.442	0.191
5G NR n77	3450.00	2.50	27.00	29.500	891.251	0.134	1.000	0.134
5G NR n78	3450.00	2.50	27.00	29.500	891.251	0.134	1.000	0.134
WLAN2.4GHz	2412	0.34	20.00	20.340	108.143	0.016	1.000	0.016
WLAN5GHz	5180	3.35	20.00	23.350	216.272	0.033	1.000	0.033

**<NR MIMO>**

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Average EIRP (dBm)	Average EIRP (mW)	Power Density at 23cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
5G NR n41	2496.00	4.50	24.00	28.500	707.946	0.107	1.000	0.107
5G NR n77	3450.00	2.50	27.00	29.500	891.251	0.134	1.000	0.134
5G NR n78	3450.00	2.50	27.00	29.500	891.251	0.134	1.000	0.134

Note:

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum RF output tune up power and the maximum antenna gain of all antennas among same frequency WWAN bands to perform MPE calculation conservatively.

5.2. Collocated Power Density Calculation**<WWAN + WLAN 2.4GHz + WLAN 5GHz >:**

Maximum WWAN Power Density / Limit	Maximum WLAN 2.4GHz Power Density / Limit	Maximum WLAN 5GHz Power Density / Limit	Σ (Power Density / Limit) of WWAN + WLAN 2.4GHz + WLAN 5GHz
0.905	0.016	0.033	0.954

Note:

1. The MPE analysis performed in this report evaluates a Mobile Hotspot use case(e.g. in-vehicle installation, fixed location installation, etc.) The external antennas of cellular transmitters can be active in in-vehicle installation or fixed location installation. The WWAN power levels used and reported in this analysis are specific for this use condition only.
2. In simultaneous transmission for this device, 5G NR including uplink MIMO and LTE transmission are managed and controlled by Qualcomm smart transmit on LTE and 5G FR1 , while the RF exposure from WLAN radios are managed using legacy approach, therefore simultaneous transmission compliance can be assessed on LTE+FR1+WLAN, above power density calculations selected highest power density between LTE and 5G NR for simultaneous transmission analysis with other transmitters. And inter-band ULCA is based on the same principle.
3. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN 2.4GHz + WLAN 5GHz / LTE (or NR) inter-band ULCA + WLAN 2.4GHz + WLAN 5GHz
4. Considering all transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of all collocated transmitters is compliant.

Conclusion:

According to 47 CFR §2.1091, the equipment at least 23 cm to show compliance with the power density limit, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

-----THE END-----