



FCC RF EXPOSURE REPORT
CERTIFICATION TEST REPORT

For

SoundBar

**MODEL NUMBER: HW-A450, HW-A460, HW-A430, HW-A440, HW-A40M,
HW-A47M, HW-A470, HW-A450***, HW-A450/**, HW-A460***, HW-A460/**,
HW-A430***, HW-A430/**, HW-A440***, HW-A440/**, HW-A40M***, HW-A40M/**,
HW-A47M***, HW-A47M/**, HW-A470***, HW-A470/****

FCC ID: A3LHWA450-2

REPORT NUMBER: 4789912435-3

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Prepared for

**Samsung Electronics Co Ltd
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Prepared by

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V0	05/10/2021	Initial Issue	



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ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Samsung Electronics Co Ltd
Address: 19 Chapin Rd., Building D Pine Brook New Jersey United States 07058

Manufacturer Information

Company Name: Samsung Electronics Co Ltd
Address: 19 Chapin Rd., Building D Pine Brook New Jersey United States 07058

EUT Information

EUT Name: SoundBar
Model: HW-A450
Brand: SAMSUNG
Serial Model: Please refer to clause 3 DESCRIPTION OF EUT
Model Difference: Please refer to clause 3 DESCRIPTION OF EUT
Sample Received Date: April 25, 2021
Sample Status: Normal
Sample ID: 3847299
Date of Tested: April 26, 2021~ April 30, 2021

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47CFR§2.1091	PASS

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1. TEST METHODOLOGY

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091.

2. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p>A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p>ISED (Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.</p> <p>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B, the VCCI registration No. is C-20012 and T-20011</p>
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Note: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China.



3. DESCRIPTION OF EUT

EUT Name	SoundBar	
Model Name	HW-A450	
Series Model	HW-A460, HW-A430, HW-A440, HW-A40M, HW-A47M, HW-A470, HW-A450***, HW-A450/**, HW-A460***, HW-A460/**, HW-A430***, HW-A430/**, HW-A440***, HW-A440/**, HW-A40M***, HW-A40M/**, HW-A47M***, HW-A47M/**, HW-A470***, HW-A470/**	
Model difference	HW-A460, HW-A430, HW-A440, HW-A40M, HW-A47M, HW-A470, HW-A450***, HW-A450/**, HW-A460***, HW-A460/**, HW-A430***, HW-A430/**, HW-A440***, HW-A440/**, HW-A40M***, HW-A40M/**, HW-A47M***, HW-A47M/**, HW-A470***, HW-A470/** ("*" represents any alphanumeric character or blank) have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with HW-A450. The difference lies only model number and marketing purpose.	
Product Description (Bluetooth)	Operation Frequency	2402 MHz ~ 2480 MHz
	Modulation Type	Data Rate
	GFSK	1 Mbps
	$\pi/4$ -DQPSK	2 Mbps
	8DPSK	3 Mbps
Rating	AC 110 ~ 120 V, 50/60 Hz, 25 W	

4. REQUIREMENT

LIMIT AND CALCULATION METHOD

Systems operating under the provisions of FCC 47 CFR 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.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

RF EXPOSURE LIMIT

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (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

CALCULATION METHOD

$$S=PG/4\pi R^2$$

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

**CALCULATED RESULTS**

(Worst case)					
Operating Mode	Max. Tune up Power	Directional Gain		Power density	Limit
	(dBm)	(dBi)	(num)	(mW/ cm ²)	
BT	7	2	1.58	0.00158	1
Wireless 5G	16	2.2	1.66	0.013144	1

Note: 1. $BT + \text{Wireless } 5G = 0.00158 + 0.013144 = 0.014724 \text{ (mW/ cm}^2\text{)}$

Therefor the maximum calculations of above situations are less than the "1" limit.

2. Wireless 5G power comes from report NK-16-R-146. (FCC ID: A3LWSM520V)
3. The Power comes from report operation description.
4. The minimum separation distance of the device is greater than 20 cm.
5. Calculate by WORST-CASE mode.

END OF REPORT