

VSM Group AB

MPE ASSESSMENT REPORT

Report Type:

FCC Part §2.1091, §2.1093 and §1.1307(b) assessment report

Model:

SE9180

REPORT NUMBER:

220900874SHA-002

ISSUE DATE:

May 11, 2023

DOCUMENT CONTROL NUMBER:

TTRFFCCMPE-01_V1 © 2018 Intertek



Applicant: VSM Group AB
Soldattorpsgatan 3
SE-554 74 Jonkoping

Manufacturer: VSM Group AB
Soldattorpsgatan 3
SE-554 74 Jonkoping

Factory 1: Shang Gong Group Co., Ltd. Jiangsu Household Sewing Machine Branch
No. 8, Middle Miaoqiao Road, Tangqiao Town, Zhangjiagang City,
Jiangsu Province

Factory 2: Singer (Shanghai) Sewing Machine Co., Ltd.
1078 Dayao Road, Minhang, Shanghai, P. R. China

FCC ID: 2BBQS-GC596910

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06
FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:**REVIEWED BY:**

Project Engineer
Damon Ding



Reviewer
Eric Li

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Revision History

Report No.	Version	Description	Issued Date
220900874SHA-002	Rev. 01	Initial issue of report	May 11, 2023

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Sewing Machine for household use
Type/Model/PMN/HVIN:	SE9180
Description of EUT:	EUT is a Sewing Machine for household use. EUT supports WIFI function.
Rating:	110-240V, 60Hz, 45W
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample Identification No.:	0221569-27-001
Sample received date:	2023.1.30
Date of test:	2023.3.30-2023.5.11

1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20)
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT20): OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Operating Frequency:	2412MHz to 2462MHz for IEEE 802.11b/g/n(HT20)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20)
Channel Separation:	5 MHz
Antenna:	PCB Antenna, 2.23dBi

TEST REPORT

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Member No: 3598 (Registration No.: R-14243, G-10845, C-14723, T-12252)
	A2LA Accreditation Lab Certificate Number: 3309.02

2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

2.2 Assessment Results

Power density (S) is calculated according to the formula:

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

Where S = power density in mW/cm²

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 220900874SHA-001:

Here R is chosen to be 20cm,

Mode	Frequency band	Max Power	Antenna Gain	R	S	Limits
	(MHz)	dBm	dBi	(cm)	(mW/cm ²)	(mW/cm ²)
WIFI	2412-2462	16.07	2.23	20	0.008	1

Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.

To ensure compliance, operations at closer than this distance is not recommended.

***** END *****