Hisense Communication Co., Ltd.

MPE ASSESSMENT REPORT

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

Model:
MWH409S

REPORT NUMBER:
230300287SHA-002

ISSUE DATE:
March 15, 2023

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TEST REPORT

Report no.: 230300287SHA-002

Applicant:	Hisense Communication Co., Ltd. No.218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province,China
Manufacturer:	Hisense Communication Co., Ltd. No.218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province,China
Product Name:	WiFi Module
Type/Model:	MWH409S
FCC ID:	SARMWH409S

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 Dylan Tang	Reviewer Wakeyou Wang

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Revision History

Report No.	Version	Description	Issued Date
230300287SHA-002	Rev. 01	Initial issue of report	March 15, 2023

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	WiFi Module
Type/Model:	MWH409S
Description of EUT:	The EUT is a WiFi Module which supports 802.11 b/g/n mode, it has only one model.
Rating:	DC 3.3V
EUT type:	☒ Table top ☐ Floor standing
Product Marketing Name:	MWH409S
HVIN:	MWH409S
Software Version:	/
Hardware Version:	V4.00
Serial numbers:	0230315-27-001(for radiation sample), 0230315-27-002(for conduction sample)
Sample received date:	February 27, 2023
Date of test:	February 27, 2023 ~ March 13, 2023

1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20), IEEE 802.11n(HT40)
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) IEEE 802.11n(HT40): OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Operating Frequency:	2412MHz to 2462MHz for IEEE 802.11b/g/n(HT20) 2422MHz to 2452MHz for IEEE 802.11n(HT40)
Channel Number:	11 Channels for 802.11b, 802.11g ,802.11n(HT20) 7 Channels for 802.11n(HT40)
Channel Separation:	5 MHz
Antenna Information:	PCB antenna: 2.59dBi

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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 Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

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2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

According to§1.1310, the limit for general population/uncontrolled exposures

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=Frequency in MHz; *Plane-wave equivalent power density

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**

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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/cm^2

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 230300287SHA-001:

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

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Working Mode	Frequency band	Power		Antenna Gain		R	S	Limits
	(MHz)	dBm	mW	dBi	(Numeric)	(cm)	(mW/cm2)	(mW/cm2)
2.4G WIFI	2412-2462	17.80	60.26	2.59	1.82	20	0.0218	1

Note: 1 mW/cm2 from 1.310 Table 1.

Conclusion: therefore, the maximum calculations of the above simultaneous are less the limit.

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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**********