

MPE REPORT

Report No.: SRTC2024-9004(F)-24061709(I)
Product Name: WiFi/BT Module
Model Name: MWH516B.01
Applicant: Hisense Communication Co., Ltd.
FCC ID: SARMWH516B01

Reference Specification
FCC Part §1.1310

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, ShijingshanDistrict, Beijing,P.R.China

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1 GENERAL INFORMATION

1.1 Notes of the test report

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The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Designation number:	CN1267
Registration number:	239125
Certificate Number:	5055.02
Address:	15th Building, No.30 Shixing Street, Shijingshan District, Beijing P.R.China
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1.3 Applicant's details

Company:	Hisense Communication Co., Ltd.
Address:	No.218, Qianwangang Road, Economic andTechnological Development Zone, Qingdao,Shandong Province, China
City:	Qingdao
Country or Region:	CHINA
Contacted person:	wanghaining
Tel:	13381232625
Email:	wanghaining@hisense.com

1.4 Manufacturer's details

Company:	Hisense Communication Co., Ltd.
Address:	No.218, Qianwangang Road, Economic andTechnological Development Zone, Qingdao,Shandong Province, China
City:	Qingdao
Country or Region:	CHINA
Contacted person:	wanghaining
Tel:	13381232625
Email:	wanghaining@hisense.com

1.5 Test environment

Date of Receipt of test sample at SRTC:	2024/6/18
Testing Start Date:	2024/6/19
Testing End Date:	2024/7/10

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40
Maximum Extreme	70	---
Minimum Extreme	-10	---

Normal Supply Voltage (V d.c.):	5.0
Maximum Extreme Supply Voltage (V d.c.):	5.2
Minimum Extreme Supply Voltage (V d.c.):	4.8

2 DESCRIPTION OF THE EQUIPMENT UNDER TEST

2.1 Final equipment build status

BT

Frequency Range:	2.402GHz~2.480GHz
Number of Channel:	79
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Duplex Mode:	TDD
Channel Spacing:	1MHz
Data Rate:	1Mbps, 2 Mbps, 3 Mbps
Power Supply:	DC supply
Software Revision:	NA
Hardware Revision:	V4.00
IMEI:	N/A
Antenna gain:	-0.5dBi
Antenna type:	Ceramic Antenna

BLE

Frequency Range:	2.402GHz~2.480GHz
Number of Channel:	40
Modulation Type:	GFSK
Equipment Class:	DTS
Channel Spacing:	2MHz
Data Rate:	LE 1Mbps/2Mbps LE Coded 125kbps/500kbps
Power Supply:	DC supply
Software Revision:	NA
Hardware Revision:	V4.00
IMEI:	N/A
Antenna gain:	-0.5dBi
Antenna type:	Ceramic Antenna

WIFI2.4G

Frequency Band:	2.412GHz~2.462GHz
Number of Channel For 20MHz:	11
Number of Channel For 40MHz:	7
Modulation Type:	802.11b 802.11g 802.11n (HT20/HT40)
Power Supply:	DC supply
Antenna gain:	For Power/PSD: ANT0: 0.3dBi ANT1: 0.2dBi
Directional Gain:	For Power/PSD:0.25dBi(Uncorrelated)
Software Revision:	NA
Hardware Revision:	V4.00
IMEI:	N/A
Antenna type:	Ceramic Antenna

WIFI5G

Frequency Band(s):	U-NII-1:5150MHz-5250MHz U-NII-2A:5250MHz-5350MHz U-NII-2C:5470MHz-5725MHz U-NII-3:5725MHz-5850MHz	
The DFS related operating mode(s) of the equipment:	☐	Master
	☐	Slave with radar detection
	☒	Slave without radar detection
Modulation Type:	802.11a 802.11n (HT20/HT40) 802.11ac (VHT20/VHT40/VHT80)	
Antenna Type:	Ceramic Antenna	
Antenna gain	For Power/PSD: ANT0:0.5dBi ANT1:0.45dBi	
Directional Gain:	0.48dBi(Uncorrelated)	
Power Supply:	DC supply	

Software Revision:	NA
Hardware Revision:	V4.00
IMEI:	NA

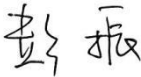
NOTE1: Directional gain = 10 log[(10^{G1/10} + 10^{G2/10}+ ... + 10^{GN/10}/ /N_{ANT}] dBi(Uncorrelated)

3 SPECIFICATION

Specification	Version	Title
Part 1.1310	Latest	Radio frequency radiation exposure limits.

4 RESULT SUMMARY

Case	Verdict
MPE	Pass

This Test Report Is Issued by: Mr. Peng Zhen 	Checked by: Mr. Li Bin 
Tested by: Mr.Huang Yubin 	Issued date: 20240712

5 CALCULATION RESULT

5.1 Maximum permissible exposure (MPE)

Limit:

(A) Limits for Occupational/Controlled Exposure ☐

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Time E ² , H ² or S (minutes)
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 ☒

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm2)	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

f = frequency in MHz *Plane-wave equivalent power density

Result:

According to §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission’s guidelines.

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

Where S = power density in mW/cm²

P = transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

Standalone Transmission Result

Band	Freq. (MHz)	Maximum Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
BT	2441	5.98	-0.5	5.48	3.532	0.001	1
BLE	2480	8.07	-0.5	7.57	5.715	0.001	1
WIFI 2.4G	2437	19.19	0.25	19.44	87.902	0.017	1
WIFI 5.2G	5180	19.99	0.48	20.47	111.429	0.022	1
WIFI 5.3G	5260	19.20	0.48	19.68	92.897	0.018	1
WIFI 5.6G	5500	18.95	0.48	19.43	87.700	0.017	1
WIFI 5.8G	5785	19.05	0.48	19.53	89.743	0.018	1

Simultaneous Transmission Result

Power Density1 / Limit	Power Density2 / Limit	Σ(Power Density / Limit)
0.017 +0.022 (WIFI2.4/5GMIMO)	0.001(BT)	0.040

Note: Simultaneous Transmission Limit = Power Density_1 / Limit_1 + Power Density_2 / Limit_2 < 1.