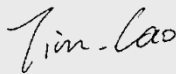




Test report No:
25B0817R.705

TEST REPORT

Product Name	WiFi BT Module
Trademark	Hisense
Model and /or type reference	MWH658B
FCC ID	2AJVQ-MWH658B
Applicant's name / address	Qingdao Intelligent & Precise Electronics Co., Ltd. No.218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, China
Test method requested, standard	FCC 47CFR §2.1091
Verdict Summary	IN COMPLIANCE
Documented By (name / position & signature)	Tim Cao / Project Manager 
Approved by (name / position & signature)	Frank He / Technical Manager 
Date of issue	2025-12-16
Report Version	V1.0
Report template No.	Template_FCC-MPE-RF-V1.0

INDEX

	page
Competences and Guarantees	3
General conditions	3
Document History	4
1 General Information	5
2 RF Exposure Evaluation	6
2.1 Limits: KDB 447498 D04.....	6
2.2 Test Procedure	10
2.3 Test Result of RF Exposure Evaluation	10

COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location A	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Test Facility A	A2LA (Certificate No. 3235.01) CNAS (Certificate No. L5313) FCC - Designation Number: CN1199 Test Firm Registration Number: 566524 ISED - CAB identifier: CN0040 IC#: 4075B
Test Location B	No. 8213, Fanhua Avenue, Baohe District, Hefei City, Anhui Province, China
Test Facility B	A2LA (Certificate No. 6579.01) CNAS (Certificate No. L21125) FCC - Designation Number: CN1231 Test Firm Registration Number: 690292 ISED - CAB identifier: CN0175 IC#: 32222
Date(receive sample)	Nov. 28, 2025
Date (start test)	Nov. 30, 2025
Date (finish test)	Dec. 12, 2025

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.



DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
25B0817R.705	V1.0	Initial issue of report.	2025-12-16

1 GENERAL INFORMATION

Product Name	WiFi BT Module
Model No.	MWH658B
Trademark.	Hisense
FCC ID	2AJVQ-MWH658B
Manufacturer	Qingdao Intelligent & Precise Electronics Co., Ltd.
Manufacturer Address.....	No.218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, China
Power Supply	4.5~5.5 Vdc
Wireless specification.....	Wi-Fi
Operating frequency range(s)	2.4G ISM band: 2400~2483.5MHz U-NII-1: 5150 MHz to 5250 MHz U-NII-2A: 5250 MHz to 5350 MHz U-NII-2C: 5470 MHz to 5725 MHz U-NII-3: 5725 MHz to 5850 MHz
Type of modulation.....	DSSS / OFDM
Channel Spacing	802.11b/g/n/ac: 20MHz 802.11n/ac: 40MHz 802.11ac: 80MHz
Antenna type	PCB
Antenna Gain	2.4G: 3.11 dBi; 5G: 3.75 dBi
Wireless specification.....	Bluetooth LE
Operating frequency range(s)	2402~2480MHz
Type of Modulation.....	GFSK
Number of channels	40
Data Rate	LE1M 1Mbit/s, LE2M 2Mbit/s
Antenna Type	PCB
Antenna Gain	0.38 dBi
Wireless specification.....	Bluetooth BR/EDR
Operating frequency range(s)	2402~2480MHz
Type of modulation.....	GFSK
Number of channels	79
Data Rate	GFSK 1Mbit/s, Pi/4 DQPSK 1Mbit/s, 8DPSK 3Mbit/s
Antenna type	PCB
Antenna Gain	3.70 dBi
Remark:	
1. As above information is provided and confirmed by the applicant. DEKRA is not liable to the accuracy, suitability, reliability or/and integrity of the information.	

2. RF Exposure Evaluation

2.1. Limits: KDB 447498 D04

B.2 Blanket 1 mW Blanket Exemption

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

The 1 mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph § 1.1307(b)(3)(ii)(A).

The 1 mW exemption is independent of service type and covers the full range of 100 kHz to 100 GHz, but it shall not be used in conjunction with other exemption criteria or in devices with higher-power transmitters operating in the same time-averaging period. Exposure from such higher-power transmitters would invalidate the underlying assumption that exposure from the lower-power transmitter is the only contributor to SAR in the relevant volume of tissue.

B.3 MPE-based Exemption

General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

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/cm ²)
0.3-1.34	614	1.63	(100)*
1.34-30	824/f	2.19/f	(180/f ²)*
30-300	27.5	0.073	0.2
300-1500			f/1500
1500-100,000			1.0

The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least $\lambda/2\pi$. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator. For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B. 1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities

in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

B.4 SAR-based Exemption

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of $\lambda/4$.

As for devices with antennas of length greater than $\lambda/4$ where the gain is not well defined, but always less than that of a half-wave dipole (length $\lambda/2$), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known.

The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

Simultaneous Transmission SAR Test Exemption with Respect to Multiple Exemption Criteria

Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluated_k term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1) [repeated from § 1.1307(b)(3)(ii)(B)].

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1 \quad (C.1)$$

- a. number of fixed, mobile, or portable RF sources claiming exemption using the § 1.1307(b)(3)(i)(B) formula for P_{th} , including existing exempt transmitters and those being added.
- b. number of fixed, mobile, or portable RF sources claiming exemption using the applicable § 1.1307(b)(3)(i)(C) Table 1 formula for Threshold ERP, including existing exempt transmitters and those being added.
- c. number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance.

P_i the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

$P_{th,i}$ the exemption threshold power (P_{th}) according to the § 1.1307(b)(3)(i)(B) formula for fixed, mobile, or portable RF source i .

ERP_j the available maximum time-averaged power or the ERP, whichever is greater, of fixed, mobile, or portable RF source j .

$ERP_{th,j}$ exemption threshold ERP for fixed, mobile, or portable RF source j , at a distance of at least $\lambda/2\pi$, according to the applicable § 1.1307(b)(3)(i)(C) Table 1 formula at the location in question.

$Evaluated_k$ the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation.

Exposure Limit $_k$ either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable sources, as applicable

The sum of the ratios of the applicable terms for SAR-based, MPE-based and measured SAR or MPE shall be less than 1, to determine simultaneous transmission exposure compliance.

2.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

2.3. Test Result of RF Exposure Evaluation

Standalone Mode:

Band	Frequency (MHz)	Tune-up Power(dBm)	Antenna Gain (dBm)	EIRP (dBm)	EIRP (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Bluetooth	2400~2480	7.00	3.70	10.70	11.75	0.0023	1.00
WLAN 2.4G	2400~2483.5	17.00	3.11	20.11	102.57	0.0204	1.00
WLAN 5G	5150~5850	17.00	3.75	20.75	118.85	0.0236	1.00

Remark:

1. According to KDB 447498 D04, output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power and it will be used for calculating exemption Limits for Routine Evaluation.
2. The actual frequency was used to calculating the limits of MPE.
3. Select the data of the worst-case mode for each antenna in each frequency band for MPE calculation.

Simultaneous Transmission:

Test Mode	Frequency Band (MHz)	Tune-up Power(dBm)	EIRP (dBm)	EIRP (mW)	Rate	Total Rate	Limit	Result
Bluetooth	2400~2480	7.00	10.70	11.75	0.002	0.046	1	Pass
WLAN 2.4G	2400~2483.5	17.00	20.11	102.57	0.020			
WLAN 5G	5150~5850	17.00	20.75	118.85	0.024			

The worst-case situation is 0.046, which is less than "1". This confirmed that the device comply with FCC KDB 447498 D01 Power Density limit.

Conclusion: This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

The End