

Test report No:
2550050R.705B

FCC Exposure TEST REPORT

Product Name	In-vehicle Multimedia Host
Trademark	BYD
Model and /or type reference	MTD421-A1
FCC ID	SD4-MTD421-A1
Applicant's name / address	BYD Auto Industry Company Limited No. 3001, 3007, HengPing Road, Pingshan, Shenzhen, 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	2025-07-28
Report Version	V1.0
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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	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	May. 06, 2025
Date (start test)	May. 12, 2025
Date (finish test)	Jun. 30, 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.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
T_x	: Transmitter
R_x	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2550050R.705B	V1.0	Initial issue of report.	2025-07-28

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with FCC 47CFR §2.1091.
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results relate only to the samples tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
 - Chapter 1 General Information

1. General Description of the Item(s)

Product Name..... :	In-vehicle Multimedia Host					
Model No. :	MTD421-A1					
Trademark :	BYD					
Operation Temperature :	-40~85 °C					
Manufacturer :	BYD Auto Industry Company Limited					
Manufacturer address :	No. 3001, 3007, HengPing Road, Pingshan, Shenzhen, China					
Power Supply :	DC: 12 Vac					
Test Matrix/ IMEI..... :	24J448HKB001					
Wireless specification :	Bluetooth BR/EDR					
Operating frequency range(s)	2400-2483.5MHz					
Type of Modulation :	GFSK					
PHYs	☒	GFSK	☒	Pi/4 DQPSK	☒	8DPSK
Data Rate :	☒	1Mbit/s	☒	2Mbit/s	☒	3Mbit/s
Wireless specification :	Bluetooth (LE)					
Operating frequency range(s)	2400-2483.5MHz					
Type of Modulation :	GFSK					
PHYs	☒	LE 1M	☒	LE 2M	☐	LE Coded S=2/8
Data Rate :	☒	1Mbit/s	☒	2Mbit/s	☐	500/125 Kbit/s
Number of channels..... :	79					
Antenna Type :	External					
Antenna Gain..... :	4.55 dBi					
Wireless specification :	802.11b/g/n/ax					
Operating frequency range(s)	2400-2483.5MHz					
Type of Modulation :	802.11b:DSSS-DBPSK,DQPSK,CCK 802.11g/n/ax: OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM					
Channel Spacing :	20MHz					
Antenna Type :	External					
Antenna Gain..... :	2.76 dBi					
Wireless specification :	802.11a/n/ac/ax					
Operating frequency range(s)	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 :	OFDM / OFDMA					
Channel Spacing :	802.11a 20 MHz 802.11n 20 MHz, 40 MHz 802.11ac 20 MHz, 40 MHz, 80 MHz 802.11ax 20 MHz, 40 MHz, 80 MHz					
Antenna Type :	External					
Antenna Gain..... :	5150 ~ 5250MHz:2.08dBi 5250 ~ 5350MHz:2.17dBi 5470 ~ 5725MHz:3.65dBi 5725 ~ 5850MHz:2.79dBi					

Remark:

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

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

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

Power Density:

Standalone modes:

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm ²)	Power Density Limit (mW/cm ²)
2.4G WIFI	2400 ~ 2483.5	18.03	0.013	1
5G WIFI	5150 ~ 5250 5250 ~ 5350 5470 ~ 5725 5725 ~ 5850	18.22	0.013	1
Bluetooth	2400 ~ 2483.5	9.57	0.002	1

Note: Maximum EIRP reference test reports: 2550050R.701B, 2550050R.702B, 2550050R.703B, 2550050R.704B. The safe use distance of the EUT is 20cm, Access Point without any other radio equipment.

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