

RF EXPOSURE Test Report

Product: In-car wireless CarPlay/Android Auto touchscreen

Trade Mark: N/A

Model Number: HL-8368XU, HL_LINUX_NBT, HL_LINUX_CIC,
HL_LINUX_CCC, HL_LINUX_5.0, HL_LINUX_4.5,
HL_LINUX_4.0, HL_LINUX_MMI3G,
HL_LINUX_MMI2G, HL_LINUX_EVO,
HL_LINUX_MIB, HL_LINUX_MIB2

FCC ID: 2BVJRHL-8368XU

Prepared for

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's Name..... : Shenzhenshi Aotudakeji Youxian Gongsi
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Product description

Product name : In-car wireless CarPlay/Android Auto touchscreen
HL-8368XU, HL_LINUX_NBT, HL_LINUX_CIC,
Model Number : HL_LINUX_CCC, HL_LINUX_5.0, HL_LINUX_4.5,
HL_LINUX_4.0, HL_LINUX_MMI3G, HL_LINUX_MMI2G,
HL_LINUX_EVO, HL_LINUX_MIB, HL_LINUX_MIB2

Standards : FCC CFR 47 PART 1, 1.1310

Test procedure : KDB 447498 D01 General RF Exposure Guidance v06

This device described above has been tested by Shenzhen HongBiao Certification& Testing Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

Date of Test :

Date (s) of performance of tests : Apr 01, 2026~ Apr.08, 2026

Test Result : **Pass**

Testing Engineer :

Zoe Su

(Z o e S u)

Technical Manager :

Gary Lu

(G a r y L u)

Authorized Signatory :

Leo Su

(L e o S u)

[illegible]

1 General Description

1.1 Description of EUT

Product name:	In-car wireless CarPlay/Android Auto touchscreen
Model name:	HL-8368XU
Series Model:	HL_LINUX_NBT, HL_LINUX_CIC, HL_LINUX_CCC, HL_LINUX_5.0, HL_LINUX_4.5, HL_LINUX_4.0, HL_LINUX_MMI3G, HL_LINUX_MMI2G, HL_LINUX_EVO, HL_LINUX_MIB, HL_LINUX_MIB2
Different of series model:	All the models are the same circuit and module, except the model No..
Operation frequency:	BT:2402-2480MHz 2.4G WIFI: IEEE 802.11b/g/n20: 2412-2462MHz IEEE 802.11n40: 2422-2452MHz
Modulation type:	BT:GFSK, $\pi/4$ -DQPSK,8DPSK 2.4G WIFI: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g/n (HT20/H40): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Bit Rate of transmitter:	BT:1 Mbps, 2Mbps, 3Mbps 2.4G WIFI: IEEE 802.11b: 1/2/5.5/11Mbps IEEE 802.11g: 6/9/12/18/24/36/48/54Mbps IEEE 802.11n(20MHz): MCS0-7, up to 150Mbps IEEE 802.11n(40MHz): MCS0-7, up to 300Mbps
Antenna type:	FPC Antenna
Antenna gain:	3.8dBi
Battery:	N/A
Power supply:	DC 12V 1A
Adapter information:	N/A

1.2 Test Mode

Pretest Test Mode	Description of Mode
1	TX
2	/
3	/

1.3 Test Setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

2 Test Facilities and Accreditations

2.1 Test Laboratory

Test Site	Shenzhen HongBiao Certification& Testing Co., Ltd
Test Site Location	Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Telephone:	(86-755) 2998 9321
Fax:	(86-755) 2998 5110
FCC Registration No.:	CN1341
A2LA Certificate No.:	6765.01

2.2 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15°C~35°C
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

2.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

The data and results quoted in this document are true and accurate values, and uncertainties are not involved in the calculations.

In addition, components and mass production processes that are similar to testing equipment may introduce additional deviations, and the manufacturer is solely responsible for the continued compliance of the equipment.

Measurement Frequency Range	U, (dB)	Note
RF frequency	2×10^{-5}	
RF power, conducted	± 0.57 dB	
Temperature	± 1 degree	
Humidity	± 5 %	

2.4 Test Software

Software name	Manufacturer	Model	Version
RF Test System	MWRF	MTS 8310	V2.0.0.0

3 List of Test Equipment

RF							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E041	MXG Anaio Signal Generator	Agilent	N5181A	MY47070421	2025-05-07	2026-05-06
2	HB-E042	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	132108	2025-05-08	2026-05-07
3	HB-E043	MXG Anaio Signal Generator	Agilent	N5182A	US46240335	2025-05-08	2026-05-07
4	HB-E044	Signal & spectrum Analyzer	R&S	FSV3044	101264	2025-05-07	2026-05-06
5	HB-E045	RF Control Box	Noyetec	NY100-R FCB	N/A	2025-05-08	2026-05-07
6	HB-E058	Thermometer Clock Humidity Monitor	N/A	HTC-1S	N/A	2025-05-09	2026-05-08

Note: the calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

4 RF Exposure

4.1 Standalone SAR test exclusion considerations

Limit

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).

Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
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
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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
300-1,500			f/1500	30
1,500-100,000			1.0	30

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

MPE Calculation Method

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 = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm(20cm)

P_d the limit of MPE, 1mW/cm².

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

Test Result

BR+EDR:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm²

Antenna Type: FPC Antenna;

WIFI antenna gain:3.8dBi

R = 20cm

$mW = 10^{(dBm/10)}$

antenna gain Numeric = $10^{(dBi/10)} = 10^{(3.8/10)} = 2.4$

BR+EDR:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	4.479	4±1	5	5.012	3.8	2.4	0.0015	1
2441		5.263	5±1	6	3.162	3.8	2.4	0.0019	1
2480		4.828	4±1	5	1.995	3.8	2.4	0.0015	1
2402	π/4-DQPSK	4.475	4±1	5	7.943	3.8	2.4	0.0015	1
2441		4.209	4±1	5	5.012	3.8	2.4	0.0015	1
2480		4.803	4±1	5	3.162	3.8	2.4	0.0015	1
2402	8DPSK	4.469	4±1	5	7.943	3.8	2.4	0.0015	1
2441		4.217	4±1	5	6.310	3.8	2.4	0.0015	1
2480		4.808	4±1	5	3.981	3.8	2.4	0.0015	1

2.4GHz WIFI:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	Numeric		
2412	802.11b	11.68	12±1	13	63.10	2.4	0.0095	1
2437		12.45	12±1	13	63.10	2.4	0.0095	1
2462		12.08	12±1	13	63.10	2.4	0.0095	1
2412	802.11g	11.62	11±1	12	63.10	2.4	0.0076	1
2437		11.64	11±1	12	63.10	2.4	0.0076	1
2462		11.66	11±1	12	63.10	2.4	0.0076	1
2412	802.11n H20	10.01	10±1	11	63.10	2.4	0.0060	1
2437		10.26	10±1	11	63.10	2.4	0.0060	1
2462		10.10	10±1	11	63.10	2.4	0.0060	1
2422	802.11n H40	8.84	8±1	9	63.10	2.4	0.0020	1
2437		8.47	8±1	9	63.10	2.4	0.0020	1
2452		8.36	8±1	9	63.10	2.4	0.0020	1

Conclusion:

For the max result: 0.0023≤1g SAR, No SAR is required.

***** END OF REPORT *****