

RF EXPOSURE Test Report

Product: CarPlay

Trade Mark: N/A

Model Number: XH501

FCC ID: 2BU77-XH501

Prepared for

Shenzhen Xinghai Technology Co., Ltd.

No. 15 Keyuan Rd., Nanshan District, Shenzhen

Prepared by

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TEST RESULT CERTIFICATION

Applicant's Name.....: Shenzhen Xinghai Technology Co., Ltd.
Address: No. 15 Keyuan Rd., Nanshan District, Shenzhen
Manufacturer's Name: Shenzhen Xinghai Technology Co., Ltd.
Address: No. 15 Keyuan Rd., Nanshan District, Shenzhen

Product description

Product name: CarPlay
Model Number: XH501

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.....:

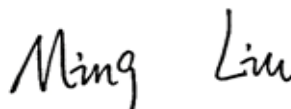
Date (s) of performance of tests.....: Mar. 10, 2026~Mar. 16, 2026

Test Result.....: **Pass**

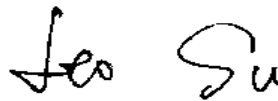
Testing Engineer :


(Z o e S u)

Technical Manager :


(M i n g L i u)

Authorized Signatory :


(L e o S u)

Revision History

[illegible]

1 General Description

1.1 Description of EUT

Product name:	CarPlay
Model name:	XH501
Series Model:	XH502, XH503
Different of series model:	All models of circuits and modules are the same, except for appearance color and model number.
Operation frequency:	BLE: 2402-2480MHz 5GHz WIFI: 5745-5825MHz
Modulation type:	BLE: GFSK 5GHz WIFI: 802.11a/n: OFDM(BPSK,QPSK,16QAM, 64QAM, 256QAM)
Bit Rate of transmitter:	BLE: 1 Mbps 5GHz WIFI: 802.11a: 6,9,12,18,24,36,48,54Mbps 802.11n(HT20/HT40): MCS0-MCS15
Antenna type:	PCB Antenna
Antenna gain:	BLE: 4.29dBi 5GHz WIFI: 2.67dBi
Max. output power:	BLE: -0.38dBm 5GHz WIFI: 16.72dBm
Hardware version:	V1.0
Software version:	V1.0
Battery:	N/A
Power supply:	Input: DC 5V/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.

1.4 Ancillary Equipment

Equipment	Model	S/N	Manufacturer
/	/	/	/

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

4.1.1. 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.

4.1.2. Test Result

BLE:

Operation Frequency: 2402-2480MHz

Antenna Type: PCB Antenna

WIFI antenna gain: 4.29dBi

Power density limited: 1mW/ cm²

5GHz WIFI:

802.11a: 20 MHz

802.11n: 20 MHz, 40 MHz

Antenna Type: PCB Antenna

WIFI antenna gain: 2.67dBi

R=20cm

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

BLE: antenna gain Numeric=10^{^(dBi/10)}= 10^{^(4.29/10)}=2.69

5GHz WIFI: antenna gain Numeric=10^{^(dBi/10)}= 10^{^(2.67/10)}=1.85

BLE(Worst):

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain			
				(dBm)	(dBm)	(mW)	(dBi)	Numeric	(mW/cm ²)
2402	GFSK	-0.38	0±1	1	1.259	4.29	2.69	0.0007	1

5GHz WIFI(Worst):

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain			
				(dBm)	(dBm)	(mW)	(dBi)	Numeric	(mW/cm ²)
5785	802.11n20	16.72	17±1	18	63.096	2.67	1.85	0.0232	1

Conclusion:

NO	Maximum MPE Value		Limits (mW/cm ²)
	BLE (mW/cm ²)	5GHz WIFI (mW/cm ²)	
1	0.0007	0.0232	1

Simultaneous transmit:

NO	Configurations	Maximum MPE Value			Limits
		BLE (mW/cm ²)	5GHz WIFI (mW/cm ²)	Transmit simultaneously	
1	BLE + 5GHz WIFI	0.0007	0.0232	0.0239	1

According to KDB 447498 D01 General RF Exposure Guidance v06, at the transmit simultaneously calculation method is as follows:

Transmit simultaneously MPE = Σ of MPE ratios

MPE ratios = Field strengths or power density / MPE limit at the test frequency

For the max result: 0.0239≤1g SAR, No SAR is required.

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