

FCC Radio Partial Test Report

FCC ID: 2AYGCLGE-NX9

This report concerns: Original Grant

Project No. : 2203G019
Equipment : Smart Phone
Brand Name : HONOR
Test Model : LGE-NX9
Series Model : N/A
Applicant : Honor Device Co., Ltd.
Address : Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Manufacturer : Honor Device Co., Ltd.
Address : Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Date of Receipt : Feb. 11, 2022
Date of Test : Feb. 13, 2022 ~ Apr. 19, 2022
Issued Date : Apr. 22, 2022
Report Version : R00
Standard(s) : FCC CFR Title 47, Part 15, Subpart C
FCC KDB 558074 D01 15.247 Meas Guidance v05r02
ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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TESTING CERT #5123.02

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Declaration

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The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-10-2203G019	R00	Original Report.	Apr. 22, 2022	Valid

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C				
Standard(s) Section	Test Item		Judgment	Remark
15.247(a)(2)	Bandwidth	6 dB Bandwidth	PASS	-----
		99% Emission Bandwidth		
15.247(b)(3)	Maximum Output Power		PASS	-----
15.247(d)	Conducted Spurious Emissions		PASS	-----
15.247(d)	Band Edge Measurements		PASS	-----
15.247(e)	Power Spectral Density		PASS	-----
15.203	Antenna Requirement		PASS	Note(2)

Note:

- (1) "N/A" denotes test is not applicable in this test report
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town Dongguan City, Guangdong 523792 People's Republic of China.

BTL's Registration Number for FCC: 357015
 BTL's Designation Number for FCC: CN1240

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The BTL measurement uncertainty as below table:

Test Item	Extended Uncertainty
Transmit Output Power Data	U = 0.56 dB
RF Power Density, Conducted	U = 0.66 dB
Bandwidth	20MHz: U=41.78kHz 40MHz: U=82.12kHz 80MHz: U=163.5kHz
Band Edge Compliance	U = 0.9 dB
Spurious Emissions, Conducted	20MHz~3.6GHz: U=0.92dB 3.6GHz~8.4GHz: U= 1.22dB 8.4GHz~13.6GHz: U= 1.44dB 8.4GHz~17.1GHz: U= 1.58dB 17.1GHz~22GHz: U= 1.98dB 22GHz~26.5GHz: U= 2.18dB
Frequency Stability	2500MHz: U=41.58Hz 5800MHz: U=82.24Hz
Duty Cycle	U=2.06 %

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
Bandwidth	15 ~ 35°C	20 ~ 75%	DC 3.87V	Jesse Wang
Maximum Output Power	15 ~ 35°C	20 ~ 75%	DC 3.87V	Jesse Wang
Conducted Spurious Emissions	15 ~ 35°C	20 ~ 75%	DC 3.87V	Jesse Wang
Band Edge Measurements	15 ~ 35°C	20 ~ 75%	DC 3.87V	Jesse Wang
Power Spectral Density	15 ~ 35°C	20 ~ 75%	DC 3.87V	Jesse Wang

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Phone
Brand Name	HONOR
Test Model	LGE-NX9
Series Model	N/A
Model Difference(s)	N/A
Hardware Version	HN1LGEHM
Software Version	6.0.0.108(C900E103R1P3)
Power Source	1# DC voltage supplied from AC adapter. 2# Supplied from battery.
Power Rating	1# I/P: 100-240V~ 50/60Hz 1.6A O/P: 5V $\overline{\text{---}}$ 2A or 10V $\overline{\text{---}}$ 4A or 20V $\overline{\text{---}}$ 5A Max 2# DC 3.87V, Rated Capacity:4500mAh
Operation Frequency	2412 MHz ~ 2462 MHz
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM IEEE 802.11ax: OFDMA
Bit Rate of Transmitter	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 300 Mbps IEEE 802.11ax: up to 573.6 Mbps
Maximum Output Power	IEEE 802.11ax : 26.58 dBm (0.4550 W)
Antenna Smart System	SISO, MIMO, CDD

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20), IEEE 802.11ax(HE20) CH03 - CH09 for IEEE 802.11n(HT40), IEEE 802.11ax(HE40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Antenna Specification:

Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
N/A	N/A	Integrated	N/A	-1.70	Ant 1
N/A	N/A	Integrated	N/A	-2.80	Ant 2

Note:

- This EUT supports CDD/MIMO, any transmit signals are correlated with each other, so Directional gain= $10\log[(10^{G1/20}+10^{G2/20}+\dots+10^{GN/20})^2/N]$ dBi, that is Directional gain= $10\log[(10^{-2.4/20}+10^{-2.2/20})^2/2]$ dBi =0.78.
- The antenna gain is provided by the manufacturer.

4. The worst case for 2TX as follow:

Operating Mode	TX Mode	1TX	2TX
IEEE 802.11b		V (SISO)	-
IEEE 802.11g		V (SISO)	V (CDD)
IEEE 802.11n(HT20)		V (SISO)	-
IEEE 802.11n(HT40)		V (SISO)	-
IEEE 802.11ax(HE20)		V (SISO)	V (MIMO)
IEEE 802.11ax(HE40)		V (SISO)	V (MIMO)

5. The EUT contains following accessory devices :

Object / Part No.	Manufacturer / Trademark	Type / Model Name	Technical Data
Adapter	HONOR Device Co., Ltd.	HN-200500E01	I/P: 100-240V ~50/60Hz, 1.6A O/P: 5V \equiv 2A or 10V \equiv 4A or 20V \equiv 5A Max
		HN-200500U01	
		HN-200500B01	
Battery	Shenzhen Sunwoda Intelligence Technology Co., Ltd.	HB586680EFW	Rated capacity: 4500 mAh Nominal Voltage: +3.87V Charging Voltage: +4.45V
	Scud (Fujian) Electronics Co., Ltd.		

2.2 PARAMETERS OF TEST SOFTWARE

Test Software Version	N/A						
Frequency (MHz)	2412		2437		2462		
IEEE 802.11b	14.5		14.5		14.5		
Frequency (MHz)	2422	2427	2437	2447	2452		
IEEE 802.11n(HT40)	13.5	14	14.5	14	13.5		
Frequency (MHz)	2422	2427	2437	2447	2452		
IEEE 802.11ax(HT40)	13.5	14	14.5	14	13.5		
Frequency (MHz)	2412	2417	2422	2437	2452	2457	2462
IEEE 802.11g	14.5	15.5	16.5	18	17	15.5	15
Frequency (MHz)	2412	2417	2422	2437	2452	2457	2462
IEEE 802.11n(HT20)	13.5	14.5	16	16.5	15.5	15.5	14
Frequency (MHz)	2412	2417	2422	2437	2452	2457	2462
IEEE 802.11ax(HE20)	13.5	14.5	16	16.5	15.5	15.5	14

3. BANDWIDTH

3.1 LIMIT

Section	Test Item	Limit
FCC 15.247(a)(2)	6 dB Bandwidth	Minimum 500 kHz
	99% Emission Bandwidth	-

3.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

For 6 dB Bandwidth:

Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

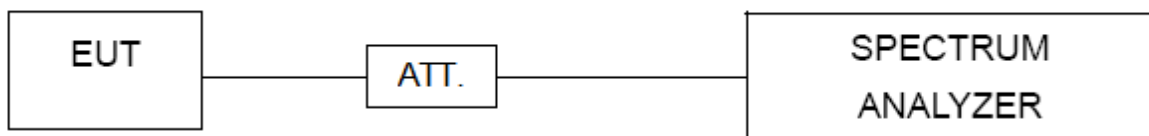
For 99% Emission Bandwidth:

Spectrum Parameters	Setting
Span Frequency	Between 1.5 times and 5.0 times the OBW
RBW	300 kHz For 20MHz 1 MHz For 40MHz
VBW	1 MHz For 20MHz 3 MHz For 40MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.3 DEVIATION FROM STANDARD

No deviation.

3.4 TEST SETUP



3.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULTS

Please refer to the APPENDIX.

4. MAXIMUM OUTPUT POWER

4.1 LIMIT

Section	Test Item	Limit
FCC 15.247(b)(3)	Maximum Output Power	1.0000 Watt or 30.00 dBm

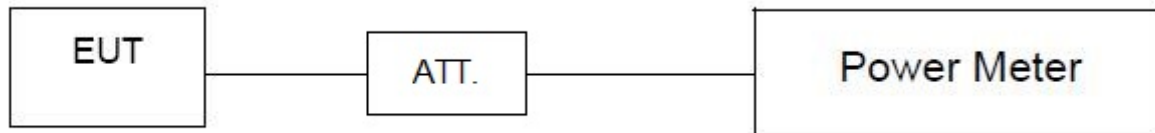
4.2 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.2.3.1 of ANSI C63.10-2013.

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



4.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULTS

Please refer to the APPENDIX.

5. CONDUCTED SPURIOUS EMISSIONS & BAND EDGE MEASUREMENTS

5.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

5.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX.

6. POWER SPECTRAL DENSITY

6.1 LIMIT

Section	Test Item	Limit
FCC 15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

6.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	25 MHz (20 MHz) / 60 MHz (40 MHz)
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX.

7. MEASUREMENT INSTRUMENTS LIST

Conducted Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	R&S	NRX	102795	Sep. 26, 2022
2	Power Sensor	R&S	NRP6A	103126	May 14, 2022
3	Power Sensor	R&S	NRP6A	103127	May 14, 2022
4	Spectrum Analyzer	R&S	FSW43	101625	May 13, 2022
5	Temperature Chamber	WEISS	WKL64/40	56246014990010	May 24, 2022
6	Universal Radio Communication Tester	R&S	CMW500	164699	May 13, 2022
7	Universal Radio Communication Tester	R&S	CMW500	164543	May 13, 2022
8	Vector Signal Generator	R&S	SMW200A	107864	May 13, 2022

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

End of Test Report