

FCC Radio 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. 14, 2022
Date of Test : Feb. 14, 2022 ~ Apr. 14, 2022
Issued Date : Apr. 20, 2022
Report Version : R00
Standard(s) : 47 CFR FCC Part 90 Subpart S
47 CFR FCC Part 2
ANSI/TIA/EIA-603-E-2016
FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

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

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

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 is not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-4-2203G019	R00	Original Report.	Apr. 20, 2022	Valid

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 90 Subpart S & Part 2			
Standard(s) Section	Test Item	Judgment	Remark
2.1046 & 90.635 (b)	Equivalent Isotropic Radiated Power	PASS	-----
2.1049 & 90.209	Occupied Bandwidth	PASS	-----
2.1053 & 90.669	Conducted Spurious Emissions	PASS	-----
2.1047	Modulation Characteristics	PASS	-----
2.1053 & 90.691	Mask Measurements	PASS	-----
-	Peak To Average Ratio	PASS	Record Only
2.1055 & 90.213	Frequency Stability	PASS	-----

Note:

(1) "N/A" denotes test is not applicable in this test report.

1.1 TEST FACILITY

The test facilities used to collect the test data of conducted in this report is at the location of Room 108, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong, People's Republic of China.

BTL's Test Firm 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:

Parameter	Uncertainty
Transmit Output Power Output Data	U = 0.40 dB
RF Power Density, Conducted	U = 0.66 dB
Bandwidth	200kHz: U=9.06kHz 1.4MHz: U=9.48kHz 3MHz: U= 10.86kHz 5MHz: U=13.84kHz 10MHz: U=22.32kHz 15MHz: U=31.9kHz 20MHz: U=41.78kHz
Band Edge Compliance	U = 0.9 dB
Spurious Emissions, Conducted	20MHz~3.6GHz: U=0.88dB 3.6GHz~8.4GHz: U=1.08dB 8.4GHz~13.6GHz: U= 1.24dB 13.6GHz~22GHz: U= 1.34dB 22GHz~26.5GHz: U= 1.36dB
Frequency Stability	800MHz: U=24.08Hz 900MHz: U=24.54Hz 1900MHz: U=34.7Hz 2100MHz: U=36.96Hz 2300MHz: U=39.24Hz 2500MHz: U=41.58Hz 2600MHz: U=42.74Hz

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
Output Power & ERP	0 ~ 35°C	25 ~ 75%	DC 3.87V	Rick Liao
Occupied Bandwidth	0 ~ 35°C	25 ~ 75%	DC 3.87V	Rick Liao
Conducted Spurious Emissions	0 ~ 35°C	25 ~ 75%	DC 3.87V	Rick Liao
Mask Measurements	0 ~ 35°C	25 ~ 75%	DC 3.87V	Rick Liao
Peak to Average Ratio	0 ~ 35°C	25 ~ 75%	DC 3.87V	Rick Liao
Frequency Stability	Normal & Extreme	25 ~ 75%	Normal & Extreme	Rick Liao

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		
IEMI No.	867843050038442, 867843050038392		
Modulation Type	LTE	UL: QPSK, 16QAM, 64QAM	
Max. ERP	LTE B26A	16.78	dBm

Note:

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

2. Channel List:

LTE Band 26A					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	1.4	26697	814.7	8697	859.7
	3	26705	815.5	8705	860.5
	5	26715	816.5	8715	861.5
Mid Range	1.4/3/5/10	26740	819	8740	864
High Range	1.4	26783	823.3	8783	868.3
	3	26775	822.5	8775	867.5
	5	26765	821.5	8765	866.5

3. Table for Filed Antenna:

Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
N/A	N/A	Integral	N/A	-6.0	LTE Band 26A

Note: The antenna gain is provided by the manufacturer.

2.2 DESCRIPTION OF TEST MODES

Following mode(s) is (were) found to be the worst case(s) and selected for the final test.

LTE BAND 26 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	1RB/6RB
	26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	1RB/25RB
	26740	26740	10MHz	QPSK, 16QAM	1RB/50RB
Occupied Bandwidth	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM, 64QAM	6RB
	26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM, 64QAM	15RB
	26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM, 64QAM	25RB
	26740	26740	10MHz	QPSK, 16QAM, 64QAM	50RB
Conducted Spurious Emissions	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM, 64QAM	1RB/6RB
	26705 to 26775	26705, 26740, 26775	5MHz	QPSK, 16QAM, 64QAM	1RB/25RB
	26715 to 26765	26740	10MHz	QPSK, 16QAM, 64QAM	1RB/50RB
Modulation Characteristics	26697 to 26783	26740	1.4MHz	QPSK, 16QAM, 64QAM	1RB
	26705 to 26775	26740	5MHz	QPSK, 16QAM, 64QAM	1RB
	26715 to 26765	26740	10MHz	QPSK, 16QAM, 64QAM	1RB
Mask	26697 to 26783	26697, 26783	1.4MHz	QPSK, 16QAM, 64QAM	1RB/6RB
	26715 to 26765	26715, 26765	5MHz	QPSK, 16QAM, 64QAM	1RB/25RB
	26740	26740	10MHz	QPSK, 16QAM, 64QAM	1RB/50RB
Peak To Average Ratio	26697 to 26783	26740	1.4MHz	QPSK, 16QAM, 64QAM	1RB/6RB
	26715 to 26765	26740	5MHz	QPSK, 16QAM, 64QAM	1RB/25RB
	26740	26740	10MHz	QPSK, 16QAM, 64QAM	1RB/50RB
Frequency Stability	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	6RB
	26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	25RB
	26740	26740	10MHz	QPSK, 16QAM	50RB

3. TEST RESULT

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMIT

Mobile / Portable station are limited to 100 watts e.r.p.

3.1.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.0.

ERP:

$EIRP = \text{Output Power} + \text{Antenan gain}$

$ERP = EIPR - 2.15\text{dBi}$.

Output Power:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA, CDMA, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TESTSETUP LAYOUT

Output Power Measurement



3.1.4 TEST DEVIATION

No deviation

3.1.5 TEST RESULTS

Please refer to the APPENDIX.

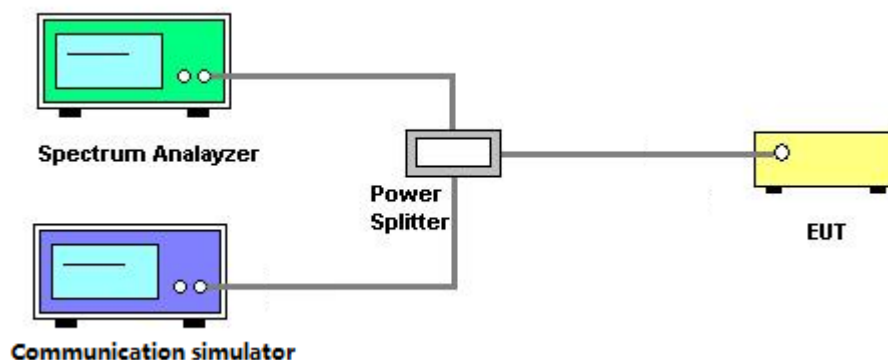
3.2 OCCUPIED BANDWIDTH MEASUREMENT

3.2.1 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 4.0.

1. The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. $RBW=(1\% \sim 5\%)*EBW$
 $VBW \geq 3* RBW$
4. Set spectrum analyzer with RMS detector.

3.2.2 TEST SETUP LAYOUT



3.2.3 TEST DEVIATION

No deviation

3.2.4 TEST RESULTS

Please refer to the APPENDIX.

3.3 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

3.3.1 LIMIT

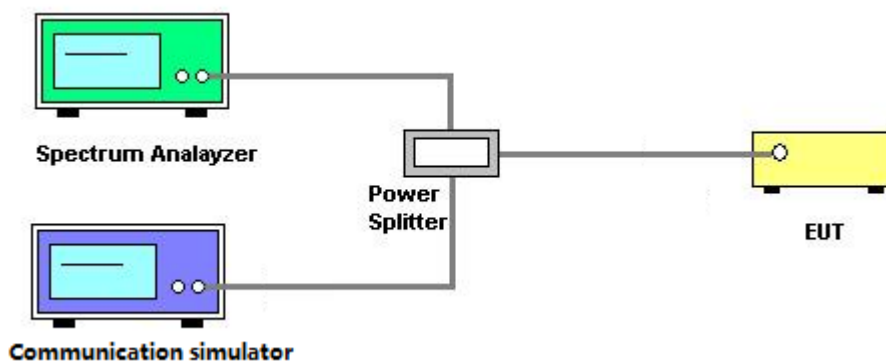
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

3.3.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.0.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Set RBW \geq 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
3. Set spectrum analyzer with RMS detector.
4. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.3.3 TESTSETUP LAYOUT



3.3.4 TESTDEVIATION

No deviation

3.3.5 TEST RESULTS

Please refer to the APPENDIX.

3.4 MASK MEASUREMENTS

3.4.1 LIMIT

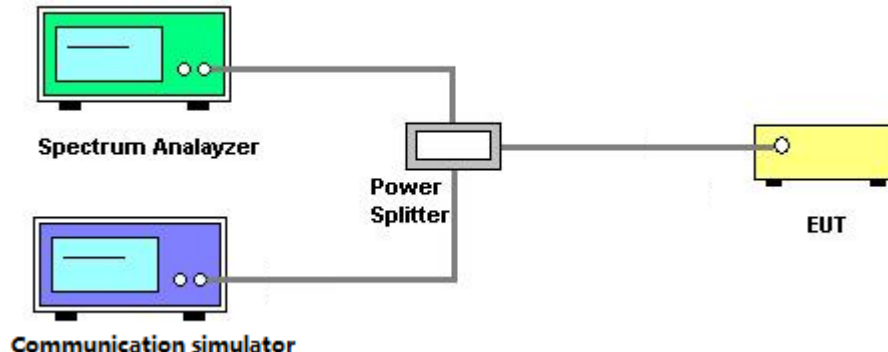
According to FCC part 90.691 shall be tested the emission mask. For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \text{ Log}_{10}(f/6.1)$ decibels or $50+10\text{Log}_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz. For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10\text{Log}_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

3.4.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.0.

1. All measurements were done at low and high operational frequency range.
2. Set RBW=1% of 26dBc bandwidth, VBW=3 X RBW, detector=RMS, Sweep time = Auto.
For Section 90.691(a) compliance testing, use RBW = 300 Hz for offsets less than 37.5 kHz from a channel edge; RBW = 100 kHz for offsets greater than 37.5 kHz is allowed.
3. Record the max trace plot into the test report.

3.4.3 TESTSETUP LAYOUT



3.4.4 TESTDEVIATION

No deviation

3.4.5 TEST RESULTS

Please refer to the APPENDIX.

3.5 PEAK TO AVERAGE RATIO MEASUREMENT

3.5.1 LIMIT

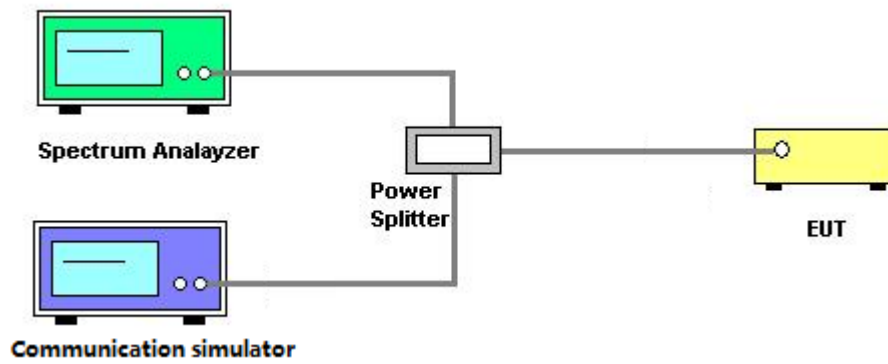
In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 5.7.

1. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.5.3 TEST SETUP LAYOUT



3.5.4 TEST DEVIATION

No deviation

3.5.5 TEST RESULTS

Please refer to the APPENDIX.

3.6 FREQUENCY STABILITY MEASUREMENT

3.6.1 LIMIT

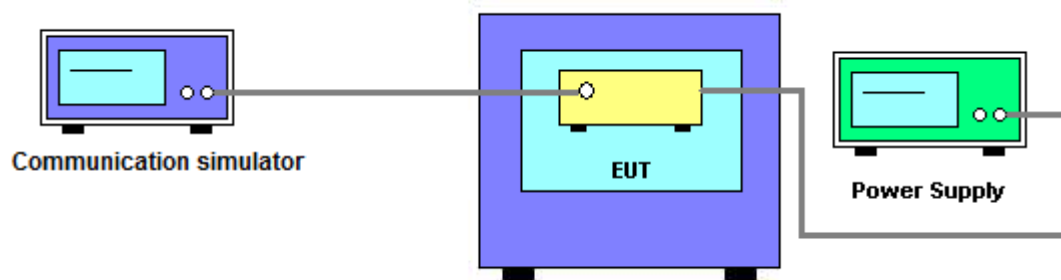
± 1.5 ppm is for base and fixed station. ± 2.5 ppm is for mobile station.

3.6.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 9.0.

1. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
2. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
3. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
4. The frequency error was recorded frequency error from the communication simulator.

3.6.3 TESTSETUP LAYOUT



3.6.4 TESTDEVIATION

No deviation

3.6.5 TEST RESULTS

Please refer to the APPENDIX.

4. LIST OF MEASUREMENT EQUIPMENTS

Conducted Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Temperature Chamber	WEISS	WKL64/40	56246014990010	May 24, 2022
2	High Speed Power Supply	KEITHLEY	2303	000500E	Dec. 20, 2022
3	Universal Radio Communication Tester	R&S	CMW500	167224	Sep. 27, 2022
4	Universal Radio Communication Tester	R&S	CMW500	169872	May 13, 2022
5	Universal Radio Communication Tester	R&S	CMW500	169873	May 13, 2022
6	Signal Analyzer	R&S	FSW26	102253	May 13, 2022
7	Signal Analyzer	R&S	FSW43	101998	May 13, 2022
8	Vector Signal Generator	R&S	SMW200A	109896	Sep. 27, 2022
9	Vector Signal Generator	R&S	SMW200A	109897	Sep. 27, 2022

Remark: "N/A" denotes no model name, serial no. or calibration specified.
 All calibration period of equipment list is one year.