



中国认可  
国际互认  
检测  
TESTING  
CNAS L0310



# FCC RF Test Report

**Product Name: Smart Phone**

**Model Number: HRY-LX2**

**Report No.: SYBH(Z-RF)20180907024002-2004**

**FCC ID: QISHRY-LX2**

**Reliability Laboratory of Huawei Technologies Co., Ltd.**

**(Global Compliance and Testing Center of Huawei Technologies Co., Ltd)**

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## Notice

1. The laboratory has passed the accreditation by China National Accreditation Service for Conformity Assessment (CNAS). The accreditation number is L0310.
2. The laboratory has passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01 .
3. The laboratory has been recognized by the US Federal Communications Commission (FCC) to perform compliance testing subject to the Commission's Certification rules. The Designation Number is CN1173, and the Test Firm Registration Number is 294140.
4. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 6369A-1.
5. The laboratory (Reliability Lab of Huawei Technologies Co., Ltd) is also named “Global Compliance and Testing Center of Huawei Technologies Co., Ltd”, the both names have coexisted since 2009.
6. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
7. The test report is invalid if there is any evidence of erasure and/or falsification.
8. The test report is only valid for the test samples.
9. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.



**Applicant:** Huawei Technologies Co., Ltd.  
**Address:** Administration Building, Headquarters of Huawei Technologies Co., Ltd.,  
Bantian, Longgang District, Shenzhen, 518129, P.R.C

**Date of Receipt Sample:** 2018-09-25  
**Start Date of Test:** 2018-10-08  
**End Date of Test:** 2018-11-20

**Test Result:** Pass

<b>Approved by Senior Engineer:</b>	2018-11-20	He Hao	He Hao
	Date	Name	Signature

<b>Prepared by:</b>	2018-11-20	zhoulingbo	zhoulingbo
	Date	Name	Signature



## CONTENT

1	General Information.....	5
1.1	Applied Standard.....	5
1.2	Test Location.....	5
1.3	Test Environment Condition.....	5
2	Test Summary.....	6
3	Description of the Equipment under Test (EUT).....	7
3.1	General Description.....	7
3.2	EUT Identity.....	7
3.3	Technical Description.....	8
4	General Test Conditions / Configurations.....	9
4.1	EUT Configurations.....	9
4.2	Test Environments.....	9
4.3	Test Setups.....	10
4.4	Test Conditions.....	11
5	Main Test Instruments.....	12
6	Measurement Uncertainty.....	13
7	Appendixes.....	13



## 1 General Information

### 1.1 Applied Standard

Applied Rules: 47 CFR FCC Part 2, Subpart J  
47 CFR FCC Part 15, Subpart C

Test Method: FCC KDB 558074 D01 DTS Meas Guidance v04  
ANSI C63.10-2013, American National Standard for Testing Unlicensed  
Wireless Devices.

### 1.2 Test Location

Test Location : Reliability Laboratory of Huawei Technologies Co., Ltd.  
Address1: No.2 New City Avenue Songshan Lake Sci. &Tech. Industry Park, Dongguan,  
Guangdong, P.R.C

### 1.3 Test Environment Condition

Ambient Temperature: 19.5to 25 °C  
Ambient Relative Humidity: 40 to 55 %  
Atmospheric Pressure: Not applicable



## 2 Test Summary

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Location
DTS (6 dB) Bandwidth	15.247(a)(2)	≥ 500 kHz.	Appendix A	Pass	Location 1
Occupied Bandwidth	---	No limit.	Appendix B	Pass	Location 1
Duty Cycle	KDB 558074 D01 (6.0)	No limit.	Appendix C	Pass	Location 1
Maximum Conducted peak Output Power	15.247(b)(3)	FCC: For directional gain: Conducted < 30 dBm – (G[dBi] – 6 [dB]); Otherwise: Conducted < 30 dBm,	Appendix D	Pass	Location 1
Maximum Power Spectral Density Level	15.247(e)	Conducted < 8 dBm/3 kHz.	Appendix E	Pass	Location 1
Band Edges Compliance	15.247(d)	< -20 dB/100 kHz if total peak power ≤ power limit.	Appendix F	Pass	Location 1
Unwanted Emissions into Non-Restricted Frequency Bands			Appendix G	Pass	Location 1



### 3 Description of the Equipment under Test (EUT)

#### 3.1 General Description

HRY-LX2 is subscriber equipment in the GSM/WCDMA/LTE system. The GSM frequency bands include GSM850, GSM900, DCS1800 and PCS1900. The UMTS frequency band includes band I, band II, band IV, band V and band VIII. The LTE frequency bands include band 1, band 2, band 3, band 4, band 5, band 7, band 8, band 28, band 38, band 40 and band 41. The Mobile Phone implements such functions as RF signal receiving/transmitting, LTE/HSPA/UMTS and GSM/GPRS/EDGE protocol processing, voice, video MMS service, GPS, AGPS and WIFI etc. Externally it provides one micro SD card interface, earphone port (to provide voice service) and one and two SIM card interface. HRY-LX2 is dual and single SIM smart phone. It also provides Bluetooth module to synchronize data between a PC and the phone, or to use the built-in modem of the phone to access the Internet with a PC, or to exchange data with other Bluetooth devices.

NOTE1: Only Bluetooth BLE test data included in this report.



#### 3.2 EUT Identity

NOTE: Unless otherwise noted in the report, the functional boards installed in the units shall be selected from the below list, but not means all the functional boards listed below shall be installed in one unit.

##### 3.2.1 Board

Board		
Description	Software version	Hardware version
Main Board	9.0.1.111(C900E110R1P9)	HL1HRYM

##### 3.2.2 Sub-Assembly

Sub-Assembly			
Sub-Assembly Name	Model	Manufacturer	Description
Adapter	HW-050200U02	Huawei Technologies Co.,Ltd.	Input Voltage:100V-240V~50/60Hz, 0.5A Output Voltage: 5V  2A
Adapter	HW-050200U01	Huawei Technologies Co.,Ltd.	nput Voltage:100V-240V~50/60Hz, 0.5A Output Voltage: 5V  2A
Rechargeable Li-ion	HB396286ECW	Huawei Technologies Co.,Ltd.	Rated capacity: 3320mAh Nominal Voltage: +3.82V Charging Voltage: +4.4V



### 3.3 Technical Description

Characteristics	Description	
TX/RX Operating Range	2400-2483.5 MHz band	fc = 2402 MHz + N * 2 MHz, where: - fc = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 0 to 39.
Modulation Type	Digital	GFSK,
Emission Designator	GFSK for BT 4.2: 716KFXD	
Bluetooth Power Class	Class 1	
Antenna Description	Isotropic Antenna	
Antenna Type	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated	
Antenna Gain	-1.81 dBi (per antenna port, max.)	
Power Supply	<input checked="" type="checkbox"/> AC/DC Adapter <input type="checkbox"/> PoE: <input type="checkbox"/> Other:	





## 4 General Test Conditions / Configurations

### 4.1 EUT Configurations

#### 4.1.1 General Configurations

Configuration	Description
Test Antenna Ports	Until otherwise specified, <ul style="list-style-type: none"> <li>- All TX tests are performed at all TX antenna ports of the EUT, and</li> <li>- All RX tests are performed at all RX antenna ports of the EUT.</li> </ul>
Multiple RF Sources	Other than the tested RF source of the EUT, other RF source(s) are disabled or shutdown during measurements.

#### 4.1.2 Customized Configurations

# EUT Conf.	Signal Description	Operating Frequency	Duty cycle
TM1_Ch0	GFSK for BT 4.2 modulation, package type DH5, hopping off.	Ch No. 0 / 2402 MHz	60.5%
TM1_Ch19	GFSK for BT 4.2 modulation, package type DH5, hopping off.	Ch No. 19 / 2440 MHz	60.5%
TM1_Ch39	GFSK for BT 4.2 modulation, package type DH5, hopping off.	Ch No. 39 / 2480 MHz	60.5%

### 4.2 Test Environments

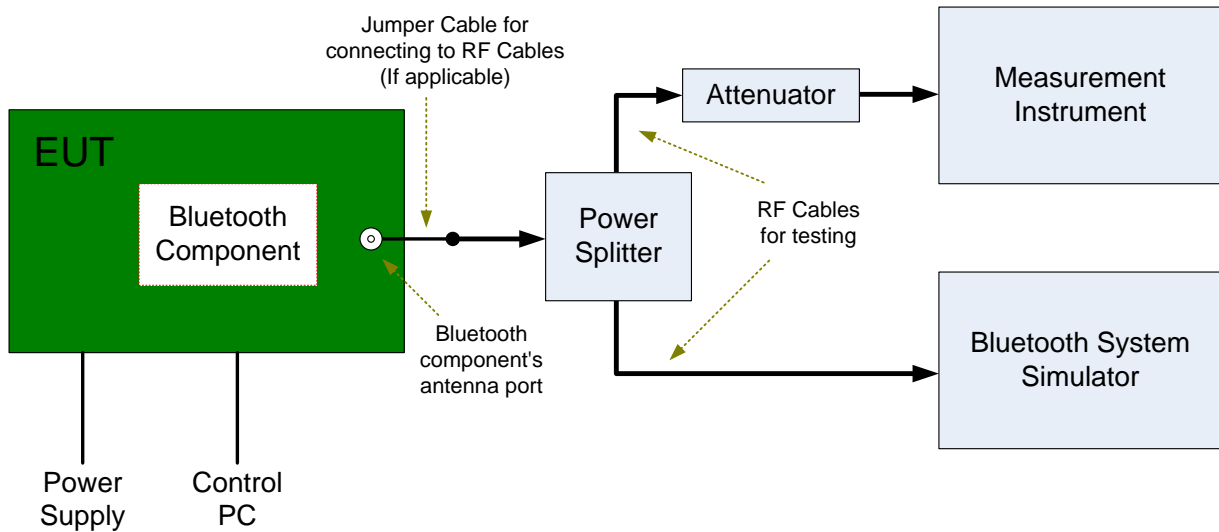
NOTE: The values used in the test report may be stringent than the declared.

Environment Parameter	Selected Values During Tests		
	Temperature	Voltage	Relative Humidity
NTNV	Ambient	3.82 VDC	Ambient

### 4.3 Test Setups

#### 4.3.1 Test Setup 1

The Bluetooth component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by Bluetooth System Simulator and/or PC/software to emit the specified signals for the purpose of measurements.





#### 4.4 Test Conditions

Test Case	Test Conditions	
	Configuration	Description
6dB Emission Bandwidth (EBW)	Meas. Method	FCC KDB 558074 D01 §8.1 Option 2.
	Test Env.	NTNV
	Test Setup	Test Setup 1
	EUT Conf.	TM1_Ch0, TM1_Ch19, TM1_Ch39.
Occupied Bandwidth	Meas. Method	FCC KDB 558074 D01 §8.2 Option 2.
	Test Env.	NTNV
	Test Setup	Test Setup 1
	EUT Conf.	TM1_Ch0, TM1_Ch19, TM1_Ch39.
Maximum peak Conducted Output Power	Meas. Method	FCC KDB 558074 D01 §9.1.1
	Test Env.	NTNV
	Test Setup	Test Setup 1
	EUT Conf.	TM1_Ch0, TM1_Ch19, TM1_Ch39.
Maximum Power Spectral Density Level	Meas. Method	FCC KDB 558074 D01 §10.2(peak PSD)
	Test Env.	NTNV
	Test Setup	Test Setup 1
	EUT Conf.	TM1_Ch0, TM1_Ch19, TM1_Ch39.
Band edge spurious emission	Meas. Method	FCC KDB 558074 D01§13.0.
	Test Env.	NTNV
	Test Setup	Test Setup 1
	EUT Conf.	TM1_Ch0, TM1_Ch39.
Unwanted Emissions into Non-Restricted Frequency Bands	Meas. Method	FCC KDB 558074 D01§11.0
	Test Env.	NTNV
	Test Setup	Test Setup 1
	EUT Conf.	TM1_Ch0, TM1_Ch19, TM1_Ch39.



## 5 Main Test Instruments

Main Test Equipments					
Equipment Name	Manufacturer	Model	Serial Number	Cal Date	Cal- Due
Power supply	KEITHLEY	2303	000381E	2018/05/21	2019/05/21
Universal Radio Communication Tester	R&S	CMU200	110932	2018/4/27	2019/4/27
Universal Radio Communication Tester	R & S	CMW500	159302	2018/7/23	2019/7/23
Signal Analyzer	R&S	FSQ31	200021	2018/7/23	2019/7/23
Spectrum Analyzer	Agilent	N9030A	MY49431698	2018/7/23	2019/7/23
Temperature Chamber	WEISS	WKL64	56246002940010	2017/12/13	2018/12/13
Signal generator	Agilent	E8257D	MY49281095	2018/7/23	2019/7/23
Vector Signal Generator	R&S	SMU200A	104162	2018/7/23	2019/7/23
Power Detecting & Samplig Unit	R&S	OSP-B157	101429	2018/7/23	2019/7/23
Spectrum Analyzer	Keysight	N9040B	MY57212529	2018/6/28	2019/6/28



## 6 Measurement Uncertainty

For a 95% confidence level ( $k = 2$ ), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item		Extended Uncertainty
Transmit Output Power Data	Power [dBm]	U = 0.39 dB
RF Power Density, Conducted	Power [dBm]	U = 0.64 dB
Bandwidth	Magnitude [%]	U=7%
Band Edge Compliance	Disturbance Power [dBm]	U = 0.9 dB
Spurious Emissions, Conducted	Disturbance Power [dBm]	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	Frequency Accuracy [Hz]	U=41.58Hz
Duty Cycle	Duty Cycle [%]	U=±2.06 %

## 7 Appendixes

Appendix No.	Description
SYBH(Z-RF)20180907024002-2004-A	Appendix for Bluetooth BLE

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END