



FCC RF Test Report

Product Name: Smart Phone

Model Number: ELE-L29m/ELE-L09m

Report No.: SYBH(Z-RF)20190401022001-2007

FCC ID: QISELE-LX9M

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1. The laboratory has passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01.
2. 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.
3. The laboratory has been recognized by the Innovation, Science and Economic Development Canada (ISED) to test to Canadian radio equipment requirements. The CAB identifier is CN0003, and the ISED# is 21741.
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MODIFICATION RECORD

No.	Report No	Modification Description
1	SYBH(Z-RF)20190401022001-2007	First release.

DECLARATION

Type	Description
Multiple Models Applications	☐ The present report applies to single model. ☒ The present report applies to several models. The practical measurements are performed with the model <u>ELE-L29m</u>. These models utilize the similar radio design, shielding, interface, physical layout and so on. The differences and modifications between these models are declared by the applicant and showed in General Description All others between these models are identical. The present report only presents the worst test case of all modes, see relevant test results for detailed.

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2 General Information

1.1 Test standard/s

Applied Rules :	47 CFR FCC Part 02 47 CFR FCC Part 15 Subpart C
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1.2 Test Environment

Temperature :	TN	15 to 30	°C during room temperature tests
Ambient Relative Humidity:	25 to 75 %		
Atmospheric Pressure:	Not applicable		
Power supply :	VL	3.6	V
	VN	3.8	V DC by Battery
	VH	4.35	V

NOTE 1: 1) VN= nominal voltage, VL= low extreme test voltage, VH= High extreme test voltage;

TN= normal temperature, TL= low extreme test temperature, TH= High extreme test temperature.

NOTE 2: The values used in the test report may be stringent than the declared.

1.3 Test Laboratories

Test Location 1 :	RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD.
Address of Test Location 1 :	No.2, New City Avenue, Songshan Lake Sci. & Tech. Industry Park, Dongguan, 523808, P.R.C

1.4 Applicant and Manufacturer

Company Name :	HUAWEI TECHNOLOGIES CO., LTD
Address :	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.5 Application details

Date of Receipt Sample:	2019-04-15
Start of test:	2019-04-16
End of test:	2019-04-30

3 Summary

FCC Rule No.	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE					
15.225 (a)	In-Band Emissions	15,848 μ V/m @ 30m 13.553 – 13.567 MHz	RADIATED	Pass	Refer to No. SYBH(Z-RF)20190401017001-2007
2.1049 15.215	Bandwidth	N/A		Pass	Refer to No. SYBH(Z-RF)20190401017001-2007
15.225(b)	In-Band Emissions	334 μ V/m @ 30m 13.410 – 13.553 MHz 13.567 – 13.710 MHz		Pass	Refer to No. SYBH(Z-RF)20190401017001-2007
15.225(c)	In-Band Emissions	106 μ V/m @ 30m 13.110 – 13.410 MHz 13.710 – 14.010 MHz		Pass	Refer to No. SYBH(Z-RF)20190401017001-2007
15.225(d) 15.209	Out-of-Band Emissions	FCC: Emissions outside of the specified band (13.110 – 14.010 MHz) must meet the radiated limits detailed in 15.209		Pass	Refer to No. SYBH(Z-RF)20190401017001-2007
15.225(e)	Frequency Stability Tolerance	$\pm$ 0.01% of Operating Frequency	Temperature Chamber	Pass	Refer to No. SYBH(Z-RF)20190401017001-2007
15.207	AC Conducted Emissions 150kHz – 30MHz	FCC: < FCC 15.207 limits	LINE CONDUCTED	Pass	Refer to No. SYBH(Z-RF)20190401017001-2007
NOTE: The transmitter has an integral PCB loop antenna that is enclosed within the housing of the EUT and meets the requirements of FCC 15.203					

4 Product Description

4.1 Product Information

4.1.1 General Description

ELE-L29m/ELE-L09m is subscriber equipment in the GSM/WCDMA/LTE system. The GSM frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900. The UMTS frequency band is B1 and B2 and B4 and B5 and B6 and B8 and B19. The ELE-L29m/ELE-L09m LTE frequency band is B1 and B2 and B3 and B4 and B5 and B6 and B7 and B8 and B9 and B12 and B17 and B18 and B19 and B20 and B26 and B28 and B32 and B34 and B38 and B39 and B41. The ELE-L29m LTE frequency band for intra-band carrier aggregation uplink operation band is CA_1C and CA_2C and CA_3C and CA_7C and CA_38C and CA_39C and CA_41C. 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 (it can also used as SIM card interface), earphone port (to provide voice service) and one SIM card interface. ELE-L29m is dual SIM smart phone. ELE-L09m is 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.

The difference between model **ELE-L04m** and model **ELE -L29m** is show in the below table:

	Model	ELE-L04m	ELE-L29m
Licensed Frequency	LTE BAND	FCC Band: B2/B4/ B5/B7/B12/B17/B26/B38/B41(2535~2655MHz)/B66	FCC Band: B2/B4/ B5/B7/B12/B17/B26/B38/B41(2535~2655MHz)
	UMTS BAND	the same	the same
	GSM	the same	the same
	IC	the same	the same
	Antenna	the same	the same
	NFC	the same	the same
Unlicensed Frequency	Bluetooth	the same	the same
	2.4G Wi-Fi	the same	the same
	5.8G Wi-Fi	the same	the same
	IC	the same	the same
	Antenna	the same	the same
Hardware	Ram / Rom	the same	the same
	Camera	the same	the same
	PCB	the same	the same
	USB Port	the same	the same
	SIM	one	two
	Hardware version	the same	the same
RF	RF circuit	The hardware channel of WCDMA B4 and LTE B2/4/7(include CA band) is different, Irrelevant to other frequency	The hardware channel of WCDMA B4 and LTE B2/4/7(include CA band) is different, Irrelevant to other frequency bands

		bands	
Appearance	Dimension	the same	the same
	Color	different	different
Accessory	Battery	the same	the same
	External Charger	the same	the same
	USB label	the same	the same
	Earphone	the same	the same

Note1: Based on HW knowledge of the device design, we do not test NFC of ELE-L29m/ELE-L09m, all test data can refer to No. SYBH(Z-RF)20190401017001-2007 of ELE-L04m(FCC ID: QISELE-L04M).

4.2 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.

4.2.1 Board

Board		
Description	Software Version	Hardware Version
Main Board	5.0.1.130 (SP2C432E131R1P11)	HL3ELLEM

4.2.2 Sub-Assembly

Sub-Assembly			
Sub-Assembly Name	Model	Manufacturer	Description
Adapter	HW-050450B00	Huawei Technologies Co., Ltd.	Input voltage: 100V-240V~50/60Hz, 0.75A Output voltage: 5V  2A OR 4.5V  5A OR 5V  4.5A
Adapter	HW-050450E00	Huawei Technologies Co., Ltd.	Input voltage: 100V-240V~50/60Hz, 0.75A Output voltage: 5V  2A OR 4.5V  5A OR 5V  4.5A
Adapter	HW-050450U00	Huawei Technologies Co., Ltd.	Input voltage: 100V-240V~50/60Hz, 0.75A Output voltage: 5V  2A OR 4.5V  5A OR 5V  4.5A
Adapter	HW-050450A00	Huawei Technologies Co., Ltd.	Input voltage: 100V-240V~50/60Hz, 0.75A Output voltage: 5V  2A OR 4.5V  5A OR 5V  4.5A
Adapter	HW-050450E01	Huawei Technologies Co., Ltd.	Input voltage: 100V-240V~50/60Hz, 0.75A Output voltage: 5V  2A OR 4.5V  5A OR 5V  4.5A
Adapter	HW-050450A01	Huawei Technologies Co., Ltd.	Input voltage: 100V-240V~50/60Hz, 0.75A Output voltage: 5V  2A OR 4.5V  5A OR 5V  4.5A
Battery	HB436380ECW	Huawei Technologies	Rated capacity: 3550mAh mAh

Sub-Assembly			
Sub-Assembly Name	Model	Manufacturer	Description
		Co., Ltd.	Nominal Voltage:  +3.85V Charging Voltage:  +4.43V

4.2.3 Wireless charging case

Wireless charging case	C-ELE Wireless charging case
Manufacturer	Huawei Technologies Co., Ltd.
Wireless charging power	10W max
Connector rating	5A max
Rated operating voltage	9V
Charging efficiency	>75%
Operating temperature	-10 °C~40 °C
Storage temperature	-40 °C~70°C

4.3 Technical Description

NOTE: For the detailed technical descriptions, see the applicant/manufacture's specifications or user manual.

Characteristics	Description	
Operating Frequency	13.56MHz	
Modulation Type	ASK	
Antenna Type	Loop Antenna	
Description of product Class:	☒ product Class 1, ☐ product Class 2, ☐ product Class 3, ☐ product Class 4	
Power Supply	Power Supply Type:	☐ External DC mains, ☒ Battery, ☐ AC/DC Adapter, ☐ Powered over Ethernet (PoE). ☐ USB ☐ Other_____
	Input Rated Voltage	3.8V
	Operating Voltage Range	3.6V~4.35V

5 Test Results

5.1 Bandwidth Measurement

Refer to No. SYBH(Z-RF)20190401017001-2007

5.2 In-Band Radiated Spurious Emission Measurements

Refer to No. SYBH(Z-RF)20190401017001-2007

5.3 Radiated Spurious Emission Measurements, Out-of-Band

Refer to No. SYBH(Z-RF)20190401017001-2007

5.4 Frequency Stability

Refer to No. SYBH(Z-RF)20190401017001-2007

5.5 AC Power Line Conducted Emissions

Refer to No. SYBH(Z-RF)20190401017001-2007

6 MAIN TEST INSTRUMENTS

6.1 Current Test Project/Report

Main Test Equipments(RE test system)					
Equipment Name	Manufacturer	Model	Serial Number	Cal Date	Cal-Due
Test receiver	R&S	ESU26	100387	2019/01/15	2020/01/14
LOOP Antennas(9kHz-30MHz)	R&S	HFH2-Z2	100263	2019/03/15	2021/03/15
Trilog Broadband Antenna (30M~3GHz)	SCHWARZ BECK	VULB 9163	9163-356	2018/4/9	2020/4/8
Double-Ridged Waveguide Horn Antenna (1G~18GHz)	R&S	HF906	100684	2017/5/27	2019/5/26
Pyramidal Horn Antenna(18GHz-26.5GHz)	ETS-Lindgren	3160-09	5140299	2017/07/20	2019/07/19
Pyramidal Horn Antenna(26.5GHz-40GHz)	ETS-Lindgren	3160-10	00205695	2018/04/20	2020/04/19
Software Information					
Test Item	Software Name		Manufacturer		Version
RE	EMC32		R&S		V9.25.0

Main Test Equipment(CE test system)					
Equipment Name	Manufacturer	Model	Serial Number	Cal Date	Cal-Due
Test receiver	R&S	ESU26	100387	2019/01/15	2020/01/14
Artificial Main Network	R&S	ENV4200	100134	2018/05/08	2019/05/07

Line Impedance Stabilization Network	R&S	ENV216	100382	2018/05/08	2019/05/07
Software Information					
Test Item	Software Name		Manufacturer		Version
CE	EMC32		R&S		V9.25.0

7 System 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
All Emissions, Radiated	Field Strength [dB μ V/m]	For 3 m Chamber: U = 3.868 dB (9 kHz to 150 kHz) U = 3.782 dB (150 kHz to 30 MHz) U = 5.24 dB (30 MHz-1 GHz)
AC Power Line Conducted Emissions	Disturbance Voltage[dB μ V]	U=2.3 dB

-----The END-----