



# FCC TEST REPORT FOR

Shanghai SmartPeak Technology Co.,Ltd.

POS Terminal

Test Model: P2000L

Prepared for : Shanghai SmartPeak Technology Co.,Ltd.  
Address : Room 1, No.3 Building, NO.295, Qianqiao Road, Fengxian District, Shanghai, China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
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Date of receipt of test sample : December 10, 2022

Number of tested samples : 2

Sample No. : A120822084-1, A120822084-2

Serial number : Prototype

Date of Test : December 10, 2022 ~ December 15, 2022

Date of Report : December 15, 2022





## FCC PART 24/27 TEST REPORT

### FCC Part 24E/Part 27

<b>Report Reference No.</b> .....	<b>LCSA120822084EG</b>
<b>FCC ID.</b> .....	<b>2A73S-P2000L</b>
<b>Date of Issue</b> .....	<b>December 15, 2022</b>
<b>Testing Laboratory Name</b> .....	<b>Shenzhen LCS Compliance Testing Laboratory Ltd.</b>
<b>Address</b> .....	101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
<b>Applicant's name</b> .....	<b>Shanghai SmartPeak Technology Co.,Ltd.</b>
<b>Address</b> .....	Room 1, No.3 Building, NO.295, Qianqiao Road, Fengxian District, Shanghai, China
<b>Test specification</b> .....	<b>FCC CFR Title 47 Part 2, Part 24E, Part 27</b>
<b>Standard</b> .....	<b>TIA-603-E: 2016</b>
	<b>KDB971168 D01 Power Meas License Digital Systems v03r01</b>
<b>Test Report Form No.</b> .....	LCSEMC-1.0
<b>TRF Originator</b> .....	Shenzhen LCS Compliance Testing Laboratory Ltd.
<b>Master TRF</b> .....	Dated 2011-03
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<b>Test item description</b> .....	<b>POS Terminal</b>
<b>Trade Mark</b> .....	SmartPeak
<b>Test Model</b> .....	P2000L
<b>Modulation Type</b> .....	QPSK, 16QAM
<b>Rating</b> .....	Please Refer to Page 7
<b>Hardware version</b> .....	/
<b>Software version</b> .....	/
<b>Result</b> .....	<b>PASS</b>

**Compiled by:**

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**Approved by:**

Gavin Liang/ Manager





# TEST REPORT

<b>Test Report No. :</b> <b>LCSA120822084EG</b>	December 15, 2022 Date of issue
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Equipment under Test        :        POS Terminal

Test Model                     :        P2000L

**Applicant**                     :        **Shanghai SmartPeak Technology Co.,Ltd.**

Address                         :        Room 1, No.3 Building, NO.295, Qianqiao Road,  
Fengxian District, Shanghai, China

**Manufacturer**                :        **Shanghai SmartPeak Technology Co.,Ltd.**

Address                         :        Room 1, No.3 Building, NO.295, Qianqiao Road,  
Fengxian District, Shanghai, China

**Factory**                        :        **Shanghai SmartPeak Technology Co.,Ltd.**

Address                         :        Room 1, No.3 Building, NO.295, Qianqiao Road,  
Fengxian District, Shanghai, China

<b>Test Result:</b>	<b>PASS</b>
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The test report merely corresponds to the test sample.  
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.





### Revision History

Report Version	Issue Date	Revision Content	Revised By
000	December 15, 2022	Initial Issue	---





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# 1 TEST STANDARDS

The tests were performed according to following standards:

[FCC Part 24E](#): Broadband PCS

[FCC Part 27](#): MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

[TIA-603-E March 2016](#): Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

[47 CFR FCC Part 15 Subpart B](#): Unintentional Radiators

[FCC Part 2](#): FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

[ANSI C63.4:2014](#): Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

[FCC KDB971168 D01](#) Power Meas License Digital Systems v03r01

[ANSI C63.26:2015](#): Compliance Testing of Transmitters Used in Licensed Radio Services





## 2 SUMMARY

### 2.1 Product Description

The **Shanghai SmartPeak Technology Co.,Ltd.**'s Model: P2000L or the "EUT" as referred to in this report; more general information as follows, for more details, refer to the user's manual of the EUT.

EUT : POS Terminal

Test Model : P2000L

Power Supply : Input: 5V  $\overline{\text{---}}$ 2A  
 For Adapter1 Input: 100-240V~, 50/60Hz, 0.40A  
 For Adapter1 Output: 5.0V  $\overline{\text{---}}$ 2.0A, 10.0W  
 For Adapter2 Input: 100-240V~, 50/60Hz, 0.40A  
 For Adapter2 Output: 5.0V  $\overline{\text{---}}$ 2.0A, 10.0W  
 DC 7.4V by Rechargeable Li-ion Battery, 2000mAh

Hardware Version : /

Software Version : /

**Bluetooth** :

Frequency Range : 2402MHz ~ 2480MHz

Channel Number : 79 channels for Bluetooth V4.1(DSS)  
 40 channels for Bluetooth V4.1 (DTS)

Channel Spacing : 1MHz for Bluetooth V4.1 (DSS)  
 2MHz for Bluetooth V4.1 (DTS)

Modulation Type : GFSK,  $\pi/4$ -DQPSK, 8-DPSK for Bluetooth V4.1(DSS)  
 GFSK for Bluetooth V4.1 (DTS)

Bluetooth Version : V4.1

Antenna Description : PIFA Antenna, 0.5dBi(Max.)

**WIFI(2.4G Band)** :

Frequency Range : 2412MHz ~ 2462MHz

Channel Spacing : 5MHz

Channel Number : 11 Channels for 20MHz bandwidth (2412~2462MHz)

Modulation Type : IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK)  
 IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK)  
 IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)

Antenna Description : PIFA Antenna, 0.5dBi(Max.)

**2G** :

Support Band :  GSM 900 (EU-Band)     DCS 1800 (EU-Band)  
 GSM 850 (U.S.-Band)     PCS 1900 (U.S.-Band)

Release Version : R99

GPRS Class : Class 12

EGPRS Class : Class 12

Type Of Modulation : GMSK for GSM/GPRS; GMSK/8PSK for EGPRS

Antenna Description : PIFA Antenna  
 0.5dBi (max.) For GSM 850  
 0.5dBi (max.) For PCS 1900

**3G** :





Support Band :  WCDMA Band II (U.S.-Band)  
 WCDMA Band V (U.S.-Band)  
 WCDMA Band IV (U.S.-Band)  
 WCDMA Band I (EU-Band)  
 WCDMA Band VIII (EU-Band)

Release Version : R9

Type Of Modulation : QPSK, 16QAM

Antenna Description : PIFA Antenna  
0.5dBi (max.) For WCDMA Band II  
0.5dBi (max.) For WCDMA Band V

**LTE :**

Support Band :  E-UTRA Band 2(U.S.-Band)  
 E-UTRA Band 4(U.S.-Band)  
 E-UTRA Band 7(U.S.-Band)

LTE Release Version : R9

Type Of Modulation : QPSK/16QAM

Antenna Description : PIFA Antenna  
0.5dBi (max.) For E-UTRA Band 2  
0.5dBi (max.) For E-UTRA Band 4  
0.5dBi (max.) For E-UTRA Band 7

Power Class : Class 3

**NFC :**

Operating Frequency : 13.56MHz

Modulation Type : ASK

Antenna Description : PCB Antenna, 0.5dBi(Max.)

**GPS function : Support and only RX**

Extreme temp. Tolerance : -30°C to +50°C

Extreme vol. Limits : 6.4VDC to 8.4VDC (nominal: 7.4VDC)







## 2.2 Equipment under Test

### Power supply system utilised

Power supply voltage	:	<input type="radio"/> 120V/ 60 Hz	<input type="radio"/> 115V/60Hz
		<input type="radio"/> 12 V DC	<input type="radio"/> 24 V DC
		<input checked="" type="radio"/> Other (specified in blank below): 7.4V	

## 2.3 Short description of the Equipment under Test (EUT)

### 2.4.1 GeneralDescription

P2000L is subscriber equipment in the BT/BLE/2.4GWIFI/GSM/WCDMA/LTE/NFC/GPS system. GSM/GPRS/EGPRS frequency band is Band II/V. The HSPA/UMTS frequency band is Band II/V. LTE frequency band is band 2/4/7. The HSPA/UMTS frequency band II and Band V test data included in this report. The P2000L implements such functions as RF signal receiving/transmitting, GSM/GPRS/EGPRS/HSPA/UMTS/LTE protocol processing, video MMS service and etc. Externally it provides SIM card interface.

## 2.4 Internal Identification of AE used during the test

AE ID*	Description
AE1	Rechargeable Li-Polymer Battery
AE2	Switching Adapter
AE3	Power Adapter

AE1  
 Battery Model: 335880  
 DC 7.4V by Rechargeable Li-ion Battery, 2000mAh

AE2  
 Adapter Model: GLH50D2000HW  
 Adapter Input: 100-240V~, 50/60Hz, 0.4A  
 Adapter Output: 5.0V $\overline{\text{---}}$ 2.0A, 10.0W

AE3  
 Adapter Model: GLH50A2000HW  
 Adapter Input: 100-240V~, 50/60Hz, 0.4A  
 Adapter Output: 5.0V $\overline{\text{---}}$ 2.0A, 10.0W

## 2.5 Normal Accessory setting

Fully charged battery was used during the test.

## 2.6 EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- - supplied by the lab

○ Power Cable	Length (m) :	/
	Shield :	/
	Detachable :	/
○ Multimeter	Manufacturer :	/
	Model No. :	/





## 2.7 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: 2A73S-P2000L filing to comply with Part 24 and Part 27 Rules

## 2.8 Modifications

No modifications were implemented to meet testing criteria.

## 2.9 General Test Conditions/Configurations

### 2.10.1 Test Environment

EnvironmentParameter	SelectedValuesDuringTests	
Relative Humidity	Ambient	
Temperature	TN	Ambient
Voltage	VL	DC 6.4V
	VN	DC 7.4V
	VH	DC 8.4V

NOTE: VL=lower extreme testvoltage VN=nominal voltage  
 VH=upper extreme testvoltage TN=normal temperature





### 3 TEST ENVIRONMENT

#### 3.1 Address of the test laboratory

**Shenzhen LCS Compliance Testing Laboratory Ltd**

101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

The sites are constructed in conformance with the requirements of ANSI C63.4 (2014) and CISPR Publication 32.

#### 3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Test Firm Registration Number: 254912.

#### 3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

#### 3.4 Test Description

**Band 2 (1850-1910MHz paired with 1930-1990MHz)**

Test Item	FCC Rule No.	Requirements	Verdict
Field Strength of Spurious Radiation	§2.1053, §24.238	≤ -13dBm/1MHz.	PASS

NOTE 1: For the verdict, the "N/A" denotes "not applicable", the "N/T" denotes "not tested".





**Band 4 (1710-1755MHz paired with 2110-2155MHz)**

Test Item	FCC RuleNo.	Requirements	Verdict
Radiated spurious emission	§2.1053, §27.53(h)	≤ -13dBm/1MHz.	PASS
NOTE 1: For the verdict, the "N/A" denotes "not applicable", the "N/T" de notes "not tested"			

**Band 7 (2500-2570MHz paired with 2620-2690MHz)**

Test Item	FCC Rule No.	Requirements	Verdict
Field Strength of Spurious Radiation	§2.1053, §27.53(m)	More details specified in §27.53(m)(4)	Pass
NOTE 1:For the verdict, the"N/A"denotes"not applicable",the"N/T"de notes "not tested".			





### 3.5 Equipments Used during the Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Power Meter	R&S	NRVS	100444	2022-06-16	2023-06-15
2	Power Sensor	R&S	NRV-Z81	100458	2022-06-16	2023-06-15
3	Power Sensor	R&S	NRV-Z32	10057	2022-06-16	2023-06-15
4	LTE Test Software	Tonscend	JS1120-1	N/A	N/A	N/A
5	RF Control Unit	Tonscend	JS0806-1	158060009	2022-10-29	2023-10-28
6	MXA Signal Analyzer	Agilent	N9020A	MY512509 05	2022-10-29	2023-10-28
7	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2022-06-16	2023-06-15
8	DC Power Supply	Agilent	E3642A	N/A	2022-10-29	2023-10-28
9	EMI Test Software	AUDIX	E3	/	N/A	N/A
10	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03- HY	2022-06-16	2023-06-15
11	Positioning Controller	Max-Full	MF7802BS	MF780208 586	N/A	N/A
12	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2021-08-29	2024-08-28
13	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2021-09-12	2024-09-11
14	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D- 1925	2021-09-05	2024-09-04
15	Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	791	2021-08-29	2024-08-28
16	Broadband Preamplifier	SCHWARZBECK	BBV9719	9719-025	2022-06-16	2023-06-15
17	EMI Test Receiver	R&S	ESR 7	101181	2022-06-16	2023-06-15
18	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2022-10-29	2023-10-28
19	Broadband Preamplifier	/	BP-01M18G	P190501	2022-06-16	2023-06-15
20	6dB Attenuator	/	100W/6dB	1172040	2022-06-16	2023-06-15
21	3dB Attenuator	/	2N-3dB	/	2022-10-29	2023-10-28
22	Temperature & Humidity Chamber	GUANGZHOU GOGNWEN	GDS-100	70932	2022-10-06	2023-10-05
23	EMI Test Software	Farad	EZ	/	N/A	N/A
24	RADIO COMMUNICATION TESTER	R&S	CMU 200	105988	2022-10-29	2023-10-28



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### 3.6 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to ETSI TR 100 028 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics" and is documented in the Shenzhen LCS Compliance Testing Laboratory Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen LCS Compliance Testing Laboratory Ltd. is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	3.10 dB	(1)
Radiated Emission	1~18GHz	3.80 dB	(1)
Radiated Emission	18-40GHz	3.90 dB	(1)
Conducted Disturbance	0.15~30MHz	1.63 dB	(1)
Conducted Power	9KHz~18GHz	0.61 dB	(1)
Spurious RF Conducted Emission	9KHz~40GHz	1.22 dB	(1)
Band Edge Compliance of RF Emission	9KHz~40GHz	1.22 dB	(1)
Occupied Bandwidth	9KHz~40GHz	-	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=1.96$ .



## 4 TEST CONDITIONS AND RESULTS

### 4.1 Radiated Spurious Emission

#### LIMIT

For LTE FDD Band 2: Per FCC §24.238 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.

For LTE FDD Band 4: Per §27.53(h): For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB.

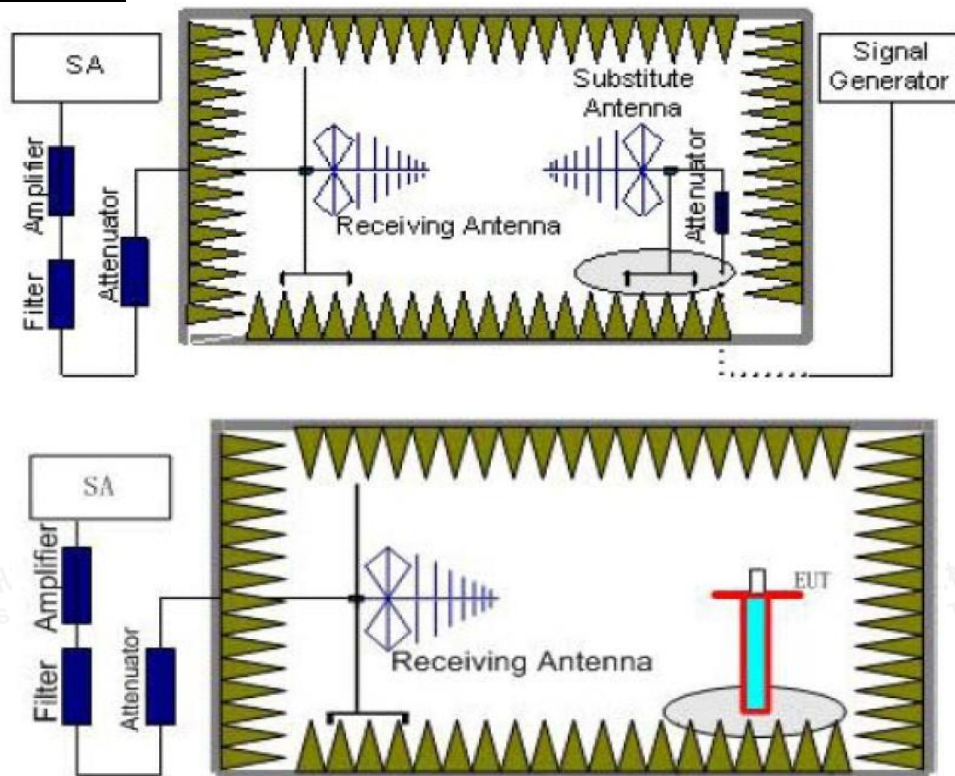
For LTE FDD Band 7: Per FCC §27.53 (m)(4): For mobile digital stations, the attenuation factor shall be not less than:

- $40 + 10\log P$  dB ( $-10$  dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge,
- $43 + 10\log P$  dB ( $-13$  dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge, and
- $55 + 10\log P$  dB ( $-25$  dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB). [§ 27.53(m)(4)]

In addition, the attenuation factor (fixed limit) shall not be less than:

- $43 + 10\log P$  dB on all frequencies between 2490.5 MHz and 2496 MHz, and
- $55 + 10\log P$  dB at or below 2490.5 MHz. [§ 27.53(m)(4)]

#### TEST CONFIGURATION



**TEST PROCEDURE**

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, And the maximum value of the receiver should be recorded as ( $P_r$ ).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power ( $P_{Mea}$ ) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded ( $P_r$ ). The power of signal source ( $P_{Mea}$ ) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss ( $P_{cl}$ ), the Substitution Antenna Gain ( $G_a$ ) and the Amplifier Gain ( $P_{Ag}$ ) should be recorded after test.  
The measurement results are obtained as described below:  
Power(EIRP)= $P_{Mea} + P_{Ag} - P_{cl} + G_a$
6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi.
8. In order to make sure test results more clearly, we set frequency range and sweep time for difference frequency range as follows table:

Working Frequency	Subrange (GHz)	RBW	VBW	Sweep time (s)
LTE FDD Band 2	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
	1~2	1 MHz	3 MHz	2
	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	11~14	1 MHz	3 MHz	3
	14~18	1 MHz	3 MHz	3
LTE FDD Band 4	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
	1~2	1 MHz	3 MHz	2
	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	11~14	1 MHz	3 MHz	3
	14~18	1 MHz	3 MHz	3
LTE FDD Band 7	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10



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	1~2	1 MHz	3 MHz	2
	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	11~14	1 MHz	3 MHz	3
	14~18	1 MHz	3 MHz	3
	18~20	1 MHz	3 MHz	2
	20~26	1 MHz	3 MHz	2

Frequency	Channel	Frequency Range	Verdict
LTE FDD Band 2	Low	9KHz -20GHz	PASS
	Middle	9KHz -20GHz	PASS
	High	9KHz -20GHz	PASS
LTE FDD Band 4	Low	9KHz -18GHz	PASS
	Middle	9KHz -18GHz	PASS
	High	9KHz -18GHz	PASS
LTE FDD Band 7	Low	9KHz -26GHz	PASS
	Middle	9KHz -26GHz	PASS
	High	9KHz -26GHz	PASS

## TEST RESULTS

### Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 7; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 7.
3. We were not recorded other points as values lower than limits.
4.  $Power(EIRP) = P_{Mea} + P_{Ag} - P_{cl} + G_a$
5.  $Margin = EIRP - Limit$



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*LTE FDD Band 2\_Channel Bandwidth 20MHz\_QPSK\_Low Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3715.0	-38.68	5.26	3.00	9.88	-34.06	-13.00	-21.06	H
5572.5	-44.97	6.11	3.00	11.36	-39.72	-13.00	-26.72	H
3715.0	-28.12	5.26	3.00	9.88	-23.50	-13.00	-10.50	V
5572.5	-36.21	6.11	3.00	11.36	-30.96	-13.00	-17.96	V

*LTE FDD Band 2\_Channel Bandwidth 20MHz\_QPSK\_Middle Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3720.0	-40.07	5.32	3.00	10.03	-35.36	-13.00	-22.36	H
5580.0	-43.19	6.19	3.00	11.41	-37.97	-13.00	-24.97	H
3720.0	-30.00	5.32	3.00	10.03	-25.29	-13.00	-12.29	V
5580.0	-35.45	6.19	3.00	11.41	-30.23	-13.00	-17.23	V

*LTE FDD Band 2\_Channel Bandwidth 20MHz\_QPSK\_High Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3800.0	-39.44	5.36	3.00	9.62	-35.18	-13.00	-22.18	H
5700.0	-46.09	6.24	3.00	11.46	-40.87	-13.00	-27.87	H
3800.0	-31.52	5.36	3.00	9.62	-27.26	-13.00	-14.26	V
5700.0	-36.25	6.24	3.00	11.46	-31.03	-13.00	-18.03	V

*LTE FDD Band 2\_Channel Bandwidth 20MHz\_16QAM\_Low Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3715.0	-40.65	5.26	3.00	9.88	-36.03	-13.00	-23.03	H
5572.5	-49.16	6.11	3.00	11.36	-43.91	-13.00	-30.91	H
3715.0	-32.47	5.26	3.00	9.88	-27.85	-13.00	-14.85	V
5572.5	-38.83	6.11	3.00	11.36	-33.58	-13.00	-20.58	V

*LTE FDD Band 2\_Channel Bandwidth 20MHz\_16QAM\_Middle Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3720.0	-40.48	5.32	3.00	10.03	-35.77	-13.00	-22.77	H
5580.0	-48.16	6.19	3.00	11.41	-42.94	-13.00	-29.94	H
3720.0	-31.83	5.32	3.00	10.03	-27.12	-13.00	-14.12	V
5580.0	-41.50	6.19	3.00	11.41	-36.28	-13.00	-23.28	V

*LTE FDD Band 2\_Channel Bandwidth 20MHz\_16QAM\_High Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3800.0	-40.72	5.36	3.00	9.62	-36.46	-13.00	-23.46	H
5700.0	-48.90	6.24	3.00	11.46	-43.68	-13.00	-30.68	H
3800.0	-31.95	5.36	3.00	9.62	-27.69	-13.00	-14.69	V
5700.0	-40.35	6.24	3.00	11.46	-35.13	-13.00	-22.13	V



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*LTE FDD Band 4\_Channel Bandwidth 20MHz\_QPSK\_Low Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3440.0	-40.90	4.62	3.00	9.81	-35.71	-13.00	-22.71	H
5160.0	-48.09	5.94	3.00	10.86	-43.17	-13.00	-30.17	H
3440.0	-33.22	4.62	3.00	9.81	-28.03	-13.00	-15.03	V
5160.0	-41.62	5.94	3.00	10.86	-36.70	-13.00	-23.70	V

*LTE FDD Band 4\_Channel Bandwidth 20MHz\_QPSK\_Middle Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-42.83	4.63	3.00	9.84	-37.62	-13.00	-24.62	H
5197.5	-47.15	5.94	3.00	10.86	-42.23	-13.00	-29.23	H
3465.0	-35.65	4.63	3.00	9.84	-30.44	-13.00	-17.44	V
5197.5	-39.87	5.94	3.00	10.86	-34.95	-13.00	-21.95	V

*LTE FDD Band 4\_Channel Bandwidth 20MHz\_QPSK\_High Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.0	-40.41	4.65	3.00	9.9	-35.16	-13.00	-22.16	H
5235.0	-46.62	5.95	3.00	10.91	-41.66	-13.00	-28.66	H
3490.0	-34.62	4.65	3.00	9.9	-29.37	-13.00	-16.37	V
5235.0	-39.04	5.95	3.00	10.91	-34.08	-13.00	-21.08	V

*LTE FDD Band 4\_Channel Bandwidth 20MHz\_16QAM\_Low Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3440.0	-44.23	4.62	3.00	9.81	-39.04	-13.00	-26.04	H
5160.0	-50.94	5.94	3.00	10.86	-46.02	-13.00	-33.02	H
3440.0	-38.95	4.62	3.00	9.81	-33.76	-13.00	-20.76	V
5160.0	-43.00	5.94	3.00	10.86	-38.08	-13.00	-25.08	V

*LTE FDD Band 4\_Channel Bandwidth 20MHz\_16QAM\_Middle Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-43.52	4.63	3.00	9.84	-38.31	-13.00	-25.31	H
5197.5	-49.18	5.94	3.00	10.86	-44.26	-13.00	-31.26	H
3465.0	-36.08	4.63	3.00	9.84	-30.87	-13.00	-17.87	V
5197.5	-41.37	5.94	3.00	10.86	-36.45	-13.00	-23.45	V

*LTE FDD Band 4\_Channel Bandwidth 20MHz\_16QAM\_High Channel*

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.0	-43.46	4.65	3.00	9.9	-38.21	-13.00	-25.21	H
5235.0	-48.74	5.95	3.00	10.91	-43.78	-13.00	-30.78	H
3490.0	-38.02	4.65	3.00	9.9	-32.77	-13.00	-19.77	V
5235.0	-42.42	5.95	3.00	10.91	-37.46	-13.00	-24.46	V



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**LTE FDD Band 7\_Channel Bandwidth 20MHz\_QPSK\_Low Channel**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5020.0	-41.08	5.88	3.00	10.77	-36.19	-25.00	-11.19	H
7530.0	-47.88	7.12	3.00	12.26	-42.74	-25.00	-17.74	H
5020.0	-44.92	5.88	3.00	10.77	-40.03	-25.00	-15.03	V
7530.0	-43.30	7.12	3.00	12.26	-38.16	-25.00	-13.16	V

**LTE FDD Band 7\_Channel Bandwidth 20MHz\_QPSK\_Middle Channel**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5070.0	-38.24	5.9	3.00	10.81	-33.33	-25.00	-8.33	H
7605.0	-44.94	7.19	3.00	12.32	-39.81	-25.00	-14.81	H
5070.0	-45.07	5.9	3.00	10.81	-40.16	-25.00	-15.16	V
7605.0	-41.54	7.19	3.00	12.32	-36.41	-25.00	-11.41	V

**LTE FDD 7\_Channel Bandwidth 20MHz\_QPSK\_High Channel**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5120.0	-39.92	5.94	3.00	10.86	-35.00	-25.00	-10.00	H
7680.0	-47.65	7.25	3.00	12.98	-41.92	-25.00	-16.92	H
5120.0	-44.66	5.94	3.00	10.86	-39.74	-25.00	-14.74	V
7680.0	-43.63	7.25	3.00	12.98	-37.90	-25.00	-12.90	V

**LTE FDD Band 7\_Channel Bandwidth 20MHz\_16QAM\_Low Channel**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5020.0	-42.00	5.88	3.00	10.77	-37.11	-25.00	-12.11	H
7530.0	-48.35	7.12	3.00	12.26	-43.21	-25.00	-18.21	H
5020.0	-45.17	5.88	3.00	10.77	-40.28	-25.00	-15.28	V
7530.0	-41.23	7.12	3.00	12.26	-36.09	-25.00	-11.09	V

**LTE FDD Band 7\_Channel Bandwidth 20MHz\_16QAM\_Middle Channel**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5070.0	-44.52	5.9	3.00	10.81	-39.61	-25.00	-14.61	H
7605.0	-48.91	7.19	3.00	12.32	-43.78	-25.00	-18.78	H
5070.0	-47.61	5.9	3.00	10.81	-42.70	-25.00	-17.70	V
7605.0	-41.08	7.19	3.00	12.32	-35.95	-25.00	-10.95	V

**LTE FDD Band 7\_Channel Bandwidth 20MHz\_16QAM\_High Channel**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5120.0	-42.28	5.94	3.00	10.86	-37.36	-25.00	-12.36	H
7680.0	-48.87	7.25	3.00	12.98	-43.14	-25.00	-18.14	H
5120.0	-46.33	5.94	3.00	10.86	-41.41	-25.00	-16.41	V
7680.0	-40.42	7.25	3.00	12.98	-34.69	-25.00	-9.69	V

Notes: All channel bandwidth were tested,the report recorded the worst data.



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## **5 Test Setup Photos of the EUT**

Pleaserefer to separated files for Test Setup Photos of the EUT.

## **6 External Photos of the EUT**

Pleaserefer to separated files for External Photos of the EUT.

## **7 Internal Photos of the EUT**

Pleaserefer to separated files for Internal Photos of the EUT.

\*\*\*\*\*End of Report\*\*\*\*\*

