



# TEST REPORT

No. I14N00586-EMC

for

**XPAL Power**

**GSM quad band with WCDMA dual band mobile phone**

**Model Name: S0311WWR**

**Marketing Name: SpareOne 3G**

**FCC ID: 2ACDO-S03GA**

with

**Hardware Version: V1.1**

**Software Version: E4610\_05.03.01**

**Issued Date: 2014-06-11**

**Test Laboratory:**

**FCC 2.948 Listed: No.310359**

**IC O.A.T.S listed: No.6629C-1**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

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## 1. Test Laboratory

### 1.1. Testing Location

Company Name: TMC Shenzhen, Telecommunication Metrology Center of MIIT  
Address: No. 12 Building, Shangsha Innovation and Technology Park, Futian District  
Postal Code: 518048  
Telephone: +86(0)755-33322000  
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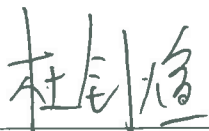
### 1.2. Testing Environment

Normal Temperature: 15-35°C  
Relative Humidity: 20-75%

### 1.3. Project data

Testing Start Date: 2014-06-05  
Testing End Date: 2014-06-11

### 1.4. Signature



Du Zhaoxuan

(Prepared this test report)



Zhang Bojun

(Reviewed this test report)



Lu Minniu

Director of the laboratory

(Approved this test report)

## **2. Client Information**

### **2.1. Applicant Information**

Company Name: XPAL Power  
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### **2.2. Manufacturer Information**

Company Name: Teleepoch Ltd.  
Address /Post: RM308-315,3/F,Block A,Tsinghua Unis Inforport, No.13 Langshan Road,HiTech Park(North),Nanshan District,Shenzhen, PRC  
Contact: Susan  
Email: ylan@teleepoch.com  
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Fax: 0755-86638991

### **3. Equipment Under Test (EUT) and Ancillary Equipment (AE)**

#### **3.1. About EUT**

|                |                                                 |
|----------------|-------------------------------------------------|
| Description    | GSM quad band with WCDMA dual band mobile phone |
| Model Name     | S0311WWR                                        |
| Marketing Name | SpareOne 3G                                     |
| FCC ID         | 2ACDO-SO3GA                                     |

#### **3.2. Internal Identification of EUT used during the test**

| EUT ID* | SN or IMEI | HW Version | SW Version     |
|---------|------------|------------|----------------|
| EUT1    | /          | V1.1       | E4610_05.03.01 |

\*EUT ID: is used to identify the test sample in the lab internally.

#### **3.3. EUT set-ups**

| EUT set-up No. | Combination of EUT and AE | Remarks   |
|----------------|---------------------------|-----------|
| Set.1          | EUT1                      | Idle mode |

## **4. Reference Documents**

### **4.1. Reference Documents for testing**

The following documents listed in this section are referred for testing.

| <b>Reference</b>       | <b>Title</b>                                                                                                                         | <b>Version</b>       |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| FCC Part 15, Subpart B | Radio frequency devices                                                                                                              | 10-1-2013<br>Edition |
| ANSI C63.4             | Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz | 2003                 |

## 5. LABORATORY ENVIRONMENT

**Semi-anechoic chamber** (11.20 meters×6.10meters×5.60meters) did not exceed following limits along the EMC testing:

|                                   |                                              |
|-----------------------------------|----------------------------------------------|
| Temperature                       | Min. = 15 °C, Max. = 30 °C                   |
| Relative humidity                 | Min. = 35 %, Max. = 60 %                     |
| Shielding effectiveness           | > 110 dB                                     |
| Electrical insulation             | > 2MΩ                                        |
| Ground system resistance          | < 0.5 Ω                                      |
| Normalised site attenuation (NSA) | < ±3.5 dB, 3 m distance, from 30 to 1000 MHz |
| Uniformity of field strength      | Between 0 and 6 dB, from 80 to 3000 MHz      |

**Control room** did not exceed following limits along the EMC testing:

|                          |                            |
|--------------------------|----------------------------|
| Temperature              | Min. = 15 °C, Max. = 35 °C |
| Relative humidity        | Min. =20 %, Max. = 80 %    |
| Shielding effectiveness  | > 110 dB                   |
| Electrical insulation    | > 2MΩ                      |
| Ground system resistance | < 0.5 Ω                    |

**Conducted chamber** did not exceed following limits along the EMC testing:

|                          |                            |
|--------------------------|----------------------------|
| Temperature              | Min. = 15 °C, Max. = 30 °C |
| Relative humidity        | Min. =35 %, Max. = 60 %    |
| Shielding effectiveness  | > 110 dB                   |
| Electrical insulation    | > 2MΩ                      |
| Ground system resistance | < 0.5 Ω                    |

**Fully-anechoic chamber** (11.20 meters×6.10 meters×6.60 meters) did not exceed following limits along the EMC testing:

|                                    |                                       |
|------------------------------------|---------------------------------------|
| Temperature                        | Min. = 15 °C, Max. = 30 °C            |
| Relative humidity                  | Min. = 35 %, Max. = 60 %              |
| Shielding effectiveness            | > 110 dB                              |
| Electrical insulation              | > 2MΩ                                 |
| Ground system resistance           | < 0.5 Ω                               |
| Voltage Standing Wave Ratio (VSWR) | ≤ 6 dB, from 1 to 6 GHz, 3 m distance |

## 6. SUMMARY OF TEST RESULTS

|                                    |                |
|------------------------------------|----------------|
| Abbreviations used in this clause: |                |
| P                                  | Pass           |
| NA                                 | Not applicable |
| F                                  | Fail           |

| Items | Test Name         | Clause in FCC rules | Section in this report | Verdict |
|-------|-------------------|---------------------|------------------------|---------|
| 1     | Radiated Emission | 15.109(a)           | A.1                    | P       |

**7. Test Equipments Utilized**

| NO. | Description                                | TYPE     | SERIES<br>NUMBER | MANUFACTURE  | CAL DUE<br>DATE | CAL<br>PERIOD |
|-----|--------------------------------------------|----------|------------------|--------------|-----------------|---------------|
| 1   | Test Receiver                              | ESCI     | 100701           | R&S          | 2014.07.31      | 1 year        |
| 2   | Test Receiver                              | FSP 40   | 100378           | R&S          | 2014.12.20      | 1 year        |
| 3   | BiLog Antenna                              | VULB9163 | 9163 329         | Schwarzbeck  | 2017.01.20      | 3 years       |
| 4   | Dual-Ridge<br>Waveguide Horn<br>Antenna    | 3117     | 00066577         | ETS-Lindgren | 2016.04.01      | 3 years       |
| 5   | Universal Radio<br>Communication<br>Tester | E5515C   | GB44051324       | Agilent      | 2015.05.20      | 1 year        |

## **ANNEX A: MEASUREMENT RESULTS**

### **A.1 Radiated Emission (§15.109(a))**

#### **Reference**

FCC: CFR Part 15.109(a)

#### **A.1.1 Method of measurement**

The field strength of radiated emissions from the unintentional radiator at a distance of 3 meters is tested. Tested in accordance with the procedures of ANSI C63.4 - 2003, section 8.3.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

#### **A.1.2 EUT Operating Mode:**

The MS is operating in the idle mode with attaching to E5515C.

#### **A.1.3 Measurement Limit**

Limit from CFR Part 15.109(a)

| Frequency range<br>(MHz) | Field strength limit ( $\mu\text{V/m}$ ) |         |      |
|--------------------------|------------------------------------------|---------|------|
|                          | Quasi-peak                               | Average | Peak |
| 30-88                    | 100                                      |         |      |
| 88-216                   | 150                                      |         |      |
| 216-960                  | 200                                      |         |      |
| 960-1000                 | 500                                      |         |      |
| >1000                    |                                          | 500     | 5000 |

\*Note: The original limit is defined at 10m test distance. This limit is calculated according to CISPR requirements.

#### **A.1.4 Test Condition**

| Frequency of emission (MHz) | RBW/VBW               | Sweep Time(s) |
|-----------------------------|-----------------------|---------------|
| 30-1000                     | 120kHz (IF bandwidth) | 5             |
| Above 1000                  | 1MHz/1MHz             | 15            |

### A.1.5 Measurement Results

A "reference path loss" is established and the  $A_{Rpl}$  is the attenuation of "reference path loss". It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + A_{\text{Rpl}} = P_{\text{Mea}} + G_A + G_{\text{PL}}$$

Where

$G_A$ : Antenna factor of receive antenna

$G_{\text{PL}}$ : Path Loss

$P_{\text{Mea}}$ : Measurement result on receiver.

Note: the result contains vertical part and Horizontal part

#### Set.1 Idle mode / Peak detector

| Frequency(MHz) | Result(dBuV/m) | Polarity | $A_{\text{Rpl}}$ (dB) | Margin(dB) | Limit (dB $\mu$ V/m) |
|----------------|----------------|----------|-----------------------|------------|----------------------|
| 16734.000000   | 62.1           | V        | 15.3                  | 11.9       | 74.0                 |
| 16750.000000   | 61.9           | V        | 15.4                  | 12.1       | 74.0                 |
| 16811.000000   | 61.8           | H        | 15.7                  | 12.2       | 74.0                 |
| 16777.000000   | 61.7           | V        | 15.5                  | 12.3       | 74.0                 |
| 17242.000000   | 61.5           | V        | 15.5                  | 12.5       | 74.0                 |
| 16823.000000   | 61.3           | H        | 15.8                  | 12.7       | 74.0                 |

#### Set.1 Idle mode / Average detector

| Frequency(MHz) | Result(dBuV/m) | Polarity | $A_{\text{Rpl}}$ (dB) | Margin(dB) | Limit (dB $\mu$ V/m) |
|----------------|----------------|----------|-----------------------|------------|----------------------|
| 16810.000000   | 49.6           | V        | 15.7                  | 4.4        | 54.0                 |
| 15770.000000   | 48.4           | V        | 14.5                  | 5.6        | 54.0                 |
| 13671.000000   | 45.1           | H        | 12.9                  | 8.9        | 54.0                 |
| 12662.000000   | 44.3           | H        | 13.6                  | 9.7        | 54.0                 |
| 12156.000000   | 43.9           | V        | 13.1                  | 10.1       | 54.0                 |
| 10520.000000   | 41.7           | H        | 12.0                  | 12.3       | 54.0                 |

Note: the results below 1GHz are all less than 20dB compared with limit.

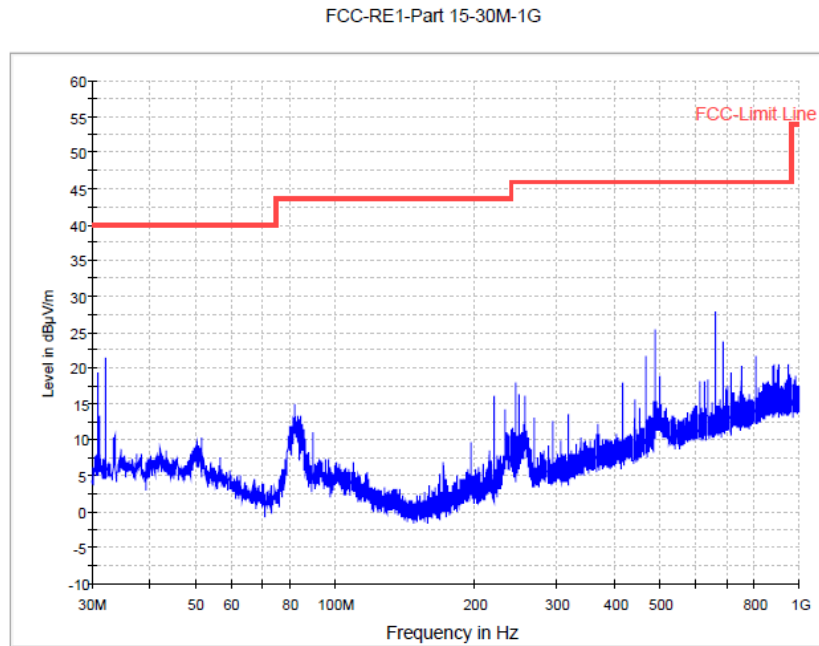


Figure A.1 Radiated Emission from 30MHz to 1GHz (Set.1, Charging mode)

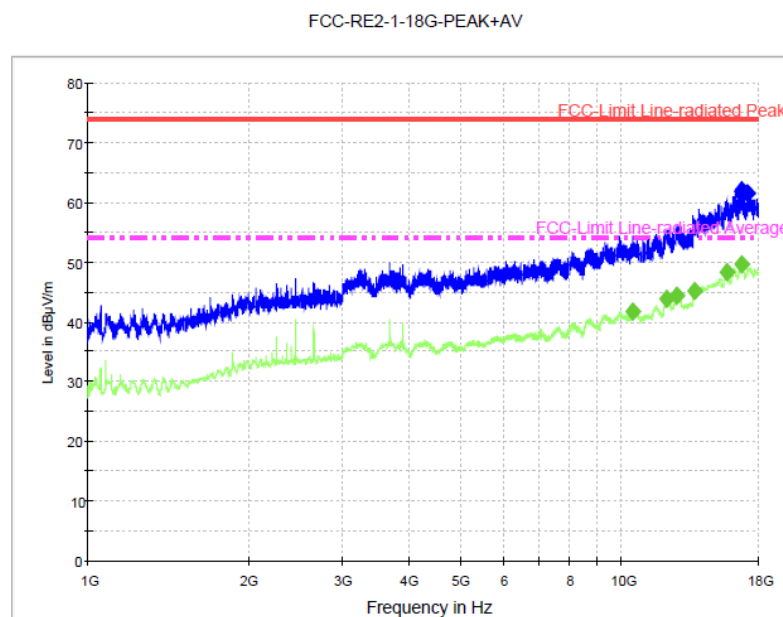


Figure A.2 Radiated Emission from 1GHz to 18GHz (Set.1, Charging mode)

\*\*\*END OF REPORT\*\*\*