



## TEST REPORT

**Application No.:** ZR/2020/70008  
**Applicant:** OnePlus Technology (shenzhen) Co., Ltd.  
**Address of Applicant:** 18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, China.  
**Manufacturer:** OnePlus Technology (shenzhen) Co., Ltd.  
**Address of Manufacturer:** 18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, China.  
**EUT Description:** Smart Phone  
**Model No.:** BE2011, BE2012, BE2015  
**Trade Mark:** ONEPLUS  
**FCC ID:** 2ABZ2-EF164  
**Standard(s):** 47 CFR Part 15, Subpart B  
**Date of Receipt:** 2020/8/10  
**Date of Test:** 2020/8/10 to 2020/8/31  
**Date of Issue:** 2021/5/27

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Simon Ling

Wireless Laboratory Manager



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| Revision Record |         |           |           |                                                                                |
|-----------------|---------|-----------|-----------|--------------------------------------------------------------------------------|
| Version         | Chapter | Date      | Modifier  | Remark                                                                         |
| 01              |         | 2020/9/4  |           | Original                                                                       |
| 02              |         | 2021/5/27 | Leah Chen | 1. Modify data conversion error of antenna height<br>2. Updated equipment list |
|                 |         |           |           |                                                                                |

|                          |                                                                                                                |
|--------------------------|----------------------------------------------------------------------------------------------------------------|
| Authorized for issue by: |                                                                                                                |
| Prepared By              | <br>(Leah Chen) /Engineer    |
| Checked By               | <br>(Daniel Wang) /Reviewer |



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## Test Summary

| Emission Part                                         |                           |                 |             |        |
|-------------------------------------------------------|---------------------------|-----------------|-------------|--------|
| Item                                                  | Standard                  | Method          | Requirement | Result |
| Conducted Emissions at Mains Terminals (150kHz-30MHz) | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | Class B     | Pass   |
| Radiated Emissions (30MHz-1GHz)                       | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | Class B     | Pass   |
| Radiated Emissions (above 1GHz)                       | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | Class B     | Pass   |

| Internal Source    | Upper Frequency                                                    |
|--------------------|--------------------------------------------------------------------|
| Below 1.705MHz     | 30MHz                                                              |
| 1.705MHz to 108MHz | 1GHz                                                               |
| 108MHz to 500MHz   | 2GHz                                                               |
| 500MHz to 1GHz     | 5GHz                                                               |
| Above 1GHz         | 5th harmonic of the highest frequency or 40GHz, whichever is lower |



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## Contents

|          |                                                            |           |
|----------|------------------------------------------------------------|-----------|
| <b>1</b> | <b>GENERAL INFORMATION .....</b>                           | <b>5</b>  |
| 1.1      | DESCRIPTION OF SUPPORT UNITS .....                         | 8         |
| 1.2      | TEST LOCATION.....                                         | 8         |
| 1.3      | TEST FACILITY.....                                         | 8         |
| 1.4      | DEVIATION FROM STANDARDS.....                              | 8         |
| 1.5      | ABNORMALITIES FROM STANDARD CONDITIONS .....               | 8         |
| <b>2</b> | <b>EMISSION TEST RESULTS .....</b>                         | <b>9</b>  |
| 2.1      | CONDUCTED EMISSIONS AT MAINS TERMINALS (150KHZ-30MHZ)..... | 9         |
| 2.1.1    | E.U.T. Operation.....                                      | 9         |
| 2.1.2    | Test Setup Diagram.....                                    | 10        |
| 2.1.3    | Measurement Data .....                                     | 10        |
| 2.2      | RADIATED EMISSIONS (30MHZ-1GHZ).....                       | 13        |
| 2.2.1    | E.U.T. Operation.....                                      | 13        |
| 2.2.2    | Test Setup Diagram.....                                    | 14        |
| 2.2.3    | Measurement Data .....                                     | 14        |
| 2.3      | RADIATED EMISSIONS (ABOVE 1GHZ).....                       | 17        |
| 2.3.1    | E.U.T. Operation.....                                      | 17        |
| 2.3.2    | Test Setup Diagram.....                                    | 18        |
| 2.3.3    | Measurement Data .....                                     | 18        |
| <b>3</b> | <b>EQUIPMENT LIST .....</b>                                | <b>21</b> |
| <b>4</b> | <b>MEASUREMENT UNCERTAINTY .....</b>                       | <b>23</b> |
| <b>5</b> | <b>PHOTOGRAPHS.....</b>                                    | <b>23</b> |
| 5.1      | TEST SETUP.....                                            | 23        |
| 5.2      | EUT CONSTRUCTIONAL DETAILS (EUT PHOTOS).....               | 23        |



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## 1 General Information

|                   |                        |           |           |
|-------------------|------------------------|-----------|-----------|
| Product Name:     | Smart Phone            |           |           |
| Model No.(EUT):   | BE2011, BE2012, BE2015 |           |           |
| Trade Mark:       | ONEPLUS                |           |           |
| Hardware Version: | 44                     |           |           |
| Software Version: | 10.5.5.BE82CB          |           |           |
| Frequency Bands:  | Band                   | Tx (MHz)  | Rx (MHz)  |
|                   | GSM850                 | 824~849   | 869~894   |
|                   | GSM1900                | 1850~1910 | 1930~1990 |
|                   | WCDMA Band II          | 1850~1910 | 1930~1990 |
|                   | WCDMA Band IV          | 1710~1755 | 2110~2155 |
|                   | WCDMA Band V           | 824~849   | 869~894   |
|                   | CDMA BC0               | 824~849   | 869~894   |
|                   | CDMA BC1               | 1850~1910 | 1930~1990 |
|                   | CDMA BC10              | 817~824   | 862~869   |
|                   | LTE Band 2             | 1850~1910 | 1930~1990 |
|                   | LTE Band 4             | 1710~1755 | 2110~2155 |
|                   | LTE Band 5             | 824~849   | 869~894   |
|                   | LTE Band 7             | 2500~2570 | 2620~2690 |
|                   | LTE Band 12            | 699~716   | 729~746   |
|                   | LTE Band 13            | 777~787   | 746~756   |
|                   | LTE Band 17            | 704~716   | 734~746   |
|                   | LTE Band 25            | 1850~1915 | 1930~1995 |
|                   | LTE Band 26            | 814~849   | 859~894   |
|                   | LTE Band 38            | 2570~2620 | 2570~2620 |
|                   | LTE Band 41            | 2496~2690 | 2496~2690 |
|                   | LTE Band 66            | 1710~1780 | 2110~2200 |
|                   | LTE Band 71            | 663~698   | 617~652   |
|                   | Wi-Fi 2.4G             | 2412~2472 | 2412~2472 |
|                   | Bluetooth              | 2402~2480 | 2402~2480 |
|                   | Wi-Fi 5G               | 5150~5850 | 5150~5850 |



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The mobile phone BE2012 and BE2015 and BE2011 are GSM/CDMA/WCDMA/LTE mobile phone. The differences between BE2012 and BE2015 and BE2011 are showed in the following table. They only have different model name, other parts of the mobile phone are the same, including Chipsets, the appearance, Bluetooth mode, Wifi mode, Adapter, Battery, and so on.

| Model name              | BE2012              | BE2011    | BE2015    |
|-------------------------|---------------------|-----------|-----------|
| Type                    | Object of reference | New model | New model |
| GSM bands               | /                   | The same  | The same  |
| WCDMA bands             | /                   | The same  | The same  |
| LTE bands               | /                   | The same  | The same  |
| SIM card                | /                   | The same  | The same  |
| External camera         | /                   | The same  | The same  |
| Internal camera         | /                   | The same  | The same  |
| FLASH                   | /                   | The same  | The same  |
| Mainboard               | /                   | The same  | The same  |
| PCB layout              | /                   | The same  | The same  |
| Appearance              | /                   | The same  | The same  |
| Bluetooth mode          | /                   | The same  | The same  |
| WLAN mode               | /                   | The same  | The same  |
| BT/ WLAN antenna        | /                   | The same  | The same  |
| GSM/ WCDMA /LTE antenna | /                   | The same  | The same  |
| Adapter                 | /                   | The same  | The same  |
| Battery                 | /                   | The same  | The same  |
| Chipset                 | /                   | The same  | The same  |
| Memory                  | /                   | The same  | The same  |
| RF Parameter            | /                   | The same  | The same  |
| Dimension               | /                   | The same  | The same  |

Note:

Model No.: BE2011, BE2012, BE2015.

Only the BE2012 was tested, since they only have different model name, other parts of the mobile phone are the same, including Chipsets, the appearance, Bluetooth mode, Wi-Fi mode, Adapter, Battery, and so on.



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**Accessory:**

| Battery       |                                                  |            |                                                             |
|---------------|--------------------------------------------------|------------|-------------------------------------------------------------|
| Battery       | Huizhou Desay<br>Battery Co., Ltd.               | BLP813     | 3.87V; 4890mAh/18.92Wh/1cell                                |
| USB Cable     |                                                  |            |                                                             |
| USB Cable1    |                                                  |            | 1.0m shielded cable without core                            |
| USB Cable2    |                                                  |            | 1.0m shielded cable without core                            |
| Adapter       |                                                  |            |                                                             |
| Adapter1 (US) | HUIZHOU<br>GOLDEN LAKE<br>INDUSTRIAL<br>CO.,LTD. | WC018A51JH | I/P:100-240VAC 50/60Hz 0.5A<br>O/P:5VDC 2.0A or 9.0VDC,2.0A |
| Adapter2 (US) | SHENZHEN<br>KUNXING<br>TECHNOLOGY<br>CO.,LTD.    | WC018A51KX | I/P:100-240VAC 50/60Hz 0.5A<br>O/P:5VDC 2.0A or 9.0VDC,2.0A |



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## 1.1 Description of Support Units

| Description | Manufacturer | Model No.    | Serial No. |
|-------------|--------------|--------------|------------|
| Router      | NETGEAR      | R6020        | No.XA1401  |
| Computer    | Lenovo       | L480         | No.XA1402  |
| Mouse       | A4TECH       | OP-520NU USB | No.XA1403  |

## 1.2 Test Location

|                |                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------|
| Company:       | SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD.                                                                   |
| Address:       | 1/F, Unit D, Building 1, Kanghong Orange Technology Park, No.137, Keyuan 3rd Road, Fengdong New City, Xi'an, Shaanxi China |
| Post code:     | 710086                                                                                                                     |
| Test engineer: | Ben Huang, Leah Chen                                                                                                       |

## 1.3 Test Facility

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

### • A2LA (Certificate No. 4854.01)

SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

### • FCC –Designation Number: CN1271.

## 1.4 Deviation from Standards

None

## 1.5 Abnormalities from Standard Conditions

None



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## 2 Emission Test Results

### 2.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

|                   |                                                              |
|-------------------|--------------------------------------------------------------|
| Test Requirement: | 47 CFR Part 15, Subpart B                                    |
| Test Method:      | ANSI C63.4:2014                                              |
| Frequency Range:  | 150kHz to 30MHz                                              |
| Limit:            |                                                              |
| 0.15M-0.5MHz      | 66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average      |
| 0.5M-5MHz         | 56dB(μV) quasi-peak, 46dB(μV) average                        |
| 5M-30MHz          | 60dB(μV) quasi-peak, 50dB(μV) average                        |
| Detector:         | Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz |

#### 2.1.1 E.U.T. Operation

Operating Environment:

Temperature: 18.9 °C Humidity: 55.1 % RH Atmospheric Pressure: 1000 mbar

Pretest these modes to find the worst case:

- a: Transfer data between the EUT and the PC + USB cable + Earphone
- b: GSM 850 Idle + BT+ WLAN + GPS Rx + playing MP4 (SD card) + battery + Cable + adapter + battery + Earphone
- c: WCDMA Band V Idle + BT + WLAN + GPS Rx + playing MP4 (SD card) + Cable + adapter2 + battery + Earphone
- d: LTE Band 5 Idle+BT+ WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone
- e: LTE Band 12 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone
- f: LTE Band 13 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone
- g: LTE Band 17 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone
- h: LTE Band 26 Idle + BT + WLAN + GPS Rx + camera (Back) + battery + Cable + Earphone

The worst case for final test: d: LTE Band 5 Idle + BT+ WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone



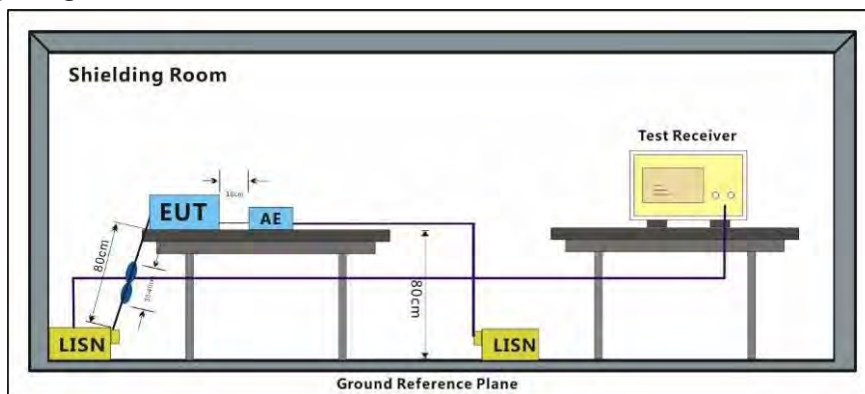
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### 2.1.2 Test Setup Diagram



### 2.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



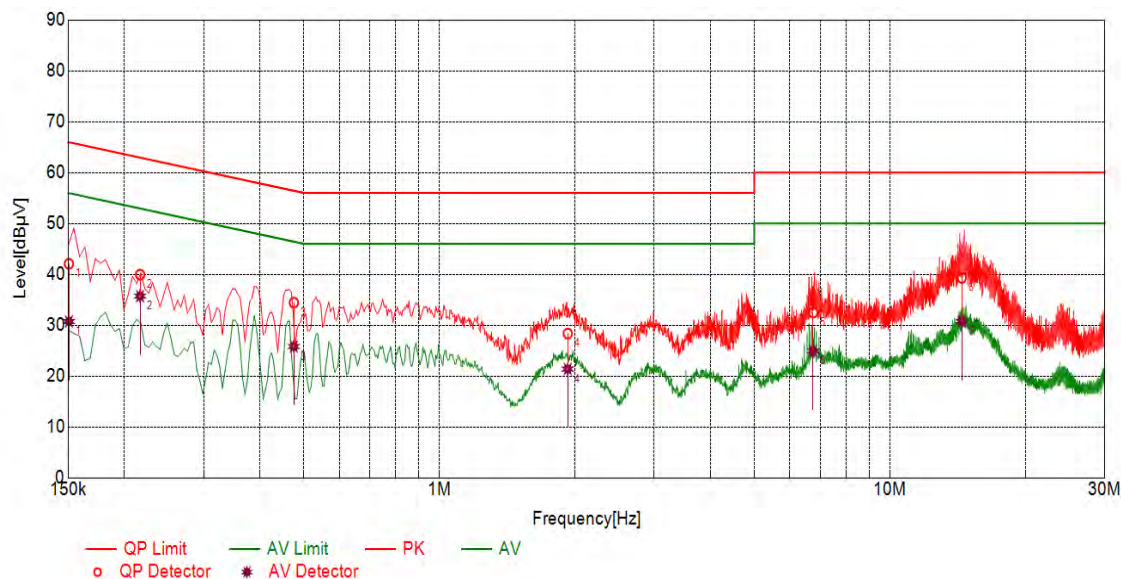
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Mode:; Line:Live Line



## Final Data List

| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value | QP<br>Limit | QP<br>Margin | AV<br>Value | AV<br>Limit | AV<br>Margin | Type |
|-----|----------------|----------------|-------------|-------------|--------------|-------------|-------------|--------------|------|
| 1   | 0.1506         | 10.10          | 42.07       | 65.96       | 23.89        | 30.73       | 55.96       | 25.23        | L    |
| 2   | 0.2167         | 10.10          | 39.94       | 62.95       | 23.01        | 35.72       | 52.95       | 17.23        | L    |
| 3   | 0.4755         | 10.10          | 34.44       | 56.42       | 21.98        | 25.82       | 46.42       | 20.60        | L    |
| 4   | 1.9279         | 10.10          | 28.36       | 56.00       | 27.64        | 21.38       | 46.00       | 24.62        | L    |
| 5   | 6.7583         | 10.10          | 32.48       | 60.00       | 27.52        | 24.94       | 50.00       | 25.06        | L    |
| 6   | 14.4419        | 10.11          | 39.31       | 60.00       | 20.69        | 30.73       | 50.00       | 19.27        | L    |



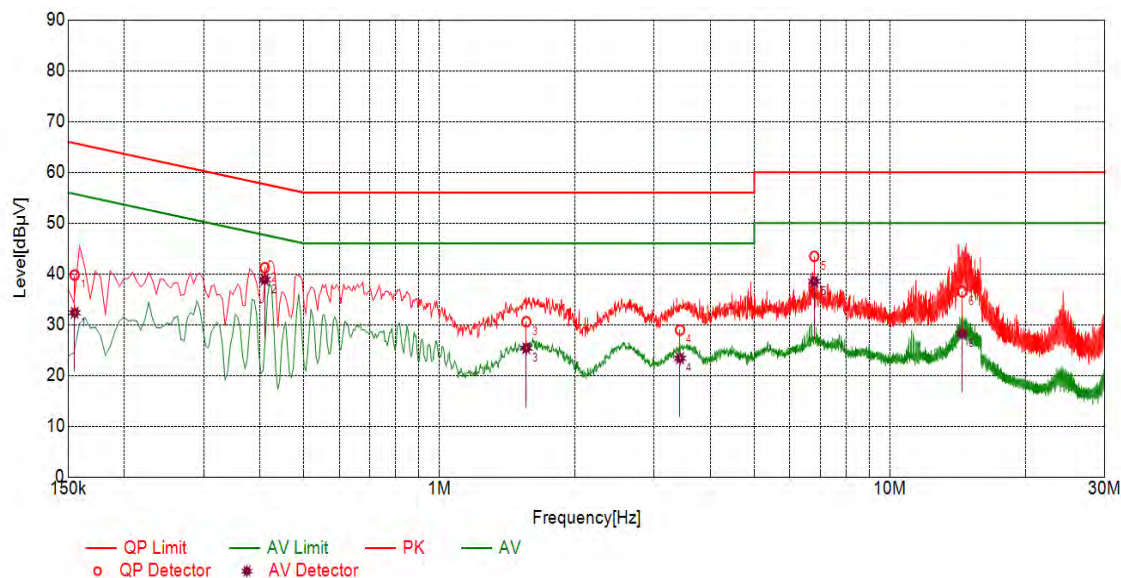
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Mode;; Line:Neutral Line



### Final Data List

| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value<br>[dBμV] | QP<br>Limit<br>[dBμV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBμV] | AV<br>Limit<br>[dBμV] | AV<br>Margin<br>[dB] | Type |
|-----|----------------|----------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|------|
| 1   | 0.1551         | 10.10          | 39.77                 | 65.72                 | 25.95                | 32.35                 | 55.72                 | 23.37                | N    |
| 2   | 0.4098         | 10.10          | 41.21                 | 57.65                 | 16.44                | 38.87                 | 47.65                 | 8.78                 | N    |
| 3   | 1.5599         | 10.10          | 30.57                 | 56.00                 | 25.43                | 25.38                 | 46.00                 | 20.62                | N    |
| 4   | 3.4223         | 10.10          | 28.94                 | 56.00                 | 27.06                | 23.39                 | 46.00                 | 22.61                | N    |
| 5   | 6.7967         | 10.10          | 43.46                 | 60.00                 | 16.54                | 38.52                 | 50.00                 | 11.48                | N    |
| 6   | 14.4678        | 10.11          | 36.49                 | 60.00                 | 23.51                | 28.30                 | 50.00                 | 21.70                | N    |



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## 2.2 Radiated Emissions (30MHz-1GHz)

|                       |                                                               |
|-----------------------|---------------------------------------------------------------|
| Test Requirement:     | 47 CFR Part 15, Subpart B                                     |
| Test Method:          | ANSI C63.4:2014                                               |
| Frequency Range:      | 30MHz to 1GHz                                                 |
| Measurement Distance: | 3m                                                            |
| Limit:                |                                                               |
| 30MHz -88MHz          | 40.0(dBμV/m) quasi-peak                                       |
| 88MHz-216MHz          | 43.5(dBμV/m) quasi-peak                                       |
| 216MHz-960MHz         | 46.0(dBμV/m) quasi-peak                                       |
| 960MHz-1000MHz        | 54.0(dBμV/m) quasi-peak                                       |
| Detector:             | Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz |

### 2.1.4 E.U.T. Operation

Operating Environment:

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |           |                       |           |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------------------|-----------|
| Temperature:                                | 25 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Humidity: | 66.5 % RH | Atmospheric Pressure: | 1010 mbar |
| Pretest these modes to find the worst case: | <p>a: Transfer data between the EUT and the PC + USB cable + Earphone</p> <p>b: GSM 850 Idle + BT+ WLAN + GPS Rx + playing MP4 (SD card) + battery + Cable + adapter + battery + Earphone</p> <p>c: WCDMA Band V Idle + BT + WLAN + GPS Rx + playing MP4 (SD card) + Cable + adapter2 + battery + Earphone</p> <p>d: LTE Band 5 Idle+BT+ WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone</p> <p>e: LTE Band 12 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone</p> <p>f: LTE Band 13 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone</p> <p>g: LTE Band 17 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone</p> <p>h: LTE Band 26 Idle + BT + WLAN + GPS Rx + camera (Back) + battery + Cable + Earphone</p> |           |           |                       |           |

The worst case for final test: d: LTE Band 5 Idle + BT+ WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone



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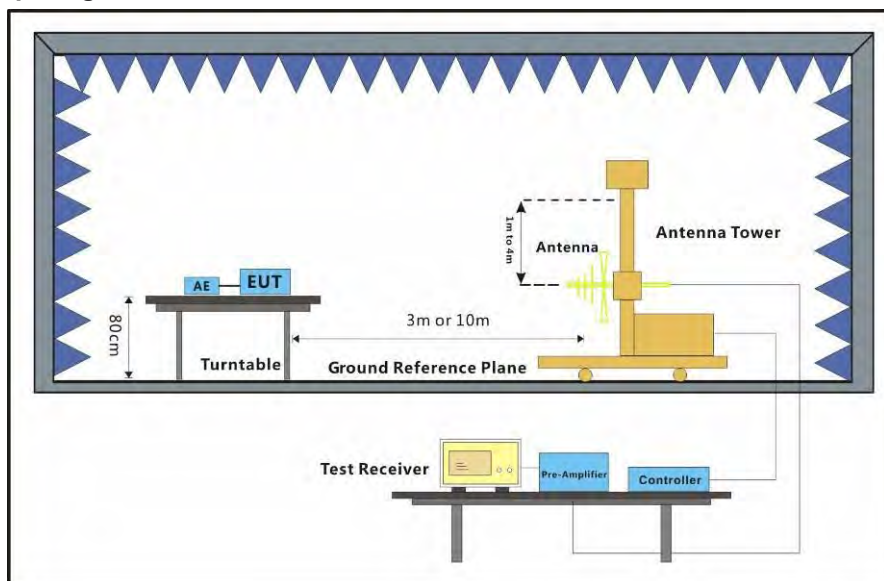
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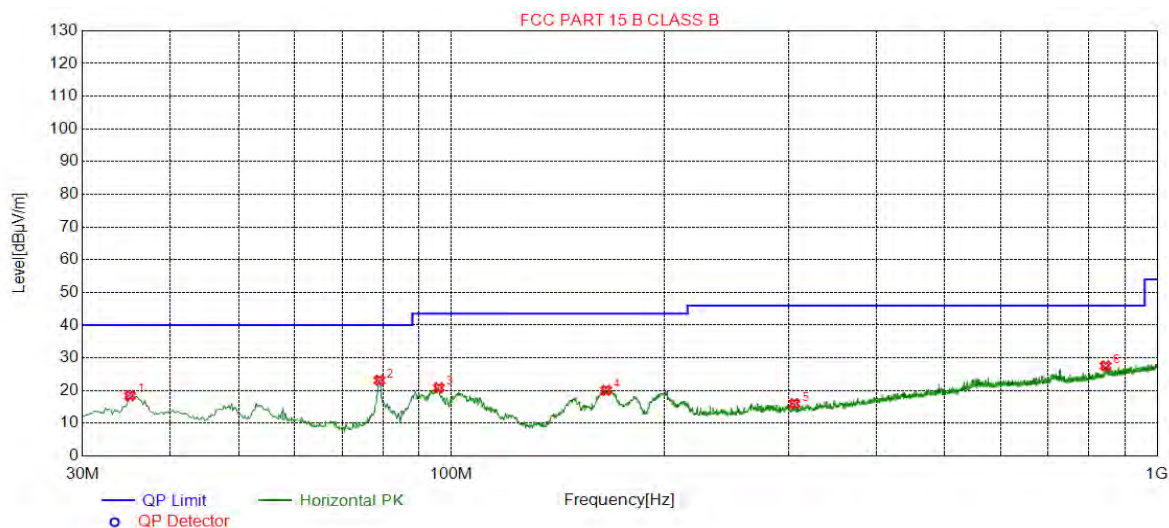
### 2.1.5 Test Setup Diagram



### 2.1.6 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Mode: Polarization:Horizontal



### Suspected List

| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
|-----|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| 1   | 35.0450     | 18.45          | -29.95      | 40.00          | 21.55       | 230         | 246       | Horizontal |
| 2   | 79.0918     | 23.17          | -35.99      | 40.00          | 16.83       | 160         | 159       | Horizontal |
| 3   | 95.9732     | 20.85          | -32.72      | 43.50          | 22.65       | 121         | 255       | Horizontal |
| 4   | 165.633     | 20.07          | -34.30      | 43.50          | 23.43       | 127         | 212       | Horizontal |
| 5   | 306.311     | 16.02          | -28.08      | 46.00          | 29.98       | 187         | 215       | Horizontal |
| 6   | 845.157     | 27.54          | -16.97      | 46.00          | 18.46       | 100         | 285       | Horizontal |



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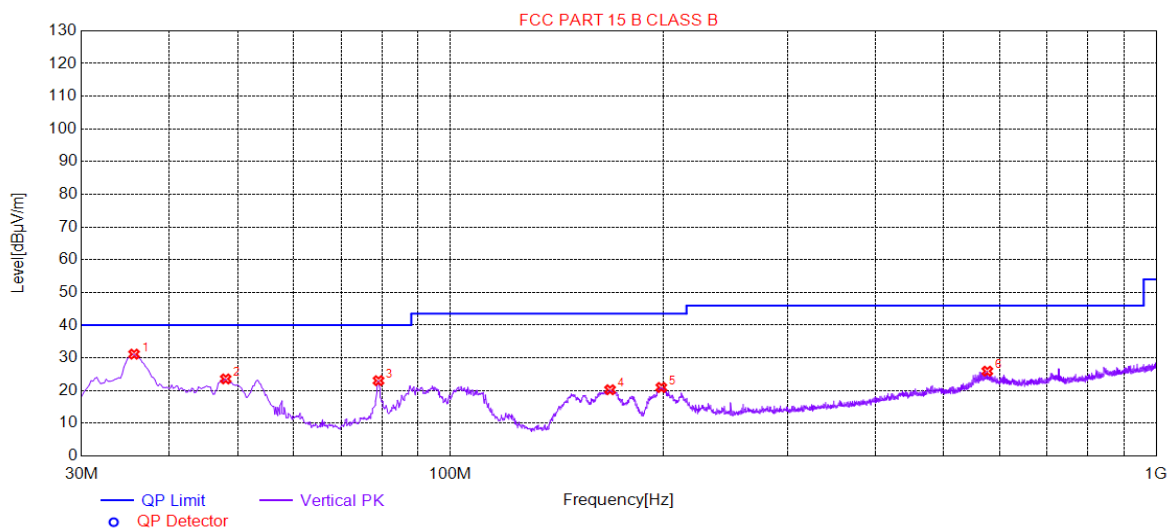
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Mode: Polarization: Vertical



### Suspected List

| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| 1   | 35.6271     | 31.15          | -29.76      | 40.00          | 8.85        | 162         | 335       | Vertical |
| 2   | 48.0456     | 23.57          | -30.39      | 40.00          | 16.43       | 157         | 4         | Vertical |
| 3   | 79.0918     | 23.04          | -35.99      | 40.00          | 16.96       | 289         | 94        | Vertical |
| 4   | 168.349     | 20.26          | -34.14      | 43.50          | 23.24       | 271         | 335       | Vertical |
| 5   | 199.007     | 20.96          | -31.29      | 43.50          | 22.54       | 182         | 33        | Vertical |
| 6   | 576.413     | 25.95          | -21.30      | 46.00          | 20.05       | 153         | 27        | Vertical |



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## 2.3 Radiated Emissions (above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B  
Test Method: ANSI C63.4:2014  
Frequency Range: Above 1GHz  
Measurement Distance: 3m  
Limit:  
Above 1GHz 74(dBμV/m) peak, 54(dBμV/m) average  
Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

### 2.1.7 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C Humidity: 56.4 % RH Atmospheric Pressure: 1010 mbar

Pretest these modes to find the worst case:

- a: Transfer data between the EUT and the PC + USB cable + Earphone
- b: GSM 850 Idle + BT+ WLAN + GPS Rx + playing MP4 (SD card) + battery + Cable + adapter + battery + Earphone
- c: WCDMA Band V Idle + BT + WLAN + GPS Rx + playing MP4 (SD card) + Cable + adapter2 + battery + Earphone
- d: LTE Band 5 Idle+BT+ WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone
- e: LTE Band 12 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone
- f: LTE Band 13 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone
- g: LTE Band 17 Idle + BT + WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone
- h: LTE Band 26 Idle + BT + WLAN + GPS Rx + camera (Back) + battery + Cable + Earphone

The worst case for final test: d: LTE Band 5 Idle + BT+ WLAN + GPS Rx + camera (Front) + battery + Cable + Earphone



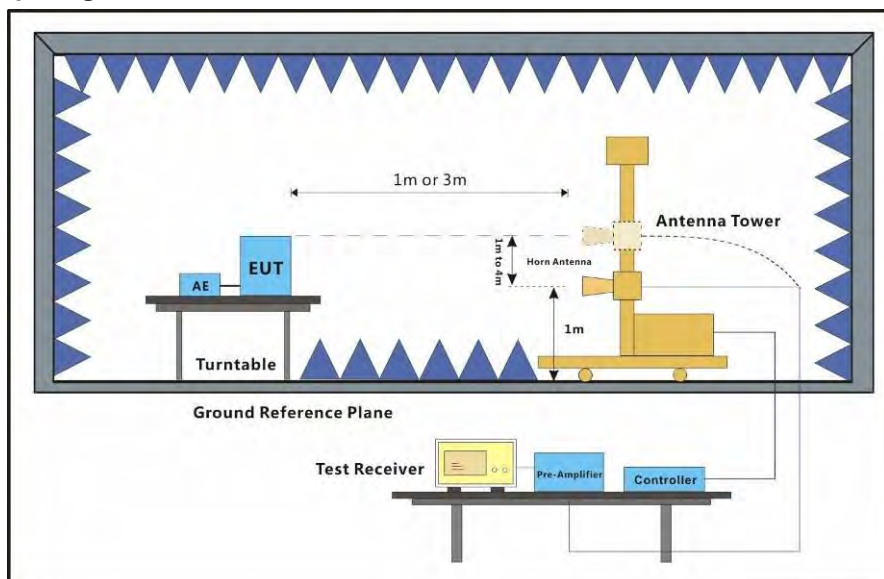
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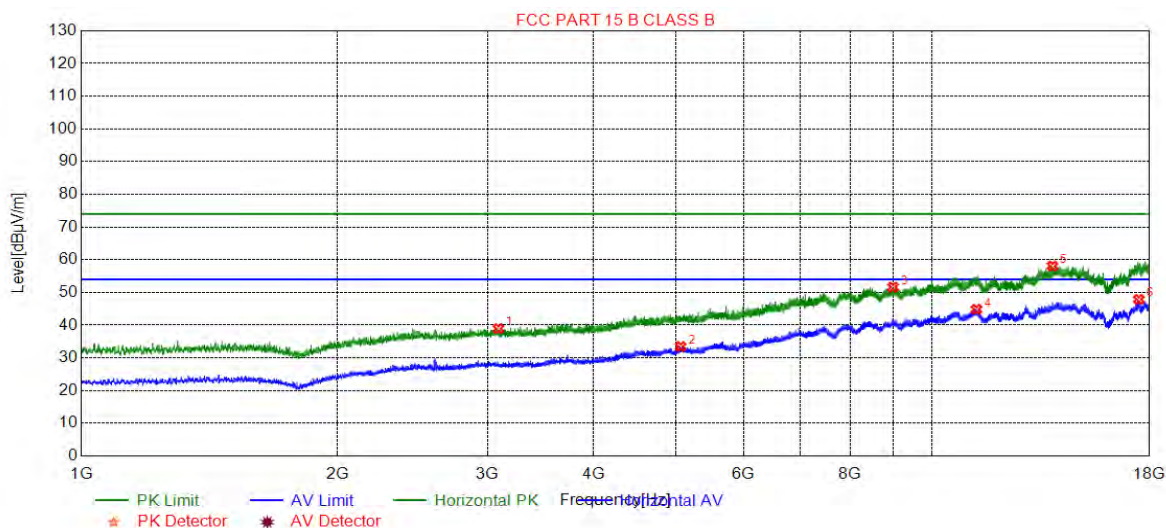
### 2.1.8 Test Setup Diagram



### 2.1.9 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

Mode: Polarization:Horizontal



## Suspected List

| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
|-----|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| 1   | 3091.10     | 38.95          | -24.37      | 74.00          | 35.05       | 177         | 207       | Horizontal |
| 2   | 5060.65     | 33.47          | -17.35      | 54.00          | 20.53       | 136         | 306       | Horizontal |
| 3   | 8989.54     | 51.64          | -6.78       | 74.00          | 22.36       | 163         | 283       | Horizontal |
| 4   | 11265.9     | 44.85          | -2.76       | 54.00          | 9.15        | 175         | 344       | Horizontal |
| 5   | 13838.1     | 58.11          | 1.92        | 74.00          | 15.89       | 185         | 54        | Horizontal |
| 6   | 17484.0     | 47.89          | 1.44        | 54.00          | 6.11        | 248         | 306       | Horizontal |

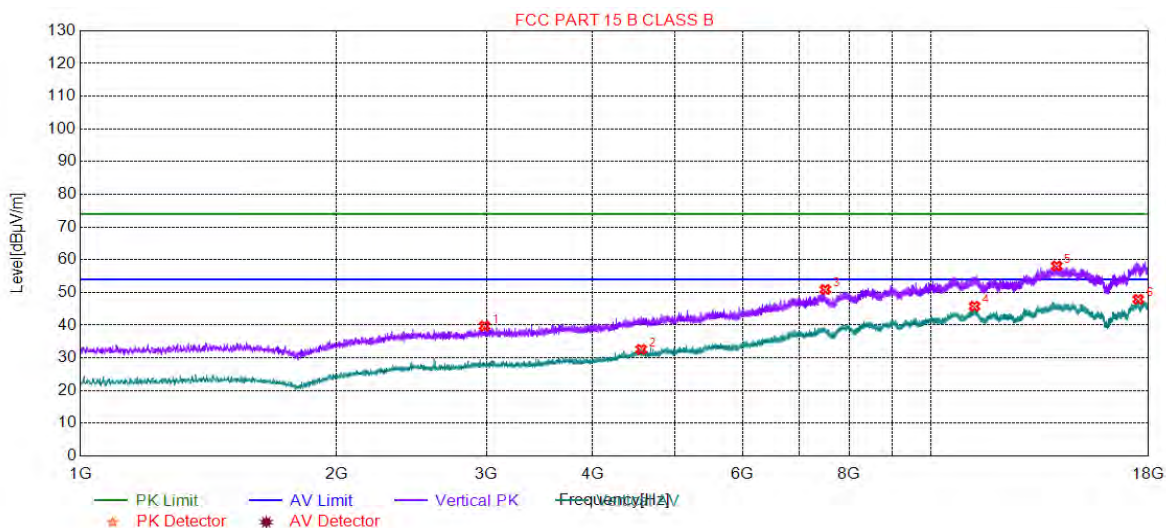


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Mode: Polarization: Vertical



#### Suspected List

| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| 1   | 2985.69     | 39.78          | -24.55      | 74.00          | 34.22       | 237         | 357       | Vertical |
| 2   | 4560.82     | 32.61          | -19.12      | 54.00          | 21.39       | 244         | 16        | Vertical |
| 3   | 7505.37     | 50.92          | -9.72       | 74.00          | 23.08       | 261         | 54        | Vertical |
| 4   | 11237.9     | 45.79          | -2.80       | 54.00          | 8.21        | 262         | 192       | Vertical |
| 5   | 14038.8     | 58.11          | 2.29        | 74.00          | 15.89       | 282         | 116       | Vertical |
| 6   | 17503.5     | 47.92          | 1.62        | 54.00          | 6.08        | 172         | 154       | Vertical |



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### 3 Equipment List

| CE Test System                 |               |             |               |            |              |
|--------------------------------|---------------|-------------|---------------|------------|--------------|
| Equipment                      | Manufacturer  | Model No.   | Inventory No. | Cal Date   | Cal Due Date |
| Shielding Room                 | Brilliant-emc | N/A         | XAW03-35-01   | 2019-09-11 | 2022-09-10   |
| Radio communication analyzer   | ROHDE&SCHWARZ | CMW 500     | XAW01-03-02   | 2020-04-02 | 2021-04-01   |
| Test receiver                  | ROHDE&SCHWARZ | ESR         | XAW01-08-01   | 2019-09-07 | 2020-09-06   |
| Artificial network             | ROHDE&SCHWARZ | ENV216      | XAW01-04-01   | 2020-08-04 | 2021-08-03   |
| Temperature and humidity meter | MingGao       | TH101B      | XAW01-01-01   | 2019-12-06 | 2020-12-05   |
| Measurement Software           | Tonscend      | TS+ CE V2.5 | XAW02-05-02   | NCR        | NCR          |



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| RE Test System                      |                |                  |               |            |              |
|-------------------------------------|----------------|------------------|---------------|------------|--------------|
| Equipment                           | Manufacturer   | Model No.        | Inventory No. | Cal Date   | Cal Due Date |
| Semi-Anechoic Chamber               | Brilliant-emc  | N/A              | XAW03-35-01   | 2019-09-11 | 2022-09-10   |
| MXA signal analyzer                 | Keysight       | N9020A           | XAW01-06-01   | 2020-04-02 | 2021-04-01   |
| Radio communication analyzer        | ROHDE&SCHWARZ  | CMW 500          | XAW01-03-02   | 2020-04-02 | 2021-04-01   |
| Test receiver                       | ROHDE&SCHWARZ  | ESR              | XAW01-08-01   | 2019-09-07 | 2020-09-06   |
| Receiving antenna (30MHz-3GHz)      | Schwarzbeck    | VULB 9163        | XAW01-09-01   | 2019-10-13 | 2021-10-12   |
| Receiving antenna (1GHz~18GHz)      | Schwarzbeck    | BBHA 9120D       | XAW01-09-02   | 2019-10-13 | 2021-10-12   |
| Receiving antenna (15GHz~40GHz)     | Schwarzbeck    | BBHA 9170        | XAW01-09-03   | 2019-10-13 | 2021-10-12   |
| Directional antenna rack controller | Max-Full       | MF-7802BS        | XAW03-03-01   | NCR        | NCR          |
| High-speed antenna rack controller  | Max-Full       | MF-7802          | XAW03-04-01   | NCR        | NCR          |
| Amplifier                           | Tonscend       | TAP00903040      | XAW01-41-01   | 2019-11-18 | 2020-11-17   |
| Amplifier                           | Tonscend       | TAP01018048      | XAW01-41-02   | 2019-11-18 | 2020-11-17   |
| Amplifier                           | Tonscend       | TAP18040048      | XAW01-41-03   | 2019-12-03 | 2020-12-02   |
| Amplifier                           | Shanghai Steed | YX28980930       | XAW01-41-06   | 2019-11-18 | 2020-11-17   |
| Temperature and humidity meter      | MingGao        | TH101B           | XAW01-01-01   | 2019-12-06 | 2020-12-05   |
| Measurement Software                | Tonscend       | TS+ RSE V3.0.0.2 | XAW02-05-01   | NCR        | NCR          |
| Radio communication analyzer        | ROHDE&SCHWARZ  | CMW 500          | XAW01-03-02   | 2020-04-02 | 2021-04-01   |



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## 4 Measurement Uncertainty

| No. | Item                | Measurement Uncertainty              |
|-----|---------------------|--------------------------------------|
| 1   | Conduction Emission | $\pm 3.0\text{dB}$ (150kHz to 30MHz) |
| 2   | Radiated Emission   | $\pm 4.8\text{dB}$ (Below 1GHz)      |
|     |                     | $\pm 4.8\text{dB}$ (1GHz to 6GHz)    |
|     |                     | $\pm 4.5\text{dB}$ (6GHz to 18GHz)   |
|     |                     | $\pm 5.02\text{dB}$ (Above 18GHz)    |

## 5 Photographs

### 5.1 Test Setup

Refer to Appendix A - Photographs of Set-Up for ZR/2020/70008

### 5.2 EUT Constructional Details (EUT Photos)

Refer to Photographs of EUT Constructional Details

- End of the Report -



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