


|  |   |   |  |                                       |                |
|--|---|---|--|---------------------------------------|----------------|
| <b>Prüfbericht-Nr.:</b><br><i>Test report no.:</i>   | <b>CN21W1AW 001</b>   | <b>Auftrags-Nr.:</b><br><i>Order no.:</i>       | 168345853  | Seite 1 von 28<br><i>Page 1 of 28</i> |                |
| <b>Kunden-Referenz-Nr.:</b><br><i>Client reference no.:</i>  | N/A   | <b>Auftragsdatum:</b><br><i>Order date:</i>     | 2021-11-16   |                                       |                |
| <b>Auftraggeber:</b><br><i>Client:</i>   | <b>Robert Bosch GmbH</b><br>Gerhard-Kindler-Strasse 3, Reutlingen Baden-Wuerttemberg 72770 Germany  |   |  |                                       |                |
| <b>Prüfgegenstand:</b><br><i>Test item:</i>  | SmartphoneGrip  |   |  |                                       |                |
| <b>Bezeichnung / Typ-Nr.:</b><br><i>Identification / Type no.:</i>   | BSP3200<br>(Trademark: BOSCH)   |   |  |                                       |                |
| <b>Auftrags-Inhalt:</b><br><i>Order content:</i>   | Type test   |   |  |                                       |                |
| <b>Prüfgrundlage:</b><br><i>Test specification:</i>  | CFR47 FCC Part 15: Subpart B Section 15.109<br>CFR47 FCC Part 15: Subpart C Section 15.209<br>CFR47 FCC Part 15: Subpart C Section 15.215 |   |  |                                       |                |
| <b>Wareneingangsdatum:</b><br><i>Date of sample receipt:</i>   | 2021-12-03  | Refer to photos document                        |  |                                       |                |
| <b>Prüfmuster-Nr.:</b><br><i>Test sample no.:</i>  | A003176714-001  |   |  |                                       |                |
| <b>Prüfzeitraum:</b><br><i>Testing period:</i>   | 2021-12-14 – 2021-12-31   |   |  |                                       |                |
| <b>Ort der Prüfung:</b><br><i>Place of testing:</i>  | TÜV Rheinland (Shenzhen)<br>Co., Ltd.   |   |  |                                       |                |
| <b>Prüflaboratorium:</b><br><i>Testing laboratory:</i>   | TÜV Rheinland (Shenzhen)<br>Co., Ltd.   |   |  |                                       |                |
| <b>Prüfergebnis*:</b><br><i>Test result*:</i>  | Pass  |   |  |                                       |                |
| <b>geprüft von:</b><br><i>tested by:</i>   | <b>genehmigt von:</b><br><i>authorized by:</i>  |   |  |                                       |                |
| <b>Datum:</b><br><i>Date:</i> 2022-01-21   | <br>Signed by: Alex Lan                                |   | <br>Signed by: Winnie Hou |                                       |                |
| <b>Stellung / Position</b>   | Senior Project Engineer   | <b>Stellung / Position</b>                      | Department Manager   |                                       |                |
| <b>Sonstiges / Other:</b>  | FCC ID: 2AWRC-BSP3200   |   |  |                                       |                |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br><i>Condition of the test item at delivery:</i>   | Prüfmuster vollständig und unbeschädigt<br><i>Test item complete and undamaged:</i>   |   |  |                                       |                |
| * Legende:   | 1 = sehr gut  | 2 = gut   | 3 = befriedigend   | 4 = ausreichend                       | 5 = mangelhaft |
| Legend:  | 1 = very good   | 2 = good  | 3 = satisfactory   | 4 = sufficient                        | 5 = poor       |
|  | P(ass) = entspricht o.g. Prüfgrundlage(n)   | F(ail) = entspricht nicht o.g. Prüfgrundlage(n) | N/A = nicht anwendbar  | N/T = nicht getestet                  |                |
|  | P(ass) = passed a.m. test specifications(s)   | F(ail) = failed a.m. test specifications(s)     | N/A = not applicable   | N/T = not tested                      |                |
| <b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b><br><i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i> |   |   |  |                                       |                |

## **Test Summary**

**5.1.1 ANTENNA REQUIREMENT**

*RESULT: Pass*

**5.1.2 20dB BANDWIDTH**

*RESULT: Pass*

**5.1.3 RADIATED SPURIOUS EMISSION**

*RESULT: Pass*

**5.1.4 RADIATED EMISSION**

*RESULT: Pass*

## Contents

|              |   |           |
|--------------|---|-----------|
| <b>1</b>     | <b>GENERAL REMARKS .....</b>                              | <b>4</b>  |
| <b>1.1</b>   | <b>COMPLEMENTARY MATERIALS.....</b>                       | <b>4</b>  |
| <b>2</b>     | <b>TEST SITES.....</b>                                    | <b>5</b>  |
| <b>2.1</b>   | <b>TEST FACILITIES .....</b>                              | <b>5</b>  |
| <b>2.2</b>   | <b>LIST OF TEST AND MEASUREMENT INSTRUMENTS .....</b>     | <b>5</b>  |
| <b>2.3</b>   | <b>TRACEABILITY .....</b>                                 | <b>7</b>  |
| <b>2.4</b>   | <b>CALIBRATION.....</b>                                   | <b>7</b>  |
| <b>2.5</b>   | <b>MEASUREMENT UNCERTAINTY.....</b>                       | <b>7</b>  |
| <b>2.6</b>   | <b>LOCATION OF ORIGINAL DATA.....</b>                     | <b>7</b>  |
| <b>2.7</b>   | <b>STATUS OF FACILITY USED FOR TESTING .....</b>          | <b>7</b>  |
| <b>3</b>     | <b>GENERAL PRODUCT INFORMATION .....</b>                  | <b>8</b>  |
| <b>3.1</b>   | <b>PRODUCT FUNCTION AND INTENDED USE .....</b>            | <b>8</b>  |
| <b>3.2</b>   | <b>RATINGS AND SYSTEM DETAILS.....</b>                    | <b>8</b>  |
| <b>3.3</b>   | <b>INDEPENDENT OPERATION MODES.....</b>                   | <b>8</b>  |
| <b>3.4</b>   | <b>NOISE GENERATING AND NOISE SUPPRESSING PARTS .....</b> | <b>8</b>  |
| <b>3.5</b>   | <b>SUBMITTED DOCUMENTS.....</b>                           | <b>8</b>  |
| <b>4</b>     | <b>TEST SET-UP AND OPERATION MODES.....</b>               | <b>9</b>  |
| <b>4.1</b>   | <b>PRINCIPLE OF CONFIGURATION SELECTION .....</b>         | <b>9</b>  |
| <b>4.2</b>   | <b>TEST OPERATION AND TEST SOFTWARE .....</b>             | <b>9</b>  |
| <b>4.3</b>   | <b>SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT .....</b>  | <b>9</b>  |
| <b>4.4</b>   | <b>COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE .....</b>    | <b>9</b>  |
| <b>4.5</b>   | <b>TEST SETUP DIAGRAM .....</b>                           | <b>10</b> |
| <b>5</b>     | <b>TEST RESULTS .....</b>                                 | <b>11</b> |
| <b>5.1</b>   | <b>TRANSMITTER REQUIREMENT &amp; TEST SUITES.....</b>     | <b>11</b> |
| <b>5.1.1</b> | <i>Antenna Requirement.....</i>                           | <i>11</i> |
| <b>5.1.2</b> | <i>20dB Bandwidth .....</i>                               | <i>12</i> |
| <b>5.1.3</b> | <i>Radiated Spurious Emission .....</i>                   | <i>13</i> |
| <b>5.1.4</b> | <i>Radiated Emission.....</i>                             | <i>19</i> |
| <b>6</b>     | <b>PHOTOGRAPHS OF THE TEST SET-UP .....</b>               | <b>28</b> |
| <b>7</b>     | <b>LIST OF TABLES.....</b>                                | <b>28</b> |

# 1 General Remarks

## 1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

## 2 Test Sites

### 2.1 Test Facilities

**TÜV Rheinland (Shenzhen) Co., Ltd.**

No. 362 Huangguan Road Middle, Longhua District, Shenzhen 518110, China

FCC Registration No.: CN1260

IC Registration No.: 25069 and the CAB identifier is CN0078.

### 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

**TÜV Rheinland (Shenzhen) Co., Ltd.**

| <b>Radio Spectrum Testing</b>             |                     |                   |                   |                   |
|---|---------------------|-------------------|-------------------|-------------------|
| <b>Description</b>                        | <b>Manufacturer</b> | <b>Model</b>      | <b>Serial No.</b> | <b>Cal. Until</b> |
| Signal Analyzer                           | Rohde & Schwarz     | FSV 40            | 101441            | 2022-08-09        |
| OSP                                       | Rohde & Schwarz     | OSP 150           | 101017            | 2021-12-20        |
| Control PC                                | DELL                | OptiPlex 7050     | FTJZ9P2           | N/A               |
| Test Software                             | Rohde & Schwarz     | WMS32 (V10.40.10) | N/A               | N/A               |
| Shielding Room 8#                         | Albatross           | SR8               | APC17151-SR8      | 2024-06-22        |
| <b>Unwanted Emission Testing</b>          |                     |                   |                   |                   |
| <b>Description</b>                        | <b>Manufacturer</b> | <b>Model</b>      | <b>Serial No.</b> | <b>Cal. Until</b> |
| EMI Test Receiver                         | R&S                 | ESR 7             | 102021            | 2022-08-10        |
| Signal Analyzer                           | R&S                 | FSV 40            | 101439            | 2022-08-09        |
| System Controller Interface               | R&S                 | SCI-100           | S10010038         | N/A               |
| Filterbank                                | R&S                 | Wlan              | 100759            | 2022-08-09        |
| OSP                                       | R&S                 | OSP 120           | 102040            | N/A               |
| Pre-amplifier                             | R&S                 | SCU08F1           | 08320031          | 2022-08-09        |
| Amplifier                                 | R&S                 | SCU-18F           | 180070            | 2022-08-09        |
| Amplifier                                 | R&S                 | SCU40A            | 100475            | 2022-08-09        |
| Trilog Broadband Antenna (30 MHz - 7 GHz) | Schwarzbeck         | VULB 9162         | 193               | 2022-08-08        |
| Double-Ridged Antenna (1 -18 GHz)         | ETS-LINDGREN        | 3117              | 00218717          | 2022-08-08        |
| Wideband Ridged Horn Antenna (18-40 GHz)  | Steatite            | QMS-00880         | 19067             | 2022-08-08        |
| Active Loop Antenna                       | Schwarzbeck         | FMZB 1513         | 302               | 2022-09-13        |
| Test software                             | R&S                 | EMC32 (V10.60.10) | N/A               | N/A               |

**Prüfbericht - Nr.: CN21W1AW 001**  
*Test Report No.*

 Seite 6 von 28  
 Page 6 of 28

|                          |                     |                     |                   |                   |
|--------------------------|---------------------|---------------------|-------------------|-------------------|
| Control PC               | Dell                | OptiPlex 7050       | 36NV9P2           | N/A               |
| 3m Semi-Anechoic Chamber | Albatross           | SAC-3m              | APC17151-SAC      | 2024-06-22        |
| EMI Test Receiver        | R&S                 | ESR 7               | 102021            | 2022-08-10        |
| <b>Radiated Emission</b> |                     |                     |                   |                   |
| <b>Equipment</b>         | <b>Manufacturer</b> | <b>Model No.</b>    | <b>Serial No.</b> | <b>Cal. Until</b> |
| 3m SAC                   | ETS-Lindgren        | SAC3                | CT001632-Q1362    | 2024-04-26        |
| EMI Test Receiver        | R&S                 | ESR7                | 102111            | 2022-12-01        |
| Horn Antenna             | R&S                 | HF907               | 102706            | 2022-08-07        |
| Preamplifier (1-18GHz)   | FIT                 | SCU-18F             | 180077            | 2022-08-13        |
| Trilog-Broadband antenna | SCHWARZBECK         | VULB9168            | 0945              | 2022-12-12        |
| EMC32 test software      | R&S                 | EMC32(Ver.10.50.00) | N/A               | N/A               |

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table

| Test                          | Parameters                           | Expanded uncertainty ( $U_{lab}$ ) | Expanded uncertainty ( $U_{cispr}$ ) |
|-------------------------------|--------------------------------------|------------------------------------|--------------------------------------|
| Radiated Emission<br>(3m SAC) | Level accuracy<br>(30MHz to 1000MHz) | $\pm 4.52$ dB                      | $\pm 6.3$ dB                         |
|                               | Level accuracy<br>(above 1000MHz)    | $\pm 4.37$ dB                      | N/A                                  |

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huangguan Road Middle, Longhua District, Shenzhen 518110, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

## 3 General Product Information

### 3.1 Product Function and Intended Use

The EUT is a SmartphoneGrip which supports wireless charging function, it is installed on the eBike system.

For details refer to the User Manual, Technical Description and Circuit Diagram.

### 3.2 Ratings and System Details

**Table 2: Technical Specification of EUT**

| General Information of EUT     | Value   |
|--------------------------------|---|
| Kind of Equipment              | SmartphoneGrip                                      |
| Type Designation               | BSP3200   |
| Trademark                      | BOSCH   |
| Input Voltage                  | DC 5V, 1.5A via BDS                                 |
| Output Voltage                 | DC 5V, 1A for USB port or<br>DC 5V, 1A for Wireless |
| Technical Specification of WPT |   |
| Operating Frequency            | 111-205KHz  |
| Modulation                     | FSK   |
| Antenna Type                   | Induction Coil Antenna                              |
| Antenna Gain                   | 0 dBi   |
| Antenna number                 | 1   |
| Wireless Charger output power  | Max. 5W   |

### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Wireless charging
- B. On, Charging via USB port
- C. Off

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

### 3.5 Submitted Documents

- ID Label and Location Info

- User Manual



## 4 Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

**Radio Spectrum:** The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5&6. All testing were performed according to the procedures in ANSI C63.10: 2013.

### 4.3 Special Accessories and Auxiliary Equipment

**Table 3: List of Accessories and Auxiliary Equipment**

| Description                 | Manufacturer                               | Model         | S/N or Rating                                |
|-----------------------------|--|---------------|--|
| Wireless charge Load        | YBZ  | N/A           | N/A  |
| BDS (Bosch DC power supply) | BOSCH                                      | BDS3210       | Input: DC 13.5V, 1.5A<br>Output: DC 5V, 1.5A |
| Dummy Load                  | BOSCH                                      | N/A           | N/A  |
| CAN optical-converter       | Customer Provide                           | N/A           | N/A  |
| Optical fiber isolator      | Nanjing Rongxiang Test Equipment Co., LTD. | FOL-A1M       | N/A  |
| Laptop                      | Lenovo                                     | ThinkPad T480 | 10Q67059                                     |
| oscilloscope                | Tektronix                                  | MDO3102       | C047737                                      |

### 4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

### 4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

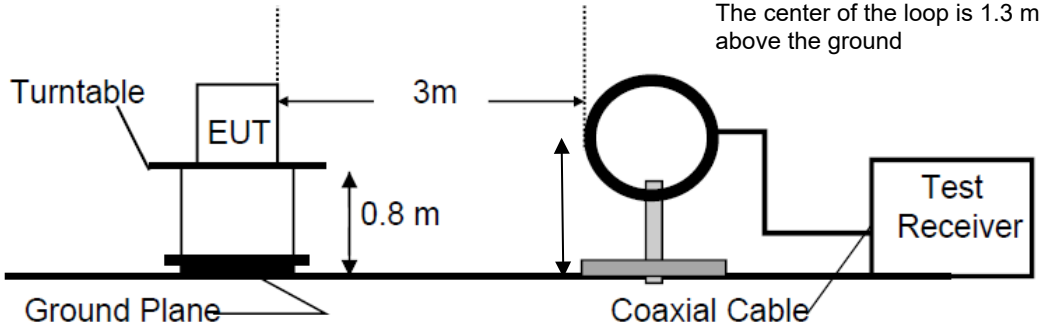
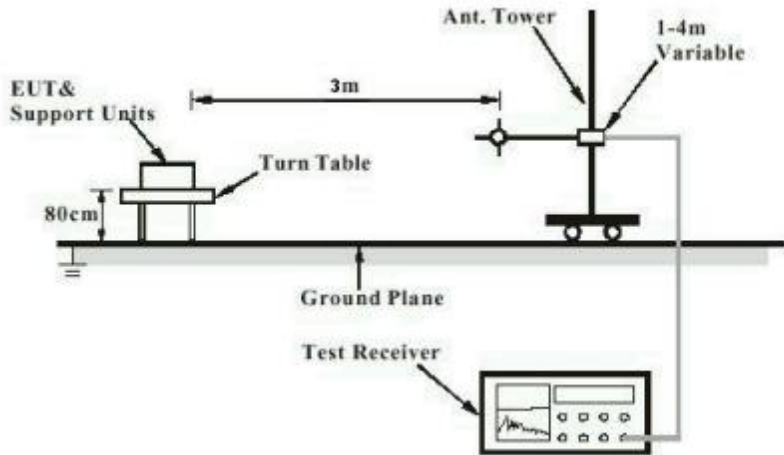


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)



## 5 Test Results

### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Antenna Requirement

**RESULT:**

**Pass**

**Test Specification**

Test standard : Part 15.203

According to the manufacturer declared, the EUT has an internal antenna, and the antenna is permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

### 5.1.2 20dB Bandwidth

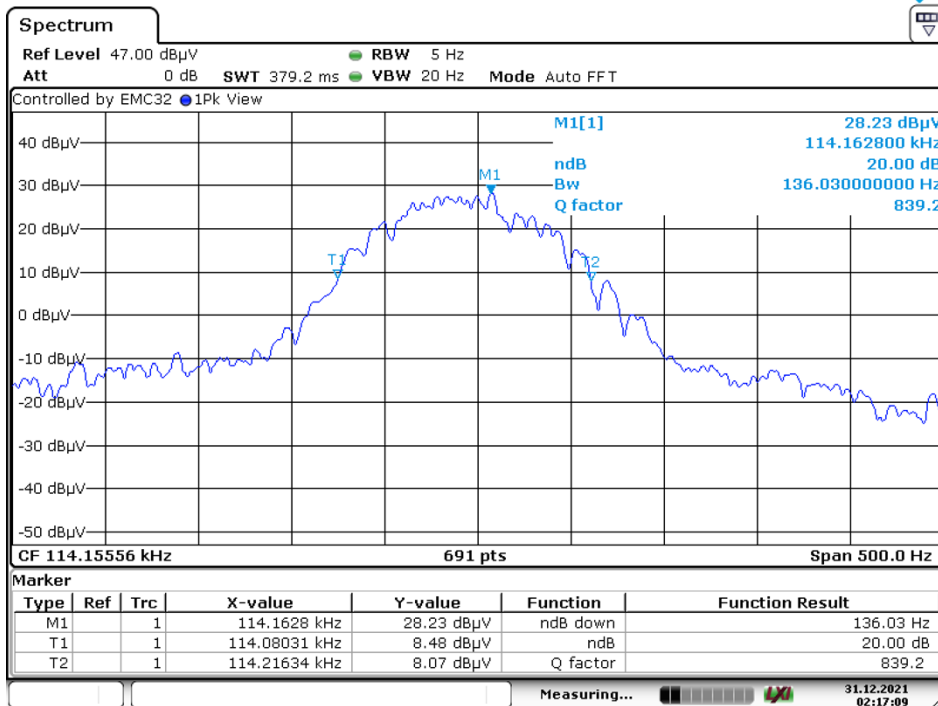
**RESULT:**
**Pass**
**Test Specification**

 Test standard : FCC Part 15.215(c)  
 Basic standard : ANSI C63.10: 2013  
 Kind of test site : Shielded Room

**Test Setup**

 Date of testing : 2021-12-31  
 Input voltage : DC 13.5V via BDS  
 Operation mode : A  
 Ambient temperature : 23 °C  
 Relative humidity : 45 %  
 Atmospheric pressure : 101 kPa

For details refer to following test result.



### 5.1.3 Radiated Spurious Emission

**RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.209 & 15.205  
Basic standard : ANSI C63.10: 2013  
Limits : Refer to 15.209(a)  
Kind of test site : 3m Semi-anechoic Chamber

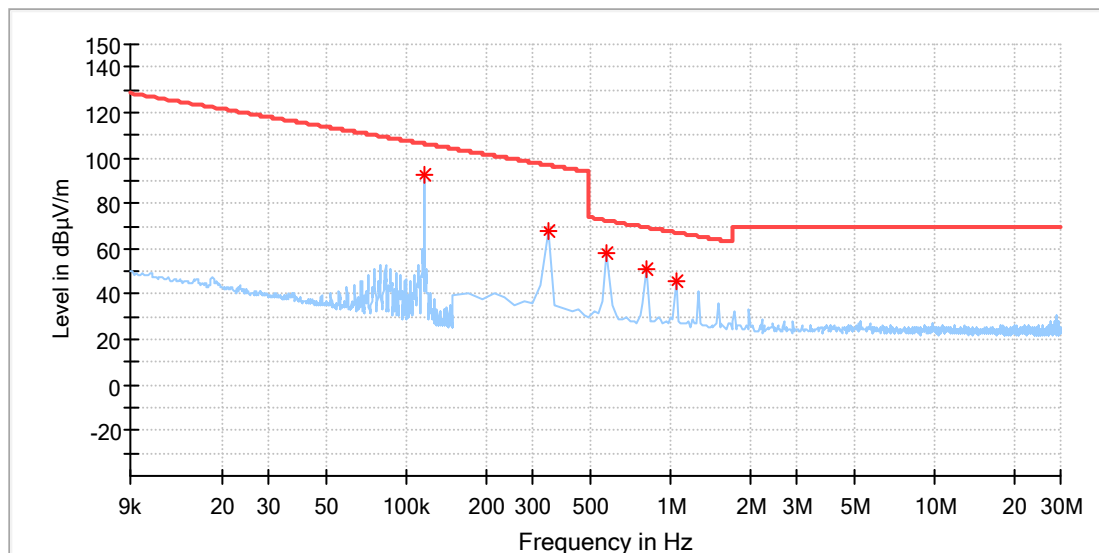
**Test Setup**

Date of testing : 2021-12-20 to 2021-12-28  
Input voltage : DC 13.5V via BDS  
Operation mode : A  
Ambient temperature : 23 °C  
Relative humidity : 45 %  
Atmospheric pressure : 101 kPa

Refer to following test plots for details of test result.

## EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Smartphone Grip          |
| Model:              | BSP3200                  |
| Test Mode:          | Charging                 |
| Order No/Sample No: | 168345853/A003183987-001 |
| Test Voltage::      | DC 13.5V From DC Source  |
| Remark:             | Temp 22 Humi:52%         |
| Test Standard:      | FCC Part 15C             |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

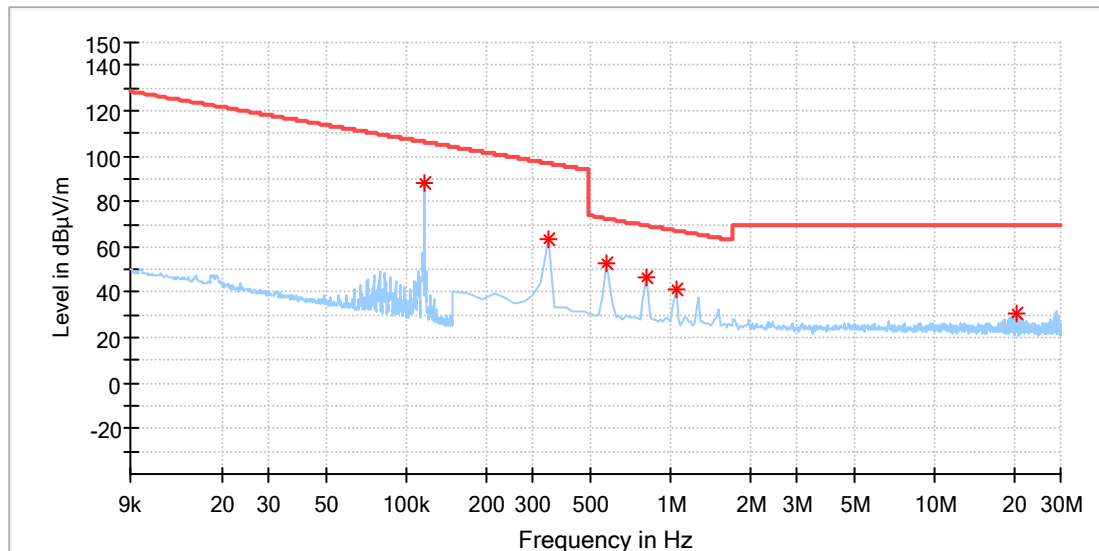


## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 0.116966        | 92.21            | 106.24         | 14.02       | 100.0       | X   | 166.0         | 20.1         |
| 0.341893        | 67.67            | 96.92          | 29.25       | 100.0       | X   | 170.0         | 20.1         |
| 0.576429        | 57.71            | 72.39          | 14.68       | 100.0       | X   | 170.0         | 20.1         |
| 0.810964        | 51.11            | 69.44          | 18.33       | 100.0       | X   | 170.0         | 20.1         |
| 1.045500        | 45.58            | 67.24          | 21.66       | 100.0       | X   | 147.0         | 20.1         |

## EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Smartphone Grip          |
| Model:              | BSP3200                  |
| Test Mode:          | Charging                 |
| Order No/Sample No: | 168345853/A003183987-001 |
| Test Voltage::      | DC 13.5V From DC Source  |
| Remark:             | Temp 22 Humi:52%         |
| Test Standard:      | FCC Part 15C             |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

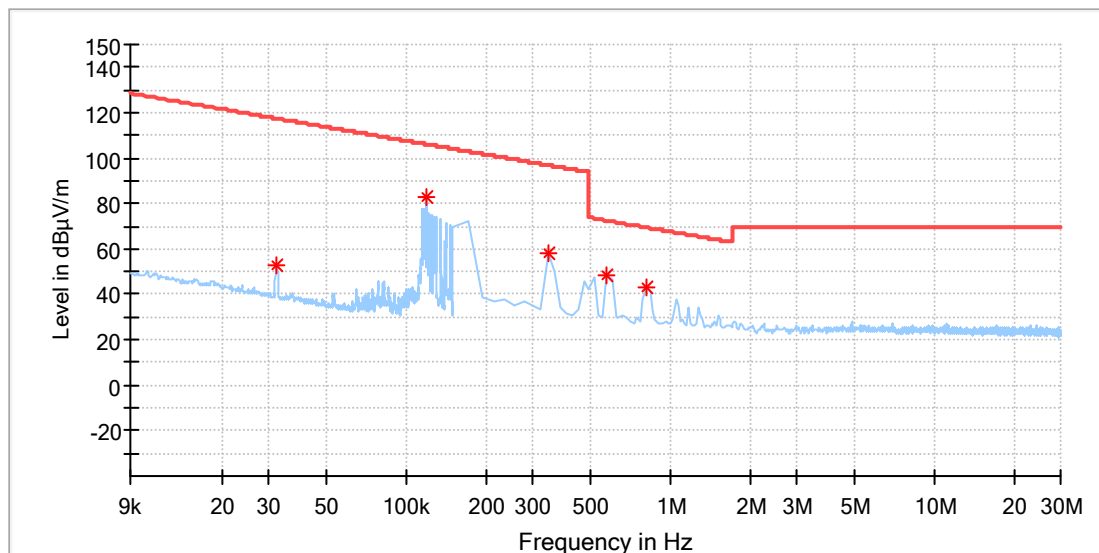


## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 0.116664        | 88.10            | 106.26         | 18.16       | 100.0       | Y   | 262.0         | 20.1         |
| 0.341893        | 63.33            | 96.92          | 33.60       | 100.0       | Y   | 263.0         | 20.1         |
| 0.576429        | 53.03            | 72.39          | 19.36       | 100.0       | Y   | 263.0         | 20.1         |
| 0.810964        | 46.47            | 69.44          | 22.97       | 100.0       | Y   | 263.0         | 20.1         |
| 1.045500        | 41.46            | 67.24          | 25.78       | 100.0       | Y   | 263.0         | 20.1         |
| 20.298750       | 30.48            | 69.50          | 39.02       | 100.0       | Y   | 334.0         | 20.6         |

## EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Smartphone Grip          |
| Model:              | BSP3200                  |
| Test Mode:          | Charging                 |
| Order No/Sample No: | 168345853/A003183987-001 |
| Test Voltage::      | DC 13.5V From DC Source  |
| Remark:             | Temp 22 Humi:52%         |
| Test Standard:      | FCC Part 15C             |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |



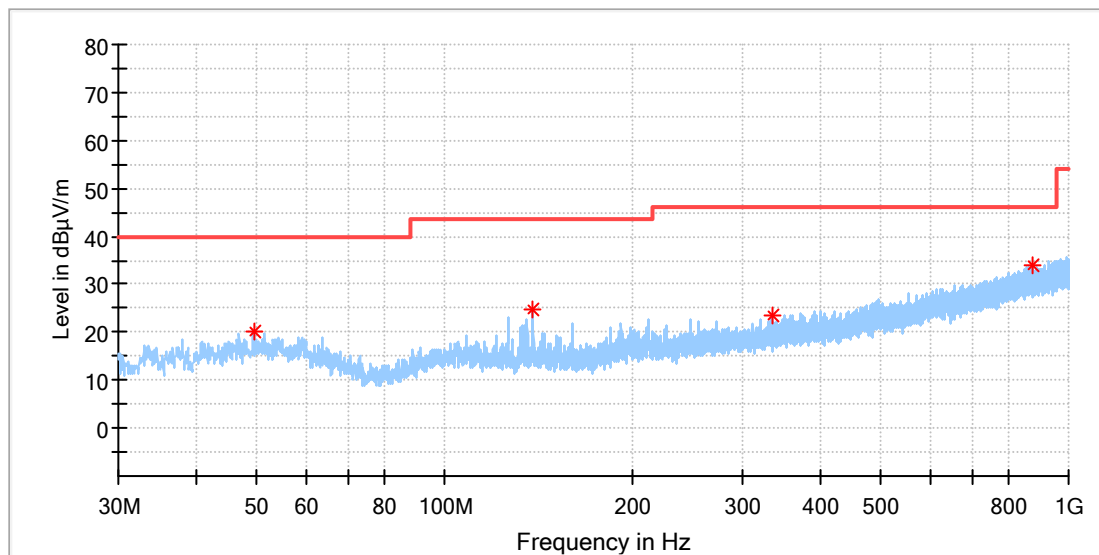
## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 0.032164        | 52.47            | 117.44         | 64.98       | 100.0       | Z   | 264.0         | 20.1         |
| 0.119484        | 82.45            | 106.05         | 23.60       | 100.0       | Z   | 171.0         | 20.1         |
| 0.341893        | 58.44            | 96.92          | 38.49       | 100.0       | Z   | 167.0         | 20.1         |
| 0.576429        | 48.59            | 72.39          | 23.80       | 100.0       | Z   | 167.0         | 20.1         |
| 0.810964        | 43.21            | 69.44          | 26.22       | 100.0       | Z   | 167.0         | 20.1         |



## EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Smartphone Grip          |
| Model:              | BSP3200                  |
| Test Mode:          | Charging                 |
| Order No/Sample No: | 168345853/A003183987-001 |
| Test Voltage::      | DC 13.5V From DC Source  |
| Remark:             | Temp 22 Humi:52%         |
| Test Standard:      | FCC Part 15C             |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

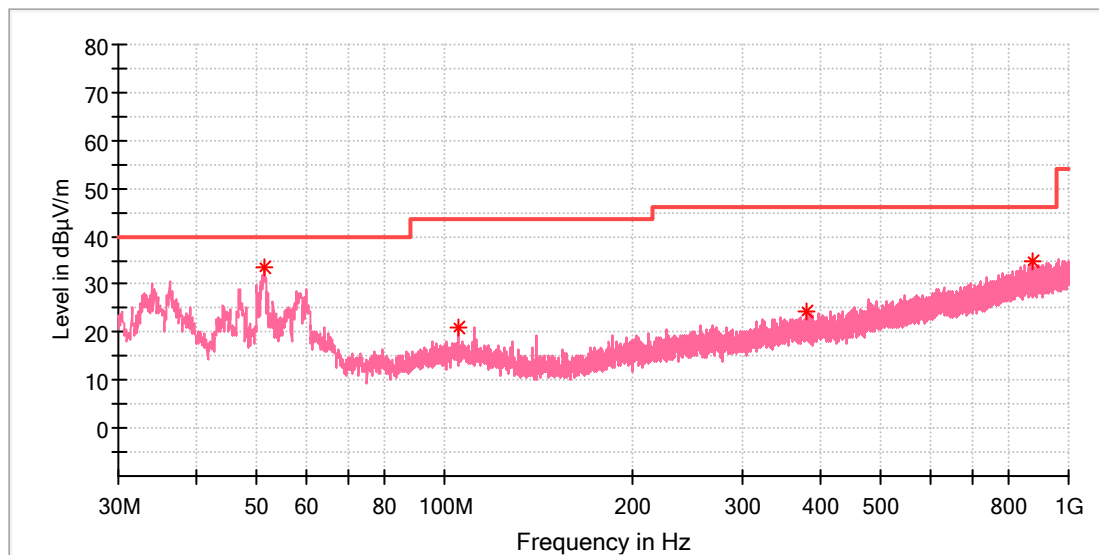


## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 49.400000       | 20.22            | 40.00          | 19.78       | 100.0       | H   | 0.0           | -18.3        |
| 138.591500      | 24.59            | 43.50          | 18.91       | 100.0       | H   | 270.0         | -22.2        |
| 334.143500      | 23.64            | 46.00          | 22.36       | 100.0       | H   | 43.0          | -15.3        |
| 878.701500      | 33.95            | 46.00          | 12.05       | 100.0       | H   | 156.0         | -5.2         |

## EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Smartphone Grip          |
| Model:              | BSP3200                  |
| Test Mode:          | Charging                 |
| Order No/Sample No: | 168345853/A003183987-001 |
| Test Voltage::      | DC 13.5V From DC Source  |
| Remark:             | Temp 22 Humi:52%         |
| Test Standard:      | FCC Part 15C             |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |



## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 51.485500       | 33.64            | 40.00          | 6.36        | 100.0       | V   | 202.0         | -18.3        |
| 105.320500      | 20.99            | 43.50          | 22.51       | 100.0       | V   | 194.0         | -18.8        |
| 379.927500      | 24.24            | 46.00          | 21.76       | 100.0       | V   | 351.0         | -14.2        |
| 878.119500      | 34.87            | 46.00          | 11.13       | 100.0       | V   | 359.0         | -5.2         |

## 5.1.4 Radiated Emission

**RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.209  
Basic standard : ANSI C63.4: 2014  
Frequency range : 30 - 6000MHz  
Limits : Refer to 15.209(a)  
Kind of test site : 3m Semi-anechoic Chamber

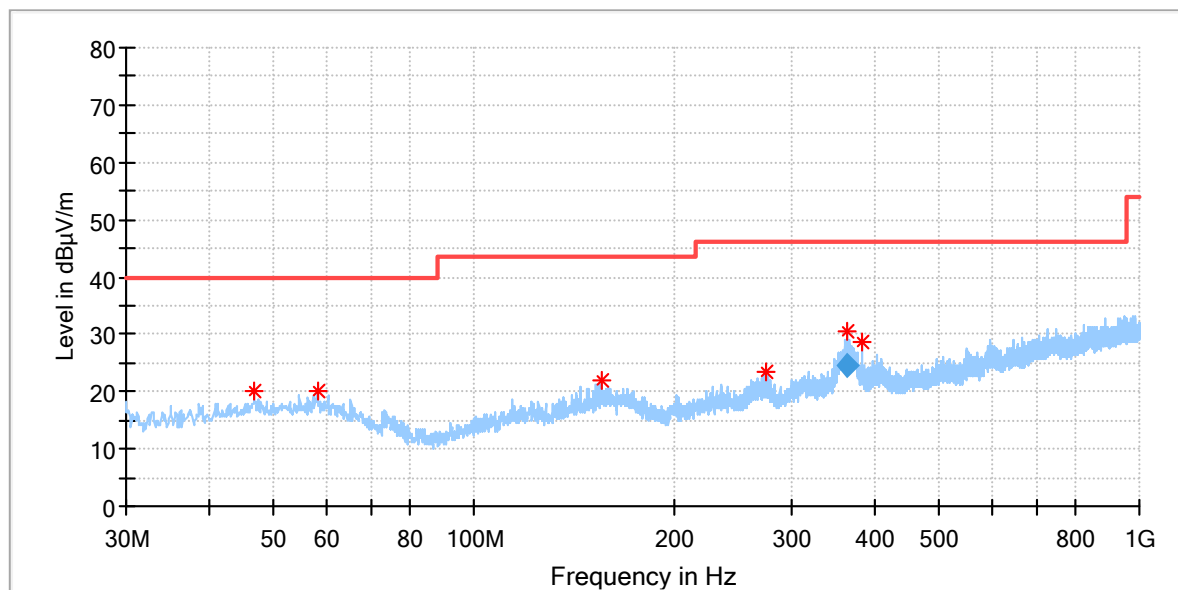
**Test Setup**

Date of testing : 2021-12-14  
Input voltage : DC 13.5V via BDS  
Operation mode : A, B  
Ambient temperature : 22 °C  
Relative humidity : 52 %  
Atmospheric pressure : 101 kPa

Refer to following test plots for details of test result.

## EUT Information

|               |                      |
|---------------|----------------------|
| EUT Name:     | Smartphone Grip      |
| Model         | 168345853 130        |
| Order No:     | BSP3200              |
| Test Mode:    | wireless load (5.0W) |
| Test Voltage: | DC 13.5V             |
| Test By:      | Kevin Zhou           |
| Review By:    | Gary Chen            |
| Remark:       | 3m Chamber           |



## Critical Freqs

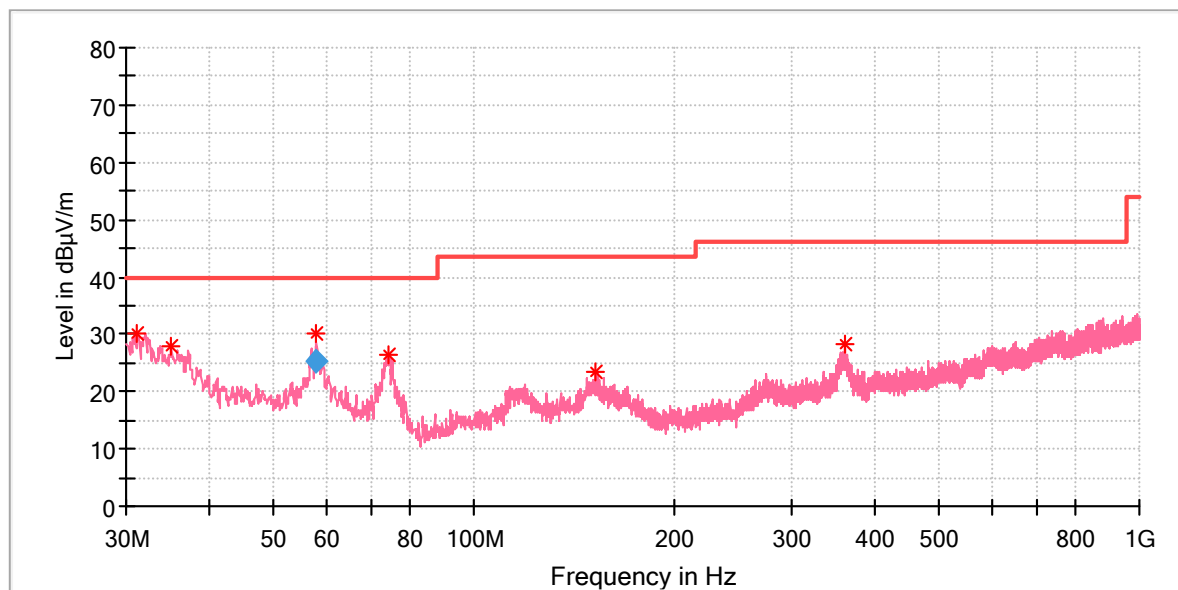
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 46.684000       | 20.09            | 40.00          | 19.91       | 200.0       | H   | 7.0           | 21.1         |
| 58.130000       | 20.23            | 40.00          | 19.77       | 200.0       | H   | 145.0         | 21.4         |
| 155.809000      | 22.07            | 43.50          | 21.43       | 200.0       | H   | 220.0         | 21.5         |
| 273.761000      | 23.34            | 46.00          | 22.66       | 100.0       | H   | 304.0         | 20.4         |
| 363.272000      | 30.34            | 46.00          | 15.66       | 100.0       | H   | 171.0         | 22.8         |
| 383.856000      | 28.48            | 46.00          | 17.52       | 100.0       | H   | 156.0         | 22.7         |

## Final Result

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 363.272000      | 24.44              | 46.00          | 21.56       | 1000.0          | 120.000         | 100.0       | H   | 171.0         | 22.8         |

## EUT Information

|               |                      |
|---------------|----------------------|
| EUT Name:     | Smartphone Grip      |
| Model         | 168345853 130        |
| Order No:     | BSP3200              |
| Test Mode:    | wireless load (5.0W) |
| Test Voltage: | DC 13.5V             |
| Test By:      | Kevin Zhou           |
| Review By:    | Gary Chen            |
| Remark:       | 3m Chamber           |



## Critical Freqs

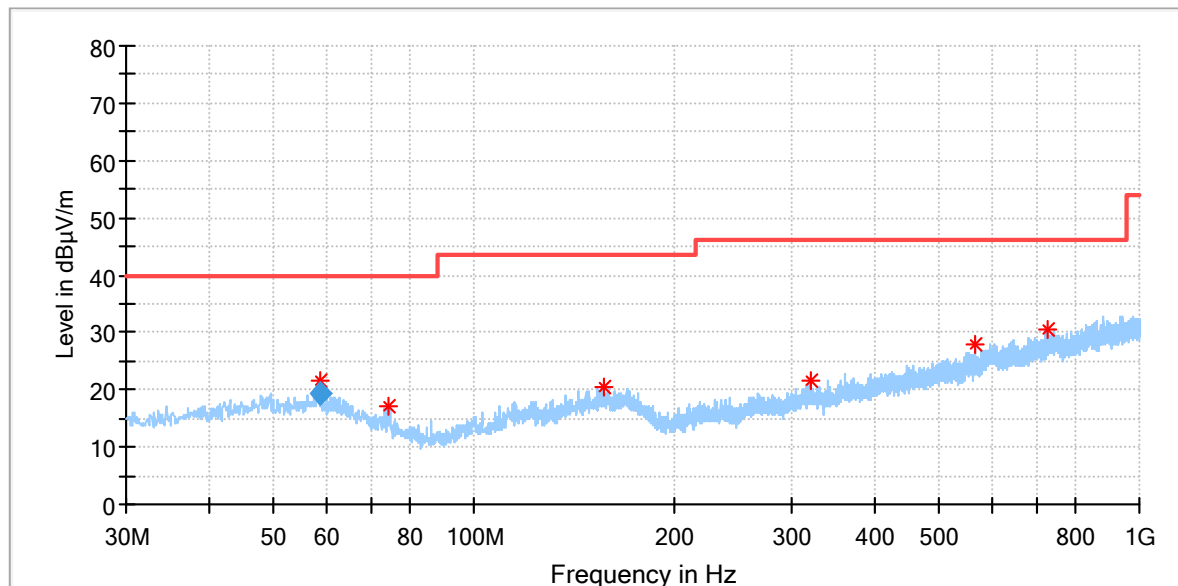
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 31.164000       | 30.10            | 40.00          | 9.90        | 100.0       | V   | 350.0         | 18.0         |
| 35.141000       | 27.93            | 40.00          | 12.07       | 100.0       | V   | 158.0         | 18.5         |
| 57.973000       | 30.09            | 40.00          | 9.91        | 100.0       | V   | 264.0         | 21.4         |
| 74.523000       | 26.60            | 40.00          | 13.40       | 200.0       | V   | 104.0         | 17.0         |
| 152.705000      | 23.58            | 43.50          | 19.92       | 200.0       | V   | 7.0           | 21.0         |
| 361.837000      | 28.33            | 46.00          | 17.67       | 100.0       | V   | 233.0         | 22.8         |

## Final Result

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 57.973000       | 25.36              | 40.00          | 14.64       | 1000.0          | 120.000         | 100.0       | V   | 264.0         | 21.4         |

## EUT Information

|               |                   |
|---------------|-------------------|
| EUT Name:     | Smartphone Grip   |
| Model         | BSP3200           |
| Order No:     | 168345853 130     |
| Test Mode:    | USB load (5V, 1A) |
| Test Voltage: | DC 13.5V          |
| Test By:      | Kevin Zhou        |
| Review By:    | Gary Chen         |
| Remark:       | 3m Chamber        |



## Critical\_Freqs

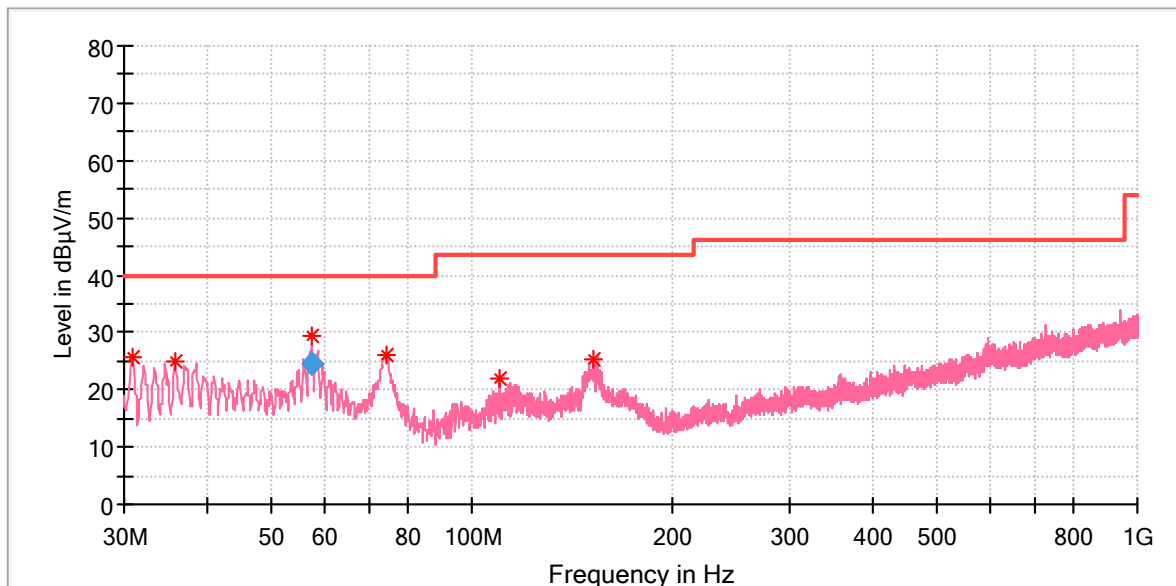
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 58.732000       | 21.56            | 40.00          | 18.44       | 100.0       | H   | 292.0         | 21.2         |
| 74.135000       | 17.24            | 40.00          | 22.76       | 100.0       | H   | 147.0         | 17.1         |
| 156.294000      | 20.45            | 43.50          | 23.05       | 100.0       | H   | 40.0          | 21.5         |
| 319.933000      | 21.63            | 46.00          | 24.37       | 100.0       | H   | 28.0          | 21.9         |
| 566.507000      | 27.94            | 46.00          | 18.06       | 200.0       | H   | 295.0         | 26.4         |
| 727.139000      | 30.41            | 46.00          | 15.59       | 200.0       | H   | 299.0         | 29.6         |

## Final\_Result

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 58.732000       | 19.20              | 40.00          | 20.80       | 1000.0          | 120.000         | 100.0       | H   | 292.0         | 21.2         |

## EUT Information

|               |                   |
|---------------|-------------------|
| EUT Name:     | Smartphone Grip   |
| Model         | BSP3200           |
| Order No:     | 168345853 130     |
| Test Mode:    | USB load (5V, 1A) |
| Test Voltage: | DC 13.5V          |
| Test By:      | Kevin Zhou        |
| Review By:    | Gary Chen         |
| Remark:       | 3m Chamber        |



## Critical\_Freqs

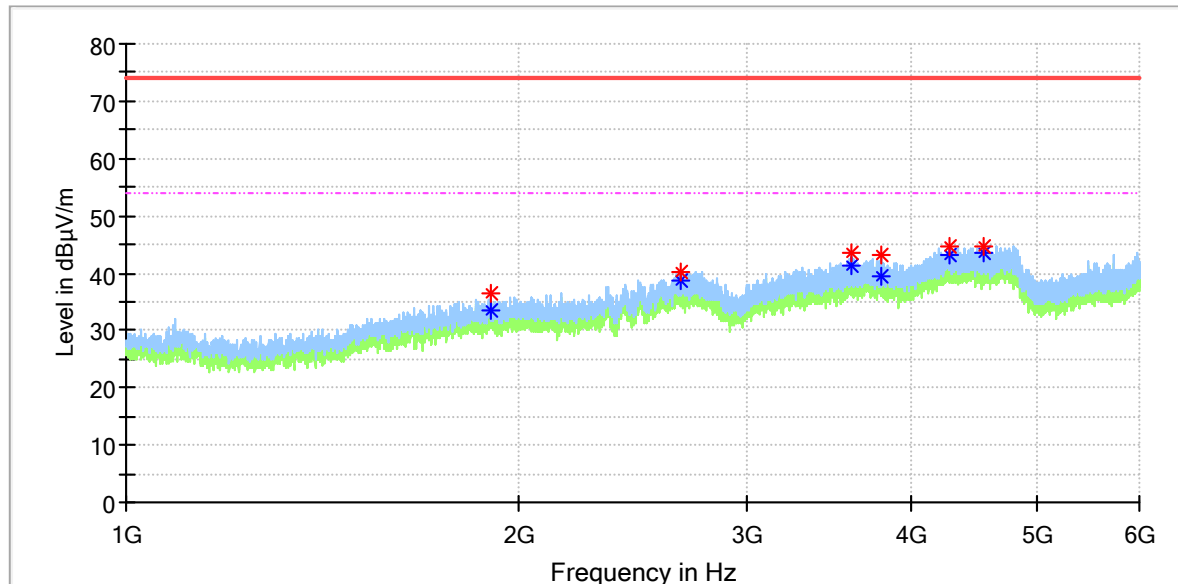
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 30.970000       | 25.59            | 40.00          | 14.41       | 100.0       | V   | 0.0           | 18.0         |
| 35.723000       | 24.89            | 40.00          | 15.11       | 100.0       | V   | 0.0           | 18.7         |
| 57.431000       | 29.42            | 40.00          | 10.58       | 100.0       | V   | 257.0         | 21.3         |
| 74.135000       | 26.08            | 40.00          | 13.92       | 200.0       | V   | 121.0         | 17.1         |
| 110.025000      | 22.06            | 43.50          | 21.44       | 100.0       | V   | 168.0         | 17.9         |
| 152.705000      | 25.17            | 43.50          | 18.33       | 200.0       | V   | 149.0         | 21.0         |

## Final\_Result

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 57.431000       | 24.55              | 40.00          | 15.45       | 1000.0          | 120.000         | 100.0       | V   | 257.0         | 21.3         |

## EUT Information

|               |                   |
|---------------|-------------------|
| EUT Name:     | Smartphone Grip   |
| Model:        | BSP3200           |
| Order No:     | 168345853 130     |
| Test Mode:    | USB load (5V, 1A) |
| Test Voltage: | DC 13.5V          |
| Test By:      | Kevin Zhou        |
| Review By:    | Gary Chen         |
| Remark:       | 3m Chamber        |



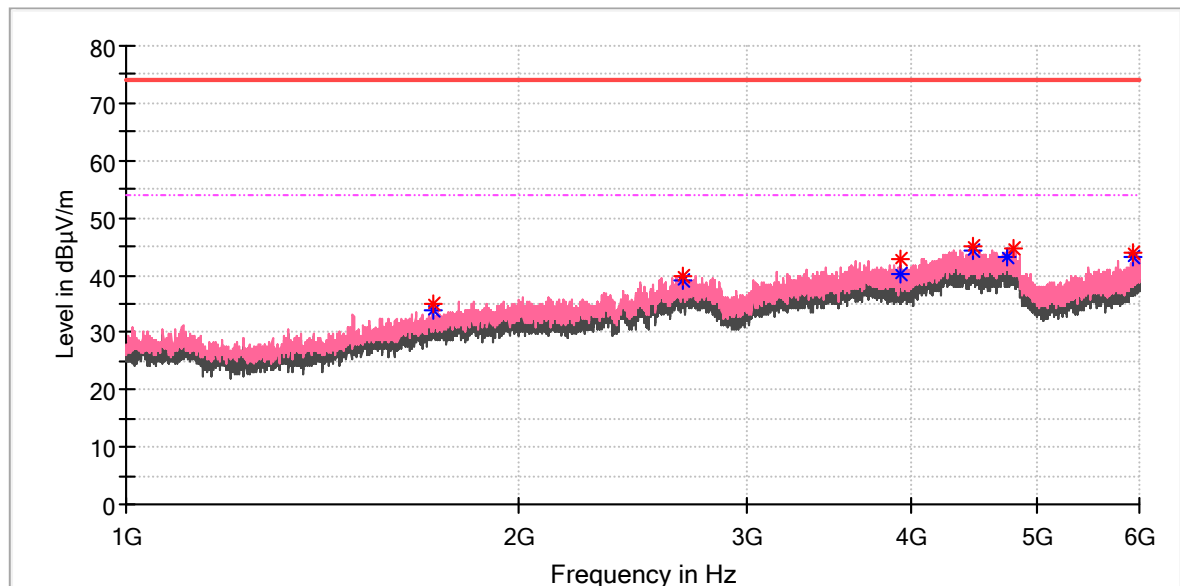
## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1908.500000     | ---              | 33.46            | 54.00          | 20.54       | 100.0       | H   | 331.0         | -7.8         |
| 1908.500000     | 36.59            | ---              | 74.00          | 37.41       | 100.0       | H   | 331.0         | -7.8         |
| 2667.500000     | ---              | 38.69            | 54.00          | 15.31       | 100.0       | H   | 71.0          | -3.3         |
| 2667.500000     | 40.27            | ---              | 74.00          | 33.73       | 100.0       | H   | 71.0          | -3.3         |
| 3604.000000     | ---              | 41.32            | 54.00          | 12.68       | 100.0       | H   | 331.0         | -0.6         |
| 3604.000000     | 43.53            | ---              | 74.00          | 30.47       | 100.0       | H   | 331.0         | -0.6         |
| 3804.000000     | ---              | 39.39            | 54.00          | 14.61       | 100.0       | H   | 46.0          | 0.0          |
| 3804.000000     | 43.08            | ---              | 74.00          | 30.92       | 100.0       | H   | 46.0          | 0.0          |
| 4284.500000     | ---              | 43.00            | 54.00          | 11.00       | 100.0       | H   | 160.0         | 2.1          |
| 4284.500000     | 44.50            | ---              | 74.00          | 29.50       | 100.0       | H   | 160.0         | 2.1          |
| 4553.000000     | ---              | 43.35            | 54.00          | 10.65       | 100.0       | H   | 0.0           | 2.0          |
| 4553.000000     | 44.59            | ---              | 74.00          | 29.41       | 100.0       | H   | 0.0           | 2.0          |



## EUT Information

EUT Name: Smartphone Grip  
 Model: BSP3200  
 Order No: 168345853 130  
 Test Mode: USB load (5V, 1A)  
 Test Voltage: DC 13.5V  
 Test By: Kevin Zhou  
 Review By: Gary Chen  
 Remark: 3m Chamber

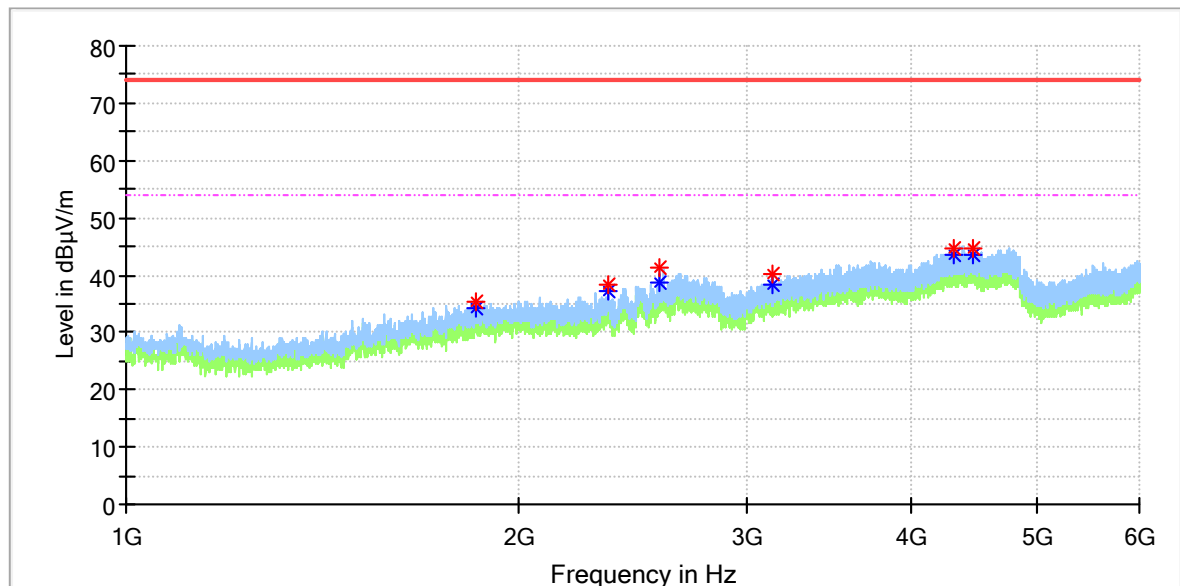


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1718.500000     | 35.05            | ---              | 74.00          | 38.95       | 100.0       | V   | 175.0         | -9.1         |
| 1718.500000     | ---              | 33.73            | 54.00          | 20.27       | 100.0       | V   | 175.0         | -9.1         |
| 2674.500000     | ---              | 38.92            | 54.00          | 15.08       | 100.0       | V   | 133.0         | -3.2         |
| 2674.500000     | 39.95            | ---              | 74.00          | 34.05       | 100.0       | V   | 133.0         | -3.2         |
| 3938.000000     | ---              | 40.36            | 54.00          | 13.64       | 100.0       | V   | 38.0          | -0.2         |
| 3938.000000     | 42.69            | ---              | 74.00          | 31.31       | 100.0       | V   | 38.0          | -0.2         |
| 4477.500000     | 45.19            | ---              | 74.00          | 28.81       | 100.0       | V   | 129.0         | 2.0          |
| 4477.500000     | ---              | 44.41            | 54.00          | 9.59        | 100.0       | V   | 129.0         | 2.0          |
| 4742.000000     | ---              | 43.10            | 54.00          | 10.90       | 100.0       | V   | 207.0         | 2.8          |
| 4804.000000     | 44.61            | ---              | 74.00          | 29.39       | 100.0       | V   | 114.0         | 2.3          |
| 5932.000000     | ---              | 43.15            | 54.00          | 10.85       | 100.0       | V   | 86.0          | 1.9          |
| 5932.000000     | 43.90            | ---              | 74.00          | 30.10       | 100.0       | V   | 86.0          | 1.9          |

## EUT Information

EUT Name: Smartphone Grip  
 Model: BSP3200  
 Order No: 168345853 130  
 Test Mode: wireless load (5.0W)  
 Test Voltage: DC 13.5V  
 Test By: Kevin Zhou  
 Review By: Gary Chen  
 Remark: 3m Chamber

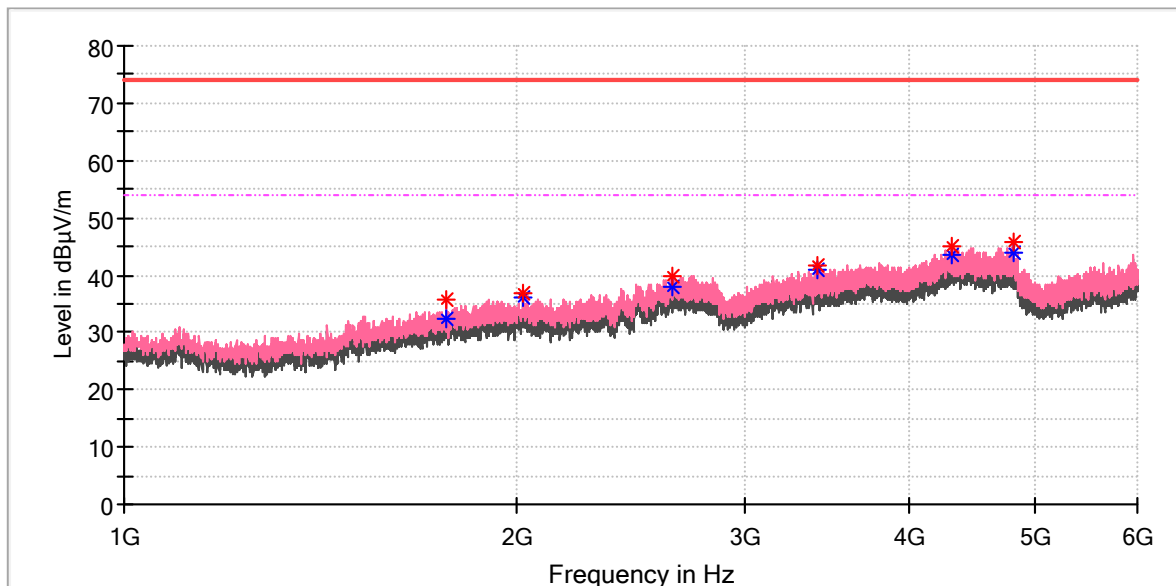


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1854.000000     | ---              | 34.40            | 54.00          | 19.60       | 100.0       | H   | 270.0         | -8.1         |
| 1854.000000     | 35.35            | ---              | 74.00          | 38.65       | 100.0       | H   | 270.0         | -8.1         |
| 2349.000000     | ---              | 37.24            | 54.00          | 16.76       | 100.0       | H   | 298.0         | -6.2         |
| 2349.000000     | 38.40            | ---              | 74.00          | 35.60       | 100.0       | H   | 298.0         | -6.2         |
| 2572.000000     | ---              | 38.53            | 54.00          | 15.47       | 100.0       | H   | 298.0         | -3.9         |
| 2572.000000     | 41.14            | ---              | 74.00          | 32.86       | 100.0       | H   | 298.0         | -3.9         |
| 3137.500000     | ---              | 38.49            | 54.00          | 15.51       | 100.0       | H   | 326.0         | -2.8         |
| 3137.500000     | 40.12            | ---              | 74.00          | 33.88       | 100.0       | H   | 326.0         | -2.8         |
| 4326.500000     | ---              | 43.56            | 54.00          | 10.44       | 100.0       | H   | 196.0         | 2.2          |
| 4326.500000     | 44.75            | ---              | 74.00          | 29.25       | 100.0       | H   | 196.0         | 2.2          |
| 4472.500000     | ---              | 43.64            | 54.00          | 10.36       | 100.0       | H   | 58.0          | 2.0          |
| 4472.500000     | 44.70            | ---              | 74.00          | 29.30       | 100.0       | H   | 58.0          | 2.0          |

## EUT Information

|               |                      |
|---------------|----------------------|
| EUT Name:     | Smartphone Grip      |
| Model:        | BSP3200              |
| Order No:     | 168345853 130        |
| Test Mode:    | wireless load (5.0W) |
| Test Voltage: | DC 13.5V             |
| Test By:      | Kevin Zhou           |
| Review By:    | Gary Chen            |
| Remark:       | 3m Chamber           |



## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1765.000000     | 35.79            | ---              | 74.00          | 38.21       | 100.0       | V   | 324.0         | -8.7         |
| 1765.000000     | ---              | 32.30            | 54.00          | 21.70       | 100.0       | V   | 324.0         | -8.7         |
| 2024.000000     | 36.94            | ---              | 74.00          | 37.06       | 100.0       | V   | 217.0         | -7.2         |
| 2024.000000     | ---              | 35.91            | 54.00          | 18.09       | 100.0       | V   | 217.0         | -7.2         |
| 2640.000000     | ---              | 37.78            | 54.00          | 16.22       | 100.0       | V   | 19.0          | -3.3         |
| 2640.500000     | 39.76            | ---              | 74.00          | 34.24       | 100.0       | V   | 208.0         | -3.3         |
| 3411.500000     | 41.60            | ---              | 74.00          | 32.40       | 100.0       | V   | 79.0          | -1.5         |
| 3411.500000     | ---              | 40.90            | 54.00          | 13.10       | 100.0       | V   | 79.0          | -1.5         |
| 4315.500000     | 44.96            | ---              | 74.00          | 29.04       | 100.0       | V   | 153.0         | 2.2          |
| 4315.500000     | ---              | 43.61            | 54.00          | 10.39       | 100.0       | V   | 153.0         | 2.2          |
| 4821.000000     | 45.58            | ---              | 74.00          | 28.42       | 100.0       | V   | 22.0          | 2.1          |
| 4821.000000     | ---              | 43.98            | 54.00          | 10.02       | 100.0       | V   | 22.0          | 2.1          |

## 6 Photographs of the Test Set-Up

Refer to test photo document.

## 7 List of Tables

|   |   |
|---|---|
| Table 1: List of Test and Measurement Equipment.....      | 5 |
| Table 2: Technical Specification of EUT.....              | 8 |
| Table 3: List of Accessories and Auxiliary Equipment..... | 9 |