# FCC TEST REPORT

# FCC ID: 2AHPLWPB2

| | |
|---|---|
| Product Name: | **Woodie PowerBank** |
| Trademark: | **N/A** |
| Model Number: | **WPB2**<br>**WPB3,WPB4,WPB5,WPB6** |
| Prepared For :<br><br>Address : | **Woodie s.r.l**<br><br>Galleria del Corso 2,20122 Milano,Italy |
| Prepared By :<br><br>Address : | **Shenzhen BCTC Technology Co., Ltd.**<br><br>No.101,Yousong Road, Longhua New District, Shenzhen, China |
| Report No.: | **BCTC-160301810-1E** |

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# TEST RESULT CERTIFICATION

| | |
|---|---|
| **Applicant's name**.....: | **Woodie s.r.l** |
| Address .....: | Galleria del Corso 2,20122 Milano,Italy |
| **Manufacture's Name** ....: | **Woodie s.r.l** |
| Address .....: | Galleria del Corso 2,20122 Milano,Italy |
| **Product description** | |
| Product name .....: | **Woodie PowerBank** |
| Trademark .....: | N/A |
| Model and/or type reference : | **WPB2** |
| Serial Model .....: | **WPB3,WPB4,WPB5,WPB6** |
| **Standards**.....: | FCC Part 15 C: 2015 |
| Test Date: | Mar. 5 - Mar. 10, 2016 |
| Date of Report : | Mar. 12, 2016 |

This device described above has been tested by BCTC, and the test results show that the equipment under And it is applicable only to the tested sample identified in the report.
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Prepared by(Engineer): Eric Yang

Reviewer(Quality Manager): Sophie Lee

Approved & Authorized Signer(Manager): Casey Wang

SHENZHEN BCTC TECHNOLOGY CO., LTD APPROVED

# 1. GENERAL INFORMATION

## 1.1.Report information

1.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BCTC approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BCTC in any way guarantees the later performance of the product/equipment.

1.1.2.The sample/s mentioned in this report is/are supplied by Applicant, BCTC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

1.1.3.Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BCTC, unless the applicant has authorized BCTC in writing to do so.

## 1.2.Test Facility

Site Description

| | | |
|---|---|---|
| Name of Firm | : | Shenzhen BCTC Technology Co., Ltd. |
| Site Location | : | No.101,Yousong Road,Longhua New District, Shenzhen,China |

## 1.3.Test Uncertainty

| | | |
|---|---|---|
| Conducted Emission Uncertainty | = | ±2.66dB |
| Radiated Emission Uncertainty | = | ±4.15dB |

# 2. PRODUCT DESCRIPTION

## 2.1.EUT Description

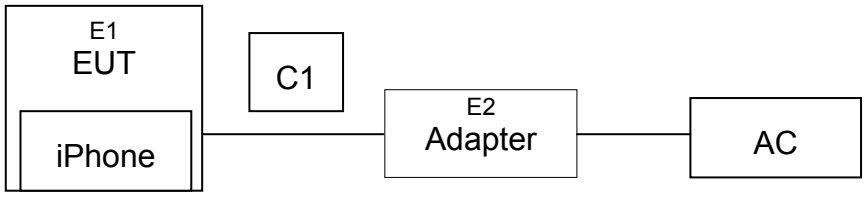
| | | |
|---|---|---|
| Description | : | Woodie PowerBank |
| Modulation Type: | : | MSK |
| Operation Frequency: | : | 110K~205KHz |
| Channel number | : | 20 channels |
| Model Number | : | WPB2 |
| Serial Model | : | WPB3,WPB4,WPB5,WPB6 |
| Model Difference | : | All the same, is different for outlook color, model name, Ring size. |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2.

| Channel List | | | |
|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 01 | 0.110 | 11 | 0.160 |
| 02 | 0.115 | 12 | 0.165 |
| ~ | | | |
| 10 | 0.155 | 20 | 0.205 |

## 2.2.Block Diagram of EUT Configuration




## 2.3.Test Conditions

Temperature: 23~25℃

Relative Humidity: 55~63 %

## 2.4.Description Of Support Units (Conducted Mode)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment | Mfr/Brand | Model/Type No. | Series No. | Note |
|---|---|---|---|---|---|
| E-1 | Woodie PowerBank | N/A | WPB2 | N/A | EUT |
| E-2 | Adapter | N/A | FJ-SW126L0502000UN | N/A | Provide by test lab. |
| | Mobile phone | iPhone 6 | A1530 | N/A | |
| | Battery model | iPhone 6 | A1530B | N/A | electric quantity:0%,50%,90% |

| Item | Shielded Type | Ferrite Core | Length | Note |
|---|---|---|---|---|
| C1 | No Shielded | NO | 0.5M | Mini USB cable |
| | | | | |
| | | | | |

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

## 2.5.TEST Results Summary

**Table 1 Test Results Summary**

| Test Items | Test Results |
|---|---|
| Conducted disturbance | Pass |
| Radiated disturbance | Pass |

Remark: “N/A” means “Not applicable.”

DESCRIPTION OF TEST MODES

| **For Conducted & Radiated Emission** | |
|---|---|
| Final Test Mode | Description |
| Mode 1 | TX Low Channel 110kHz |
| Mode 2 | TX High channel 205kHz |
| Mode 3 | TX Middle channel 155kHz |
| Mode 4 | RX Mode |
| Mode 5 | Transfer mode(Battery's electric quantity reference item2.4) |

we pretest all mode, the report only show the worst mode.

# 3. TEST EQUIPMENT USED

## 3.1.For Conducted Emission Test

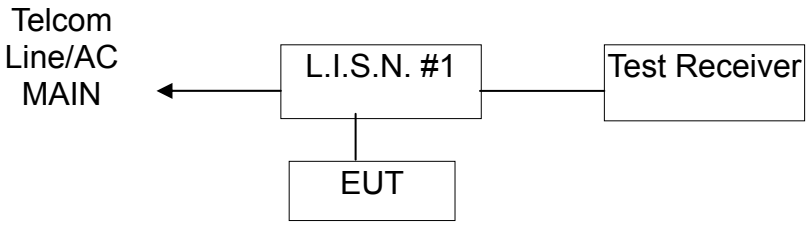
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1 | Test Receiver | Rohde & Schwarz | ESCI30 | 828985/018 | Aug. 24,2015 | 1 Year |
| 2 | Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100006 | Aug. 24,2015 | 1 Year |
| 3 | L.I.S.N. | Rohde & Schwarz | ESH2-Z5 | 834549/005 | Aug. 24,2015 | 1 Year |

## 3.2.For Radiated Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | ANRITSU | MS2661C | 6200140915 | Aug. 24,2015 | 1 Year |
| 2 | Test Receiver | Rohde&Schwarz | ESCI30 | 828985/018 | Aug. 24,2015 | 1 Year |
| 3 | Bilog Antenna | Schwarzbeck | VULB9163 | 142 | Aug. 24,2015 | 1 Year |
| 4 | 50 Coaxial Switch | Anritsu Corp | MP59B | 6100237248 | Aug. 24,2015 | 1 Year |
| 5 | Cable | Schwarzbeck | AK9513 | ACRX1 | Aug. 24,2015 | 1 Year |
| 7 | Cable | Schwarzbeck | AK9513 | CRRX2 | Aug. 24,2015 | 1 Year |
| 9 | Single Phase Power Line Filter | MPE | 23332C | N/A | Aug. 24,2015 | 1 Year |
| 10 | Single Phase Power Line Filter | MPE | 23333C | N/A | Aug. 24,2015 | 1 Year |
| 11 | Signal Generator | HP | 864A | 3625U00573 | Aug. 24,2015 | 1 Year |
| 12 | Loop Antenna | ARA | PLA-1030/B | 1029 | Aug. 24,2015 | 1 Year |

# 4. CONDUCTED EMISSION TEST

## 4.1.Block Diagram of Test Setup




(EUT: **Woodie PowerBank**)

## 4.2.Test Standard

FCC Part 15 C: 2015

## 4.3.Conducted Emission Limit (Class B)

| Frequency MHz | Limits dB(μV) | |
|---|---|---|
| | Quasi-peak Level | Average Level |
| 0.15 ~ 0.50 | 66 ~ 56* | 56 ~ 46* |
| 0.50 ~ 5.00 | 56 | 46 |
| 5.00 ~ 30.00 | 60 | 50 |

Notes: 1. *Decreasing linearly with logarithm of frequency.

## 4.4.EUT Configuration on Test

The following equipments are installed on conducted emission test to meet Part 15 B requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

4.4.1.**Woodie PowerBank**

Model Number: **WPB2**

## 4.5.Operating Condition of EUT

4.5.1.Setup the EUT and simulators as shown in Section 5.1.

4.5.2.Turn on the power of all equipments.

4.5.3.Let the EUT work in test modes (energy transfer mode).

## 4.6.Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCI30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver (R&S Test Receiver ESCI30) is set at 10KHz.

## 4.7.Test Result

PASS

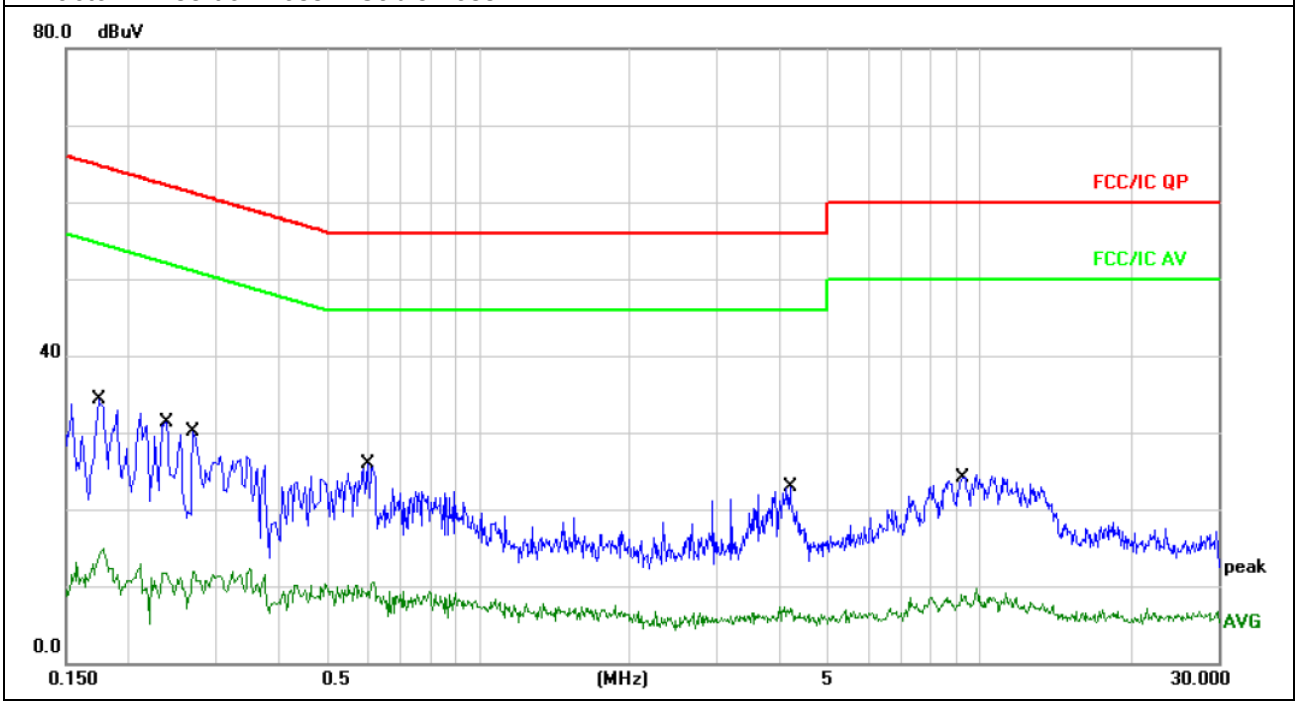
Please refer to the following pages.

we pretest all mode, only the mode 5 was worst mode and the data recording in the report.

| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010hPa | Phase : | L |
| Test Voltage ： | AC 120V/60Hz | Test Mode： | Mode 5 |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1728 | 24.23 | 10.06 | 34.29 | 64.82 | -30.53 | QP | |
| 2 | | 0.1728 | 3.29 | 10.06 | 13.35 | 54.82 | -41.47 | AVG | |
| 3 | | 0.2374 | 21.30 | 10.08 | 31.38 | 62.18 | -30.80 | QP | |
| 4 | | 0.2374 | 1.56 | 10.08 | 11.64 | 52.18 | -40.54 | AVG | |
| 5 | | 0.2669 | 20.06 | 10.09 | 30.15 | 61.21 | -31.06 | QP | |
| 6 | | 0.2669 | 1.90 | 10.09 | 11.99 | 51.21 | -39.22 | AVG | |
| 7 | * | 0.6014 | 15.72 | 10.12 | 25.84 | 56.00 | -30.16 | QP | |
| 8 | | 0.6014 | -0.80 | 10.12 | 9.32 | 46.00 | -36.68 | AVG | |
| 9 | | 4.1733 | 12.74 | 10.16 | 22.90 | 56.00 | -33.10 | QP | |
| 10 | | 4.1733 | -3.40 | 10.16 | 6.76 | 46.00 | -39.24 | AVG | |
| 11 | | 9.2530 | 14.04 | 10.12 | 24.16 | 60.00 | -35.84 | QP | |
| 12 | | 9.2530 | -1.95 | 10.12 | 8.17 | 50.00 | -41.83 | AVG | |

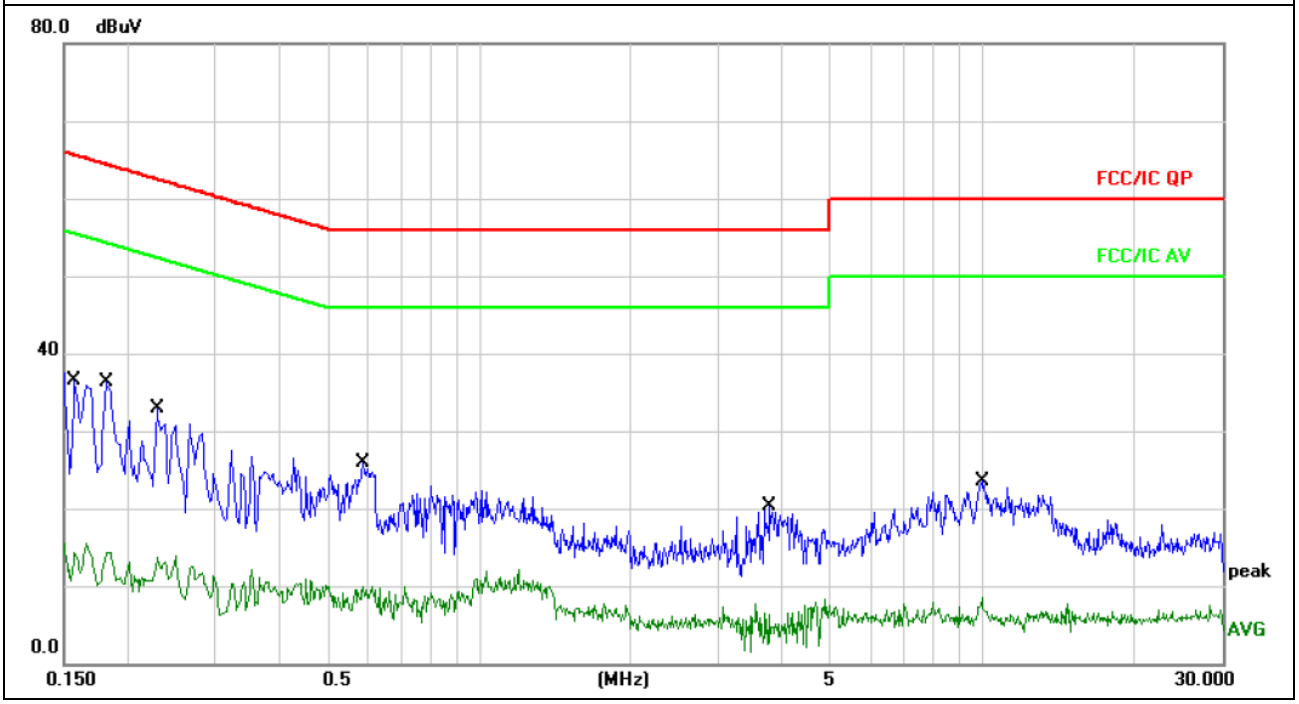
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT： | Woodie PowerBank | Model Name. ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010hPa | Phase : | N |
| Test Voltage ： | AC 120V/60Hz | Test Mode： | Mode 5 |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1570 | 26.47 | 10.05 | 36.52 | 65.62 | -29.10 | QP | |
| 2 | | 0.1570 | 4.27 | 10.05 | 14.32 | 55.62 | -41.30 | AVG | |
| 3 | * | 0.1811 | 26.23 | 10.06 | 36.29 | 64.43 | -28.14 | QP | |
| 4 | | 0.1811 | 4.33 | 10.06 | 14.39 | 54.43 | -40.04 | AVG | |
| 5 | | 0.2268 | 22.75 | 10.07 | 32.82 | 62.56 | -29.74 | QP | |
| 6 | | 0.2268 | 3.65 | 10.07 | 13.72 | 52.56 | -38.84 | AVG | |
| 7 | | 0.5833 | 15.82 | 10.12 | 25.94 | 56.00 | -30.06 | QP | |
| 8 | | 0.5833 | -0.25 | 10.12 | 9.87 | 46.00 | -36.13 | AVG | |
| 9 | | 3.7751 | 10.05 | 10.17 | 20.22 | 56.00 | -35.78 | QP | |
| 10 | | 3.7751 | -7.49 | 10.17 | 2.68 | 46.00 | -43.32 | AVG | |
| 11 | | 10.0183 | 13.39 | 10.12 | 23.51 | 60.00 | -36.49 | QP | |
| 12 | | 10.0183 | -2.88 | 10.12 | 7.24 | 50.00 | -42.76 | AVG | |

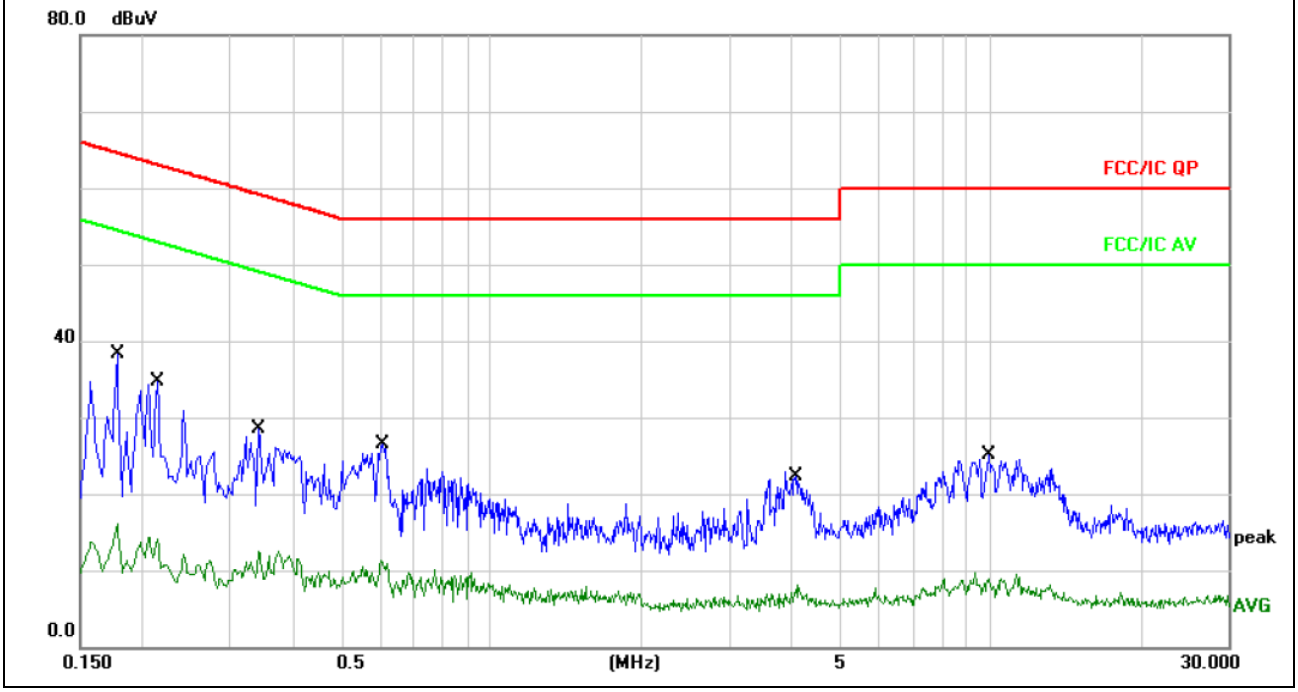
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010hPa | Phase : | L |
| Test Voltage ： | AC 120V/60Hz | Test Mode： | Mode 1 |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | * | 0.1780 | 28.17 | 10.06 | 38.23 | 64.57 | -26.34 | QP | |
| 2 | | 0.1785 | 4.91 | 10.06 | 14.97 | 54.55 | -39.58 | AVG | |
| 3 | | 0.2140 | 24.56 | 10.07 | 34.63 | 63.04 | -28.41 | QP | |
| 4 | | 0.2140 | 3.98 | 10.07 | 14.05 | 53.04 | -38.99 | AVG | |
| 5 | | 0.3420 | 18.37 | 10.10 | 28.47 | 59.15 | -30.68 | QP | |
| 6 | | 0.3420 | 2.41 | 10.10 | 12.51 | 49.15 | -36.64 | AVG | |
| 7 | | 0.6060 | 16.45 | 10.13 | 26.58 | 56.00 | -29.42 | QP | |
| 8 | | 0.6108 | 0.07 | 10.13 | 10.20 | 46.00 | -35.80 | AVG | |
| 9 | | 4.0899 | 12.21 | 10.16 | 22.37 | 56.00 | -33.63 | QP | |
| 10 | | 4.0899 | -2.56 | 10.16 | 7.60 | 46.00 | -38.40 | AVG | |
| 11 | | 9.9339 | 15.06 | 10.12 | 25.18 | 60.00 | -34.82 | QP | |
| 12 | | 10.0219 | -1.97 | 10.12 | 8.15 | 50.00 | -41.85 | AVG | |

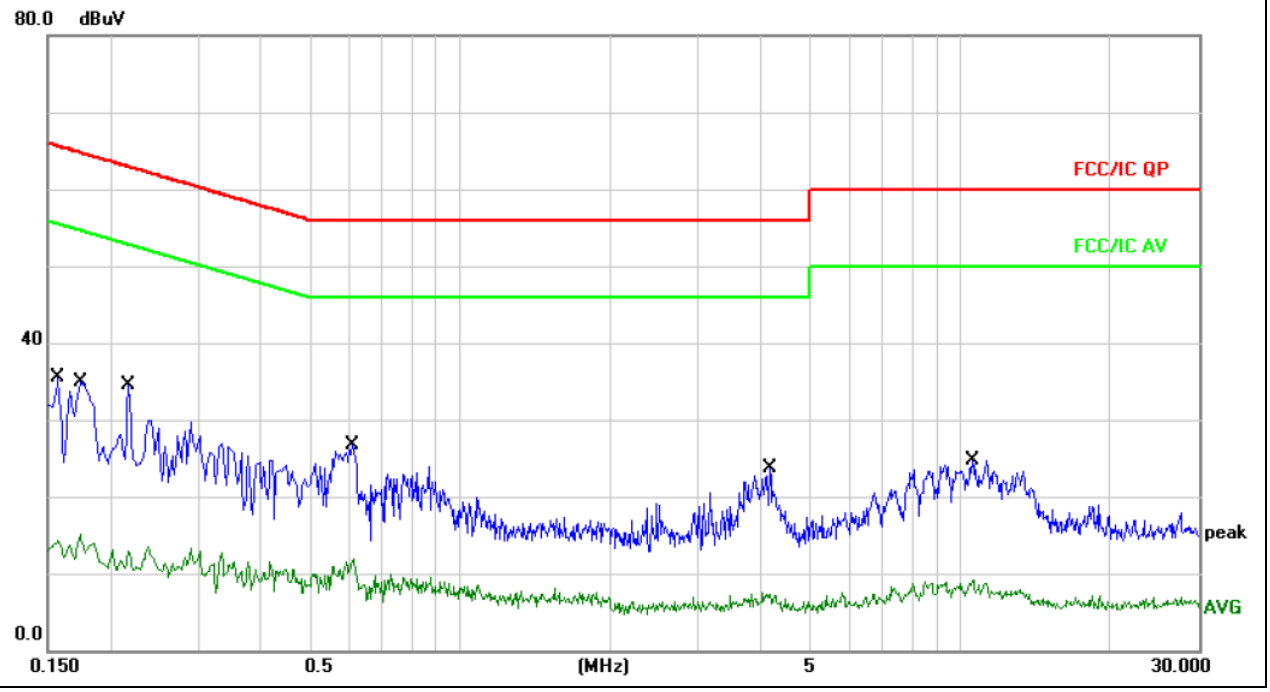
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT： | Woodie PowerBank | Model Name. ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010hPa | Phase : | N |
| Test Voltage ： | AC 120V/60Hz | Test Mode： | Mode 1 |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1580 | 25.51 | 10.05 | 35.56 | 65.56 | -30.00 | QP | |
| 2 | | 0.1580 | 4.17 | 10.05 | 14.22 | 55.56 | -41.34 | AVG | |
| 3 | | 0.1740 | 5.09 | 10.06 | 15.15 | 54.76 | -39.61 | AVG | |
| 4 | | 0.1748 | 24.74 | 10.06 | 34.80 | 64.72 | -29.92 | QP | |
| 5 | * | 0.2180 | 24.42 | 10.07 | 34.49 | 62.89 | -28.40 | QP | |
| 6 | | 0.2180 | 2.89 | 10.07 | 12.96 | 52.89 | -39.93 | AVG | |
| 7 | | 0.6100 | 16.51 | 10.13 | 26.64 | 56.00 | -29.36 | QP | |
| 8 | | 0.6140 | 1.71 | 10.13 | 11.84 | 46.00 | -34.16 | AVG | |
| 9 | | 4.1739 | 13.54 | 10.16 | 23.70 | 56.00 | -32.30 | QP | |
| 10 | | 4.1739 | -2.81 | 10.16 | 7.35 | 46.00 | -38.65 | AVG | |
| 11 | | 10.5739 | 14.56 | 10.13 | 24.69 | 60.00 | -35.31 | QP | |
| 12 | | 10.6618 | -0.95 | 10.13 | 9.18 | 50.00 | -40.82 | AVG | |

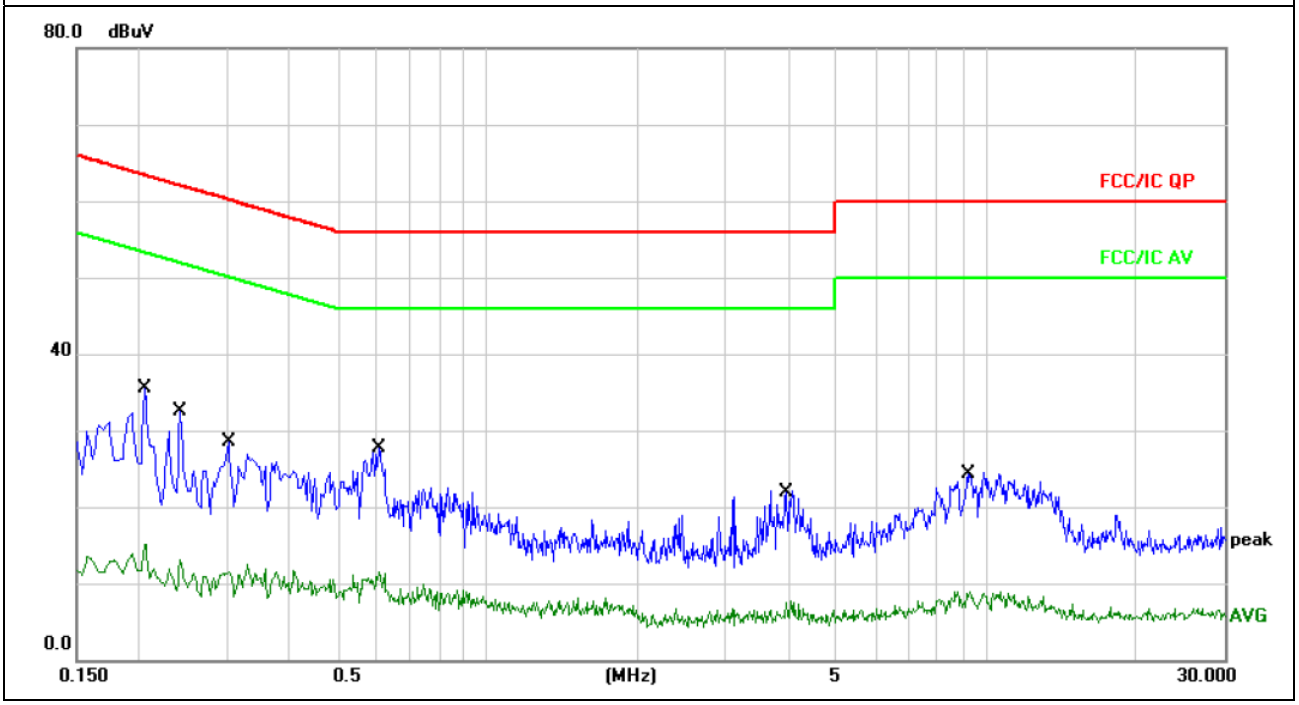
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010hPa | Phase : | L |
| Test Voltage ： | AC 120V/60Hz | Test Mode： | Mode 2 |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | * | 0.2060 | 25.43 | 10.07 | 35.50 | 63.36 | -27.86 | QP | |
| 2 | | 0.2060 | 5.04 | 10.07 | 15.11 | 53.36 | -38.25 | AVG | |
| 3 | | 0.2420 | 22.48 | 10.08 | 32.56 | 62.02 | -29.46 | QP | |
| 4 | | 0.2420 | 2.94 | 10.08 | 13.02 | 52.02 | -39.00 | AVG | |
| 5 | | 0.3020 | 18.36 | 10.09 | 28.45 | 60.19 | -31.74 | QP | |
| 6 | | 0.3020 | 1.44 | 10.09 | 11.53 | 50.19 | -38.66 | AVG | |
| 7 | | 0.6060 | 17.57 | 10.13 | 27.70 | 56.00 | -28.30 | QP | |
| 8 | | 0.6060 | 1.43 | 10.13 | 11.56 | 46.00 | -34.44 | AVG | |
| 9 | | 3.9660 | 11.72 | 10.16 | 21.88 | 56.00 | -34.12 | QP | |
| 10 | | 3.9660 | -2.69 | 10.16 | 7.47 | 46.00 | -38.53 | AVG | |
| 11 | | 9.1699 | 14.18 | 10.12 | 24.30 | 60.00 | -35.70 | QP | |
| 12 | | 9.2819 | -1.24 | 10.12 | 8.88 | 50.00 | -41.12 | AVG | |

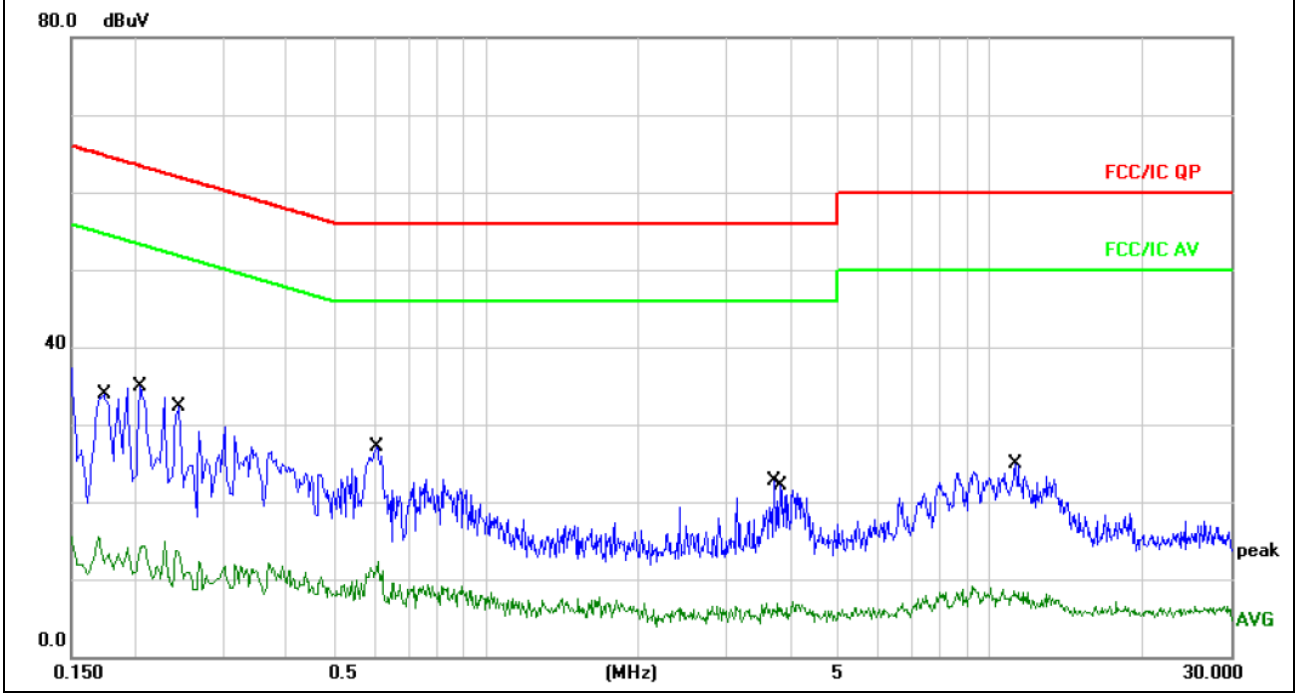
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT： | Woodie PowerBank | Model Name. ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010hPa | Phase : | N |
| Test Voltage ： | AC 120V/60Hz | Test Mode： | Mode 2 |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1720 | 3.61 | 10.06 | 13.67 | 54.86 | -41.19 | AVG | |
| 2 | | 0.1740 | 23.77 | 10.06 | 33.83 | 64.76 | -30.93 | QP | |
| 3 | * | 0.2060 | 24.77 | 10.07 | 34.84 | 63.36 | -28.52 | QP | |
| 4 | | 0.2060 | 4.12 | 10.07 | 14.19 | 53.36 | -39.17 | AVG | |
| 5 | | 0.2420 | 3.67 | 10.08 | 13.75 | 52.02 | -38.27 | AVG | |
| 6 | | 0.2460 | 22.16 | 10.08 | 32.24 | 61.89 | -29.65 | QP | |
| 7 | | 0.6060 | 16.94 | 10.13 | 27.07 | 56.00 | -28.93 | QP | |
| 8 | | 0.6100 | 2.09 | 10.13 | 12.22 | 46.00 | -33.78 | AVG | |
| 9 | | 3.7220 | 12.55 | 10.17 | 22.72 | 56.00 | -33.28 | QP | |
| 10 | | 3.7940 | -3.33 | 10.17 | 6.84 | 46.00 | -39.16 | AVG | |
| 11 | | 11.1539 | -1.68 | 10.13 | 8.45 | 50.00 | -41.55 | AVG | |
| 12 | | 11.2339 | 14.70 | 10.13 | 24.83 | 60.00 | -35.17 | QP | |

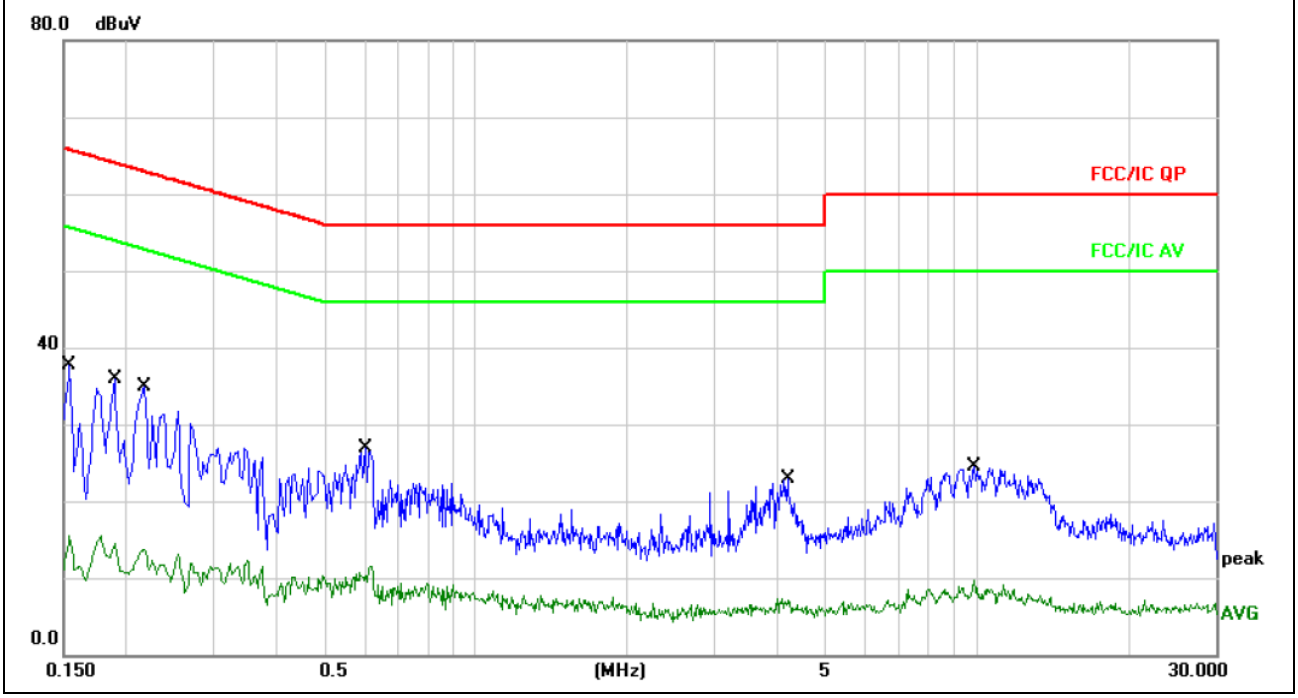
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010hPa | Phase : | L |
| Test Voltage ： | AC 120V/60Hz | Test Mode： | Mode 3 |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1539 | 27.71 | 10.05 | 37.76 | 65.78 | -28.02 | QP | |
| 2 | | 0.1539 | 5.47 | 10.05 | 15.52 | 55.78 | -40.26 | AVG | |
| 3 | | 0.1900 | 25.78 | 10.06 | 35.84 | 64.03 | -28.19 | QP | |
| 4 | | 0.1900 | 4.51 | 10.06 | 14.57 | 54.03 | -39.46 | AVG | |
| 5 | * | 0.2180 | 24.81 | 10.07 | 34.88 | 62.89 | -28.01 | QP | |
| 6 | | 0.2184 | 3.33 | 10.07 | 13.40 | 52.88 | -39.48 | AVG | |
| 7 | | 0.5980 | -0.35 | 10.12 | 9.77 | 46.00 | -36.23 | AVG | |
| 8 | | 0.6020 | 16.70 | 10.13 | 26.83 | 56.00 | -29.17 | QP | |
| 9 | | 4.1819 | 12.74 | 10.16 | 22.90 | 56.00 | -33.10 | QP | |
| 10 | | 4.2139 | -3.40 | 10.16 | 6.76 | 46.00 | -39.24 | AVG | |
| 11 | | 9.9098 | 14.32 | 10.12 | 24.44 | 60.00 | -35.56 | QP | |
| 12 | | 9.9098 | -0.50 | 10.12 | 9.62 | 50.00 | -40.38 | AVG | |

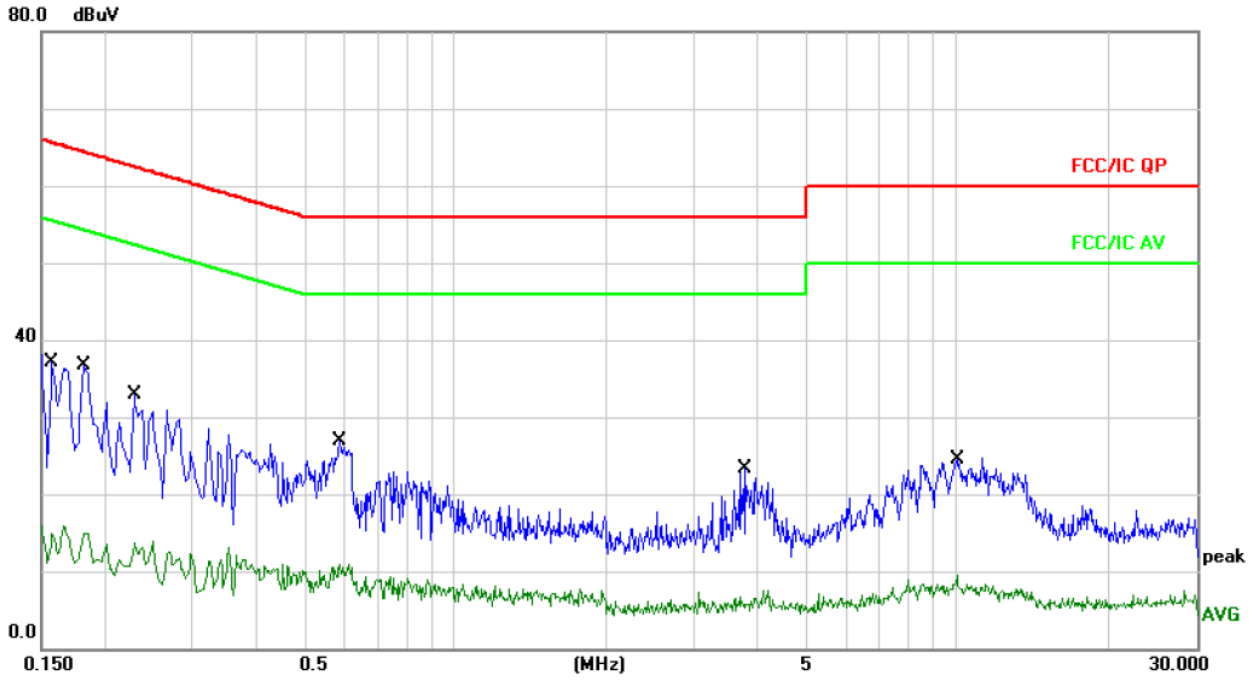
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT： | Woodie PowerBank | Model Name. ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010hPa | Phase : | N |
| Test Voltage ： | AC 120V/60Hz | Test Mode： | Mode 3 |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1580 | 26.97 | 10.05 | 37.02 | 65.56 | -28.54 | QP | |
| 2 | | 0.1580 | 4.77 | 10.05 | 14.82 | 55.56 | -40.74 | AVG | |
| 3 | * | 0.1819 | 26.73 | 10.06 | 36.79 | 64.39 | -27.60 | QP | |
| 4 | | 0.1833 | 4.82 | 10.06 | 14.88 | 54.33 | -39.45 | AVG | |
| 5 | | 0.2300 | 22.75 | 10.07 | 32.82 | 62.45 | -29.63 | QP | |
| 6 | | 0.2303 | 3.52 | 10.07 | 13.59 | 52.44 | -38.85 | AVG | |
| 7 | | 0.5860 | -0.07 | 10.12 | 10.05 | 46.00 | -35.95 | AVG | |
| 8 | | 0.5899 | 16.82 | 10.12 | 26.94 | 56.00 | -29.06 | QP | |
| 9 | | 3.7980 | 13.05 | 10.17 | 23.22 | 56.00 | -32.78 | QP | |
| 10 | | 3.7980 | -4.49 | 10.17 | 5.68 | 46.00 | -40.32 | AVG | |
| 11 | | 10.0259 | 14.39 | 10.12 | 24.51 | 60.00 | -35.49 | QP | |
| 12 | | 10.0259 | -1.88 | 10.12 | 8.24 | 50.00 | -41.76 | AVG | |

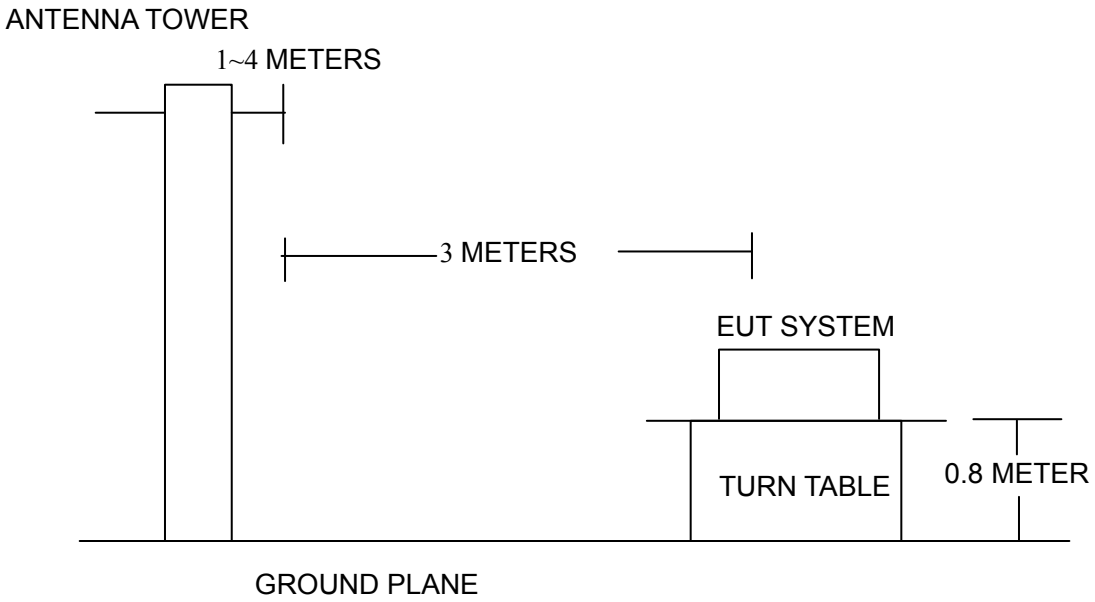
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



# 5. RADIATED EMISSION MEASUREMENT

## 5.1.Block Diagram of Test Setup

### 5.1.1.Anechoic Chamber Test Setup Diagram




## 5.2.Test Standard

FCC Part 15 C: 2015

## 5.3.Radiated Emission Limit(Class B)

| FREQUENCY (MHz) | DISTANCE (Meters) | FIELD STRENGTHS LIMITS (microvolt/meter) |
|---|---|---|
| 0.009~0.490 | 300 | 2400/F(kHz) |
| 0.490~1.705 | 30 | 24000/F(kHz) |
| 1.705~30 | 30 | 30.0 |
| 30 ~ 88 | 3 | 100.0 |
| 88 ~ 216 | 3 | 150.0 |
| 216 ~ 960 | 3 | 200.0 |
| 960 ~ 1000 | 3 | 500.0 |

Note:(1) The smaller limit shall apply at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.
(3) According to §15.31 (f)(2),
- 300 m Result(dBuV/m) = 3 m Result(dBuV/m) – 40log(300/3) (dBuV/m)
- 30 m Result(dBuV/m) = 3 m Result(dBuV/m) – 40log(30/3) (dBuV/m)
(4) According to field strength table of general requirement in §15.209 (a), field strength limits below

1.705 MHz were calculated as below.
- 9 kHz to 490 kHz : 20log(2 400 / F (kHz)) at 300 m (dBuV/m)
- 490 kHz to 1 705 kHz : 20log(24 000 / F (kHz)) at 30 m (dBuV/m)
- 1.705 MHz to 30 MHz : 30 at 30 m (dBuV/m)

(5) According to §15.209 (d), the measurements were tested by using Quasi peak detector except for the frequency bands 9 – 90 kHz, 110 – 490 kHzand above 1 GHz in these three bands on measurements employing an average detector.

## 5.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

Operating Condition of EUT

5.4.1.Setup the EUT as shown on Section 6.1

5.4.2.Turn on the power of all equipments.

5.4.3.Let the EUT work in test mode(communication mode).

## 5.5.Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

The bandwidth setting on the test receiver is 120 KHz.

The EUT is tested in Anechoic Chamber. The frequency range from 30MHz to 1000MHz is checked. All the test results are listed in Section 6.6.

## 5.6.Test Result

PASS

Please refer to the following pages.

### 9KHz-30MHz

| | | | |
|---|---|---|---|
| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Horizontal |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 5 | | |

| Freq. | Reading | Correct Factor | Result | Limit | Margin | Detector | State |
|---|---|---|---|---|---|---|---|
| (MHz) | (dBuV/m) | dB | (dBuV/m) | (dBuV/m) at 3 m | (dB) | | P/F |
| 0.110 | 72.94 | 18.63 | 91.57 | 126.77 | -15.20 | PK | PASS |
| 0.110 | 66.98 | 18.63 | 85.61 | 106.77 | -21.16 | AV | PASS |
| 0.155 | 75.68 | 18.63 | 94.31 | 123.79 | -9.48 | PK | PASS |
| 0.155 | 65.58 | 18.63 | 84.21 | 103.79 | -19.58 | AV | PASS |
| 0.205 | 74.76 | 18.66 | 93.42 | 121.37 | -7.95 | PK | PASS |
| 0.205 | 65.86 | 18.66 | 84.52 | 101.37 | -16.85 | AV | PASS |
| 0.220 | 44.06 | 18.66 | 62.72 | 120.76 | -38.04 | PK | PASS |
| 0.220 | 41.57 | 18.66 | 60.23 | 100.76 | -40.53 | AV | PASS |
| 0.310 | 44.28 | 18.74 | 63.02 | 117.78 | -34.76 | PK | PASS |
| 0.310 | 40.36 | 18.74 | 59.10 | 97.78 | -38.68 | AV | PASS |
| 0.410 | 43.94 | 18.77 | 62.71 | 115.35 | -32.64 | PK | PASS |
| 0.410 | 40.16 | 18.77 | 58.93 | 95.35 | -36.42 | AV | PASS |
| 1.963 | 16.95 | 19.38 | 36.33 | 60.00 | -23.67 | QP | PASS |
| 1.958 | 16.33 | 19.38 | 35.71 | 60.00 | -24.29 | QP | PASS |

**NOTE:**

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

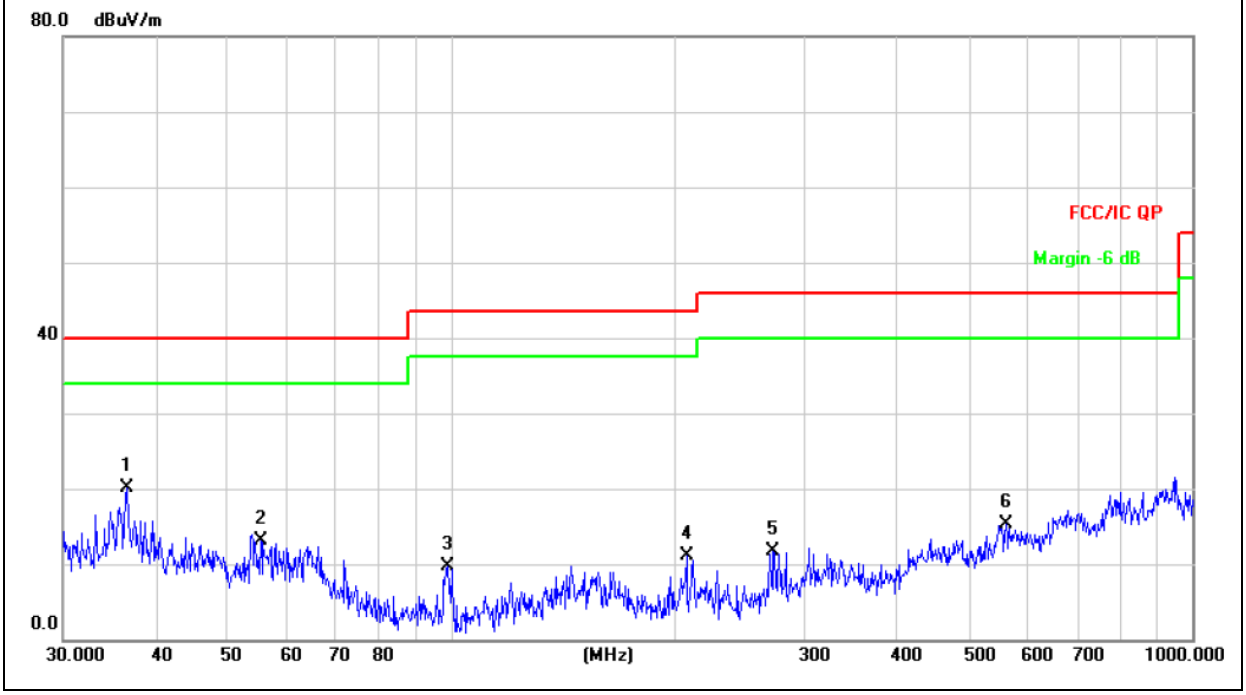
Limit line = specific limits(dBuv) + distance extrapolation factor.

# 30MHz-1GHz

| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Horizontal |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 5 | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 36.6375 | 28.71 | -8.64 | 20.07 | 40.00 | -19.93 | QP | | | |
| 2 | | 55.4147 | 24.17 | -11.16 | 13.01 | 40.00 | -26.99 | QP | | | |
| 3 | | 98.8324 | 26.33 | -16.60 | 9.73 | 43.50 | -33.77 | QP | | | |
| 4 | | 207.8500 | 27.13 | -15.98 | 11.15 | 43.50 | -32.35 | QP | | | |
| 5 | | 272.2776 | 25.18 | -13.42 | 11.76 | 46.00 | -34.24 | QP | | | |
| 6 | | 560.6928 | 22.05 | -6.80 | 15.25 | 46.00 | -30.75 | QP | | | |

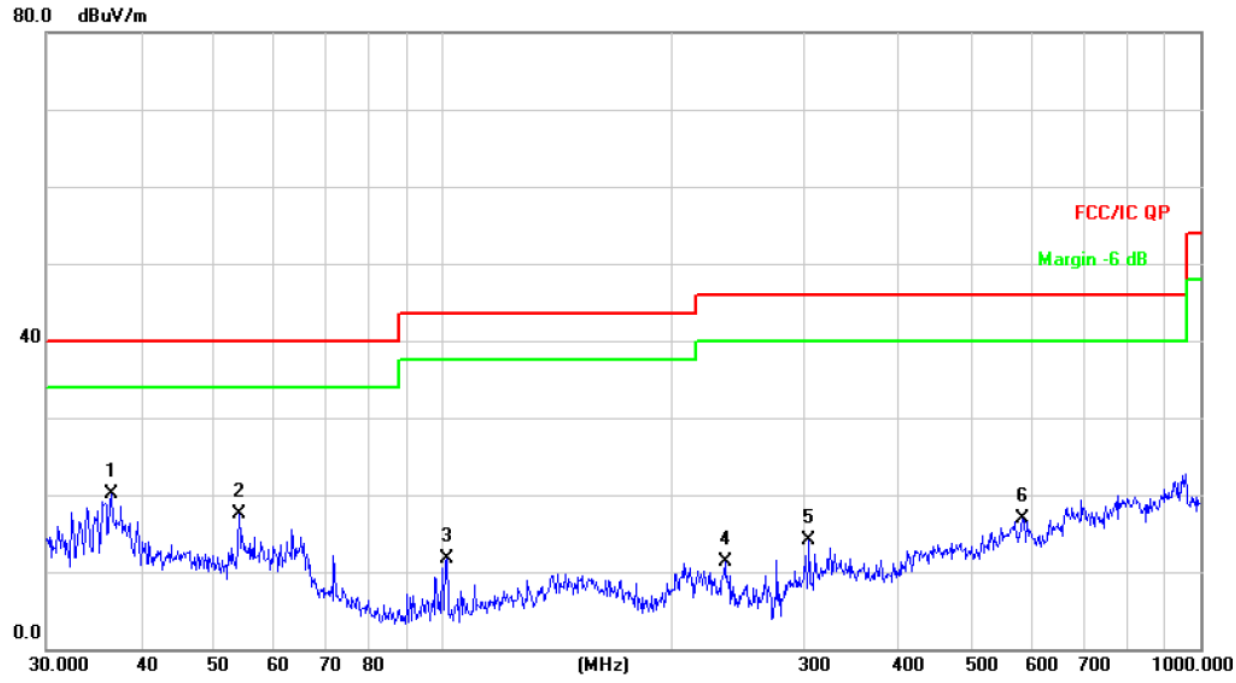
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Vertical |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 5 | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 36.6375 | 28.71 | -8.64 | 20.07 | 40.00 | -19.93 | QP | | | |
| 2 | | 53.8817 | 28.46 | -10.93 | 17.53 | 40.00 | -22.47 | QP | | | |
| 3 | | 101.2883 | 27.98 | -16.36 | 11.62 | 43.50 | -31.88 | QP | | | |
| 4 | | 235.8163 | 25.94 | -14.72 | 11.22 | 46.00 | -34.78 | QP | | | |
| 5 | | 304.6099 | 26.53 | -12.47 | 14.06 | 46.00 | -31.94 | QP | | | |
| 6 | | 582.7423 | 23.06 | -6.20 | 16.86 | 46.00 | -29.14 | QP | | | |

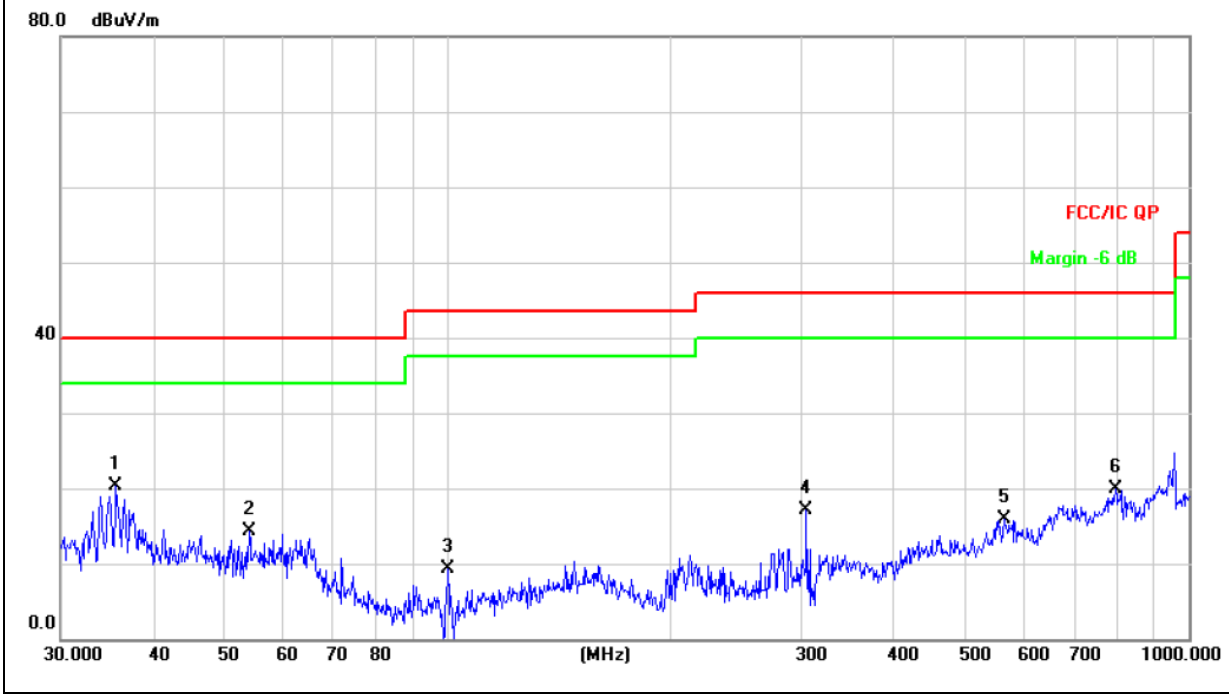
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Horizontal |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 1 | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 35.6240 | 28.90 | -8.56 | 20.34 | 40.00 | -19.66 | QP | | | |
| 2 | | 53.8817 | 25.25 | -10.93 | 14.32 | 40.00 | -25.68 | QP | | | |
| 3 | | 99.8777 | 25.78 | -16.49 | 9.29 | 43.50 | -34.21 | QP | | | |
| 4 | | 304.6099 | 29.60 | -12.47 | 17.13 | 46.00 | -28.87 | QP | | | |
| 5 | | 562.6624 | 22.68 | -6.75 | 15.93 | 46.00 | -30.07 | QP | | | |
| 6 | | 796.1829 | 22.49 | -2.56 | 19.93 | 46.00 | -26.07 | QP | | | |

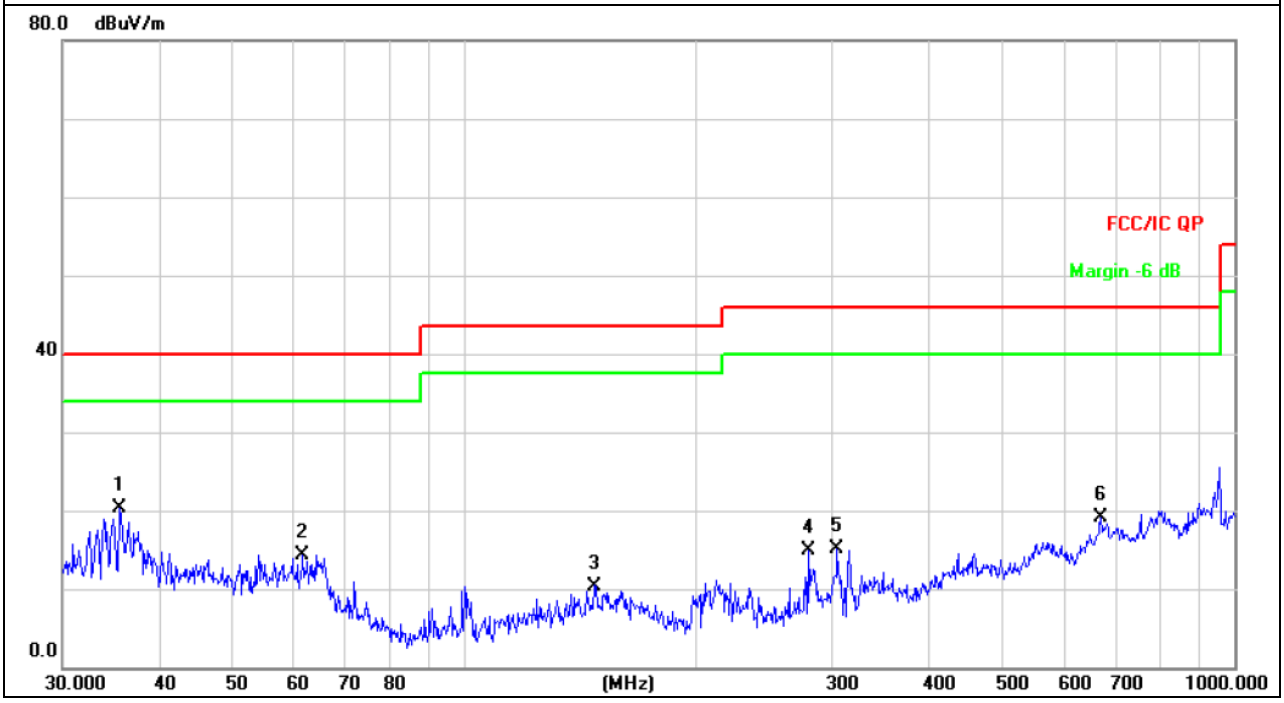
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Vertical |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 1 | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 35.6240 | 28.90 | -8.56 | 20.34 | 40.00 | -19.66 | QP | | | |
| 2 | | 61.5617 | 26.22 | -11.83 | 14.39 | 40.00 | -25.61 | QP | | | |
| 3 | | 147.4036 | 23.40 | -13.00 | 10.40 | 43.50 | -33.10 | QP | | | |
| 4 | | 279.0436 | 28.10 | -13.13 | 14.97 | 46.00 | -31.03 | QP | | | |
| 5 | | 304.6099 | 27.60 | -12.47 | 15.13 | 46.00 | -30.87 | QP | | | |
| 6 | | 670.4891 | 23.94 | -4.83 | 19.11 | 46.00 | -26.89 | QP | | | |

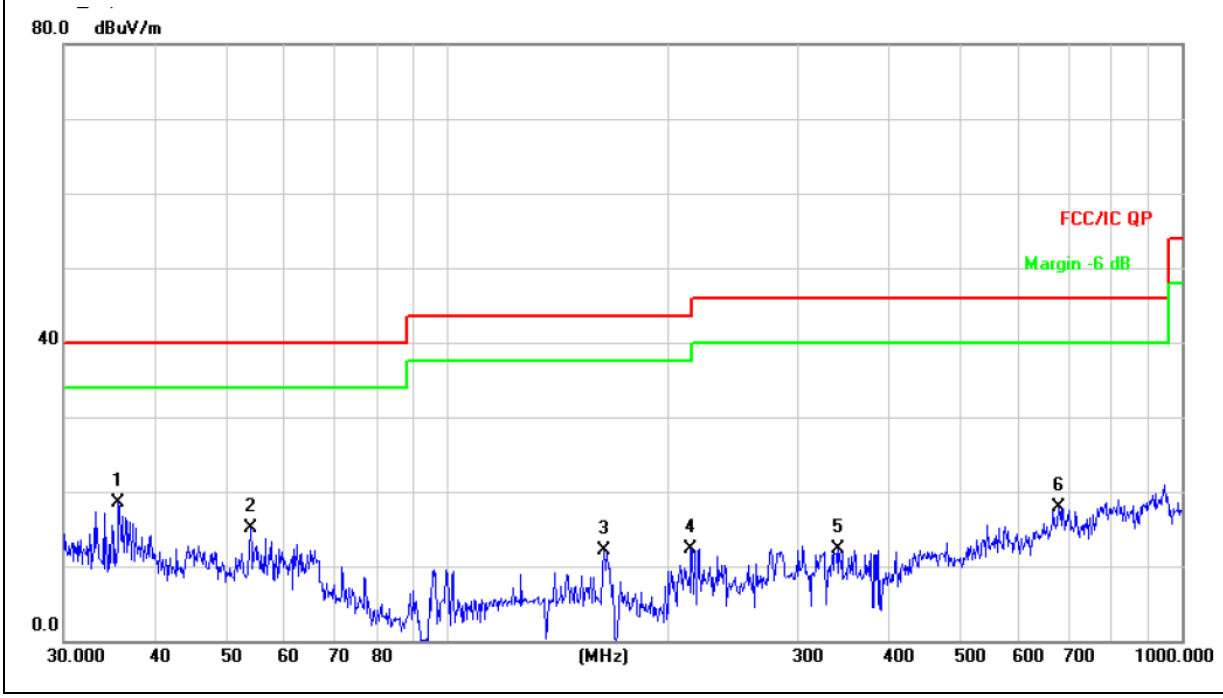
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Horizontal |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 2 | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 35.6240 | 27.14 | -8.56 | 18.58 | 40.00 | -21.42 | QP | | | |
| 2 | | 53.8817 | 26.00 | -10.93 | 15.07 | 40.00 | -24.93 | QP | | | |
| 3 | | 163.1818 | 25.14 | -13.05 | 12.09 | 43.50 | -31.41 | QP | | | |
| 4 | | 214.5141 | 28.04 | -15.78 | 12.26 | 43.50 | -31.24 | QP | | | |
| 5 | | 340.7817 | 23.91 | -11.56 | 12.35 | 46.00 | -33.65 | QP | | | |
| 6 | | 679.9600 | 22.51 | -4.69 | 17.82 | 46.00 | -28.18 | QP | | | |

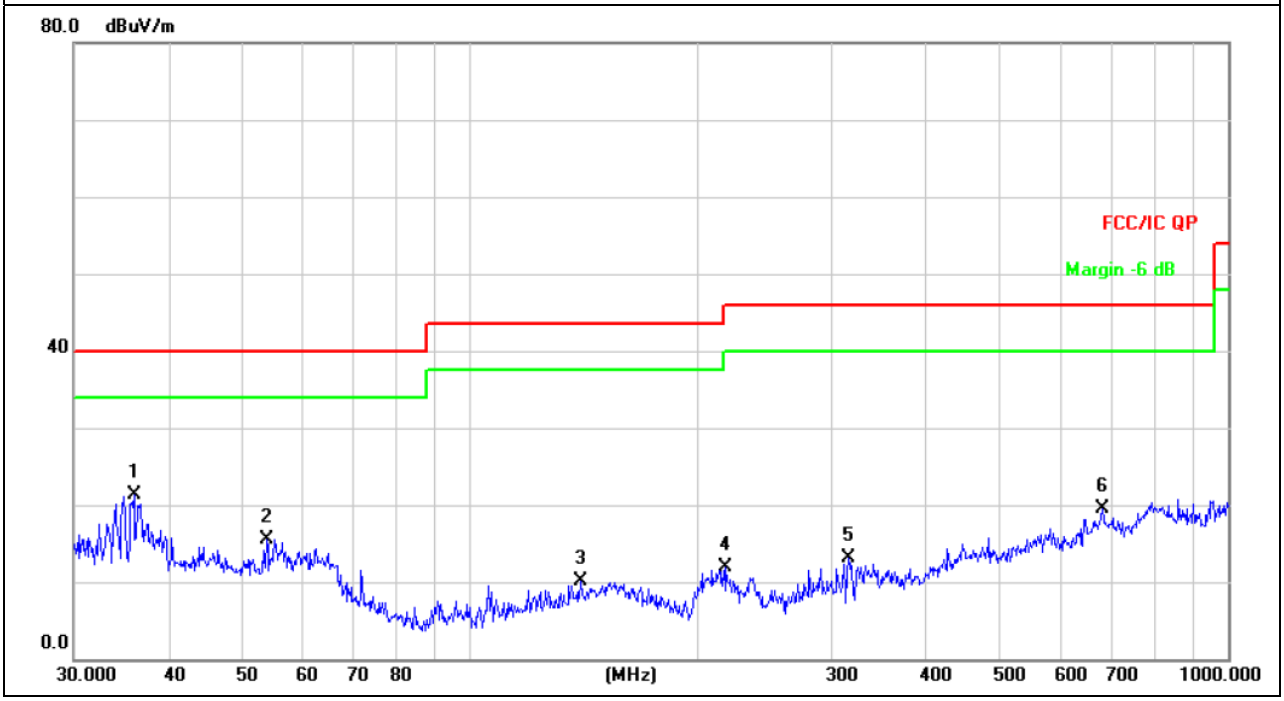
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Vertical |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 2 | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 36.0007 | 29.86 | -8.59 | 21.27 | 40.00 | -18.73 | QP | | | |
| 2 | | 53.8817 | 26.48 | -10.93 | 15.55 | 40.00 | -24.45 | QP | | | |
| 3 | | 139.8507 | 23.48 | -13.40 | 10.08 | 43.50 | -33.42 | QP | | | |
| 4 | | 217.5442 | 27.51 | -15.70 | 11.81 | 46.00 | -34.19 | QP | | | |
| 5 | | 315.4806 | 25.20 | -12.18 | 13.02 | 46.00 | -32.98 | QP | | | |
| 6 | | 682.3484 | 24.16 | -4.66 | 19.50 | 46.00 | -26.50 | QP | | | |

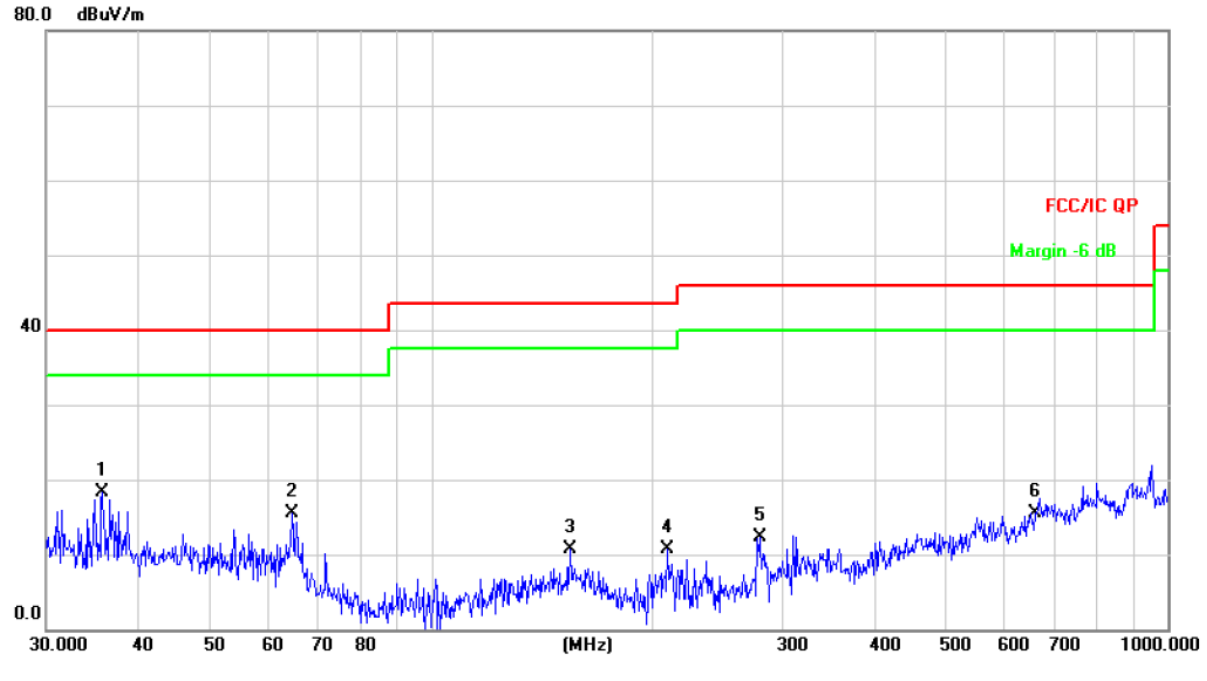
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Horizontal |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 3 | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 35.7490 | 26.78 | -8.56 | 18.22 | 40.00 | -21.78 | QP | | | |
| 2 | | 64.6594 | 28.01 | -12.45 | 15.56 | 40.00 | -24.44 | QP | | | |
| 3 | | 154.2786 | 23.48 | -12.86 | 10.62 | 43.50 | -32.88 | QP | | | |
| 4 | | 209.3129 | 26.62 | -15.93 | 10.69 | 43.50 | -32.81 | QP | | | |
| 5 | | 279.0436 | 25.42 | -13.13 | 12.29 | 46.00 | -33.71 | QP | | | |
| 6 | | 661.1503 | 20.49 | -4.94 | 15.55 | 46.00 | -30.45 | QP | | | |

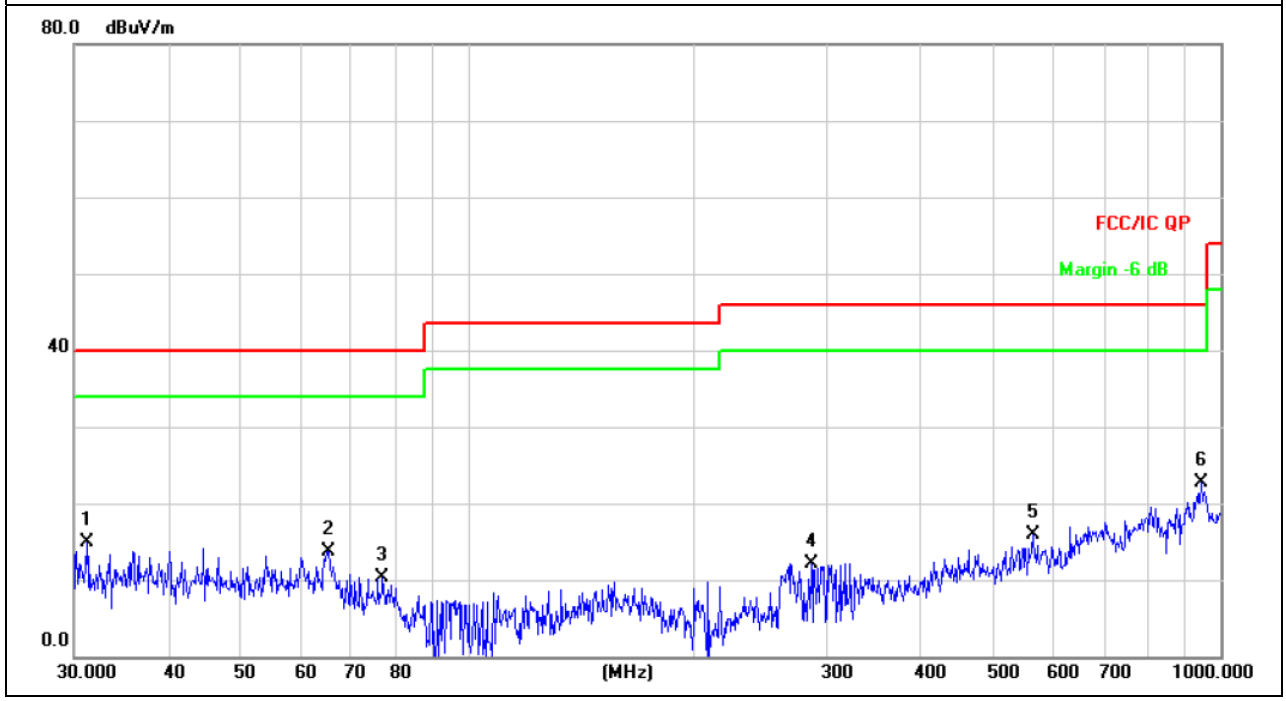
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



| EUT： | Woodie PowerBank | Model Name ： | WPB2 |
|---|---|---|---|
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization : | Vertical |
| Test Voltage ： | DC5V For Adapter | | |
| Test Mode ： | Mode 3 | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 31.1798 | 23.12 | -8.19 | 14.93 | 40.00 | -25.07 | QP | | | |
| 2 | | 65.3431 | 26.45 | -12.66 | 13.79 | 40.00 | -26.21 | QP | | | |
| 3 | | 77.0504 | 27.29 | -17.05 | 10.24 | 40.00 | -29.76 | QP | | | |
| 4 | | 285.9778 | 25.08 | -12.94 | 12.14 | 46.00 | -33.86 | QP | | | |
| 5 | | 562.6624 | 22.65 | -6.75 | 15.90 | 46.00 | -30.10 | QP | | | |
| 6 | * | 942.1304 | 23.29 | -0.63 | 22.66 | 46.00 | -23.34 | QP | | | |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

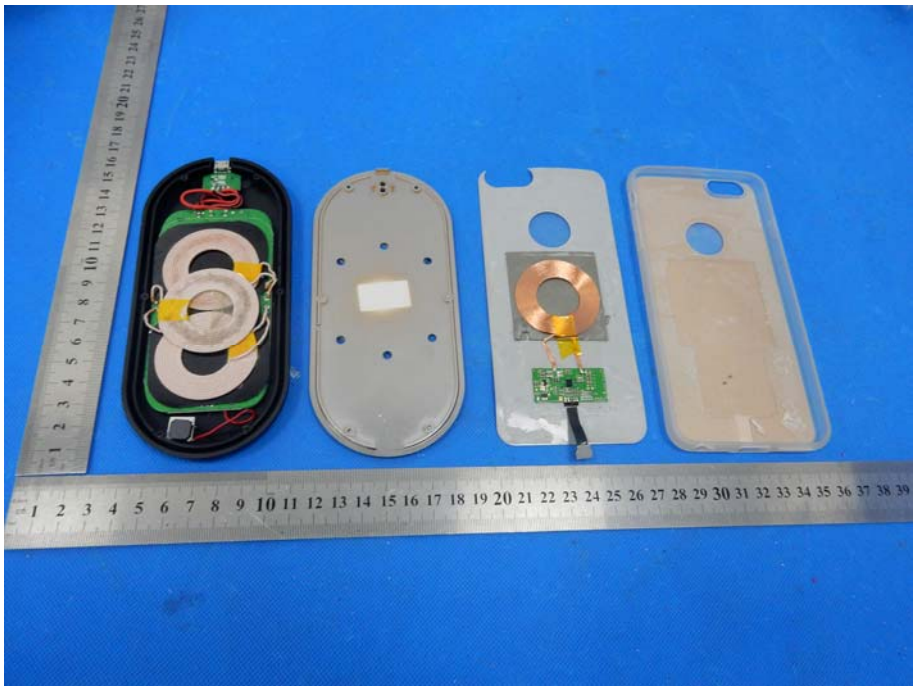


# APPENDIX I (PHOTOS OF THE EUT)

**EUT Photo 1**

**EUT Photo 2**

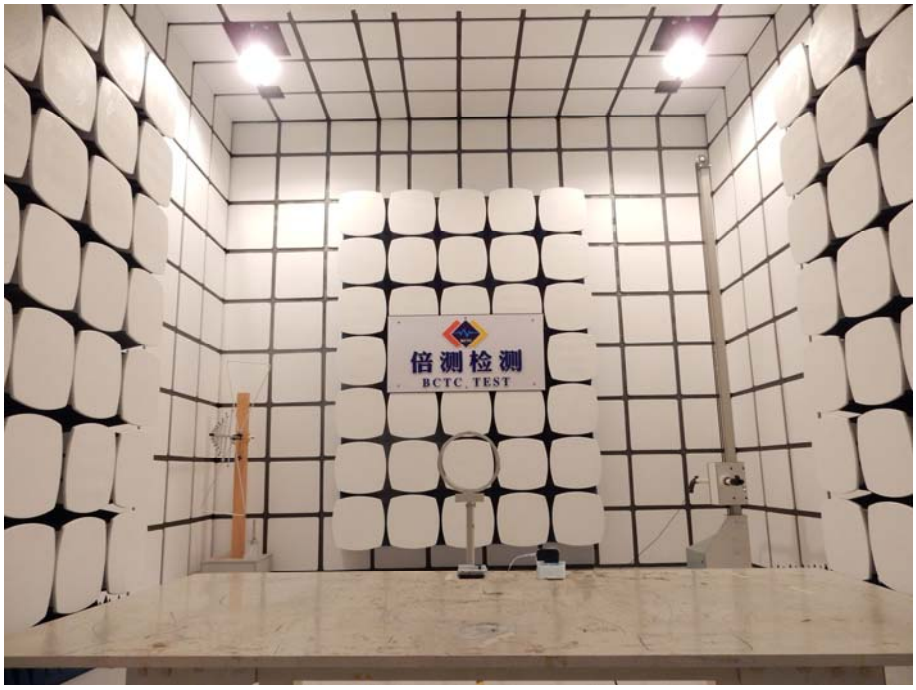
**EUT Photo 3**



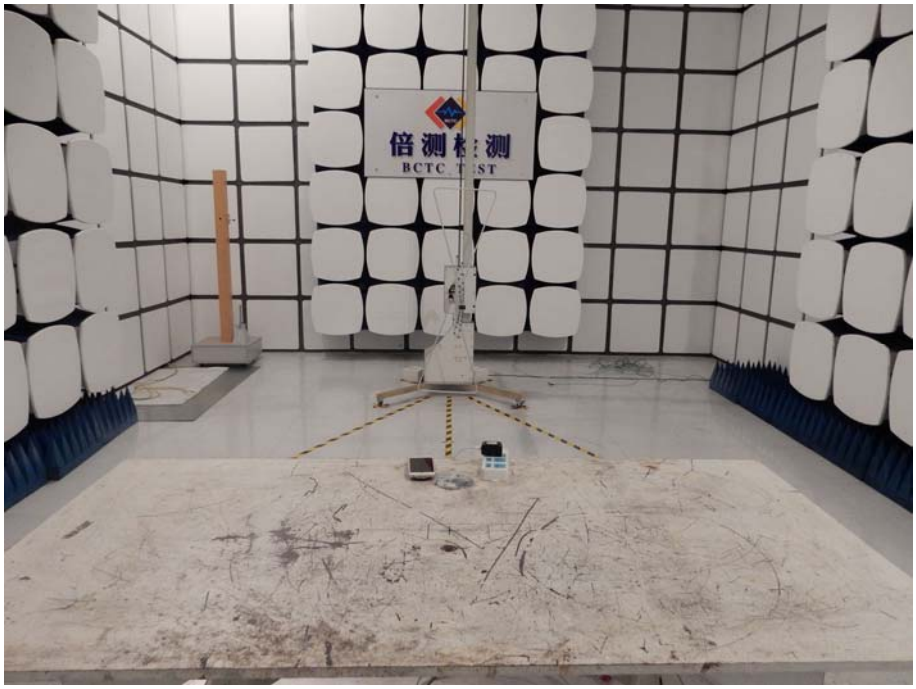
**EUT Photo 4**

# APPENDIX II (TEST PHOTOS OF THE EUT)

9KMz-30MHz




30MHz-1GMz



※ ※ ※ ※ ※ **END OF REPORT** ※ ※ ※ ※ ※