# APPLICATION CERTIFICATION FCC Part 15C & RSS-210
On Behalf of
Country Mate Technology Ltd

Wireless Stereo Earbuds
Model No.: NS-CAHBTAP, NS-CAHBTAP-C

FCC ID: MV3-CAHBTAPR
IC: 9029A-CAHBTAPR

| | | |
|---|---|---|
| Prepared for | : | Country Mate Technology Ltd |
| Address | : | 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K. |
| Prepared by | : | Shenzhen Accurate Technology Co., Ltd. |
| Address | : | 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China. |
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| | | |
|---|---|---|
| Report No. | : | ATE20180513 |
| Date of Test | : | April 9-April 10, 2018 |
| Date of Report | : | April 10, 2018 |

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# Test Report Certification

| | | |
|---|---|---|
| Applicant | : | Country Mate Technology Ltd |
| Address | : | 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K. |
| Manufacturer | : | Country Mate Technology Ltd |
| Address | : | 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K. |
| Product | : | Wireless Stereo Earbuds |
| Model No. | : | NS-CAHBTAP, NS-CAHBTAP-C |

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.215**
**ANSI C63.10: 2013**
**RSS-210 Issue 9 August 2016**
**RSS-Gen Issue 4 November 2014**

The device described above is tested by Shenzhen Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.215 and RSS-210 limits. The measurement results are contained in this test report and Shenzhen Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Date of Test : April 9-April 10, 2018
Date of Report: April 10, 2018

Prepared by : (Star Yang, Engineer)

Approved &
Authorized Signer : (Sean Liu, Manager)

# 1. GENERAL INFORMATION

## 1.1.Description of Device (EUT)

| | | |
|---|---|---|
| EUT | : | Wireless Stereo Earbuds |
| Model Number | : | NS-CAHBTAP, NS-CAHBTAP-C<br>(Note: Above series are identical in schematic, structure and critical components, Only the model name is different from the market requirement, NS-CAHBTAP For the FCC reports, NS-CAHBTAP-C For the IC reports.) |
| HVIN | : | R |
| Frequency Range | : | 10.579MHz |
| Number of Channels | : | 1 |
| Antenna Gain(Max) | : | 0dBi |
| Antenna type | : | Inductive coil antenna |
| Modulation mode | : | D8PSK PTCM |
| Trade Name | : | INSIGNIA |
| Rating | : | DC 3.7V (Powered by Lithium battery) or<br>DC 5V (Powered by USB port) |
| Applicant | : | Country Mate Technology Ltd |
| Address | : | 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K. |
| Manufacturer | : | Country Mate Technology Ltd |
| Address | : | 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K. |
| Date of sample received | : | Feb. 24, 2018 |
| Date of Test | : | April 9-April 10, 2018 |

## 1.2.Accessory and Auxiliary Equipment

| | |
|---|---|
| Notebook PC: | Manufacturer: Lenovo<br>M/N: ThinkPad X240<br>S/N:n.a |

## 1.3.Description of Test Facility

| | | |
|---|---|---|
| EMC Lab | : | Recognition of accreditation by Federal Communications Commission (FCC)<br>The Designation Number is CN1189<br>The Registration Number is 708358<br><br>Listed by Innovation, Science and Economic Development Canada (ISEDC)<br>The Registration Number is 5077A-2<br><br>Accredited by China National Accreditation Service for Conformity Assessment (CNAS)<br>The Registration Number is CNAS L3193<br><br>Accredited by American Association for Laboratory Accreditation (A2LA)<br>The Certificate Number is 4297.01 |
| Name of Firm | : | Shenzhen Accurate Technology Co., Ltd. |
| Site Location | : | 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China |

## 1.4.Measurement Uncertainty

| | | |
|---|---|---|
| Conducted Emission Expanded Uncertainty | = | 2.23dB, k=2 |
| Radiated emission expanded uncertainty (9kHz-30MHz) | = | 3.08dB, k=2 |
| Radiated emission expanded uncertainty (30MHz-1000MHz) | = | 4.42dB, k=2 |
| Radiated emission expanded uncertainty (Above 1GHz) | = | 4.06dB, k=2 |

# 2. MEASURING DEVICE AND TEST EQUIPMENT

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

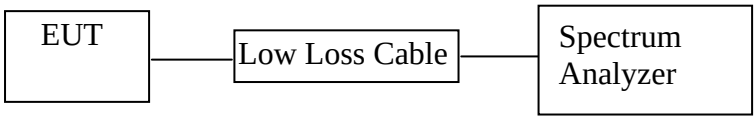
| Kind of equipment | Manufacturer | Type | S/N | Calibrated dates | Calibrated until |
|---|---|---|---|---|---|
| EMI Test Receiver | Rohde&Schwarz | ESCS30 | 100307 | Jan. 06, 2018 | Jan. 05, 2019 |
| EMI Test Receiver | Rohde&Schwarz | ESPI3 | 101526/003 | Jan. 06, 2018 | Jan. 05, 2019 |
| Spectrum Analyzer | Rohde&Schwarz | FSV-40 | 101495 | Jan. 06, 2018 | Jan. 05, 2019 |
| Spectrum Analyzer | Agilent | E7405A | MY45115511 | Jan. 06, 2018 | Jan. 05, 2019 |
| Pre-Amplifier | Rohde&Schwarz | CBLU1183540-01 | 3791 | Jan. 06, 2018 | Jan. 05, 2019 |
| Loop Antenna | Schwarzbeck | FMZB1516 | 1516131 | Jan. 12, 2018 | Jan. 11, 2019 |
| Bilog Antenna | Schwarzbeck | VULB9163 | 9163-323 | Jan. 12, 2018 | Jan. 11, 2019 |
| Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-655 | Jan. 12, 2018 | Jan. 11, 2019 |
| Horn Antenna | Schwarzbeck | BBHA9170 | 9170-359 | Jan. 12, 2018 | Jan. 11, 2019 |
| Open Switch and Control Unit | Rohde&Schwarz | OSP120 + OSP-B157 | 101244 + 100866 | Jan. 06, 2018 | Jan. 05, 2019 |
| LISN | Rohde&Schwarz | ESH3-Z5 | 100305 | Jan. 06, 2018 | Jan. 05, 2019 |
| LISN | Schwarzbeck | NSLK8126 | 8126431 | Jan. 06, 2018 | Jan. 05, 2019 |
| Highpass Filter | Wainwright Instruments | WHKX3.6/18G-10SS | N/A | Jan. 06, 2018 | Jan. 05, 2019 |
| Band Reject Filter | Wainwright Instruments | WRCG2400/2485-2375/2510-60/11SS | N/A | Jan. 06, 2018 | Jan. 05, 2019 |

# 3. TEST PROCEDURES AND RESULTS

| FCC & IC Rules | Description of Test | Result |
|---|---|---|
| Section 15.215(c) | 20dB Bandwidth Test | Compliant |
| RSS-Gen Section 6.6 | 99% Occupied Bandwidth | Compliant |
| Section 15.209<br>Rss 210 Section 3.1&4.4<br>RSS-Gen 6.13 | Radiated Emission Test | Compliant |
| Section 15.207<br>RSS-Gen Section 8.8 | AC Power Line Conducted Emission Test | Compliant |
| Section 15.203<br>RSS-Gen 8.3 | Antenna Requirement | Compliant |

# 4. 20DB BANDWIDTH TEST

## 4.1.Block Diagram of Test Setup




(EUT: Wireless Stereo Earbuds)

## 4.2.The Requirement For Section 15.215(c)

Section 15.215(c): Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation

## 4.3.Test Procedure

4.3.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

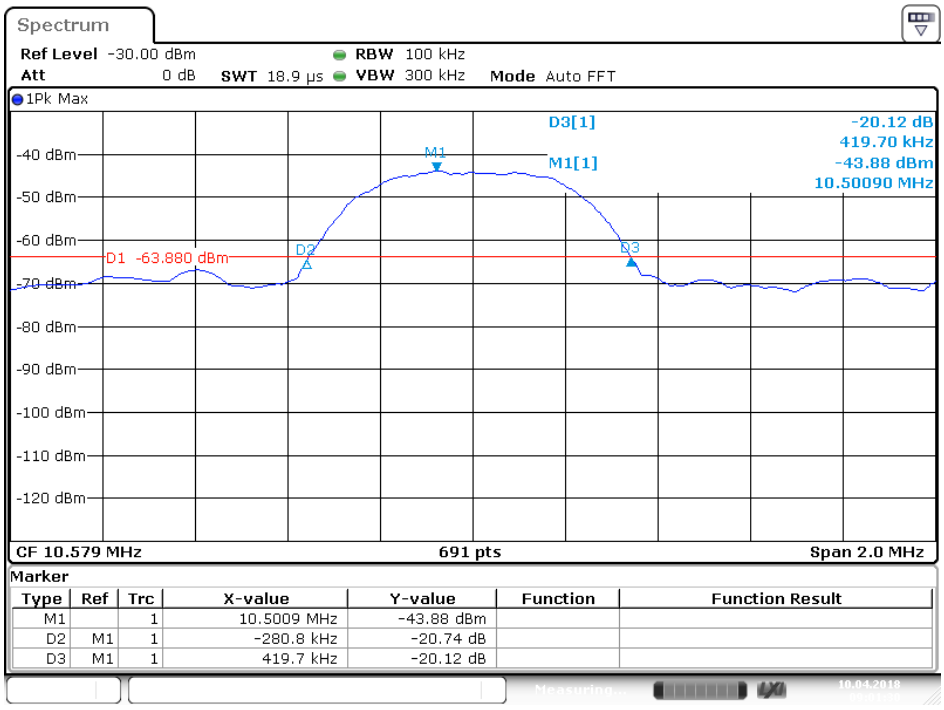
4.3.2.The RBW should be 1%~5% of OBW.

4.3.3.The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

## 4.4.Test Result

| Frequency (MHz) | 20dB Bandwidth (MHz) |
|---|---|
| 10.579 | 0.701 |

The spectrum analyzer plots are attached as below.

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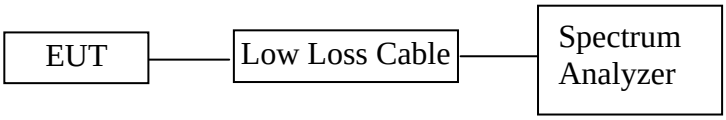
# 5. 99% OCCUPIED BANDWIDTH

## 5.1.Block Diagram of Test Setup




(EUT: Wireless Stereo Earbuds)

## 5.2.The Requirement for RSS-Gen Clause 6.6

The emission bandwidth (x dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated x dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth. When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth

## 5.3.Test Procedure

5.3.1.Place the EUT on the table and set it in transmitting mode.

5.3.2.Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

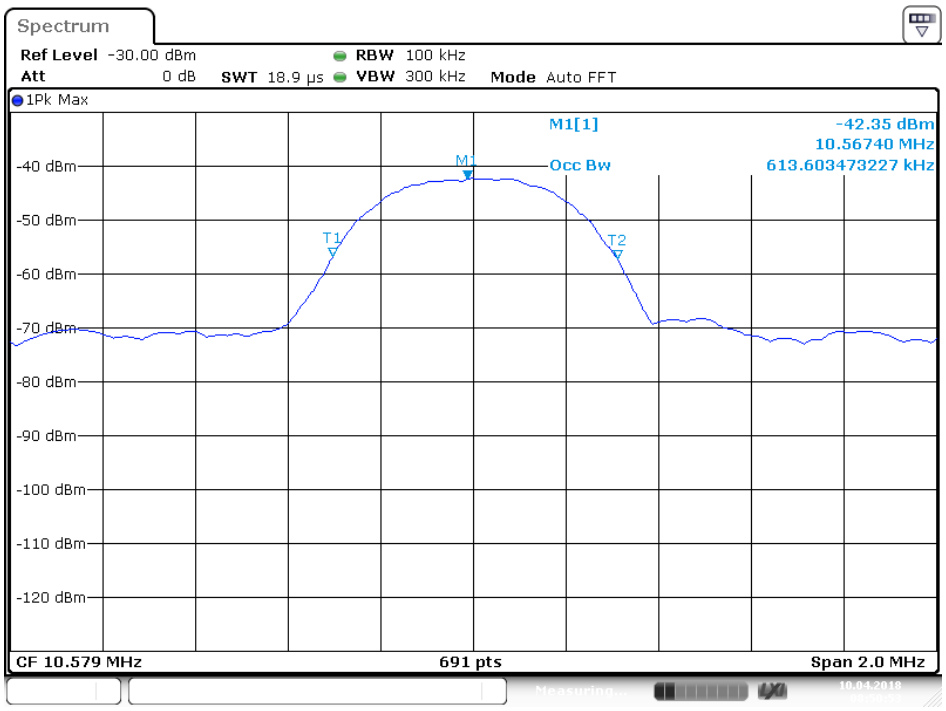
5.3.3.The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW. Set RBW of spectrum analyzer to 10kHz and VBW to 30kHz, Detector function=peak, Trace=max hold, Sweep=auto.

5.3.4.Set the measured frequency and test 99% bandwidth with spectrum analyzer.

## 5.4.Measurement Result

| Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|
| 10.579 | 0.614 |

The spectrum analyzer plots are attached as below.

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# 6. RADIATED EMISSION TEST

## 6.1.Block Diagram of Test Setup

### 6.1.1.Block diagram of connection between the EUT and peripherals

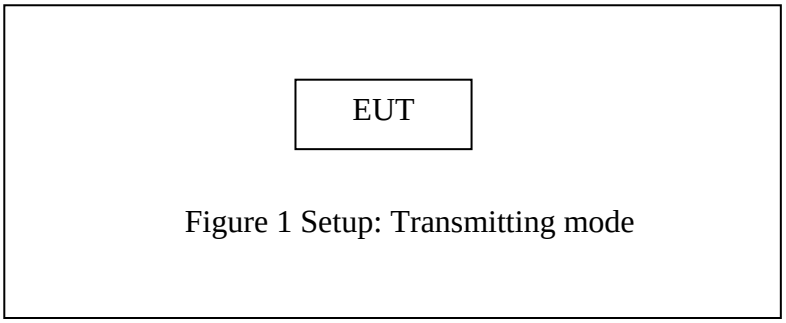
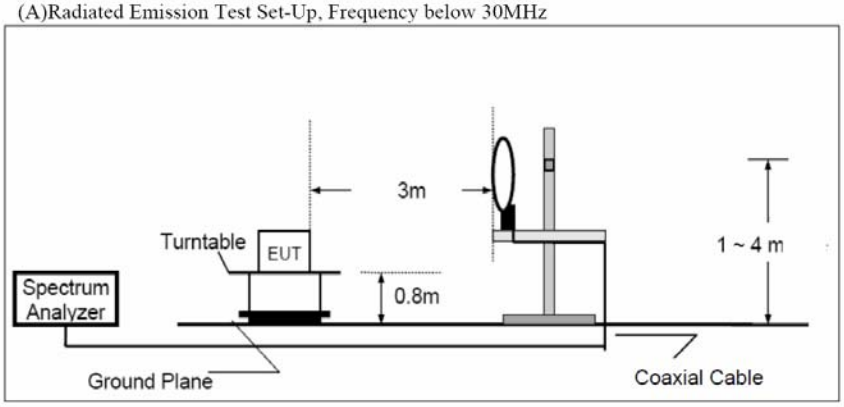


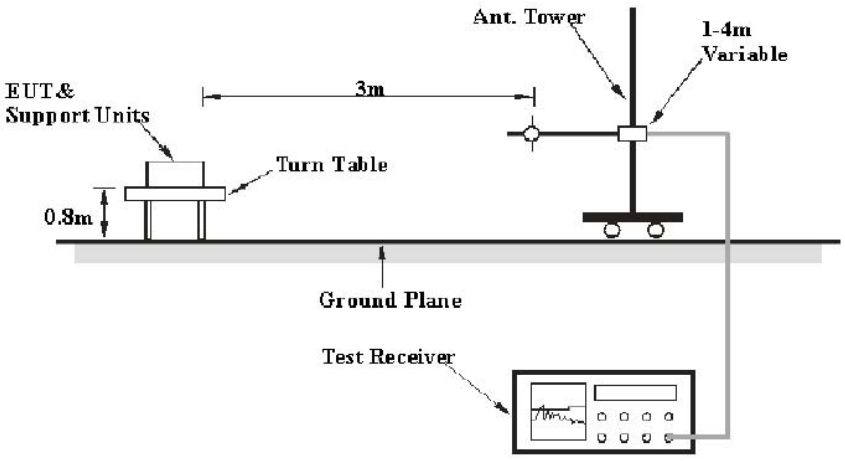

Figure 1 Setup: Transmitting mode

### 6.1.2.Semi-Anechoic Chamber Test Setup Diagram

(A)Radiated Emission Test Set-Up, Frequency below 30MHz




(B)Radiated Emission Test Set-Up, Frequency 30MHz-1GHz



## 6.2.The Limit For Section 15.215(b)

Section 15.215(b): In most cases, unwanted emissions outside of the frequency bands shown in these alternative provisions must be attenuated to the emission limits shown in § 15.209. In no case shall the level of the unwanted emissions from an intentional radiator operating under these additional provisions exceed the field strength of the fundamental emission

## 6.3.Restricted bands of operation

### 6.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| [1]0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | ([2]) |
| 13.36-13.41 | | | |

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 6.4. Configuration of EUT on Measurement

The equipment is 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.

## 6.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. This EUT was tested in 3 orthogonal positions and the worst case position data was reported.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

## 6.6.Data Sample

| Frequency (MHz) | Reading (dBμv) | Factor (dB/m) | Result (dBμv/m) | Limit (dBμv/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|
| X.XX | 48.69 | -13.35 | 35.34 | 46 | -10.66 | QP |

Frequency(MHz) = Emission frequency in MHz
Reading(dBμv) = Uncorrected Analyzer/Receiver reading
Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain
Result(dBμv/m) = Reading(dBμv) + Factor(dB/m)
Limit (dBμv/m) = Limit stated in standard
Margin (dB) = Result(dBμv/m) - Limit (dBμv/m)
QP = Quasi-peak Reading

Calculation Formula:
Margin(dB) = Result (dBμV/m)–Limit(dBμV/m)
Result(dBμV/m)= Reading(dBμV)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

## 6.7.The Field Strength of Radiation Emission Measurement Results

**PASS.**

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectrum analyzer plots are attached as below.

# 9kHz-30MHz test data

***ACCURATE TECHNOLOGY CO.,LTD***

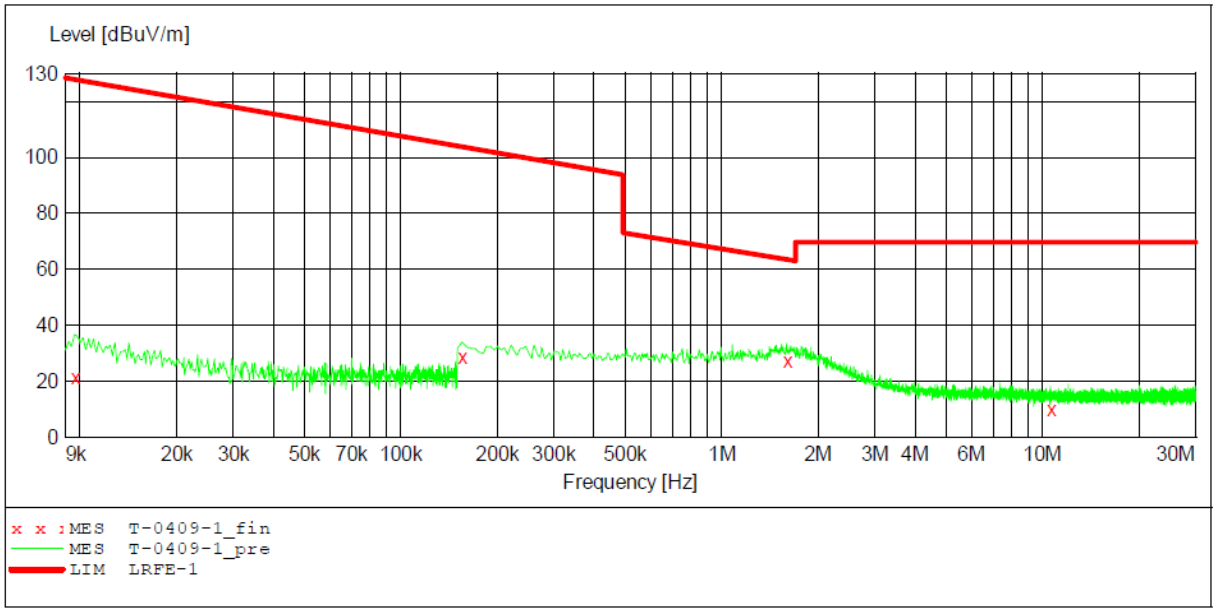
***FCC Class B 3m Radiated***

EUT: Wireless Stereo Earbuds M/N:NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd
Operating Condition: TX 10.579MHz
Test Site: 2# Chamber
Operator: WADE
Test Specification: DC 3.7V
Comment: X
Start of Test: 2018-4-9 /

***SCAN TABLE: "LFRE(E) Fin"***

Short Description: _SUB_STD_VTERM2 1.70

| Start Frequency | Stop Frequency | Step Width | Detector | Meas. Time | IF Bandw. | Transducer |
|---|---|---|---|---|---|---|
| 9.0 kHz | 150.0 kHz | 100.0 Hz | QuasiPeak | 1.0 s | 200 Hz | 1516E |
| 150.0 kHz | 30.0 MHz | 5.0 kHz | QuasiPeak | 1.0 s | 9 kHz | 1516E |




***MEASUREMENT RESULT: "T-0409-1_fin"***

2018-4-9

| Frequency MHz | Level dBuV/m | Transd dB | Limit dBuV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---|---|---|---|---|---|---|---|---|
| 0.009600 | 21.30 | 20.1 | 127.9 | 106.6 | QP | 100.0 | 0.00 | X |
| 0.155000 | 28.40 | 20.1 | 103.8 | 75.4 | QP | 100.0 | 0.00 | X |
| 1.595000 | 27.20 | 20.4 | 63.5 | 36.3 | QP | 100.0 | 0.00 | X |
| 10.595000 | 10.00 | 20.7 | 69.5 | 59.5 | QP | 100.0 | 0.00 | X |

***ACCURATE TECHNOLOGY CO.,LTD***

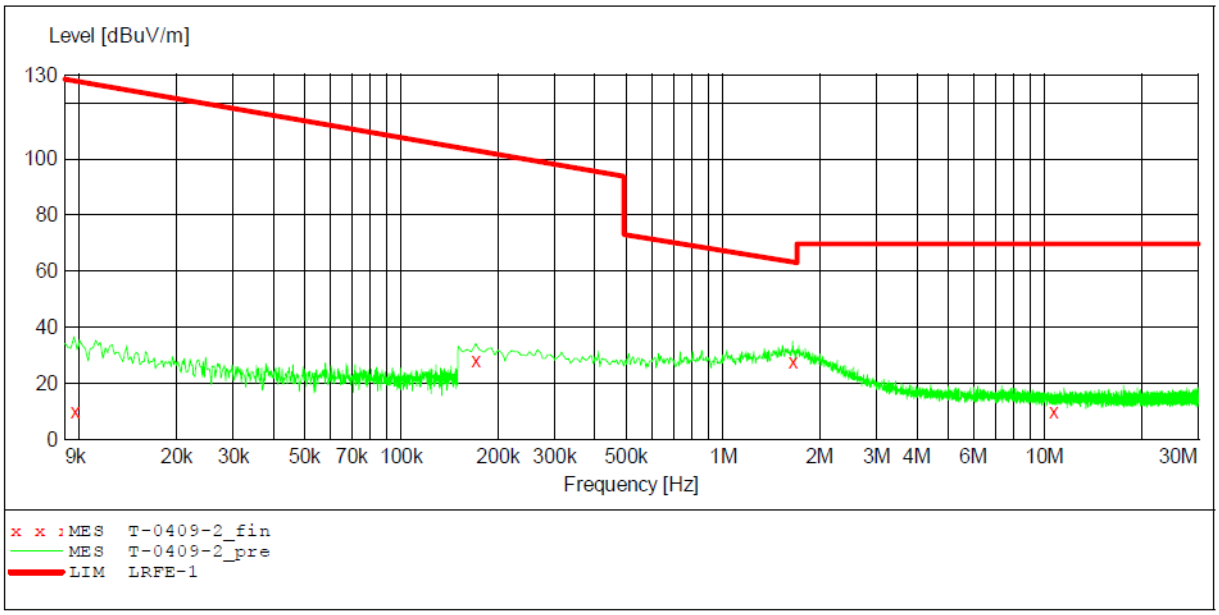
***FCC Class B 3m Radiated***

EUT: Wireless Stereo Earbuds M/N:NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd
Operating Condition: TX 10.579MHz
Test Site: 2# Chamber
Operator: WADE
Test Specification: DC 3.7V
Comment: Y
Start of Test: 2018-4-9 /

***SCAN TABLE: "LFRE(E) Fin"***

Short Description: _SUB_STD_VTERM2 1.70

| Start Frequency | Stop Frequency | Step Width | Detector | Meas. Time | IF Bandw. | Transducer |
|---|---|---|---|---|---|---|
| 9.0 kHz | 150.0 kHz | 100.0 Hz | QuasiPeak | 1.0 s | 200 Hz | 1516E |
| 150.0 kHz | 30.0 MHz | 5.0 kHz | QuasiPeak | 1.0 s | 9 kHz | 1516E |




***MEASUREMENT RESULT: "T-0409-2_fin"***

2018-4-9

| Frequency MHz | Level dBuV/m | Transd dB | Limit dBuV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---|---|---|---|---|---|---|---|---|
| 0.009600 | 10.00 | 20.1 | 127.9 | 117.9 | QP | 100.0 | 0.00 | Y |
| 0.170000 | 27.90 | 20.2 | 103.0 | 75.1 | QP | 100.0 | 0.00 | Y |
| 1.645000 | 27.40 | 20.4 | 63.3 | 35.9 | QP | 100.0 | 0.00 | Y |
| 10.585000 | 10.00 | 20.7 | 69.5 | 59.5 | QP | 100.0 | 0.00 | Y |

***ACCURATE TECHNOLOGY CO.,LTD***

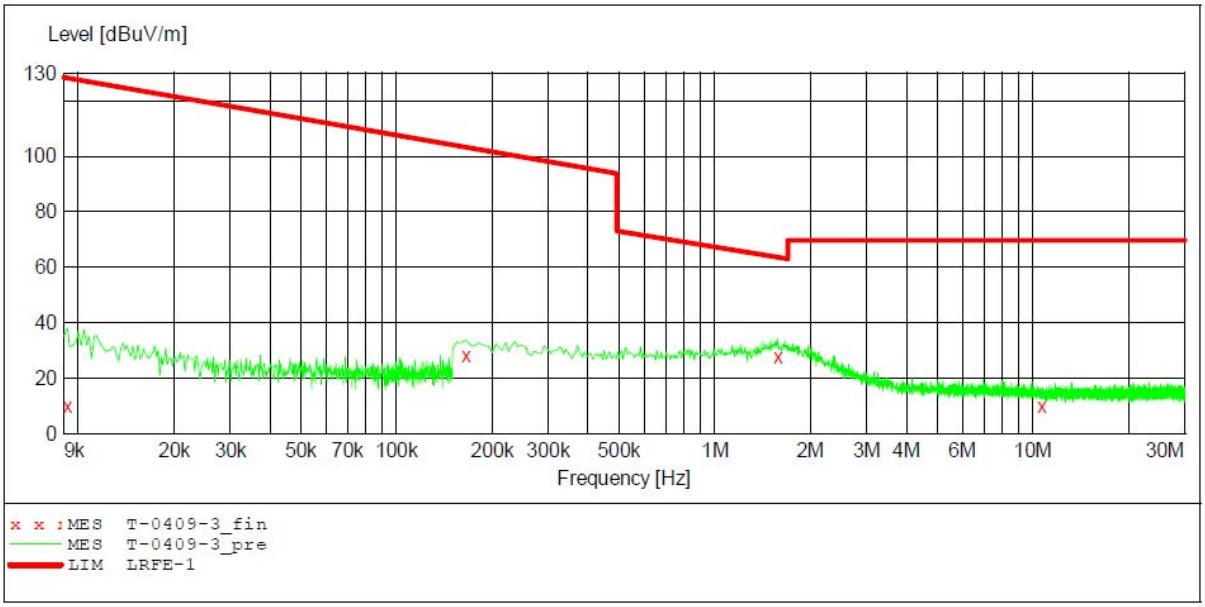
***FCC Class B 3m Radiated***

EUT: Wireless Stereo Earbuds M/N:NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd
Operating Condition: TX 10.579MHz
Test Site: 2# Chamber
Operator: WADE
Test Specification: DC 3.7V
Comment: Z
Start of Test: 2018-4-9 /

***SCAN TABLE: "LFRE(E) Fin"***

Short Description: _SUB_STD_VTERM2 1.70

| Start Frequency | Stop Frequency | Step Width | Detector | Meas. Time | IF Bandw. | Transducer |
|---|---|---|---|---|---|---|
| 9.0 kHz | 150.0 kHz | 100.0 Hz | QuasiPeak | 1.0 s | 200 Hz | 1516E |
| 150.0 kHz | 30.0 MHz | 5.0 kHz | QuasiPeak | 1.0 s | 9 kHz | 1516E |




***MEASUREMENT RESULT: "T-0409-3_fin"***

2018-4-9

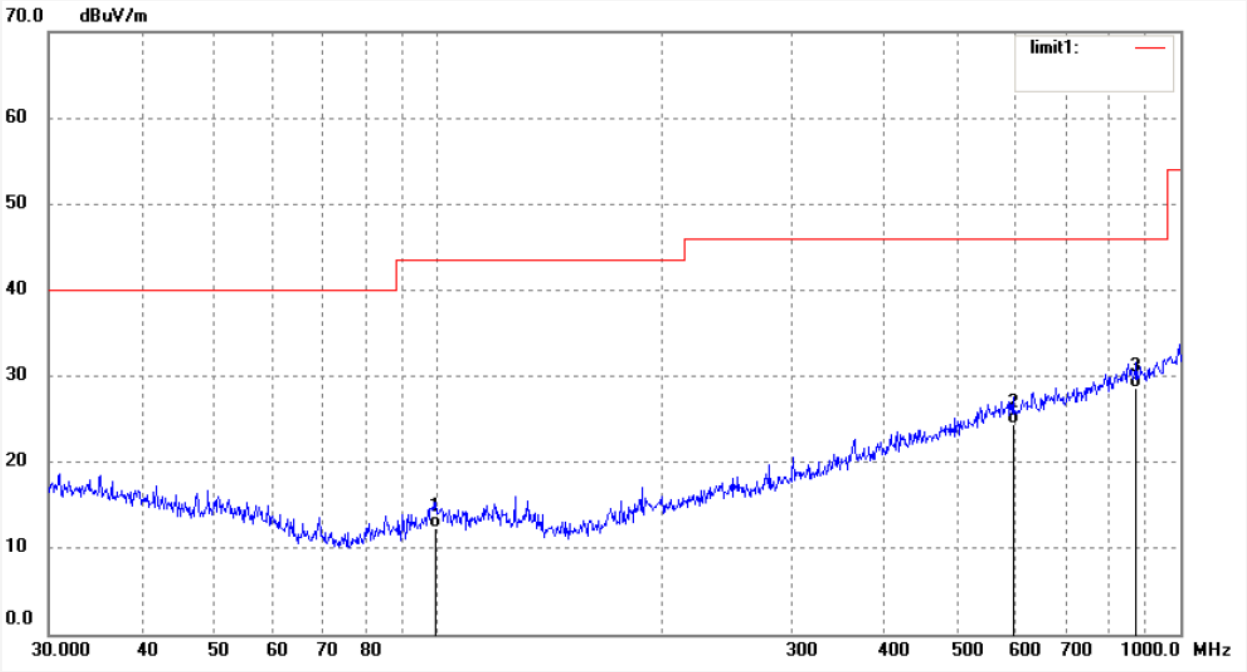
| Frequency MHz | Level dBuV/m | Transd dB | Limit dBuV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---|---|---|---|---|---|---|---|---|
| 0.009200 | 10.00 | 20.1 | 128.3 | 118.3 | QP | 100.0 | 0.00 | Z |
| 0.165000 | 28.10 | 20.2 | 103.2 | 75.1 | QP | 100.0 | 0.00 | Z |
| 1.570000 | 27.50 | 20.4 | 63.6 | 36.1 | QP | 100.0 | 0.00 | Z |
| 10.585000 | 10.00 | 20.7 | 69.5 | 59.5 | QP | 100.0 | 0.00 | Z |

**30MHz-1000MHz test data**

**ACCURATE TECHNOLOGY CO., LTD.**
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: LGW2018 #665 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: |
| Test item: Radiation Test | Date: 18/04/09/ |
| Temp.( C)/Hum.(%) 23 C / 48 % | Time: |
| EUT: Wireless Stereo Earbuds | Engineer Signature: WADE |
| Mode: TX 10.579MHz | Distance: 3m |
| Model: NS-CAHBTAP | |
| Manufacturer: Country Mate Technology Ltd | |

Note:




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 99.5279 | 25.57 | -13.20 | 12.37 | 43.50 | -31.13 | QP | | | |
| 2 | 595.1327 | 26.94 | -2.44 | 24.50 | 46.00 | -21.50 | QP | | | |
| 3 | 872.1832 | 26.64 | 1.94 | 28.58 | 46.00 | -17.42 | QP | | | |

**ACCURATE TECHNOLOGY CO., LTD.**
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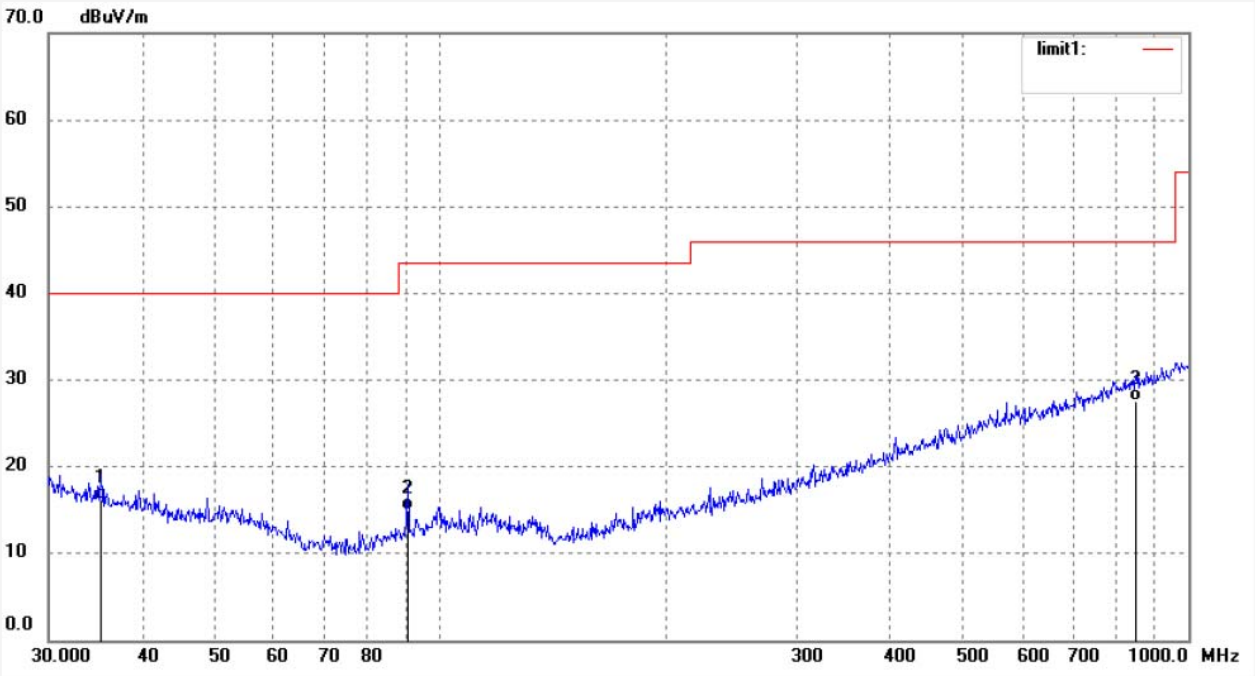
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: LGW2018 #496 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 3.7V |
| Test item: Radiation Test | Date: 18/02/10/ |
| Temp.( C)/Hum.(%) 23 C / 48 % | Time: |
| EUT: True Wireless Earbuds | Engineer Signature: WADE |
| Mode: TX 10.579MHz | Distance: 3m |
| Model: NS-CAHBTAP | |
| Manufacturer: Country Mate Technology Ltd | |

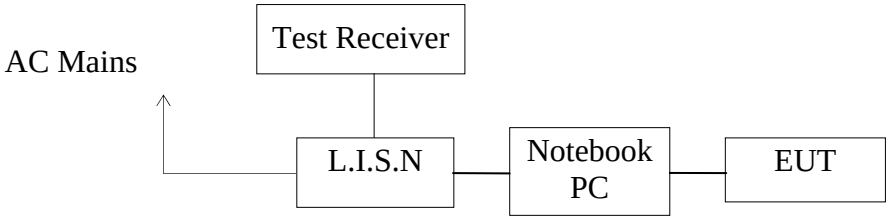
Note:




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 35.2511 | 26.60 | -10.47 | 16.13 | 40.00 | -23.87 | QP | | | |
| 2 | 90.5374 | 30.00 | -14.98 | 15.02 | 43.50 | -28.48 | QP | | | |
| 3 | 851.0353 | 25.99 | 1.57 | 27.56 | 46.00 | -18.44 | QP | | | |

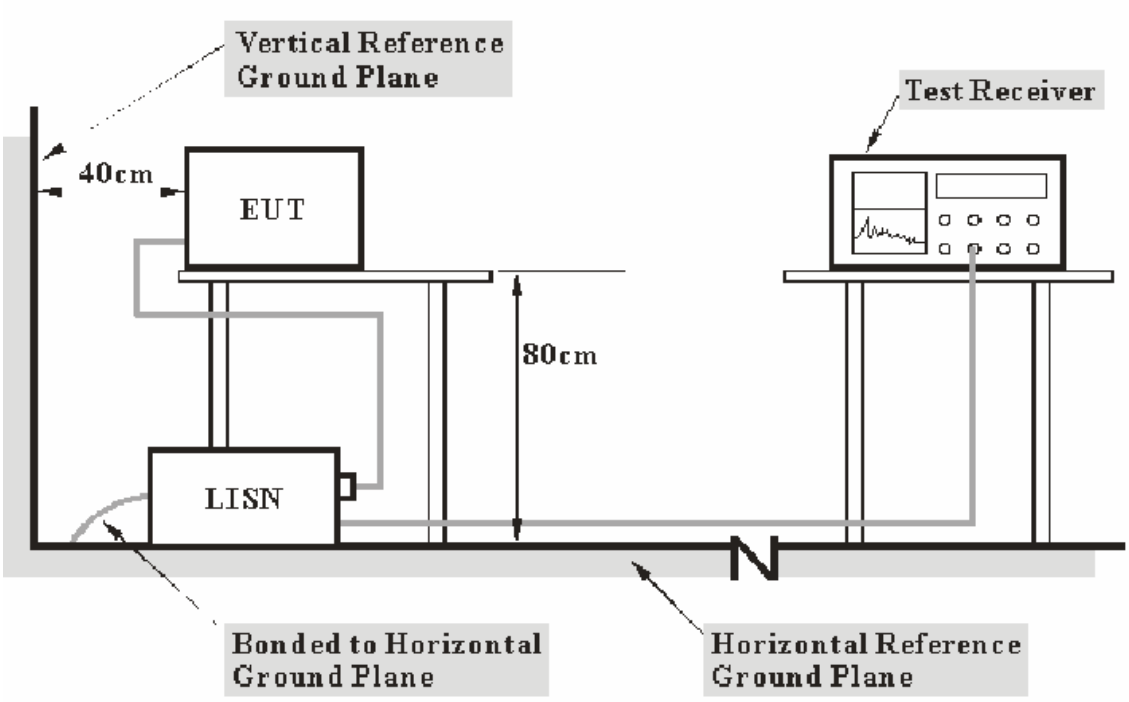
# 7. AC POWER LINE CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.207 & RSS-GEN 8.8

## 7.1.Block Diagram of Test Setup




(EUT:Wireless Stereo Earbuds)

## 7.2.Test System Setup




Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

## 7.3.Power Line Conducted Emission Measurement Limits

| Frequency (MHz) | Limit dB(μV) | |
|---|---|---|
| | Quasi-peak Level | Average Level |
| 0.15 - 0.50 | 66.0 – 56.0 * | 56.0 – 46.0 * |
| 0.50 - 5.00 | 56.0 | 46.0 |
| 5.00 - 30.00 | 60.0 | 50.0 |
| NOTE1: The lower limit shall apply at the transition frequencies.<br>NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz. | | |

## 7.4.Configuration of EUT on Measurement

The equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

## 7.5.Operating Condition of EUT

7.5.1. Setup the EUT and simulator as shown as Section 7.1.

7.5.2. Turn on the power of all equipment.

7.5.3. Let the EUT work in test mode and measure it.

## 7.6.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2014 on Conducted Emission Measurement.
The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

## 7.7.Data Sample

| Frequency (MHz) | Transducer value (dB) | QuasiPeak Level (dBμV) | Average Level (dBμV) | QuasiPeak Limit (dBμV) | Average Limit (dBμV) | QuasiPeak Margin (dB) | Average Margin (dB) | Remark (Pass/Fail) |
|---|---|---|---|---|---|---|---|---|
| X.XX | 10.5 | 51.1 | 34.2 | 56.0 | 46.0 | 4.9 | 11.8 | Pass |

Frequency(MHz) = Emission frequency in MHz
Transducer value(dB) = Insertion loss of LISN + Cable Loss
Level(dBμV) = Quasi-peak Reading/Average Reading + Transducer value
Limit (dBμV) = Limit stated in standard
Margin = Limit (dBμV) - Level (dBμV)

Calculation Formula:
Margin = Limit (dBμV) - Level (dBμV)

## 7.8.Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150kHz to 30MHz is checked.

Test mode : TX (AC 120V/60Hz)

***MEASUREMENT RESULT: "TUV-0210-1_fin"***

2/10/2018

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.175000 | 57.30 | 10.5 | 65 | 7.4 | QP | N | GND |
| 0.235000 | 48.60 | 10.6 | 62 | 13.7 | QP | N | GND |
| 4.820000 | 43.50 | 11.1 | 56 | 12.5 | QP | N | GND |
| 22.180000 | 33.20 | 11.4 | 60 | 26.8 | QP | N | GND |

***MEASUREMENT RESULT: "TUV-0210-1_fin2"***

2/10/2018

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.180000 | 42.20 | 10.5 | 55 | 12.3 | AV | N | GND |
| 0.235000 | 32.30 | 10.6 | 52 | 20.0 | AV | N | GND |
| 4.830000 | 37.30 | 11.1 | 46 | 8.7 | AV | N | GND |
| 22.015000 | 26.70 | 11.4 | 50 | 23.3 | AV | N | GND |

***MEASUREMENT RESULT: "TUV-0210-2_fin"***

2/10/2018

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.180000 | 55.60 | 10.5 | 65 | 8.9 | QP | L1 | GND |
| 0.240000 | 47.30 | 10.6 | 62 | 14.8 | QP | L1 | GND |
| 3.270000 | 40.00 | 11.1 | 56 | 16.0 | QP | L1 | GND |
| 23.545000 | 33.80 | 11.5 | 60 | 26.2 | QP | L1 | GND |

***MEASUREMENT RESULT: "TUV-0210-2_fin2"***

2/10/2018

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.180000 | 40.30 | 10.5 | 55 | 14.2 | AV | L1 | GND |
| 0.245000 | 31.70 | 10.6 | 52 | 20.2 | AV | L1 | GND |
| 4.720000 | 37.30 | 11.1 | 46 | 8.7 | AV | L1 | GND |
| 5.840000 | 28.70 | 11.2 | 50 | 21.3 | AV | L1 | GND |

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

***ACCURATE TECHNOLOGY CO.,LTD***

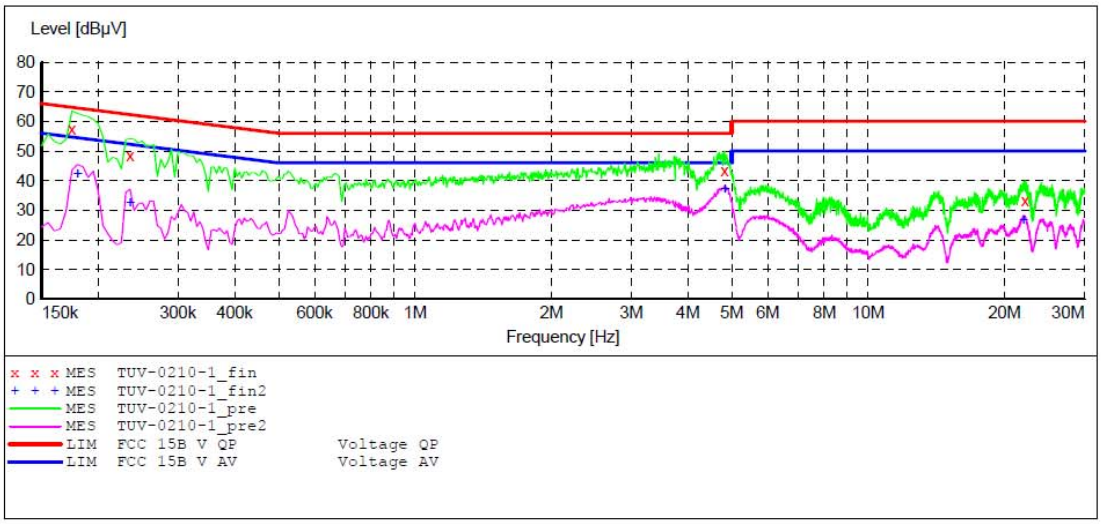
***CONDUCTED EMISSION STANDARD FCC PART 15 C***

EUT: Wireless Stereo Earbuds M/N:NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd
Operating Condition: TX
Test Site: 1#Shielding Room
Operator: WADE
Test Specification: N 120V/60Hz
Comment: Mains port
Start of Test: 2/10/2018 /

***SCAN TABLE: "V 9K-30MHz fin"***

Short Description: _SUB_STD_VTERM2 1.70

| Start Frequency | Stop Frequency | Step Width | Detector | Meas. Time | IF Bandw. | Transducer |
|---|---|---|---|---|---|---|
| 9.0 kHz | 150.0 kHz | 100.0 Hz | QuasiPeak<br>Average | 1.0 s | 200 Hz | NSLK8126 2008 |
| 150.0 kHz | 30.0 MHz | 5.0 kHz | QuasiPeak<br>Average | 1.0 s | 9 kHz | NSLK8126 2008 |




***MEASUREMENT RESULT: "TUV-0210-1_fin"***

2/10/2018

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.175000 | 57.30 | 10.5 | 65 | 7.4 | QP | N | GND |
| 0.235000 | 48.60 | 10.6 | 62 | 13.7 | QP | N | GND |
| 4.820000 | 43.50 | 11.1 | 56 | 12.5 | QP | N | GND |
| 22.180000 | 33.20 | 11.4 | 60 | 26.8 | QP | N | GND |

***MEASUREMENT RESULT: "TUV-0210-1_fin2"***

2/10/2018

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.180000 | 42.20 | 10.5 | 55 | 12.3 | AV | N | GND |
| 0.235000 | 32.30 | 10.6 | 52 | 20.0 | AV | N | GND |
| 4.830000 | 37.30 | 11.1 | 46 | 8.7 | AV | N | GND |
| 22.015000 | 26.70 | 11.4 | 50 | 23.3 | AV | N | GND |

***ACCURATE TECHNOLOGY CO.,LTD***

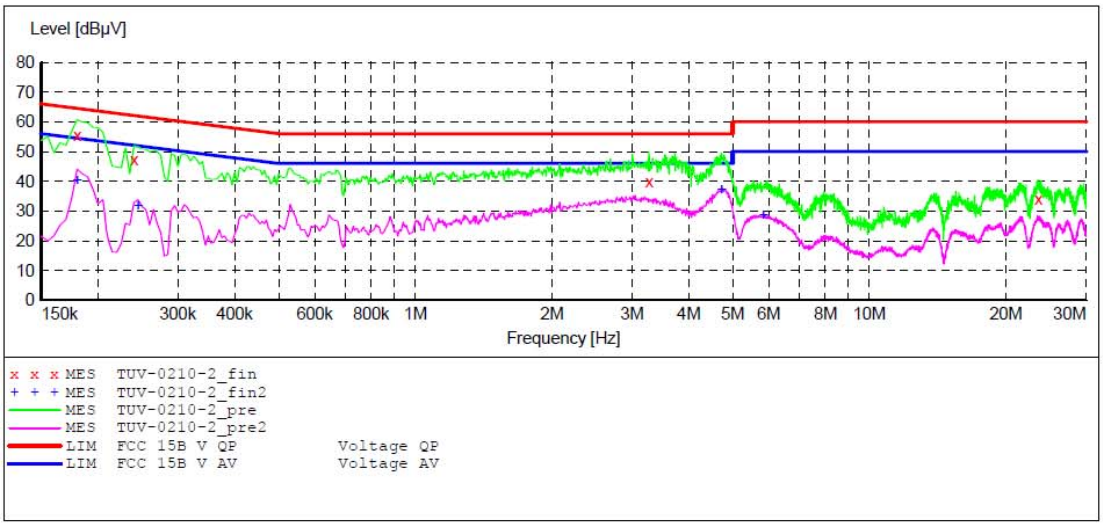
***CONDUCTED EMISSION STANDARD FCC PART 15 C***

EUT: Wireless Stereo Earbuds M/N:NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd
Operating Condition: TX
Test Site: 1#Shielding Room
Operator: WADE
Test Specification: L 120V/60Hz
Comment: Mains port
Start of Test: 2/10/2018 /

***SCAN TABLE: "V 9K-30MHz fin"***

Short Description: _SUB_STD_VTERM2 1.70

| Start Frequency | Stop Frequency | Step Width | Detector | Meas. Time | IF Bandw. | Transducer |
|---|---|---|---|---|---|---|
| 9.0 kHz | 150.0 kHz | 100.0 Hz | QuasiPeak<br>Average | 1.0 s | 200 Hz | NSLK8126 2008 |
| 150.0 kHz | 30.0 MHz | 5.0 kHz | QuasiPeak<br>Average | 1.0 s | 9 kHz | NSLK8126 2008 |




***MEASUREMENT RESULT: "TUV-0210-2_fin"***

2/10/2018

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.180000 | 55.60 | 10.5 | 65 | 8.9 | QP | L1 | GND |
| 0.240000 | 47.30 | 10.6 | 62 | 14.8 | QP | L1 | GND |
| 3.270000 | 40.00 | 11.1 | 56 | 16.0 | QP | L1 | GND |
| 23.545000 | 33.80 | 11.5 | 60 | 26.2 | QP | L1 | GND |

***MEASUREMENT RESULT: "TUV-0210-2_fin2"***

2/10/2018

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.180000 | 40.30 | 10.5 | 55 | 14.2 | AV | L1 | GND |
| 0.245000 | 31.70 | 10.6 | 52 | 20.2 | AV | L1 | GND |
| 4.720000 | 37.30 | 11.1 | 46 | 8.7 | AV | L1 | GND |
| 5.840000 | 28.70 | 11.2 | 50 | 21.3 | AV | L1 | GND |

# 8. ANTENNA REQUIREMENT

## 8.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

## 8.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Max Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.

******* End of Test Report *******