

# TEST REPORT

**Report No.**..... : ATA0126090582  
**FCC ID**..... : 2BYJB-UBDS  
**Applicant**..... : CHANGCHUNSHIXINXINDIANZIYOUXIANGONGSI  
**Address**..... : Room 401, Building 1, Anhua Meijun, 2988 Southeast Lake Avenu,  
Economic Development Zone, Changchun City, Jilin Province ,  
China  
**Manufacturer**..... : CHANGCHUNSHIXINXINDIANZIYOUXIANGONGSI  
**Address**..... : Room 401, Building 1, Anhua Meijun, 2988 Southeast Lake Avenu,  
Economic Development Zone, Changchun City, Jilin Province ,  
China  
**Product Name**..... : chameleon ultra  
**Trade Mark**..... : N/A  
**Test Model**..... : Ultra black dropper style  
**Series Model(s)**..... : N/A  
**Standard**..... : FCC CFR Title 47 Part 15 Subpart C Section 15.225  
**Test procedure**..... : ANSI C63.10-2020 + Cor.1-2023+C63.10a-2024+Errata to  
C63.10a-2024  
**Date of Receipt**..... : Sep. 20, 2026  
**Date of Test Date**..... : Sep. 20, 2026~Sep. 24, 2026  
**Date of issue**..... : Sep. 24, 2026  
**Test result**..... : Pass

Compiled by:

(Printed name+signature)

Lily Zheng

*Lily Zheng*

Supervised by:

( Printed name+signature)

Travis Young

*Travis Young*

Approved by:

( Printed name+signature)

Jason chen

*Jasonchen*

**Testing Laboratory Name**..... : Shenzhen ATA Testing Lab. Inc

**Address**..... : 4th Floor, Building 10, No.60 Nanchang Road, Nanchang  
Community, Xixiang Street, Bao'an District, Shenzhen City,  
China

This test report may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by ATA. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to ATA within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit. The test report merely correspond to the test sample.

| TABLE OF CONTENTS                                                  |  | Page      |
|--------------------------------------------------------------------|--|-----------|
| <b>1. TEST SUMMARY .....</b>                                       |  | <b>3</b>  |
| 1.1. TEST STANDARDS .....                                          |  | 3         |
| 1.2. REPORT VERSION .....                                          |  | 3         |
| 1.3. TEST DESCRIPTION .....                                        |  | 4         |
| 1.4. TEST FACILITY .....                                           |  | 5         |
| 1.5. MEASUREMENT UNCERTAINTY .....                                 |  | 6         |
| 1.6. ENVIRONMENTAL CONDITIONS .....                                |  | 6         |
| <b>2. GENERAL INFORMATION .....</b>                                |  | <b>7</b>  |
| 2.1. GENERAL DESCRIPTION OF EUT .....                              |  | 7         |
| 2.2. DESCRIPTION OF THE TEST MODES .....                           |  | 8         |
| 2.3. BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED ..... |  | 8         |
| 2.4. DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS .....  |  | 9         |
| 2.5. MEASUREMENT INSTRUMENTS LIST .....                            |  | 10        |
| 2.5. TEST SOFTWARE .....                                           |  | 11        |
| <b>3. TEST ITEM AND RESULTS .....</b>                              |  | <b>12</b> |
| 3.1. ANTENNA REQUIREMENT .....                                     |  | 12        |
| 3.2. CONDUCTED EMISSION .....                                      |  | 13        |
| 3.3. RADIATED EMISSION .....                                       |  | 16        |
| 3.4. FREQUENCY STABILITY .....                                     |  | 23        |
| 3.5. OCCUPIED BANDWIDTH .....                                      |  | 24        |
| <b>4. EUT TEST PHOTOS .....</b>                                    |  | <b>26</b> |
| <b>5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL .....</b>                  |  | <b>26</b> |

## 1. TEST SUMMARY

### 1.1. Test Standards

The tests were performed according to following standards:

**FCC Rules Part 15.225:** Operation within the band 13.110-14.010 MHz

**ANSI C63.10-2020 + Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024:** American National Standard for Testing Unlicensed Wireless Devices.

### 1.2. Report version

| Revised No. | Date of issue | Description |
|-------------|---------------|-------------|
| 01          | Sep. 24, 2026 | Original    |

### 1.3. Test Description

| FCC Part 15 Subpart C(15.225) |                                        |        |        |
|-------------------------------|----------------------------------------|--------|--------|
| Test Item                     | Standard Section                       | Result | Remark |
|                               | FCC                                    |        |        |
| Antenna Requirement           | 15.203                                 | Pass   |        |
| Conducted Emission            | 15.207                                 | Pass   |        |
| Radiated Spurious Emission    | 15.205(a)<br>15.209<br>15.225(a/b/c/d) | Pass   |        |
| Occupied Bandwidth            | 15.225<br>15.215(c)                    | Pass   |        |
| Frequency Tolerance           | 15.225(e)                              | Pass   |        |

Note:(1) "N/A" denotes test is not applicable to this device.

## 1.4. Test Facility

|                    |                                                                                                                        |
|--------------------|------------------------------------------------------------------------------------------------------------------------|
| Test Site          | Shenzhen ATA Testing Lab. Inc                                                                                          |
| Test Site Location | 4th Floor, Building 10, No.60 Nanchang Road, Nanchang Community, Xixiang Street, Bao'an District, Shenzhen City, China |
| Telephone:         | +86 0755-2783-0095                                                                                                     |
| Fax:               | +86 0755-2783-0095                                                                                                     |

|                                                                                           |                                                   |
|-------------------------------------------------------------------------------------------|---------------------------------------------------|
| The test facility is recognized, certified, or accredited by the following organizations: | A2LA Accreditation Lab Certificate Number: 839205 |
|                                                                                           | FCC Accreditation Lab Designation Number: CN1455  |
|                                                                                           | ISED Accreditation Lab Designation Number: CN0201 |

## 1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen ATA Testing Lab. Inc. system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device. Below is the best measurement capability for Shenzhen ATA Testing Lab. Inc.

| Test Items                       | Measurement Uncertainty   | U(k=2) |
|----------------------------------|---------------------------|--------|
| Radiated Emissions 9K-30MHz      | $\pm 2.70$ dB             | 1.96   |
| Radiated Emissions 30~1000MHz    | $\pm 5.432$ dB            | 1.96   |
| Radiated Emissions 1~18GHz       | $\pm 3.88$ dB             | 1.96   |
| Radiated Emissions 18~40GHz      | $\pm 5.32$ dB             | 1.96   |
| Conducted Emissions 9kHz~150KHz  | $\pm 3.90$ dB             | 1.96   |
| Conducted Emissions 150Hz~30MHz  | $\pm 3.52$ dB             | 1.96   |
| Conducted spurious emissions     | $\pm 1.60$ dB             | 1.96   |
| RF Output Power Conducted        | $\pm 0.58$ dB             | 1.96   |
| Power Spectral Density Conducted | $\pm 1.52$ dB             | 1.96   |
| Occupied Bandwidth               | $\pm 0.463\%$             | 1.96   |
| Humidity uncertainty             | $\pm 2.0\%$ RH            | 1.96   |
| Temperature uncertainty          | $\pm 0.6^{\circ}\text{C}$ | 1.96   |
| Barometric pressure uncertainty  | 0.5hPa                    | 1.96   |

**Note (1):** This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=1.96$ .

## 1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

|                    |             |
|--------------------|-------------|
| Temperature:       | 15~35°C     |
| Relative Humidity: | 30~60 %     |
| Air Pressure:      | 950~1050hPa |

## 2. GENERAL INFORMATION

### 2.1. General Description of EUT

|                                                                                                                                                                                                                                                                                                                                                                                       |                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Product Name:                                                                                                                                                                                                                                                                                                                                                                         | chameleon ultra                                 |
| Trade Mark:                                                                                                                                                                                                                                                                                                                                                                           | N/A                                             |
| Test Model:                                                                                                                                                                                                                                                                                                                                                                           | Ultra black dropper style                       |
| Series Model(s):                                                                                                                                                                                                                                                                                                                                                                      | N/A                                             |
| Model Difference:                                                                                                                                                                                                                                                                                                                                                                     | N/A                                             |
| Power Source:                                                                                                                                                                                                                                                                                                                                                                         | Rating Voltag: DC 5V $\overline{\text{---}}$ 1A |
| Battery                                                                                                                                                                                                                                                                                                                                                                               | DC 3.7V 100mAh                                  |
| Hardware version:                                                                                                                                                                                                                                                                                                                                                                     | V1.0                                            |
| Software version:                                                                                                                                                                                                                                                                                                                                                                     | V1.0                                            |
|                                                                                                                                                                                                                                                                                                                                                                                       |                                                 |
| Modulation type:                                                                                                                                                                                                                                                                                                                                                                      | GFSK                                            |
| Operation frequency:                                                                                                                                                                                                                                                                                                                                                                  | 13.56MHz                                        |
| Channel number:                                                                                                                                                                                                                                                                                                                                                                       | 1                                               |
| Antenna type:                                                                                                                                                                                                                                                                                                                                                                         | PCB Antenna                                     |
| Antenna gain:                                                                                                                                                                                                                                                                                                                                                                         | 0dBi                                            |
| <p>Note:(1)All antenna information is provided by the manufacturer, test laboratory will not be responsible if any error.</p> <p>(2) The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.</p> <p>(3) "N/A" Indicates inapplicability</p> |                                                 |

## 2.2. DESCRIPTION OF THE TEST MODES

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters.

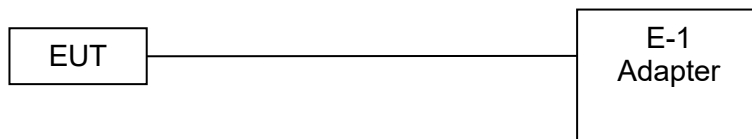
| Channel | Frequency (MHz) |
|---------|-----------------|
| 01      | 13.56           |

## 2.3. BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test



RF Conducted Test



## 2.4. DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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                                  | Mode/Type | Note     |
|------|-----------|--------------------------------------------|-----------|----------|
| E-1  | Adapter   | ShenzhenBeiShi<br>DaElectronics<br>Co.,Ltd | K01       | Test Use |
|      |           |                                            |           |          |
|      |           |                                            |           |          |
|      |           |                                            |           |          |
|      |           |                                            |           |          |

| Item | Equipment | Mfr/Brand | Length | Note |
|------|-----------|-----------|--------|------|
|      |           |           |        |      |
|      |           |           |        |      |
|      |           |           |        |      |
|      |           |           |        |      |
|      |           |           |        |      |

Note : (1) For detachable type I/O cable should be specified the length in cm in Length a column.

(2) "YES" means "with core"; "NO" means "without core".

## 2.5. Measurement Instruments List

| Radiation emission |               |                                |                      |                        |                 |                  |            |
|--------------------|---------------|--------------------------------|----------------------|------------------------|-----------------|------------------|------------|
| Item               | Equipment No. | Equipment name                 | Manufacturer         | Model                  | Serial No.      | Calibration date | Due date   |
| 1                  | ATA-E-001     | 966 chamber                    | CRT                  | 9*6*6M                 | CRTNDCR966      | 2025-03-21       | 2028-03-20 |
| 2                  | ATA-E-011     | AC Power Source                | XINOUEHUA            | APW-1300N              | 202504292663    | 2026-05-07       | 2027-05-06 |
| 3                  | ATA-E-013     | DC Power Source                | XINOUEHUA            | ADC250-32D             | 202504292667    | 2026-05-07       | 2027-05-06 |
| 4                  | ATA-E-033     | Receiver                       | R&S                  | ESPI7                  | 100092          | 2026-05-07       | 2027-05-06 |
| 5                  | ATA-E-034     | Broadband antenna              | Schwarzbeck          | VULB9168               | 01839           | 2025-07-17       | 2027-07-17 |
| 6                  | ATA-E-035     | High Frequency Horn Antenna    | Schwarzbeck          | BBHA 9120D             | 03169           | 2025-07-17       | 2027-07-17 |
| 7                  | ATA-E-038     | Cable                          | Times                | 0-18GHz                | /               | 2026-05-07       | 2027-05-06 |
| 8                  | ATA-E-040     | 6dB attenuator                 | Zhengchang Liubo     | 6dB                    | /               | 2026-05-07       | 2027-05-06 |
| 9                  | ATA-E-039     | Cable                          | Times                | 0-1GHz                 | /               | 2026-05-07       | 2027-05-06 |
| 10                 | ATA-E-041     | Preamplifier                   | COM MV               | DLNA8-1-18G-2705       | 10241234        | 2026-05-07       | 2027-05-06 |
| 11                 | ATA-E-042     | Preamplifier                   | COM MV               | DLNA8-0.009-1000-1034  | 5252881         | 2026-05-07       | 2027-05-06 |
| 12                 | ATA-E-044     | Filter                         | MWRFTesT             | ZHPF6-C3000-18000-3129 | 08252098        | 2026-05-07       | 2027-05-06 |
| 13                 | ATA-E-045     | Filter                         | MWRFTesT             | ZHPF6-C6500-18000-175  | 08252097        | 2026-05-07       | 2027-05-06 |
| 14                 | ATA-E-046     | Filter                         | MWRFTesT             | ZBSF6-C2400-2483.5-543 | 08252096        | 2026-05-07       | 2027-05-06 |
| 15                 | ATA-E-047     | Filter                         | MWRFTesT             | ZBSF6-C5100-5900-5713  | 08252095        | 2026-05-07       | 2027-05-06 |
| 16                 | ATA-E-051     | Spectrum Analyzer              | R&S                  | FSV40-N                | 101779          | 2026-05-07       | 2027-05-06 |
| 17                 | ATA-E-052     | Cable                          | HELPLIGHT            | 2.92J/2.92J 10M        | /               | 2026-01-19       | 2027-01-18 |
| 18                 | ATA-E-054     | Cable                          | HELPLIGHT            | 2.92J/2.92J 0.8M       | /               | 2026-01-19       | 2027-01-18 |
| 19                 | ATA-E-059     | Antenna Tower                  | CRT                  | AT-1                   | /               | /                | /          |
| 20                 | ATA-E-005     | Temperature and humidity meter | deli                 | LE502-WH               | /               | 2026-05-07       | 2027-05-06 |
| 21                 | ATA-E-064     | Barometer                      | Qingping             | CGP23W                 | /               | 2026-01-28       | 2027-01-27 |
| 22                 | ATA-E-048     | Loop Antenna                   | ZHINA                | ZN30900C               | 21104CCUT SE019 | 2026-05-07       | 2027-05-06 |
| 23                 | ATA-E-049     | Horn Antenna                   | ECHO MICrowave.,Ltd. | OBH100400              | 12221225        | 2026-05-07       | 2027-05-06 |
| 24                 | ATA-E-051     | Spectrum Analyzer              | R&S                  | FSV40-N                | 101779          | 2026-05-07       | 2027-05-06 |

| Conduction emission |               |                                |              |               |            |                  |            |
|---------------------|---------------|--------------------------------|--------------|---------------|------------|------------------|------------|
| Item                | Equipment No. | Equipment name                 | Manufacturer | Model         | Serial No. | Calibration date | Due date   |
| 1                   | ATA-E-032     | EMI TEST RECEIVER              | Schwarzbeck  | ESCI3         | 1009300    | 2026-05-07       | 2027-05-06 |
| 2                   | ATA-E-037     | Pulse Limiter                  | Schwarzbeck  | VTSD 9561 F-N | /          | 2026-05-07       | 2027-05-06 |
| 3                   | ATA-E-069     | Conductive test cable          | Schwarzbeck  | 2.5m          | N/A        | 2026-01-28       | 2027-01-27 |
| 4                   | ATA-E-036     | Artificial Mains Network       | Schwarzbeck  | NSLK 8127     | 01169      | 2026-05-07       | 2027-05-06 |
| 5                   | ATA-E-072     | Three-Line V-Network           | ZHINAN       | 2N33770A      | 13003      | 2026-01-26       | 2027-01-27 |
| 6                   | ATA-E-009     | Temperature and humidity meter | deli         | LE502-WH      | /          | 2026-05-07       | 2027-05-06 |
| 7                   | ATA-E-010     | Barometer                      | Qingping     | CGP23W        | /          | 2026-05-07       | 2027-05-06 |

| RF Conducted Test |               |                                     |              |            |                 |                  |            |
|-------------------|---------------|-------------------------------------|--------------|------------|-----------------|------------------|------------|
| Item              | Equipment No. | Equipment name                      | Manufacturer | Model      | Serial No.      | Calibration date | Due date   |
| 1                 | ATA-E-029     | Spectrum Analyzer                   | Keysight     | N9020A     | MY50530404      | 2026-05-07       | 2027-05-06 |
| 2                 | ATA-E-030     | MXG Analog Signal Generator         | Agilent      | N5181A     | MY47420598      | 2026-05-07       | 2027-05-06 |
| 3                 | ATA-E-031     | WIDEBAND RADIO COMMUNICATION TESTER | R&S          | CMW500     | 161163          | 2026-05-07       | 2027-05-06 |
| 4                 | ATA-E-043     | Radio Control Unit                  | MWRFTest     | MW100-RFCB | MW250428A TA-55 | 2026-05-07       | 2027-05-06 |

Note:

- 1)The Cal. Interval was one year The darkroom calibration cycle is three years
- 2)The cable loss has calculated in test result which connection between each test instruments.

## 2.5. Test Software

| Software name                           | Model    | Version      |
|-----------------------------------------|----------|--------------|
| Conducted emission Measurement Software | EZ-EMC   | FARAD-3A1.1+ |
| Radiated emission Measurement Software  | EZ-EMC   | FARAD-3A1.1+ |
| Bluetooth and WIFI Test System          | MWRF8310 | 2.0.0.0      |

### 3. TEST ITEM AND RESULTS

#### 3.1. Antenna requirement

##### Requirement

##### **FCC CFR Title 47 Part 15 Subpart C 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

##### Antenna Information

The maximum gain of antenna was 0dBi. Antenna type: PCB Antenna

Note: The antenna gain is provided by the customer, if the data provided by the customer is not accurate, SHENZHEN ATA TESTING LAB. INC. does not assume any responsibility.

## 3.2. Conducted Emission

### Limit

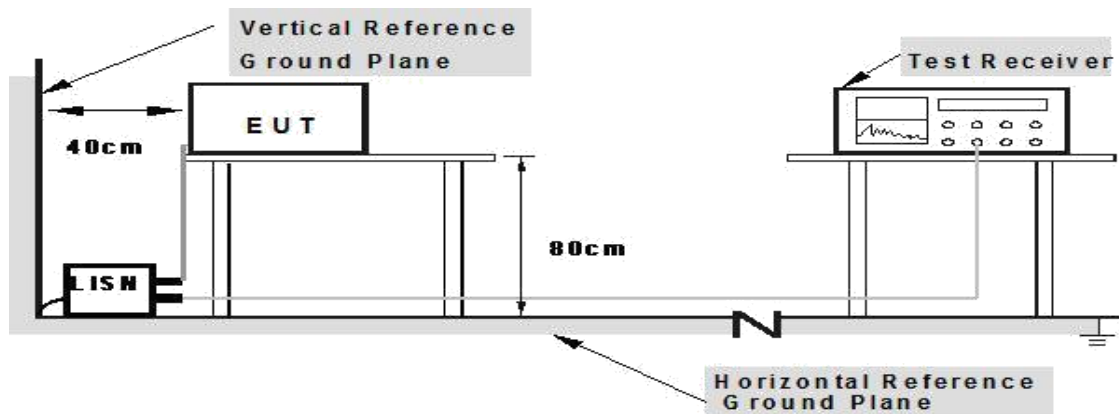
Conducted Emission Test Limit

| Frequency     | Maximum RF Line Voltage (dB $\mu$ V) |               |
|---------------|--------------------------------------|---------------|
|               | Quasi-peak Level                     | Average Level |
| 150kHz~500kHz | 66 ~ 56 *                            | 56 ~ 46 *     |
| 500kHz~5MHz   | 56                                   | 46            |
| 5MHz~30MHz    | 60                                   | 50            |

Notes:

- (1) \*Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### Test Configuration



### Test Procedure

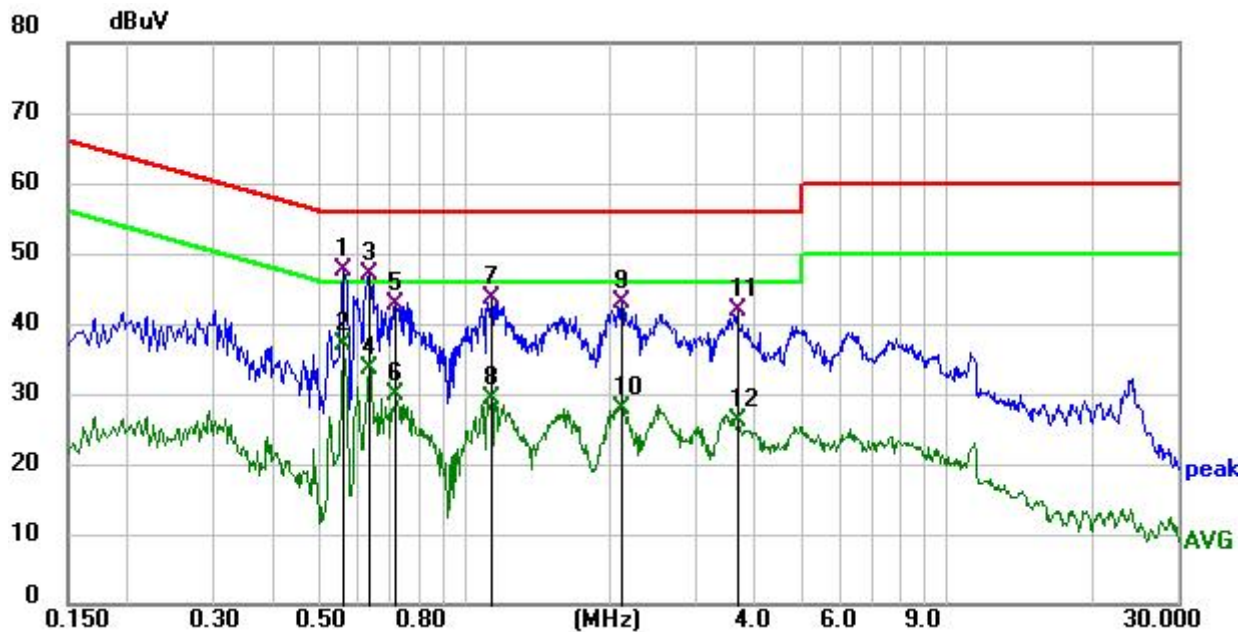
1. The EUT was setup according to ANSI C63.10-2020 + Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 requirements.
2. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment.  
The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
3. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
4. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
5. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
6. During the above scans, the emissions were maximized by cable manipulation.

### Test Mode:

Please refer to the clause 2.2.

**Test Results**

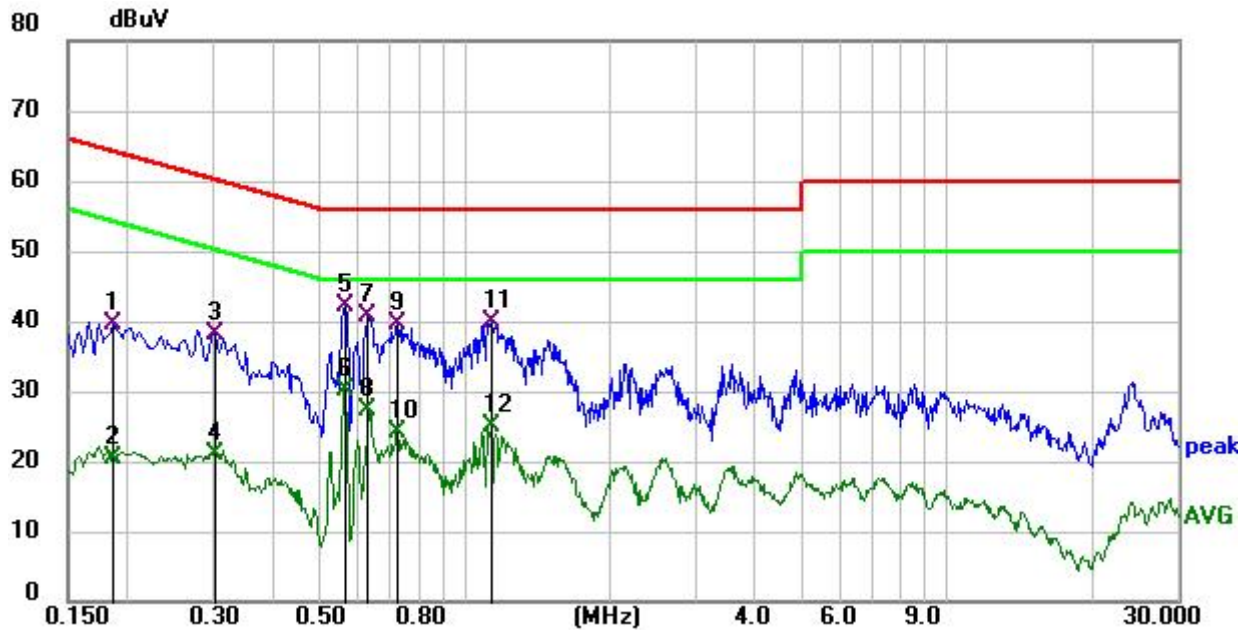
|             |                 |               |                                  |
|-------------|-----------------|---------------|----------------------------------|
| EUT:        | chameleon ultra | Model Name:   | Ultra black dropper style        |
| Pressure:   | 1010 hPa        | Phase:        | L                                |
| Temperature | 24.8℃           | Humidity      | 52.1%                            |
| Test Mode:  | Charging+TX     | Test Voltage: | DC 5V from USB Port AC 120V/60Hz |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|
| 1   | 0.5620          | 37.53          | 10.14       | 47.67        | 56.00        | -8.33       | QP       |
| 2   | 0.5620          | 26.88          | 10.14       | 37.02        | 46.00        | -8.98       | AVG      |
| 3   | 0.6300          | 36.81          | 10.15       | 46.96        | 56.00        | -9.04       | QP       |
| 4   | 0.6300          | 23.41          | 10.15       | 33.56        | 46.00        | -12.44      | AVG      |
| 5*  | 0.7180          | 32.68          | 10.16       | 42.84        | 56.00        | -13.16      | QP       |
| 6   | 0.7180          | 19.81          | 10.16       | 29.97        | 46.00        | -16.03      | AVG      |
| 7   | 1.1300          | 33.33          | 10.14       | 43.47        | 56.00        | -12.53      | QP       |
| 8   | 1.1300          | 19.17          | 10.14       | 29.31        | 46.00        | -16.69      | AVG      |
| 9   | 2.1140          | 32.81          | 10.19       | 43.00        | 56.00        | -13.00      | QP       |
| 10  | 2.1140          | 17.81          | 10.19       | 28.00        | 46.00        | -18.00      | AVG      |
| 11  | 3.6740          | 31.61          | 10.22       | 41.83        | 56.00        | -14.17      | QP       |
| 12  | 3.6740          | 15.96          | 10.22       | 26.18        | 46.00        | -19.82      | AVG      |

Remark: 1. All readings are Quasi-Peak and Average values  
2. Margin = Result (Result = Reading + Factor) - Limit  
3. Factor = LISN factor + Cable loss + Limiter (10dB)

|             |                 |               |                                  |
|-------------|-----------------|---------------|----------------------------------|
| EUT:        | chameleon ultra | Model Name:   | Ultra black dropper style        |
| Pressure:   | 1010 hPa        | Phase:        | N                                |
| Temperature | 24.8°C          | Humidity      | 52.1%                            |
| Test Mode:  | Charging+TX     | Test Voltage: | DC 5V from USB Port AC 120V/60Hz |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|
| 1   | 0.1860          | 29.38          | 10.10       | 39.48        | 64.21        | -24.73      | QP       |
| 2   | 0.1860          | 10.32          | 10.10       | 20.42        | 54.21        | -33.79      | AVG      |
| 3   | 0.3020          | 28.12          | 10.11       | 38.23        | 60.19        | -21.96      | QP       |
| 4   | 0.3020          | 10.86          | 10.11       | 20.97        | 50.19        | -29.22      | AVG      |
| 5*  | 0.5660          | 32.07          | 10.14       | 42.21        | 56.00        | -13.79      | QP       |
| 6   | 0.5660          | 20.05          | 10.14       | 30.19        | 46.00        | -15.81      | AVG      |
| 7   | 0.6260          | 30.53          | 10.15       | 40.68        | 56.00        | -15.32      | QP       |
| 8   | 0.6260          | 17.24          | 10.15       | 27.39        | 46.00        | -18.61      | AVG      |
| 9   | 0.7260          | 29.47          | 10.16       | 39.63        | 56.00        | -16.37      | QP       |
| 10  | 0.7260          | 13.91          | 10.16       | 24.07        | 46.00        | -21.93      | AVG      |
| 11  | 1.1300          | 29.58          | 10.14       | 39.72        | 56.00        | -16.28      | QP       |
| 12  | 1.1300          | 14.80          | 10.14       | 24.94        | 46.00        | -21.06      | AVG      |

Remark: 1. All readings are Quasi-Peak and Average values  
2. Margin = Result (Result = Reading + Factor) - Limit  
3. Factor = LISN factor + Cable loss + Limiter (10dB)

### 3.3. Radiated Emission

#### Limit

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequencies<br>(MHz) | Field Strength<br>(micorvolts/meter) | Measurement Distance<br>(meters) |
|----------------------|--------------------------------------|----------------------------------|
| 0.009~0.490          | 2400/F(KHz)                          | 300                              |
| 0.490~1.705          | 24000/F(KHz)                         | 30                               |
| 1.705~30.0           | 30                                   | 30                               |
| 30~88                | 100                                  | 3                                |
| 88~216               | 150                                  | 3                                |
| 216~960              | 200                                  | 3                                |
| Above 960            | 500                                  | 3                                |

| Spectrum Parameter                    | Setting               |
|---------------------------------------|-----------------------|
| Attenuation                           | Auto                  |
| Start Frequency                       | 1000 MHz              |
| Start Frequency                       | 10th carrier harmonic |
| RB / VB (emission in restricted band) | 1MHz / 1MHz for Peak  |

| Receiver Parameter     | Setting                          |
|------------------------|----------------------------------|
| Attenuation            | Auto                             |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP    |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP    |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

Note:

1. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

2. For Above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (Peak).

(a)The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters, equal to 124dBuV/m at 3 meters. .

- Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
- Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band excluding restricted frequency bands) are attenuated by at least the minimum requirements specified (at least 20 dB

relative to the maximum in-band peak PSD level in 100 kHz). Report the three highest emissions relative to the limit.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters, equal to 90.5dBuV/m at 3 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters, equal to 80.5dBuV/m at 3 meters.. (d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

### **Test Procedure**

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented. The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz

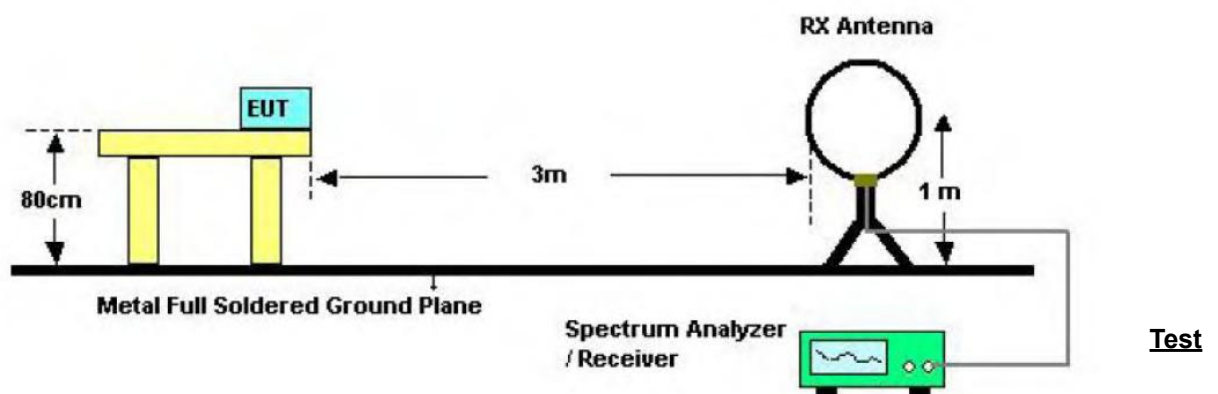
VBW  $\geq$  RBW

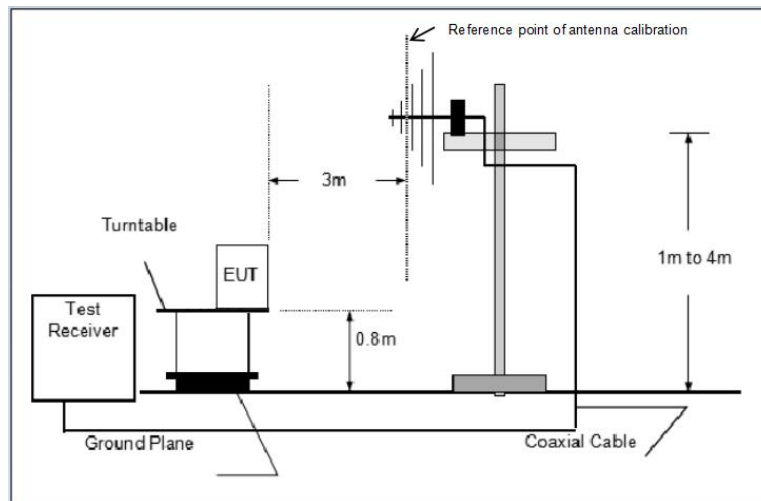
Sweep = auto

Detector function = peak

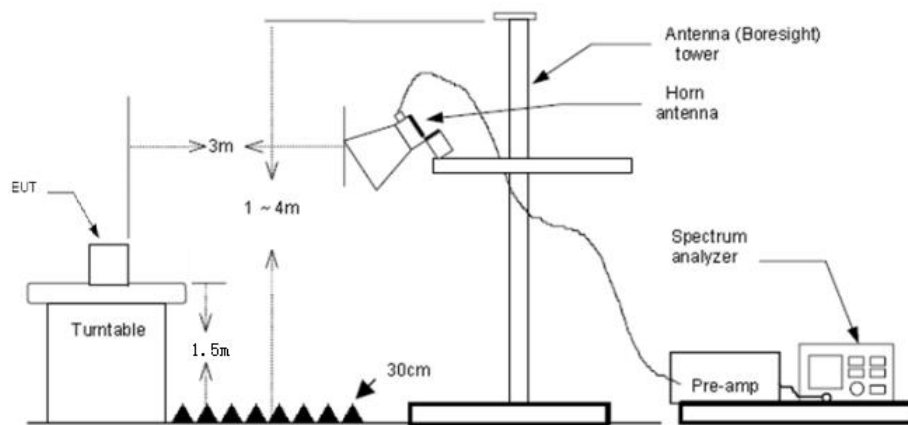
Trace = max hold

### **Test Setup**





Below 1000MHz Test Setup



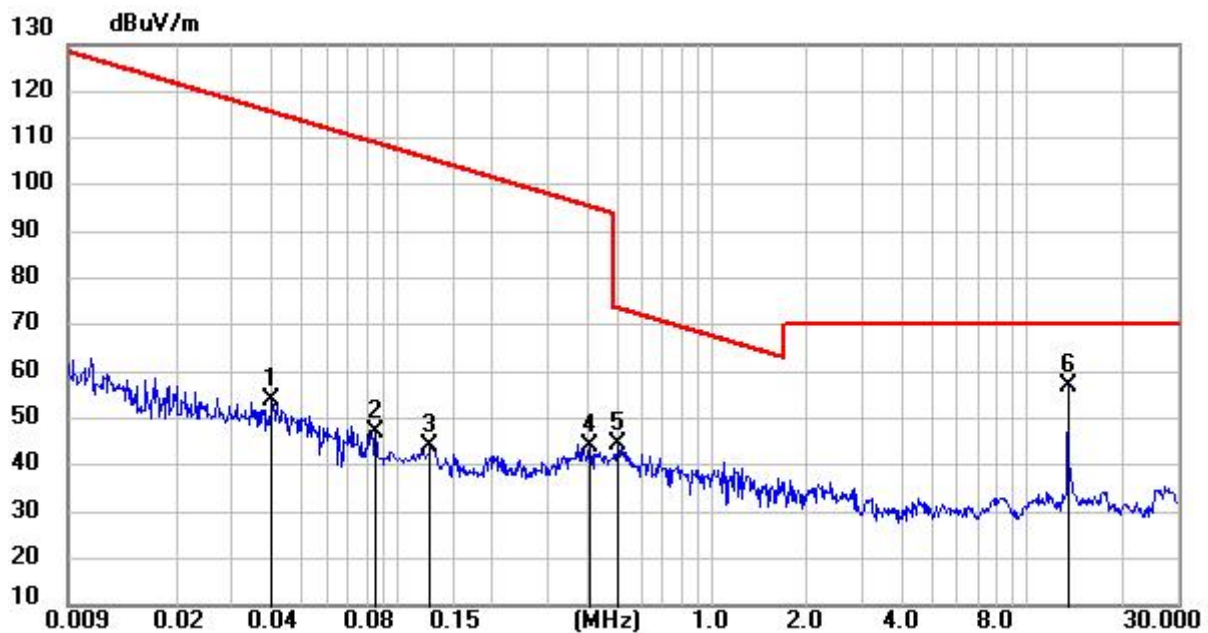
Above 1GHz Test Setup

**Test Mode**

Please refer to the clause 2.2.

**Test Result**

|             |                                 |               |                           |
|-------------|---------------------------------|---------------|---------------------------|
| EUT:        | chameleon ultra                 | Model Name:   | Ultra black dropper style |
| Pressure:   | 1010 hPa                        | Phase:        | Coaxial                   |
| Temperature | 24.8°C                          | Humidity      | 52.1%                     |
| Test Mode:  | TX-NFC 13.56MHz<br>(Worst Case) | Test Voltage: | DC 3.7V from Battery      |

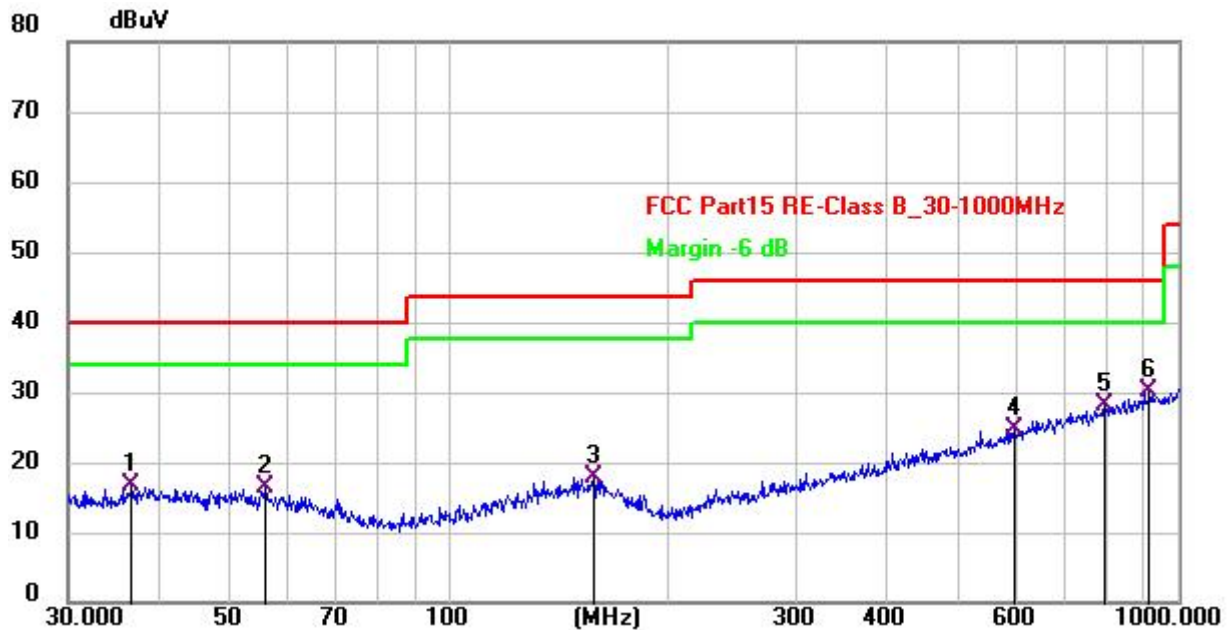


| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 0.0403          | 42.35          | 11.72         | 54.07          | 115.50         | -61.43      | QP       |
| 2   | 0.0850          | 36.44          | 10.80         | 47.24          | 109.02         | -61.78      | QP       |
| 3   | 0.1259          | 33.80          | 10.41         | 44.21          | 105.60         | -61.39      | QP       |
| 4   | 0.4061          | 33.58          | 10.56         | 44.14          | 95.43          | -51.29      | QP       |
| 5   | 0.5020          | 33.92          | 10.65         | 44.57          | 73.59          | -29.02      | QP       |
| 6*  | 13.5677         | 46.79          | 10.26         | 57.05          | 70.00          | -12.95      | QP       |

**Emission Level= Read Level+ Correct Factor**

## Results of Radiated Emissions (30MHz~ 1000MHz)

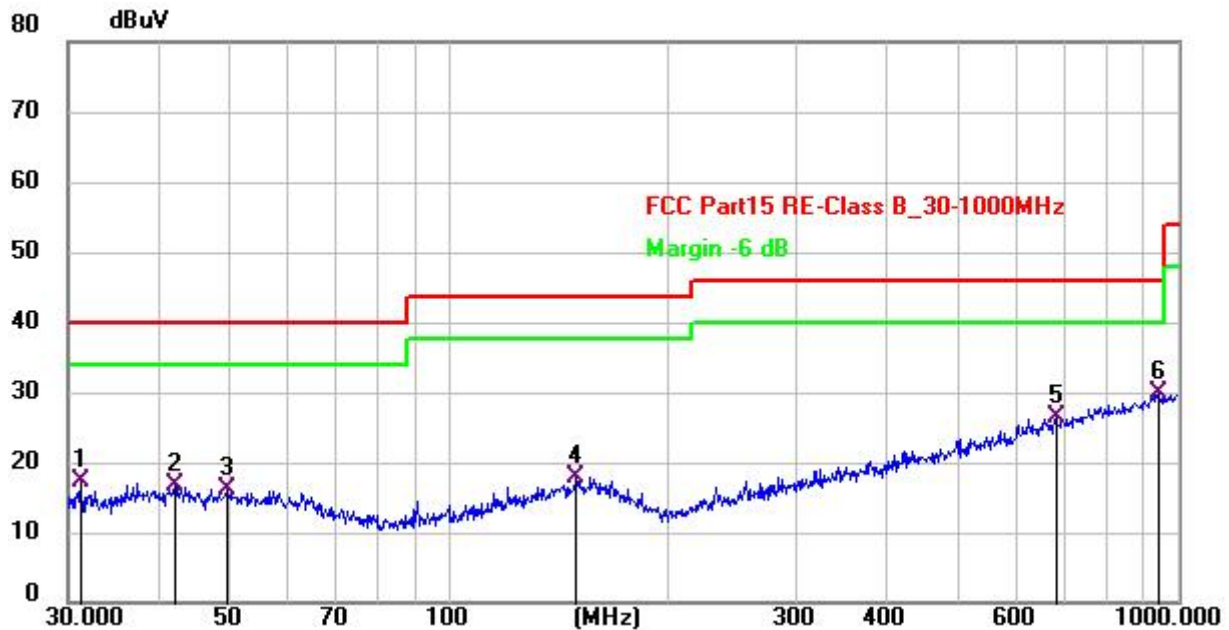
|             |                                 |               |                           |
|-------------|---------------------------------|---------------|---------------------------|
| EUT:        | chameleon ultra                 | Model Name:   | Ultra black dropper style |
| Pressure:   | 1010 hPa                        | Phase:        | Horizontal                |
| Temperature | 24.8℃                           | Humidity      | 52.1%                     |
| Test Mode:  | TX-NFC 13.56MHz<br>(Worst Case) | Test Voltage: | DC 3.7V from Battery      |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 30.3172         | 29.37          | -13.49        | 15.88          | 40.00          | -24.12      | QP       |
| 2   | 43.9658         | 28.36          | -12.91        | 15.45          | 40.00          | -24.55      | QP       |
| 3   | 154.2785        | 29.42          | -11.52        | 17.90          | 43.50          | -25.60      | QP       |
| 4   | 590.9737        | 29.83          | -4.80         | 25.03          | 46.00          | -20.97      | QP       |
| 5   | 716.6820        | 28.90          | -2.51         | 26.39          | 46.00          | -19.61      | QP       |
| 6*  | 952.0937        | 28.83          | 0.60          | 29.43          | 46.00          | -16.57      | QP       |

Emission Level= Read Level+ Correct Factor

|             |                                 |               |                           |
|-------------|---------------------------------|---------------|---------------------------|
| EUT:        | chameleon ultra                 | Model Name:   | Ultra black dropper style |
| Pressure:   | 1010 hPa                        | Phase:        | Vertical                  |
| Temperature | 24.8℃                           | Humidity      | 52.1%                     |
| Test Mode:  | TX-NFC 13.56MHz<br>(Worst Case) | Test Voltage: | DC 3.7V from Battery      |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 41.5670         | 29.75          | -12.68        | 17.07          | 40.00          | -22.93      | QP       |
| 2   | 55.8047         | 28.37          | -13.37        | 15.00          | 40.00          | -25.00      | QP       |
| 3   | 150.0108        | 28.29          | -11.55        | 16.74          | 43.50          | -26.76      | QP       |
| 4   | 530.1013        | 29.93          | -6.18         | 23.75          | 46.00          | -22.25      | QP       |
| 5   | 599.3212        | 29.60          | -4.60         | 25.00          | 46.00          | -21.00      | QP       |
| 6*  | 945.4400        | 28.63          | 0.55          | 29.18          | 46.00          | -16.82      | QP       |

Emission Level= Read Level+ Correct Factor

|             |                                 |               |                           |
|-------------|---------------------------------|---------------|---------------------------|
| EUT:        | chameleon ultra                 | Model Name:   | Ultra black dropper style |
| Pressure:   | 1010 hPa                        | Phase:        | Vertical                  |
| Temperature | 24.8°C                          | Humidity      | 52.1%                     |
| Test Mode:  | TX-NFC 13.56MHz<br>(Worst Case) | Test Voltage: | DC 3.7V from Battery      |



| No. | Frequency (MHz) | Reading (dB uV) | Factor (dB/ m) | Level (dBuV/m) | Limit ( dBuV/m) | Margin (dB) |
|-----|-----------------|-----------------|----------------|----------------|-----------------|-------------|
| 1*  | 13.5600         | 39.43           | 20.80          | 60.23          | 124.00          | -63.77      |

**Emission Level= Read Level+ Correct Factor**

### 3.4. Frequency stability

#### Limit

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  of the operating frequency over a temperature variation of  $-20$  degrees to  $+50$  degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

#### Test Procedure

Setup the EUT as show in the block diagram above.

Set Spectrum Analyzer

Centre Frequency= Fundamental Frequency

RBW=100 kHz, VBW= 300 kHz

Span= 0 Hz

Sweep Time= 5 Seconds.

Setup the EUT as normal operation and press Transmitter button

Release the button, use Delta Mark function to test the time.

#### Test Results

| Voltage (Vdc) | Temp. (°C) | Frequency (MHz) | Deviation (%) | Limit (%)    |
|---------------|------------|-----------------|---------------|--------------|
| 12            | -20        | 13.560348       | 0.0026%       | $\pm 0.01\%$ |
| 12            | -10        | 13.560410       | 0.0030%       |              |
| 12            | 0          | 13.560352       | 0.0026%       |              |
| 12            | 10         | 13.560354       | 0.0026%       |              |
| 12            | 20         | 13.560444       | 0.0033%       |              |
| 12            | 30         | 13.560380       | 0.0028%       |              |
| 12            | 40         | 13.560412       | 0.0030%       |              |
| 12            | 50         | 13.560440       | 0.0032%       |              |
| 10.2          | 20         | 13.560401       | 0.0030%       |              |
| 13.8          | 20         | 13.560422       | 0.0031%       |              |

### 3.5. Occupied Bandwidth

#### Limit

Operation within the band 13.110 MHz to 14.010 MHz

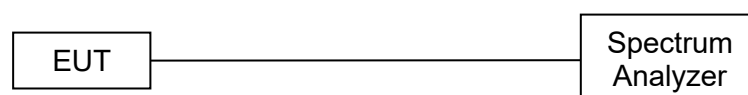
#### Test Procedure

- a) Span: Set the span to 2 to 5 times the estimated bandwidth of the EUT signal. Center the span on the nominal center frequency of the EUT channel.
- b) Resolution Bandwidth (RBW): Set RBW between 1 % and 5 % of the estimated occupied bandwidth. If this range cannot be achieved, document the actual RBW used and provide technical justification.
- c) Video Bandwidth (VBW): Set  $VBW \geq 3 \times RBW$ .
- d) Reference level and mixer linearity: Adjust the reference level to avoid mixer compression. The peak signal level shall be sufficiently below the reference level to prevent compression; as a guideline, the peak signal should be at least  $10 \log_{10} (OBW/RBW)$  below the reference level.
- e) Dynamic range: Ensure the measurement system noise floor, at the selected RBW, is at least 10 dB below the target down-from-peak level. For example, for -20 dB bandwidth measurement, noise floor shall be  $\geq 30$  dB below the signal peak.
- f) Detector and trace mode: Set detector to peak; set trace mode to max-hold. Use auto-coupled sweep time. Allow the trace to fully stabilize before taking measurements.

The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth and 99% occupied bandwidth of the emission.

Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 1 KHz to perform the occupied bandwidth test.

#### Test Setup

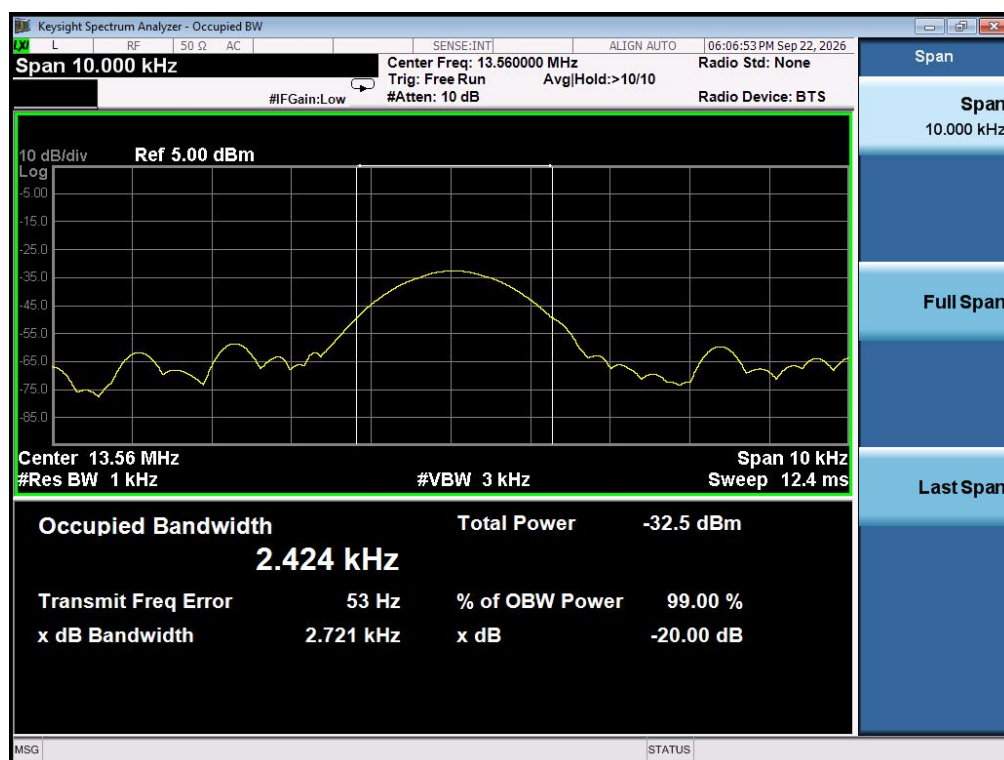


## Test Results

| Frequency (MHz) | 20dB emission bandwidth (Hz) |
|-----------------|------------------------------|
| 13.56           | 2721                         |

|               |                                  |             |                           |
|---------------|----------------------------------|-------------|---------------------------|
| EUT:          | chameleon ultra                  | Model Name: | Ultra black dropper style |
| Pressure:     | 1010 hPa                         | Temperature | 24.8°C                    |
| Humidity      | 52.1%                            | Test Mode:  | TX                        |
| Test Voltage: | DC 5V from USB Port AC 120V/60Hz |             |                           |

## Test Graphs:



#### 4. EUT TEST PHOTOS

Note: Refer to the attached test photos

#### 5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Note: Refer to the attached exterior and interior photos

\*\*\*\*\*THE END\*\*\*\*\*