



## Shenzhen EBO Technology Co., Ltd.

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Report No.: EBO1412093-E412  
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# FCC REPORT

**Applicant:** SHENZHEN DINSAFE INTELLIGENCE TECHNOLOGY  
CO., LTD

**Address of Applicant:** Room 721, Zone A Of Hua Mei Ju, Xin Hu Rd., Baoan Dist.,  
Shenzhen, China

**Equipment Under Test (EUT)**

Product Name: MATIGARD SMART ALARM SYSTEM

Brand Name: MatiGard

Model No.: G-1-ACC, G2-1-ACC, G3-1-ACC, Gfence-ACC, Mini-1-ACC,  
AirX-ACC, I-ACC, X-1-ACC, X2-1-ACC

FCC ID: 2ADXQMTGACS

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.231:2013

**Date of sample receipt:** February 27, 2015

**Date of Test:** February 27, 2015 To March 05, 2015

**Date of report issue:** March 05, 2015

**Test Result :** PASS \*

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

Authorized Signature:

Kevin Yu  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the EBO product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of EBO International Electrical Approvals or testing done by EBO International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by EBO International Electrical Approvals in writing.

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## 1 Version

| Version No. | Date           | Description |
|-------------|----------------|-------------|
| 00          | March 05, 2015 | Original    |
|             |                |             |
|             |                |             |
|             |                |             |
|             |                |             |

Prepared by:

Date:

March 05, 2015

Project Engineer

Reviewed by:

Date:

March 05, 2015

Reviewer

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### 3 Test Summary

| Test Item                                | Section in CFR 47 | Result |
|--|-------------------|--------|
| Antenna requirement                      | 15.203            | Pass   |
| Field strength of the fundamental signal | 15.231 (b)        | Pass   |
| Spurious emissions                       | 15.231 (b)/15.209 | Pass   |
| 20Db Bandwidth                           | 15.231 ©          | Pass   |
| Release time                             | 15.231 (a)(2)     | Pass   |
| Silent Period                            | 15.231 (e)        | N/A    |

*Pass: The EUT complies with the essential requirements in the standard.*



## 4 General Information

### 4.1 Client Information

|                          |   |
|--------------------------|---|
| Applicant:               | SHENZHEN DINSAFE INTELLIGENCE TECHNOLOGY CO., LTD                           |
| Address of Applicant:    | Room 721, Zone A Of Hua Mei Ju, Xin Hu Rd., Baoan Dist.,<br>Shenzhen, China |
| Manufacturer:            | SHENZHEN DINSAFE INTELLIGENCE TECHNOLOGY CO., LTD                           |
| Address of Manufacturer: | Room 721, Zone A Of Hua Mei Ju, Xin Hu Rd., Baoan Dist.,<br>Shenzhen, China |
| Factory:                 | SHENZHEN DINSAFE INTELLIGENCE TECHNOLOGY CO., LTD                           |
| Address of Factory:      | Room 721, Zone A Of Hua Mei Ju, Xin Hu Rd., Baoan Dist.,<br>Shenzhen, China |

### 4.2 General Description of EUT

|                      |   |
|----------------------|---|
| Product Name:        | MATIGARD SMART ALARM SYSTEM   |
| Brand Name:          | MatiGard  |
| Model No.:           | G-1-ACC, G2-1-ACC, G3-1-ACC, Gfence-ACC, Mini-1-ACC, AirX-ACC, I-ACC, X-1-ACC, X2-1-ACC |
| Test Model No.:      | AirX  |
| Operation Frequency: | 433.93MHz   |
| Modulation type:     | ASK   |
| Antenna Type:        | integral antenna  |
| Antenna gain:        | 0dBi  |
| Power supply:        | TX: DC 1.5V ("AAA" battery)   |

### 4.3 Test mode

|                    |   |
|--------------------|---|
| Transmitting mode: | Keep the EUT in transmitting mode.            |
| Remark:            | During the test, the new batteries were used. |

#### Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

| Axis                   | X     | Y     | Z     |
|------------------------|-------|-------|-------|
| Field Strength(dBuV/m) | 80.63 | 83.49 | 81.15 |

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data encoding and found the data encoding in CH4 is the worst case.

#### Final Test Mode:

According to ANSI C63.4 standards, the test results are both the "worst case" and "worst setup":

Y axis (see the test setup photo)

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#### 4.4 Description of Support Units

None.

#### 4.5 Test Facility

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

- **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. to ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 28, 2013.

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-Anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013

#### 4.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China



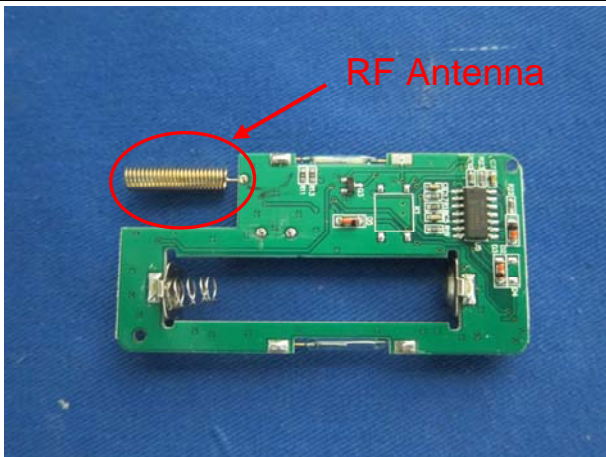
## 5 Test Instruments list

| Radiated Emission: |                               |                             |                             |               |                     |                         |
|--------------------|-------------------------------|-----------------------------|-----------------------------|---------------|---------------------|-------------------------|
| Item               | Test Equipment                | Manufacturer                | Model No.                   | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                  | 3m Semi- Anechoic Chamber     | ZhongYu Electron            | 9.2(L)*6.2(W)*6.4(H)        | GTS250        | Mar. 29 2014        | Mar. 28 2015            |
| 2                  | Control Room                  | ZhongYu Electron            | 6.2(L)*2.5(W)*2.4(H)        | GTS251        | N/A                 | N/A                     |
| 3                  | Spectrum Analyzer             | Agilent                     | E4440A                      | GTS533        | Jul. 01 2014        | Jun 30 2015             |
| 4                  | EMI Test Receiver             | Rohde & Schwarz             | ESU26                       | GTS203        | Jul. 01 2014        | Jun 30 2015             |
| 5                  | BiConiLog Antenna             | SCHWARZBECK MESS-ELEKTRONIK | VULB9163                    | GTS214        | Jul. 01 2014        | Jun 30 2015             |
| 6                  | Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRONIK | 9120D-829                   | GTS208        | June 27 2014        | June 26 2015            |
| 7                  | Horn Antenna                  | ETS-LINDGREN                | 3160                        | GTS217        | Mar. 28 2014        | Mar. 27 2015            |
| 8                  | EMI Test Software             | AUDIX                       | E3                          | N/A           | N/A                 | N/A                     |
| 9                  | Coaxial Cable                 | GTS                         | N/A                         | GTS213        | Mar. 29 2014        | Mar. 28 2015            |
| 10                 | Coaxial Cable                 | GTS                         | N/A                         | GTS211        | Mar. 29 2014        | Mar. 28 2015            |
| 11                 | Coaxial cable                 | GTS                         | N/A                         | GTS210        | Mar. 29 2014        | Mar. 28 2015            |
| 12                 | Coaxial Cable                 | GTS                         | N/A                         | GTS212        | Mar. 29 2014        | Mar. 28 2015            |
| 13                 | Amplifier(100kHz-3GHz)        | HP                          | 8347A                       | GTS204        | Jul. 01 2014        | Jun. 30, 2015           |
| 14                 | Amplifier(2GHz-20GHz)         | HP                          | 8349B                       | GTS206        | Jul. 01 2014        | Jun. 30, 2015           |
| 15                 | Amplifier (18-26GHz)          | Rohde & Schwarz             | AFS33-18002<br>650-30-8P-44 | GTS218        | June 27 2014        | June 26 2015            |
| 16                 | Band filter                   | Amindeon                    | 82346                       | GTS219        | Mar. 29 2014        | Mar. 28 2015            |
| 17                 | Power Meter                   | Anritsu                     | ML2495A                     | GTS540        | July 01 2014        | June 30 2015            |
| 18                 | Power Sensor                  | Anritsu                     | MA2411B                     | GTS541        | July 01 2014        | June 30 2015            |

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## 6 Test results and Measurement Data

### 6.1 Antenna requirement:

|   |                             |
|---|-----------------------------|
| <b>Standard requirement:</b>  | FCC Part15 C Section 15.203 |
| <p>15.203 requirement:<br/>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.</p> |                             |
| <b>E.U.T Antenna:</b>   |                             |
| The EUT make use of an integral antenna, The antenna gain is 0dBi.  |                             |
|    |                             |

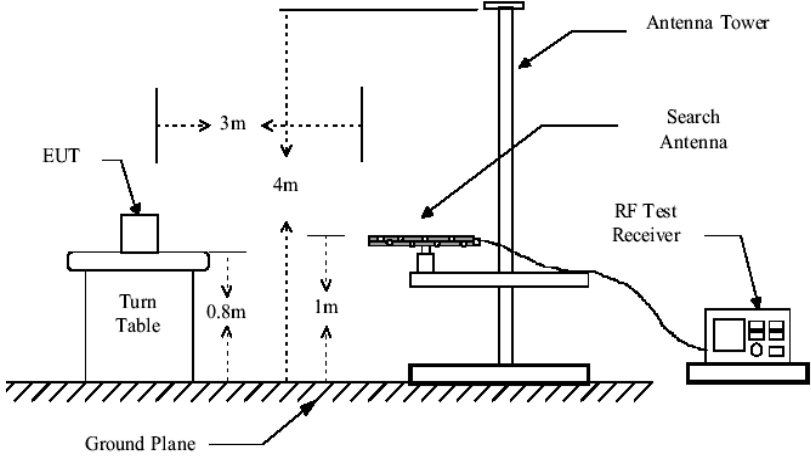
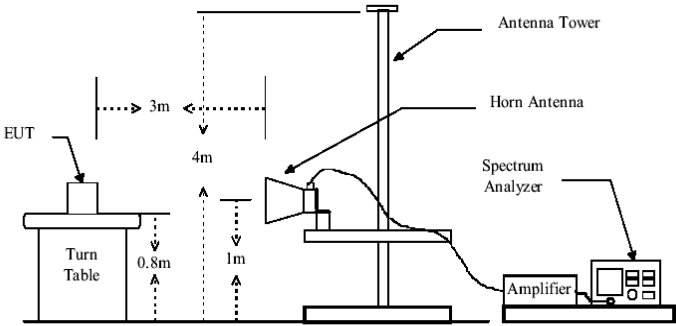




## 6.2 Radiated Emission

|   |  |                    |                  |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
|---|--|--------------------|------------------|------------------|--|-----------|----------|--------------------|--------|-------------|------------|------------|------------------|--------------|------------------|------------|------------------|---------------|------|------------|------------------|-------------|--|------|------------------|------------|--|------|---------------|------|------------|
| Test Requirement:                                       | FCC Part15 C Section 15.231(b) and 15.209  |                    |                  |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Test Method:  | ANSI C63.4:2009  |                    |                  |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Test Frequency Range:                                   | 30MHz to 5000MHz   |                    |                  |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Test site:  | Measurement Distance: 3m (Semi-Anechoic Chamber)   |                    |                  |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Receiver setup:   | <table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr><tr><td>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr></table>   |                    |                  |                  |  | Frequency | Detector | RBW                | VBW    | Remark      | 30MHz-1GHz | Quasi-peak | 120KHz           | 300KHz       | Quasi-peak Value | Above 1GHz | Peak             | 1MHz          | 3MHz | Peak Value |                  |             |  |      |                  |            |  |      |               |      |            |
| Frequency   | Detector   | RBW                | VBW              | Remark           |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| 30MHz-1GHz  | Quasi-peak   | 120KHz             | 300KHz           | Quasi-peak Value |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Above 1GHz  | Peak   | 1MHz               | 3MHz             | Peak Value       |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Limit:<br>(Field strength of the<br>fundamental signal) | <table><tr><td colspan="2">Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr><tr><td colspan="2" rowspan="2">433.93 MHz</td><td>80.80</td><td>Average Value</td></tr><tr><td>100.80</td><td>Peak Value</td></tr></table>  |                    |                  |                  |  | Frequency |          | Limit (dBuV/m @3m) | Remark | 433.93 MHz  |            | 80.80      | Average Value    | 100.80       | Peak Value       |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Frequency   |  | Limit (dBuV/m @3m) | Remark           |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| 433.93 MHz  |  | 80.80              | Average Value    |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
|   |  | 100.80             | Peak Value       |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Limit:<br>(Spurious Emissions)                          | <table><tr><td colspan="2">Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr><tr><td colspan="2">30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr><tr><td colspan="2">88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr><tr><td colspan="2">216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr><tr><td colspan="2">960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr><tr><td colspan="2" rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr><tr><td>74.0</td><td>Peak Value</td></tr></table> <p>Or The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level whichever limit permits a higher field strength.</p>  |                    |                  |                  |  | Frequency |          | Limit (dBuV/m @3m) | Remark | 30MHz-88MHz |            | 40.0       | Quasi-peak Value | 88MHz-216MHz |                  | 43.5       | Quasi-peak Value | 216MHz-960MHz |      | 46.0       | Quasi-peak Value | 960MHz-1GHz |  | 54.0 | Quasi-peak Value | Above 1GHz |  | 54.0 | Average Value | 74.0 | Peak Value |
| Frequency   |  | Limit (dBuV/m @3m) | Remark           |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| 30MHz-88MHz   |  | 40.0               | Quasi-peak Value |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| 88MHz-216MHz  |  | 43.5               | Quasi-peak Value |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| 216MHz-960MHz   |  | 46.0               | Quasi-peak Value |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| 960MHz-1GHz   |  | 54.0               | Quasi-peak Value |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Above 1GHz  |  | 54.0               | Average Value    |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
|   |  | 74.0               | Peak Value       |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |
| Test Procedure:   | <p>a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data</p> |                    |                  |                  |  |           |          |                    |        |             |            |            |                  |              |                  |            |                  |               |      |            |                  |             |  |      |                  |            |  |      |               |      |            |

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|                          |   |
|--------------------------|---|
| <p>Test setup:</p>       | <p>sheet.</p> <p>Below 1GHz</p>  <p>Above 1GHz</p>  |
| <p>Test Instruments:</p> | <p>Refer to section 6.0 for details</p>   |
| <p>Test mode:</p>        | <p>Refer to section 5.3 for details</p>   |
| <p>Test results:</p>     | <p>Pass</p>   |

## Measurement Data

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### 6.2.1 Field Strength Of The Fundamental Signal

Peak value:

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 433.93          | 88.36             | 17.53                 | 3.02            | 31.77              | 77.14          | 100.80              | -23.66          | Horizontal   |
| 433.93          | 94.71             | 17.53                 | 3.02            | 31.77              | 83.49          | 100.80              | -17.31          | Vertical     |

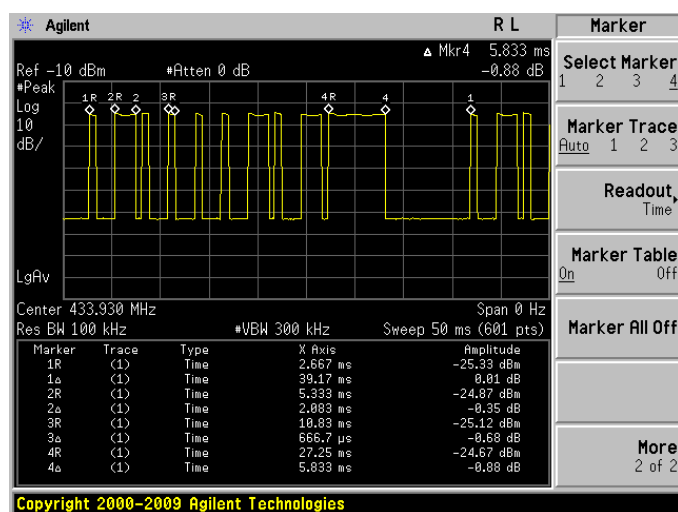
Average value:

| Frequency (MHz) | Peak Value (dBuV/m) | Duty cycle factor | Average value (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|---------------------|-------------------|------------------------|---------------------|-----------------|--------------|
| 433.93          | 77.14               | -7.73             | 69.41                  | 80.80               | -11.39          | Horizontal   |
| 433.93          | 83.49               | -7.73             | 75.76                  | 80.80               | -5.04           | Vertical     |

Average value=Peak Value + Duty cycle factor

| Duty cycle factor  |  |
|--------------------|--|
| Calculate Formula: | Duty cycle factor=20 log(Duty cycle)<br>Duty cycle= T on time / T period |
| Test data:         | Ton time = 3*2.083ms+6*0.667ms+5.833ms=16.08ms                           |
|                    | T period =39.17ms  |
|                    | Duty cycle= 41.06%   |
|                    | duty cycle factor= -7.73   |

Test plot as follows:



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## 6.2.2 Spurious Emissions

| Frequency<br>(MHz) | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |
|--------------------|-------------------------|-----------------------------|-----------------------|--------------------------|-------------------|------------------------|-----------------------|--------------|
| 33.52              | 41.13                   | 14.32                       | 0.58                  | 32.06                    | 23.97             | 40.00                  | -16.03                | Vertical     |
| 58.92              | 41.28                   | 14.73                       | 0.86                  | 31.94                    | 24.93             | 40.00                  | -15.07                | Vertical     |
| 96.99              | 40.44                   | 14.90                       | 1.16                  | 31.74                    | 24.76             | 43.50                  | -18.74                | Vertical     |
| 155.18             | 44.84                   | 10.51                       | 1.60                  | 32.00                    | 24.95             | 43.50                  | -18.55                | Vertical     |
| 45.20              | 39.37                   | 15.56                       | 0.71                  | 32.02                    | 23.62             | 40.00                  | -16.38                | Horizontal   |
| 57.47              | 40.02                   | 14.80                       | 0.84                  | 31.94                    | 23.72             | 40.00                  | -16.28                | Horizontal   |
| 111.80             | 40.53                   | 14.15                       | 1.28                  | 31.81                    | 24.15             | 43.50                  | -19.35                | Horizontal   |
| 198.56             | 40.03                   | 12.57                       | 1.84                  | 32.14                    | 22.30             | 43.50                  | -21.20                | Horizontal   |

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**Harmonic emissions**

**Peak value:**

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|
| 867.86          | 59.08             | 22.78                 | 4.74            | 31.22                    | 55.38          | 80.80               | -25.42          | Vertical     |
| 1301.79         | 61.80             | 25.63                 | 4.54            | 33.27                    | 58.70          | 74.00               | -15.30          | Vertical     |
| 1735.72         | 48.63             | 25.05                 | 4.82            | 34.00                    | 44.50          | 80.80               | -36.30          | Vertical     |
| 2169.65         | 58.54             | 27.67                 | 5.15            | 34.27                    | 57.09          | 80.80               | -23.71          | Vertical     |
| 2603.58         | 49.63             | 27.82                 | 5.58            | 33.78                    | 49.25          | 80.80               | -31.55          | Vertical     |
| 3037.51         | 50.91             | 28.61                 | 6.02            | 33.28                    | 52.26          | 80.80               | -28.54          | Vertical     |
| 3471.44         | 43.44             | 28.90                 | 6.91            | 32.79                    | 46.46          | 80.80               | -34.34          | Vertical     |
| 3905.37         | 47.31             | 29.52                 | 7.71            | 32.29                    | 52.25          | 74.00               | -21.75          | Vertical     |
| 4339.30         | 40.12             | 30.88                 | 8.19            | 31.86                    | 47.33          | 74.00               | -26.67          | Vertical     |
| 867.86          | 53.98             | 22.78                 | 4.74            | 31.22                    | 50.28          | 80.80               | -30.52          | Horizontal   |
| 1301.79         | 46.94             | 25.63                 | 4.54            | 33.27                    | 43.84          | 74.00               | -30.16          | Horizontal   |
| 1735.72         | 43.20             | 25.05                 | 4.82            | 34.00                    | 39.07          | 80.80               | -41.73          | Horizontal   |
| 2169.65         | 48.62             | 27.67                 | 5.15            | 34.27                    | 47.17          | 80.80               | -33.63          | Horizontal   |
| 2603.58         | 44.69             | 27.82                 | 5.58            | 33.78                    | 44.31          | 80.80               | -36.49          | Horizontal   |
| 3037.51         | 50.15             | 28.61                 | 6.02            | 33.28                    | 51.50          | 80.80               | -29.30          | Horizontal   |
| 3471.44         | 42.67             | 28.90                 | 6.91            | 32.79                    | 45.69          | 80.80               | -35.11          | Horizontal   |
| 3905.37         | 47.12             | 29.52                 | 7.71            | 32.29                    | 52.06          | 74.00               | -21.94          | Horizontal   |
| 4339.30         | 40.97             | 30.88                 | 8.19            | 31.86                    | 48.18          | 74.00               | -25.82          | Horizontal   |



**Average value:**

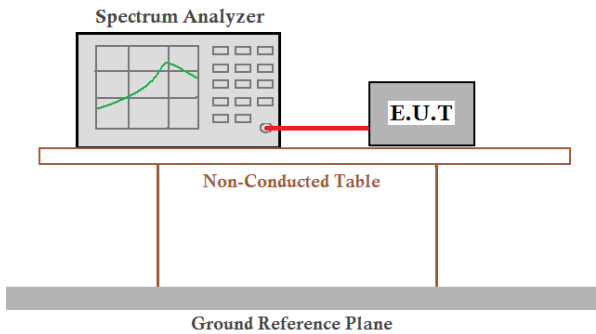
| Frequency (MHz) | Level (dBuV/m) | Duty cycle factor | Average value (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|----------------|-------------------|------------------------|---------------------|-----------------|--------------|
| 867.86          | 55.38          | -7.73             | 47.65                  | 60.80               | -13.15          | Vertical     |
| 1301.79         | 58.70          | -7.73             | 50.97                  | 54.00               | -3.03           | Vertical     |
| 1735.72         | 44.50          | -7.73             | 36.77                  | 60.80               | -24.03          | Vertical     |
| 2169.65         | 57.09          | -7.73             | 49.36                  | 60.80               | -11.44          | Vertical     |
| 2603.58         | 49.25          | -7.73             | 41.52                  | 60.80               | -19.28          | Vertical     |
| 3037.51         | 52.26          | -7.73             | 44.53                  | 60.80               | -16.27          | Vertical     |
| 3471.44         | 46.46          | -7.73             | 38.73                  | 60.80               | -22.07          | Vertical     |
| 3905.37         | 52.25          | -7.73             | 44.52                  | 54.00               | -9.48           | Vertical     |
| 4339.30         | 47.33          | -7.73             | 39.60                  | 54.00               | -14.40          | Vertical     |
| 867.86          | 50.28          | -7.73             | 42.55                  | 60.80               | -18.25          | Horizontal   |
| 1301.79         | 43.84          | -7.73             | 36.11                  | 54.00               | -17.89          | Horizontal   |
| 1735.72         | 39.07          | -7.73             | 31.34                  | 60.80               | -29.46          | Horizontal   |
| 2169.65         | 47.17          | -7.73             | 39.44                  | 60.80               | -21.36          | Horizontal   |
| 2603.58         | 44.31          | -7.73             | 36.58                  | 60.80               | -24.22          | Horizontal   |
| 3037.51         | 51.50          | -7.73             | 43.77                  | 60.80               | -17.03          | Horizontal   |
| 3471.44         | 45.69          | -7.73             | 37.96                  | 60.80               | -22.84          | Horizontal   |
| 3905.37         | 52.06          | -7.73             | 44.33                  | 54.00               | -9.67           | Horizontal   |
| 4339.30         | 48.18          | -7.73             | 40.45                  | 54.00               | -13.55          | Horizontal   |

*Remark:*

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *Average value = Peak value + Duty cycle factor*



### 6.3 20dB Bandwidth

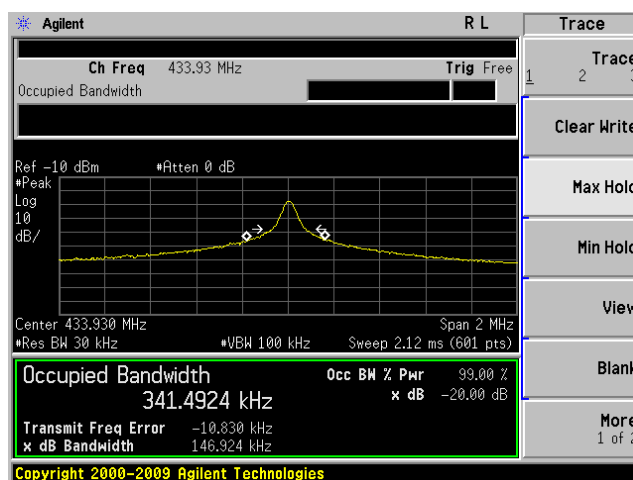
|                   |   |
|-------------------|---|
| Test Requirement: | FCC Part15 C Section 15.231 (c)   |
| Test Method:      | ANSI C63.4:2009   |
| Limit:            | The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier. |
| Test setup:       |    |
| Test Instruments: | Refer to section 6.0 for details  |
| Test mode:        | Refer to section 5.3 for details  |
| Test results:     | Pass  |

### Measurement Data

| Test Frequency (MHz) | 20dB bandwidth (MHz) | Limit (MHz) | Result |
|----------------------|----------------------|-------------|--------|
| 433.93               | 0.147                | 1.08MHz     | Pass   |

Note: Limit= Fundamental frequency $\times$ 0.25%=433.93 $\times$ 0.25%=1.08MHz

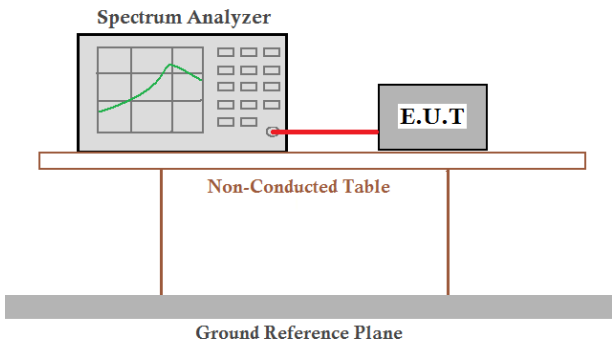
Test plot as follows:



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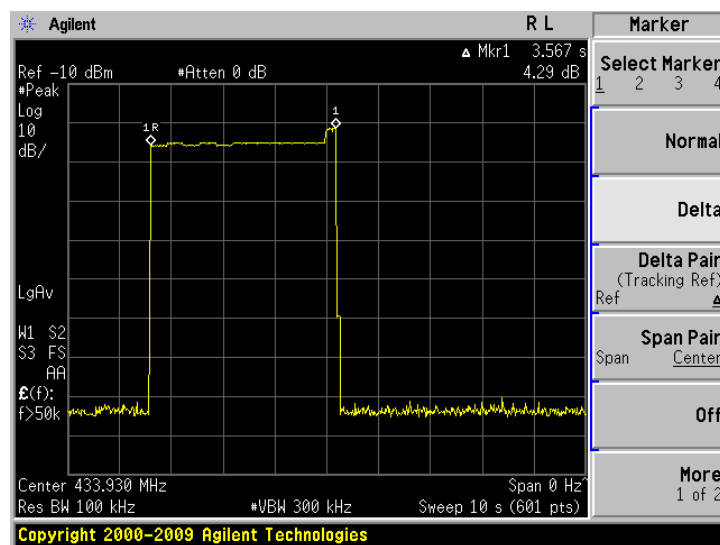
## 6.4 Release time

|                   |  |
|-------------------|--|
| Test Requirement: | FCC Part15 C Section 15.231 (a)(2)   |
| Test Method:      | ANSI C63.4:2009  |
| Receiver setup:   | RBW=100KHz, VBW=300KHz, span=0Hz, detector: Peak                                   |
| Limit:            | Not more than 5 seconds  |
| Test setup:       |  |
| Test Instruments: | Refer to section 6.0 for details   |
| Test mode:        | Refer to section 5.3 for details   |
| Test results:     | Pass   |

### Measurement data:

|                     |                |        |
|---------------------|----------------|--------|
| Dwell time (second) | Limit (second) | Result |
| 3.567               | <5.0           | Pass   |

Test plot as follows:



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## **7 Test Setup Photo**

Refer to test setup photos.

## **8 EUT Constructional Details**

Refer to EUT external and internal photos.

-----End-----