# FCC Test Report

| | |
|---|---|
| Product Name | RFID Reader |
| Model No. | BF-IDM01 |
| FCC ID | 2AGZY-BFIDM01 |

| | |
|---|---|
| Applicant | Balluff GmbH |
| Address | Schurwaldstrasse 9, 73765 Neuhausen a.d.F., Germany |

| | |
|---|---|
| Date of Receipt | May 19, 2016 |
| Issued Date | Jun. 13, 2016 |
| Report No. | 1650440R-RFUSP17V00 |
| Report Version | V1.0 |

Testing Laboratory
3023

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.
The test report shall not be reproduced without the written approval of QuieTek Corporation.

# Test Report

Issued Date: Jun. 13, 2016
Report No.: 1650440R-RFUSP17V00

| | |
|---|---|
| Product Name | RFID Reader |
| Applicant | Balluff GmbH |
| Address | Schurwaldstrasse 9, 73765 Neuhausen a.d.F., Germany |
| Manufacturer | Balluff GmbH |
| Model No. | BF-IDM01 |
| FCC ID. | 2AGZY-BFIDM01 |
| EUT Rated Voltage | DC 24V |
| EUT Test Voltage | DC 24V |
| Trade Name | BALLUFF |
| Applicable Standard | FCC CFR Title 47 Part 15 Subpart C: 2015<br>ANSI C63.4: 2014, ANSI C63.10: 2013 |
| Test Result | Complied |

Documented By : Rita Huang

( Senior Adm. Specialist / Rita Huang )

Tested By : Paul Jiang

( Engineer / Paul Jiang )

Approved By :

( Director / Vincent Lin )

# TABLE OF CONTENTS

# 1. GENERAL INFORMATION

## 1.1. EUT Description

| | |
|---|---|
| Product Name | RFID Reader |
| Trade Name | BALLUFF |
| Model No. | BF-IDM01 |
| FCC ID | 2AGZY-BFIDM01 |
| Frequency Range | 13.56MHz |
| Modulation | ASK |
| Antenna Type | Loop Antenna |

Frequency of Each Channel:

| Channel | Frequency |
|---|---|
| Channel 1: | 13.56 MHz |

Note:

1. This device is an RFID Reader with a built-in 13.56MHz transceiver.
2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.225
3. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

| | |
|---|---|
| Test Mode | Mode 1: Transmit Mode |

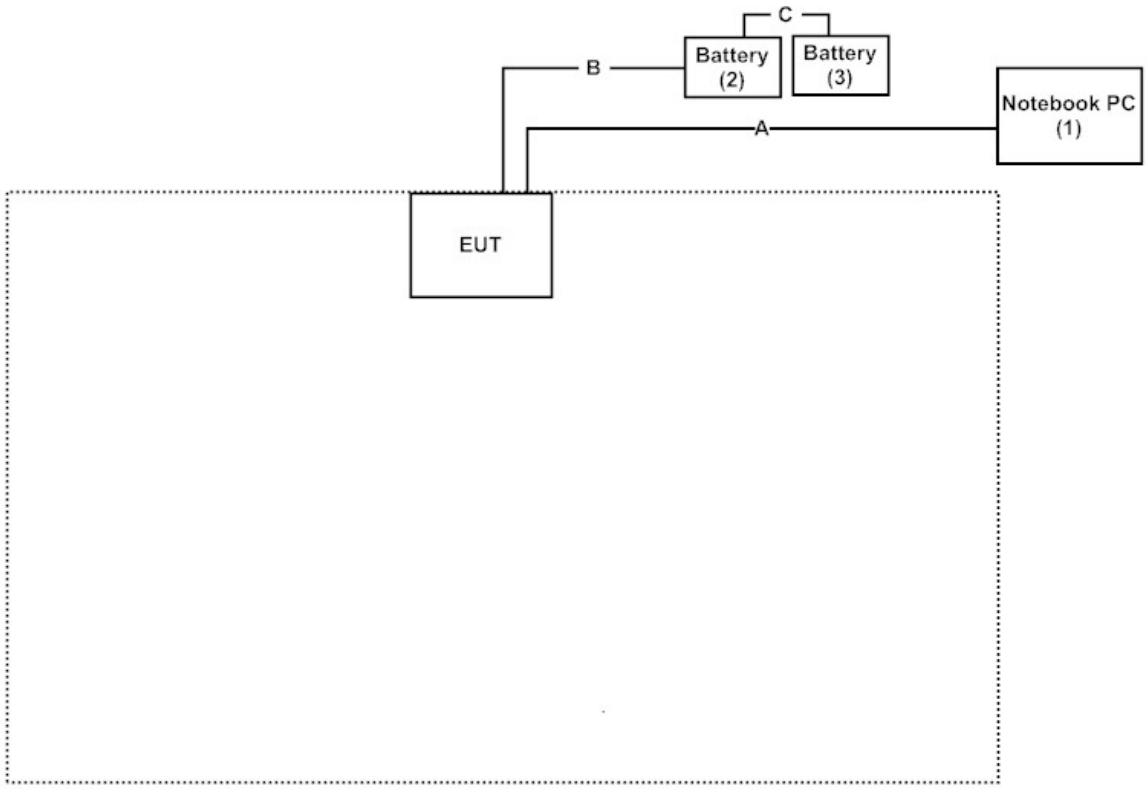
## 1.3. Tested System Datails

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

| | Product | Manufacturer | Model No. | Serial No. | Power Cord |
|---|---|---|---|---|---|
| (1) | Notebook PC | DELL | Latitude E5440 | B6TYTZ1 | Non-Shielded, 0.8m |
| (2) | DC 12V Battery | TRANE | 12B50PE | N/A | N/A |
| (3) | DC 12V Battery | Chen Guang | 66N50 | N/A | N/A |

| Signal Cable Type | | Signal cable Description |
|---|---|---|
| A | MR to LAN Cable | Shielded, 10m |
| B | DC Cable | Non-Shielded, 1.8m, with two ferrite cores bonded. |
| C | DC Cable | Non-Shielded, 0.1m |

## 1.4. Configuration of tested System



## 1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Provide the DC Power Source.

(3) Configure the test mode, the test channel.

(4) Verify that the EUT works properly.

## 1.6. Test Facility

Ambient conditions in the laboratory:

| Items | Required (IEC 68-1) | Actual |
|---|---|---|
| Temperature (°C) | 15-35 | 20-35 |
| Humidity (%RH) | 25-75 | 50-65 |
| Barometric pressure (mbar) | 860-1060 | 950-1000 |

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site: http://www.quietek.com/chinese/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site: http://www.quietek.com/

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Site Name: Quietek Corporation
Site Address: No.5-22, Ruishukeng,
Linkou Dist. New Taipei City 24451,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

# 2. Conducted Emission

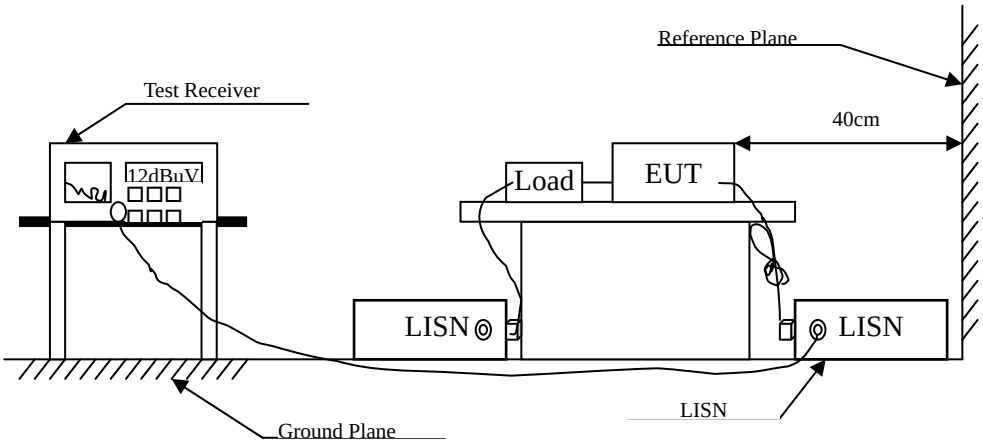
## 2.1. Test Equipment

| | Equipment | Manufacturer | Model No. / Serial No. | Last Cal. | Remark |
|---|---|---|---|---|---|
| X | Test Receiver | R & S | ESCS 30 / 825442/018 | Sep., 2015 | |
| X | Artificial Mains Network | R & S | ENV4200 / 848411/10 | Feb., 2016 | Peripherals |
| X | LISN | R & S | ESH3-Z5 / 825562/002 | Feb., 2016 | EUT |
| | DC LISN | Schwarzbeck | 8226 / 176 | Mar, 2016 | EUT |
| X | Pulse Limiter | R & S | ESH3-Z2 / 357.8810.52 | Feb., 2016 | |
| | No.1 Shielded Room | | | | |

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

## 2.2. Test Setup



## 2.3. Limits

| FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit | | |
|---|---|---|
| Frequency MHz | Limits | |
| | QP | AV |
| 0.15 - 0.50 | 66-56(※) | 56-46(※) |
| 0.50-5.0 | 56 | 46 |
| 5.0 - 30 | 60 | 50 |

## 2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

## 2.5. Uncertainty

± 2.26 dB

## 2.6. Test Result of Conducted Emission

Owing to the DC operation of EUT, this test item is not performed.

# 3. Radiated Emission

## 3.1. Test Equipment

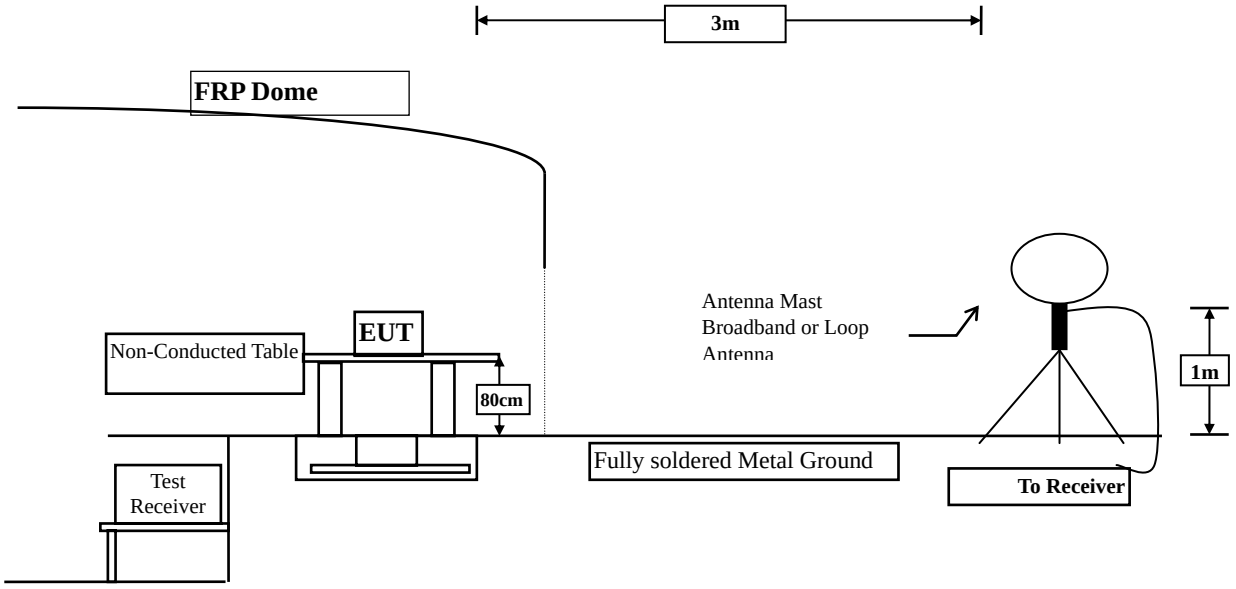
The following test equipments are used during the radiated emission test:

| Test Site | | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|---|---|---|---|---|
| ☒Site # 3 | X | Magnetic Loop Antenna | Teseq | HLA6121/ 37133 | Sep, 2015 |
| | X | Bilog Antenna | Schaffner Chase | CBL6112B/ 2707 | Jun, 2016 |
| | X | EMI Test Receiver | R&S | ESCS 30/838251/ 001 | Jun, 2016 |
| | X | Coaxial Cable | QTK(Arnist) | RG 214/ LC003-RG | Jun, 2016 |
| | X | Coaxial signal switch | Arnist | MP59B/ 6200798682 | Jun, 2016 |

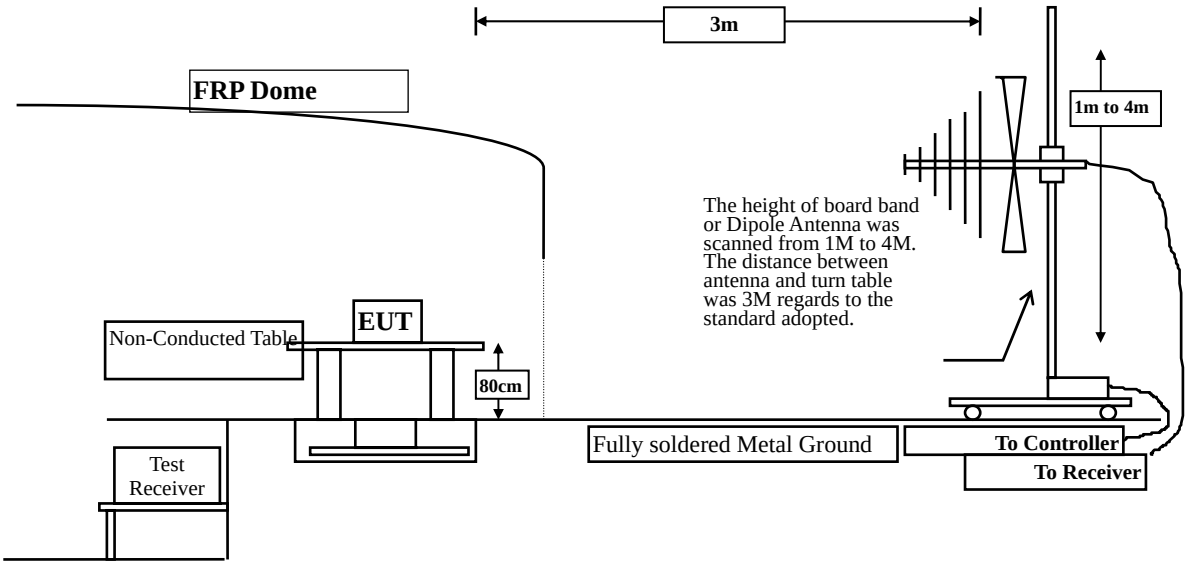
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

## 3.2. Test Setup

9kHz~30MHz



30MHz~1GHz




## 3.3. Limits

➢ Fundamental electric field strength Limit

| FCC Part 15 Subpart C Paragraph 15.225 Limits | | | | |
|---|---|---|---|---|
| Fundamental Frequency MHz | Field strength of fundamental | | | |
| | uV/m | Distance (meter) | dBuV/m | Distance (meter) |
| 13.553 – 13.567 | 15848 | 30 | 124 | 3 |
| 13.410 – 13.553 and 13.567 – 13.710 | 334 | 30 | 90.47 | 3 |
| 13.110 – 13.410 and 13.710 – 14.010 | 106 | 30 | 80.50 | 3 |
| Outside of the 13.110 – 14.010 | See 15.209 Limits | | | |

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

➢ Spurious electric field strength Limit

| FCC Part 15 Subpart C Paragraph 15.209 Limits | | | |
|---|---|---|---|
| Frequency MHz | uV/m | dBuV/m | Measurement distance (meter) |
| 0.009-0.490 | 2400/F(kHz) | See Remark[1] | 300 |
| 0.490-1.705 | 24000/F(kHz) | See Remark[1] | 30 |
| 1.705-30 | 30 | 29.5 | 30 |
| 30-88 | 100 | 40 | 3 |
| 88-216 | 150 | 43.5 | 3 |
| 216-960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

## 3.4. Test Procedure

Fundamental electric field strength:
The EUT and its simulators are placed on a turn table which is 1 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum electric field strength.
The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna which is 1 meter above ground. All X-axis, Y-axis and Z-axis polarization of the antenna are set on measurement.

Spurious electric field strength:
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C6310: 2013 on radiated measurement.
On any frequency the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
The bandwidth below 30MHz setting on the field strength meter is 9kHz and above 30MHz is 120kHz.
The frequency range from 9kHz to 10th harmonics is checked.

## 3.5. Uncertainty

± 2.6 dB below 30MHz

± 3.8 dB above 30MHz

## 3.6. Test Result of Radiated Emission

Product : RFID Reader
Test Item : Fundamental Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit Mode

| Frequency | Correct Factor | Reading Level | Measurement Level | Margin | Limit |
|---|---|---|---|---|---|
| MHz | dB | dBuV | dBuV/m | dB | dBuV/m |
| **X-axis** | | | | | |
| **Quasi-Peak** | | | | | |
| **Horizontal** | | | | | |
| 13.560 | 20.410 | 43.890 | 64.300 | -59.700 | 124.000 |
| **Vertical** | | | | | |
| 13.560 | 20.410 | 38.910 | 59.320 | -64.680 | 124.000 |
| **Y-axis** | | | | | |
| **Quasi-Peak** | | | | | |
| **Horizontal** | | | | | |
| 13.560 | 20.410 | 47.290 | 67.700 | -56.300 | 124.000 |
| **Vertical** | | | | | |
| 13.560 | 20.410 | 42.390 | 62.800 | -61.200 | 124.000 |
| **Z-axis** | | | | | |
| **Quasi-Peak** | | | | | |
| **Horizontal** | | | | | |
| 13.560 | 20.410 | 39.420 | 59.830 | -64.170 | 124.000 |
| **Vertical** | | | | | |
| 13.560 | 20.410 | 46.660 | 67.070 | -56.930 | 124.000 |

Note:

1. Limit=84dBuV/m + 40*Log (30(m)/3(m))=124dBuV/m
2. All Readings below 1GHz are Quasi-Peak, above are average value.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : RFID Reader
Test Item : General Radiated Emission Data (below 30MHz)
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit Mode

| Frequency | Correct Factor | Reading Level | Measurement Level | Margin | Limit |
|---|---|---|---|---|---|
| MHz | dB | dBuV | dBuV/m | dB | dBuV/m |
| **Horizontal** | | | | | |
| 27.120 | 19.950 | 20.730 | 40.680 | -28.860 | 69.540 |
| **Vertical** | | | | | |
| 27.120 | 19.950 | 20.120 | 40.070 | -29.470 | 69.540 |

Note:

1. Limit=29.54dBuV/m + 40*Log (30(m)/3(m))=69.54dBuV/m
2. All Readings below 1GHz are Quasi-Peak, above are average value.
3. “ ” means the worst emission level.
4. Measurement Level = Reading Level + Correct Factor.

Product : RFID Reader
Test Item : General Radiated Emission Data (above 30MHz)
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit Mode

| Frequency | Correct Factor | Reading Level | Measurement Level | Margin | Limit |
|---|---|---|---|---|---|
| MHz | dB | dBuV | dBuV/m | dB | dBuV/m |
| **Horizontal** | | | | | |
| **QP Detector** | | | | | |
| 33.880 | -7.772 | 44.189 | 36.417 | -3.583 | 40.000 |
| 317.120 | -17.184 | 61.051 | 43.867 | -2.133 | 46.000 |
| 406.360 | -11.647 | 50.257 | 38.610 | -7.390 | 46.000 |
| 600.360 | -6.830 | 40.621 | 33.791 | -12.209 | 46.000 |
| 800.180 | -6.808 | 43.177 | 36.369 | -9.631 | 46.000 |
| 963.140 | -6.502 | 45.242 | 38.740 | -15.260 | 54.000 |
| **Vertical** | | | | | |
| **QP Detector** | | | | | |
| 39.700 | -18.150 | 55.666 | 37.516 | -2.484 | 40.000 |
| 210.420 | -12.549 | 50.889 | 38.340 | -5.160 | 43.500 |
| 319.060 | -18.242 | 61.188 | 42.946 | -3.054 | 46.000 |
| 499.480 | -12.482 | 49.660 | 37.178 | -8.822 | 46.000 |
| 701.240 | -10.255 | 43.672 | 33.417 | -12.583 | 46.000 |
| 935.980 | -5.925 | 47.611 | 41.686 | -4.314 | 46.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

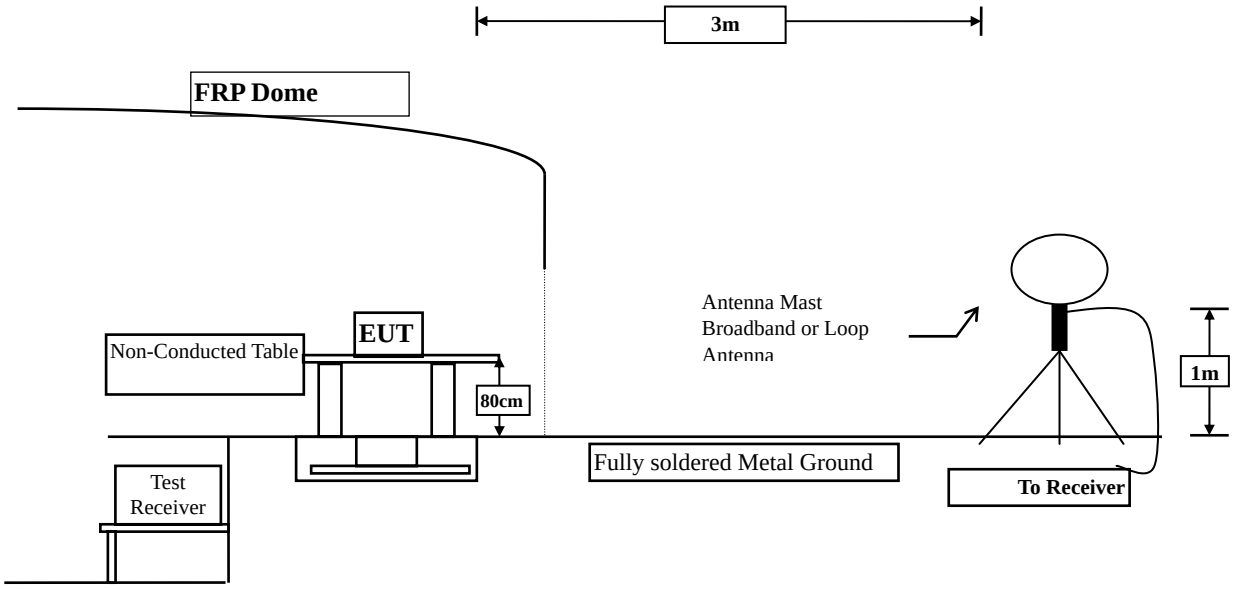
# 4. Band Edge

## 4.1. Test Equipment

| Test Site | Equipment | | Manufacturer | Model No./Serial No. | Last Cal. |
|---|---|---|---|---|---|
| ☒Site # 3 | X | Magnetic Loop Antenna | Teseq | HLA6121/ 37133 | Sep, 2015 |
| | X | Bilog Antenna | Schaffner Chase | CBL6112B/ 2707 | Jun, 2016 |
| | X | EMI Test Receiver | R&S | ESCS 30/838251/ 001 | Jun, 2016 |
| | X | Coaxial Cable | QTK(Arnist) | RG 214/ LC003-RG | Jun, 2016 |
| | X | Coaxial signal switch | Arnist | MP59B/ 6200798682 | Jun, 2016 |

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

## 4.2. Test Setup



## 4.3. Limits

In any 9 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 50 dB below that in the 9 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

## 4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.
The bandwidth below 30MHz setting on the field strength meter is 9kHz and above 30MHz is 120kHz.

## 4.5. Uncertainty

Radiated is ± 2.6 dB

## 4.6. Test Result of Band Edge

Product : RFID Reader
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit Mode

**RF Radiated Measurement**

**(Horizontal)**

| Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | QP Limit (dBuV/m) | Result |
|---|---|---|---|---|---|
| 13.110 | 20.410 | 7.800 | 28.210 | 69.540 | Pass |
| 13.290 | 20.410 | 13.600 | 34.010 | 69.540 | Pass |
| 13.360 | 20.410 | 7.800 | 28.210 | 69.540 | Pass |
| 13.400 | 20.410 | 19.800 | 40.210 | 69.540 | Pass |
| 13.410 | 20.410 | 15.700 | 36.110 | 69.540 | Pass |
| 14.010 | 20.410 | 6.600 | 27.010 | 69.540 | Pass |
| 14.060 | 20.410 | 8.700 | 29.110 | 69.540 | Pass |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "  " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

**(Vertical)**

| Frequency (MHz) | Correct Factor (dB) | Reading Level (dBuV) | Emission Level (dBuV/m) | QP Limit (dBuV/m) | Result |
|---|---|---|---|---|---|
| 13.060 | 20.410 | 9.000 | 29.410 | 69.540 | Pass |
| 13.110 | 20.410 | 8.500 | 28.910 | 69.540 | Pass |
| 13.260 | 20.410 | 9.500 | 29.910 | 69.540 | Pass |
| 13.360 | 20.410 | 9.200 | 29.610 | 69.540 | Pass |
| 13.410 | 20.410 | 11.900 | 32.310 | 69.540 | Pass |
| 14.010 | 20.410 | 11.800 | 32.210 | 69.540 | Pass |

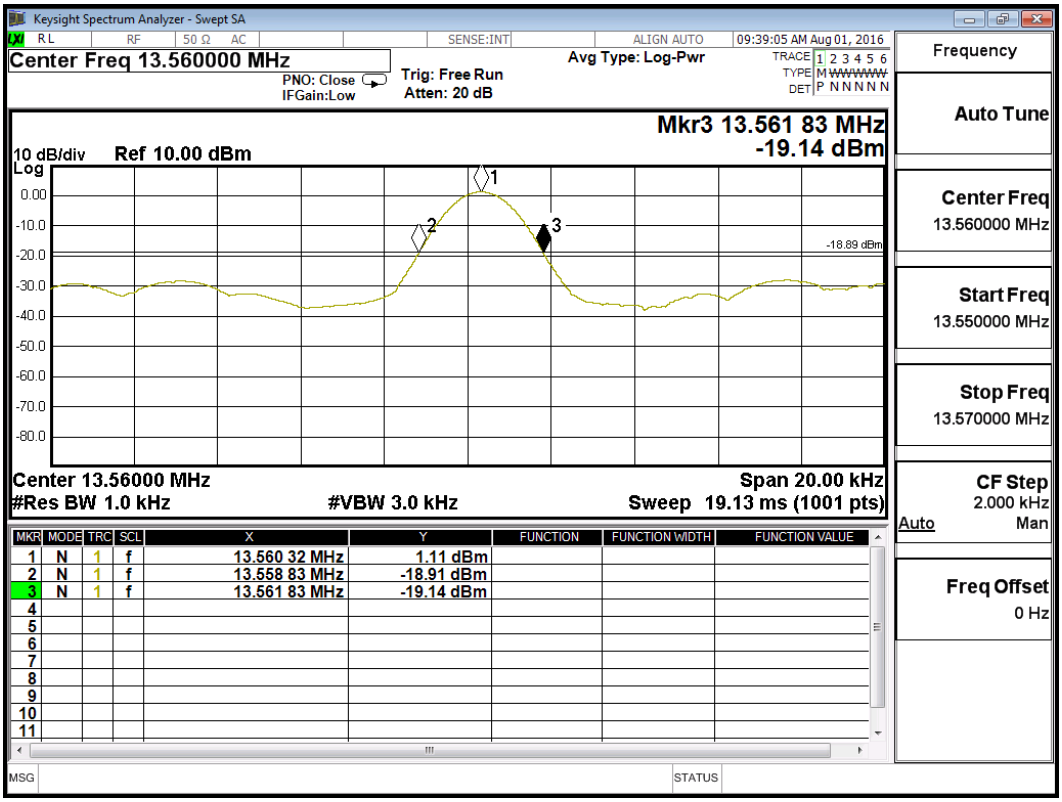
Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "  " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : RFID Reader
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit Mode

| Test Frequency (MHz) | Measurement Level (20dB BW) (MHz) | Limit (MHz) | Result |
|---|---|---|---|
| 13.56 | 13.558 | >13.110 | PASS |
| 13.56 | 13.561 | <14.010 | PASS |

NOTE: Accordance with 15.215 requirement.



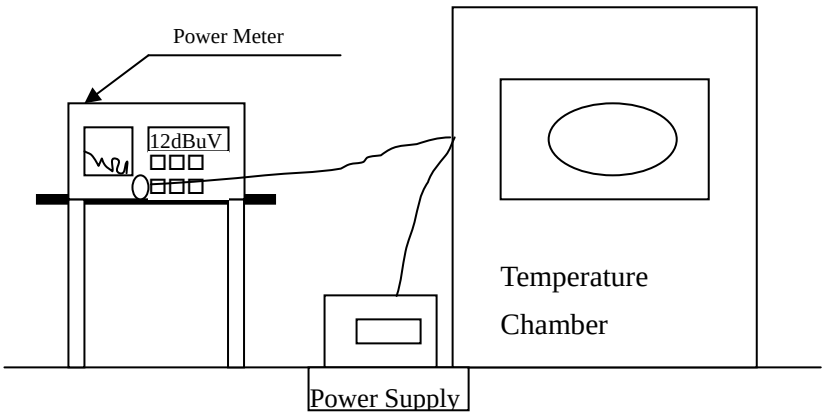
## 5. Frequency Tolerance

### 5.1. Test Equipment

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|---|---|---|---|
| | Spectrum Analyzer | R&S | FSP40 / 100170 | Jun, 2016 |
| | Spectrum Analyzer | Agilent | E4407B / US39440758 | Jun, 2016 |
| X | Spectrum Analyzer | Agilent | N9010A / MY48030495 | Apr., 2016 |
| X | Temperature Chamber | TDE | CHM 150CT | March, 2016 |

Note: All equipments are calibrated every one year.

### 5.2. Test Setup




### 5.3. Limits

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency.

### 5.4. Test Procedure

The over 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.

### 5.5. Uncertainty

± 150 Hz

## 5.6. Test Result of Frequency Stability

Product : RFID Reader
Test Item : Frequency Tolerance
Test Site : Temperature Chamber
Test Mode : Mode 1: Transmit Mode

| Temperature (℃) | Voltage (V) | Observe Time | Declared Frequency (MHz) | Read Frequency (MHz) | Tolerance (%) | Limit (%) |
|---|---|---|---|---|---|---|
| 20 | 24 | start | 13.56 | 13.56032 | 0.002360 | ± 0.01 % |
| | | 2mins | 13.56 | 13.56032 | 0.002360 | |
| | | 5mins | 13.56 | 13.56032 | 0.002360 | |
| | | 10mins | 13.56 | 13.56032 | 0.002360 | |
| 20 | 20.4 | start | 13.56 | 13.56032 | 0.002360 | ± 0.01 % |
| | | 2mins | 13.56 | 13.56032 | 0.002360 | |
| | | 5mins | 13.56 | 13.56032 | 0.002360 | |
| | | 10mins | 13.56 | 13.56032 | 0.002360 | |
| 20 | 27.6 | start | 13.56 | 13.56032 | 0.002360 | ± 0.01 % |
| | | 2mins | 13.56 | 13.56032 | 0.002360 | |
| | | 5mins | 13.56 | 13.56032 | 0.002360 | |
| | | 10mins | 13.56 | 13.56032 | 0.002360 | |
| 50 | 24 | start | 13.56 | 13.56029 | 0.002139 | ± 0.01 % |
| | | 2mins | 13.56 | 13.56029 | 0.002139 | |
| | | 5mins | 13.56 | 13.56029 | 0.002139 | |
| | | 10mins | 13.56 | 13.56029 | 0.002139 | |
| 40 | 24 | start | 13.56 | 13.56031 | 0.002286 | ± 0.01 % |
| | | 2mins | 13.56 | 13.56031 | 0.002286 | |
| | | 5mins | 13.56 | 13.56031 | 0.002286 | |
| | | 10mins | 13.56 | 13.56031 | 0.002286 | |
| 30 | 24 | start | 13.56 | 13.56035 | 0.002581 | ± 0.01 % |
| | | 2mins | 13.56 | 13.56035 | 0.002581 | |
| | | 5mins | 13.56 | 13.56035 | 0.002581 | |
| | | 10mins | 13.56 | 13.56035 | 0.002581 | |
| 10 | 24 | start | 13.56 | 13.56041 | 0.003024 | ± 0.01 % |
| | | 2mins | 13.56 | 13.56041 | 0.003024 | |
| | | 5mins | 13.56 | 13.56041 | 0.003024 | |
| | | 10mins | 13.56 | 13.56041 | 0.003024 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0 | 24 | start | 13.56 | 13.56043 | 0.003171 | ± | 0.01 | % |
| | | 2mins | 13.56 | 13.56043 | 0.003171 | | | |
| | | 5mins | 13.56 | 13.56043 | 0.003171 | | | |
| | | 10mins | 13.56 | 13.56043 | 0.003171 | | | |
| -10 | 24 | start | 13.56 | 13.56044 | 0.003245 | ± | 0.01 | % |
| | | 2mins | 13.56 | 13.56044 | 0.003245 | | | |
| | | 5mins | 13.56 | 13.56044 | 0.003245 | | | |
| | | 10mins | 13.56 | 13.56044 | 0.003245 | | | |
| -20 | 24 | start | 13.56 | 13.56042 | 0.003097 | ± | 0.01 | % |
| | | 2mins | 13.56 | 13.56042 | 0.003097 | | | |
| | | 5mins | 13.56 | 13.56042 | 0.003097 | | | |
| | | 10mins | 13.56 | 13.56042 | 0.003097 | | | |

Note: Limit= Ref. Freq. * (±) 0.01% = 13.55952~13.56223MHz

## 6. EMI Reduction Method During Compliance Testing

No modification was made during testing.

# Attachment 1: EUT Test Photographs

# Attachment 2: EUT Detailed Photographs