



## Test Report

Date : 2023-09-20  
No. : HMD23080008

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**Applicant** : SIEPER GMBH  
Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany

**Supplier / Manufacturer** : SIEPER GMBH  
Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany

**Description of Sample(s)** : Submitted sample(s) said to be  
Product: Claas Axion 850 Set with remote control  
Brand Name: N/A  
Model No.: 10688200004  
FCC ID: 2BCOX-6882

**Date Samples Received** : 2023-08-31

**Date Tested** : 2023-08-31 to 2023-09-06

**Investigation Requested** : Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 and ANSI C63.10: 2013 for FCC Certification.

**Conclusions** : The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

**Remarks** : 2.4GHz wireless (2FSK)

**Test by** Susu

  
  
Dr.CHAN Kwok Hung, Brian  
Authorized Signatory

The Hong Kong Standards and Testing Centre Limited

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### **1.0 General Details**

#### **1.1 Test Laboratory**

The Hong Kong Standards and Testing Centre Ltd.  
EMC Laboratory  
10 Dai Wang Street, Taipo Industrial Estate, New Territories, Hong Kong  
Telephone: 852 2666 1888  
Fax: 852 2664 4353

#### **1.2 Equipment Under Test [EUT]**

##### **Description of Sample(s)**

|               |                                                                         |
|---------------|-------------------------------------------------------------------------|
| Product:      | Claas Axion 850 Set with remote control                                 |
| Manufacturer: | SIEPER GMBH<br>Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany |
| Brand Name:   | N/A                                                                     |
| Model Number: | 10688200004                                                             |
| Rating:       | Vehicle: 4.5Vd.c.(“AAA” battery *3)                                     |

#### **1.3 Description of EUT Operation**

The Equipment Under Test (EUT) is a Claas Axion 850 Set with remote control. It is a transceiver operating at 2408 MHz~2470 MHz and the RF signal was modulated by IC.

RF modulation: 2FSK  
Antenna gain:1.8dBi

#### **1.4 Date of Order**

2023-08-03

#### **1.5 Submitted Sample(s):**

1 Sample

#### **1.6 Test Duration**

2023-08-31 to 2023-09-06

#### **1.7 Country of Origin**

China

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### 2.0 Technical Details

#### **2.1 Investigations Requested**

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 Regulations and ANSI C63.10: 2013 for FCC Certification.

#### **2.2 Test Standards and Results Summary Tables**

| EMISSION<br>Results Summary                               |                     |                   |                     |                                     |                          |                                     |
|-----------------------------------------------------------|---------------------|-------------------|---------------------|-------------------------------------|--------------------------|-------------------------------------|
| Test Condition                                            | Test Requirement    | Test Method       | Class /<br>Severity | Test Result                         |                          |                                     |
|                                                           |                     |                   |                     | Pass                                | Failed                   | N/A                                 |
| Field Strength of<br>Fundamental &<br>Harmonics Emissions | FCC 47CFR 15.249    | ANSI C63.10: 2013 | N/A                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| Radiated Emissions                                        | FCC 47CFR 15.209    | ANSI C63.10: 2013 | N/A                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| AC Mains Conducted<br>Emissions                           | FCC 47CFR 15.207    | ANSI C63.10: 2013 | N/A                 | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Antenna requirement                                       | FCC 47CFR 15.203    | N/A               | N/A                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 20dB Emission bandwidth                                   | FCC 47CFR 15.215(c) | ANSI C63.10: 2013 | N/A                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |

Note: N/A - Not Applicable

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### **3.0 Test Results**

#### **3.1 Emission**

##### **3.1.1 Radiated Emissions**

Ambient temperature 25°C

Relative humidity 57%

|                    |                                     |
|--------------------|-------------------------------------|
| Test Requirement:  | FCC 47CFR 15.249 & FCC 47CFR 15.209 |
| Test Method:       | ANSI C63.10:2013                    |
| Test Date:         | 2023-08-31                          |
| Mode of Operation: | Tx mode                             |

#### **Test Method:**

For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semi-anechoic Chamber\*. For emission measurements above 1 GHz, the sample was placed 1.5m above the ground plane of semi-anechoic Chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

- \* Semi-Anechoic chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with  
Registration Number: HK0001  
Test Firm Registration Number: 367672

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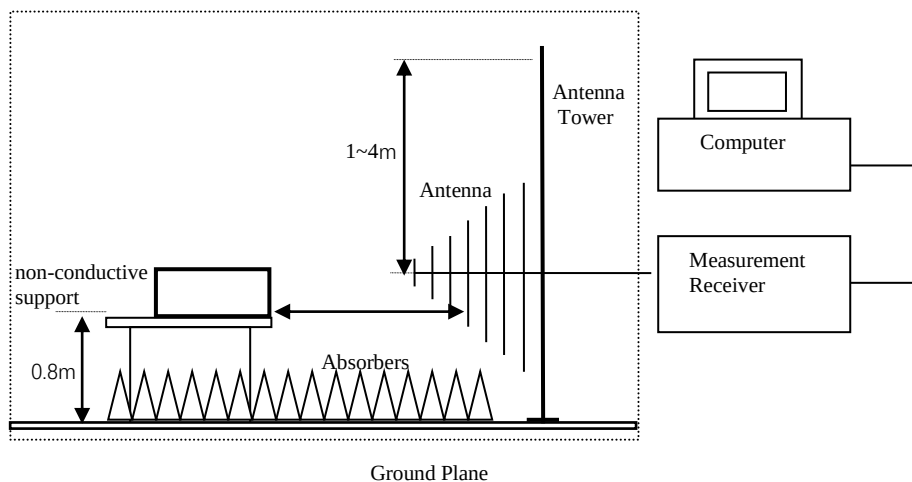
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### Spectrum Analyzer Setting:

|                        |                                                                                                                   |
|------------------------|-------------------------------------------------------------------------------------------------------------------|
| 9KHz – 30MHz (Pk & Av) | RBW: 10kHz<br>VBW: 30kHz<br>Sweep: Auto<br>Span: Fully capture the emissions being measured<br>Trace: Max. hold   |
| 30MHz – 1GHz (QP)      | RBW: 120kHz<br>VBW: 120kHz<br>Sweep: Auto<br>Span: Fully capture the emissions being measured<br>Trace: Max. hold |
| Above 1GHz (Pk)        | RBW: 1MHz<br>VBW: 1MHz<br>Sweep: Auto<br>Span: Fully capture the emissions being measured<br>Trace: Max. hold     |
| Above 1GHz (Av)        | RBW: 1MHz<br>VBW: 10Hz<br>Sweep: Auto<br>Span: Fully capture the emissions being measured<br>Trace: Max. hold     |

### Test Setup:



- Absorbers placed on top of the ground plane are for measurements above 1000MHz only.
- Measurements between 30MHz to 1000MHz made with Bi-log antennas, above 1000MHz horn antennas are used.

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### Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

| Frequency Range of<br>Fundamental<br><br>[MHz] | Field Strength of<br>Fundamental Emission<br><br>[microvolts/meter] | Field Strength of<br>Harmonics Emission<br><br>[microvolts/meter] |
|------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------|
| 902-928                                        | 50,000 [Quasi-Peak]                                                 | 500 [Average]                                                     |
| 2400-2483.5                                    | 50,000 [Average]                                                    | 500 [Average]                                                     |

#### Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

Calculated measurement uncertainty  
(9kHz-30MHz): 2.0dB  
(30MHz -1GHz): 4.9dB  
(1GHz -6GHz): 4.02dB  
(6GHz -26.5GHz): 4.03dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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### Results of Tx mode (Lowest Frequency Channel-2408 MHz): Pass

| Field Strength of Fundamental Emissions |                                       |                                      |                                   |                                |                        |                     |
|-----------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Peak Value                              |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                        | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 2408.00                                 | 89.4                                  | -4.8                                 | 84.6                              | 17,060.8                       | 500,000                | Vertical            |
| 2408.00                                 | 88.1                                  | -4.7                                 | 83.4                              | 14,842.3                       | 500,000                | Horizontal          |

| Field Strength of Fundamental Emissions |                                       |                                      |                                   |                                |                        |                     |
|-----------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Average Value                           |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                        | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 2408.00                                 | 69.5                                  | -4.8                                 | 64.7                              | 1,717.9                        | 50,000                 | Vertical            |
| 2408.00                                 | 68.2                                  | -4.7                                 | 63.5                              | 1,496.2                        | 50,000                 | Horizontal          |

| Field Strength of Harmonics Emission |                                       |                                      |                                   |                                |                        |                     |
|--------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Peak Value                           |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                     | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 4816.0                               | 55.0                                  | 0.8                                  | 55.8                              | 618.0                          | 5,000                  | Vertical            |
| 4816.0                               | 55.4                                  | 0.5                                  | 55.9                              | 623.7                          | 5,000                  | Horizontal          |
| 7224.0                               | 47.5                                  | 7.0                                  | 54.5                              | 530.9                          | 5,000                  | Vertical            |
| 7224.0                               | 48.3                                  | 6.5                                  | 54.8                              | 549.5                          | 5,000                  | Horizontal          |
| 9632.0                               | 46.4                                  | 8.5                                  | 54.9                              | 555.9                          | 5,000                  | Vertical            |
| 9632.0                               | 45.8                                  | 8.3                                  | 54.1                              | 507.0                          | 5,000                  | Horizontal          |
| 12040.0                              | 44.0                                  | 10.9                                 | 54.9                              | 555.9                          | 5,000                  | Vertical            |
| 12040.0                              | 44.2                                  | 10.8                                 | 55.0                              | 562.3                          | 5,000                  | Horizontal          |

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| Field Strength of Harmonics Emission |                                       |                                      |                                   |                                |                        |                     |
|--------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Average Value                        |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                     | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 4816.0                               | 40.2                                  | 0.8                                  | 41.0                              | 112.5                          | 500                    | Vertical            |
| 4816.0                               | 41.1                                  | 0.5                                  | 41.6                              | 120.2                          | 500                    | Horizontal          |
| 7224.0                               | 34.3                                  | 7.0                                  | 41.3                              | 116.1                          | 500                    | Vertical            |
| 7224.0                               | 33.5                                  | 6.5                                  | 40.0                              | 100.0                          | 500                    | Horizontal          |
| 9632.0                               | 33.0                                  | 8.5                                  | 41.5                              | 118.9                          | 500                    | Vertical            |
| 9632.0                               | 32.5                                  | 8.3                                  | 40.8                              | 109.6                          | 500                    | Horizontal          |
| 12040.0                              | 30.8                                  | 10.9                                 | 41.7                              | 121.6                          | 500                    | Vertical            |
| 12040.0                              | 30.4                                  | 10.8                                 | 41.2                              | 114.8                          | 500                    | Horizontal          |

### Results of Tx mode (Middle Frequency Channel- 2440MHz): Pass

| Field Strength of Fundamental Emissions |                                       |                                      |                                   |                                |                        |                     |
|-----------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Peak Value                              |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                        | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 2440.00                                 | 90.3                                  | -4.8                                 | 85.5                              | 18,836.5                       | 500,000                | Vertical            |
| 2440.00                                 | 93.4                                  | -4.7                                 | 88.7                              | 27,227.0                       | 500,000                | Horizontal          |

| Field Strength of Fundamental Emissions |                                       |                                      |                                   |                                |                        |                     |
|-----------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Average Value                           |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                        | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 2440.00                                 | 70.6                                  | -4.8                                 | 65.8                              | 1,949.8                        | 50,000                 | Vertical            |
| 2440.00                                 | 73.4                                  | -4.7                                 | 68.7                              | 2,722.7                        | 50,000                 | Horizontal          |

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| Field Strength of Harmonics Emission<br>Peak Value |                                 |                                |                             |                           |                   |                     |
|----------------------------------------------------|---------------------------------|--------------------------------|-----------------------------|---------------------------|-------------------|---------------------|
| Frequency<br>MHz                                   | Measured<br>Level @3m<br>dBμV/m | Correction<br>Factor<br>dBμV/m | Field<br>Strength<br>dBμV/m | Field<br>Strength<br>μV/m | Limit @3m<br>μV/m | E-Field<br>Polarity |
| 4880.0                                             | 54.4                            | 0.8                            | 55.2                        | 576.8                     | 5,000             | Vertical            |
| 4880.0                                             | 55.3                            | 0.5                            | 55.8                        | 616.6                     | 5,000             | Horizontal          |
| 7320.0                                             | 47.6                            | 7.0                            | 54.6                        | 537.0                     | 5,000             | Vertical            |
| 7320.0                                             | 49.1                            | 6.5                            | 55.6                        | 602.6                     | 5,000             | Horizontal          |
| 9760.0                                             | 46.7                            | 8.5                            | 55.2                        | 575.4                     | 5,000             | Vertical            |
| 9760.0                                             | 47.0                            | 8.3                            | 55.3                        | 582.1                     | 5,000             | Horizontal          |
| 12200.0                                            | 45.1                            | 10.9                           | 56.0                        | 631.0                     | 5,000             | Vertical            |
| 12200.0                                            | 45.0                            | 10.8                           | 55.8                        | 616.6                     | 5,000             | Horizontal          |

| Field Strength of Harmonics Emission<br>Average Value |                                 |                                |                             |                           |                   |                     |
|-------------------------------------------------------|---------------------------------|--------------------------------|-----------------------------|---------------------------|-------------------|---------------------|
| Frequency<br>MHz                                      | Measured<br>Level @3m<br>dBμV/m | Correction<br>Factor<br>dBμV/m | Field<br>Strength<br>dBμV/m | Field<br>Strength<br>μV/m | Limit @3m<br>μV/m | E-Field<br>Polarity |
| 4880.0                                                | 40.5                            | 0.8                            | 41.3                        | 116.4                     | 500               | Vertical            |
| 4880.0                                                | 40.3                            | 0.5                            | 40.8                        | 109.6                     | 500               | Horizontal          |
| 7320.0                                                | 34.2                            | 7.0                            | 41.2                        | 114.8                     | 500               | Vertical            |
| 7320.0                                                | 34.1                            | 6.5                            | 40.6                        | 107.2                     | 500               | Horizontal          |
| 9760.0                                                | 32.5                            | 8.5                            | 41.0                        | 112.2                     | 500               | Vertical            |
| 9760.0                                                | 32.2                            | 8.3                            | 40.5                        | 105.9                     | 500               | Horizontal          |
| 12200.0                                               | 31.4                            | 10.9                           | 42.3                        | 130.3                     | 500               | Vertical            |
| 12200.0                                               | 31.1                            | 10.8                           | 41.9                        | 124.5                     | 500               | Horizontal          |

**Results of Tx mode (Highest Frequency Channel – 2470MHz): Pass**

| Field Strength of Fundamental Emissions<br>Peak Value |                                 |                                |                             |                           |                   |                     |
|-------------------------------------------------------|---------------------------------|--------------------------------|-----------------------------|---------------------------|-------------------|---------------------|
| Frequency<br>MHz                                      | Measured<br>Level @3m<br>dBμV/m | Correction<br>Factor<br>dBμV/m | Field<br>Strength<br>dBμV/m | Field<br>Strength<br>μV/m | Limit @3m<br>μV/m | E-Field<br>Polarity |
| 2470.00                                               | 89.2                            | -4.8                           | 84.4                        | 16,595.9                  | 500,000           | Vertical            |
| 2470.00                                               | 95.5                            | -4.7                           | 90.8                        | 34,673.7                  | 500,000           | Horizontal          |

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| Field Strength of Fundamental Emissions |                                       |                                      |                                   |                                |                        |                     |
|-----------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Average Value                           |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                        | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 2470.00                                 | 69.1                                  | -4.8                                 | 64.3                              | 1,640.6                        | 50,000                 | Vertical            |
| 2470.00                                 | 75.6                                  | -4.7                                 | 70.9                              | 3,507.5                        | 50,000                 | Horizontal          |

| Field Strength of Harmonics Emission |                                       |                                      |                                   |                                |                        |                     |
|--------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Peak Value                           |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                     | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 4940.0                               | 54.6                                  | 0.8                                  | 55.4                              | 590.2                          | 5,000                  | Vertical            |
| 4940.0                               | 55.2                                  | 0.5                                  | 55.7                              | 609.5                          | 5,000                  | Horizontal          |
| 7410.0                               | 48.5                                  | 7.0                                  | 55.5                              | 595.7                          | 5,000                  | Vertical            |
| 7410.0                               | 47.9                                  | 6.5                                  | 54.4                              | 524.8                          | 5,000                  | Horizontal          |
| 9880.0                               | 46.8                                  | 8.5                                  | 55.3                              | 582.1                          | 5,000                  | Vertical            |
| 9880.0                               | 45.6                                  | 8.3                                  | 53.9                              | 495.5                          | 5,000                  | Horizontal          |
| 12350.0                              | 44.4                                  | 10.9                                 | 55.3                              | 582.1                          | 5,000                  | Vertical            |
| 12350.0                              | 44.7                                  | 10.8                                 | 55.5                              | 595.7                          | 5,000                  | Horizontal          |

| Field Strength of Harmonics Emission |                                       |                                      |                                   |                                |                        |                     |
|--------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|------------------------|---------------------|
| Average Value                        |                                       |                                      |                                   |                                |                        |                     |
| Frequency<br>MHz                     | Measured<br>Level @3m<br>dB $\mu$ V/m | Correction<br>Factor<br>dB $\mu$ V/m | Field<br>Strength<br>dB $\mu$ V/m | Field<br>Strength<br>$\mu$ V/m | Limit @3m<br>$\mu$ V/m | E-Field<br>Polarity |
| 4940.0                               | 40.2                                  | 0.8                                  | 41.0                              | 112.5                          | 500                    | Vertical            |
| 4940.0                               | 40.7                                  | 0.5                                  | 41.2                              | 114.8                          | 500                    | Horizontal          |
| 7410.0                               | 34.2                                  | 7.0                                  | 41.2                              | 114.8                          | 500                    | Vertical            |
| 7410.0                               | 34.1                                  | 6.5                                  | 40.6                              | 107.2                          | 500                    | Horizontal          |
| 9880.0                               | 32.8                                  | 8.5                                  | 41.3                              | 116.1                          | 500                    | Vertical            |
| 9880.0                               | 32.7                                  | 8.3                                  | 41.0                              | 112.2                          | 500                    | Horizontal          |
| 12350.0                              | 30.2                                  | 10.9                                 | 41.1                              | 113.5                          | 500                    | Vertical            |
| 12350.0                              | 30.7                                  | 10.8                                 | 41.5                              | 118.9                          | 500                    | Horizontal          |

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### Radiated Emissions Measurement:

#### Limit :

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 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 5.205(c)).

### Result: RF Radiated Emissions (1GHz-26GHz) (Lowest)

| Field Strength of Band-edge Compliance |                    |                   |                |              |              |                  |
|----------------------------------------|--------------------|-------------------|----------------|--------------|--------------|------------------|
| Peak Value                             |                    |                   |                |              |              |                  |
| Frequency                              | Measured Level @3m | Correction Factor | Field Strength | Limit @3m    | Margin       | E-Field Polarity |
| MHz                                    | dB $\mu$ V         | dB/m              | dB $\mu$ V/m   | dB $\mu$ V/m | dB $\mu$ V/m |                  |
| 2400.0                                 | 57.9               | -4.7              | 53.2           | 74.0         | 20.8         | Horizontal       |

| Field Strength of Band-edge Compliance |                    |                   |                |              |              |                  |
|----------------------------------------|--------------------|-------------------|----------------|--------------|--------------|------------------|
| Average Value                          |                    |                   |                |              |              |                  |
| Frequency                              | Measured Level @3m | Correction Factor | Field Strength | Limit @3m    | Margin       | E-Field Polarity |
| MHz                                    | dB $\mu$ V         | dB/m              | dB $\mu$ V/m   | dB $\mu$ V/m | dB $\mu$ V/m |                  |
| 2400.0                                 | 47.5               | -4.7              | 42.8           | 54.0         | 11.2         | Horizontal       |

### Result: RF Radiated Emissions (1GHz-26GHz) (Highest)

| Field Strength of Band-edge Compliance |                    |                   |                |              |              |                  |
|----------------------------------------|--------------------|-------------------|----------------|--------------|--------------|------------------|
| Peak Value                             |                    |                   |                |              |              |                  |
| Frequency                              | Measured Level @3m | Correction Factor | Field Strength | Limit @3m    | Margin       | E-Field Polarity |
| MHz                                    | dB $\mu$ V         | dB/m              | dB $\mu$ V/m   | dB $\mu$ V/m | dB $\mu$ V/m |                  |
| 2483.5                                 | 59.4               | -4.7              | 54.7           | 74.0         | 19.3         | Horizontal       |

| Field Strength of Band-edge Compliance |                    |                   |                |              |              |                  |
|----------------------------------------|--------------------|-------------------|----------------|--------------|--------------|------------------|
| Average Value                          |                    |                   |                |              |              |                  |
| Frequency                              | Measured Level @3m | Correction Factor | Field Strength | Limit @3m    | Margin       | E-Field Polarity |
| MHz                                    | dB $\mu$ V         | dB/m              | dB $\mu$ V/m   | dB $\mu$ V/m | dB $\mu$ V/m |                  |
| 2483.5                                 | 48.5               | -4.7              | 43.8           | 54.0         | 10.2         | Horizontal       |

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| Field Strength of Band-edge Compliance |                    |                   |                |              |              |                  |
|----------------------------------------|--------------------|-------------------|----------------|--------------|--------------|------------------|
| Peak Value                             |                    |                   |                |              |              |                  |
| Frequency                              | Measured Level @3m | Correction Factor | Field Strength | Limit @3m    | Margin       | E-Field Polarity |
| MHz                                    | dB $\mu$ V         | dB/m              | dB $\mu$ V/m   | dB $\mu$ V/m | dB $\mu$ V/m |                  |
| 2400.0                                 | 59.8               | -4.8              | 55.0           | 74.0         | 19.0         | Vertical         |

| Field Strength of Band-edge Compliance |                    |                   |                |              |              |                  |
|----------------------------------------|--------------------|-------------------|----------------|--------------|--------------|------------------|
| Average Value                          |                    |                   |                |              |              |                  |
| Frequency                              | Measured Level @3m | Correction Factor | Field Strength | Limit @3m    | Margin       | E-Field Polarity |
| MHz                                    | dB $\mu$ V         | dB/m              | dB $\mu$ V/m   | dB $\mu$ V/m | dB $\mu$ V/m |                  |
| 2400.0                                 | 50.0               | -4.8              | 45.2           | 54.0         | 8.8          | Vertical         |

**Result: RF Radiated Emissions (1GHz-26GHz) (Highest)**

| Field Strength of Band-edge Compliance |                    |                   |                |              |              |                  |
|----------------------------------------|--------------------|-------------------|----------------|--------------|--------------|------------------|
| Peak Value                             |                    |                   |                |              |              |                  |
| Frequency                              | Measured Level @3m | Correction Factor | Field Strength | Limit @3m    | Margin       | E-Field Polarity |
| MHz                                    | dB $\mu$ V         | dB/m              | dB $\mu$ V/m   | dB $\mu$ V/m | dB $\mu$ V/m |                  |
| 2483.5                                 | 53.7               | -4.8              | 48.9           | 74.0         | 25.1         | Vertical         |

| Field Strength of Band-edge Compliance |                    |                   |                |              |              |                  |
|----------------------------------------|--------------------|-------------------|----------------|--------------|--------------|------------------|
| Average Value                          |                    |                   |                |              |              |                  |
| Frequency                              | Measured Level @3m | Correction Factor | Field Strength | Limit @3m    | Margin       | E-Field Polarity |
| MHz                                    | dB $\mu$ V         | dB/m              | dB $\mu$ V/m   | dB $\mu$ V/m | dB $\mu$ V/m |                  |
| 2483.5                                 | 46.1               | -4.8              | 41.3           | 54.0         | 12.7         | Vertical         |

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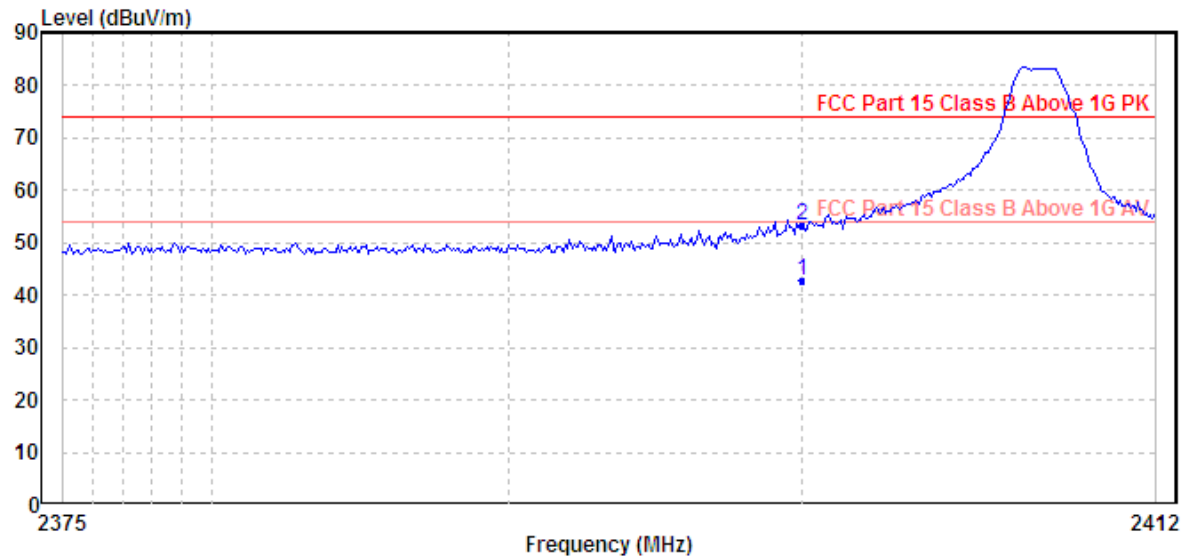
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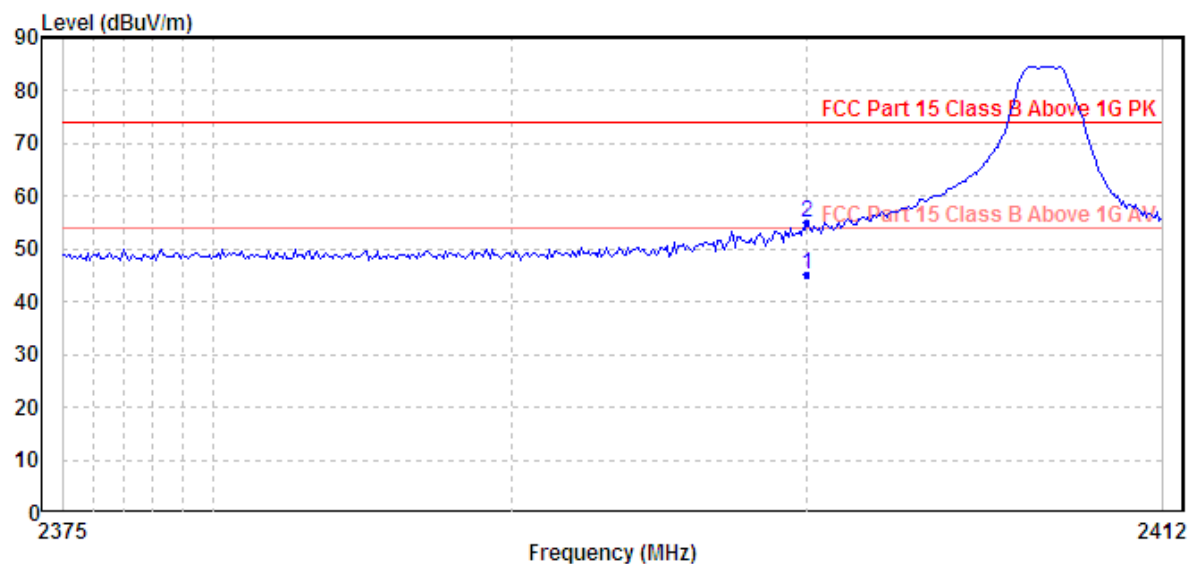
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### Emissions radiated outside of the specified frequency bands (Lowest)

Horizontal



Vertical



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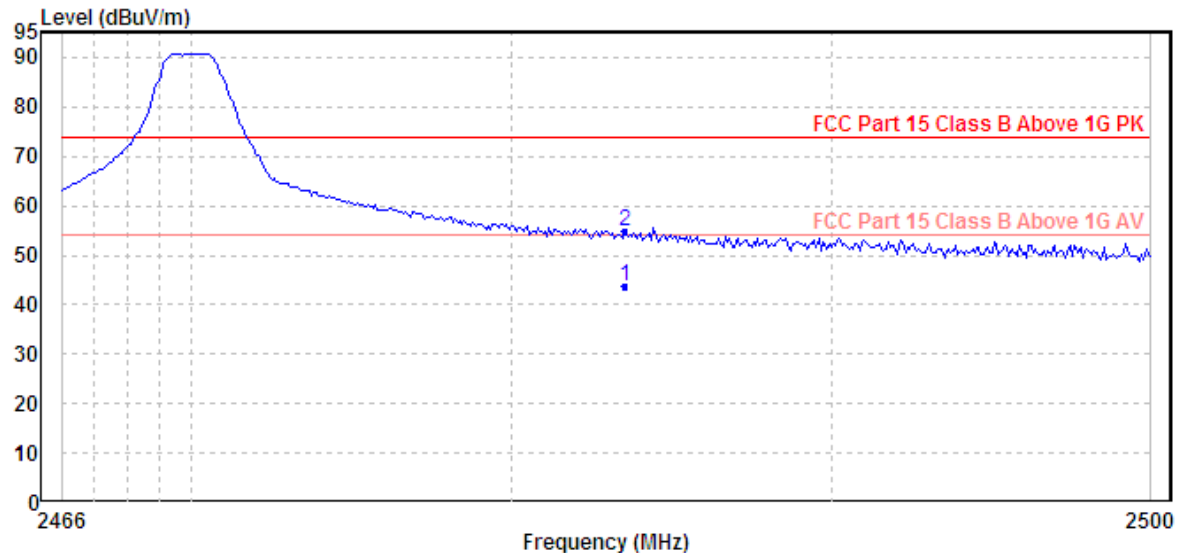
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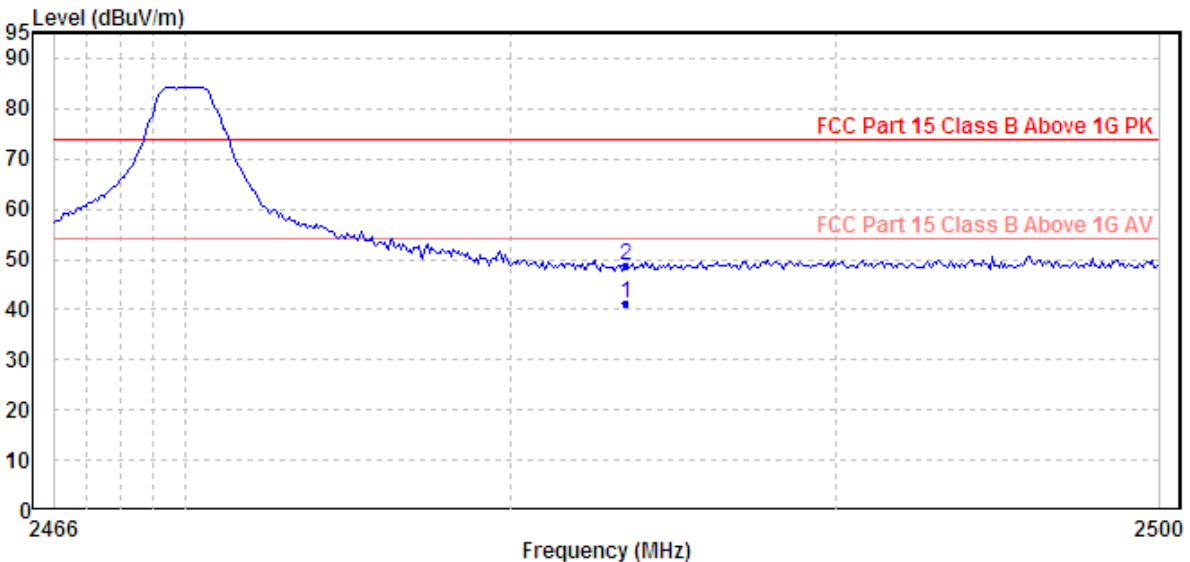
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### Emissions radiated outside of the specified frequency bands (Highest)

Horizontal



Vertical



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### Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

| Frequency Range<br>[MHz] | Quasi-Peak Limits<br>[μV/m] |
|--------------------------|-----------------------------|
| 0.009-0.490              | 2400/F (kHz)                |
| 0.490-1.705              | 24000/F (kHz)               |
| 1.705-30                 | 30                          |
| 30-88                    | 100                         |
| 88-216                   | 150                         |
| 216-960                  | 200                         |
| Above960                 | 500                         |

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

#### Remarks:

Calculated measurement uncertainty (9kHz-30MHz): 2.0dB /(30MHz – 1GHz): 4.9dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

### Results of TX mode (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the FCC Limits, not reported.

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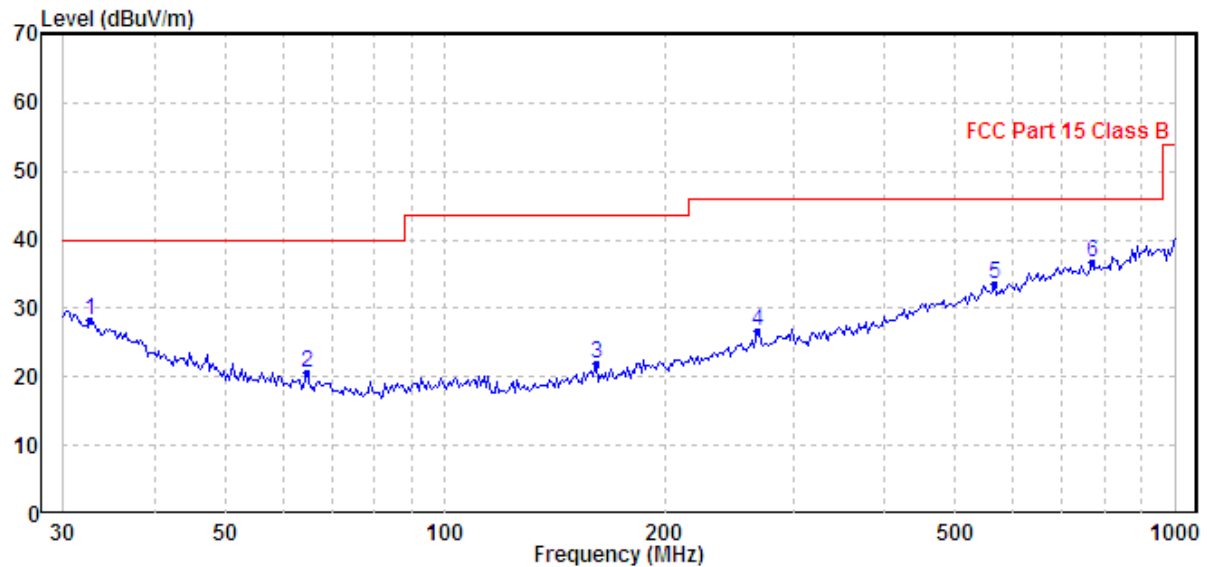
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Results of TX mode (30MHz – 1GHz)(2410MHz worst case): PASS

Horizontal



Ambient Temperature: 26.3C

Relative Humidity : 54.7%

Air Pressure : 100.9kPa

|   | Freq    | Level  | Limit | Over   |        |            |
|---|---------|--------|-------|--------|--------|------------|
|   | MHz     | dBuV/m | Line  | Limit  | Remark | Pol/Phase  |
| 1 | 32.634  | 28.25  | 40.00 | -11.75 | QP     | Horizontal |
| 2 | 64.887  | 20.51  | 40.00 | -19.49 | QP     | Horizontal |
| 3 | 161.474 | 22.00  | 43.50 | -21.50 | QP     | Horizontal |
| 4 | 267.546 | 26.57  | 46.00 | -19.43 | QP     | Horizontal |
| 5 | 566.622 | 33.54  | 46.00 | -12.46 | QP     | Horizontal |
| 6 | 771.449 | 36.81  | 46.00 | -9.19  | QP     | Horizontal |

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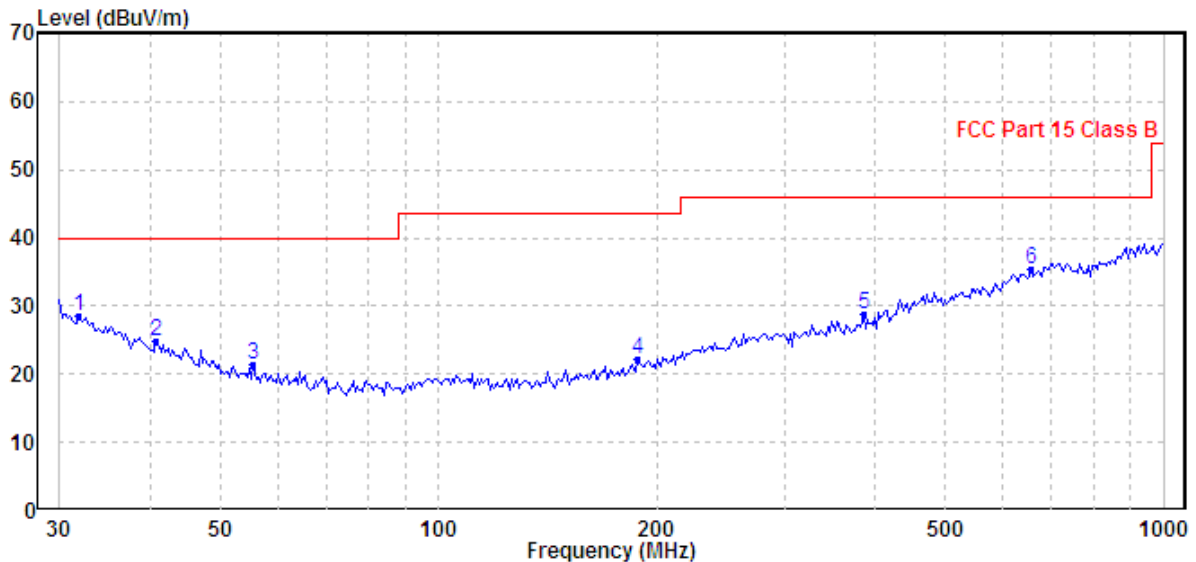
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Results of TX mode (30MHz – 1GHz) (2410MHz worst case): PASS

Vertical



Ambient Temperature: 26.3C  
Relative Humidity : 54.7%  
Air Pressure : 100.9kPa

|   | Freq    | Level  | Limit | Over   | Remark | Pol/Phase |
|---|---------|--------|-------|--------|--------|-----------|
|   | MHz     | dBuV/m | Line  | Limit  |        |           |
| 1 | 31.955  | 28.48  | 40.00 | -11.52 | QP     | Vertical  |
| 2 | 40.845  | 24.93  | 40.00 | -15.07 | QP     | Vertical  |
| 3 | 55.609  | 21.38  | 40.00 | -18.62 | QP     | Vertical  |
| 4 | 188.413 | 22.23  | 43.50 | -21.27 | QP     | Vertical  |
| 5 | 385.281 | 28.82  | 46.00 | -17.18 | QP     | Vertical  |
| 6 | 656.530 | 35.49  | 46.00 | -10.51 | QP     | Vertical  |

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### **3.1.2 Antenna Requirement**

Ambient temperature 25°C

Relative humidity 57%

**Test Requirements:** § 15.203

#### **Test Specification:**

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 shall be considered sufficient to comply with the provisions of this section. 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.

#### **Test Results:**

This is wire antenna. There is no external antenna, the antenna gain =1.8dBi. User is unable to remove or changed the Antenna.

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### **3.1.3 20dB Bandwidth of Fundamental Emission**

Ambient temperature 25°C

Relative humidity 57%

Test Requirement: FCC 47 CFR 15.249  
Test Method: ANSI C63.10:2013  
Test Date: 2023-09-04  
Mode of Operation: Tx mode

#### **Test Method:**

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

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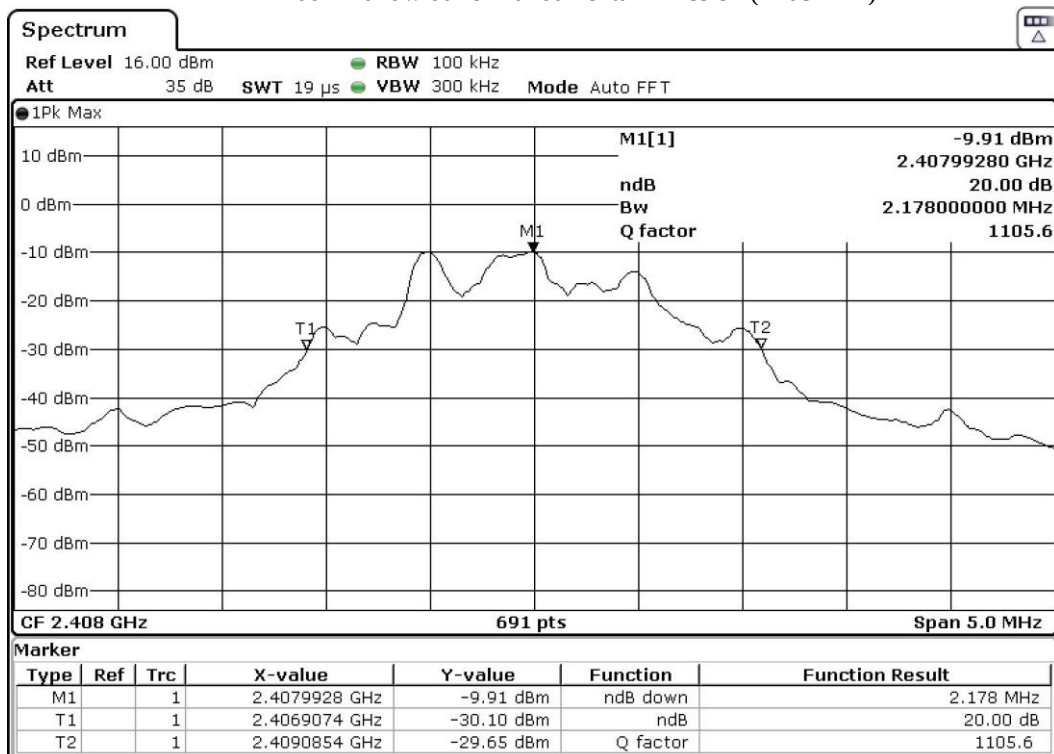
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### Limits for 20dB Bandwidth of Fundamental Emission (Low Frequency Channel):

| Frequency Range<br>[MHz] | 20dB Bandwidth<br>[MHz] |
|--------------------------|-------------------------|
| 2408.0                   | 2.1780                  |

20dB Bandwidth of Fundamental Emission (2408MHz)



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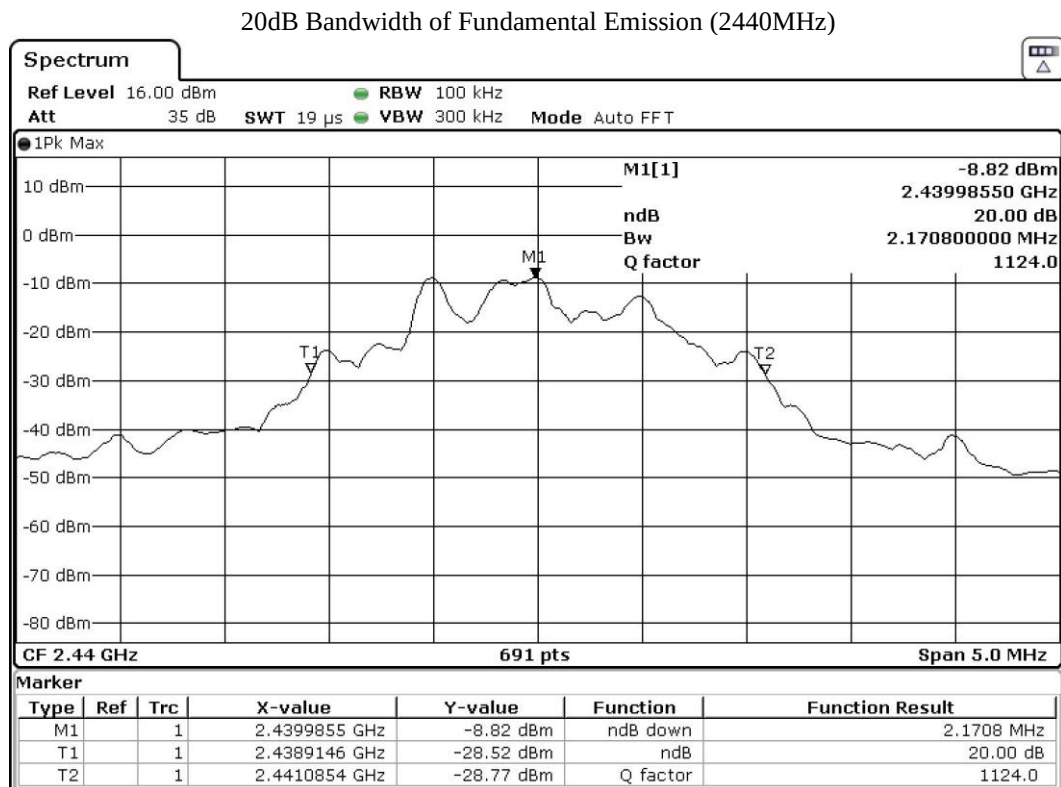
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### Limits for 20dB Bandwidth of Fundamental Emission (Middle Frequency Channel):

| Frequency Range<br>[MHz] | 20dB Bandwidth<br>[MHz] |
|--------------------------|-------------------------|
| 2440.0                   | 2.1708                  |



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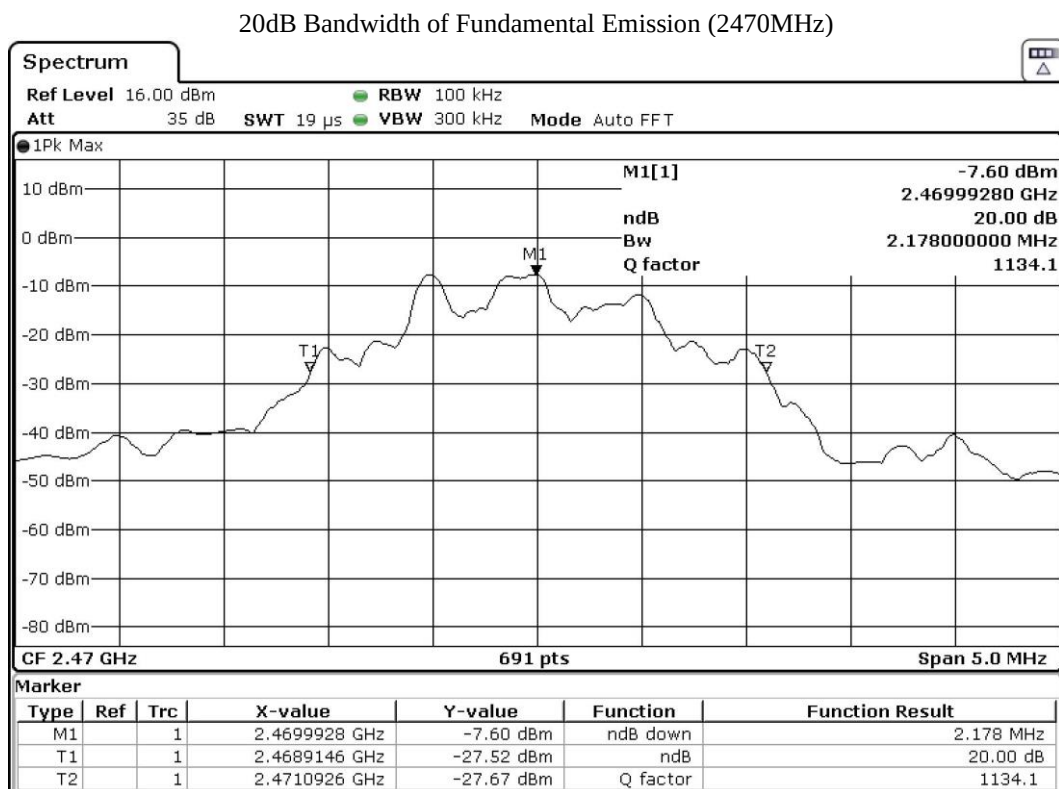
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### Limits for 20dB Bandwidth of Fundamental Emission (High Frequency Channel):

| Frequency Range<br>[MHz] | 20dB Bandwidth<br>[MHz] |
|--------------------------|-------------------------|
| 2470.0                   | 2.1780                  |



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### Appendix A

#### List of Measurement Equipment

##### Radiated Emission

| EQP NO. | DESCRIPTION                             | MANUFACTURER            | MODEL NO. | SERIAL NO. | LAST CAL   | DUE CAL    |
|---------|-----------------------------------------|-------------------------|-----------|------------|------------|------------|
| EM215   | MULTIDEVICE CONTROLLER                  | EMCO                    | 2090      | 00024676   | N/A        | N/A        |
| EM217   | ELECTRIC POWERED<br>TURN TABLE          | EMCO                    | 2088      | 00029144   | N/A        | N/A        |
| EM218   | ANECHOIC CHAMBER                        | ETS-LINDGREN            | FACT-3    | --         | 2019-04-16 | 2024-04-16 |
| EM356   | ANTENNA<br>POSITIONING TOWER            | ETS-LINDGREN            | 2171B     | 00150346   | N/A        | N/A        |
| EM293   | SPECTRUM ANALYZER                       | AGILENT<br>TECHNOLOGIES | N9020A    | MY50510152 | 2023-03-21 | 2024-03-21 |
| EM299   | BROADBAND HORN ANTENNA                  | ETS-LINDGREN            | 3115      | 00114120   | 2023-01-25 | 2025-01-25 |
| EM300   | PYRAMIDAL STANDARD GAIN<br>HORN ANTENNA | ETS-LINDGREN            | 3160-09   | 00130130   | 2023-01-16 | 2025-01-16 |
| EM301   | PYRAMIDAL STANDARD GAIN<br>HORN ANTENNA | ETS-LINDGREN            | 3160-10   | 00130988   | 2023-02-15 | 2025-02-15 |
| EM353   | LOOP ANTENNA                            | ETS_LINDGREN            | 6502      | 00206533   | 2022-09-26 | 2024-09-26 |
| EM355   | BICONILOG ANTENNA                       | ETS-LINDGREN            | 3143B     | 00094856   | 2022-08-26 | 2024-08-26 |
| EM200   | DUAL CHANNEL POWER<br>METER             | R & S                   | NRVD      | 100592     | 2023-08-02 | 2025-08-02 |
| EM012   | PRE-AMPLIFIER                           | HP                      | HP8448B   | 3008A00262 | 2022-11-08 | 2025-11-08 |
| EM215   | MULTIDEVICE CONTROLLER                  | EMCO                    | 2090      | 00024676   | N/A        | N/A        |

Remarks:-

N/A Not Applicable or Not Available

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### Appendix B Photographs of EUT

Front View of the product



Rear View of the product



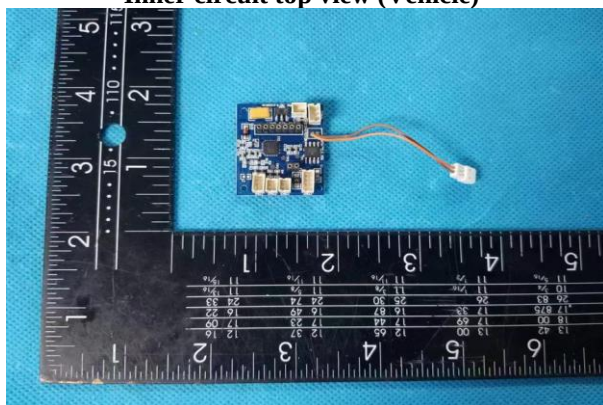
Inner circuit view (Vehicle)



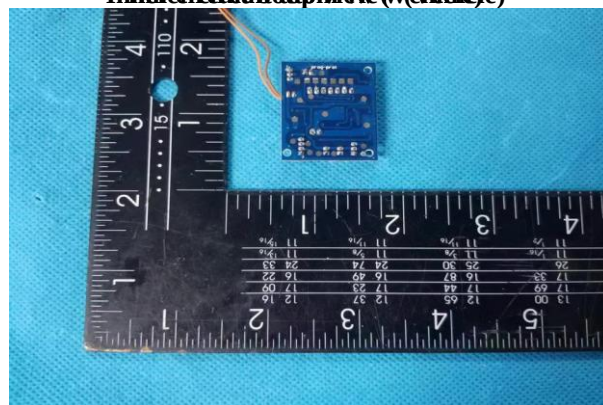
Inner circuit view (Vehicle)



Inner circuit top view (Vehicle)



Inner circuit top view (Vehicle)



Inner circuit top view (Vehicle)



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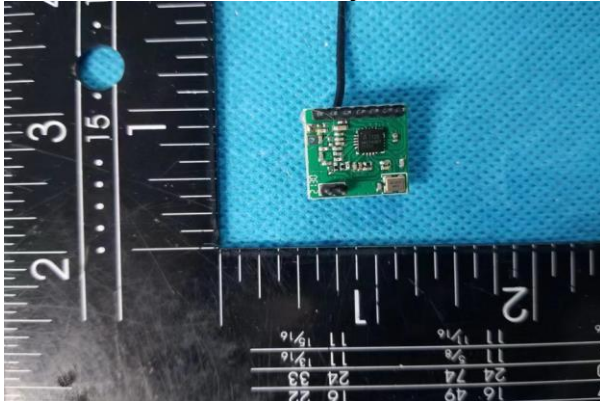
## Test Report

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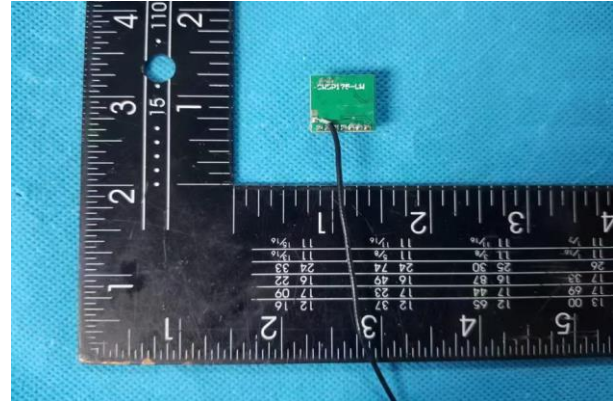
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### Photographs of EUT

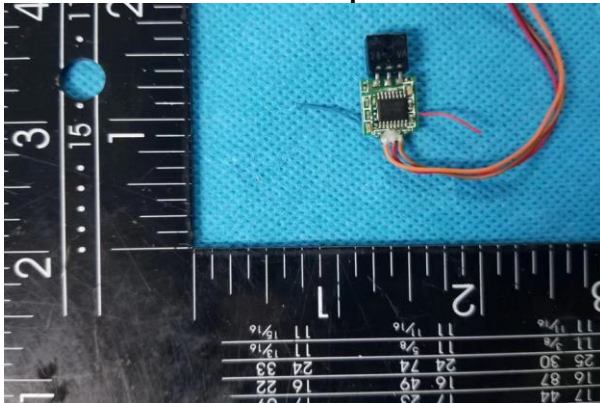
Inner circuit top view



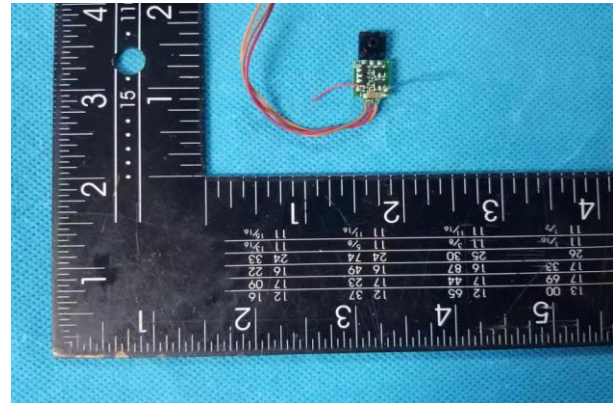
Inner circuit bottom view



Inner circuit top view



Inner circuit bottom view



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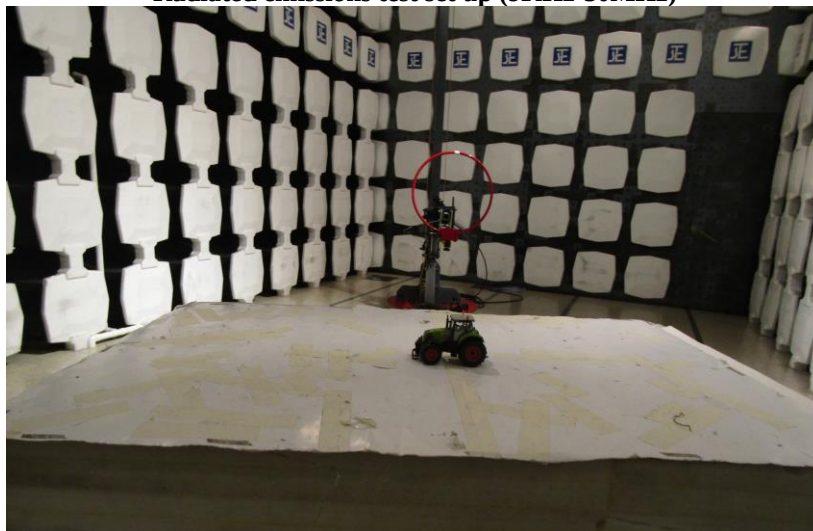
## Test Report

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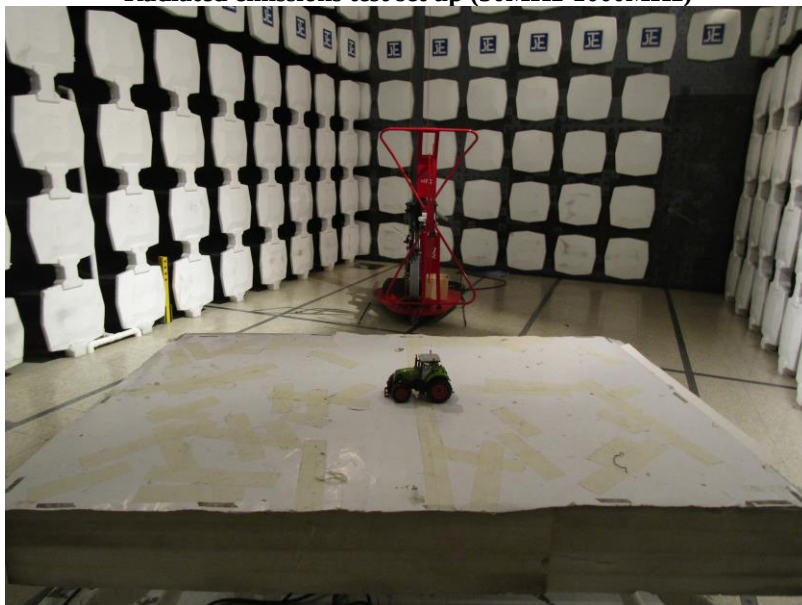
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### Photographs of EUT

**Radiated emissions test set up (9KHz-30MHz)**



**Radiated emissions test set up (30MHz-1000MHz)**



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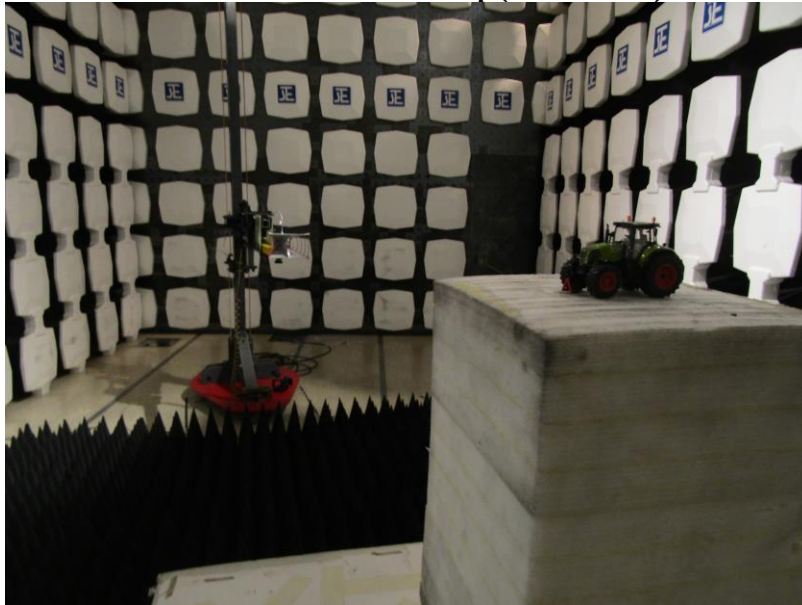
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### Photographs of EUT

**Radiated emissions test set up (Above 1GHz)**



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

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