# Test Report

| | |
|---|---|
| **Report No.:** | MTi240408008-01E1 |
| **Date of issue:** | 2024-05-28 |
| **Applicant:** | Guangzhou Havit Technology Co., Ltd. |
| **Product:** | 3 IN 1 WIRELESS CHARGER |
| **Model(s):** | W3037 kit |
| **FCC ID:** | 2AI6I-W3037KIT |

Shenzhen Microtest Co., Ltd.

http://www.mtitest.cn



Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China.
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# Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.

2. The test results in this test report are only responsible for the samples submitted

3. This test report is invalid without the seal and signature of the laboratory.

4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.

5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

# Table of contents

| Test Result Certification | |
|---|---|
| **Applicant:** | Guangzhou Havit Technology Co., Ltd. |
| Address: | ROOM 1307, 13F, PHASE 2 B, C BUILDING OF POLY WORLD TRADE CENTER, NO.1000, XINGANG EAST ROAD, HAIZHU GUANGDONG China |
| **Manufacturer:** | Guangzhou Havit Technology Co., Ltd. |
| Address: | ROOM 1307, 13F, PHASE 2 B, C BUILDING OF POLY WORLD TRADE CENTER, NO.1000, XINGANG EAST ROAD, HAIZHU GUANGDONG China |
| **Product description** | |
| Product name: | 3 IN 1 WIRELESS CHARGER |
| Trademark: | HAVIT |
| Model name: | W3037 kit |
| Series Model(s): | N/A |
| Standards: | 47 CFR Part 15C |
| Test Method: | ANSI C63.10-2013 |
| **Date of Test** | |
| Date of test: | 2024-05-22 to 2024-05-24 |
| Test result: | Pass |

| | | |
|---|---|---|
| **Test Engineer** | : | Letter. Lan. |
| | | (Letter Lan) |
| **Reviewed By** | : | David. Lee |
| | | (David Lee) |
| **Approved By** | : | Leon chen |
| | | (Leon Chen) |

# 1 General Description

## 1.1 Description of the EUT

| | |
|---|---|
| Product name: | 3 IN 1 WIRELESS CHARGER |
| Model name: | W3037 kit |
| Series Model(s): | N/A |
| Model difference: | N/A |
| Electrical rating: | Input: 9VDC 3A<br>Wireless Output: Phone: 5W,7.5W,10W,15W; Earphone: 3W; Watch: 2.5W |
| Accessories: | Type-c to Type-c cable 1m |
| Hardware version: | V1.0 |
| Software version: | V1.0 |
| Test sample(s) number: | MTi240408008-01S1001 |
| **RF specification** | |
| Operating frequency range: | Transmitter1 (Phone): 115-205 kHz<br>Transmitter2 (Earphone): 115-205 kHz<br>Transmitter3 (Watch): 300-350 kHz |
| Modulation type: | ASK |
| Antenna(s) type: | Coil |

## 1.2 Description of test modes

| No. | Emission test modes |
|---|---|
| Mode1 | Wireless output(5W)+Earphone(3W)+Watch(2.5W)+lighting |
| Mode2 | Wireless output(7.5W)+Earphone(3W)+Watch(2.5W)+lighting |
| Mode3 | Wireless output(10W)+Earphone(3W)+Watch(2.5W)+lighting |
| Mode4 | Wireless output(15W)+Earphone(3W)+Watch(2.5W)+lighting |
| Mode5 | Wireless output(5W)+Earphone(3W)+lighting |
| Mode6 | Wireless output(7.5W)+Earphone(3W)+lighting |
| Mode7 | Wireless output(10W)+Earphone(3W)+lighting |
| Mode8 | Wireless output(15W)+Earphone(3W)+lighting |
| Mode9 | Wireless output(5W)+Watch(2.5W)+lighting |
| Mode10 | Wireless output(7.5W)+Watch(2.5W)+lighting |
| Mode11 | Wireless output(10W)+Watch(2.5W)+lighting |
| Mode12 | Wireless output(15W)+Watch(2.5W)+lighting |
| Mode13 | Earphone(3W)+Watch(2.5W)+lighting |
| Mode14 | Wireless output(5W)+lighting |
| Mode15 | Wireless output(7.5W)+lighting |
| Mode16 | Wireless output(10W)+lighting |
| Mode17 | Wireless output(15W)+lighting |
| Mode18 | Watch(2.5W)+lighting |

| | |
|---|---|
| Mode19 | Earphone(3W)+lighting |
| Mode20 | stand by |

### 1.3 Environmental Conditions

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

| | |
|---|---|
| Temperature: | 15°C ~ 35°C |
| Humidity: | 20% RH ~ 75% RH |
| Atmospheric pressure: | 98 kPa ~ 101 kPa |

### 1.4 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| **Support equipment list** | | | |
|---|---|---|---|
| Description | Model | Serial No. | Manufacturer |
| MI CHARGE(33W) | MDY-11-EX | SA623116200029J | MI |
| wireless charging load | YBZ1.1 | / | YBZ |
| iWatch | iWatch S7 | M0JVGQG1VP | Apple |
| Air Pods | MQD83CH/A | / | Apple |
| **Support cable list** | | | |
| Description | Length (m) | From | To |
| / | / | / | / |

### 1.5 Measurement uncertainty

| Measurement | Uncertainty |
|---|---|
| Conducted emissions (AMN 150kHz~30MHz) | ±3.1dB |
| Occupied channel bandwidth | ±3 % |
| Radiated spurious emissions (9kHz~30MHz) | ±4.3dB |
| Radiated spurious emissions (30MHz~1GHz) | ±4.7dB |
| Temperature | ±1 °C |
| Humidity | ± 5 % |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

# 2 Summary of Test Result

| No. | Item | Standard | Requirement | Result |
|---|---|---|---|---|
| 1 | Antenna requirement | 47 CFR Part 15C | 47 CFR Part 15.203 | Pass |
| 2 | Conducted Emission at AC power line | 47 CFR Part 15C | 47 CFR Part 15.207(a) | Pass |
| 3 | 20dB Occupied Bandwidth | 47 CFR Part 15C | 47 CFR Part 15.215(c) | Pass |
| 4 | Emissions in frequency bands (below 30MHz) | 47 CFR Part 15C | 47 CFR Part 15.209 | Pass |
| 5 | Emissions in frequency bands (30MHz - 1GHz) | 47 CFR Part 15C | 47 CFR Part 15.209 | Pass |

# 3 Test Facilities and accreditations

## 3.1 Test laboratory

| | |
|---|---|
| Test laboratory: | Shenzhen Microtest Co., Ltd. |
| Test site location: | 101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |
| Telephone: | (86-755)88850135 |
| Fax: | (86-755)88850136 |
| CNAS Registration No.: | CNAS L5868 |
| FCC Registration No.: | 448573 |
| IC Registration No.: | 21760 |
| CABID: | CN0093 |

# 4 List of test equipment

| No. | Equipment | Manufacturer | Model | Serial No. | Cal. date | Cal. Due |
|---|---|---|---|---|---|---|
| Conducted Emission at AC power line | | | | | | |
| 1 | EMI Test Receiver | Rohde&schwarz | ESCI3 | 101368 | 2024-03-20 | 2025-03-19 |
| 2 | Artificial mains network | Schwarzbeck | NSLK 8127 | 183 | 2024-03-21 | 2025-03-20 |
| 3 | Artificial Mains Network | Rohde & Schwarz | ESH2-Z5 | 100263 | 2024-03-20 | 2025-03-19 |
| 20dB Occupied Bandwidth | | | | | | |
| 1 | Wideband Radio Communication Tester | Rohde&schwarz | CMW500 | 149155 | 2024-03-20 | 2025-03-19 |
| 2 | ESG Series Analog Ssignal Generator | Agilent | E4421B | GB40051240 | 2024-03-21 | 2025-03-20 |
| 3 | PXA Signal Analyzer | Agilent | N9030A | MY51350296 | 2024-03-21 | 2025-03-20 |
| 4 | Synthesized Sweeper | Agilent | 83752A | 3610A01957 | 2024-03-21 | 2025-03-20 |
| 5 | MXA Signal Analyzer | Agilent | N9020A | MY50143483 | 2024-03-21 | 2025-03-20 |
| 6 | RF Control Unit | Tonscend | JS0806-1 | 19D8060152 | 2024-03-21 | 2025-03-20 |
| 7 | Band Reject Filter Group | Tonscend | JS0806-F | 19D8060160 | 2024-03-21 | 2025-03-20 |
| 8 | ESG Vector Signal Generator | Agilent | N5182A | MY50143762 | 2024-03-20 | 2025-03-19 |
| 9 | DC Power Supply | Agilent | E3632A | MY40027695 | 2024-03-21 | 2025-03-20 |
| Emissions in frequency bands (below 30MHz) | | | | | | |
| 1 | EMI Test Receiver | Rohde&schwarz | ESCI7 | 101166 | 2024-03-20 | 2025-03-19 |
| 2 | Active Loop Antenna | Schwarzbeck | FMZB 1519 B | 00066 | 2024-03-23 | 2025-03-22 |
| 3 | Amplifier | Hewlett-Packard | 8447F | 3113A06184 | 2024-03-20 | 2025-03-19 |
| Emissions in frequency bands (30MHz - 1GHz) | | | | | | |
| 1 | EMI Test Receiver | Rohde&schwarz | ESCI7 | 101166 | 2024-03-20 | 2025-03-19 |
| 2 | TRILOG Broadband Antenna | schwarabeck | VULB 9163 | 9163-1338 | 2023-06-11 | 2025-06-10 |
| 3 | Active Loop Antenna | Schwarzbeck | FMZB 1519 B | 00066 | 2024-03-23 | 2025-03-22 |
| 4 | Amplifier | Hewlett-Packard | 8447F | 3113A06184 | 2024-03-20 | 2025-03-19 |

# 5 Evaluation Results (Evaluation)

## 5.1 Antenna requirement

| | |
|---|---|
| Test Requirement: | Refer to 47 CFR Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. |

### 5.1.1 Conclusion:

| |
|---|
| The antenna of the EUT is permanently attached.<br>The EUT complies with the requirement of FCC PART 15.203. |

# 6 Radio Spectrum Matter Test Results (RF)

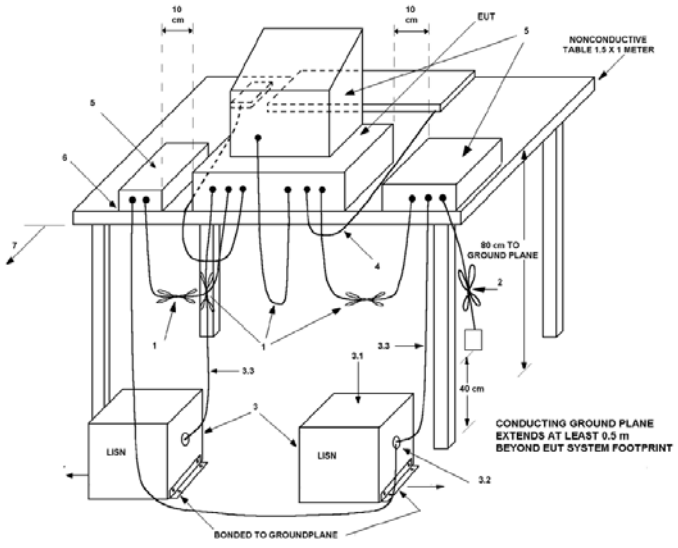
## 6.1 Conducted Emission at AC power line

| | |
|---|---|
| Test Requirement: | Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). |
| Test Limit: | Frequency of emission (MHz) / Conducted limit (dBμV): Quasi-peak / Average<br>0.15-0.5: 66 to 56* / 56 to 46*<br>0.5-5: 56 / 46<br>5-30: 60 / 50<br>*Decreases with the logarithm of the frequency. |
| Test Method: | ANSI C63.10-2013 section 6.2 |
| Procedure: | Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices |

### 6.1.1 E.U.T. Operation:

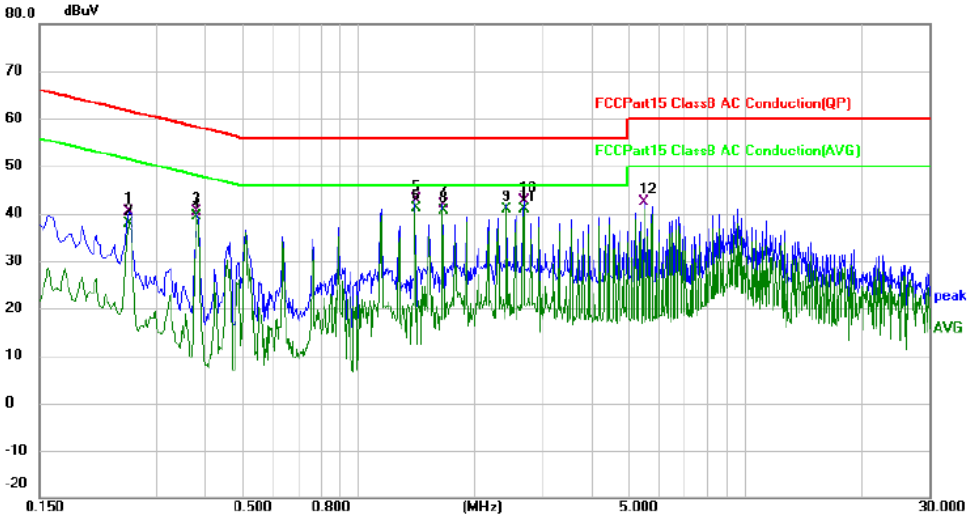
| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 25.3 °C | Humidity: | 56 % | Atmospheric Pressure: | 101 kPa |
| Pre test mode: | Mode1, Mode2, Mode3, Mode4, Mode5, Mode6, Mode7, Mode8, Mode9, Mode10, Mode11, Mode12, Mode13, Mode14, Mode15, Mode16, Mode17, Mode18, Mode19, Mode20 | | | | |
| Final test mode: | All of the listed pre-test mode were tested, only the data of the worst mode (Mode2) is recorded in the report | | | | |

### 6.1.2 Test Setup Diagram:



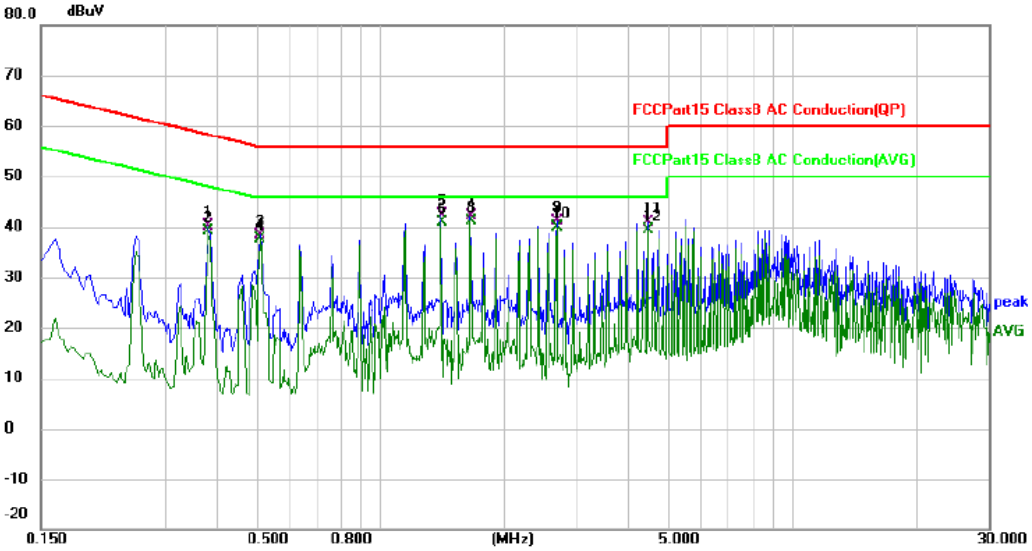
### 6.1.3 Test Data:

Mode2 / Line: Line




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.2540 | 29.62 | 10.77 | 40.39 | 61.63 | -21.24 | QP | |
| 2 | | 0.2540 | 27.05 | 10.77 | 37.82 | 51.63 | -13.81 | AVG | |
| 3 | | 0.3820 | 29.25 | 11.05 | 40.30 | 58.24 | -17.94 | QP | |
| 4 | | 0.3820 | 28.45 | 11.05 | 39.50 | 48.24 | -8.74 | AVG | |
| 5 | | 1.4060 | 29.89 | 13.06 | 42.95 | 56.00 | -13.05 | QP | |
| 6 | * | 1.4060 | 28.14 | 13.06 | 41.20 | 46.00 | -4.80 | AVG | |
| 7 | | 1.6580 | 28.50 | 13.46 | 41.96 | 56.00 | -14.04 | QP | |
| 8 | | 1.6580 | 27.21 | 13.46 | 40.67 | 46.00 | -5.33 | AVG | |
| 9 | | 2.4260 | 30.83 | 10.11 | 40.94 | 46.00 | -5.06 | AVG | |
| 10 | | 2.6820 | 32.47 | 10.19 | 42.66 | 56.00 | -13.34 | QP | |
| 11 | | 2.6820 | 30.66 | 10.19 | 40.85 | 46.00 | -5.15 | AVG | |
| 12 | | 5.4899 | 32.05 | 10.27 | 42.32 | 60.00 | -17.68 | QP | |

Mode2 / Line: Neutral




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.3820 | 29.12 | 11.00 | 40.12 | 58.24 | -18.12 | QP | |
| 2 | | 0.3820 | 28.11 | 11.00 | 39.11 | 48.24 | -9.13 | AVG | |
| 3 | | 0.5100 | 26.98 | 11.34 | 38.32 | 56.00 | -17.68 | QP | |
| 4 | | 0.5100 | 26.26 | 11.34 | 37.60 | 46.00 | -8.40 | AVG | |
| 5 | | 1.4060 | 29.13 | 13.20 | 42.33 | 56.00 | -13.67 | QP | |
| 6 | | 1.4060 | 27.74 | 13.20 | 40.94 | 46.00 | -5.06 | AVG | |
| 7 | | 1.6580 | 28.47 | 13.74 | 42.21 | 56.00 | -13.79 | QP | |
| 8 | * | 1.6580 | 27.29 | 13.74 | 41.03 | 46.00 | -4.97 | AVG | |
| 9 | | 2.6820 | 30.66 | 10.35 | 41.01 | 56.00 | -14.99 | QP | |
| 10 | | 2.6820 | 29.56 | 10.35 | 39.91 | 46.00 | -6.09 | AVG | |
| 11 | | 4.4699 | 30.65 | 10.28 | 40.93 | 56.00 | -15.07 | QP | |
| 12 | | 4.4699 | 29.10 | 10.28 | 39.38 | 46.00 | -6.62 | AVG | |

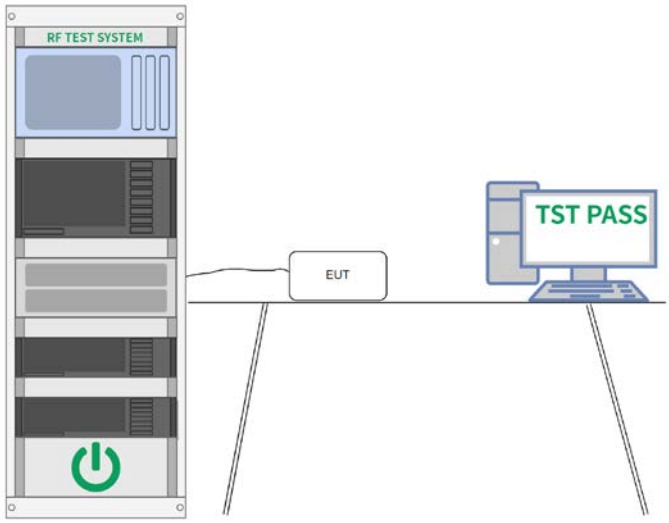
## 6.2 20dB Occupied Bandwidth

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15.215(c) |
| Test Limit: | Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. |
| Test Method: | ANSI C63.10-2013, section 6.9.2 |
| Procedure: | a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.<br>b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.<br>c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.<br>d) Steps a) through c) might require iteration to adjust within the specified tolerances.<br>e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “−xx dB down” requirement; that is, if the requirement calls for measuring the −20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.<br>f) Set detection mode to peak and trace mode to max hold.<br>g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).<br>h) Determine the “−xx dB down amplitude” using [(reference value) − xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.<br>i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).<br>j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-xx dB down amplitude” determined in step h). If a marker is below this “−xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.<br>k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s). |

### 6.2.1 E.U.T. Operation:

| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 23.6 °C | Humidity: | 34.7 % | Atmospheric Pressure: | 100 kPa |
| Pre test mode: | Mode1, Mode2, Mode3, Mode4, Mode5, Mode6, Mode7, Mode8, Mode9, Mode10, Mode11, Mode12, Mode13, Mode14, Mode15, Mode16, Mode17, Mode18, Mode19, Mode20 | | | | |
| Final test mode: | All of the listed pre-test mode were tested, only the data of the worst mode (Mode17, Mode18, Mode19) is recorded in the report | | | | |

### 6.2.2 Test Setup Diagram:

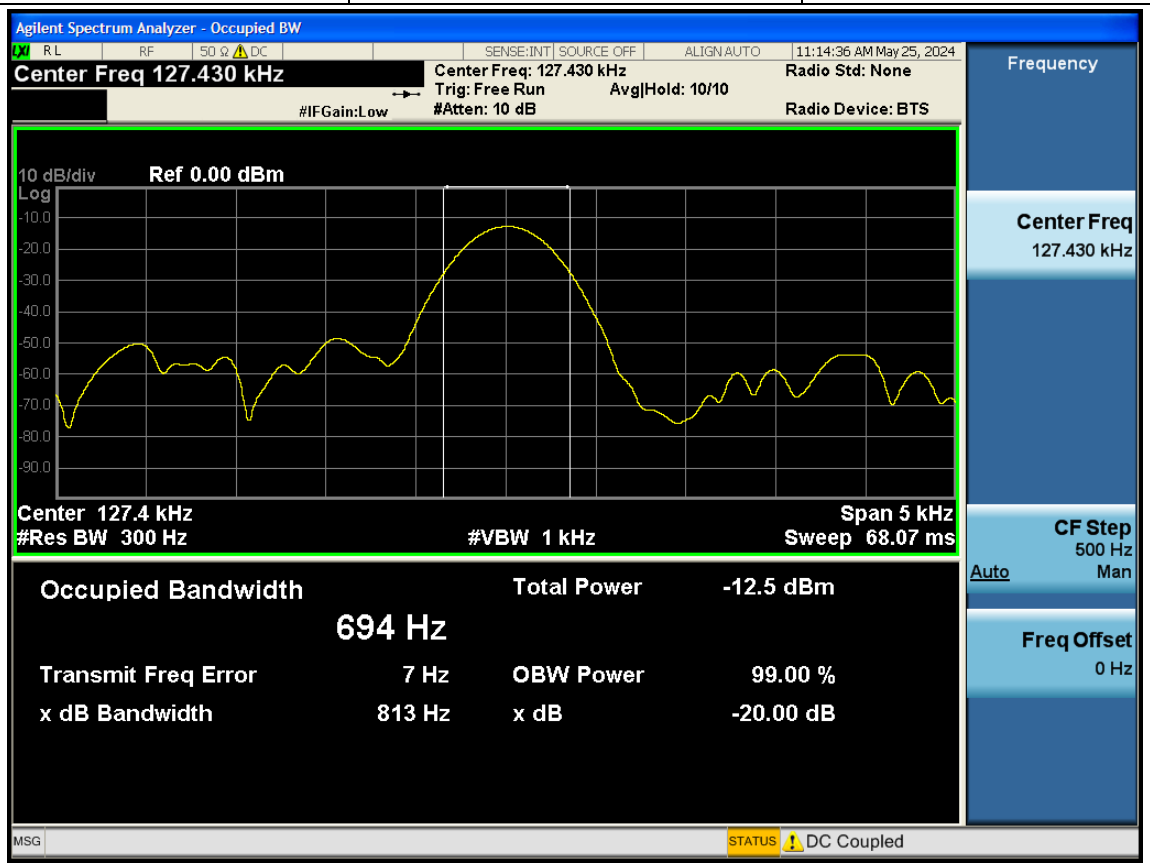


### 6.2.3 Test Data:

**Note:** Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 300 Hz to perform the occupied bandwidth test.

Transmitter1

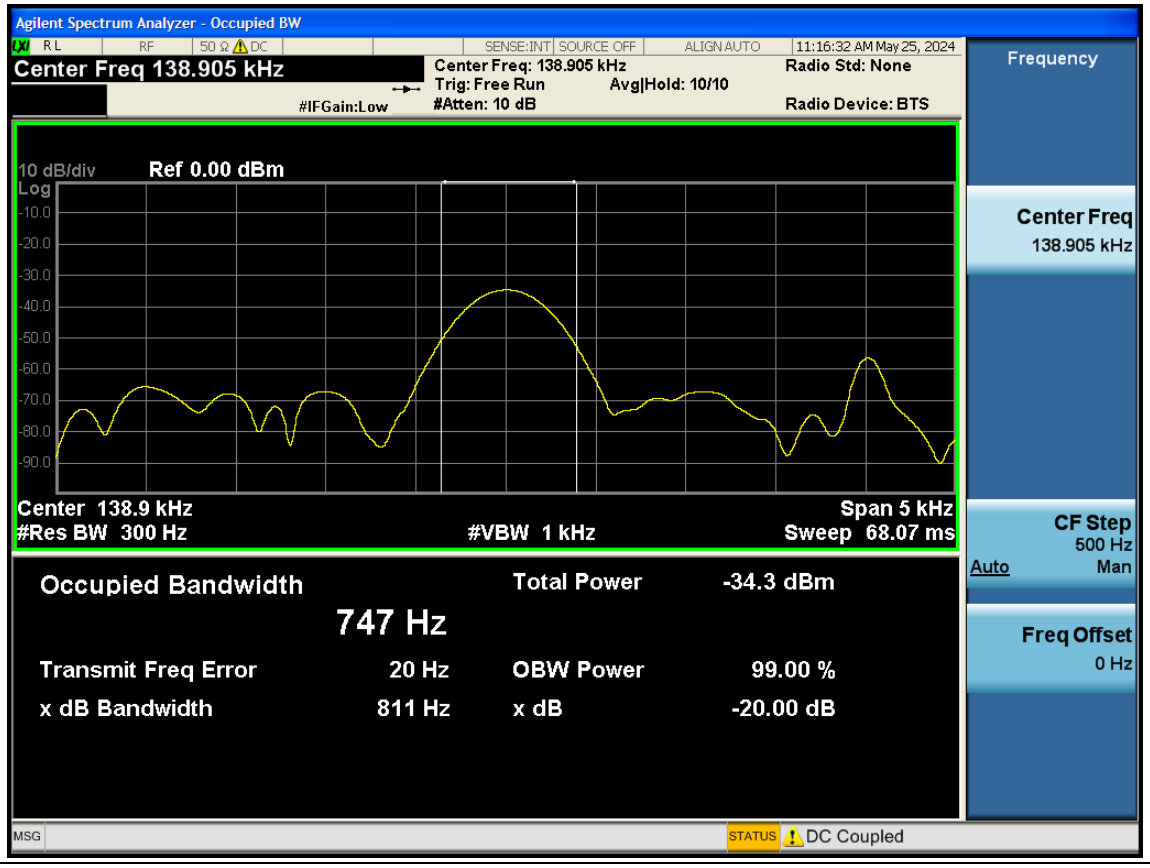
| Frequency kHz | 20 dB occupied bandwidth Hz | 99% occupied bandwidth Hz |
|---|---|---|
| 127.43 | 813 | 694 |



**Note:** Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 300 Hz to perform the occupied bandwidth test.

Transmitter2

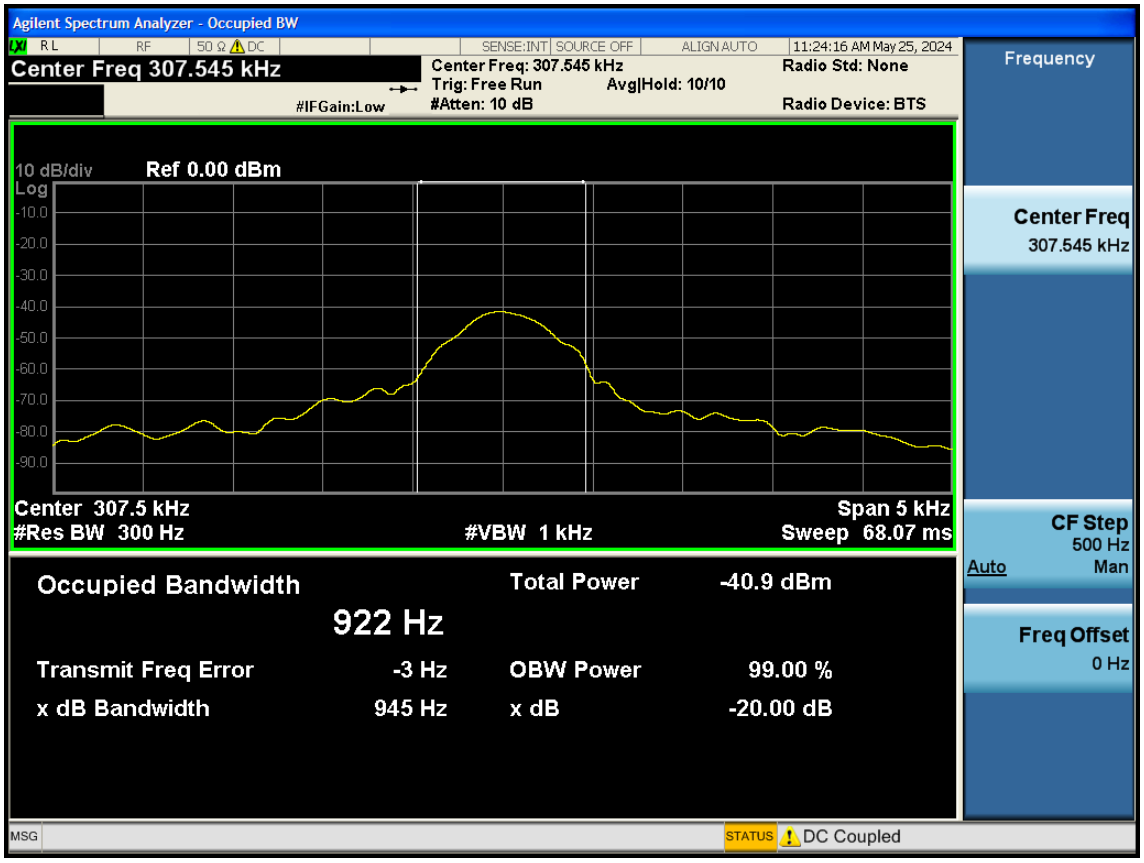
| Frequency<br>kHz | 20 dB occupied bandwidth<br>Hz | 99% occupied bandwidth<br>Hz |
|---|---|---|
| 138.905 | 811 | 747 |



**Note:** Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 300 Hz to perform the occupied bandwidth test.

Transmitter3

| Frequency kHz | 20 dB occupied bandwidth Hz | 99% occupied bandwidth Hz |
|---|---|---|
| 307.545 | 945 | 922 |



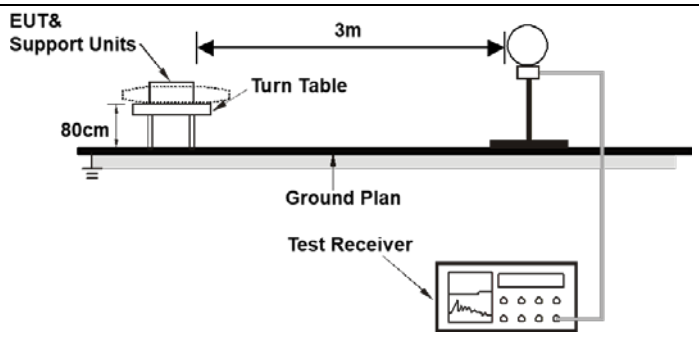
## 6.3 Emissions in frequency bands (below 30MHz)

<table>
<tr><td>Test Requirement:</td><td>47 CFR Part 15.209</td></tr>
<tr><td>Test Limit:</td><td>
<table>
<tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100 **</td><td>3</td></tr>
<tr><td>88-216</td><td>150 **</td><td>3</td></tr>
<tr><td>216-960</td><td>200 **</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.<br>
In the emission table above, the tighter limit applies at the band edges.<br>
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.<br>
As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a)and (b)of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b)of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.
</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10-2013 section 6.4</td></tr>
<tr><td>Procedure:</td><td>ANSI C63.10-2013 section 6.4</td></tr>
</table>

### 6.3.1 E.U.T. Operation:

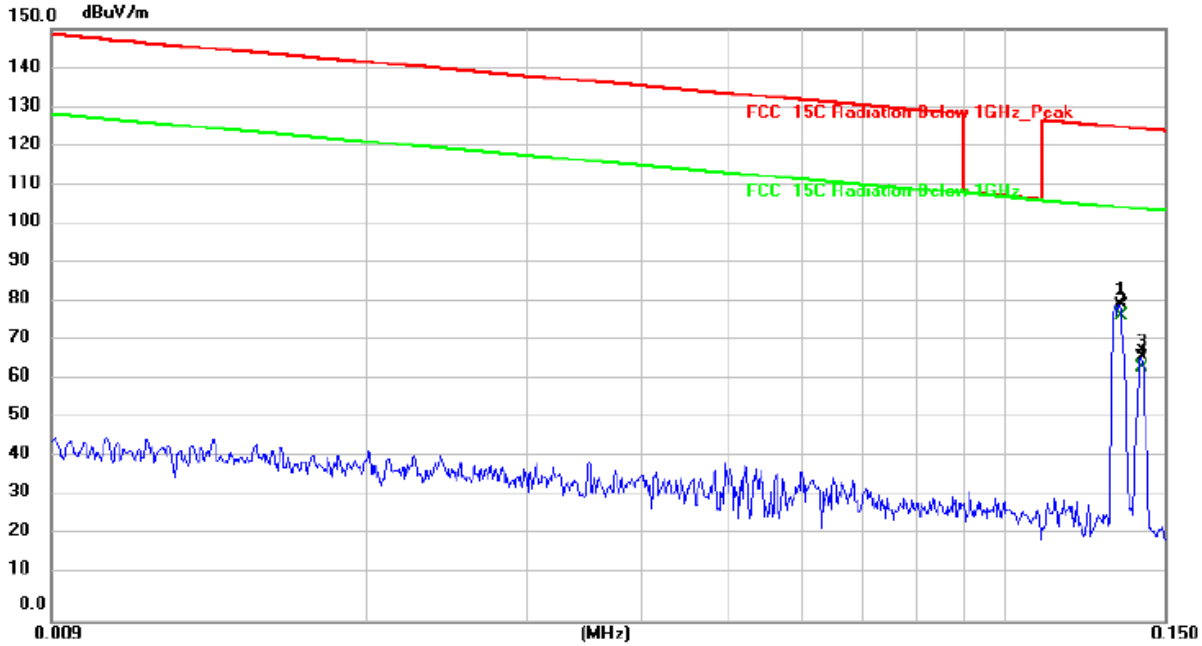
<table>
<tr><td colspan="6">Operating Environment:</td></tr>
<tr><td>Temperature:</td><td>19.4 °C</td><td>Humidity:</td><td>49.2 %</td><td>Atmospheric Pressure:</td><td>100 kPa</td></tr>
<tr><td>Pre test mode:</td><td colspan="5">Mode1, Mode2, Mode3, Mode4, Mode5, Mode6, Mode7, Mode8, Mode9, Mode10, Mode11, Mode12, Mode13, Mode14, Mode15, Mode16, Mode17, Mode18, Mode19, Mode20</td></tr>
<tr><td>Final test mode:</td><td colspan="5">All of the listed pre-test mode were tested, only the data of the worst mode (Mode4) is recorded in the report</td></tr>
</table>

### 6.3.2 Test Setup Diagram:



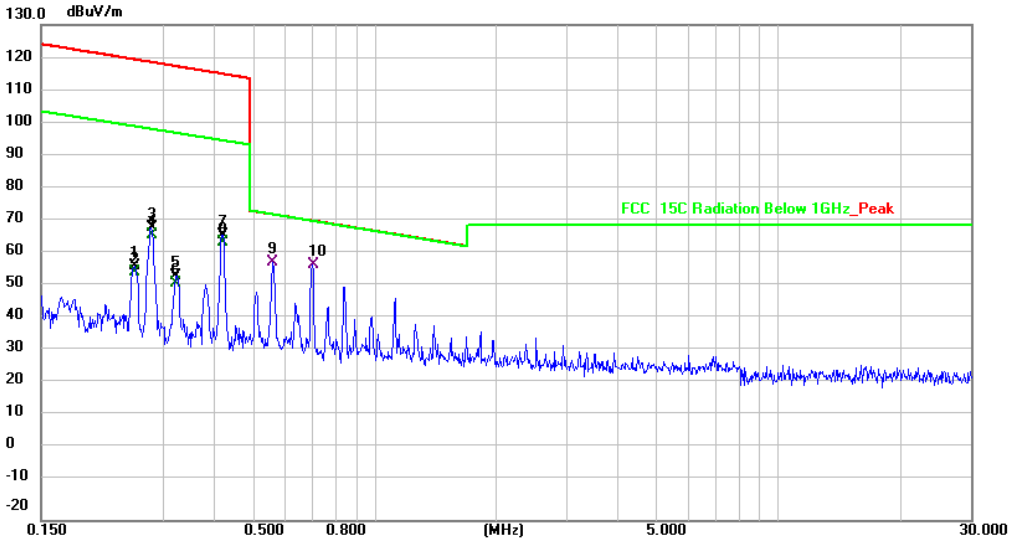
### 6.3.3 Test Data:

Mode4 / Polarization: Coaxial




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 0.1337 | 59.80 | 20.19 | 79.99 | 125.10 | -45.11 | peak | |
| 2 | * | 0.1337 | 57.40 | 20.19 | 77.59 | 105.10 | -27.51 | AVG | |
| 3 | | 0.1409 | 46.67 | 20.22 | 66.89 | 124.65 | -57.76 | peak | |
| 4 | | 0.1409 | 44.26 | 20.22 | 64.48 | 104.65 | -40.17 | AVG | |

Mode4 / Polarization: Coaxial




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 0.2548 | 36.95 | 20.30 | 57.25 | 119.49 | -62.24 | peak | |
| 2 | | 0.2548 | 34.89 | 20.30 | 55.19 | 99.49 | -44.30 | AVG | |
| 3 | | 0.2803 | 48.43 | 20.31 | 68.74 | 118.66 | -49.92 | peak | |
| 4 | | 0.2803 | 46.18 | 20.31 | 66.49 | 98.66 | -32.17 | AVG | |
| 5 | | 0.3234 | 33.91 | 20.32 | 54.23 | 117.42 | -63.19 | peak | |
| 6 | | 0.3234 | 31.41 | 20.32 | 51.73 | 97.42 | -45.69 | AVG | |
| 7 | | 0.4193 | 46.19 | 20.35 | 66.54 | 115.16 | -48.62 | peak | |
| 8 | | 0.4193 | 43.87 | 20.35 | 64.22 | 95.16 | -30.94 | AVG | |
| 9 | | 0.5611 | 37.89 | 20.39 | 58.28 | 72.63 | -14.35 | QP | |
| 10 | * | 0.7010 | 37.08 | 20.45 | 57.53 | 70.70 | -13.17 | QP | |

## 6.4 Emissions in frequency bands (30MHz - 1GHz)

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15.209 |
| Test Limit: | |

| Frequency (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30.0 | 30 | 30 |
| 30-88 | 100 ** | 3 |
| 88-216 | 150 ** | 3 |
| 216-960 | 200 ** | 3 |
| Above 960 | 500 | 3 |

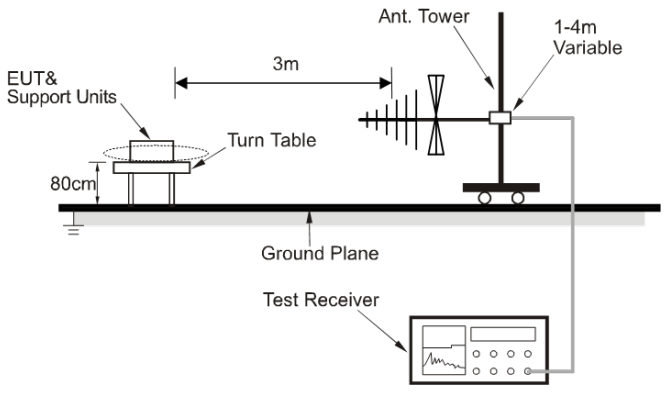
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a)and (b)of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b)of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

| | |
|---|---|
| Test Method: | ANSI C63.10-2013 section 6.5 |
| Procedure: | ANSI C63.10-2013 section 6.5 |

### 6.4.1 E.U.T. Operation:

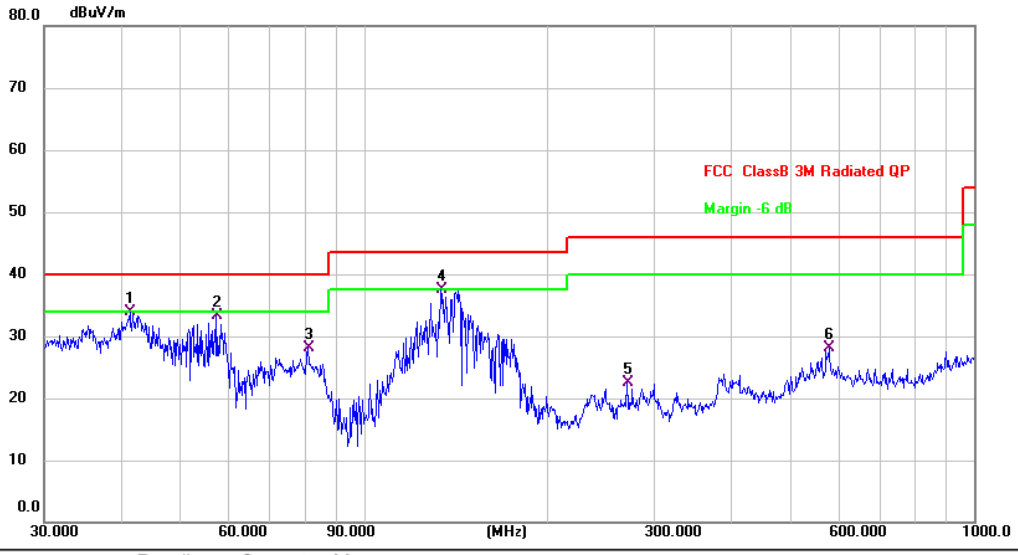
| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 22.5 °C | Humidity: | 43 % | Atmospheric Pressure: | 101 kPa |
| Pre test mode: | Mode1, Mode2, Mode3, Mode4, Mode5, Mode6, Mode7, Mode8, Mode9, Mode10, Mode11, Mode12, Mode13, Mode14, Mode15, Mode16, Mode17, Mode18, Mode19, Mode20 | | | | |
| Final test mode: | All of the listed pre-test mode were tested, only the data of the worst mode (Mode4) is recorded in the report | | | | |

### 6.4.2 Test Setup Diagram:



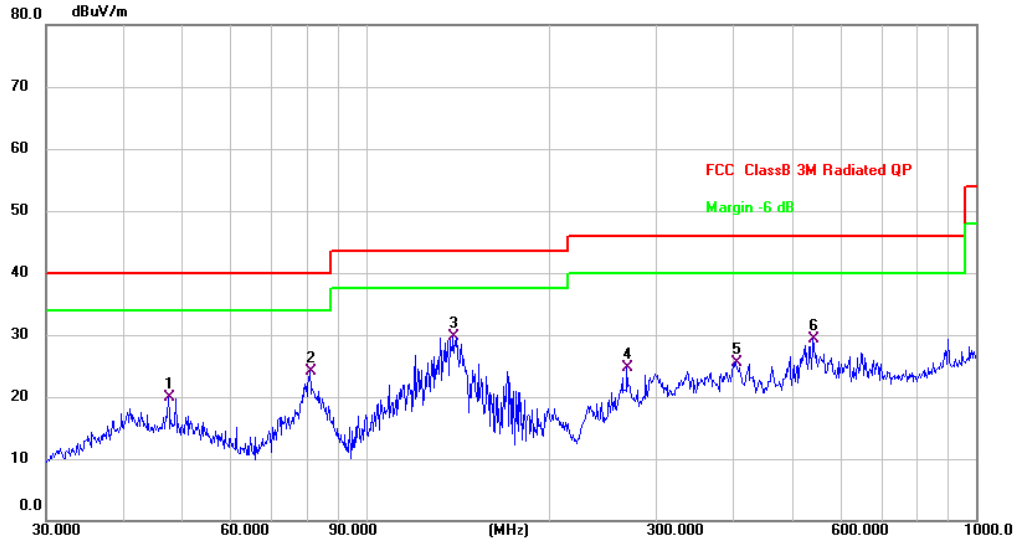
### 6.4.3 Test Data:

Mode4 / Polarization: Horizontal




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 41.4215 | 47.06 | -13.07 | 33.99 | 40.00 | -6.01 | QP | |
| 2 | | 57.3923 | 46.82 | -13.49 | 33.33 | 40.00 | -6.67 | QP | |
| 3 | | 80.9275 | 45.40 | -17.29 | 28.11 | 40.00 | -11.89 | QP | |
| 4 | * | 133.6188 | 53.34 | -15.81 | 37.53 | 43.50 | -5.97 | QP | |
| 5 | | 270.3748 | 33.34 | -10.81 | 22.53 | 46.00 | -23.47 | QP | |
| 6 | | 578.6699 | 32.94 | -4.92 | 28.02 | 46.00 | -17.98 | QP | |

Mode4 / Polarization: Vertical




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 47.4918 | 32.27 | -12.45 | 19.82 | 40.00 | -20.18 | QP | |
| 2 | | 80.9275 | 41.31 | -17.29 | 24.02 | 40.00 | -15.98 | QP | |
| 3 | * | 138.8735 | 43.96 | -14.27 | 29.69 | 43.50 | -13.81 | QP | |
| 4 | | 268.4853 | 35.56 | -10.84 | 24.72 | 46.00 | -21.28 | QP | |
| 5 | | 404.6665 | 34.49 | -9.00 | 25.49 | 46.00 | -20.51 | QP | |
| 6 | | 541.3725 | 35.49 | -6.19 | 29.30 | 46.00 | -16.70 | QP | |

## Photographs of the test setup

Refer to Appendix - Test Setup Photos

## Photographs of the EUT

Refer to Appendix - EUT Photos

**----End of Report----**