

MRT Technology (Taiwan) Co., Ltd

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Testing Laboratory

3261

MEASUREMENT REPORT

FCC ID : CHQ7253T

IC : 2968A-7253T

APPLICANT : RHINE ELECTRONIC CO., LTD.

Application Type : Certification

Product : Transmitter

Model No. : UC7253T

Brand Name : RHINE

FCC Classification: FCC Part 15 Security/Remote Control Transmitter (DSC)

FCC Rule Part(s) : Part 15.231(b)

ISED Standard : RSS 210 Issue 10

Test Procedure(s): ANSI C63.10-2013

Received Date : June 17, 2023

Test Date : June 17 ~ July 24, 2023

: Kaunaz Lee **Tested By**

(Kaunaz Lee)

Paddy Chen **Reviewed By**

(Paddy Chen)

any ker

(Chenz Ker)

The test results only relate to the tested sample.

Approved By

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

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Revision History

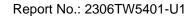
| Report No. Version | | Description | Issue Date | Note |
|--------------------|-----|-----------------|------------|------|
| 2306TW5401-U1 | 1.0 | Original Report | 2023-07-28 | |

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§2.1033 General Information

| Applicant | RHINE ELECTRONIC CO., LTD. | | | |
|------------------------|--|--|--|--|
| Applicant Address | No. 29, Fong Li Road, Tan-Zi Dist, Taichung City 42754, Taiwan, R.O.C. | | | |
| Manufacturer | 1. RHINE ELECTRONIC CO., LTD | | | |
| | 2. KAM SHING ELECTRONIC CO., LTD | | | |
| | 1. No.29, Fengli Rd.,Tanzi Dist.,Taichung City 427,Taiwan (R.O.C.) | | | |
| Manufacturer Address | 2. THE YOUTH LNDUSTRIAL ADMINISTRATION PARK, CHENJIANG | | | |
| | TOWN,HUICHENG DISTRICT,HUIZHOU CITY, GUANGDONG,CHINA | | | |
| Test Site | MRT Technology (Taiwan) Co., Ltd | | | |
| T. (0'() A 11 | No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan | | | |
| Test Site Address | (R.O.C) | | | |
| MRT Registration No. | 291082 | | | |
| Test Device Serial No. | #1-1 Production Pre-Production Engineering | | | |
| FCC Classification | FCC Part 15 Security/Remote Control Transmitter(DSC) | | | |

Test Facility / Accreditations

- 1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
- **2.** MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
- 3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Canada, EU and TELEC Rules.



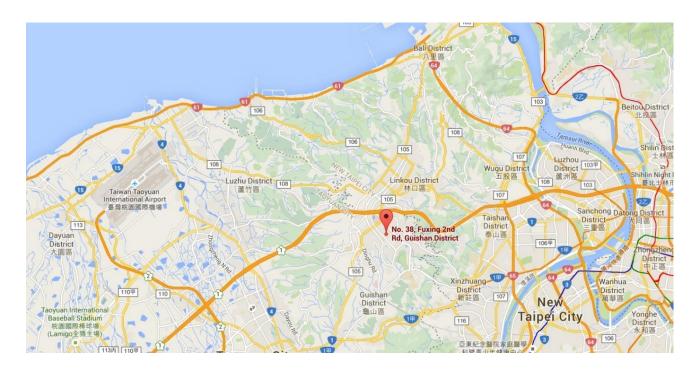
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).





2. PRODUCT INFORMATION

2.1. Equipment Description

| Product Name | Transmitter |
|--------------------|------------------|
| Model No. | UC7253T |
| Frequency Range | 303.875 MHz |
| Type of modulation | ASK |
| Antenna Type | Integral Antenna |

2.2. Test Standards

The following report is prepared on behalf of the **RHINE ELECTRONIC CO., LTD.** in accordance with FCC Part 15, Subpart C, and section 15.231, 15.203, 15.205 and 15.209 of the Federal Communication Commission rules/ IC RSS-Gen 8.8,8.9,8.10 and RSS-210 AnnexA

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

2.3. Test Methodology

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013).

Deviation from measurement procedure......None



2.4. EUT Setup and Test Mode

The EUT was operated at continuous transmitting mode that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

| Test Mode | |
|-----------|----------------------------|
| Mode 1 | Transmitting by 303.875MHz |



3. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 antenna of the Transmitter is permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The Transmitter unit complies with the requirement of §15.203.



4. TEST EQUIPMENT CALIBRATION DATE

Radiated Emissions – AC1

| Instrument | Manufacturer | Type No. | Asset No. | Cali. Interval | Cali. Due Date |
|--------------------------|--------------|---------------|-------------|----------------|----------------|
| Acitve Loop Antenna | SCHWARZBECK | FMZB 1519B | MRTTWA00002 | 1 year | 2024/5/22 |
| Broadband TRILOG Antenna | SCHWARZBECK | VULB 9162 | MRTTWA00001 | 1 year | 2023/12/21 |
| Broadband Hornantenna | SCHWARZBECK | BBHA 9120D | MRTTWA00003 | 1 year | 2024/3/24 |
| Broadband Preamplifier | SCHWARZBECK | BBV 9718 | MRTTWA00005 | 1 year | 2024/3/24 |
| Breitband Hornantenna | SCHWARZBECK | BBHA 9170 | MRTTWA00004 | 1 year | 2024/3/20 |
| Broadband Amplifier | SCHWARZBECK | BBV 9721 | MRTTWA00006 | 1 year | 2024/3/27 |
| EMI Test Receiver | R&S | ESR3 | MRTTWA00009 | 1 year | 2024/3/8 |
| Signal Analyzer | R&S | FSV40 | MRTTWA00007 | 1 year | 2024/3/14 |
| Antenna Cable | HUBERSUHNER | SF106 | MRTTWE00010 | 1 year | 2024/6/13 |
| Cable | Rosnol | K1K50-UP0264- | MRTTWE00012 | 1 year | 2024/6/18 |
| | | K1K50-4M | | , | |

Test Software

| Software | Version | Function | | |
|----------|-----------|-------------------|--|--|
| e3 | 9.160520a | EMI Test Software | | |
| ЕМІ | V3 | EMI Test Software | | |

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5. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

AC Conducted Emission Measurement – SR2

Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):

150kHz~30MHz: ± 2.42dB

Conducted Measurement-SR1

Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ± 1.3dB

Radiated Emission Measurement – AC1

Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):

Horizontal: 9K~30MHz: ± 4.14dB

30MHz~1GHz: ± 4.22dB 1GHz~40GHz: ± 4.05dB

Vertical: 9K~30MHz: ± 4.14dB

30MHz~1GHz: ± 3.37dB 1GHz~40GHz: ± 4.08dB



6. TEST RESULT

6.1. Summary

Company Name: RHINE ELECTRONIC CO., LTD.

| FCC/IC Part Section(s) | Test Description | Test Condition | Test Result | |
|----------------------------------|-------------------|-------------------|-------------|--|
| 15.203 | ANTENNA | | Pass | |
| 10.200 | REQUIREMENTS | | 1 400 | |
| 15.205,15.209,15.231(b)/ | Radiated Spurious | | Pass | |
| RSS Gen 8.9,8.10 RSS-210 Annex A | Emissions | | Pd55 | |
| 15.231(c)/ | 20dB Bandwidth / | | Pass | |
| RSS-210 Annex A.1.3 | 99% Bandwidth | Dodiotod | r ass | |
| 15.231(a)/ | Transmission Time | Radiated | Door | |
| RSS-210 Annex A.1.1(a) | Transmission time | | Pass | |
| 15.231(a)/ | Duty Cycle | | Door | |
| RSS-210 Annex A.1.1(a) | Duty Cycle | | Pass | |
| 45 207 / | AC Conducted | Lina | | |
| 15.207 / | Emissions | Line | N/A | |
| RSS Gen 8.8 | 150kHz - 30MHz | Conducted | | |

- Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.
- 2) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 3) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 4) The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
- 5) The EUT Power by Battery, so do not need to test Conducted Emissions.



6.2. Radiated Emissions

6.2.1. Standard Applicable

According to §15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

| Fundamental frequency (MHz) | Field strength of fundamental (microvolts/meter) | Field strength of spurious emissions (microvolts/meter) |
|--------------------------------|---|--|
| 40.66-40.70 | 2,250 | 225 |
| 70-130 | 1,250 | 125 |
| 130-174 | 11,250 to 3,750 | 1125 to 375 |
| 174-260 | 3,750 | 375 |
| 260-470 | 13,750 to 12,500 | 1375 to 1,250 |
| Above 470 | 12,500 | 1,250 |

The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements start below or at the lowest crystal frequency.

Compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

6.2.2. Test Procedure

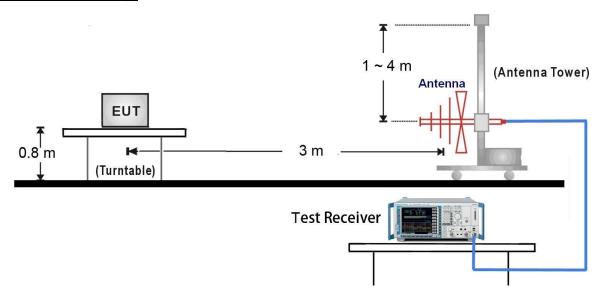
The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.231(b) and FCC Part 15.209 Limit / RSS-Gen 8.9 and RSS-210 Annex A.1.2.



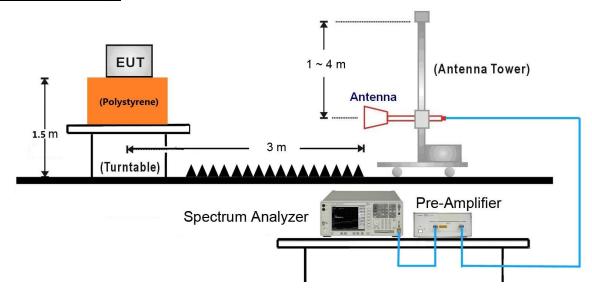
6.2.3. Test Setup

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.231(b) and FCC Part 15.209 Limit/ RSS-Gen 8.9 and RSS-210 Annex A.1.2.

30MHz ~ 1GHz Test Setup:



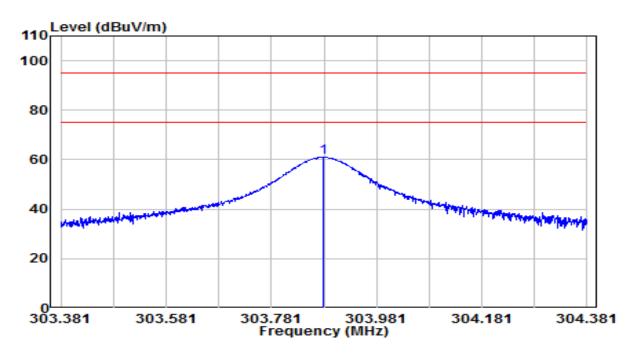
1GHz ~ 5GHz Test Setup:





6.2.4. Test Results

| EUT | Transmitter | Date of Test | 2023-07-22 |
|-----------|---------------|----------------------|------------|
| Factor | VULB 9162 | Temp. / Humidity | 23°C /58% |
| Polarity | Horizontal | Site / Test Engineer | AC1 / Dio |
| Test Mode | TX-303.875MHz | Test Voltage | By Battery |

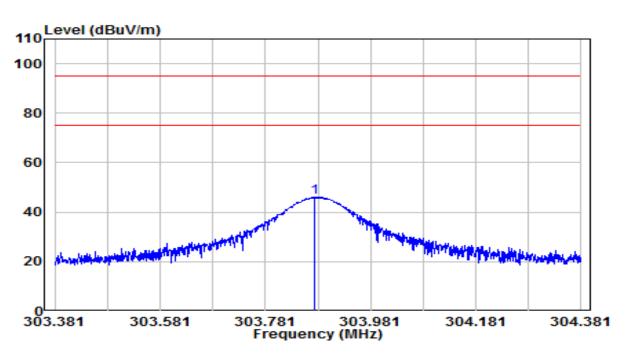


| No | Jo. | Frequency | Reading | C.F | Measurement | Margin | Limit | Height | Angle | Remark |
|----|-----|------------|---------|--------|-------------|--------|----------|--------|-------|------------|
| • | No | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dB) | (dBuV/m) | (cm) | (deg) | (QP/PK/AV) |
| | 1 | * 303.8750 | 39.85 | 21.15 | 61.00 | -33.94 | 94.94 | 100 | 18 | Peak |

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



| EUT | Transmitter | Date of Test | 2023-07-22 |
|-----------|---------------|----------------------|------------|
| Factor | VULB 9162 | Temp. / Humidity | 23°C /58% |
| Polarity | Vertical | Site / Test Engineer | AC1 / Dio |
| Test Mode | TX-303.875MHz | Test Voltage | By Battery |

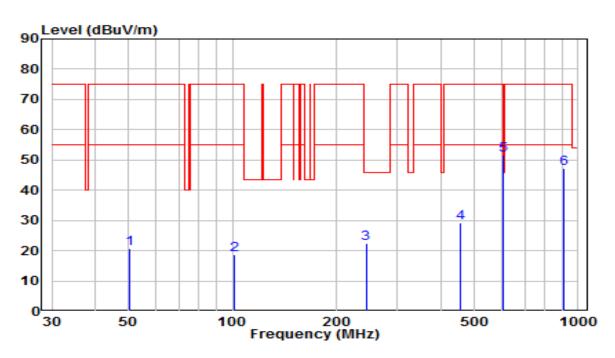


| No | No | Frequency | Reading | C.F | Measurement | Margin | Limit | Height | Angle | Remark |
|----|-------|-----------|---------|----------|-------------|----------|-------|--------|------------|--------|
| | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dB) | (dBuV/m) | (cm) | (deg) | (QP/PK/AV) | |
| | 1 | * 303.875 | 25.03 | 21.15 | 46.18 | -48.76 | 94.94 | 131 | 102 | Peak |

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



| EUT | Transmitter | Date of Test | 2023-07-24 |
|-----------|---------------|----------------------|------------|
| Factor | VULB 9162 | Temp. / Humidity | 23°C /52% |
| Polarity | Horizontal | Site / Test Engineer | AC1 / Dio |
| Test Mode | TX-303.875MHz | Test Voltage | By Battery |

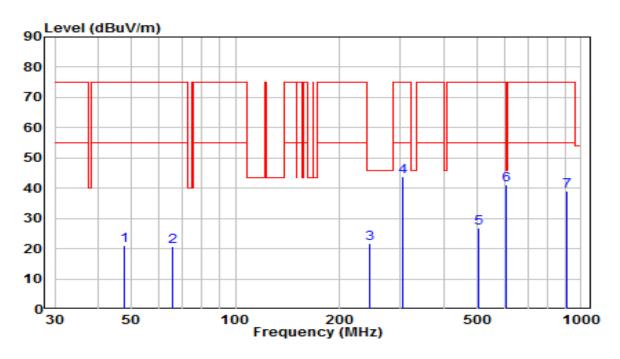


| No | Frequenc | y Reading | C.F | Measurement | Margin | Limit | Height | Angle | Remark |
|-----|-----------|-----------|--------|-------------|--------|----------|--------|-------|------------|
| INO | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dB) | (dBuV/m) | (cm) | (deg) | (QP/PK/AV) |
| 1 | 50.370 | -0.08 | 20.89 | 20.81 | -54.12 | 74.93 | 100 | 135 | QP |
| 2 | 100.810 | 0.07 | 18.75 | 18.82 | -56.11 | 74.93 | 200 | 30 | QP |
| 3 | 243.400 | 2.32 | 20.05 | 22.37 | -23.63 | 46.00 | 100 | 130 | QP |
| 4 | 455.830 | 4.92 | 24.35 | 29.26 | -45.67 | 74.93 | 200 | 360 | QP |
| 5 | * 607.750 | 23.94 | 27.62 | 51.55 | -23.38 | 74.93 | 150 | 0 | QP |
| 6 | 911.730 | 15.32 | 31.74 | 47.06 | -27.87 | 74.93 | 150 | 40 | QP |

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



| EUT | Transmitter | Date of Test | 2023-07-24 |
|-----------|---------------|----------------------|------------|
| Factor | VULB 9162 | Temp. / Humidity | 23°C /52% |
| Polarity | Vertical | Site / Test Engineer | AC1 / Dio |
| Test Mode | TX-303.875MHz | Test Voltage | By Battery |

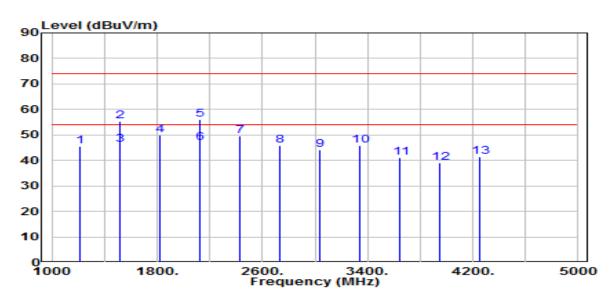


| No | Frequency | Reading | C.F | Measurement | Margin | Limit | Height | Angle | Remark |
|-----|-----------|---------|--------|-------------|--------|----------|--------|-------|------------|
| INO | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dB) | (dBuV/m) | (cm) | (deg) | (QP/PK/AV) |
| 1 | 47.460 | 0.44 | 20.77 | 21.21 | -53.72 | 74.93 | 100 | 15 | QP |
| 2 | 65.890 | 3.41 | 17.32 | 20.74 | -54.19 | 74.93 | 100 | 340 | QP |
| 3 | 244.370 | 1.68 | 20.09 | 21.77 | -24.23 | 46.00 | 100 | 150 | QP |
| 4 | 303.540 | 22.59 | 21.14 | 43.73 | -31.20 | 74.93 | 150 | 105 | QP |
| 5 | 503.360 | 1.11 | 25.57 | 26.68 | -48.25 | 74.93 | 150 | 70 | QP |
| 6 | * 608.120 | 13.40 | 27.62 | 41.01 | -4.99 | 46.00 | 150 | 280 | QP |
| 7 | 911.730 | 7.38 | 31.74 | 39.12 | -35.81 | 74.93 | 150 | 130 | QP |

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



| EUT | Transmitter | Date of Test | 2023-07-22 | | |
|-----------|---------------|----------------------|------------|--|--|
| Factor | BBHA 9120D | Temp. / Humidity | 24°C /52% | | |
| Polarity | Horizontal | Site / Test Engineer | AC1 / Dio | | |
| Test Mode | TX-303.875MHz | Test Voltage | By Battery | | |



| No | | Frequency | Reading | C.F | Measurement | Margin | Limit | Height | Angle | Remark |
|----|---|-----------|---------|--------|-------------|--------|----------|--------|-------|------------|
| No | | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dB) | (dBuV/m) | (cm) | (deg) | (QP/PK/AV) |
| 1 | | 1215.375 | 50.32 | -4.90 | 45.42 | -28.58 | 74.00 | 150 | 360 | Peak |
| 2 | | 1519.500 | 59.25 | -3.95 | 55.29 | -18.71 | 74.00 | 150 | 360 | Peak |
| 3 | | 1519.500 | N/A | N/A | 46.15 | -7.85 | 54.00 | 150 | 360 | Average |
| 4 | | 1823.625 | 53.44 | -3.35 | 50.09 | -23.91 | 74.00 | 150 | 360 | Peak |
| 5 | * | 2127.000 | 58.60 | -2.60 | 56.00 | -18.00 | 74.00 | 150 | 360 | Peak |
| 6 | * | 2127.000 | N/A | N/A | 46.86 | -7.14 | 54.00 | 150 | 360 | Average |
| 7 | | 2432.375 | 51.15 | -1.64 | 49.51 | -24.49 | 74.00 | 150 | 360 | Peak |
| 8 | | 2734.875 | 47.51 | -1.52 | 45.99 | -28.01 | 74.00 | 150 | 360 | Peak |
| 9 | | 3038.875 | 45.81 | -1.51 | 44.30 | -29.70 | 74.00 | 150 | 360 | Peak |
| 10 | | 3342.500 | 46.51 | -0.59 | 45.92 | -28.08 | 74.00 | 150 | 360 | Peak |
| 11 | | 3646.375 | 40.84 | 0.27 | 41.11 | -32.89 | 74.00 | 150 | 360 | Peak |
| 12 | | 3950.750 | 38.06 | 1.07 | 39.14 | -34.86 | 74.00 | 150 | 360 | Peak |
| 13 | | 4253.500 | 39.36 | 2.22 | 41.58 | -32.42 | 74.00 | 150 | 360 | Peak |

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) Preamplifier(dB).

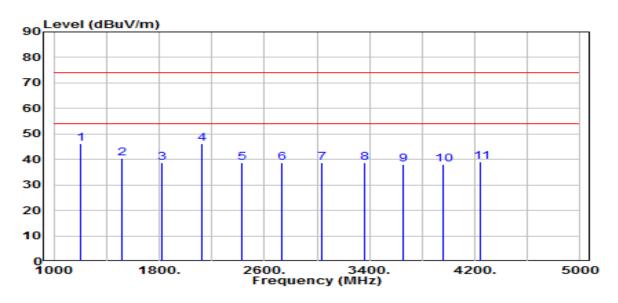


- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. Average factor (20Log(1/Duty Cycle)) is 9.14dB.
- 6. Average Measurement = Peak Measurement Average factor.

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| EUT | Transmitter | Date of Test | 2023-07-22 |
|-----------|---------------|----------------------|------------|
| Factor | BBHA 9120D | Temp. / Humidity | 24°C /52% |
| Polarity | Vertical | Site / Test Engineer | AC1 / Dio |
| Test Mode | TX-303.875MHz | Test Voltage | By Battery |



| No | | Frequency | Reading | C.F | Measurement | Margin | Limit | Height | Angle | Remark |
|----|---|-----------|---------|--------|-------------|--------|----------|--------|-------|------------|
| No | | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dB) | (dBuV/m) | (cm) | (deg) | (QP/PK/AV) |
| 1 | * | 1200.000 | 51.16 | -4.94 | 46.22 | -27.78 | 74.00 | 150 | 360 | Peak |
| 2 | | 1519.375 | 44.36 | -3.95 | 40.41 | -33.59 | 74.00 | 150 | 360 | Peak |
| 3 | | 1824.375 | 42.15 | -3.35 | 38.80 | -35.20 | 74.00 | 150 | 360 | Peak |
| 4 | | 2126.875 | 48.82 | -2.60 | 46.21 | -27.79 | 74.00 | 150 | 360 | Peak |
| 5 | | 2432.125 | 40.51 | -1.64 | 38.87 | -35.13 | 74.00 | 150 | 360 | Peak |
| 6 | | 2734.750 | 40.21 | -1.52 | 38.68 | -35.32 | 74.00 | 150 | 360 | Peak |
| 7 | | 3038.000 | 40.28 | -1.51 | 38.77 | -35.23 | 74.00 | 150 | 360 | Peak |
| 8 | | 3361.500 | 39.09 | -0.53 | 38.56 | -35.44 | 74.00 | 150 | 360 | Peak |
| 9 | | 3654.625 | 37.76 | 0.30 | 38.05 | -35.95 | 74.00 | 150 | 360 | Peak |
| 10 | | 3956.750 | 36.91 | 1.09 | 38.00 | -36.00 | 74.00 | 150 | 360 | Peak |
| 11 | | 4244.750 | 36.96 | 2.19 | 39.15 | -34.85 | 74.00 | 150 | 360 | Peak |

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) Preamplifier(dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



- 5. Average factor (20Log(1/Duty Cycle)) is 9.14dB.
- 6. Average Measurement = Peak Measurement Average factor.

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6.3. 20dB Bandwidth / 99% Bandwidth

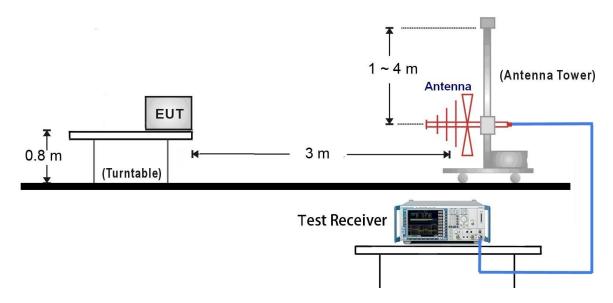
6.3.1. Standard Applicable

According to FCC Part 15.231(c), the bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

6.3.2. Test Procedure

With the EUT's antenna attached, the EUT's 20dB Bandwidth power was received by the test antenna, which was connected to the spectrum analyzer with the START, and STOP frequencies set to the EUT's operation band.

6.3.3. Test Setup

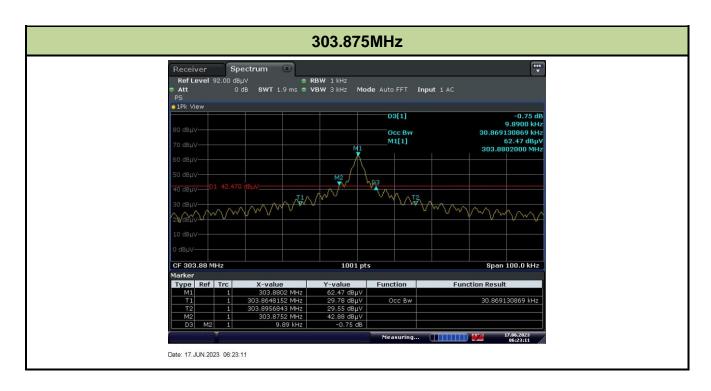




6.3.4. Test Result

| Test Frequency (MHz) | Modulation Type | 20dB Bandwidth (KHz) | 99% Bandwidth (KHz) | Limit (KHz) | Result |
|-------------------------|-----------------|-------------------------|------------------------|----------------|--------|
| 303.875 | ASK | 9.89 | 30.869 | ≤ 759.7 | Pass |

Limit = Fundamental Frequency * 0.25%, 303.875 MHz * 0.25% = 0.7597MHz 0.7597MHz * 1000= 759.7KHz





6.4. Transmission Time

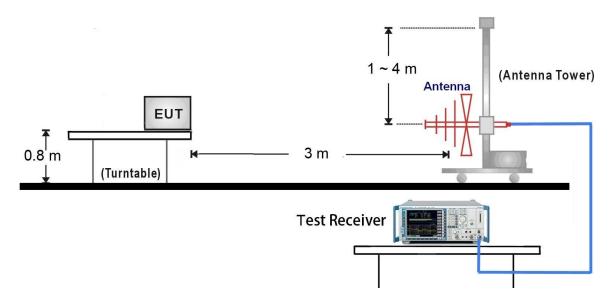
6.4.1. Standard Applicable

According to FCC 15.231(a)(1), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

6.4.2. Test Procedure

With the EUT's antenna attached, the EUT's output signal was received by the test antenna, which was connected to the spectrum analyzer. Set the center frequency to 434MHz, then set the spectrum analyzer to Zero Span for the release time reading. During the testing, the switch was released then the EUT automatically deactivated.

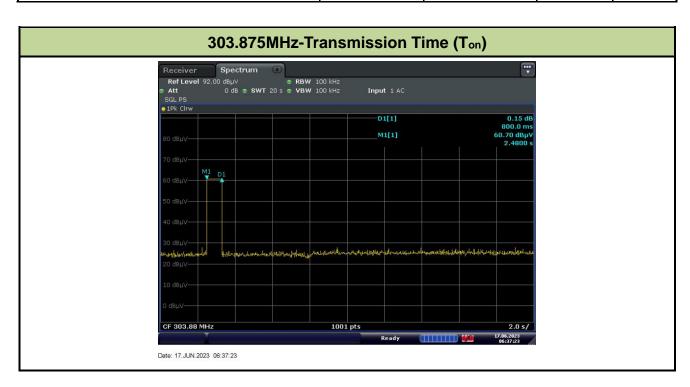
6.4.3. Test Setup





6.4.4. Test Result

| Test Item | Frequency (MHz) | Measurement (s) | Limit (s) | Result |
|-------------------------|--------------------|-----------------|--------------|--------|
| Transmission Time (Ton) | 303.875 | 0.8 | < 5 | Pass |





6.5. Duty Cycle

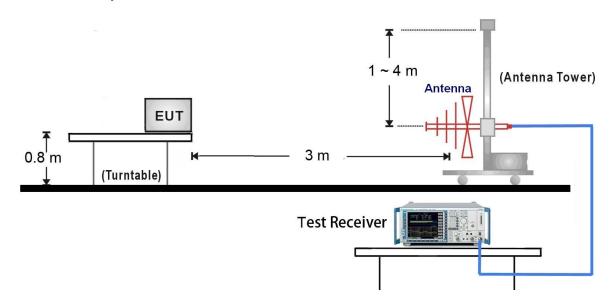
6.5.1. Standard Applicable

According to FCC Part 15.231(b) and 15.35(c), for pulse operation transmitter, the averaging pulsed emissions are calculated by peak value of measured emission plus duty cycle factor.

6.5.2. Test Procedure

With the EUT's antenna attached, the EUT's output signal was received by the test antenna, which was connected to the spectrum analyzer. Set the center frequency to 434MHz, then set the spectrum analyzer to Zero Span for the release time reading. During the testing, the switch was released then the EUT automatically deactivated.

6.5.3. Test Setup





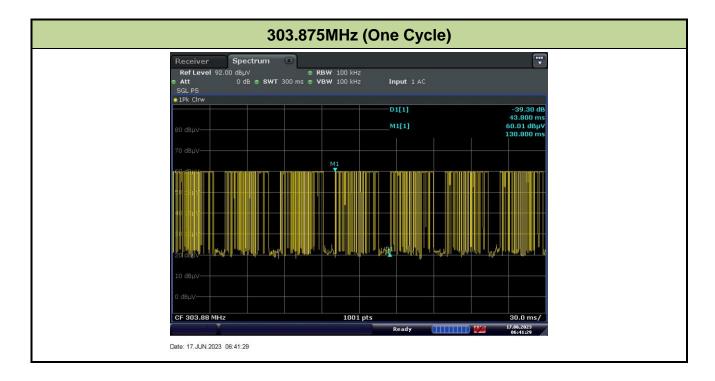
6.5.4. Test Result

| Modulation Type | Total Time (Ton) | The duration of one | Duty Cycle | Average Factor |
|-----------------|------------------|---------------------|------------|----------------|
| | (ms) | cycle | (ms) | (dB) |
| | | (ms) | | |
| ASK | 15.30 | 43.80 | 0.35 | 9.14 |

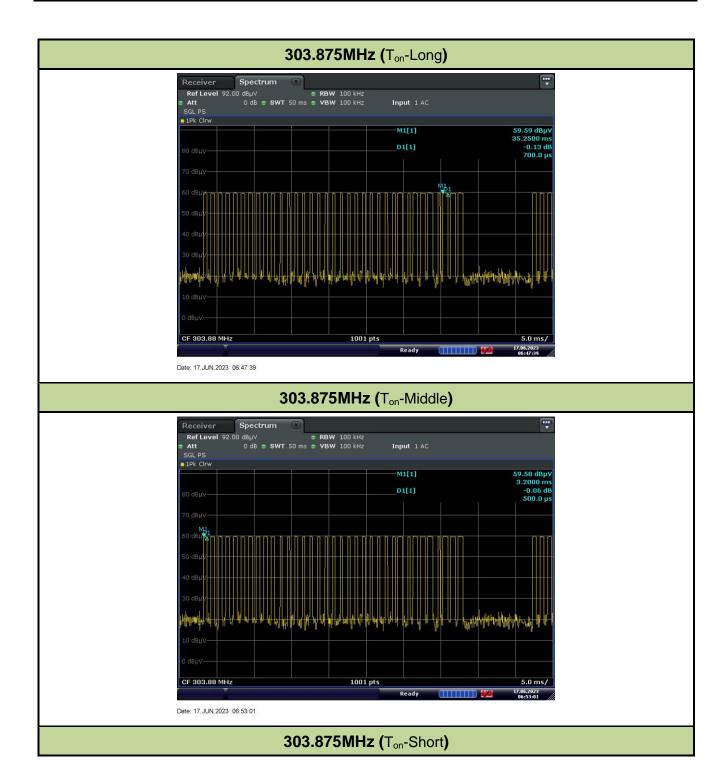
Note 1: Duty Cycle = Total Time $(T_{on}) / (T_{on} + T_{off})$.

(Long 700us*7)+(Median 500us*10)+(Short 300us*18) = 15300us, 15300us / 1000 = 15.30ms

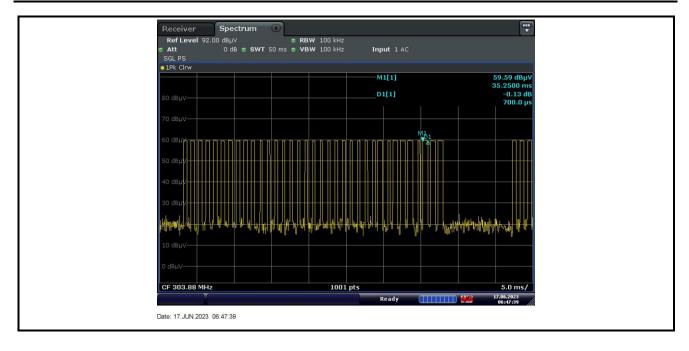
Note 2: Average Factor = 20*Log*(1/Duty Cycle).













6.6. AC Conducted Emissions Measurement

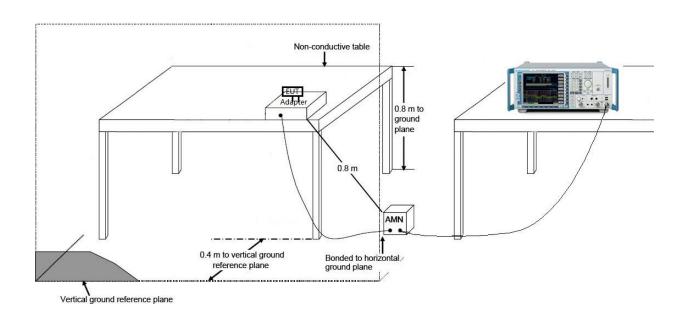
6.6.1. Test Limit

| FCC Part 15 Subpart C Paragraph 15.207 / RSS-Gen Limits | | | | | |
|---|--------------|-------------------|--|--|--|
| Frequency (MHz) | QP (dBµV) | Average (dBµV) | | | |
| 0.15 - 0.50 | 66 - 56 | 56 - 46 | | | |
| 0.50 - 5.0 | 56 | 46 | | | |
| 5.0 - 30 | 60 | 50 | | | |

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.6.2. Test Setup





6.6.3. Test Result

Note: The EUT Power by Battery, so do not need to test Conducted Emissions.



7. CONCLUSION

The data collected relate only the item(s) tested and show that the **Transmitter** is in compliance with FCC Rules/ IC RSS 210 Annex A1.1.

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Appendix A : Test Photograph

Refer to "2306TW5401-UT" file.

Appendix B : External Photograph

Refer to "2306TW5401-UE" file.

| Appendix C : Internal Pho | otograph |
|---------------------------|----------|
|---------------------------|----------|

| Refer to "2306TW5401-UI" file. | | |
|--------------------------------|---------|--|
| | | |
| | The End | |