| | | | | |
|---|---|---|---|---|
| **Prüfbericht-Nr.:**<br>*Test report no.:* | **CN25PSTZ 003** | **Auftrags-Nr.:**<br>*Order no.:* | 168581151 | Seite 1 von 23<br>*Page 1 of 23* |
| **Kunden-Referenz-Nr.:**<br>*Client reference no.:* | N/A | **Auftragsdatum:**<br>*Order date:* | 2025-10-28 | |
| **Auftraggeber:**<br>*Client:* | Guangzhou Shikun Electronics Co., Ltd<br>No.6, Liankun Road, Huangpu District, Guangzhou, China | | | |
| **Prüfgegenstand:**<br>*Test item:* | IEEE 802.11a/b/g/n/ac 2T2R USB Wi-Fi&IR Module Integrated Bluetooth 2.1+EDR/4.2/5.3 | | | |
| **Bezeichnung / Typ-Nr.:**<br>*Identification / Type no.:* | SKI.WB822EU.12 | | | |
| **Auftrags-Inhalt:**<br>*Order content:* | Test Report | | | |
| **Prüfgrundlage:**<br>*Test specification:* | CFR Title 47 FCC Part 15: Subpart C Section 15.247<br>RSS-247 Issue 3 August 2023<br>RSS-Gen Issue 5 February 2021 | | | |

| | | |
|---|---|---|
| **Wareneingangsdatum:**<br>*Date of sample receipt:* | 2025-10-28 | Please refer to Photo Document |
| **Prüfmuster-Nr.:**<br>*Test sample no:* | A004121829-001~011<br>A004121820-001~013 | |
| **Prüfzeitraum:**<br>*Testing period:* | 2025-11-07 - 2025-12-01 | |
| **Ort der Prüfung:**<br>*Place of testing:* | TÜV Rheinland<br>(Shenzhen) Co., Ltd. | |
| **Prüflaboratorium:**<br>*Testing laboratory:* | TÜV Rheinland<br>(Shenzhen) Co., Ltd. | |
| **Prüfergebnis*:**<br>*Test result*:* | Pass | |

| | | | |
|---|---|---|---|
| **geprüft von:**<br>tested by: | X Lin Lin | **genehmigt von:**<br>*authorized by:* | X Hardy Suo |
| **Datum:**<br>*Date:* 2025-12-04 | | **Ausstellungsdatum:**<br>*Issue date:* 2025-12-04 | |
| **Stellung** / Position: | Sachverständige(r)/Expert | **Stellung** / Position: | Sachverständige(r)/Expert |

**Sonstiges /**
*Other:*

FCC ID: 2AR82-SKIWB822EU12
IC: 24728-SKIWB822EU12, HVIN: SKI.WB822EU.12

This report is for 2.4GHz Wi-Fi.

**Zustand des Prüfgegenstandes bei Anlieferung:**
*Condition of the test item at delivery:*

Prüfmuster vollständig und unbeschädigt
*Test item complete and undamaged*

| | | | | |
|---|---|---|---|---|
| * Legende: | P(ass) = entspricht o.g. Prüfgrundlage(n) | F(ail) = entspricht nicht o.g. Prüfgrundlage(n) | N/A = nicht anwendbar | N/T = nicht getestet |
| ** Legend:* | *P(ass) = passed a.m. test specification(s)* | *F(ail) = failed a.m. test specification(s)* | *N/A = not applicable* | *N/T = not tested* |

**Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.**
*This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.*

## Anmerkungen
*Remarks*

| | |
|---|---|
| **1** | Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.<br>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.<br><br>*The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.*<br>*Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.* |
| **2** | Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie auf folgender Webseite: go.tuv.com/digital-signature<br><br>*As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. For information on verifying the authenticity of our documents, please visit the following website: go.tuv.com/digital-signature* |
| **3** | Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.<br>Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.<br><br>*Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.*<br>*Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.* |
| **4** | Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.<br><br>*The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.* |

# *Test Summary*

**5.1.1 ANTENNA REQUIREMENT**
*RESULT: Pass*

**5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER**
*RESULT: Pass*

**5.1.3 CONDUCTED POWER SPECTRAL DENSITY**
*RESULT: Pass*

**5.1.4 6DB BANDWIDTH**
*RESULT: Pass*

**5.1.5 99% BANDWIDTH**
*RESULT: Pass*

**5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH**
*RESULT: Pass*

**5.1.7 RADIATED SPURIOUS EMISSION**
*RESULT: Pass*

**5.1.8 CONDUCTED EMISSION ON AC MAINS**
*RESULT: Pass*

# *Contents*

1 GENERAL REMARKS ..... 5
1.1 COMPLEMENTARY MATERIALS ..... 5
2 TEST SITES ..... 6
2.1 TEST FACILITIES ..... 6
2.2 LIST OF TEST AND MEASUREMENT INSTRUMENTS ..... 6
2.3 TRACEABILITY ..... 7
2.4 CALIBRATION ..... 7
2.5 MEASUREMENT UNCERTAINTY ..... 7
2.6 LOCATION OF ORIGINAL DATA ..... 7
2.7 STATUS OF FACILITY USED FOR TESTING ..... 7
3 GENERAL PRODUCT INFORMATION ..... 8
3.1 PRODUCT FUNCTION AND INTENDED USE ..... 8
3.2 RATINGS AND SYSTEM DETAILS ..... 8
3.3 INDEPENDENT OPERATION MODES ..... 10
3.4 NOISE GENERATING AND NOISE SUPPRESSING PARTS ..... 10
3.5 SUBMITTED DOCUMENTS ..... 10
4 TEST SET-UP AND OPERATION MODES ..... 11
4.1 PRINCIPLE OF CONFIGURATION SELECTION ..... 11
4.2 TEST OPERATION AND TEST SOFTWARE ..... 11
4.3 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT ..... 11
4.4 COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE ..... 11
4.5 TEST SETUP DIAGRAM ..... 12
5 TEST RESULTS ..... 14
5.1 TRANSMITTER REQUIREMENT & TEST SUITES ..... 14
*5.1.1 Antenna Requirement ..... 14*
*5.1.2 Maximum Peak Conducted Output Power ..... 15*
*5.1.3 Conducted Power Spectral Density ..... 17*
*5.1.4 6dB Bandwidth ..... 18*
*5.1.5 99% Bandwidth ..... 19*
*5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth ..... 20*
*5.1.7 Radiated Spurious Emission ..... 21*
*5.1.8 Conducted Emission on AC Mains ..... 22*
6 PHOTOGRAPHS OF THE TEST SET-UP ..... 23
7 LIST OF TABLES ..... 23

# 1 General Remarks

## 1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of 2.4GHz Wi-Fi

Appendix B: Photographs of the Test Set-up

# 2 Test Sites

## 2.1 Test Facilities

**TÜV Rheinland (Shenzhen) Co., Ltd.**
2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, China

FCC Accreditation Designation No.: 694916

ISED wireless device testing laboratory: 25069

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

| **Radio Spectrum Testing (TS8997)** | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. Date** | **Cal. until** |
| Signal Analyzer | R&S | FSV 40 | 101441 | 2025-09-23 | 2026-09-22 |
| OSP | R&S | OSP 150 | 101017 | 2025-10-30 | 2026-10-29 |
| Control PC | DELL | OptiPlex 7050 | FTJZ9P2 | N/A | N/A |
| Test Software | R&S | WMS32 (V11.00.00) | N/A | N/A | N/A |
| Power Meter | R&S | NRP2 | 107105 | 2025-10-30 | 2026-10-29 |
| Wideband Power Sensor | R&S | NRP-Z81 | 105677 | 2025-09-23 | 2026-09-22 |
| Shielding Room | Albatross | SR1 | APC17151-SR1 | 2024-09-14 | 2027-09-13 |
| **Unwanted Emission Testing (TS9975)** | | | | | |
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. Date** | **Cal. until** |
| EMI Test Receiver | R&S | ESR 7 | 102021 | 2025-09-22 | 2026-09-21 |
| Signal Analyzer | R&S | FSV 40 | 101439 | 2025-09-22 | 2026-09-21 |
| System Controller Interface | R&S | SCI-100 | S10010038 | N/A | N/A |
| Filterbank | R&S | Wlan | 100759 | 2025-09-22 | 2026-09-21 |
| OSP | R&S | OSP 120 | 102040 | N/A | N/A |
| Pre-amplifier | R&S | SCU08F1 | 08320031 | 2025-09-22 | 2026-09-21 |
| Amplifier | R&S | SCU-18F | 180070 | 2025-09-22 | 2026-09-21 |
| Amplifier | R&S | SCU40A | 100475 | 2025-09-22 | 2026-09-21 |
| Trilog Broadband Antenna (30 MHz - 7 GHz) | Schwarzbeck | VULB 9162 | 193 | 2024-09-28 | 2026-09-27 |
| Double-Ridged Antenna(1 -18 GHz) | ETS-LINDGREN | 3117 | 00218717 | 2024-09-28 | 2026-09-27 |
| Wideband Ridged Horn Antenna(18-40 GHz) | Steatite | QMS-00880 | 19067 | 2024-09-28 | 2026-09-27 |
| Active Loop Antenna | Schwarzbeck | FMZB 1513 | 302 | 2024-09-28 | 2026-09-27 |
| Test software | R&S | EMC32 (V10.60.10) | N/A | N/A | N/A |
| Control PC | Dell | OptiPlex 7050 | 36NV9P2 | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| 3m Semi-Anechoic Chamber | Albatross | SAC-3m | APC17151-SAC | 2024-09-14 | 2027-09-13 |

| **Conducted Emission** | | | | |
|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Cal. Until** |
| EMI Test Receiver | R&S | ESR3 | 102680 | 2026-02-09 |
| Artificial Mains Network | R&S | ENV216 | 102333 | 2026-07-18 |
| EMC32 Test Software | R&S | EMC32(Ver.10.60.20) | N/A | N/A |

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

## 2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

**Table 2: Measurement Uncertainty**

| Parameter | Uncertainty (k=2) |
|---|---|
| RF output power, conducted | ± 0.99 dB |
| Occupied Channel Bandwidth | ± 2.08 % |
| RF power density, conducted | ± 0.99 dB |
| Unwanted Emissions, conducted | ± 0.89 dB |
| All emissions, radiated | ± 4.17 dB |
| Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz) | ± 3.24 dB / ± 3.24 dB |

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

# 3 General Product Information

## 3.1 Product Function and Intended Use

The EUT is a Wireless Module which supports Bluetooth, 2.4GHz Wi-Fi and 5GHz Wi-Fi wireless technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

## 3.2 Ratings and System Details

**Table 3: Technical Specification of EUT**

| **General Information of EUT** | **Value** |
|---|---|
| Kind of Equipment: | IEEE 802.11a/b/g/n/ac 2T2R USB Wi-Fi&IR Module Integrated Bluetooth 2.1+EDR/4.2/5.3 |
| Type Designation: | SKI.WB822EU.12 |
| FCC ID: | 2AR82-SKIWB822EU12 |
| IC: | 24728-SKIWB822EU12 |
| HVIN: | SKI.WB822EU.12 |
| Operating Voltage: | 3.0Vdc-3.6Vdc |
| **Technical Specification of Bluetooth (dual mode)** | |
| Operating Frequency: | 2402 MHz to 2480 MHz |
| Type of Modulation: | GFSK, π/4-DQPSK, 8DPSK |
| Channel Number: | BR & EDR mode:79 channels, Low Energy mode:40 channels |
| Channel Separation: | BR & EDR mode:1MHz, Low Energy mode:2MHz |
| Data Rate: | BR & EDR mode: 1Mbps, 2Mbps, 3Mbps<br>Low Energy mode: 1Mbps, 2Mbps |
| Antenna Type: | PCB Layout Antenna |
| Antenna Gain: | 1.71 dBi (Provided by the Client) |
| **Technical Specification of 2.4GHz Wi-Fi** | |
| Operating Frequency: | 2412 - 2462MHz for 802.11b/g/n(HT20)<br>2422 - 2452MHz for 802.11n(HT40) |
| Type of Modulation: | DSSS(DBPSK/DQPSK/CCK)<br>OFDM(BPSK/QPSK/16QAM/64QAM) |
| Data Rate: | 1/2/5.5/11 Mbps for 802.11b<br>6/9/12/18/24/36/48/54 Mbps for 802.11g<br>MCS0 ~ MCS7 for 802.11n(HT20)/n(HT40) |
| Channel Number: | 11 channels for 802.11b/g/n(HT20)<br>7 channels for 802.11n(HT40) |
| Channel Separation: | 5 MHz |
| Antenna Type: | PCB Layout Antenna |
| Antenna Number: | 2Tx2Rx |
| Antenna Gain: | 1.56 dBi for ANT 0; 1.74dBi for ANT 1<br>(Provided by the Client) |
| **Technical Specification of 5GHz Wi-Fi** | |

| | |
|---|---|
| Operating Frequency: | 5180-5240MHz, 5260-5320MHz, 5500-5700MHz, 5745-5825MHz |
| Protocol: | 802.11 a/n20/n40/ac20/ac40/ac80 |
| Channel Number: | 5180-5240MHz, 7CHs<br>5260-5320MHz, 7CHs<br>5500-5700MHz, 18CHs<br>5745-5825MHz, 8CHs |
| Type of Modulation: | OFDM(BPSK/QPSK/16QAM/64QAM/256QAM) |
| Type of Device: | Slave device |
| Transmit Power control (TPC): | Not support |
| Data Rate: | 6/9/12/18/24/36/48/54 Mbps for 802.11a<br>MCS0~MCS7 for 802.11n<br>MCS0~MCS9 for 802.11ac |
| Channel Separation: | 20MHz, 40MHz, 80MHz |
| Antenna Type: | PCB Layout Antenna |
| Antenna Number: | 2Tx2Rx |
| Antenna Gain: | WIFI 0:<br>1.94dBi for U-NII Band 5150-5250MHz,<br>1.89dBi for U-NII Band 5250-5350MHz,<br>2.42dBi for U-NII Band 5470-5725MHz,<br>2.50dBi for U-NII Band 5745-5825MHz,<br>WIFI 1:<br>1.78dBi for U-NII Band 5150-5250MHz,<br>1.63dBi for U-NII Band 5250-5350MHz,<br>1.04dBi for U-NII Band 5470-5725MHz,<br>1.95dBi for U-NII Band 5745-5825MHz,<br>(Provided by the Client) |

Note: The correctness of all data provided by customer in the test report is ensured and responsible of the customer. Any misjudgment of the test results caused by the use of incorrect data provided by customer shall be borne by the customer.

**Table 4: RF Channel and Frequency of 2.4GHz Wi-Fi**

| RF Channel | 802.11 b/g/n(HT20) | 802.11 n(HT40) |
|---|---|---|
| | Frequency (MHz) | Frequency (MHz) |
| **01** | **2412** | **/** |
| 02 | 2417 | / |
| **03** | 2422 | **2422** |
| 04 | 2427 | 2427 |
| 05 | 2432 | 2432 |
| **06** | **2437** | **2437** |
| 07 | 2442 | 2442 |
| 08 | 2447 | 2447 |
| **09** | 2452 | **2452** |
| 10 | 2457 | / |
| **11** | **2462** | **/** |

Test frequencies are lowest channel: 2412 MHz, middle channel: 2437 MHz and highest channel: 2462 MHz for 802.11b/g/n(HT20)

Test frequencies are lowest channel: 2422 MHz, middle channel: 2437 MHz and highest channel: 2452 MHz for 802.11n(HT40)

## 3.3 Independent Operation Modes

The basic operation modes are:

A. On, 2.4GHz Wi-Fi wireless transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

B. On, BT+WIFI Link

C. Off

## 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

## 3.5 Submitted Documents

- Application Form
- Operation Description
- User Manual
- FCC/IC Label and Location Info

# 4 Test Set-up and Operation Modes

## 4.1 Principle of Configuration Selection

**Radio Spectrum:** The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

## 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024.

According to clause 3.1, all tests were performed on model *SKI.WB822EU.12* in this report.

## 4.3 Special Accessories and Auxiliary Equipment

**Table 5: List of Accessories and Auxiliary Equipment**

| Description | Manufacturer | Model | S/N |
|---|---|---|---|
| Laptop | Lenovo | T480 | PF-16A6N8 |
| Laptop | Lenovo | T480 | 10Q67059 |
| AC/DC Adapter | Lenovo | ADLX65YLC3D | N/A |

## 4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

# 4.5 Test Setup Diagram

**Diagram of Measurement Configuration for Radiation Test (Below 1GHz)**

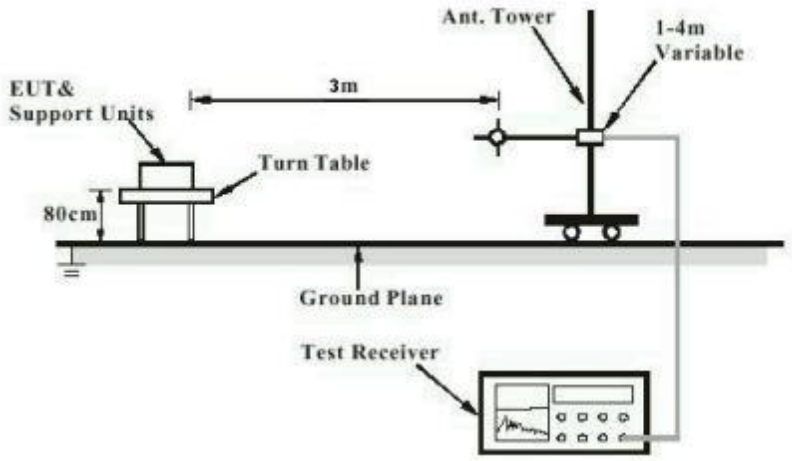



**Diagram of Measurement Configuration for Radiation Test (Above 1GHz)**

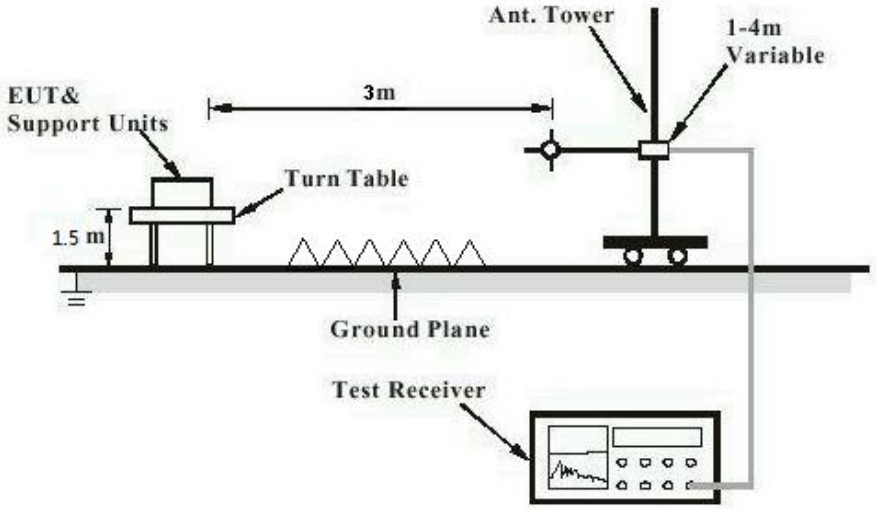


**Diagram of Measurement Configuration for Mains Conduction Measurement**

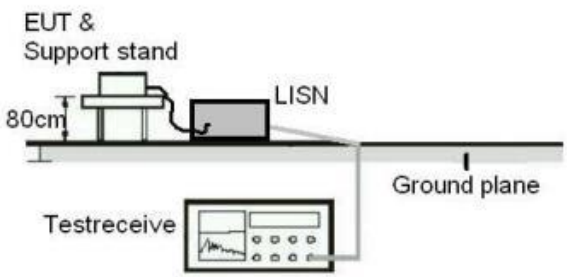
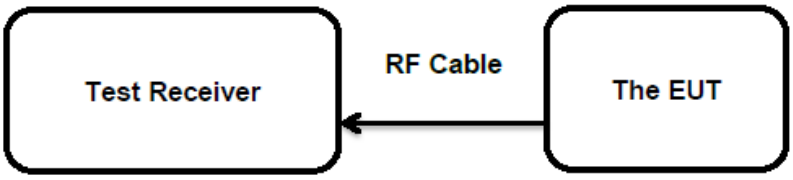



**Diagram of Measurement Configuration for Conducted Transmitter Measurement**



# 5 Test Results

## 5.1 Transmitter Requirement & Test Suites

### 5.1.1 Antenna Requirement

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(b)(4) and Part 15.203<br>RSS-Gen Clause 6.8 |

According to the manufacturer declared, the EUT has two PCB Layout Antennas, permanent attachment and no consideration of replacement, refer to section 3.2 for details.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

## 5.1.2 Maximum Peak Conducted Output Power

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(b)(3)<br>RSS-247 Clause 5.4(d) |
| Basic standard | : | ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024 |
| Limits | : | < 1.0 W |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2025-11-20 |
| Input voltage | : | DC 3.3V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.6 ℃ |
| Relative humidity | : | 48 % |
| Atmospheric pressure | : | 101 kPa |

For details refer to following test result.

**Table 6: Test Result of Maximum Peak Conducted Output Power**

Worst case_SISO ANT0

| Test Mode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| 11B | Ant0 | 2412 | 18.65 | ≤30.00 | PASS |
| | Ant0 | 2437 | 18.72 | ≤30.00 | PASS |
| | Ant0 | 2462 | 18.03 | ≤30.00 | PASS |
| 11G | Ant0 | 2412 | 20.45 | ≤30.00 | PASS |
| | Ant0 | 2437 | 20.79 | ≤30.00 | PASS |
| | Ant0 | 2462 | 20.86 | ≤30.00 | PASS |

Worst case: MIMO

| Test Mode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| 11N20MIMO | Ant0 | 2412 | 18.31 | ≤30.00 | PASS |
| | Ant1 | 2412 | 17.59 | ≤30.00 | PASS |
| | total | 2412 | 20.97 | ≤30.00 | PASS |
| | Ant0 | 2437 | 18.25 | ≤30.00 | PASS |
| | Ant1 | 2437 | 17.08 | ≤30.00 | PASS |
| | total | 2437 | 20.71 | ≤30.00 | PASS |
| | Ant0 | 2462 | 17.73 | ≤30.00 | PASS |
| | Ant1 | 2462 | 17.65 | ≤30.00 | PASS |
| | total | 2462 | 20.70 | ≤30.00 | PASS |
| 11N40MIMO | Ant0 | 2422 | 16.74 | ≤30.00 | PASS |
| | Ant1 | 2422 | 16.87 | ≤30.00 | PASS |
| | total | 2422 | 19.81 | ≤30.00 | PASS |
| | Ant0 | 2437 | 17.23 | ≤30.00 | PASS |
| | Ant1 | 2437 | 17.04 | ≤30.00 | PASS |
| | total | 2437 | 20.45 | ≤30.00 | PASS |
| | Ant0 | 2452 | 17.19 | ≤30.00 | PASS |
| | Ant1 | 2452 | 17.53 | ≤30.00 | PASS |
| | total | 2452 | 20.37 | ≤30.00 | PASS |

Max. e.i.r.p.=20.97dBm+4.66dBi=25.63dBm, which is less than 36dBm=4W.

Note:

1) The test system was pre-scanning tested based on the EUT wireless mode (802.11b/g/n20/n40, SISO and MIMO mode) and the worst-case SISO mode is 802.11b/g_antenna0, the worst-case MIMO mode is 802.11n20/n40_antenna0+1.
2) The cable loss is taken into account in results.
3) Antenna gain(G): 4.66 dBi for MIMO mode

   e.i.r.p.=$P_{(Peak\ power)}$+ G, which is far below the 4 W

## 5.1.3 Conducted Power Spectral Density

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(e)<br>RSS-247 Clause 5.2(b) |
| Basic standard | : | ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024 |
| Limits | : | < 8 dBm / 3kHz |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2025-11-20 |
| Input voltage | : | DC 3.3V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.6 ℃ |
| Relative humidity | : | 48 % |
| Atmospheric pressure | : | 101 kPa |

Note: The test system was pre-scanning tested based on the EUT wireless mode (802.11b/g/n20/n40, SISO and MIMO mode) and the worst-case SISO mode is 802.11b/g_antenna0, the worst-case MIMO mode is 802.11n20/n40_antenna0+1.

For the measurement records, refer to the appendix A.

## 5.1.4 6dB Bandwidth

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(a)(2)<br>RSS-247 Clause 5.2(a) |
| Basic standard | : | ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024 |
| Limits | : | > 500 kHz |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2025-11-20 |
| Input voltage | : | DC 3.3V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.6 ℃ |
| Relative humidity | : | 48 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

Remark: This testing was carried out on all operation modes, but only the worst case was presented in this report.

## 5.1.5 99% Bandwidth

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(a)<br>RSS-Gen Clause 6.7 |
| Basic standard | : | ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024 |
| Limits | : | Within assigned band 2400-2483.5MHz |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2025-11-20 |
| Input voltage | : | DC 3.3V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.6 ℃ |
| Relative humidity | : | 48 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

## 5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(d)<br>RSS-247 Clause 5.5 |
| Basic standard | : | ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024 |
| Limits | : | 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);<br>In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a) |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2025-11-20 |
| Input voltage | : | DC 3.3V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.6 ℃ |
| Relative humidity | : | 48 % |
| Atmospheric pressure | : | 101 kPa |

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A.

## 5.1.7 Radiated Spurious Emission

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(d) & FCC Part 15.205<br>RSS-247 Clause 3.3 |
| Basic standard | : | ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024 |
| Limits | : | Refer to 15.209(a) of FCC part 15.247(d)<br>RSS-Gen Section 8.9 & 8.10 |
| Kind of test site | : | 3m Semi-anechoic Chamber |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2025-11-29 to 2025-12-01 |
| Input voltage | : | DC 3.3V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | Refer to test results |
| Relative humidity | : | Refer to test results |
| Atmospheric pressure | : | 101 kPa |

Remark:
Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A.

## 5.1.8 Conducted Emission on AC Mains

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.207(a)<br>RSS-Gen Section 8.8 |
| Basic standard | : | ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024 |
| Frequency range | : | 0.15 – 30MHz |
| Classification | : | Class B |
| Limits | : | FCC Part 15.207(a)<br>RSS-Gen Table 4 |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2025-11-07 |
| Input voltage | : | AC 120V, 60Hz (PC input voltage) |
| Operation mode | : | B |
| Ambient temperature | : | Refer to test result |
| Relative humidity | : | Refer to test result |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

# 6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

# 7 List of Tables

Table 1: List of Test and Measurement Equipment ..... 6
Table 2: Measurement Uncertainty ..... 7
Table 3: Technical Specification of EUT ..... 8
Table 4: RF Channel and Frequency of 2.4GHz Wi-Fi ..... 9
Table 5: List of Accessories and Auxiliary Equipment ..... 11
Table 6: Test Result of Maximum Peak Conducted Output Power ..... 16