

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                   |  |                                                                                    |  |                                          |  |                                      |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------|--|------------------------------------------|--|--------------------------------------|--|
| <b>Prüfbericht-Nr.:</b><br>Test report no.:                                                                                                                                                                                                                                                                                                                                                                                                                         |  | <b>CN23CPBF 001</b>                                                               |  | <b>Auftrags-Nr.:</b><br>Order no.:                                                 |  | <b>168435417</b>                         |  | Seite 1 von 22<br>Page 1 of 22       |  |
| <b>Kunden-Referenz-Nr.:</b><br>Client reference no.:                                                                                                                                                                                                                                                                                                                                                                                                                |  | <b>N/A</b>                                                                        |  | <b>Auftragsdatum:</b><br>Order date:                                               |  | <b>2023-05-17</b>                        |  |                                      |  |
| <b>Auftraggeber:</b><br>Client:                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | Honeywell International Inc.<br>12 Clintonville Road, Northford, CT 06472, USA    |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Prüfgegenstand:</b><br>Test item:                                                                                                                                                                                                                                                                                                                                                                                                                                |  | I/O Module                                                                        |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Bezeichnung / Typ-Nr.:</b><br>Identification / Type no.:                                                                                                                                                                                                                                                                                                                                                                                                         |  | IQ5-IO-8DI-B                                                                      |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Auftrags-Inhalt:</b><br>Order content:                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Test Report                                                                       |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Prüfgrundlage:</b><br>Test specification:                                                                                                                                                                                                                                                                                                                                                                                                                        |  | CFR47 FCC Part 15: Subpart C Section 15.247<br>RSS-247 Issue 3<br>RSS-Gen Issue 5 |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Wareneingangsdatum:</b><br>Date of sample receipt:                                                                                                                                                                                                                                                                                                                                                                                                               |  | 2023-07-03                                                                        |  | Please refer to Photo Document                                                     |  |                                          |  |                                      |  |
| <b>Prüfmuster-Nr.:</b><br>Test sample no:                                                                                                                                                                                                                                                                                                                                                                                                                           |  | A003511968-001, 002<br>A003516465-012,<br>A003508525-014                          |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Prüfzeitraum:</b><br>Testing period:                                                                                                                                                                                                                                                                                                                                                                                                                             |  | 2023-07-27 - 2023-08-07                                                           |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Ort der Prüfung:</b><br>Place of testing:                                                                                                                                                                                                                                                                                                                                                                                                                        |  | TÜV Rheinland (Shenzhen)<br>Co., Ltd.                                             |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Prüflaboratorium:</b><br>Testing laboratory:                                                                                                                                                                                                                                                                                                                                                                                                                     |  | TÜV Rheinland (Shenzhen)<br>Co., Ltd.                                             |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Prüfergebnis*:</b><br>Test result*:                                                                                                                                                                                                                                                                                                                                                                                                                              |  | Pass                                                                              |  |                                                                                    |  |                                          |  |                                      |  |
| <b>geprüft von:</b><br>tested by:                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                   |  | <b>genehmigt von:</b><br>authorized by:                                            |  |                                          |  |                                      |  |
| X <u>Bell Hu</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                   |  | X <u>Jonathan Li</u>                                                               |  |                                          |  |                                      |  |
| <b>Datum:</b><br>Date: 2023-12-13                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                   |  | <b>Ausstellungsdatum:</b><br>Issue date: 2023-12-13                                |  |                                          |  |                                      |  |
| Signed by: Bell Hu                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                   |  | Signed by: Jonathan Li                                                             |  |                                          |  |                                      |  |
| <b>Stellung / Position:</b><br>Sachverständige(r)/Expert                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                   |  | <b>Stellung / Position:</b><br>Sachverständige(r)/Expert                           |  |                                          |  |                                      |  |
| <b>Sonstiges / Other:</b><br>FCC ID: 2A8LT-IQ5IODI<br>IC: 1609A-IQ5IODI<br>HVIN: 601005<br>PMN: IQ5-IO-8DI-B                                                                                                                                                                                                                                                                                                                                                        |  |                                                                                   |  |                                                                                    |  |                                          |  |                                      |  |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br>Condition of the test item at delivery:                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                   |  | <b>Prüfmuster vollständig und unbeschädigt</b><br>Test item complete and undamaged |  |                                          |  |                                      |  |
| * Legende: 1 = sehr gut 2 = gut<br>P(ass) = entspricht o.g. Prüfgrundlage(n)                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                                                   |  | Sachverständige(r)/Expert<br>F(ail) = entspricht nicht o.g. Prüfgrundlage(n)       |  | Sachverständige(r)<br>Sachverständige(r) |  | 5 = mangelhaft<br>Sachverständige(r) |  |
| * Legend: 1 = very good 2 = good<br>P(ass) = passed a.m. test specification(s)                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                   |  | Sachverständige(r)/Expert<br>F(ail) = failed a.m. test specification(s)            |  | Sachverständige(r)<br>Sachverständige(r) |  | 5 = poor<br>Sachverständige(r)       |  |
| <p><b>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.</b><br/> <i>This test report only relates to the a. m. 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.</i></p> |  |                                                                                   |  |                                                                                    |  |                                          |  |                                      |  |

V05

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**Anmerkungen**  
Remarks

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p>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.</p> <p>Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</p> <p><i>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.</i></p> <p><i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i></p>                                                                                                                                                |
| 2 | <p>As contractually agreed, this document has been signed digitally only. TÜV 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, TÜV 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.</p> <p><i>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.</i></p>                                                                                      |
| 3 | <p>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</p> <p><i>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4 | <p>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 115:2021, 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.</p> <p><i>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, 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 bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</i></p> |

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## ***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*

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# 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: Photographs of the Test Set-up

Appendix B: Test Results of Bluetooth Low energy

## 2 Test Sites

### 2.1 Test Facilities

**TÜV Rheinland (Shenzhen) Co., Ltd.**

No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Registration No.: 694916

IC Registration No.: 25069 and the CAB identifier is CN0078.

### 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. until |
| EXA Signal Analyzer, Multi-touch               | Keysight     | N9010B           | MY60241175 | 21.09.2024 |
| MXG X-Series RF Vector Signal Generator        | Keysight     | N5182B           | MY61250137 | 21.09.2024 |
| EXG X-Series Microwave Analog Signal Generator | Keysight     | N5173B           | MY61250141 | 21.09.2024 |
| DC Power Supply                                | Keysight     | E3642A           | MY61276100 | 21.09.2024 |
| Wireless Connectivity Tester                   | R&S          | CMW270           | 102505     | 21.09.2024 |
| Power Control Unit                             | Tonscend     | JS0806-4ADC      | N/A        | 21.09.2024 |
| Automation Control Unit                        | Tonscend     | JS0806-2         | 21C8060396 | 21.09.2024 |
| Test Software                                  | Tonscend     | JS1120-3         | N/A        | N/A        |
| Control PC                                     | Lenovo       | TianYi510S-071MB | Y LX23JMF  | N/A        |
| Unwanted Emission Testing (TS9975)             |              |                  |            |            |
| Equipment                                      | Manufacturer | Model            | Serial No. | Cal. until |
| EMI Test Receiver                              | R&S          | ESR 7            | 102021     | 25.07.2024 |
| Signal Analyzer                                | R&S          | FSV 40           | 101439     | 25.07.2024 |
| System Controller Interface                    | R&S          | SCI-100          | S10010038  | N/A        |
| Filterbank                                     | R&S          | Wlan             | 100759     | 25.07.2024 |
| OSP                                            | R&S          | OSP 120          | 102040     | N/A        |
| Pre-amplifier                                  | R&S          | SCU08F1          | 08320031   | 25.07.2024 |
| Amplifier                                      | R&S          | SCU-18F          | 180070     | 25.07.2024 |
| Amplifier                                      | R&S          | SCU40A           | 100475     | 25.07.2024 |
| Trilog Broadband Antenna (30 MHz - 7 GHz)      | Schwarzbeck  | VULB 9162        | 193        | 06.08.2024 |
| Double-Ridged Antenna (1 -18 GHz)              | ETS-LINDGREN | 3117             | 00218717   | 06.08.2024 |
| Wideband Ridged Horn Antenna                   | Steatite     | QMS-00880        | 19067      | 27.08.2024 |

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|                          |             |                      |              |            |
|--------------------------|-------------|----------------------|--------------|------------|
| (18-40 GHz)              |             |                      |              |            |
| Active Loop Antenna      | Schwarzbeck | FMZB 1513            | 302          | 06.08.2024 |
| Test software            | R&S         | EMC32<br>(V10.60.10) | N/A          | N/A        |
| Control PC               | Dell        | OptiPlex 7050        | 36NV9P2      | N/A        |
| 3m Semi-Anechoic Chamber | Albatross   | SAC-3m               | APC17151-SAC | 22.06.2024 |

| Conducted Emission       |              |                     |            |            |
|--------------------------|--------------|---------------------|------------|------------|
| Equipment                | Manufacturer | Model No.           | Serial No. | Cal. Until |
| EMI Test Receiver        | R&S          | ESR3                | 102428     | 30.07.2024 |
| Artificial Mains Network | R&S          | ENV216              | 102333     | 30.07.2024 |
| EMC32 test software      | R&S          | EMC32(Ver.10.50.00) | 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 basis 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.

| Parameter                                              | Uncertainty (k=2)     |
|--------------------------------------------------------|-----------------------|
| Occupied Channel Bandwidth                             | ± 2.08 %              |
| RF output power, conducted                             | ± 0.99 dB             |
| Unwanted Emissions, conducted                          | ± 0.89 dB             |
| All emissions, radiated                                | ± 4.17 dB             |
| Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz) | ± 3.70 dB / ± 3.30 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.

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## 2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. 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 I/O Module, which supports Bluetooth (Low Energy) wireless technology.  
For details refer to the User Manual, Technical Description and Circuit Diagram.

### 3.2 Ratings and System Details

Table 2: Technical Specification of EUT

| General Information of EUT                        | Value                                            |
|---------------------------------------------------|--------------------------------------------------|
| Kind of Equipment:                                | I/O Module                                       |
| Type Designation:                                 | IQ5-IO-8DI-B                                     |
| FCC ID:                                           | 2A8LT-IQ5IODI                                    |
| IC:                                               | 1609A-IQ5IODI                                    |
| HVIN:                                             | 601005                                           |
| PMN:                                              | IQ5-IO-8DI-B                                     |
| Operating Voltage:                                | AC/DC 24V                                        |
| Testing Voltage:                                  | AC 120V, 60Hz (AC-AC Adapter with AC 24V output) |
| Technical Specification of Bluetooth (Low Energy) |                                                  |
| Frequency Range:                                  | 2402 MHz to 2480 MHz                             |
| Type of Modulation:                               | GFSK                                             |
| Channel Number:                                   | 40 channels                                      |
| Data Rate:                                        | 2Mbps, 1Mbps, 500kbps, 125kbps                   |
| Channel Separation:                               | 2 MHz                                            |
| Antenna Type:                                     | Integral antenna                                 |
| Antenna Gain:                                     | 2.24 dBi                                         |

**Table 3: RF Channel and Frequency of Bluetooth (Low Energy)**

| RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) |
|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|
| <b>0</b>   | <b>2402</b>     | 10         | 2422            | 20         | 2442            | 30         | 2462            |
| 1          | 2404            | 11         | 2424            | 21         | 2444            | 31         | 2464            |
| 2          | 2406            | 12         | 2426            | 22         | 2446            | 32         | 2466            |
| 3          | 2408            | 13         | 2428            | 23         | 2448            | 33         | 2468            |
| 4          | 2410            | 14         | 2430            | 24         | 2450            | 34         | 2470            |
| 5          | 2412            | 15         | 2432            | 25         | 2452            | 35         | 2472            |
| 6          | 2414            | 16         | 2434            | 26         | 2454            | 36         | 2474            |
| 7          | 2416            | 17         | 2436            | 27         | 2456            | 37         | 2476            |
| 8          | 2418            | 18         | 2438            | 28         | 2458            | 38         | 2478            |
| 9          | 2420            | <b>19</b>  | <b>2440</b>     | 29         | 2460            | <b>39</b>  | <b>2480</b>     |

Test frequencies are lowest channel: 2402 MHz, middle channel: 2440 MHz and highest channel: 2480 MHz

### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth Low Energy transmitting mode
  - 1) Low Channel
  - 2) Middle Channel
  - 3) High Channel
- B. On, Normal Working with Bluetooth connected
- C. Off

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

### 3.5 Submitted Documents

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

## 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: 2013.

### 4.3 Special Accessories and Auxiliary Equipment

Table 4: Auxiliary Equipment Used during Test

| Name             | Model        | Manufacturer |
|------------------|--------------|--------------|
| Portable Laptop  | E5440        | DELL         |
| Phone            | K30          | Redmi        |
| AC-AC Adapter    | MOD_EL_66    | Emperor Ling |
| Wiring Adapter   | IQ5-IO-ADPT  | Honeywell    |
| I/O Module       | IQ5-IO-8DI-B | Honeywell    |
| Plant controller | CPO-PC600    | Honeywell    |
| Portable Laptop  | T480         | Lenovo       |

### 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)

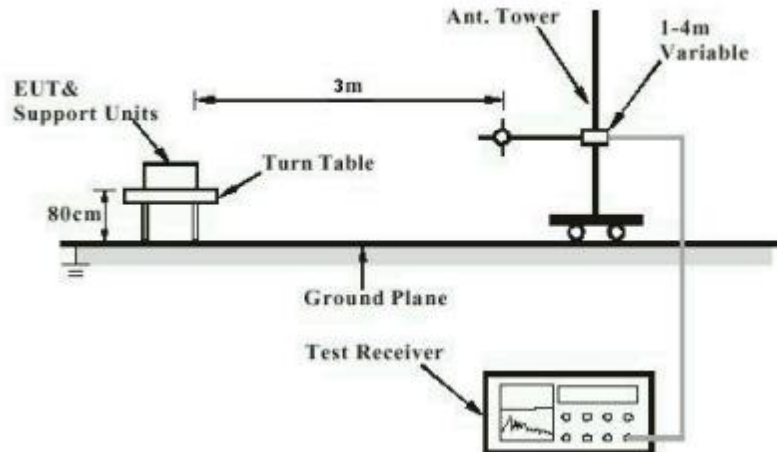
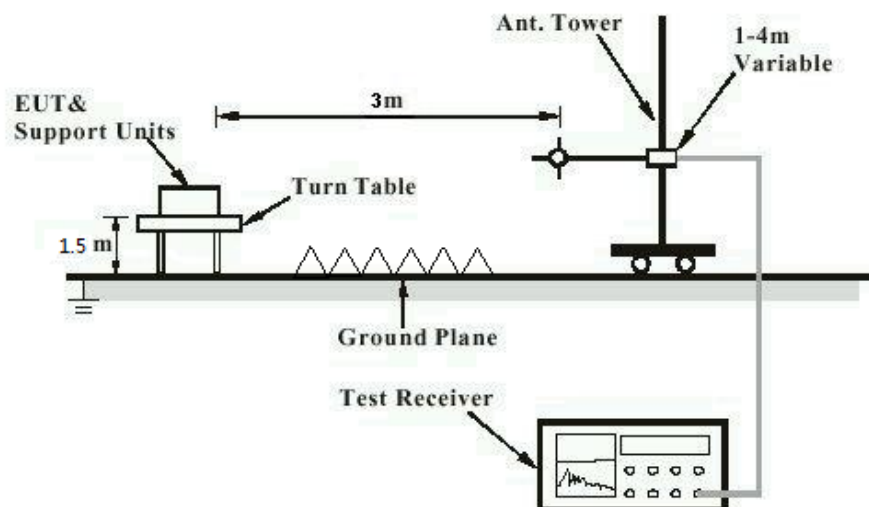
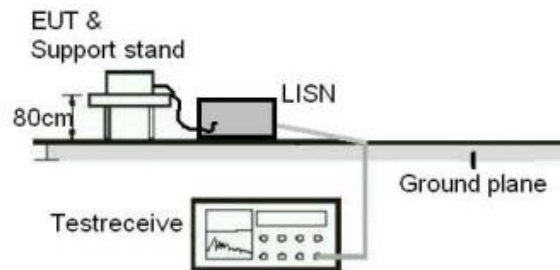


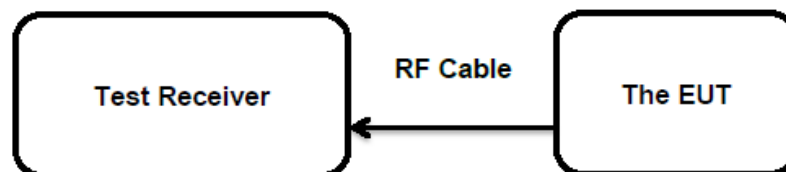
Diagram of Measurement Configuration for Radiation Test (Above 1GHz)



**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  
RSS-Gen Clause 6.8

The EUT has an Integral antenna, the directional gain of antenna is 2.24 dBi, permanent attachment and no consideration of replacement.

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

Refer to EUT Photo for further details.

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## 5.1.2 Maximum Peak Conducted Output Power

**RESULT:**

**Pass**

### Test Specification

Test standard : FCC Part 15.247(b)(3)  
RSS-247 Clause 5.4(d)  
Basic standard : ANSI C63.10: 2013  
Limits : 1.0 Watts  
Kind of test site : Shielded Room

### Test Setup

Date of testing : 2023-07-27  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 25.5 °C  
Relative humidity : 53 %  
Atmospheric pressure : 101 kPa

**Table 5: Test Result of Maximum Peak Conducted Output Power**

| Test Mode              | Data Rate | Test Channel (MHz) | Measured Peak Power |        | Limit (W) |
|------------------------|-----------|--------------------|---------------------|--------|-----------|
|                        |           |                    | (dBm)               | (W)    |           |
| Bluetooth (Low Energy) | 2Mbps     | 2402               | 9.36                | 0.0086 | < 1.0     |
|                        |           | 2440               | 9.40                | 0.0087 |           |
|                        |           | 2480               | 9.36                | 0.0086 |           |
|                        | 1Mbps     | 2402               | 9.31                | 0.0085 |           |
|                        |           | 2440               | 9.39                | 0.0087 |           |
|                        |           | 2480               | 9.36                | 0.0086 |           |
|                        | 500kbps   | 2402               | 9.36                | 0.0086 |           |
|                        |           | 2440               | 9.39                | 0.0087 |           |
|                        |           | 2480               | 9.36                | 0.0086 |           |
|                        | 125kbps   | 2402               | 9.40                | 0.0087 |           |
|                        |           | 2440               | 9.47                | 0.0089 |           |
|                        |           | 2480               | 9.43                | 0.0088 |           |
| Maximum Measured Value |           |                    | 9.47                | 0.0089 |           |

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G): 2.24 dBi,  
e.i.r.p.=P<sub>(Peak power)</sub>+ G, which is far below the 4 W

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### 5.1.3 Conducted Power Spectral Density

**RESULT:**

**Pass**

#### Test Specification

Test standard : FCC Part 15.247(e)  
RSS-247 Clause 5.2(b)  
Basic standard : ANSI C63.10: 2013  
Limits : < 8 dBm / 3kHz  
Kind of test site : Shielded Room

#### Test Setup

Date of testing : 2023-07-27  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 25.5 °C  
Relative humidity : 53 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

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### 5.1.4 6dB Bandwidth

**RESULT:**

**Pass**

#### Test Specification

Test standard : FCC Part 15.247(a)(2)  
RSS-247 Clause 5.2(a)  
Basic standard : ANSI C63.10: 2013  
Limits : > 500 KHz  
Kind of test site : Shielded Room

#### Test Setup

Date of testing : 2023-07-27  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 25.5 °C  
Relative humidity : 53 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

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### 5.1.5 99% Bandwidth

**RESULT:**

**Pass**

#### Test Specification

Test standard : RSS-Gen Clause 6.7  
Basic standard : ANSI C63.10: 2013  
Kind of test site : Shielded Room

#### Test Setup

Date of testing : 2023-07-27  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 25.5 °C  
Relative humidity : 53 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

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## 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: 2013                                                                                                                                                                                                                                                |
| 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      | : 2023-07-27          |
| Input voltage        | : AC 120V, 60Hz       |
| Operation mode       | : A                   |
| Test channel         | : Low / Middle / High |
| Ambient temperature  | : 25.5 °C             |
| Relative humidity    | : 53 %                |
| 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 B.

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### 5.1.7 Radiated Spurious Emission

**RESULT:**

**Pass**

#### Test Specification

Test standard : FCC Part 15.247(d) & FCC Part 15.205  
RSS-247 Clause 3.3  
Basic standard : ANSI C63.10: 2013  
Limits : Refer to 15.209(a) of FCC part 15.247(d)  
RSS-Gen Section 8.9 & 8.10  
Kind of test site : 3m Semi-anechoic Chamber

#### Test Setup

Date of testing : 2023-08-02 - 2023-08-03  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : Refer to test result  
Relative humidity : Refer to test result  
Atmospheric pressure : 101 kPa

#### Remark:

Testing 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 B.

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### 5.1.8 Conducted Emission on AC Mains

**RESULT:**

**Pass**

**Test Specification**

|                   |                                            |
|-------------------|--------------------------------------------|
| Test standard     | : FCC Part 15.207(a)<br>RSS-Gen Clause 8.8 |
| Basic standard    | : ANSI C63.10: 2013                        |
| Frequency range   | : 0.15 – 30MHz                             |
| Classification    | : Class B                                  |
| Limits            | : FCC Part 15.207(a)<br>RSS-Gen Table 3    |
| Kind of test site | : Shielded Room                            |

**Test Setup**

|                      |                 |
|----------------------|-----------------|
| Date of testing      | : 2023-08-07    |
| Input voltage        | : AC 120V, 60Hz |
| Operation mode       | : B             |
| Earthing             | : Not connected |
| Ambient temperature  | : 25.8 °C       |
| Relative humidity    | : 58.7 %        |
| Atmospheric pressure | : 101 kPa       |

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

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

7 List of Tables

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