

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                           |                                                 |                                          |                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Prüfbericht-Nr.:</b><br>Test report no.:                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>CN26B33F 002</b>                                                                                                                       | <b>Auftrags-Nr.:</b><br>Order no.:              | 27231104                                 | Seite 1 von 21<br>Page 1 of 21                                                                       |
| <b>Kunden-Referenz-Nr.:</b><br>Client reference no.:                                                                                                                                                                                                                                                                                                                                                                                                          | N/A                                                                                                                                       | <b>Auftragsdatum:</b><br>Order date:            | 2026-04-23                               |                                                                                                      |
| <b>Auftraggeber:</b><br>Client:                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Schneider Electric USA, Inc.</b><br>201 Washington Street, One Boston Place, Suite 2700, Boston, Massachusetts,<br>02108 United States |                                                 |                                          |                                                                                                      |
| <b>Prüfgegenstand:</b><br>Test item:                                                                                                                                                                                                                                                                                                                                                                                                                          | Temperature/Humidity Sensor                                                                                                               |                                                 |                                          |                                                                                                      |
| <b>Bezeichnung / Typ-Nr.:</b><br>Identification / Type no.:                                                                                                                                                                                                                                                                                                                                                                                                   | SAH232111<br>(Trademark:  )                              |                                                 |                                          |                                                                                                      |
| <b>Auftrags-Inhalt:</b><br>Order content:                                                                                                                                                                                                                                                                                                                                                                                                                     | Test Report                                                                                                                               |                                                 |                                          |                                                                                                      |
| <b>Prüfgrundlage:</b><br>Test specification:                                                                                                                                                                                                                                                                                                                                                                                                                  | CFR Title 47 FCC Part 15.247                                                                                                              |                                                 |                                          |                                                                                                      |
| <b>Wareneingangsdatum:</b><br>Date of sample receipt:                                                                                                                                                                                                                                                                                                                                                                                                         | 2026-09-14                                                                                                                                | (Please refer to Photo Document)                |                                          |                                                                                                      |
| <b>Prüfmuster-Nr.:</b><br>Test sample no.:                                                                                                                                                                                                                                                                                                                                                                                                                    | A004291725-002<br>A004291725-003                                                                                                          |                                                 |                                          |                                                                                                      |
| <b>Prüfzeitraum:</b><br>Testing period:                                                                                                                                                                                                                                                                                                                                                                                                                       | 2026-09-14 - 2026-09-28                                                                                                                   |                                                 |                                          |                                                                                                      |
| <b>Ort der Prüfung:</b><br>Place of testing:                                                                                                                                                                                                                                                                                                                                                                                                                  | TÜV Rheinland<br>(Shenzhen) Co., Ltd.                                                                                                     |                                                 |                                          |                                                                                                      |
| <b>Prüflaboratorium:</b><br>Testing laboratory:                                                                                                                                                                                                                                                                                                                                                                                                               | TÜV Rheinland<br>(Shenzhen) Co., Ltd.                                                                                                     |                                                 |                                          |                                                                                                      |
| <b>Prüfergebnis*:</b><br>Test result*:                                                                                                                                                                                                                                                                                                                                                                                                                        | Pass                                                                                                                                      |                                                 |                                          |                                                                                                      |
| <b>geprüft von:</b><br>tested by:                                                                                                                                                                                                                                                                                                                                                                                                                             |  <b>Hardy Suo</b>                                      |                                                 | <b>genehmigt von:</b><br>authorized by:  |  <b>Lin Lin</b> |
| <b>Datum:</b><br>Date:                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2026-10-10                                                                                                                                |                                                 | <b>Ausstellungsdatum:</b><br>Issue date: | 2026-10-10                                                                                           |
| <b>Stellung / Position:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                   | Sachverständige(r)/Expert                                                                                                                 |                                                 | <b>Stellung / Position:</b>              | Sachverständige(r)/Expert                                                                            |
| <b>Sonstiges / Other:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                     | FCC ID: 2AODLH23211<br><br>This report is for Bluetooth LE, 2.4GHz Thread.                                                                |                                                 |                                          |                                                                                                      |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br>Condition of the test item at delivery:                                                                                                                                                                                                                                                                                                                                                               | Prüfmuster vollständig und unbeschädigt<br>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                                                                                     |
| <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>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. |                                                                                                                                           |                                                 |                                          |                                                                                                      |

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**Anmerkungen**  
*Remarks*

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p>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.</p> <p>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</p> <p><i>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. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2 | <p>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: <a href="http://go.tuv.com/digital-signature">go.tuv.com/digital-signature</a></p> <p><i>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: <a href="http://go.tuv.com/digital-signature">go.tuv.com/digital-signature</a></i></p> |
| 3 | <p>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.</p> <p>Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</p> <p><i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i></p> <p><i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4 | <p>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.</p> <p><i>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.</i></p>                                                                                                                                                                                                                                                                                       |

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## ***TEST SUMMARY***

**5.1.1 ANTENNA REQUIREMENT**

RESULT: Pass

**5.1.2 MAXIMUM CONDUCTED PEAK OUTPUT POWER**

RESULT: Pass

**5.1.3 CONDUCTED POWER SPECTRAL DENSITY**

RESULT: Pass

**5.1.4 6dB BANDWIDTH**

RESULT: Pass

**5.1.5 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 kHz BANDWIDTH**

RESULT: Pass

**5.1.6 RADIATED SPURIOUS EMISSION**

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: Test Results of Bluetooth Low Energy

Appendix B: Test Results of 2.4GHz Thread

Appendix C: Photographs of 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, People's Republic of China

A2LA Certificate Number: 5162.01

FCC Test Site Number: CN1260

ISED Test Lab CAB identifier: CN0078

### 2.2 List of Test and Measurement Instruments

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

| <b>Radio Spectrum Testing (SRD-Tonscend)</b> |                                                |                     |                  |                   |                                   |                                    |
|----------------------------------------------|------------------------------------------------|---------------------|------------------|-------------------|-----------------------------------|------------------------------------|
| <b>Equip. No.</b>                            | <b>Description</b>                             | <b>Manufacturer</b> | <b>Model</b>     | <b>Serial No.</b> | <b>Cal. Date<br/>(DD.MM.YYYY)</b> | <b>Cal. until<br/>(DD.MM.YYYY)</b> |
| 9039436                                      | EXA Signal Analyzer, Multi-touch               | Keysight            | N9010B           | MY60241175        | 07.09.2026                        | 06.09.2027                         |
| 9039437                                      | MXG X-Series RF Vector Signal Generator        | Keysight            | N5182B           | MY61250137        | 07.09.2026                        | 06.09.2027                         |
| 9039438                                      | EXG X-Series Microwave Analog Signal Generator | Keysight            | N5173B           | MY61250141        | 07.09.2026                        | 06.09.2027                         |
| 9039439                                      | DC Power Supply                                | Keysight            | E3642A           | MY61276100        | 07.09.2026                        | 06.09.2027                         |
| 9039440                                      | Wireless Connectivity Tester                   | R&S                 | CMW270           | 102505            | 07.09.2026                        | 06.09.2027                         |
| 9039441                                      | Power Control Unit                             | Tonscend            | JS0806-4ADC      | N/A               | 07.09.2026                        | 06.09.2027                         |
| 9039442                                      | Automation Control Unit                        | Tonscend            | JS0806-2         | 21C8060396        | 07.09.2026                        | 06.09.2027                         |
| 9039443                                      | Test Software                                  | Tonscend            | JS1120-3         | N/A               | N/A                               | N/A                                |
| 9039444                                      | Control PC                                     | Lenovo              | TianYi510S-071MB | Y LX23JMF         | N/A                               | N/A                                |
| G1826483                                     | Humid & Temp Programmable Tester               | BOST                | NTH090-60        | 19040801          | 02.02.2026                        | 01.02.2027                         |
| <b>Unwanted Emission Testing (TS9975)</b>    |                                                |                     |                  |                   |                                   |                                    |
| <b>Equip. No.</b>                            | <b>Description</b>                             | <b>Manufacturer</b> | <b>Model</b>     | <b>Serial No.</b> | <b>Cal. Date<br/>(DD.MM.YYYY)</b> | <b>Cal. until<br/>(DD.MM.YYYY)</b> |
| G1826021                                     | EMI Test Receiver                              | R&S                 | ESR 7            | 102021            | 11.09.2026                        | 10.09.2027                         |
| G1826023                                     | Signal Analyzer                                | R&S                 | FSV 40           | 101439            | 11.09.2026                        | 10.09.2027                         |
| G1826024                                     | System Controller Interface                    | R&S                 | SCI-100          | S10010038         | N/A                               | N/A                                |
| G1826025                                     | Filterbank                                     | R&S                 | Wlan             | 100759            | 11.09.2026                        | 10.09.2027                         |
| G1826026                                     | OSP                                            | R&S                 | OSP 120          | 102040            | N/A                               | N/A                                |
| G1826028                                     | Pre-amplifier                                  | R&S                 | SCU08F1          | 08320031          | 11.09.2026                        | 10.09.2027                         |
| G1826029                                     | Amplifier                                      | R&S                 | SCU-18F          | 180070            | 11.09.2026                        | 10.09.2027                         |
| G1826030                                     | Amplifier                                      | R&S                 | SCU40A           | 100475            | 11.09.2026                        | 10.09.2027                         |

|          |                                           |              |                   |              |            |            |
|----------|-------------------------------------------|--------------|-------------------|--------------|------------|------------|
| G1826031 | Trilog Broadband Antenna (30 MHz - 7 GHz) | Schwarzbeck  | VULB 9162         | 193          | 13.09.2026 | 12.09.2028 |
| G1826032 | Double-Ridged Antenna (1 -18 GHz)         | ETS-LINDGREN | 3117              | 00218717     | 13.09.2026 | 12.09.2028 |
| G1826033 | Wideband Ridged Horn Antenna (18-40 GHz)  | Steatite     | QMS-00880         | 19067        | 13.09.2026 | 12.09.2028 |
| G1826034 | Active Loop Antenna                       | Schwarzbeck  | FMZB 1513         | 302          | 13.09.2026 | 12.09.2028 |
| G1826036 | Test software                             | R&S          | EMC32 (V10.60.10) | N/A          | N/A        | N/A        |
| G1826037 | Control PC                                | Dell         | OptiPlex 7050     | 36NV9P2      | N/A        | N/A        |
| G1826433 | 3m Semi-Anechoic Chamber                  | Albatross    | SAC-3m            | APC17151-SAC | 14.09.2024 | 13.09.2027 |

## 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.

**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) | ± 3.70 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, C 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 2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, People's Republic of 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 Product is a Temperature/Humidity Sensor which supports Bluetooth LE, 2.4GHz Thread and NFC passive.

Note: NFC function is used to achieve 2.4GHz Thread pairing. It does not use SAH232111's source of power, but send data by passively returning energy received from a NFC reader's interrogating signal via load modulation.

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:                                         | Temperature/Humidity Sensor                                                                                                                                     |
| Type Designation:                                          | SAH232111                                                                                                                                                       |
| Trademark:                                                 |                                                                              |
| FCC ID:                                                    | 2AODLH23211                                                                                                                                                     |
| Operating Voltage:                                         | DC 3V (via build-in battery CR2450)                                                                                                                             |
| Testing Voltage:                                           | DC 3V (via build-in battery CR2450)                                                                                                                             |
| Operating Temperature Range:                               | -10 °C ~ +50 °C                                                                                                                                                 |
| Radiofrequency operating mode:                             | 1) Bluetooth LE: operating within 2400-2483.5 MHz<br>2) 2.4GHz Thread: operating within 2400-2483.5 MHz<br>3) NFC (passive): operating within 13.553-13.567 MHz |
| <b>Technical Specification of Bluetooth (Bluetooth LE)</b> |                                                                                                                                                                 |
| Operating Frequency:                                       | 2402 MHz to 2480 MHz                                                                                                                                            |
| Type of Modulation:                                        | GFSK                                                                                                                                                            |
| Channel Number:                                            | 40 channels                                                                                                                                                     |
| Channel Separation:                                        | 2MHz                                                                                                                                                            |
| Data Rate:                                                 | 1Mbps                                                                                                                                                           |
| Antenna Type:                                              | Integral Antenna                                                                                                                                                |
| Antenna Number:                                            | 1                                                                                                                                                               |
| Antenna Gain:                                              | 0.17dBi (Provided by the client)                                                                                                                                |
| The type of wideband data transmission equipment:          | Non-FHSS                                                                                                                                                        |
| <b>Technical Specification of 2.4GHz Thread</b>            |                                                                                                                                                                 |
| Operating Frequency:                                       | 2405 MHz to 2480 MHz                                                                                                                                            |
| Type of Modulation:                                        | OQPSK                                                                                                                                                           |
| Channel Number:                                            | 16 channels                                                                                                                                                     |
| Channel Separation:                                        | 5MHz                                                                                                                                                            |
| Data Rate:                                                 | 250kbps                                                                                                                                                         |

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|                                                   |                                  |
|---------------------------------------------------|----------------------------------|
| Antenna Type:                                     | Integral Antenna                 |
| Antenna Number:                                   | 1                                |
| Antenna Gain:                                     | 0.17dBi (Provided by the client) |
| The type of wideband data transmission equipment: | Non-FHSS                         |

**Table 4: RF Channel and Frequency of Bluetooth LE**

| RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) |
|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|
| 0          | 2402            | 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            | 19         | 2440            | 29         | 2460            | 39         | 2480            |

**Table 5: RF Channel and Frequency of 2.4GHz Thread**

| RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) |
|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|
| 11         | 2405            | 15         | 2425            | 19         | 2445            | 23         | 2465            |
| 12         | 2410            | 16         | 2430            | 20         | 2450            | 24         | 2470            |
| 13         | 2415            | 17         | 2435            | 21         | 2455            | 25         | 2475            |
| 14         | 2420            | 18         | 2440            | 22         | 2460            | 26         | 2480            |

### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth wireless mode (Low Energy)
  - 1 Transmitting (Low / Middle / High channel)
- B. On, 2.4GHz Thread wireless mode
  - 1 Transmitting (Low / Middle / High channel)

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

### 3.5 Submitted Documents

- |                              |                         |
|------------------------------|-------------------------|
| - Application Form           | - User Manual           |
| - ID Label and Location Info | - Operation Description |

## 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.

According to clause 3.1, all tests were performed on model SAH232111 in this report.

### 4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Accessories and Auxiliary Equipment

| Description | Manufacturer | Model | Remark         |
|-------------|--------------|-------|----------------|
| Laptop      | Lenovo       | T480  | S/N: PF-16A6N8 |

### 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)

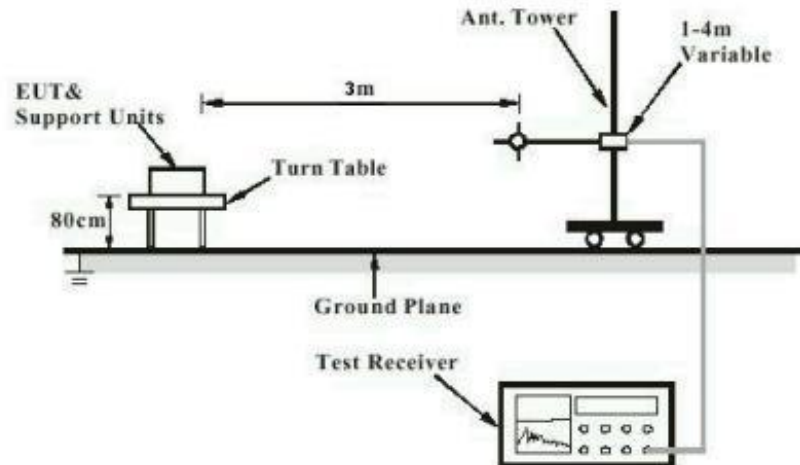


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

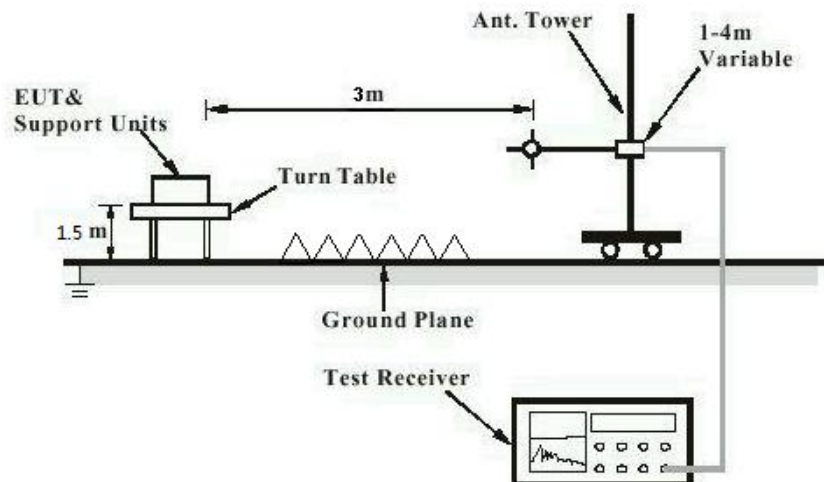
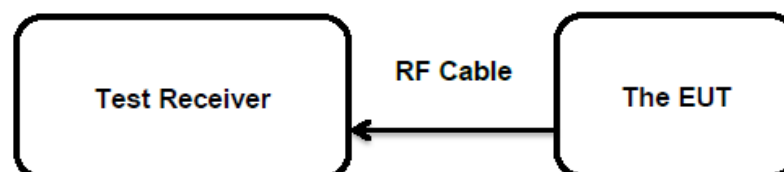


Diagram of Measurement Configuration for Conducted Transmitter Measurement



## 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

According to the manufacturer declared, the EUT has one integral antenna for Bluetooth LE / 2.4GHz Thread, and one loop integral antenna for NFC passive. The maximum directional gain is 0.17 dBi for Bluetooth LE / 2.4GHz Thread, the antenna connector is designed with 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 Conducted Peak Output Power

RESULT:

Pass

### Test Specification

|                   |                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------|
| Test standard     | : FCC Part 15.247(b)(3)                                                                       |
| Basic standard    | : ANSI C63.10-2020                                                                            |
| Limits            | : Maximum peak conducted output power (or maximum conducted output power) shall not exceed 1W |
| Kind of test site | : Shielded Room                                                                               |

### Test Setup

|                      |                                       |
|----------------------|---------------------------------------|
| Date of testing      | : 2026-09-14 - 2026-09-28             |
| Input voltage        | : DC 3V (via build-in battery CR2450) |
| Operation mode       | : A, B                                |
| Test channel         | : Low / Middle / High                 |
| Ambient temperature  | : 25.5 °C                             |
| Relative humidity    | : 56.5 %                              |
| Atmospheric pressure | : 101 kPa                             |

For details refer to following test result.

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**Table 7: Test Result of Maximum Conducted Peak Output Power, Bluetooth LE**

| Test Mode                                                           | Data Rate | Test Channel (MHz) | Measured Peak Power |        | Limit (W) |
|---------------------------------------------------------------------|-----------|--------------------|---------------------|--------|-----------|
|                                                                     |           |                    | (dBm)               | (W)    |           |
| Bluetooth LE                                                        | 1 Mbps    | 2402               | 5.56                | 0.0036 | < 1.0     |
|                                                                     |           | 2440               | 5.50                | 0.0035 |           |
|                                                                     |           | 2480               | 5.59                | 0.0036 |           |
| Maximum Measured Value                                              |           | 5.59               | 0.0036              |        |           |
| Max. e.i.r.p.=5.59dBm+0.17dBi=5.76dBm, which is less than 36dBm=4W. |           |                    |                     |        |           |

**Table 8: Test Result of Maximum Conducted Peak Output Power, 2.4GHz Thread**

| Test Mode                                                           | Data Rate | Test Channel (MHz) | Measured Peak Power |        | Limit (W) |
|---------------------------------------------------------------------|-----------|--------------------|---------------------|--------|-----------|
|                                                                     |           |                    | (dBm)               | (W)    |           |
| 2.4GHz Thread                                                       | 250 kbps  | 2405               | 7.71                | 0.0059 | < 1.0     |
|                                                                     |           | 2445               | 7.62                | 0.0058 |           |
|                                                                     |           | 2480               | 7.70                | 0.0059 |           |
| Maximum Measured Value                                              |           |                    | 7.71                | 0.0059 |           |
| Max. e.i.r.p.=7.71dBm+0.17dBi=7.88dBm, which is less than 36dBm=4W. |           |                    |                     |        |           |

Note:

- 1) The cable loss is taken into account in results.
- 2) Max. Antenna gain(G):  
0.17 dBi for Bluetooth LE and 2.4GHz Thread

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### 5.1.3 Conducted Power Spectral Density

**RESULT:**

**Pass**

#### Test Specification

|                   |                      |
|-------------------|----------------------|
| Test standard     | : FCC Part 15.247(e) |
| Basic standard    | : ANSI C63.10-2020   |
| Limits            | : < 8 dBm / 3kHz     |
| Kind of test site | : Shielded Room      |

#### Test Setup

|                      |                                       |
|----------------------|---------------------------------------|
| Date of testing      | : 2026-09-14 - 2026-09-28             |
| Input voltage        | : DC 3V (via build-in battery CR2450) |
| Operation mode       | : A, B                                |
| Test channel         | : Low / Middle / High                 |
| Ambient temperature  | : 25.5 °C                             |
| Relative humidity    | : 56.5 %                              |
| Atmospheric pressure | : 101 kPa                             |

For the measurement records, refer to the appendix A, B.

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### 5.1.4 6dB Bandwidth

**RESULT:****Pass****Test Specification**

|                   |   |                                                   |
|-------------------|---|---------------------------------------------------|
| Test standard     | : | FCC Part 15.247(a)(2)<br>RSS-247 Clause 6.3.1 (b) |
| Basic standard    | : | ANSI C63.10-2020                                  |
| Limits            | : | > 500 KHz                                         |
| Kind of test site | : | Shielded Room                                     |

**Test Setup**

|                      |   |                                     |
|----------------------|---|-------------------------------------|
| Date of testing      | : | 2026-09-14 - 2026-09-28             |
| Input voltage        | : | DC 3V (via build-in battery CR2450) |
| Operation mode       | : | A, B                                |
| Test channel         | : | Low / Middle / High                 |
| Ambient temperature  | : | 25.5 °C                             |
| Relative humidity    | : | 56.5 %                              |
| Atmospheric pressure | : | 101 kPa                             |

For the measurement records, refer to the appendix A, B.

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### 5.1.5 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

**RESULT:****Pass****Test Specification**

|                   |                                                                                                                                                                                                                                                                    |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test standard     | : FCC Part 15.247(d)                                                                                                                                                                                                                                               |
| Basic standard    | : ANSI C63.10-2020                                                                                                                                                                                                                                                 |
| 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      | : 2026-09-14 - 2026-09-28             |
| Input voltage        | : DC 3V (via build-in battery CR2450) |
| Operation mode       | : A, B                                |
| Test channel         | : Low / Middle / High                 |
| Ambient temperature  | : 25.5 °C                             |
| Relative humidity    | : 56.5 %                              |
| 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, B.

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## 5.1.6 Radiated Spurious Emission

**RESULT:****Pass****Test Specification**

|                   |                                            |
|-------------------|--------------------------------------------|
| Test standard     | : FCC Part 15.247(d) & FCC Part 15.205     |
| Basic standard    | : ANSI C63.10-2020                         |
| Limits            | : Refer to 15.209(a) of FCC part 15.247(d) |
| Kind of test site | : 3m Semi-anechoic Chamber                 |

**Test Setup**

|                      |                                       |
|----------------------|---------------------------------------|
| Date of testing      | : 2026-09-14 - 2026-09-28             |
| Input voltage        | : DC 3V (via build-in battery CR2450) |
| Operation mode       | : A, B                                |
| Test channel         | : Low / Middle / High                 |
| Ambient temperature  | : Refer to test result                |
| Relative humidity    | : Refer to test result                |
| 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 each mode was reported.

For the measurement records, refer to the appendix A, B.

## 6 Photographs of the Test Set-Up

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

## 7 List of Tables

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## Appendix A: Test Results of Bluetooth Low Energy

|                                                                             |           |
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## Appendix A.1: Test Results of 6dB Bandwidth

### *Test Result*

| TestMode | Antenna | Channel | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|--------------|----------|----------|------------|---------|
| BLE_1M   | Ant1    | 2402    | 0.704        | 2401.620 | 2402.324 | 0.5        | PASS    |
|          |         | 2442    | 0.648        | 2441.648 | 2442.296 | 0.5        | PASS    |
|          |         | 2480    | 0.664        | 2479.636 | 2480.300 | 0.5        | PASS    |

## Test Graphs



## Appendix A.2: Test Results of Conducted Power Spectral Density

### Test Result

| TestMode | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|---------|----------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402    | -8.45                | ≤8.00           | PASS    |
|          |         | 2442    | -8.44                | ≤8.00           | PASS    |
|          |         | 2480    | -7.32                | ≤8.00           | PASS    |

Test Graphs

BLE 1M Ant1\_2402



BLE 1M Ant1\_2442



BLE 1M Ant1\_2480



## Appendix A.3: Test Results of Band Edge Measurements

### *Test Result*

| TestMode | Antenna | ChName | Channel | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|--------|---------|---------------|-------------|------------|---------|
| BLE_1M   | Ant1    | Low    | 2402    | 3.73          | -39.28      | ≤-16.27    | PASS    |
|          |         | High   | 2480    | 4.52          | -39.63      | ≤-15.48    | PASS    |

Test Graphs

BLE 1M Ant1 Low 2402



BLE 1M Ant1 High 2480



## Appendix A.4: Test Results of Conducted Spurious Emission

### Test Result

| TestMode | Antenna | Channel | FreqRange<br>[MHz] | RefLevel<br>[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|--------------------|-------------------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402    | Reference          | 4.45              | 4.45        | ---        | PASS    |
|          |         |         | 30~1000            | 4.45              | -42.95      | ≤-15.55    | PASS    |
|          |         |         | 1000~26500         | 4.45              | -37.36      | ≤-15.55    | PASS    |
|          |         | 2442    | Reference          | 4.81              | 4.81        | ---        | PASS    |
|          |         |         | 30~1000            | 4.81              | -43.29      | ≤-15.19    | PASS    |
|          |         |         | 1000~26500         | 4.81              | -43.57      | ≤-15.19    | PASS    |
|          |         | 2480    | Reference          | 5.02              | 5.02        | ---        | PASS    |
|          |         |         | 30~1000            | 5.02              | -43.28      | ≤-14.98    | PASS    |
|          |         |         | 1000~26500         | 5.02              | -43.95      | ≤-14.98    | PASS    |

## Test Graphs

BLE 1M Ant1 2402 0~Reference



BLE 1M Ant1 2402 30~1000



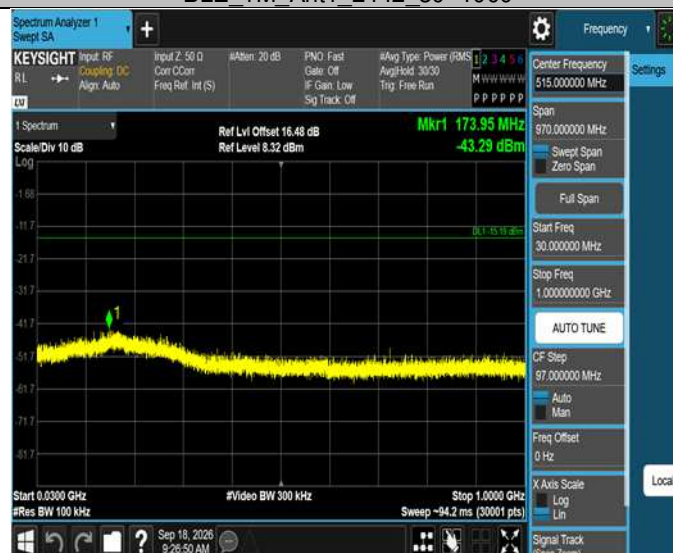
BLE 1M Ant1 2402 1000~26500



BLE 1M Ant1 2442 0~Reference



BLE 1M Ant1 2442 30~1000



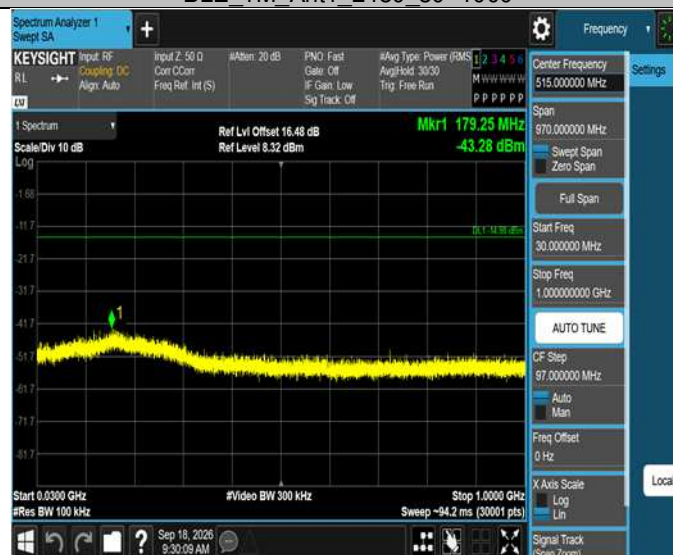
BLE 1M Ant1 2442 1000~26500



BLE 1M Ant1 2480 0~Reference



BLE 1M Ant1 2480 30~1000



BLE 1M Ant1 2480 1000~26500



## Appendix A.5: Test Results of Radiated Spurious Emissions

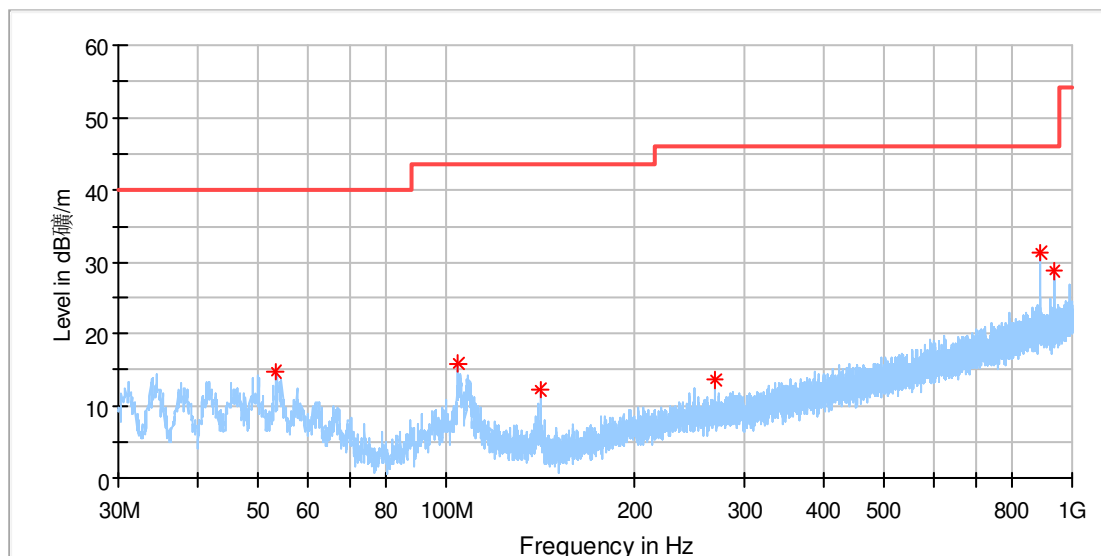
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz – 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30MHz - 1GHz

### EUT Information

|                     |                             |
|---------------------|-----------------------------|
| EUT Name:           | Temperature/Humidity Sensor |
| Model:              | SAH232111                   |
| Test Mode:          | BLE 1M_Mid channel          |
| Order No/Sample No: | 27231104/A004291725-003     |
| Test Voltage:       | Battery                     |
| Remark:             | Temp 23.8°C Humi:57%        |
| Test Standard:      | FCC 15.247                  |
| Tested By:          | Kei Zhang                   |
| Reviewed By:        | Terry Yin                   |



### Critical\_Freqs

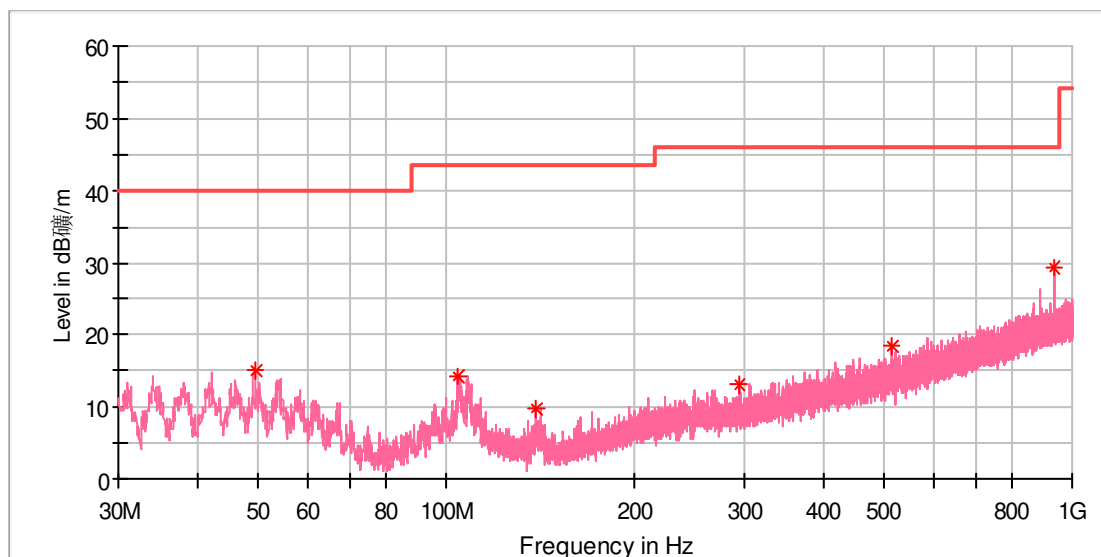
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 53.549444       | 14.74            | 40.00          | 25.26       | 100.0       | H   | 45.0          | -18.5        |
| 104.582222      | 15.81            | 43.50          | 27.69       | 100.0       | H   | 157.0         | -18.9        |
| 141.172778      | 12.40            | 43.50          | 31.10       | 100.0       | H   | 219.0         | -22.4        |
| 269.482222      | 13.68            | 46.00          | 32.32       | 100.0       | H   | 355.0         | -17.0        |
| 890.982778      | 31.20            | 46.00          | 14.80       | 100.0       | H   | 27.0          | -4.9         |
| 938.405000      | 28.81            | 46.00          | 17.19       | 100.0       | H   | 0.0           | -4.4         |

### Final\_Result

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-------------|-----|---------------|--------------|
| ---             | ---                | ---            | ---         | ---         | --- | ---           | ---          |

## EUT Information

EUT Name: Temperature/Humidity Sensor  
Model: SAH232111  
Test Mode: BLE 1M\_Mid channel  
Order No/Sample No: 27231104/A004291725-003  
Test Voltage: Battery  
Remark: Temp 23.8°C Humi:57%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



## Critical Freqs

| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 49.400000       | 15.08            | 40.00          | 24.92       | 100.0       | V   | 6.0           | -18.4        |
| 104.690000      | 14.34            | 43.50          | 29.16       | 100.0       | V   | 79.0          | -18.9        |
| 139.286667      | 9.69             | 43.50          | 33.81       | 100.0       | V   | 359.0         | -22.3        |
| 293.355000      | 13.16            | 46.00          | 32.84       | 100.0       | V   | 106.0         | -16.4        |
| 513.491111      | 18.39            | 46.00          | 27.61       | 100.0       | V   | 308.0         | -11.6        |
| 936.950000      | 29.43            | 46.00          | 16.57       | 100.0       | V   | 53.0          | -4.4         |

## Final Result

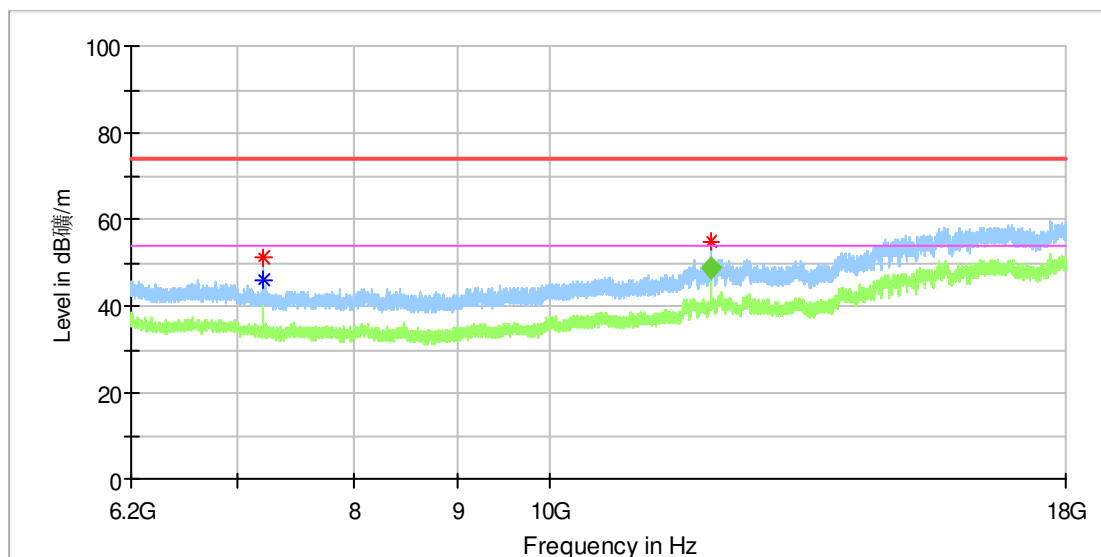
| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-------------|-----|---------------|--------------|
| ---             | ---                | ---            | ---         | ---         | --- | ---           | ---          |



| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.7               | 122.5               | 119.5               | 119.5             | 0.0            | 1.0            | V   | 135              | 0.0             |

## EUT Information

EUT Name: Temperature/Humidity Sensor  
Model: SAH232111  
Test Mode: BLE 1M\_Low channel  
Order No/Sample No: 27231104/A004291725-003  
Test Voltage: Battery  
Remark: Temp 23.8°C Humi:57%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



## Critical Freqs

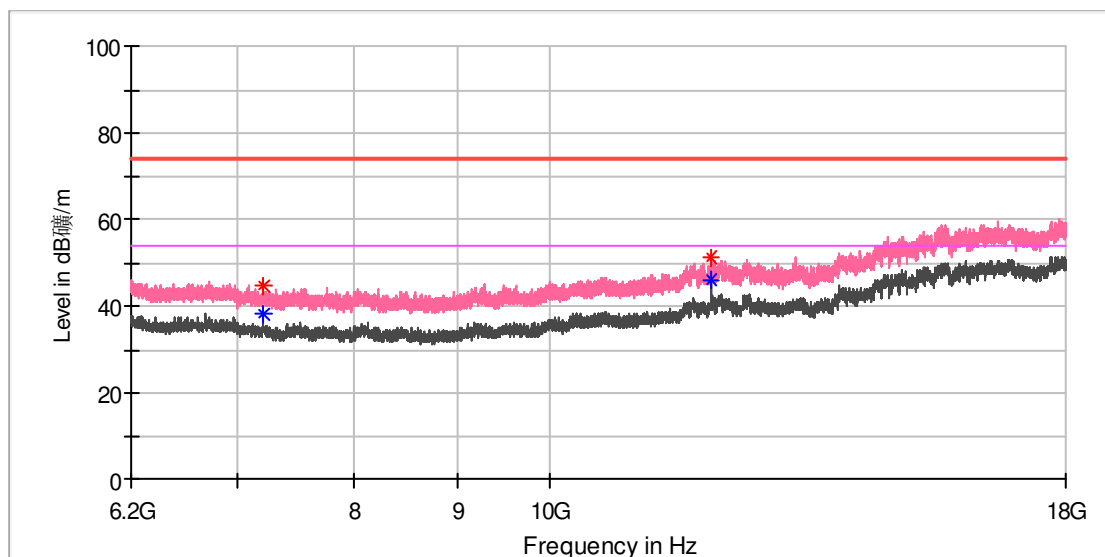
| Frequency (MHz) | MaxPeak (dBμV/m) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7204.966667     | 51.16            | ---              | 74.00          | 22.84       | 150.0       | H   | 210.0         | 8.8          |
| 7205.458333     | ---              | 46.09            | 54.00          | 7.91        | 150.0       | H   | 210.0         | 8.8          |
| 12011.008333    | 54.75            | ---              | 74.00          | 19.25       | 150.0       | H   | 175.0         | 15.5         |

## Final Result

| Frequency (MHz) | MaxPeak (dBμV/m) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 12011.111250    | ---              | 48.86            | 54.00          | 5.14        | 150.0       | H   | 175.0         | 15.5         |

## EUT Information

|                     |                             |
|---------------------|-----------------------------|
| EUT Name:           | Temperature/Humidity Sensor |
| Model:              | SAH232111                   |
| Test Mode:          | BLE 1M_Low channel          |
| Order No/Sample No: | 27231104/A004291725-003     |
| Test Voltage:       | Battery                     |
| Remark:             | Temp 23.8°C Humi:57%        |
| Test Standard:      | FCC 15.247                  |
| Tested By:          | Kei Zhang                   |
| Reviewed By:        | Terry Yin                   |



## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBμV/m) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7204.966667     | 44.57            | ---              | 74.00          | 29.43       | 150.0       | V   | 221.0         | 8.8          |
| 7205.458333     | ---              | 38.29            | 54.00          | 15.71       | 150.0       | V   | 244.0         | 8.8          |
| 12008.550000    | 51.09            | ---              | 74.00          | 22.91       | 150.0       | V   | 288.0         | 15.5         |
| 12008.550000    | ---              | 45.85            | 54.00          | 8.15        | 150.0       | V   | 288.0         | 15.5         |

## Final Result

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| ----               | ----                | ----                | ----              | ----           | ----           |     | ----             | ----            |

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.7               | 122.5               | 119.5               | 119.5             | 0.0            | 1.0            | V   | 135              | 0.0             |

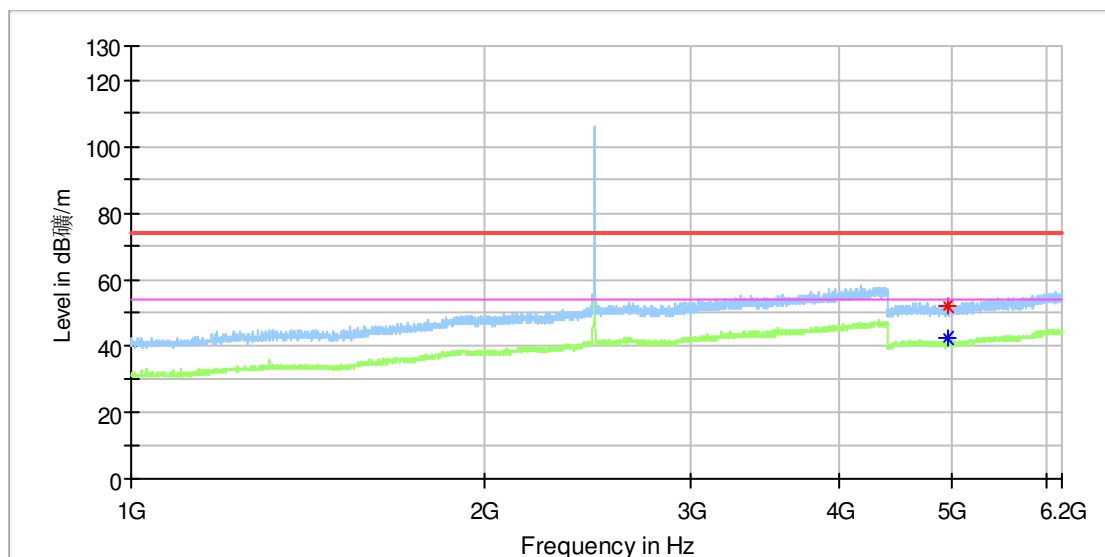


| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| ----               | ----                | ----                | ----              | ----           | ----           |     | ----             | ----            |



## EUT Information

|                     |                             |
|---------------------|-----------------------------|
| EUT Name:           | Temperature/Humidity Sensor |
| Model:              | SAH232111                   |
| Test Mode:          | BLE 1M_High channel         |
| Order No/Sample No: | 27231104/A004291725-003     |
| Test Voltage:       | Battery                     |
| Remark:             | Temp 23.8°C Humi:57%        |
| Test Standard:      | FCC 15.247                  |
| Tested By:          | Kei Zhang                   |
| Reviewed By:        | Terry Yin                   |



## Critical\_Freqs

| Frequency<br>(MHz) | MaxPeak<br>(dBµV/m) | Average<br>(dBµV/m) | Limit<br>(dBµV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 4960.000000        | 52.16               | ---                 | 74.00             | 21.84          | 150.0          | H   | 217.0            | 13.3            |
| 4960.000000        | ---                 | 42.18               | 54.00             | 11.82          | 150.0          | H   | 217.0            | 13.3            |

## Final Result

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 100.000000         | 100.000000          | 100.000000          | 100.000000        | 100.000000     | 100.000000     |     | 100.000000       |                 |





| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| ----               | ----                | ----                | ----              | ----           | ----           |     | ----             | ----            |

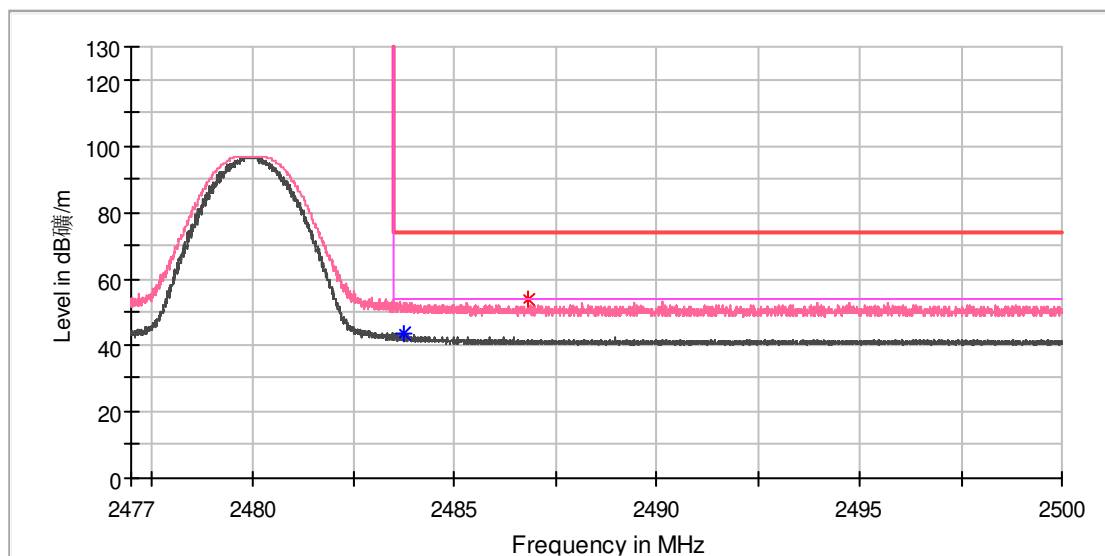
| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.7               | 122.5               | 122.5               | 122.5             | 0              | 100            | h   | 135              | 0               |

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| ----               | ----                | ----                | ----              | ----           | ----           |     | ----             | ----            |

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| ----               | ----                | ----                | ----              | ----           | ----           |     | ----             | ----            |

## EUT Information

|                     |                             |
|---------------------|-----------------------------|
| EUT Name:           | Temperature/Humidity Sensor |
| Model:              | SAH232111                   |
| Test Mode:          | BLE 1M_High channel         |
| Order No/Sample No: | 27231104/A004291725-003     |
| Test Voltage:       | Battery                     |
| Remark:             | Temp 23.8°C Humi:57%        |
| Test Standard:      | FCC 15.247                  |
| Tested By:          | Kei Zhang                   |
| Reviewed By:        | Terry Yin                   |



## Critical\_Freqs

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 2483.757353        | ---                 | 43.67               | 54.00             | 10.33          | 150.0          | V   | 301.0            | 9.0             |
| 2486.819853        | 53.68               | ---                 | 74.00             | 20.32          | 150.0          | V   | 239.0            | 9.0             |

## Final Result

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| ----               | ----                | ----                | ----              | ----           | ----           |     | ----             | ----            |

## Appendix B: Test Results of 2.4GHz Thread

|                                                                                  |           |
|----------------------------------------------------------------------------------|-----------|
| <b>APPENDIX B: TEST RESULTS OF 2.4GHZ THREAD.....</b>                            | <b>1</b>  |
| <b>APPENDIX B.1: TEST RESULTS OF 6DB BANDWIDTH .....</b>                         | <b>2</b>  |
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| Test Graphs.....                                                                 | 3         |
| <b>APPENDIX B.2: TEST RESULTS OF CONDUCTED POWER SPECTRAL DENSITY .....</b>      | <b>4</b>  |
| Test Result.....                                                                 | 4         |
| Test Graphs.....                                                                 | 5         |
| <b>APPENDIX B.3: TEST RESULTS OF BAND EDGE MEASUREMENTS.....</b>                 | <b>6</b>  |
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| Test Graphs.....                                                                 | 7         |
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## Appendix B.1: Test Results of 6dB Bandwidth

### *Test Result*

| TestMode | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|----------------|--------------|----------|----------|------------|---------|
| Thread   | Ant1    | 2405           | 1.690        | 2404.150 | 2405.840 | 0.5        | PASS    |
|          |         | 2445           | 1.660        | 2444.160 | 2445.820 | 0.5        | PASS    |
|          |         | 2480           | 1.650        | 2479.160 | 2480.810 | 0.5        | PASS    |

Test Graphs

Thread Ant1\_2405



Thread Ant1\_2445



Thread Ant1\_2480



## Appendix B.2: Test Results of Conducted Power Spectral Density

### Test Result

| TestMode | Antenna | Frequency[MHz] | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|----------------|----------------------|-----------------|---------|
| Thread   | Ant1    | 2405           | -7.96                | ≤8.00           | PASS    |
|          |         | 2445           | -8.79                | ≤8.00           | PASS    |
|          |         | 2480           | -8.16                | ≤8.00           | PASS    |

Test Graphs

Thread Ant1\_2405



Thread Ant1\_2445



Thread Ant1\_2480



## Appendix B.3: Test Results of Band Edge Measurements

### *Test Result*

| TestMode | Antenna | ChName | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|--------|----------------|---------------|-------------|------------|---------|
| Thread   | Ant1    | Low    | 2405           | 2.72          | -39.32      | ≤-17.29    | PASS    |
|          |         | High   | 2480           | 2.56          | -38.73      | ≤-17.44    | PASS    |

Test Graphs

Thread Ant1 Low 2405



Thread Ant1 High 2480



## Appendix B.4: Test Results of Conducted Spurious Emission

### Test Result

| TestMode | Antenna | Frequency[MHz] | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|----------------|-----------------|----------------|-------------|------------|---------|
| Thread   | Ant1    | 2405           | Reference       | 2.94           | 2.94        | ---        | PASS    |
|          |         |                | 30~1000         | 2.94           | -43.35      | ≤-17.06    | PASS    |
|          |         |                | 1000~26500      | 2.94           | -43.73      | ≤-17.06    | PASS    |
|          |         | 2445           | Reference       | 0.95           | 0.95        | ---        | PASS    |
|          |         |                | 30~1000         | 0.95           | -42.54      | ≤-19.05    | PASS    |
|          |         |                | 1000~26500      | 0.95           | -43.59      | ≤-19.05    | PASS    |
|          |         | 2480           | Reference       | 1.50           | 1.50        | ---        | PASS    |
|          |         |                | 30~1000         | 1.50           | -42.63      | ≤-18.5     | PASS    |
|          |         |                | 1000~26500      | 1.50           | -43.19      | ≤-18.5     | PASS    |

## Test Graphs

Thread Ant1\_2405\_0~Reference



Thread Ant1\_2405\_30~1000



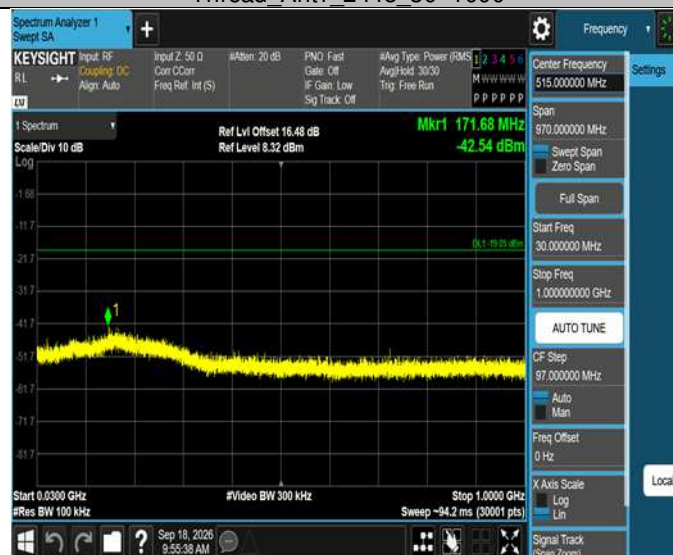
Thread Ant1\_2405\_1000~26500



Thread Ant1 2445 0~Reference



Thread Ant1 2445 30~1000



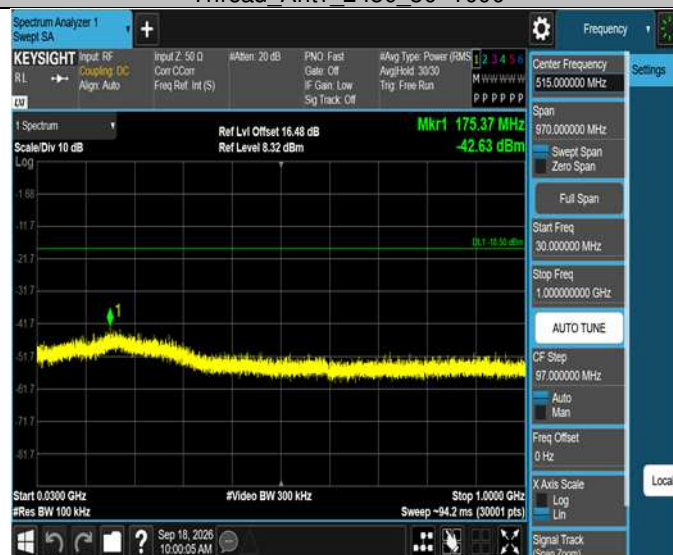
Thread Ant1 2445 1000~26500



### Thread Ant1 2480 0~Reference



### Thread Ant1 2480 30~1000



### Thread Ant1 2480 1000~26500



## Appendix B.5: Test Results of Radiated Spurious Emissions

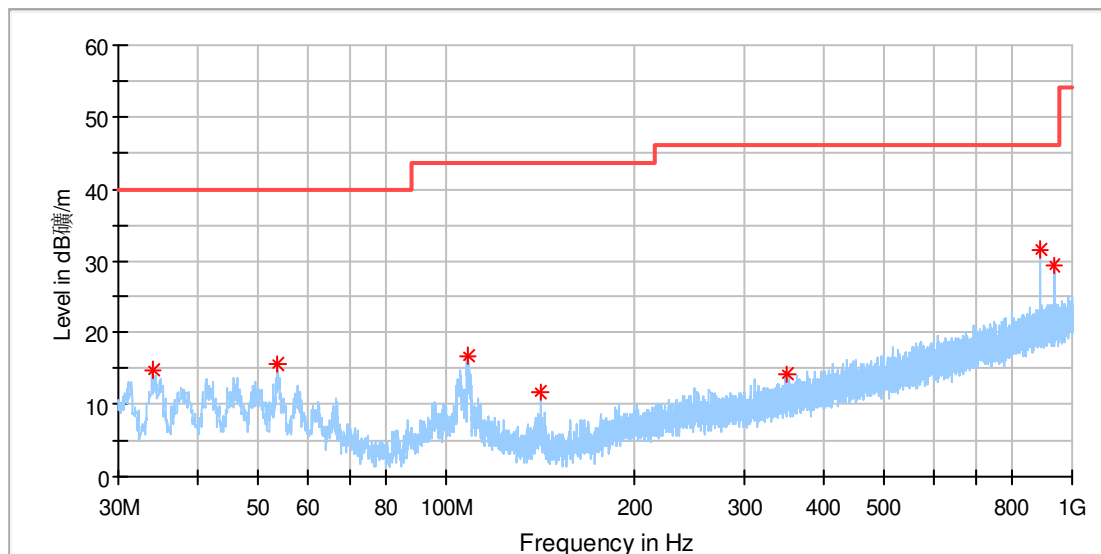
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz – 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30MHz - 1GHz

### EUT Information

|                     |                             |
|---------------------|-----------------------------|
| EUT Name:           | Temperature/Humidity Sensor |
| Model:              | SAH232111                   |
| Test Mode:          | Thread_Mid channel          |
| Order No/Sample No: | 27231104/A004291725-003     |
| Test Voltage:       | Battery                     |
| Remark:             | Temp 23 Humi:53%            |
| Test Standard:      | FCC 15.247                  |
| Tested By:          | Kei Zhang                   |
| Reviewed By:        | Terry Yin                   |



### Critical\_Freqs

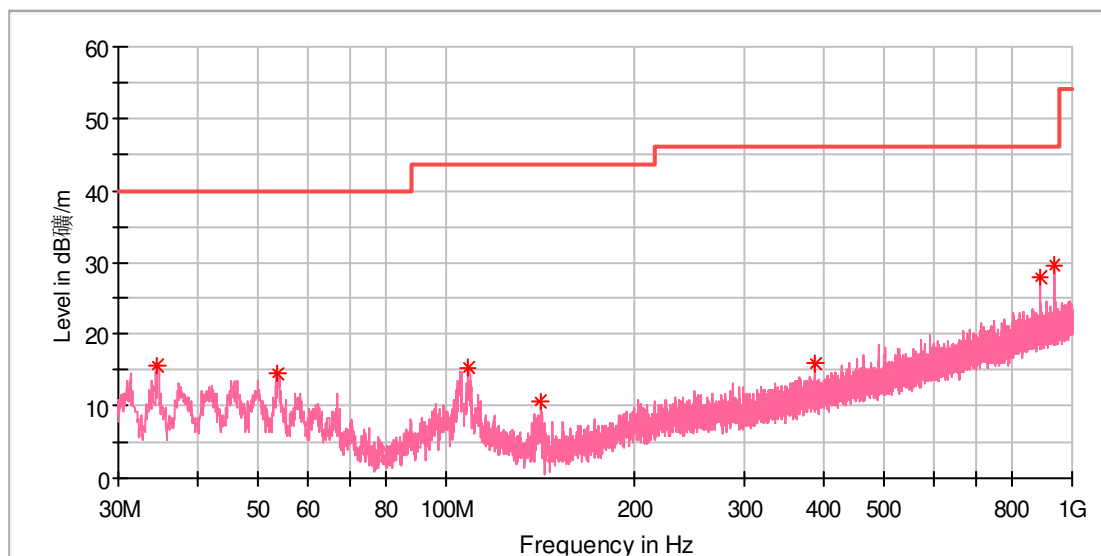
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 33.933889       | 14.73            | 40.00          | 25.27       | 100.0       | H   | 0.0           | -22.3        |
| 53.926667       | 15.50            | 40.00          | 24.50       | 100.0       | H   | 119.0         | -18.5        |
| 108.785556      | 16.78            | 43.50          | 26.72       | 100.0       | H   | 251.0         | -19.1        |
| 141.118889      | 11.72            | 43.50          | 31.78       | 100.0       | H   | 337.0         | -22.4        |
| 350.207778      | 14.34            | 46.00          | 31.66       | 100.0       | H   | 119.0         | -14.8        |
| 890.982778      | 31.52            | 46.00          | 14.49       | 100.0       | H   | 83.0          | -4.9         |
| 936.950000      | 29.44            | 46.00          | 16.56       | 100.0       | H   | 136.0         | -4.4         |

### Final\_Result

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-------------|-----|---------------|--------------|
| ---             | ---                | ---            | ---         | ---         | --- | ---           | ---          |

## EUT Information

|                     |                             |
|---------------------|-----------------------------|
| EUT Name:           | Temperature/Humidity Sensor |
| Model:              | SAH232111                   |
| Test Mode:          | Thread_Mid channel          |
| Order No/Sample No: | 27231104/A004291725-003     |
| Test Voltage:       | Battery                     |
| Remark:             | Temp 23 Humi:53%            |
| Test Standard:      | FCC 15.247                  |
| Tested By:          | Kei Zhang                   |
| Reviewed By:        | Terry Yin                   |



## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 34.634444       | 15.54            | 40.00          | 24.46       | 100.0       | V   | 345.0         | -22.1        |
| 53.603333       | 14.61            | 40.00          | 25.39       | 100.0       | V   | 264.0         | -18.5        |
| 108.785556      | 15.37            | 43.50          | 28.13       | 100.0       | V   | 201.0         | -19.1        |
| 141.172778      | 10.47            | 43.50          | 33.03       | 100.0       | V   | 218.0         | -22.4        |
| 389.654444      | 15.94            | 46.00          | 30.06       | 100.0       | V   | 175.0         | -14.0        |
| 890.982778      | 27.91            | 46.00          | 18.09       | 100.0       | V   | 26.0          | -4.9         |
| 938.405000      | 29.50            | 46.00          | 16.50       | 100.0       | V   | 354.0         | -4.4         |

## Final Result

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-------------|-----|---------------|--------------|
| ---             | ---                | ---            | ---         | ---         |     | ---           | ---          |

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| ---                | ---                 | ---                 | ---               | ---            | ---            |     | ---              | ---             |







| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.750000          | 122.00              | 122.00              | 122.00            | 0.00           | 100.00         |     | 0.00             | 0.00            |

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.750000          | 122.00              | 122.00              | 122.00            | 0.00           | 100.00         |     | 000.00           | 00.00           |





| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.750000          | 93.750000           | 93.750000           | 93.750000         | 93.750000      | 93.750000      |     | 93.750000        | 93.750000       |







| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.5               | 59.5                | 59.5                | 59.5              | 0.0            | 100            | 0   | 0                | 0               |

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol    | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|--------|------------------|-----------------|
| 93.750 MHz         | 93.750 dBμV/m       | 93.750 dBμV/m       | 93.750 dBμV/m     | 93.750 dB      | 93.750 cm      | 93.750 | 93.750 deg       | 93.750 dB/m     |

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.7               | 118.0               | 118.0               | 118.0             | 0.0            | 100.0          | 0   | 0                | 0               |

| Frequency<br>(MHz) | MaxPeak<br>(dBμV/m) | Average<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) |
|--------------------|---------------------|---------------------|-------------------|----------------|----------------|-----|------------------|-----------------|
| 93.750000          | 122.00              | 118.00              | 120.00            | 2.00           | 300.00         |     | 135.00           | 0.00            |