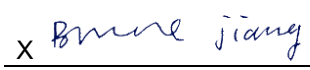


|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |                                                 |                                         |                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------|
| <b>Prüfbericht-Nr.:</b><br>Test report no.:                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>CN25RKDB 004</b>                                                                 | <b>Auftrags-Nr.:</b><br>Order no.:              | 168573835                               | Seite 1 von 25<br>Page 1 of 25                                                        |
| <b>Kunden-Referenz-Nr.:</b><br>Client reference no.:                                                                                                                                                                                                                                                                                                                                                                                                                          | N/A                                                                                 | <b>Auftragsdatum:</b><br>Order date:            | 2025-09-08                              |                                                                                       |
| <b>Auftraggeber:</b><br>Client:                                                                                                                                                                                                                                                                                                                                                                                                                                               | SWAN USA LLC<br>401 S Old Woodward Ave, Ste. 333 Birmingham MI 48009 USA            |                                                 |                                         |                                                                                       |
| <b>Prüfgegenstand:</b><br>Test item:                                                                                                                                                                                                                                                                                                                                                                                                                                          | SWAN Beauty Mirror                                                                  |                                                 |                                         |                                                                                       |
| <b>Bezeichnung / Typ-Nr.:</b><br>Identification / Type no.:                                                                                                                                                                                                                                                                                                                                                                                                                   | SM02O-BK, SM02O-W<br>(Trademark: SWAN)                                              |                                                 |                                         |                                                                                       |
| <b>Auftrags-Inhalt:</b><br>Order content:                                                                                                                                                                                                                                                                                                                                                                                                                                     | Test Report                                                                         |                                                 |                                         |                                                                                       |
| <b>Prüfgrundlage:</b><br>Test specification:                                                                                                                                                                                                                                                                                                                                                                                                                                  | CFR Title 47 FCC Part 15: Subpart E Section 15.407                                  |                                                 |                                         |                                                                                       |
| <b>Wareneingangsdatum:</b><br>Date of sample receipt:                                                                                                                                                                                                                                                                                                                                                                                                                         | 2025-07-25                                                                          | Please refer to Photo Document                  |                                         |                                                                                       |
| <b>Prüfmuster-Nr.:</b><br>Test sample no.:                                                                                                                                                                                                                                                                                                                                                                                                                                    | CTC250722-011-S003<br>CTC250722-011-S004                                            |                                                 |                                         |                                                                                       |
| <b>Prüfzeitraum:</b><br>Testing period:                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2025-07-29 - 2025-09-04                                                             |                                                 |                                         |                                                                                       |
| <b>Ort der Prüfung:</b><br>Place of testing:                                                                                                                                                                                                                                                                                                                                                                                                                                  | Refer to section 2.1                                                                |                                                 |                                         |                                                                                       |
| <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>genehmigt von:</b><br>authorized by: |  |
| <b>Datum:</b><br>Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2025-11-28                                                                          | <b>Ausstellungsdatum:</b><br>Issue date:        |                                         | 2025-11-28                                                                            |
| <b>Stellung / Position:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Sachverständige(r)/Expert                                                           | <b>Stellung / Position:</b>                     |                                         | Sachverständige(r)/Expert                                                             |
| <b>Sonstiges / Other:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | FCC ID: 2BP6Y-SM02O<br><br>This report is for 5GHz Wi-Fi.                           |                                                 |                                         |                                                                                       |
| <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                                                                      |
| <p><b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b><br/> <i>This test report only relates to the 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.</i></p> |                                                                                     |                                                 |                                         |                                                                                       |

Prüfbericht-Nr.: CN25RKDB 004  
Test report no.:

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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="https://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="https://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 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen 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 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i></p>                                                                                                                                                                                                                                                                                         |

## ***Test Summary***

**5.1.1 ANTENNA REQUIREMENT**

*RESULT: Pass*

**5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER**

*RESULT: Pass*

**5.1.3 CONDUCTED POWER SPECTRAL DENSITY**

*RESULT: Pass*

**5.1.4 FREQUENCY STABILITY**

*RESULT: Pass*

**5.1.5 26dB BANDWIDTH AND 99% BANDWIDTH**

*RESULT: Pass*

**5.1.6 6dB BANDWIDTH**

*RESULT: Pass*

**5.1.7 RADIATED SPURIOUS EMISSION**

*RESULT: Pass*

**5.1.8 DYNAMIC FREQUENCY SELECTION (DFS)**

*RESULT: Pass*

**5.1.9 CONDUCTED EMISSION ON AC MAINS**

*RESULT: Pass*

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# 1 General Remarks

## 1.1 Complementary Materials

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

Appendix A: Test Results of 5GHz Wi-Fi

Appendix B: Photographs of the Test Set-up

## 2 Test Sites

### 2.1 Test Facilities

**CTC Laboratories Inc.**

2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

CNAS Registration No.: L5365

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

### 2.2 List of Test and Measurement Instruments

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

| Conducted emission |                   |              |           |                  |               |                  |
|--------------------|-------------------|--------------|-----------|------------------|---------------|------------------|
| Item               | Test Equipment    | Manufacturer | Model No. | Serial No.       | Cal. Date     | Calibrated until |
| 1                  | LISN              | R&S          | ENV216    | 101112           | Dec. 13, 2024 | Dec. 12, 2025    |
| 2                  | LISN              | R&S          | ENV216    | 101113           | Dec. 13, 2024 | Dec. 12, 2025    |
| 3                  | EMI Test Receiver | R&S          | ESCI      | 100524           | Dec. 13, 2024 | Dec. 12, 2025    |
| 4                  | ISN CAT6          | Schwarzbeck  | NTFM 8158 | CAT6-8158-0046   | Dec. 13, 2024 | Dec. 12, 2025    |
| 5                  | ISN CAT5          | Schwarzbeck  | NTFM 8158 | CAT5-8158-0046   | Dec. 13, 2024 | Dec. 12, 2025    |
| 6                  | CE-001            | COMM         | /         | 001              | Feb. 09, 2025 | Feb. 08, 2026    |
| Test Software      |                   |              |           |                  |               |                  |
| Name               |                   | Manufacturer |           | Software Version |               |                  |
| EMC32              |                   | R&S          |           | 6.10.10          |               |                  |

| RF Test System – SRD |                                       |              |               |                  |               |                  |
|----------------------|---------------------------------------|--------------|---------------|------------------|---------------|------------------|
| Item                 | Test Equipment                        | Manufacturer | Model No.     | Serial No.       | Cal. Date     | Calibrated Until |
| 1                    | Spectrum Analyzer                     | R&S          | FSV40-N       | 101331           | Mar. 23, 2025 | Mar. 24, 2026    |
| 2                    | MXA Signal Analyzer                   | Keysight     | N9020A        | MY52091402       | Dec. 13, 2024 | Dec. 12, 2025    |
| 3                    | MXG Vector Signal Generator           | Agilent      | N5182A        | MY47420864       | Dec. 13, 2024 | Dec. 12, 2025    |
| 4                    | PSG Analog Signal Generator           | Agilent      | E8257D        | MY46521908       | Dec. 13, 2024 | Dec. 12, 2025    |
| 5                    | USB Wideband Power Sensor             | Keysight     | U2021XA       | MY55130004       | Mar. 25, 2025 | Mar. 24, 2026    |
| 6                    | USB Wideband Power Sensor             | Keysight     | U2021XA       | MY55130006       | Mar. 25, 2025 | Mar. 24, 2026    |
| 7                    | Wideband Radio Communication Tester   | R&S          | CMW500        | 102257           | Oct. 24, 2024 | Oct. 23, 2025    |
| 8                    | RF Control Unit                       | Tonscend     | JS0806-2      | /                | Mar. 25, 2025 | Mar. 24, 2026    |
| 9                    | High and low temperature test chamber | ESPEC        | MT3035        | /                | Mar. 25, 2025 | Mar. 24, 2026    |
| 10                   | RF Cable                              | HUBER+SUHNER | SUCOFLEX101PE | RF-08            | Apr. 15, 2025 | Apr. 16, 2026    |
| Test Software        |                                       |              |               |                  |               |                  |
| Name                 |                                       | Manufacturer |               | Software Version |               |                  |
| JS1120-3             |                                       | Tonscend     |               | V2.6.88.0346     |               |                  |

## 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**

| Test Items                     | Measurement Uncertainty                                             | Note |
|--------------------------------|---------------------------------------------------------------------|------|
| Emission Bandwidth             | $\pm 0.0196\%$                                                      | (1)  |
| Maximum Conduct Output Power   | $\pm 0.766\text{dB}$                                                | (1)  |
| Power Spectral Density         | $\pm 1.22\text{dB}$                                                 | (1)  |
| Band Edge Measurements         | $\pm 1.328\text{dB}$                                                | (1)  |
| Unwanted Emissions Measurement | 9kHz-1GHz: $\pm 0.746\text{dB}$<br>1GHz-26GHz: $\pm 1.328\text{dB}$ | (1)  |
| Frequency Stability            | $\pm 2.76\%$                                                        | (1)  |
| Conducted Emissions 9kHz~30MHz | $\pm 3.08\text{ dB}$                                                | (1)  |
| Radiated Emissions 30~1000MHz  | $\pm 4.51\text{ dB}$                                                | (1)  |
| Radiated Emissions 1~18GHz     | $\pm 5.84\text{ dB}$                                                | (1)  |
| Radiated Emissions 18~40GHz    | $\pm 6.12\text{ dB}$                                                | (1)  |

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

## 2.6 Location of Original Data

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

## 2.7 Status of Facility Used for Testing

The CTC Laboratories Inc. Test facility located at 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

### 3 General Product Information

#### 3.1 Product Function and Intended Use

The EUT is a SWAN Beauty Mirror which supports Bluetooth, 2.4G Wi-Fi and 5GHz Wi-Fi functions.

According to the declaration of the applicant, the schematics, PCB layout and electronic components are identical, only the model no. is different for market strategy.

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:                    | SWAN Beauty Mirror                                                                                                                                                       |
| Type Designation:                     | SM02O-BK, SM02O-W                                                                                                                                                        |
| Trademark:                            | SWAN                                                                                                                                                                     |
| FCC ID:                               | 2BP6Y-SM02O                                                                                                                                                              |
| Operating Voltage:                    | DC 12V@4A input via AC Adapter                                                                                                                                           |
| Testing Voltage:                      | AC 120V, 60Hz                                                                                                                                                            |
| Operating Temperature Range:          | 0 °C ~ +40 °C                                                                                                                                                            |
| AC Adapter:                           | Model: TEKA-TF120400XX<br>Input: 100-240V, 50/60Hz, 1.4A Max<br>Output: 12.0V, 4.0A                                                                                      |
| Technical Specification of 5GHz Wi-Fi |                                                                                                                                                                          |
| Operating Frequency:                  | 5180-5240MHz, 5260-5320MHz, 5500-5700MHz, 5745-5825MHz                                                                                                                   |
| Protocol:                             | 802.11 a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80                                                                                                                           |
| Channel Number:                       | 5180-5240MHz, 7CHs<br>5260-5320MHz, 7CHs<br>5500-5700MHz, 18CHs<br>5745-5825MHz, 8CHs                                                                                    |
| Type of Modulation:                   | OFDMA(BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM)                                                                                                                              |
| Data Rate:                            | 6/9/12/18/24/36/48/54 Mbps for 802.11a<br>MCS0 ~ MCS7 for 802.11n<br>MCS0 ~ MCS9 for 802.11ac<br>MCS0 ~ MCS11 for 802.11ax<br>(Only Full RU mode supported for 802.11ax) |
| Channel Separation:                   | 20MHz, 40MHz, 80MHz                                                                                                                                                      |
| Antenna Type:                         | FPC Antenna                                                                                                                                                              |
| Antenna Number:                       | 1Tx1Rx                                                                                                                                                                   |
| Antenna Gain:                         | 2.22 dBi (Provided by the Client)                                                                                                                                        |

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

**Table 4: RF Channel and Frequency of 5GHz Wi-Fi**

| U-NII-1         |                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 20MHz Bandwidth |                 | 40MHz Bandwidth |                 | 80MHz Bandwidth |                 |
| Channel         | Frequency (MHz) | Channel         | Frequency (MHz) | Channel         | Frequency (MHz) |
| 36              | 5180            | 38              | 5190            | 42              | 5210            |
| 40              | 5200            | 46              | 5230            |                 |                 |
| 44              | 5220            |                 |                 |                 |                 |
| 48              | 5240            |                 |                 |                 |                 |

| U-NII-2A        |                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 20MHz Bandwidth |                 | 40MHz Bandwidth |                 | 80MHz Bandwidth |                 |
| Channel         | Frequency (MHz) | Channel         | Frequency (MHz) | Channel         | Frequency (MHz) |
| 52              | 5260            | 54              | 5270            | 58              | 5290            |
| 56              | 5280            | 62              | 5310            |                 |                 |
| 60              | 5300            |                 |                 |                 |                 |
| 64              | 5320            |                 |                 |                 |                 |

| U-NII-2C        |                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 20MHz Bandwidth |                 | 40MHz Bandwidth |                 | 80MHz Bandwidth |                 |
| Channel         | Frequency (MHz) | Channel         | Frequency (MHz) | Channel         | Frequency (MHz) |
| 100             | 5500            | 102             | 5510            | 106             | 5530            |
| 104             | 5520            | 110             | 5550            | 122             | 5610            |
| 108             | 5540            | 118             | 5590            |                 |                 |
| 112             | 5560            | 126             | 5630            |                 |                 |
| 116             | 5580            | 134             | 5670            |                 |                 |
| 120             | 5600            |                 |                 |                 |                 |
| 124             | 5620            |                 |                 |                 |                 |
| 128             | 5640            |                 |                 |                 |                 |
| 132             | 5660            |                 |                 |                 |                 |
| 136             | 5680            |                 |                 |                 |                 |
| 140             | 5700            |                 |                 |                 |                 |

| U-NII-3         |                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 20MHz Bandwidth |                 | 40MHz Bandwidth |                 | 80MHz Bandwidth |                 |
| Channel         | Frequency (MHz) | Channel         | Frequency (MHz) | Channel         | Frequency (MHz) |
| 149             | 5745            | 151             | 5755            | 155             | 5775            |
| 153             | 5765            | 159             | 5795            |                 |                 |
| 157             | 5785            |                 |                 |                 |                 |
| 161             | 5805            |                 |                 |                 |                 |
| 165             | 5825            |                 |                 |                 |                 |

### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On, 5G Wi-Fi wireless transmitting mode
  - 1. Low channel
  - 2. Middle channel
  - 3. High channel
- B. On, Normal working
- C. Off

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

### 3.5 Submitted Documents

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

## 4 Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

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

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

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10:2020.

According to clause 3.1, all tests were performed on model *SM020-BK* in this report.

### 4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

| Description        | Manufacturer | Model               | S/N      |
|--------------------|--------------|---------------------|----------|
| USB Disk           | Kingston     | DTGE9               | /        |
| Notebook           | Lenovo       | ThinkBook 14 G3 ACL | MP246Q6S |
| USB Cable          | /            | /                   | /        |
| GPON ONU, GPON ONT | Skyworth     | GN630V              | /        |

### 4.4 Countermeasures to Achieve EMC Compliance

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

No additional measures were employed to achieve compliance.

## 4.5 Test Setup Diagram

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

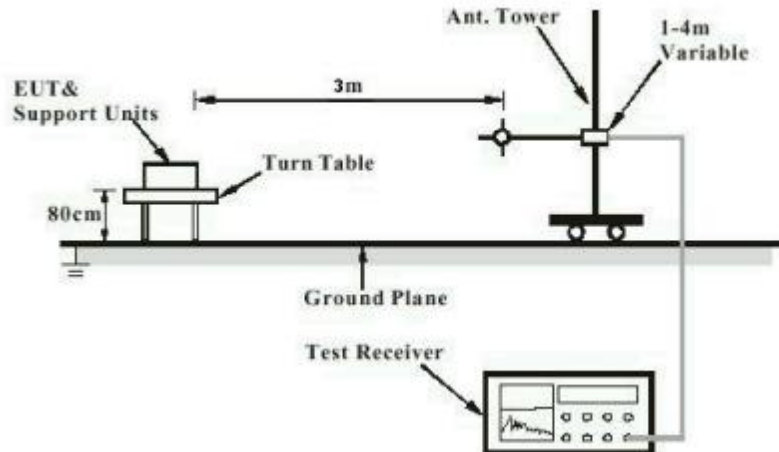
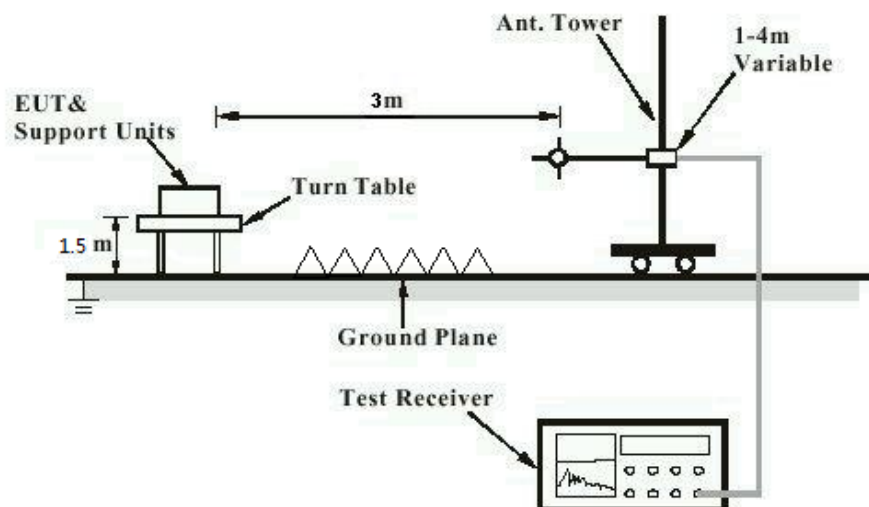
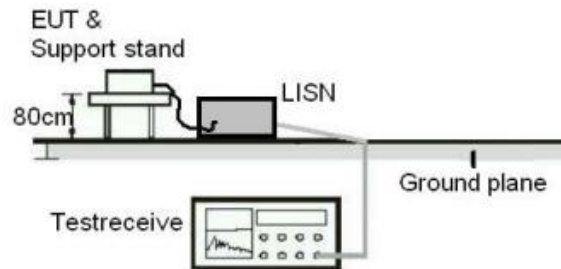


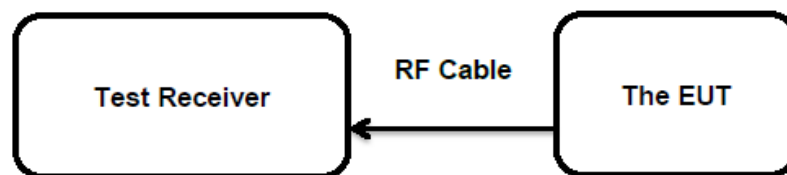
Diagram of Measurement Configuration for Radiation Test (Above 1GHz)



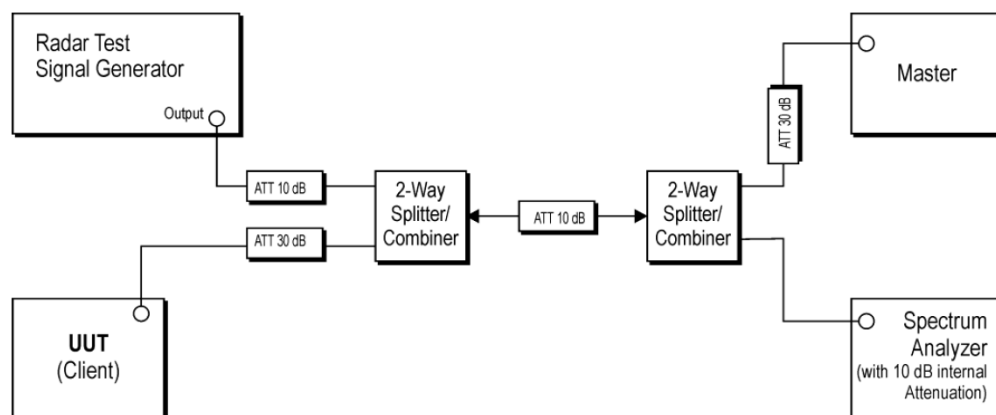
### Diagram of Measurement Configuration for Mains Conduction Measurement



### Diagram of Measurement Configuration for Conducted Transmitter Measurement



### Diagram of Measurement Configuration for Dynamic Frequency Selection (DFS)



## 5 Test Results

### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Antenna Requirement

RESULT:

**Pass**

**Test Specification**

Test standard : FCC Part 15.203

According to the manufacturer declared, the EUT has FPC antenna, permanent attachment and no consideration of replacement, refer to section 3.2 for details.

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

Refer to EUT Photo for further details.

## 5.1.2 Maximum Peak Conducted Output Power

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

|                   |                                                                                                                                                                                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test standard     | : FCC Part 15.407(a)(1)&(2)&(4)                                                                                                                                                                                                 |
| Basic standard    | : ANSI C63.10:2020                                                                                                                                                                                                              |
| Limits            | : FCC:<br><250mW (24dBm) (5150-5250MHz)<br>*<250mW (24dBm) (5250-5350MHz, 5470-5725MHz)<br>*250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz, where is lesser.<br><1W (30dBm) (5725-5850MHz) |
| Kind of test site | : Shielded Room                                                                                                                                                                                                                 |

**Test Setup**

|                      |                            |
|----------------------|----------------------------|
| Date of testing      | : 2025-07-29 to 2025-07-31 |
| Input voltage        | : AC 120V, 60Hz            |
| Operation mode       | : A                        |
| Test channel         | : Low / Middle / High      |
| Ambient temperature  | : 25 °C                    |
| Relative humidity    | : 45 %                     |
| Atmospheric pressure | : 101 kPa                  |

For details refer to following test result.

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

| Test Mode  | Antenna | Freq (MHz) | Result [dBm] | FCC Limit [dBm] | Verdict |
|------------|---------|------------|--------------|-----------------|---------|
| 11A        | Ant1    | 5180       | 17.22        | ≤23.98          | PASS    |
|            |         | 5200       | 17.59        | ≤23.98          | PASS    |
|            |         | 5240       | 16.89        | ≤23.98          | PASS    |
|            |         | 5260       | 15.95        | ≤23.98          | PASS    |
|            |         | 5280       | 16.47        | ≤23.98          | PASS    |
|            |         | 5320       | 15.43        | ≤23.98          | PASS    |
|            |         | 5500       | 17.11        | ≤23.98          | PASS    |
|            |         | 5580       | 17.49        | ≤23.98          | PASS    |
|            |         | 5700       | 15.79        | ≤23.98          | PASS    |
|            |         | 5745       | 16.72        | ≤30.00          | PASS    |
|            |         | 5785       | 16.75        | ≤30.00          | PASS    |
| 11N20SISO  | Ant1    | 5825       | 14.85        | ≤30.00          | PASS    |
|            |         | 5180       | 16.06        | ≤23.98          | PASS    |
|            |         | 5200       | 16.93        | ≤23.98          | PASS    |
|            |         | 5240       | 16.16        | ≤23.98          | PASS    |
|            |         | 5260       | 15.72        | ≤23.98          | PASS    |
|            |         | 5280       | 16.11        | ≤23.98          | PASS    |
|            |         | 5320       | 15.21        | ≤23.98          | PASS    |
|            |         | 5500       | 17.03        | ≤23.98          | PASS    |
|            |         | 5580       | 17.48        | ≤23.98          | PASS    |
|            |         | 5700       | 15.82        | ≤23.98          | PASS    |
|            |         | 5745       | 17.14        | ≤30.00          | PASS    |
| 11N40SISO  | Ant1    | 5785       | 16.77        | ≤30.00          | PASS    |
|            |         | 5825       | 16.23        | ≤30.00          | PASS    |
|            |         | 5190       | 16.97        | ≤23.98          | PASS    |
|            |         | 5230       | <b>17.98</b> | ≤23.98          | PASS    |
|            |         | 5270       | 15.44        | ≤23.98          | PASS    |
|            |         | 5310       | 14.63        | ≤23.98          | PASS    |
|            |         | 5510       | 17.01        | ≤23.98          | PASS    |
|            |         | 5550       | 17.24        | ≤23.98          | PASS    |
|            |         | 5670       | 17.19        | ≤23.98          | PASS    |
|            |         | 5755       | 16.39        | ≤30.00          | PASS    |
|            |         | 5795       | 15.29        | ≤30.00          | PASS    |
| 11AC20SISO | Ant1    | 5180       | 17.83        | ≤23.98          | PASS    |
|            |         | 5200       | 17.14        | ≤23.98          | PASS    |
|            |         | 5240       | 16.45        | ≤23.98          | PASS    |
|            |         | 5260       | 15.82        | ≤23.98          | PASS    |
|            |         | 5280       | 15.91        | ≤23.98          | PASS    |
|            |         | 5320       | 15.42        | ≤23.98          | PASS    |
|            |         | 5500       | 16.92        | ≤23.98          | PASS    |
|            |         | 5580       | 17.10        | ≤23.98          | PASS    |
|            |         | 5700       | 16.05        | ≤23.98          | PASS    |
|            |         | 5745       | 16.33        | ≤30.00          | PASS    |
|            |         | 5785       | 16.07        | ≤30.00          | PASS    |
| 11AC40SISO | Ant1    | 5825       | 14.85        | ≤30.00          | PASS    |
|            |         | 5190       | 16.92        | ≤23.98          | PASS    |
|            |         | 5230       | 17.34        | ≤23.98          | PASS    |
|            |         | 5270       | 15.97        | ≤23.98          | PASS    |
|            |         | 5310       | 15.83        | ≤23.98          | PASS    |
|            |         | 5510       | 17.21        | ≤23.98          | PASS    |
|            |         | 5550       | 17.26        | ≤23.98          | PASS    |
|            |         | 5670       | 16.34        | ≤23.98          | PASS    |
|            |         | 5755       | 15.62        | ≤30.00          | PASS    |
|            |         | 5795       | 15.05        | ≤30.00          | PASS    |
| 11AC80SISO | Ant1    | 5210       | 13.93        | ≤23.98          | PASS    |
|            |         | 5290       | 14.48        | ≤23.98          | PASS    |
|            |         | 5530       | 15.07        | ≤23.98          | PASS    |
|            |         | 5610       | 15.12        | ≤23.98          | PASS    |
|            |         | 5775       | 16.98        | ≤30.00          | PASS    |

|            |      |      |       |        |      |
|------------|------|------|-------|--------|------|
| 11AX20SISO | Ant1 | 5180 | 16.77 | ≤23.98 | PASS |
|            |      | 5200 | 17.45 | ≤23.98 | PASS |
|            |      | 5240 | 16.00 | ≤23.98 | PASS |
|            |      | 5260 | 15.46 | ≤23.98 | PASS |
|            |      | 5280 | 16.41 | ≤23.98 | PASS |
|            |      | 5320 | 15.31 | ≤23.98 | PASS |
|            |      | 5500 | 17.78 | ≤23.98 | PASS |
|            |      | 5580 | 16.89 | ≤23.98 | PASS |
|            |      | 5700 | 15.64 | ≤23.98 | PASS |
|            |      | 5745 | 17.67 | ≤30.00 | PASS |
|            |      | 5785 | 16.27 | ≤30.00 | PASS |
|            |      | 5825 | 15.97 | ≤30.00 | PASS |
| 11AX40SISO | Ant1 | 5190 | 17.06 | ≤23.98 | PASS |
|            |      | 5230 | 17.59 | ≤23.98 | PASS |
|            |      | 5270 | 15.72 | ≤23.98 | PASS |
|            |      | 5310 | 14.83 | ≤23.98 | PASS |
|            |      | 5510 | 17.43 | ≤23.98 | PASS |
|            |      | 5550 | 17.13 | ≤23.98 | PASS |
|            |      | 5670 | 16.66 | ≤23.98 | PASS |
|            |      | 5755 | 16.94 | ≤30.00 | PASS |
| 11AX80SISO | Ant1 | 5795 | 15.49 | ≤30.00 | PASS |
|            |      | 5210 | 13.75 | ≤23.98 | PASS |
|            |      | 5290 | 13.72 | ≤23.98 | PASS |
|            |      | 5530 | 13.79 | ≤23.98 | PASS |
|            |      | 5610 | 15.30 | ≤23.98 | PASS |
|            |      | 5775 | 16.05 | ≤30.00 | PASS |

**Note:**

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G): 2.2dBi

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### 5.1.3 Conducted Power Spectral Density

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

Test standard : FCC part 15.407(a)  
Basic standard : ANSI C63.10:2020  
KDB 789033 D02 v01r03  
Limits : FCC:  
<11dBm/MHz (5150-5250MHz, 5250-5350MHz and 5470-5725MHz)  
<30dBm/500kHz (5725-5850MHz)  
Kind of test site : Shielded Room

**Test Setup**

Date of testing : 2025-07-29 to 2025-07-31  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 25 °C  
Relative humidity : 45 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

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### 5.1.4 Frequency Stability

**RESULT:**

**Pass**

#### Test Specification

Test standard : FCC Part 15.407(g)  
Basic standard : ANSI C63.10:2020  
Limits : Within assigned bands  
Kind of test site : Shielded Room

#### Test Setup

Date of testing : 2025-07-29 to 2025-07-31  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 25 °C  
Relative humidity : 45 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

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### 5.1.5 26dB Bandwidth and 99% Bandwidth

**RESULT:**

**Pass**

#### Test Specification

Test standard : FCC Part 15.407(e)  
Basic standard : ANSI C63.10:2020  
Limits : N/A  
Kind of test site : Shielded Room

#### Test Setup

Date of testing : 2025-07-29 to 2025-07-31  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 25 °C  
Relative humidity : 45 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

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### 5.1.6 6dB Bandwidth

**RESULT:**

**Pass**

#### Test Specification

Test standard : FCC Part 15.407(e)  
Basic standard : ANSI C63.10:2020  
Limits : At least 500kHz (5725-5850MHz)  
Kind of test site : Shielded Room

#### Test Setup

Date of testing : 2025-07-29 to 2025-07-31  
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 25 °C  
Relative humidity : 45 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

### 5.1.7 Radiated Spurious Emission

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

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test standard     | : FCC Part 15.407(b) & FCC Part 15.205 & FCC Part 15.209                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Basic standard    | : ANSI C63.10:2020<br>KDB 789033 D02 v01r03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Limits            | : <ul style="list-style-type: none"><li>• For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.</li><li>• For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.</li><li>• For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.<br/>Emissions outside the band 5470-5600 MHz and 5650-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.</li><li>• For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</li><li>• Restricted Bands meet the requirement of 15.209 limit</li></ul> |
| Kind of test site | : 3m Semi-anechoic Chamber                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

**Test Setup**

|                      |                            |
|----------------------|----------------------------|
| Date of testing      | : 2025-08-03 to 2025-08-25 |
| Input voltage        | : AC 120V, 60Hz            |
| Operation mode       | : A                        |
| Test channel         | : Low / Middle / High      |
| Ambient temperature  | : Refer to test result     |
| Relative humidity    | : Refer to test result     |
| Atmospheric pressure | : Refer to test result     |

**Remark:**

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

For the measurement records, refer to the appendix A.

### 5.1.8 Dynamic Frequency Selection (DFS)

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

|                   |                                                                                                                                                                                                              |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test standard     | : FCC Part 15.407(h)                                                                                                                                                                                         |
| Basic standard    | : ANSI C63.10:2020                                                                                                                                                                                           |
| Limits            | : 5250-5350MHz, 5470-5725MHz<br>Channel Move Time: Within 10 seconds.<br>Channel Closing Transmission Time: 200ms+aggregate of 60ms over remaining 10s period;<br>Non-Occupancy Period: at least 30 minutes. |
| Kind of test site | : Shielded Room                                                                                                                                                                                              |

**Test Setup**

|                      |                            |
|----------------------|----------------------------|
| Date of testing      | : 2025-07-29 to 2025-09-04 |
| Input voltage        | : AC 120V, 60Hz            |
| Operation mode       | : A                        |
| Ambient temperature  | : 25 °C                    |
| Relative humidity    | : 45 %                     |
| Atmospheric pressure | : 101 kPa                  |

For the measurement records, refer to the appendix A.

### 5.1.9 Conducted Emission on AC Mains

**RESULT:**

**Pass**

**Test Specification**

|                   |                      |
|-------------------|----------------------|
| Test standard     | : FCC Part 15.207(a) |
| Basic standard    | : ANSI C63.10:2020   |
| Frequency range   | : 0.15 – 30MHz       |
| Classification    | : Class B            |
| Limits            | : FCC Part 15.207(a) |
| Kind of test site | : Shielded Room      |

**Test Setup**

|                      |                        |
|----------------------|------------------------|
| Date of testing      | : 2025-08-04           |
| Input voltage        | : AC 120V, 60Hz        |
| Operation mode       | : B                    |
| Ambient temperature  | : Refer to test result |
| Relative humidity    | : Refer to test result |
| Atmospheric pressure | : Refer to test result |

For the measurement records, refer to the appendix A.

## 6 Photographs of the Test Set-Up

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

## 7 List of Tables

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