

Test Report No:  
2470952R-RFUSV01S-A

## Test Result for Inspection (Class II Permissive Change)

|                                 |   |
|---------------------------------|---|
| Product Name                    | Peplink Pepwave Wireless Product  |
| Brand Name                      |  PEPWAVE   |
| Model No.                       | B One 5G<br>B-ONE-5GN-T-PRM<br>B One Plus<br>B-ONE-PLUS-LTE-US-T-PRM  |
| FCC ID                          | U8G-P1AX23  |
| Applicant's Name / Address      | PISMO LABS TECHNOLOGY LIMITED<br>A8, 5/F, HK Spinners Industrial Building, Phase 6, 481 Castle Peak Road, Cheung Sha Wan, Hong Kong |
| Manufacturer's Name             | PISMO LABS TECHNOLOGY LIMITED   |
| Test Method Requested, Standard | FCC CFR Title 47 Part 15 Subpart C Section 15.247<br>ANSI C63.10-2013   |
| Verdict Summary                 | IN COMPLIANCE   |
| Documented by April Chen        |    |
| Tested by Bill Lin              |   |
| Approved by Steven Tsai         |    |
| Date of Receipt                 | 2024/07/31  |
| Date of Issue                   | 2024/09/23  |
| Report Version                  | V1.0  |

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## Competences and Guarantees

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DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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## General Conditions

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1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

## Revision History

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| Version | Description             | Issued Date |
|---------|-------------------------|-------------|
| V1.0    | Initial issue of report | 2024/09/23  |

## Permissive Change

| Report No.          | Version | Description  | Issued Date |
|---------------------|---------|--|-------------|
| 2470952R-RFUSV01S-A | V1.0    | The major change filed under this application is:<br>Change #1: Adding FTDI components addition.<br>Change #2: Added new e-SIM (M/N: MFXS-M006B-MFOCMW). | 2024/09/23  |

## Summary of Test Result

| Report Clause | Test Items                     | Result (PASS/FAIL) | Remark |
|---------------|--------------------------------|--------------------|--------|
| 3             | Maximum Conducted Output Power | PASS               | -      |
| 4             | Radiated Emission              | PASS               | -      |

### Comments and Explanations

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

## 1. General Information

### 1.1. EUT Description

|                     |   |  |   |
|---------------------|---|--|---|
| Frequency Range     | 2400 ~ 2483.5 MHz                             |  |   |
| Operating Frequency | IEEE 802.11b/g<br>IEEE 802.11n/ac/ax (20 MHz) |  | 2412 ~ 2462 MHz                                 |
|                     | IEEE 802.11n/ac/ax (40 MHz)                   |  | 2422 ~ 2452 MHz                                 |
| Channel Number      | IEEE 802.11b/g<br>IEEE 802.11n/ac/ax (20 MHz) |  | 11 Channels                                     |
|                     | IEEE 802.11n/ac/ax (40 MHz)                   |  | 7 Channels                                      |
| Type of Modulation  | IEEE 802.11b                                  |  | DSSS-DBPSK, DQPSK, CCK                          |
|                     | IEEE 802.11g/n                                |  | OFDM-BPSK, QPSK, 16QAM, 64QAM                   |
|                     | IEEE 802.11ac                                 |  | OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM           |
|                     | IEEE 802.11ax                                 |  | OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM |

| Accessories Information |                |  |                    |  |  |
|-------------------------|----------------|--|--------------------|--|--|
| No.                     | Equipment Name | Manufacturer                                   | Model No.          | Rating   | Remark                                   |
| 1                       | Adapter        | Zhuzhou Dachuan Electronic Technology Co.,Ltd. | DCT36W12030 0ZZ-D2 | Input:<br>100-240Vac~ 50/60Hz, 1.0A<br>Output:<br>12V, 3.0A, 36.0W | With power cable :<br>Non-Shielded, 1.5m |
| 2                       | Adapter        | FLYPOWER                                       | PS36LA120K30 00UD  | Input:<br>100-240Vac~ 50/60Hz, 1.0A<br>Output:<br>12V, 3.0A, 36.0W | With power cable :<br>Non-Shielded, 1.5m |

The difference for each model is shown as below:

| Model                   | WWAN module       | WWAN function | WIFI function | BT function |
|-------------------------|-------------------|---------------|---------------|-------------|
| B One 5G                |                   |               |               |             |
| B-ONE-5GN-T-PRM         | Quectel RM520N-GL | ✓             | ✓             | ✓           |
| B One Plus              |                   |               |               |             |
| B-ONE-PLUS-LTE-US-T-PRM | Quectel EC25-AFXD | ✓             | ✓             | ✓           |

From the above models, model: B One 5G was selected as representative model for the test and its data was recorded in this report.

| Antenna Information |              |                    |                  |                    |                       |
|---------------------|--------------|--------------------|------------------|--------------------|-----------------------|
| Item.               | Manufacturer | Model No.          | Type             | Antenna Gain (dBi) | Directional gain(dBi) |
| 1                   | INPAQ        | RFDPA191300SBLB813 | Omni-directional | 4.53               | 7.54                  |
| 2                   | INPAQ        | RFDPA191300SBLB813 | Omni-directional | 4.53               |                       |

Note: The antenna of EUT is conforming to FCC 15.203.

#### For IEEE 802.11b/g/n/ac/ax Mode: (2TX, 2RX)

All of the antenna No. can be used as transmitting/receiving antennas.

## 1.2. EUT Information

|                           |                                     |                     |                          |                |
|---------------------------|-------------------------------------|---------------------|--------------------------|----------------|
| EUT Power Type            | From DC 10~30V                      |                     |                          |                |
| EUT Function              | <input checked="" type="checkbox"/> | Point-to-multipoint | <input type="checkbox"/> | Point-to-point |
| Resource Unit of 802.11ax | <input checked="" type="checkbox"/> | Full RU             | <input type="checkbox"/> | Partial RU     |

## 1.3. Testing Location Information

|        |   |
|--------|---|
| USA    | FCC Registration Number: TW0033                       |
| Canada | CAB Identifier Number: TW3023 / Company Number: 26930 |

|                  |                         |
|------------------|-------------------------|
| Site Description | Accredited by TAF       |
|                  | Accredited Number: 3023 |

|                    |  |
|--------------------|--|
| Test Laboratory    | DEKRA Testing and Certification Co., Ltd.                                    |
|                    | Linkou Laboratory  |
| Address            | No. 5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan, R.O.C. |
| Performed Location | No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan, R.O.C.    |
| Phone Number       | +886-3-275-7255  |
| Fax Number         | +886-3-327-8031  |

Ambient conditions in the laboratory:

| Performed Item        | Items            | Required | Actual  | Test Date             |
|-----------------------|------------------|----------|---------|-----------------------|
| Radiated Emission     | Temperature (°C) | 10~40 °C | 24.6 °C | 2024/09/05~2024/09/13 |
|                       | Humidity (%RH)   | 10~90 %  | 57.3 %  |                       |
| RF Conducted Emission | Temperature (°C) | 10~40 °C | 23.4 °C | 2024/08/07            |
|                       | Humidity (%RH)   | 10~90 %  | 55.2 %  |                       |

## 1.4. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document.

The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

| Test Item                      | Uncertainty   |
|--------------------------------|---|
| Maximum Conducted Output Power | Spectrum Analyzer: $\pm 2.13$ dB<br>Power Meter: $\pm 1.07$ dB  |
| Radiated Emission              | 9 kHz~30 MHz: $\pm 3.30$ dB<br>30 MHz~1 GHz: $\pm 4.79$ dB<br>1 GHz~18 GHz: $\pm 4.17$ dB<br>18 GHz~40 GHz: $\pm 3.32$ dB |
| Duty Cycle                     | $\pm 0.51$ %  |

## 1.5. List of Test Equipment

### For Conducted Measurements / HY-SR02

|   | Equipment             | Manufacturer | Model No. | Serial No. | Cal. Date  | Due Date   |
|---|-----------------------|--------------|-----------|------------|------------|------------|
| V | Spectrum Analyzer     | R&S          | FSV30     | 103466     | 2024/01/05 | 2025/01/04 |
| V | Peak Power Analyzer   | KEYSIGHT     | 8990B     | MY51000539 | 2024/05/07 | 2025/05/06 |
| V | Wideband Power Sensor | KEYSIGHT     | N1923A    | MY59240002 | 2024/05/08 | 2025/05/07 |
| V | Wideband Power Sensor | KEYSIGHT     | N1923A    | MY59240003 | 2024/05/08 | 2025/05/07 |

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software Version: RF Conducted Test Tools R3 V3.0.1.14.

### For Radiated Measurements /HY-CB01

|   | Equipment         | Manufacturer  | Model No.         | Serial No.   | Cal. Date  | Due. Date  |
|---|-------------------|---------------|-------------------|--------------|------------|------------|
| V | Loop Antenna      | TESEQ         | HLA6121           | 49611        | 2024/02/23 | 2025/02/22 |
| V | Bi-Log Antenna    | SCHWARZBECK   | VULB9168          | 9168-0675    | 2023/08/09 | 2025/08/08 |
| V | Horn Antenna      | RF SPIN       | DRH18-E           | 210802A18ES  | 2024/03/28 | 2025/03/27 |
| V | Horn Antenna      | Com-Power     | AH-840            | 101101       | 2023/12/04 | 2025/12/03 |
| V | Pre-Amplifier     | SGH           | 0301              | 20211007-7   | 2024/01/10 | 2025/01/09 |
| V | Pre-Amplifier     | EMCI          | EMC051845SE       | 980632       | 2024/01/10 | 2025/01/09 |
| V | Pre-Amplifier     | EMCI          | EMC05820SE        | 980362       | 2024/01/10 | 2025/01/09 |
| V | Pre-Amplifier     | EMCI          | EMC184045SE       | 980369       | 2024/01/10 | 2025/01/09 |
| V | Coaxial Cable     | EMCI          | EMC102-KM-KM-600  | 1160314      | 2024/01/10 | 2025/01/09 |
| V | Coaxial Cable     | EMCI          | EMC102-KM-KM-7000 | 170242       | 2024/01/10 | 2025/01/09 |
| V | Filter            | MICRO TRONICS | BRM50702          | G251         | 2024/01/05 | 2025/01/04 |
|   | Filter            | MICRO TRONICS | BRM50716          | 067          | 2024/01/05 | 2025/01/04 |
| V | EMI Test Receiver | R&S           | ESR3              | 102792       | 2024/01/05 | 2025/01/04 |
| V | Spectrum Analyzer | R&S           | FSV3044           | 101115       | 2024/01/11 | 2025/01/10 |
| V | Coaxial Cable     | SUHNER        | SUCOFLEX 106      | 25450/6      | 2024/01/10 | 2025/01/09 |
| V | Coaxial Cable     | SGH           | SGH18             | 2021003-8    | 2024/01/10 | 2025/01/09 |
| V | Coaxial Cable     | SGH           | HA800             | GD20110222-8 | 2024/01/10 | 2025/01/09 |
| V | Coaxial Cable     | EMCI          | EMC106            | 151113       | 2024/01/10 | 2025/01/09 |

Note:

1. Bi-Log Antenna and Horn Antenna (AH-840) is calibrated every two years, the other equipments are calibrated every one year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software Version: e3 230303 dekra V9.

## 2. Test Configuration of EUT

### 2.1. Test Condition

| EUT Operational Condition |   |
|---------------------------|---|
| Testing Voltage           | AC 120V/60Hz to DC 12V (power by adapter) |

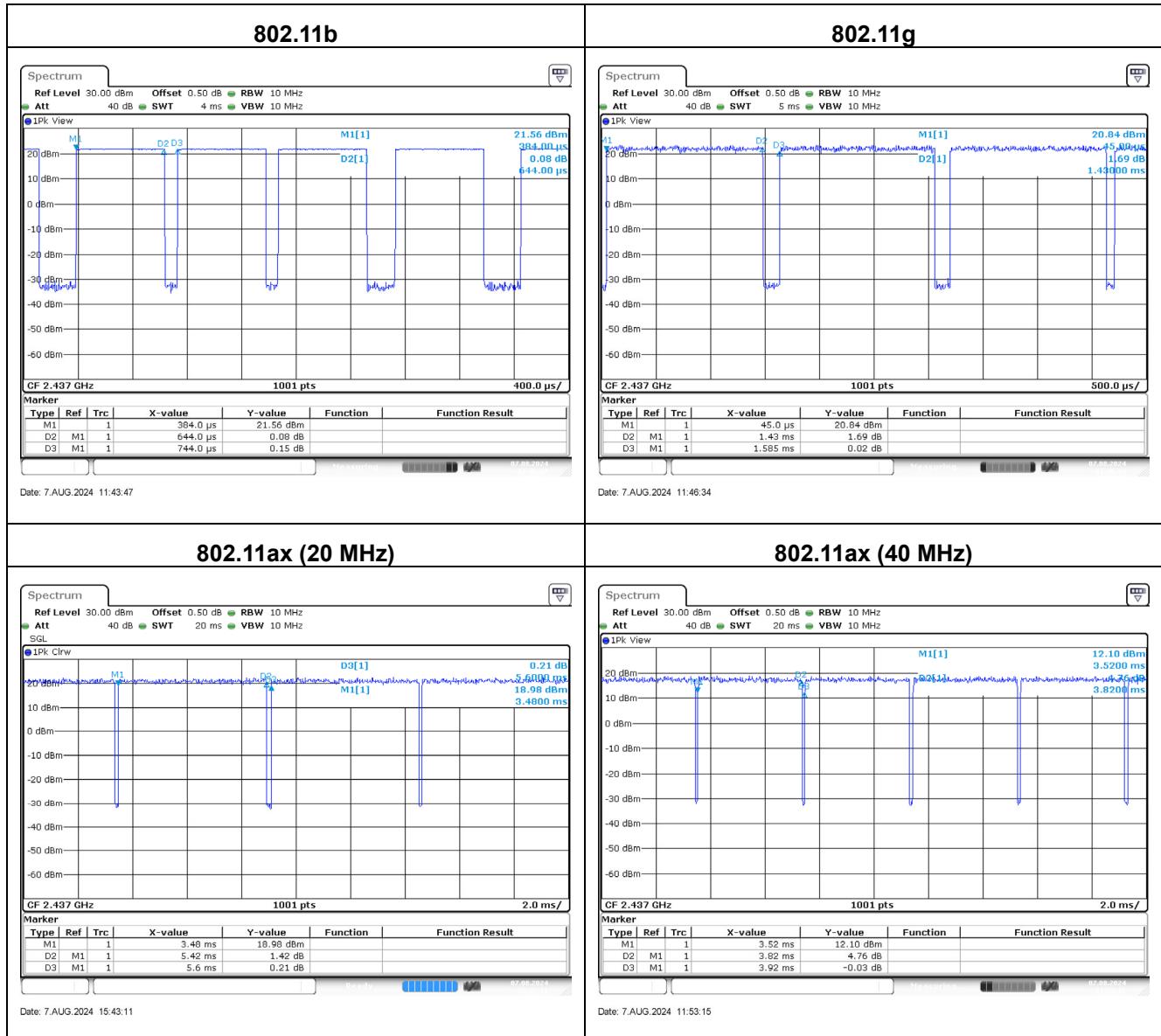
### 2.2. Test Frequency Mode

| Test Software Version | Qualcomm Sequence Profiling Resource Version 5.0-00197 |
|-----------------------|--|
|-----------------------|--|

| Modulation | Frequency (MHz) | Power Setting |
|------------|-----------------|---------------|
| 802.11b    | 2437            | 21            |
| 802.11g    | 2437            | 20.25         |
| 802.11ax20 | 2437            | 19.5          |
| 802.11ax40 | 2437            | 16.415        |

### 2.3. Duty Cycle

| Modulation        | On Times (ms) | On+Off Times (ms) | Duty Cycle (%) | Duty Factor (dB) | VBW (Hz) |
|-------------------|---------------|-------------------|----------------|------------------|----------|
| 802.11b           | 0.6440        | 0.7440            | 86.56          | 0.63             | 2000     |
| 802.11g           | 1.4300        | 1.5850            | 90.22          | 0.45             | 1000     |
| 802.11ax (20 MHz) | 5.4200        | 5.6000            | 96.79          | 0.14             | 200      |
| 802.11ax (40 MHz) | 3.8200        | 3.9200            | 97.45          | 0.11             | 300      |



## 2.4. Worst Case Measurement Configuration

|           |                   |                   |
|-----------|-------------------|-------------------|
| Test Mode | Mode 1 (Transmit) | 802.11b           |
|           |                   | 802.11g           |
|           |                   | 802.11ax (20 MHz) |
|           |                   | 802.11ax (40 MHz) |

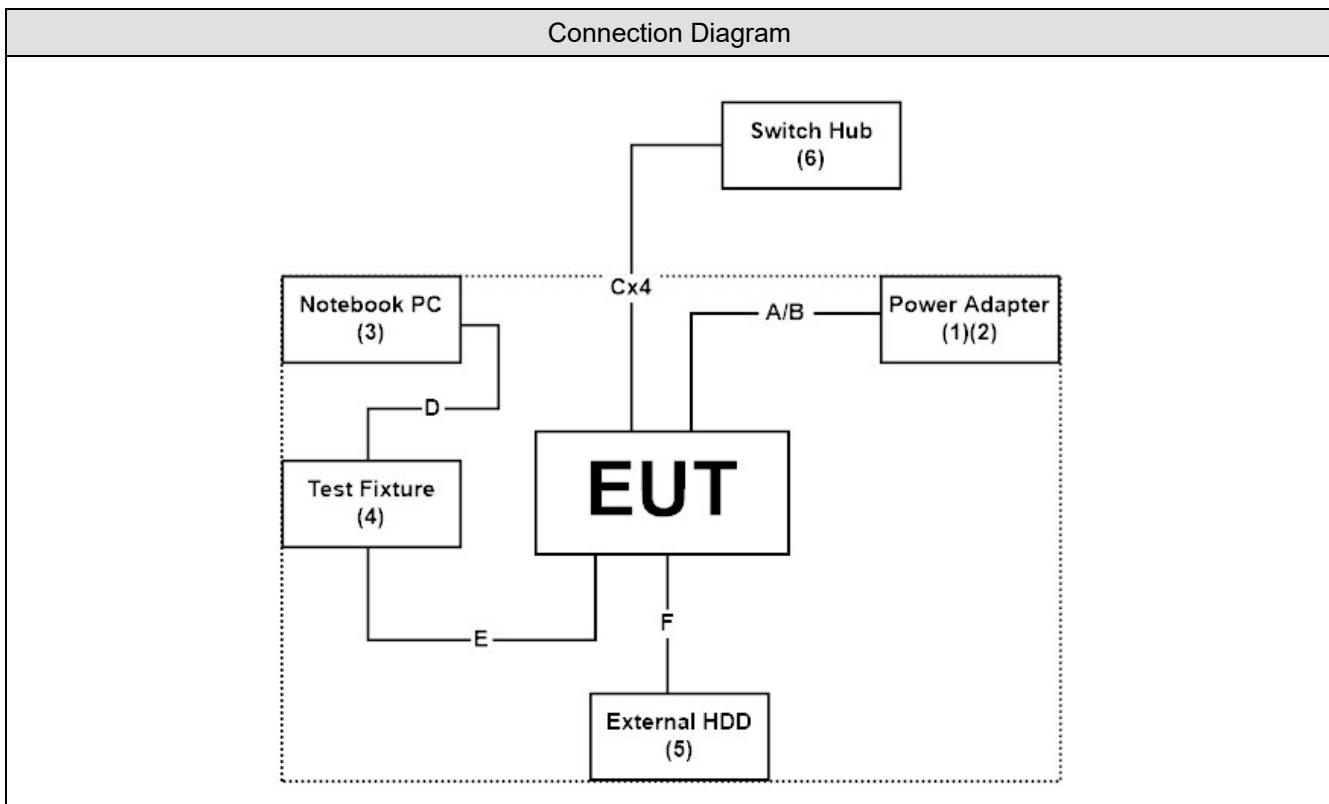
Note:

1. Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
3. Lowest data rates are tested in each mode. Only worst case is shown in the report.  
(802.11b is 1Mbps, 802.11g is 6Mbps, 802.11ax is MCS0)

## 2.5. Tested System Details

| No. | Equipment     | Manufacturer                                   | Model No.         | Serial No.      | Power Cord |
|-----|---------------|--|-------------------|-----------------|------------|
| 1   | Power Adapter | Zhuzhou Dachuan Electronic Technology Co.,Ltd. | DCT36W120300ZZ-D2 | N/A             | N/A        |
| 2   | Power Adapter | FLYPOWER                                       | PS36LA120K3000UD  | N/A             | N/A        |
| 3   | Notebook PC   | ASUS   | P5430U            | G8NXCV07J179325 | N/A        |
| 4   | Test Fixture  | Askey  | BBS tool Rev03    | N/A             | N/A        |
| 5   | External HDD  | Transcend                                      | TS1TSJ25MC        | F30467-0003     | N/A        |
| 6   | Switch Hub    | ZYXEL  | GS-108B v3        | N/A             | N/A        |

## 2.6. Configuration of Tested System



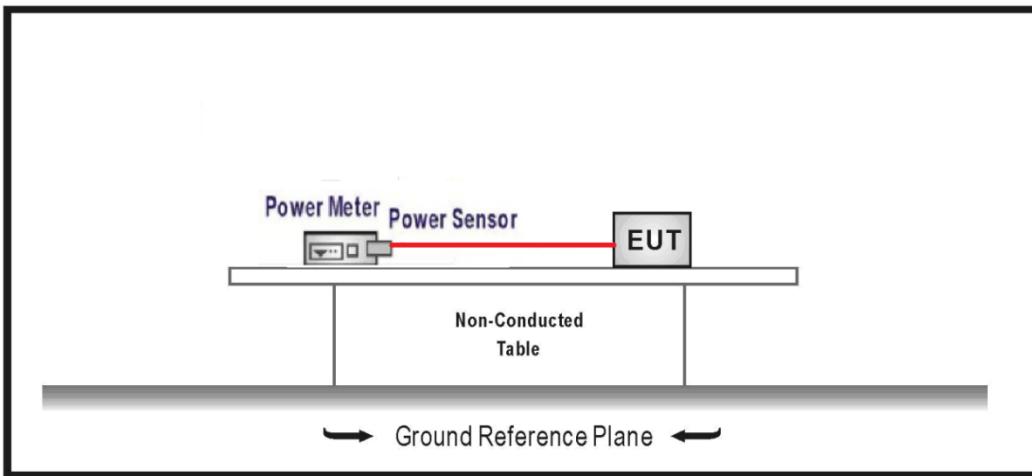
| Signal Cable Type |                     | Signal cable Description   |
|-------------------|---------------------|----------------------------|
| A                 | Power Cable         | Non-shielded, 1.5m         |
| B                 | Power Cable         | Non-shielded, 1.5m         |
| C                 | LAN Cable           | Non-shielded, 3m four PCS. |
| D                 | USB TO MicroB Cable | Shielded, 1m               |
| E                 | Signal Cable        | Non-shielded, .0.1m        |
| F                 | USB Cable           | Shielded, .0.5m            |

## 2.7. EUT Exercise Software

|   |   |
|---|---|
| 1 | Setup the EUT as shown in Section 2.6.  |
| 2 | Execute software "Qualcomm Sequence Profiling Resource Version 5.0-00197" on the Notebook PC. |
| 3 | Configure the test mode, the test channel, and the data rate.                                 |
| 4 | Press "OK" to start the continuous transmit.  |
| 5 | Verify that the EUT works properly.   |

### 3. Maximum Conducted Output Power

#### 3.1. Test Setup



#### 3.2. Test Limit

The maximum conducted output power shall be less 30 dBm (1 Watt).

#### 3.3. Test Procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074.

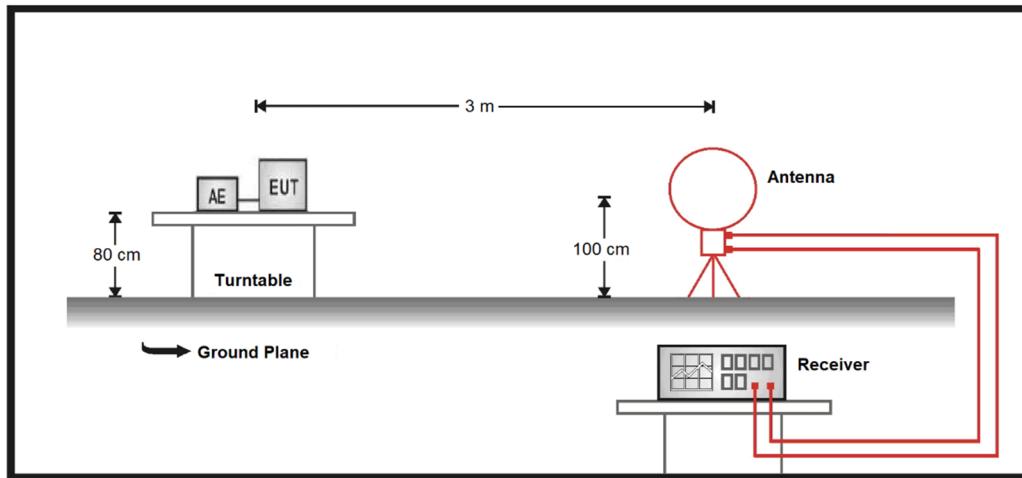
#### 3.4. Test Result of Maximum Conducted Output Power

Refer as Appendix A

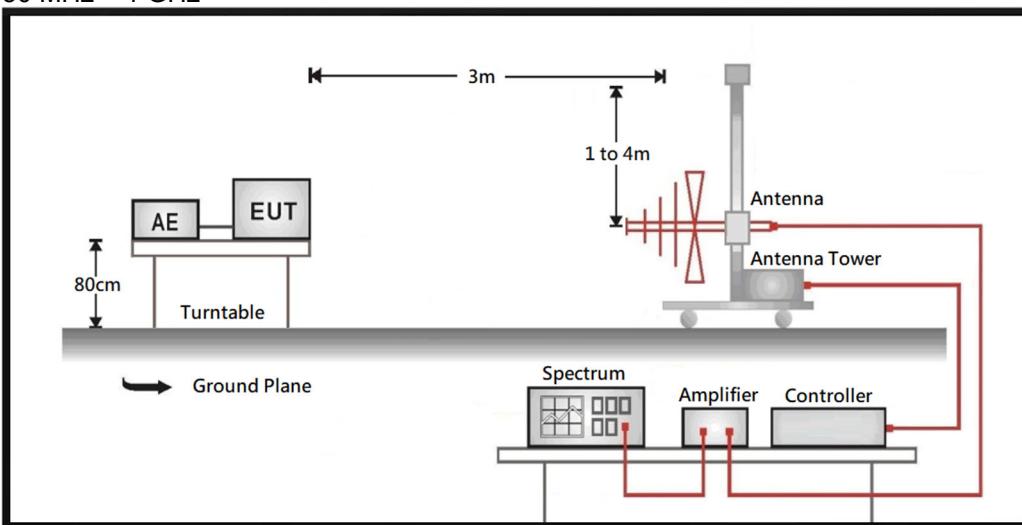
## 4. Radiated Emission

### 4.1. Test Setup

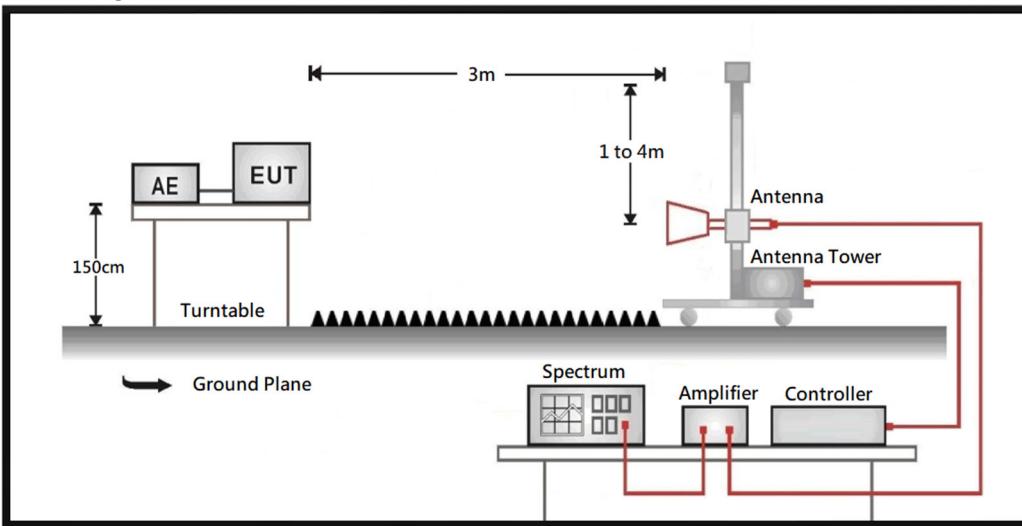
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz



#### 4.2. Test Limit

| Frequency (MHz) | Field strength (uV/m) | Field strength (dBuV/m) | Measurement distance (m) |
|-----------------|-----------------------|-------------------------|--------------------------|
| 0.009 – 0.490   | 2400/F(kHz)           | 20 log (2400/F(kHz))    | 300                      |
| 0.490 – 1.705   | 24000/F(kHz)          | 20 log (24000/F(kHz))   | 30                       |
| 1.705 - 30      | 30                    | 29.5                    | 30                       |
| 30 - 88         | 100                   | 40                      | 3                        |
| 88 - 216        | 150                   | 43.5                    | 3                        |
| 216 - 960       | 200                   | 46                      | 3                        |
| Above 960       | 500                   | 54                      | 3                        |

Remarks:

1. Field strength (dBuV/m) = 20 log Field strength (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### 4.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB 558074.

The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

On any frequency or frequencies from 9 kHz (including the lowest oscillator frequency generated within the device up to the 10th harmonic) to 1000 MHz, the limit shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limit shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

The bandwidth below 1 GHz setting on the field strength meter is 120 kHz and above 1 GHz is 1 MHz.

#### 4.4. Test Result of Radiated Emission

Refer as Appendix B