



Test Report No:
2430929R-RFUSV07S-A

TEST REPORT FCC Rules&Regulations

| | |
|---------------------------------|--|
| Product Name | Mobile POS Terminal |
| Brand Name | PARTNER |
| Model No. | M10-3N |
| FCC ID | NDPM103N |
| Applicant's Name / Address | Partner Tech Corporation 10F, No. 233-1, Baoqiao Rd., Xindian Dist, New Taipei City, Taiwan |
| Manufacturer's Name | Partner Tech Corporation |
| Test Method Requested, Standard | FCC CFR Title 47 Part 15 Subpart C Section 15.225 ANSI C63.10-2013 |
| Verdict Summary | IN COMPLIANCE |
| Documented By Ida Tung | <i>Ida Tung</i> |
| Tested By Bill Lin | <i>Bill Lin</i> |
| Approved By Alan Chen | <i>Alan Chen</i> |
| Date of Receipt | 2024/03/29 |
| Date of Issue | 2024/05/31 |
| Report Version | V1.0 |

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Competences and Guarantees

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.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

General Conditions

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

| Version | Description | Issued Date |
|---------|-------------------------|-------------|
| V1.0 | Initial issue of report | 2024/05/31 |

Summary of Test Result

| Report Clause | Test Items | Result (PASS/FAIL) | Remark |
|---------------|---|--------------------|--------|
| 3 | AC Power Line Conducted Emission | PASS | - |
| 4 | Emission Bandwidth | PASS | - |
| 5 | Frequency Stability | PASS | - |
| 6 | Field Strength of Fundamental Emissions and Spectrum Mask | PASS | - |
| 7 | 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 | 13.553 ~ 13.567 MHz |
| Operation Frequency | 13.56 MHz |
| Channel Number | 1 Channel |
| Type of Modulation | ASK |

| Accessories Information | | | | | |
|-------------------------|----------------|------------|-----------|--|---|
| No. | Equipment Name | Brand Name | Model No. | Rating | Remark |
| 1 | Adapter | EDAC | EA1024P1 | INPUT: AC 100-240V~1A 50-60Hz OUTPUT: 12V 3.0A , 36W | With power cable : Non-shielded, 1.2m with one ferrite core bonded. |

| Antenna Information | | | |
|---------------------|------------|-----------------|------|
| Item. | Brand Name | Model No. | Type |
| 1 | Sunion | ANT-6010-IPX110 | PCB |

1.2. EUT Information

| | |
|----------------|--------------|
| EUT Power Type | From Adapter |
|----------------|--------------|

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 |
|--------------------|------------------|----------|---------|-----------------------|
| Conducted Emission | Temperature (°C) | 10~40 °C | 23.1 °C | 2024/04/18 |
| | Humidity (%RH) | 10~90 % | 59.2 % | |
| Radiated Emission | Temperature (°C) | 10~40 °C | 21.5 °C | 2024/04/03~2024/04/11 |
| | Humidity (%RH) | 10~90 % | 63.4 % | |

1.4. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ($k=2$)).

| Test item | Uncertainty |
|---|---|
| AC Power Line Conducted Emission | ± 3.50 dB |
| Emission Bandwidth | ± 1580.61 Hz |
| Field Strength of Fundamental Emissions and Spectrum Mask | ± 3.88 dB |
| Radiated Emission | 9 kHz~30 MHz: ± 3.88 dB 30 MHz~1 GHz: ± 4.42 dB 1 GHz~18 GHz: ± 4.28 dB 18 GHz~40 GHz: ± 3.90 dB |
| Frequency Stability | ± 1580.61 Hz |

1.5. List of Test Equipment

For Conduction Measurements / HY-SR01

| | Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Due Date |
|---|--------------------|--------------|-----------|------------|------------|------------|
| V | EMI Test Receiver | R&S | ESR7 | 101601 | 2023/06/20 | 2024/06/19 |
| V | Two-Line V-Network | R&S | ENV216 | 101478 | 2023/09/13 | 2024/09/12 |
| V | Two-Line V-Network | R&S | ENV216 | 101307 | 2023/08/17 | 2024/08/16 |
| V | Coaxial Cable | SUHNER | RG400_BNC | RF001 | 2024/01/10 | 2025/01/09 |

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: e3 230303 dekra V9.

For Conducted Measurements / HY-SR03

| | Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Due Date |
|---|---------------------|--------------|-------------|------------|------------|------------|
| V | Spectrum Analyzer | R&S | FSV30 | 103466 | 2024/01/05 | 2025/01/04 |
| V | Temperature Chamber | KSON | THS-D4T-100 | A0606 | 2023/08/10 | 2024/08/09 |
| V | AC Power Source | eec | 6605 | 1570547 | 2024/01/30 | 2025/01/29 |

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 V3.0.0.14.

For Radiated Measurements /HY-CB01

| | Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Due Date |
|---|-------------------|---------------|-------------------|--------------|------------|------------|
| V | Loop Antenna | AMETEK | HLA6121 | 56736 | 2023/05/23 | 2024/05/22 |
| V | Bi-Log Antenna | SCHWARZBECK | VULB9168 | 9168-0675 | 2023/08/09 | 2025/08/08 |
| | Horn Antenna | RF SPIN | DRH18-E | 210802A18ES | 2024/03/28 | 2025/03/27 |
| | Horn Antenna | Com-Power | AH-840 | 101100 | 2023/10/02 | 2025/10/01 |
| V | Pre-Amplifier | SGH | 0301 | 20211007-7 | 2024/01/10 | 2025/01/09 |
| | Pre-Amplifier | EMCI | EMC051845SE | 980632 | 2024/01/10 | 2025/01/09 |
| | Pre-Amplifier | EMCI | EMC05820SE | 980362 | 2024/01/10 | 2025/01/09 |
| | Pre-Amplifier | EMCI | EMC184045SE | 980369 | 2024/01/10 | 2025/01/09 |
| | Coaxial Cable | EMCI | EMC102-KM-KM-600 | 1160314 | 2024/01/10 | 2025/01/09 |
| | Coaxial Cable | EMCI | EMC102-KM-KM-7000 | 170242 | 2024/01/10 | 2025/01/09 |
| | 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 | Vnom (AC 120V/60Hz) | Vmax (AC 138V/60Hz) | Vmin (AC 102V/60Hz) |

2.2. Test Frequency Mode

| | |
|-----------------------|-----------------------|
| Test Software Version | RFDemo / Version 2.03 |
|-----------------------|-----------------------|

| Modulation | Frequency | Power Setting |
|------------|-----------|---------------|
| NFC | 13.56MHz | N/A |

2.3. The Worst Case Measurement Configuration

| | | |
|-----------|--------|----------|
| Test Mode | Mode 1 | Transmit |
|-----------|--------|----------|

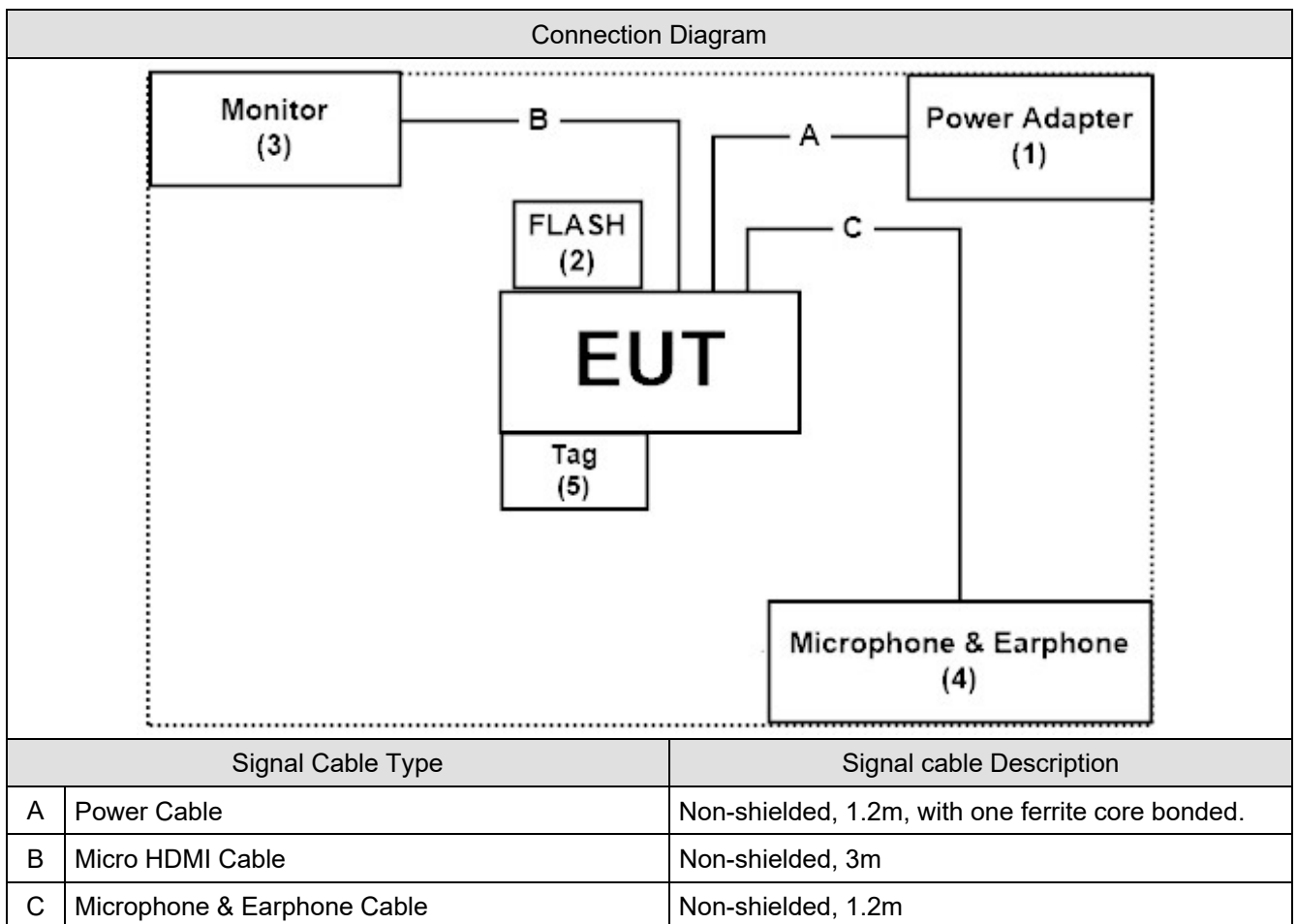
Note:

1. Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. For radiated emission below 1 GHz and AC power line conducted emission have performed all modes of operation were investigated and the worst-case emissions are reported.
3. The spectrum plot against conducted item only shows the worst case.
4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

2.4. Tested System Details

| No. | Equipment | Brand Name | Model No. | Serial No. | Power Cord |
|-----|-----------------------|------------|-----------------------|------------------------------|--------------------|
| 1 | Power Adapter | EDAC | EA1024P1 | N/A | N/A |
| 2 | FLASH | SanDisk | 16GB Ultra Flair CZ73 | N/A | N/A |
| 3 | Monitor | DELL | ST2320Lf | CN-0M2NN6-7 2872-22I-C9VS | Non-shielded, 1.8m |
| 4 | Microphone & Earphone | Verbatim | C09024VB | N/A | N/A |
| 5 | Tag | ASUS | Tag | N/A | N/A |

2.5. Configuration of tested System

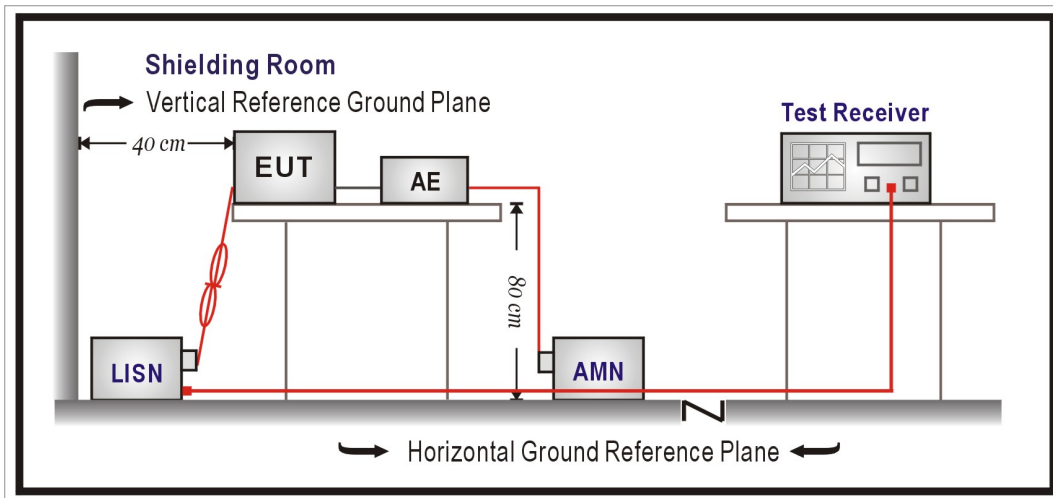


2.6. EUT Operating Procedures

| | |
|---|--|
| 1 | Setup the EUT as shown in Section 2.5. |
| 2 | Execute software "RFDemo / Version 2.03" on the EUT. |
| 3 | Place a tag on the EUT. |
| 4 | Verify that the EUT works properly. |

3. AC Power Line Conducted Emission

3.1. Test Setup



3.2. Test Limit

| Frequency (MHz) | QP (dBuV) | AV (dBuV) |
|-----------------|-----------|-----------|
| 0.15 - 0.50 | 66 - 56 | 56 - 46 |
| 0.50 - 5.0 | 56 | 46 |
| 5.0 - 30 | 60 | 50 |

Remarks: In the above table, the tighter limit applies at the band edges.

3.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50 ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.

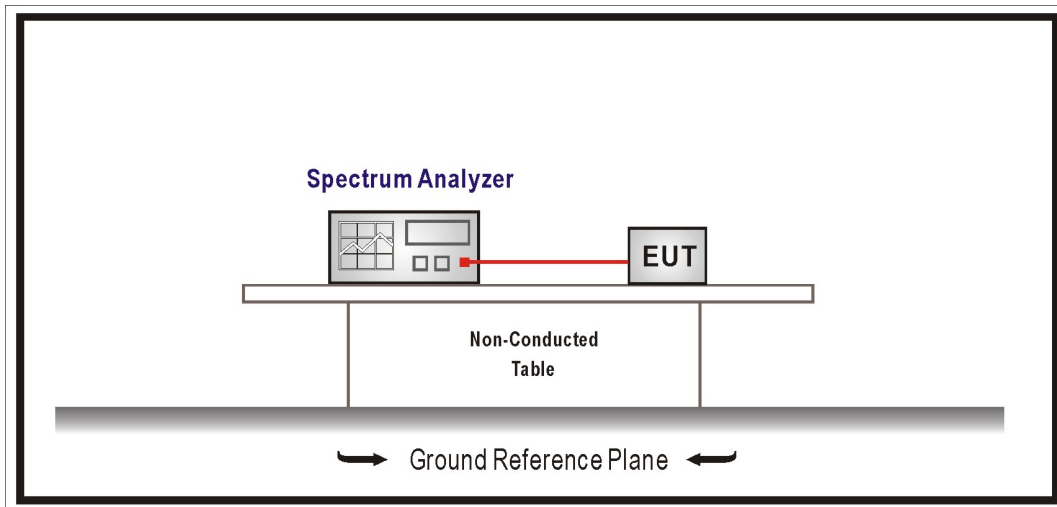
Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz.

3.4. Test Result of AC Power Line Conducted Emission

Refer as Appendix A

4. Emission Bandwidth

4.1. Test Setup



4.2. Test Limit

Intentional radiators must be designed to ensure that the 20dB emission bandwidth in the specific band 13.553 ~ 13.567 MHz.

4.3. Test Procedures

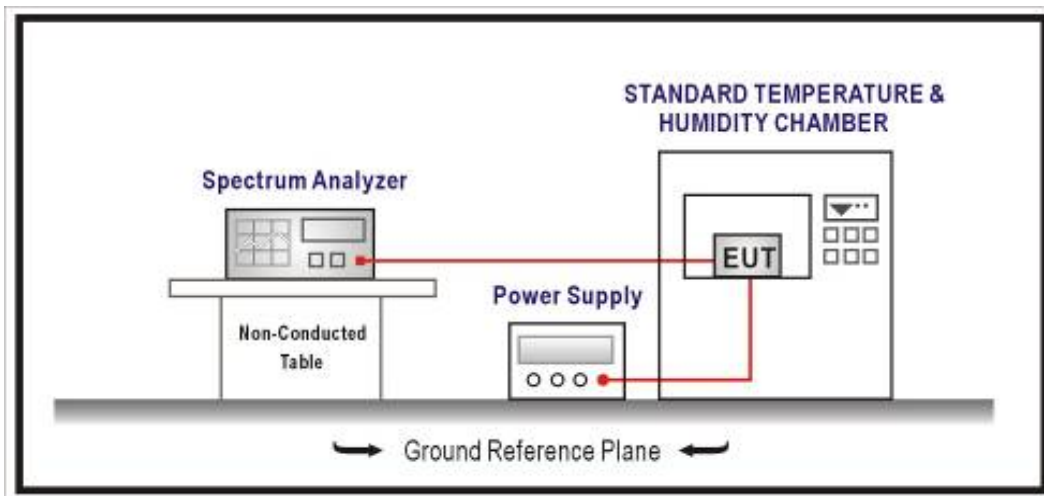
1. For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.
2. Because the measured signal is CW or CW-like adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

4.4. Test Result of Emission Bandwidth

Refer as Appendix B

5. Frequency Stability

5.1. Test Setup



5.2. Test Limit

Carrier frequency stability shall be maintained to $\pm 0.01\%$ (± 100 ppm).

5.3. Test Procedures

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

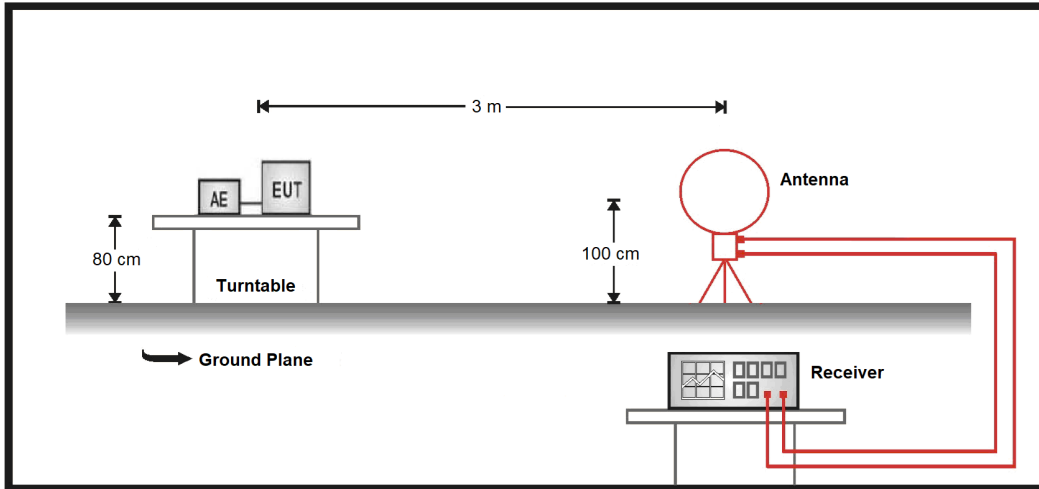
For battery operated equipment, the equipment tests shall be performed using a new battery.

5.4. Test Result of Frequency Stability

Refer as Appendix C

6. Field Strength of Fundamental Emissions and Spectrum Mask

6.1. Test Setup



6.2. Test Limit

| Field Strength of Fundamental Emissions | | | |
|---|--|--------------------------------------|-------------------------------------|
| Frequencies (MHz) | Field Strength (microvolts/meter) at 30m | Field Strength (dB μ V/m) at 10m | Field Strength (dB μ V/m) at 3m |
| 13.553 – 13.567 MHz | 15848 | 103.08 (QP) | 124 (QP) |

Quasi peak measurement of the fundamental.

| Spectrum Mask | | | | | |
|---------------|--|------------------|--------------------|--------------------|-------------------|
| Description | Compliance with the spectrum mask is tested using a spectrum analyzer with RBW set to a 9kHz for the band 13.553 – 13.567 MHz. | | | | |
| Limit | Freq. of Emission (MHz) | Field Strength | | | |
| | | (μ V/m)@30m | (dB μ V/m)@30m | (dB μ V/m)@10m | (dB μ V/m)@3m |
| | 1.705~13.110 | 30 | 29.5 | 48.6 | 69.5 |
| | 13.110~13.410 | 106 | 40.5 | 59.6 | 80.5 |
| | 13.410~13.553 | 334 | 50.5 | 69.6 | 90.5 |
| | 13.553~13.567 | 15848 | 84.0 | 103.1 | 124.0 |
| | 13.567~13.710 | 334 | 50.5 | 69.6 | 90.5 |
| | 13.710~14.010 | 106 | 40.5 | 59.6 | 80.5 |
| | 14.010~30.000 | 30 | 29.5 | 48.6 | 69.5 |

6.3. Test Procedure

1. Configure the EUT according to ANSI C63.10: 2013. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the receiving antenna was fixed at one meter above ground to find the maximum emissions field strength.
4. For Fundamental emissions, use the receiver to measure QP reading.
5. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
6. Compliance with the spectrum mask is tested using a spectrum analyzer with RBW set to a 9kHz for the band 13.553 – 13.567 MHz.

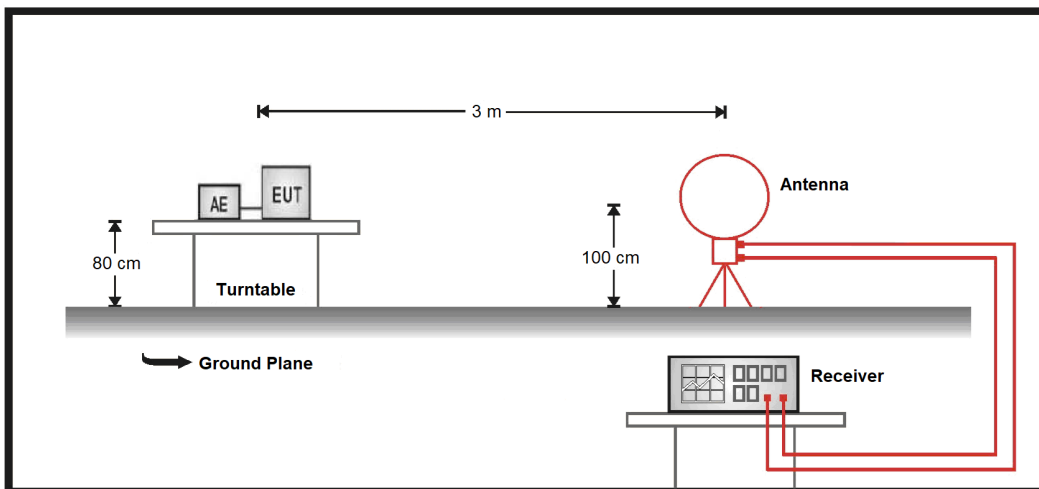
6.4. Test Result of Field Strength of Fundamental Emissions and Spectrum Mask

Refer as Appendix D

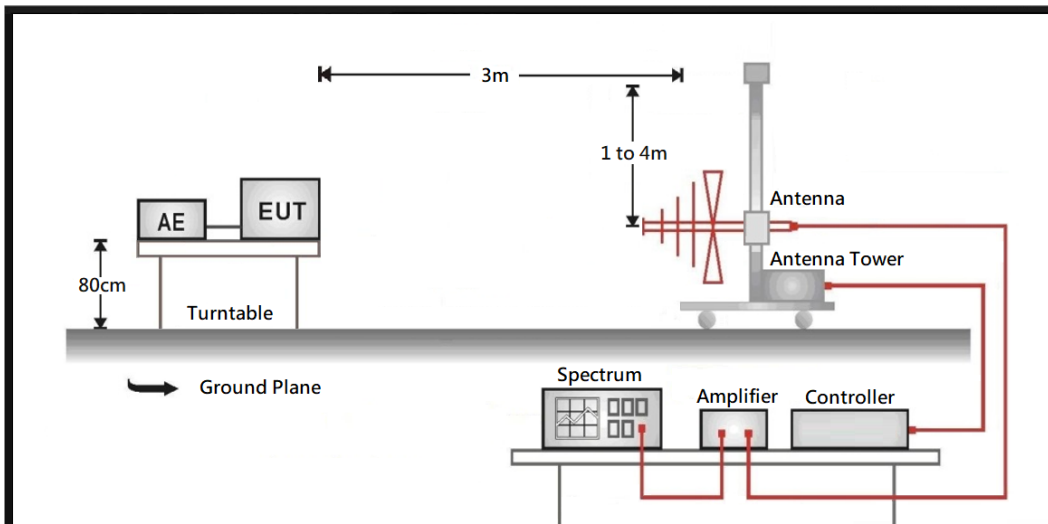
7. Radiated Emission

7.1. Test Setup

9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



7.2. Test Limit

The field strength of any emissions which appear outside of 13.553 ~ 13.567MHz band shall not exceed the general radiated emissions limits.

| 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

7.3. Test Procedure

1. Configure the EUT according to ANSI C63.10: 2013. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
7. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

7.4. Test Result of Radiated Emission

Refer as Appendix E