



FCC TEST REPORT

For

OBDSTAR Technology Co, Ltd

Diagnostic Tool

Test Model: MD700

Additional Model No.: Please Refer to Page 6

Prepared for : OBDSTAR Technology Co, Ltd
Address : 19th floor, Building T1, Hi Park, Luozu Community, Shiyan Street,
Baoan District, Shenzhen, Guangdong, P.R.China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : May 19, 2025
Number of tested samples : 2
Sample number : A250519009-1, A250519009-2
Serial number : Prototype
Date of Test : May 19, 2025 ~ May 27, 2025
Date of Report : May 28, 2025



Shenzhen LCS Compliance Testing Laboratory Ltd.
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**FCC TEST REPORT**
FCC CFR 47 PART 15 C(15.247)**Report Reference No.** : **LCSA05135120EA****Date of Issue** : May 28, 2025**Testing Laboratory Name** : **Shenzhen LCS Compliance Testing Laboratory Ltd.****Address** : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China**Testing Location/ Procedure** : Full application of Harmonised standards ☒
Partial application of Harmonised standards ☐
Other standard testing method ☐**Applicant's Name** : **OBDSTAR Technology Co, Ltd****Address** : 19th floor, Building T1, Hi Park, Luoqu Community, Shiyuan Street, Baoan District, Shenzhen, Guangdong, P.R.China**Test Specification****Standard**..... : FCC CFR 47 PART 15 C(15.247)**Test Report Form No.** : TRF-4-E-147 A/0**TRF Originator** : Shenzhen LCS Compliance Testing Laboratory Ltd.**Master TRF** : Dated 2011-03**Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved.**

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EUT Description..... : **Diagnostic Tool****Trade Mark**..... : N/A**Test Model** : MD700**Ratings**..... : Input: DC 5V

DC 3.7V by Rechargeable Li-ion Battery, 3700mAh

Result : **Positive****Compiled by:***Joker.Hu*

Joker Hu/Administrator

Supervised by:*Cary Luo*

Cary Luo/ Technique principal

Approved by:*Gavin Liang*

Gavin Liang/ Manager



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**FCC -- TEST REPORT**

| | | |
|--------------------------|-----------------------|--------------------------------------|
| Test Report No. : | LCSA05135120EA | <u>May 28, 2025</u> Date of issue |
|--------------------------|-----------------------|--------------------------------------|

| | |
|--------------------------|---|
| Test Model..... | : MD700 |
| EUT..... | : Diagnostic Tool |
| Applicant..... | : OBDSTAR Technology Co, Ltd |
| Address..... | : 19th floor, Building T1, Hi Park, Luoizu Community, Shiyan Street, Baoan District, Shenzhen, Guangdong, P.R.China |
| Telephone..... | : / |
| Fax..... | : / |
| Manufacturer..... | : OBDSTAR Technology Co, Ltd |
| Address..... | : 19th floor, Building T1, Hi Park, Luoizu Community, Shiyan Street, Baoan District, Shenzhen, Guangdong, P.R.China |
| Telephone..... | : / |
| Fax..... | : / |
| Factory..... | : OBDSTAR Technology Co, Ltd |
| Address..... | : 19th floor, Building T1, Hi Park, Luoizu Community, Shiyan Street, Baoan District, Shenzhen, Guangdong, P.R.China |
| Telephone..... | : / |
| Fax..... | : / |

| | |
|--------------------|-----------------|
| Test Result | Positive |
|--------------------|-----------------|

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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**Revision History**

| Report Version | Issue Date | Revision Content | Revised By |
|--|--------------|------------------|------------|
| 000 | May 28, 2025 | Initial Issue | -- |
| | | | |
| At the customer's request, the revised report was submitted to LCSA05135120EA applicant by quoting the test data of LCSA12104014EA original report. Added Test model: ZSCAN(Pad)- II Replaced the external product photo. Conduction and radiation were retested, The relevant data and test photos have been replaced. | | | |





TABLE OF CONTENTS

| | |
|--|-----------|
| 1. GENERAL INFORMATION | 6 |
| 1.1. DESCRIPTION OF DEVICE (EUT) | 6 |
| 1.2. HOST SYSTEM CONFIGURATION LIST AND DETAILS | 7 |
| 1.3. EXTERNAL I/O CABLE | 7 |
| 1.4. DESCRIPTION OF TEST FACILITY | 7 |
| 1.5. STATEMENT OF THE MEASUREMENT UNCERTAINTY | 7 |
| 1.6. MEASUREMENT UNCERTAINTY | 8 |
| 1.7. DESCRIPTION OF TEST MODES | 8 |
| 2. TEST METHODOLOGY | 10 |
| 2.1. EUT CONFIGURATION | 10 |
| 2.2. EUT EXERCISE | 10 |
| 2.3. GENERAL TEST PROCEDURES | 10 |
| 2.4. TEST SAMPLE | 10 |
| 3. SYSTEM TEST CONFIGURATION | 11 |
| 3.1. JUSTIFICATION | 11 |
| 3.2. EUT EXERCISE SOFTWARE | 11 |
| 3.3. SPECIAL ACCESSORIES | 11 |
| 3.4. BLOCK DIAGRAM/SCHEMATICS | 11 |
| 3.5. EQUIPMENT MODIFICATIONS | 11 |
| 3.6. TEST SETUP | 11 |
| 4. SUMMARY OF TEST RESULTS | 12 |
| 5. TEST RESULT | 13 |
| 5.2. MAXIMUM PEAK CONDUCTED OUTPUT POWER MEASUREMENT | 22 |
| 5.3. AC POWER LINE CONDUCTED EMISSIONS | 24 |
| 6. LIST OF MEASURING EQUIPMENTS | 27 |
| 7. TEST SETUP PHOTOGRAPHS OF EUT | 28 |
| 8. EXTERIOR PHOTOGRAPHS OF THE EUT | 28 |
| 9. INTERIOR PHOTOGRAPHS OF THE EUT | 28 |





1. GENERAL INFORMATION

1.1. Description of Device (EUT)

| | |
|----------------------|---|
| EUT | : Diagnostic Tool |
| Test Model | : MD700 |
| Additional Model No. | : iScan Pro, iScan Pros, MOTOSTAR, MOTOSTAR Pro, MOTOSTAR Pros, MS70 Pro, MS70 Pros, Moto Tuner, Marine Pro, D700 Pro, D700 Pros, D700 S, DC706 Pro, DC706 Pros, ECU Pro, HDEC, HDECUPRO, AutoEcu, ECU MASTER, HD ECU PROS, MotoECU, Diesel ECU pro, Diesel Pro, M700, M700 PRO, M700 PROS, M700 MASTER, FK100, FK100 Pro, IM700, IM700 S, IM700 Pro, IM706, IM706S, IM706 Pro, KeyMaster 7, KeyMaster 7S, KeyMaster 7 Pro, Odo Master Pro, Boat Master, MS75, MS75S, MS75 Pro, DB700, DB700 Pro, DB700S, DB706, DB706 Pro, DB706S, MS70 Pro, MS70 Pros, iScan 700, iScan 700S, iScan 700 Pro, iScan 700 Pros, MOTO 700, MOTO 700S, MOTO 700 Pro, MOTO 700 Pros, MK75, MK75S, MK75 Pro, MK75 Pros, MK70S, MK70 Pro, MK70 Pros, MK706, MK706S, MK706 Pro, ZSCAN(Pad)- II |
| Model Declaration | : PCB board, structure and internal of these model(s) are the same, So no additional models were tested |
| Power Supply | : Input: DC 5V DC 3.7V by Rechargeable Li-ion Battery, 3700mAh |
| Hardware Version | : V1.0 |
| Software Version | : V1.0 |
| WIFI(2.4G Band) | : |
| Frequency Range | : 2412MHz~2462MHz |
| Channel Spacing | : 5MHz |
| Channel Number | : 11 Channels for 20MHz bandwidth (2412~2462MHz) |
| Modulation Type | : IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) |
| Antenna Description | : Internal Antenna 1.62dBi(Max.) |

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.





1.2. Host System Configuration List and Details

| Manufacturer | Description | Model | Serial Number | Certificate |
|---------------------------------------|---------------|----------------|---------------|-------------|
| SHENZHEN TIANYIN ELECTRONICS CO., LTD | Power Adapter | TPA-46050200UU | -- | FCC |

Note: Auxiliary equipment is provided by the laboratory.

1.3. External I/O Cable

| I/O Port Description | Quantity | Cable |
|----------------------|----------|-------|
| VGA Port | 1 | N/A |
| Type-C Port | 1 | N/A |
| USB Port | 1 | N/A |
| Power Port | 1 | N/A |

1.4. Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Test Firm Registration Number: 254912.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

1.5. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.





1.6. Measurement Uncertainty

| Test Item | Frequency Range | Uncertainty | Note |
|--------------------------------|-----------------|-------------|------|
| Radiation Uncertainty | 9KHz~30MHz | ±3.10dB | (1) |
| | 30MHz~200MHz | ±2.96dB | (1) |
| | 200MHz~1000MHz | ±3.10dB | (1) |
| | 1GHz~26.5GHz | ±3.80dB | (1) |
| | 26.5GHz~40GHz | ±3.90dB | (1) |
| Conduction Uncertainty | 150kHz~30MHz | ±1.63dB | (1) |
| Power disturbance | 30MHz~300MHz | ±1.60dB | (1) |
| Output power | 1GHz-40GHz | ±0.57dB | (1) |
| Power Spectral Density | 1GHz-40GHz | ±1.2dB | (1) |
| Occupied Channel Bandwidth | 1GHz-40GHz | ±5% | (1) |
| Conducted RF Spurious Emission | 9kHz-40GHz | ±1.80dB | (1) |
| Emissions in Restricted Bands | 1GHz-40GHz | ±2.47dB | (1) |

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

1.7. Description of Test Modes

The EUT has been tested under operating condition.

This test was performed with EUT in X, Y, Z position and the worst case was found when EUT in Y position.

AC conducted emission pre-test at both at AC 120V/60Hz and AC 240V/50Hz modes, recorded worst case at AC 120V/60Hz;

Worst-case mode and channel used for 150 KHz-30 MHz power line conducted emissions was determined to be IEEE 802.11b Mode (Low Channel).

Worst-case mode and channel used for 9 KHz-1000 MHz radiated emissions was determined to be IEEE 802.11b Mode (Low Channel).

Worst-Case data rates were utilized from preliminary testing of the Chipset, worst-case data rates used during the testing are as follows:

IEEE 802.11b Mode: 1 Mbps, DSSS.

IEEE 802.11n Mode HT20: MCS0, OFDM.





Channel List & Frequency

IEEE 802.11b/n HT20

| Frequency Band | Channel No. | Frequency(MHz) | Channel No. | Frequency(MHz) |
|----------------|-------------|----------------|-------------|----------------|
| 2412~2462MHz | 1 | 2412 | 7 | 2442 |
| | 2 | 2417 | 8 | 2447 |
| | 3 | 2422 | 9 | 2452 |
| | 4 | 2427 | 10 | 2457 |
| | 5 | 2432 | 11 | 2462 |
| | 6 | 2437 | --- | --- |





2. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen LCS Compliance Testing Laboratory Ltd.

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to FCC's request, Test Procedure KDB558074 D01 15.247 Meas Guidance v05r02 is required to be used for this kind of FCC 15.247 digital modulation device.

According to its specifications, the EUT must comply with the requirements of the Section 15.203, 15.205, 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

2.3. General Test Procedures

2.3.1 Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1GHz and 1.5 m above ground plane above 1GHz. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10-2013.

2.4. Test Sample

The application provides 2 samples to meet requirement;

| Sample Number | Description |
|------------------------|---------------------------------------|
| Sample 1(A250519009-1) | Engineer sample – continuous transmit |
| Sample 2(A250519009-2) | Normal sample – Intermittent transmit |





3. SYSTEM TEST CONFIGURATION

3.1. Justification

The system was configured for testing in a continuous transmits condition.

3.2. EUT Exercise Software

The system was configured for testing in a continuous transmits condition and change test channels by software provided by application.

3.3. Special Accessories

N/A.

3.4. Block Diagram/Schematics

Please refer to the related document

3.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6. Test Setup

Please refer to the test setup photo.





4. SUMMARY OF TEST RESULTS

| Applied Standard: FCC Part 15 Subpart C | | | | |
|---|-------------------------------------|----------------------|-----------|--------------|
| FCC Rules | Description of Test | Test Sample | Result | Remark |
| §15.209(a) | Radiated Spurious Emissions | Sample 1 Sample 2 | Compliant | Note 1 |
| §15.247(b) | Maximum Peak Conducted Output Power | Sample 1 | Compliant | Appendix A.2 |
| §15.207(a) | Conducted Emissions | Sample 2 | Compliant | Note 1 |
| §15.247(i)§1.1310 §15.247(i)§2.1091 | RF Exposure | N/A | Compliant | Note 2 |

Remark:

1. Note 1 – Test results inside test report;
2. Note 2 – Test results in other test report (RF Exposure report);





5. TEST RESULT

5.1. Radiated Emissions Measurement

5.1.1. Standard Applicable

15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|-------------------|---------------------|---------------|-------------|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| 1\ 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | (2\) |
| 13.36-13.41 | | | |

1\ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

2\ Above 38.6

According to §15.247 (d): 20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

5.1.2. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 10 th carrier harmonic |
| RB / VB (Emission in restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average |
| RB / VB (Emission in non-restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average |





| Receiver Parameter | Setting |
|------------------------|--|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9kHz~150kHz / RB/VB 200Hz/1KHz for QP/AVG |
| Start ~ Stop Frequency | 150kHz~30MHz / RB/VB 9kHz/30KHz for QP/AVG |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB/VB 120kHz/1MHz for QP |

5.1.3. Test Procedures

1) Sequence of testing 9 kHz to 30 MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 1.0 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).
- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.





2) Sequence of testing 30 MHz to 1 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 3 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.





3) Sequence of testing 1 GHz to 18 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 2.5 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.





4) Sequence of testing above 18 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

Premeasurement:

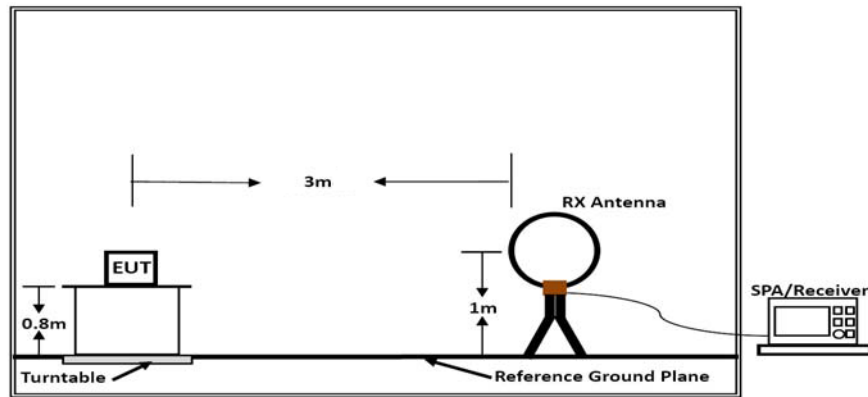
- The antenna is moved spherical over the EUT in different polarizations of the antenna.

Final measurement:

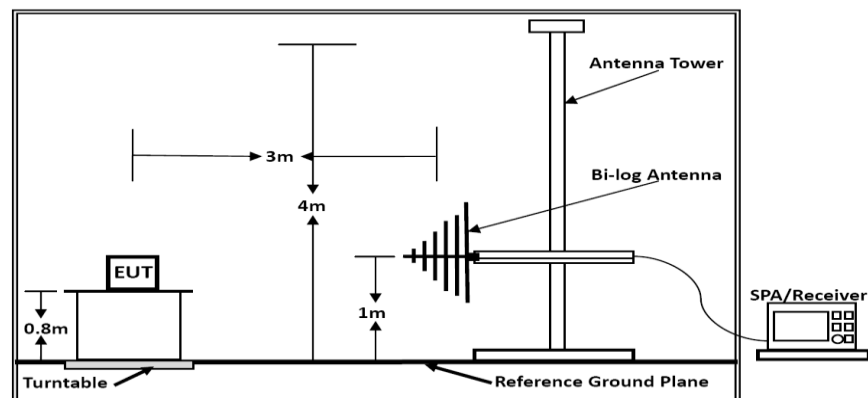
- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.



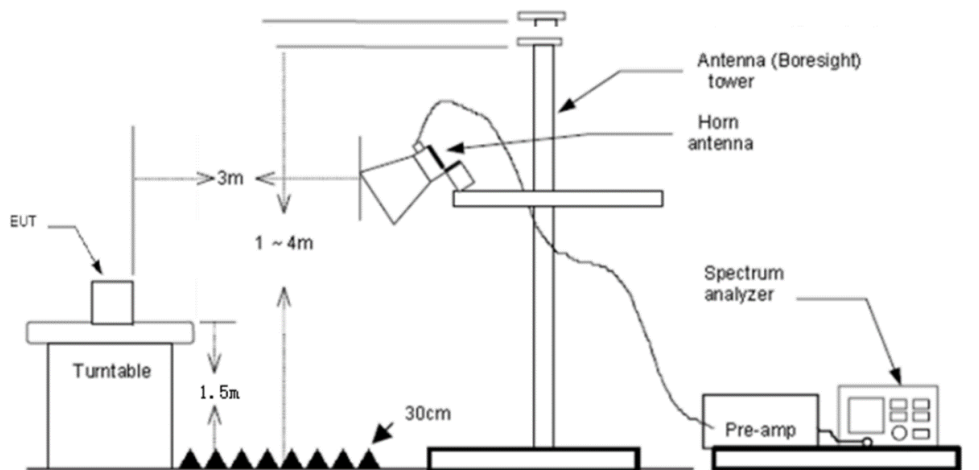
5.1.4. Test Setup Layout



Below 30MHz



Below 1GHz



Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.

5.1.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.





5.1.6. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS \text{ (dBuV/m)} = RA \text{ (dBuV)} + AF \text{ (dB/m)} + CL \text{ (dB)} - AG \text{ (dB)}$$

| | |
|---------------------------|--|
| Where FS = Field Strength | CL = Cable Attenuation Factor (Cable Loss) |
| RA = Reading Amplitude | AG = Amplifier Gain |
| AF = Antenna Factor | |

5.1.7. Results of Radiated Emissions (9 KHz~30MHz)

| | | | |
|---------------|---------|----------------|----------------|
| Temperature | 23.8℃ | Humidity | 52.1% |
| Test Engineer | Can Kun | Configurations | IEEE 802.11b/n |

| Freq. (MHz) | Level (dBuV) | Over Limit (dB) | Over Limit (dB) | Remark |
|-------------|--------------|-----------------|-----------------|----------|
| - | - | - | - | See Note |

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

5.1.8. Results of Radiated Emissions (30MHz~1GHz)

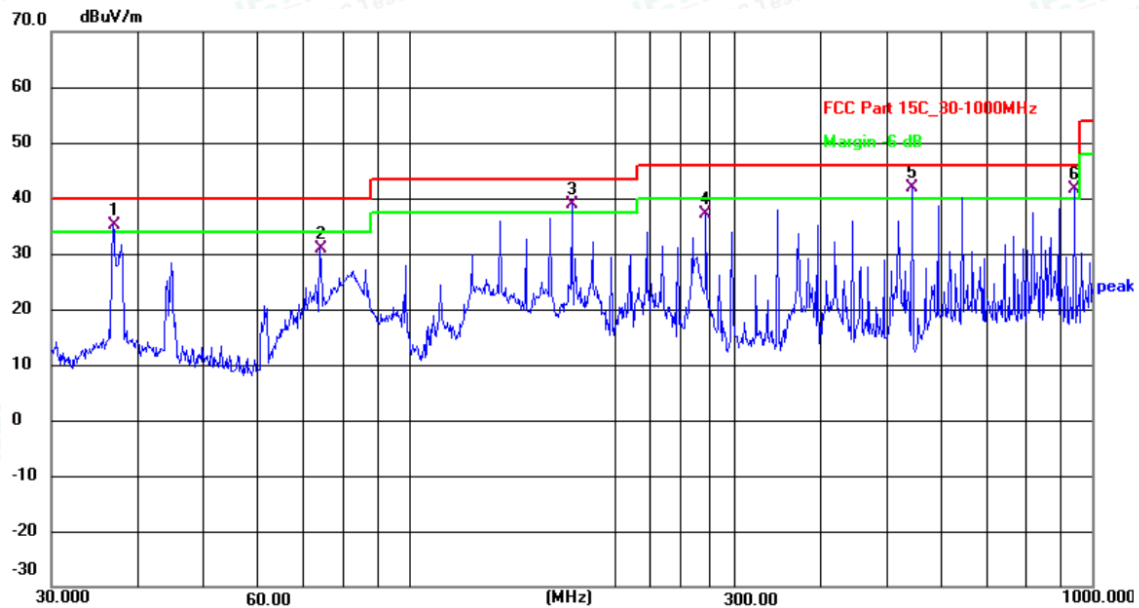
| | | | |
|---------------|---------|----------------|----------------|
| Temperature | 23.8℃ | Humidity | 52.1% |
| Test Engineer | Can Kun | Configurations | IEEE 802.11b/n |





Test result for IEEE 802.11b Mode (Low Channel)

Horizontal

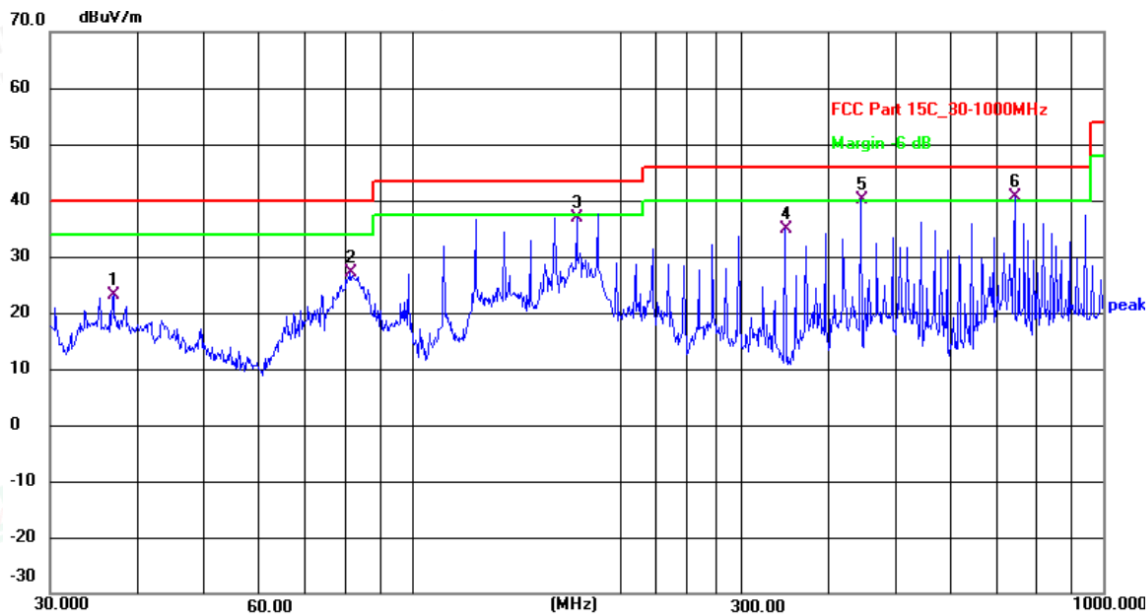


| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 | 36.8953 | 52.52 | -17.43 | 35.09 | 40.00 | -4.91 | QP |
| 2 | 74.1351 | 50.39 | -19.44 | 30.95 | 40.00 | -9.05 | QP |
| 3 | 173.2050 | 59.00 | -20.12 | 38.88 | 43.50 | -4.62 | QP |
| 4 | 272.2776 | 53.62 | -16.44 | 37.18 | 46.00 | -8.82 | QP |
| 5 | 545.1825 | 54.12 | -12.33 | 41.79 | 46.00 | -4.21 | QP |
| 6 | 942.1304 | 48.69 | -6.97 | 41.72 | 46.00 | -4.28 | QP |





Vertical



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 | 37.0248 | 40.81 | -17.69 | 23.12 | 40.00 | -16.88 | QP |
| 2 | 81.4970 | 46.90 | -19.73 | 27.17 | 40.00 | -12.83 | QP |
| 3 | 173.2050 | 56.14 | -19.26 | 36.88 | 43.50 | -6.62 | QP |
| 4 | 346.8092 | 49.66 | -14.78 | 34.88 | 46.00 | -11.12 | QP |
| 5 | 446.4140 | 54.52 | -14.45 | 40.07 | 46.00 | -5.93 | QP |
| 6 | 744.8660 | 50.73 | -10.21 | 40.52 | 46.00 | -5.48 | QP |

Note:

Pre-scan all modes and recorded the worst case results in this report IEEE 802.11b Mode (Low Channel).

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Level = Reading + Factor, Margin = Level – Limit,

Factor = Antenna Factor + Cable Loss - Preamp Factor



5.2. Maximum Peak Conducted Output Power Measurement

5.2.1. Standard Applicable

According to §15.247(b): For systems using digital modulation in the 2400-2483.5 MHz and 5725-5850 MHz band, the limit for maximum peak conducted output power is 30dBm. The limit has to be reduced by the amount in dB that the gain of the antenna exceeds 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi without any corresponding reduction in transmitter peak output power.

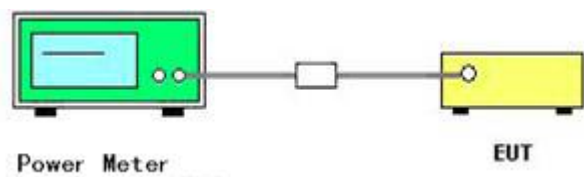
5.2.2. Measuring Instruments and Setting

Please refer to equipment's list in this report. The following table is the setting of the power meter.

5.2.3. Test Procedures

According to KDB558074 D01 15.247 Meas Guidance v05r02 Section 9.1 Maximum peak conducted output power, 9.1.3 the maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

5.2.4. Test Setup Layout



5.2.5. EUT Operation during Test

- 1) The EUT is configured to transmit continuously.
- 2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
- 3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

5.2.6. Test Result of Maximum Peak Conducted Output Power



**PASS**

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Original Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-----------------------|----------------------|-------------|---------|
| NVNT | b | 2412 | Ant1 | 15.46 | 15.86 | 30 | Pass |
| NVNT | b | 2437 | Ant1 | 15.38 | 15.84 | 30 | Pass |
| NVNT | b | 2462 | Ant1 | 15.16 | 15.37 | 30 | Pass |
| NVNT | n20 | 2412 | Ant1 | 14.36 | 14.92 | 30 | Pass |
| NVNT | n20 | 2437 | Ant1 | 14.51 | 14.76 | 30 | Pass |
| NVNT | n20 | 2462 | Ant1 | 14.37 | 14.49 | 30 | Pass |

Remark:

- 1). Measured output power at difference data rate for each mode and recorded worst case for each mode.
- 2). Test results including cable loss;
- 3). Worst case data at 1Mbps at IEEE 802.11b; 6.5Mbps at IEEE 802.11n HT20;
- 4). Peak power only for report.





5.3. AC Power line conducted emissions

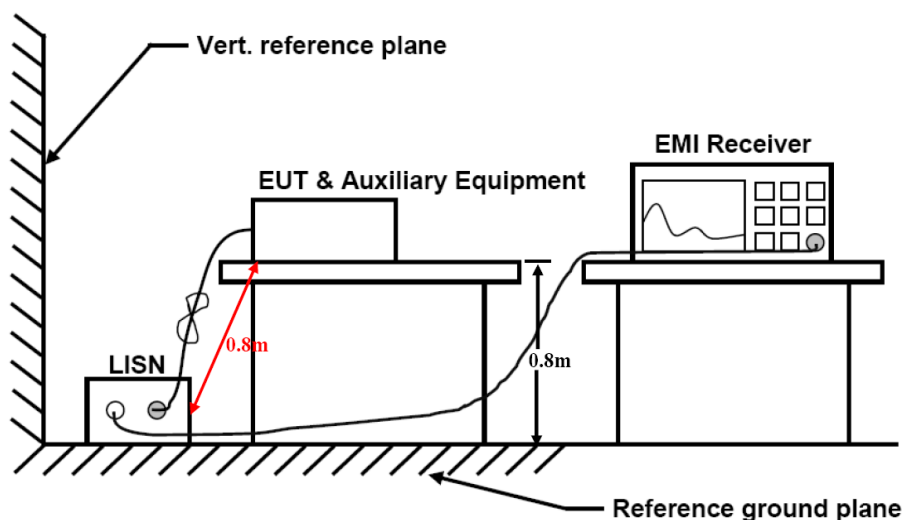
5.3.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

| Frequency Range (MHz) | Limits (dBμV) | |
|-----------------------|---------------|----------|
| | Quasi-peak | Average |
| 0.15 to 0.50 | 66 to 56 | 56 to 46 |
| 0.50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |

* Decreasing linearly with the logarithm of the frequency

5.3.2 Block Diagram of Test Setup



5.3.3 Disturbance Calculation

The AC mains conducted disturbance is calculated by adding the 10dB Pulse Limiter and Cable Factor and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$CD \text{ (dBμV)} = RA \text{ (dBμV)} + PL \text{ (dB)} + CL \text{ (dB)}$$

| | |
|----------------------------------|--|
| Where CD = Conducted Disturbance | CL = Cable Attenuation Factor (Cable Loss) |
| RA = Reading Amplitude | PL = 10 dB Pulse Limiter Factor |

5.3.4 Test Results

| | | | |
|---------------|---------|----------------|----------------|
| Temperature | 23.5°C | Humidity | 52.3% |
| Test Engineer | Can Kun | Configurations | IEEE 802.11b/n |

PASS.

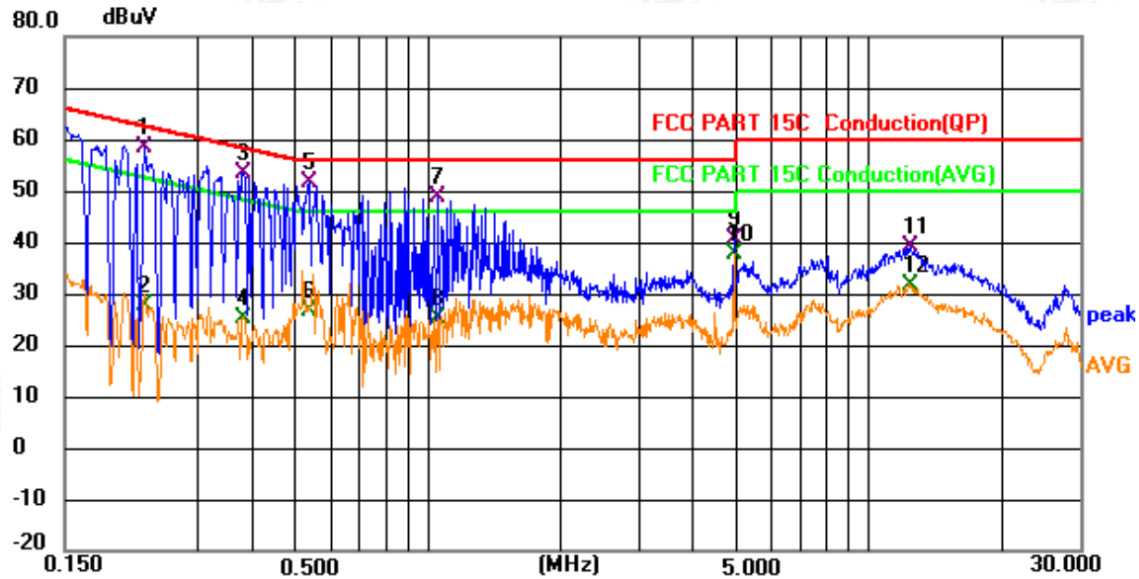
The test data please refer to following page.



Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

**AC Conducted Emission @ AC 120V/60Hz @ IEEE 802.11b Mode (Low Channel) (worst case)**

Line

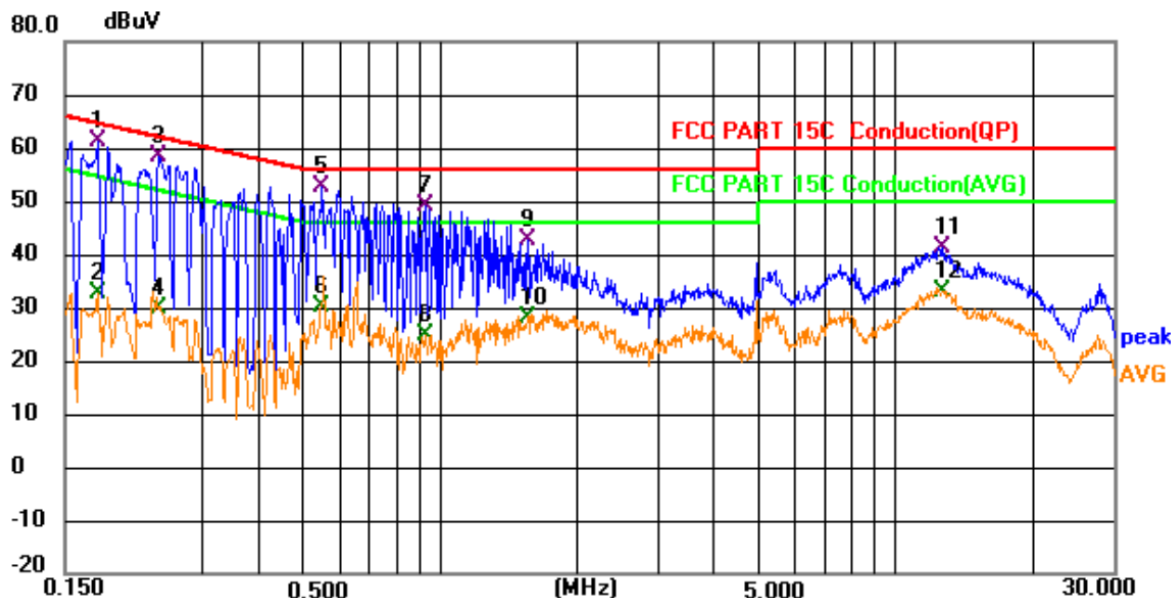


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Margin | Detector | Comment |
|-----|-----|--------|---------|---------|----------|-------|--------|----------|---------|
| | | MHz | Level | Factor | ment | | | | |
| | | | dBuV | dB | dBuV | dBuV | dB | | |
| 1 | * | 0.227 | 38.82 | 19.70 | 58.52 | 62.56 | -4.04 | QP | |
| 2 | | 0.227 | 7.81 | 19.70 | 27.51 | 52.56 | -25.05 | AVG | |
| 3 | | 0.380 | 33.32 | 19.98 | 53.30 | 58.28 | -4.98 | QP | |
| 4 | | 0.380 | 5.30 | 19.98 | 25.28 | 48.28 | -23.00 | AVG | |
| 5 | | 0.537 | 31.94 | 19.73 | 51.67 | 56.00 | -4.33 | QP | |
| 6 | | 0.537 | 7.01 | 19.73 | 26.74 | 46.00 | -19.26 | AVG | |
| 7 | | 1.059 | 29.70 | 19.14 | 48.84 | 56.00 | -7.16 | QP | |
| 8 | | 1.059 | 6.21 | 19.14 | 25.35 | 46.00 | -20.65 | AVG | |
| 9 | | 4.952 | 21.70 | 18.95 | 40.65 | 56.00 | -15.35 | QP | |
| 10 | | 4.952 | 18.56 | 18.95 | 37.51 | 46.00 | -8.49 | AVG | |
| 11 | | 12.440 | 19.32 | 19.69 | 39.01 | 60.00 | -20.99 | QP | |
| 12 | | 12.440 | 11.80 | 19.69 | 31.49 | 50.00 | -18.51 | AVG | |





Neutral



| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure- ment dBuV | Limit dBuV | Margin dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|--------------|----------|---------|
| 1 | | 0.177 | 41.52 | 19.69 | 61.21 | 64.63 | -3.42 | QP | |
| 2 | | 0.177 | 12.94 | 19.69 | 32.63 | 54.63 | -22.00 | AVG | |
| 3 | | 0.242 | 38.66 | 19.78 | 58.44 | 62.03 | -3.59 | QP | |
| 4 | | 0.242 | 9.91 | 19.78 | 29.69 | 52.03 | -22.34 | AVG | |
| 5 | * | 0.550 | 33.33 | 19.42 | 52.75 | 56.00 | -3.25 | QP | |
| 6 | | 0.550 | 10.86 | 19.42 | 30.28 | 46.00 | -15.72 | AVG | |
| 7 | | 0.924 | 30.12 | 18.90 | 49.02 | 56.00 | -6.98 | QP | |
| 8 | | 0.924 | 5.84 | 18.90 | 24.74 | 46.00 | -21.26 | AVG | |
| 9 | | 1.558 | 23.80 | 18.99 | 42.79 | 56.00 | -13.21 | QP | |
| 10 | | 1.558 | 9.13 | 18.99 | 28.12 | 46.00 | -17.88 | AVG | |
| 11 | | 12.620 | 21.77 | 19.63 | 41.40 | 60.00 | -18.60 | QP | |
| 12 | | 12.620 | 13.46 | 19.63 | 33.09 | 50.00 | -16.91 | AVG | |

***Note: 1). Pre-scan all modes and recorded the worst case results in this report IEEE 802.11b Mode (Low Channel).

2). $\text{Measurement} = \text{Reading} + \text{Correct}$, $\text{Margin} = \text{Measurement} - \text{Limit}$.
 $\text{Correct Factor} = \text{Lisn Factor} + \text{Cable Factor} + \text{Insertion loss of Pulse Limiter}$





6. LIST OF MEASURING EQUIPMENTS

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|------|--------------------------|----------------|-------------|-----------------|------------|------------|
| 1 | Power Meter | R&S | NRVS | 100444 | 2024-06-06 | 2025-06-05 |
| 2 | Power Sensor | R&S | NRV-Z81 | 100458 | 2024-06-06 | 2025-06-05 |
| 3 | Power Sensor | R&S | NRV-Z32 | 10057 | 2024-06-06 | 2025-06-05 |
| 4 | Test Software | Tonscend | JS1120-2 | / | N/A | N/A |
| 5 | RF Control Unit | Tonscend | JS0806-2 | N/A | 2024-11-08 | 2025-11-07 |
| 6 | MXA Signal Analyzer | Agilent | N9020A | MY50510140 | 2024-10-08 | 2025-10-07 |
| 7 | DC Power Supply | Agilent | E3642A | N/A | 2024-10-08 | 2025-10-07 |
| 8 | EMI Test Software | AUDIX | E3 | / | N/A | N/A |
| 9 | 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | 2024-06-06 | 2025-06-05 |
| 10 | Positioning Controller | Max-Full | MF7802BS | MF780208586 | N/A | N/A |
| 11 | Active Loop Antenna | SCHWARZBECK | FMZB 1519B | 00005 | 2024-07-13 | 2027-07-12 |
| 12 | By-log Antenna | SCHWARZBECK | VULB9163 | 9163-470 | 2024-08-03 | 2027-08-02 |
| 13 | Horn Antenna | SCHWARZBECK | BBHA 9120D | 9120D-1925 | 2024-07-13 | 2027-07-12 |
| 14 | Broadband Horn Antenna | SCHWARZBECK | BBHA 9170 | 791 | 2024-07-13 | 2027-07-12 |
| 15 | Broadband Preamplifier | SCHWARZBECK | BBV9719 | 9719-025 | 2024-07-30 | 2025-07-29 |
| 16 | EMI Test Receiver | R&S | ESR 7 | 101181 | 2024-06-06 | 2025-06-05 |
| 17 | RS SPECTRUM ANALYZER | R&S | FSP40 | 100503 | 2024-06-06 | 2025-06-05 |
| 18 | Low-frequency amplifier | SchwarzZBECK | BBV9745 | 00253 | 2024-10-08 | 2025-10-07 |
| 19 | High-frequency amplifier | JS Denki Pte | PA0118-43 | JSPA21009 | 2024-10-08 | 2025-10-07 |
| 20 | 6dB Attenuator | / | 100W/6dB | 1172040 | 2024-06-06 | 2025-06-05 |
| 21 | 3dB Attenuator | / | 2N-3dB | / | 2024-10-08 | 2025-10-07 |
| 22 | EMI Test Receiver | R&S | ESPI | 101940 | 2024-06-06 | 2025-06-05 |
| 23 | Artificial Mains | R&S | ENV216 | 101288 | 2024-06-06 | 2025-06-05 |
| 24 | 10dB Attenuator | SCHWARZBECK | MTS-IMP-136 | 261115-001-0032 | 2024-06-06 | 2025-06-05 |
| 25 | EMI Test Software | Farad | EZ | / | N/A | N/A |
| 26 | Antenna Mast | Max-Full | MFA-515BSN | 1308572 | N/A | N/A |
| 27 | Pulse Limiter | R&S | ESH3-Z2 | 102750-NB | 2024-06-06 | 2025-06-05 |





7. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

8. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

9. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

-----THE END OF REPORT-----

