



Report No.: RZA2010-0701_15B



Part 15B


TEST REPORT

| | |
|--------------|---|
| Product Name | GSM/GPRS Dual Band Mobile Phone |
| FCC ID | YCNA330 |
| Model | Lenovo A330 |
| Applicant | Lenovo Mobile Communication Technology Ltd. |

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GENERAL SUMMARY

| | | | |
|------------------------------|---|-------------------|------------------|
| Product Name | GSM/GPRS Dual Band Mobile Phone | Model | Lenovo A330 |
| FCC ID | YCNA330 | Report No. | RZA2010-0701_15B |
| Client | Lenovo Mobile Communication Technology Ltd. | | |
| Manufacturer | Lenovo Mobile Communication Technology Ltd. | | |
| Reference Standard(s) | <p>FCC Part 15 Subpart B Radio frequency device. (December 17, 2009)</p> <p>ANSI C63.4 Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2003)</p> | | |
| Conclusion | <p>This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards.</p> <p>General Judgment : Pass</p> <div style="text-align: right;"> <p>(Stamp)</p> <p>Date of issue: May 12th, 2010</p>  </div> | | |
| Comment | The test result only responds to the measured sample. | | |

Approved by 杨伟中
Yang Weizhong

Revised by 宋明
Song Ming

Performed by 刘伟
Liu Wei

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1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone does not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report can not be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

1.2. Testing laboratory

| | |
|------------|--|
| Company: | TA Technology (Shanghai) Co., Ltd. |
| Address: | No.145, Jintang Rd, Tangzhen Industry Park, Pudong |
| City: | Shanghai |
| Post code: | 201201 |
| Country: | P. R. China |
| Contact: | Yang Weizhong |
| Telephone: | +86-021-50791141/2/3 |
| Fax: | +86-021-50791141/2/3-8000 |
| Website: | http://www.ta-shanghai.com |
| E-mail: | yangweizhong@ta-shanghai.com |

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1.3. Applicant Information

Company: Lenovo Mobile Communication Technology Ltd.
Address: No.999,Qishan North 2nd Road,Information&Optoelectronics Park,Torch Hi-tech Indu
City: Xiamen
Postal Code: /
Country: P.R. China
Contact: Qiu shouyu
Telephone: 86-0592-2166651
Fax: 86-0592-2169999-6651

1.4. Manufacturer Information

Company: Lenovo Mobile Communication Technology Ltd.
Address: No.999,Qishan North 2nd Road,Information&Optoelectronics Park,Torch Hi-tech Indu
City: Xiamen
Postal Code: /
Country: P.R. China
Telephone: 86-0592-2166651
Fax: 86-0592-2169999-6651

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1.5. Information of EUT

General information

| | | | |
|----------------------------------|---|-----------------|-----------------|
| Device type: | Portable device | | |
| Name of EUT: | GSM/GPRS Dual Band Mobile Phone | | |
| Device operating configurations: | | | |
| SN or IMEI: | 135790246811220 | | |
| Operating mode(s): | GSM 850: (tested) GSM 1900: (tested) | | |
| Antenna type: | internal antenna | | |
| Rated Power Supply Voltage: | 3.8 | | |
| Extreme Voltage: | Minimum: 3.4 Maximum: 4.2 | | |
| Extreme Temperature: | Lowest: -15C Highest: +55°C | | |
| Operating frequency range(s) | Band | Tx (MHz) | Rx (MHz) |
| | GSM850 | 824.2 ~ 848.8 | 869.2 ~ 893.8 |
| | GSM1900 | 1850.2 ~ 1909.8 | 1930.2 ~ 1989.8 |
| Hardware version: | V1.0 | | |
| Software version: | A330_VE_S001_100424 | | |
| Used host products: | IBM T61 | | |

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Auxiliary equipment details

AE1: Battery

Model: HBL801
Manufacture: ZHUHAISUNDA TECHNOLOGY CO.,LTD
IMEI or SN: /

AE2: Travel Adaptor

Model: ZT-668-01B2K
Manufacture: SHENZHEN ZHONGTIAN ELECTRONIC CO.,LTD
IMEI or SN: /

Equipment Under Test (EUT) is GSM/GPRS Dual Band Mobile Phone with internal antenna. The EUT supports GSM 850, and GSM1900.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test date is performed on May 5, 2010.

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2. Test Information

2.1. Summary of test results

| Number | Test Case | Clause in FCC Rules | Verdict |
|---------------|--------------------|----------------------------|----------------|
| 1 | Radiated Emission | 15.109, ANSI C63.4-2003 | PASS |
| 2 | Conducted Emission | 15.107, ANSI C63.4-2003 | PASS |

2.2. Radiated Emission

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 26°C | 60% | 102.5kPa |

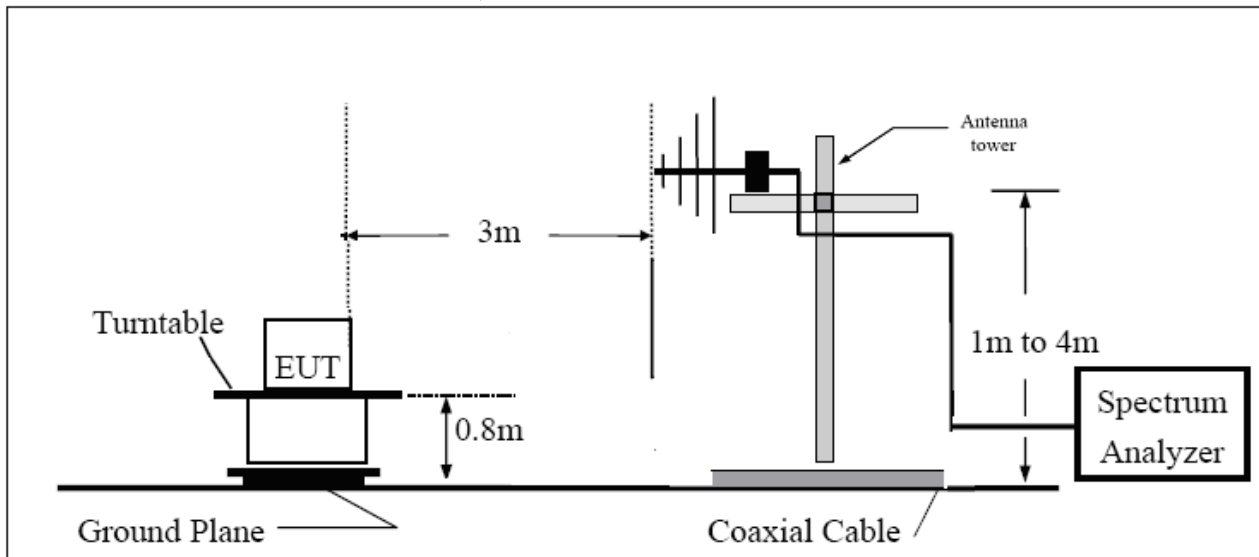
Methods of Measurement

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The distance between EUT and receive antenna should be 3 meters. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. Sweep the whole frequency band through the range from 30MHz to 10GHz. During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing

Test Setup

Below 1GHz



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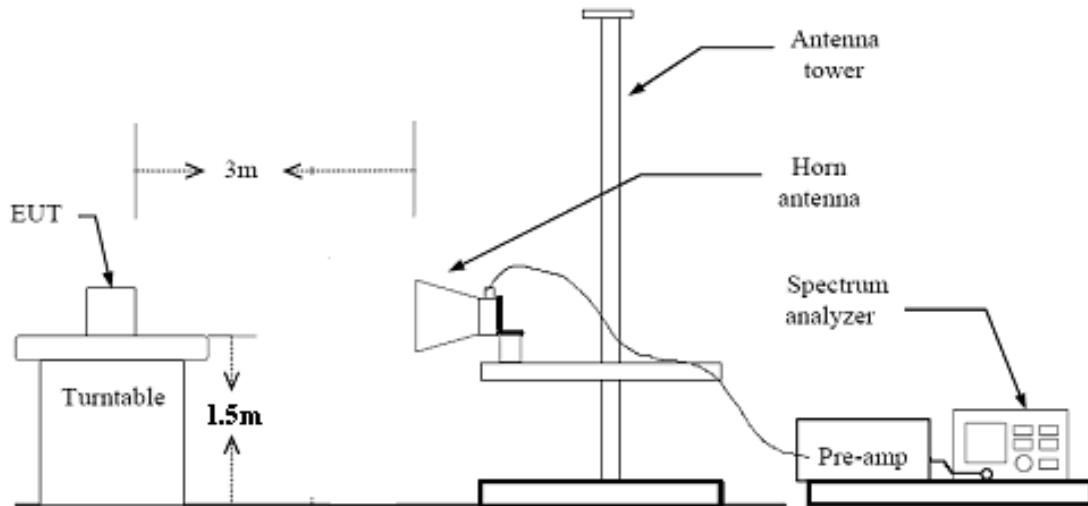
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Above 1GHz



Limits

| Frequency (MHz) | Field Strength (dB μ V/m) | Detector |
|---|-------------------------------|--------------|
| 30 -88 | 40.0 | Quasi-peak |
| 88-216 | 43.5 | Quasi-peak |
| 216 – 960 | 46.0 | Quasi-peak |
| Above 960 | 54.0 | Quasi-peak |
| 1000-5 th harmonic of the highest frequency or 40GHz, which is lower | 54 74 | Average Peak |

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$. $U = 3.92$ dB.

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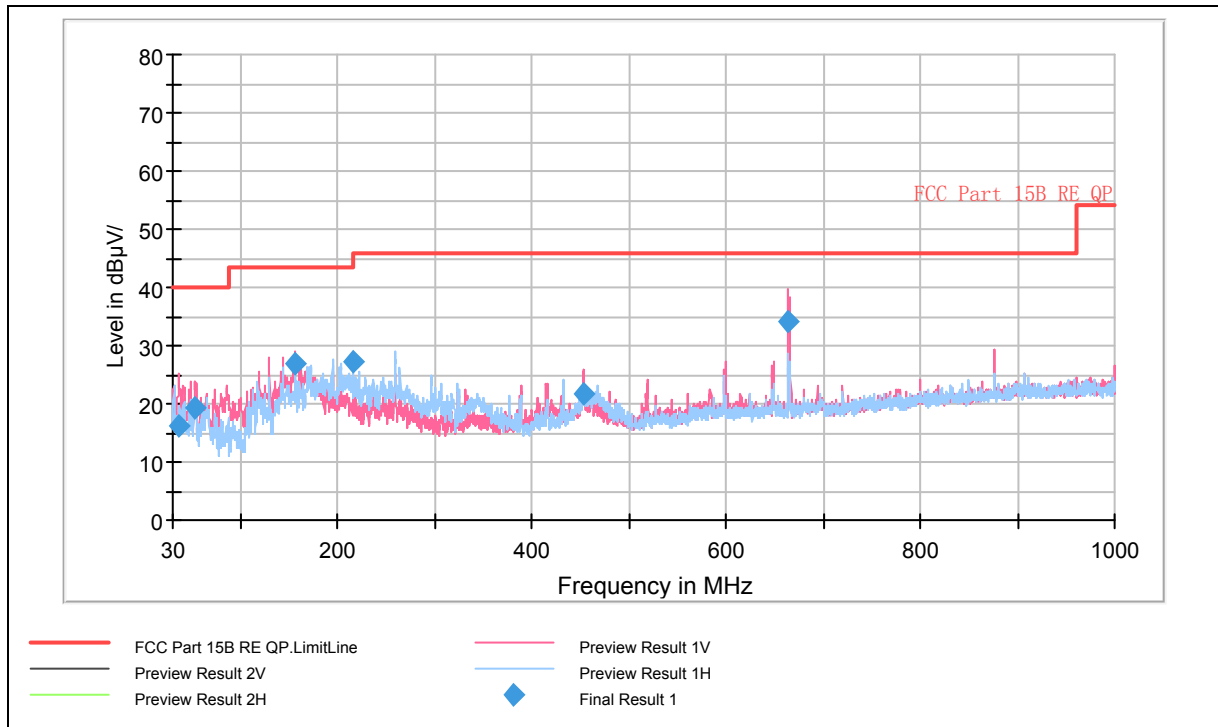
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Test Results

GSM 850



Note: Red trace is in vertical polarization Blue trace is in horizontal polarization

Radiated Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------------|-------------|--------------|---------------|-------------|----------------|
| 35.865000 | 16.3 | 125.0 | Vertical | 68.0 | 23.7 | 40.0 |
| 53.687500 | 19.4 | 100.0 | Vertical | 84.0 | 20.6 | 40.0 |
| 156.017500 | 27.0 | 100.0 | Vertical | 0.0 | 16.5 | 43.5 |
| 215.997500 | 27.4 | 125.0 | Horizontal | 74.0 | 16.1 | 43.5 |
| 452.837500 | 21.7 | 125.0 | Vertical | 183.0 | 24.3 | 46.0 |
| 663.895000 | 34.1 | 100.0 | Vertical | 192.0 | 11.9 | 46.0 |

Note: all emissions level measured above 1GHz was more than 10dB below the limit

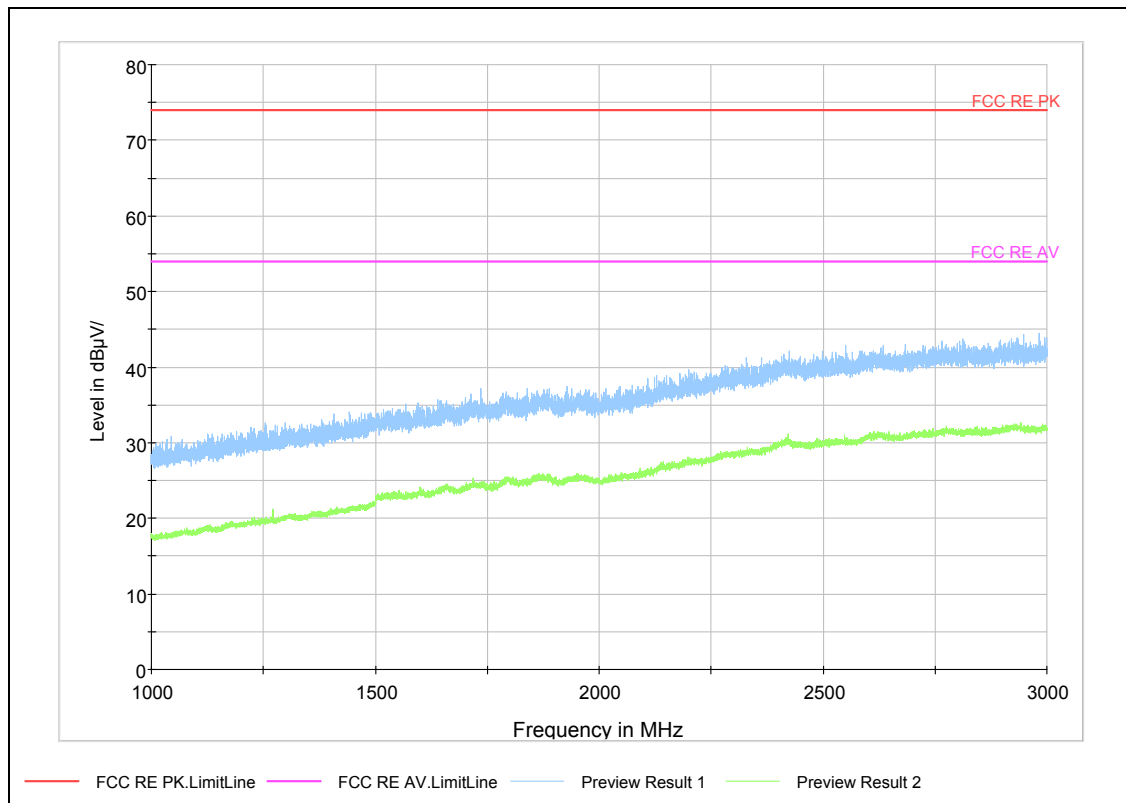
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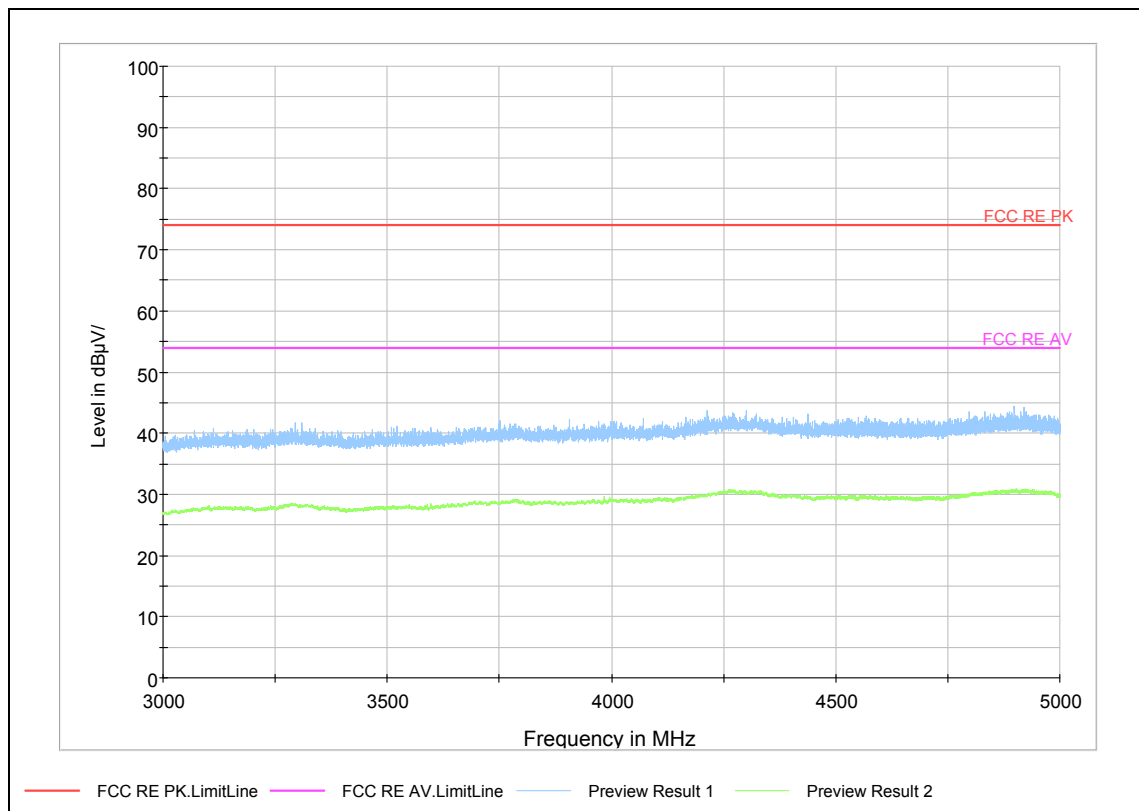
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Note: Blue trace uses the peak detection Green trace uses the average detection

Radiated Emission from 1GHz to 3GHz



Note: Blue trace uses the peak detection Green trace uses the average detection

Radiated Emission from 3GHz to 5GHz

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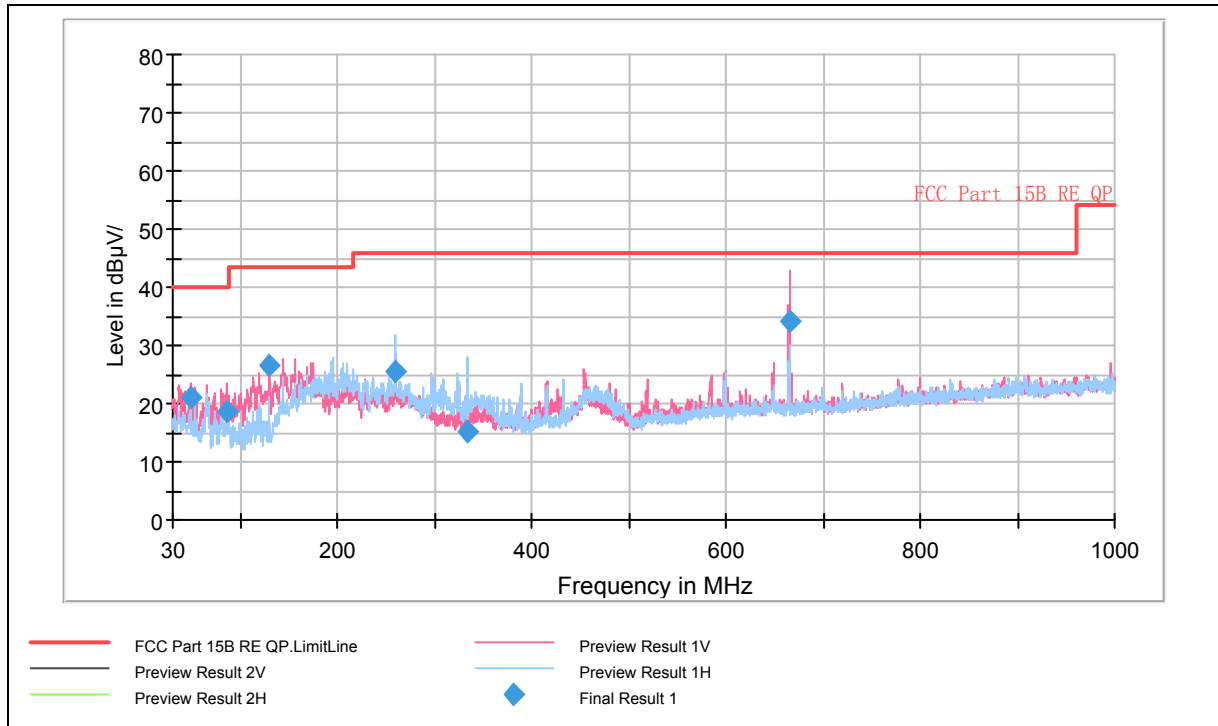
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GSM 1900



Note: Red trace is in vertical polarization Blue trace is in horizontal polarization

Radiated Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------------|-------------|--------------|---------------|-------------|----------------|
| 47.985000 | 21.1 | 100.0 | Vertical | 68.0 | 18.9 | 40.0 |
| 85.772500 | 18.6 | 100.0 | Vertical | 22.0 | 21.4 | 40.0 |
| 129.425000 | 26.6 | 100.0 | Vertical | 16.0 | 16.9 | 43.5 |
| 259.607500 | 25.4 | 100.0 | Horizontal | 86.0 | 20.6 | 46.0 |
| 333.002500 | 15.1 | 116.0 | Horizontal | 112.0 | 30.9 | 46.0 |
| 666.037500 | 34.0 | 100.0 | Vertical | 198.0 | 12.0 | 46.0 |

Note: all emissions level measured above 1GHz was more than 10dB below the limit

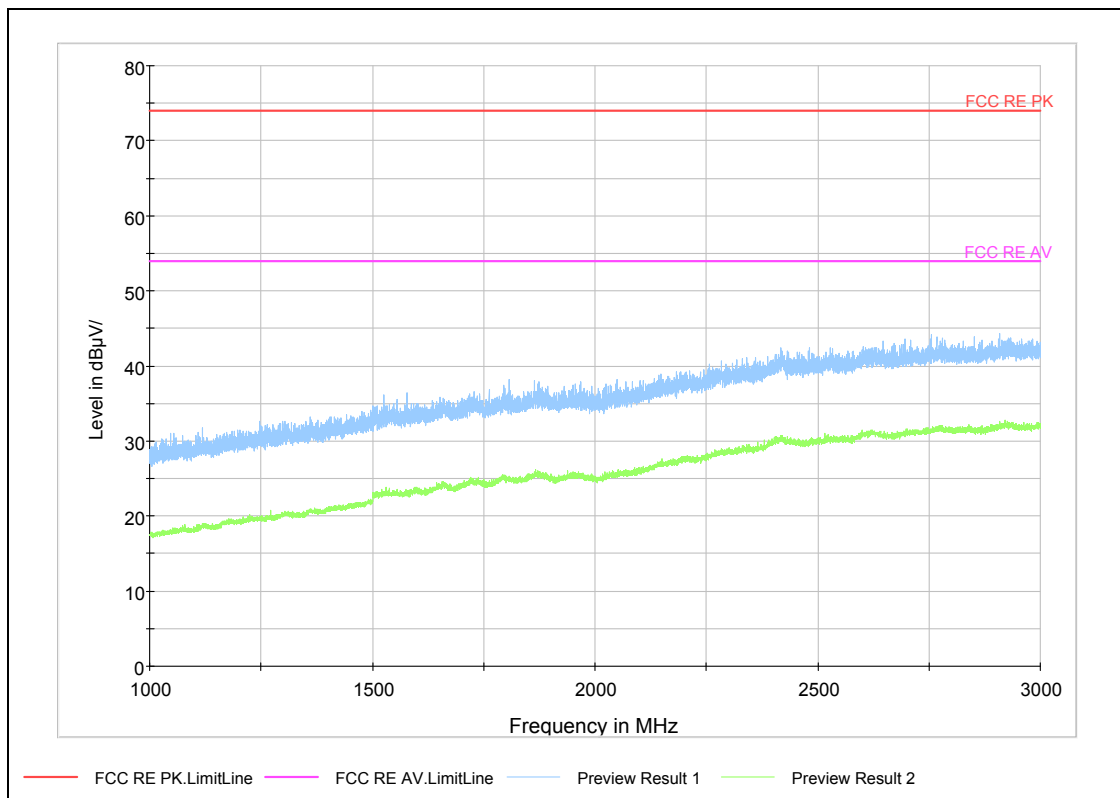
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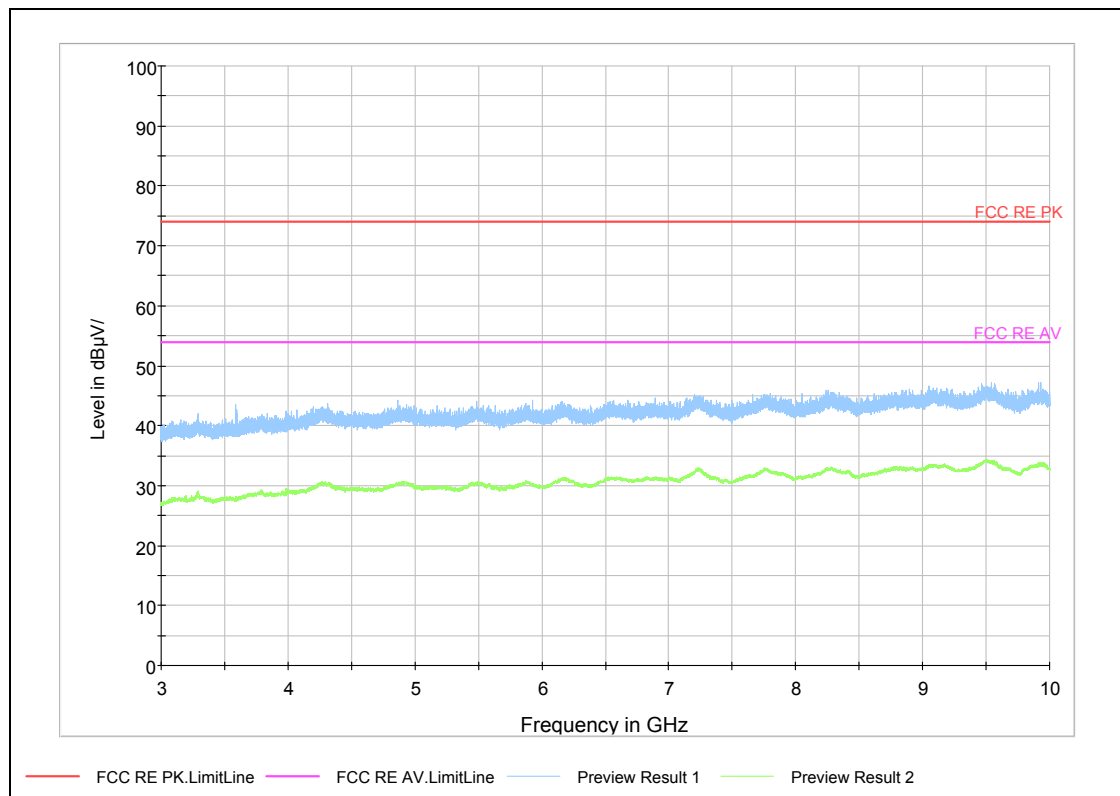
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Note: Blue trace uses the peak detection Green trace uses the average detection

Radiated Emission from 1GHz to 3GHz



Note: Blue trace uses the peak detection Green trace uses the average detection

Radiated Emission from 3GHz to 10GHz

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2.3. Conducted Emission

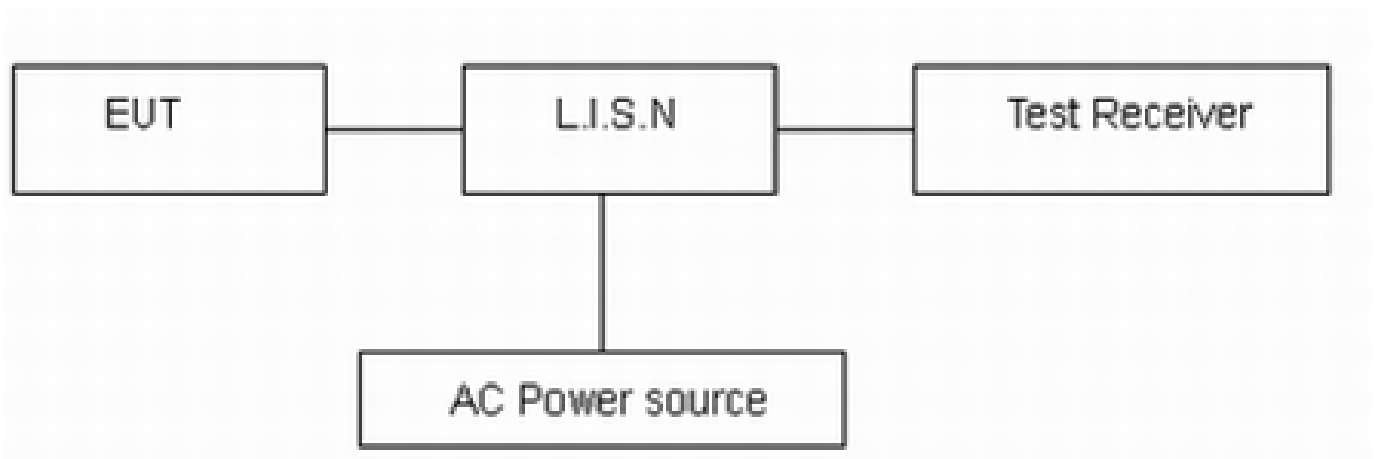
Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 58% | 102.5kPa |

Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. The measurement result should include both L line and N line.

Test Setup



Note: AC Power source is used to change the voltage from 220V/50Hz to 110V/60Hz.

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Limits

| Frequency (MHz) | Conducted Limits(dBμV) | |
|---|------------------------|------------|
| | Quasi-peak | Average |
| 0.15 - 0.5 | 66 to 56 * | 56 to 46 * |
| 0.5 - 5 | 56 | 46 |
| 5 - 30 | 60 | 50 |
| *: Decreases with the logarithm of the frequency. | | |

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$. $U = 2.69$ dB.

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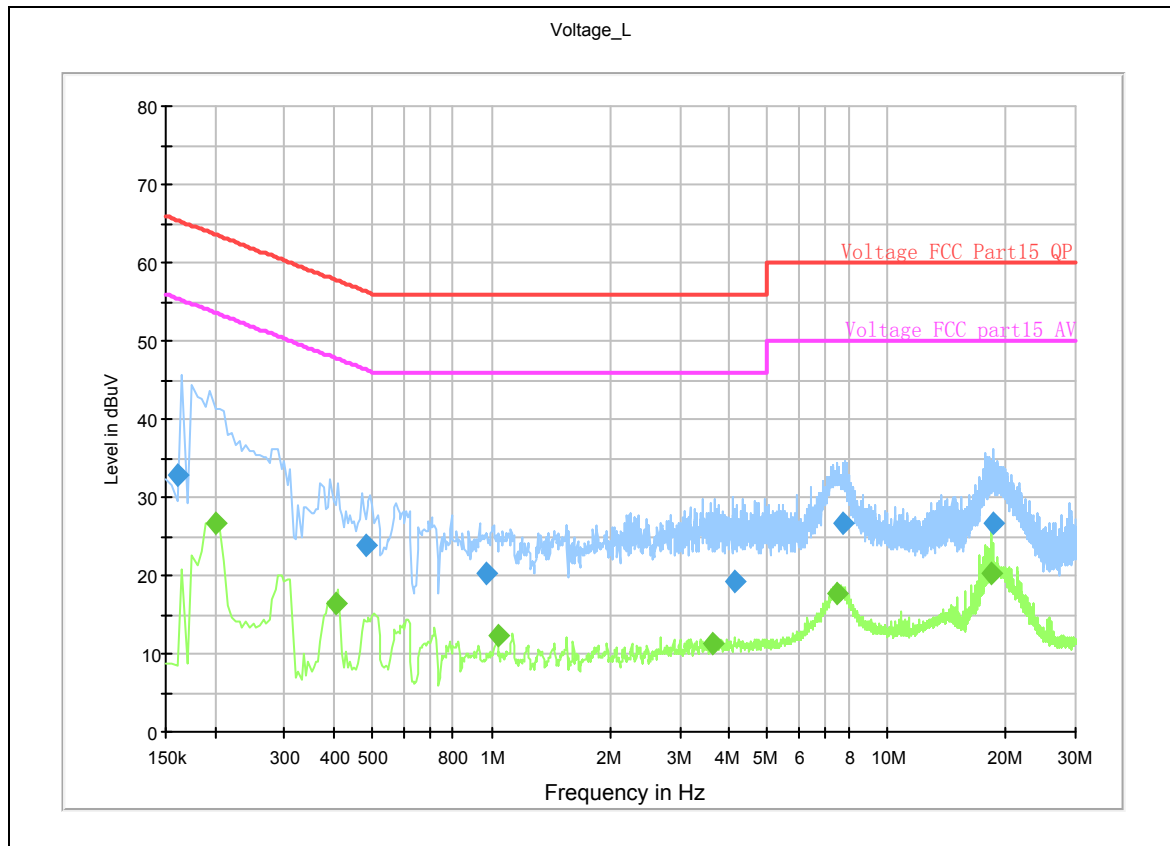
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Test Results

GSM 850



Note: Blue trace uses the Quasi-peak detection Green trace uses the average detection
L line

Conducted Emission from 150 KHz to 30 MHz

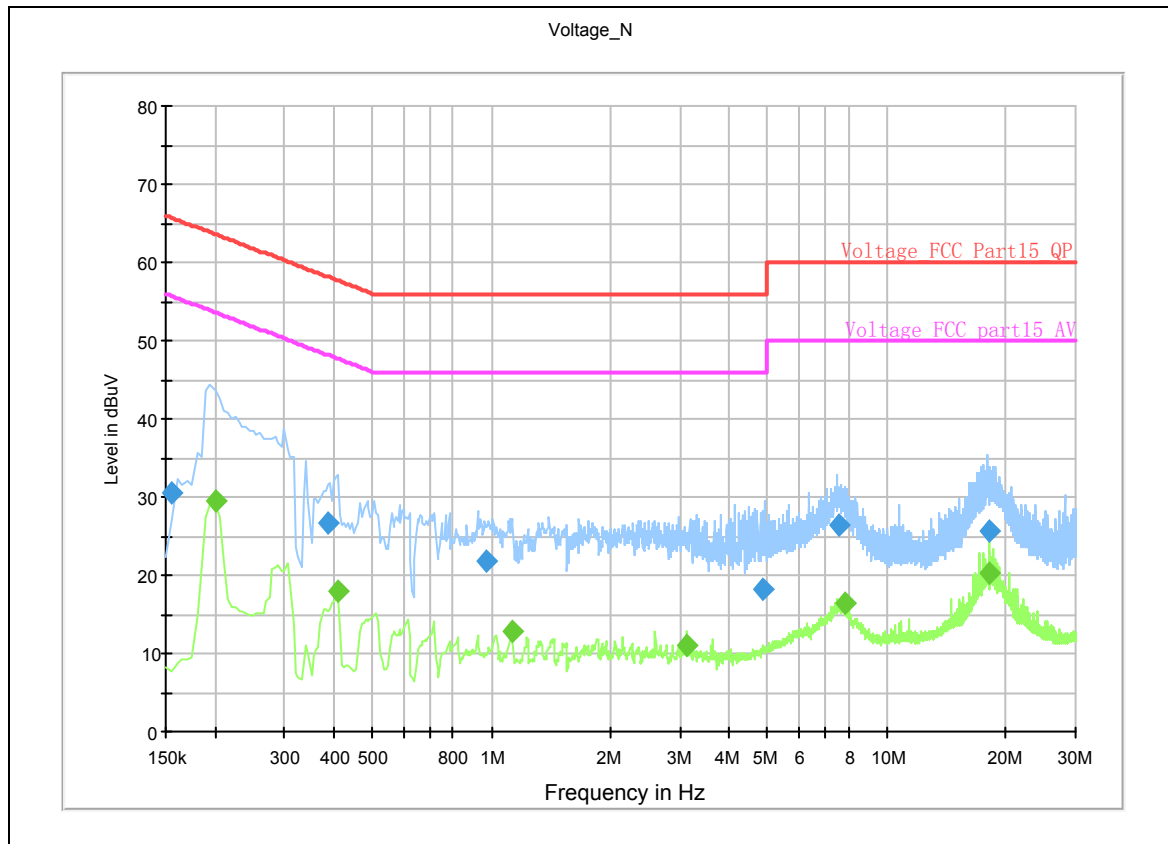
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Note: Blue trace uses the Quasi-peak detection Green trace uses the average detection
N line

Conducted Emission from 150 KHz to 30 MHz

| Frequency (MHz) | Detector | Line | Level (dB μ V) | Limit (dB μ V) | Margin (dB) |
|-----------------|------------|------|--------------------|--------------------|-------------|
| 0.405 | Average | L | 16.3 | 47.8 | 31.5 |
| 1.035 | Average | L | 12.2 | 46 | 33.8 |
| 1.13 | Average | N | 12.8 | 46 | 33.2 |
| 3.1 | Average | N | 10.9 | 46 | 35.1 |
| 3.625 | Average | L | 11.3 | 46 | 34.7 |
| 7.845 | Average | N | 16.4 | 50 | 33.6 |
| 0.48 | Quasi-peak | L | 23.9 | 56.3 | 32.4 |
| 0.97 | Quasi-peak | N | 21.7 | 56 | 34.3 |
| 0.975 | Quasi-peak | L | 20.1 | 56 | 35.9 |
| 4.105 | Quasi-peak | L | 19.2 | 56 | 36.8 |
| 4.855 | Quasi-peak | N | 18.3 | 56 | 37.7 |
| 18.09 | Quasi-peak | N | 25.8 | 60 | 34.2 |

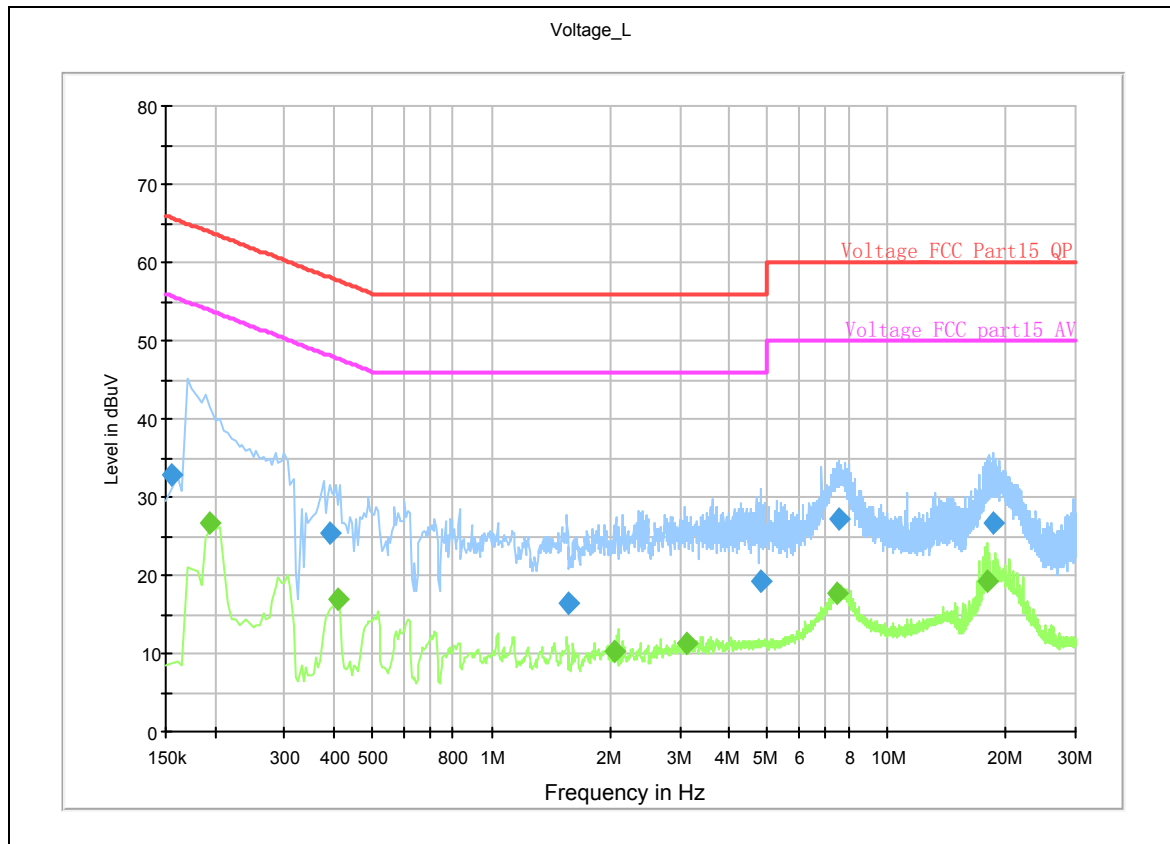
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GSM 1900



Note: Blue trace uses the Quasi-peak detection Green trace uses the average detection
L line

Conducted Emission from 150 KHz to 30 MHz

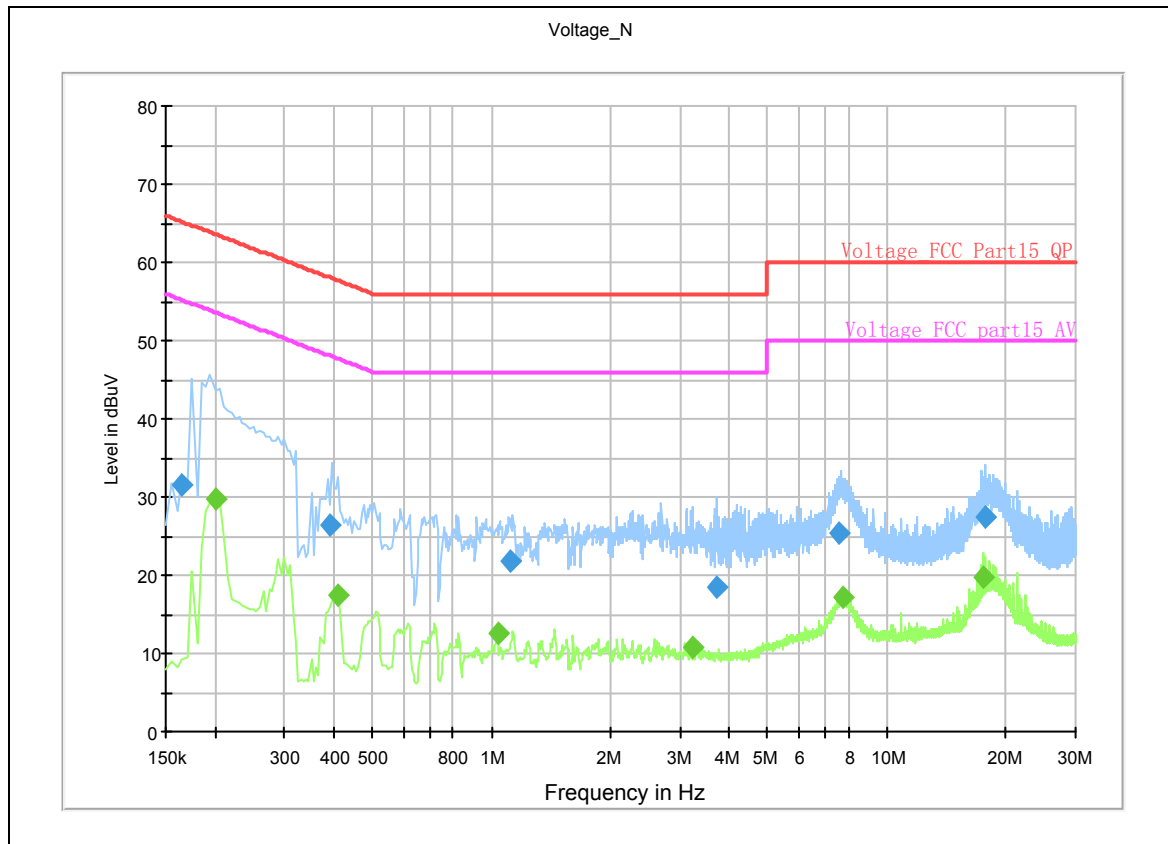
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Note: Blue trace uses the Quasi-peak detection Green trace uses the average detection
N line

Conducted Emission from 150 KHz to 30 MHz

| Frequency (MHz) | Detector | Line | Level (dB μ V) | Limit (dB μ V) | Margin (dB) |
|-----------------|------------|------|--------------------|--------------------|-------------|
| 0.41 | Average | N | 17.6 | 47.6 | 30 |
| 1.035 | Average | N | 12.6 | 46 | 33.4 |
| 2.06 | Average | L | 10.3 | 46 | 35.7 |
| 3.1 | Average | L | 11.4 | 46 | 34.6 |
| 3.215 | Average | N | 10.9 | 46 | 35.1 |
| 7.515 | Average | L | 17.6 | 50 | 32.4 |
| 0.39 | Quasi-peak | L | 25.5 | 58.1 | 32.6 |
| 1.115 | Quasi-peak | N | 21.7 | 56 | 34.3 |
| 1.565 | Quasi-peak | L | 16.5 | 56 | 39.5 |
| 3.735 | Quasi-peak | N | 18.4 | 56 | 37.6 |
| 4.775 | Quasi-peak | L | 19.2 | 56 | 36.8 |
| 7.61 | Quasi-peak | N | 25.4 | 60 | 34.6 |

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3. Main Test Instruments

| No. | Name | Type | Manufacturer | Serial Number | Calibration Date | Valid Period |
|-----|------------------------|--------------|-----------------|---------------|------------------|--------------|
| 01 | Base Station Simulator | CMU200 | R&S | 118133 | 2009-06-02 | One year |
| 02 | Signal Analyzer | FSV | R&S | 100815 | 2009-06-29 | One year |
| 03 | Signal generator | SMR27 | R&S | 100365 | 2009-07-02 | One year |
| 04 | EMI Test Receiver | ESCI | R&S | 100948 | 2009-07-02 | One year |
| 05 | Trilog Antenna | VULB 9163 | SCHWARZB ECK | 9163-391 | 2009-05-14 | Two years |
| 06 | Horn Antenna | HF907 | R&S | 100126 | 2009-07-02 | Two years |
| 07 | LISN | EMCO | 3816/2 | 00084033 | 2009-12-04 | Two years |
| 08 | AC Power Source | AFC-11005G | APC | F309040118 | 2009-07-25 | One year |
| 09 | Semi-Anechoic Chamber | 9.6*6.7*6.6m | ETS-Lindgren | NA | NA | NA |
| 10 | Shielding room | 5*4*4m | ETS-Lindgren | NA | NA | NA |
| 11 | EMI test software | ES-K1 | R&S | NA | NA | NA |

ANNEX A: The EUT Appearance and Test Configuration

A.1 EUT and Auxiliary Appearance



Picture 1 EUT

A.2 Test Setup



Picture 2 Radiated Emission Test Setup



Picture 3 Conducted Emission Test Setup

*******END OF REPORT BODY*******