



Product Service

FCC & IC TEST REPORT

Report Number : **68.760.11.369.01** Date of Issue: 9 February 2012

Model : **NPPC-1**

Product Type : Notebook Computer

Applicant : Novero Canada Inc

Address : 19 allstate parkway, suite 300, L3R 5A4 Markham
Ontario Canada

Production Facility : Wanlida Group Co., Ltd.

Address : Wanlida Industry Zone, Nanjing, Fujian, China 363601

Test Result : **Positive** **Negative**

Total pages including Appendices : 18

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test site1:

Company name: Jiangsu TÜV Product Service Ltd. – Shenzhen Branch
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Century Craftwork Culture Square,
No. 4001, Fuqiang Road,
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Company name: TMC Shenzhen, Telecommunication Metrology Center of MIIT
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Shenzhen, 518048, P. R. China

Telephone: 86 755 3332 2000

Fax: 86 755 3332 2000



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3 Description of the Equipment Under Test

Description of the Equipment Under Test

Product: Notebook Computer

Model no.: NPPC-1

Brand Name: NOVERO

Options and accessories: NIL

Rating: DC 12V, 2.5A
Test with adaptor MPA-631 with following rating:
Input: AC 100-240V, 50/60Hz, 1A Max
Output: DC 12V, 2.5A

Antenna: Integral antenna inside enclosure of EUT, NOT accessible by end user

RF Transmission Frequency: WiFi/Bluetooth: 2400-2483.5MHz
GSM850/WCDMA850: 824-849MHz
GSM1900/WCDMA1900: 1920-1980MHz

Description of the EUT: NIL

Auxiliary Equipment and Cable Used during Test:

| DESCRIPTION | MANUFACTURER | MODEL NO.(SHIELD) | S/N(LENGTH) |
|-----------------|--------------|-------------------|---------------------|
| LCD monitor | DELL | 1907FPt | 7735430660P0G WD-04 |
| Mouse | DELL | OCJ339 | G0203WAZ |
| Headphone | ODDO | --- | ---- |
| SD card | Kingston | SD4/4GBFE | ---- |
| USB flash drive | Kingston | USB/4GB | ---- |
| Printer | Lenovo | LJ2600D | ---- |
| VGA cable | DELL | Unshield | 140cm |
| HDMI Cable | DELL | Shield | 120cm |
| AC Power cable | DELL | Unshield | 180cm |



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4 Summary of Test Standards

| Test Standards | |
|-----------------------|--|
| FCC Part 15 Subpart B | PART 15 - RADIO FREQUENCY DEVICES Subpart B - Unintentional Radiators |
| ICES-003 | Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard |



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5 Summary of Test Results

| Technical Requirements | | | |
|---|-------|-------------------------------------|--------------------------|
| FCC Part 15 Subpart B, ICES-003 | | Test Result | |
| Test Condition | Pages | Pass | Fail |
| | | N/A | |
| Conducted Emission AC Power Port 150kHz to 30MHz | 9 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Spurious radiated emissions 30MHz to 18000MHz | 12 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |



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6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: XWTNPPC-1 and IC verification filing to comply with Section 15.107, 15.109 of the FCC Part 15 Subpart B and ICES-003.



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SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed

- **Not** Performed

The Equipment Under Test

- **Fulfills** the general approval requirements.

- **Does not** fulfill the general approval requirements.

Sample Received Date: 15 December 2011

Testing Start Date: 17 December 2011

Testing End Date: 29 December 2011

- Jiangsu TÜV Product Service Ltd. – Shenzhen Branch -

Tested By 2012-02-09 Wangshanshan
Test Lab Engineer Date Name Signature 

Prepared By 2012-02-09 Peter Kang
Project Engineer Date Name Signature 

Reviewed By 2012-02-09 Ken Li
EMC Project Manager Date Name Signature 

7 Technical Requirement

7.1 Conducted Emission

Test Method

- 1 The EUT was placed on a table, which is 0.8m above ground plane
- 2 The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
- 3 Maximum procedure was performed to ensure EUT compliance
- 4 A EMI test receiver is used to test the emissions from both sides of AC line

Limit

| Frequency MHz | QP Limit dB μ V | AV Limit dB μ V |
|------------------|------------------------|------------------------|
| 0.150-0.500 | 66-56* | 56-46* |
| 0.500-5 | 56 | 46 |
| 5-30 | 60 | 50 |

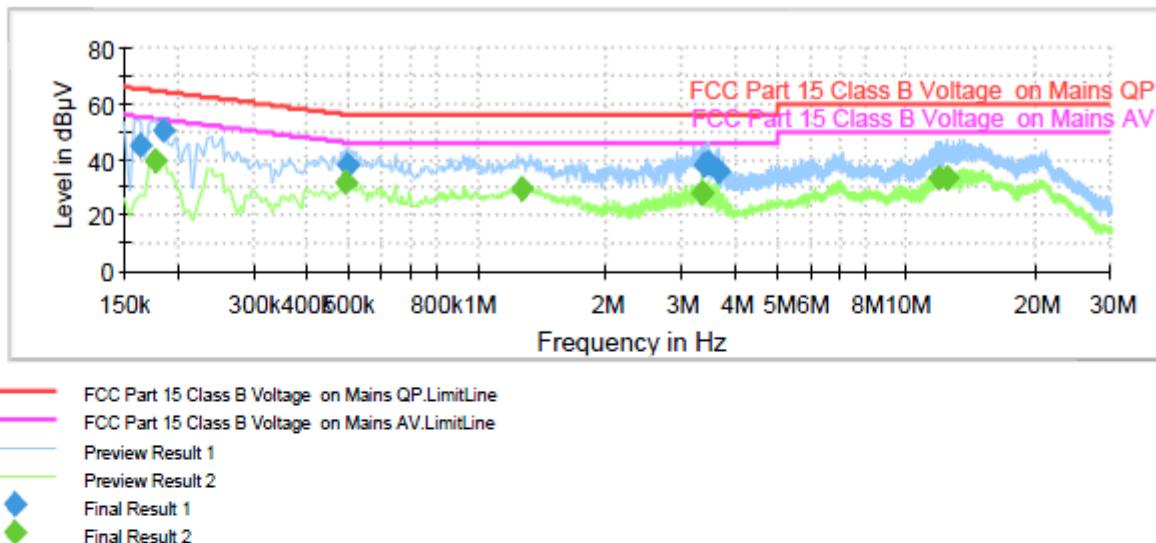
* Decreasing linearly with logarithm of the frequency

Conducted Emission

EUT: NPPC-1
 Op Cond: Run test program
 Test Spec: L&N
 Comment: AC 120V/60Hz

ESH2-Z5 Scan

ESH2-Z5 Scan



Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|-----------------|------------------|-----|------|------------|-------------|--------------|---------|
| 0.163500 | 45.1 | FLO | N | 10.1 | 20.2 | 65.3 | |
| 0.186000 | 50.1 | FLO | N | 10.1 | 14.1 | 64.2 | |
| 0.501000 | 38.4 | FLO | L1 | 10.0 | 17.6 | 56.0 | |
| 3.367500 | 38.0 | FLO | N | 10.2 | 18.0 | 56.0 | |
| 3.466500 | 39.0 | FLO | N | 10.2 | 17.0 | 56.0 | |
| 3.655500 | 36.0 | FLO | N | 10.2 | 20.0 | 56.0 | |

Final Result 2

| Frequency (MHz) | CAverage (dBµV) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|-----------------|-----------------|-----|------|------------|-------------|--------------|---------|
| 0.177000 | 39.3 | FLO | N | 10.1 | 15.3 | 54.6 | |
| 0.496500 | 32.0 | FLO | L1 | 10.0 | 14.1 | 46.1 | |
| 1.275000 | 29.8 | FLO | L1 | 10.1 | 16.2 | 46.0 | |
| 3.340500 | 28.3 | FLO | N | 10.2 | 17.7 | 46.0 | |
| 11.976000 | 33.3 | FLO | N | 10.4 | 16.7 | 50.0 | |
| 12.471000 | 33.5 | FLO | N | 10.4 | 16.5 | 50.0 | |



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Test Equipment List

Conducted Emission Test

| DESCRIPTION | MODEL | MANUFACTURER | CAL. DUE DATE |
|---------------|---------|-----------------|---------------|
| Test Receiver | ESCI | Rohde & Schwarz | 2012-12-31 |
| LISN | ESH2-Z5 | Rohde & Schwarz | 2012-12-31 |

7.2 Radiated emissions

Test Method

- 1 The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2 The turntable shall be rotated for 360 degrees to determine the position of maximum emission level
- 3 EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4 Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5 Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Limit

FCC 15.109

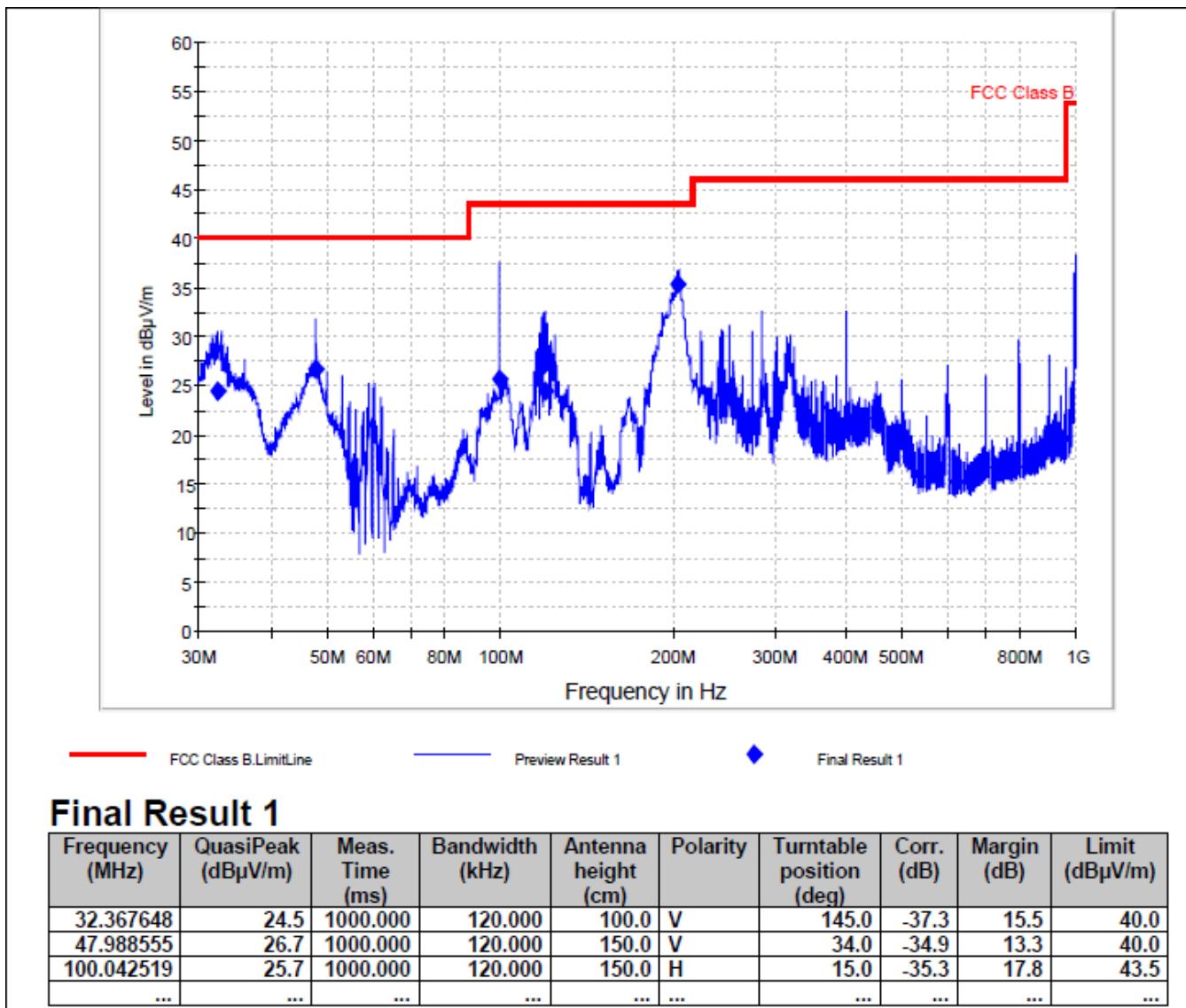
| Frequency MHz | Field Strength uV/m | Field Strength dB μ V/m | Detector |
|------------------|------------------------|--------------------------------|----------|
| 30-88 | 100 | 40 | QP |
| 88-216 | 150 | 43.5 | QP |
| 216-960 | 200 | 46 | QP |
| 960-1000 | 500 | 54 | QP |
| Above 1000 | 500 | 54 | AV |
| Above 1000 | 5000 | 74 | PK |

ICES-003

| Frequency MHz | Field Strength dB μ V/m | Detector |
|------------------|--------------------------------|----------|
| 30-230 | 40 | QP |
| 230-1000 | 47 | QP |

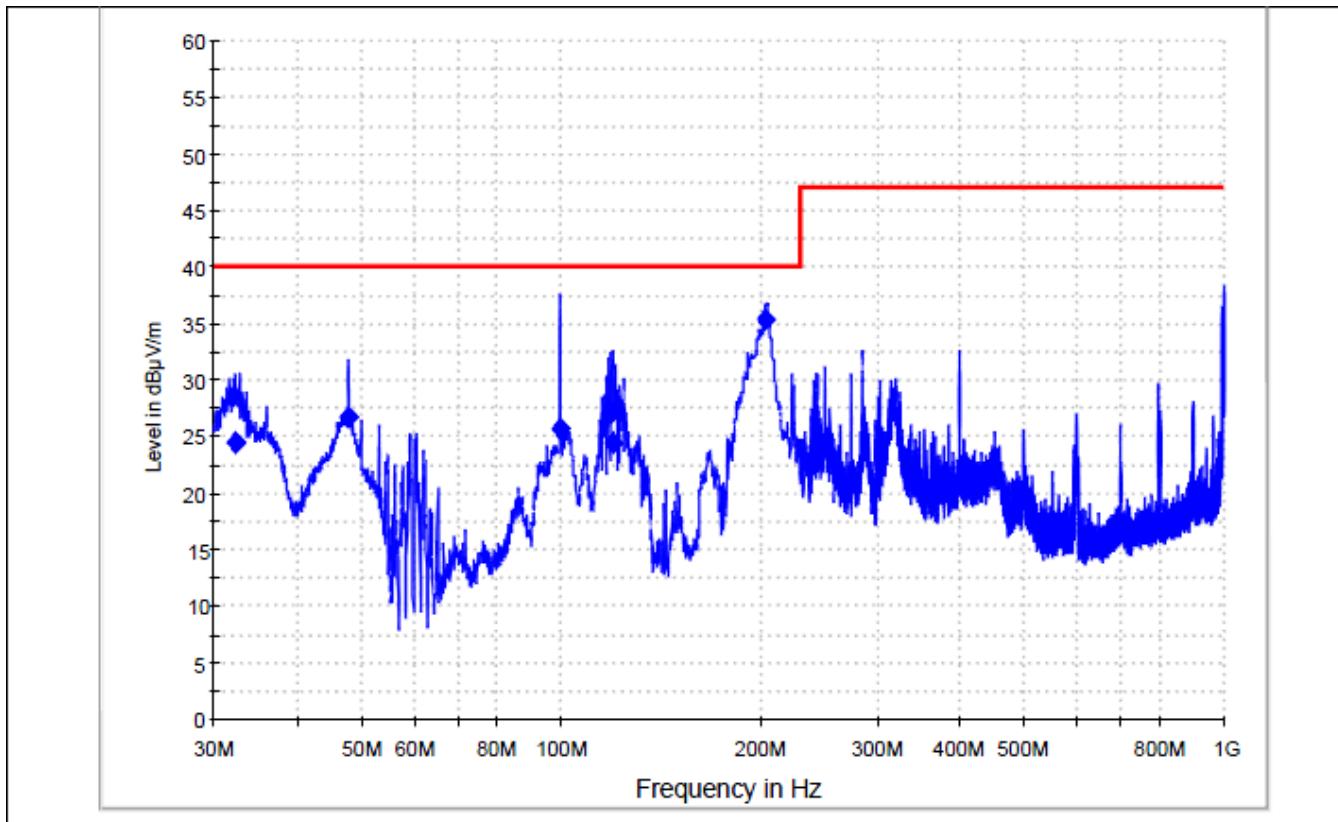
Radiated Emission

EUT: NPPC-1
 Op Cond: Run test program
 Test Spec: Horizontal & Vertical
 Comment: AC 120V/60Hz
 Remark: FCC Part 15 B test result



Radiated Emission

EUT: NPPC-1
 Op Cond: Run test program
 Test Spec: Horizontal & Vertical
 Comment: AC 120V/60Hz
 Remark: ICES-003 test result

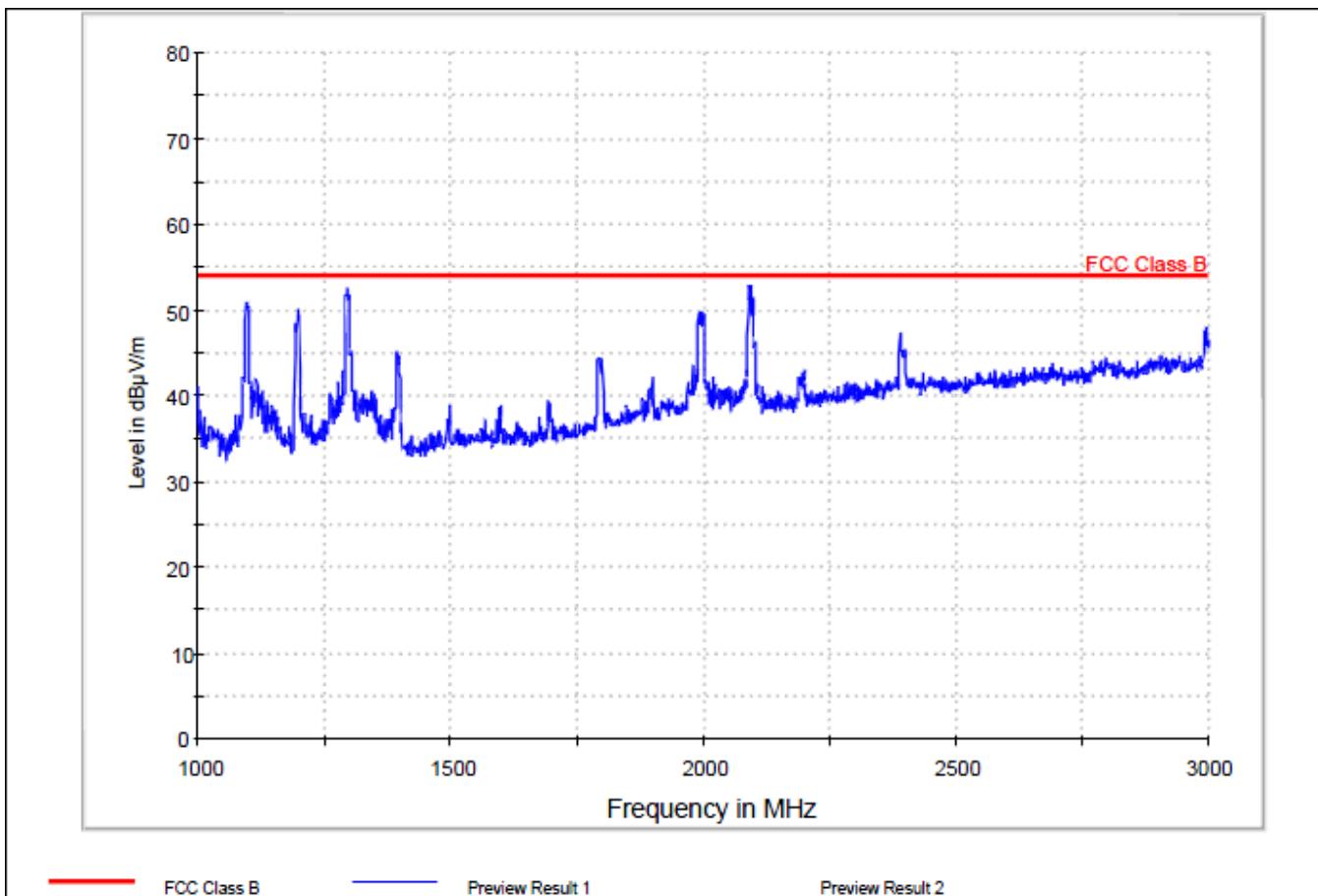


Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Antenna height (cm) | Polarity | Turntable position (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|---------------------|----------|--------------------------|------------|-------------|----------------|
| 32.367648 | 24.5 | 1000.000 | 120.000 | 100.0 | V | 145.0 | -37.3 | 15.5 | 40.0 |
| 47.988555 | 26.7 | 1000.000 | 120.000 | 150.0 | V | 34.0 | -34.9 | 13.3 | 40.0 |
| 100.042519 | 25.7 | 1000.000 | 120.000 | 150.0 | H | 15.0 | -35.3 | 14.3 | 40.0 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

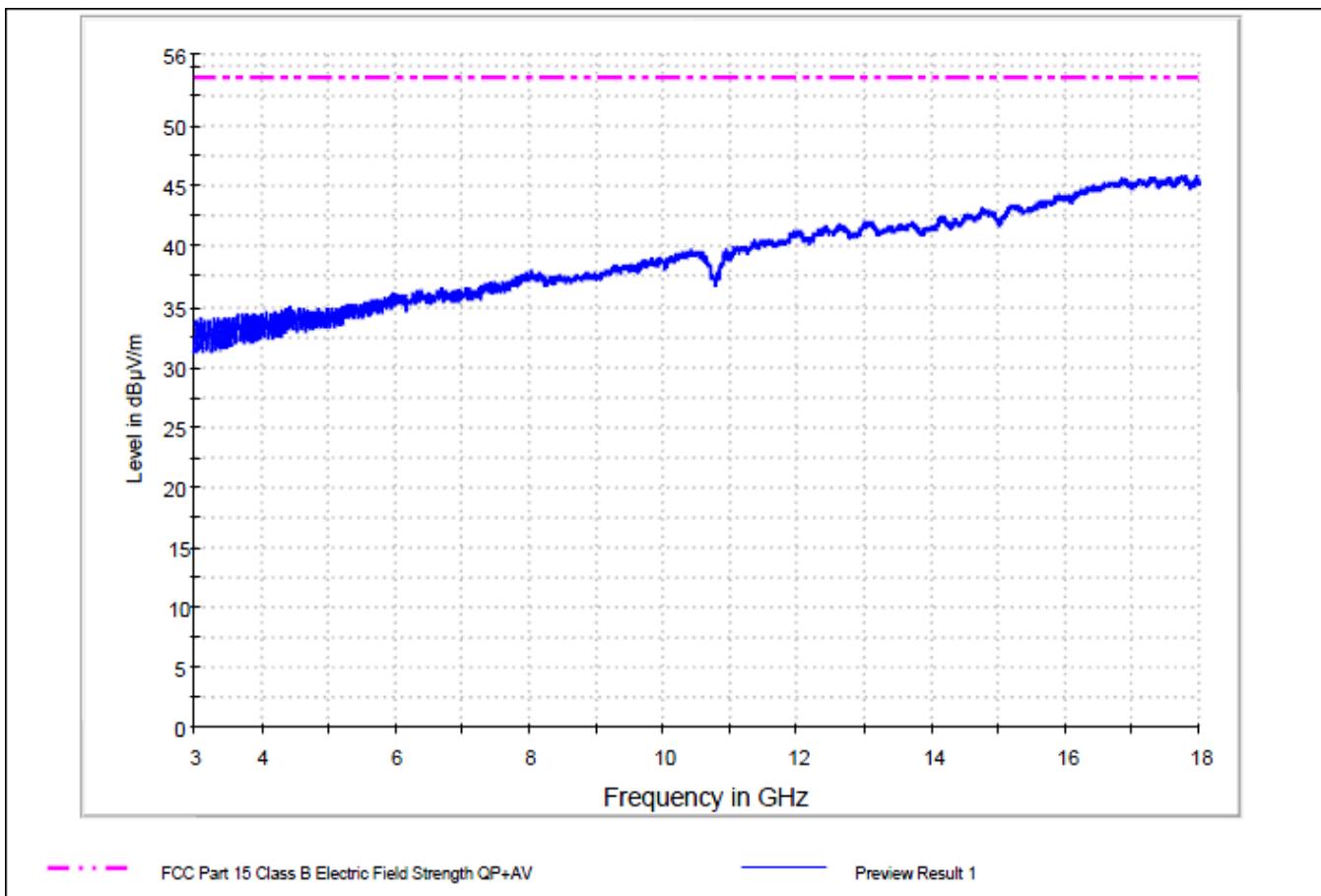
Radiated Emission

EUT: NPPC-1
Op Cond: Run test program
Test Spec: Horizontal &Vertical
Comment: AC 120V/60Hz
Remark: FCC Part 15 B test result



Radiated Emission

EUT: NPPC-1
Op Cond: Run test program
Test Spec: Horizontal & Vertical
Comment: AC 120V/60Hz
Remark: FCC Part 15 B test result





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Test Equipment List

Radiated Emission Test

| DESCRIPTION | MODEL | MANUFACTURER | CAL. DUE DATE. |
|---|---------|---------------|----------------|
| Test Receiver | ESCI | Rohde&Schwarz | 2012-12-24 |
| Spectrum Analyzer | FSP40 | Rohde&Schwarz | 2012-12-24 |
| BiLog Antenna | 9163 | Schwarzbeck | 2012-03-02 |
| Dual-Ridge Waveguide Horn Antenna | 3164-05 | ETS-Lindgren | 2012-02-18 |
| Universal Radio Communication Tester | CMU200 | Rohde&Schwarz | 2012-03-25 |



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8 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

| Items | | Extended Uncertainty |
|--------------|----------------------------------|--|
| RE | Field strength (dB μ V/m) | $U=4.18\text{dB}(k=2)$ (30MHz~1GHz) $U=4.06\text{dB}(k=2)$ (1GHz~18GHz) |
| CE | Disturbance Voltage (dB μ V) | $U=2.76\text{dB}(k=2)$ |