Product Service

# FCC - TEST REPORT

| | | | | |
|---|---|---|---|---|
| Report Number | : | **68.760.12.219.01** | Date of Issue: | 10 August 2012 |

| | | |
|---|---|---|
| Model | : | **USB2** |
| Product Type | : | USB Dongle |
| Applicant | : | Dayton Industrial Co., Ltd. |
| Address | : | 2-12 Kwai Fat Road, 11-A Kwai Chung, New Territories, Hong Kong |
| Production Facility | : | Kendy Electronics (Dongguan) Ltd. |
| Address | : | Xingsi Huangtang Village, Hengli Town, Dongguan City, Guangdong Province, P.R.China |
| Test Result | : | ■ **Positive** ☐ **Negative** |
| Total pages including Appendices | : | 20 |

*Jiangsu TÜV Product Service Ltd. – Shenzhen Branch is a subcontractor to TÜV SÜD Product Service GmbH according to the principles outlined in ISO 17025.*

*Jiangsu TÜV Product Service Ltd. – Shenzhen Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. Jiangsu TÜV Product Service Ltd. – Shenzhen Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Jiangsu TÜV Product Service Ltd. – Shenzhen Branch issued reports.*





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## 1 Table of Contents





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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
6th Floor, H Hall,
Century Craftwork Culture Square,
No. 4001, Fuqiang Road,
Futian District 518048,
Shenzhen,P.R.C.

Telephone: 86 755 8828 6998
Fax: 86 755 8828 5299

Test site2:

Company name: Audix Technology (Shenzhen) Co., Ltd
Block Shenzhen, Science & Industry Park,
Nantou, Shenzhen
Guangdong
China

Telephone: 86 755 2663 9496
Fax: 86 755 2663 2877


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## 3 Description of the Equipment Under Test

### Description of the Equipment Under Test

Product: USB Dongle

Model no.: USB2

Brand Name: NIL

Options and accessories: NIL

Rating: DC 5V from PC via USB Port

RF Transmission Frequency: 2403MHz-2480MHz

Description of the EUT: NIL

Auxiliary Equipment Used during Test:

| DESCRIPTION | MANUFACTURER | MODEL NO.(SHIELD) | S/N(LENGTH) |
|---|---|---|---|
| PC | Lenovo | T400 | -- |
| Digital HRM Watch | -- | DC6050X | -- |


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## 4 Summary of Test Standards

| Test Standards | |
|---|---|
| FCC Part 15 Subpart B, 10-1-2011 Edition | Unintentional Radiators |


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## 5 Summary of Test Results

| Emission Tests | | | | | |
|---|---|---|---|---|---|
| **FCC Part 15 Subpart B** | | | | | |
| Test Condition | Pages | Test Result | | | Test Site |
| | | Pass | Fail | N/A | |
| Radiated Emission<br>30MHz to 6000MHz | 8 | ☒ | ☐ | ☐ | Site 2 |
| Conducted Emission on AC<br>150kHz to 30MHz | 13 | ☒ | ☐ | ☐ | Site 2 |


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## 6 General Remarks

**Remarks**

This submittal(s) (test report) is intended for FCC ID: O4GUSB2 complies with Section 15.107, 15.109 of the FCC Part 15, Subpart B Rules.

All the configurations of the product were tested and only the worst test results are listed in the report.

**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: 19 May 2012

Testing Start Date: 20 May 2012

Testing End Date: 1 August 2012

- Jiangsu TÜV Product Service Ltd. – Shenzhen Branch -

| Reviewed by: | Prepared by: | Tested by: |
|---|---|---|
| Phoebe Hu | Felix Li | Sunny Lu |
| EMC Project Manager | EMC Project Engineer | Test Engineer |



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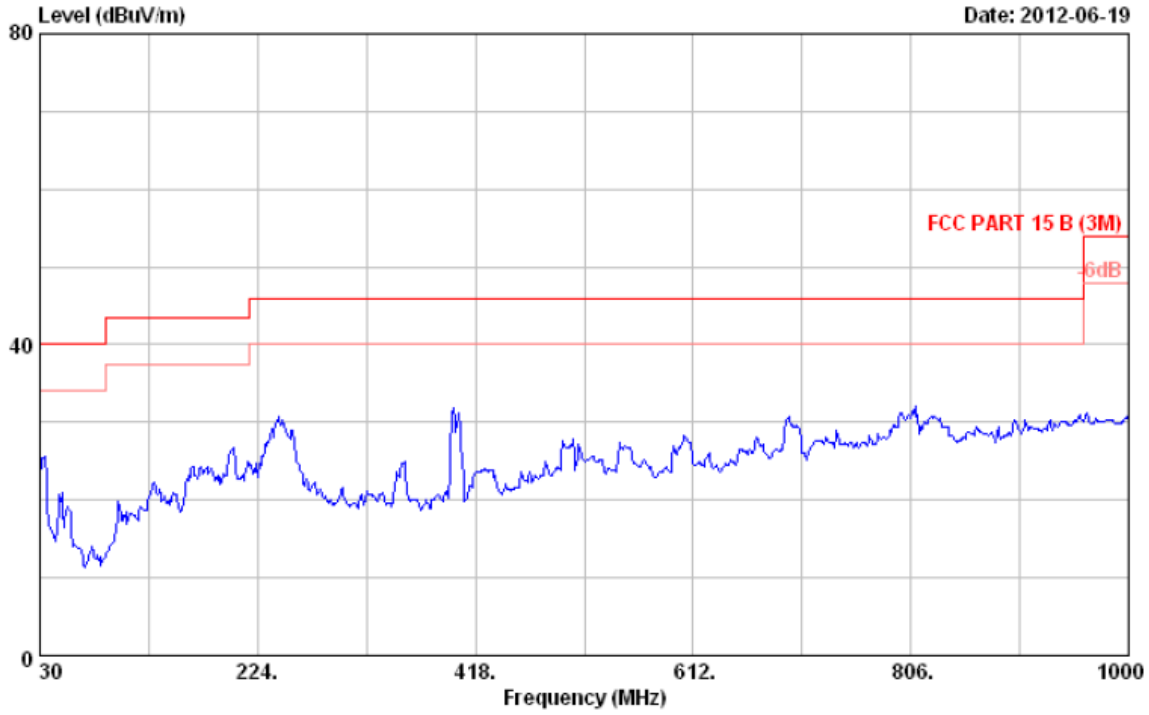
# 7 Emission Test Results

## 7.1 Radiated Emission Test 30MHz – 6000MHz

EUT: USB2
Op Cond: Data transmitting
Test Spec: Vertical, 30MHz-1GHz
Comment: AC 120V/60Hz





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## Radiated Emission Test 30MHz – 6000MHz

EUT: USB2
Op Cond: Data transmitting
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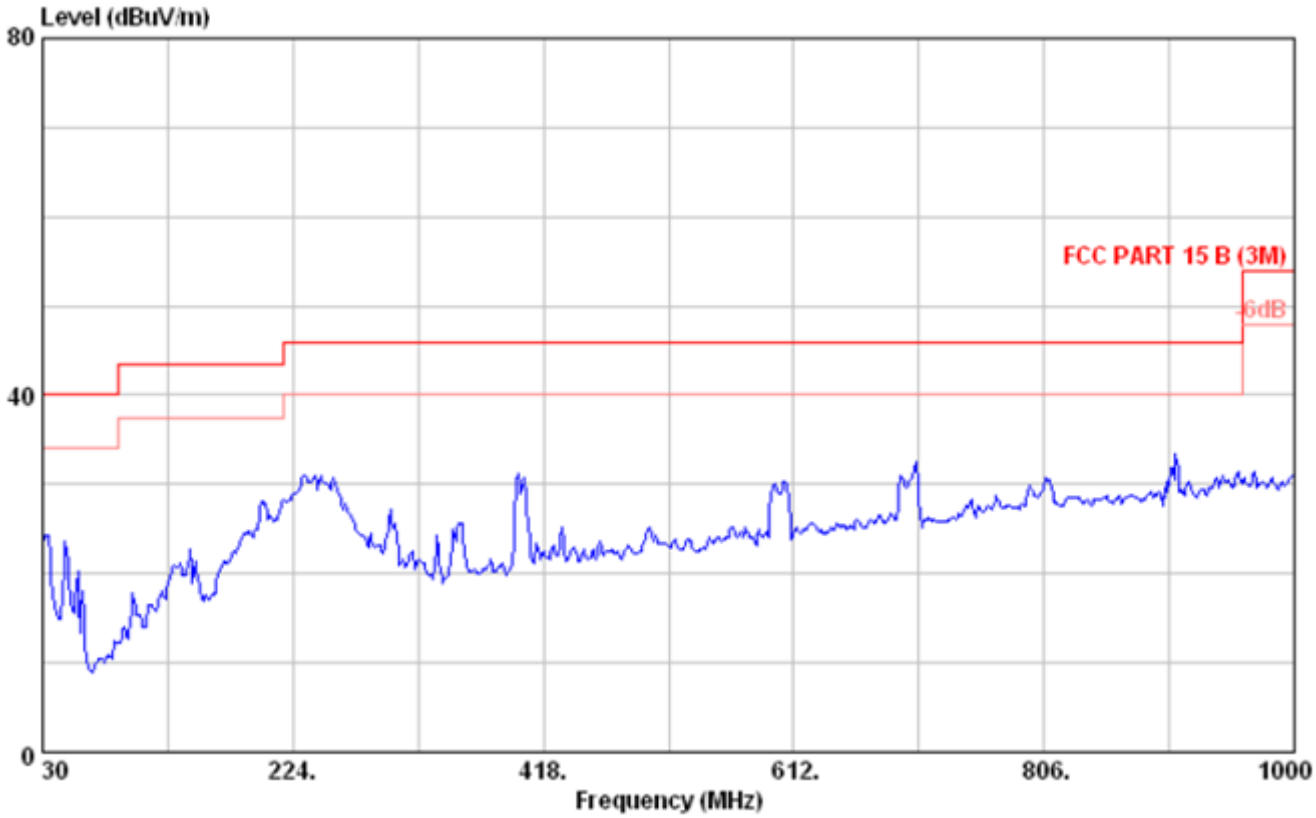
Comment: AC 120V/60Hz





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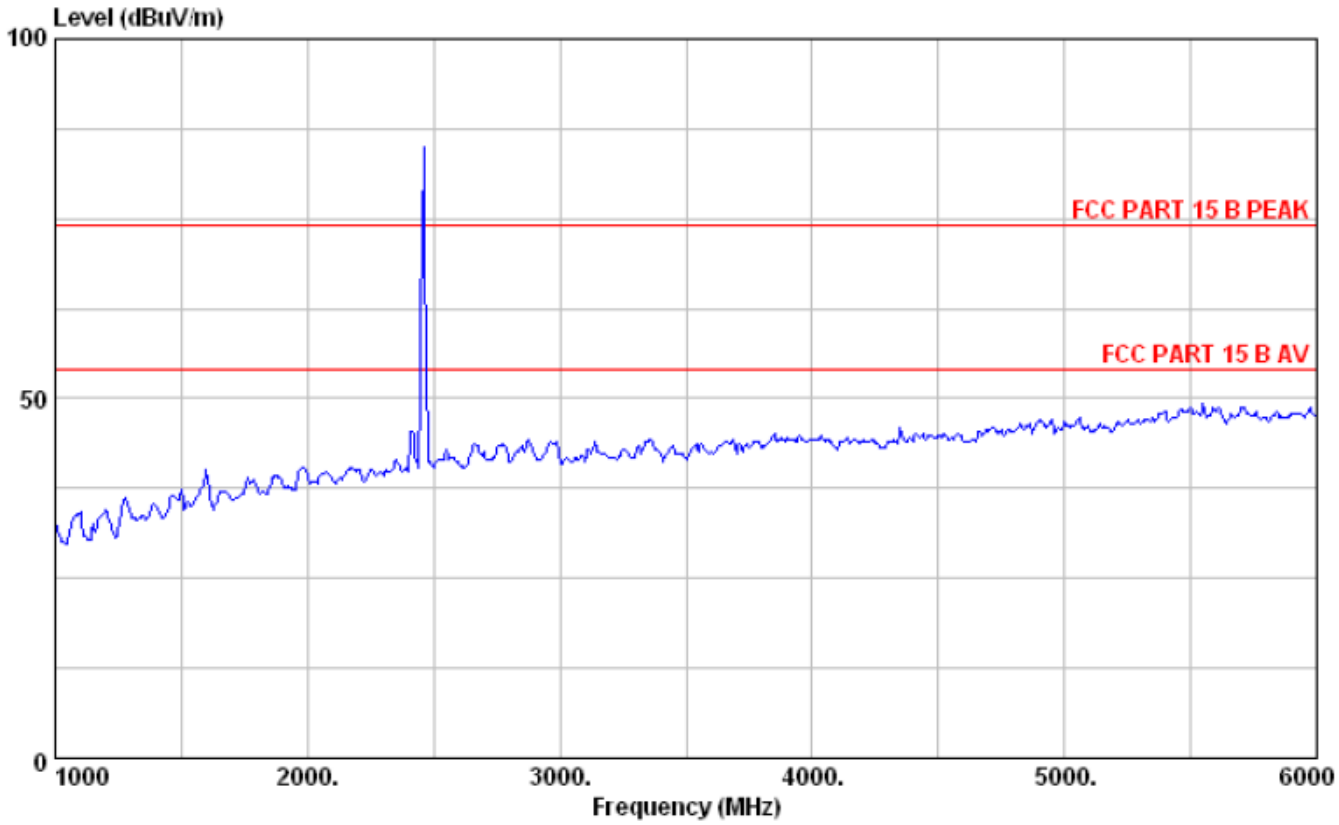
## Radiated Emission Test 30MHz – 6000MHz

EUT: USB2
Op Cond: Data transmitting
Test Spec: Vertical, above 1GHz
Comment: AC 120V/60Hz




Note: the frequency point over the limit is the work frequency of EUT.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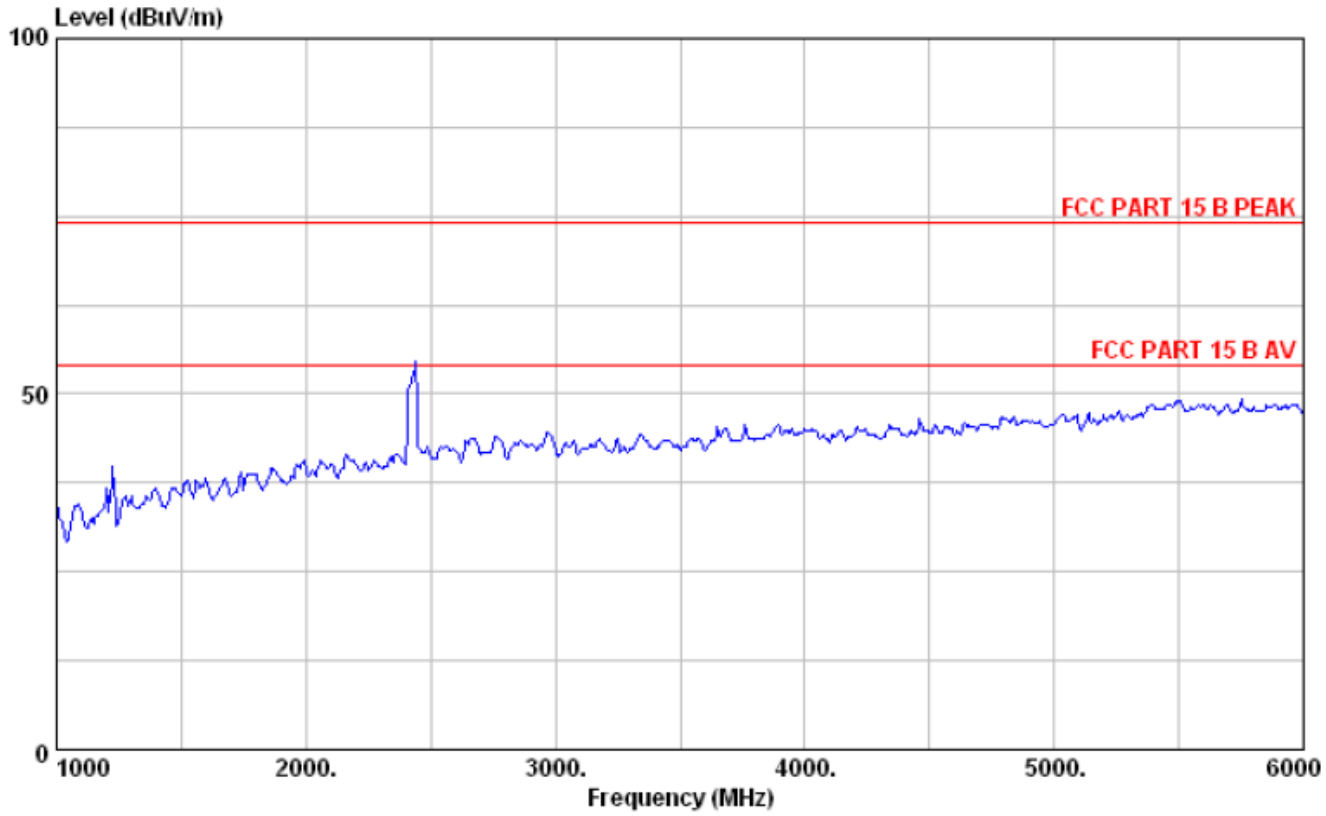
## Radiated Emission Test 30MHz – 6000MHz

EUT: USB2
Op Cond: Data transmitting
Test Spec: Horizontal, above 1GHz
Comment: AC 120V/60Hz




Note: the frequency point over the limit is the work frequency of EUT.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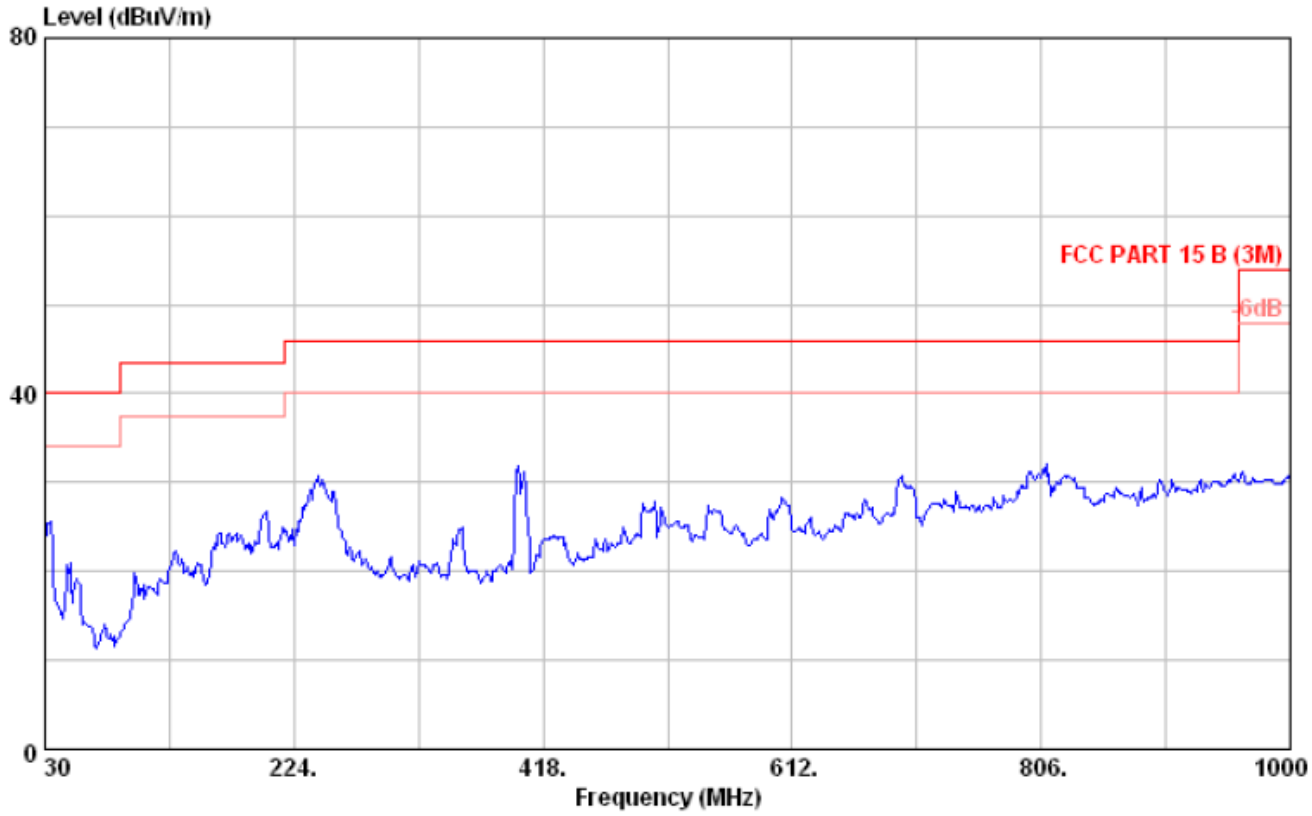
## Radiated Emission Test 30MHz – 6000MHz

EUT: USB2
Op Cond: Receiving mode
Test Spec: Vertical, 30MHz-1GHz
Comment: AC 120V/60Hz





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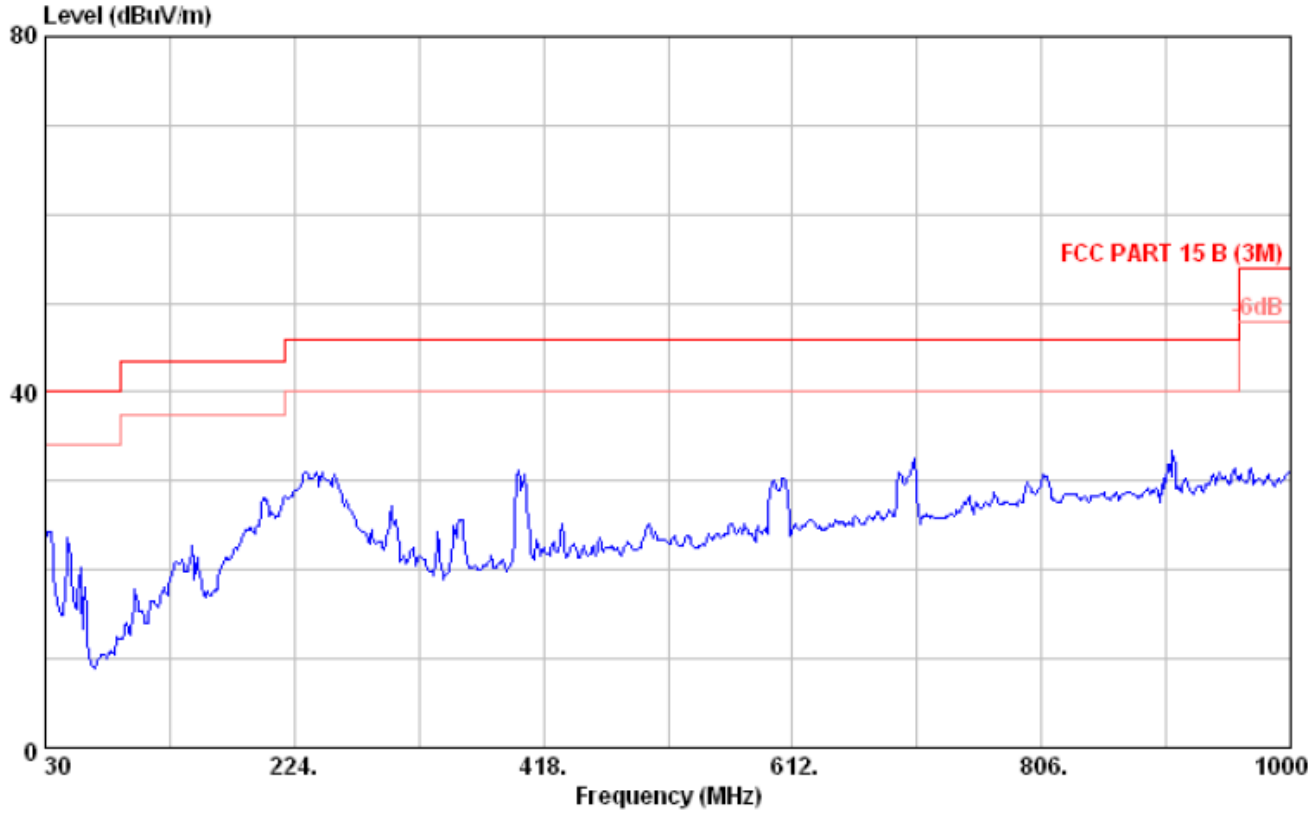
## Radiated Emission Test 30MHz – 6000MHz

EUT: USB2
Op Cond: Receiving mode
Test Spec: Horizontal, 30MHz-1GHz
Comment: AC 120V/60Hz





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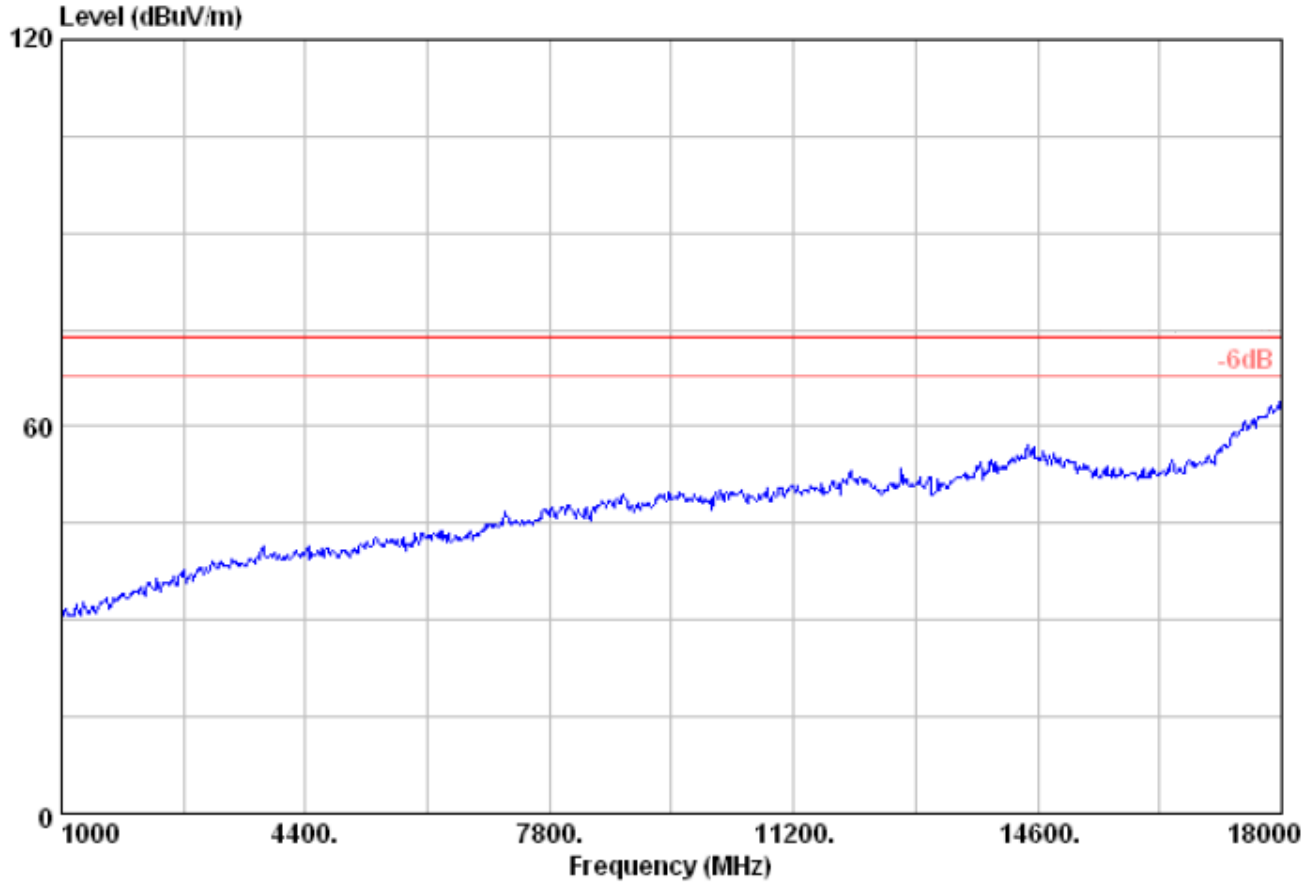
## Radiated Emission Test 30MHz – 6000MHz

EUT: USB2
Op Cond: Receiving mode
Test Spec: Vertical, above 1GHz
Comment: AC 120V/60Hz





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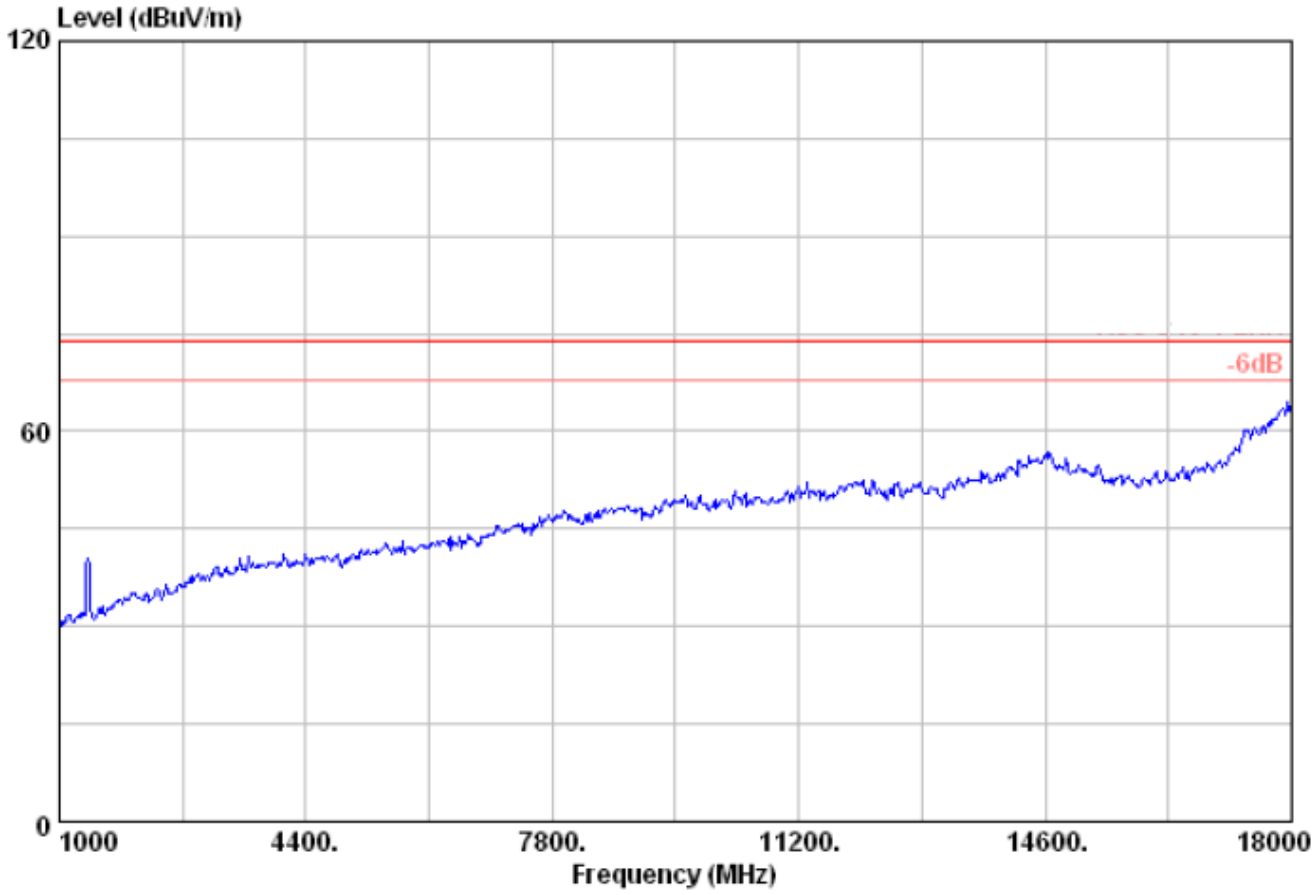
## Radiated Emission Test 30MHz – 6000MHz

EUT: USB2
Op Cond: Receiving mode
Test Spec: Horizontal, above 1GHz
Comment: AC 120V/60Hz





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## Test Equipment List

### Radiated Emission Test

| DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | CAL. DUE DATE |
|---|---|---|---|---|
| EMC Analyzer | Agilent | E7405A | MY42000131 | May.07, 13 |
| EMC Analyzer | Agilent | E7405A | MY45116588 | May.07, 13 |
| Test Receiver | Rohde & Schwarz | ESCI | 100842 | May.07, 13 |
| Amplifier | Agilent | 8447D | 2944A10684 | May.07, 13 |
| Amplifier | Agilent | 8447D | 2944A11140 | May.07, 13 |
| Bilog Antenna | Schaffner | CBL6112D | 25238 | May.26, 13 |
| Bilog Antenna | Schaffner | CBL6112D | 25237 | May.26, 13 |
| RF Cable | MIYAZAKI | 8D-FB | 10m Chamber No.1 | May.07, 13 |
| RF Cable | MIYAZAKI | 8D-FB | 10m Chamber No.2 | May.07, 13 |
| Coaxial Switch | Anritsu | MP59B | 6200766906 | May.07, 13 |
| Coaxial Switch | Anritsu | MP59B | 6200766905 | May.07, 13 |
| Coaxial Switch | Anritsu | MP59B | 6200313662 | May.07, 13 |


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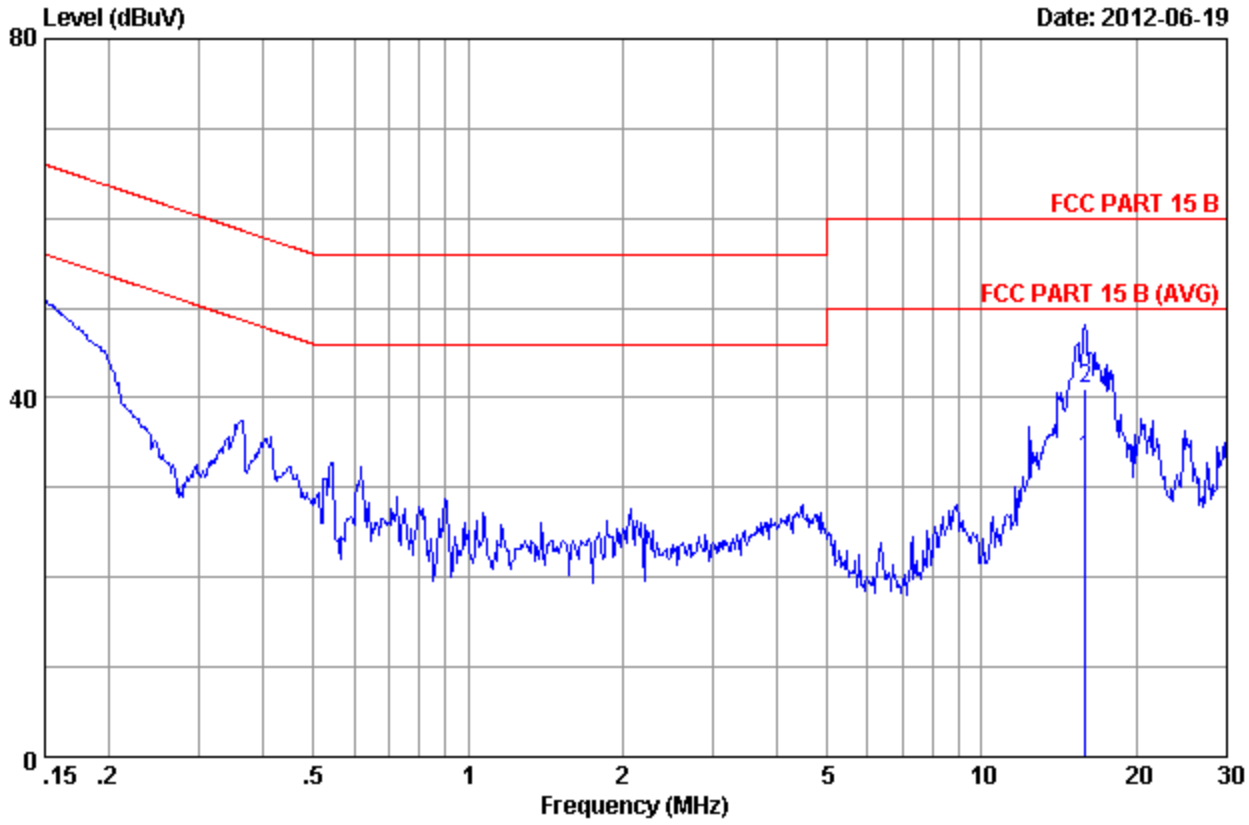
## 7.2 Conducted Emission Test 150kHz – 30MHz

EUT: USB Dongle M/N: USB2
Operating Condition: Data transmitting
Test Specification: Power Line, Live (tested on PC power line)
Comment: AC 120V/60Hz




| No | Freq (MHz) | Current Clamp Factor (dB) | Reading (dBuA) | Emission Level (dBuA) | Limits (dBuA) | Margin (dBuA) | Remark (dB) |
|---|---|---|---|---|---|---|---|
| 1 | 15.887 | 0.43 | 22.80 | 33.23 | 50.00 | 16.77 | Average |
| 2 | 15.887 | 0.43 | 30.50 | 40.93 | 60.00 | 19.07 | QP |

Remarks: 1.Emission Level=Current Clamp Factor+Reading.

2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.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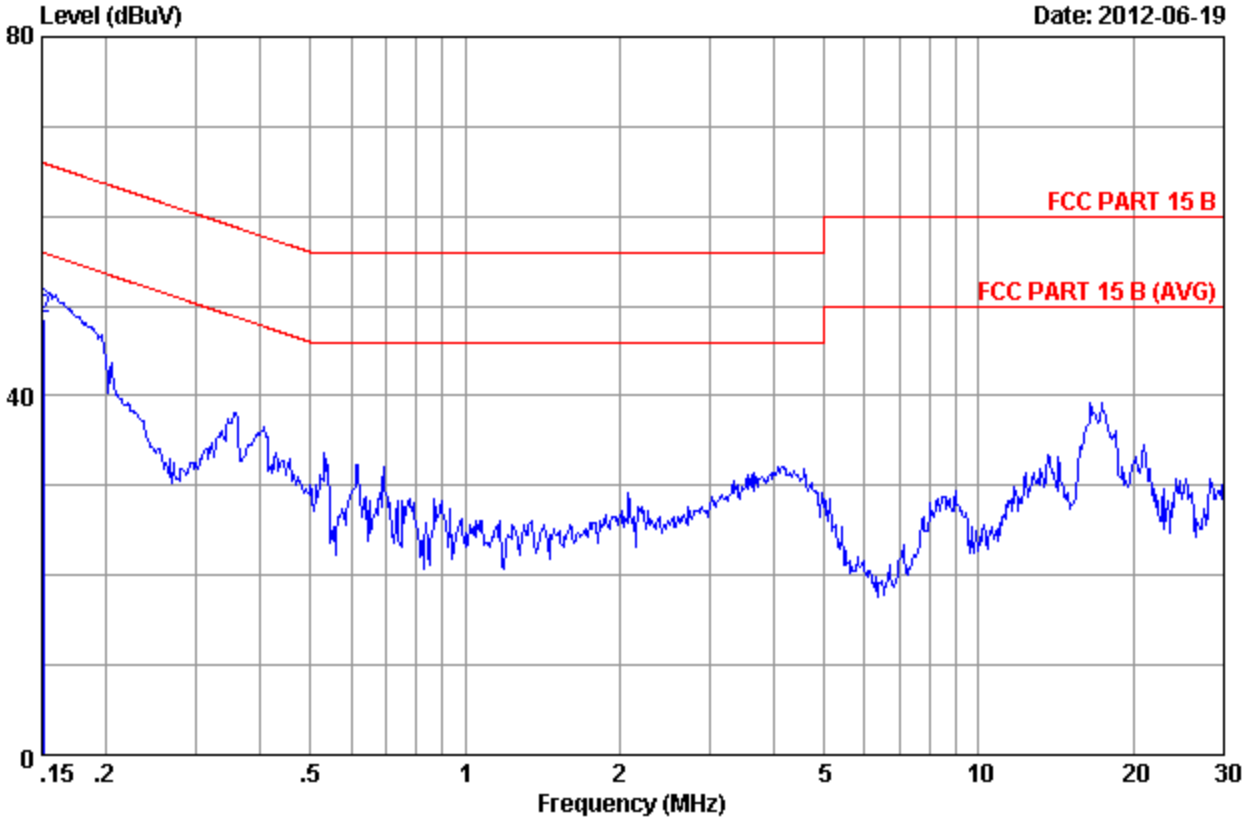
## Conducted Emission Test 150kHz – 30MHz

EUT: USB Dongle M/N: USB2
Operating Condition: Data transmitting
Test Specification: Power Line, Neutral (tested on PC power line)
Comment: AC 120V/60Hz




| No | Freq (MHz) | Current Clamp Factor (dB) | Reading (dBuA) | Emission Level (dBuA) | Limits (dBuA) | Margin (dBuA) | Remark (dB) |
|---|---|---|---|---|---|---|---|
| 1 | 0.15200 | 0.14 | 18.71 | 28.79 | 55.89 | 27.10 | Average |
| 2 | 0.15200 | 0.14 | 38.51 | 48.59 | 65.89 | 17.30 | QP |

Remarks: 1.Emission Level=Current Clamp Factor+Reading.

2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.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## Test Equipment List

### Conducted Emission Test

| DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | CAL. DUE DATE |
|---|---|---|---|---|
| Test Receiver | Rohde & Schwarz | ESHS10 | 838693/001 | Dec.17, 2012 |
| L.I.S.N.#1 | Rohde & Schwarz | ESH2-Z5 | 834066/011 | Mar.29, 2013 |
| L.I.S.N.#3 | Kyoritsu | KNW-242C | 8-1920-1 | May.07, 2013 |
| Terminator | Hubersuhner | 50Ω | No. 1 | May.07, 2013 |
| Terminator | Hubersuhner | 50Ω | No. 2 | May.07, 2013 |
| RF Cable | Fujikura | 3D-2W | LISN Cable 1# | May.07, 2013 |
| Coaxial Switch | Anritsu | MP59B | M55367 | May.07, 2013 |
| Passive Probe | Rohde & Schwarz | ESH2-Z3 | 299.7810.52 | May.07, 2013 |
| Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100341 | May.07, 2013 |


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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 (dBμV/m) | U=4.32dB (30MHz-25GHz) |
| CE | Disturbance Voltage (dBμV) | U=2.4dB |


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