

# Test report

## FCC 15.225 and RSS-210 A2.6 13.56 MHz 2016\_298866

Date of issue: April 25, 2016

Applicant: Citronix Inc.

Product: Industrial Inkjet Printer

Model: ci5000 series

Model Variant: ci5200, ci5300, ci5500, ci5650

FCC ID: 2AHQACI5000SERIE

IC Registration number: 21236-CI5000SERIE

Specifications:

**FCC 47 CFR Part 15 Subpart C, §15.225**

Operation within the band 13.110-14.010 MHz.

**RSS-210 Issue 8**

Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment

#### Test location

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Company name	Nemko USA Inc.
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City	Carlsbad
Province	CA
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Country	USA
Telephone	+1 858-755-5525
Website	www.nemko.com
Site number	FCC: US5058; IC: 2040B

Tested by	Feng You
Reviewed by	James Morris
Date	April 25, 2016
Signature	

#### Limits of responsibility

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Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko USA's ISO/IEC 17025 accreditation.

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## Section 1. Report summary

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### 1.1 Applicant and manufacturer

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Company name	Citronix Inc.
Address	2241 S. Watson Road, Suite 111
City	Arlington
Province/State	TX
Postal/Zip code	76010
Country	U.S.A.

### 1.2 Test specifications

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FCC 47 CFR Part 15, Subpart C, Clause 15.225	Operation in the 13.110–14.010 MHz
RSS-210 Issue 8, December 2010, Annex 2.6	Band 13.110-14.010 MHz

### 1.3 Statement of compliance

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In the configuration tested, the EUT was found compliant.

Testing was completed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See “Summary of test results” for full details.

### 1.4 Exclusions

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None

### 1.5 Test report revision history

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Revision #	Details of changes made to test report
1	Original report issued
2	Correction based from review feedback

## Section 2. Summary of test results

### 2.1 FCC Part 15 Subpart C, general requirements test results

Part	Test description	Verdict
§15.31(e)	Variation of power source	Pass <sup>1</sup>
§15.203	Antenna requirement	Pass <sup>2</sup>
§15.207(a)	Conducted limits	Pass
§15.215(c)	20 dB bandwidth	Pass

Notes: <sup>1</sup> Measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, was performed with the supply voltage varied between 100VAC – 240VAC (rated by manufacturer). No noticeable output power variation was observed.

<sup>2</sup> The Antenna is internal to device.

### 2.2 FCC Part 15 Subpart C, intentional radiators test results

Part	Test description	Verdict
§15.225(a)	Field strength within 13.553–13.567 MHz band	Pass
§15.225(b)	Field strength within 13.410–13.553 MHz and 13.567–13.710 MHz bands	Pass
§15.225(c)	Field strength within 13.110–13.410 MHz and 13.710–14.010 MHz bands	Pass
§15.225(d)	Field strength outside 13.110–14.010 MHz band	Pass
§15.225(e)	Frequency tolerance of carrier signal <sup>1</sup>	Pass

### 2.3 IC RSS-GEN, Issue 4, test results

Part	Test description	Verdict
6.6	Occupied bandwidth	Pass
6.11	Transmitter frequency stability	Pass <sup>1</sup>
7.1.2	Receiver spurious emissions limits (radiated)	Not applicable
7.1.3	Receiver spurious emissions limits (antenna conducted)	Not applicable
8.8	AC power lines conducted emission limits	Pass

Notes: <sup>1</sup> Frequency stability covered in RSS-210.

### 2.4 IC RSS-210, Issue 8, test results

Part	Test description	Verdict
A2.6 (a)	The field strength within the band 13.553–13.567 MHz.	Pass
A2.6 (b)	The field strength within the bands 13.410–13.553 MHz and 13.567–13.710 MHz	Pass
A2.6 (c)	The field strength within the bands 13.110–13.410 MHz and 13.710–14.010 MHz.	Pass
A2.6 (d)	The field strength outside the band 13.110–14.010 MHz.	Pass
A2.6	Carrier frequency stability shall be maintained to $\pm 0.01\%$ ( $\pm 100$ ppm) <sup>1</sup>	Pass

## Section 3. Equipment under test (EUT) details

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### 3.1 Sample information

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Receipt date	February 29, 2016
Nemko sample ID number	1

### 3.2 EUT information

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Product name	Industrial Inkjet Printer
Model	ci5000 series
Serial number	0516056P
FCC ID	2AHQACI5000SERIE
IC Registration Number	21236-CI5000SERIE

### 3.3 Technical information

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Operating band	13.553–13.567 MHz
Operating frequency	13.56 MHz
Modulation type	ASK
Occupied bandwidth (99 %)	294.9 Hz
Power requirements	100-240VAC, 50/60Hz
Emission designator	A1D
Antenna information	The EUT uses a unique antenna coupling/ non-detachable antenna to the intentional radiator. Internal antenna inside device.

### 3.4 Product description and theory of operation

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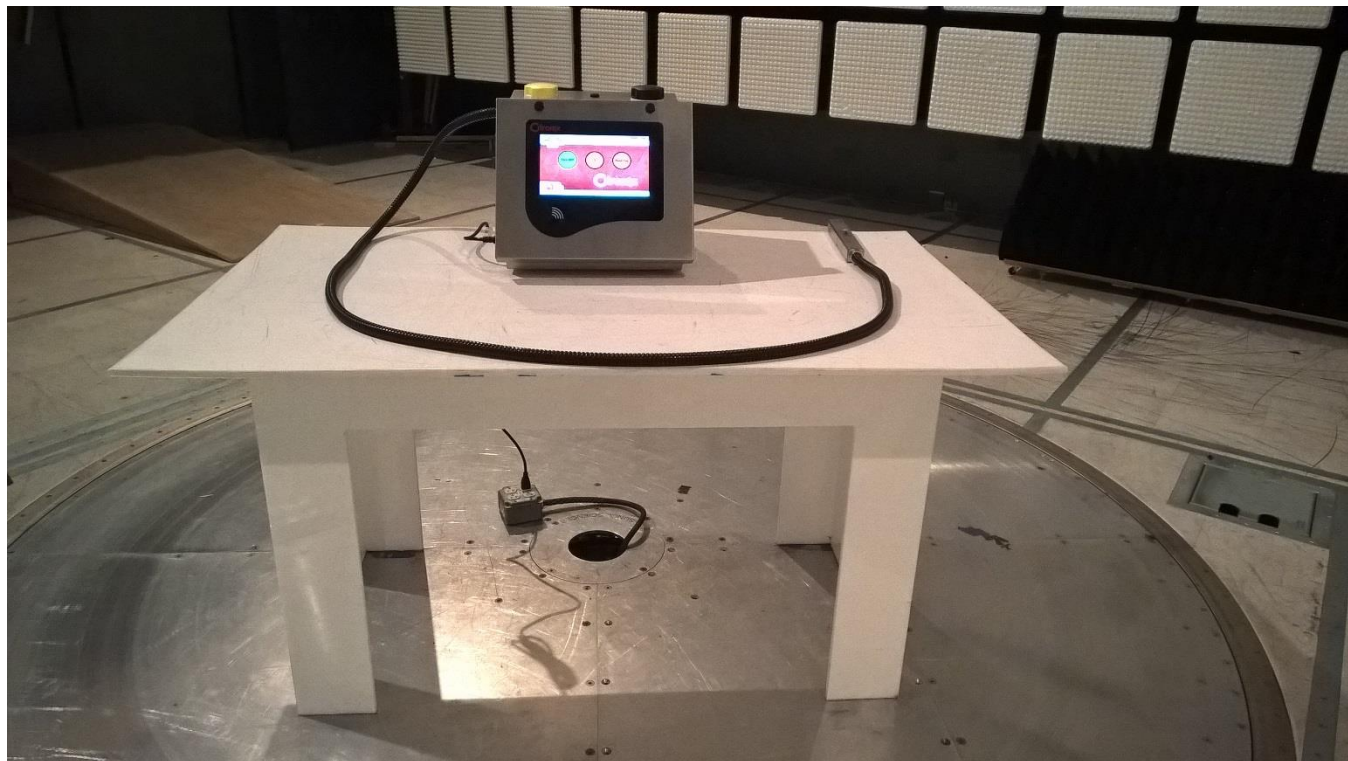
EUT is industrial inkjet printer using 13.56MHz RFID reader to control access.

### 3.5 EUT exercise details

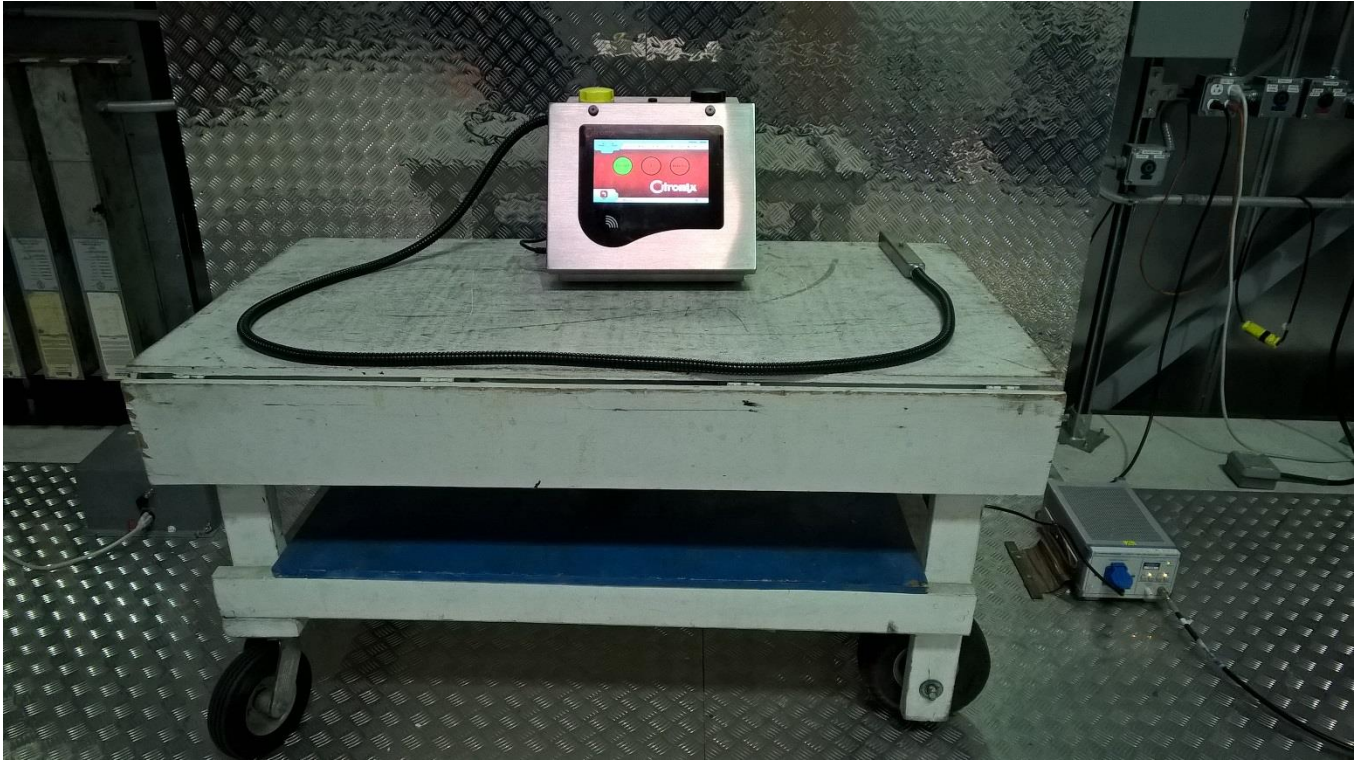
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RFID reader is set to constant transmit. Modulation applies when ID Tag presents.

### 3.6 EUT setup diagram



**Figure 3.6-1:** Radiated Emissions Setup



**Figure 3.6-2:** AC Powerline Conducted Emissions Setup

### 3.7 EUT sub assemblies

**Table 3.7-1:** EUT sub assemblies

Description	Brand name	Model/Part number	Serial number
Industrial Inkjet Printer	Citronix	cii5500	0516056P



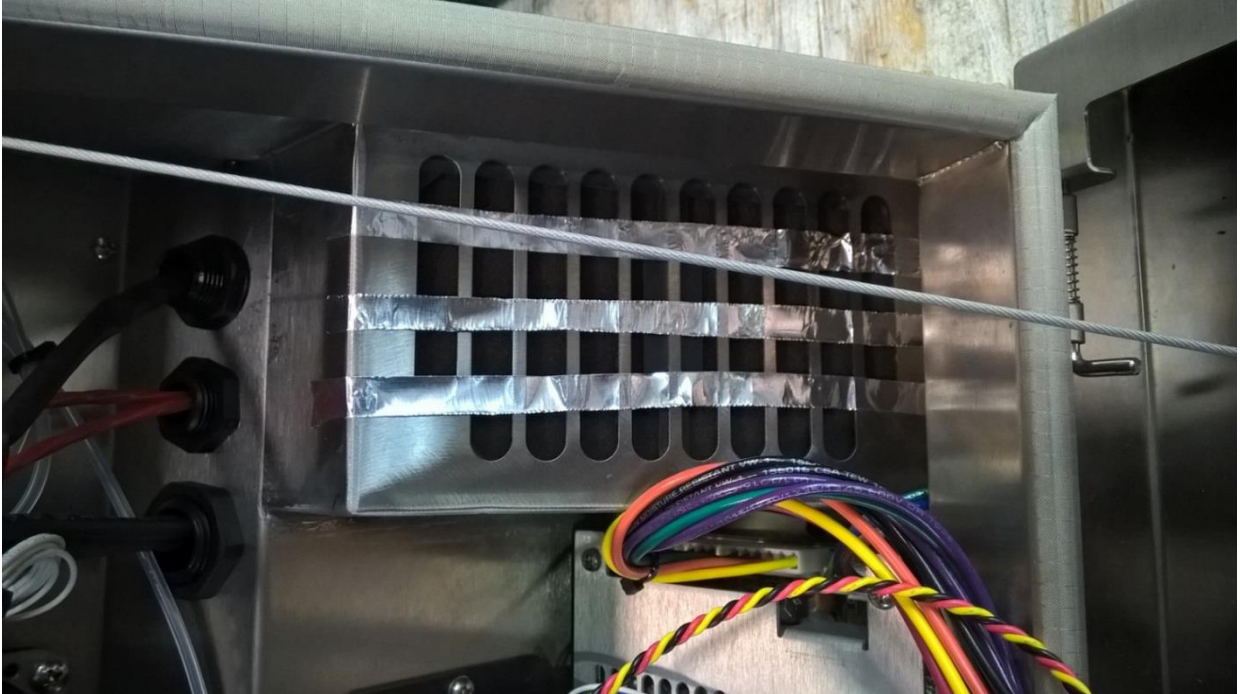
## Section 4. Engineering considerations

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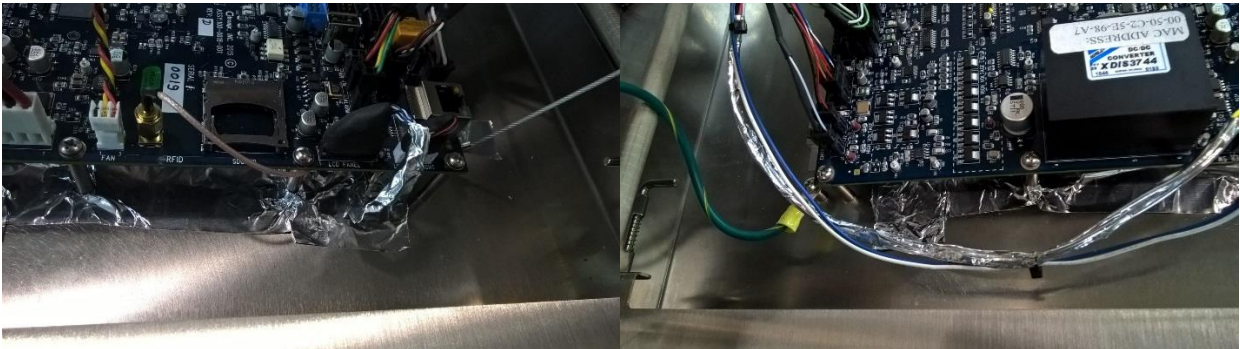
### 4.1 Modifications incorporated in the EUT

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1. Internal air vent cover modified to reduce opening size



2. Internal cables shielded



### 4.2 Technical judgment

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None

### 4.3 Deviations from laboratory tests procedures

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No deviations were made from laboratory procedures.

## Section 5. Test conditions

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### 5.1 Atmospheric conditions

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Temperature	15–30 °C
Relative humidity	20–75 %
Air pressure	860–1060 mbar

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

### 5.2 Power supply range

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The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages  $\pm 5\%$ , for which the equipment was designed.  
115VAC (Rated Range 100-240VAC)

## Section 6. Measurement uncertainty

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### 6.1 Uncertainty of measurement

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Nemko USA Inc. has calculated measurement uncertainty and is documented in EMC/MUC/001 "Uncertainty in EMC measurements." Measurement uncertainty was calculated using the methods described in CISPR 16-4 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC measurements; as well as described in UKAS LAB34: The expression of Uncertainty in EMC Testing. Measurement uncertainty calculations assume a coverage factor of  $K=2$  with 95% certainty.

Frequency/Time Uncertainty  $\leq 0.2\text{ms}$

Amplitude Uncertainty  $\leq 1.7\text{dB}$

## Section 7. Test equipment

### 7.1 Test equipment list

*Table 7.1-1: Equipment list*

Asset Tag	Description	Manufacturer	Model	Serial #	Last Cal	Next Cal
S1043	Variac (Variable Transformer) 3kVA, Input 110/220VAC @ 4.8/12A	Shanghai China	TDGC	N/A	VOU	VOU
1480	Antenna, Bilog	Schaffner-Chase	CBL6111C	2572	18-May-2015	18-May-2016
1733	Antenna, Active Loop	EMCO	6507	45939	21-Oct-2014	21-Oct-2016
1767	Receiver, EMI Test 20Hz - 26.5 GHz - 150 - +30 dBm LCD	Rohde & Schwartz	ESIB26	837491/0002	03-Feb-2016	03-Feb-2017
1839	Environmental Chamber (Temperature only)	Tenney	T-14	14	VOU	VOU
CCL001229	Receiver, EMI Test 40GHz	Rohde & Schwartz	ESU	1302.6005.40	07-Apr-2015	07-Apr-2016
E1019	Two Line V-Network	Rohde & Schwarz	ENV216	101045	15-May-2015	15-May-2016
1839	Environmental Chamber	Tenney	T-14	14	VOU	VOU
487	Digital Thermometer	Fluke	52	6100733	02-Feb-2016	02-Feb-2017
N100	True RMS Multimeter	FLUKE	189	76800162	30-Sep-2015	30-Sep-2016

Note: NCR - no calibration required, VOU - verify on use

## Section 8. Testing data

### 8.1 FCC 15.215(c) 20 dB bandwidth

#### 8.1.1 Definitions and limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage.

#### 8.1.2 Test summary

Test date	March 1, 2016	Temperature	20 °C
Test engineer	Feng You	Air pressure	1007 mbar
Verdict	Pass	Relative humidity	60 %

#### 8.1.3 Observations, settings and special notes

Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	≥1 % of span
Video bandwidth	RBW × 3
Trace mode	Max Hold

#### 8.1.4 Test data

**Table 8.1-1: Lower 20 dBc frequency cross result**

Fundamental frequency, MHz	Lower 20 dBc frequency cross, MHz	Limit, MHz	Margin, kHz
13.560	13.5598	13.553	6.8

**Table 8.1-2: Upper 20 dBc frequency cross result**

Fundamental frequency, MHz	Upper 20 dBc frequency cross, MHz	Limit, MHz	Margin, kHz
13.560	13.5600	13.567	7.0

## 8.2 RSS-Gen 6.6 Occupied bandwidth

### 8.2.1 Definitions and limits

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99 percent emission bandwidth, as calculated or measured.

The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1 percent of the selected span as is possible without being below 1 percent. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual.

The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 percent of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.

The span between the two recorded frequencies is the occupied bandwidth.

### 8.2.2 Test summary

Test date	March 1, 2016	Temperature	20 °C
Test engineer	Feng You	Air pressure	1007 mbar
Verdict	Pass	Relative humidity	60 %

### 8.2.3 Observations, settings and special notes

Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	$\geq 1$ % of span
Video bandwidth	RBW $\times$ 3
Trace mode	Max Hold

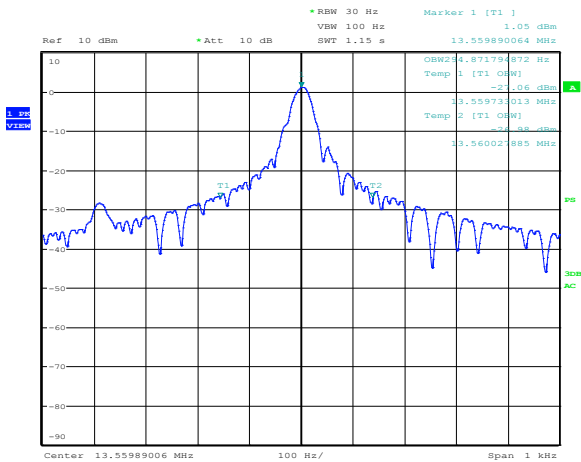
### 8.2.4 Test data

**Table 8.2-1:** 99 % occupied bandwidth result

Fundamental frequency, MHz	99 % occupied bandwidth, kHz
13.560	0.2949



8.2.4 Test data, continued



Date: 1.MAR.2016 12:11:15

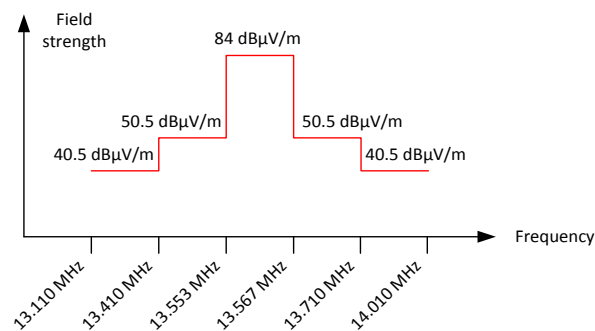
Figure 8.2-1: 99 % occupied bandwidth

## 8.3 FCC 15.225(a–c) and RSS-210 A2.6 (a–c) Field strength within the 13.110–14.010 MHz band

### 8.3.1 Definitions and limits

- a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15848  $\mu\text{V/m}$  (84 dB $\mu\text{V/m}$ ) at 30 m.
- b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334  $\mu\text{V/m}$  (50.5 dB $\mu\text{V/m}$ ) at 30 m.
- c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106  $\mu\text{V/m}$  (40.5 dB $\mu\text{V/m}$ ) at 30 m.

15.31(e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.



**Figure 8.3-1:** In-band spurious emissions limit

### 8.3.2 Test summary

Test date	March 3, 2016	Temperature	20 °C
Test engineer	Feng You	Air pressure	1007 mbar
Verdict	Pass	Relative humidity	60 %

### 8.3.3 Observations/special notes

The measurements were performed at the distance of 3 m. 40 dB distance correction factor\* was applied to the measurement result in order to comply with 30 m limits.

\* 30 m to 3 m distance correction factor calculation (for 13 MHz band):

$$40 \times \log_{10} (3 \text{ m}/30 \text{ m}) = 40 \times \log_{10} (0.1) = -40 \text{ dB}$$

Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	10 kHz
Video bandwidth	30 kHz
Trace mode	Max Hold

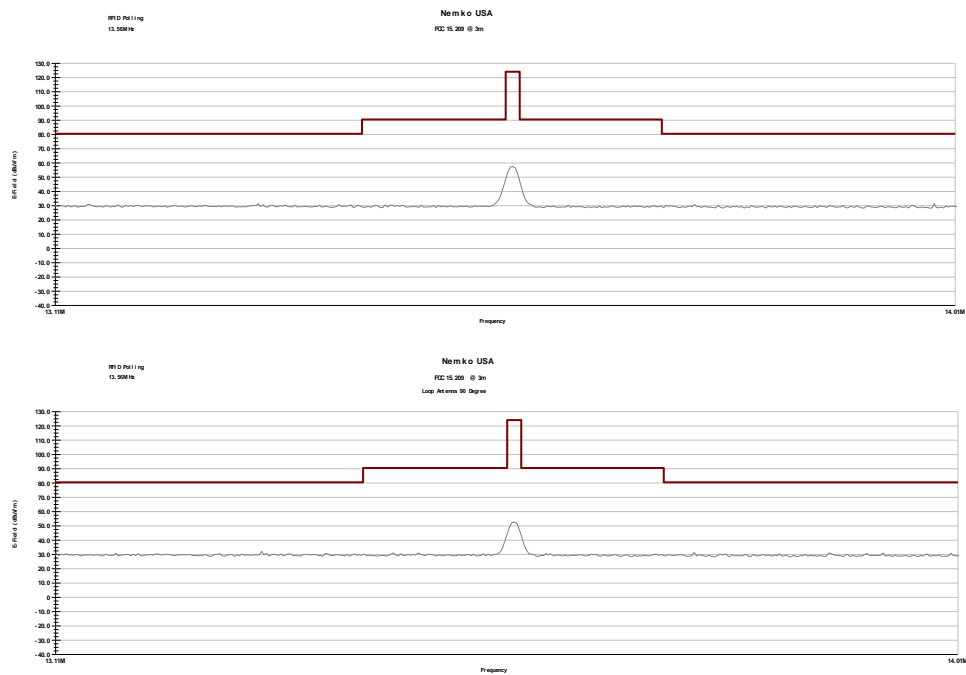


### 8.3.4 Test data

**Table 8.3-1: Field strength measurements results**

Frequency range, MHz	Frequency, MHz	Field strength at 3 m, dBμV/m	Calculated field strength at 30 m, dBμV/m	Limit, dBμV/m	Margin, dB
13.553–13.567	13.56032	57.4	17.4	84.00	66.6
13.410–13.553	13.43	30.5	-9.5	50.50	60
13.567–13.710	13.62	30.3	-9.7	50.50	60.2
13.110–13.410	13.31	31.4	-8.6	40.50	49.1
13.710–14.010	13.99	31.4	-8.6	40.50	49.1

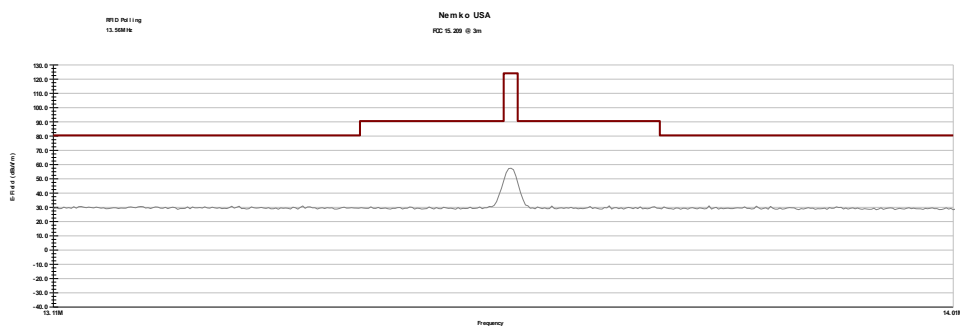
Note: Calculated field strength at 30 m = Measured field strength at 3 m – 40 dB



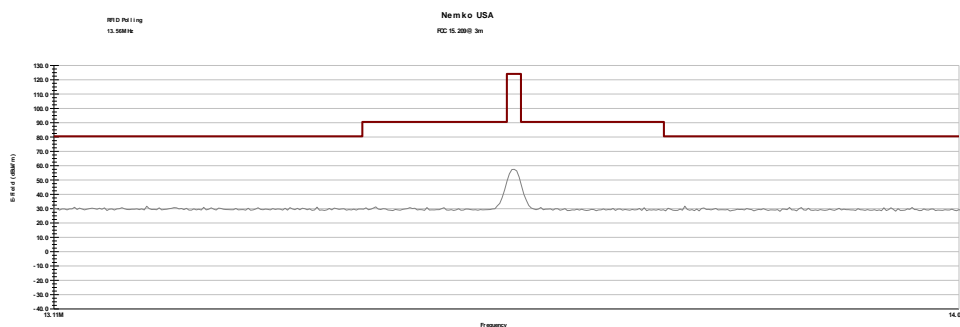
**Figure 8.3-2: Field strength within 13.11–14.010 MHz band – 115V**

**Table 8.3-2: Field strength measurements of fundamental**

Supply Voltage	Frequency, MHz	Field strength at 3 m, dBμV/m	Calculated field strength at 30 m, dBμV/m	Limit, dBμV/m	Margin, dB
115	13.56032	57.39	17.39	84.00	66.61
100	13.56032	57.45	17.45	84.00	66.55
240	13.56032	57.43	17.43	84.00	66.57



**Figure 8.3-3:** Field strength within 13.11–14.010 MHz band – 100V



**Figure 8.3-4:** Field strength within 13.11–14.010 MHz band – 240V

## 8.4 FCC 15.225(d) and RSS-210 A2.6(d) Field strength of emissions outside 13.110–14.010 MHz band

### 8.4.1 Definitions and limits

FCC: The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209

The field strength of emissions appearing within restricted bands (as specified in §15.205) shall not exceed the limits from §15.209.

IC: The field strength of any emission outside the band 13.110–14.010 MHz shall not exceed the 30 µV/m (29.5 dBµV/m) limit.

**Table 8.4-1: FCC §15.209 – Radiated emission limits**

Frequency, MHz	Field strength of emissions		Measurement distance, m
	µV/m	dBµV/m	
0.009–0.490	2400/F	$67.6 - 20 \times \log_{10}(F)$	300
0.490–1.705	24000/F	$87.6 - 20 \times \log_{10}(F)$	30
1.705–30.0	30	29.5	30
30–88	100	40.0	3
88–216	150	43.5	3
216–960	200	46.0	3
above 960	500	54.0	3

Notes: In the emission table above, the tighter limit applies at the band edges. For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test

**Table 8.4-2: Restricted frequency bands**

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
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	Above 38.6
13.36–13.41			

### 8.4.2 Test summary

Test date	March 3, 2016	Temperature	20 °C
Test engineer	Feng You	Air pressure	1007 mbar
Verdict	Pass	Relative humidity	60 %

### 8.4.3 Observations, settings and special notes

The spectrum was searched from 9 kHz to 1 GHz.  
Radiated measurements were performed at a distance of 3 m.

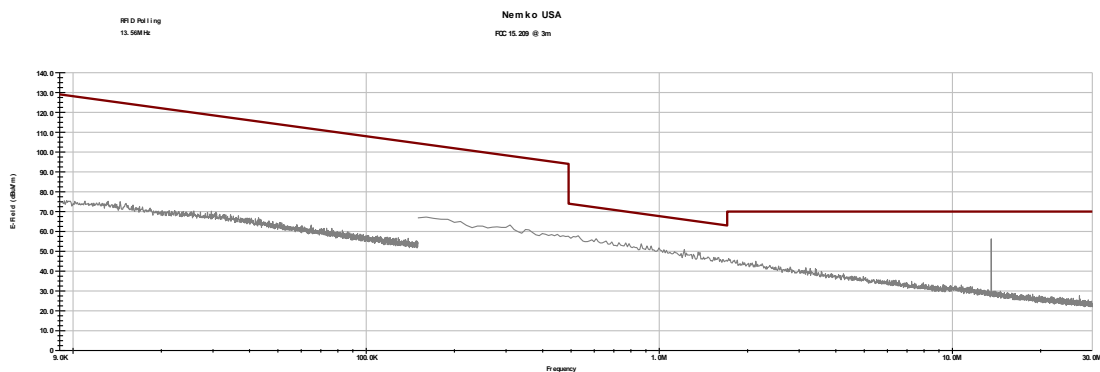
Spectrum analyzer settings for frequencies below 30 MHz:

Detector mode	Quasi-Peak
Resolution bandwidth	9 kHz
Video bandwidth	30 kHz
Trace mode	Max Hold
Measurement time	100 ms

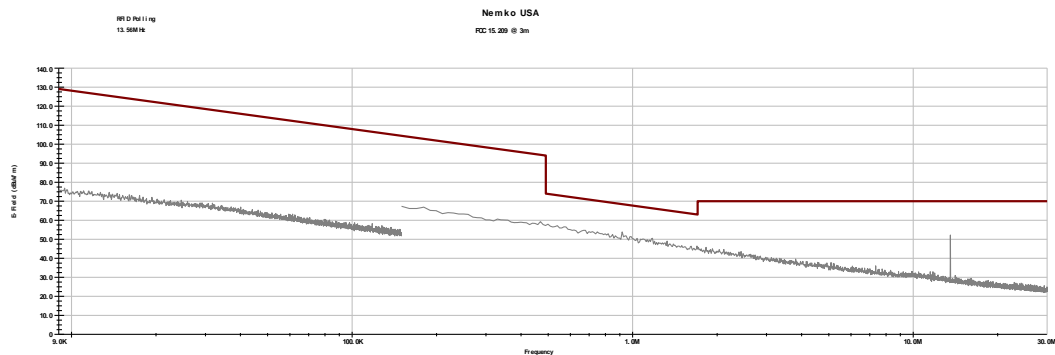
Spectrum analyzer settings for frequencies above 30 MHz:

Detector mode	Peak
Resolution bandwidth	100 kHz
Video bandwidth	300 kHz
Trace mode	Max Hold
Measurement time	100 ms

### 8.4.4 Test data



**Figure 8.4-1:** Field strength of spurious emissions below 30 MHz



**Figure 8.4-2:** Field strength of spurious emissions below 30 MHz – 90 Degree

Peak at 13.56MHz is the fundamental signal.

8.4.4 Test data, continued

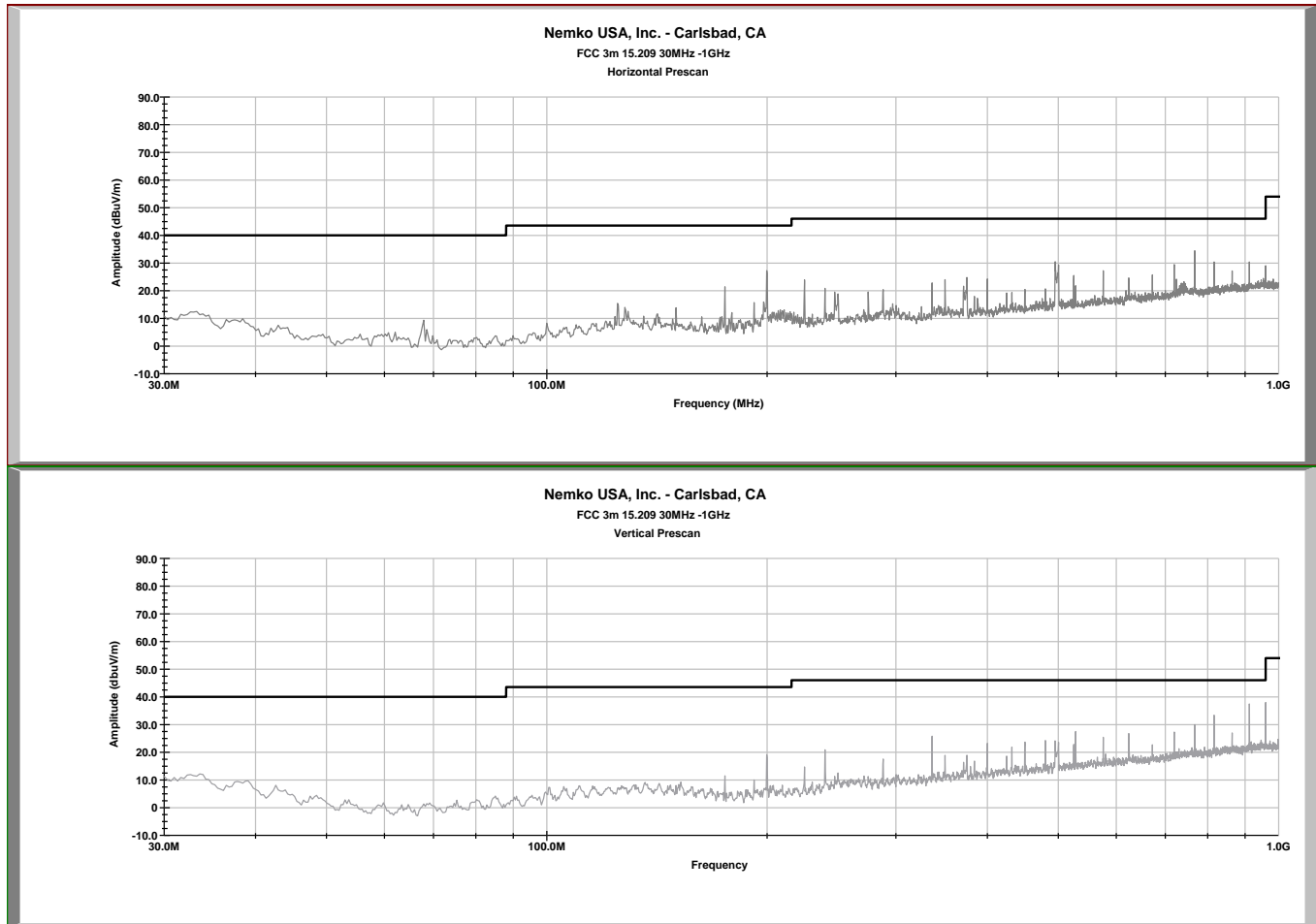


Figure 8.4-3: Field strength of spurious emissions 30-1000 MHz

Table 8.4-3: QP Measurement Results 30-1000MHz

Frequency MHz	Polarity H/V	Corrected QP dBuV/m	QP Limit dBuV/m	QP Margin dB
199.85	H	14.83	43.5	28.67
494.85	H	30.55	46	15.45
720.05	H	28.25	46	17.75
768.08	H	36.64	46	9.36
816.35	H	18.43	46	27.57
912.25	H	22.91	46	23.09
336.11	V	23.03	46	22.97
528.01	V	27.3	46	18.7
767.98	V	31.69	46	14.31
815.93	V	23.7	46	22.3
911.93	V	39.71	46	6.29
960.1	V	28.27	54	25.73

## 8.5 FCC 15.225(e) and RSS-210 A2.6 Frequency tolerance of the carrier signal

### 8.5.1 Definitions and limits

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  ( $\pm 100$  ppm) of the operating frequency over a temperature variation of  $-20\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$  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  $20\text{ }^{\circ}\text{C}$ . For battery operated equipment, the equipment tests shall be performed using a new battery.

### 8.5.2 Test summary

Test date	March 4, 2016	Temperature	21 $^{\circ}\text{C}$
Test engineer	Feng You	Air pressure	1006 mbar
Verdict	Pass	Relative humidity	54 %

### 8.5.3 Observations, settings and special notes

Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	$\geq 1\%$ of emission bandwidth
Video bandwidth	RBW $\times 3$
Trace mode	Max Hold
Special Condition	Because the EUT is module for medical equipment used in operating room, the temperature range tested is extended according to the manufacturer declared operation range to $70^{\circ}\text{C}$ . The module is supplied with 36V DC nominal voltage. Declared voltage range is 17-41V DC.

### 8.5.4 Test data

**Table 8.5-1: Frequency drift measurements results**

Test conditions	Frequency, MHz	Frequency drift, $\pm\text{ppm}$	Limit, $\pm\text{ppm}$	Margin, ppm
+20 $^{\circ}\text{C}$ , Nominal 115V AC	13.55988	Reference	Reference	Reference
+20 $^{\circ}\text{C}$ , 100V AC	13.55988	0	100	100
+20 $^{\circ}\text{C}$ , 240V AC	13.55988	0	100	100
-20 $^{\circ}\text{C}$	13.55995	70	100	30
-10 $^{\circ}\text{C}$	13.55995	70	100	30
0 $^{\circ}\text{C}$	13.55994	60	100	40
+10 $^{\circ}\text{C}$	13.55991	30	100	70
+30 $^{\circ}\text{C}$	13.55984	-40	100	60
+40 $^{\circ}\text{C}$	13.55982	-60	100	40
+50 $^{\circ}\text{C}$	13.55981	-70	100	30

Note: frequency drift was calculated as follows:

$$\text{Frequency drift (ppm)} = ((F_{\text{measured}} - F_{\text{reference}}) \div F_{\text{reference}}) \times 1 \times 10^6$$

## 8.6 FCC 15.207(a) AC power line conducted emissions limits

### 8.6.1 Definitions and limits

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that 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 the limits in the following table, as measured using a 50  $\mu$ H/50  $\Omega$  line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

The conducted emissions shall be measured with a 50  $\Omega$ /50  $\mu$ H line impedance stabilization network (LISN).

**Table 8.6-1: Conducted emissions limit**

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

Note: \* - Decreases with the logarithm of the frequency.

### 8.6.2 Test summary

Test date	March 1, 2016	Temperature	20 °C
Test engineer	Feng You	Air pressure	1007 mbar
Verdict	Pass	Relative humidity	60 %

### 8.6.3 Observations, settings and special notes

The module is tested inside host device Stryker Neptune 3.

The EUT was set up as floor standing configuration.

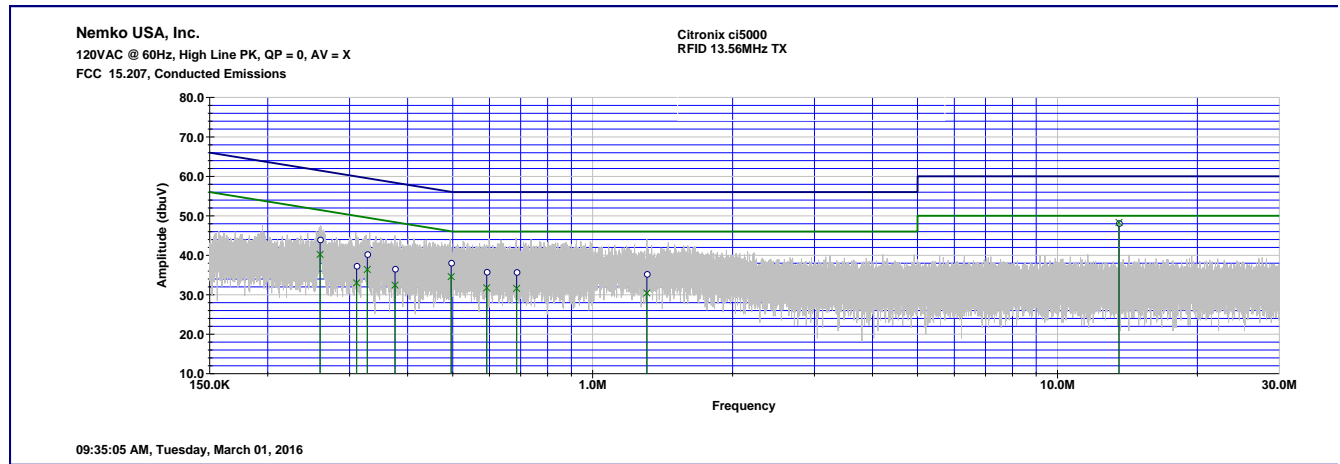
The spectral scan has been corrected with transducer factors (i.e. cable loss, LISN factors, and attenuators) for determination of compliance.

A preview measurement was generated with the receiver in continuous scan mode. Emissions detected within 6 dB or above limit were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement.

Test receiver settings:

Frequency span	150 kHz to 30 MHz
Detector mode	Peak and Average (preview mode); Quasi-Peak (final measurements)
Resolution bandwidth	9 kHz
Video bandwidth	30 kHz
Trace mode	Max Hold
Measurement time	1000 ms

#### 8.6.4 Test data



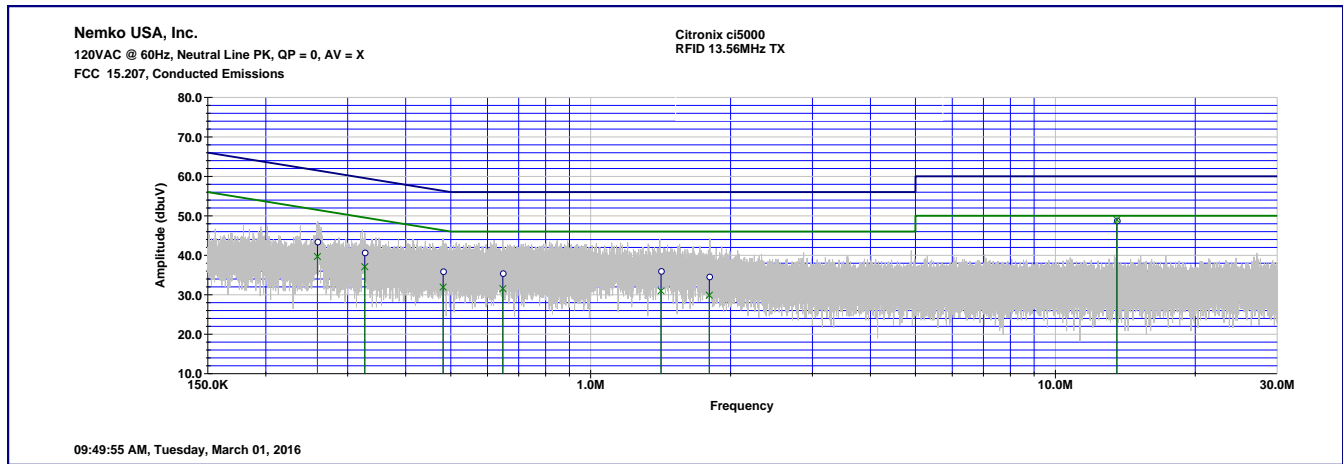
**Plot 8.6-1:** Conducted emissions on phase line

**Table 8.6-2:** Quasi-Peak and Average conducted emissions results on phase line

Frequency kHz	QP Rdng (dBuV)	Avg Rdng (dBuV)	QP Limit (dBuV)	Avg Limit (dBuV)	QP Margin (dB)	Avg Margin (dB)
259.24	44	40.2	62.9	51.5	18.9	11.3
310.58	37.3	33	61.4	50	24.1	17
327.51	40.3	36.4	60.9	49.5	20.6	13.1
375.77	36.6	32.4	59.5	48.4	22.9	16
496.18	38.1	34.6	56.1	46.1	18	11.5
591.71	35.8	31.7	56	46	20.2	14.3
686.42	35.7	31.6	56	46	20.3	14.4
1308.48	35.3	30.4	56	46	20.7	15.6
13559.53	48.1	48.3	60	50	11.9	1.7



8.6.4 Test data, continued



Plot 8.6-2: Conducted emissions on neutral line

Table 8.6-3: Quasi-Peak and Average conducted emissions results on neutral line

Frequency kHz	QP Rdng (dBuV)	Avg Rdng (dBuV)	QP Limit (dBuV)	Avg Limit (dBuV)	QP Margin (dB)	Avg Margin (dB)
258.32	43.4	39.7	62.9	51.5	19.5	11.8
326.54	40.7	37.1	61	49.5	20.3	12.4
481.36	35.9	31.9	56.5	46.3	20.6	14.4
647.04	35.5	31.6	56	46	20.5	14.4
1416.86	36	31	56	46	20	15
1799.54	34.6	29.9	56	46	21.4	16.1
13559.93	48.8	49	60	50	11.2	1

## Section 9. Block diagrams of test set-ups

### 9.1 Radiated emissions set-up

