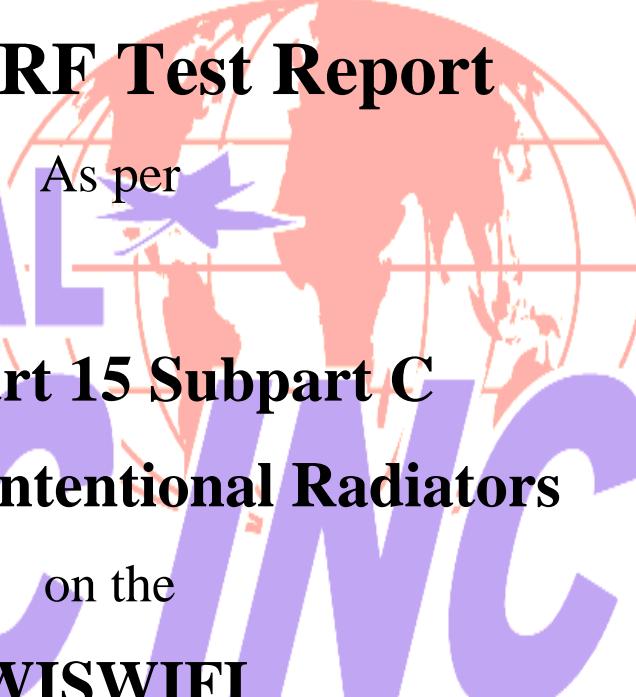


Global EMC Inc. Labs

EMC & RF Test Report

As per



GLOBAL
FCC Part 15 Subpart C
Unlicensed Intentional Radiators
on the
WISWIFI



Yong Huang
Project Specialist
Global EMC Inc. Laval
2972 Joseph-A-Bombardier
Laval, QC, H7P 6E3 CANADA
Ph: (450) 687- 4976

Testing produced for



See Appendix A for full customer & EUT details.



Industry
Canada

LAB REGISTRATION #6844B-1



FCC REGISTRATION
REG#382292



Testing Laboratory
Certificate #2555.01

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Table of Contents

Table of Contents	2
Report Scope	3
Summary	4
Test Results Summary	5
Justifications, Descriptions, or Deviations	6
Applicable Standards, Specifications and Methods	7
Sample calculation(s)	8
Document Revision Status	8
Definitions and Acronyms	9
Testing Facility	10
Calibrations and Accreditations	10
Testing Environmental Conditions and Dates	11
Detailed Test Results Section	12
Spurious Radiated Emissions	13
Appendix A – EUT Summary	32
Appendix B – EUT and Test Setup Photographs	35

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Report Scope

This report addresses the EMC verification testing and test results of the **WISWIFI**, herein referred to as EUT (Equipment Under Test) performed at Global EMC Labs.

The EUT was tested for compliance against the following standards:

FCC Part 15 Subpart C 15

Test procedures, results, justifications, and engineering considerations, if any, follow later in this report.

The results contained in this report relate only to the item(s) tested.

This report does not imply product endorsement by A2LA or any other accreditation agency, any government, or Global EMC Inc.

Opinions/interpretations expressed in this report, if any, are outside the scope of Global EMC Inc accreditation. Any opinions expressed do not necessarily reflect the opinions of Global EMC Inc, unless otherwise stated.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Summary

The results contained in this report relate only to the item(s) tested.

EUT FCC Certification #, FCC ID:	V95-WISWIFI
EUT Industry Canada Certification #, IC:	7591A-WISWIFI
EUT Passed all tests performed.	Yes (see test results summary)
Tests conducted by	Yong Huang

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Test Results Summary

Standard/Method	Description	Class/Limit	Result
FCC 15.203	Antenna Requirement	Unique	Pass See Justification
FCC 15.205 RSS 210 (Table 1)	Restricted Bands for intentional operation	QuasiPeak Average	Pass See Justifications
FCC 15.207	Power line conducted emissions	QuasiPeak Average	Pass See Justifications
FCC 15.209 RSS-210 (Table 2)	Spurious Radiated emissions	QuasiPeak Average	Pass
FCC 15.247(a)2 RSS-210 A8.2(a)	6 dB Bandwidth	> 500 kHz	Pass See Justifications
FCC 15.247(b)2 RSS-210 A8.4(4)	Max output power	< 1 Watt	Pass See Justifications
FCC 15.247(b)(4) RSS-210 A8.4(5)	Antenna Gain	< 6 dBi	Pass See Justifications
FCC 15.247(d) RSS-210 A8.5	Antenna conducted spurious	< 20 dBc	Pass See Justifications
FCC 15.247(e) RSS-210 A8.2(b)	Spectral Density	< 8 dBm (3 kHz BW)	Pass See Justifications
FCC 15.247(i) IC Safety code 6	Maximum Permissible Exposure	> 20 cm separation.	Pass See justifications
Overall Result			PASS

If the product as tested or otherwise complies with the specification, the EUT is deemed to comply with the requirement and is deemed a 'PASS' grade. If not 'FAIL' grade will be issued. Note that 'PASS' / 'FAIL' grade is independent of any measurement uncertainties. A 'PASS' / 'FAIL' grade within measurement uncertainty is marked with a '*'.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Justifications, Descriptions, or Deviations

The following justifications for tests not performed or deviations from the above listed specifications apply:

As per customer's request, this report is for the purpose of Class II permissive change /limited modular approval on the original approvals of the EUT. This report records the applicable tests that are performed as per TCB's request, by differences noted from previous testing on the module. Hence full test of compliance was covered by test report (report No. FR3N2752-01C).

This product has a change of the reference trace antenna from the original certification, which has less then or equal power to the previous certification and has less then or equal antenna gain then the previous certification. This limited modular approval is for incorporation in specific host(s).

As per client's request, the EUT was tested as installed in the end-use product as host for limited modular approval purpose. The EUT was tested in modes chosen as representative worst case according to previous testing.

For the scope of this test report, radiated testing of the EUT was pre-scanned in three orthogonal axis to maximize emissions. Maximum emissions were found in the vertical EUT polarization. This setup was used for all testing in this report.

For the Restricted Bands of operation, the EUT is designed to only operate between 2.4 GHz and 2.4835 GHz

For the Antenna requirement specified in FCC 15.203 and RSS 210 section 5.5, this device uses a PCB trace antenna with a gain less than -0.4 dBi.

EUT configuration, firmware version and peripherals were as supplied and designated by the client.

A later revision of the standard may have been substituted in place of the previous dated referenced revision. The year of the specification used are listed under applicable standards. Using the later revision accomplishes the goal of ensuring compliance to the intent of the previous specification, while allowing the laboratory to incorporate the extensions and clarifications made available by a later revision.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Applicable Standards, Specifications and Methods

ANSI C63.4:2014 - Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

ANSI C63.10:2013 - American national standard for testing unlicensed wireless devices

CFR 47 FCC 15 - Code of Federal Regulations – Radio Frequency Devices

CISPR 22:2008 - Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement

ICES-003:2012 - Digital Apparatus - Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard

ISO 17025:2005 - General Requirements for the competence of testing and calibration laboratories

RSS 210:2010 - Issue 8: Spectrum Management and Telecommunications Policy. Radio Standards Specification Low Power Licence-Exempt Radiocommunication Devices

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Sample calculation(s)

Margin = limit – (received signal + antenna factor + cable loss – pre-amp gain)

Margin = 50.5dBuV/m – (50dBuV + 10dB + 2.5dB – 20dB)

Margin = 8.5 dB

Document Revision Status

Revision 1 - Released on July 30th , 2015

Revision 2 - Released on August 6th , 2015. Revised as per TCB's request.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Definitions and Acronyms

The following definitions and acronyms are applicable in this report.
See also ANSI C63.14.

AE – Auxillary Equipment.

BW – Bandwidth. Unless otherwise stated, this is refers to the 6 dB bandwidth.

EMC – Electro-Magnetic Compatibility

EMI – Electro-Magnetic Immunity

EUT – Equipment Under Test

ITE – Information Technology Equipment with a primary function(s) of entry, storage, display, retrieval, transmission, processing, switching, or control, of data.

LISN – Line impedance stabilization network

NCR – No Calibration Required

RF – Radio Frequency

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Testing Facility

Testing for EMC on the EUT was carried out at Global EMC labs in Montréal, Québec, Canada. The testing lab consists of a 3m semi-anechoic chamber calibrated to be able to allow measurements on an EUT with a maximum width or length of up to 2m and height up to 3m. The chamber is equipped with a turn table that is capable of testing devices up to 3300lb in weight. This facility is capable of testing products that are rated for 120 Vac and 240Vac single phase, or 208 Vac 3 phase input. DC capability is also available. The chamber is equipped with an antenna mast that controls polarization and height from the control room adjoining the shielded chamber. Radiated emissions measurements are performed using a Bilog, and Horn antenna where applicable. Conducted emissions, unless otherwise stated, are performed using a LISN.

Calibrations and Accreditations

The measurement site used is registered with Federal Communications Commission (FCC) and Industry Canada (IC). This site is calibrated for Normalized Site Attenuation (NSA) using test procedures outlined in ANSI C63.4 "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". The semi-anechoic chamber is lined with ferrite tiles and absorption cones to minimize any undesired reflections. All measuring equipment is calibrated on an annual or bi-annual basis as listed for each respective test.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Testing Environmental Conditions and Dates

Following were the environmental conditions in the facility during time of testing –

Date	Test	Init.	Temperature (°C)	Humidity (%)	Pressure (kPa)
July 16-July 23	all	YH	18-25°C	30-45%	100 -103kPa

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Detailed Test Results Section

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Spurious Radiated Emissions

Purpose

The purpose of this test is to ensure that the RF energy unintentionally emitted from the EUT does not exceed the limits listed below as defined in the applicable test standard, as measured from a receiving antenna. This helps protect broadcast radio services such as television, FM radio, pagers, cellular telephones, emergency services, and so on, from unwanted interference.

Limit(s) and Method

The method is as defined in ANSI C63.4 for tests below 1GHz, and ANSI C63.10 for tests above 1GHz.

The limits, as defined in 15.247(d) for unintentional radiated emissions apply for those emissions that fall in the restricted bands, as defined in Section 15.205(a). These emissions must comply with the radiated emission limits specified in Section 15.209(a).

All unintentional emissions (including band edge) must also meet the requirements of -20 dBc or greater

30 MHZ – 88 MHz, 100 uV/m (40.0 dBuV/m¹) at 3 m

88 MHz – 216 MHz, 150 uV/m (43.5 dBuV/m¹) at 3 m

216 MHz – 960 MHz, 200 uV/m (46.4 dBuV/m¹) at 3 m

Above 960 MHz, 500 uV/m (54.0 dBuV/m¹) at 3 m

Above 1000 MHz, 500 uV/m (54.0 dBuV/m²) at 3m

¹Limit is with 120 kHz measurement bandwidth and a using a Quasi Peak detector.

²Limit is with 1 MHz measurement bandwidth and using an Average detector, scanned in accordance with 15.33 to above the 10th harmonic (25 GHz).

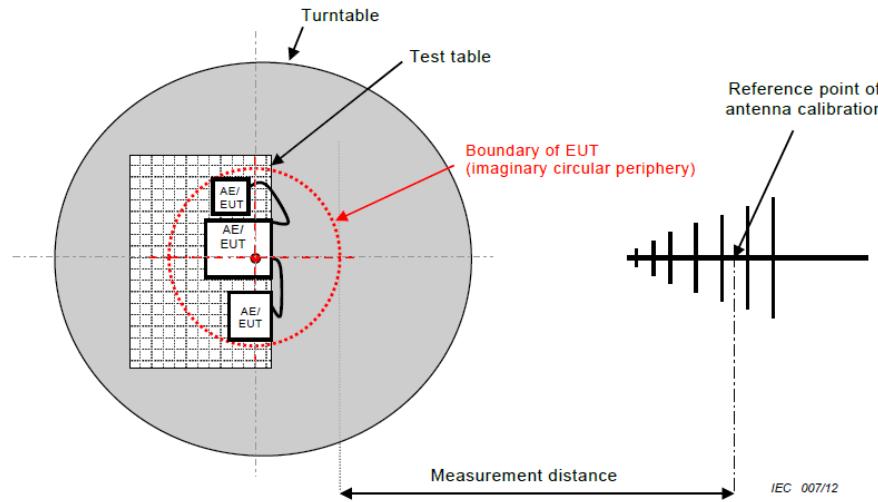
Results

The EUT passed the limits. Low, middle and high band was measured. The worst case for each mode is presented as a graph for the spectrum. The -20 dBc requirement is shown for the lower band edge at 2.4 GHz in the low band. The -20 dBc requirement is also shown for the higher band edge at 2.4835 GHz in the high band.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Typical Radiated Emissions Setup



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Measurement Uncertainty

The expanded measurement uncertainty is calculated in accordance with CISPR 16-4-2 and is +/-4.4 dB with a 'k=2' coverage factor and a 95% confidence level.

Preliminary Graphs

Note the graphs shown below are for graphical illustration only. For final measurements with the appropriate detector, please refer to the final measurement table where applicable. The graph shown below is a maximized peak measurement graph, measured with a resolution bandwidth greater than the final required detector and over a full 0-360 rotation. This peaking process is done as a worst case measurement. This process enables the detection of frequencies of concern for final measurement, and provides considerable time savings. Final measurements are performed over a full 0-360 degrees rotation and 1 – 4 meter height of measurement antenna.

The worst case or representative mode graphs are shown for 30 MHz to 2 GHz, however the device was scanned at low, middle, and high channel.

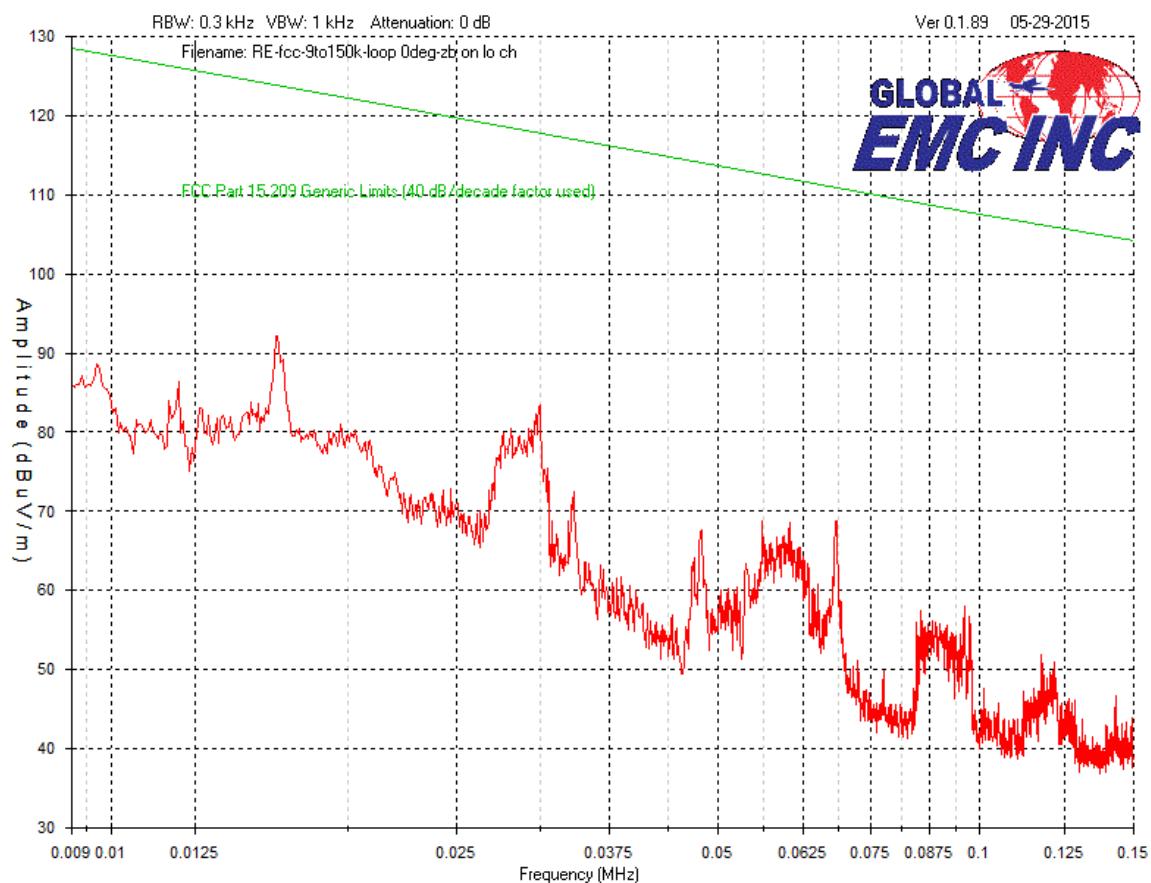
In accordance with FCC Part 15, Subpart A, Section 15.33, the device was scanned to a minimum of a 25 GHz, no emission were found above 18Ghz, while the noise floor was 6dB lower than the limit .

The graphs shown below shows the peak power output of the device during the radiated measurement at 300 kHz bandwidth during transmit operation of the EUT from 30 MHz – 1 GHz, since the RBW used is greater than the value required by the standard (100 kHz) this is a worst case reading and still complied with the limits. None of the spurious exceeded the 80.5 dbuV/m limit (-20dbc from max reading of 100.5 dbuV/m).

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



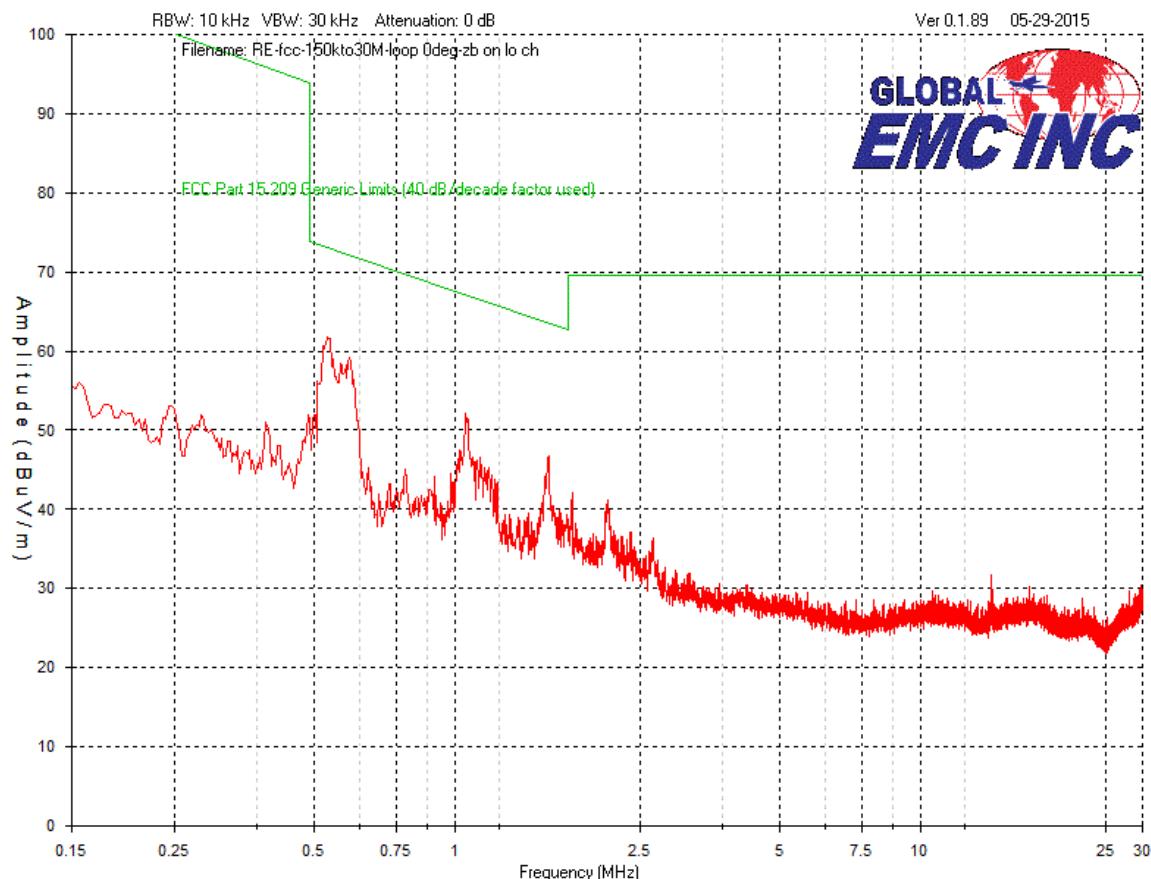
Loop @ 0 degree – Peak Emissions Graph – 9kHz to 150kHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



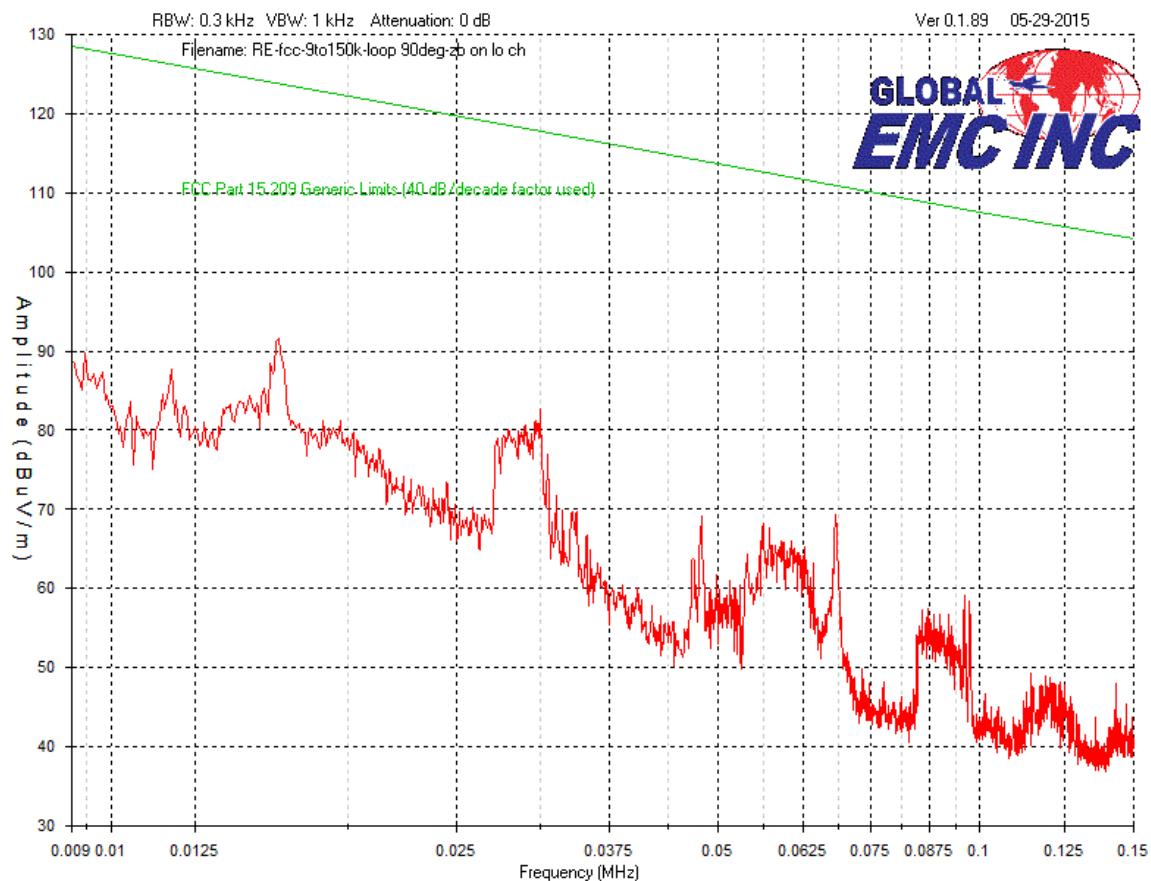
Loop @ 0 degree – Peak Emissions Graph – 150kHz to 30MHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



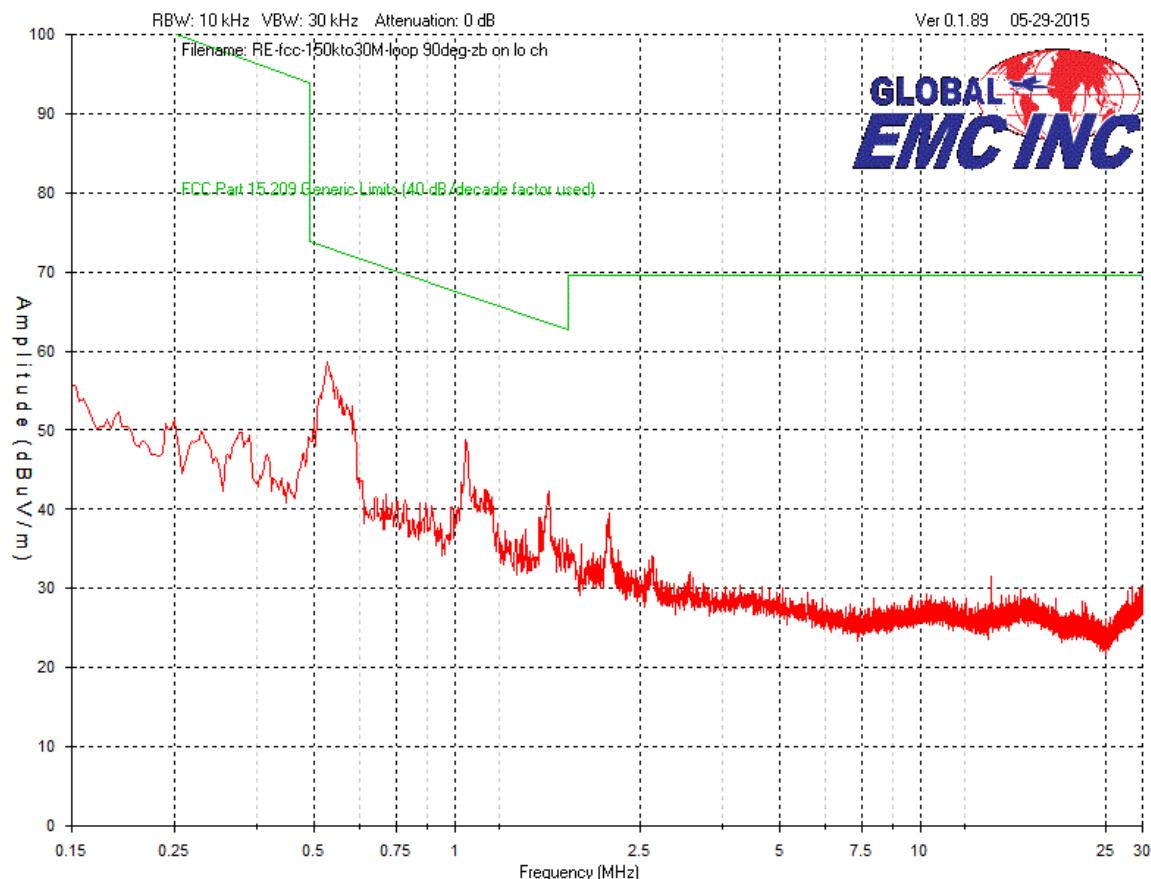
Loop @ 90 degree – Peak Emissions Graph – 9kHz to 150kHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



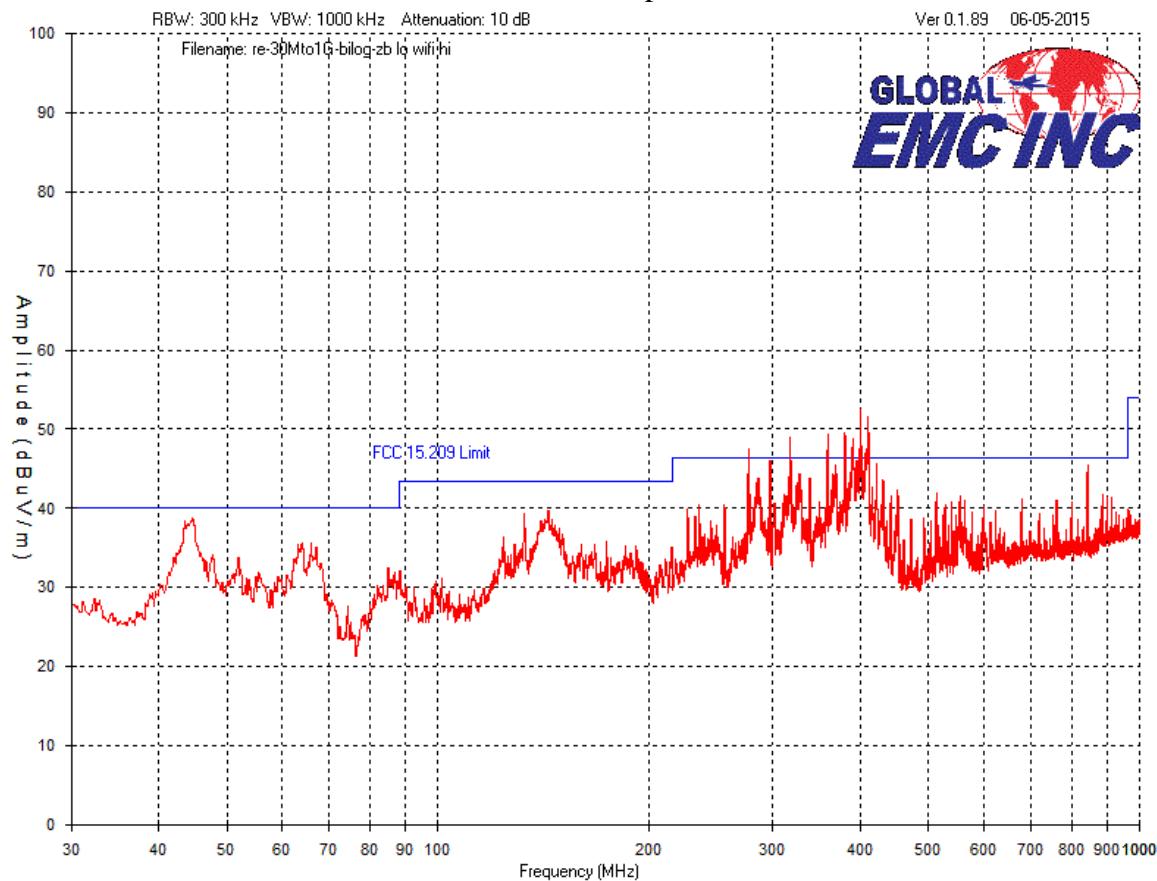
Loop @ 90 degree – Peak Emissions Graph – 150kHz to 30MHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



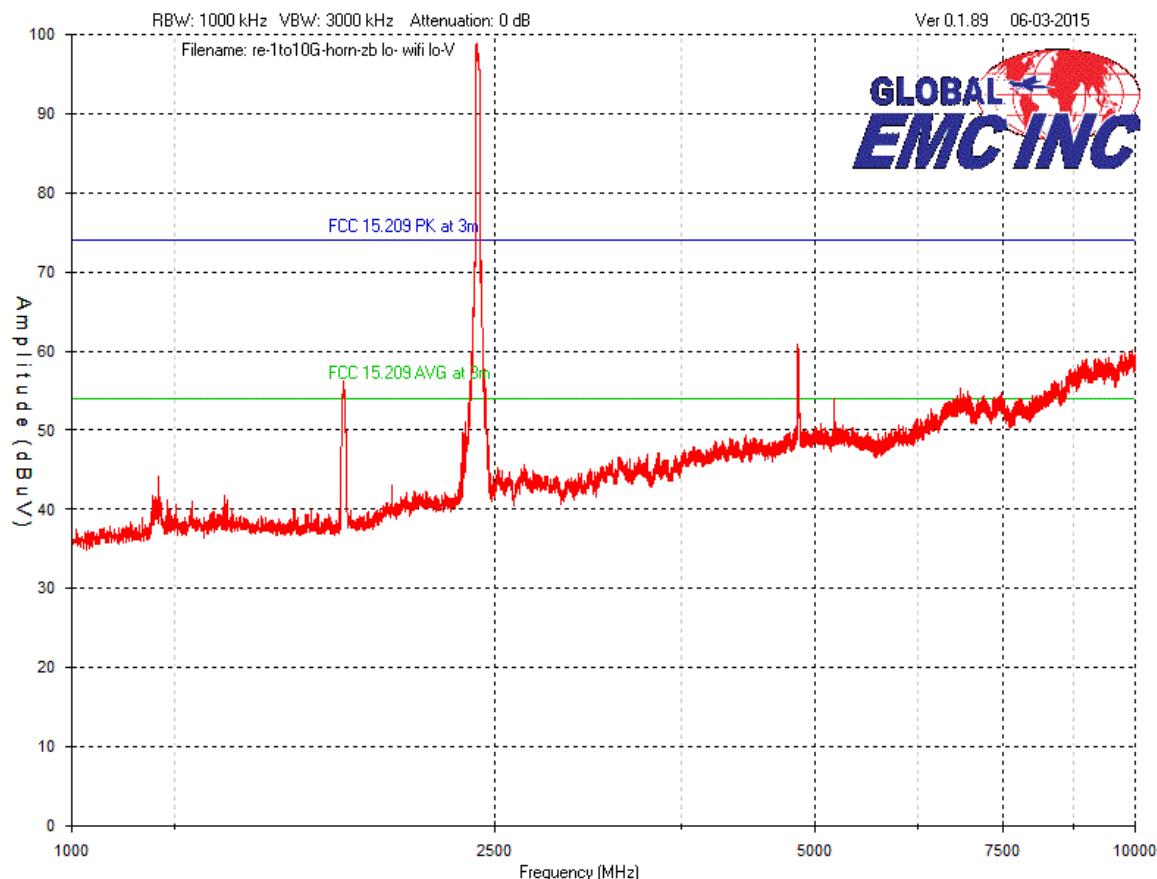
Vertical – Peak Emissions Graph – 30MHz to 1GHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



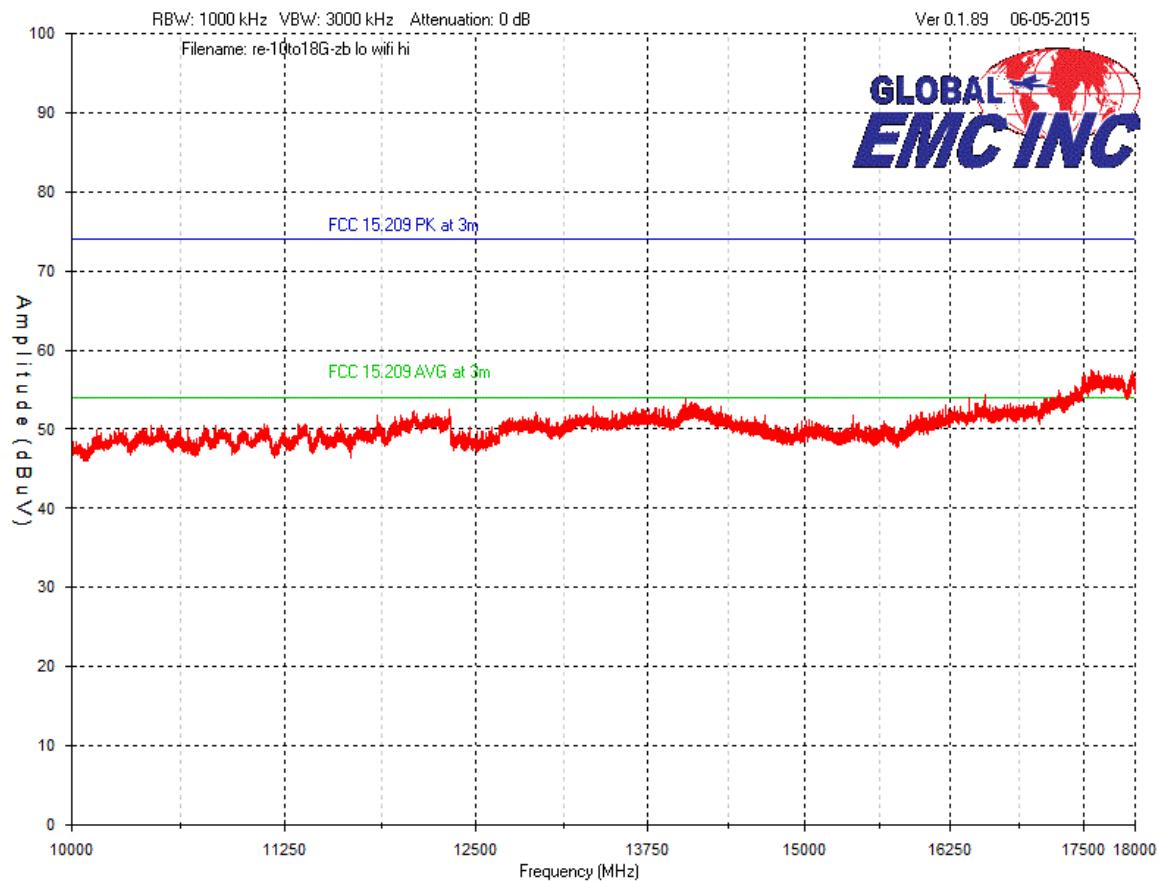
Vertical – Peak Emissions Graph –1 GHz to 10 GHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



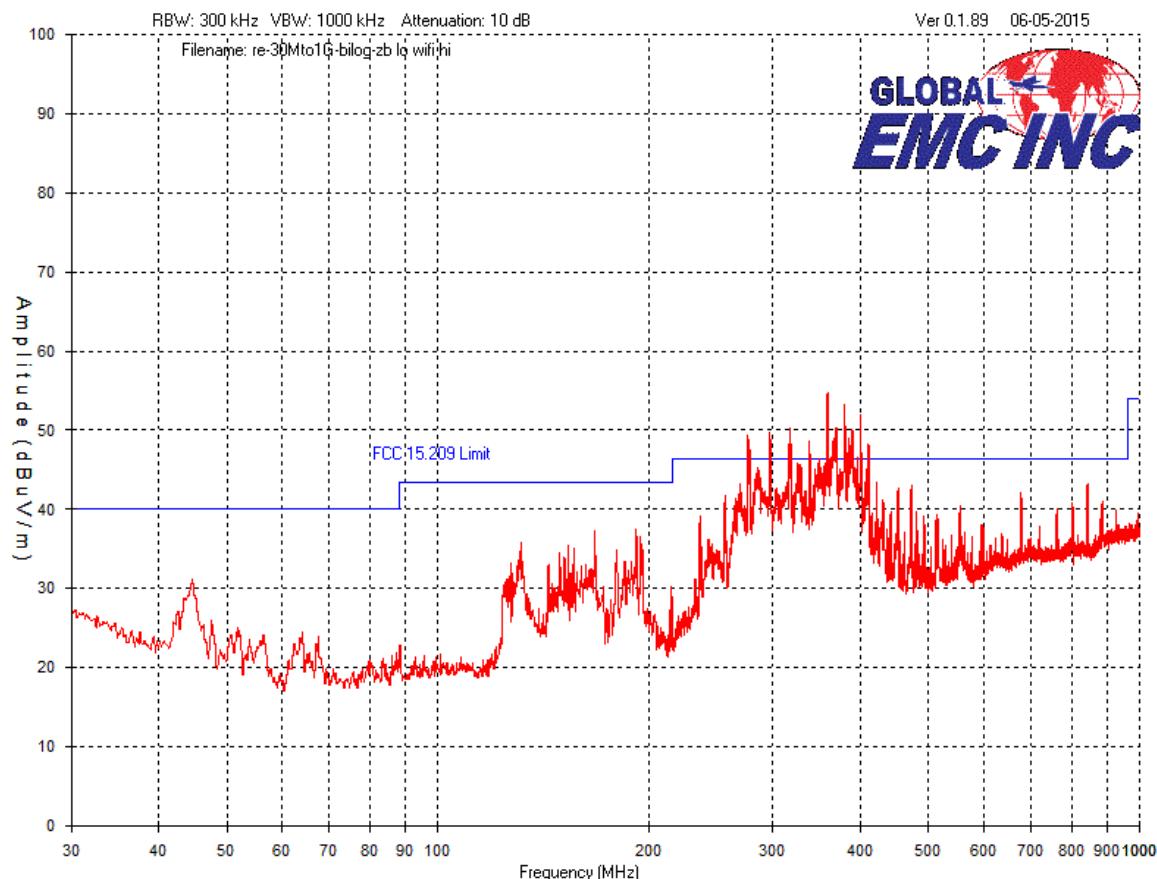
Vertical – Peak Emissions Graph –10 GHz to 18 GHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



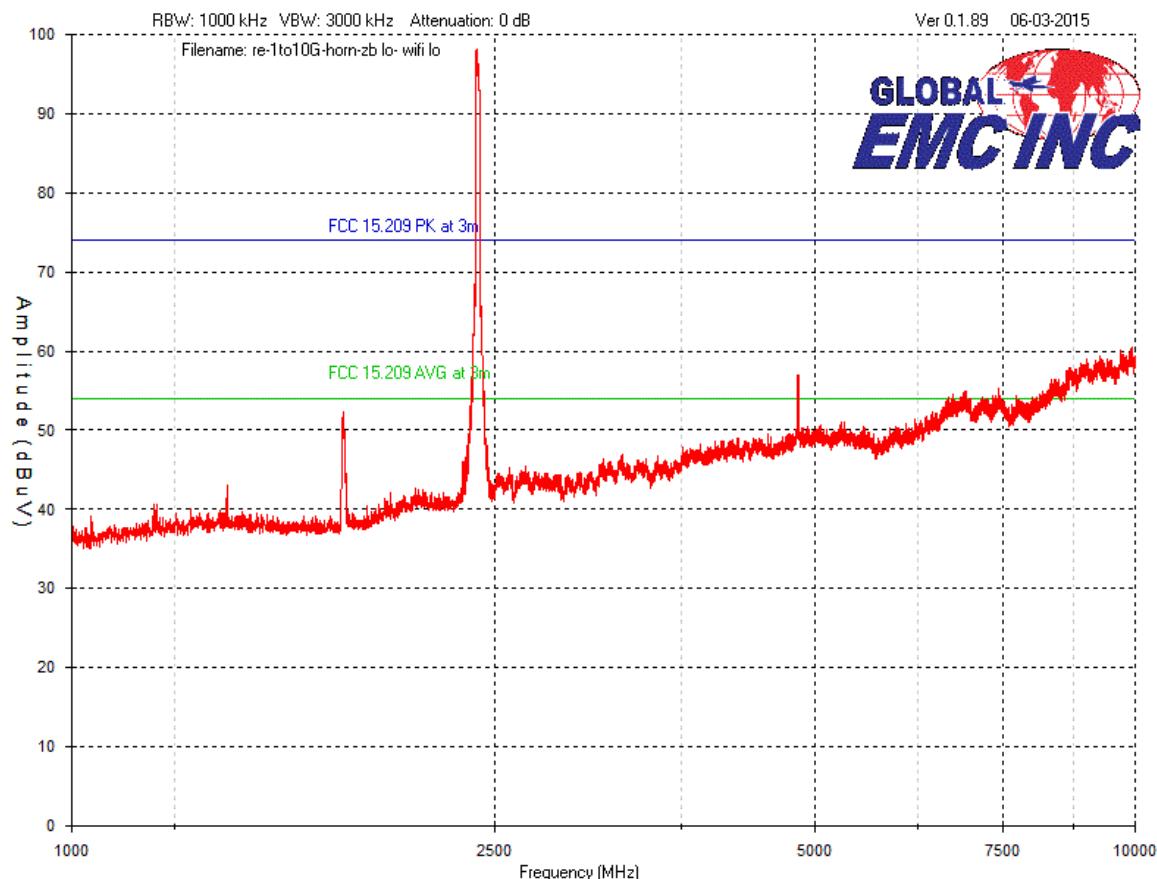
Horizontal – Peak Emissions Graph – 30 MHz to 1 GHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



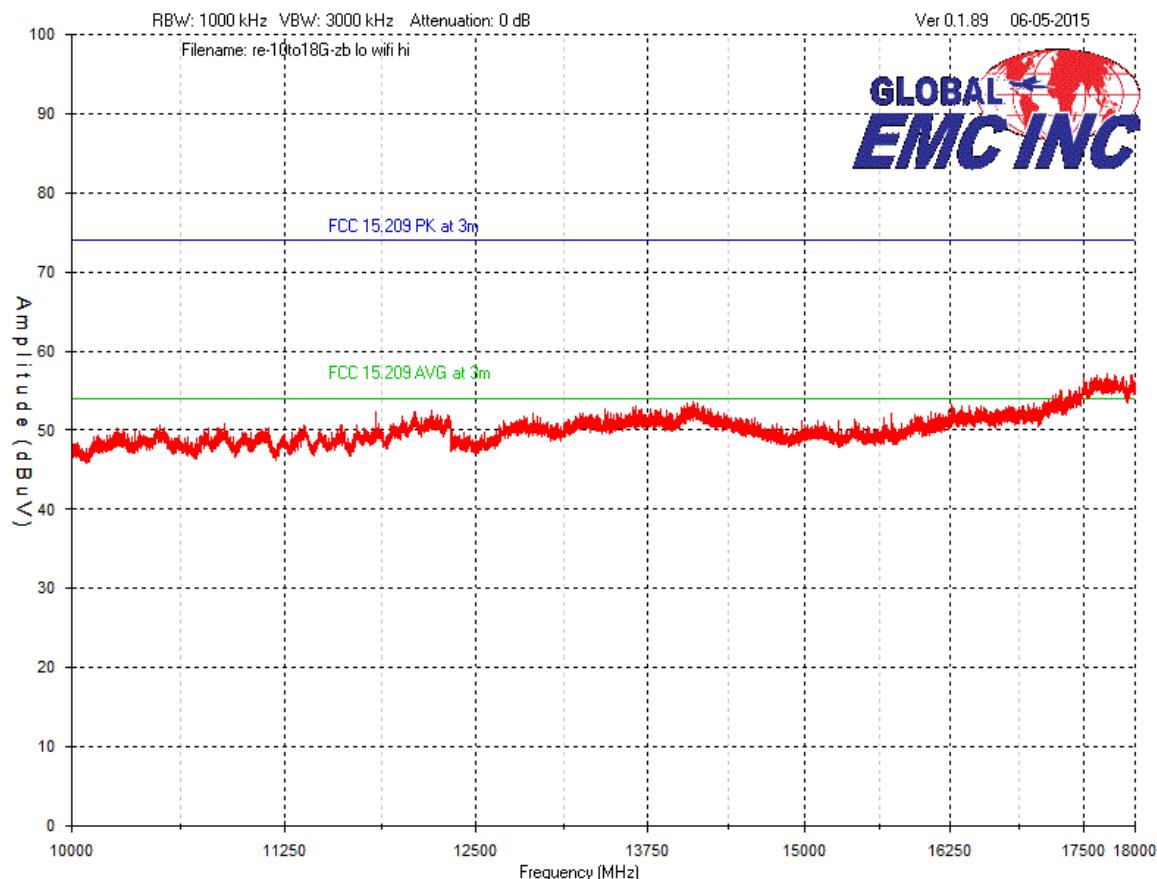
Horizontal – Peak Emissions Graph – 1 GHz to 10 GHz



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Horizontal – Peak Emissions Graph – 10 GHz to 18 GHz



Note: All modes of the Wifi (802.11b/g/n) were evaluated for spurious at low, middle and high channel and the worst case spurious emissions is presented

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Final Measurements

Note: In accordance with 15.247(d), only radiated emissions exceeding the 15.209 limit that occur within the bands listed in 15.205, need to be verified with a quasi-peak detector or an average detector.

The frequency shown on the peak graph between does not fall within a restricted band as listed in FCC 15.205 and does not need to be verified.

For information purposes, the fundamental was measured to be 99.5 dBuV/m at 3 meters, and none of the unintentional radiated emissions that fall outside of the restricted bands exceeded the -20dBc (or 79.5 dBuV/m) requirement.

The following measurements were made at the harmonics shown in the above graphs.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Radiated Emissions Measurements

- Mode 802.11b/1Mbps

Test Frequency (MHz)	Detection mode (Q-Peak)	Antenna polarity (Horz/Vert)	Raw signal dB(µV)	Antenna factor dB	Cable loss dB	Pre-Amp Gain dB	Received signal dB(µV/m)	Emission limit dB(µV/m)	MARGIN dB(µV)	Result
Low Channel 1										
2412	Peak	Horz	100.1	30.6	2.2	36.2	96.7	n/a	n/a	PASS
2412	Avg	Horz	95.5	30.6	2.2	36.2	92.1	n/a	n/a	PASS
2412	Peak	Vert	102.1	30.6	2.2	36.2	98.7	n/a	n/a	PASS
2412	Avg	Vert	97.1	30.6	2.2	36.2	93.7	n/a	n/a	PASS
2390	Peak	Horz	47.6	30.6	2.2	36.2	44.2	74.0	29.8	PASS
2390	Avg	Horz	36.7	30.6	2.2	36.2	33.3	54.0	20.7	PASS
2390	Peak	Vert	49.5	30.6	2.2	36.2	46.1	74.0	27.9	PASS
2390	Avg	Vert	38.2	30.6	2.2	36.2	34.8	54.0	19.2	PASS
Mid channel 6										
2437	Peak	Horz	99.8	30.6	2.2	36.2	96.4	n/a	n/a	PASS
2437	Avg	Horz	95.2	30.6	2.2	36.2	91.8	n/a	n/a	PASS
2437	Peak	Vert	102.3	30.6	2.2	36.2	98.9	n/a	n/a	PASS
2437	Avg	Vert	97.8	30.6	2.2	36.2	94.4	n/a	n/a	PASS
High channel 11										
2462	Peak	Horz	98.7	30.6	2.2	36.2	95.3	n/a	n/a	PASS
2462	Avg	Horz	94.4	30.6	2.2	36.2	91.0	n/a	n/a	PASS
2462	Peak	Vert	101.9	30.6	2.2	36.2	98.5	n/a	n/a	PASS
2462	Avg	Vert	97.6	30.6	2.2	36.2	94.2	n/a	n/a	PASS
2483.5	Peak	Horz	55.3	30.6	2.2	36.2	51.9	74.0	22.1	PASS
2483.5	Avg	Horz	41.6	30.6	2.2	36.2	38.2	54.0	15.8	PASS
2483.5	Peak	Vert	49.4	30.6	2.2	36.2	46.0	74.0	28.0	PASS
2483.5	Avg	Vert	37.6	30.6	2.2	36.2	34.2	54.0	19.8	PASS

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Radiated Emissions Measurements

- Mode 802.11g/6Mbps

Test Frequency (MHz)	Detection mode (Q-Peak)	Antenna polarity (Horz/Vert)	Raw signal dB(µV)	Antenna factor dB	Cable loss dB	Pre-Amp Gain dB	Received signal dB(µV/m)	Emission limit dB(µV/m)	MARGIN dB(µV)	Result
Low Channel 1										
2412	Peak	Horz	100.3	30.6	2.2	36.2	96.9	n/a	n/a	PASS
2412	Avg	Horz	88.6	30.6	2.2	36.2	85.2	n/a	n/a	PASS
2412	Peak	Vert	102.9	30.6	2.2	36.2	99.5	n/a	n/a	PASS
2412	Avg	Vert	90.2	30.6	2.2	36.2	86.8	n/a	n/a	PASS
2390	Peak	Horz	68.4	30.6	2.2	36.2	65.0	74.0	9.0	PASS
2390	Avg	Horz	42.1	30.6	2.2	36.2	38.7	54.0	15.3	PASS
2390	Peak	Vert	71.6	30.6	2.2	36.2	68.2	74.0	5.8	PASS
2390	Avg	Vert	44.5	30.6	2.2	36.2	41.1	54.0	12.9	PASS
Mid channel 6										
2437	Peak	Horz	99.5	30.6	2.2	36.2	96.1	n/a	n/a	PASS
2437	Avg	Horz	87.3	30.6	2.2	36.2	83.9	n/a	n/a	PASS
2437	Peak	Vert	102.8	30.6	2.2	36.2	99.4	n/a	n/a	PASS
2437	Avg	Vert	89.1	30.6	2.2	36.2	85.7	n/a	n/a	PASS
High channel 11										
2462	Peak	Horz	99.4	30.6	2.2	36.2	96.0	n/a	n/a	PASS
2462	Avg	Horz	87.9	30.6	2.2	36.2	84.5	n/a	n/a	PASS
2462	Peak	Vert	102.1	30.6	2.2	36.2	98.7	n/a	n/a	PASS
2462	Avg	Vert	89.9	30.6	2.2	36.2	86.5	n/a	n/a	PASS
2483.5	Peak	Horz	66.5	30.6	2.2	36.2	63.1	74.0	10.9	PASS
2483.5	Avg	Horz	41.1	30.6	2.2	36.2	37.7	54.0	16.3	PASS
2483.5	Peak	Vert	67.5	30.6	2.2	36.2	64.1	74.0	9.9	PASS
2483.5	Avg	Vert	41.3	30.6	2.2	36.2	37.9	54.0	16.1	PASS

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Radiated Emissions Measurements
- Mode 802.11n HT20/MCS0

Test Frequency (MHz)	Detection mode (Q-Peak)	Antenna polarity (Horz/Vert)	Raw signal dB(µV)	Antenna factor dB	Cable loss dB	Pre-Amp Gain dB	Received signal dB(µV/m)	Emission limit dB(µV/m)	MARGIN dB(µV)	Result
High channel 11										
2462	Peak	Horz	98.4	30.6	2.2	36.2	95.0	n/a	n/a	PASS
2462	Avg	Horz	81.5	30.6	2.2	36.2	78.1	n/a	n/a	PASS
2462	Peak	Vert	99.8	30.6	2.2	36.2	96.4	n/a	n/a	PASS
2462	Avg	Vert	83.9	30.6	2.2	36.2	80.5	n/a	n/a	PASS
2483.5	Peak	Horz	66.6	30.6	2.2	36.2	63.2	74.0	10.8	PASS
2483.5	Avg	Horz	39.6	30.6	2.2	36.2	36.2	54.0	17.8	PASS
2483.5	Peak	Vert	69.1	30.6	2.2	36.2	65.7	74.0	8.3	PASS
2483.5	Avg	Vert	42.6	30.6	2.2	36.2	39.2	54.0	14.8	PASS

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Spurious Emission Reading Table – Horizontal

Frequency (MHz)	Det. mode	Raw (dBuV)	Ant. (dB/m)	Att. (dB)	Cab. (dB)	Amp (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pass/Fail
359.8	QP	40.4	15.6	3	1.8	-28.6	32.2	46.4	14.2	Pass
379.879	QP	42.5	16	3	1.8	-28.6	34.7	46.4	11.7	Pass
317.799	QP	41.7	14.3	3	1.7	-28.6	32.1	46.4	14.3	Pass
369.403	QP	45.2	15.7	3	1.8	-28.7	37.0	46.4	9.4	Pass
389.385	QP	51.1	16.5	3	1.9	-28.7	43.8	46.4	2.6	Pass
4821.67	AVG	31.5	33.9	0	6.9	-32.8	39.5	54	14.5	Pass

Spurious Emission Reading Table – Vertical

Frequency (MHz)	Det. mode	Raw (dBuV)	Ant. (dB/m)	Att. (dB)	Cab. (dB)	Amp (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pass/Fail
407.91	QP	40.3	17	3	1.9	-28.7	33.5	46.4	12.9	Pass
380.073	QP	39.2	16	3	1.8	-28.6	31.4	46.4	15.0	Pass
359.121	QP	40.5	15.6	3	1.8	-28.6	32.3	46.4	14.1	Pass
277.059	QP	30.5	13.2	3	1.7	-28.6	19.8	46.4	26.6	Pass
1804.33	AVG	32.5	25.4	0	4	-33.1	28.8	54	25.2	Pass
4821	AVG	34.6	33.9	0	6.9	-32.8	42.6	54	11.4	Pass

Note: No emissions above the 3rd harmonic were detected. In case the peak emissions exceeding the average limits, average detector emission measurements were made to ensure compliance.

Note: During the tests, EUT was operating in a continuous transmit in which it is transmitting at a 100% duty cycle.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Test Equipment List

Equipment	Model No.	Manufacturer	Last Calibration Date ¹	Next Calibration Date ¹	Asset #
Spectrum Analyzer Display	8566B	HP	1-28-15	1-28-17	4168
Spectrum Analyzer	8566B	HP	1-28-15	1-28-17	4169
Quasi Peak Adapter	85650A	HP	1-28-15	1-28-17	4170
BiLog Antenna	3142-C	ETS	9-8-14	9-8-16	8
Horn Antenna	ATH1G18G	AR	4-23-15	4-23-17	4003
Biconical Antenna	EM-6913	Electro-Metrics	4/28/15	4/28/17	4060
Log Periodic Antenna	LPA-25	Electro-Metrics	4/14/15	4/14/17	4087
Attenuator 3 dB	FP-50-3	Trilithic	1-28-15	1-28-17	4028
9kHz-1GHz, 28dB preamp	LNA 6901	Teseq	8-6-13	8-6-15	4036
1-26.5GHz preamp	8449B	Agilent	9-9-14	9-9-16	6351
RF Cable 10m	LMR-400-10M-50OHM-MN-MN	LexTec	1-28-15	1-28-17	4025
RF Cable 7m	LMR-400-7M-50OHM-MN-MN	LexTec	1-28-15	1-28-17	4026
Emission software	0.1.87	Global EMC	1-28-15	1-28-17	58

1: For cables and attenuators, verification dates apply.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Appendix A – EUT Summary

For further details for filing purposes, refer to filing package.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



General EUT Description

Client Details	
Organization / Address	Viconics Technologies Inc 9245 Langelier Blvd.
Contact	Emmanuel Stathopoulos
Phone	514-321-5660
Email	emmanuel.stathopoulos@schneider-electric.com

Note the EUT is considered to have been received the date of the commencement of the first test, unless otherwise stated. For a close-up picture of the EUT, see 'Appendix B – EUT & Test Setup Photographs'

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



EUT Functional Description

Wifi module.

EUT Configuration

Please see Appendix B for a picture of the unit running in normal conditions and labels. Configuration and firmware settings are as per client's instruction.

Operational Setup

These devices are required to be attached to the EUT for its normal operation.

- Control laptop, . The EUT was configured as client's instruction. .

Modifications for Compliance

The following modifications were made during testing for the sample to achieve compliance with the testing requirements:

None.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Appendix B – EUT and Test Setup Photographs

Note: These photos are for information purposes only. Also refer to PDF files that are separate from this test report.

Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Radiated Emission Test Setup Photo #1:



Client	Viconics Electronics Inc.
Product	WISWIFI
Standard(s)	FCC Part 15 Subpart C 15



Radiated Emission Test Setup Photo #2:

