

Flow Data, Inc.

ADDENDUM TEST REPORT TO 94043-7

ATI- Android Touch Screen Interface Model: PROVue

Tested To The Following Standards:

FCC Part 15 Subpart C Sections 15.247
and
RSS-210 Issue 8

Report No.: 94043-7A

Date of issue May 16, 2013



This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Flow Data, Inc.
2309 Grand Park Dr.
Grand Junction, CO 81505

Representative: Paul Brennen – Flow Data
Erin Littell - F-Squared
Customer Reference Number: 2410

REPORT PREPARED BY:

Joyce Walker
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 94043

DATE OF EQUIPMENT RECEIPT:
DATE(S) OF TESTING:

April 4, 2013
April 4-May 15, 2013

Revision History

Original: Testing of the ATI- Android Touch Screen Interface, Model: PROVue to FCC Part 15 Subpart C Sections 15.247 and RSS-210 Issue 8.

Addendum A: The addendum corrects errors in the report by replacing the data in the sections for RF Power Output, Power Spectral Density and Bandedge.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information



Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Brea D	US0060	SL2-IN-E-1146R	3082D-2	100638	A-0147

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C & RSS 210 Issue 8

Description	Test Procedure/Method	Results
Conducted Emissions	FCC Part 15 Subpart C Section 15.207 / ANSI C63.4 (2003)	Pass
-6dBc & 99% Occupied Bandwidth	FCC Part 15 Subpart C Section 15.247(a)(2) / 558074 DOI DTS MEAS GUIDEANCE V03	Pass
RF Power Output	FCC Part 15 Subpart C Section 15.247(b)(3) / 15.31(e) / 558074 DOI DTS MEAS GUIDEANCE V03	Pass
Radiated Spurious Emissions / Bandedge	FCC Part 15 Subpart C Section 15.247(d) / 15.209 / ITU-R 55/1 / 558074 DOI DTS MEAS GUIDEANCE V03 / ANSI C63.4 (2003)	Pass
Power Spectral Density	FCC Part 15 Subpart C 15.247(e) / 558074 DOI DTS MEAS GUIDEANCE V03	Pass

Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

ATI- Android Touch Screen Interface

Manuf: Flow Data, Inc.

Model: PROVue

Serial: 2013-D-PVC-024

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Laptop

Manuf: Toshiba

Model: Satellite A105-S4004

Serial: 36322146Q

DC Power Supply

Manuf: Toshiba

Model: SADP-75PBA

Serial: PA3469U-1ACA

DC Power Supply

Manuf: SL Power and AULT

Model: MEMNB1030A1203C01

Serial: NA

DC Power Supply, Dual-tracking

Manuf: Topward

Model: 6306D

Serial: 988614

FCC PART 15 SUBPART C

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR 15C requirements for Unlicensed Radio Frequency Devices, Subpart C - Intentional Radiators.

15.207 AC Conducted Emissions

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **94043** Date: **4/17/2013**
 Test Type: **Conducted Emissions** Time: **08:52:53**
 Equipment: **ATI- Android Touch screen Interface** Sequence#: **1**
 Manufacturer: Flow Data, Inc. Tested By: **Don Nguyen**
 Model: **PROVue** **120V 60Hz**
 S/N: **2013-D-PVC-024**

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06085	Attenuator	SA18N10W-09	12/14/2012	12/14/2014
T2	ANP01910	Cable	RG-142	2/6/2012	2/6/2014
T3	AN00969A	50uH LISN-Line 1 (L1) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN00969A	50uH LISN-Line 2 (L2) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN02343	High Pass Filter	HE9615-150K-50-720B	1/10/2013	1/10/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. The Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12Vdc

Emission is measured through supported DC power supply.

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Operating Frequency: 2412-2462MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11b: 11.0 mbps long preamble, Firmware power setting= 18dbm

Frequency range of measurement = 150kHz-30MHz

RBW=9 kHz, VBW=9 kHz

Test environment conditions: 23°C, 40% Relative Humidity, 100kPa

Site D

Applicable data rate was investigated

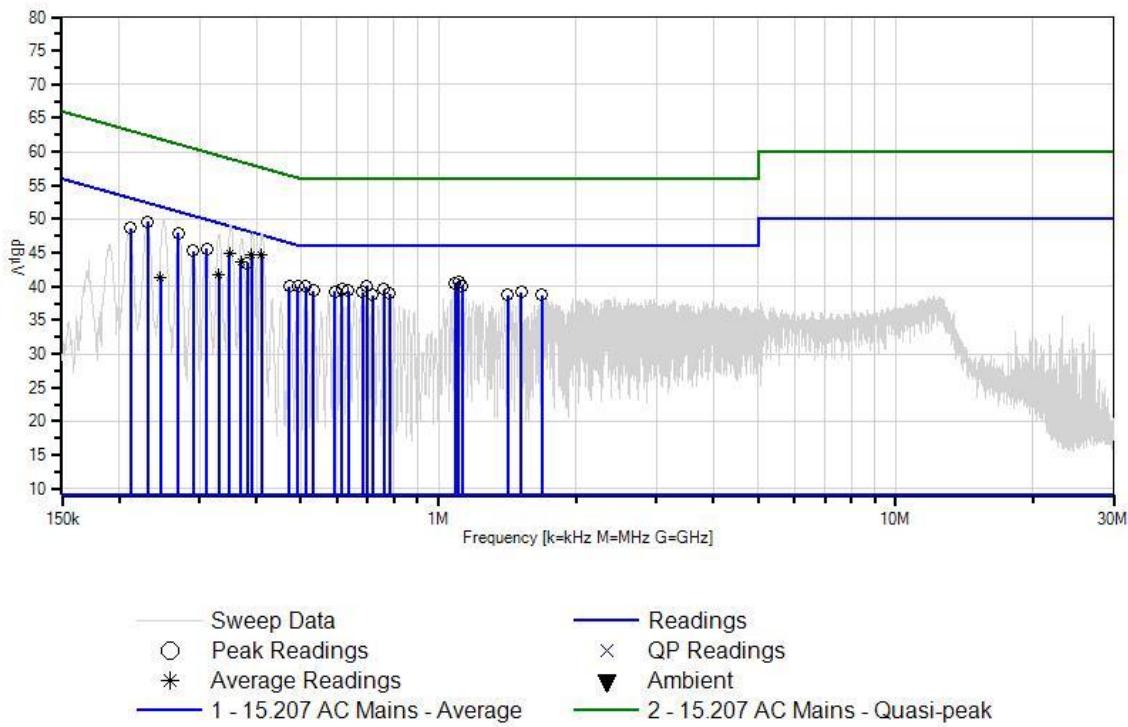
Recorded data represents worse case emission.

Ext Attn: 0 dB

Measurement Data:			Reading listed by margin.				Test Lead: L1(L)				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	230.720k	43.5	+5.7	+0.1	+0.1	+0.2	+0.0	49.6	52.4	-2.8	L1(L)
2	410.387k Ave	38.7	+5.7	+0.1	+0.1	+0.2	+0.0	44.8	47.6	-2.8	L1(L)
^	410.387k	42.2	+5.7	+0.1	+0.1	+0.2	+0.0	48.3	47.6	+0.7	L1(L)
4	269.989k	41.8	+5.7	+0.1	+0.1	+0.2	+0.0	47.9	51.1	-3.2	L1(L)
5	390.191k Ave	38.6	+5.7	+0.1	+0.1	+0.2	+0.0	44.7	48.1	-3.4	L1(L)
^	390.191k	41.9	+5.7	+0.1	+0.1	+0.2	+0.0	48.0	48.1	-0.1	L1(L)
7	349.028k Ave	38.9	+5.7	+0.1	+0.1	+0.2	+0.0	45.0	49.0	-4.0	L1(L)
^	349.028k	43.5	+5.7	+0.1	+0.1	+0.2	+0.0	49.6	49.0	+0.6	L1(L)
^	350.709k	43.1	+5.7	+0.1	+0.1	+0.2	+0.0	49.2	48.9	+0.3	L1(L)
10	211.813k	42.6	+5.7	+0.1	+0.1	+0.2	+0.0	48.7	53.1	-4.4	L1(L)
11	310.713k	39.5	+5.7	+0.1	+0.1	+0.2	+0.0	45.6	50.0	-4.4	L1(L)
12	381.252k	37.4	+5.7	+0.1	+0.1	+0.2	+0.0	43.5	48.3	-4.8	L1(L)
13	369.898k Ave	37.6	+5.7	+0.1	+0.1	+0.2	+0.0	43.7	48.5	-4.8	L1(L)
^	369.898k	41.3	+5.7	+0.1	+0.1	+0.2	+0.0	47.4	48.5	-1.1	L1(L)
15	291.078k	39.2	+5.7	+0.1	+0.1	+0.2	+0.0	45.3	50.5	-5.2	L1(L)
16	1.107M	34.7	+5.7	+0.1	+0.1	+0.1	+0.0	40.7	46.0	-5.3	L1(L)
17	1.086M	34.5	+5.7	+0.1	+0.1	+0.1	+0.0	40.5	46.0	-5.5	L1(L)
18	697.586k	34.0	+5.7	+0.1	+0.1	+0.2	+0.0	40.1	46.0	-5.9	L1(L)
19	1.128M	34.1	+5.7	+0.1	+0.1	+0.1	+0.0	40.1	46.0	-5.9	L1(L)
20	512.876k	33.9	+5.7	+0.1	+0.1	+0.2	+0.0	40.0	46.0	-6.0	L1(L)
21	491.787k	33.9	+5.7	+0.1	+0.1	+0.2	+0.0	40.0	46.1	-6.1	L1(L)
22	615.412k	33.6	+5.7	+0.1	+0.1	+0.2	+0.0	39.7	46.0	-6.3	L1(L)
23	758.671k	33.6	+5.7	+0.1	+0.1	+0.1	+0.0	39.6	46.0	-6.4	L1(L)
24	472.152k	33.9	+5.7	+0.1	+0.1	+0.2	+0.0	40.0	46.5	-6.5	L1(L)

25	533.238k	33.3	+5.7	+0.1	+0.1	+0.2	+0.0	39.4	46.0	-6.6	L1(L)
26	635.774k	33.3	+5.7	+0.1	+0.1	+0.2	+0.0	39.4	46.0	-6.6	L1(L)
27	593.596k	33.2	+5.7	+0.1	+0.1	+0.2	+0.0	39.3	46.0	-6.7	L1(L)
28	681.588k	33.1	+5.7	+0.1	+0.1	+0.2	+0.0	39.2	46.0	-6.8	L1(L)
29	1.519M	33.1	+5.7	+0.1	+0.1	+0.2	+0.0	39.2	46.0	-6.8	L1(L)
30	780.488k	33.0	+5.7	+0.1	+0.1	+0.1	+0.0	39.0	46.0	-7.0	L1(L)
31	716.493k	32.7	+5.7	+0.1	+0.1	+0.1	+0.0	38.7	46.0	-7.3	L1(L)
32	1.417M	32.6	+5.7	+0.1	+0.1	+0.2	+0.0	38.7	46.0	-7.3	L1(L)
33	1.681M	32.6	+5.7	+0.1	+0.1	+0.2	+0.0	38.7	46.0	-7.3	L1(L)
34	330.347k	35.7	+5.7	+0.1	+0.1	+0.2	+0.0	41.8	49.4	-7.6	L1(L)
	Ave										
^	330.347k	41.7	+5.7	+0.1	+0.1	+0.2	+0.0	47.8	49.4	-1.6	L1(L)
36	246.773k	35.2	+5.7	+0.1	+0.1	+0.2	+0.0	41.3	51.9	-10.6	L1(L)
	Ave										
^	246.773k	43.8	+5.7	+0.1	+0.1	+0.2	+0.0	49.9	51.9	-2.0	L1(L)

CKC Laboratories, Inc. Date: 4/17/2013 Time: 08:52:53 Flow Data, Inc. WO#: 94043
 15.207 AC Mains - Average Test Lead: L1(L) 120V 60Hz Sequence#: 1 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **94043** Date: 4/17/2013
 Test Type: **Conducted Emissions** Time: 08:58:43
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 2
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue 120V 60Hz
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06085	Attenuator	SA18N10W-09	12/14/2012	12/14/2014
T2	ANP01910	Cable	RG-142	2/6/2012	2/6/2014
	AN00969A	50uH LISN-Line 1 (L1) (dB)	3816/2NM	3/12/2013	3/12/2015
T3	AN00969A	50uH LISN-Line 2 (L2) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN02343	High Pass Filter	HE9615-150K-50-720B	1/10/2013	1/10/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. The Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12VDC

Emission is measured through supported DC power supply.

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Operating Frequency: 2412-2462MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11b: 11.0 mbps long preamble, Firmware power setting= 18dbm

Frequency range of measurement = 150kHz-30MHz

RBW=9kHz, VBW=9kHz

Test environment conditions: 23°C, 40% Relative Humidity, 100kPa

Site D

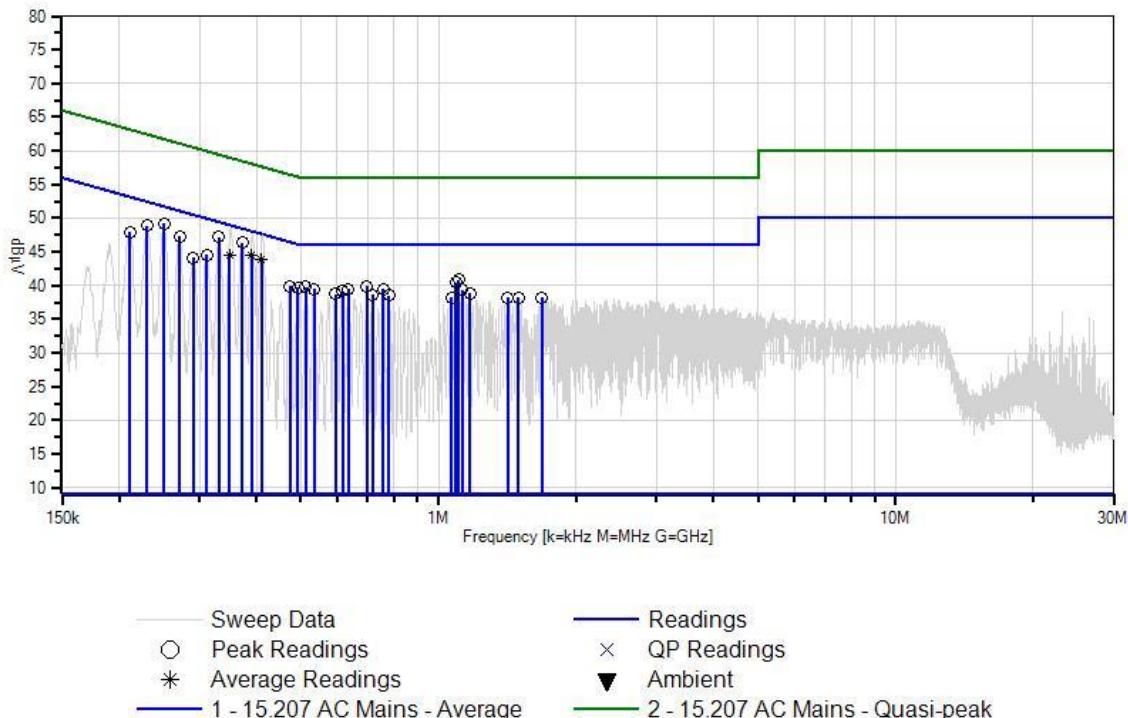
Applicable data rate was investigated.

Recorded data represents worse case emission.

Ext Attn: 0 dB

Measurement Data:			Reading listed by margin.				Test Lead: L2(N)				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	372.525k	40.4	+5.7	+0.1	+0.0	+0.2	+0.0	46.4	48.4	-2.0	L2(N)
2	331.074k	41.2	+5.7	+0.1	+0.0	+0.2	+0.0	47.2	49.4	-2.2	L2(N)
3	251.082k	43.2	+5.7	+0.1	+0.0	+0.2	+0.0	49.2	51.7	-2.5	L2(N)
4	229.993k	42.9	+5.7	+0.1	+0.0	+0.2	+0.0	48.9	52.4	-3.5	L2(N)
5	389.699k	38.5	+5.7	+0.1	+0.0	+0.2	+0.0	44.5	48.1	-3.6	L2(N)
	Ave										
^	389.699k	41.4	+5.7	+0.1	+0.0	+0.2	+0.0	47.4	48.1	-0.7	L2(N)
7	271.443k	41.3	+5.7	+0.1	+0.0	+0.2	+0.0	47.3	51.1	-3.8	L2(N)
8	409.453k	37.8	+5.7	+0.1	+0.0	+0.2	+0.0	43.8	47.7	-3.9	L2(N)
	Ave										
^	409.453k	41.3	+5.7	+0.1	+0.0	+0.2	+0.0	47.3	47.7	-0.4	L2(N)
10	348.915k	38.5	+5.7	+0.1	+0.0	+0.2	+0.0	44.5	49.0	-4.5	L2(N)
	Ave										
^	348.915k	42.6	+5.7	+0.1	+0.0	+0.2	+0.0	48.6	49.0	-0.4	L2(N)
12	1.107M	34.9	+5.7	+0.1	+0.1	+0.1	+0.0	40.9	46.0	-5.1	L2(N)
13	211.085k	41.9	+5.7	+0.1	+0.0	+0.2	+0.0	47.9	53.2	-5.3	L2(N)
14	311.440k	38.6	+5.7	+0.1	+0.0	+0.2	+0.0	44.6	49.9	-5.3	L2(N)
15	1.090M	34.4	+5.7	+0.1	+0.1	+0.1	+0.0	40.4	46.0	-5.6	L2(N)
16	696.859k	33.9	+5.7	+0.1	+0.0	+0.2	+0.0	39.9	46.0	-6.1	L2(N)
17	512.876k	33.8	+5.7	+0.1	+0.0	+0.2	+0.0	39.8	46.0	-6.2	L2(N)
18	492.514k	33.7	+5.7	+0.1	+0.0	+0.2	+0.0	39.7	46.1	-6.4	L2(N)
19	291.078k	38.1	+5.7	+0.1	+0.0	+0.2	+0.0	44.1	50.5	-6.4	L2(N)
20	533.965k	33.5	+5.7	+0.1	+0.0	+0.2	+0.0	39.5	46.0	-6.5	L2(N)
21	635.774k	33.5	+5.7	+0.1	+0.0	+0.2	+0.0	39.5	46.0	-6.5	L2(N)
22	757.944k	33.6	+5.7	+0.1	+0.0	+0.1	+0.0	39.5	46.0	-6.5	L2(N)
23	472.879k	33.9	+5.7	+0.1	+0.0	+0.2	+0.0	39.9	46.5	-6.6	L2(N)
24	1.128M	33.4	+5.7	+0.1	+0.1	+0.1	+0.0	39.4	46.0	-6.6	L2(N)

25	616.139k	33.2	+5.7	+0.1	+0.0	+0.2	+0.0	39.2	46.0	-6.8	L2(N)
26	1.171M	32.9	+5.7	+0.1	+0.1	+0.1	+0.0	38.9	46.0	-7.1	L2(N)
27	594.323k	32.7	+5.7	+0.1	+0.0	+0.2	+0.0	38.7	46.0	-7.3	L2(N)
28	716.493k	32.7	+5.7	+0.1	+0.0	+0.1	+0.0	38.6	46.0	-7.4	L2(N)
29	779.760k	32.6	+5.7	+0.1	+0.0	+0.1	+0.0	38.5	46.0	-7.5	L2(N)
30	1.685M	32.1	+5.7	+0.1	+0.1	+0.2	+0.0	38.2	46.0	-7.8	L2(N)
31	1.498M	32.1	+5.7	+0.1	+0.1	+0.2	+0.0	38.2	46.0	-7.8	L2(N)
32	1.069M	32.2	+5.7	+0.1	+0.1	+0.1	+0.0	38.2	46.0	-7.8	L2(N)
33	1.417M	32.1	+5.7	+0.1	+0.1	+0.2	+0.0	38.2	46.0	-7.8	L2(N)

CKC Laboratories, Inc. Date: 4/17/2013 Time: 08:58:43 Flow Data, Inc. WO#: 94043
15.207 AC Mains - Average Test Lead: L2(N) 120V 60Hz Sequence#: 2 Ext ATTN: 0 dB


Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **94043** Date: 4/17/2013
 Test Type: **Conducted Emissions** Time: 09:10:19
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 4
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue 120V 60Hz
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06085	Attenuator	SA18N10W-09	12/14/2012	12/14/2014
T2	ANP01910	Cable	RG-142	2/6/2012	2/6/2014
T3	AN00969A	50uH LISN-Line 1 (L1) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN00969A	50uH LISN-Line 2 (L2) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN02343	High Pass Filter	HE9615-150K-50-720B	1/10/2013	1/10/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12VDC

Emission is measured through supported DC power supply.

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Operating Frequency: 2412-2462MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11g: 54.0 mbps. OFDM, Firmware power setting= 18dbm

Frequency range of measurement = 150kHz-30MHz

RBW=9 kHz, VBW=9 kHz

Test environment conditions: 23°C, 40% Relative Humidity, 100kPa

Site D

Applicable data rate was investigated

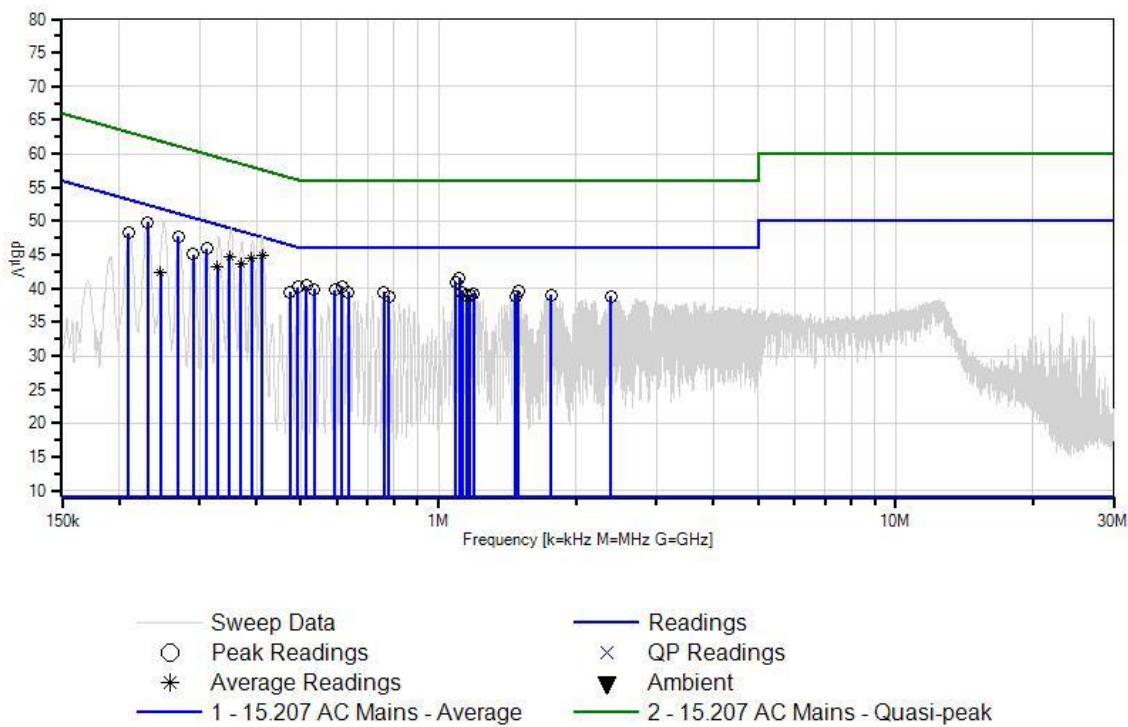
Recorded data represents worse case emission.

Ext Attn: 0 dB

Measurement Data:			Reading listed by margin.				Test Lead: L1(L)				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	411.046k Ave	38.9	+5.7	+0.1	+0.1	+0.2	+0.0	45.0	47.6	-2.6	L1(L)
^	411.046k	41.7	+5.7	+0.1	+0.1	+0.2	+0.0	47.8	47.6	+0.2	L1(L)
3	230.719k	43.7	+5.7	+0.1	+0.1	+0.2	+0.0	49.8	52.4	-2.6	L1(L)
4	269.988k	41.6	+5.7	+0.1	+0.1	+0.2	+0.0	47.7	51.1	-3.4	L1(L)
5	390.131k Ave	38.4	+5.7	+0.1	+0.1	+0.2	+0.0	44.5	48.1	-3.6	L1(L)
^	390.131k	41.2	+5.7	+0.1	+0.1	+0.2	+0.0	47.3	48.1	-0.8	L1(L)
^	391.431k	41.0	+5.7	+0.1	+0.1	+0.2	+0.0	47.1	48.0	-0.9	L1(L)
8	311.439k	39.8	+5.7	+0.1	+0.1	+0.2	+0.0	45.9	49.9	-4.0	L1(L)
9	349.374k Ave	38.6	+5.7	+0.1	+0.1	+0.2	+0.0	44.7	49.0	-4.3	L1(L)
^	349.374k	42.9	+5.7	+0.1	+0.1	+0.2	+0.0	49.0	49.0	+0.0	L1(L)
11	1.111M	35.5	+5.7	+0.1	+0.1	+0.1	+0.0	41.5	46.0	-4.5	L1(L)
12	209.630k	42.2	+5.7	+0.1	+0.1	+0.2	+0.0	48.3	53.2	-4.9	L1(L)
13	369.762k Ave	37.5	+5.7	+0.1	+0.1	+0.2	+0.0	43.6	48.5	-4.9	L1(L)
^	369.762k	41.0	+5.7	+0.1	+0.1	+0.2	+0.0	47.1	48.5	-1.4	L1(L)
15	1.090M	35.0	+5.7	+0.1	+0.1	+0.1	+0.0	41.0	46.0	-5.0	L1(L)
16	291.077k	39.0	+5.7	+0.1	+0.1	+0.2	+0.0	45.1	50.5	-5.4	L1(L)
17	513.602k	34.3	+5.7	+0.1	+0.1	+0.2	+0.0	40.4	46.0	-5.6	L1(L)
18	614.684k	34.2	+5.7	+0.1	+0.1	+0.2	+0.0	40.3	46.0	-5.7	L1(L)
19	492.513k	34.1	+5.7	+0.1	+0.1	+0.2	+0.0	40.2	46.1	-5.9	L1(L)
20	533.964k	33.8	+5.7	+0.1	+0.1	+0.2	+0.0	39.9	46.0	-6.1	L1(L)
21	593.595k	33.7	+5.7	+0.1	+0.1	+0.2	+0.0	39.8	46.0	-6.2	L1(L)
22	328.692k Ave	37.2	+5.7	+0.1	+0.1	+0.2	+0.0	43.3	49.5	-6.2	L1(L)
^	331.073k	41.6	+5.7	+0.1	+0.1	+0.2	+0.0	47.7	49.4	-1.7	L1(L)
^	328.692k	41.7	+5.7	+0.1	+0.1	+0.2	+0.0	47.8	49.5	-1.7	L1(L)

25	1.498M	33.6	+5.7	+0.1	+0.1	+0.2	+0.0	39.7	46.0	-6.3	L1(L)
26	635.773k	33.4	+5.7	+0.1	+0.1	+0.2	+0.0	39.5	46.0	-6.5	L1(L)
27	1.128M	33.5	+5.7	+0.1	+0.1	+0.1	+0.0	39.5	46.0	-6.5	L1(L)
28	758.670k	33.5	+5.7	+0.1	+0.1	+0.1	+0.0	39.5	46.0	-6.5	L1(L)
29	1.192M	33.3	+5.7	+0.1	+0.1	+0.1	+0.0	39.3	46.0	-6.7	L1(L)
30	1.149M	33.1	+5.7	+0.1	+0.1	+0.1	+0.0	39.1	46.0	-6.9	L1(L)
31	1.171M	33.1	+5.7	+0.1	+0.1	+0.1	+0.0	39.1	46.0	-6.9	L1(L)
32	1.766M	33.0	+5.7	+0.1	+0.1	+0.2	+0.0	39.1	46.0	-6.9	L1(L)
33	472.878k	33.4	+5.7	+0.1	+0.1	+0.2	+0.0	39.5	46.5	-7.0	L1(L)
34	2.383M	32.7	+5.7	+0.2	+0.1	+0.2	+0.0	38.9	46.0	-7.1	L1(L)
35	779.032k	32.8	+5.7	+0.1	+0.1	+0.1	+0.0	38.8	46.0	-7.2	L1(L)
36	1.477M	32.7	+5.7	+0.1	+0.1	+0.2	+0.0	38.8	46.0	-7.2	L1(L)
37	246.292k	36.3	+5.7	+0.1	+0.1	+0.2	+0.0	42.4	51.9	-9.5	L1(L)
Ave											
^	246.292k	43.8	+5.7	+0.1	+0.1	+0.2	+0.0	49.9	51.9	-2.0	L1(L)

CKC Laboratories, Inc. Date: 4/17/2013 Time: 09:10:19 Flow Data, Inc. WO#: 94043
 15.207 AC Mains - Average Test Lead: L1(L) 120V 60Hz Sequence#: 4 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **94043** Date: 4/17/2013
 Test Type: **Conducted Emissions** Time: 09:05:19
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 3
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue 120V 60Hz
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06085	Attenuator	SA18N10W-09	12/14/2012	12/14/2014
T2	ANP01910	Cable	RG-142	2/6/2012	2/6/2014
	AN00969A	50uH LISN-Line 1 (L1) (dB)	3816/2NM	3/12/2013	3/12/2015
T3	AN00969A	50uH LISN-Line 2 (L2) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN02343	High Pass Filter	HE9615-150K-50-720B	1/10/2013	1/10/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12VDC

Emission is measured through supported DC power supply.

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated.

The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Operating Frequency: 2412-2462MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11g: 54.0 mbps. OFDM, Firmware power setting= 18dbm

Frequency range of measurement = 150kHz-30MHz

RBW=9kHz, VBW=9kHz

Test environment conditions: 23°C, 40% Relative Humidity, 100kPa

Site D

Applicable data rate was investigated

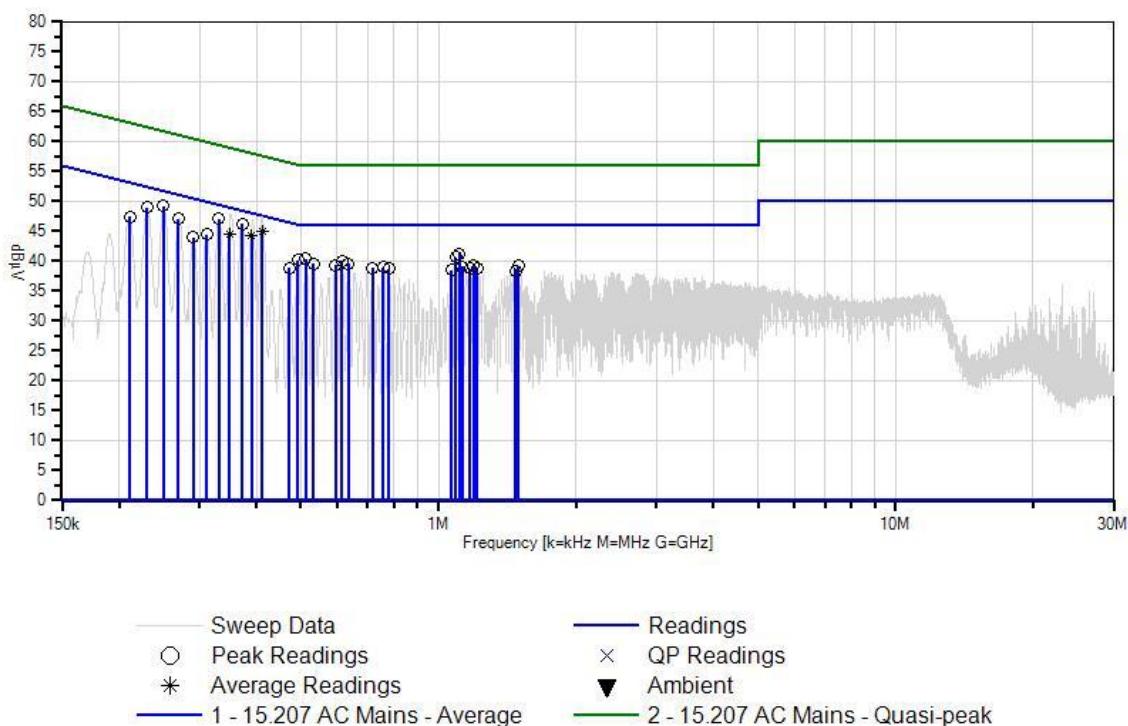
Recorded data represents worse case emission.

Ext Attn: 0 dB

Measurement Data:			Reading listed by margin.				Test Lead: L2(N)				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	372.524k	40.3	+5.7	+0.1	+0.0	+0.2	+0.0	46.3	48.4	-2.1	L2(N)
2	330.346k	41.1	+5.7	+0.1	+0.0	+0.2	+0.0	47.1	49.4	-2.3	L2(N)
3	250.353k	43.2	+5.7	+0.1	+0.0	+0.2	+0.0	49.2	51.7	-2.5	L2(N)
4	410.986k Ave	39.0	+5.7	+0.1	+0.0	+0.2	+0.0	45.0	47.6	-2.6	L2(N)
^	410.986k	41.4	+5.7	+0.1	+0.0	+0.2	+0.0	47.4	47.6	-0.2	L2(N)
6	229.992k	43.0	+5.7	+0.1	+0.0	+0.2	+0.0	49.0	52.5	-3.5	L2(N)
7	390.585k Ave	38.2	+5.7	+0.1	+0.0	+0.2	+0.0	44.2	48.1	-3.9	L2(N)
^	392.886k	41.0	+5.7	+0.1	+0.0	+0.2	+0.0	47.0	48.0	-1.0	L2(N)
^	390.585k	40.7	+5.7	+0.1	+0.0	+0.2	+0.0	46.7	48.1	-1.4	L2(N)
10	269.988k	41.1	+5.7	+0.1	+0.0	+0.2	+0.0	47.1	51.1	-4.0	L2(N)
11	349.508k Ave	38.5	+5.7	+0.1	+0.0	+0.2	+0.0	44.5	49.0	-4.5	L2(N)
^	349.508k	42.5	+5.7	+0.1	+0.0	+0.2	+0.0	48.5	49.0	-0.5	L2(N)
13	1.111M	35.2	+5.7	+0.1	+0.1	+0.1	+0.0	41.2	46.0	-4.8	L2(N)
14	1.090M	34.6	+5.7	+0.1	+0.1	+0.1	+0.0	40.6	46.0	-5.4	L2(N)
15	311.439k	38.5	+5.7	+0.1	+0.0	+0.2	+0.0	44.5	49.9	-5.4	L2(N)
16	512.875k	34.4	+5.7	+0.1	+0.0	+0.2	+0.0	40.4	46.0	-5.6	L2(N)
17	211.084k	41.4	+5.7	+0.1	+0.0	+0.2	+0.0	47.4	53.2	-5.8	L2(N)
18	492.513k	34.2	+5.7	+0.1	+0.0	+0.2	+0.0	40.2	46.1	-5.9	L2(N)
19	615.411k	34.0	+5.7	+0.1	+0.0	+0.2	+0.0	40.0	46.0	-6.0	L2(N)
20	635.045k	33.6	+5.7	+0.1	+0.0	+0.2	+0.0	39.6	46.0	-6.4	L2(N)
21	533.237k	33.6	+5.7	+0.1	+0.0	+0.2	+0.0	39.6	46.0	-6.4	L2(N)
22	291.077k	38.0	+5.7	+0.1	+0.0	+0.2	+0.0	44.0	50.5	-6.5	L2(N)
23	595.776k	33.4	+5.7	+0.1	+0.0	+0.2	+0.0	39.4	46.0	-6.6	L2(N)
24	1.498M	33.1	+5.7	+0.1	+0.1	+0.2	+0.0	39.2	46.0	-6.8	L2(N)

25	1.192M	33.2	+5.7	+0.1	+0.1	+0.1	+0.0	39.2	46.0	-6.8	L2(N)
26	1.128M	33.1	+5.7	+0.1	+0.1	+0.1	+0.0	39.1	46.0	-6.9	L2(N)
27	757.943k	33.1	+5.7	+0.1	+0.0	+0.1	+0.0	39.0	46.0	-7.0	L2(N)
28	716.492k	33.0	+5.7	+0.1	+0.0	+0.1	+0.0	38.9	46.0	-7.1	L2(N)
29	1.213M	32.8	+5.7	+0.1	+0.1	+0.1	+0.0	38.8	46.0	-7.2	L2(N)
30	779.032k	32.9	+5.7	+0.1	+0.0	+0.1	+0.0	38.8	46.0	-7.2	L2(N)
31	1.171M	32.7	+5.7	+0.1	+0.1	+0.1	+0.0	38.7	46.0	-7.3	L2(N)
32	1.069M	32.5	+5.7	+0.1	+0.1	+0.1	+0.0	38.5	46.0	-7.5	L2(N)
33	472.151k	32.9	+5.7	+0.1	+0.0	+0.2	+0.0	38.9	46.5	-7.6	L2(N)
34	1.477M	32.3	+5.7	+0.1	+0.1	+0.2	+0.0	38.4	46.0	-7.6	L2(N)

CKC Laboratories, Inc. Date: 4/17/2013 Time: 09:05:19 Flow Data, Inc. WO#: 94043
 15.207 AC Mains - Average Test Lead: L2(N) 120V 60Hz Sequence#: 3 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **94043** Date: 4/17/2013
 Test Type: **Conducted Emissions** Time: 09:19:02
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 5
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue 120V 60Hz
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06085	Attenuator	SA18N10W-09	12/14/2012	12/14/2014
T2	ANP01910	Cable	RG-142	2/6/2012	2/6/2014
T3	AN00969A	50uH LISN-Line 1 (L1) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN00969A	50uH LISN-Line 2 (L2) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN02343	High Pass Filter	HE9615-150K-50-720B	1/10/2013	1/10/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. The Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12VDC

Emission is measured through supported DC power supply.

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Operating Frequency: 2412-2462MHz

Mid channel (6): 2437MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11n: 7.2 mbps.MCS0, Firmware power setting= 18dbm

Frequency range of measurement = 150kHz-30MHz

RBW=9kHz, VBW=9 kHz

Test environment conditions: 23°C, 40% Relative Humidity, 100kPa

Site D

Applicable data rate was investigated

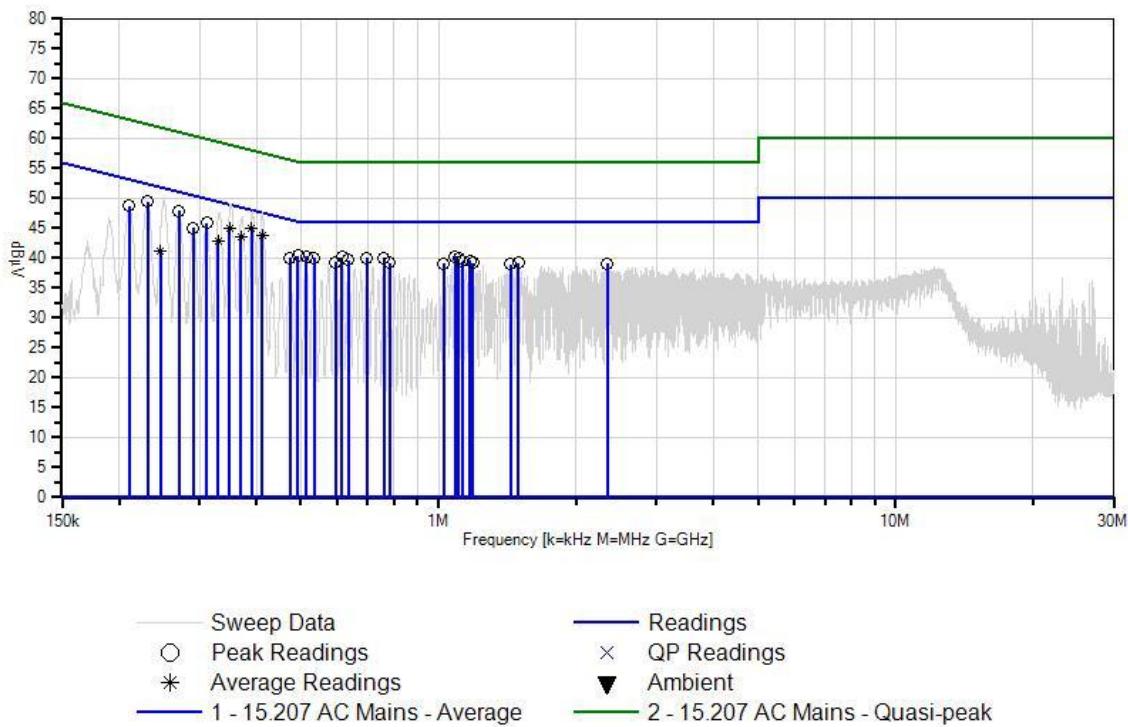
Recorded data represents worse case emission.

Ext Attn: 0 dB

Measurement Data:			Reading listed by margin.				Test Lead: L1(L)				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	230.720k	43.4	+5.7	+0.1	+0.1	+0.2	+0.0	49.5	52.4	-2.9	L1(L)
2	270.716k	41.8	+5.7	+0.1	+0.1	+0.2	+0.0	47.9	51.1	-3.2	L1(L)
3	390.572k Ave	38.8	+5.7	+0.1	+0.1	+0.2	+0.0	44.9	48.1	-3.2	L1(L)
^	390.572k	42.3	+5.7	+0.1	+0.1	+0.2	+0.0	48.4	48.1	+0.3	L1(L)
5	411.047k Ave	37.8	+5.7	+0.1	+0.1	+0.2	+0.0	43.9	47.6	-3.7	L1(L)
^	411.047k	41.5	+5.7	+0.1	+0.1	+0.2	+0.0	47.6	47.6	+0.0	L1(L)
7	311.440k	39.8	+5.7	+0.1	+0.1	+0.2	+0.0	45.9	49.9	-4.0	L1(L)
8	349.229k Ave	38.8	+5.7	+0.1	+0.1	+0.2	+0.0	44.9	49.0	-4.1	L1(L)
^	349.229k	43.1	+5.7	+0.1	+0.1	+0.2	+0.0	49.2	49.0	+0.2	L1(L)
10	210.358k	42.6	+5.7	+0.1	+0.1	+0.2	+0.0	48.7	53.2	-4.5	L1(L)
11	370.124k Ave	37.5	+5.7	+0.1	+0.1	+0.2	+0.0	43.6	48.5	-4.9	L1(L)
^	370.124k	41.0	+5.7	+0.1	+0.1	+0.2	+0.0	47.1	48.5	-1.4	L1(L)
13	290.351k	39.0	+5.7	+0.1	+0.1	+0.2	+0.0	45.1	50.5	-5.4	L1(L)
14	492.514k	34.3	+5.7	+0.1	+0.1	+0.2	+0.0	40.4	46.1	-5.7	L1(L)
15	513.603k	34.2	+5.7	+0.1	+0.1	+0.2	+0.0	40.3	46.0	-5.7	L1(L)
16	1.086M	34.3	+5.7	+0.1	+0.1	+0.1	+0.0	40.3	46.0	-5.7	L1(L)
17	615.412k	34.1	+5.7	+0.1	+0.1	+0.2	+0.0	40.2	46.0	-5.8	L1(L)
18	533.965k	34.0	+5.7	+0.1	+0.1	+0.2	+0.0	40.1	46.0	-5.9	L1(L)
19	758.671k	34.0	+5.7	+0.1	+0.1	+0.1	+0.0	40.0	46.0	-6.0	L1(L)
20	697.586k	33.9	+5.7	+0.1	+0.1	+0.2	+0.0	40.0	46.0	-6.0	L1(L)
21	1.107M	33.9	+5.7	+0.1	+0.1	+0.1	+0.0	39.9	46.0	-6.1	L1(L)
22	635.774k	33.6	+5.7	+0.1	+0.1	+0.2	+0.0	39.7	46.0	-6.3	L1(L)
23	1.171M	33.6	+5.7	+0.1	+0.1	+0.1	+0.0	39.6	46.0	-6.4	L1(L)
24	472.879k	34.0	+5.7	+0.1	+0.1	+0.2	+0.0	40.1	46.5	-6.4	L1(L)

25	1.128M	33.5	+5.7	+0.1	+0.1	+0.1	+0.0	39.5	46.0	-6.5	L1(L)
26	594.323k	33.3	+5.7	+0.1	+0.1	+0.2	+0.0	39.4	46.0	-6.6	L1(L)
27	328.933k	36.7	+5.7	+0.1	+0.1	+0.2	+0.0	42.8	49.5	-6.7	L1(L)
Ave											
^	331.074k	41.7	+5.7	+0.1	+0.1	+0.2	+0.0	47.8	49.4	-1.6	L1(L)
^	328.933k	41.4	+5.7	+0.1	+0.1	+0.2	+0.0	47.5	49.5	-2.0	L1(L)
30	1.188M	33.2	+5.7	+0.1	+0.1	+0.1	+0.0	39.2	46.0	-6.8	L1(L)
31	780.488k	33.2	+5.7	+0.1	+0.1	+0.1	+0.0	39.2	46.0	-6.8	L1(L)
32	1.498M	33.1	+5.7	+0.1	+0.1	+0.2	+0.0	39.2	46.0	-6.8	L1(L)
33	1.026M	33.1	+5.7	+0.1	+0.1	+0.1	+0.0	39.1	46.0	-6.9	L1(L)
34	2.340M	32.9	+5.7	+0.2	+0.1	+0.2	+0.0	39.1	46.0	-6.9	L1(L)
35	1.439M	32.9	+5.7	+0.1	+0.1	+0.2	+0.0	39.0	46.0	-7.0	L1(L)
36	246.760k	35.0	+5.7	+0.1	+0.1	+0.2	+0.0	41.1	51.9	-10.8	L1(L)
Ave											
^	246.760k	43.7	+5.7	+0.1	+0.1	+0.2	+0.0	49.8	51.9	-2.1	L1(L)

CKC Laboratories, Inc. Date: 4/17/2013 Time: 09:19:02 Flow Data, Inc. WO#: 94043
 15.207 AC Mains - Average Test Lead: L1(L) 120V 60Hz Sequence#: 5 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **94043** Date: 4/17/2013
 Test Type: **Conducted Emissions** Time: 09:23:04
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 6
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue 120V 60Hz
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06085	Attenuator	SA18N10W-09	12/14/2012	12/14/2014
T2	ANP01910	Cable	RG-142	2/6/2012	2/6/2014
	AN00969A	50uH LISN-Line 1 (L1) (dB)	3816/2NM	3/12/2013	3/12/2015
T3	AN00969A	50uH LISN-Line 2 (L2) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN02343	High Pass Filter	HE9615-150K-50-720B	1/10/2013	1/10/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. The Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12VDC

Emission is measured through supported DC power supply.

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Operating Frequency: 2412-2462MHz

Mid channel (6): 2437MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11n: 7.2 mbps.MCS0, Firmware power setting= 18dbm

Frequency range of measurement = 150kHz-30MHz

RBW=9kHz, VBW=9kHz

Test environment conditions: 23°C, 40% Relative Humidity, 100kPa

Site D

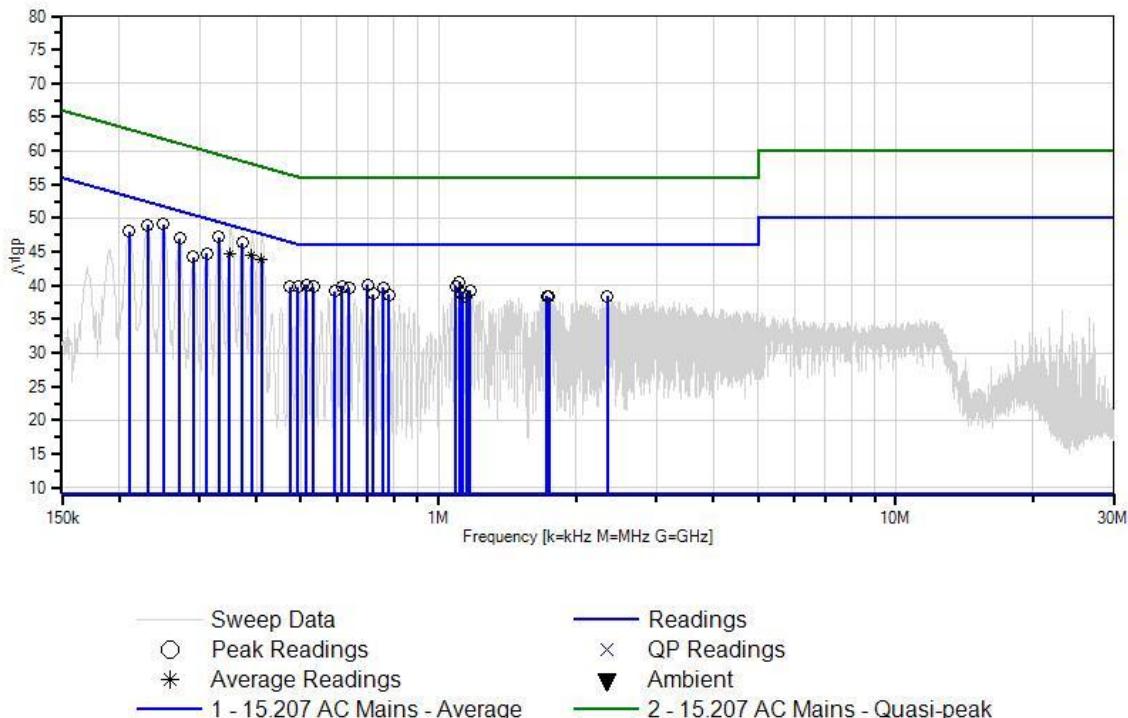
Applicable data rate was investigated

Recorded data represents worse case emission.

Ext Attn: 0 dB

Measurement Data:			Reading listed by margin.				Test Lead: L2(N)				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	372.525k	40.3	+5.7	+0.1	+0.0	+0.2	+0.0	46.3	48.4	-2.1	L2(N)
2	331.074k	41.2	+5.7	+0.1	+0.0	+0.2	+0.0	47.2	49.4	-2.2	L2(N)
3	250.354k	43.1	+5.7	+0.1	+0.0	+0.2	+0.0	49.1	51.7	-2.6	L2(N)
4	230.720k	43.0	+5.7	+0.1	+0.0	+0.2	+0.0	49.0	52.4	-3.4	L2(N)
5	389.939k	38.4	+5.7	+0.1	+0.0	+0.2	+0.0	44.4	48.1	-3.7	L2(N)
	Ave										
^	389.939k	42.3	+5.7	+0.1	+0.0	+0.2	+0.0	48.3	48.1	+0.2	L2(N)
7	410.734k	37.9	+5.7	+0.1	+0.0	+0.2	+0.0	43.9	47.6	-3.7	L2(N)
	Ave										
^	410.734k	41.2	+5.7	+0.1	+0.0	+0.2	+0.0	47.2	47.6	-0.4	L2(N)
9	271.443k	41.0	+5.7	+0.1	+0.0	+0.2	+0.0	47.0	51.1	-4.1	L2(N)
10	349.062k	38.7	+5.7	+0.1	+0.0	+0.2	+0.0	44.7	49.0	-4.3	L2(N)
	Ave										
^	349.062k	42.7	+5.7	+0.1	+0.0	+0.2	+0.0	48.7	49.0	-0.3	L2(N)
12	311.440k	38.8	+5.7	+0.1	+0.0	+0.2	+0.0	44.8	49.9	-5.1	L2(N)
13	210.358k	42.0	+5.7	+0.1	+0.0	+0.2	+0.0	48.0	53.2	-5.2	L2(N)
14	1.111M	34.4	+5.7	+0.1	+0.1	+0.1	+0.0	40.4	46.0	-5.6	L2(N)
15	699.041k	34.1	+5.7	+0.1	+0.0	+0.2	+0.0	40.1	46.0	-5.9	L2(N)
16	513.603k	34.1	+5.7	+0.1	+0.0	+0.2	+0.0	40.1	46.0	-5.9	L2(N)
17	1.090M	33.9	+5.7	+0.1	+0.1	+0.1	+0.0	39.9	46.0	-6.1	L2(N)
18	615.412k	33.9	+5.7	+0.1	+0.0	+0.2	+0.0	39.9	46.0	-6.1	L2(N)
19	533.238k	33.8	+5.7	+0.1	+0.0	+0.2	+0.0	39.8	46.0	-6.2	L2(N)
20	291.078k	38.2	+5.7	+0.1	+0.0	+0.2	+0.0	44.2	50.5	-6.3	L2(N)
21	492.514k	33.8	+5.7	+0.1	+0.0	+0.2	+0.0	39.8	46.1	-6.3	L2(N)
22	636.501k	33.7	+5.7	+0.1	+0.0	+0.2	+0.0	39.7	46.0	-6.3	L2(N)
23	757.944k	33.8	+5.7	+0.1	+0.0	+0.1	+0.0	39.7	46.0	-6.3	L2(N)
24	1.171M	33.3	+5.7	+0.1	+0.1	+0.1	+0.0	39.3	46.0	-6.7	L2(N)

25	472.879k	33.8	+5.7	+0.1	+0.0	+0.2	+0.0	39.8	46.5	-6.7	L2(N)
26	593.596k	33.2	+5.7	+0.1	+0.0	+0.2	+0.0	39.2	46.0	-6.8	L2(N)
27	1.128M	32.8	+5.7	+0.1	+0.1	+0.1	+0.0	38.8	46.0	-7.2	L2(N)
28	718.675k	32.8	+5.7	+0.1	+0.0	+0.1	+0.0	38.7	46.0	-7.3	L2(N)
29	779.760k	32.7	+5.7	+0.1	+0.0	+0.1	+0.0	38.6	46.0	-7.4	L2(N)
30	2.340M	32.2	+5.7	+0.2	+0.1	+0.2	+0.0	38.4	46.0	-7.6	L2(N)
31	1.149M	32.4	+5.7	+0.1	+0.1	+0.1	+0.0	38.4	46.0	-7.6	L2(N)
32	1.723M	32.3	+5.7	+0.1	+0.1	+0.2	+0.0	38.4	46.0	-7.6	L2(N)
33	1.745M	32.2	+5.7	+0.1	+0.1	+0.2	+0.0	38.3	46.0	-7.7	L2(N)

CKC Laboratories, Inc. Date: 4/17/2013 Time: 09:23:04 Flow Data, Inc. WO#: 94043
15.207 AC Mains - Average Test Lead: L2(N) 120V 60Hz Sequence#: 6 Ext ATTN: 0 dB


Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **94043** Date: 4/17/2013
 Test Type: **Conducted Emissions** Time: 09:45:45
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 8
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue 120V 60Hz
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06085	Attenuator	SA18N10W-09	12/14/2012	12/14/2014
T2	ANP01910	Cable	RG-142	2/6/2012	2/6/2014
T3	AN00969A	50uH LISN-Line 1 (L1) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN00969A	50uH LISN-Line 2 (L2) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN02343	High Pass Filter	HE9615-150K-50-720B	1/10/2013	1/10/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12VDC

Emission is measured through supported DC power supply.

Manufactures declare that only Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Operating Frequency: 2412-2462MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11n: 72.2 mbps.MCS7, Firmware power setting= 18dbm

Frequency range of measurement = 150kHz-30MHz

RBW=9kHz, VBW=9kHz

Test environment conditions: 23°C, 40% Relative Humidity, 100kPa

Site D

Applicable data rate was investigated

Recorded data represents worse case emission.

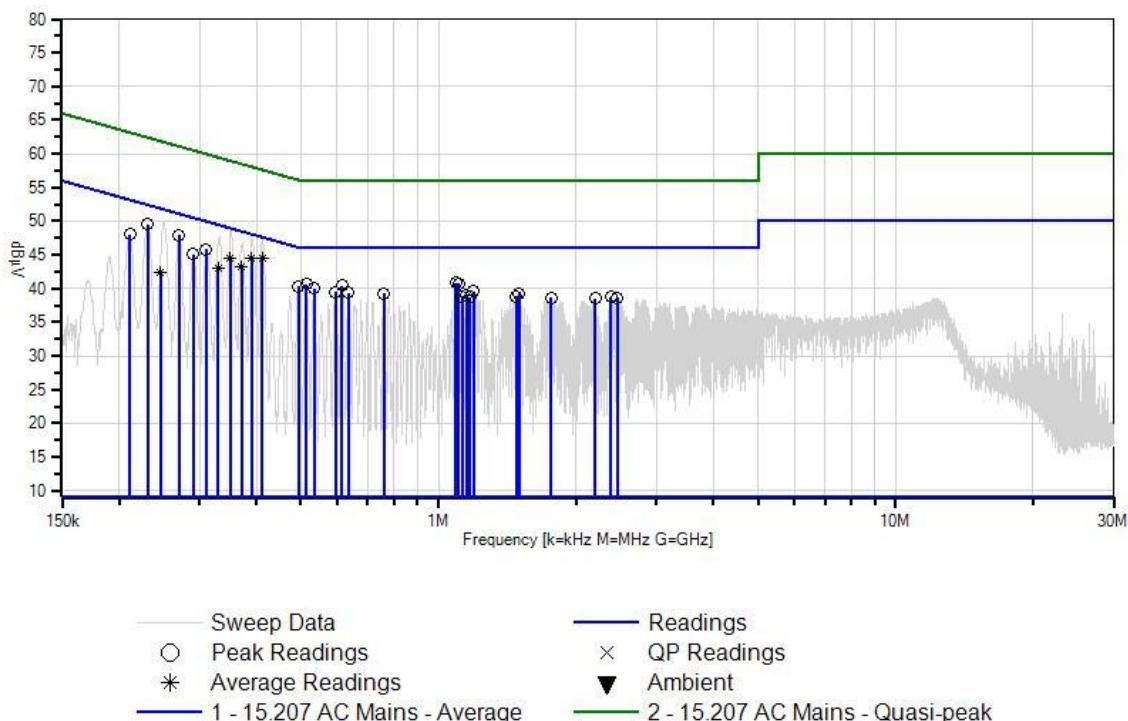
Ext Attn: 0 dB

Measurement Data:		Reading listed by margin.				Test Lead: L1(L)					
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	230.719k	43.4	+5.7	+0.1	+0.1	+0.2	+0.0	49.5	52.4	-2.9	L1(L)
2	411.113k Ave	38.4	+5.7	+0.1	+0.1	+0.2	+0.0	44.5	47.6	-3.1	L1(L)

^	411.113k	41.0	+5.7	+0.1	+0.1	+0.2	+0.0	47.1	47.6	-0.5	L1(L)
4	270.715k	41.8	+5.7	+0.1	+0.1	+0.2	+0.0	47.9	51.1	-3.2	L1(L)
5	390.444k Ave	38.3	+5.7	+0.1	+0.1	+0.2	+0.0	44.4	48.1	-3.7	L1(L)
^	390.444k	40.9	+5.7	+0.1	+0.1	+0.2	+0.0	47.0	48.1	-1.1	L1(L)
7	309.984k	39.7	+5.7	+0.1	+0.1	+0.2	+0.0	45.8	50.0	-4.2	L1(L)
8	349.967k Ave	38.4	+5.7	+0.1	+0.1	+0.2	+0.0	44.5	49.0	-4.5	L1(L)
^	349.967k	42.3	+5.7	+0.1	+0.1	+0.2	+0.0	48.4	49.0	-0.6	L1(L)
10	1.090M	34.9	+5.7	+0.1	+0.1	+0.1	+0.0	40.9	46.0	-5.1	L1(L)
11	370.423k Ave	37.2	+5.7	+0.1	+0.1	+0.2	+0.0	43.3	48.5	-5.2	L1(L)
^	372.524k	40.8	+5.7	+0.1	+0.1	+0.2	+0.0	46.9	48.4	-1.5	L1(L)
^	370.423k	40.8	+5.7	+0.1	+0.1	+0.2	+0.0	46.9	48.5	-1.6	L1(L)
14	211.084k	41.9	+5.7	+0.1	+0.1	+0.2	+0.0	48.0	53.2	-5.2	L1(L)
15	1.107M	34.7	+5.7	+0.1	+0.1	+0.1	+0.0	40.7	46.0	-5.3	L1(L)
16	291.077k	39.0	+5.7	+0.1	+0.1	+0.2	+0.0	45.1	50.5	-5.4	L1(L)
17	514.329k	34.5	+5.7	+0.1	+0.1	+0.2	+0.0	40.6	46.0	-5.4	L1(L)
18	615.411k	34.3	+5.7	+0.1	+0.1	+0.2	+0.0	40.4	46.0	-5.6	L1(L)
19	493.967k	34.2	+5.7	+0.1	+0.1	+0.2	+0.0	40.3	46.1	-5.8	L1(L)
20	534.691k	33.9	+5.7	+0.1	+0.1	+0.2	+0.0	40.0	46.0	-6.0	L1(L)
21	1.192M	33.6	+5.7	+0.1	+0.1	+0.1	+0.0	39.6	46.0	-6.4	L1(L)
22	329.280k Ave	37.0	+5.7	+0.1	+0.1	+0.2	+0.0	43.1	49.5	-6.4	L1(L)
^	329.280k	41.6	+5.7	+0.1	+0.1	+0.2	+0.0	47.7	49.5	-1.8	L1(L)
24	594.322k	33.4	+5.7	+0.1	+0.1	+0.2	+0.0	39.5	46.0	-6.5	L1(L)
25	635.773k	33.3	+5.7	+0.1	+0.1	+0.2	+0.0	39.4	46.0	-6.6	L1(L)
26	1.502M	33.2	+5.7	+0.1	+0.1	+0.2	+0.0	39.3	46.0	-6.7	L1(L)
27	759.398k	33.3	+5.7	+0.1	+0.1	+0.1	+0.0	39.3	46.0	-6.7	L1(L)
28	1.149M	33.1	+5.7	+0.1	+0.1	+0.1	+0.0	39.1	46.0	-6.9	L1(L)

29	1.128M	32.9	+5.7	+0.1	+0.1	+0.1	+0.0	38.9	46.0	-7.1	L1(L)	
30	1.481M	32.8	+5.7	+0.1	+0.1	+0.2	+0.0	38.9	46.0	-7.1	L1(L)	
31	1.171M	32.7	+5.7	+0.1	+0.1	+0.1	+0.0	38.7	46.0	-7.3	L1(L)	
32	2.383M	32.5	+5.7	+0.2	+0.1	+0.2	+0.0	38.7	46.0	-7.3	L1(L)	
33	1.766M	32.5	+5.7	+0.1	+0.1	+0.2	+0.0	38.6	46.0	-7.4	L1(L)	
34	2.463M	32.4	+5.7	+0.2	+0.1	+0.2	+0.0	38.6	46.0	-7.4	L1(L)	
35	2.200M	32.4	+5.7	+0.1	+0.1	+0.2	+0.0	38.5	46.0	-7.5	L1(L)	
36	246.372k	36.3	+5.7	+0.1	+0.1	+0.2	+0.0	42.4	51.9	-9.5	L1(L)	
Ave		246.372k	43.7	+5.7	+0.1	+0.1	+0.2	+0.0	49.8	51.9	-2.1	L1(L)

CKC Laboratories, Inc. Date: 4/17/2013 Time: 09:45:45 Flow Data, Inc. WO#: 94043
 15.207 AC Mains - Average Test Lead: L1(L) 120V 60Hz Sequence#: 8 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **94043** Date: 4/17/2013
 Test Type: **Conducted Emissions** Time: 09:38:01
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 7
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue 120V 60Hz
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06085	Attenuator	SA18N10W-09	12/14/2012	12/14/2014
T2	ANP01910	Cable	RG-142	2/6/2012	2/6/2014
	AN00969A	50uH LISN-Line 1 (L1) (dB)	3816/2NM	3/12/2013	3/12/2015
T3	AN00969A	50uH LISN-Line 2 (L2) (dB)	3816/2NM	3/12/2013	3/12/2015
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN02343	High Pass Filter	HE9615-150K-50-720B	1/10/2013	1/10/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12VDC

Emission is measured through supported DC power supply.

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Operating Frequency: 2412-2462MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11n: 72.2 mbps.MCS7, Firmware power setting= 18dbm

Frequency range of measurement = 150kHz-30MHz

RBW=9kHz, VBW=9kHz

Test environment conditions: 23°C, 40% Relative Humidity, 100kPa

Site D

Applicable data rate was investigated

Recorded data represents worse case emission.

Ext Attn: 0 dB

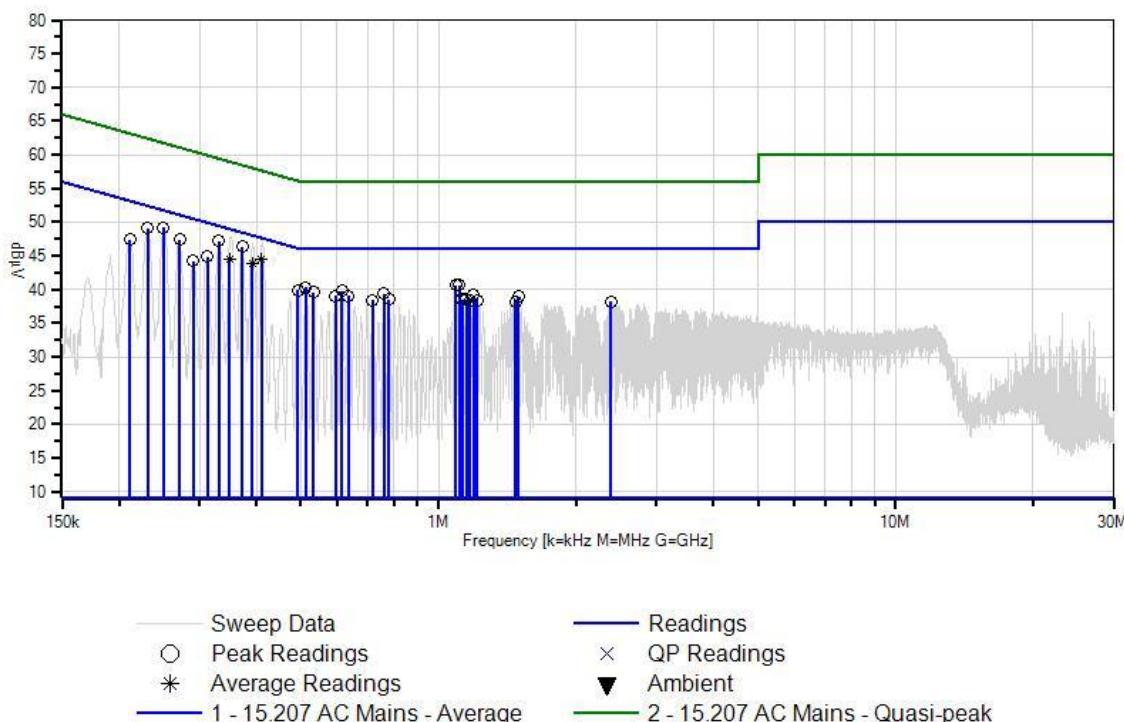
Measurement Data: Reading listed by margin. **Test Lead: L2(N)**

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	371.798k	40.4	+5.7	+0.1	+0.0	+0.2	+0.0	46.4	48.5	-2.1	L2(N)
2	331.074k	41.2	+5.7	+0.1	+0.0	+0.2	+0.0	47.2	49.4	-2.2	L2(N)

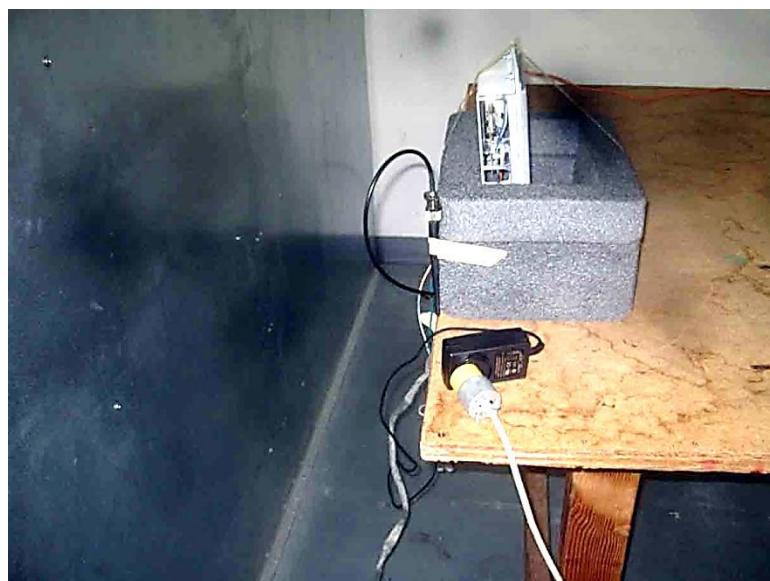
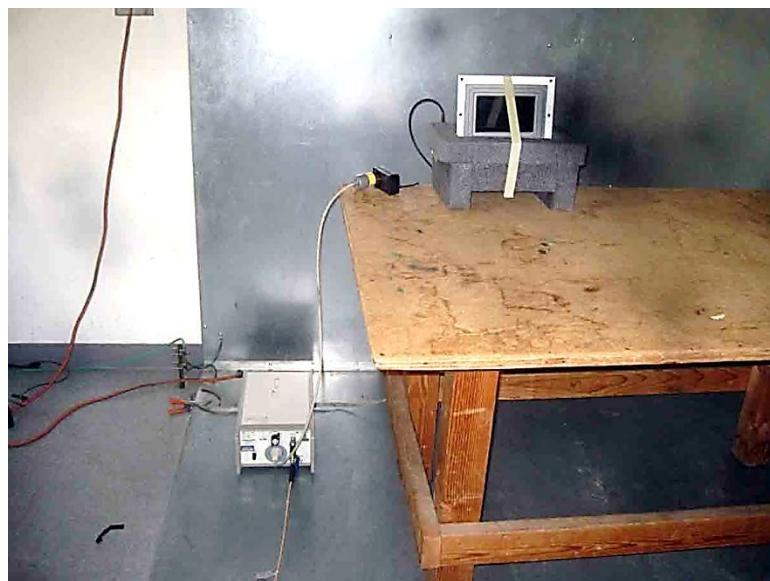
3	250.354k	43.2	+5.7	+0.1	+0.0	+0.2	+0.0	49.2	51.7	-2.5	L2(N)
4	410.614k	38.4	+5.7	+0.1	+0.0	+0.2	+0.0	44.4	47.6	-3.2	L2(N)
Ave											
^	410.614k	40.8	+5.7	+0.1	+0.0	+0.2	+0.0	46.8	47.6	-0.8	L2(N)
6	230.720k	43.1	+5.7	+0.1	+0.0	+0.2	+0.0	49.1	52.4	-3.3	L2(N)
7	271.443k	41.4	+5.7	+0.1	+0.0	+0.2	+0.0	47.4	51.1	-3.7	L2(N)
Ave											
^	390.667k	37.9	+5.7	+0.1	+0.0	+0.2	+0.0	43.9	48.0	-4.1	L2(N)
8	390.667k	40.6	+5.7	+0.1	+0.0	+0.2	+0.0	46.6	48.0	-1.4	L2(N)
Ave											
10	349.495k	38.4	+5.7	+0.1	+0.0	+0.2	+0.0	44.4	49.0	-4.6	L2(N)
Ave											
^	349.495k	42.2	+5.7	+0.1	+0.0	+0.2	+0.0	48.2	49.0	-0.8	L2(N)
12	312.167k	38.9	+5.7	+0.1	+0.0	+0.2	+0.0	44.9	49.9	-5.0	L2(N)
13	1.090M	34.6	+5.7	+0.1	+0.1	+0.1	+0.0	40.6	46.0	-5.4	L2(N)
14	1.111M	34.6	+5.7	+0.1	+0.1	+0.1	+0.0	40.6	46.0	-5.4	L2(N)
15	512.876k	34.3	+5.7	+0.1	+0.0	+0.2	+0.0	40.3	46.0	-5.7	L2(N)
16	211.085k	41.4	+5.7	+0.1	+0.0	+0.2	+0.0	47.4	53.2	-5.8	L2(N)
17	615.412k	33.8	+5.7	+0.1	+0.0	+0.2	+0.0	39.8	46.0	-6.2	L2(N)
18	492.514k	33.9	+5.7	+0.1	+0.0	+0.2	+0.0	39.9	46.1	-6.2	L2(N)
19	290.351k	38.2	+5.7	+0.1	+0.0	+0.2	+0.0	44.2	50.5	-6.3	L2(N)
20	533.238k	33.6	+5.7	+0.1	+0.0	+0.2	+0.0	39.6	46.0	-6.4	L2(N)
21	759.399k	33.5	+5.7	+0.1	+0.0	+0.1	+0.0	39.4	46.0	-6.6	L2(N)
22	1.192M	33.2	+5.7	+0.1	+0.1	+0.1	+0.0	39.2	46.0	-6.8	L2(N)
23	595.777k	33.1	+5.7	+0.1	+0.0	+0.2	+0.0	39.1	46.0	-6.9	L2(N)
24	635.774k	33.1	+5.7	+0.1	+0.0	+0.2	+0.0	39.1	46.0	-6.9	L2(N)
25	1.498M	32.9	+5.7	+0.1	+0.1	+0.2	+0.0	39.0	46.0	-7.0	L2(N)
26	1.128M	32.5	+5.7	+0.1	+0.1	+0.1	+0.0	38.5	46.0	-7.5	L2(N)
27	779.033k	32.6	+5.7	+0.1	+0.0	+0.1	+0.0	38.5	46.0	-7.5	L2(N)
28	1.149M	32.5	+5.7	+0.1	+0.1	+0.1	+0.0	38.5	46.0	-7.5	L2(N)

29	1.213M	32.4	+5.7	+0.1	+0.1	+0.1	+0.0	38.4	46.0	-7.6	L2(N)
30	1.171M	32.4	+5.7	+0.1	+0.1	+0.1	+0.0	38.4	46.0	-7.6	L2(N)
31	717.948k	32.5	+5.7	+0.1	+0.0	+0.1	+0.0	38.4	46.0	-7.6	L2(N)
32	1.477M	32.1	+5.7	+0.1	+0.1	+0.2	+0.0	38.2	46.0	-7.8	L2(N)
33	2.383M	32.0	+5.7	+0.2	+0.1	+0.2	+0.0	38.2	46.0	-7.8	L2(N)

CKC Laboratories, Inc. Date: 4/17/2013 Time: 09:38:01 Flow Data, Inc. WO#: 94043
 15.207 AC Mains - Average Test Lead: L2(N) 120V 60Hz Sequence#: 7 Ext ATTN: 0 dB



Test Setup Photos



15.247(a)(2) -6dB & RSS 210 99% Occupied Bandwidth

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**

Specification: **-6dbc / 99% Bandwidth**

Work Order #: **94043**

Date: 4/16/2013

Time: 15:13:55

Equipment: **ATI- Android Touch Screen Interface**

Sequence#: 0

Manufacturer: Flow Data, Inc.

Tested By: Don Nguyen

Model: PROVue

S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch Screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply, Dual-tracking	Topward	6306D	988614
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. The EUT comes with 0.6m coaxial cable and emission is measured from the end of this cable. 10db external attenuator is installed between EUT and spectrum analyzer. Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

The EUT is mounted in fixed position.

Input voltage: 12VDC

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Freq: 2412-2462MHz

Low channel (1): 2412MHz

Mid channel (6): 2437MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11b: 11.0 mbps long preamble, Firmware power setting= 18dbm

802.11g: 54.0 mbps. OFDM, Firmware power setting= 18dbm

802.11n: 7.2 mbps.MCS0, Firmware power setting= 18dbm

802.11n: 72.2 mbps.MCS7, Firmware power setting= 18dbm

Frequency range of measurement = fundamental

9kHz -150 kHz; RBW=200 Hz, VBW=200 Hz;150 kHz-30 MHz; RBW=9 kHz, VBW=9 kHz;30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz,1000 MHz-25000MHz;RBW=1 MHz, VBW=1 MHz

Test environment conditions: 22°C, 38% Relative Humidity, 100kPa

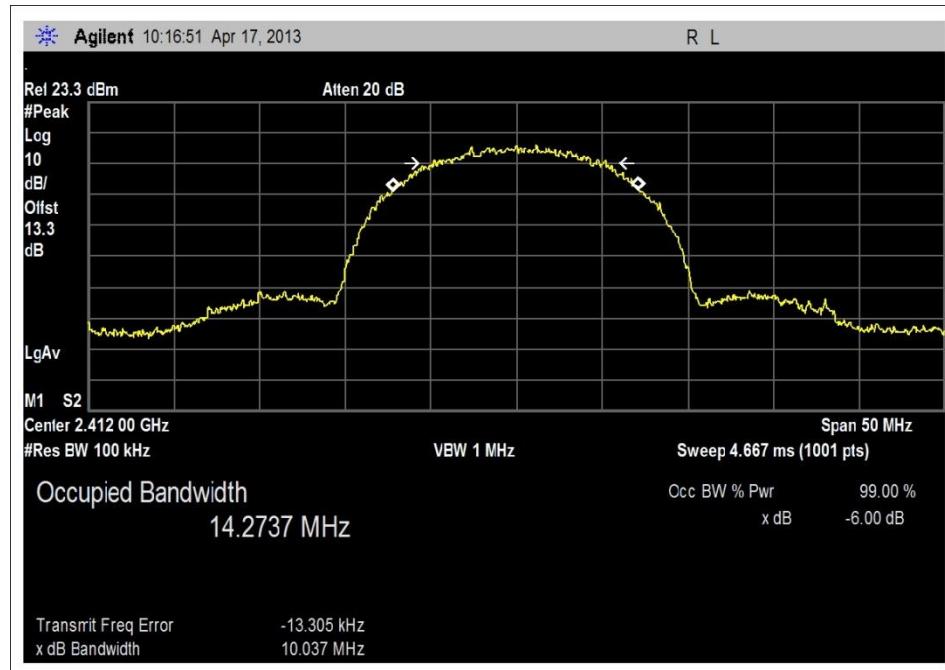
Site D

Applicable data rate was investigated

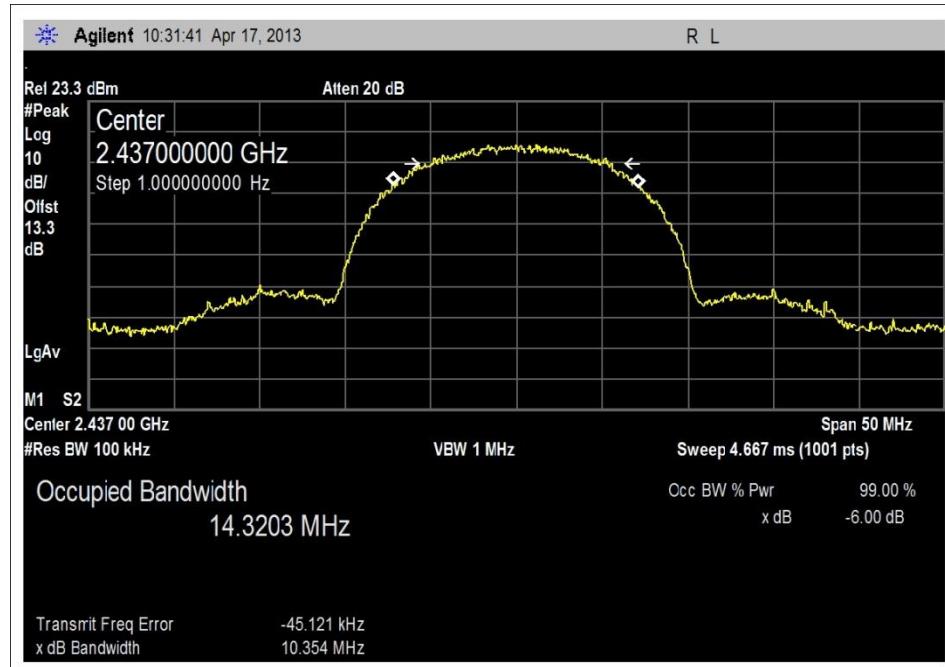
Recorded data represents worse case emission.

Test method in accordance with FCC document: 558074 D01 DTS Meas Guidance V03, Sec 8.2.

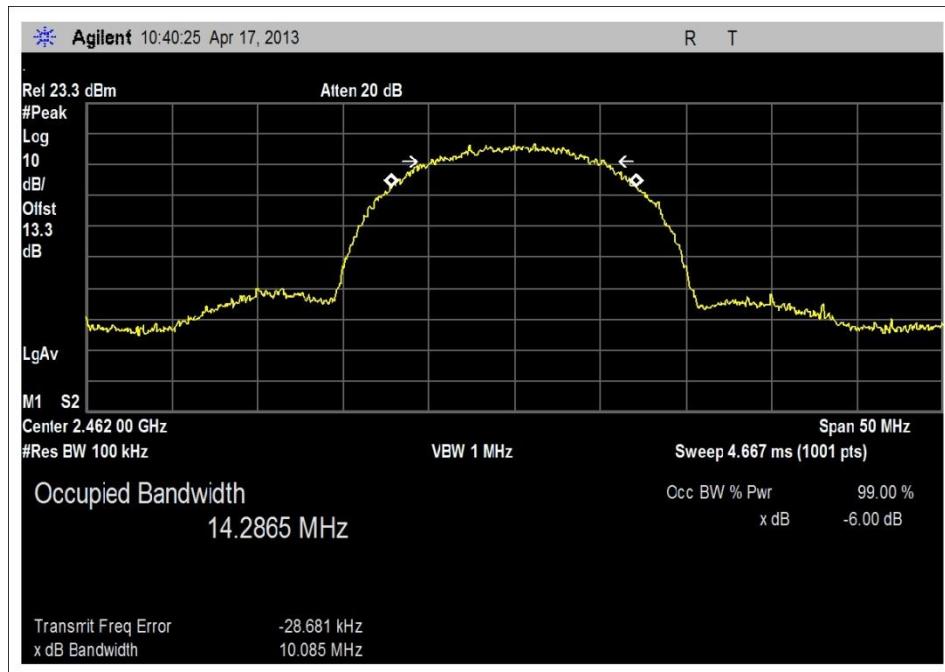
Test Plots



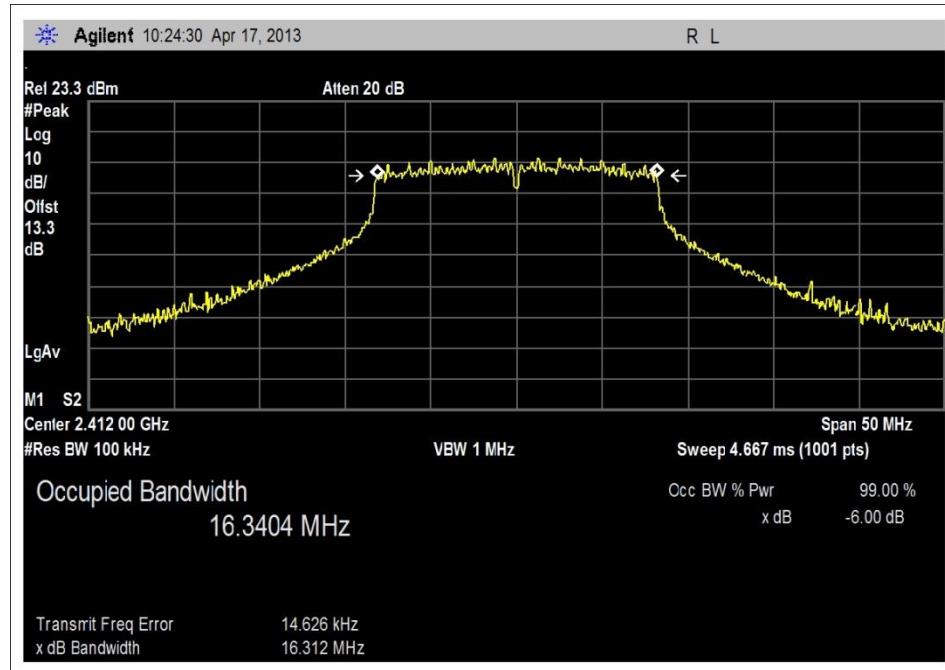
-6db & 99% Low Channel, 802.11b



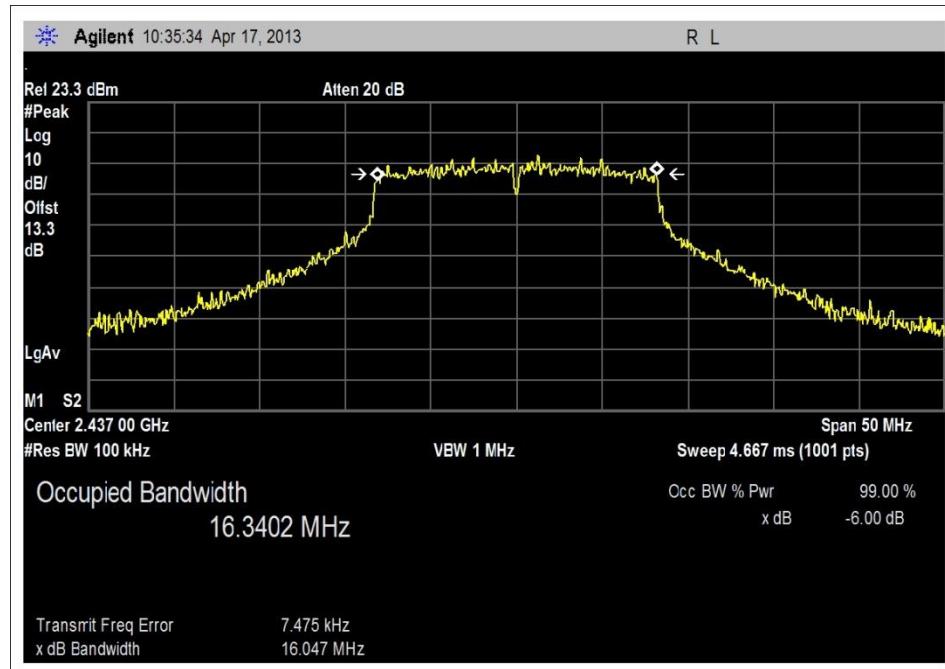
-6db & 99% Mid Channel, 802.11b



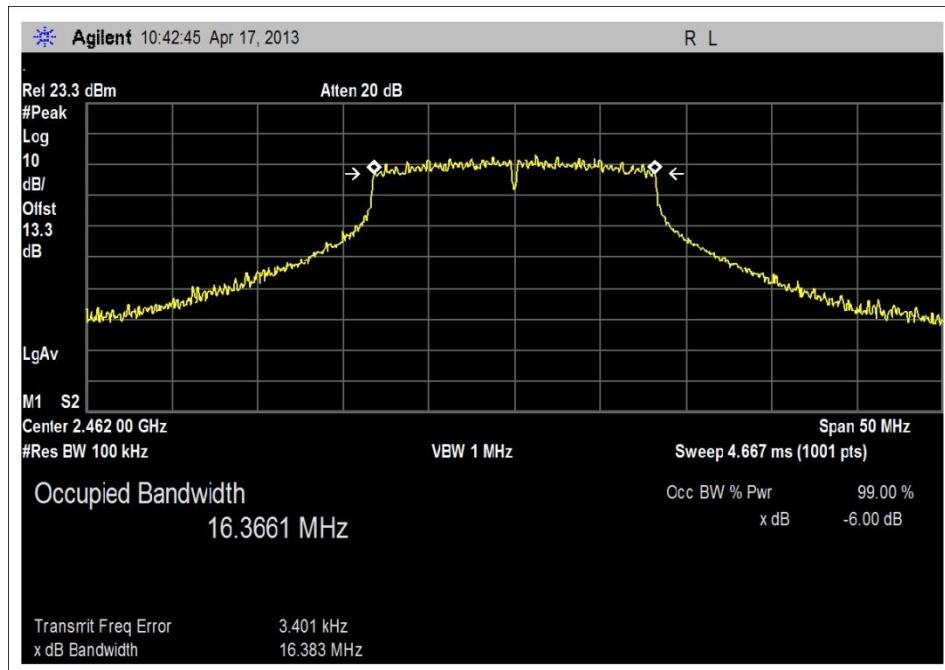
-6db & 99% High Channel, 802.11b



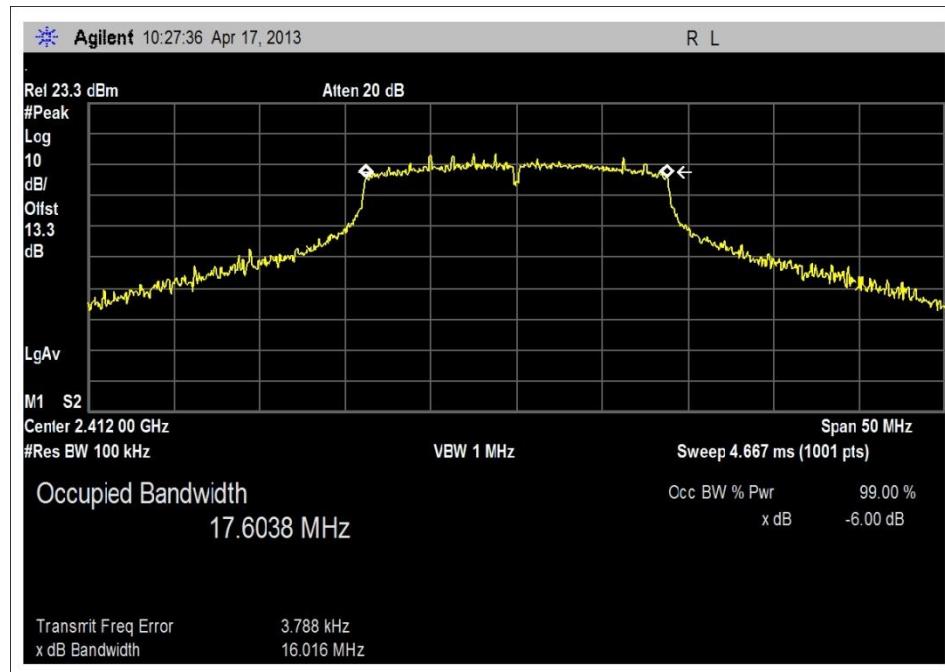
-6db & 99% Low Channel, 802.11g



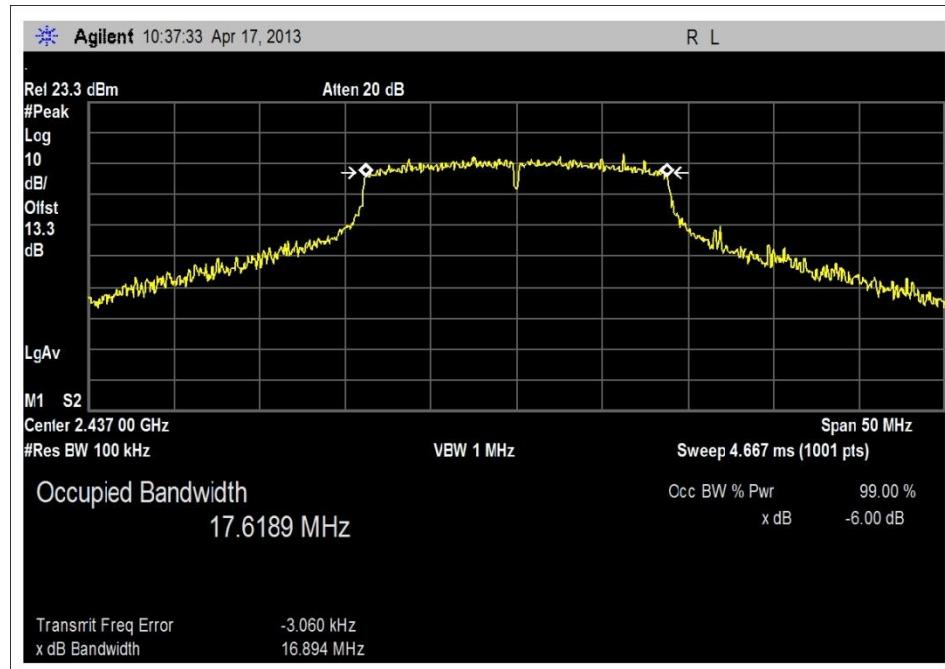
-6db & 99% Mid Channel, 802.11g



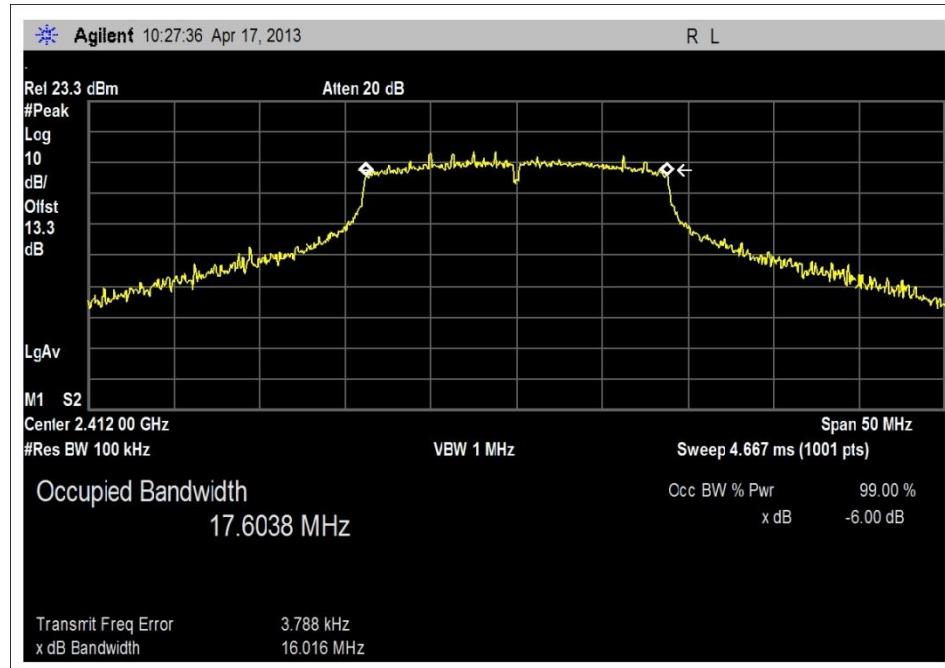
-6db & 99% High Channel, 802.11g



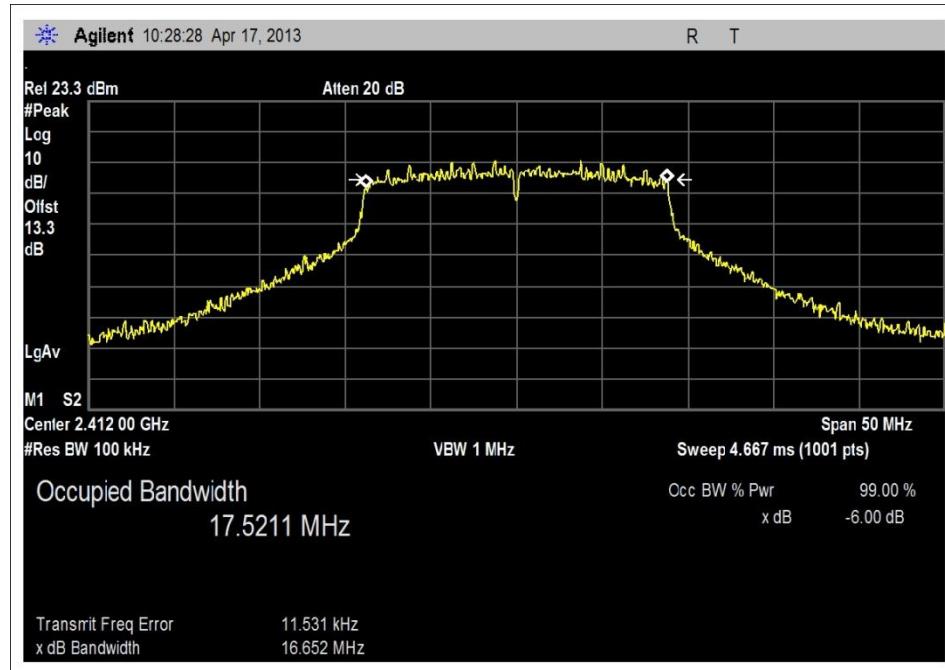
-6db & 99% Low Channel, 802.11n_MCS0



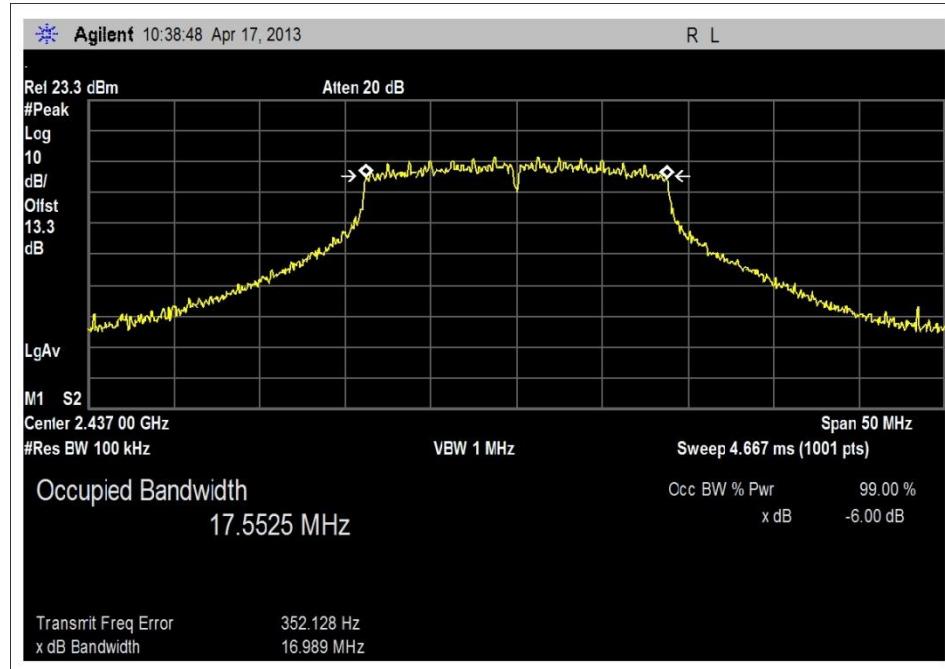
-6db & 99% Mid Channel, 802.11n_MCS0



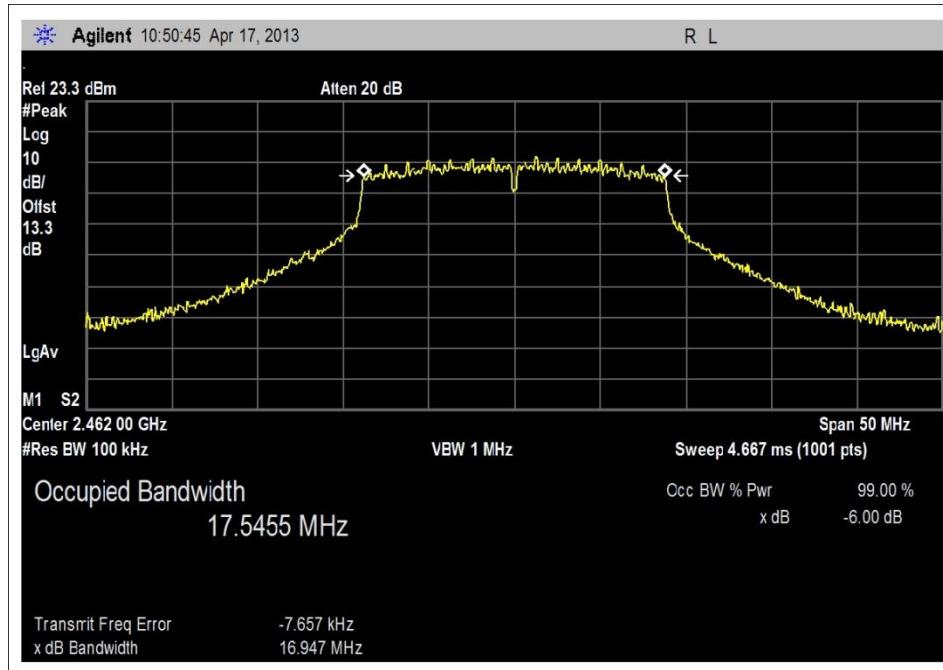
-6db & 99% High Channel, 802.11n_MCS0



-6db & 99% Low Channel, 802.11n_MCS7

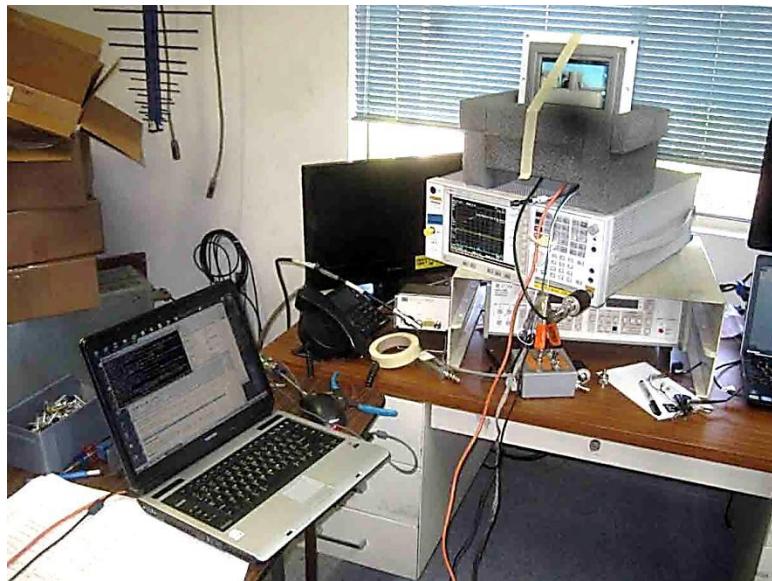


-6db & 99% Mid Channel, 802.11n_MCS7



-6db & 99% High Channel, 802.11n_MCS7

Test Setup Photos



15.247(b)(3) RF Power Output

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **RF Power Measurement**
 Work Order #: **94043** Date: **5/15/2013**
 Test Type: **Maximized Emissions** Time: **15:13:55**
 Equipment: **ATI- Android Touch screen Interface** Sequence#: **0**
 Manufacturer: Flow Data, Inc. Tested By: **Don Nguyen**
 Model: **PROVue**
 S/N: **2013-D-PVC-024**

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen	Flow Data, Inc.	PROVue	2013-D-PVC-024
Interface*			

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. EUT comes with 0.6m coaxial cable and emission is measured from the end of this cable. 10db external attenuator is installed between EUT and spectrum analyzer. Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

EUT chassis is grounded.

EUT is mounted in fixed position.

Input voltage: 12Vdc

Manufacture declares that only Ethernet port is used during operation. All other ports are left open and unterminated.

The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Freq: 2412-2462MHz

Low channel (1): 2412MHz

Mid channel (6): 2437MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11b: 11.0 mbps long preamble, Firmware power setting= 18dbm

802.11g: 54.0 mbps. OFDM, Firmware power setting= 18dbm

802.11n: 7.2 mbps.MCS0, Firmware power setting= 18dbm

802.11n: 72.2 mbps.MCS7, Firmware power setting= 18dbm

Applicable data rate was investigated

Frequency range of measurement = fundamental

9 kHz -150 kHz;RBW=200 Hz,VBW=200 Hz;150 kHz-30 MHz;RBW=9 kHz,VBW=9 kHz;30 MHz-1000 MHz;RBW=120 kHz,VBW=120 kHz,1000 MHz-25000MHz;RBW=1 MHz,VBW=1 MHz.

Test **environment conditions:** 22 DegC, 38% relative humidity, 100kPa

Site D

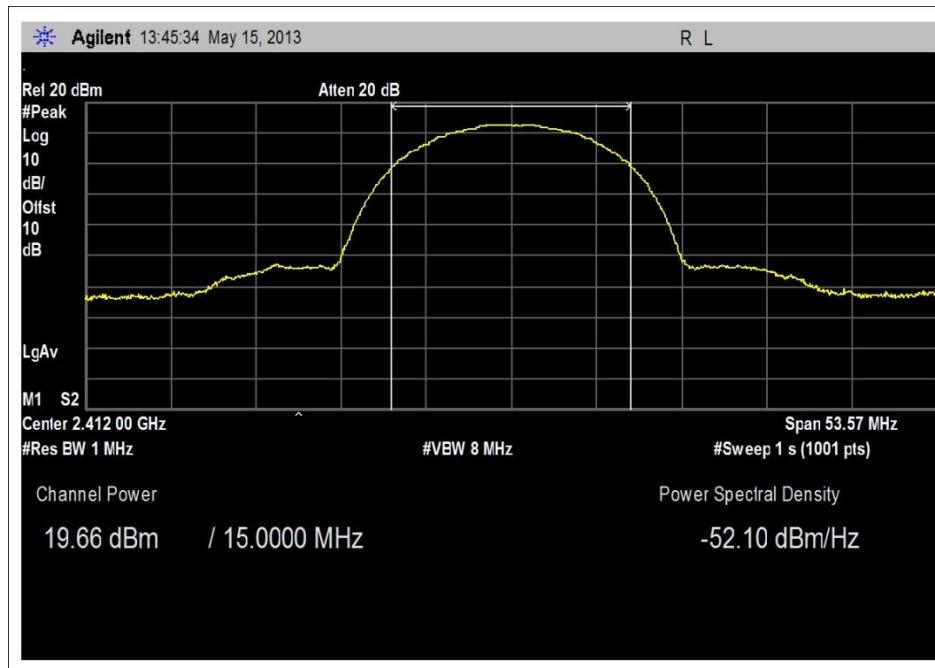
Recorded data represents worse case emission.

Test method in accordance with FCC document: 558074 D01 DTS Meas Guidance V03, Sec 9.1.2

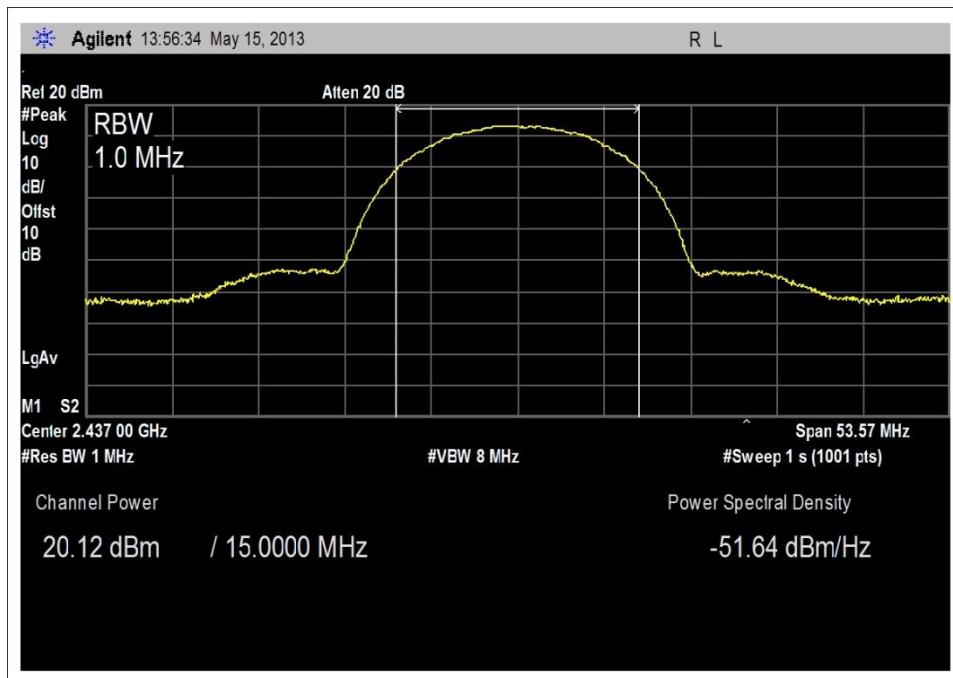
10db external attenuator was verified before use and 10db offset was entered in spectrum analyzer.

Test Data

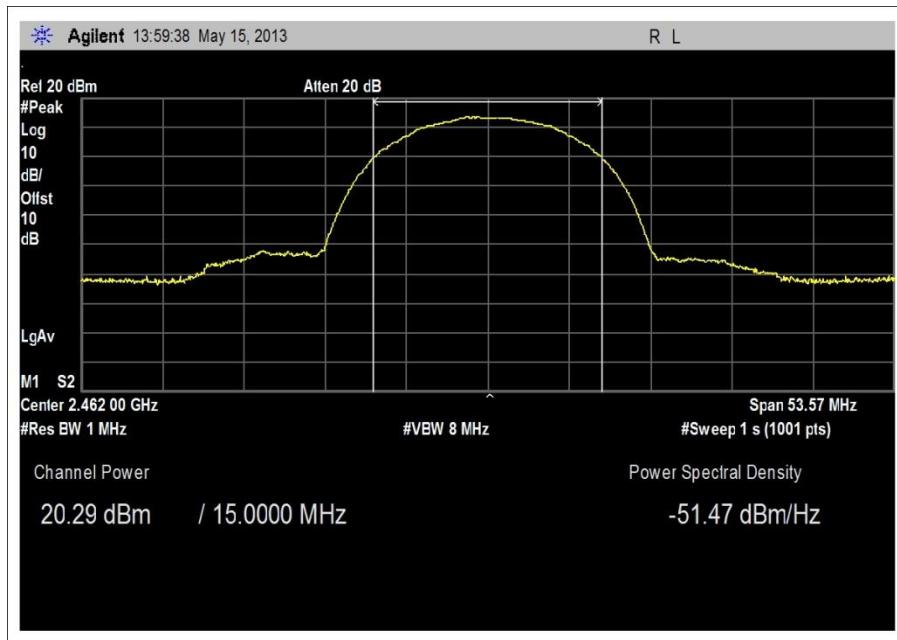
Modulation		Power (dBm)	Power (W)
802.11b: 11.0 mbps long preamble			
2412MHz		19.66	0.0924698
2437MHz		20.12	0.1028020
2462MHz		20.29	0.1069050
802.11g: 54.0 mbps. OFDM			
2412MHz		18.22	0.0663743
2437MHz		18.44	0.0698232
2462MHz		18.60	0.0724436
802.11n: 7.2 mbps.MCS0			
2412MHz		21.33	0.1358310
2437MHz		21.91	0.1552390
2462MHz		22.10	0.1621810
802.11n:72.2 mbps.MCS7			
2412MHz		16.90	0.0489779
2437MHz		17.32	0.0539511
2462MHz		17.55	0.0568853



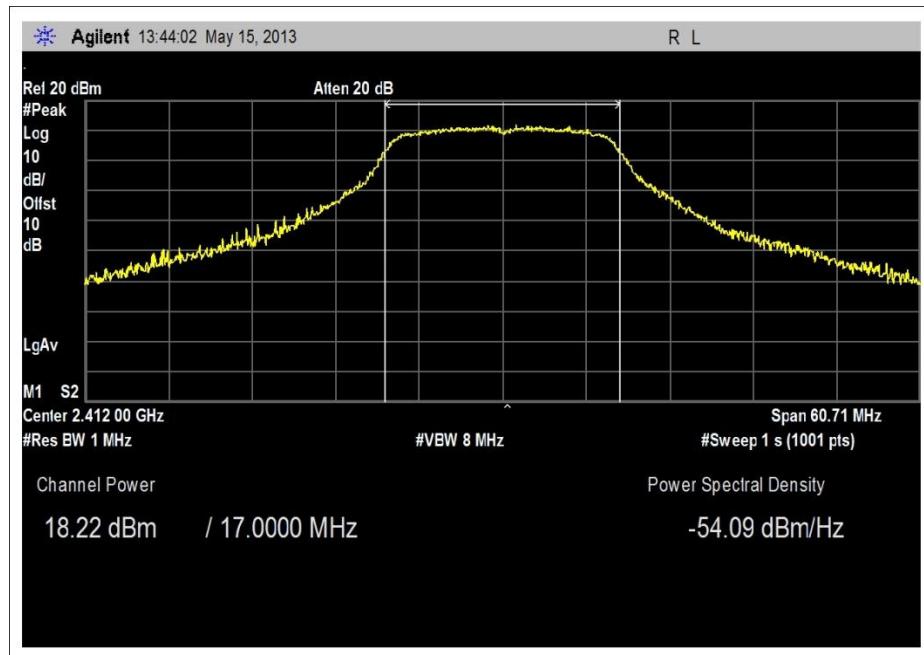
802.11b, Low Channel



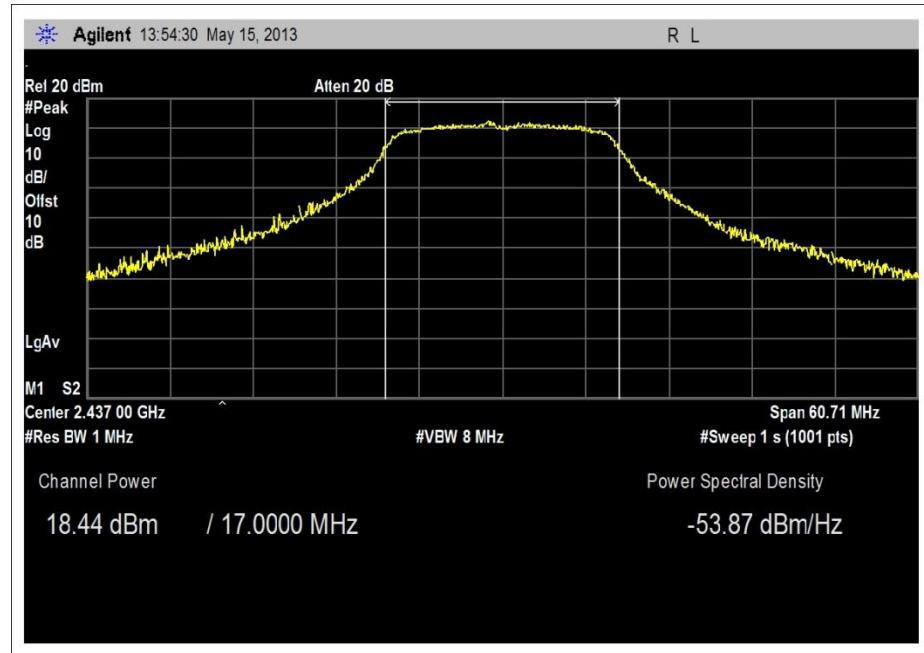
802.11b, Mid Channel



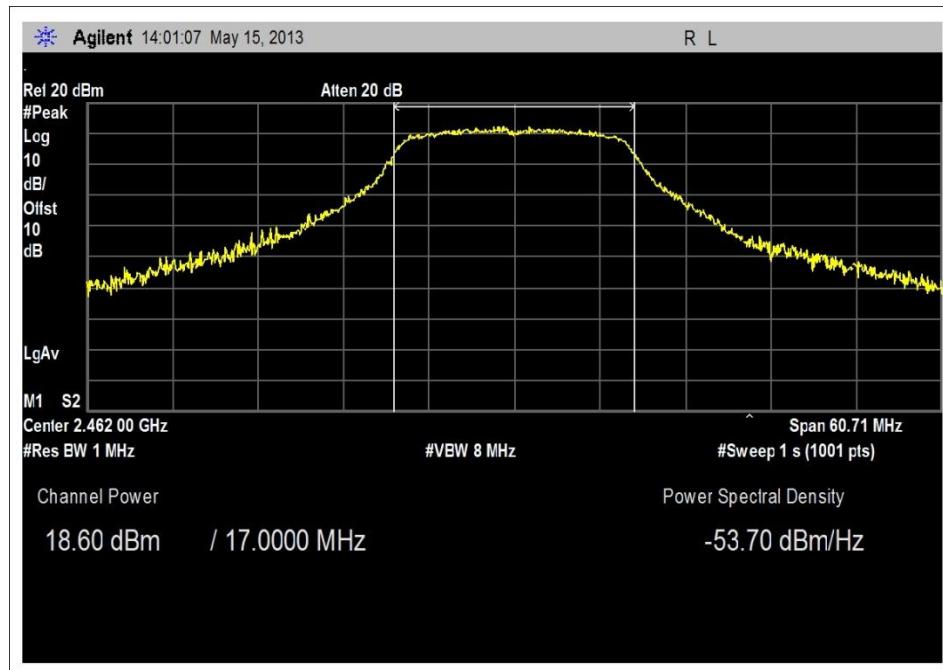
802.11b, High Channel



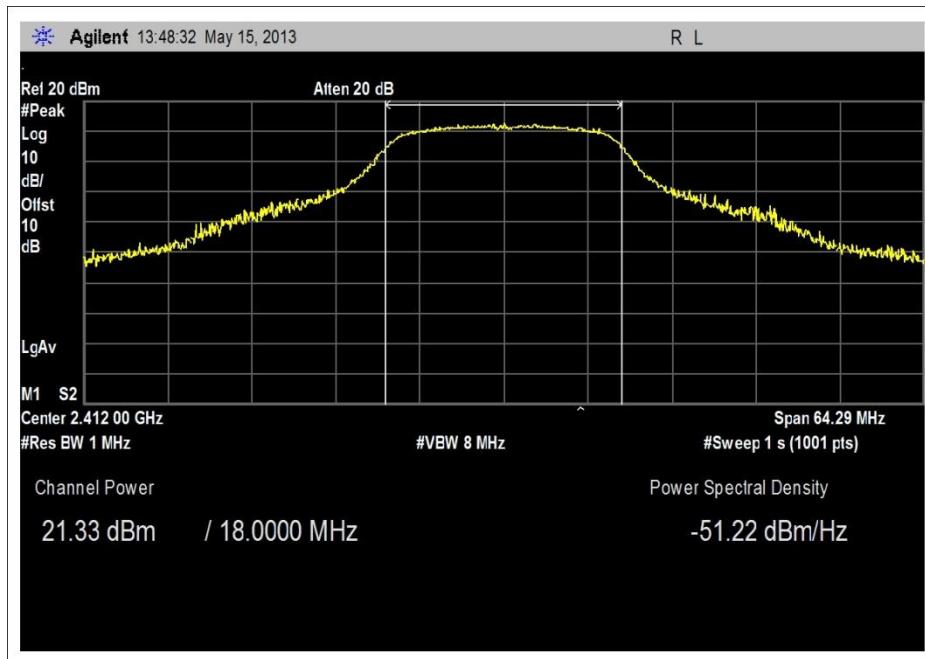
802.11g, Low Channel



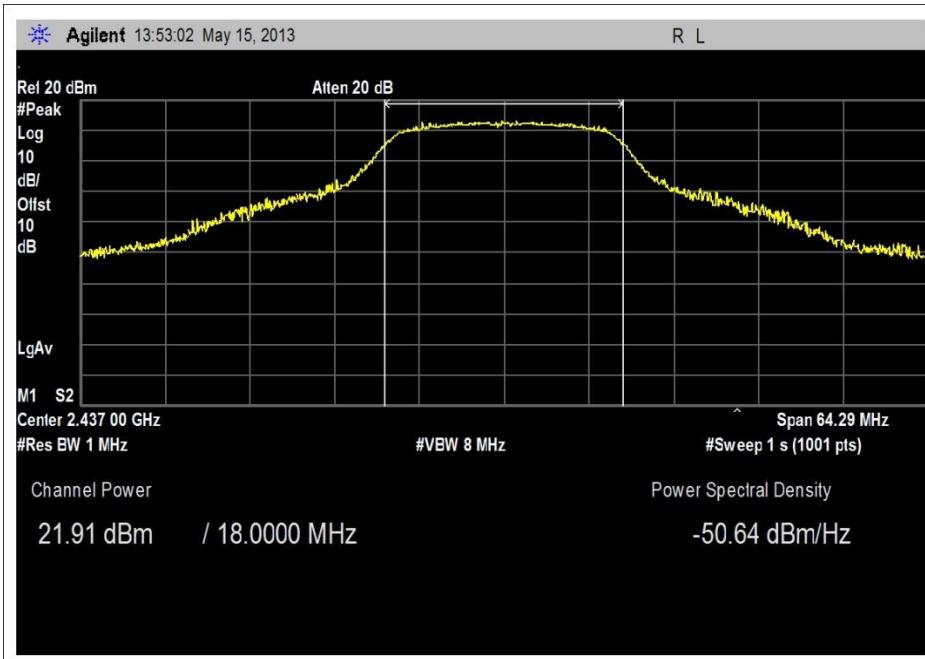
802.11g, Mid Channel



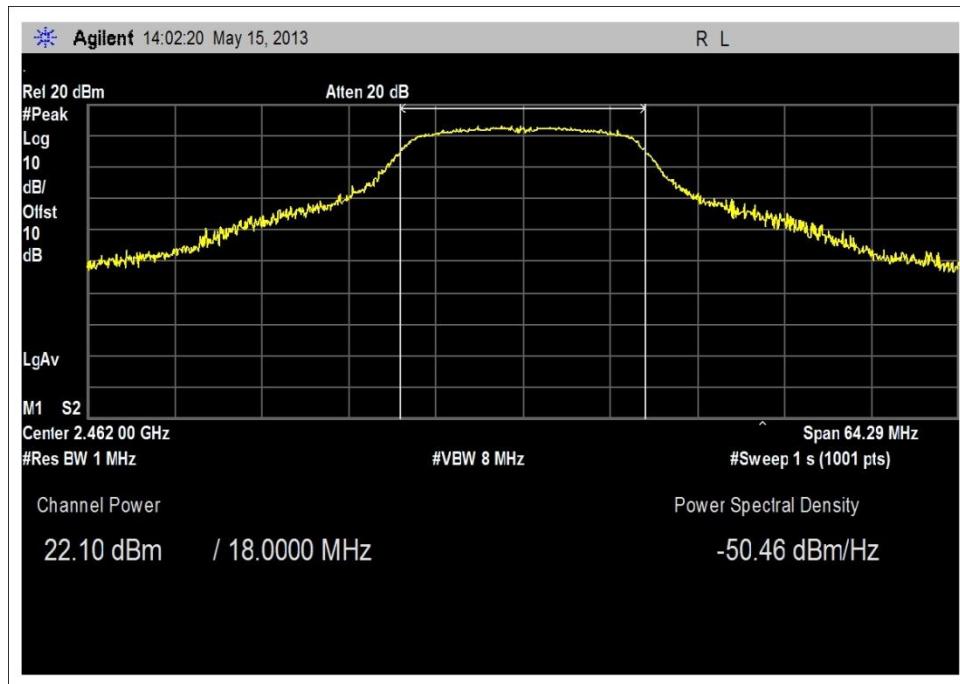
802.11g, High Channel



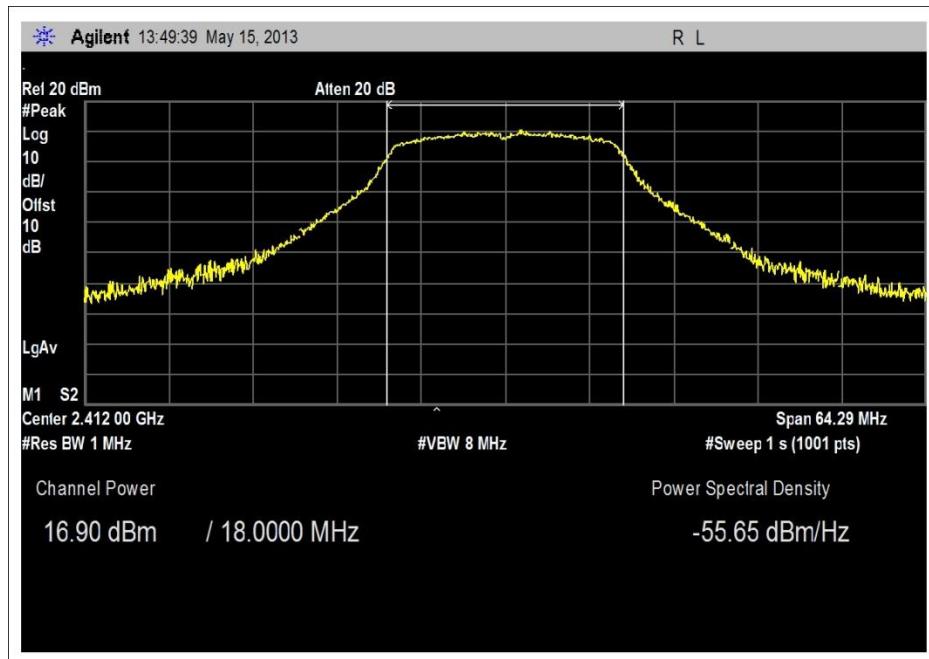
802.11n_MCS0, Low Channel



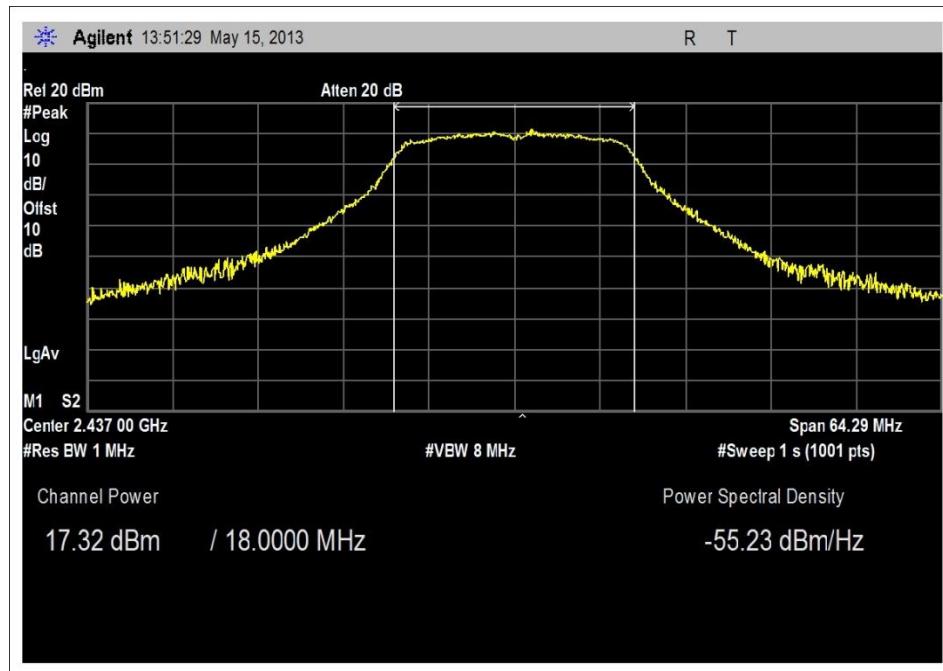
802.11n_MCS0, Mid Channel



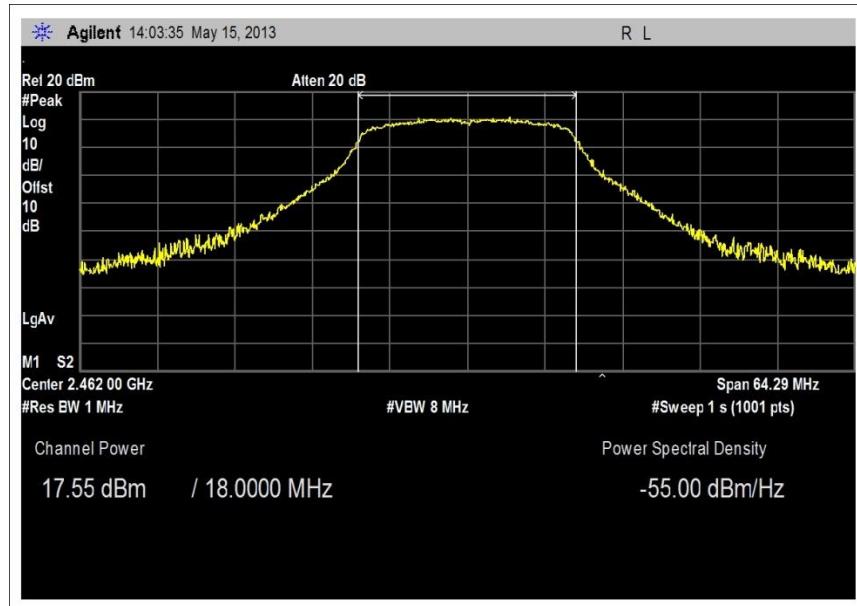
802.11n_MCS0, High Channel



802.11n_MCS7, Low Channel

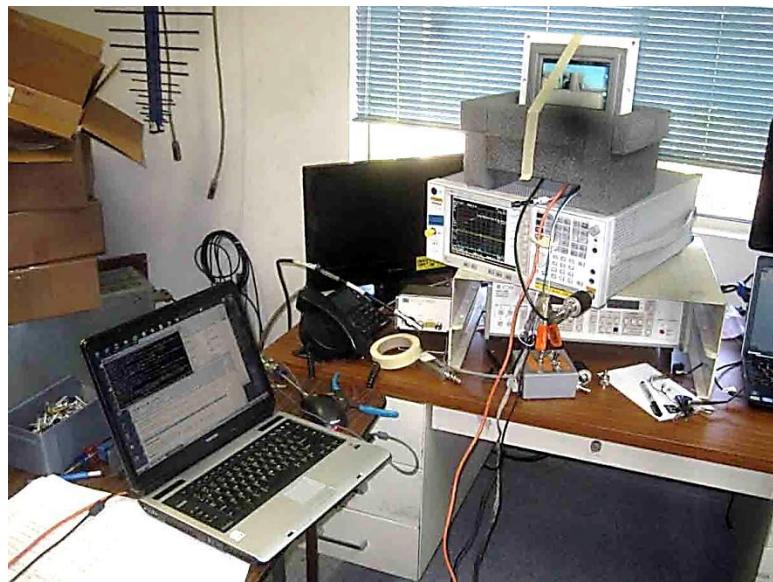


802.11n_MCS7, Mid Channel



802.11n_MCS7, High Channel

Test Setup Photos



15.247(d) Radiated Spurious Emissions / Bandedge

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **94043** Date: **4/16/2013**
 Test Type: **Maximized Emissions** Time: **15:13:55**
 Equipment: **ATI- Android Touch screen Interface** Sequence#: **0**
 Manufacturer: **Flow Data, Inc.** Tested By: **Don Nguyen**
 Model: **PROVue**
 S/N: **2013-D-PVC-024**

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN01646	Horn Antenna	3115	4/13/2012	4/13/2014
T3	AN02947	Cable	32022-29094K-29094K-72TC	8/8/2011	8/8/2013
T4	AN02115	Preamp	83051A	11/12/2012	11/12/2014
T5	ANP06360	Cable	L1-PNMNM-48	8/29/2012	8/29/2014
T6	ANP05989	High Pass Filter	AE6000H9761	10/23/2012	10/23/2014
	AN01413	Horn Antenna-ANSI	84125-80008	11/9/2012	11/9/2014
		C63.5 (dB/m)			
	AN02946	Cable	32022-2-2909K-36TC	8/8/2011	8/8/2013
	AN00314	Loop Antenna	6502	6/29/2012	6/29/2014
T7	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014
T8	AN00010	Preamp	8447D	3/29/2012	3/29/2014
T9	AN00851	Biconilog Antenna	CBL6111C	5/16/2012	5/16/2014
T10	ANP05555	Cable	RG223/U	6/19/2012	6/19/2014
T11	ANP05569	Cable	RG-214/U	6/19/2012	6/19/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply, Dual-tracking	Topward	6306D	988614
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. Connected to the antenna port is 0.6m coaxial cable with 3dbi gain antenna. The Ethernet port is connected to remotely located support laptop via crossover Ethernet cable. Laptop is running Android SDK in DOS to program EUT transmitter.

The EUT chassis is grounded.

EUT is mounted in fixed position.

Input voltage: 12VDC

Manufacturer declares only the Ethernet port is used during operation. All other ports are left open and unterminated. The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Freq: 2412-2462MHz

Low channel (1): 2412MHz

Mid channel (6): 2437MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11b: 11.0 mbps long preamble, Firmware power setting= 18dbm

802.11g: 54.0 mbps. OFDM, Firmware power setting= 18dbm

802.11n: 7.2 mbps.MCS0, Firmware power setting= 18dbm

802.11n: 72.2 mbps.MCS7, Firmware power setting= 18dbm

Frequency range of measurement = 9 kHz- 25GHz.

9kHz -150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz-30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz-25000MHz; RBW=1 MHz, VBW=1 MHz.

Test environment conditions: 22°C, 38% relative humidity, 100kPa

Site D

Applicable data rate was investigated

Recorded data represents worse case emission.

Test method in accordance with FCC document: 558074 D01 DTS Meas Guidance V03, Sec 12.2.6.

Ext Attn: 0 dB

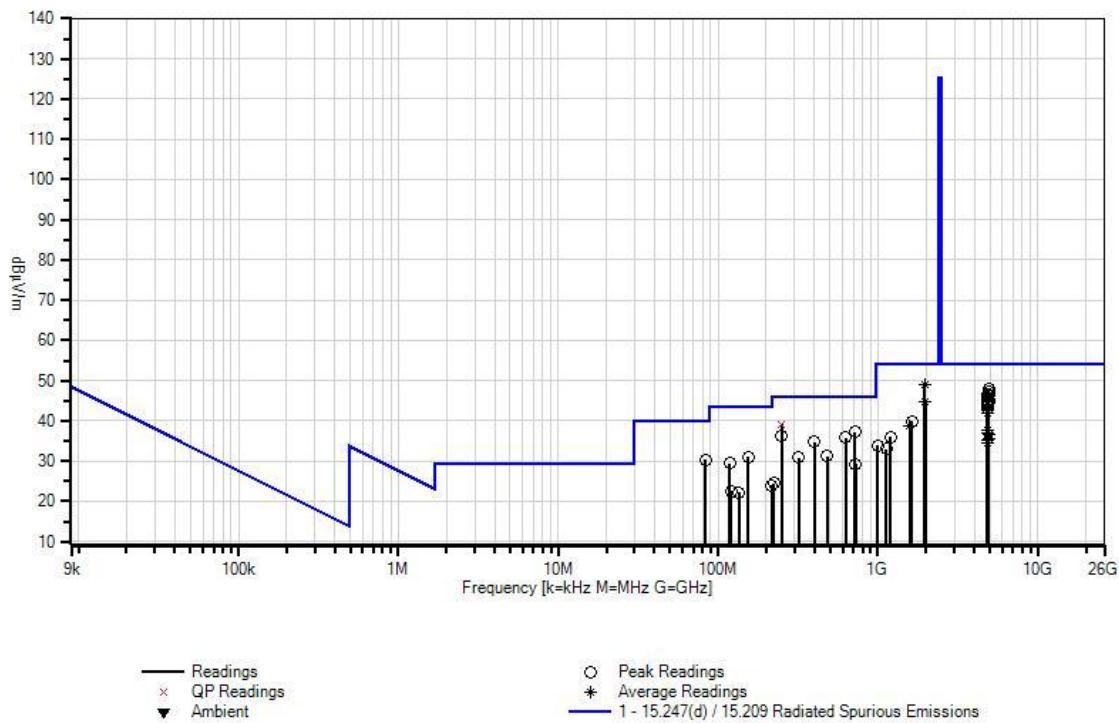
Measurement Data:			Reading listed by margin.			Test Distance: 3 Meters					
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dB μ V	dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	1960.450M	45.2	+0.0	+27.9	+0.4	-33.1	+0.0	48.9	54.0	-5.1	Vert
	Ave		+3.0	+0.0	+5.5	+0.0					
			+0.0	+0.0	+0.0						
^	1960.450M	59.9	+0.0	+27.9	+0.4	-33.1	+0.0	63.6	54.0	+9.6	Vert
			+3.0	+0.0	+5.5	+0.0					
			+0.0	+0.0	+0.0						
3	4923.900M	32.2	+0.0	+33.6	+0.7	-32.4	+0.0	47.8	54.0	-6.2	Horiz
			+4.9	+0.5	+8.3	+0.0					
			+0.0	+0.0	+0.0						
4	4923.900M	31.8	+0.0	+33.6	+0.7	-32.4	+0.0	47.4	54.0	-6.6	Horiz
			+4.9	+0.5	+8.3	+0.0					
			+0.0	+0.0	+0.0						
5	249.999M	49.4	+0.0	+0.0	+0.0	+0.0	+0.0	39.2	46.0	-6.8	Horiz
	QP		+0.0	+0.0	+1.8	-26.5					
			+12.6	+0.3	+1.6						
^	249.999M	50.3	+0.0	+0.0	+0.0	+0.0	+0.0	40.1	46.0	-5.9	Horiz
			+0.0	+0.0	+1.8	-26.5					
			+12.6	+0.3	+1.6						
^	250.004M	50.1	+0.0	+0.0	+0.0	+0.0	+0.0	39.9	46.0	-6.1	Horiz
			+0.0	+0.0	+1.8	-26.5					
			+12.6	+0.3	+1.6						
8	4824.127M	32.0	+0.0	+33.0	+0.7	-32.4	+0.0	46.7	54.0	-7.3	Horiz
			+4.8	+0.5	+8.1	+0.0					
			+0.0	+0.0	+0.0						
9	4923.900M	31.0	+0.0	+33.6	+0.7	-32.4	+0.0	46.6	54.0	-7.4	Horiz
			+4.9	+0.5	+8.3	+0.0					
			+0.0	+0.0	+0.0						
10	4924.127M	30.5	+0.0	+33.6	+0.7	-32.4	+0.0	46.1	54.0	-7.9	Vert
	Ave		+4.9	+0.5	+8.3	+0.0					
			+0.0	+0.0	+0.0						
11	4874.627M	30.8	+0.0	+33.3	+0.7	-32.4	+0.0	46.0	54.0	-8.0	Vert
	Ave		+4.9	+0.5	+8.2	+0.0					
			+0.0	+0.0	+0.0						
12	4872.710M	30.8	+0.0	+33.3	+0.7	-32.4	+0.0	45.9	54.0	-8.1	Horiz
			+4.8	+0.5	+8.2	+0.0					
			+0.0	+0.0	+0.0						
13	4872.710M	30.6	+0.0	+33.3	+0.7	-32.4	+0.0	45.7	54.0	-8.3	Horiz
			+4.8	+0.5	+8.2	+0.0					
			+0.0	+0.0	+0.0						
14	4924.127M	30.0	+0.0	+33.6	+0.7	-32.4	+0.0	45.6	54.0	-8.4	Vert
	Ave		+4.9	+0.5	+8.3	+0.0					
			+0.0	+0.0	+0.0						
15	720.004M	37.5	+0.0	+0.0	+0.0	+0.0	+0.0	37.2	46.0	-8.8	Vert
			+0.0	+0.0	+3.1	-27.8					
			+20.9	+0.5	+3.0						

16	4824.127M	30.2	+0.0	+33.0	+0.7	-32.4	+0.0	44.9	54.0	-9.1	Horiz
			+4.8	+0.5	+8.1	+0.0					N, MCS7, low ch
			+0.0	+0.0	+0.0						
17	4824.127M	30.2	+0.0	+33.0	+0.7	-32.4	+0.0	44.9	54.0	-9.1	Horiz
			+4.8	+0.5	+8.1	+0.0					N, MCS0, low ch
			+0.0	+0.0	+0.0						
18	1974.700M	40.9	+0.0	+27.9	+0.4	-33.0	+0.0	44.7	54.0	-9.3	Vert
	Ave		+3.0	+0.0	+5.5	+0.0					
			+0.0	+0.0	+0.0						
^	1974.700M	60.0	+0.0	+27.9	+0.4	-33.0	+0.0	63.8	54.0	+9.8	Vert
			+3.0	+0.0	+5.5	+0.0					
			+0.0	+0.0	+0.0						
20	4923.900M	29.1	+0.0	+33.6	+0.7	-32.4	+0.0	44.7	54.0	-9.3	Horiz
			+4.9	+0.5	+8.3	+0.0					N, MCS0, hi ch
			+0.0	+0.0	+0.0						
21	83.310M	47.2	+0.0	+0.0	+0.0	+0.0	+0.0	30.3	40.0	-9.7	Vert
			+0.0	+0.0	+1.0	-27.0					
			+8.0	+0.2	+0.9						
22	249.998M	46.3	+0.0	+0.0	+0.0	+0.0	+0.0	36.1	46.0	-9.9	Vert
			+0.0	+0.0	+1.8	-26.5					
			+12.6	+0.3	+1.6						
23	4824.127M	29.2	+0.0	+33.0	+0.7	-32.4	+0.0	43.9	54.0	-10.1	Horiz
			+4.8	+0.5	+8.1	+0.0					G, low ch
			+0.0	+0.0	+0.0						
24	624.978M	37.6	+0.0	+0.0	+0.0	+0.0	+0.0	35.9	46.0	-10.1	Vert
			+0.0	+0.0	+3.0	-27.9					
			+19.8	+0.5	+2.9						
25	4872.710M	28.7	+0.0	+33.3	+0.7	-32.4	+0.0	43.8	54.0	-10.2	Horiz
			+4.8	+0.5	+8.2	+0.0					N, MCS0, mid ch
			+0.0	+0.0	+0.0						
26	4872.710M	27.9	+0.0	+33.3	+0.7	-32.4	+0.0	43.0	54.0	-11.0	Horiz
			+4.8	+0.5	+8.2	+0.0					G, mid ch
			+0.0	+0.0	+0.0						
27	399.998M	41.5	+0.0	+0.0	+0.0	+0.0	+0.0	34.7	46.0	-11.3	Vert
			+0.0	+0.0	+2.3	-27.2					
			+15.5	+0.4	+2.2						
28	4824.000M	27.8	+0.0	+33.0	+0.7	-32.4	+0.0	42.5	54.0	-11.5	Vert
	Ave		+4.8	+0.5	+8.1	+0.0					B, low ch
			+0.0	+0.0	+0.0						
29	4824.000M	27.3	+0.0	+33.0	+0.7	-32.4	+0.0	42.0	54.0	-12.0	Vert
	Ave		+4.8	+0.5	+8.1	+0.0					N, MCS0, low ch
			+0.0	+0.0	+0.0						
30	4873.817M	26.7	+0.0	+33.3	+0.7	-32.4	+0.0	41.9	54.0	-12.1	Vert
	Ave		+4.9	+0.5	+8.2	+0.0					B, mid ch
			+0.0	+0.0	+0.0						
^	4873.817M	43.8	+0.0	+33.3	+0.7	-32.4	+0.0	59.0	54.0	+5.0	Vert
			+4.9	+0.5	+8.2	+0.0					B, mid ch
			+0.0	+0.0	+0.0						
32	154.010M	44.2	+0.0	+0.0	+0.0	+0.0	+0.0	31.0	43.5	-12.5	Vert
			+0.0	+0.0	+1.4	-26.9					
			+10.8	+0.2	+1.3						

33	1624.900M	40.5	+0.0	+26.5	+0.4	-35.1	+0.0	40.0	54.0	-14.0	Vert
			+2.7	+0.0	+5.0	+0.0					
			+0.0	+0.0	+0.0						
34	117.510M	42.2	+0.0	+0.0	+0.0	+0.0	+0.0	29.4	43.5	-14.1	Vert
			+0.0	+0.0	+1.3	-26.9					
			+11.5	+0.2	+1.1						
35	480.008M	36.3	+0.0	+0.0	+0.0	+0.0	+0.0	31.2	46.0	-14.8	Vert
			+0.0	+0.0	+2.6	-27.7					
			+17.2	+0.4	+2.4						
36	319.500M	39.6	+0.0	+0.0	+0.0	+0.0	+0.0	30.9	46.0	-15.1	Vert
			+0.0	+0.0	+2.1	-26.6					
			+13.6	+0.3	+1.9						
37	1571.000M	40.0	+0.0	+26.2	+0.4	-35.3	+0.0	38.8	54.0	-15.2	Vert
	Ave		+2.6	+0.0	+4.9	+0.0					
			+0.0	+0.0	+0.0						
^	1571.000M	53.9	+0.0	+26.2	+0.4	-35.3	+0.0	52.7	54.0	-1.3	Vert
			+2.6	+0.0	+4.9	+0.0					
			+0.0	+0.0	+0.0						
39	4824.000M	23.1	+0.0	+33.0	+0.7	-32.4	+0.0	37.8	54.0	-16.2	Vert
	Ave		+4.8	+0.5	+8.1	+0.0					
			+0.0	+0.0	+0.0						
40	724.999M	29.2	+0.0	+0.0	+0.0	+0.0	+0.0	29.2	46.0	-16.8	Vert
			+0.0	+0.0	+3.2	-27.8					
			+21.0	+0.5	+3.1						
41	4824.000M	22.3	+0.0	+33.0	+0.7	-32.4	+0.0	37.0	54.0	-17.0	Vert
	Ave		+4.8	+0.5	+8.1	+0.0					
			+0.0	+0.0	+0.0						
^	4824.000M	44.8	+0.0	+33.0	+0.7	-32.4	+0.0	59.5	54.0	+5.5	Vert
			+4.8	+0.5	+8.1	+0.0					
			+0.0	+0.0	+0.0						
^	4824.000M	44.5	+0.0	+33.0	+0.7	-32.4	+0.0	59.2	54.0	+5.2	Vert
			+4.8	+0.5	+8.1	+0.0					
			+0.0	+0.0	+0.0						
^	4824.000M	38.0	+0.0	+33.0	+0.7	-32.4	+0.0	52.7	54.0	-1.3	Vert
			+4.8	+0.5	+8.1	+0.0					
			+0.0	+0.0	+0.0						
^	4824.000M	36.8	+0.0	+33.0	+0.7	-32.4	+0.0	51.5	54.0	-2.5	Vert
			+4.8	+0.5	+8.1	+0.0					
			+0.0	+0.0	+0.0						
46	4924.127M	21.1	+0.0	+33.6	+0.7	-32.4	+0.0	36.7	54.0	-17.3	Vert
	Ave		+4.9	+0.5	+8.3	+0.0					
			+0.0	+0.0	+0.0						
47	1199.980M	40.4	+0.0	+23.7	+0.4	-34.9	+0.0	36.0	54.0	-18.0	Vert
			+2.3	+0.0	+4.1	+0.0					
			+0.0	+0.0	+0.0						
48	4924.127M	20.1	+0.0	+33.6	+0.7	-32.4	+0.0	35.7	54.0	-18.3	Vert
	Ave		+4.9	+0.5	+8.3	+0.0					
			+0.0	+0.0	+0.0						
^	4924.127M	48.7	+0.0	+33.6	+0.7	-32.4	+0.0	64.3	54.0	+10.3	Vert
			+4.9	+0.5	+8.3	+0.0					
			+0.0	+0.0	+0.0						

^	4924.127M	48.4	+0.0	+33.6	+0.7	-32.4	+0.0	64.0	54.0	+10.0	Vert
			+4.9	+0.5	+8.3	+0.0				B, hi ch	
			+0.0	+0.0	+0.0						
^	4924.127M	41.8	+0.0	+33.6	+0.7	-32.4	+0.0	57.4	54.0	+3.4	Vert
			+4.9	+0.5	+8.3	+0.0				G, hi ch	
			+0.0	+0.0	+0.0						
^	4924.127M	40.1	+0.0	+33.6	+0.7	-32.4	+0.0	55.7	54.0	+1.7	Vert
			+4.9	+0.5	+8.3	+0.0				N, MCS7, hi ch	
			+0.0	+0.0	+0.0						
53	4874.627M	20.0	+0.0	+33.3	+0.7	-32.4	+0.0	35.2	54.0	-18.8	Vert
	Ave		+4.9	+0.5	+8.2	+0.0				N, MCS7, mid ch	
			+0.0	+0.0	+0.0						
54	4874.627M	19.1	+0.0	+33.3	+0.7	-32.4	+0.0	34.3	54.0	-19.7	Vert
	Ave		+4.9	+0.5	+8.2	+0.0				G, mid ch	
			+0.0	+0.0	+0.0						
^	4874.627M	47.9	+0.0	+33.3	+0.7	-32.4	+0.0	63.1	54.0	+9.1	Vert
			+4.9	+0.5	+8.2	+0.0				N, MCS0, mid ch	
			+0.0	+0.0	+0.0						
^	4874.627M	40.9	+0.0	+33.3	+0.7	-32.4	+0.0	56.1	54.0	+2.1	Vert
			+4.9	+0.5	+8.2	+0.0				N, MCS7, mid ch	
			+0.0	+0.0	+0.0						
^	4874.627M	36.8	+0.0	+33.3	+0.7	-32.4	+0.0	52.0	54.0	-2.0	Vert
			+4.9	+0.5	+8.2	+0.0				G, mid ch	
			+0.0	+0.0	+0.0						
58	1000.040M	40.4	+0.0	+21.9	+0.3	-34.5	+0.0	33.9	54.0	-20.1	Vert
			+2.0	+0.0	+3.8	+0.0					
			+0.0	+0.0	+0.0						
59	121.100M	35.1	+0.0	+0.0	+0.0	+0.0	+0.0	22.6	43.5	-20.9	Horiz
			+0.0	+0.0	+1.3	-26.8					
			+11.7	+0.2	+1.1						
60	1124.990M	38.2	+0.0	+23.1	+0.3	-34.8	+0.0	33.0	54.0	-21.0	Vert
			+2.2	+0.0	+4.0	+0.0					
			+0.0	+0.0	+0.0						
61	134.600M	34.8	+0.0	+0.0	+0.0	+0.0	+0.0	22.2	43.5	-21.3	Horiz
			+0.0	+0.0	+1.3	-26.8					
			+11.5	+0.2	+1.2						
62	224.040M	36.7	+0.0	+0.0	+0.0	+0.0	+0.0	24.5	46.0	-21.5	Vert
			+0.0	+0.0	+1.7	-26.5					
			+10.8	+0.3	+1.5						
63	217.100M	36.7	+0.0	+0.0	+0.0	+0.0	+0.0	24.0	46.0	-22.0	Horiz
			+0.0	+0.0	+1.7	-26.5					
			+10.3	+0.3	+1.5						

CKC Laboratories, Inc. Date: 4/16/2013 Time: 15:13:55 Flow Data, Inc. WO#: 94043
 15.247(d) / 15.209 Radiated Spurious Emissions Test Distance: 3 Meters Sequence#: 0 Ext ATTN: 0 dB



Bandedge

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **Band edge**
 Work Order #: **94043** Date: 4/16/2013
 Test Type: **Maximized Emissions** Time: 15:13:55
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 0
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN01646	Horn Antenna	3115	4/13/2012	4/13/2014
T3	AN02947	Cable	32022-29094K-29094K-72TC	8/8/2011	8/8/2013
T4	AN02115	Preamp	83051A	11/12/2012	11/12/2014
T5	ANP06360	Cable	L1-PNMNM-48	8/29/2012	8/29/2014
T7	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface	Flow Data, Inc.	PROVue	2013-D-PVC-024
Interface*			

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. Connected to antenna port is 0.6m coaxial cable with 3dbi gain antenna. Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

EUT chassis is grounded.

EUT is mounted in fixed position.

Input voltage: 12Vdc

Manufactures declare that only Ethernet port is used during operation. All other ports are left open and unterminated.

The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Freq: 2412-2462MHz

Low channel (1): 2412MHz

Mid channel (6): 2437MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11b: 11.0 mbps long preamble, Firmware power setting= 18dbm

802.11g: 54.0 mbps. OFDM, Firmware power setting= 18dbm

802.11n: 7.2 mbps.MCS0, Firmware power setting= 18dbm

802.11n: 72.2 mbps.MCS7, Firmware power setting= 18dbm

Frequency range of measurement = fundamental

9 kHz -150 kHz;RBW=200 Hz,VBW=200 Hz;150 kHz-30 MHz;RBW=9 kHz,VBW=9 kHz;30 MHz-1000 MHz;RBW=120 kHz,VBW=120 kHz,1000 MHz-25000MHz;RBW=1 MHz,VBW=1 MHz.

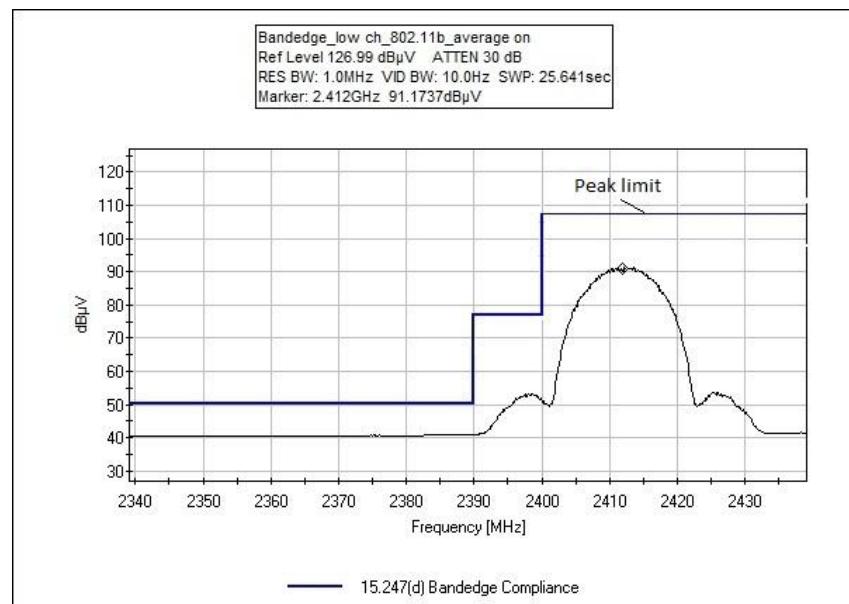
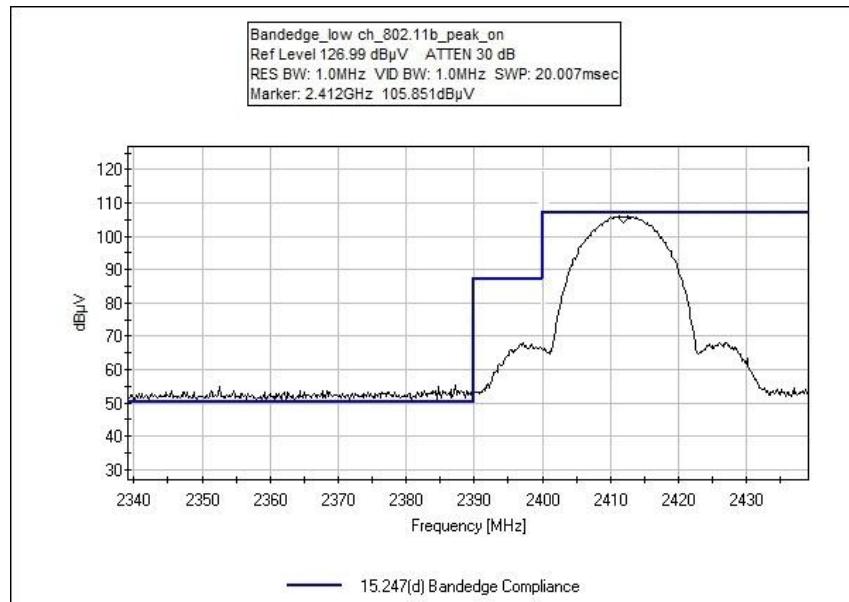
Test environment conditions: 22° C, 38% relative humidity, 100kPa

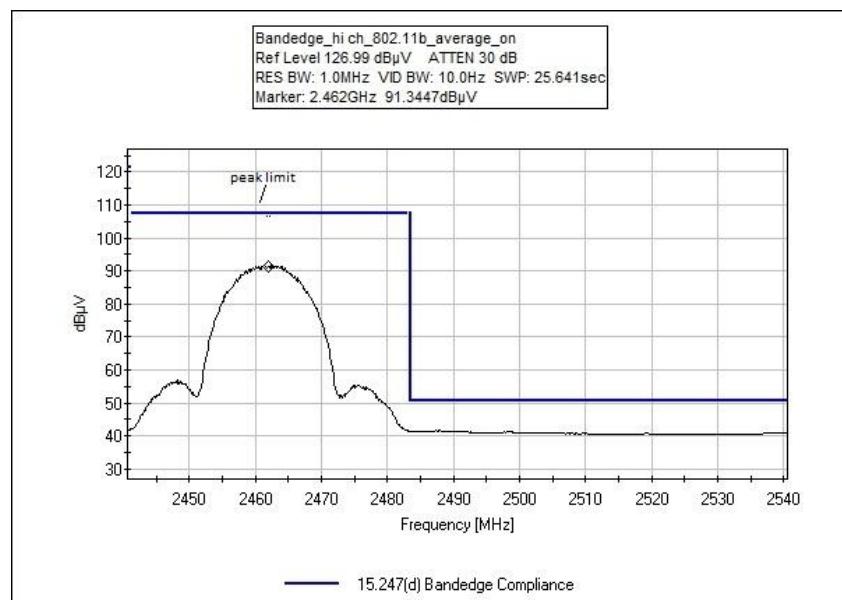
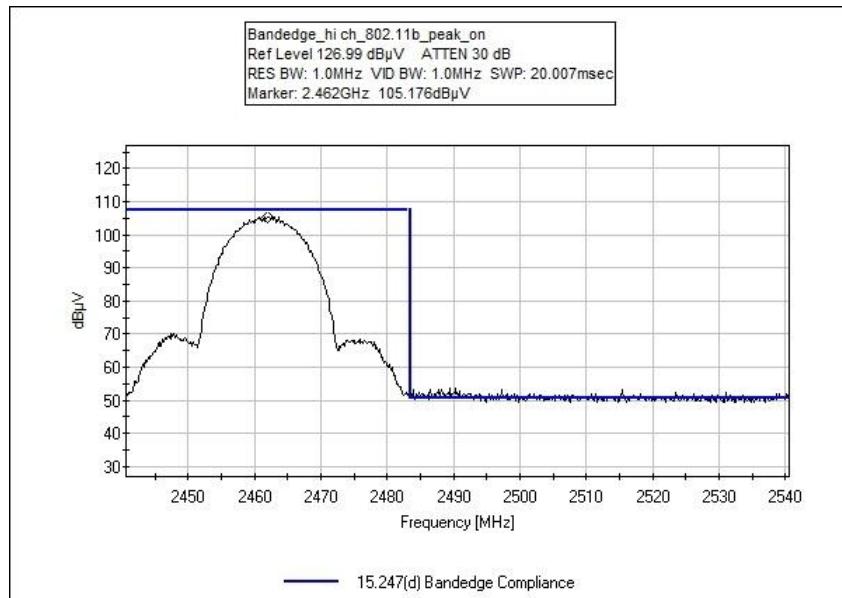
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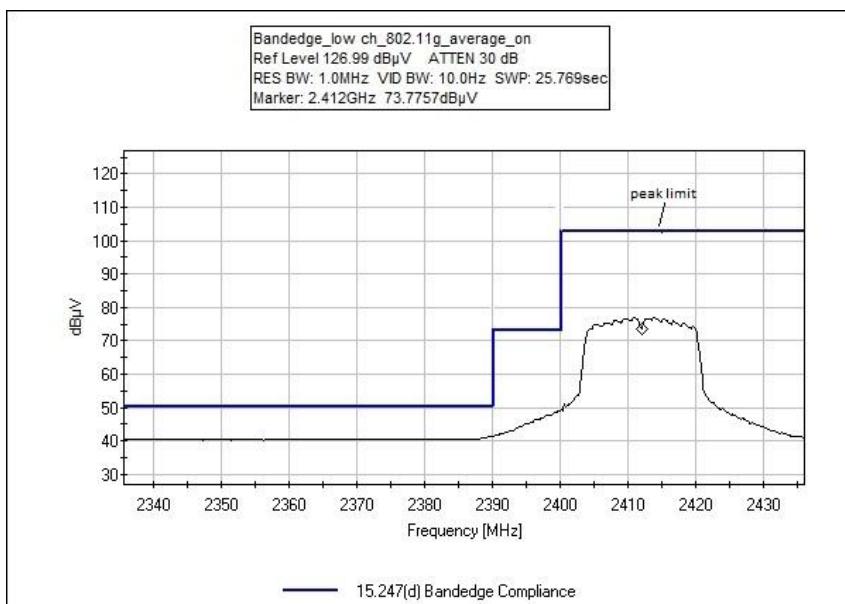
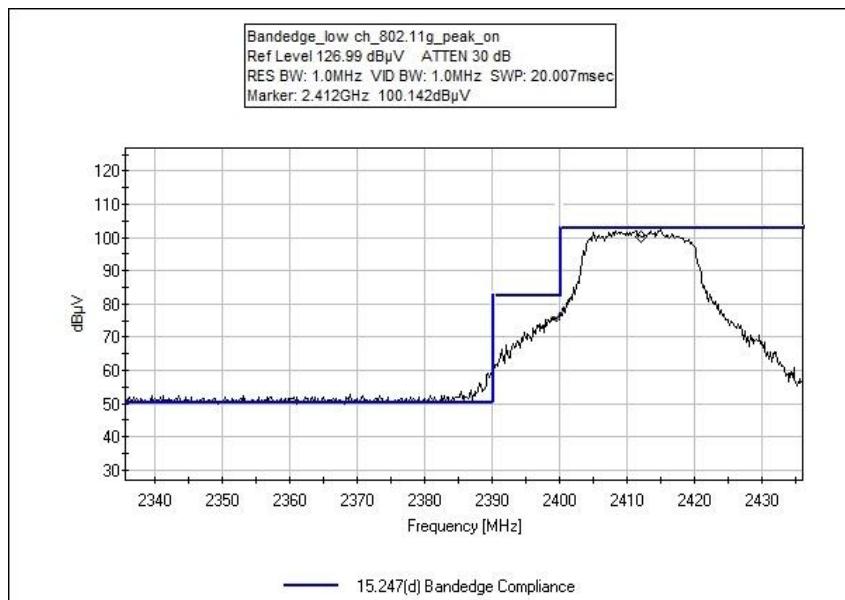
Applicable data rate was investigated

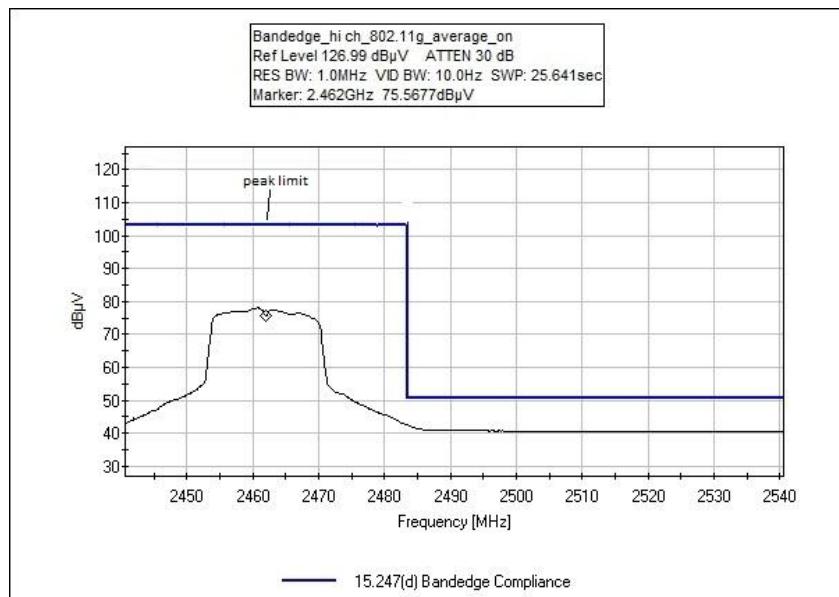
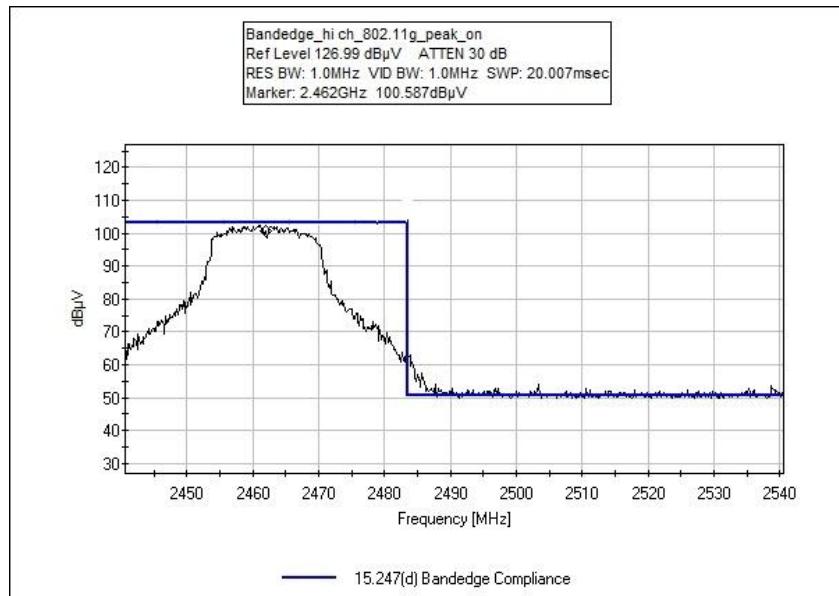
Recorded data represents worse case emission.

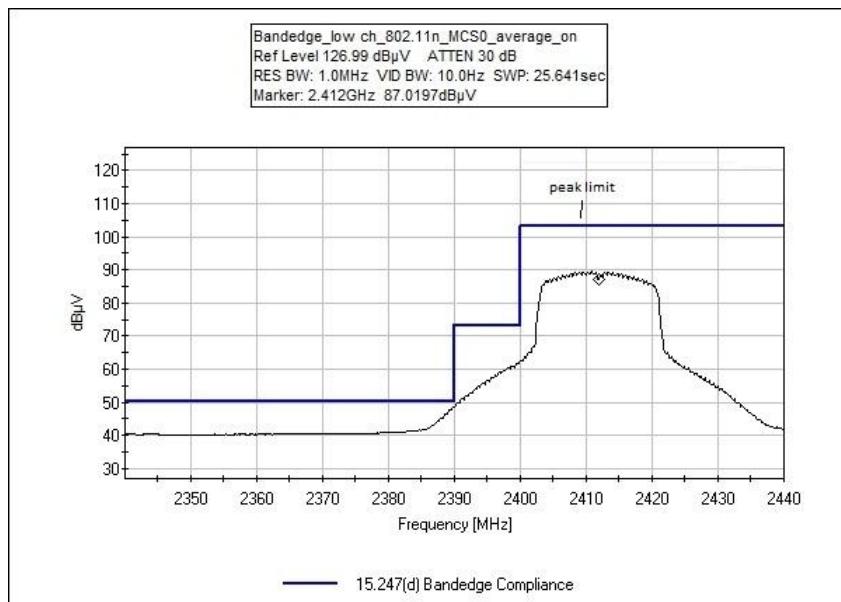
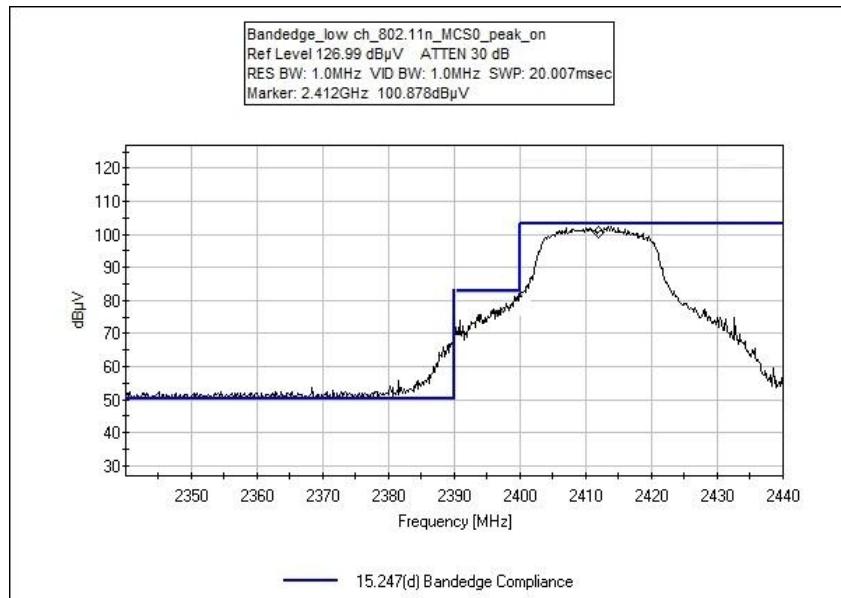
Test method in accordance with FCC document: 558074 D01 DTS Meas Guidance V03, Sec 13.1

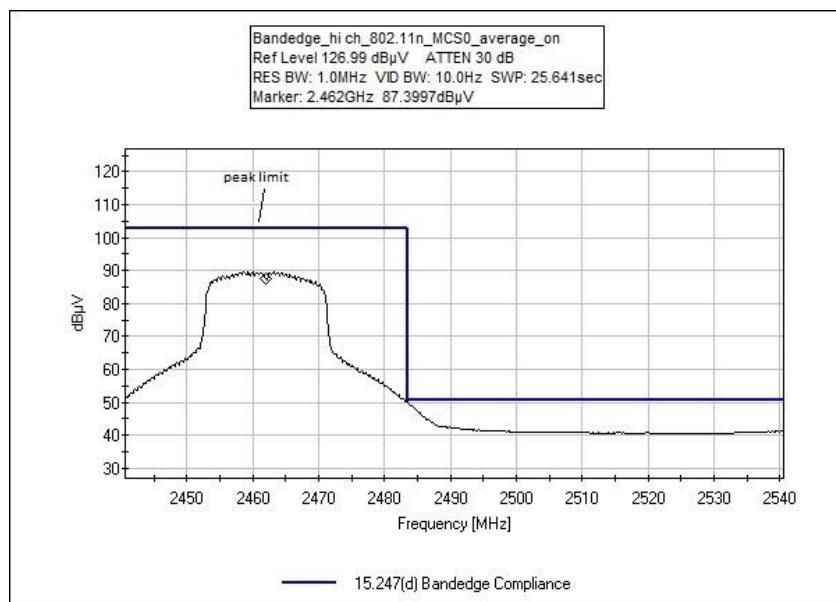
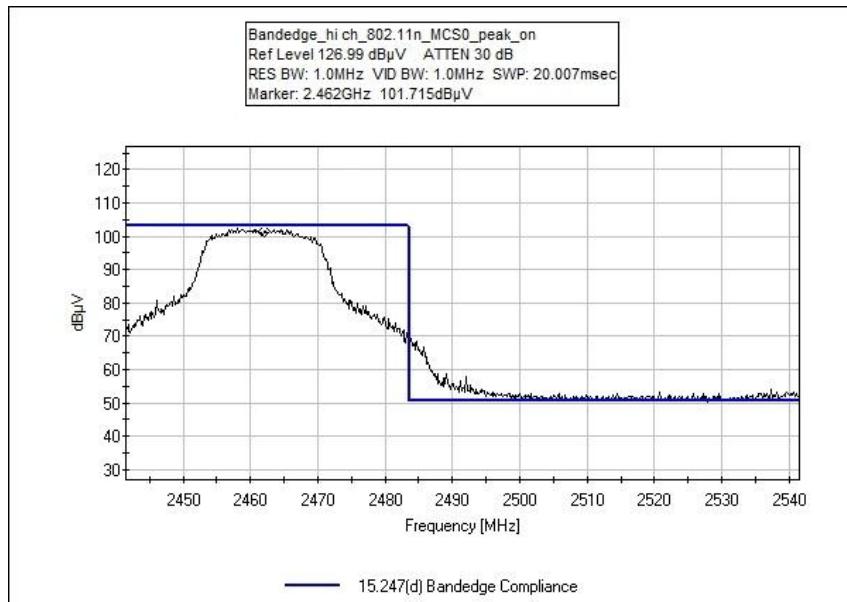


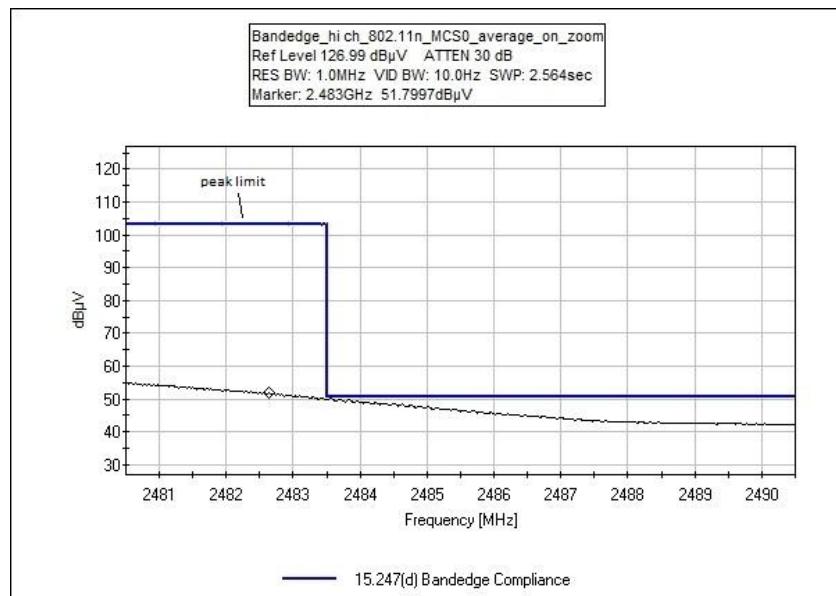


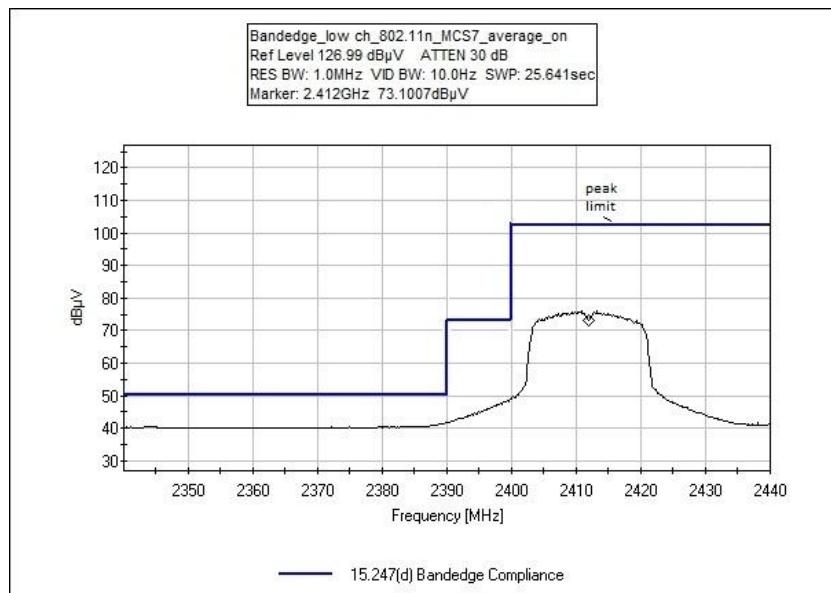
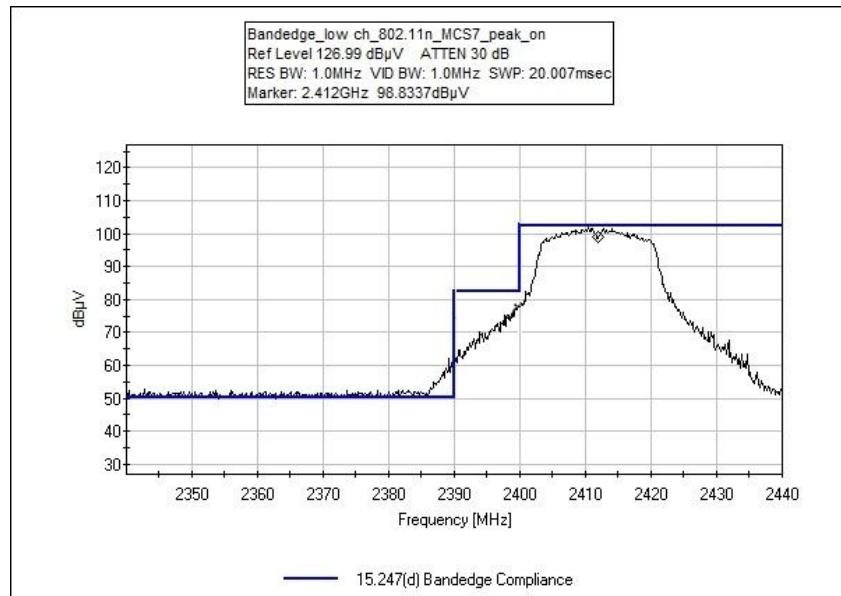


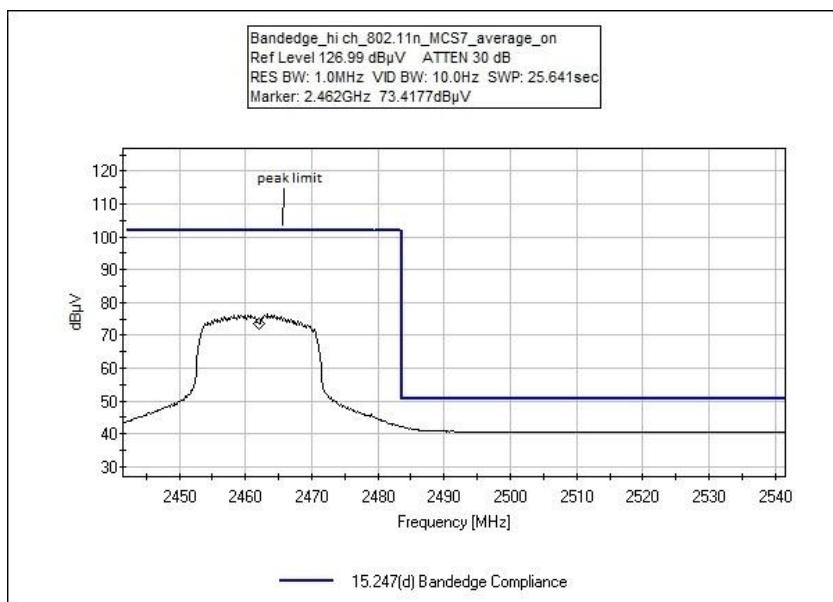
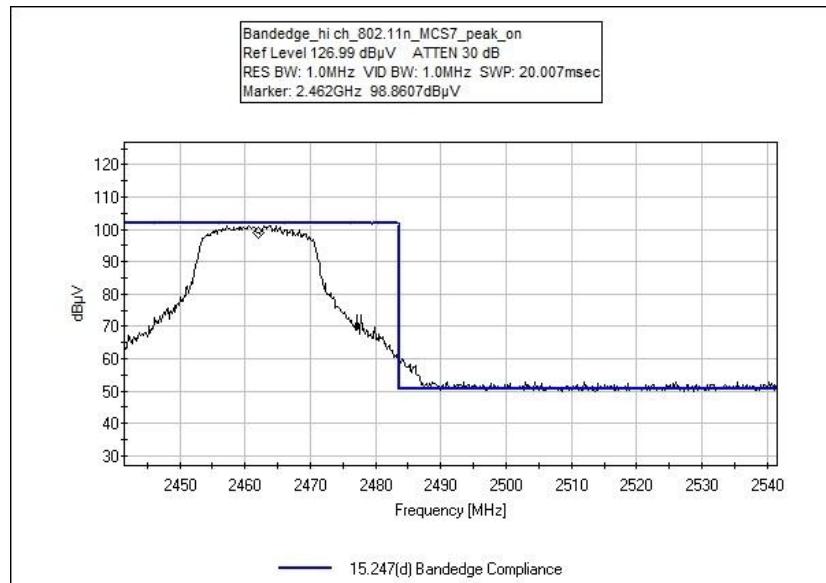



Testing the Future
LABORATORIES, INC.


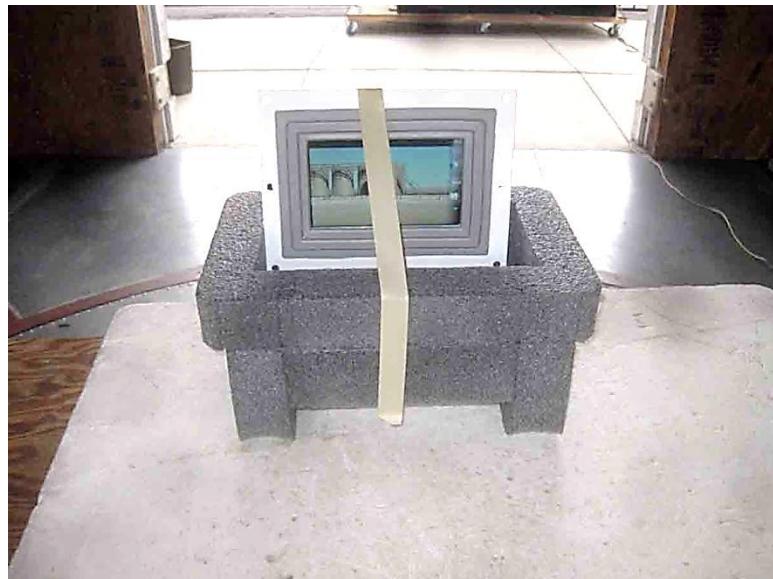








Test Setup Photos



15.247(e) Power Spectral Density

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Flow Data, Inc.**
 Specification: **Power Spectral Density Measurement**
 Work Order #: **94043** Date: 5/15/2013
 Test Type: **Maximized Emissions** Time: 15:13:55
 Equipment: **ATI- Android Touch screen Interface** Sequence#: 0
 Manufacturer: Flow Data, Inc. Tested By: Don Nguyen
 Model: PROVue
 S/N: 2013-D-PVC-024

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ATI- Android Touch screen Interface*	Flow Data, Inc.	PROVue	2013-D-PVC-024

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Toshiba	Satellite A105-S4004	36322146Q
DC Power Supply	Toshiba	SADP-75PBA	PA3469U-1ACA
DC Power Supply	SL Power and AULT	MEMNB1030A1203C01	NA

Test Conditions / Notes:

The EUT is placed on the wooden table. EUT comes with 0.6m coaxial cable and emission is measured from the end of this cable. 10db external attenuator is installed between EUT and spectrum analyzer. Ethernet port is connected to remotely located support laptop via crossover Ethernet cable.

Laptop is running Android SDK in DOS to program EUT transmitter.

EUT chassis is grounded.

EUT is mounted in fixed position.

Input voltage: 12Vdc

Manufactures declare that only Ethernet port is used during operation. All other ports are left open and unterminated.

The EUT is transmitting at rated power and exercising all the intended functionalities.

Antenna gain = 3 dBi

802.11 b/g/n

Freq: 2412-2462MHz

Low channel (1): 2412MHz

Mid channel (6): 2437MHz

Hi channel (11): 2462MHz

Firmware settings:

delay: 2000

rate: 11 (802.11b), 4096(802.11g), 8192(802.11n20-MCS0), 1048576(802.11n20-MCS7)

size: 2284

amount: 0

power: 18000 (18dbm)

seed: 0

pkt mode: 3

DC on/off: 0

gi: 0 (802.11b and 802.11g), 400 (802.11n20 MCS0 and MCS7)

preamble: 0 (802.11b), 4(802.11g), 6(802.11n20-MCS0 and 802.11n20-MCS7)

type:0

scramble:0

clpc: 1

seq nbr mode: 0

dest mac: 11:22:11:22:11:22

Data rate:

802.11b: 11.0 mbps long preamble, Firmware power setting= 18dbm

802.11g: 54.0 mbps. OFDM, Firmware power setting= 18dbm

802.11n: 7.2 mbps.MCS0, Firmware power setting= 18dbm

802.11n: 72.2 mbps.MCS7, Firmware power setting= 18dbm

Applicable data rate was investigated

Frequency range of measurement = fundamental

9 kHz -150 kHz;RBW=200 Hz,VBW=200 Hz;150 kHz-30 MHz;RBW=9 kHz,VBW=9 kHz;30 MHz-1000 MHz;RBW=120 kHz,VBW=120 kHz,1000 MHz-25000MHz;RBW=1 MHz,VBW=1 MHz.

Test **environment conditions:** 22°C, 38% relative humidity, 100kPa

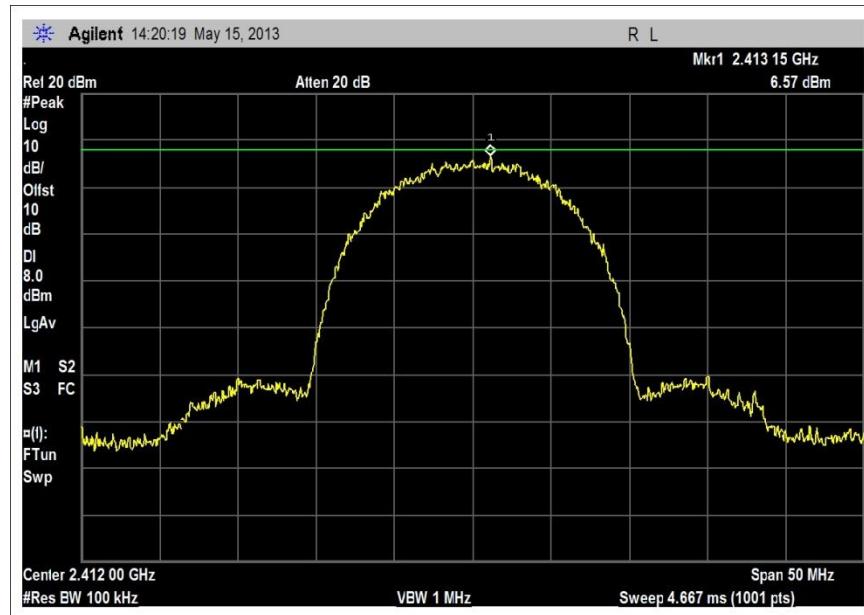
Site D

Recorded data represents worse case emission.

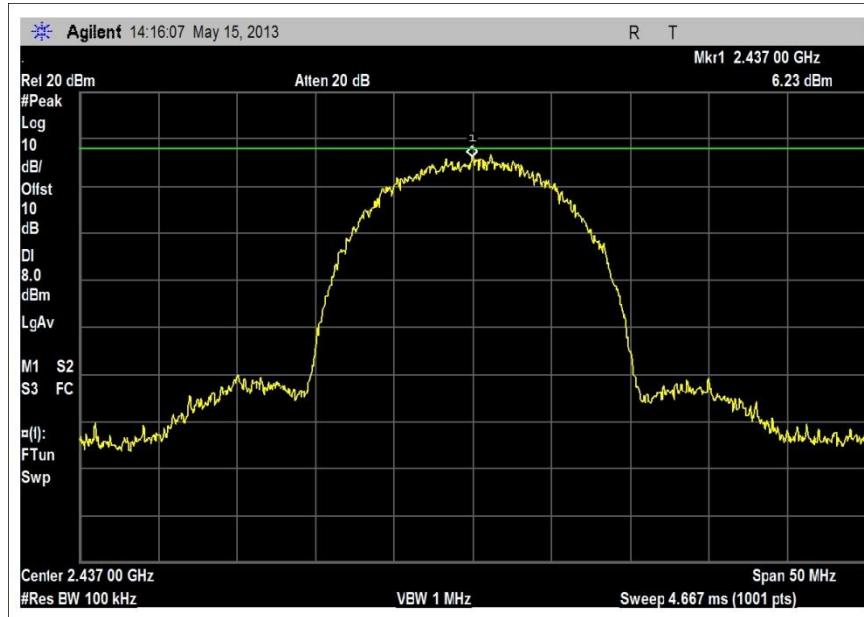
Test method in accordance with FCC document: 558074 D01 DTS Meas Guidance V03, Sec 10.2

10db external attenuator was verified before use and 10db offset was entered in spectrum analyzer.

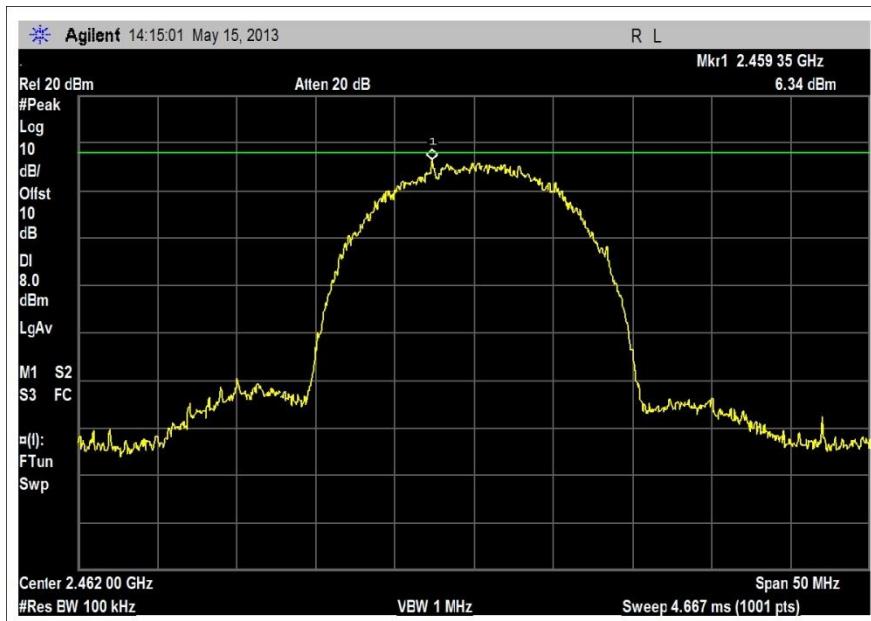
Test Data



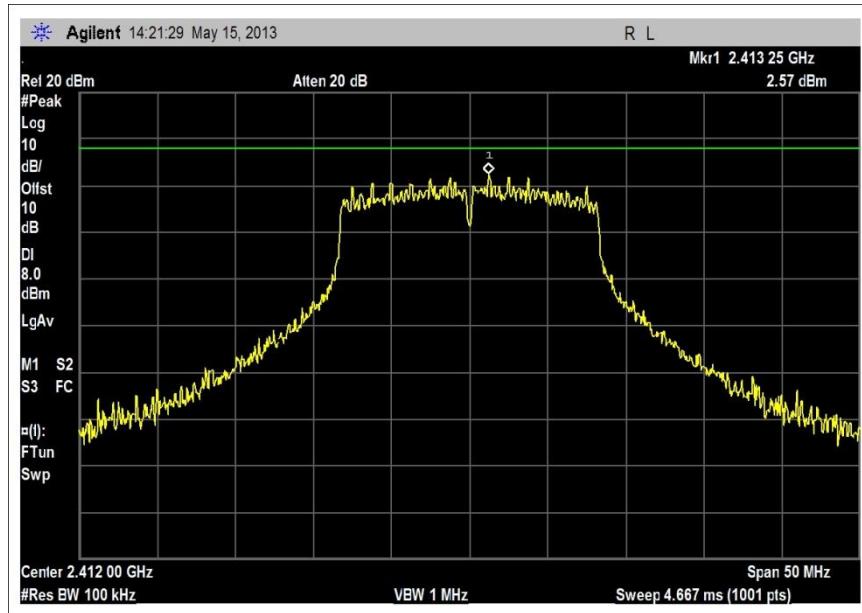
Low Channel, 802.11b



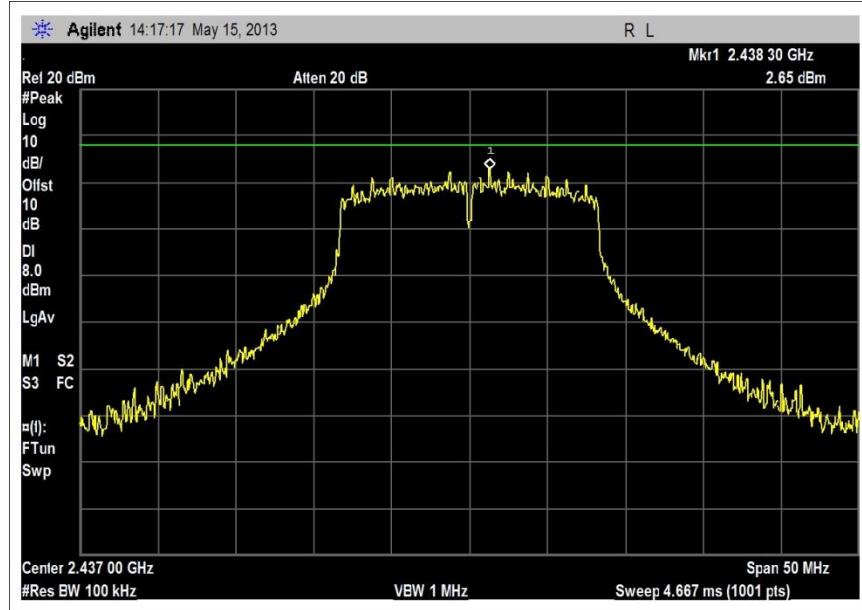
Mid Channel, 802.11b



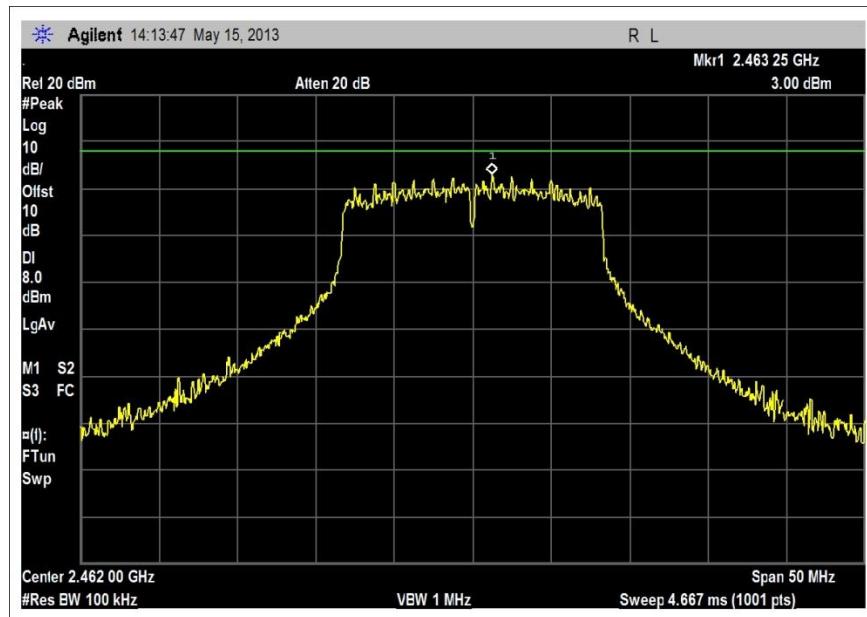
High Channel, 802.11b



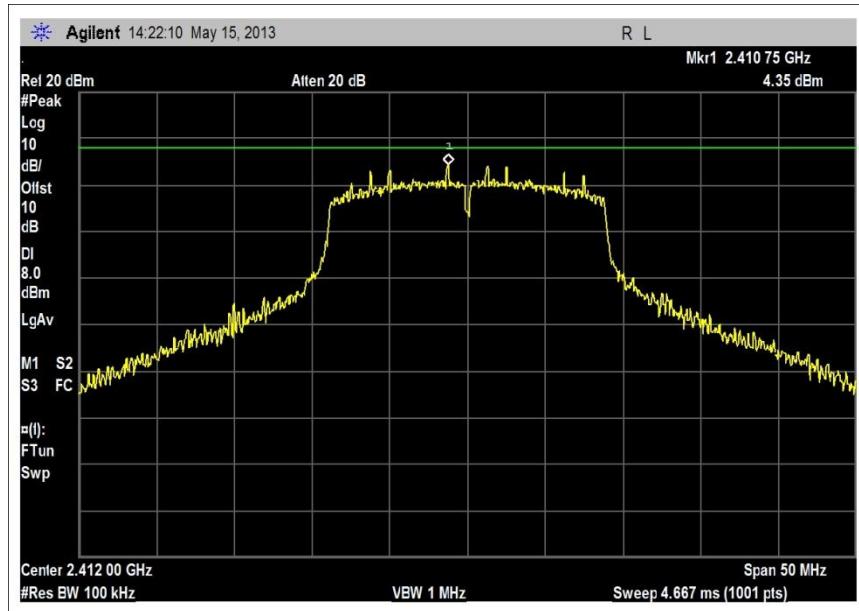
Low Channel, 802.11g



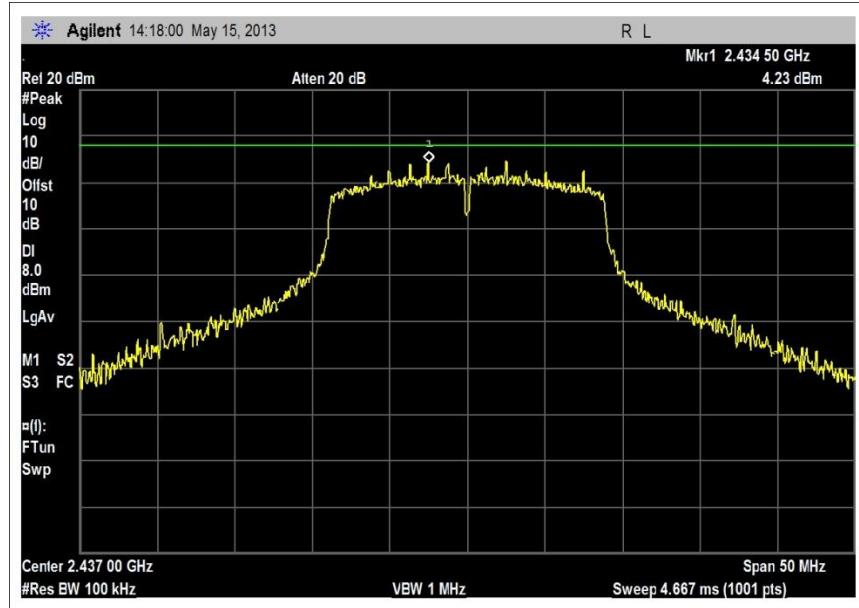
Mid Channel, 802.11g



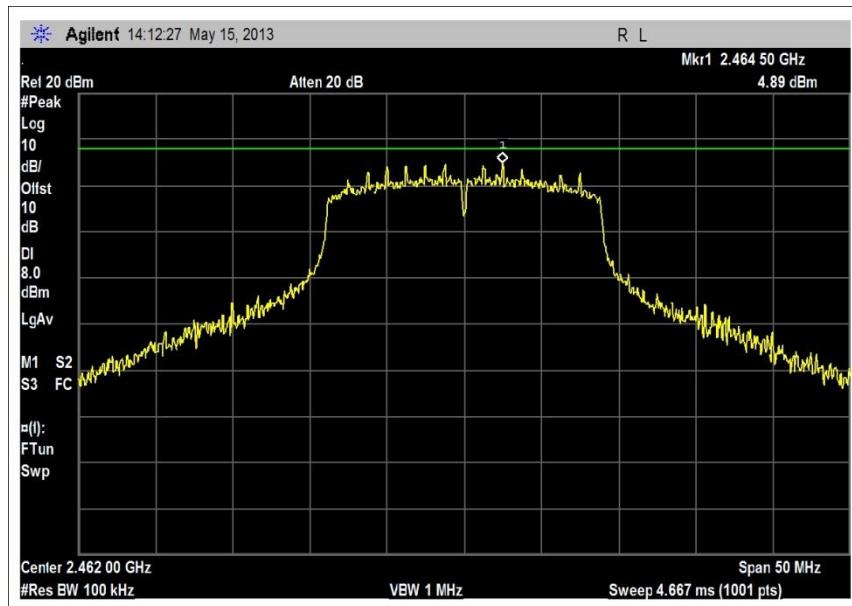
High Channel, 802.11g



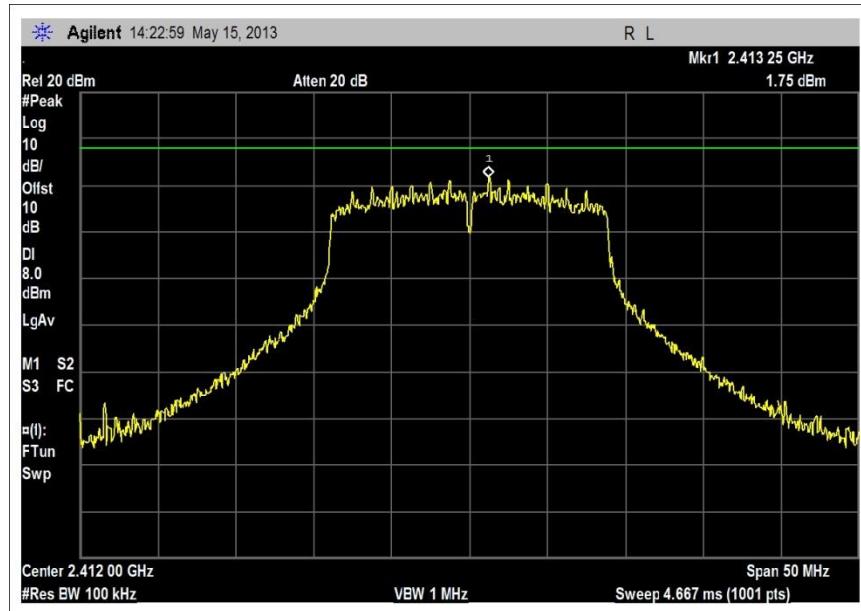
Low Channel, 802.11n_ MCS0



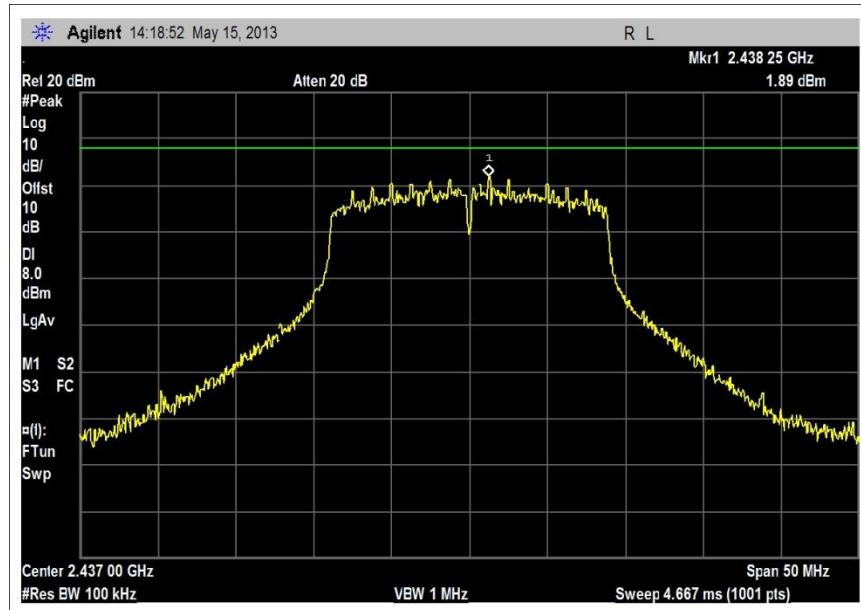
Mid Channel, 802.11n_ MCS0



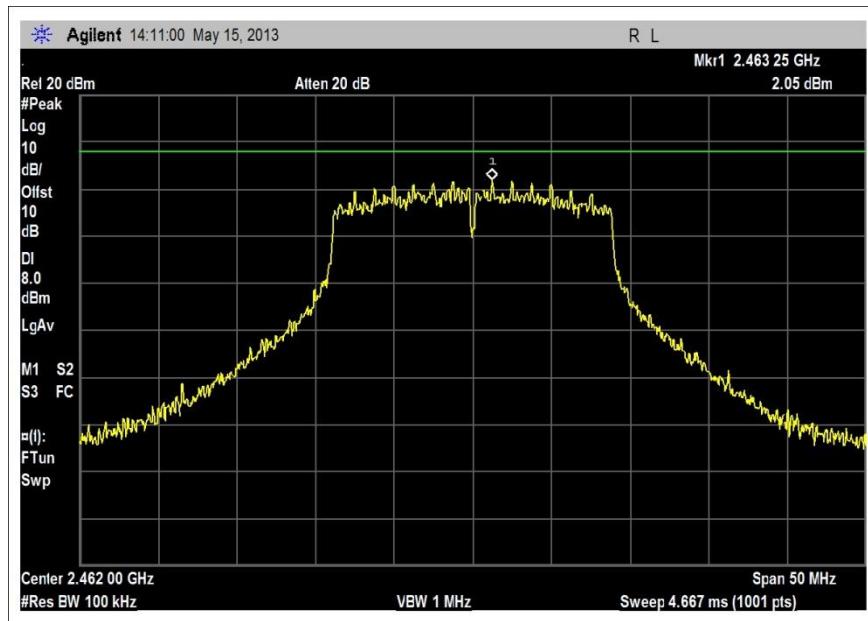
High Channel, 802.11n_ MCS0



Low Channel, 802.11n_ MCS7

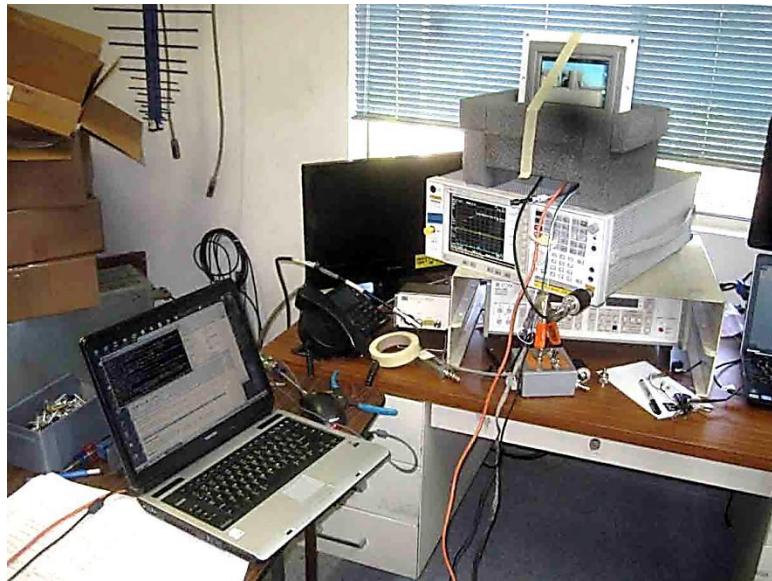


Low Channel, 802.11n_ MCS7



High Channel, 802.11n_ MCS7

Test Setup Photos



SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k=2$. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in $\text{dB}\mu\text{V}/\text{m}$, the spectrum analyzer reading in $\text{dB}\mu\text{V}$ was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS	
Meter reading	(dB μ V)
+ Antenna Factor	(dB)
+ Cable Loss	(dB)
- Distance Correction	(dB)
- Preamplifier Gain	(dB)
= Corrected Reading	(dB μ V/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.