Itron, Inc.

ADDENDUM TEST REPORT FOR 90820-7

CCU100T
(SRR+WWAN+WIFI+GPS RX)

Tested To The Following Standards:

FCC Part 15 Subpart C Section 15.247 (DTS)
and
RSS-210 Version 7

Report No.: 90820-7A

Date of issue: October 22, 2010

ACCREDITED

TESTING
CERT #803.01, 803.02, 803.05, 803.06

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.

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Itron, Inc.
2111 N. Molter Rd.
Liberty Lake, WA 99019

Representative: Jay Holcomb
Customer Reference Number: 19103

REPORT PREPARED BY:

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

Project Number: 90893

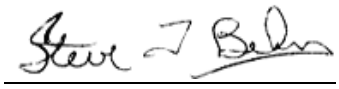
DATE OF EQUIPMENT RECEIPT: August 13, 2010
DATE(S) OF TESTING: August 13-16, 2010

Revision History

Original: Testing of the CCU100T, (SRR+WWAN+WIFI+GPS RX) to FCC Part 15 Subpart C Section 15.247 (DTS) and RSS-210 Version 7.
Addendum A: Added clarification statements about the testing for Voltage Variations, Antenna Conducted Spurious and Radiated Spurious Emissions. Also added 18-25GHz test results to the Radiated Spurious Emissions section that had been accidently left out of the report.

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.
22116 23rd Drive S.E., Suite A
Bothell, WA 98021-4413

Site Registration & Accreditation Information

Location	Japan	Canada	FCC
Bothell	R-2296, C-2506 & T-1489	3082C-1	318736

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C 15.247 (DTS)

Description	Test Procedure/Method	Results
Voltage Variations	FCC Part 15 Subpart C Section 15.31(e)	Pass
AC Conducted Emissions	FCC Part 15 Subpart C Section 15.207 / ANSI C63.4 (2003)	Pass
20dB Bandwidth	FCC Part 15 Subpart C Section 15.215(c) / ANSI C63.4 (2003)	Pass
6dB Bandwidth	FCC Part 15 Subpart C Section 15.247(a)(2) / KDB 558074	Pass
Peak Conducted Power	FCC Part 15 Subpart C Section 15.247(b)(3) / KDB 558074	Pass
Antenna Conducted Emissions	FCC Part 15 Subpart C Section 15.247(d)/ KDB 558074	Pass
Radiated Emissions	FCC Part 15 Subpart C Section 15.247 (d)/ KDB 558074	Pass
Power Spectral Density	FCC Part 15 Subpart C Section 15.247(e)/ KDB 558074	Pass
99% Bandwidth	RSS-210/RSP-100	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
Cell modem power cable has Laird ferrite 28A0392-0A2 added. Main power supply cable has Laird ferrite 28A2432-0A2 added. Ground wire added between ground lug and cell modem bracket.

FERRITE ON CELL MODEM POWER CABLE

FERRITE ON INPUT POWER CABLE

GROUND WIRE

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

SRR+WWAN+WIFI+GPS RX
Manuf: Itron, Inc.
Model: CCU100T (model: Tower CCU)
Serial: 7404FCC6

External RF Filter
Manuf: Delta Microwave
Model: U1993
Serial: 101

External Battery
Manuf: Excel Battery Company
Model: 2EXL7360
Serial: S10166003-023

Lighting Surge Arrestor
Manuf: Polyphaser
Model: DSXL-ME
Serial:

External GPS Antenna
Manuf: Trimble
Model: 57861-00
Serial: 213100323

External WWAN Antenna
Manuf: Laird Technologies
Model: FG821/18503
Serial: 40353

PERIPHERAL DEVICES

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

Laptop
Manuf: Dell
Model: Latitude D630
Serial: 9JQRJH1

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.

15.31(e) Voltage Variations

Test Set Up

The EUT was setup on the bench and connected to a spectrum analyzer via an RF cable. The EUT was cycled though the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable.

Engineer Name: J. Gilbert

Test Equipment				
Equipment	**Serial**	**Cal Date**	**Cal Due**	**Asset**
Spectrum Analyzer	MY46186330	8/25/2009	8/25/2011	02872
Cable	NA	12/2/2008	12/2/2010	03122
Programmable power source	9999-0190	5/27/2010	5/27/2012	01314

Test Data

RF Output Power over Input Voltage Variations

	802.11b				802.11g		
	2412 MHz	**2437 MHz**	**2462 MHz**		**2412 MHz**	**2437 MHz**	**2462 MHz**
VAC	**dBm**	**dBm**	**dBm**	**VAC**	**dBm**	**dBm**	**dBm**
102	15.31	15.91	15.13	**102**	12.65	12.45	11.62
120	15.10	14.93	14.17	**120**	13.02	12.41	11.52
138	16.41	15.71	15.15	**138**	13.17	12.31	11.54
204	16.24	16.20	15.00	**204**	13.04	12.15	11.70
240	16.39	16.04	15.07	**240**	12.84	12.61	11.62
265	16.31	16.22	14.90	**265**	12.95	12.31	11.75

Note: The maximum voltage tested (265VAC) is less than 240 +15% because the EUT power supply is only spec'd to 265VAC.

Test Setup Photos

VOLTAGE VARIATION MEASUREMENT

15.207(a) AC Conducted Emissions

Note: For this requirement, only one model was tested; **CCU100 (SRR+WWAN+WIFI+GPS RX Internal WWAN & GPS Antenna).** The manufacturer declares that, with regards to this particular test, the model **CCU100T** is electrically identical and therefore meet the level of testing equivalent to the tested model.

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	**Itron, Inc.**		
Specification:	**15.207 AC Mains - Average**		
Work Order #:	**90893**	Date:	8/3/2010
Test Type:	**Conducted Emissions**	Time:	3:19:53 PM
Equipment:	**SRR+WWAN+WIFI+GPS RX (internal WWAN & GPS antenna)**	Sequence#:	1
Manufacturer:	Itron, Inc.	Tested By:	Jeff Gilbert
Model:	CCU100		240V 60Hz
S/N:	7404FCC5		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01492	50uH LISN-Line (dB)	3816/2NM	6/2/2009	6/2/2011
	AN01492	50uH LISN-Neutral (dB)	3816/2NM	6/2/2009	6/2/2011
T2	ANP05435	Attenuator	PE7015-10	9/5/2008	9/5/2010
T3	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T4	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
T6	AN01717	High Pass Filter	F3440-P005	5/27/2010	5/27/2012
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (internal WWAN & GPS antenna)*	Itron, Inc.	CCU100	7404FCC5
H-pol omni antenna	Taoglas	TIC.95.2F11	

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 150 kHz - 30 MHz
Temp: 24° C
Humidity: 39%
Pressure: 102.3 kPa

EUT has the Cell modem, Wi-Fi radio, and ISM radio transmitting continuously.
GPS receiver is active.

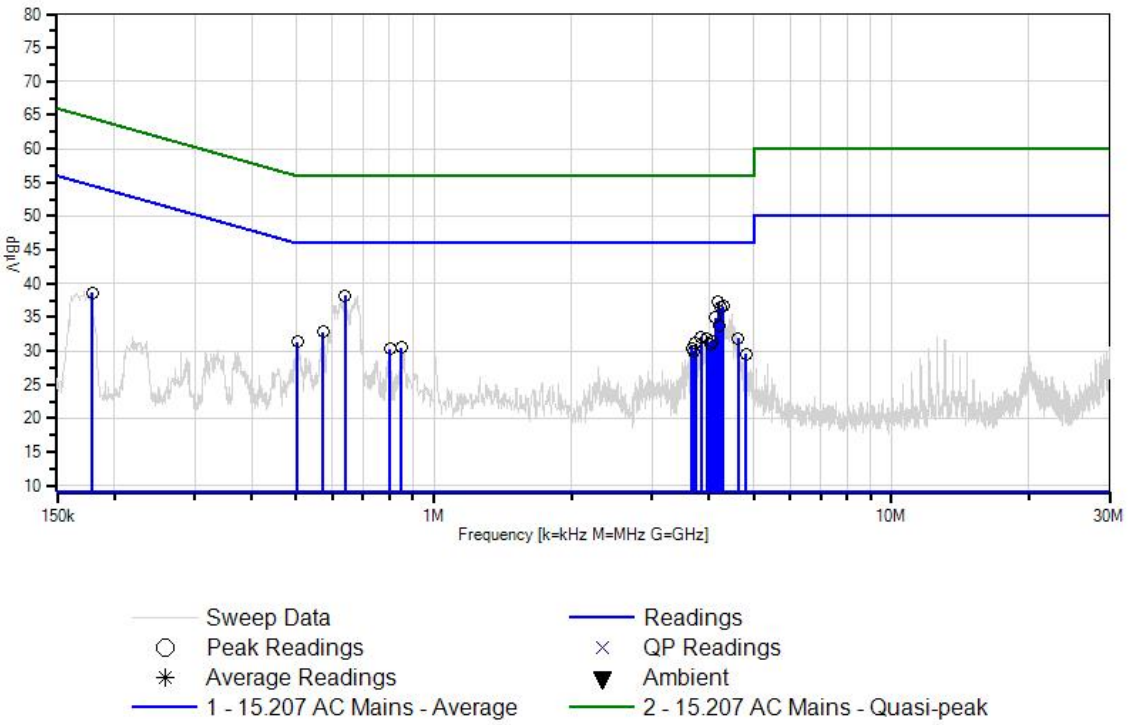
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Line

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	638.682k	28.3	+0.1 +0.0	+9.6 +0.0	+0.1	+0.1	+0.0	38.2	46.0	-7.8	Line
2	4.182M	27.2	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	37.3	46.0	-8.7	Line
3	4.296M	26.5	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	36.6	46.0	-9.4	Line
4	4.241M	26.3	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	36.4	46.0	-9.6	Line
5	4.126M	24.8	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	34.9	46.0	-11.1	Line
6	4.220M	23.7	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	33.8	46.0	-12.2	Line
7	571.779k	22.9	+0.1 +0.0	+9.6 +0.0	+0.1	+0.1	+0.0	32.8	46.0	-13.2	Line
8	3.846M	22.0	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	32.1	46.0	-13.9	Line
9	4.620M	21.6	+0.3 +0.0	+9.5 +0.1	+0.2	+0.2	+0.0	31.9	46.0	-14.1	Line
10	3.952M	21.7	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	31.8	46.0	-14.2	Line
11	4.067M	21.4	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	31.5	46.0	-14.5	Line
12	502.695k	21.3	+0.1 +0.0	+9.6 +0.1	+0.1	+0.1	+0.0	31.3	46.0	-14.7	Line
13	3.731M	21.0	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	31.1	46.0	-14.9	Line
14	4.020M	20.9	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	31.0	46.0	-15.0	Line
15	847.391k	20.7	+0.1 +0.0	+9.6 +0.0	+0.0	+0.1	+0.0	30.5	46.0	-15.5	Line
16	3.667M	20.3	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	30.4	46.0	-15.6	Line

17	801.577k	20.5	+0.1 +0.0	+9.6 +0.0	+0.0	+0.1	+0.0	30.3	46.0	-15.7	Line
18	179.088k	28.6	+0.1 +0.0	+9.6 +0.1	+0.2	+0.0	+0.0	38.6	54.5	-15.9	Line
19	3.701M	19.9	+0.2 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	30.0	46.0	-16.0	Line
20	4.819M	19.2	+0.3 +0.0	+9.5 +0.1	+0.2	+0.2	+0.0	29.5	46.0	-16.5	Line

CKC Laboratories, Inc. Date: 8/3/2010 Time: 3:19:53 PM Itron, Inc. WO#: 90893
15.207 AC Mains - Average Test Lead: Line Line Sequence#: 1 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.207 AC Mains - Average**
Work Order #: **90893** Date: 8/3/2010
Test Type: **Conducted Emissions** Time: 3:28:49 PM
Equipment: **SRR+WWAN+WIFI+GPS RX (internal WWAN & GPS antenna)** Sequence#: 2
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100 240V 60Hz
S/N: 7404FCC5

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01492	50uH LISN-Line (dB)	3816/2NM	6/2/2009	6/2/2011
T1	AN01492	50uH LISN-Neutral (dB)	3816/2NM	6/2/2009	6/2/2011
T2	ANP05435	Attenuator	PE7015-10	9/5/2008	9/5/2010
T3	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T4	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
T6	AN01717	High Pass Filter	F3440-P005	5/27/2010	5/27/2012
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (internal WWAN & GPS antenna)*	Itron, Inc.	CCU100	7404FCC5
H-pol omni antenna	Taoglas	TIC.95.2F11	

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 150 kHz - 30 MHz
Temp: 24° C
Humidity: 39%
Pressure: 102.3 kPa

EUT has the Cell modem, Wi-Fi radio, and ISM radio transmitting continuously.
GPS receiver is active.

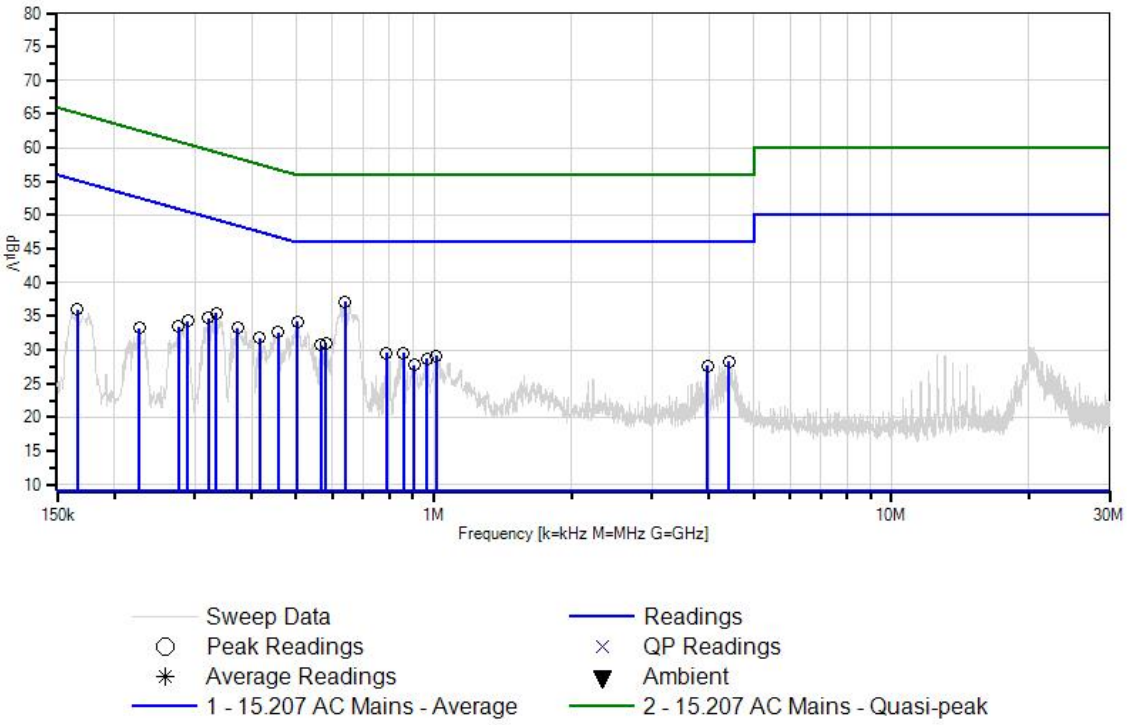
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Neutral

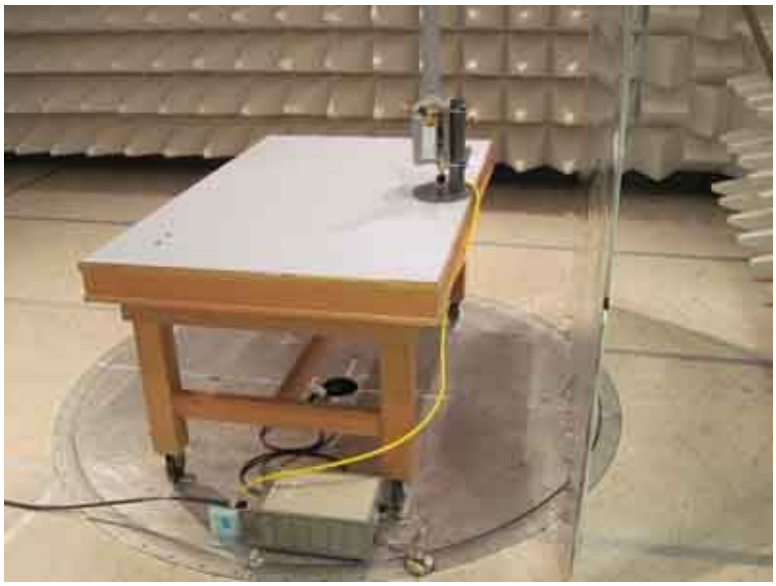
#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	638.682k	27.4	+0.0 +0.0	+9.6 +0.0	+0.1	+0.1	+0.0	37.2	46.0	-8.8	Neutr
2	503.422k	24.3	+0.0 +0.0	+9.6 +0.1	+0.1	+0.1	+0.0	34.2	46.0	-11.8	Neutr
3	334.710k	25.6	+0.0 +0.0	+9.6 +0.1	+0.1	+0.1	+0.0	35.5	49.3	-13.8	Neutr

4	456.881k	22.7	+0.0 +0.0	+9.6 +0.1	+0.1	+0.1	+0.0	32.6	46.7	-14.1	Neutr
5	320.893k	24.8	+0.0 +0.0	+9.6 +0.1	+0.1	+0.1	+0.0	34.7	49.7	-15.0	Neutr
6	581.233k	21.2	+0.0 +0.0	+9.6 +0.0	+0.1	+0.1	+0.0	31.0	46.0	-15.0	Neutr
7	372.525k	23.4	+0.0 +0.0	+9.6 +0.1	+0.1	+0.1	+0.0	33.3	48.4	-15.1	Neutr
8	565.235k	20.9	+0.0 +0.0	+9.6 +0.0	+0.1	+0.1	+0.0	30.7	46.0	-15.3	Neutr
9	415.430k	21.9	+0.0 +0.0	+9.6 +0.1	+0.1	+0.1	+0.0	31.8	47.5	-15.7	Neutr
10	289.624k	24.4	+0.0 +0.0	+9.6 +0.1	+0.2	+0.0	+0.0	34.3	50.5	-16.2	Neutr
11	788.487k	19.9	+0.0 +0.0	+9.6 +0.0	+0.0	+0.1	+0.0	29.6	46.0	-16.4	Neutr
12	858.299k	19.9	+0.0 +0.0	+9.6 +0.0	+0.0	+0.1	+0.0	29.6	46.0	-16.4	Neutr
13	1.013M	19.4	+0.0 +0.0	+9.6 +0.0	+0.0	+0.1	+0.0	29.1	46.0	-16.9	Neutr
14	966.512k	19.0	+0.0 +0.0	+9.6 +0.0	+0.0	+0.1	+0.0	28.7	46.0	-17.3	Neutr
15	276.534k	23.6	+0.0 +0.0	+9.6 +0.1	+0.2	+0.0	+0.0	33.5	50.9	-17.4	Neutr
16	4.420M	18.3	+0.1 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	28.3	46.0	-17.7	Neutr
17	906.974k	18.1	+0.0 +0.0	+9.6 +0.0	+0.0	+0.1	+0.0	27.8	46.0	-18.2	Neutr
18	3.969M	17.7	+0.1 +0.0	+9.5 +0.0	+0.2	+0.2	+0.0	27.7	46.0	-18.3	Neutr
19	165.999k	26.0	+0.1 +0.0	+9.6 +0.1	+0.2	+0.0	+0.0	36.0	55.2	-19.2	Neutr
20	227.084k	23.3	+0.0 +0.0	+9.6 +0.1	+0.2	+0.0	+0.0	33.2	52.6	-19.4	Neutr

CKC Laboratories, Inc. Date: 8/3/2010 Time: 3:28:49 PM Itron, Inc. WO#: 90893
15.207 AC Mains - Average Test Lead: Neutral Neutral Sequence#: 2 Ext ATTN: 0 dB



Test Setup Photos



15.215(c) 20dB Bandwidth

Test Set Up

The EUT was setup on the bench and connected to a spectrum analyzer via an RF cable. The EUT was cycled though the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable.

Engineer Name: J. Gilbert

Test Equipment				
Equipment	**Serial**	**Cal Date**	**Cal Due**	**Asset**
Spectrum Analyzer	MY46186330	8/25/2009	8/25/2011	02872
Cable	NA	12/2/2008	12/2/2010	03122

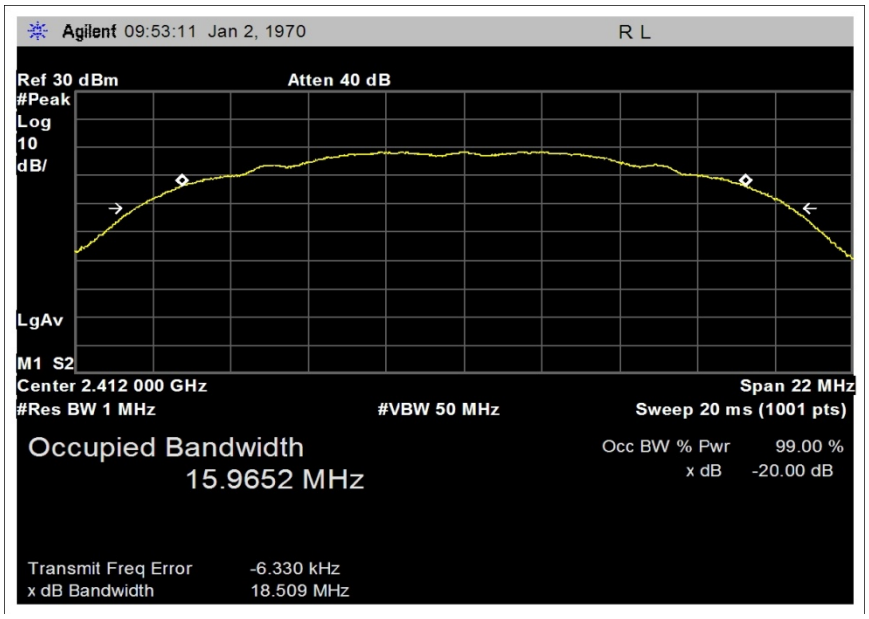
Test Data

802.11b		
2412 MHz	**2437 MHz**	**2462 MHz**
18.51 MHz	18.48 MHz	18.49 MHz
+/- 9.25 MHz = PASS	+/- 9.24 MHz = PASS	+/- 9.25 MHz = PASS

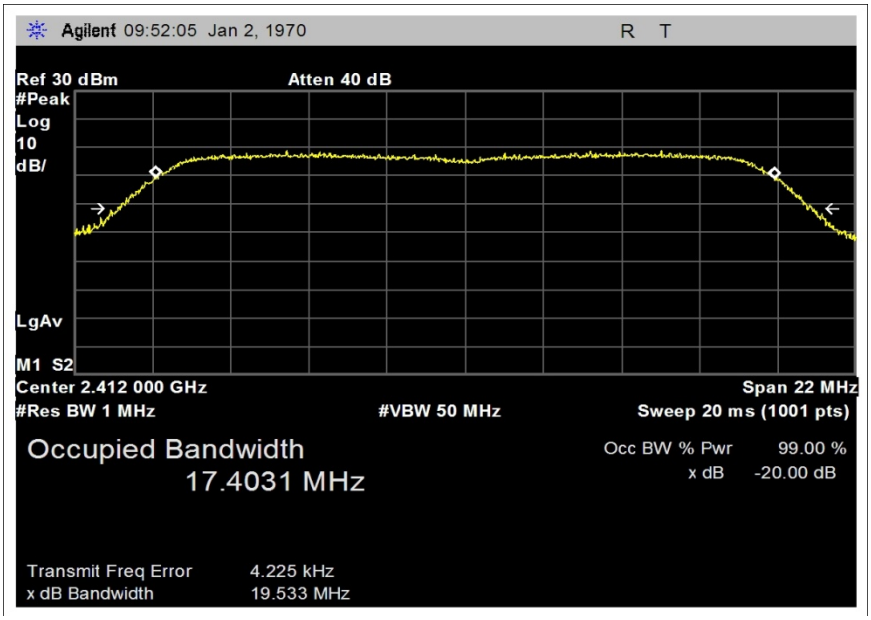
802.11g		
2412 MHz	**2437 MHz**	**2462 MHz**
19.53 MHz	19.50 MHz	19.51 MHz
+/- 9.77 MHz = PASS	+/- 9.75 MHz = PASS	+/- 9.75 MHz = PASS

Requirement: The 20 dB bandwidth of the emission must be contained within the band of operation.

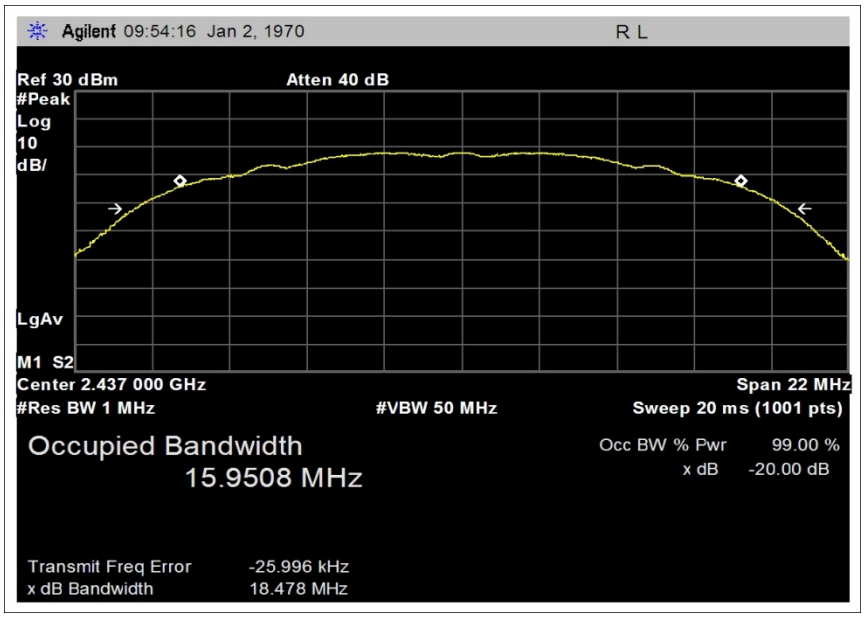
Note: The following plots contain a software default date of Jan 2, 1970 which was not changed at the time of testing. Actual date of testing was August 16, 2010.



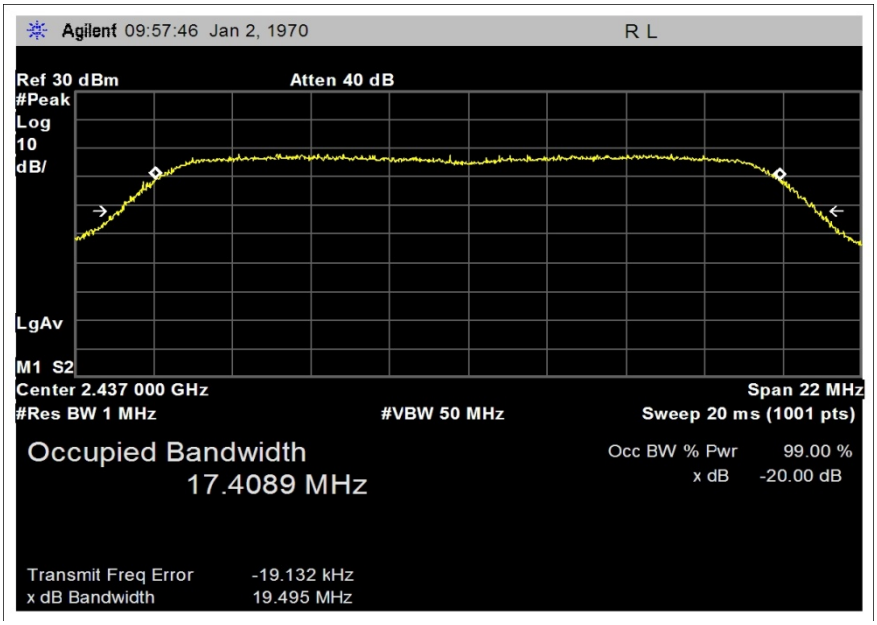
2412-802.11b



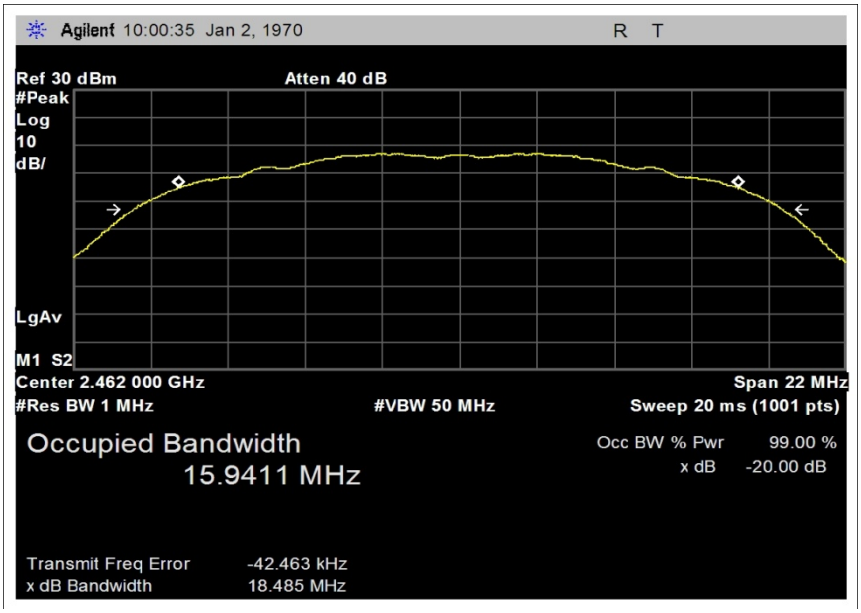
2412-802.11g



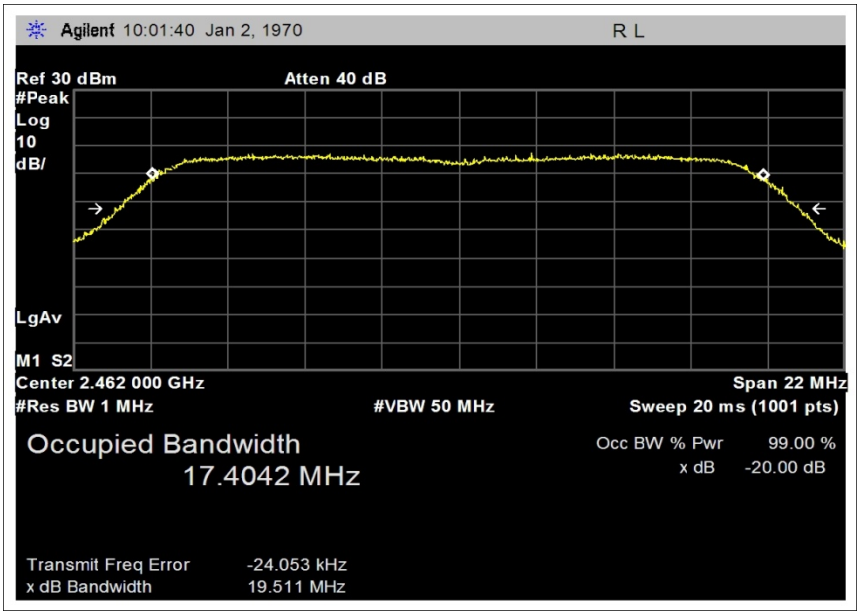
2437-802.11b



2437-802.11g



2462-802.11b



2462-802.11g

Test Setup Photos

20dB Bandwidth

15.247(a)(2) 6dB Bandwidth

Test Set Up

The EUT was setup on the bench and connected to a spectrum analyzer via an RF cable. The EUT was cycled though the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable.

Engineer Name: J. Gilbert

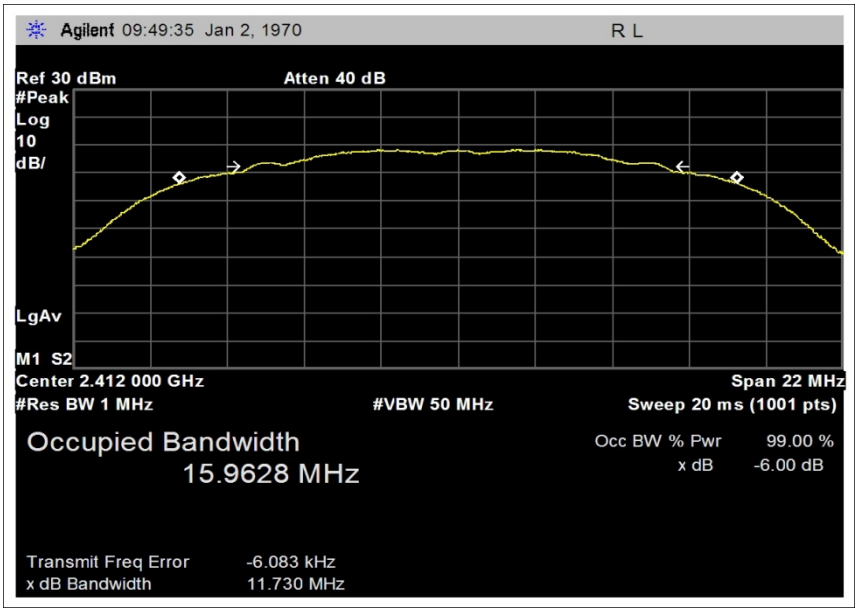
Test Equipment				
Equipment	**Serial**	**Cal Date**	**Cal Due**	**Asset**
Spectrum Analyzer	MY46186330	8/25/2009	8/25/2011	02872
Cable	NA	12/2/2008	12/2/2010	03122

Test Data

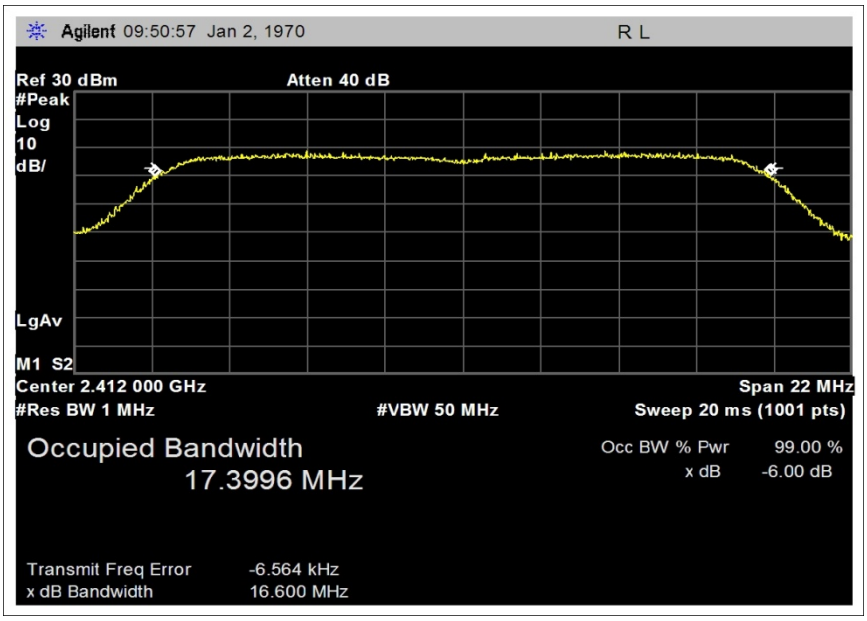
802.11b			6 dB BW Spec	802.11g		
2412 MHz	**2437 MHz**	**2462 MHz**	**500 kHz minimum**	**2412 MHz**	**2437 MHz**	**2462 MHz**
11.73 MHz	11.73 MHz	11.69 MHz	**PASS**	16.6 MHz	16.57 MHz	16.09 MHz

Requirement: The minimum 6 dB bandwidth shall be at least 500 kHz.

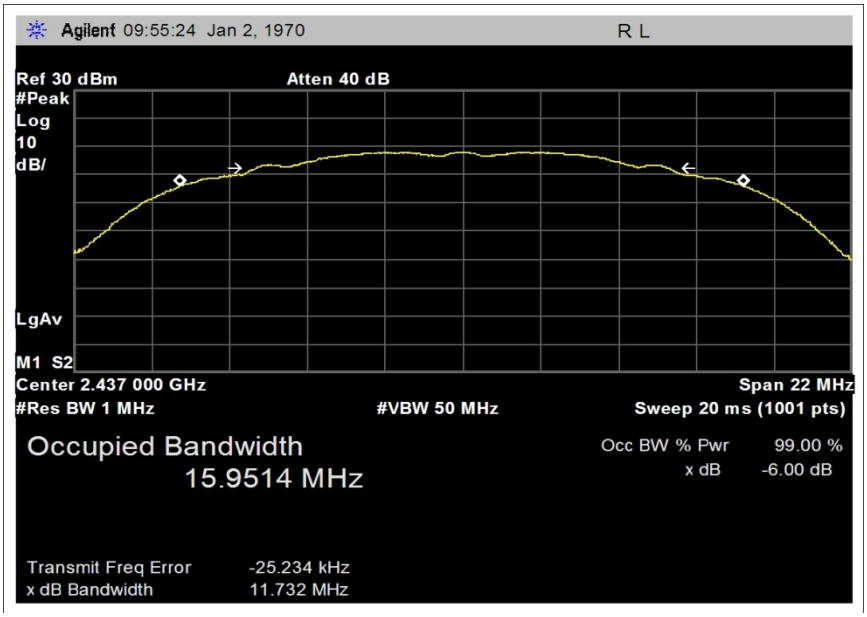
Note: The following plots contain a software default date of Jan 2, 1970 which was not changed at the time of testing. Actual date of testing was August 16, 2010.



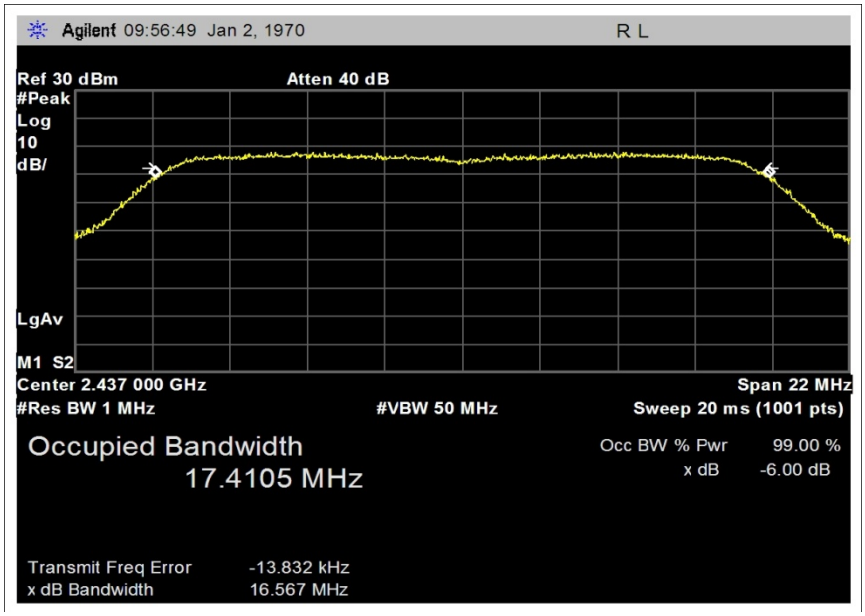
2412-802.11b



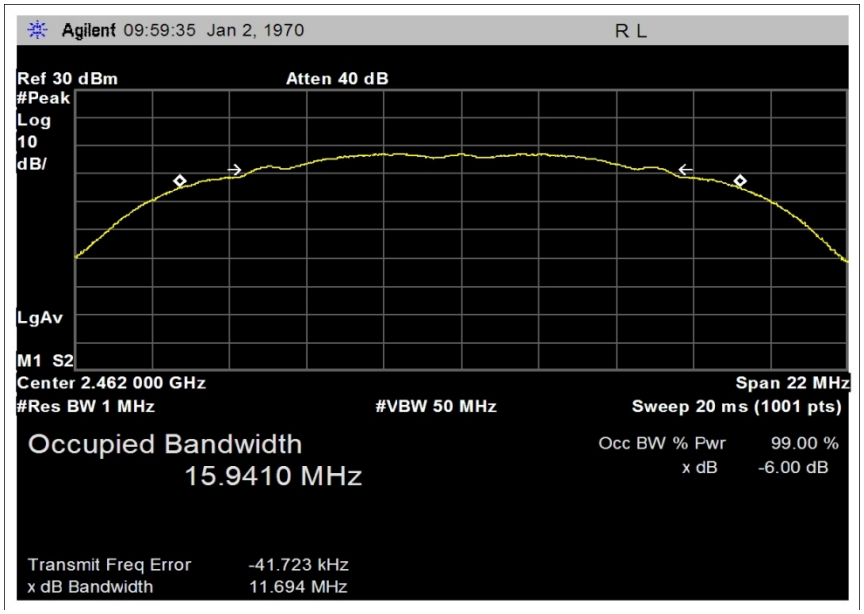
2412-802.11g



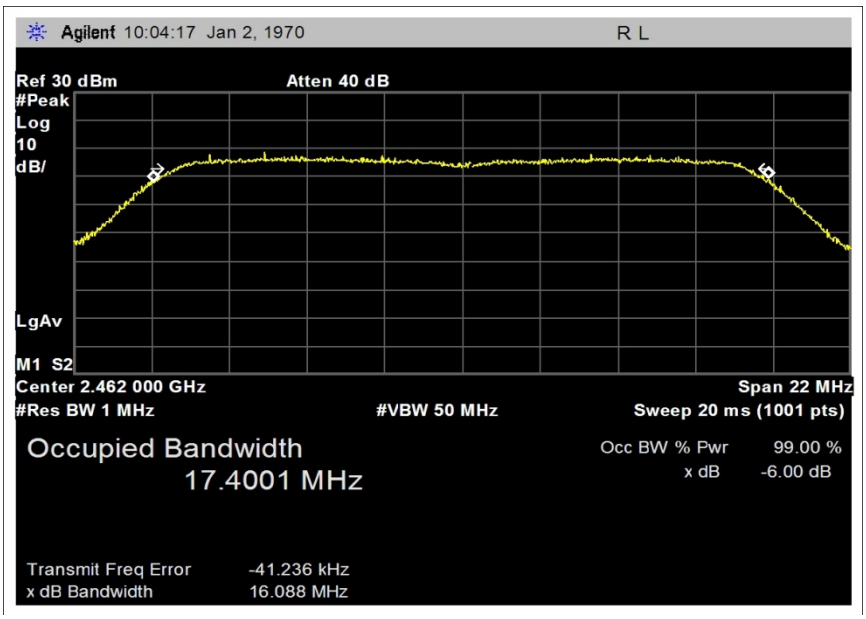
2437-802.11b



2437-802.11g



2462-802.11b



2462-802.11g

Test Setup Photos

6dB Bandwidth

15.247(b)(3) Peak Conducted Power

Test Set Up

The EUT was setup on the bench and connected to a spectrum analyzer via an RF cable. The EUT was cycled though the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable.

Engineer Name: J. Gilbert

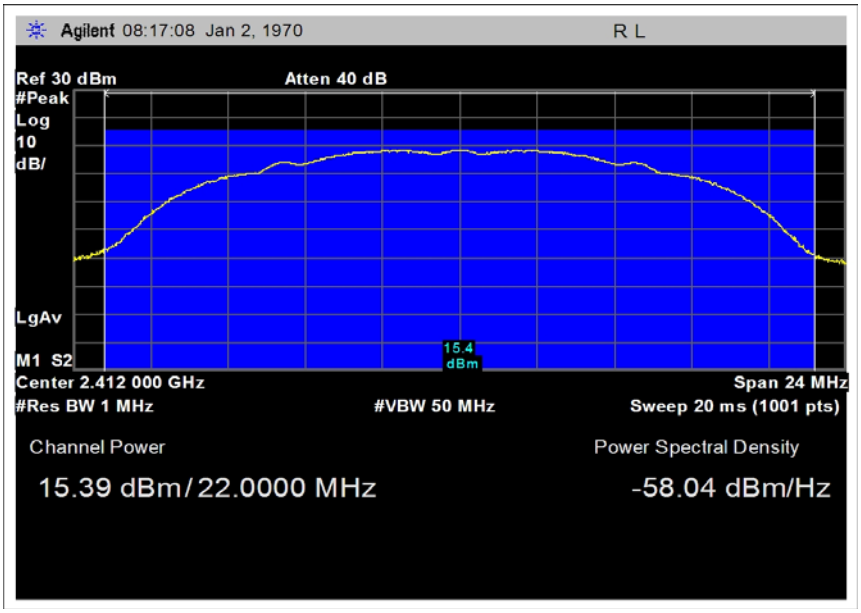
Test Equipment				
Equipment	**Serial**	**Cal Date**	**Cal Due**	**Asset**
Spectrum Analyzer	MY46186330	8/25/2009	8/25/2011	02872
Cable	NA	12/2/2008	12/2/2010	03122

Test Data

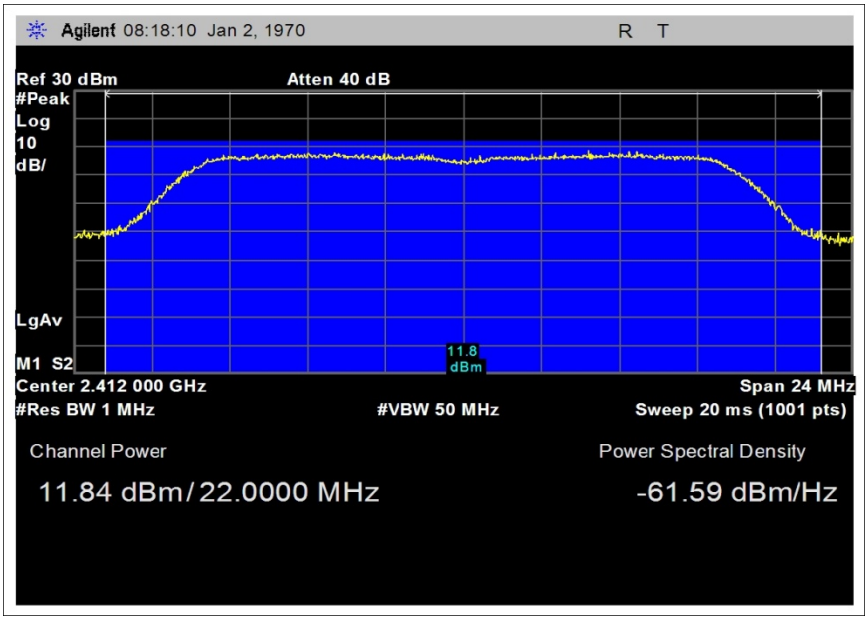
802.11b			**DTS**	**802.11g**		
2412 MHz	**2437 MHz**	**2462 MHz**	**Spec = 30 dBm**	**2412 MHz**	**2437 MHz**	**2462 MHz**
dBm/22MHz	dBm/22MHz	dBm/22MHz		dBm/22MHz	dBm/22MHz	dBm/22MHz
16.4	16.2	15.2	**PASS**	13.2	12.6	11.8

Requirement: The maximum peak conducted output power of the intentional radiator shall not exceed the following: 1 Watt

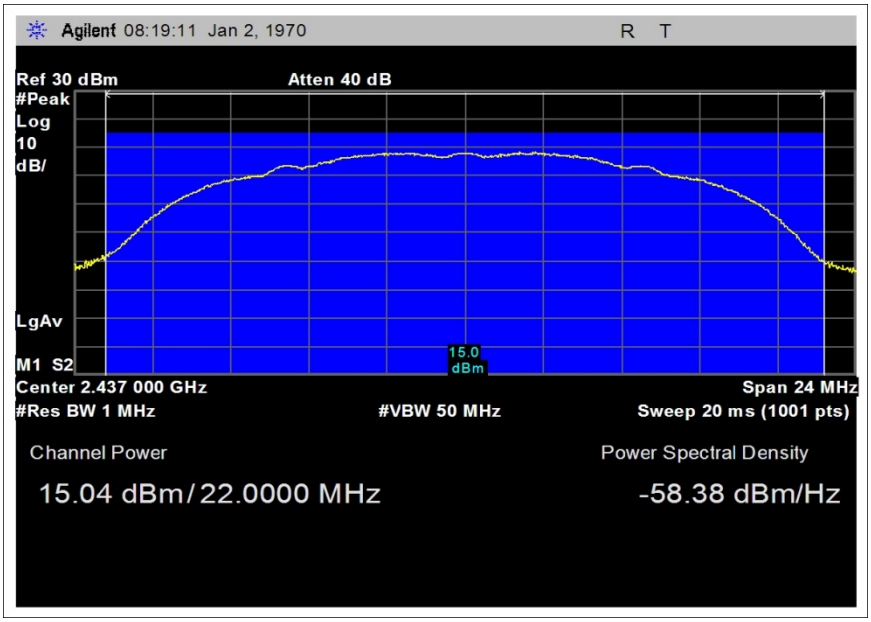
Note: The following plots contain a software default date of Jan 2, 1970 which was not changed at the time of testing. Actual date of testing was August 16, 2010.



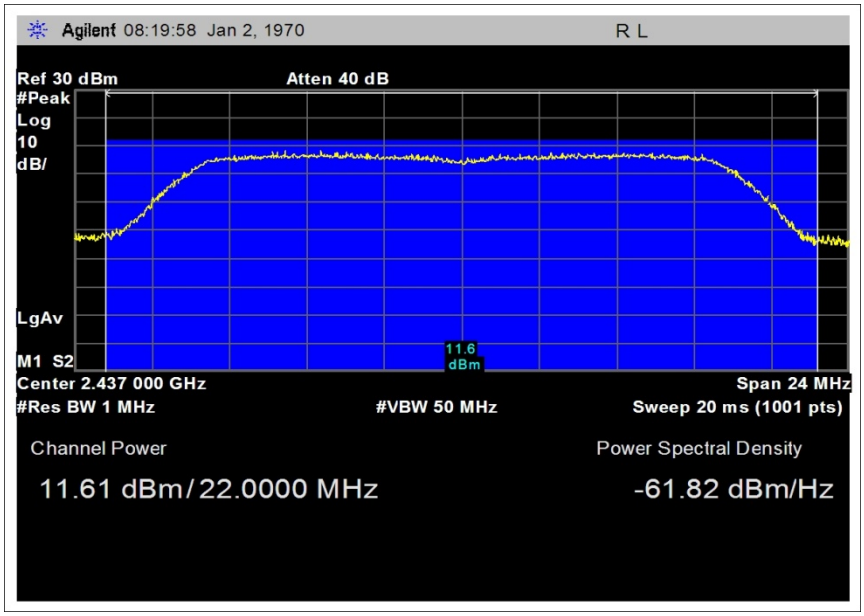
2412-802.11b-240



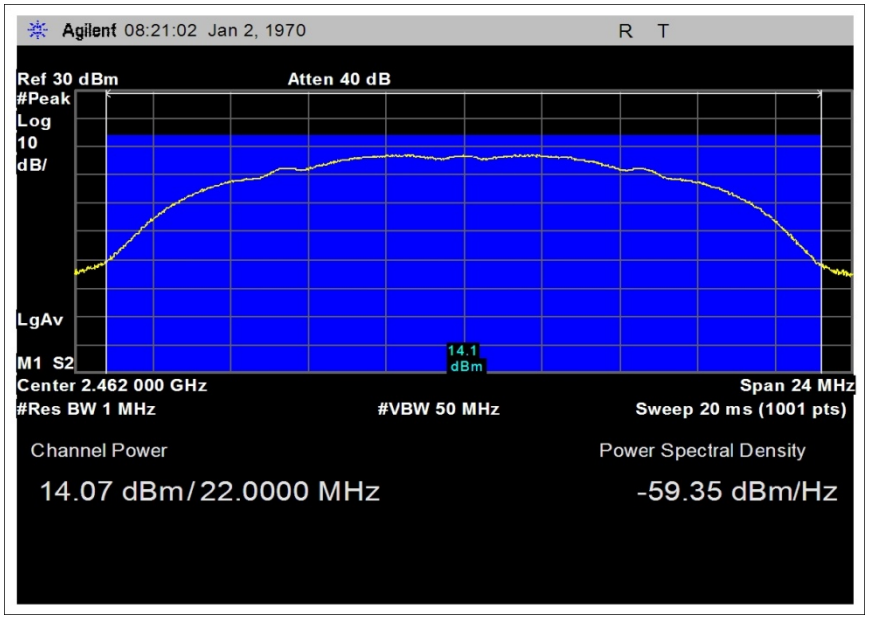
2412-802.11g-240



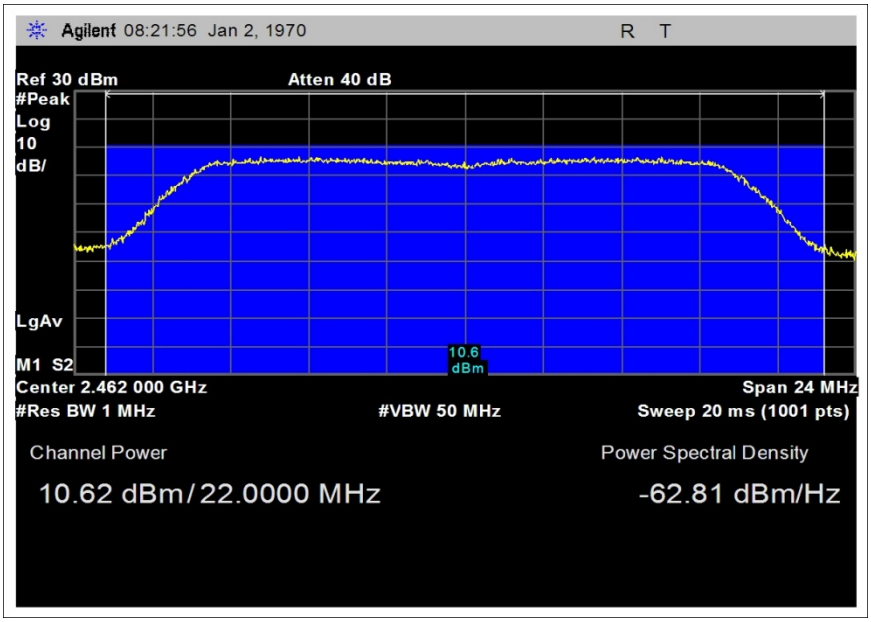
2437-802.11b-240



2437-802.11g-240



2462-802.11b-240



2462-802.11g-240

Test Setup Photos

PEAK CONDUCTED POWER

15.247(d) Antenna Conducted Spurious

Note: Reported results are with the transmitter in 802.11b mode as this was found to have the worst case emissions.

Test Data Sheets

CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Test Location:

Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Conducted Spurious Emissions**		
Work Order #:	**90820**	Date:	8/9/2010
Test Type:	**Maximized Emissions**	Time:	6:20:10 AM
Equipment:	**SRR+WWAN+WIFI+GPS RX (always external antennas)**	Sequence#:	9
Manufacturer:	Itron, Inc.	Tested By:	Jeff Gilbert
Model:	CCU100T (model: Tower CCU)		
S/N:	7404FCC6		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

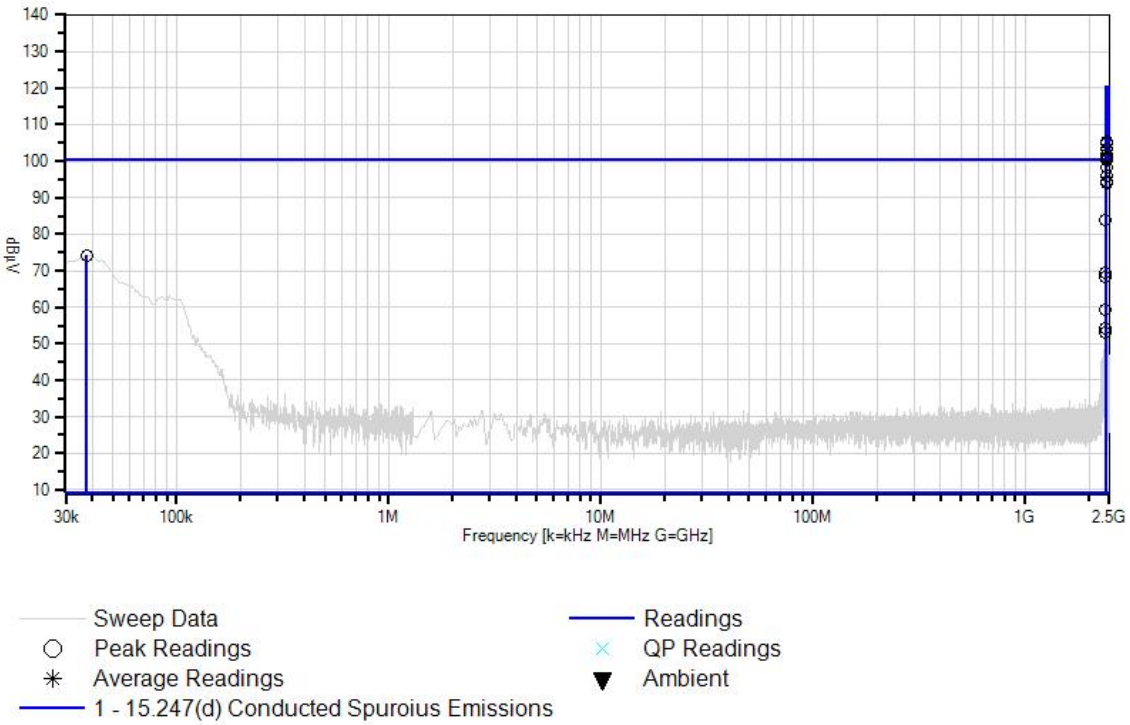
Frequency Range Investigated: 30 kHz - 2.5 GHz
Temp: 22° C
Humidity: 49%
Pressure: 102.0 kPa
Wi-Fi radio transmitting on 2412 MHz.

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2409.666M	103.9	+1.3				+0.0	105.2	120.5	-15.3	Condu 100
2	2413.750M	103.9	+1.3				+0.0	105.2	120.5	-15.3	Condu 100
3	2410.146M	103.6	+1.3				+0.0	104.9	120.5	-15.6	Condu 100
4	2408.705M	102.2	+1.3				+0.0	103.5	120.5	-17.0	Condu 100
5	2411.588M	100.3	+1.3				+0.0	101.6	120.5	-18.9	Condu 100
6	2409.906M	99.8	+1.3				+0.0	101.1	120.5	-19.4	Condu 100
7	2407.384M	99.4	+1.3				+0.0	100.7	120.5	-19.8	Condu 100
8	2407.984M	99.4	+1.3				+0.0	100.7	120.5	-19.8	Condu 100
9	2411.828M	99.1	+1.3				+0.0	100.4	120.5	-20.1	Condu 100
10	2406.663M	97.1	+1.3				+0.0	98.4	120.5	-22.1	Condu 100
11	2418.314M	94.7	+1.3				+0.0	96.0	120.5	-24.5	Condu 100
12	2419.035M	93.1	+1.3				+0.0	94.4	120.5	-26.1	Condu 100
13	37.682k	74.2	+0.0				+0.0	74.2	100.5	-26.3	Condu 100
14	2419.275M	92.6	+1.3				+0.0	93.9	120.5	-26.6	Condu 100
15	2398.014M	68.3	+1.3				+0.0	69.6	100.5	-30.9	Condu 100
16	2397.173M	67.0	+1.3				+0.0	68.3	100.5	-32.2	Condu 100
17	2402.819M	82.7	+1.3				+0.0	84.0	120.5	-36.5	Condu 100
18	2392.248M	57.9	+1.3				+0.0	59.2	100.5	-41.3	Condu 100
19	2391.768M	53.1	+1.3				+0.0	54.4	100.5	-46.1	Condu 100
20	2390.206M	51.7	+1.3				+0.0	53.0	100.5	-47.5	Condu 100

CKC Laboratories, Inc. Date: 8/9/2010 Time: 6:20:10 AM Itron, Inc. WO#: 90820
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 9 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Conducted Spurious Emissions**
Work Order #: **90820** Date: 8/9/2010
Test Type: **Maximized Emissions** Time: 6:23:32 AM
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 10
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 2.5 GHz
Temp: 22° C
Humidity: 49%
Pressure: 102.0 kPa
Wi-Fi radio transmitting on 2437 MHz.

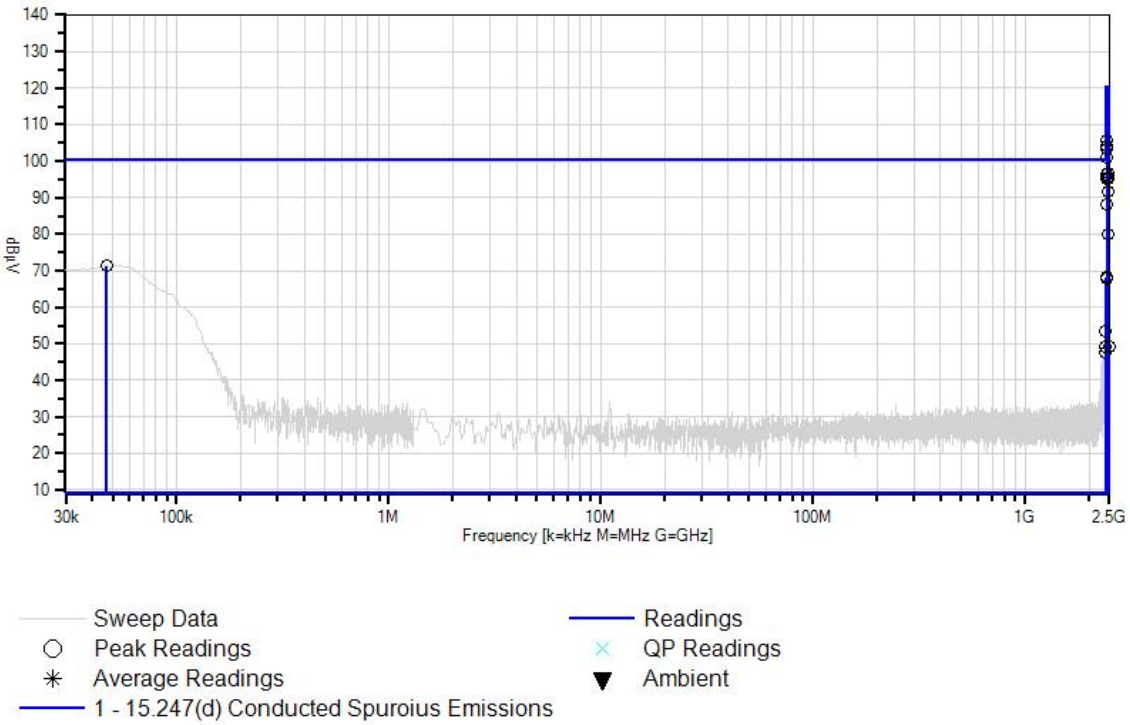
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2435.612M	104.4	+1.3				+0.0	105.7	120.5	-14.8	Condu 100
2	2435.131M	104.3	+1.3				+0.0	105.6	120.5	-14.9	Condu 100
3	2439.816M	102.7	+1.3				+0.0	104.0	120.5	-16.5	Condu 100
4	2440.296M	102.0	+1.3				+0.0	103.3	120.5	-17.2	Condu 100
5	2437.053M	99.9	+1.3				+0.0	101.2	120.5	-19.3	Condu 100

6	2443.780M	95.5	+1.3	+0.0	96.8	120.5	-23.7	Condu 100
7	2430.447M	94.9	+1.3	+0.0	96.2	120.5	-24.3	Condu 100
8	2443.179M	94.3	+1.3	+0.0	95.6	120.5	-24.9	Condu 100
9	2429.846M	93.9	+1.3	+0.0	95.2	120.5	-25.3	Condu 100
10	2444.260M	93.9	+1.3	+0.0	95.2	120.5	-25.3	Condu 100
11	2445.221M	90.4	+1.3	+0.0	91.7	120.5	-28.8	Condu 100
12	46.645k	71.3	+0.0	+0.0	71.3	100.5	-29.2	Condu 100
13	2428.645M	87.0	+1.3	+0.0	88.3	120.5	-32.2	Condu 100
14	2446.543M	78.6	+1.3	+0.0	79.9	120.5	-40.6	Condu 100
15	2399.936M	52.3	+1.3	+0.0	53.6	100.5	-46.9	Condu 100
16	2496.004M	47.9	+1.3	+0.0	49.2	100.5	-51.3	Condu 100
17	2398.134M	47.7	+1.3	+0.0	49.0	100.5	-51.5	Condu 100
18	2422.639M	66.9	+1.3	+0.0	68.2	120.5	-52.3	Condu 100
19	2423.480M	66.6	+1.3	+0.0	67.9	120.5	-52.6	Condu 100
20	2398.855M	46.4	+1.3	+0.0	47.7	100.5	-52.8	Condu 100

CKC Laboratories, Inc. Date: 8/9/2010 Time: 6:23:32 AM Itron, Inc. WO#: 90820
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 10 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Conducted Spurious Emissions**
Work Order #: **90820** Date: 8/9/2010
Test Type: **Maximized Emissions** Time: 6:25:13 AM
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 11
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 2.5 GHz
Temp: 22° C
Humidity: 49%
Pressure: 102.0 kPa
Wi-Fi radio transmitting on 2462 MHz.

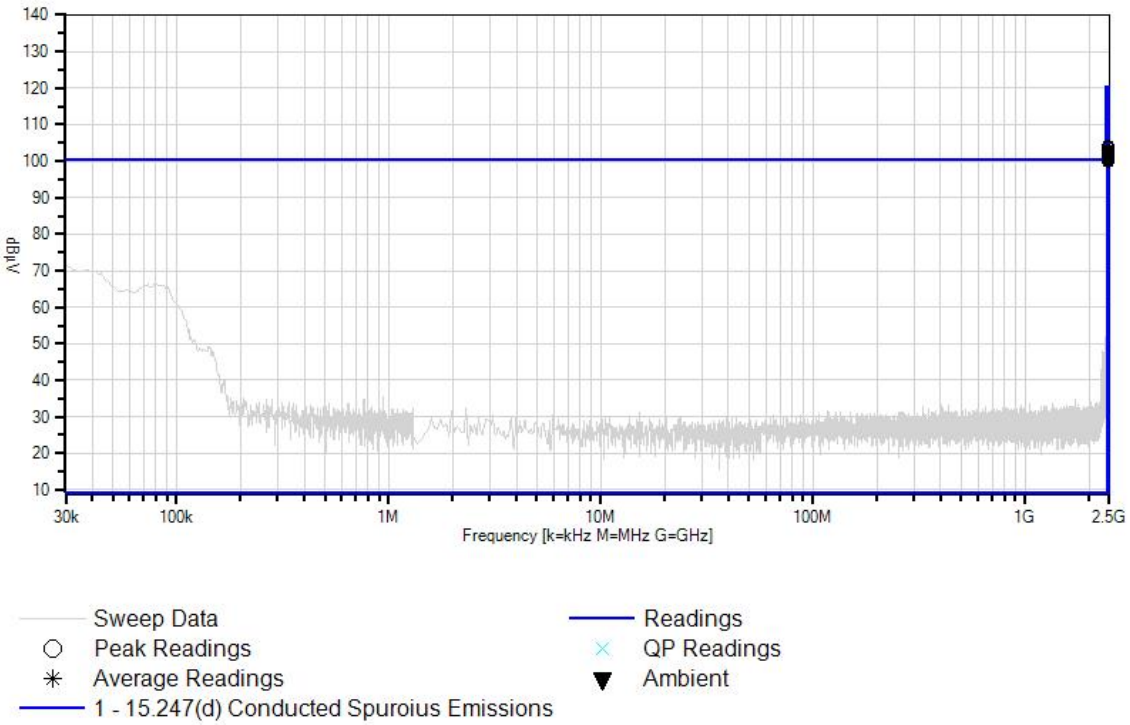
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2459.155M	102.9	+1.3				+0.0	104.2	120.5	-16.3	Condu 100
2	2464.116M	102.3	+1.3				+0.0	103.6	120.5	-16.9	Condu 100
3	2464.762M	102.3	+1.3				+0.0	103.6	120.5	-16.9	Condu 100
4	2460.120M	101.8	+1.3				+0.0	103.1	120.5	-17.4	Condu 100
5	2460.887M	101.6	+1.3				+0.0	102.9	120.5	-17.6	Condu 100

6	2460.726M	101.4	+1.3		+0.0	102.7	120.5	-17.8	Condu 100
7	2465.448M	101.4	+1.3		+0.0	102.7	120.5	-17.8	Condu 100
8	2463.914M	101.2	+1.3		+0.0	102.5	120.5	-18.0	Condu 100
9	2462.865M	101.0	+1.3		+0.0	102.3	120.5	-18.2	Condu 100
10	2465.085M	100.8	+1.3		+0.0	102.1	120.5	-18.4	Condu 100
11	2462.582M	100.6	+1.3		+0.0	101.9	120.5	-18.6	Condu 100
12	2459.757M	100.1	+1.3		+0.0	101.4	120.5	-19.1	Condu 100
13	2459.999M	99.8	+1.3		+0.0	101.1	120.5	-19.4	Condu 100
14	2459.636M	99.7	+1.3		+0.0	101.0	120.5	-19.5	Condu 100
15	2460.806M	99.7	+1.3		+0.0	101.0	120.5	-19.5	Condu 100
16	2466.094M	99.2	+1.3		+0.0	100.5	120.5	-20.0	Condu 100
17	2461.129M	99.0	+1.3		+0.0	100.3	120.5	-20.2	Condu 100
18	2465.206M	99.0	+1.3		+0.0	100.3	120.5	-20.2	Condu 100
19	2465.569M	99.0	+1.3		+0.0	100.3	120.5	-20.2	Condu 100
20	2462.138M	98.7	+1.3		+0.0	100.0	120.5	-20.5	Condu 100

CKC Laboratories, Inc. Date: 8/9/2010 Time: 6:25:13 AM Itron, Inc. WO#: 90820
15.247(d) Conducted Spuroius Emissions Test Distance: None Conducted Sequence#: 11 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Conducted Spurious Emissions**
Work Order #: **90820** Date: 8/6/2010
Test Type: **Maximized Emissions** Time: 12:33:41 PM
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 3
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03122	Cable	32026-2-29801-36	12/2/2008	12/2/2010
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 1 - 25 GHz
Temp: 22° C
Humidity: 38%
Pressure: 102.0 kPa
Wi-Fi radio transmitting on 2412 MHz.

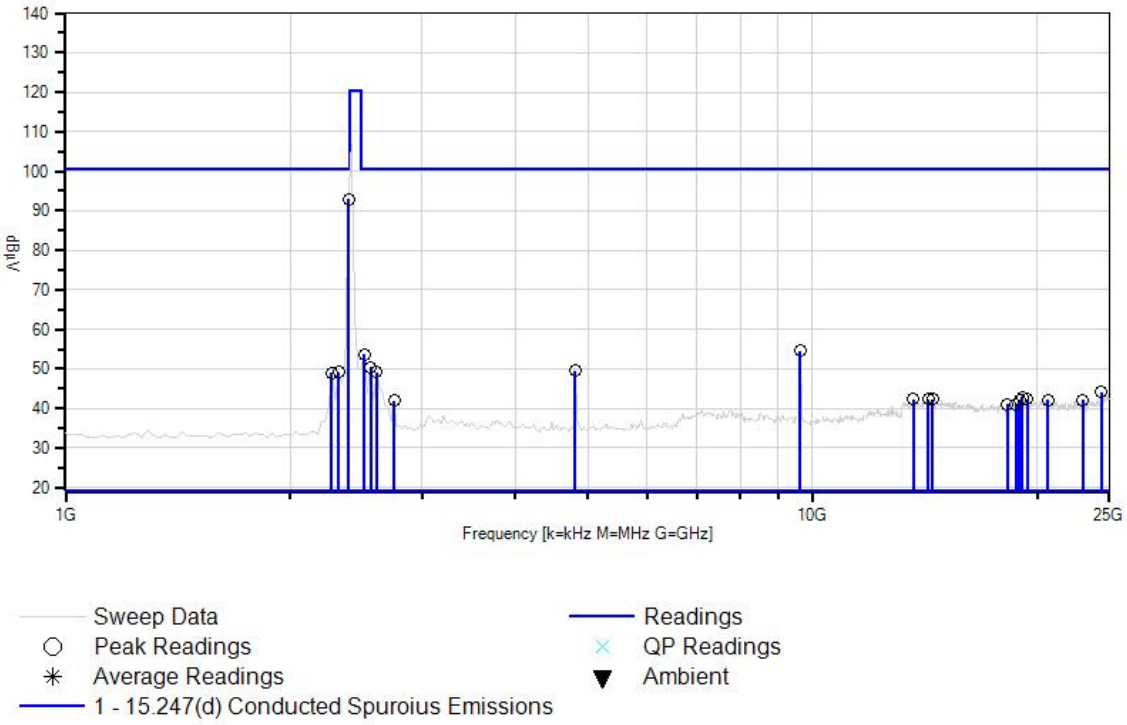
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2392.000M	91.9	+1.0				+0.0	92.9	100.5	-7.6	Condu
2	9640.000M	52.2	+2.3				+0.0	54.5	100.5	-46.0	Condu
3	2512.000M	52.7	+1.0				+0.0	53.7	100.5	-46.8	Condu
4	2560.000M	49.5	+1.0				+0.0	50.5	100.5	-50.0	Condu
5	4816.000M	48.1	+1.5				+0.0	49.6	100.5	-50.9	Condu

6	2320.000M	48.2	+1.0		+0.0	49.2	100.5	-51.3	Condu
7	2608.000M	48.1	+1.0		+0.0	49.1	100.5	-51.4	Condu
8	2272.000M	48.0	+0.9		+0.0	48.9	100.5	-51.6	Condu
9	24376.000 M	41.9	+2.3		+0.0	44.2	100.5	-56.3	Condu
10	19120.000 M	39.9	+3.0		+0.0	42.9	100.5	-57.6	Condu
11	13648.000 M	40.1	+2.3		+0.0	42.4	100.5	-58.1	Condu
12	14488.000 M	39.7	+2.7		+0.0	42.4	100.5	-58.1	Condu
13	14296.000 M	39.8	+2.5		+0.0	42.3	100.5	-58.2	Condu
14	19408.000 M	39.2	+3.1		+0.0	42.3	100.5	-58.2	Condu
15	20656.000 M	39.1	+3.1		+0.0	42.2	100.5	-58.3	Condu
16	23008.000 M	39.6	+2.6		+0.0	42.2	100.5	-58.3	Condu
17	2752.000M	40.8	+1.1		+0.0	41.9	100.5	-58.6	Condu
18	18928.000 M	38.9	+3.0		+0.0	41.9	100.5	-58.6	Condu
19	18232.000 M	38.1	+3.0		+0.0	41.1	100.5	-59.4	Condu
20	18736.000 M	38.1	+3.0		+0.0	41.1	100.5	-59.4	Condu

CKC Laboratories, Inc. Date: 8/6/2010 Time: 12:33:41 PM Itron, Inc. WO#: 90820
15.247(d) Conducted Spuroius Emissions Test Distance: None Conducted Sequence#: 3 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Conducted Spurious Emissions**
Work Order #: **90820** Date: 8/6/2010
Test Type: **Maximized Emissions** Time: 12:37:04 PM
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 4
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03122	Cable	32026-2-29801-36	12/2/2008	12/2/2010
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 1 - 25 GHz
Temp: 22° C
Humidity: 38%
Pressure: 102.0 kPa
Wi-Fi radio transmitting on 2437 MHz.

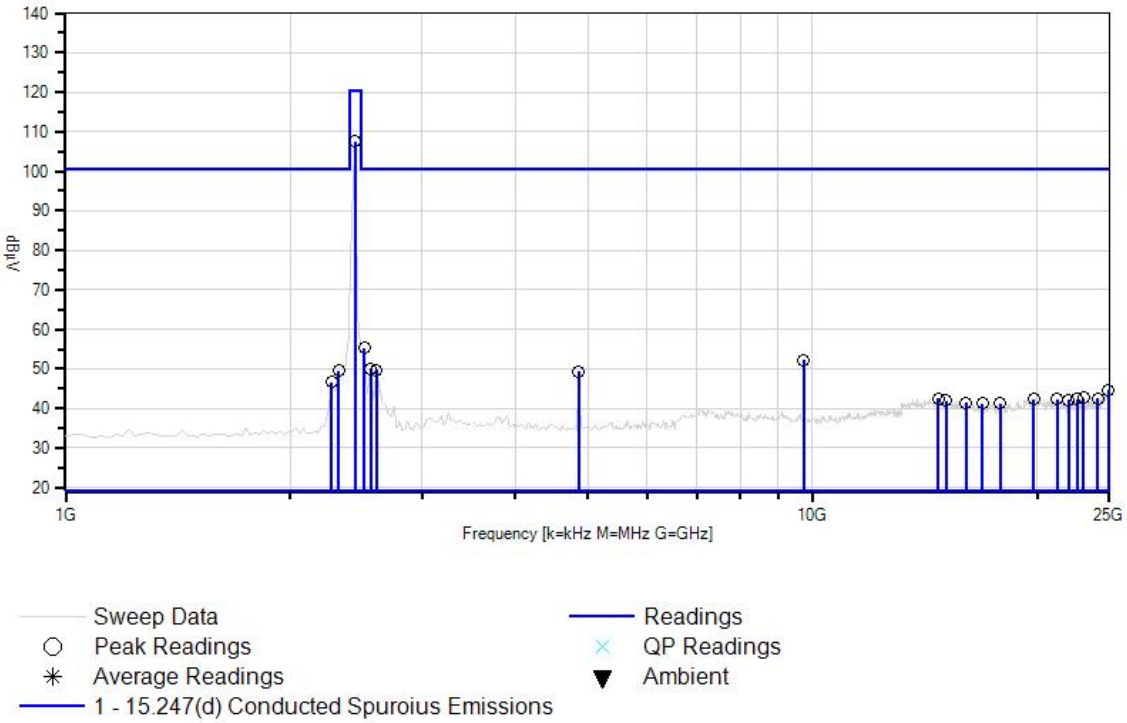
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2440.000M	106.5	+1.0				+0.0	107.5	120.5	-13.0	Condu
2	2512.000M	54.2	+1.0				+0.0	55.2	100.5	-45.3	Condu
3	9736.000M	50.1	+2.2				+0.0	52.3	100.5	-48.2	Condu
4	2560.000M	49.1	+1.0				+0.0	50.1	100.5	-50.4	Condu
5	2608.000M	48.7	+1.0				+0.0	49.7	100.5	-50.8	Condu

6	2320.000M	48.6	+1.0		+0.0	49.6	100.5	-50.9	Condu
7	4864.000M	47.8	+1.6		+0.0	49.4	100.5	-51.1	Condu
8	2272.000M	45.8	+0.9		+0.0	46.7	100.5	-53.8	Condu
9	24904.000 M	42.1	+2.5		+0.0	44.6	100.5	-55.9	Condu
10	23056.000 M	40.1	+2.6		+0.0	42.7	100.5	-57.8	Condu
11	14728.000 M	40.0	+2.5		+0.0	42.5	100.5	-58.0	Condu
12	24112.000 M	40.2	+2.3		+0.0	42.5	100.5	-58.0	Condu
13	19768.000 M	39.2	+3.2		+0.0	42.4	100.5	-58.1	Condu
14	22624.000 M	39.7	+2.7		+0.0	42.4	100.5	-58.1	Condu
15	21256.000 M	39.4	+2.9		+0.0	42.3	100.5	-58.2	Condu
16	22048.000 M	39.4	+2.8		+0.0	42.2	100.5	-58.3	Condu
17	15088.000 M	39.4	+2.5		+0.0	41.9	100.5	-58.6	Condu
18	16072.000 M	39.1	+2.4		+0.0	41.5	100.5	-59.0	Condu
19	17848.000 M	38.3	+3.0		+0.0	41.3	100.5	-59.2	Condu
20	16888.000 M	38.9	+2.3		+0.0	41.2	100.5	-59.3	Condu

CKC Laboratories, Inc. Date: 8/6/2010 Time: 12:37:04 PM Itron, Inc. WO#: 90820
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 4 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Conducted Spurious Emissions**
Work Order #: **90820** Date: 8/6/2010
Test Type: **Maximized Emissions** Time: 12:39:25 PM
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 5
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03122	Cable	32026-2-29801-36	12/2/2008	12/2/2010
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 1 - 25 GHz
Temp: 22° C
Humidity: 38%
Pressure: 102.0 kPa
Wi-Fi radio transmitting on 2462 MHz.

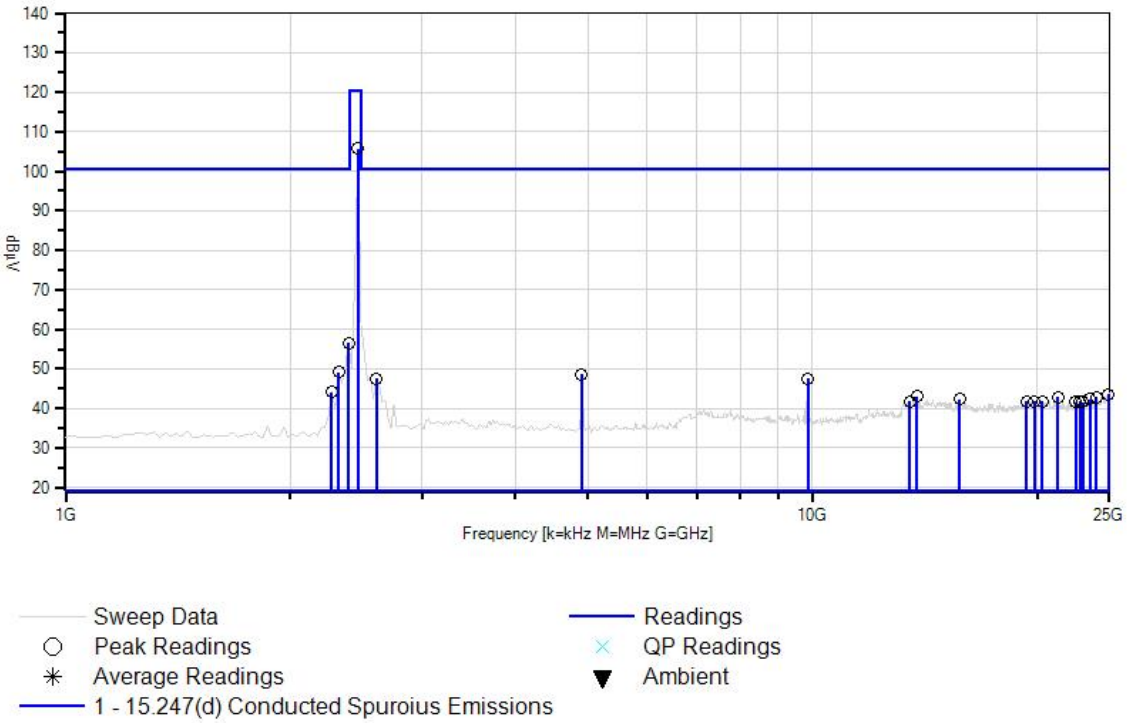
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2464.000M	104.7	+1.0				+0.0	105.7	120.5	-14.8	Condu
2	2392.000M	55.5	+1.0				+0.0	56.5	100.5	-44.0	Condu
3	2320.000M	48.1	+1.0				+0.0	49.1	100.5	-51.4	Condu
4	4912.000M	47.1	+1.6				+0.0	48.7	100.5	-51.8	Condu
5	2608.000M	46.6	+1.0				+0.0	47.6	100.5	-52.9	Condu

6	9856.000M	45.6	+2.0		+0.0	47.6	100.5	-52.9	Condu
7	2272.000M	43.3	+0.9		+0.0	44.2	100.5	-56.3	Condu
8	24904.000 M	41.1	+2.5		+0.0	43.6	100.5	-56.9	Condu
9	13816.000 M	40.4	+2.6		+0.0	43.0	100.5	-57.5	Condu
10	23992.000 M	40.5	+2.4		+0.0	42.9	100.5	-57.6	Condu
11	21304.000 M	40.0	+2.9		+0.0	42.9	100.5	-57.6	Condu
12	15760.000 M	40.0	+2.4		+0.0	42.4	100.5	-58.1	Condu
13	23512.000 M	39.8	+2.5		+0.0	42.3	100.5	-58.2	Condu
14	19840.000 M	38.6	+3.2		+0.0	41.8	100.5	-58.7	Condu
15	19360.000 M	38.7	+3.1		+0.0	41.8	100.5	-58.7	Condu
16	22816.000 M	39.1	+2.7		+0.0	41.8	100.5	-58.7	Condu
17	20296.000 M	38.6	+3.2		+0.0	41.8	100.5	-58.7	Condu
18	13504.000 M	39.4	+2.3		+0.0	41.7	100.5	-58.8	Condu
19	22504.000 M	38.9	+2.7		+0.0	41.6	100.5	-58.9	Condu
20	23032.000 M	39.0	+2.6		+0.0	41.6	100.5	-58.9	Condu

CKC Laboratories, Inc. Date: 8/6/2010 Time: 12:39:25 PM Itron, Inc. WO#: 90820
15.247(d) Conducted Spuroius Emissions Test Distance: None Conducted Sequence#: 5 Ext ATTN: 0 dB



Test Setup Photos

ANTENNA CONDUCTED SPURIOUS

15.247(d) Radiated Spurious

Note: Reported results are with the transmitter in 802.11b mode as this was found to have the worst case emissions.

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Radiated Spurious Emissions**		
Work Order #:	**90820**	Date:	8/13/2010
Test Type:	**Maximized Emissions**	Time:	
Equipment:	**SRR+WWAN+WIFI+GPS RX (always external antennas)**	Sequence#:	3
Manufacturer:	Itron, Inc.	Tested By:	Jeff Gilbert
Model:	CCU100T (model: Tower CCU)		
S/N:	7404FCC6		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00052	Loop Antenna	6502	6/8/2010	6/8/2012
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

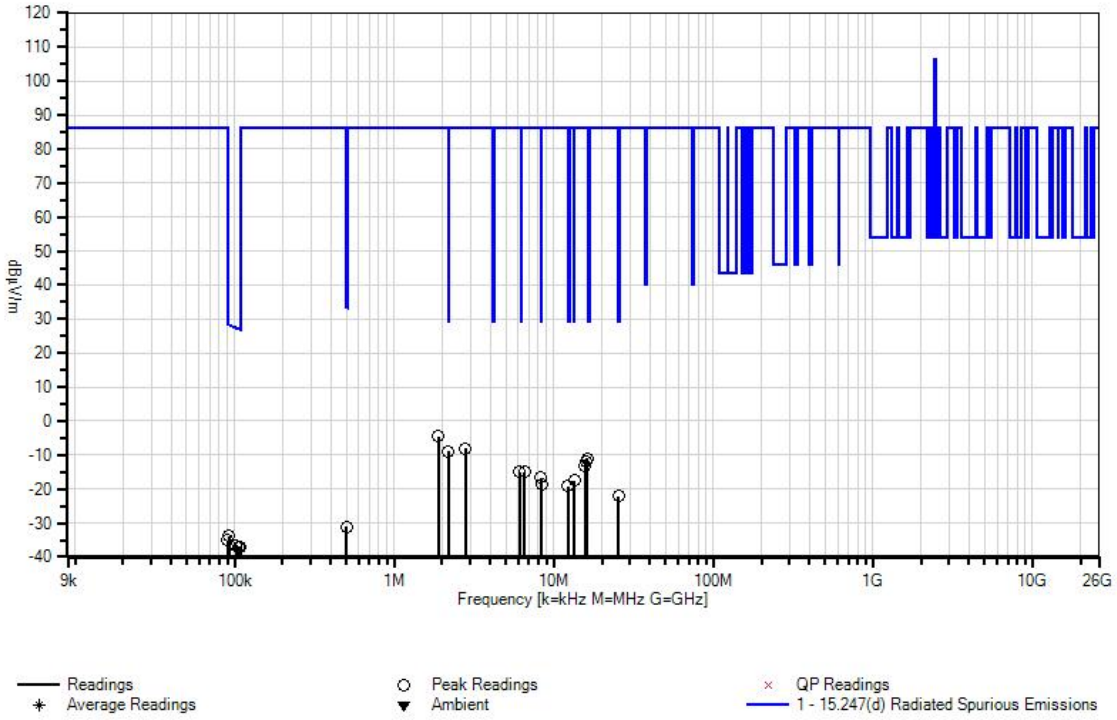
Frequency Range Investigated: 30 kHz -30 MHz
Temp: 24° C
Humidity: 44%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2412 MHz.

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2.185M	21.4	+9.7	+0.1	+0.0		-40.0	-8.8	29.5	-38.3	Verti 100
2	8.293M	13.6	+9.5	+0.2	+0.0		-40.0	-16.7	29.5	-46.2	Verti 100
3	13.401M	13.0	+9.3	+0.3	+0.0		-40.0	-17.4	29.5	-46.9	Verti 100
4	8.365M	11.5	+9.5	+0.2	+0.0		-40.0	-18.8	29.5	-48.3	Verti 100
5	8.383M	11.5	+9.5	+0.2	+0.0		-40.0	-18.8	29.5	-48.3	Verti 100
6	12.293M	11.3	+9.3	+0.2	+0.0		-40.0	-19.2	29.5	-48.7	Verti 100
7	25.509M	11.1	+6.3	+0.4	+0.1		-40.0	-22.1	29.5	-51.6	Verti 100
8	92.640k	36.3	+9.7	+0.1	+0.0		-80.0	-33.9	28.3	-62.2	Verti 100
9	90.120k	35.2	+9.7	+0.1	+0.0		-80.0	-35.0	28.5	-63.5	Verti 100
10	109.200k	33.2	+9.7	+0.1	+0.0		-80.0	-37.0	26.9	-63.9	Verti 100
11	102.720k	33.7	+9.7	+0.1	+0.0		-80.0	-36.5	27.4	-63.9	Verti 100
12	105.000k	33.2	+9.7	+0.1	+0.0		-80.0	-37.0	27.2	-64.2	Verti 100
13	501.000k	39.3	+9.4	+0.1	+0.0		-80.0	-31.2	33.6	-64.8	Verti 100
14	1.896M	25.7	+9.7	+0.1	+0.0		-40.0	-4.5	86.4	-90.9	Verti 100
15	2.797M	22.1	+9.7	+0.1	+0.0		-40.0	-8.1	86.4	-94.5	Verti 100
16	16.185M	19.7	+8.9	+0.3	+0.0		-40.0	-11.1	86.4	-97.5	Verti 100
17	15.815M	18.9	+9.0	+0.3	+0.0		-40.0	-11.8	86.4	-98.2	Verti 100
18	15.635M	17.3	+9.0	+0.3	+0.0		-40.0	-13.4	86.4	-99.8	Verti 100
19	6.113M	15.4	+9.5	+0.2	+0.0		-40.0	-14.9	86.4	-101.3	Verti 100
20	6.545M	15.3	+9.5	+0.2	+0.0		-40.0	-15.0	86.4	-101.4	Verti 100

CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 3 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Radiated Spurious Emissions**
Work Order #: **90820** Date: 8/13/2010
Test Type: **Maximized Emissions** Time:
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 2
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00052	Loop Antenna	6502	6/8/2010	6/8/2012
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz -30 MHz
Temp: 24° C
Humidity: 44%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2437 MHz.

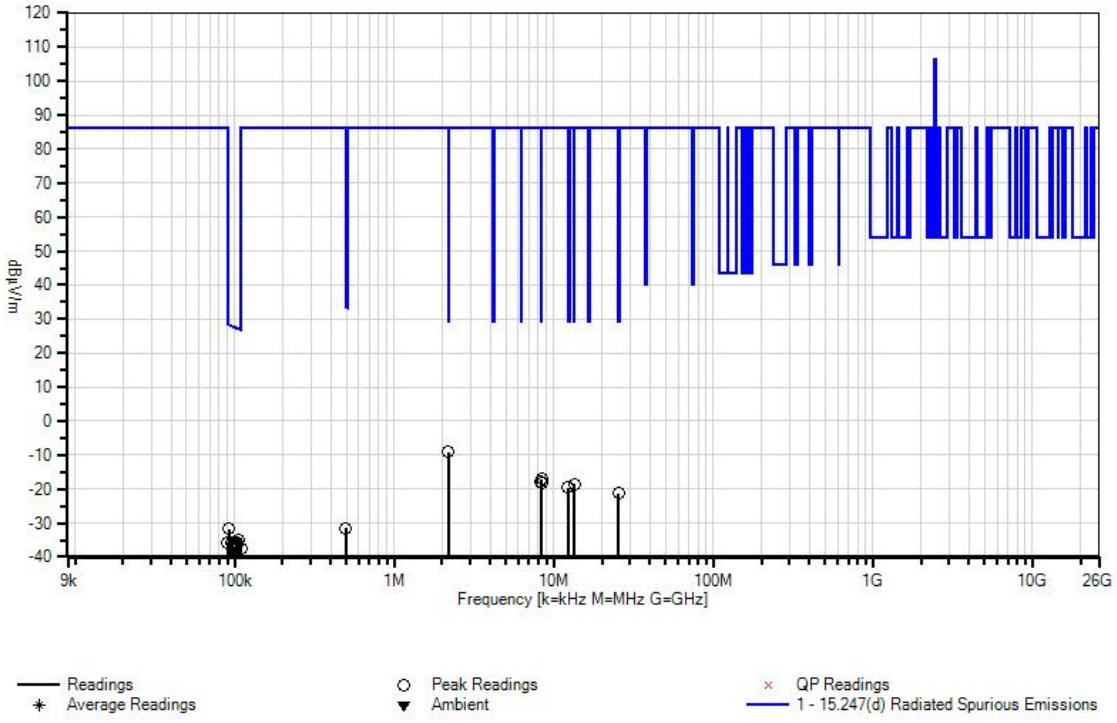
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2.185M	21.1	+9.7	+0.1	+0.0		-40.0 360	-9.1	29.5	-38.6	Verti 100
2	8.383M	13.3	+9.5	+0.2	+0.0		-40.0 360	-17.0	29.5	-46.5	Verti 100
3	8.293M	12.3	+9.5	+0.2	+0.0		-40.0 360	-18.0	29.5	-47.5	Verti 100

4	8.365M	12.0	+9.5	+0.2	+0.0	-40.0 360	-18.3	29.5	-47.8	Verti 100
5	13.392M	11.8	+9.3	+0.3	+0.0	-40.0 360	-18.6	29.5	-48.1	Verti 100
6	12.293M	11.0	+9.3	+0.2	+0.0	-40.0 360	-19.5	29.5	-49.0	Verti 100
7	25.545M	12.0	+6.3	+0.4	+0.1	-40.0 360	-21.2	29.5	-50.7	Verti 100
8	92.400k	38.4	+9.7	+0.1	+0.0	-80.0 360	-31.8	28.3	-60.1	Verti 100
9	105.840k	35.4	+9.7	+0.1	+0.0	-80.0 360	-34.8	27.1	-61.9	Verti 100
10	103.440k	34.4	+9.7	+0.1	+0.0	-80.0 360	-35.8	27.3	-63.1	Verti 100
11	101.880k	34.4	+9.7	+0.1	+0.0	-80.0 360	-35.8	27.4	-63.2	Verti 100
12	102.960k	34.0	+9.7	+0.1	+0.0	-80.0 360	-36.2	27.4	-63.6	Verti 100
13	96.120k	34.4	+9.7	+0.1	+0.0	-80.0 360	-35.8	27.9	-63.7	Verti 100
14	109.800k	32.9	+9.7	+0.1	+0.0	-80.0 360	-37.3	26.8	-64.1	Verti 100
15	97.440k	33.8	+9.7	+0.1	+0.0	-80.0 360	-36.4	27.8	-64.2	Verti 100
16	101.040k	33.4	+9.7	+0.1	+0.0	-80.0 360	-36.8	27.5	-64.3	Verti 100
17	90.720k	34.2	+9.7	+0.1	+0.0	-80.0 360	-36.0	28.4	-64.4	Verti 100
18	99.120k	33.4	+9.7	+0.1	+0.0	-80.0 360	-36.8	27.7	-64.5	Verti 100
19	100.320k	33.3	+9.7	+0.1	+0.0	-80.0 360	-36.9	27.6	-64.5	Verti 100
20	495.600k	38.9	+9.4	+0.1	+0.0	-80.0 360	-31.6	33.7	-65.3	Verti 100

CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 2 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Radiated Spurious Emissions**
Work Order #: **90820** Date: 8/13/2010
Test Type: **Maximized Emissions** Time:
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 1
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00052	Loop Antenna	6502	6/8/2010	6/8/2012
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz -30 MHz
Temp: 24° C
Humidity: 44%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2462 MHz.

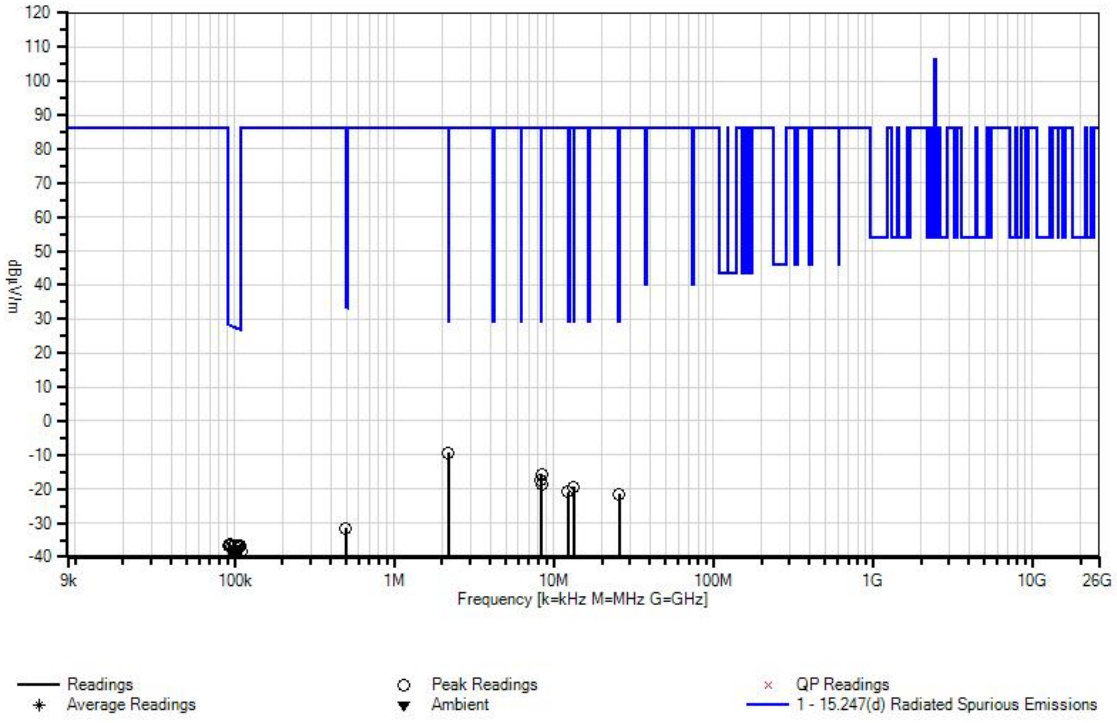
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2.185M	20.9	+9.7	+0.1	+0.0		-40.0 360	-9.3	29.5	-38.8	Verti 100
2	8.383M	14.4	+9.5	+0.2	+0.0		-40.0 360	-15.9	29.5	-45.4	Verti 100
3	8.293M	12.9	+9.5	+0.2	+0.0		-40.0 360	-17.4	29.5	-46.9	Verti 100

4	8.365M	11.7	+9.5	+0.2	+0.0	-40.0 360	-18.6	29.5	-48.1	Verti 100
5	13.383M	11.1	+9.3	+0.3	+0.0	-40.0 360	-19.3	29.5	-48.8	Verti 100
6	12.293M	9.6	+9.3	+0.2	+0.0	-40.0 360	-20.9	29.5	-50.4	Verti 100
7	25.572M	11.7	+6.3	+0.4	+0.1	-40.0 360	-21.5	29.5	-51.0	Verti 100
8	106.440k	33.6	+9.7	+0.1	+0.0	-80.0 360	-36.6	27.1	-63.7	Verti 100
9	108.480k	33.4	+9.7	+0.1	+0.0	-80.0 360	-36.8	26.9	-63.7	Verti 100
10	105.480k	33.1	+9.7	+0.1	+0.0	-80.0 360	-37.1	27.2	-64.3	Verti 100
11	93.480k	34.1	+9.7	+0.1	+0.0	-80.0 360	-36.1	28.2	-64.3	Verti 100
12	98.760k	33.6	+9.7	+0.1	+0.0	-80.0 360	-36.6	27.7	-64.3	Verti 100
13	94.080k	33.9	+9.7	+0.1	+0.0	-80.0 360	-36.3	28.1	-64.4	Verti 100
14	104.400k	32.7	+9.7	+0.1	+0.0	-80.0 360	-37.5	27.2	-64.7	Verti 100
15	94.440k	33.5	+9.7	+0.1	+0.0	-80.0 360	-36.7	28.1	-64.8	Verti 100
16	96.480k	33.1	+9.7	+0.1	+0.0	-80.0 360	-37.1	27.9	-65.0	Verti 100
17	91.920k	33.4	+9.7	+0.1	+0.0	-80.0 360	-36.8	28.3	-65.1	Verti 100
18	95.640k	33.1	+9.7	+0.1	+0.0	-80.0 360	-37.1	28.0	-65.1	Verti 100
19	109.680k	31.9	+9.7	+0.1	+0.0	-80.0 360	-38.3	26.8	-65.1	Verti 100
20	498.300k	38.9	+9.4	+0.1	+0.0	-80.0 360	-31.6	33.6	-65.2	Verti 100

CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 1 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Radiated Spurious Emissions**
Work Order #: **90820** Date: 8/13/2010
Test Type: **Maximized Emissions** Time:
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 5
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01993	Biconilog Antenna	CBL6111C	10/9/2009	10/9/2011
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN01517	Preamp	8447D	5/21/2010	5/21/2012
T4	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 30 MHz - 1 GHz
Temp: 24° C
Humidity: 45%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2412 MHz.

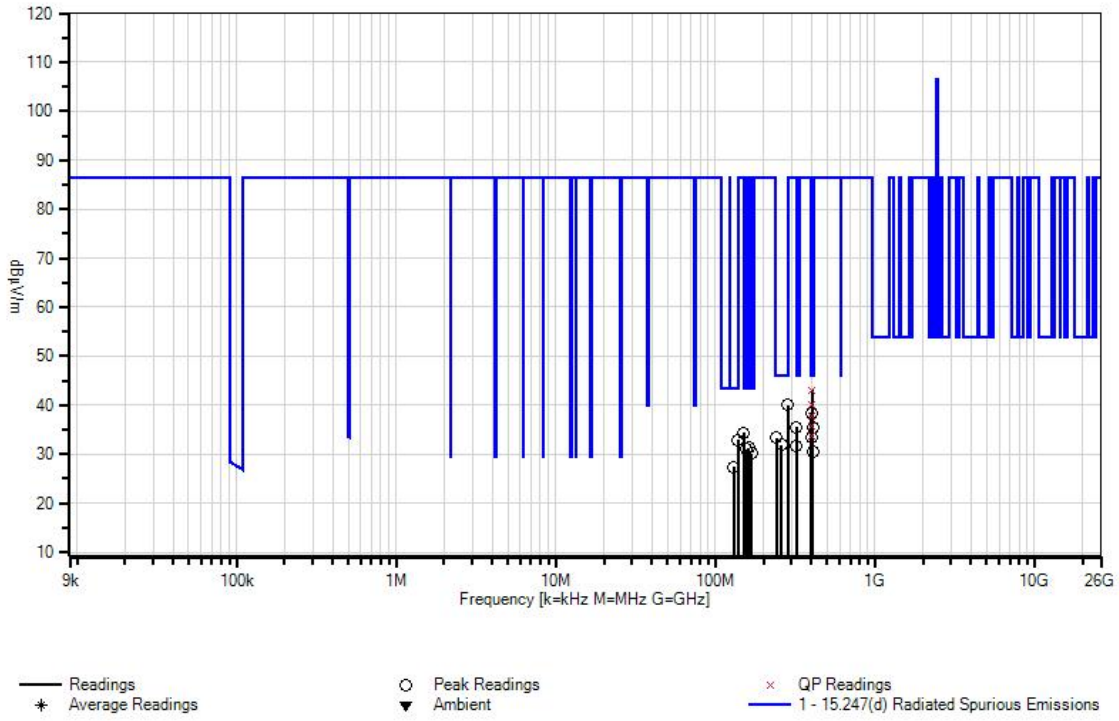
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5								
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	403.207M	52.0	+16.5	+1.5	-28.8	+1.3	+0.0	43.0	46.0	-3.0	Horiz
	QP		+0.5				170				180
^	403.276M	59.9	+16.5	+1.5	-28.8	+1.3	+0.0	50.9	46.0	+4.9	Horiz
			+0.5				170				180
^	403.276M	54.7	+16.5	+1.5	-28.8	+1.3	+0.0	45.7	46.0	-0.3	Horiz
			+0.5								130
4	284.176M	52.4	+13.3	+1.1	-28.2	+1.0	+0.0	40.0	46.0	-6.0	Horiz
			+0.4								130
5	403.998M	49.0	+16.5	+1.5	-28.8	+1.3	+0.0	40.0	46.0	-6.0	Horiz
	QP		+0.5				170				180
^	404.059M	59.3	+16.5	+1.5	-28.8	+1.3	+0.0	50.3	46.0	+4.3	Horiz
			+0.5				170				180
^	404.056M	53.2	+16.5	+1.5	-28.8	+1.3	+0.0	44.2	46.0	-1.8	Horiz
			+0.5								130
8	401.053M	47.5	+16.4	+1.5	-28.8	+1.3	+0.0	38.4	46.0	-7.6	Horiz
			+0.5								130
9	404.660M	46.9	+16.5	+1.5	-28.8	+1.3	+0.0	37.9	46.0	-8.1	Horiz
	QP		+0.5				180				174
^	404.703M	57.1	+16.5	+1.5	-28.8	+1.3	+0.0	48.1	46.0	+2.1	Horiz
			+0.5				180				174
^	404.657M	51.3	+16.5	+1.5	-28.8	+1.3	+0.0	42.3	46.0	-3.7	Horiz
			+0.5								130
12	150.002M	49.0	+12.1	+0.9	-28.7	+0.8	+0.0	34.4	43.5	-9.1	Horiz
			+0.3								130
13	402.600M	44.8	+16.4	+1.5	-28.8	+1.3	+0.0	35.7	46.0	-10.3	Horiz
	QP		+0.5				190				200
^	402.522M	58.1	+16.4	+1.5	-28.8	+1.3	+0.0	49.0	46.0	+3.0	Horiz
			+0.5				190				200
^	402.615M	52.9	+16.4	+1.5	-28.8	+1.3	+0.0	43.8	46.0	-2.2	Horiz
			+0.5								130
16	406.459M	44.6	+16.5	+1.5	-28.9	+1.3	+0.0	35.5	46.0	-10.5	Horiz
			+0.5								130
17	322.615M	46.7	+14.2	+1.3	-28.3	+1.2	+0.0	35.5	46.0	-10.5	Horiz
			+0.4								130
18	137.870M	47.7	+12.1	+0.8	-28.7	+0.7	+0.0	32.9	43.5	-10.6	Horiz
			+0.3								130
19	162.134M	46.7	+11.2	+0.9	-28.6	+0.8	+0.0	31.3	43.5	-12.2	Horiz
			+0.3								130
20	401.731M	42.7	+16.4	+1.5	-28.8	+1.3	+0.0	33.6	46.0	-12.4	Horiz
	QP		+0.5				190				190
^	401.717M	54.7	+16.4	+1.5	-28.8	+1.3	+0.0	45.6	46.0	-0.4	Horiz
			+0.5				190				190
^	401.654M	51.6	+16.4	+1.5	-28.8	+1.3	+0.0	42.5	46.0	-3.5	Horiz
			+0.5								130
23	400.453M	42.6	+16.4	+1.5	-28.8	+1.3	+0.0	33.5	46.0	-12.5	Horiz
			+0.5								130

24	156.729M	46.0	+11.6 +0.3	+0.9	-28.6	+0.8	+0.0	31.0	43.5	-12.5	Horiz 130
25	242.375M	46.8	+12.2 +0.4	+1.1	-28.2	+1.0	+0.0	33.3	46.0	-12.7	Horiz 130
26	168.020M	46.3	+10.5 +0.3	+0.9	-28.6	+0.8	+0.0	30.2	43.5	-13.3	Horiz 130
27	260.032M	44.7	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	31.9	46.0	-14.1	Horiz 130
28	322.134M	43.0	+14.2 +0.4	+1.3	-28.3	+1.2	+0.0	31.8	46.0	-14.2	Horiz 130
29	408.621M	39.6	+16.6 +0.5	+1.5	-28.9	+1.3	+0.0	30.6	46.0	-15.4	Horiz 130
30	129.942M	42.1	+12.3 +0.3	+0.8	-28.8	+0.7	+0.0	27.4	43.5	-16.1	Horiz 130

CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 5 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Radiated Spurious Emissions**		
Work Order #:	**90820**	Date:	8/13/2010
Test Type:	**Maximized Emissions**	Time:	
Equipment:	**SRR+WWAN+WIFI+GPS RX (always external antennas)**	Sequence#:	4
Manufacturer:	Itron, Inc.	Tested By:	Jeff Gilbert
Model:	CCU100T (model: Tower CCU)		
S/N:	7404FCC6		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01993	Biconilog Antenna	CBL6111C	10/9/2009	10/9/2011
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN01517	Preamp	8447D	5/21/2010	5/21/2012
T4	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

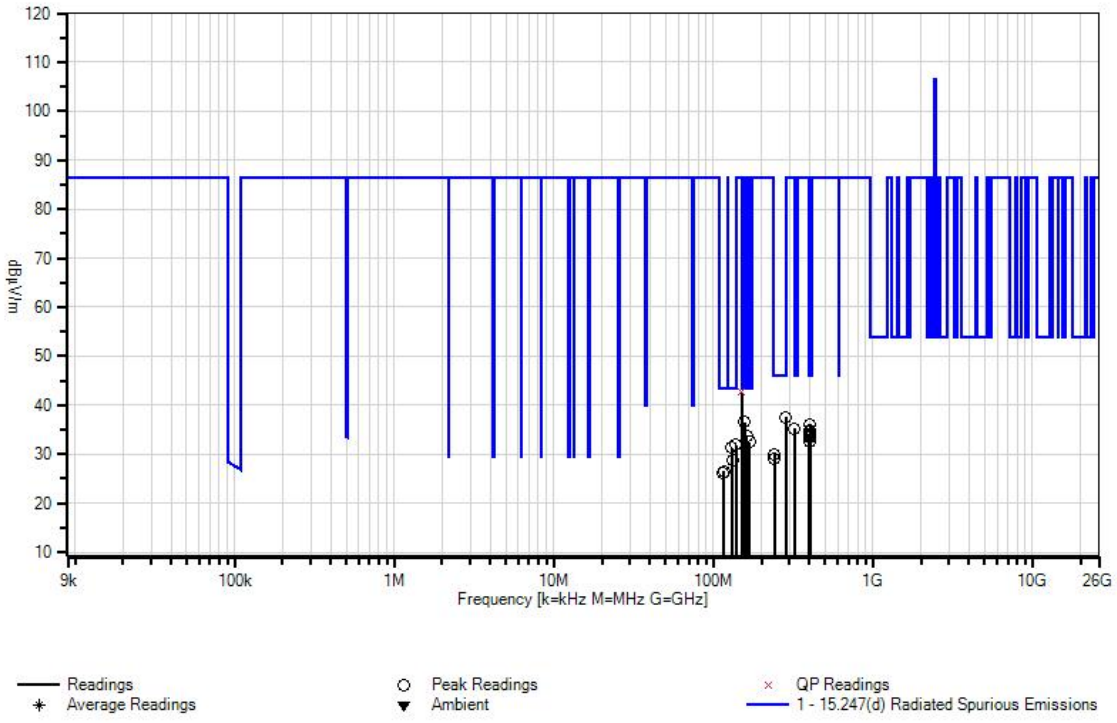
Frequency Range Investigated: 30 MHz - 1 GHz
Temp: 24° C
Humidity: 45%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2412 MHz.

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	149.980M QP	57.2	+12.1 +0.3	+0.9	-28.7	+0.8	+0.0 215	42.6	43.5	-0.9	Verti 100
^	150.028M	59.5	+12.1 +0.3	+0.9	-28.7	+0.8	+0.0 215	44.9	43.5	+1.4	Verti 100
^	150.002M	58.0	+12.1 +0.3	+0.9	-28.7	+0.8	+0.0 360	43.4	43.5	-0.1	Verti 130
4	156.729M	51.6	+11.6 +0.3	+0.9	-28.6	+0.8	+0.0 360	36.6	43.5	-6.9	Verti 130
5	283.816M	50.0	+13.3 +0.4	+1.1	-28.2	+1.0	+0.0 360	37.6	46.0	-8.4	Verti 130
6	162.134M	49.2	+11.2 +0.3	+0.9	-28.6	+0.8	+0.0 360	33.8	43.5	-9.7	Verti 130
7	403.215M	45.0	+16.5 +0.5	+1.5	-28.8	+1.3	+0.0 360	36.0	46.0	-10.0	Verti 130
8	322.134M	46.4	+14.2 +0.4	+1.3	-28.3	+1.2	+0.0 360	35.2	46.0	-10.8	Verti 130
9	402.855M	44.0	+16.5 +0.5	+1.5	-28.8	+1.3	+0.0 360	35.0	46.0	-11.0	Verti 130
10	168.140M	48.6	+10.5 +0.3	+0.9	-28.6	+0.8	+0.0 360	32.5	43.5	-11.0	Verti 130
11	401.654M	43.6	+16.4 +0.5	+1.5	-28.8	+1.3	+0.0 360	34.5	46.0	-11.5	Verti 130
12	137.870M	46.7	+12.1 +0.3	+0.8	-28.7	+0.7	+0.0 360	31.9	43.5	-11.6	Verti 130
13	401.053M	43.2	+16.4 +0.5	+1.5	-28.8	+1.3	+0.0 360	34.1	46.0	-11.9	Verti 130
14	129.942M	46.0	+12.3 +0.3	+0.8	-28.8	+0.7	+0.0 360	31.3	43.5	-12.2	Verti 130
15	401.293M	42.8	+16.4 +0.5	+1.5	-28.8	+1.3	+0.0 360	33.7	46.0	-12.3	Verti 130
16	404.056M	42.3	+16.5 +0.5	+1.5	-28.8	+1.3	+0.0 360	33.3	46.0	-12.7	Verti 130
17	404.777M	41.5	+16.5 +0.5	+1.5	-28.8	+1.3	+0.0 360	32.5	46.0	-13.5	Verti 130
18	132.225M	43.7	+12.2 +0.3	+0.8	-28.8	+0.7	+0.0 360	28.9	43.5	-14.6	Verti 130
19	241.894M	43.5	+12.2 +0.4	+1.1	-28.2	+1.0	+0.0 360	30.0	46.0	-16.0	Verti 130
20	241.053M	42.6	+12.2 +0.4	+1.1	-28.2	+1.0	+0.0 360	29.1	46.0	-16.9	Verti 130
21	116.128M	42.8	+11.0 +0.2	+0.7	-28.8	+0.6	+0.0 360	26.5	43.5	-17.0	Verti 130
22	114.687M	42.6	+10.9 +0.2	+0.7	-28.8	+0.6	+0.0 360	26.2	43.5	-17.3	Verti 130

CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 4 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Radiated Spurious Emissions**		
Work Order #:	**90820**	Date:	8/13/2010
Test Type:	**Maximized Emissions**	Time:	
Equipment:	**SRR+WWAN+WIFI+GPS RX (always external antennas)**	Sequence#:	7
Manufacturer:	Itron, Inc.	Tested By:	Jeff Gilbert
Model:	CCU100T (model: Tower CCU)		
S/N:	7404FCC6		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01993	Biconilog Antenna	CBL6111C	10/9/2009	10/9/2011
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN01517	Preamp	8447D	5/21/2010	5/21/2012
T4	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 30 MHz - 1 GHz
Temp: 24° C
Humidity: 45%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2437 MHz.

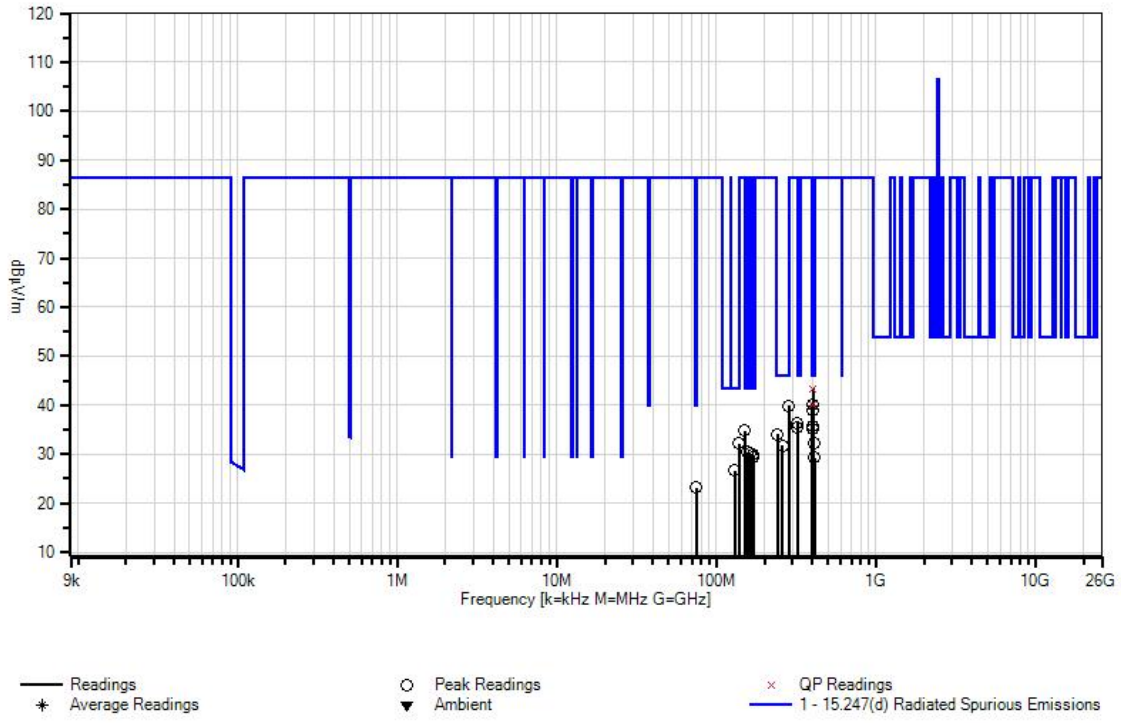
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5								
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	403.197M	52.4	+16.5	+1.5	-28.8	+1.3	+0.0	43.4	46.0	-2.6	Horiz
	QP		+0.5				180				185
^	403.230M	59.5	+16.5	+1.5	-28.8	+1.3	+0.0	50.5	46.0	+4.5	Horiz
			+0.5				180				185
^	403.230M	58.9	+16.5	+1.5	-28.8	+1.3	+0.0	49.9	46.0	+3.9	Horiz
			+0.5				185				200
4	401.173M	49.3	+16.4	+1.5	-28.8	+1.3	+0.0	40.2	46.0	-5.8	Horiz
			+0.5								130
5	403.754M	49.0	+16.5	+1.5	-28.8	+1.3	+0.0	40.0	46.0	-6.0	Horiz
	QP		+0.5				185				200
^	403.816M	55.1	+16.5	+1.5	-28.8	+1.3	+0.0	46.1	46.0	+0.1	Horiz
			+0.5								130
7	283.336M	52.4	+13.2	+1.1	-28.2	+1.0	+0.0	39.9	46.0	-6.1	Horiz
			+0.4								130
8	401.534M	48.1	+16.4	+1.5	-28.8	+1.3	+0.0	39.0	46.0	-7.0	Horiz
			+0.5								130
9	150.002M	49.4	+12.1	+0.9	-28.7	+0.8	+0.0	34.8	43.5	-8.7	Horiz
			+0.3								130
10	323.335M	47.4	+14.3	+1.3	-28.3	+1.3	+0.0	36.4	46.0	-9.6	Horiz
			+0.4								130
11	402.014M	44.7	+16.4	+1.5	-28.8	+1.3	+0.0	35.6	46.0	-10.4	Horiz
			+0.5								130
12	322.495M	46.7	+14.2	+1.3	-28.3	+1.2	+0.0	35.5	46.0	-10.5	Horiz
			+0.4								130
13	400.693M	44.2	+16.4	+1.5	-28.8	+1.3	+0.0	35.1	46.0	-10.9	Horiz
			+0.5								130
14	137.870M	47.0	+12.1	+0.8	-28.7	+0.7	+0.0	32.2	43.5	-11.3	Horiz
			+0.3								130
15	242.134M	47.6	+12.2	+1.1	-28.2	+1.0	+0.0	34.1	46.0	-11.9	Horiz
			+0.4								130
16	156.849M	45.5	+11.6	+0.9	-28.6	+0.8	+0.0	30.5	43.5	-13.0	Horiz
			+0.3								130
17	162.134M	45.7	+11.2	+0.9	-28.6	+0.8	+0.0	30.3	43.5	-13.2	Horiz
			+0.3								130
18	168.140M	46.1	+10.5	+0.9	-28.6	+0.8	+0.0	30.0	43.5	-13.5	Horiz
			+0.3								130
19	406.338M	41.4	+16.5	+1.5	-28.9	+1.3	+0.0	32.3	46.0	-13.7	Horiz
			+0.5								130
20	260.032M	44.6	+12.9	+1.1	-28.2	+1.0	+0.0	31.8	46.0	-14.2	Horiz
			+0.4								130
21	170.062M	45.4	+10.3	+0.9	-28.5	+0.8	+0.0	29.2	43.5	-14.3	Horiz
			+0.3								130

22	129.942M	41.4	+12.3 +0.3	+0.8	-28.8	+0.7	+0.0	26.7	43.5	-16.8	Horiz 130
23	409.942M	38.2	+16.6 +0.5	+1.5	-28.9	+1.3	+0.0	29.2	46.0	-16.8	Horiz 130
24	75.120M	42.9	+7.8 +0.2	+0.6	-28.9	+0.5	+0.0	23.1	40.0	-16.9	Horiz 130

CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 7 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Radiated Spurious Emissions**		
Work Order #:	**90820**	Date:	8/13/2010
Test Type:	**Maximized Emissions**	Time:	
Equipment:	**SRR+WWAN+WIFI+GPS RX (always external antennas)**	Sequence#:	6
Manufacturer:	Itron, Inc.	Tested By:	Jeff Gilbert
Model:	CCU100T (model: Tower CCU)		
S/N:	7404FCC6		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01993	Biconilog Antenna	CBL6111C	10/9/2009	10/9/2011
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN01517	Preamp	8447D	5/21/2010	5/21/2012
T4	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

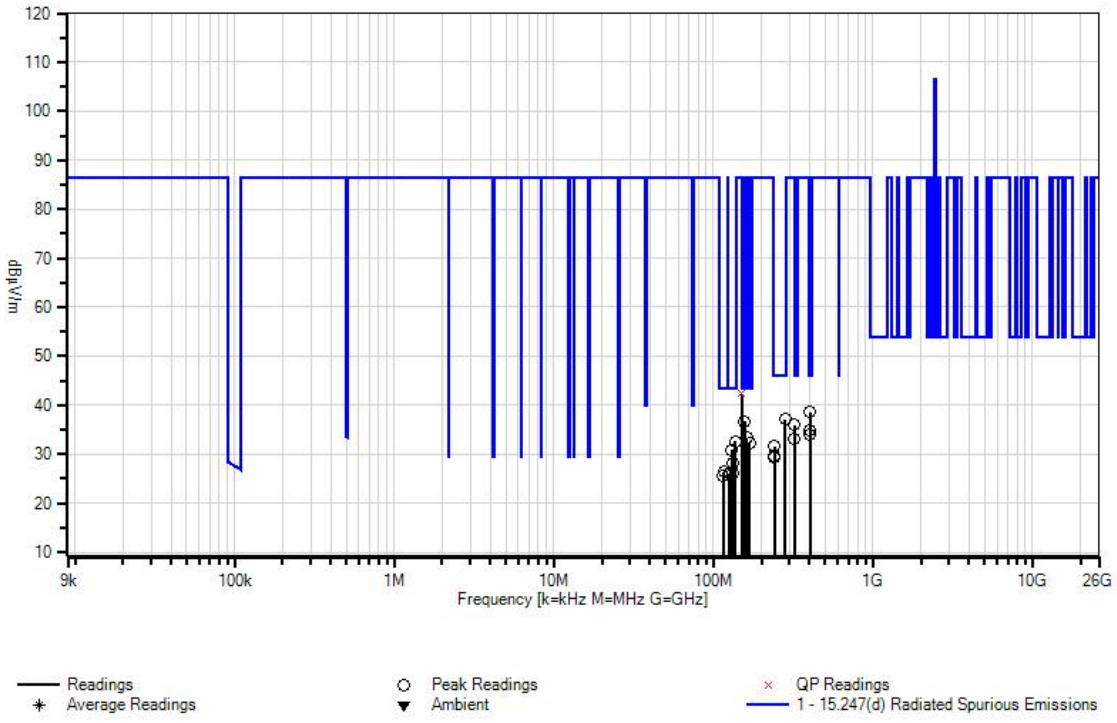
Frequency Range Investigated: 30 MHz - 1 GHz
Temp: 24° C
Humidity: 45%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2437 MHz.

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								
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	149.989M	57.0	+12.1	+0.9	-28.7	+0.8	+0.0	42.4	43.5	-1.1	Verti
	QP		+0.3				220				100
^	149.967M	59.1	+12.1	+0.9	-28.7	+0.8	+0.0	44.5	43.5	+1.0	Verti
			+0.3				220				100
^	150.002M	58.1	+12.1	+0.9	-28.7	+0.8	+0.0	43.5	43.5	+0.0	Verti
			+0.3								130
4	156.729M	51.7	+11.6	+0.9	-28.6	+0.8	+0.0	36.7	43.5	-6.8	Verti
			+0.3								130
5	404.657M	47.6	+16.5	+1.5	-28.8	+1.3	+0.0	38.6	46.0	-7.4	Verti
			+0.5								130
6	282.134M	49.6	+13.2	+1.1	-28.2	+1.0	+0.0	37.1	46.0	-8.9	Verti
			+0.4								130
7	322.975M	47.1	+14.2	+1.3	-28.3	+1.3	+0.0	36.0	46.0	-10.0	Verti
			+0.4								130
8	162.134M	48.8	+11.2	+0.9	-28.6	+0.8	+0.0	33.4	43.5	-10.1	Verti
			+0.3								130
9	137.750M	47.4	+12.1	+0.8	-28.7	+0.7	+0.0	32.6	43.5	-10.9	Verti
			+0.3								130
10	401.534M	44.0	+16.4	+1.5	-28.8	+1.3	+0.0	34.9	46.0	-11.1	Verti
			+0.5								130
11	168.020M	48.4	+10.5	+0.9	-28.6	+0.8	+0.0	32.3	43.5	-11.2	Verti
			+0.3								130
12	402.014M	43.2	+16.4	+1.5	-28.8	+1.3	+0.0	34.1	46.0	-11.9	Verti
			+0.5								130
13	130.062M	45.6	+12.3	+0.8	-28.8	+0.7	+0.0	30.9	43.5	-12.6	Verti
			+0.3								130
14	322.014M	44.3	+14.2	+1.3	-28.3	+1.2	+0.0	33.1	46.0	-12.9	Verti
			+0.4								130
15	242.254M	45.1	+12.2	+1.1	-28.2	+1.0	+0.0	31.6	46.0	-14.4	Verti
			+0.4								130
16	131.864M	43.0	+12.2	+0.8	-28.8	+0.7	+0.0	28.2	43.5	-15.3	Verti
			+0.3								130
17	240.933M	43.0	+12.2	+1.1	-28.2	+1.0	+0.0	29.5	46.0	-16.5	Verti
			+0.4								130
18	240.693M	42.8	+12.1	+1.1	-28.2	+1.0	+0.0	29.2	46.0	-16.8	Verti
			+0.4								130
19	116.249M	42.6	+11.0	+0.7	-28.8	+0.6	+0.0	26.3	43.5	-17.2	Verti
			+0.2								130
20	131.264M	41.0	+12.2	+0.8	-28.8	+0.7	+0.0	26.2	43.5	-17.3	Verti
			+0.3								130
21	126.699M	40.6	+12.4	+0.8	-28.8	+0.7	+0.0	26.0	43.5	-17.5	Verti
			+0.3								130
22	114.687M	42.1	+10.9	+0.7	-28.8	+0.6	+0.0	25.7	43.5	-17.8	Verti
			+0.2								130

CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 6 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Itron, Inc.**
Specification: **15.247(d) Radiated Spurious Emissions**
Work Order #: **90820** Date: 8/13/2010
Test Type: **Maximized Emissions** Time:
Equipment: **SRR+WWAN+WIFI+GPS RX (always external antennas)** Sequence#: 9
Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
Model: CCU100T (model: Tower CCU)
S/N: 7404FCC6

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01993	Biconilog Antenna	CBL6111C	10/9/2009	10/9/2011
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN01517	Preamp	8447D	5/21/2010	5/21/2012
T4	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 30 MHz - 1 GHz
Temp: 24° C
Humidity: 45%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2462 MHz.

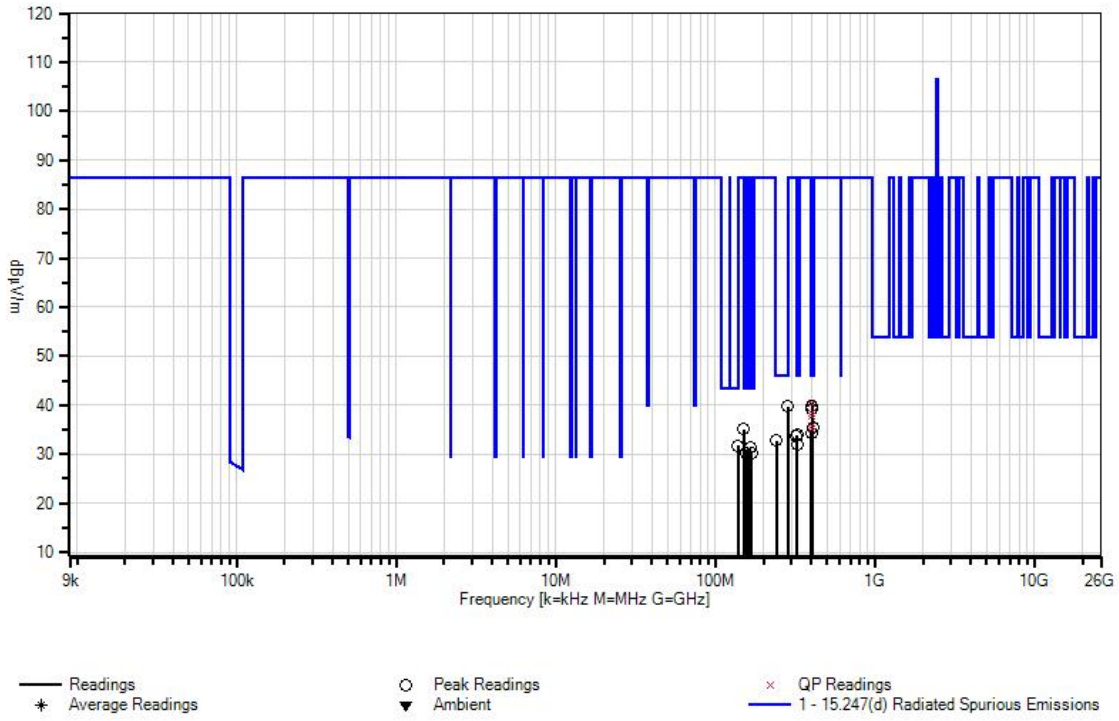
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5								
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	403.748M	49.4	+16.5	+1.5	-28.8	+1.3	+0.0	40.4	46.0	-5.6	Horiz
	QP		+0.5				180				195
^	403.761M	59.5	+16.5	+1.5	-28.8	+1.3	+0.0	50.5	46.0	+4.5	Horiz
			+0.5				180				195
^	403.696M	56.3	+16.5	+1.5	-28.8	+1.3	+0.0	47.3	46.0	+1.3	Horiz
			+0.5								130
4	401.774M	49.0	+16.4	+1.5	-28.8	+1.3	+0.0	39.9	46.0	-6.1	Horiz
			+0.5								130
5	283.936M	52.1	+13.3	+1.1	-28.2	+1.0	+0.0	39.7	46.0	-6.3	Horiz
			+0.4								130
6	401.413M	48.2	+16.4	+1.5	-28.8	+1.3	+0.0	39.1	46.0	-6.9	Horiz
			+0.5								130
7	404.441M	47.4	+16.5	+1.5	-28.8	+1.3	+0.0	38.4	46.0	-7.6	Horiz
	QP		+0.5				180				195
^	404.537M	56.7	+16.5	+1.5	-28.8	+1.3	+0.0	47.7	46.0	+1.7	Horiz
			+0.5				180				195
^	404.537M	54.8	+16.5	+1.5	-28.8	+1.3	+0.0	45.8	46.0	-0.2	Horiz
			+0.5								130
10	404.678M	46.9	+16.5	+1.5	-28.8	+1.3	+0.0	37.9	46.0	-8.1	Horiz
	QP		+0.5				180				195
^	404.742M	57.3	+16.5	+1.5	-28.8	+1.3	+0.0	48.3	46.0	+2.3	Horiz
			+0.5				180				195
^	404.777M	54.3	+16.5	+1.5	-28.8	+1.3	+0.0	45.3	46.0	-0.7	Horiz
			+0.5								130
13	150.002M	49.7	+12.1	+0.9	-28.7	+0.8	+0.0	35.1	43.5	-8.4	Horiz
			+0.3								130
14	402.461M	44.9	+16.4	+1.5	-28.8	+1.3	+0.0	35.8	46.0	-10.2	Horiz
	QP		+0.5				180				195
^	402.406M	56.9	+16.4	+1.5	-28.8	+1.3	+0.0	47.8	46.0	+1.8	Horiz
			+0.5				180				195
^	402.374M	53.3	+16.4	+1.5	-28.8	+1.3	+0.0	44.2	46.0	-1.8	Horiz
			+0.5								130
17	405.738M	44.4	+16.5	+1.5	-28.8	+1.3	+0.0	35.4	46.0	-10.6	Horiz
			+0.5								130
18	406.459M	44.4	+16.5	+1.5	-28.9	+1.3	+0.0	35.3	46.0	-10.7	Horiz
			+0.5								130
19	402.234M	44.3	+16.4	+1.5	-28.8	+1.3	+0.0	35.2	46.0	-10.8	Horiz
	QP		+0.5				180				195
^	402.215M	56.8	+16.4	+1.5	-28.8	+1.3	+0.0	47.7	46.0	+1.7	Horiz
			+0.5				180				195
^	402.134M	50.9	+16.4	+1.5	-28.8	+1.3	+0.0	41.8	46.0	-4.2	Horiz
			+0.5								130
22	400.092M	43.5	+16.4	+1.5	-28.8	+1.3	+0.0	34.4	46.0	-11.6	Horiz
			+0.5								130
23	137.870M	46.5	+12.1	+0.8	-28.7	+0.7	+0.0	31.7	43.5	-11.8	Horiz
			+0.3								130

24	323.456M	44.9	+14.3 +0.4	+1.3	-28.3	+1.3	+0.0	33.9	46.0	-12.1	Horiz 130
25	322.375M	45.0	+14.2 +0.4	+1.3	-28.3	+1.2	+0.0	33.8	46.0	-12.2	Horiz 130
26	164.176M	47.0	+10.9 +0.3	+0.9	-28.6	+0.8	+0.0	31.3	43.5	-12.2	Horiz 130
27	242.254M	46.3	+12.2 +0.4	+1.1	-28.2	+1.0	+0.0	32.8	46.0	-13.2	Horiz 130
28	156.729M	45.3	+11.6 +0.3	+0.9	-28.6	+0.8	+0.0	30.3	43.5	-13.2	Horiz 130
29	168.020M	46.2	+10.5 +0.3	+0.9	-28.6	+0.8	+0.0	30.1	43.5	-13.4	Horiz 130
30	323.936M	43.1	+14.3 +0.4	+1.3	-28.3	+1.3	+0.0	32.1	46.0	-13.9	Horiz 130

CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 9 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Radiated Spurious Emissions**		
Work Order #:	**90820**	Date:	8/13/2010
Test Type:	**Maximized Emissions**	Time:	
Equipment:	**SRR+WWAN+WIFI+GPS RX (always external antennas)**	Sequence#:	8
Manufacturer:	Itron, Inc.	Tested By:	Jeff Gilbert
Model:	CCU100T (model: Tower CCU)		
S/N:	7404FCC6		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01993	Biconilog Antenna	CBL6111C	10/9/2009	10/9/2011
T2	ANP05366	Cable	RG-214	10/20/2009	10/20/2011
T3	AN01517	Preamp	8447D	5/21/2010	5/21/2012
T4	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

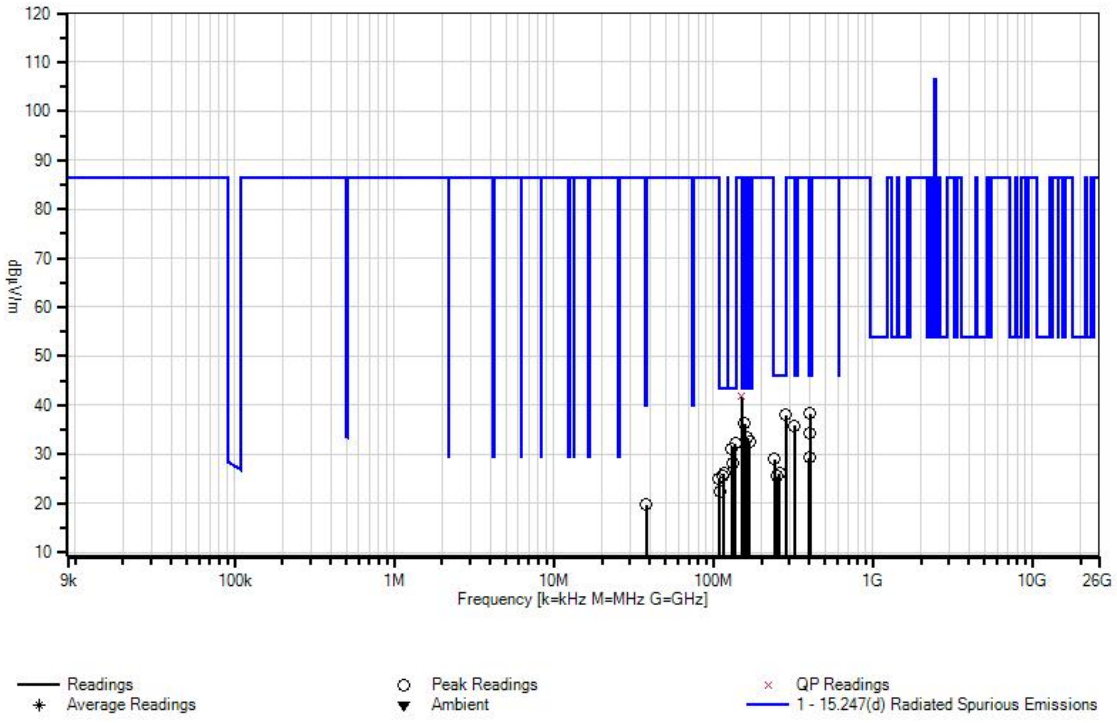
Frequency Range Investigated: 30 MHz - 1 GHz
Temp: 24° C
Humidity: 45%
Pressure: 102.1 kPa
FHSS and Cellular transceivers are in RX only mode.
Wi-Fi transmitter is on 2462 MHz.

Ext Attn: 0 dB

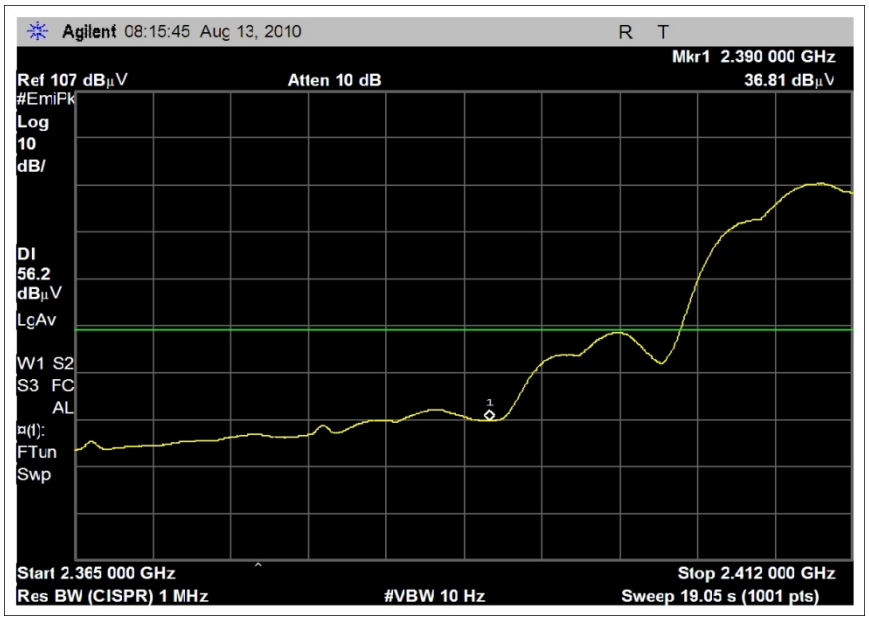
Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5								
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	149.991M	56.3	+12.1	+0.9	-28.7	+0.8	+0.0	41.7	43.5	-1.8	Verti
	QP		+0.3				205				100
^	149.977M	58.6	+12.1	+0.9	-28.7	+0.8	+0.0	44.0	43.5	+0.5	Verti
			+0.3				205				100
^	150.002M	57.7	+12.1	+0.9	-28.7	+0.8	+0.0	43.1	43.5	-0.4	Verti
			+0.3				360				130
4	156.729M	51.3	+11.6	+0.9	-28.6	+0.8	+0.0	36.3	43.5	-7.2	Verti
			+0.3				360				130
5	404.176M	47.3	+16.5	+1.5	-28.8	+1.3	+0.0	38.3	46.0	-7.7	Verti
			+0.5				360				130
6	283.095M	50.5	+13.2	+1.1	-28.2	+1.0	+0.0	38.0	46.0	-8.0	Verti
			+0.4				360				130
7	162.615M	48.9	+11.1	+0.9	-28.6	+0.8	+0.0	33.4	43.5	-10.1	Verti
			+0.3				360				130
8	322.855M	47.0	+14.2	+1.3	-28.3	+1.2	+0.0	35.8	46.0	-10.2	Verti
			+0.4				360				130
9	168.741M	48.5	+10.5	+0.9	-28.5	+0.8	+0.0	32.5	43.5	-11.0	Verti
			+0.3				360				130
10	137.750M	47.0	+12.1	+0.8	-28.7	+0.7	+0.0	32.2	43.5	-11.3	Verti
			+0.3				360				130
11	402.014M	43.5	+16.4	+1.5	-28.8	+1.3	+0.0	34.4	46.0	-11.6	Verti
			+0.5				360				130
12	129.942M	45.9	+12.3	+0.8	-28.8	+0.7	+0.0	31.2	43.5	-12.3	Verti
			+0.3				360				130
13	131.984M	43.0	+12.2	+0.8	-28.8	+0.7	+0.0	28.2	43.5	-15.3	Verti
			+0.3				360				130
14	400.453M	38.4	+16.4	+1.5	-28.8	+1.3	+0.0	29.3	46.0	-16.7	Verti
			+0.5				360				130
15	242.254M	42.5	+12.2	+1.1	-28.2	+1.0	+0.0	29.0	46.0	-17.0	Verti
			+0.4				360				130
16	116.128M	42.3	+11.0	+0.7	-28.8	+0.6	+0.0	26.0	43.5	-17.5	Verti
			+0.2				360				130
17	114.687M	41.9	+10.9	+0.7	-28.8	+0.6	+0.0	25.5	43.5	-18.0	Verti
			+0.2				360				130
18	108.080M	41.8	+10.6	+0.7	-28.8	+0.6	+0.0	25.1	43.5	-18.4	Verti
			+0.2				360				130
19	260.032M	38.8	+12.9	+1.1	-28.2	+1.0	+0.0	26.0	46.0	-20.0	Verti
			+0.4				360				130
20	37.853M	35.3	+12.3	+0.5	-28.9	+0.4	+0.0	19.7	40.0	-20.3	Verti
			+0.1				360				130
21	250.062M	38.5	+12.7	+1.1	-28.2	+1.0	+0.0	25.5	46.0	-20.5	Verti
			+0.4				360				130
22	109.642M	39.1	+10.7	+0.7	-28.8	+0.6	+0.0	22.5	43.5	-21.0	Verti
			+0.2				360				130

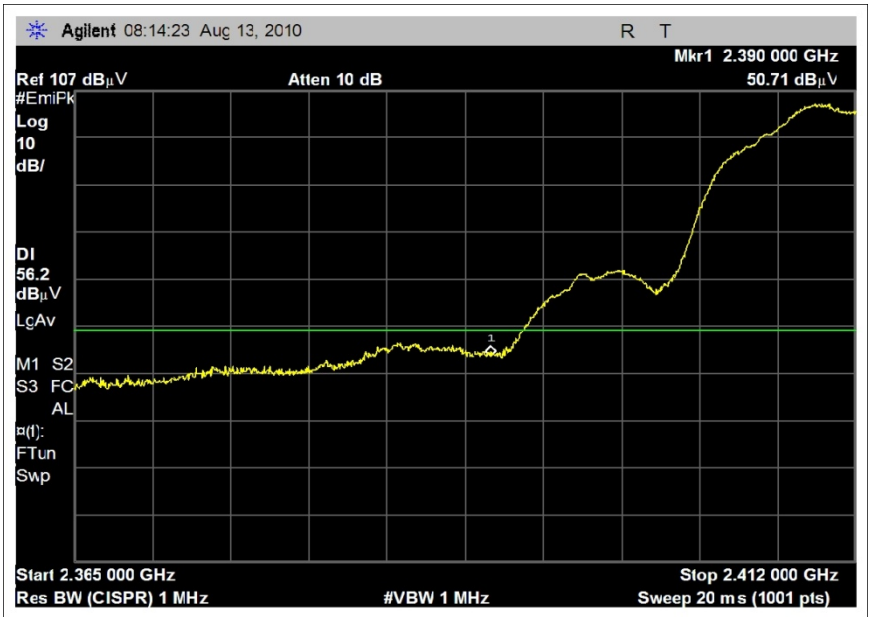
CKC Laboratories, Inc. Date: 8/13/2010 Itron, Inc. WO#: 90820
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 8 Ext ATTN: 0 dB



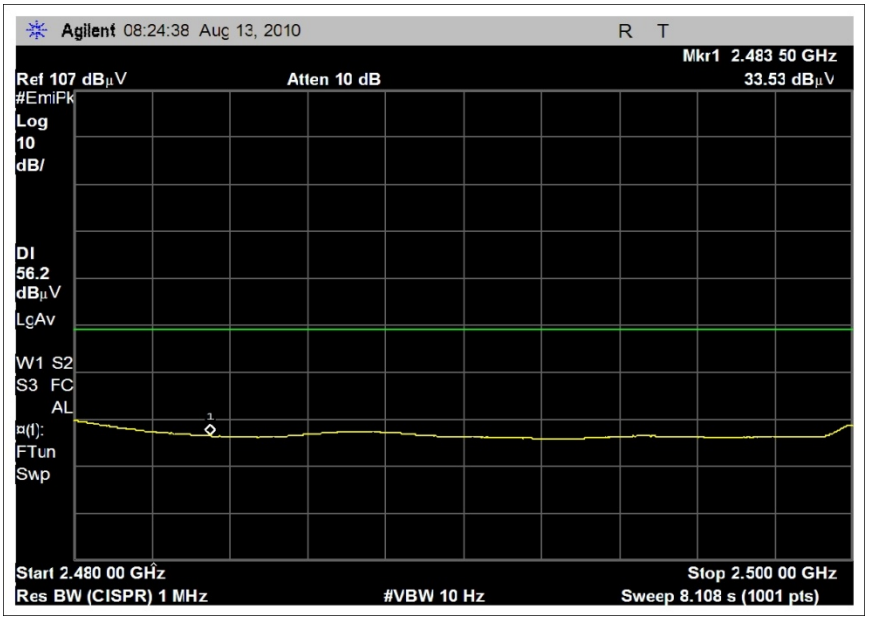
Bandedge



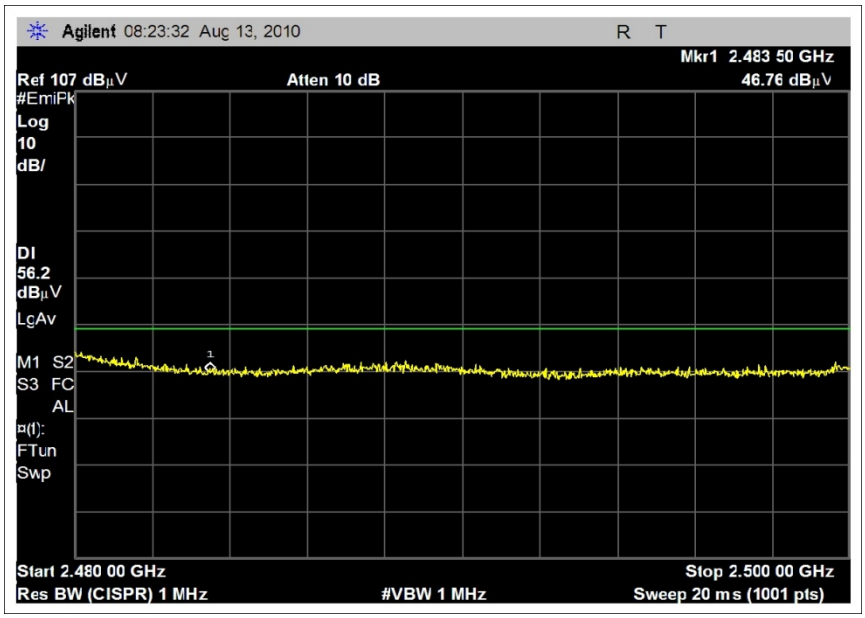
2412MHz-Bandedge-Avg



2412MHz-Bandedge-Peak



2462MHz-Bandedge-Avg



2462MHz-Bandedge-Peak

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Radiated Spurious Emissions**		
Work Order #:	**90820**	Date:	8/12/2010
Test Type:	**Maximized Emissions**	Time:	
Equipment:	**SRR+WWAN+WIFI+GPS RX (always external antennas)**	Sequence#:	3
Manufacturer:	Itron, Inc.	Tested By:	Jeff Gilbert
Model:	CCU100T (model: Tower CCU)		
S/N:	7404FCC6		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	5/7/2010	5/7/2012
T2	AN03123	Cable	32026-2-29801-12	10/23/2009	10/23/2011
T3	AN01271	Preamp	83017A	9/17/2009	9/17/2011
T4	ANP05542	Cable	Heliax	10/23/2009	10/23/2011
T5	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
	AN02872	Spectrum Analyzer	E4440A	8/25/2009	8/25/2011

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
SRR+WWAN+WIFI+GPS RX (always external antennas)*	Itron, Inc.	CCU100T (model: Tower CCU)	7404FCC6
External ISM Antenna	Laird Technologies	FG9026	40241
External WWAN Antenna	Laird Technologies	FG821/18503	40353
External GPS Antenna	Trimble	57861-00	213100323
External Battery	Excel Battery Company	2EXL7360	S10166003-023
Lighting Surge Arrestor	Polyphaser	DSXL-ME	
External RF Filter	Delta Microwave	U1993	101

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D630	9JQRJH1

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9 GHz
Temp: 24° C
Humidity: 44%
Pressure: 102.2 kPa
FHSS transceiver and cell modem are in receive only mode
Wi-Fi transmitter is on 2412 MHz.