

Ittron, Inc.

TEST REPORT FOR

**SRR+WWAN+WIFI+GPS RX (Internal WWAN & GPS Antenna), CCU100A
&
SRR+WWAN+WIFI+GPS RX (External WWAN & GPS Antenna), CCU100RA**

Tested To The Following Standards:

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

Report No.: 91909-6

Date of issue: May 4, 2011



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:

ltron, Inc.
2111 N. Molter Road
Liberty Lake, WA 99019

Representative: Jay Holcomb
Customer Reference Number:

DATE OF EQUIPMENT RECEIPT:**DATE(S) OF TESTING:****REPORT PREPARED BY:**

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

Project Number: 91909

April 26, 2011

April 26-28, 2011

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.

A handwritten signature in black ink that reads "Steve Behm".

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	CB #	JAPAN	CANADA	FCC
Bothell	US0081	R-2296, C-2506, T-1489 & G-284	3082C-1	318736

Conditions During Testing

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

Summary of Conditions

15.207 Testing:

For this requirement, only one model was tested; CCU100A (SRR+WWAN+WIFI+GPS RX Internal WWAN & GPS Antenna). The manufacturer declares that, with regards to this particular test, all models are electrically identical and therefore meet the level of testing equivalent to the tested model.

15.247(b)(2) Peak RF Power Testing:

For this requirement, only one model was tested; CCU100A (SRR+WWAN+WIFI+GPS RX Internal WWAN & GPS Antenna). The manufacturer declares that, with regards to this particular test, all models are electrically identical and therefore meet the level of testing equivalent to the tested model.

Radiated Spurious Testing:

A Laird Ferrite (part# 28B0355-000) was added on the battery wiring harness in order to pass. See photos below.



SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C 15.247 & RSS-210 Issue 8

Description	Test Procedure/Method	Results
Input Voltage Variations	FCC 15.31(e)	Pass
Conducted Emissions	FCC Part 15 Subpart C Section 15.207 / FHSS-DA00-705 / ANSI C63.4	Pass
Carrier Frequency Separation	FCC Part 15 Subpart C Section 15.247(a)(1) / FHSS-DA00-705 / ANSI C63.4	Pass
20 dB Bandwidth	FCC Part 15 Subpart C Section 15.247(a)(1)(i) / FHSS-DA00-705 / ANSI C63.4	Pass
Number of Hopping Frequencies	FCC Part 15 Subpart C Section 15.247(a)(1)(i) / FHSS-DA00-705 / ANSI C63.4	Pass
Time of Occupancy	FCC Part 15 Subpart C Section 15.247(a)(1)(i) / FHSS-DA00-705 / ANSI C63.4	Pass
Peak Conducted Output Power	FCC Part 15 Subpart C Section 15.247(b)(2) / FHSS-DA00-705 / ANSI C63.4	Pass
Spurious Emissions – Antenna Conducted	FCC Part 15 Subpart C Section 15.247(d) / FHSS-DA00-705 / ANSI C63.4	Pass
Spurious Emissions – Radiated	FCC Part 15 Subpart C Section 15.247(d) / FHSS-DA00-705 / ANSI C63.4	Pass
99% Bandwidth	RSS-Gen 4.6.1	Pass

EQUIPMENT UNDER TEST (EUT)

CKC Laboratories tested the following devices:

CCU100A (SRR+WWAN+WIFI+GPS RX Internal WWAN & GPS Antenna)

CCU100RA (SRR+WWAN+WIFI+GPS RX External WWAN & GPS Antenna)

During testing it was found that the two devices above with either the AT&T or Verizon cellular modems had a much worse emissions profile than without either cellular modem in the device. The difference between the repeater versions of these devices and the non-repeater versions is that the repeater versions do not have a cellular modem in them. Therefore, the manufacturer claims that any differences between the following devices without modems in them do not affect their EMC characteristics, and therefore meet the level of testing equivalent to the tested models:

CCU100A-Repeater (SRR+WIFI+GPS RX Internal GPS Antenna)

CCU100RA-Repeater (SRR+WIFI+GPS RX External GPS Antenna)

EQUIPMENT UNDER TEST

SRR+WWAN+WIFI+GPS RX (internal WWAN & GPS antenna)

Manuf: Itron, Inc.

Model: CCU100A

Serial: 74045190

SRR+WWAN+WIFI+GPS RX (external WWAN & GPS antenna)

Manuf: Itron, Inc.

Model: CCU100RA

Serial: 74045189

External WWAN Antenna

Manuf: Laird Technologies

Model: FG821/18503

Serial: 40353

External GPS Antenna

Manuf: Trimble

Model: 57861-00

Serial: 213100323

V-Pol Omni

Manuf: Antenna Products

Model: AMR3-91657 T0

Serial: 0818

PERIPHERAL DEVICES

The EUT was tested with following peripheral device:

Laptop

Manuf: Dell
Model: E6400
Serial: H4CSTK1

EUT LABEL



FCC PART 15 SUBPART B

15.31(e) Voltage Variations

Test Conditions / Setup

Comments

The EUT (CCU100A) was setup on the bench and connected to a spectrum analyzer via an RF cable and a 10 dB attenuator. The EUT was cycled through the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable. For this set of tests, all models (CCU100A, CCU100A-Repeater, CCU100RA, and CCU100RA-Repeater) are identical.

Requirement: Carrier Frequencies shall be separated by a minimum of 25 kHz or the 20 dB bandwidth, whichever is greater.

Result: The Carrier Frequencies are separated by 200 kHz. PASS

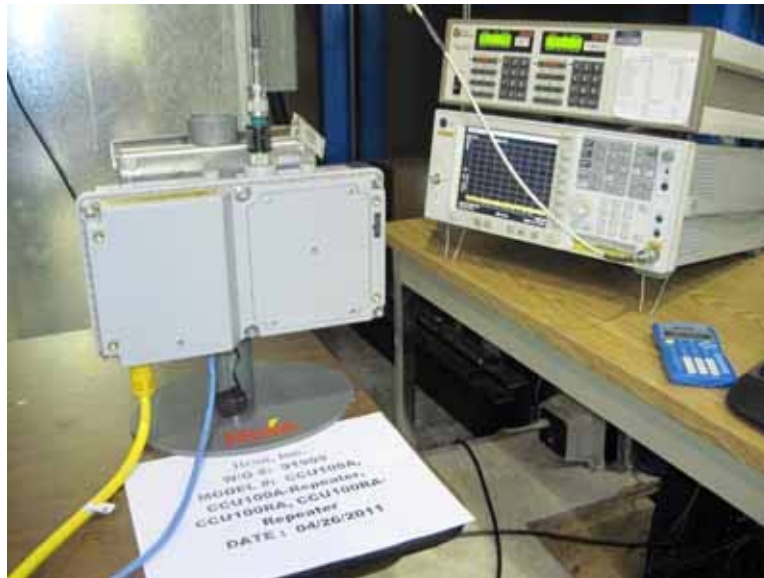
Test Equipment

Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012
03122	Cable 10k-18G	32026-2-29801-36	Astrolab	12/23/2010	12/23/2012
01314	Programmable power source	345AMXT-UPC3	PPS	05/27/2010	05/27/2012

Engineer Name: J. Gilbert

Results Table			
FHSS-AM 16 kBaud	903 MHz	915 MHz	926.8 MHz
Voltage	dBm	dBm	dBm
102	28.3	29.6	26.0
120	28.5	29.7	26.0
138	28.4	29.6	25.8
204	28.3	29.5	25.8
240	28.3	29.6	25.9
265	28.2	29.5	25.9
FHSS-FM 12.5 kBaud	903 MHz	915 MHz	926.8 MHz
Voltage	dBm	dBm	dBm
102	28.1	29.4	26.0
120	28.2	29.4	25.9
138	28.1	29.4	26.0
204	28.2	29.5	25.9
240	28.1	29.5	26.0
265	28.3	29.5	25.9
FHSS-FM 37.5 kBaud	903 MHz	915 MHz	926.8 MHz
Voltage	dBm	dBm	dBm
102	28.1	29.4	25.8
120	28.0	29.4	25.9
138	28.1	29.4	25.8
204	28.0	29.4	25.9
240	28.1	29.4	25.8
265	27.9	29.4	25.9

Test Setup Photos



15.207 AC Conducted Emissions

Test Notes: Conducted Disturbances at Mains Terminals, LISN method.

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 #: **91909**

Date: 4/26/2011

Test Type: **Conducted Emissions**

Time: 16:02:03

Equipment: **SRR+WWAN+WIFI+GPS RX
(internal WWAN & GPS antenna)**

Sequence#: 1

Manufacturer: Itron, Inc.

Tested By: Jeff Gilbert

Model: CCU100A

120V 60Hz

S/N: 74045190

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	9/8/2010	9/8/2012
T3	ANP05360	Cable	RG214	11/8/2010	11/8/2012
T4	ANP05547	Cable	Heliac	5/18/2010	5/18/2012
T5	ANP05337	Cable	RG-214	4/11/2011	4/11/2013
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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 150 kHz - 30 MHz

Temp: 25° C

Humidity: 34%

Pressure: 102.7 kPa

The EUT is transmitting on 915 MHz, AM Mod.

Ext Attn: 0 dB

Measurement Data:

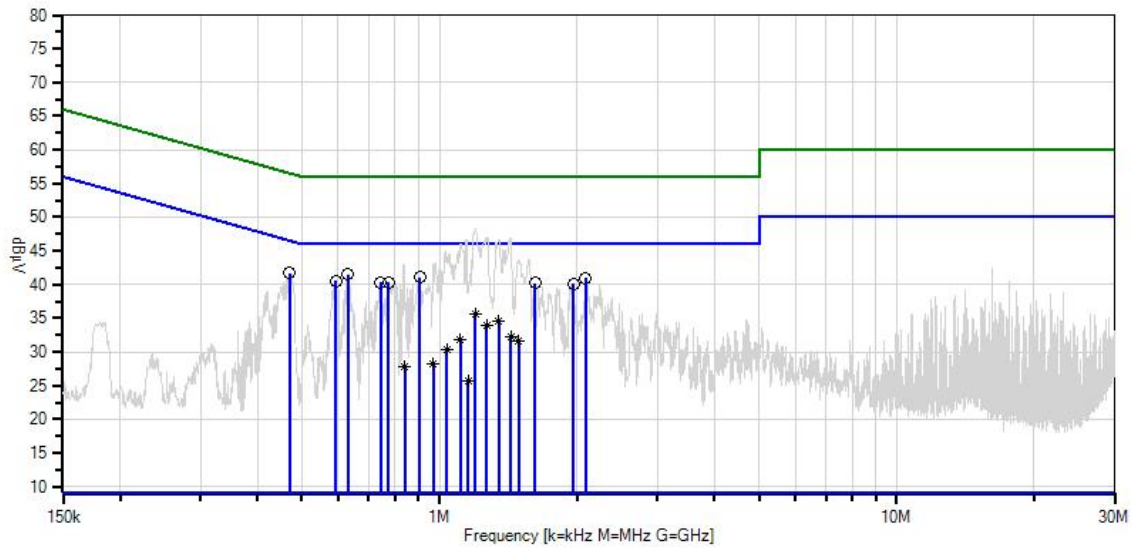
Reading listed by margin.

Test Lead: Line

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	629.956k	31.6	+0.1 +0.1	+9.7 +0.0	+0.0	+0.0	+0.0	41.5	46.0	-4.5	Line
2	469.971k	31.7	+0.1 +0.1	+9.7 +0.1	+0.0	+0.0	+0.0	41.7	46.5	-4.8	Line
3	906.974k	31.1	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	41.1	46.0	-4.9	Line
4	2.085M	31.0	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	41.0	46.0	-5.0	Line
5	593.596k	30.6	+0.1 +0.1	+9.7 +0.0	+0.0	+0.0	+0.0	40.5	46.0	-5.5	Line
6	742.673k	30.3	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.3	46.0	-5.7	Line
7	772.488k	30.3	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.3	46.0	-5.7	Line
8	1.617M	30.1	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	40.2	46.0	-5.8	Line
9	1.962M	30.1	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.1	46.0	-5.9	Line
10	1.199M	25.6	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	35.7	46.0	-10.3	Line
^	1.200M	38.2	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	48.3	46.0	+2.3	Line
12	1.346M	24.5	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	34.6	46.0	-11.4	Line
^	1.349M	36.7	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	46.8	46.0	+0.8	Line
14	1.269M	23.9	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	34.0	46.0	-12.0	Line
^	1.273M	37.1	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	47.2	46.0	+1.2	Line
16	1.431M	22.2	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	32.3	46.0	-13.7	Line
^	1.430M	36.9	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	47.0	46.0	+1.0	Line
18	1.113M	21.7	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	31.8	46.0	-14.2	Line
^	1.111M	35.9	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	46.0	46.0	+0.0	Line

20	1.492M	21.6	+0.1	+9.7	+0.0	+0.1	+0.0	31.7	46.0	-14.3	Line
Ave			+0.1	+0.1							
^	1.485M	33.6	+0.1	+9.7	+0.0	+0.1	+0.0	43.7	46.0	-2.3	Line
			+0.1	+0.1							
22	1.037M	20.4	+0.1	+9.7	+0.0	+0.1	+0.0	30.4	46.0	-15.6	Line
Ave			+0.1	+0.0							
^	1.030M	35.0	+0.1	+9.7	+0.0	+0.1	+0.0	45.0	46.0	-1.0	Line
			+0.1	+0.0							
24	969.770k	18.2	+0.1	+9.7	+0.0	+0.1	+0.0	28.2	46.0	-17.8	Line
Ave			+0.1	+0.0							
^	970.000k	33.3	+0.1	+9.7	+0.0	+0.1	+0.0	43.3	46.0	-2.7	Line
			+0.1	+0.0							
26	838.910k	17.8	+0.1	+9.7	+0.0	+0.1	+0.0	27.8	46.0	-18.2	Line
Ave			+0.1	+0.0							
^	835.028k	33.2	+0.1	+9.7	+0.0	+0.1	+0.0	43.2	46.0	-2.8	Line
			+0.1	+0.0							
^	838.664k	32.8	+0.1	+9.7	+0.0	+0.1	+0.0	42.8	46.0	-3.2	Line
			+0.1	+0.0							
29	1.155M	15.5	+0.1	+9.7	+0.0	+0.1	+0.0	25.6	46.0	-20.4	Line
Ave			+0.1	+0.1							
^	1.150M	36.6	+0.1	+9.7	+0.0	+0.1	+0.0	46.7	46.0	+0.7	Line
			+0.1	+0.1							

CKC Laboratories, Inc. Date: 4/26/2011 Time: 16:02:03 Itron, Inc. WO#: 91909
15.207 AC Mains - Average Test Lead: Line 120V 60Hz Sequence#: 1 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.207 AC Mains - Average

— Readings
× QP Readings
▼ Ambient
— 2 - 15.207 AC Mains - Quasi-peak



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 #: **91909** Date: 4/26/2011
 Test Type: **Conducted Emissions** Time: 16:15:10
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 2
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A 120V 60Hz
 S/N: 74045190

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	9/8/2010	9/8/2012
T3	ANP05360	Cable	RG214	11/8/2010	11/8/2012
T4	ANP05547	Cable	Helix	5/18/2010	5/18/2012
T5	ANP05337	Cable	RG-214	4/11/2011	4/11/2013
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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 150 kHz - 30 MHz
 Temp: 25° C
 Humidity: 34%
 Pressure: 102.7 kPa

The EUT is transmitting on 915 MHz, AM Mod.

Ext Attn: 0 dB

Measurement Data:

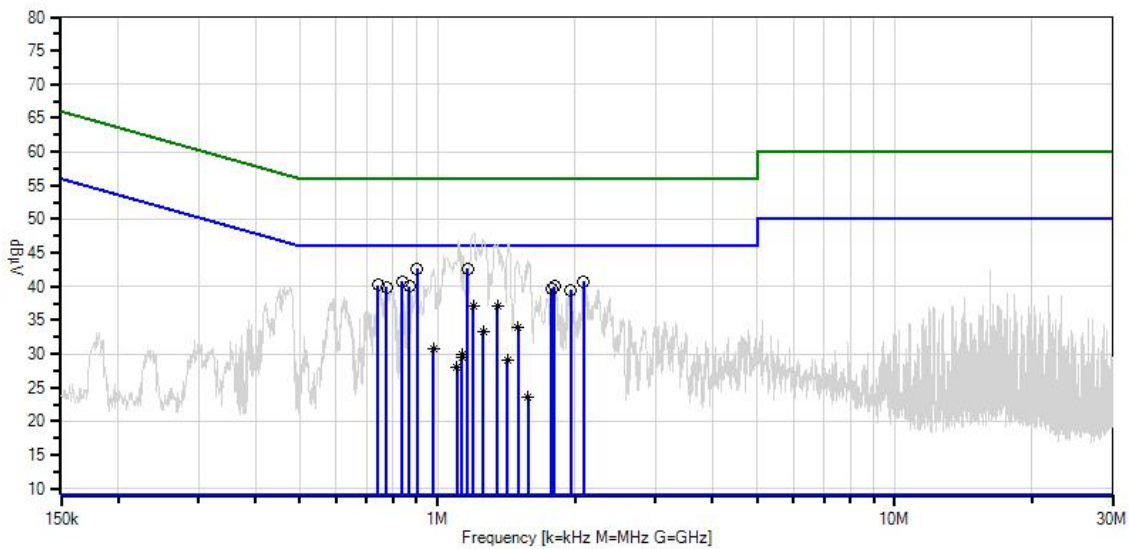
Reading listed by margin.

Test Lead: Neutral

#	Freq MHz	Rdng dB μ V	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	902.721k	32.7	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	42.6	46.0	-3.4	Neutr
2	1.162M	32.6	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	42.6	46.0	-3.4	Neutr
3	835.755k	30.8	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.7	46.0	-5.3	Neutr
4	2.089M	30.7	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.7	46.0	-5.3	Neutr
5	741.218k	30.3	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.2	46.0	-5.8	Neutr
6	867.025k	30.1	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.0	46.0	-6.0	Neutr
7	1.804M	30.0	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.0	46.0	-6.0	Neutr
8	772.488k	30.0	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	39.9	46.0	-6.1	Neutr
9	1.779M	29.7	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	39.7	46.0	-6.3	Neutr
10	1.957M	29.5	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	39.5	46.0	-6.5	Neutr
11	1.351M	27.0	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	37.0	46.0	-9.0	Neutr
^	1.358M	36.3	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	46.3	46.0	+0.3	Neutr
13	1.200M	27.0	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	37.0	46.0	-9.0	Neutr
^	1.196M	37.9	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	47.9	46.0	+1.9	Neutr
15	1.501M	23.9	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	34.0	46.0	-12.0	Neutr
^	1.498M	33.7	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	43.8	46.0	-2.2	Neutr
17	1.258M	23.2	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	33.2	46.0	-12.8	Neutr
^	1.256M	37.1	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	47.1	46.0	+1.1	Neutr
19	978.250k	20.9	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	30.8	46.0	-15.2	Neutr
^	979.270k	32.8	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	42.7	46.0	-3.3	Neutr
21	1.129M	20.0	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	30.0	46.0	-16.0	Neutr
22	1.131M	19.4	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	29.4	46.0	-16.6	Neutr
^	1.128M	35.3	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	45.3	46.0	-0.7	Neutr

^	1.141M	34.4	+0.0	+9.7	+0.0	+0.1	+0.0	44.4	46.0	-1.6	Neutr
			+0.1	+0.1							
25	1.420M	19.0	+0.1	+9.7	+0.0	+0.1	+0.0	29.1	46.0	-16.9	Neutr
Ave			+0.1	+0.1							
^	1.430M	36.4	+0.1	+9.7	+0.0	+0.1	+0.0	46.5	46.0	+0.5	Neutr
			+0.1	+0.1							
27	1.103M	18.0	+0.0	+9.7	+0.0	+0.1	+0.0	28.0	46.0	-18.0	Neutr
Ave			+0.1	+0.1							
^	1.111M	36.9	+0.0	+9.7	+0.0	+0.1	+0.0	46.9	46.0	+0.9	Neutr
			+0.1	+0.1							
29	1.580M	13.4	+0.1	+9.7	+0.0	+0.1	+0.0	23.5	46.0	-22.5	Neutr
Ave			+0.1	+0.1							
^	1.575M	33.7	+0.1	+9.7	+0.0	+0.1	+0.0	43.8	46.0	-2.2	Neutr
			+0.1	+0.1							

CKC Laboratories, Inc. Date: 4/26/2011 Time: 16:15:10 Itron, Inc. WO#: 91909
15.207 AC Mains - Average Test Lead: Neutral 120V 60Hz Sequence#: 2 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.207 AC Mains - Average
— Readings
× QP Readings
▼ Ambient
— 2 - 15.207 AC Mains - Quasi-peak



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 #: **91909** Date: 4/26/2011
 Test Type: **Conducted Emissions** Time: 16:31:39
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 3
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A 240V 60Hz
 S/N: 74045190

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	9/8/2010	9/8/2012
T3	ANP05360	Cable	RG214	11/8/2010	11/8/2012
T4	ANP05547	Cable	Helix	5/18/2010	5/18/2012
T5	ANP05337	Cable	RG-214	4/11/2011	4/11/2013
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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 150 kHz - 30 MHz
 Temp: 25° C
 Humidity: 34%
 Pressure: 102.7 kPa

The EUT is transmitting on 915 MHz, AM Mod.

Ext Attn: 0 dB

Measurement Data:

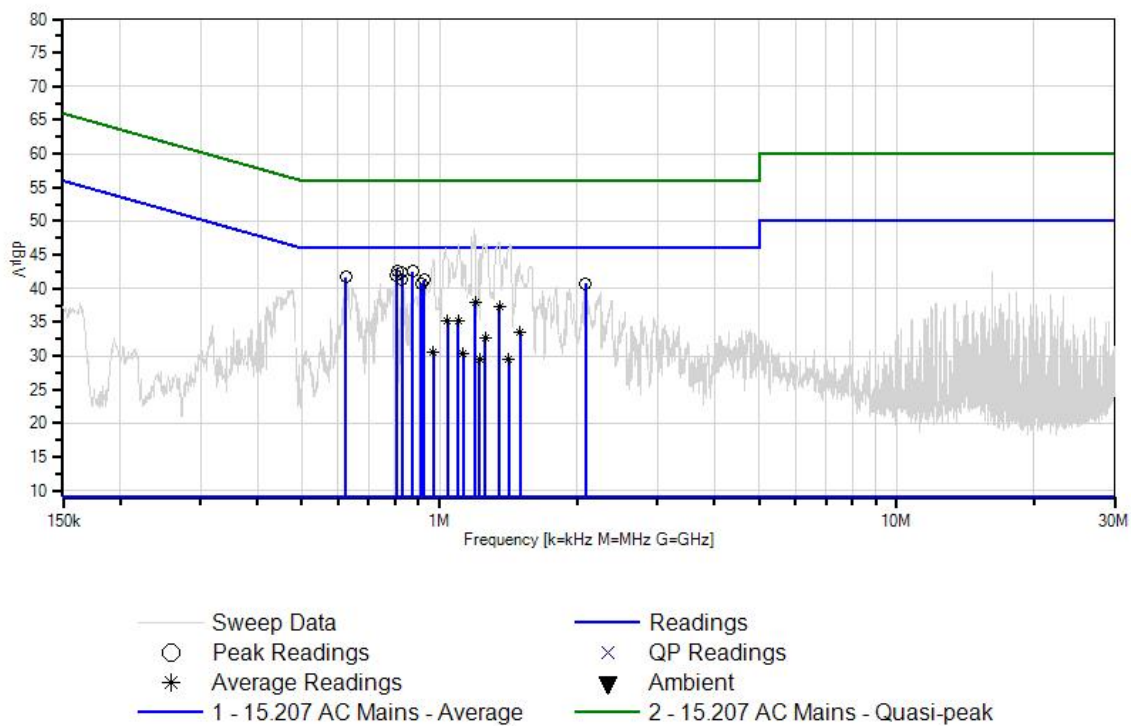
Reading listed by margin.

Test Lead: Line

#	Freq MHz	Rdng dB μ V	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	806.667k	32.6	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	42.6	46.0	-3.4	Line
2	872.116k	32.5	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	42.5	46.0	-3.5	Line
3	827.029k	32.3	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	42.3	46.0	-3.7	Line
4	803.758k	31.9	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	41.9	46.0	-4.1	Line
5	624.138k	31.8	+0.1 +0.1	+9.7 +0.0	+0.0	+0.0	+0.0	41.7	46.0	-4.3	Line
6	829.210k	31.4	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	41.4	46.0	-4.6	Line
7	923.985k	31.3	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	41.3	46.0	-4.7	Line
8	911.227k	30.8	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.8	46.0	-5.2	Line
9	2.089M	30.7	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.7	46.0	-5.3	Line
10	1.198M	27.8	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	37.9	46.0	-8.1	Line
^	1.192M	38.6	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	48.7	46.0	+2.7	Line
12	1.352M	27.2	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	37.3	46.0	-8.7	Line
^	1.345M	36.8	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	46.9	46.0	+0.9	Line
14	1.040M	25.3	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	35.3	46.0	-10.7	Line
^	1.030M	36.0	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	46.0	46.0	+0.0	Line
16	1.100M	25.1	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	35.2	46.0	-10.8	Line
^	1.098M	36.5	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	46.6	46.0	+0.6	Line
18	1.500M	23.5	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	33.6	46.0	-12.4	Line
^	1.498M	33.5	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	43.6	46.0	-2.4	Line
20	1.258M	22.5	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	32.6	46.0	-13.4	Line
^	1.256M	36.6	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	46.7	46.0	+0.7	Line
22	967.990k	20.5	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	30.5	46.0	-15.5	Line
^	966.512k	34.4	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	44.4	46.0	-1.6	Line

24	1.128M	20.3	+0.1	+9.7	+0.0	+0.1	+0.0	30.4	46.0	-15.6	Line
Ave			+0.1	+0.1							
^	1.128M	33.9	+0.1	+9.7	+0.0	+0.1	+0.0	44.0	46.0	-2.0	Line
			+0.1	+0.1							
26	1.418M	19.3	+0.1	+9.7	+0.0	+0.1	+0.0	29.4	46.0	-16.6	Line
Ave			+0.1	+0.1							
^	1.422M	36.5	+0.1	+9.7	+0.0	+0.1	+0.0	46.6	46.0	+0.6	Line
			+0.1	+0.1							
28	1.225M	19.3	+0.1	+9.7	+0.0	+0.1	+0.0	29.4	46.0	-16.6	Line
Ave			+0.1	+0.1							
^	1.230M	35.2	+0.1	+9.7	+0.0	+0.1	+0.0	45.3	46.0	-0.7	Line
			+0.1	+0.1							
^	1.217M	34.3	+0.1	+9.7	+0.0	+0.1	+0.0	44.4	46.0	-1.6	Line
			+0.1	+0.1							

CKC Laboratories, Inc. Date: 4/26/2011 Time: 16:31:39 Itron, Inc. WO#: 91909
15.207 AC Mains - Average Test Lead: Line 240V 60Hz 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: **15.207 AC Mains - Average**
 Work Order #: **91909** Date: 4/26/2011
 Test Type: **Conducted Emissions** Time: 16:43:11
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 4
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A 240V 60Hz
 S/N: 74045190

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	9/8/2010	9/8/2012
T3	ANP05360	Cable	RG214	11/8/2010	11/8/2012
T4	ANP05547	Cable	Helix	5/18/2010	5/18/2012
T5	ANP05337	Cable	RG-214	4/11/2011	4/11/2013
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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 150 kHz - 30 MHz
 Temp: 25° C
 Humidity: 34%
 Pressure: 102.7 kPa

The EUT is transmitting on 915 MHz, AM Mod.

Ext Attn: 0 dB

Measurement Data:

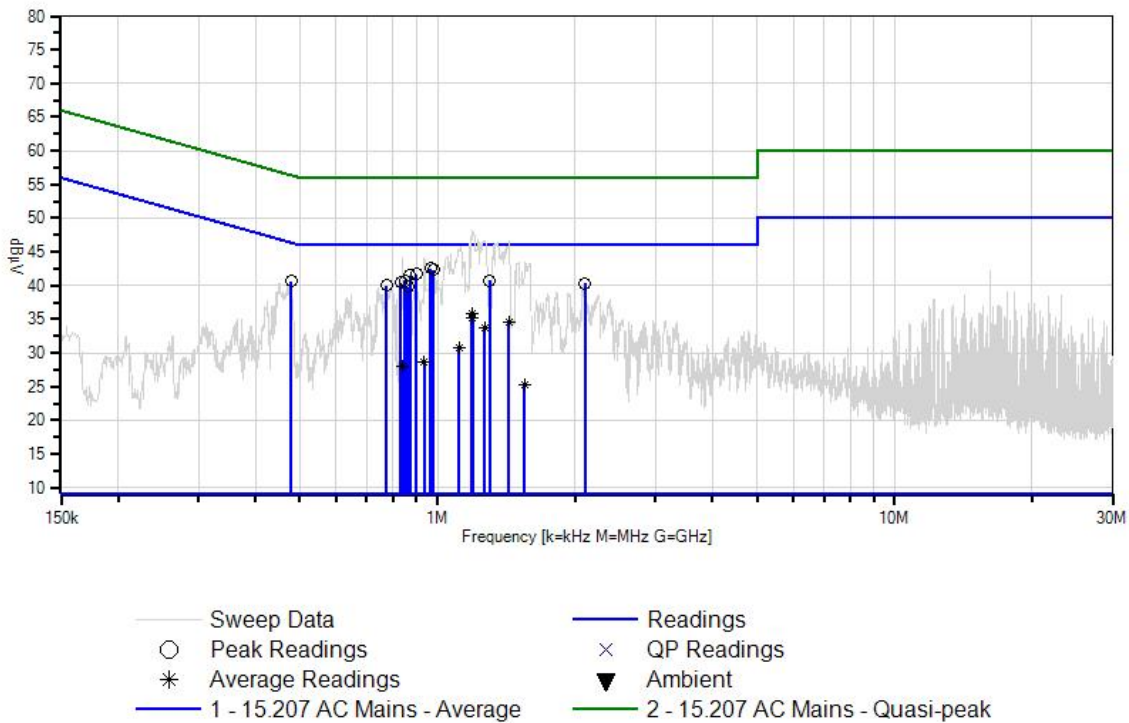
Reading listed by margin.

Test Lead: Neutral

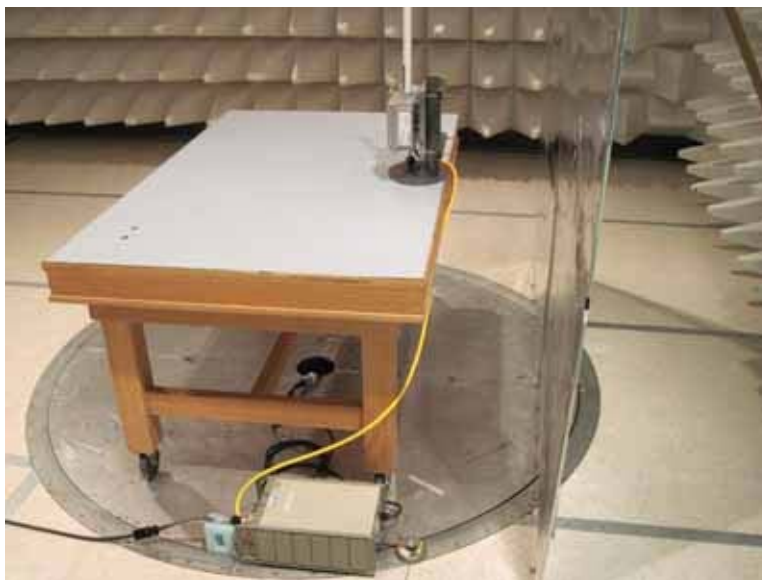
#	Freq MHz	Rdng dB μ V	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	966.512k	32.6	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	42.5	46.0	-3.5	Neutr
2	979.270k	32.4	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	42.3	46.0	-3.7	Neutr
3	898.469k	31.8	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	41.7	46.0	-4.3	Neutr
4	869.933k	31.6	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	41.5	46.0	-4.5	Neutr
5	850.298k	30.9	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.8	46.0	-5.2	Neutr
6	1.302M	30.7	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	40.7	46.0	-5.3	Neutr
7	830.664k	30.5	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.4	46.0	-5.6	Neutr
8	2.102M	30.3	+0.1 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.3	46.0	-5.7	Neutr
9	478.696k	30.7	+0.0 +0.1	+9.7 +0.1	+0.0	+0.0	+0.0	40.6	46.4	-5.8	Neutr
10	774.669k	30.1	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	40.0	46.0	-6.0	Neutr
11	861.206k	29.9	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	39.8	46.0	-6.2	Neutr
12	1.195M Ave	25.8	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	35.8	46.0	-10.2	Neutr
13	1.187M Ave	25.2	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	35.2	46.0	-10.8	Neutr
^	1.195M	38.1	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	48.1	46.0	+2.1	Neutr
^	1.187M	37.3	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	47.3	46.0	+1.3	Neutr
16	1.431M Ave	24.5	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	34.6	46.0	-11.4	Neutr
^	1.434M	36.6	+0.1 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	46.7	46.0	+0.7	Neutr
18	1.268M Ave	23.7	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	33.7	46.0	-12.3	Neutr
^	1.268M	36.7	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	46.7	46.0	+0.7	Neutr
20	1.114M Ave	20.8	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	30.8	46.0	-15.2	Neutr
^	1.124M	35.7	+0.0 +0.1	+9.7 +0.1	+0.0	+0.1	+0.0	45.7	46.0	-0.3	Neutr
22	935.680k Ave	18.8	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	28.7	46.0	-17.3	Neutr
^	936.743k	34.2	+0.0 +0.1	+9.7 +0.0	+0.0	+0.1	+0.0	44.1	46.0	-1.9	Neutr

24	839.110k	18.1	+0.0	+9.7	+0.0	+0.1	+0.0	28.0	46.0	-18.0	Neutr
	Ave		+0.1	+0.0							
^	837.209k	34.3	+0.0	+9.7	+0.0	+0.1	+0.0	44.2	46.0	-1.8	Neutr
			+0.1	+0.0							
^	839.390k	30.9	+0.0	+9.7	+0.0	+0.1	+0.0	40.8	46.0	-5.2	Neutr
			+0.1	+0.0							
27	1.549M	15.1	+0.1	+9.7	+0.0	+0.1	+0.0	25.2	46.0	-20.8	Neutr
	Ave		+0.1	+0.1							
^	1.558M	33.4	+0.1	+9.7	+0.0	+0.1	+0.0	43.5	46.0	-2.5	Neutr
			+0.1	+0.1							

CKC Laboratories, Inc. Date: 4/26/2011 Time: 16:43:11 Itron, Inc. WO#: 91909
15.207 AC Mains - Average Test Lead: Neutral 240V 60Hz Sequence#: 4 Ext ATTN: 0 dB



Test Setup Photos



15.247(a)(1) Carrier Frequency Separation

Test Conditions / Setup

Comments

The EUT (CCU100A) was setup on the bench and connected to a spectrum analyzer via an RF cable and a 10 dB attenuator. The EUT was cycled through the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable. For this set of tests, all models (CCU100A, CCU100A-Repeater, CCU100RA, and CCU100RA-Repeater) are identical.

Requirement: Carrier Frequencies shall be separated by a minimum of 25 kHz or the 20 dB bandwidth, whichever is greater.

Result: The Carrier Frequencies are separated by 200 kHz. PASS

Test Equipment

Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012
03122	Cable 10k-18G	32026-2-29801-36	Astrolab	12/23/2010	12/23/2012

15.247(a)(1)(i) 20 dB Bandwidth

Test Conditions / Setup

Comments

The EUT (CCU100A) was setup on the bench and connected to a spectrum analyzer via an RF cable and a 10 dB attenuator. The EUT was cycled through the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable. For this set of tests, all models (CCU100A, CCU100A-Repeater, CCU100RA, and CCU100RA-Repeater) are identical.

Requirement: The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz. **PASS**

Test Equipment

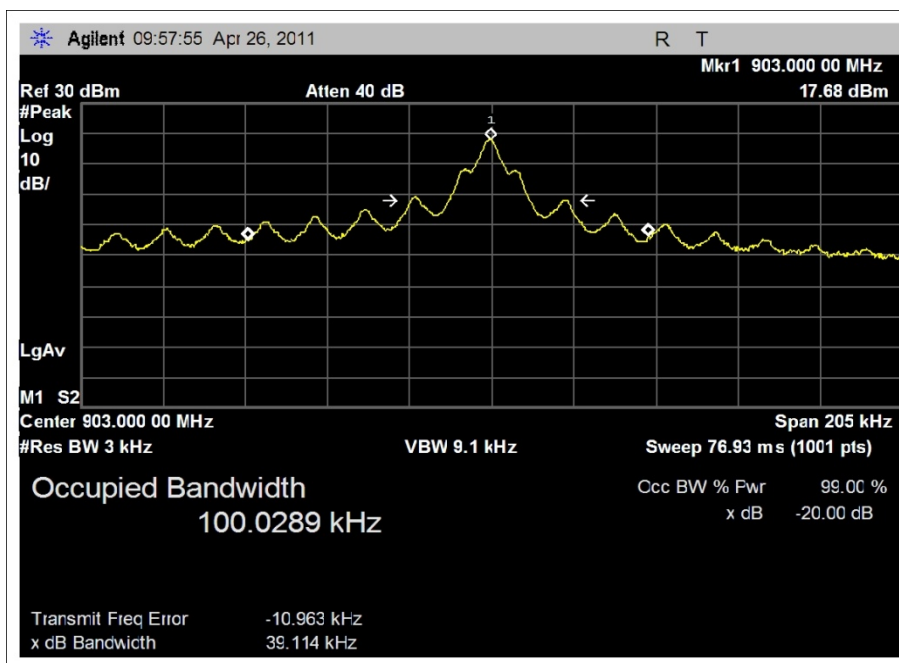
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012
03122	Cable 10k-18G	32026-2-29801-36	Astrolab	12/23/2010	12/23/2012

Engineer Name: J. Gilbert

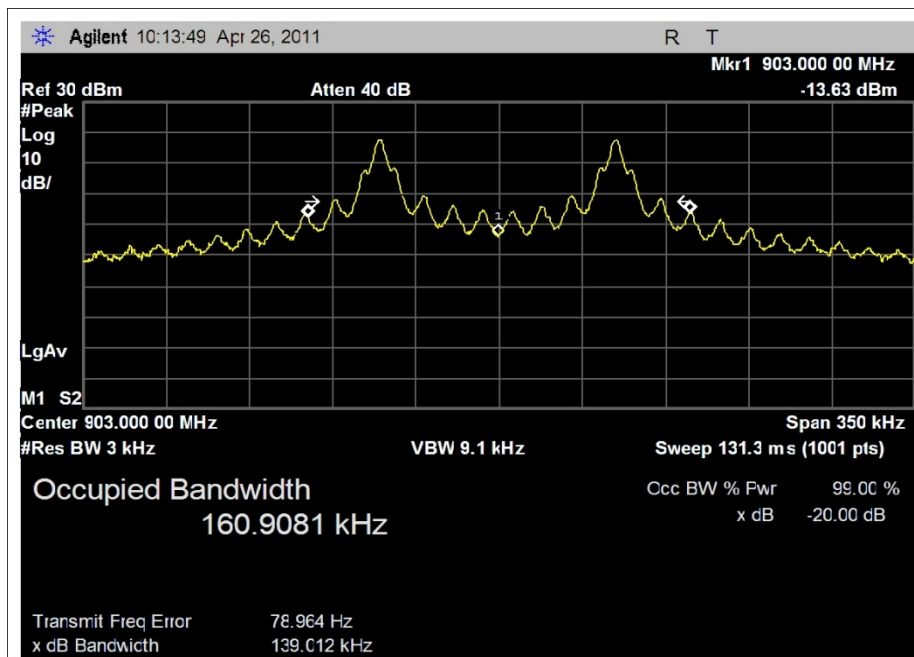
Results Table

903 MHz	AM	FM-12.5 kBaud	FM-37.5 kBaud
	39.114 kHz	139.012 kHz	54.376 kHz
915 MHz	AM	FM-12.5 kBaud	FM-37.5 kBaud
	39.084 kHz	139.191 kHz	54.618 kHz
926.8 MHz	AM	FM-12.5 kBaud	FM-37.5 kBaud
	38.823 kHz	139.134 kHz	54.643 kHz

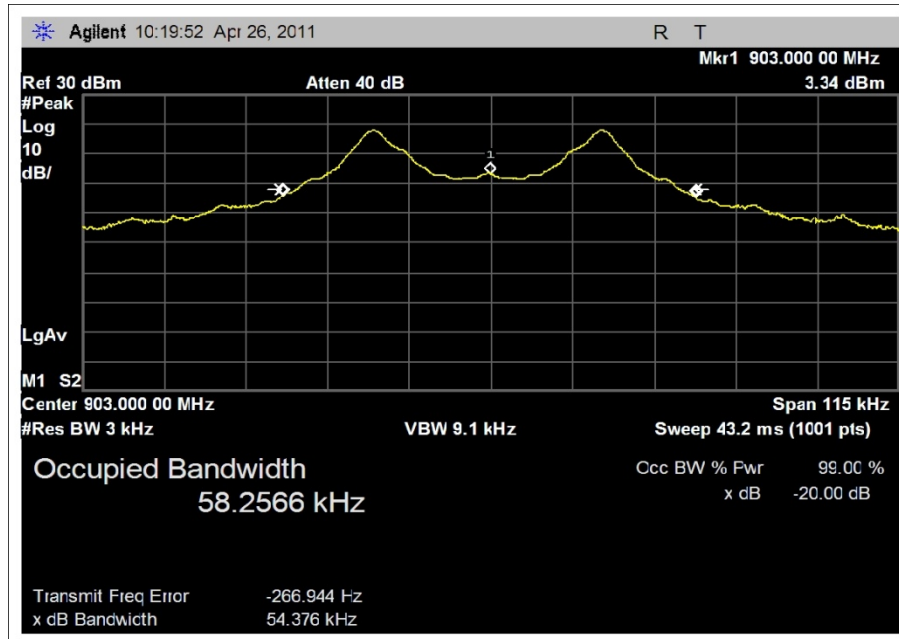
Test Data



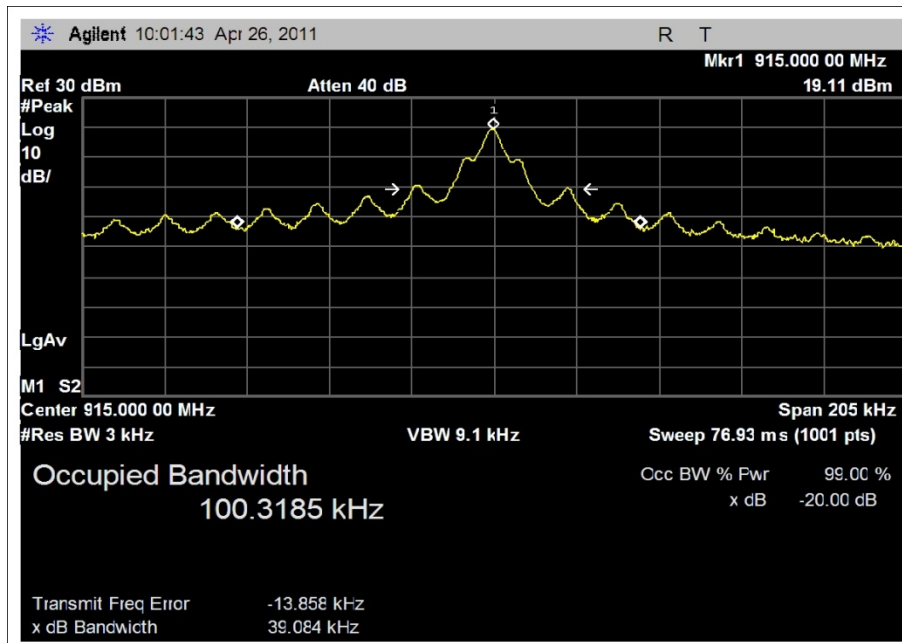
903 AM



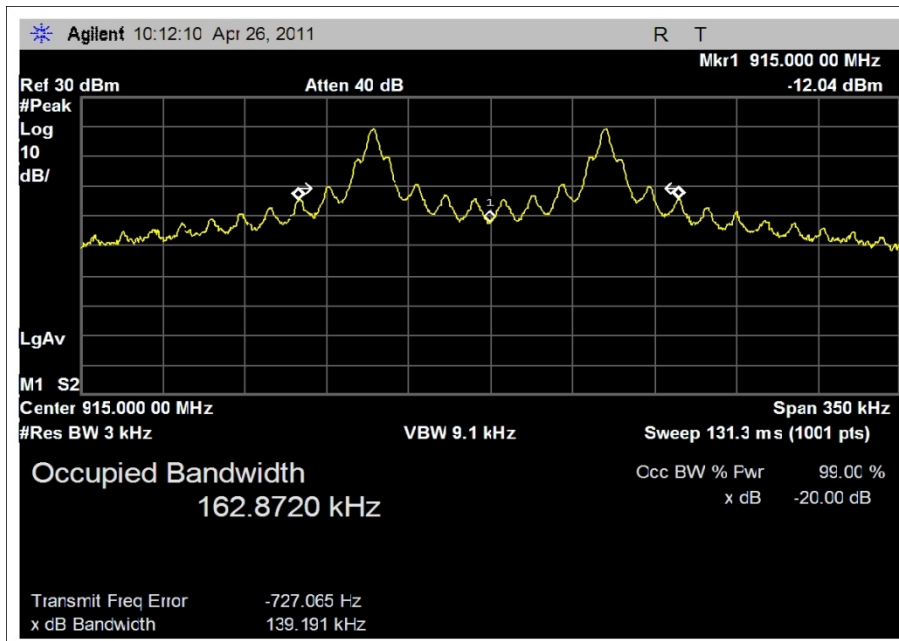
903 FM – 12.5kBaod



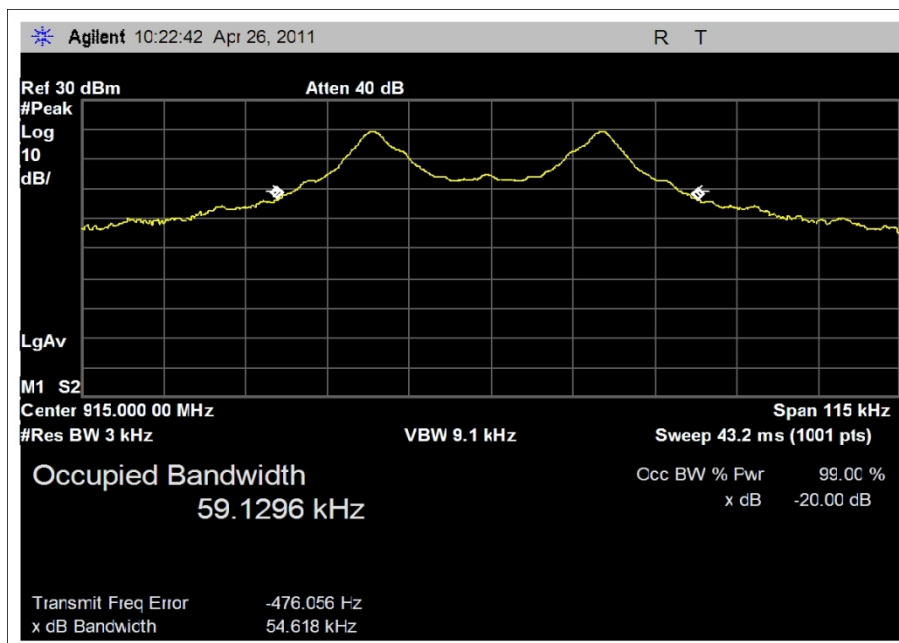
903 FM – 37.5kbaud



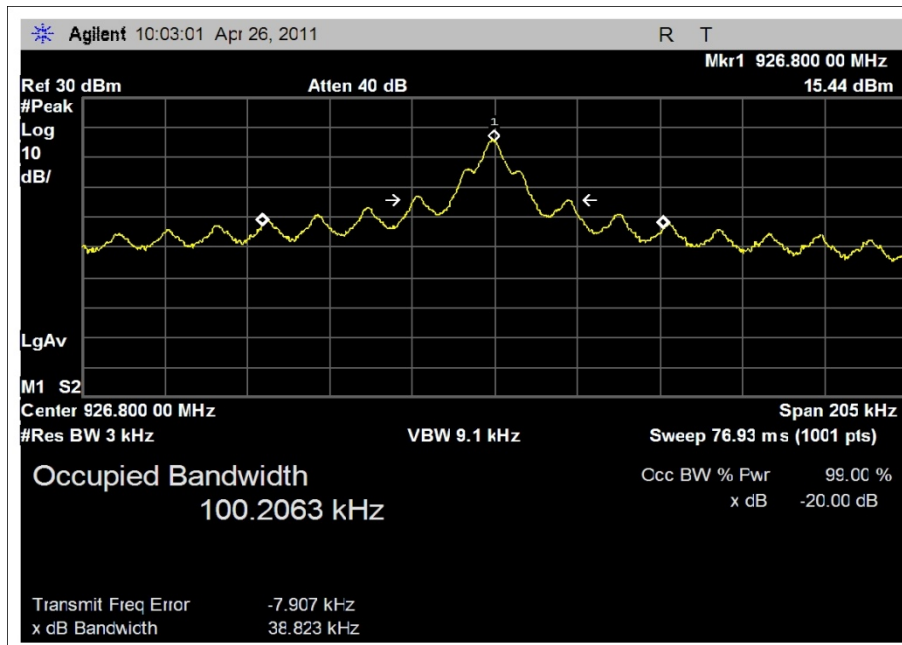
915 AM



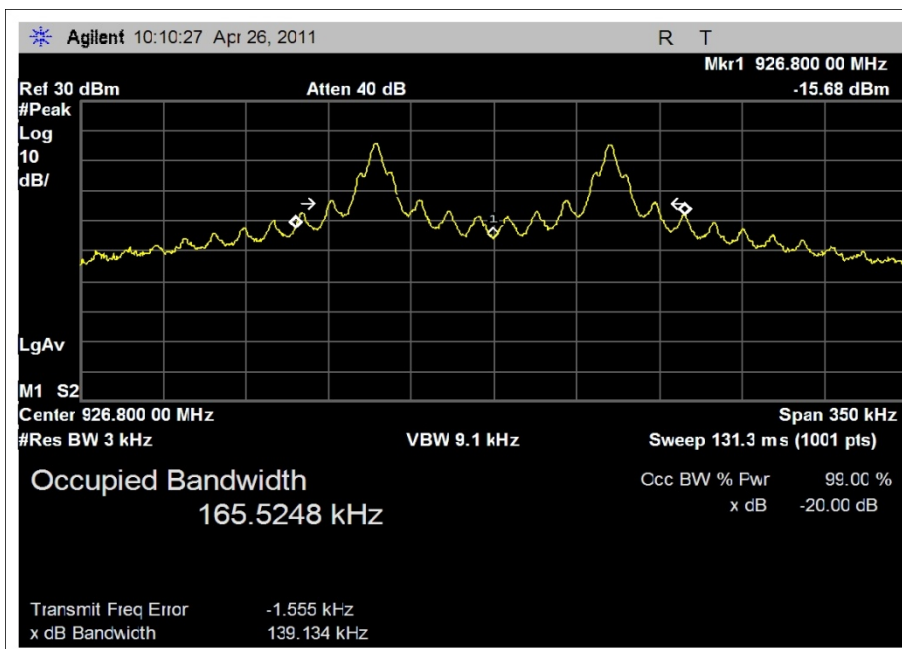
915 FM – 12.5kBaud



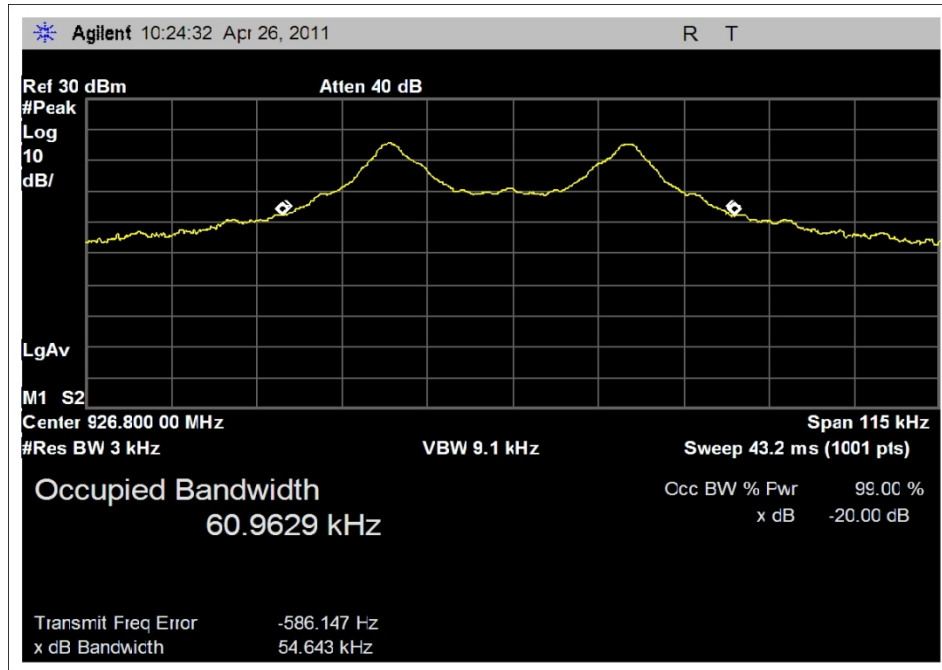
915 FM – 37.5kBaud



926.8 AM



926.8 FM 12.5kbaud



926.8 FM – 37.5kBaud

Test Setup Photos



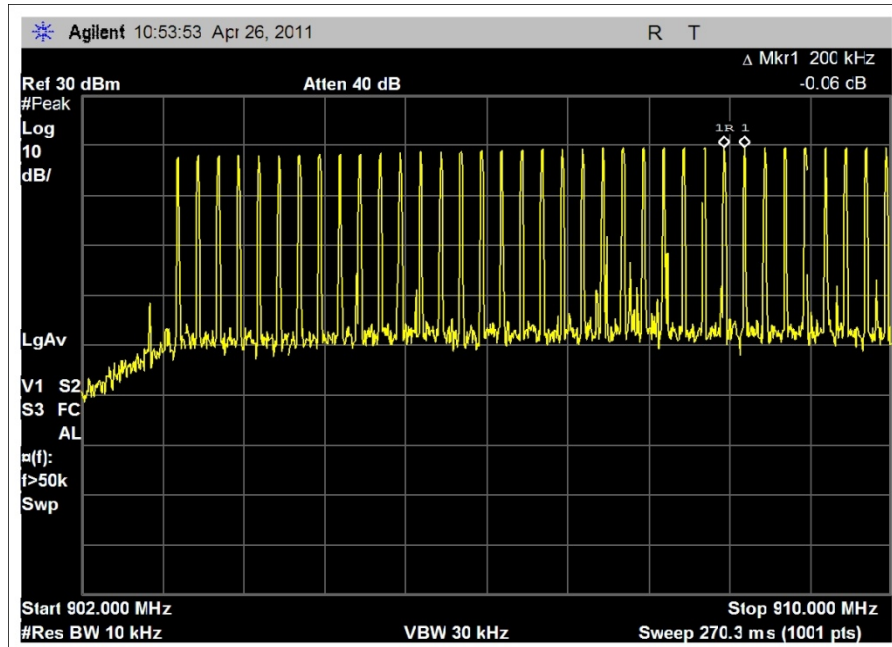
15.247(a)(1)(i) Number of Hopping Frequencies

Test Conditions / Setup
Comments
The EUT (CCU100A) was setup on the bench and connected to a spectrum analyzer via an RF cable and a 10 dB attenuator. The EUT was cycled through the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable. For this set of tests, all models (CCU100A, CCU100A-Repeater, CCU100RA, and CCU100RA-Repeater) are identical. Requirement: If the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies. Result: The system uses 120 hopping frequencies. PASS

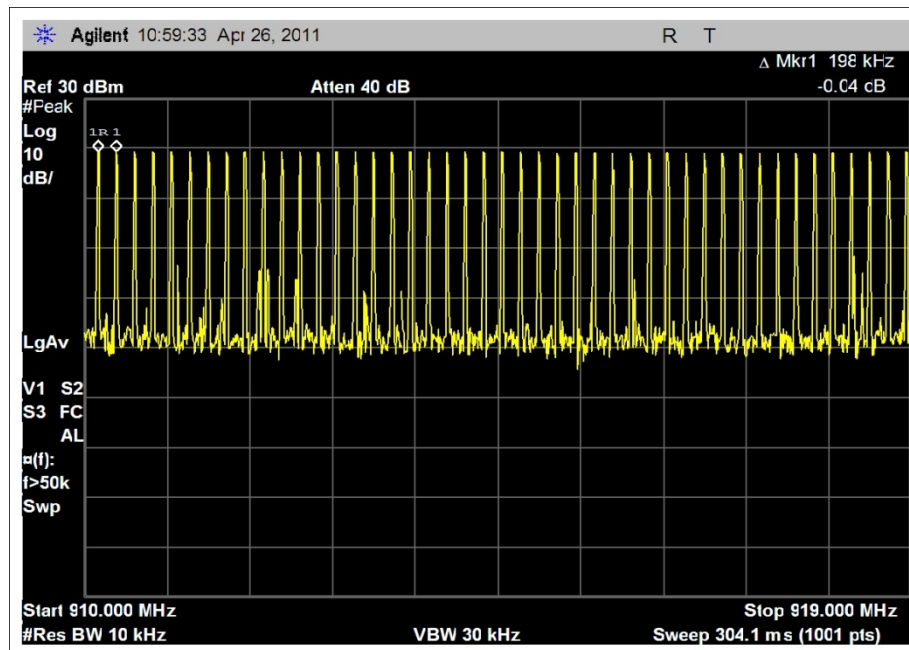
Test Equipment					
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012
03122	Cable 10k-18G	32026-2-29801-36	Astrolab	12/23/2010	12/23/2012

Test Data

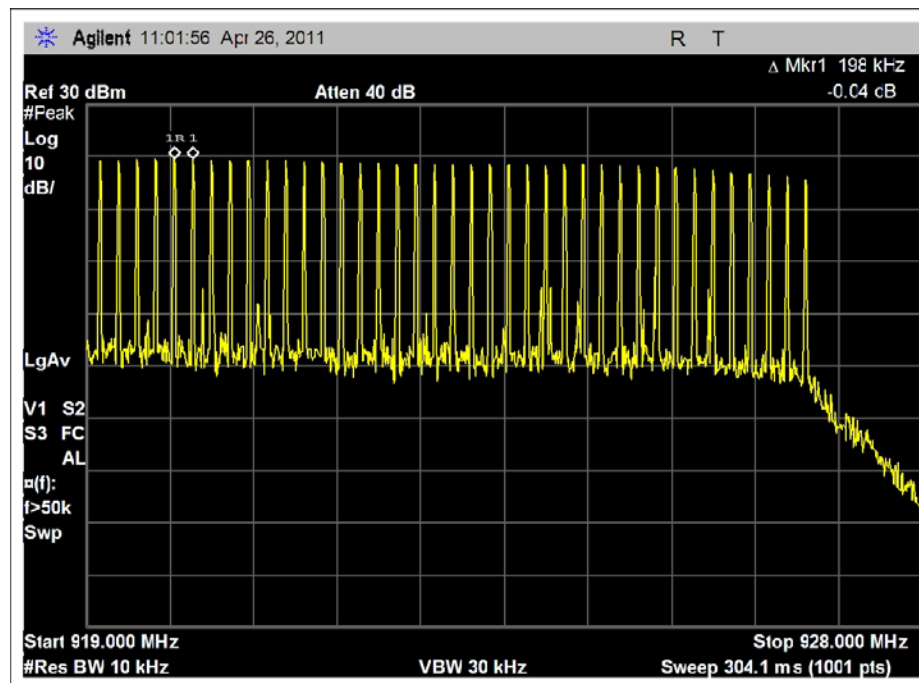
Engineer Name: J. Gilbert



902-910 MHz



910-919 MHz



919-928 MHz

Test Setup Photos



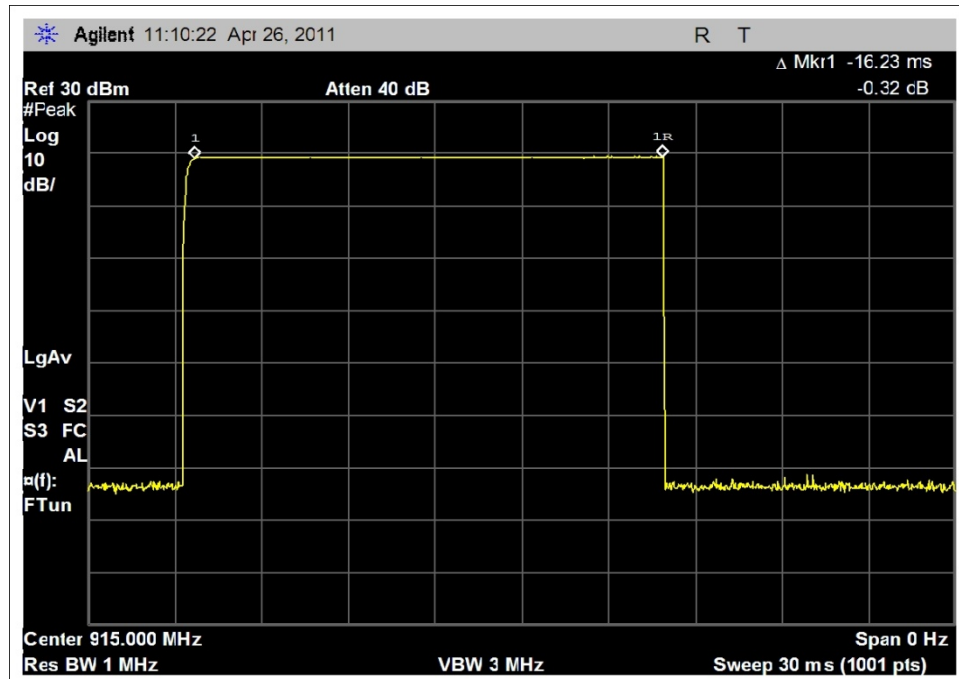
15.247(a)(1)(i) Time of Occupancy

Test Conditions / Setup
Comments
The EUT (CCU100A) was setup on the bench and connected to a spectrum analyzer via an RF cable and a 10 dB attenuator. The EUT was cycled through the different channels and modes by test software on a support laptop, connected to the EUT by an Ethernet cable. For this set of tests, all models (CCU100A, CCU100A-Repeater, CCU100RA, and CCU100RA-Repeater) are identical. Requirement: If the 20 dB bandwidth of the hopping channel is less than 250 kHz, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period. Result: The average time of occupancy is 0.01623 seconds. The manufacturer declares that the maximum individual transmission is < 20mS as shown in this report, however, there could be up to 10 transmissions on a channel within a 20 second period. Therefore, the maximum on channel time in a 20 second period would be < 200mS. PASS

Test Equipment					
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012
03122	Cable 10k-18G	32026-2-29801-36	Astrolab	12/23/2010	12/23/2012

Test Data Sheets

Engineer Name: J. Gilbert



Test Setup Photos



15.247(b)(2) Peak Conducted Output Power

Summary
Comments
Requirement: For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels.
Result: The maximum peak conducted power measured was 29.7 dBm. $10^{(29.7/10)} = 0.933\text{W}$. PASS

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(b) Power Output (902-928 MHz FHSS >50 Channels)**
 Work Order #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 08:14:17
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 1
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05435	Attenuator	PE7015-10	9/8/2010	9/8/2012
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 903, 915, 926.8 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 120VAC/60Hz
 AM16 kBaud.
 Peak RF power measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB			Dist Table	Corr dBm	Spec dBm	Margin dB	Polar Ant
1	915.000M	19.6	+9.7	+0.4			+0.0	29.7	30.0 120VAC	-0.3	Condu 100
2	903.000M	18.4	+9.7	+0.4			+0.0	28.5	30.0 120VAC	-1.5	Condu 100
3	926.798M	15.9	+9.7	+0.4			+0.0	26.0	30.0 120VAC	-4.0	Condu 100

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

Customer: **Itron, Inc.**
 Specification: **15.247(b) Power Output (902-928 MHz FHSS >50 Channels)**
 Work Order #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 08:42:24
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 2
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05435	Attenuator	PE7015-10	9/8/2010	9/8/2012
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 903, 915, 926.8 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 FM12.5 kBaud.
 Peak RF power measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist Table	Corr dBm	Spec dBm	Margin dB	Polar Ant
1	915.065M	19.4	+9.7	+0.4	+0.0	29.5	30.0 240VAC	-0.5	Condu 100
2	903.063M	18.2	+9.7	+0.4	+0.0	28.3	30.0 265VAC	-1.7	Condu 100
3	926.743M	15.9	+9.7	+0.4	+0.0	26.0	30.0 240VAC	-4.0	Condu 100

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

Customer: **Itron, Inc.**
 Specification: **15.247(b) Power Output (902-928 MHz FHSS >50 Channels)**
 Work Order #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 13:46:07
 Equipment: **SRR+WWAN+WIFI+GPS RX (internal WWAN & GPS antenna)** Sequence#: 3
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05435	Attenuator	PE7015-10	9/8/2010	9/8/2012
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 903, 915, 926.8 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 FM37.5 kBaud.
 Peak RF power measured per DA00-705.

Ext Attn: 0 dB

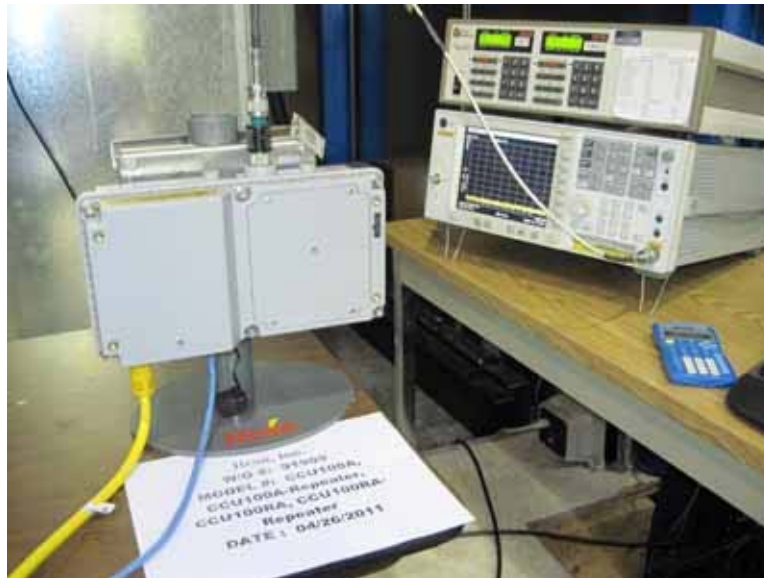
Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBm	Spec dBm	Margin dB	Polar Ant
1	915.017M	19.3	+9.7	+0.4			+0.0	29.4	30.0 240VAC	-0.6	Condu 100
2	903.017M	18.0	+9.7	+0.4			+0.0	28.1	30.0 240VAC	-1.9	Condu 100
3	926.784M	15.8	+9.7	+0.4			+0.0	25.9	30.0 265VAC	-4.1	Condu 100

Test Setup Photos



15.247(d) Spurious Emissions – Antenna Conducted

Summary
Comments
Requirement: Spurious emissions in a 100 kHz bandwidth outside the band of operation shall be at least 20 dB below the level of the carrier. Result: PASS

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) Conducted Spurious Emissions**
 Work Order #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 12:30:48 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 5
 (internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 AM16 kBaud
 903 MHz
 Measured per DA00-705.

Ext Attn: 0 dB

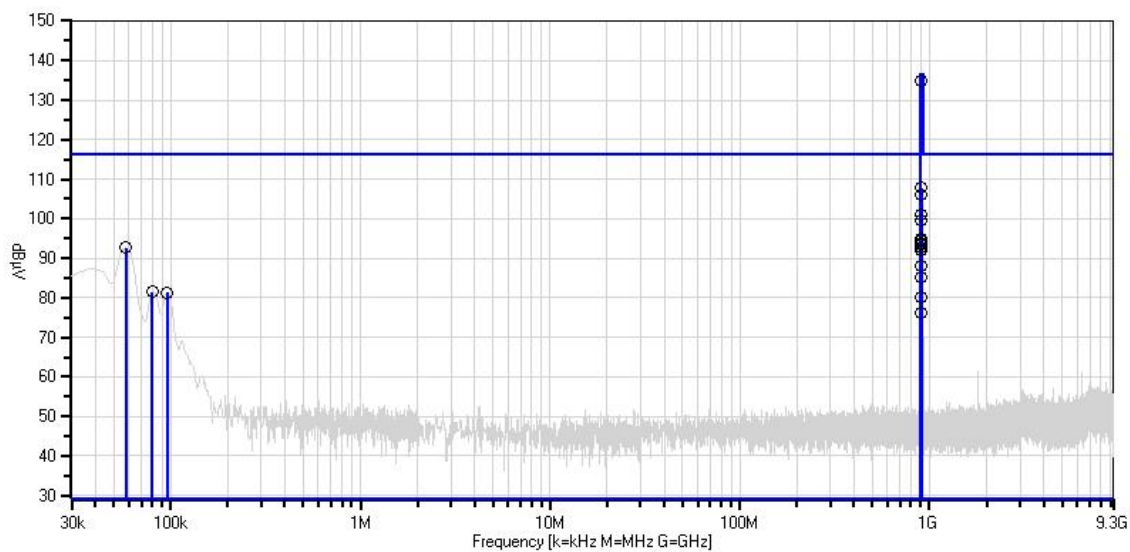
Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	902.972M	114.4	+20.2	+0.4			+0.0	135.0	136.5	-1.5	Condu 100
2	901.671M	74.4	+20.2	+0.4			+0.0	95.0	116.5	-21.5	Condu 100
3	901.471M	72.3	+20.2	+0.4			+0.0	92.9	116.5	-23.6	Condu 100
4	58.005k	72.5	+20.1	+0.0			+0.0	92.6	116.5	-23.9	Condu 100
5	901.070M	67.6	+20.2	+0.4			+0.0	88.2	116.5	-28.3	Condu 100
6	900.870M	67.4	+20.2	+0.4			+0.0	88.0	116.5	-28.5	Condu 100
7	902.472M	87.3	+20.2	+0.4			+0.0	107.9	136.5	-28.6	Condu 100
8	903.673M	87.2	+20.2	+0.4			+0.0	107.8	136.5	-28.7	Condu 100
9	903.873M	85.3	+20.2	+0.4			+0.0	105.9	136.5	-30.6	Condu 100
10	901.971M	64.4	+20.2	+0.4			+0.0	85.0	116.5	-31.5	Condu 100
11	80.009k	61.4	+20.1	+0.0			+0.0	81.5	116.5	-35.0	Condu 100
12	96.012k	61.2	+20.1	+0.0			+0.0	81.3	116.5	-35.2	Condu 100
13	904.273M	80.5	+20.2	+0.4			+0.0	101.1	136.5	-35.4	Condu 100
14	900.169M	59.5	+20.2	+0.4			+0.0	80.1	116.5	-36.4	Condu 100
15	904.774M	78.9	+20.2	+0.4			+0.0	99.5	136.5	-37.0	Condu 100
16	899.769M	55.4	+20.2	+0.4			+0.0	76.0	116.5	-40.5	Condu 100
17	906.075M	74.0	+20.2	+0.4			+0.0	94.6	136.5	-41.9	Condu 100
18	905.475M	73.1	+20.2	+0.4			+0.0	93.7	136.5	-42.8	Condu 100
19	906.476M	73.0	+20.2	+0.4			+0.0	93.6	136.5	-42.9	Condu 100
20	907.577M	71.5	+20.2	+0.4			+0.0	92.1	136.5	-44.4	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 12:30:48 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 5 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.247(d) Conducted Spurious Emissions
— Readings
× QP Readings
▼ Ambient



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 #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 12:38:23 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 6
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 AM16 kBaud
 915 MHz
 Measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

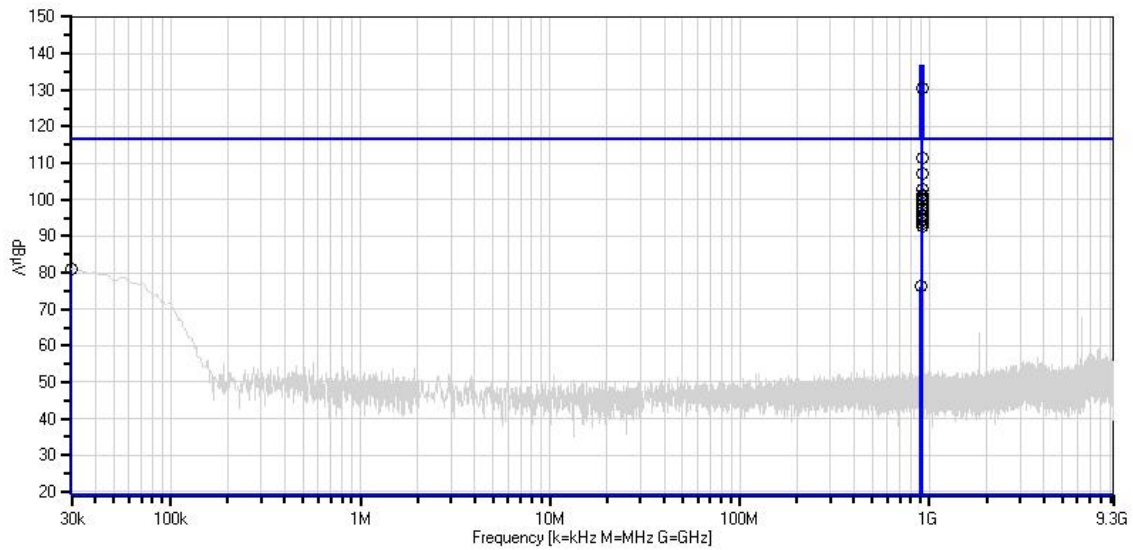
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	914.884M	110.1	+20.2	+0.4			+0.0	130.7	136.5	-5.8	Condu 100
2	914.584M	90.8	+20.2	+0.4			+0.0	111.4	136.5	-25.1	Condu 100
3	914.384M	86.5	+20.2	+0.4			+0.0	107.1	136.5	-29.4	Condu 100
4	916.085M	82.2	+20.2	+0.4			+0.0	102.8	136.5	-33.7	Condu 100
5	916.486M	80.8	+20.2	+0.4			+0.0	101.4	136.5	-35.1	Condu 100
6	913.983M	80.4	+20.2	+0.4			+0.0	101.0	136.5	-35.5	Condu 100

7	30.000k	60.7	+20.1	+0.0	+0.0	80.8	116.5	-35.7	Condu 100
8	915.485M	79.5	+20.2	+0.4	+0.0	100.1	136.5	-36.4	Condu 100
9	915.885M	79.3	+20.2	+0.4	+0.0	99.9	136.5	-36.6	Condu 100
10	913.583M	78.3	+20.2	+0.4	+0.0	98.9	136.5	-37.6	Condu 100
11	913.182M	77.3	+20.2	+0.4	+0.0	97.9	136.5	-38.6	Condu 100
12	916.686M	76.6	+20.2	+0.4	+0.0	97.2	136.5	-39.3	Condu 100
13	917.086M	75.8	+20.2	+0.4	+0.0	96.4	136.5	-40.1	Condu 100
14	901.771M	55.7	+20.2	+0.4	+0.0	76.3	116.5	-40.2	Condu 100
15	917.687M	75.4	+20.2	+0.4	+0.0	96.0	136.5	-40.5	Condu 100
16	912.782M	75.0	+20.2	+0.4	+0.0	95.6	136.5	-40.9	Condu 100
17	917.286M	74.1	+20.2	+0.4	+0.0	94.7	136.5	-41.8	Condu 100
18	911.981M	73.7	+20.2	+0.4	+0.0	94.3	136.5	-42.2	Condu 100
19	918.488M	72.7	+20.2	+0.4	+0.0	93.3	136.5	-43.2	Condu 100
20	918.287M	72.0	+20.2	+0.4	+0.0	92.6	136.5	-43.9	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 12:38:23 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 6 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— Readings
× QP Readings
▼ Ambient
— 1 - 15.247(d) Conducted Spurious Emissions

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 #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 12:44:13 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 7
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 AM16 kBaud
 926.8 MHz
 Measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

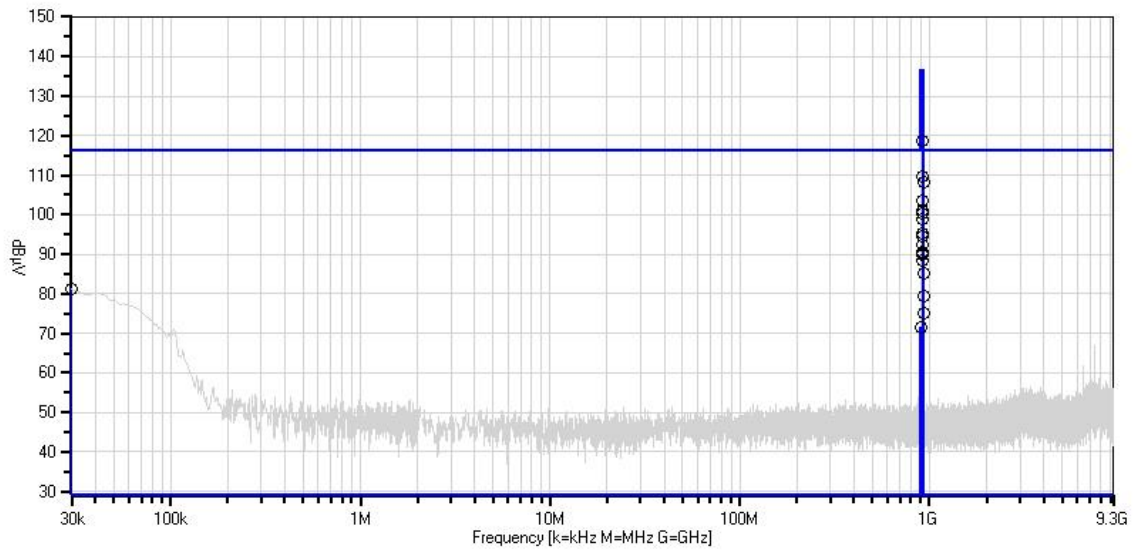
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	926.696M	98.0	+20.2	+0.4			+0.0	118.6	136.5	-17.9	Condu 100
2	926.295M	88.9	+20.2	+0.4			+0.0	109.5	136.5	-27.0	Condu 100
3	927.096M	87.7	+20.2	+0.4			+0.0	108.3	136.5	-28.2	Condu 100
4	928.097M	64.7	+20.2	+0.4			+0.0	85.3	116.5	-31.2	Condu 100
5	926.095M	83.1	+20.2	+0.4			+0.0	103.7	136.5	-32.8	Condu 100
6	925.495M	80.6	+20.2	+0.4			+0.0	101.2	136.5	-35.3	Condu 100

7	30.000k	61.0	+20.1	+0.0	+0.0	81.1	116.5	-35.4	Condu 100
8	925.895M	79.6	+20.2	+0.4	+0.0	100.2	136.5	-36.3	Condu 100
9	928.598M	58.7	+20.2	+0.4	+0.0	79.3	116.5	-37.2	Condu 100
10	925.094M	78.3	+20.2	+0.4	+0.0	98.9	136.5	-37.6	Condu 100
11	924.694M	74.7	+20.2	+0.4	+0.0	95.3	136.5	-41.2	Condu 100
12	928.798M	54.6	+20.2	+0.4	+0.0	75.2	116.5	-41.3	Condu 100
13	924.894M	73.8	+20.2	+0.4	+0.0	94.4	136.5	-42.1	Condu 100
14	923.292M	71.9	+20.2	+0.4	+0.0	92.5	136.5	-44.0	Condu 100
15	901.571M	50.9	+20.2	+0.4	+0.0	71.5	116.5	-45.0	Condu 100
16	922.692M	70.1	+20.2	+0.4	+0.0	90.7	136.5	-45.8	Condu 100
17	922.291M	69.8	+20.2	+0.4	+0.0	90.4	136.5	-46.1	Condu 100
18	924.494M	69.6	+20.2	+0.4	+0.0	90.2	136.5	-46.3	Condu 100
19	921.891M	69.1	+20.2	+0.4	+0.0	89.7	136.5	-46.8	Condu 100
20	921.090M	67.8	+20.2	+0.4	+0.0	88.4	136.5	-48.1	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 12:44:13 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 7 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.247(d) Conducted Spurious Emissions
— Readings
× QP Readings
▼ Ambient



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 #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 12:51:52 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 8
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 FM12.5 kBaud
 903 MHz
 Measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

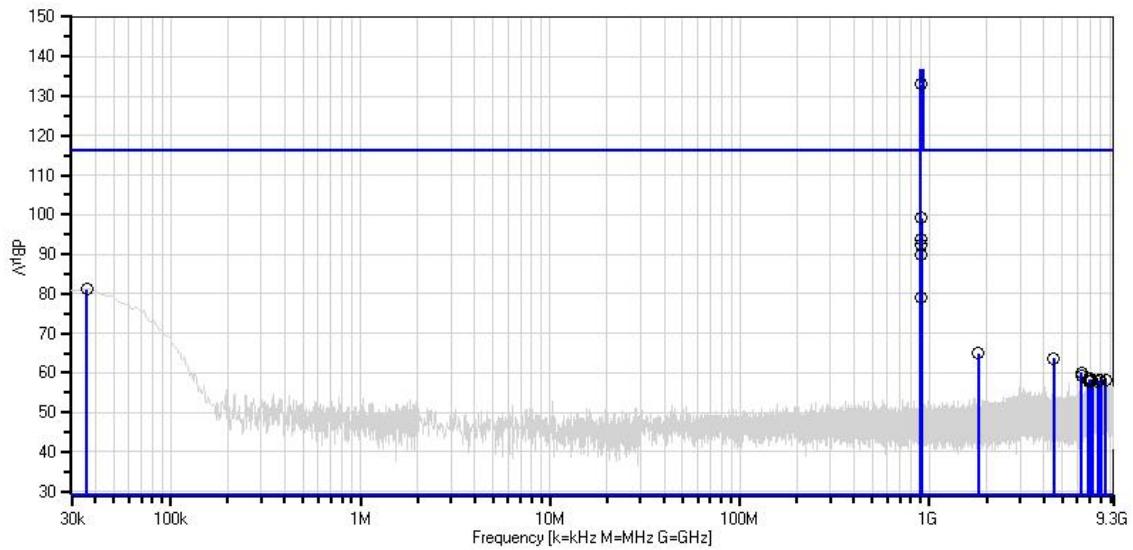
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	902.972M	112.3	+20.2	+0.4			+0.0	132.9	136.5	-3.6	Condu 100
2	901.871M	73.1	+20.2	+0.4			+0.0	93.7	116.5	-22.8	Condu 100
3	36.001k	61.1	+20.1	+0.0			+0.0	81.2	116.5	-35.3	Condu 100
4	904.173M	78.5	+20.2	+0.4			+0.0	99.1	136.5	-37.4	Condu 100
5	904.874M	71.8	+20.2	+0.4			+0.0	92.4	136.5	-44.1	Condu 100
6	905.074M	69.4	+20.2	+0.4			+0.0	90.0	136.5	-46.5	Condu 100

7	1805.874M	44.3	+20.0	+0.6	+0.0	64.9	116.5	-51.6	Condu 100
8	4515.281M	42.8	+19.7	+1.1	+0.0	63.6	116.5	-52.9	Condu 100
9	6321.385M	38.7	+20.1	+1.3	+0.0	60.1	116.5	-56.4	Condu 100
10	6320.584M	38.0	+20.1	+1.3	+0.0	59.4	116.5	-57.1	Condu 100
11	908.077M	58.4	+20.2	+0.4	+0.0	79.0	136.5	-57.5	Condu 100
12	6957.721M	36.9	+20.2	+1.3	+0.0	58.4	116.5	-58.1	Condu 100
13	6999.963M	36.7	+20.3	+1.4	+0.0	58.4	116.5	-58.1	Condu 100
14	8004.567M	36.8	+20.2	+1.3	+0.0	58.3	116.5	-58.2	Condu 100
15	7181.645M	37.0	+19.9	+1.3	+0.0	58.2	116.5	-58.3	Condu 100
16	8461.323M	36.2	+20.6	+1.3	+0.0	58.1	116.5	-58.4	Condu 100
17	7784.046M	36.0	+20.6	+1.4	+0.0	58.0	116.5	-58.5	Condu 100
18	7022.486M	36.1	+20.3	+1.4	+0.0	57.8	116.5	-58.7	Condu 100
19	6927.090M	36.2	+20.2	+1.3	+0.0	57.7	116.5	-58.8	Condu 100
20	7713.876M	36.0	+20.4	+1.3	+0.0	57.7	116.5	-58.8	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 12:51:52 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 8 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.247(d) Conducted Spurious Emissions
— Readings
× QP Readings
▼ Ambient

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 #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 12:58:52 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 9
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 FM12.5 kBaud
 915 MHz
 Measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

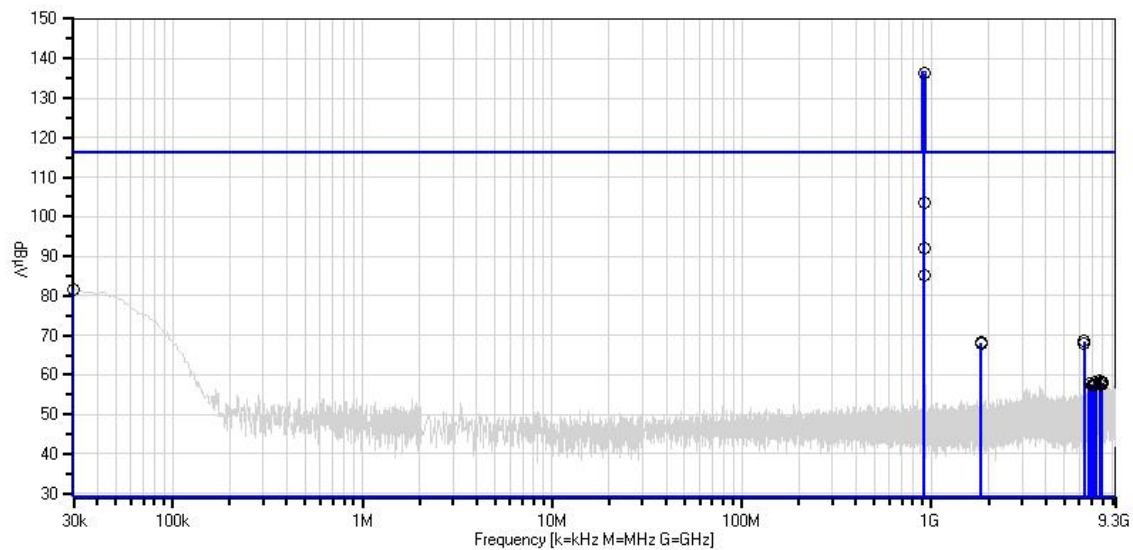
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	915.084M	115.7	+20.2	+0.4			+0.0	136.3	136.5	-0.2	Condu 100
2	915.585M	83.1	+20.2	+0.4			+0.0	103.7	136.5	-32.8	Condu 100
3	30.000k	61.6	+20.1	+0.0			+0.0	81.7	116.5	-34.8	Condu 100
4	916.586M	71.6	+20.2	+0.4			+0.0	92.2	136.5	-44.3	Condu 100
5	6405.369M	47.3	+19.9	+1.3			+0.0	68.5	116.5	-48.0	Condu 100
6	1829.898M	47.5	+20.0	+0.6			+0.0	68.1	116.5	-48.4	Condu 100

7	1830.098M	47.4	+20.0	+0.6	+0.0	68.0	116.5	-48.5	Condu 100
8	6404.668M	46.6	+19.9	+1.3	+0.0	67.8	116.5	-48.7	Condu 100
9	911.981M	64.5	+20.2	+0.4	+0.0	85.1	136.5	-51.4	Condu 100
10	7702.064M	36.7	+20.4	+1.3	+0.0	58.4	116.5	-58.1	Condu 100
11	7260.323M	37.1	+19.7	+1.3	+0.0	58.1	116.5	-58.4	Condu 100
12	7932.795M	36.4	+20.4	+1.3	+0.0	58.1	116.5	-58.4	Condu 100
13	7835.398M	36.0	+20.6	+1.4	+0.0	58.0	116.5	-58.5	Condu 100
14	7916.278M	36.1	+20.4	+1.3	+0.0	57.8	116.5	-58.7	Condu 100
15	6787.951M	36.3	+20.0	+1.4	+0.0	57.7	116.5	-58.8	Condu 100
16	7197.160M	36.5	+19.8	+1.3	+0.0	57.6	116.5	-58.9	Condu 100
17	7868.631M	35.7	+20.5	+1.4	+0.0	57.6	116.5	-58.9	Condu 100
18	7029.392M	35.8	+20.3	+1.4	+0.0	57.5	116.5	-59.0	Condu 100
19	7213.076M	36.4	+19.8	+1.3	+0.0	57.5	116.5	-59.0	Condu 100
20	7317.580M	36.7	+19.6	+1.2	+0.0	57.5	116.5	-59.0	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 12:58:52 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 9 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.247(d) Conducted Spurious Emissions
— Readings
× QP Readings
▼ Ambient



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 #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 1:03:23 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 10
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 FM12.5 kBaud
 926.8 MHz
 Measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

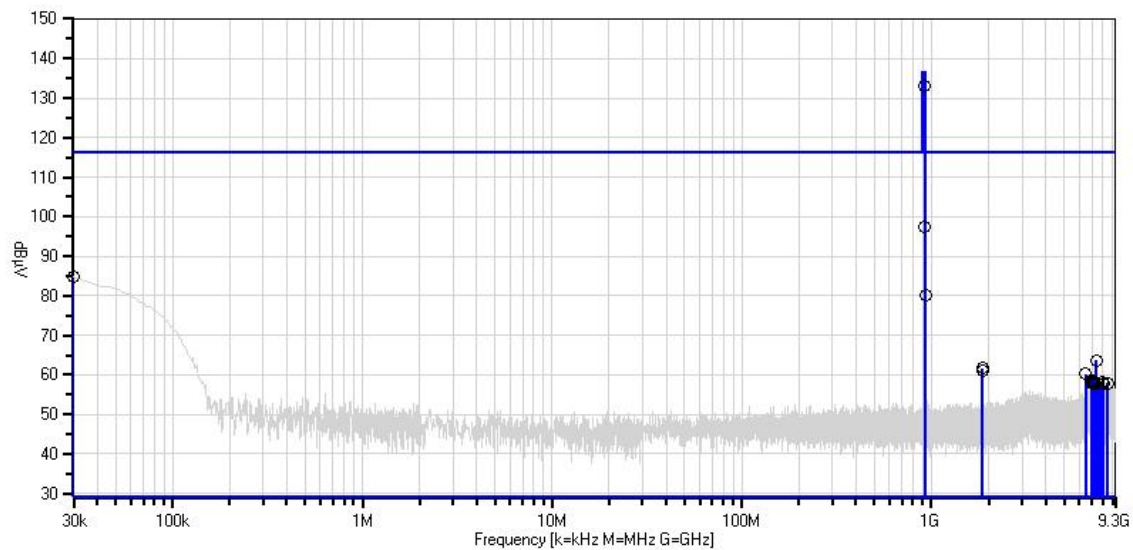
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	926.696M	112.4	+20.2	+0.4			+0.0	133.0	136.5	-3.5	Condu 100
2	30.000k	64.6	+20.1	+0.0			+0.0	84.7	116.5	-31.8	Condu 100
3	928.197M	59.4	+20.2	+0.4			+0.0	80.0	116.5	-36.5	Condu 100
4	925.194M	76.8	+20.2	+0.4			+0.0	97.4	136.5	-39.1	Condu 100
5	7414.878M	43.0	+19.4	+1.2			+0.0	63.6	116.5	-52.9	Condu 100
6	1853.522M	41.0	+20.0	+0.6			+0.0	61.6	116.5	-54.9	Condu 100

7	1853.722M	40.3	+20.0	+0.6	+0.0	60.9	116.5	-55.6	Condu 100
8	6487.251M	39.1	+19.8	+1.3	+0.0	60.2	116.5	-56.3	Condu 100
9	6986.750M	37.0	+20.3	+1.4	+0.0	58.7	116.5	-57.8	Condu 100
10	7087.450M	37.0	+20.2	+1.4	+0.0	58.6	116.5	-57.9	Condu 100
11	6989.152M	36.8	+20.3	+1.4	+0.0	58.5	116.5	-58.0	Condu 100
12	7065.829M	36.6	+20.2	+1.4	+0.0	58.2	116.5	-58.3	Condu 100
13	7067.130M	36.4	+20.2	+1.4	+0.0	58.0	116.5	-58.5	Condu 100
14	7959.722M	36.4	+20.3	+1.3	+0.0	58.0	116.5	-58.5	Condu 100
15	8063.526M	36.5	+20.1	+1.3	+0.0	57.9	116.5	-58.6	Condu 100
16	8519.781M	35.9	+20.7	+1.3	+0.0	57.9	116.5	-58.6	Condu 100
17	7067.831M	36.2	+20.2	+1.4	+0.0	57.8	116.5	-58.7	Condu 100
18	7172.035M	36.5	+20.0	+1.3	+0.0	57.8	116.5	-58.7	Condu 100
19	7273.837M	36.7	+19.7	+1.3	+0.0	57.7	116.5	-58.8	Condu 100
20	7565.028M	36.6	+19.9	+1.2	+0.0	57.7	116.5	-58.8	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 1:03:23 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 10 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.247(d) Conducted Spurious Emissions
— Readings
× QP Readings
▼ Ambient

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 #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 1:08:43 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 11
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
Temp: 22° C
Humidity: 35%
Pressure: 102.5 kPa
FM37.5 kBaud
903 MHz
Measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

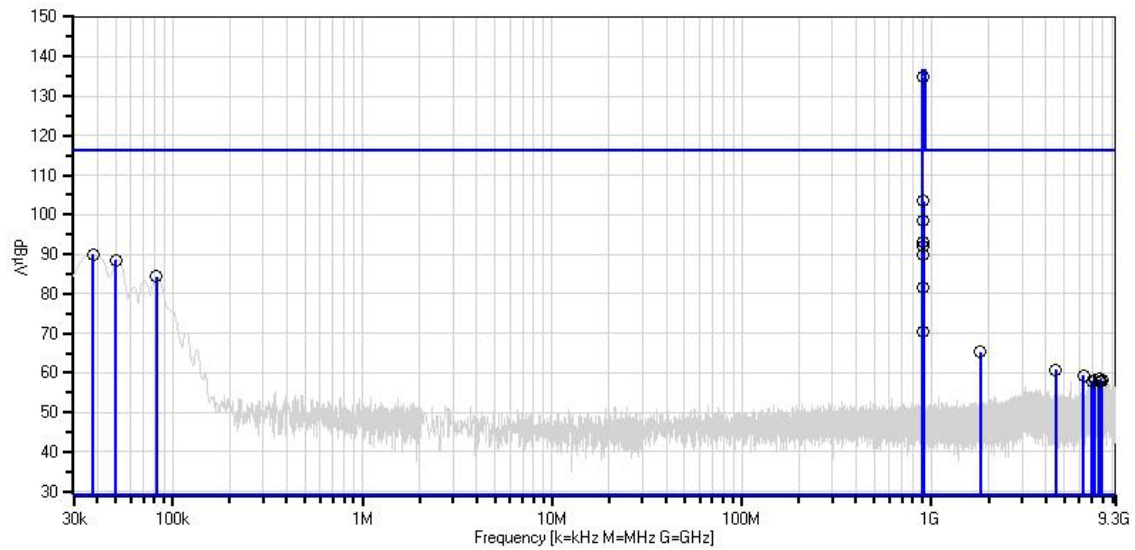
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	902.972M	114.2	+20.2	+0.4			+0.0	134.8	136.5	-1.7	Condu 100
2	901.971M	71.5	+20.2	+0.4			+0.0	92.1	116.5	-24.4	Condu 100
3	38.001k	69.8	+20.1	+0.0			+0.0	89.9	116.5	-26.6	Condu 100
4	901.571M	69.1	+20.2	+0.4			+0.0	89.7	116.5	-26.8	Condu 100
5	50.004k	68.4	+20.1	+0.0			+0.0	88.5	116.5	-28.0	Condu 100
6	82.010k	64.2	+20.1	+0.0			+0.0	84.3	116.5	-32.2	Condu 100

7	903.673M	82.9	+20.2	+0.4	+0.0	103.5	136.5	-33.0	Condu 100
8	903.873M	77.8	+20.2	+0.4	+0.0	98.4	136.5	-38.1	Condu 100
9	904.974M	72.6	+20.2	+0.4	+0.0	93.2	136.5	-43.3	Condu 100
10	900.069M	49.7	+20.2	+0.4	+0.0	70.3	116.5	-46.2	Condu 100
11	1805.974M	44.7	+20.0	+0.6	+0.0	65.3	116.5	-51.2	Condu 100
12	907.577M	60.8	+20.2	+0.4	+0.0	81.4	136.5	-55.1	Condu 100
13	4514.981M	39.9	+19.7	+1.1	+0.0	60.7	116.5	-55.8	Condu 100
14	6321.085M	37.9	+20.1	+1.3	+0.0	59.3	116.5	-57.2	Condu 100
15	7739.402M	36.7	+20.5	+1.3	+0.0	58.5	116.5	-58.0	Condu 100
16	7261.925M	37.0	+19.7	+1.3	+0.0	58.0	116.5	-58.5	Condu 100
17	7904.266M	36.3	+20.4	+1.3	+0.0	58.0	116.5	-58.5	Condu 100
18	7022.486M	36.2	+20.3	+1.4	+0.0	57.9	116.5	-58.6	Condu 100
19	7673.035M	36.3	+20.3	+1.3	+0.0	57.9	116.5	-58.6	Condu 100
20	7850.313M	35.8	+20.6	+1.4	+0.0	57.8	116.5	-58.7	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 1:08:43 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 11 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.247(d) Conducted Spurious Emissions
— Readings
× QP Readings
▼ Ambient

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 #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 1:13:13 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 12
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 FM37.5 kBaud
 915 MHz
 Measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

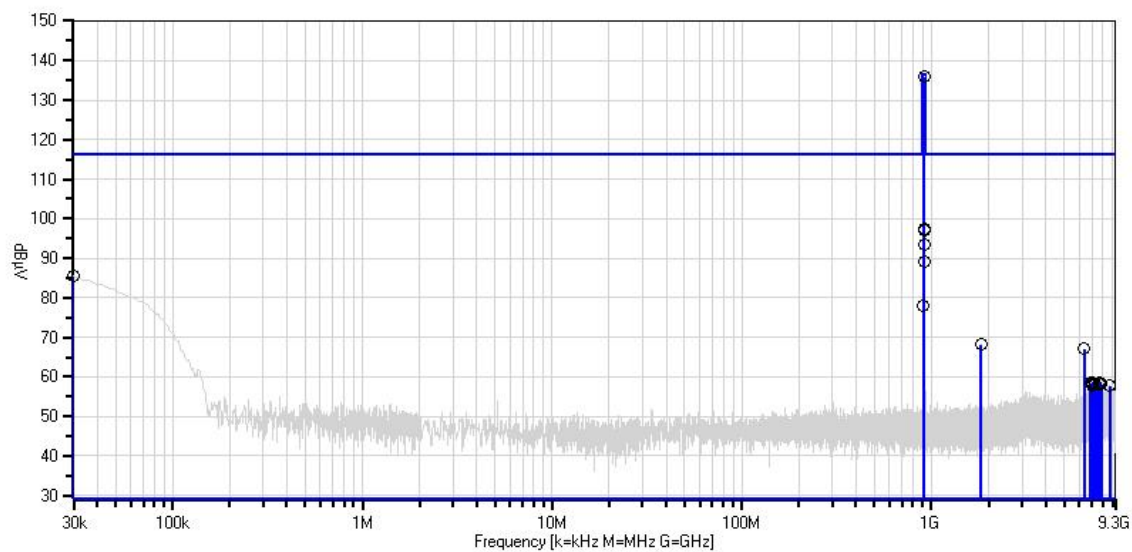
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	914.984M	115.3	+20.2	+0.4			+0.0	135.9	136.5	-0.6	Condu 100
2	30.000k	65.4	+20.1	+0.0			+0.0	85.5	116.5	-31.0	Condu 100
3	913.783M	76.7	+20.2	+0.4			+0.0	97.3	136.5	-39.2	Condu 100
4	916.586M	76.3	+20.2	+0.4			+0.0	96.9	136.5	-39.6	Condu 100
5	913.082M	72.8	+20.2	+0.4			+0.0	93.4	136.5	-43.1	Condu 100
6	912.582M	68.7	+20.2	+0.4			+0.0	89.3	136.5	-47.2	Condu 100

7	1829.998M	47.6	+20.0	+0.6	+0.0	68.2	116.5	-48.3	Condu 100
8	6404.869M	45.9	+19.9	+1.3	+0.0	67.1	116.5	-49.4	Condu 100
9	7064.427M	37.1	+20.2	+1.4	+0.0	58.7	116.5	-57.8	Condu 100
10	7712.975M	36.9	+20.4	+1.3	+0.0	58.6	116.5	-57.9	Condu 100
11	7075.539M	37.0	+20.2	+1.4	+0.0	58.6	116.5	-57.9	Condu 100
12	6905.769M	36.9	+20.2	+1.3	+0.0	58.4	116.5	-58.1	Condu 100
13	7005.669M	36.6	+20.3	+1.4	+0.0	58.3	116.5	-58.2	Condu 100
14	7353.416M	37.6	+19.5	+1.2	+0.0	58.3	116.5	-58.2	Condu 100
15	7686.249M	36.6	+20.3	+1.3	+0.0	58.2	116.5	-58.3	Condu 100
16	7884.947M	36.2	+20.5	+1.4	+0.0	58.1	116.5	-58.4	Condu 100
17	910.480M	57.4	+20.2	+0.4	+0.0	78.0	136.5	-58.5	Condu 100
18	7864.527M	36.1	+20.5	+1.4	+0.0	58.0	116.5	-58.5	Condu 100
19	6995.859M	36.2	+20.3	+1.4	+0.0	57.9	116.5	-58.6	Condu 100
20	8693.955M	35.6	+20.8	+1.4	+0.0	57.8	116.5	-58.7	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 1:13:13 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 12 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.247(d) Conducted Spurious Emissions
— Readings
× QP Readings
▼ Ambient

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 #: **91909** Date: 4/26/2011
 Test Type: **Maximized Emissions** Time: 1:18:16 PM
 Equipment: **SRR+WWAN+WIFI+GPS RX** Sequence#: 13
(internal WWAN & GPS antenna)
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: CCU100A
 S/N: 74045190

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	AN03122	Cable	32026-2-29801-36	12/23/2010	12/23/2012
	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.	CCU100A	74045190

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	E6400	H4CSTK1

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 9300 MHz
 Temp: 22° C
 Humidity: 35%
 Pressure: 102.5 kPa
 FM37.5 kBaud
 926.8 MHz
 Measured per DA00-705.

Ext Attn: 0 dB

Measurement Data:

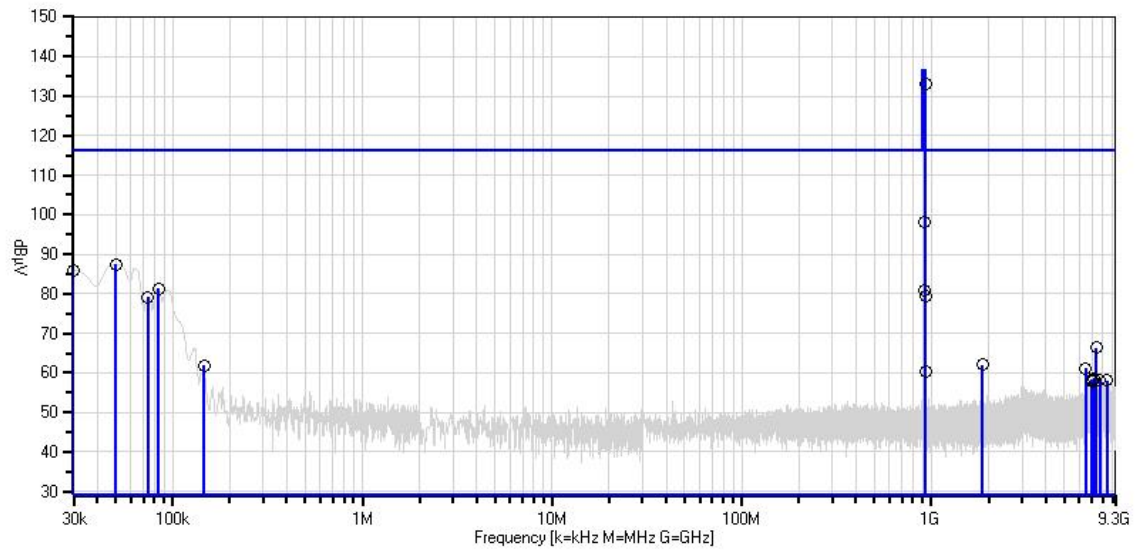
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	926.796M	112.3	+20.2	+0.4			+0.0	132.9	136.5	-3.6	Condu 100
2	50.004k	67.4	+20.1	+0.0			+0.0	87.5	116.5	-29.0	Condu 100
3	30.000k	65.8	+20.1	+0.0			+0.0	85.9	116.5	-30.6	Condu 100
4	84.010k	61.2	+20.1	+0.0			+0.0	81.3	116.5	-35.2	Condu 100
5	928.197M	58.9	+20.2	+0.4			+0.0	79.5	116.5	-37.0	Condu 100
6	74.008k	59.1	+20.1	+0.0			+0.0	79.2	116.5	-37.3	Condu 100

7	925.895M	77.5	+20.2	+0.4	+0.0	98.1	136.5	-38.4	Condu 100
8	7414.577M	45.8	+19.4	+1.2	+0.0	66.4	116.5	-50.1	Condu 100
9	1853.522M	41.5	+20.0	+0.6	+0.0	62.1	116.5	-54.4	Condu 100
10	146.021k	41.7	+20.1	+0.0	+0.0	61.8	116.5	-54.7	Condu 100
11	6487.451M	40.1	+19.8	+1.3	+0.0	61.2	116.5	-55.3	Condu 100
12	922.892M	60.1	+20.2	+0.4	+0.0	80.7	136.5	-55.8	Condu 100
13	929.198M	39.7	+20.2	+0.4	+0.0	60.3	116.5	-56.2	Condu 100
14	7173.136M	37.2	+20.0	+1.3	+0.0	58.5	116.5	-58.0	Condu 100
15	7035.499M	36.5	+20.3	+1.4	+0.0	58.2	116.5	-58.3	Condu 100
16	8455.918M	36.2	+20.6	+1.3	+0.0	58.1	116.5	-58.4	Condu 100
17	7726.589M	36.3	+20.4	+1.3	+0.0	58.0	116.5	-58.5	Condu 100
18	7742.205M	36.2	+20.5	+1.3	+0.0	58.0	116.5	-58.5	Condu 100
19	7084.748M	36.3	+20.2	+1.4	+0.0	57.9	116.5	-58.6	Condu 100
20	7092.355M	36.3	+20.2	+1.4	+0.0	57.9	116.5	-58.6	Condu 100

CKC Laboratories, Inc. Date: 4/26/2011 Time: 1:18:16 PM Itron, Inc. WO#: 91909
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 13 Ext ATTN: 0 dB



— Sweep Data
○ Peak Readings
* Average Readings
— 1 - 15.247(d) Conducted Spurious Emissions
— Readings
× QP Readings
▼ Ambient

Test Setup Photos

