

Ittron, Inc.

TEST REPORT FOR

ISM Transmitter, MC3-DL and MC LITE DL

Tested To The Following Standards:

FCC Part 15 Subpart C Section 15.247
and
RSS-210 Issue 7

Report No.: 91226-13

Date of issue: November 1, 2010



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.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

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REPORT PREPARED BY:

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REPRESENTATIVE: Jay Holcomb
Customer Reference Number: 21853

Project Number: 91226

DATE OF EQUIPMENT RECEIPT:

October 11 , 2010

DATE(S) OF TESTING:

October 11 - 14, 2010

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

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C 15.247 and RSS-210 Issue 7

Description	Test Procedure/Method	Results
Carrier Frequency Separation	FCC Part 15 Subpart C Section 15.247(a)(1) / DA-00-705	Pass
Number of Hoping Frequencies	FCC Part 15 Subpart C Section 15.247(a)(1)(i) / DA-00-705	Pass
Time of Occupancy	FCC Part 15 Subpart C Section 15.247(a)(1)(i) / DA-00-705	Pass
20 dB Bandwidth	FCC Part 15 Subpart C Section 15.247(a)(1)(i) / DA-00-705	Pass
Peak Conducted Output Power	FCC Part 15 Subpart C Section 15.247(b)(2) / DA-00-705	Pass
Antenna Conducted Spurious Emissions	FCC Part 15 Subpart C Section 15.247(d) / DA-00-705	Pass
Radiated Spurious Emissions	FCC Part 15 Subpart C Section 15.247(d) / DA-00-705	Pass
99% Bandwidth	RSS-210 / RSS-GEN Section 4.6.1	Pass

Conditions During Testing

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

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

The following model has been tested by CKC Laboratories: **ISM Transmitter, MCLite Upgrade Kit**

Since the time of testing the manufacturer has chosen to use the following model names in its place. Any differences between the names does not affect their EMC characteristics and therefore meets the level of testing equivalent to the tested model name shown on the data sheets: **ISM Transmitter, MC3-DL and MC LITE DL**

The EUT contains 4 receiver ports; 1GPS and 3 ISM. The following explains the configurations for each model:

The MC3-DL

- 4 receiver ports; 3 ISM & GPS

The MC LITE DL

- 2 receiver ports; ISM & GPS
- The other two ports are not used

ISM Transmitter

Manuf: Itron, Inc.

Model: MC3-DL and MC LITE DL

Serial: NA

PERIPHERAL DEVICES

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

Laptop

Manuf: General Dynamics

Model: IX270

Serial: ZZGEG7201ZZ7266

12VDC Deep Cycle Marine Battery

Manuf: Interstate

Model: HD-24-DP

Serial: NA

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.

15.247(a)(1) Carrier Frequency Separation

Test Engineer: J. Gilbert

Test Equipment					
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
03121	Cable 10k-18G	32026-2-29080-84	Astrolab	10/23/2009	10/23/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012

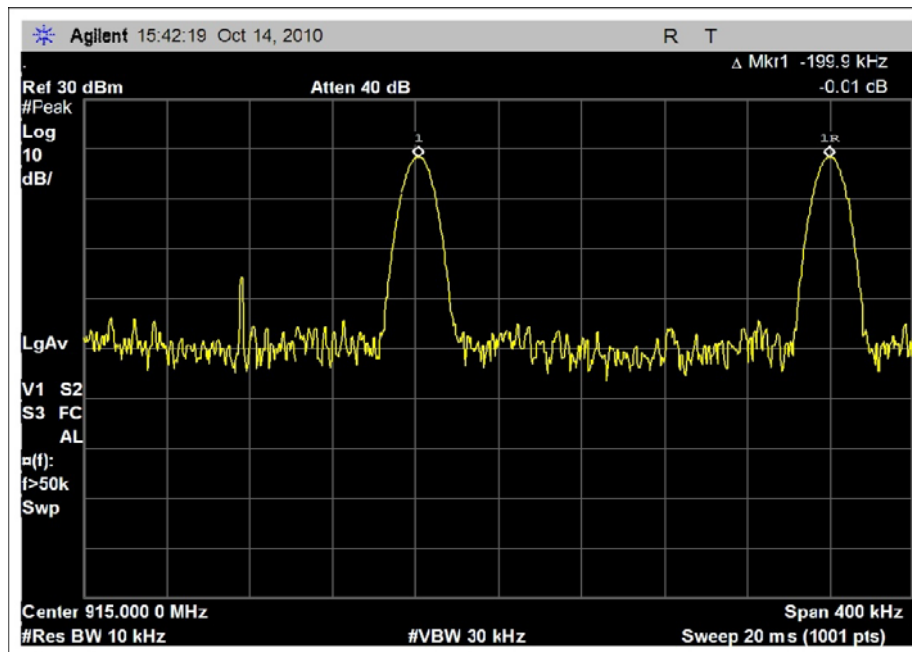
Test Conditions

The EUT was setup on the test table and connected to a spectrum analyzer via a RF cable and 10 dB attenuator. The EUT is installed in vehicles and was therefore powered by a fully charged 12VDC automotive battery. The EUT was cycled through the different channels by test software on a support laptop, connected to the EUT by a USB cable.

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 Data Sheets



Test Setup Photos



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

Test Engineer: J. Gilbert

Test Equipment					
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
03121	Cable 10k-18G	32026-2-29080-84	Astrolab	10/23/2009	10/23/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012

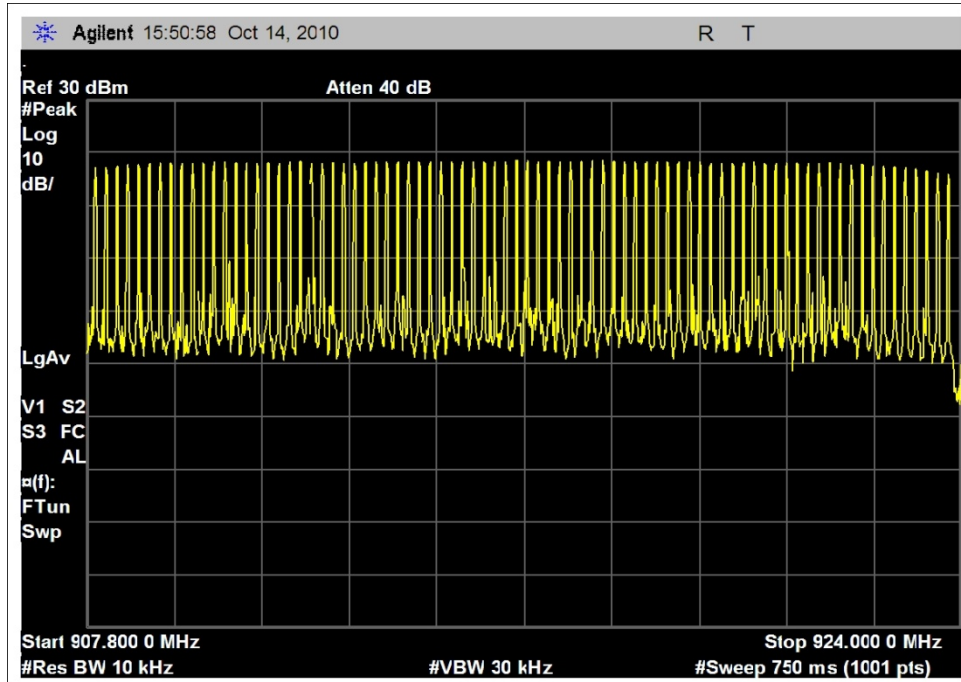
Test Conditions

The EUT was setup on the test table and connected to a spectrum analyzer via a RF cable and 10 dB attenuator. The EUT is installed in vehicles and was therefore powered by a fully charged 12VDC automotive battery. The EUT was cycled through the different channels by test software on a support laptop, connected to the EUT by a USB cable.

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 80 hopping frequencies. PASS

Test Data Sheets



Test Setup Photos



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

Test Engineer: J. Gilbert

Test Equipment					
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
03121	Cable 10k-18G	32026-2-29080-84	Astrolab	10/23/2009	10/23/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012

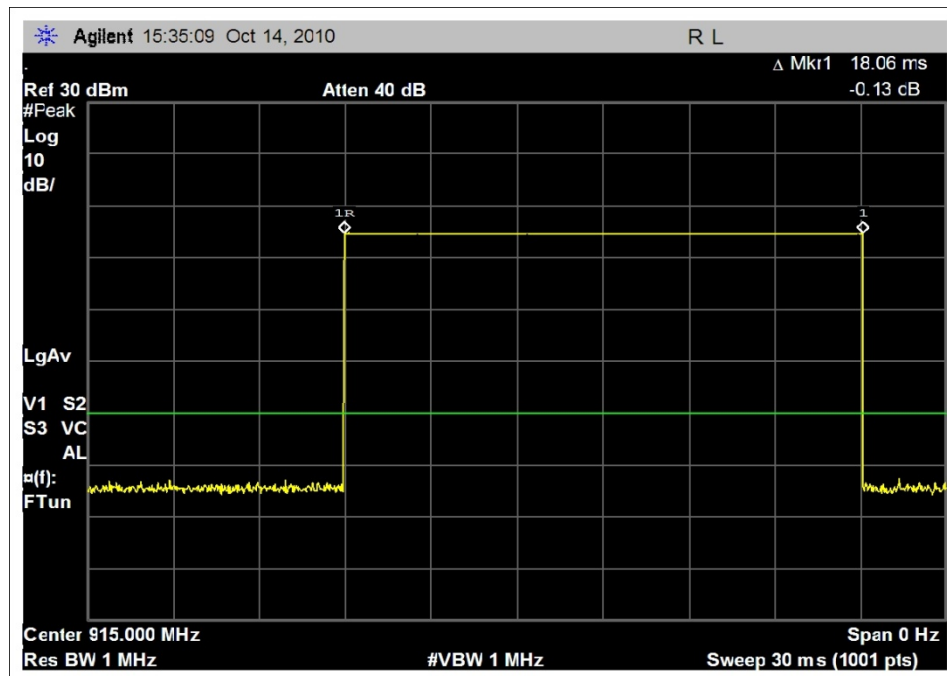
Test Conditions

The EUT was setup on the test table and connected to a spectrum analyzer via a RF cable and 10 dB attenuator. The EUT is installed in vehicles and was therefore powered by a fully charged 12VDC automotive battery. The EUT was cycled through the different channels by test software on a support laptop, connected to the EUT by a USB cable.

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 0.01806 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 Data Sheets



Test Setup Photos



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

Engineer Name:

Test Equipment					
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
03121	Cable 10k-18G	32026-2-29080-84	Astrolab	10/23/2009	10/23/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012

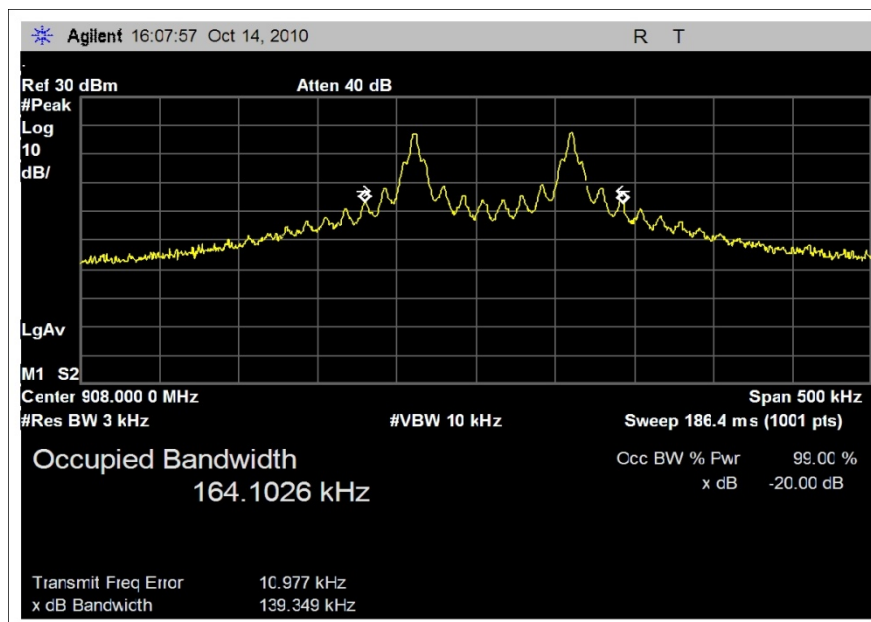
Test Conditions

The EUT was setup on the test table and connected to a spectrum analyzer via a RF cable and 10 dB attenuator. The EUT is installed in vehicles and was therefore powered by a fully charged 12VDC automotive battery. The EUT was cycled through the different channels by test software on a support laptop, connected to the EUT by a USB cable.

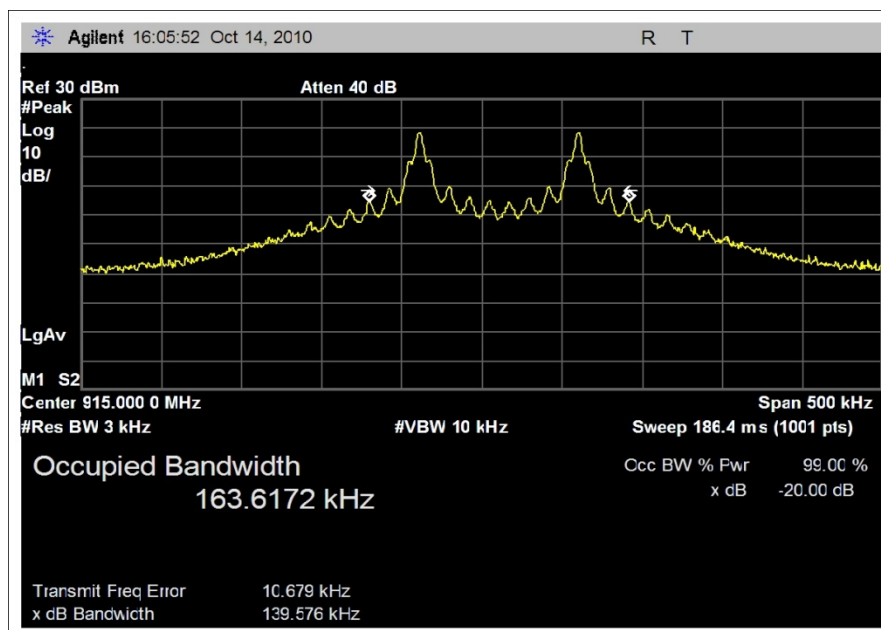
Requirement: The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz. PASS

908 MHz	915 MHz	923.8 MHz
139.35 kHz	139.58 kHz	139.76 kHz

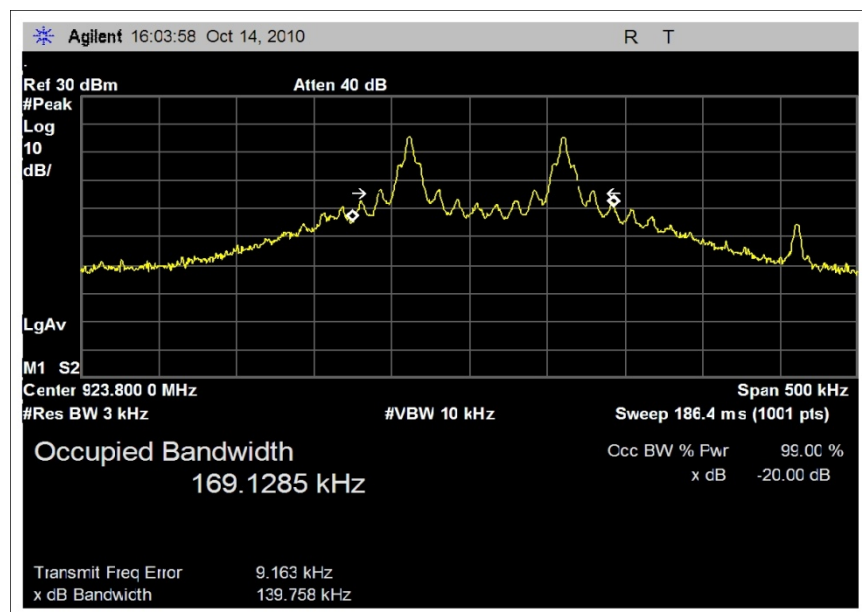
Test Plots



908 MHz



915 MHz



923.8 MHz

Test Setup Photos



15.247(b)(2) Peak Conducted Output Power

Test Data

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 #: **91226**

Date: 10/12/2010

Test Type: **Antenna Port Conducted**

Time: 14:32:40

Equipment: **ISM Transmitter**

Sequence#: 12

Manufacturer: Itron, Inc.

Tested By: Jeff Gilbert

Model: MCLite Upgrade Kit

S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05435	Attenuator	PE7015-10	9/8/2010	9/8/2012
T2	ANP05422	Cable	PE35591-72	12/17/2009	12/17/2011
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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 908, 915, 923.8 MHz

Temp: 23° C

Humidity: 39%

Pressure: 103.3 kPa

Conducted Power Measurement on ISM Transmitter.

The battery powering the EUT is on the turntable, under the test table.

The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB		Dist Table	Corr dBm	Spec dBm	Margin dB	Polar Ant
1	915.058M	16.5	+9.7	+1.7	+0.8		+0.0	28.8	30.0	-1.3	Condu 100
2	908.060M	15.7	+9.7	+1.7	+0.8		+0.0	27.9	30.0	-2.1	Condu 100
3	923.758M	14.0	+9.7	+1.7	+0.8		+0.0	26.2	30.0	-3.8	Condu 100

Test Setup Photos



15.247(d) Antenna Conducted Spurious Emissions

Test Data

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 #: **91226**

Date: 10/14/2010

Test Type: **Antenna Port Conducted**

Time: 4:25:23 PM

Equipment: **ISM Transmitter**

Sequence#: 5

Manufacturer: Itron, Inc.

Tested By: Jeff Gilbert

Model: MCLite Upgrade Kit

S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05435	Attenuator	PE7015-10	9/8/2010	9/8/2012
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 30 MHz; BW setting = 100 kHz

Temp: 24° C

Humidity: 37%

Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 908 MHz

The GPS receiver is always active.

The unused antenna ports of the EUT are terminated into 50 ohm loads.

The battery powering the EUT is under the test table.

The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

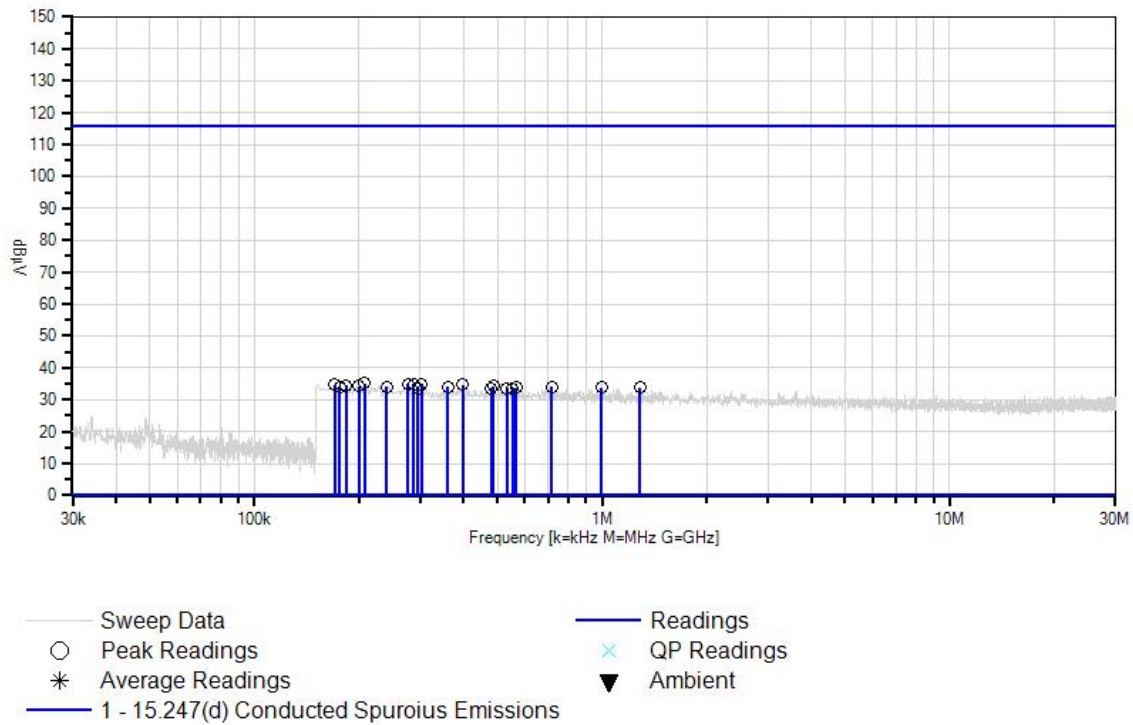
Measurement Data:

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	208.050k	25.5	+9.7	+0.0			+0.0	35.2	115.8	-80.6	Condu 100
2	287.700k	25.3	+9.7	+0.0			+0.0	35.0	115.8	-80.8	Condu 100
3	276.900k	25.2	+9.7	+0.0			+0.0	34.9	115.8	-80.9	Condu 100
4	302.550k	25.2	+9.7	+0.0			+0.0	34.9	115.8	-80.9	Condu 100
5	398.400k	25.1	+9.7	+0.0			+0.0	34.8	115.8	-81.0	Condu 100
6	170.250k	25.0	+9.7	+0.0			+0.0	34.7	115.8	-81.1	Condu 100
7	183.750k	24.7	+9.7	+0.0			+0.0	34.4	115.8	-81.4	Condu 100
8	199.950k	24.6	+9.7	+0.0			+0.0	34.3	115.8	-81.5	Condu 100
9	486.150k	24.5	+9.7	+0.0			+0.0	34.2	115.8	-81.6	Condu 100
10	240.450k	24.4	+9.7	+0.0			+0.0	34.1	115.8	-81.7	Condu 100
11	175.650k	24.3	+9.7	+0.0			+0.0	34.0	115.8	-81.8	Condu 100
12	360.600k	24.3	+9.7	+0.0			+0.0	34.0	115.8	-81.8	Condu 100
13	718.350k	24.3	+9.7	+0.0			+0.0	34.0	115.8	-81.8	Condu 100
14	567.150k	24.2	+9.7	+0.0			+0.0	33.9	115.8	-81.9	Condu 100
15	995.100k	24.1	+9.7	+0.0			+0.0	33.8	115.8	-82.0	Condu 100
16	1.288M	24.1	+9.7	+0.0			+0.0	33.8	115.8	-82.0	Condu 100
17	479.400k	24.0	+9.7	+0.0			+0.0	33.7	115.8	-82.1	Condu 100
18	533.400k	24.0	+9.7	+0.0			+0.0	33.7	115.8	-82.1	Condu 100
19	552.300k	24.0	+9.7	+0.0			+0.0	33.7	115.8	-82.1	Condu 100
20	295.800k	23.9	+9.7	+0.0			+0.0	33.6	115.8	-82.2	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:25:23 PM Itron, Inc. WO#: 91226
 15.247(d) Conducted Spurious Emissions Test Distance: None Conducted 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) Conducted Spurious Emissions**
 Work Order #: **91226** Date: 10/14/2010
 Test Type: **Antenna Port Conducted** Time: 4:29:32 PM
 Equipment: **ISM Transmitter** Sequence#: 6
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05435	Attenuator	PE7015-10	9/8/2010	9/8/2012
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 37%
 Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 908 MHz

The GPS receiver is always active.

The unused antenna ports of the EUT are terminated into 50 ohm loads.

The battery powering the EUT is under the test table.

The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

Measurement Data:

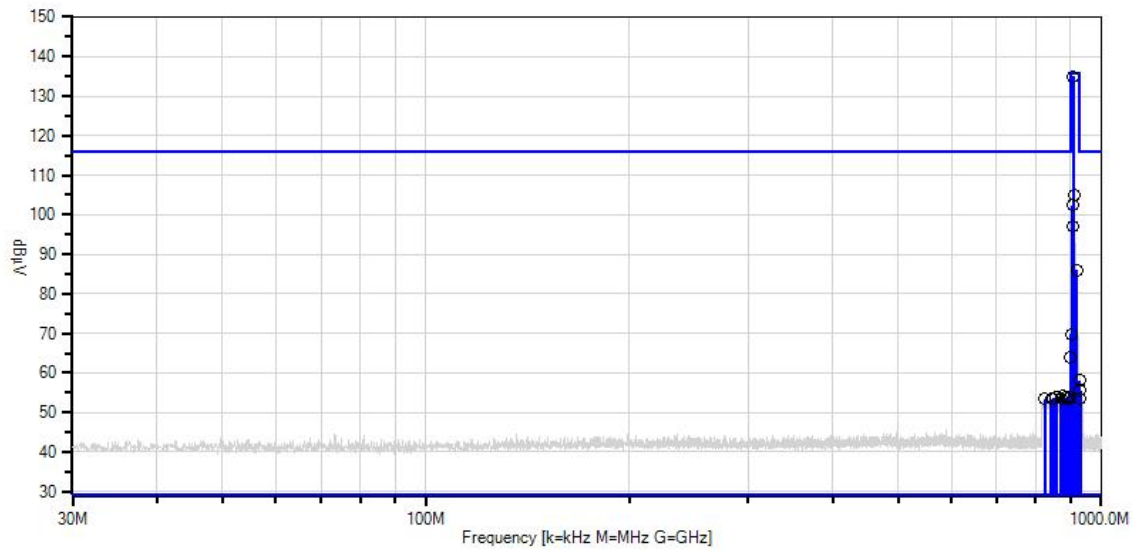
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	908.080M	124.4	+9.7	+0.8			+0.0	134.9	135.8	-0.9	Condu 100
2	910.362M	94.5	+9.7	+0.8			+0.0	105.0	135.8	-30.8	Condu 100
3	906.878M	91.8	+9.7	+0.8			+0.0	102.3	135.8	-33.5	Condu 100
4	905.557M	86.5	+9.7	+0.8			+0.0	97.0	135.8	-38.8	Condu 100

5	901.954M	59.3	+9.7	+0.8	+0.0	69.8	115.8	-46.0	Condu 100
6	919.972M	75.5	+9.7	+0.8	+0.0	86.0	135.8	-49.8	Condu 100
7	900.752M	53.5	+9.7	+0.8	+0.0	64.0	115.8	-51.8	Condu 100
8	928.260M	47.6	+9.7	+0.8	+0.0	58.1	115.8	-57.7	Condu 100
9	931.984M	45.1	+9.7	+0.8	+0.0	55.6	115.8	-60.2	Condu 100
10	878.770M	43.8	+9.7	+0.8	+0.0	54.3	115.8	-61.5	Condu 100
11	897.389M	43.5	+9.7	+0.8	+0.0	54.0	115.8	-61.8	Condu 100
12	856.428M	43.5	+9.7	+0.7	+0.0	53.9	115.8	-61.9	Condu 100
13	886.578M	43.3	+9.7	+0.8	+0.0	53.8	115.8	-62.0	Condu 100
14	848.020M	43.2	+9.7	+0.7	+0.0	53.6	115.8	-62.2	Condu 100
15	872.884M	43.1	+9.7	+0.8	+0.0	53.6	115.8	-62.2	Condu 100
16	930.662M	43.1	+9.7	+0.8	+0.0	53.6	115.8	-62.2	Condu 100
17	843.335M	43.0	+9.7	+0.7	+0.0	53.4	115.8	-62.4	Condu 100
18	824.116M	43.0	+9.7	+0.7	+0.0	53.4	115.8	-62.4	Condu 100
19	895.467M	42.9	+9.7	+0.8	+0.0	53.4	115.8	-62.4	Condu 100
20	890.182M	42.9	+9.7	+0.8	+0.0	53.4	115.8	-62.4	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:29:32 PM Itron, Inc. WO#: 91226
 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 #: **91226** Date: 10/14/2010
 Test Type: **Antenna Port Conducted** Time: 4:42:21 PM
 Equipment: **ISM Transmitter** Sequence#: 8
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 37%
 Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 908 MHz

The GPS receiver is always active.
 The unused antenna ports of the EUT are terminated into 50 ohm loads.
 The battery powering the EUT is under the test table.
 The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

Measurement Data:

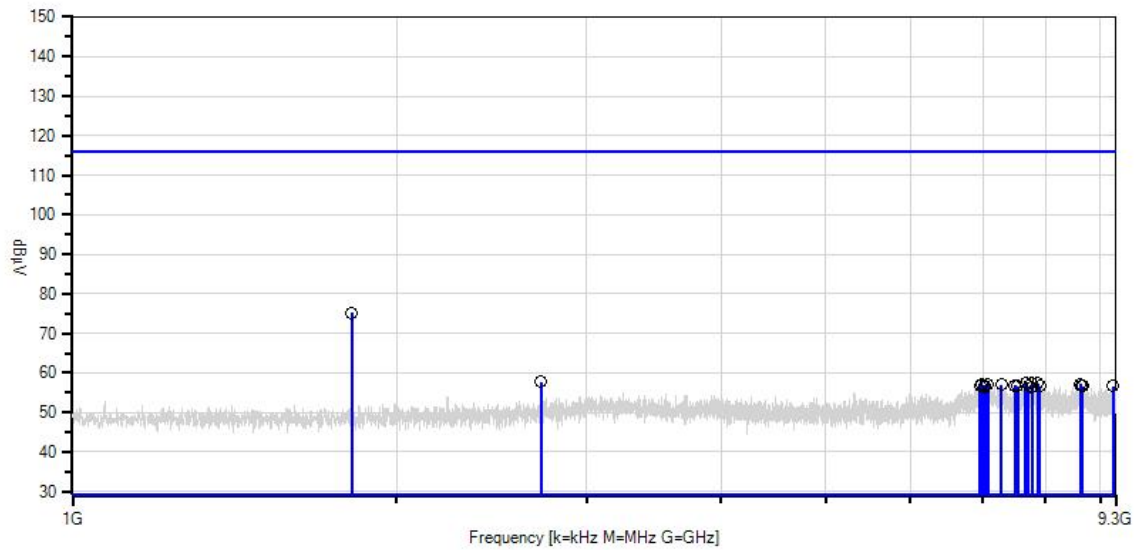
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1815.815M	53.9	+20.0	+1.2			+0.0	75.1	115.8	-40.7	Condu 100
2	2723.722M	36.2	+20.1	+1.5			+0.0	57.8	115.8	-58.0	Condu 100
3	7780.774M	34.4	+20.6	+2.4			+0.0	57.4	115.8	-58.4	Condu 100
4	7667.661M	34.6	+20.2	+2.5			+0.0	57.3	115.8	-58.5	Condu 100

5	7873.867M	34.4	+20.5	+2.4	+0.0	57.3	115.8	-58.5	Condu 100
6	8619.612M	33.5	+20.9	+2.7	+0.0	57.1	115.8	-58.7	Condu 100
7	6981.976M	34.2	+20.3	+2.5	+0.0	57.0	115.8	-58.8	Condu 100
8	7077.071M	34.3	+20.2	+2.5	+0.0	57.0	115.8	-58.8	Condu 100
9	7288.282M	35.0	+19.6	+2.4	+0.0	57.0	115.8	-58.8	Condu 100
10	7496.490M	34.8	+19.7	+2.4	+0.0	56.9	115.8	-58.9	Condu 100
11	7020.014M	33.9	+20.3	+2.6	+0.0	56.8	115.8	-59.0	Condu 100
12	6962.957M	34.0	+20.2	+2.5	+0.0	56.7	115.8	-59.1	Condu 100
13	7541.535M	34.4	+19.8	+2.5	+0.0	56.7	115.8	-59.1	Condu 100
14	9253.280M	33.4	+20.6	+2.7	+0.0	56.7	115.8	-59.1	Condu 100
15	7908.902M	33.8	+20.4	+2.4	+0.0	56.6	115.8	-59.2	Condu 100
16	7715.709M	33.7	+20.4	+2.5	+0.0	56.6	115.8	-59.2	Condu 100
17	8663.656M	32.9	+20.9	+2.8	+0.0	56.6	115.8	-59.2	Condu 100
18	8650.643M	32.9	+20.9	+2.8	+0.0	56.6	115.8	-59.2	Condu 100
19	7033.027M	33.6	+20.3	+2.6	+0.0	56.5	115.8	-59.3	Condu 100
20	7773.767M	33.5	+20.6	+2.4	+0.0	56.5	115.8	-59.3	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:42:21 PM Itron, Inc. WO#: 91226
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 #: **91226** Date: 10/14/2010
 Test Type: **Antenna Port Conducted** Time: 4:48:39 PM
 Equipment: **ISM Transmitter** Sequence#: 13
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 30 MHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 37%
 Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 915 MHz

The GPS receiver is always active.

The unused antenna ports of the EUT are terminated into 50 ohm loads.

The battery powering the EUT is under the test table.

The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

Measurement Data:

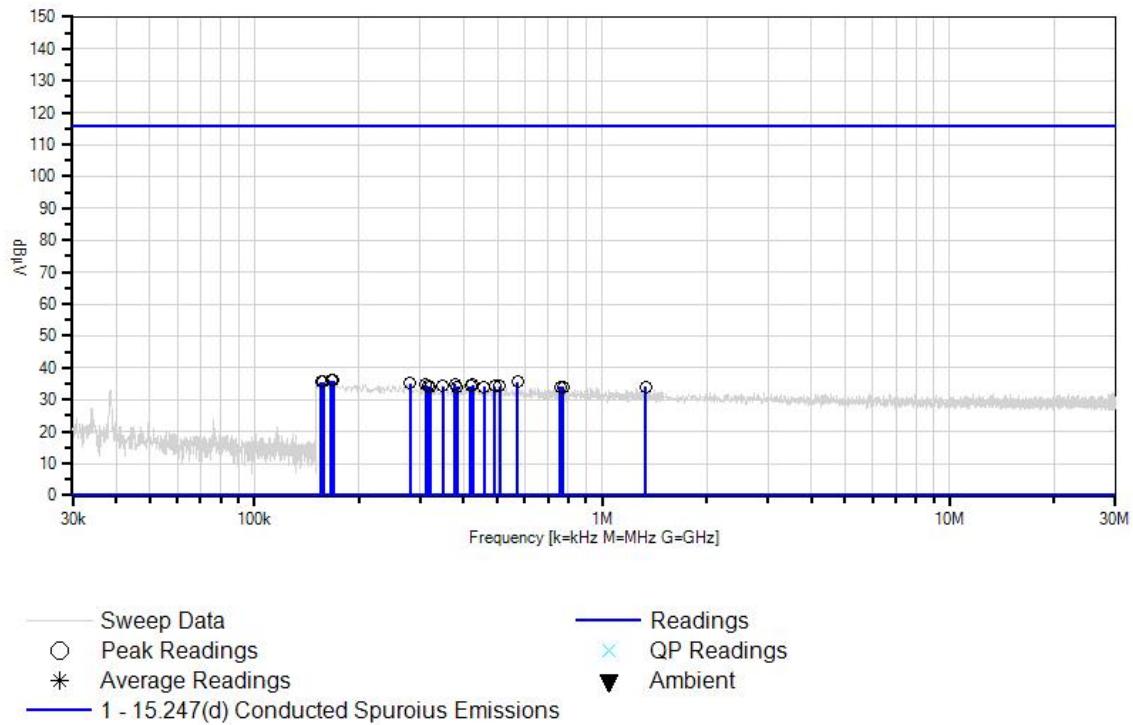
Reading listed by margin.

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	166.200k	16.0	+20.1	+0.0			+0.0	36.1	115.8	-79.7	Condu 100
2	168.900k	16.0	+20.1	+0.0			+0.0	36.1	115.8	-79.7	Condu 100
3	571.200k	15.6	+20.1	+0.0			+0.0	35.7	115.8	-80.1	Condu 100
4	155.400k	15.5	+20.1	+0.0			+0.0	35.6	115.8	-80.2	Condu 100

5	158.100k	15.5	+20.1	+0.0	+0.0	35.6	115.8	-80.2	Condu 100
6	280.950k	15.0	+20.1	+0.0	+0.0	35.1	115.8	-80.7	Condu 100
7	376.800k	14.9	+20.1	+0.0	+0.0	35.0	115.8	-80.8	Condu 100
8	312.000k	14.6	+20.1	+0.0	+0.0	34.7	115.8	-81.1	Condu 100
9	424.050k	14.5	+20.1	+0.0	+0.0	34.6	115.8	-81.2	Condu 100
10	348.450k	14.2	+20.1	+0.0	+0.0	34.3	115.8	-81.5	Condu 100
11	316.050k	14.2	+20.1	+0.0	+0.0	34.3	115.8	-81.5	Condu 100
12	418.650k	14.1	+20.1	+0.0	+0.0	34.2	115.8	-81.6	Condu 100
13	491.550k	14.1	+20.1	+0.0	+0.0	34.2	115.8	-81.6	Condu 100
14	509.100k	14.1	+20.1	+0.0	+0.0	34.2	115.8	-81.6	Condu 100
15	457.800k	14.0	+20.1	+0.0	+0.0	34.1	115.8	-81.7	Condu 100
16	758.850k	14.0	+20.1	+0.0	+0.0	34.1	115.8	-81.7	Condu 100
17	383.550k	13.9	+20.1	+0.0	+0.0	34.0	115.8	-81.8	Condu 100
18	320.100k	13.9	+20.1	+0.0	+0.0	34.0	115.8	-81.8	Condu 100
19	1.334M	13.9	+20.1	+0.0	+0.0	34.0	115.8	-81.8	Condu 100
20	773.700k	13.9	+20.1	+0.0	+0.0	34.0	115.8	-81.8	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:48:39 PM Itron, Inc. WO#: 91226
 15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 13 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 #: **91226** Date: 10/14/2010
 Test Type: **Antenna Port Conducted** Time: 4:47:01 PM
 Equipment: **ISM Transmitter** Sequence#: 12
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 37%
 Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 915 MHz

The GPS receiver is always active.

The unused antenna ports of the EUT are terminated into 50 ohm loads.

The battery powering the EUT is under the test table.

The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

Measurement Data:

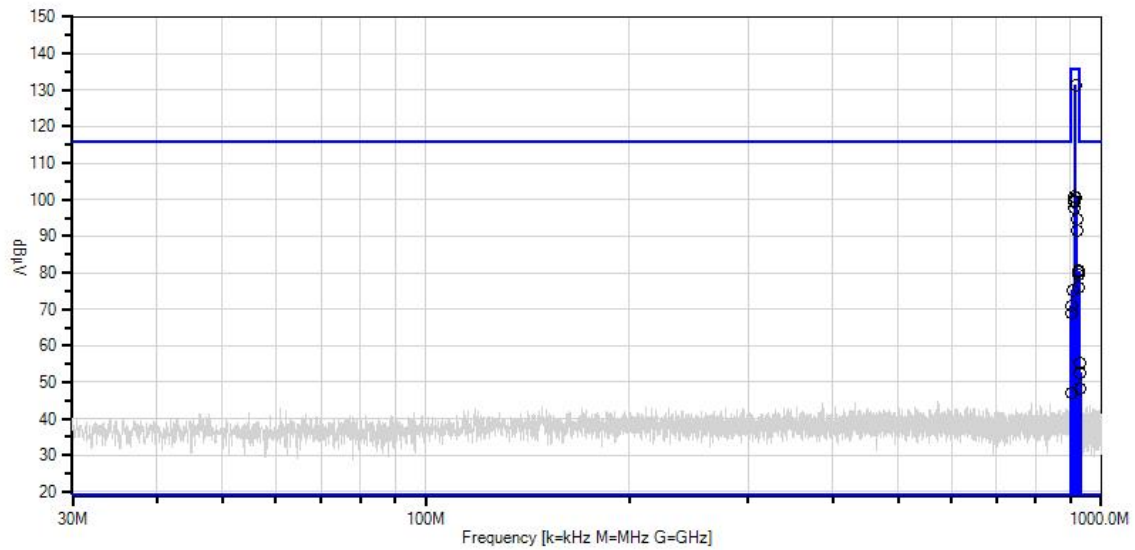
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	915.047M	110.4	+20.2	+0.8			+0.0	131.4	135.8	-4.4	Condu 100
2	913.005M	80.0	+20.2	+0.8			+0.0	101.0	135.8	-34.8	Condu 100
3	916.608M	79.4	+20.2	+0.8			+0.0	100.4	135.8	-35.4	Condu 100
4	913.966M	78.9	+20.2	+0.8			+0.0	99.9	135.8	-35.9	Condu 100

5	913.605M	78.8	+20.2	+0.8	+0.0	99.8	135.8	-36.0	Condu 100
6	912.044M	78.3	+20.2	+0.8	+0.0	99.3	135.8	-36.5	Condu 100
7	912.284M	76.6	+20.2	+0.8	+0.0	97.6	135.8	-38.2	Condu 100
8	919.611M	73.8	+20.2	+0.8	+0.0	94.8	135.8	-41.0	Condu 100
9	919.851M	70.5	+20.2	+0.8	+0.0	91.5	135.8	-44.3	Condu 100
10	927.059M	59.6	+20.2	+0.8	+0.0	80.6	135.8	-55.2	Condu 100
11	924.416M	59.2	+20.2	+0.8	+0.0	80.2	135.8	-55.6	Condu 100
12	924.176M	58.4	+20.2	+0.8	+0.0	79.4	135.8	-56.4	Condu 100
13	924.656M	54.8	+20.2	+0.8	+0.0	75.8	135.8	-60.0	Condu 100
14	928.260M	34.3	+20.2	+0.8	+0.0	55.3	115.8	-60.5	Condu 100
15	906.158M	54.2	+20.2	+0.8	+0.0	75.2	135.8	-60.6	Condu 100
16	930.062M	31.7	+20.2	+0.8	+0.0	52.7	115.8	-63.1	Condu 100
17	903.035M	49.9	+20.2	+0.8	+0.0	70.9	135.8	-64.9	Condu 100
18	905.197M	48.0	+20.2	+0.8	+0.0	69.0	135.8	-66.8	Condu 100
19	931.383M	27.2	+20.2	+0.8	+0.0	48.2	115.8	-67.6	Condu 100
20	901.113M	25.9	+20.2	+0.8	+0.0	46.9	115.8	-68.9	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:47:01 PM Itron, Inc. WO#: 91226
15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 12 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 #: **91226** Date: 10/14/2010
 Test Type: **Antenna Port Conducted** Time: 4:43:39 PM
 Equipment: **ISM Transmitter** Sequence#: 9
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 37%
 Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 915 MHz

The GPS receiver is always active.

The unused antenna ports of the EUT are terminated into 50 ohm loads.

The battery powering the EUT is under the test table.

The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

Measurement Data:

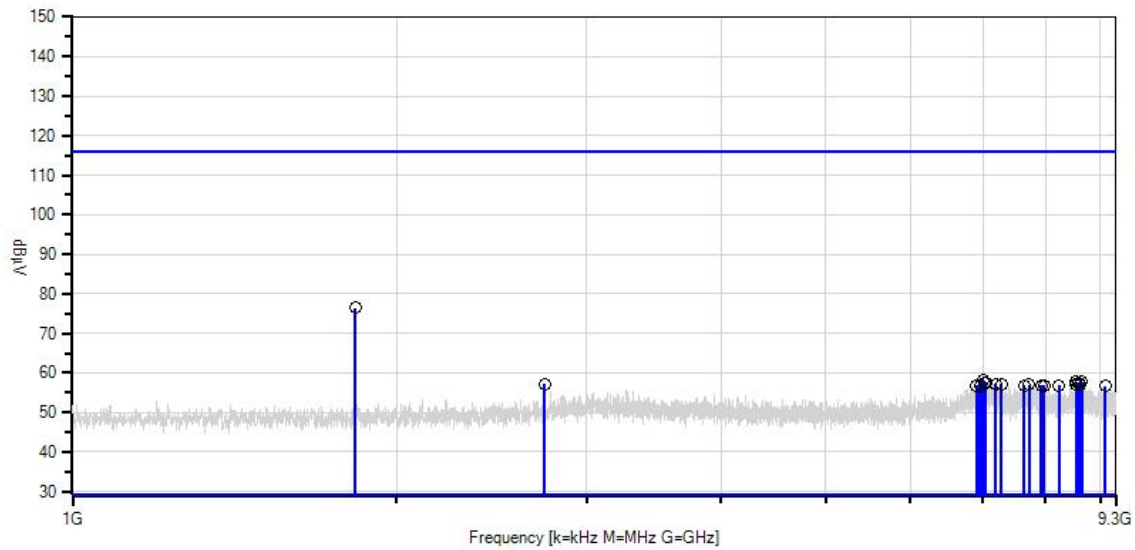
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1829.829M	55.3	+20.0	+1.2			+0.0	76.5	115.8	-39.3	Condu 100
2	7000.995M	35.4	+20.3	+2.6			+0.0	58.3	115.8	-57.5	Condu 100
3	8646.639M	34.1	+20.9	+2.8			+0.0	57.8	115.8	-58.0	Condu 100
4	8543.536M	34.4	+20.8	+2.5			+0.0	57.7	115.8	-58.1	Condu 100

5	8600.593M	34.1	+20.9	+2.6	+0.0	57.6	115.8	-58.2	Condu 100
6	7045.039M	34.6	+20.3	+2.6	+0.0	57.5	115.8	-58.3	Condu 100
7	7038.032M	34.5	+20.3	+2.6	+0.0	57.4	115.8	-58.4	Condu 100
8	7288.282M	35.2	+19.6	+2.4	+0.0	57.2	115.8	-58.6	Condu 100
9	7196.190M	34.8	+19.8	+2.5	+0.0	57.1	115.8	-58.7	Condu 100
10	8608.601M	33.6	+20.9	+2.6	+0.0	57.1	115.8	-58.7	Condu 100
11	2744.743M	35.5	+20.1	+1.5	+0.0	57.1	115.8	-58.7	Condu 100
12	7732.726M	34.0	+20.5	+2.5	+0.0	57.0	115.8	-58.8	Condu 100
13	8548.541M	33.7	+20.8	+2.5	+0.0	57.0	115.8	-58.8	Condu 100
14	7651.645M	34.2	+20.2	+2.5	+0.0	56.9	115.8	-58.9	Condu 100
15	8238.231M	34.3	+20.0	+2.6	+0.0	56.9	115.8	-58.9	Condu 100
16	6962.957M	34.1	+20.2	+2.5	+0.0	56.8	115.8	-59.0	Condu 100
17	6911.906M	34.2	+20.2	+2.4	+0.0	56.8	115.8	-59.0	Condu 100
18	7978.972M	34.1	+20.3	+2.4	+0.0	56.8	115.8	-59.0	Condu 100
19	7932.926M	34.0	+20.4	+2.4	+0.0	56.8	115.8	-59.0	Condu 100
20	9102.608M	33.9	+20.1	+2.7	+0.0	56.7	115.8	-59.1	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:43:39 PM Itron, Inc. WO#: 91226
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 #: **91226** Date: 10/14/2010
 Test Type: **Antenna Port Conducted** Time: 4:52:41 PM
 Equipment: **ISM Transmitter** Sequence#: 14
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 30 MHz; BW setting = 100 kHz z
 Temp: 24° C
 Humidity: 37%
 Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 923.8 MHz

The GPS receiver is always active.

The unused antenna ports of the EUT are terminated into 50 ohm loads.

The battery powering the EUT is under the test table.

The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

Measurement Data:

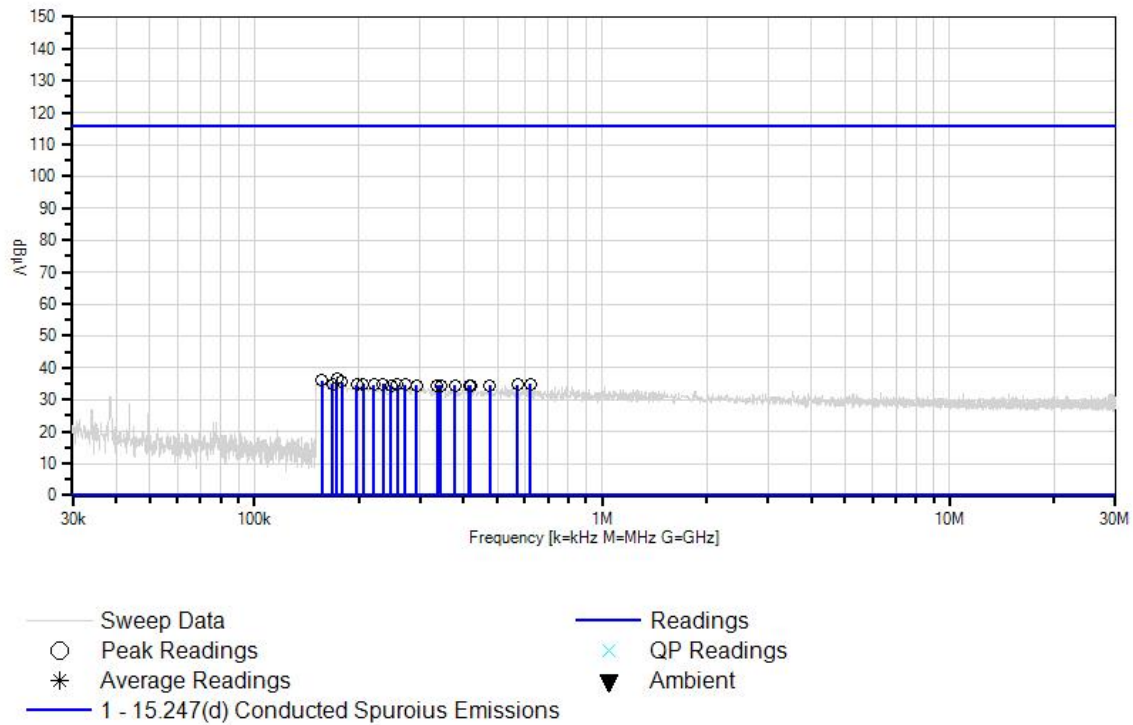
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	172.950k	16.3	+20.1	+0.0			+0.0	36.4	115.8	-79.4	Condu 100
2	156.750k	15.9	+20.1	+0.0			+0.0	36.0	115.8	-79.8	Condu 100
3	178.350k	15.4	+20.1	+0.0			+0.0	35.5	115.8	-80.3	Condu 100
4	205.350k	14.9	+20.1	+0.0			+0.0	35.0	115.8	-80.8	Condu 100

5	167.550k	14.9	+20.1	+0.0	+0.0	35.0	115.8	-80.8	Condu 100
6	622.500k	14.9	+20.1	+0.0	+0.0	35.0	115.8	-80.8	Condu 100
7	235.050k	14.9	+20.1	+0.0	+0.0	35.0	115.8	-80.8	Condu 100
8	220.200k	14.7	+20.1	+0.0	+0.0	34.8	115.8	-81.0	Condu 100
9	258.000k	14.7	+20.1	+0.0	+0.0	34.8	115.8	-81.0	Condu 100
10	271.500k	14.7	+20.1	+0.0	+0.0	34.8	115.8	-81.0	Condu 100
11	197.250k	14.7	+20.1	+0.0	+0.0	34.8	115.8	-81.0	Condu 100
12	571.200k	14.6	+20.1	+0.0	+0.0	34.7	115.8	-81.1	Condu 100
13	247.200k	14.4	+20.1	+0.0	+0.0	34.5	115.8	-81.3	Condu 100
14	475.350k	14.4	+20.1	+0.0	+0.0	34.5	115.8	-81.3	Condu 100
15	343.050k	14.3	+20.1	+0.0	+0.0	34.4	115.8	-81.4	Condu 100
16	336.300k	14.3	+20.1	+0.0	+0.0	34.4	115.8	-81.4	Condu 100
17	293.100k	14.3	+20.1	+0.0	+0.0	34.4	115.8	-81.4	Condu 100
18	418.650k	14.3	+20.1	+0.0	+0.0	34.4	115.8	-81.4	Condu 100
19	414.600k	14.3	+20.1	+0.0	+0.0	34.4	115.8	-81.4	Condu 100
20	376.800k	14.3	+20.1	+0.0	+0.0	34.4	115.8	-81.4	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:52:41 PM Itron, Inc. WO#: 91226
 15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 14 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 #: **91226** Date: 10/14/2010
 Test Type: **Antenna Port Conducted** Time: 4:45:46 PM
 Equipment: **ISM Transmitter** Sequence#: 11
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 37%
 Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 923.8 MHz

The GPS receiver is always active.

The unused antenna ports of the EUT are terminated into 50 ohm loads.

The battery powering the EUT is under the test table.

The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

Measurement Data:

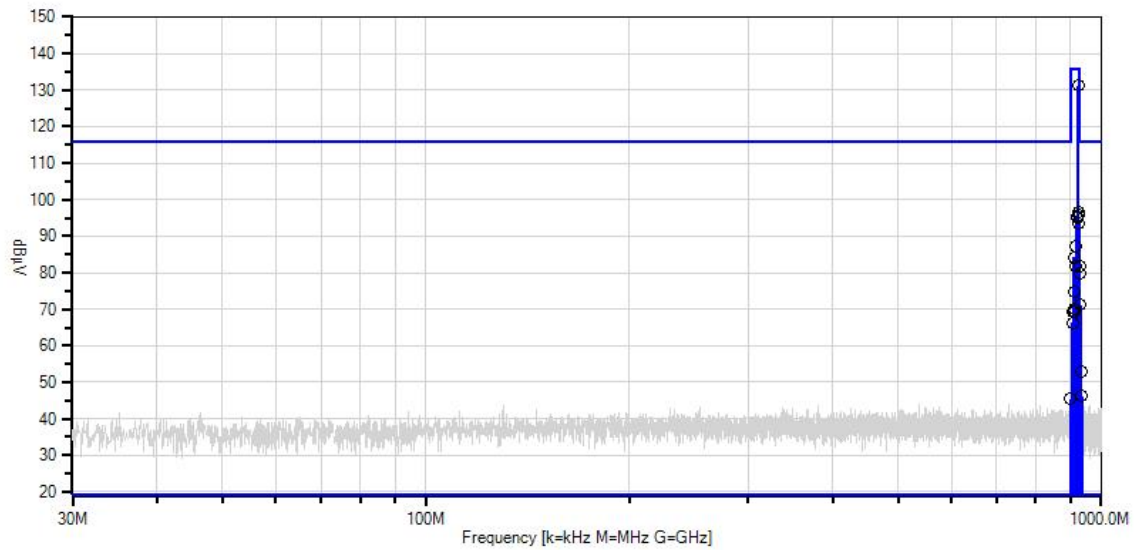
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	923.935M	110.1	+20.2	+0.8			+0.0	131.1	135.8	-4.7	Condu 100
2	928.500M	60.8	+20.2	+0.8			+0.0	81.8	115.8	-34.0	Condu 100
3	928.020M	58.8	+20.2	+0.8			+0.0	79.8	115.8	-36.0	Condu 100
4	925.017M	75.5	+20.2	+0.8			+0.0	96.5	135.8	-39.3	Condu 100

5	924.416M	75.0	+20.2	+0.8	+0.0	96.0	135.8	-39.8	Condu 100
6	920.092M	74.6	+20.2	+0.8	+0.0	95.6	135.8	-40.2	Condu 100
7	920.572M	74.1	+20.2	+0.8	+0.0	95.1	135.8	-40.7	Condu 100
8	925.377M	72.6	+20.2	+0.8	+0.0	93.6	135.8	-42.2	Condu 100
9	929.941M	50.1	+20.2	+0.8	+0.0	71.1	115.8	-44.7	Condu 100
10	917.449M	66.1	+20.2	+0.8	+0.0	87.1	135.8	-48.7	Condu 100
11	911.683M	63.2	+20.2	+0.8	+0.0	84.2	135.8	-51.6	Condu 100
12	915.527M	60.9	+20.2	+0.8	+0.0	81.9	135.8	-53.9	Condu 100
13	913.966M	53.8	+20.2	+0.8	+0.0	74.8	135.8	-61.0	Condu 100
14	932.464M	31.8	+20.2	+0.8	+0.0	52.8	115.8	-63.0	Condu 100
15	913.125M	49.0	+20.2	+0.8	+0.0	70.0	135.8	-65.8	Condu 100
16	910.002M	48.3	+20.2	+0.8	+0.0	69.3	135.8	-66.5	Condu 100
17	908.440M	48.2	+20.2	+0.8	+0.0	69.2	135.8	-66.6	Condu 100
18	906.999M	45.2	+20.2	+0.8	+0.0	66.2	135.8	-69.6	Condu 100
19	935.827M	25.2	+20.2	+0.8	+0.0	46.2	115.8	-69.6	Condu 100
20	899.791M	24.4	+20.2	+0.8	+0.0	45.4	115.8	-70.4	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:45:46 PM Itron, Inc. WO#: 91226
 15.247(d) Conducted Spurious Emissions Test Distance: None Conducted Sequence#: 11 Ext ATTN: 0 dB



— Sweep Data	— Readings
○ Peak Readings	× QP Readings
* Average 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 #: **91226** Date: 10/14/2010
 Test Type: **Antenna Port Conducted** Time: 4:44:50 PM
 Equipment: **ISM Transmitter** Sequence#: 10
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05508	Attenuator	BW-S20W2	10/12/2009	10/12/2011
T2	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 37%
 Pressure: 102.6 kPa

Testing TX antenna conducted spurious emissions.

EUT TX on 923.8 MHz

The GPS receiver is always active.

The unused antenna ports of the EUT are terminated into 50 ohm loads.

The battery powering the EUT is under the test table.

The USB port of the EUT is connected to a support laptop.

Ext Attn: 0 dB

Measurement Data:

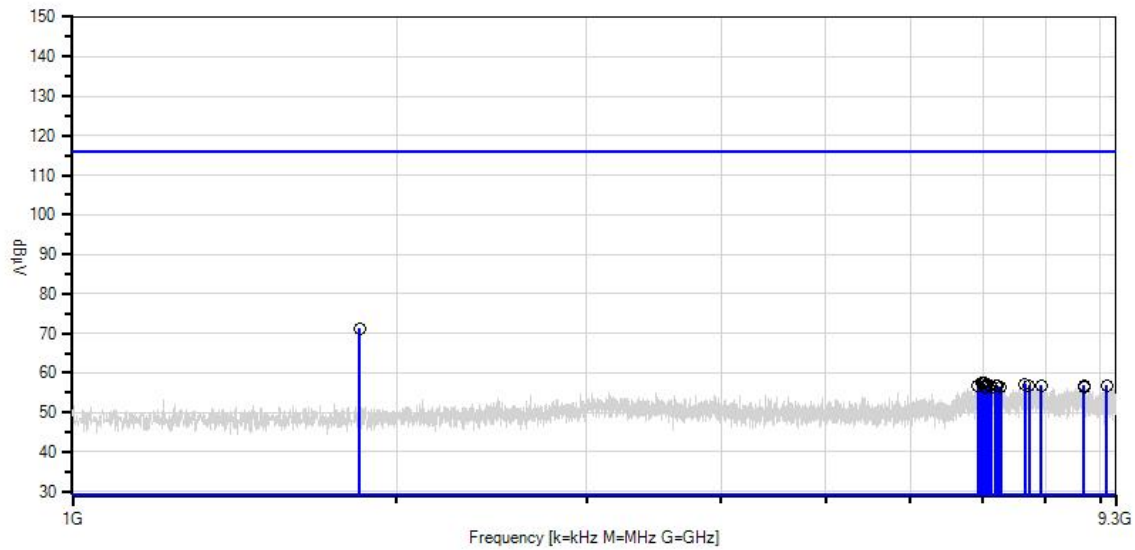
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1847.847M	50.1	+20.0	+1.2			+0.0	71.3	115.8	-44.5	Condu 100
2	7014.008M	34.5	+20.3	+2.6			+0.0	57.4	115.8	-58.4	Condu 100
3	6983.978M	34.5	+20.3	+2.5			+0.0	57.3	115.8	-58.5	Condu 100
4	7020.014M	34.4	+20.3	+2.6			+0.0	57.3	115.8	-58.5	Condu 100

5	7660.654M	34.5	+20.2	+2.5	+0.0	57.2	115.8	-58.6	Condu 100
6	7078.072M	34.4	+20.2	+2.5	+0.0	57.1	115.8	-58.7	Condu 100
7	7725.719M	34.0	+20.4	+2.5	+0.0	56.9	115.8	-58.9	Condu 100
8	8690.683M	33.3	+20.8	+2.8	+0.0	56.9	115.8	-58.9	Condu 100
9	7929.923M	34.0	+20.4	+2.4	+0.0	56.8	115.8	-59.0	Condu 100
10	9130.056M	33.9	+20.2	+2.7	+0.0	56.8	115.8	-59.0	Condu 100
11	7195.189M	34.5	+19.8	+2.5	+0.0	56.8	115.8	-59.0	Condu 100
12	6931.926M	34.0	+20.2	+2.4	+0.0	56.6	115.8	-59.2	Condu 100
13	7107.101M	33.9	+20.2	+2.5	+0.0	56.6	115.8	-59.2	Condu 100
14	7232.226M	34.4	+19.7	+2.5	+0.0	56.6	115.8	-59.2	Condu 100
15	7058.052M	33.7	+20.2	+2.5	+0.0	56.4	115.8	-59.4	Condu 100
16	7022.016M	33.5	+20.3	+2.6	+0.0	56.4	115.8	-59.4	Condu 100
17	7135.129M	33.8	+20.1	+2.5	+0.0	56.4	115.8	-59.4	Condu 100
18	8685.678M	32.8	+20.8	+2.8	+0.0	56.4	115.8	-59.4	Condu 100
19	7269.263M	34.3	+19.7	+2.4	+0.0	56.4	115.8	-59.4	Condu 100
20	8687.680M	32.7	+20.8	+2.8	+0.0	56.3	115.8	-59.5	Condu 100

CKC Laboratories, Inc. Date: 10/14/2010 Time: 4:44:50 PM Itron, Inc. WO#: 91226
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 Setup Photos



15.247(d) Radiated Spurious Emissions

Test Data

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 #: **91226**

Date: 10/13/2010

Test Type: **Maximized Emissions**

Time: 12:03:29 PM

Equipment: **ISM Transmitter**

Sequence#: 27

Manufacturer: Itron, Inc.

Tested By: Jeff Gilbert

Model: MCLite Upgrade Kit

S/N: n/a

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	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T4	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
T5	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 30 MHz; BW setting = 100 kHz

Temp: 23° C

Humidity: 37%

Pressure: 102.4 kPa

The EUT is transmitting on 908 MHz, FM

The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.

The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.

The EUT is directly below the plate, on the test table.

The battery powering the EUT is on the turntable, under the test table.

The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

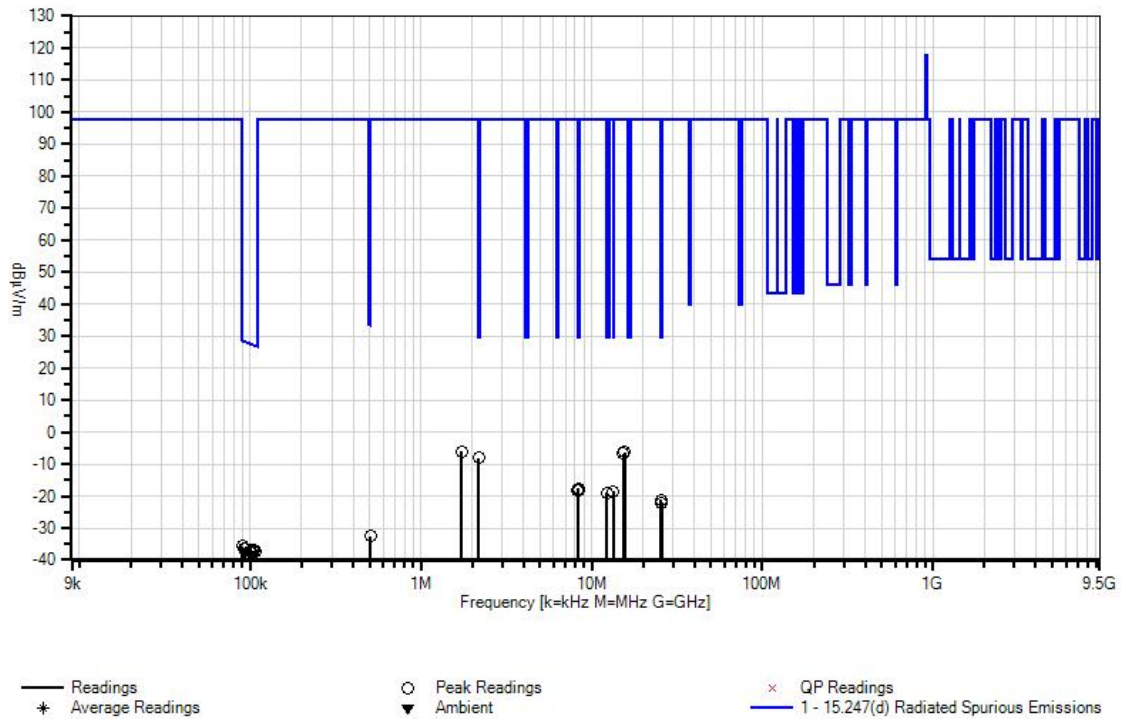
Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	2.176M	22.0	+9.7 +0.0	+0.1	+0.1	+0.0	-40.0 360	-8.1	29.5	-37.6	Verti 100
2	8.383M	12.3	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0 360	-17.7	29.5	-47.2	Verti 100
3	8.365M	11.9	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0 360	-18.1	29.5	-47.6	Verti 100
4	8.293M	11.8	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0 360	-18.2	29.5	-47.7	Verti 100
5	13.374M	11.6	+9.3 +0.1	+0.3	+0.2	+0.0	-40.0 360	-18.5	29.5	-48.0	Verti 100
6	12.293M	11.3	+9.3 +0.1	+0.2	+0.2	+0.0	-40.0 360	-18.9	29.5	-48.4	Verti 100
7	25.563M	11.7	+6.3 +0.1	+0.4	+0.3	+0.1	-40.0 360	-21.1	29.5	-50.6	Verti 100
8	25.626M	10.8	+6.3 +0.1	+0.4	+0.3	+0.1	-40.0 360	-22.0	29.5	-51.5	Verti 100
9	104.160k	33.2	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-36.9	27.3	-64.2	Verti 100
10	105.840k	33.0	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-37.1	27.1	-64.2	Verti 100
11	90.000k	34.4	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-35.7	28.5	-64.2	Verti 100
12	107.640k	32.7	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-37.4	27.0	-64.4	Verti 100
13	93.480k	33.7	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-36.4	28.2	-64.6	Verti 100
14	92.040k	33.7	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-36.4	28.3	-64.7	Verti 100
15	100.200k	32.8	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-37.3	27.6	-64.9	Verti 100
16	102.000k	32.6	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-37.5	27.4	-64.9	Verti 100
17	503.700k	37.7	+9.4 +0.1	+0.1	+0.1	+0.0	-80.0 360	-32.6	33.5	-66.1	Verti 100
18	1.734M	24.0	+9.7 +0.0	+0.1	+0.1	+0.0	-40.0 360	-6.1	97.6	-103.7	Verti 100
19	15.680M	24.0	+9.0 +0.1	+0.3	+0.2	+0.0	-40.0 360	-6.4	97.6	-104.0	Verti 100
20	15.293M	23.5	+9.1 +0.1	+0.3	+0.2	+0.0	-40.0 360	-6.8	97.6	-104.4	Verti 100

CKC Laboratories, Inc. Date: 10/13/2010 Time: 12:03:29 PM Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 27 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 12:09:11 PM
 Equipment: **ISM Transmitter** Sequence#: 28
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T4	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
T5	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 30 MHz; BW setting = 100 kHz
 Temp: 23° C
 Humidity: 37%
 Pressure: 102.4 kPa

The EUT is transmitting on 915 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

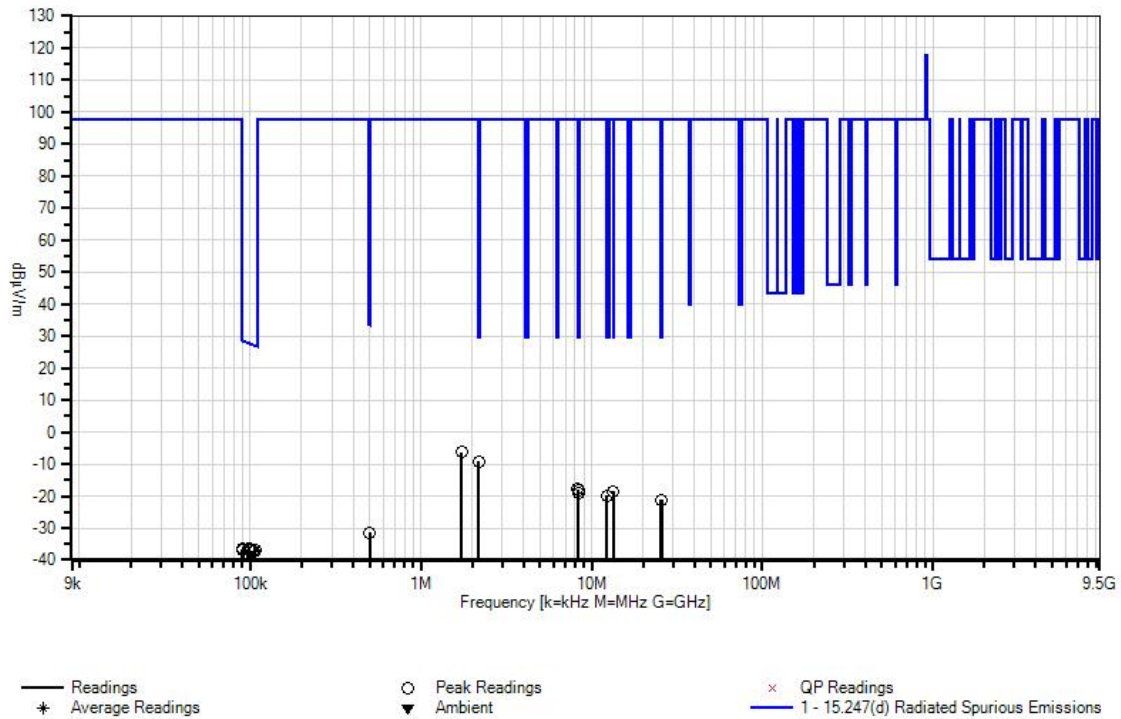
Ext Attn: 0 dB

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	T5 dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	2.185M	20.9	+9.7 +0.0	+0.1	+0.1	+0.0	-40.0	-9.2	29.5	-38.7	Verti 100
2	8.293M	12.2	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0	-17.8	29.5	-47.3	Verti 100

3	8.383M	11.6	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0	-18.4	29.5	-47.9	Verti 100
4	13.410M	11.6	+9.3 +0.1	+0.3	+0.2	+0.0	-40.0	-18.5	29.5	-48.0	Verti 100
5	8.365M	11.1	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0	-18.9	29.5	-48.4	Verti 100
6	12.293M	10.3	+9.3 +0.1	+0.2	+0.2	+0.0	-40.0	-19.9	29.5	-49.4	Verti 100
7	25.518M	11.5	+6.3 +0.1	+0.4	+0.3	+0.1	-40.0	-21.3	29.5	-50.8	Verti 100
8	25.635M	11.5	+6.3 +0.1	+0.4	+0.3	+0.1	-40.0	-21.3	29.5	-50.8	Verti 100
9	106.680k	33.1	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-37.0	27.1	-64.1	Verti 100
10	99.240k	33.5	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-36.6	27.7	-64.3	Verti 100
11	96.960k	33.5	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-36.6	27.9	-64.5	Verti 100
12	101.520k	33.1	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-37.0	27.5	-64.5	Verti 100
13	105.240k	32.8	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-37.3	27.2	-64.5	Verti 100
14	102.840k	32.9	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-37.2	27.4	-64.6	Verti 100
15	98.520k	33.1	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-37.0	27.7	-64.7	Verti 100
16	100.680k	33.0	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-37.1	27.6	-64.7	Verti 100
17	90.840k	33.5	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-36.6	28.4	-65.0	Verti 100
18	499.650k	38.9	+9.4 +0.1	+0.1	+0.1	+0.0	-80.0	-31.4	33.6	-65.0	Verti 100
19	90.000k	33.4	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0	-36.7	28.5	-65.2	Verti 100
20	1.725M	24.0	+9.6 +0.0	+0.1	+0.1	+0.0	-40.0	-6.2	97.6	-103.8	Verti 100

CKC Laboratories, Inc. Date: 10/13/2010 Time: 12:09:11 PM Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 28 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 12:15:09 PM
 Equipment: **ISM Transmitter** Sequence#: 29
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	ANP05360	Cable	RG214	11/10/2008	11/10/2010
T4	AN03121	Cable	32026-2-29080-84	10/23/2009	10/23/2011
T5	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 kHz - 30 MHz; BW setting = 100 kHz
 Temp: 23° C
 Humidity: 37%
 Pressure: 102.4 kPa

The EUT is transmitting on 923.8 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

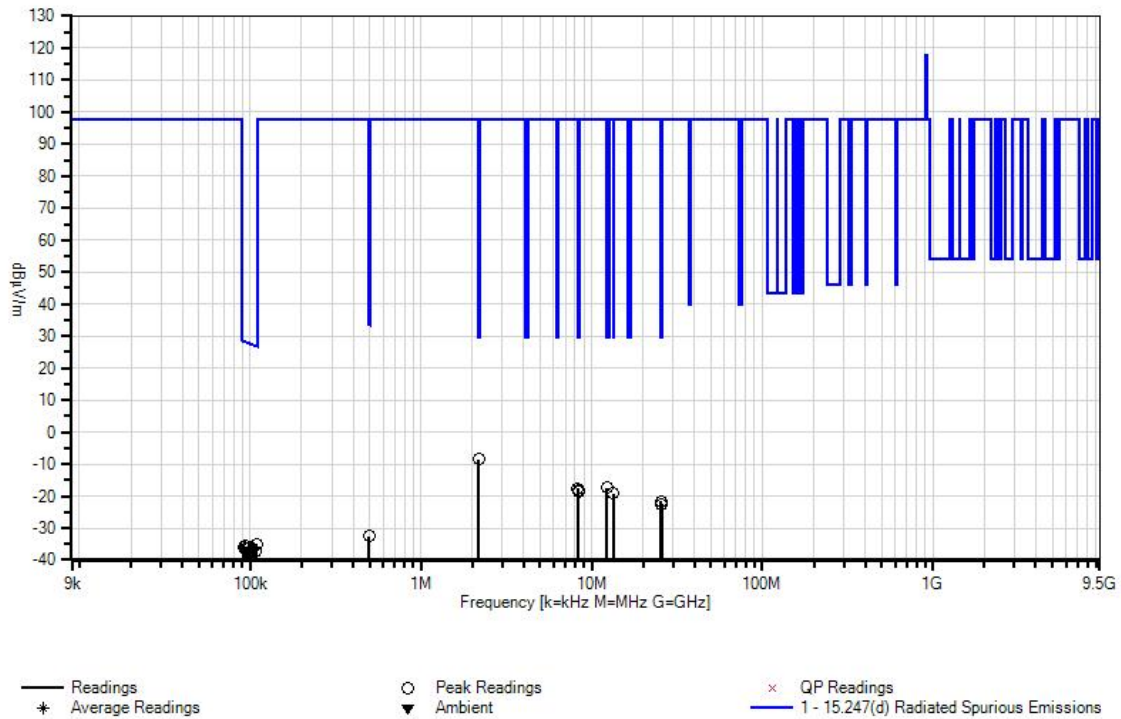
Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	T5 dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	2.185M	21.5	+9.7 +0.0	+0.1	+0.1	+0.0	-40.0 360	-8.6	29.5	-38.1	Verti 100
2	12.293M	12.8	+9.3 +0.1	+0.2	+0.2	+0.0	-40.0 360	-17.4	29.5	-46.9	Verti 100

3	8.293M	12.3	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0 360	-17.7	29.5	-47.2	Verti 100
4	8.365M	11.8	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0 360	-18.2	29.5	-47.7	Verti 100
5	8.383M	11.5	+9.5 +0.1	+0.2	+0.2	+0.0	-40.0 360	-18.5	29.5	-48.0	Verti 100
6	13.401M	10.8	+9.3 +0.1	+0.3	+0.2	+0.0	-40.0 360	-19.3	29.5	-48.8	Verti 100
7	25.572M	11.2	+6.3 +0.1	+0.4	+0.3	+0.1	-40.0 360	-21.6	29.5	-51.1	Verti 100
8	25.608M	10.3	+6.3 +0.1	+0.4	+0.3	+0.1	-40.0 360	-22.5	29.5	-52.0	Verti 100
9	108.960k	35.2	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-34.9	26.9	-61.8	Verti 100
10	103.800k	33.7	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-36.4	27.3	-63.7	Verti 100
11	94.440k	34.4	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-35.7	28.1	-63.8	Verti 100
12	99.000k	33.9	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-36.2	27.7	-63.9	Verti 100
13	91.680k	34.3	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-35.8	28.3	-64.1	Verti 100
14	107.280k	32.8	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-37.3	27.0	-64.3	Verti 100
15	97.560k	33.5	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-36.6	27.8	-64.4	Verti 100
16	95.160k	33.6	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-36.5	28.0	-64.5	Verti 100
17	93.600k	33.7	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-36.4	28.2	-64.6	Verti 100
18	98.520k	32.9	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-37.2	27.7	-64.9	Verti 100
19	100.920k	32.6	+9.7 +0.1	+0.1	+0.0	+0.0	-80.0 360	-37.5	27.5	-65.0	Verti 100
20	498.300k	37.8	+9.4 +0.1	+0.1	+0.1	+0.0	-80.0 360	-32.5	33.6	-66.1	Verti 100

CKC Laboratories, Inc. Date: 10/13/2010 Time: 12:15:09 PM Itron, Inc. WO#: 91226
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 29 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 10:50:19 AM
 Equipment: **ISM Transmitter** Sequence#: 22
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 22° C
 Humidity: 37%
 Pressure: 102.6 kPa

The EUT is transmitting on 908 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

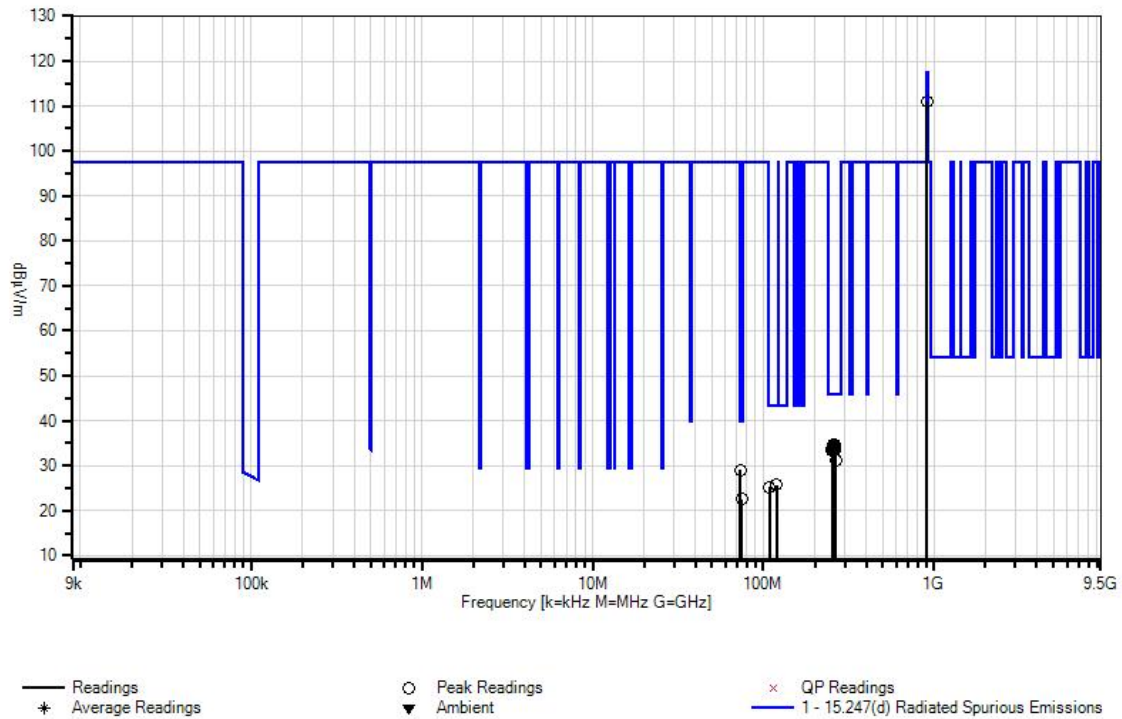
Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	T5 dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	907.960M	112.0	+23.2 +0.8	+2.3	-29.1	+1.9	+0.0	111.1	117.6	-6.5	Horiz 130
2	73.257M	49.3	+7.4 +0.2	+0.6	-28.9	+0.5	+0.0	29.1	40.0	-10.9	Horiz 130

3	257.510M	47.7	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	34.8	46.0	-11.2	Horiz 130
4	261.954M	47.6	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.8	46.0	-11.2	Horiz 130
5	255.948M	47.6	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	34.7	46.0	-11.3	Horiz 130
6	259.912M	47.2	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.4	46.0	-11.6	Horiz 130
7	259.552M	46.8	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.0	46.0	-12.0	Horiz 130
8	261.113M	46.8	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.0	46.0	-12.0	Horiz 130
9	254.387M	46.7	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	33.8	46.0	-12.2	Horiz 130
10	260.633M	46.5	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	33.7	46.0	-12.3	Horiz 130
11	253.666M	46.6	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	33.7	46.0	-12.3	Horiz 130
12	252.825M	46.5	+12.7 +0.4	+1.1	-28.2	+1.0	+0.0	33.5	46.0	-12.5	Horiz 130
13	262.194M	46.3	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	33.5	46.0	-12.5	Horiz 130
14	263.396M	46.3	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	33.5	46.0	-12.5	Horiz 130
15	262.675M	46.2	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	33.4	46.0	-12.6	Horiz 130
16	254.867M	46.2	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	33.3	46.0	-12.7	Horiz 130
17	264.236M	43.9	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	31.1	46.0	-14.9	Horiz 130
18	74.987M	42.4	+7.7 +0.2	+0.6	-28.9	+0.5	+0.0	22.5	40.0	-17.5	Horiz 130
19	119.972M	41.7	+11.1 +0.2	+0.8	-28.8	+0.7	+0.0	25.7	43.5	-17.8	Horiz 130
20	109.041M	41.9	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0	25.3	43.5	-18.2	Horiz 130

CKC Laboratories, Inc. Date: 10/13/2010 Time: 10:50:19 AM Iron, Inc. WO#: 91226
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 22 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 10:48:27
 Equipment: **ISM Transmitter** Sequence#: 21
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 22° C
 Humidity: 37%
 Pressure: 102.6 kPa

The EUT is transmitting on 908 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

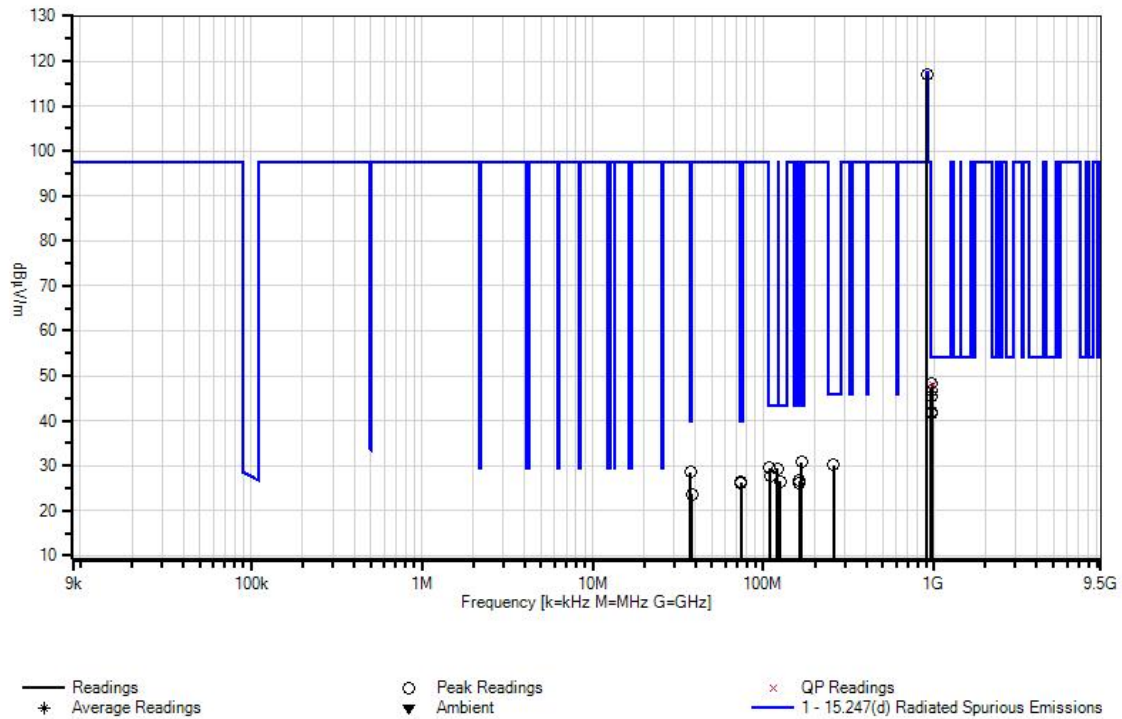
Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	T5 dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	907.960M	117.9	+23.2 +0.8	+2.3	-29.1	+1.9	+0.0	117.0	117.6 Transmitter	-0.6	Verti 131
2	974.204M	48.4	+24.1 +0.8	+2.2	-29.0	+1.8	+0.0	48.3	54.0	-5.7	Verti 131

3	976.565M QP	47.9	+24.1 +0.8	+2.3	-29.0	+1.9	+0.0 65	48.0	54.0	-6.0	Verti 135
^	976.555M	52.1	+24.1 +0.8	+2.3	-29.0	+1.9	+0.0 65	52.2	54.0	-1.8	Verti 135
^	976.521M	51.4	+24.1 +0.8	+2.3	-29.0	+1.9	+0.0	51.5	54.0	-2.5	Verti 131
6	963.999M	47.0	+23.9 +0.8	+2.2	-29.0	+1.8	+0.0	46.7	54.0	-7.3	Verti 131
7	965.564M	45.6	+24.0 +0.8	+2.2	-29.0	+1.8	+0.0	45.4	54.0	-8.6	Verti 131
8	968.006M	45.6	+24.0 +0.8	+2.2	-29.0	+1.8	+0.0	45.4	54.0	-8.6	Verti 131
9	37.520M	44.1	+12.4 +0.1	+0.5	-28.9	+0.4	+0.0	28.6	40.0	-11.4	Verti 131
10	966.378M	42.3	+24.0 +0.8	+2.2	-29.0	+1.8	+0.0	42.1	54.0	-11.9	Verti 131
11	967.129M	41.8	+24.0 +0.8	+2.2	-29.0	+1.8	+0.0	41.6	54.0	-12.4	Verti 131
12	168.020M	46.8	+10.5 +0.3	+0.9	-28.6	+0.8	+0.0	30.7	43.5	-12.8	Verti 131
13	73.723M	46.4	+7.5 +0.2	+0.6	-28.9	+0.5	+0.0	26.3	40.0	-13.7	Verti 131
14	109.041M	46.1	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0	29.5	43.5	-14.0	Verti 131
15	74.122M	46.0	+7.6 +0.2	+0.6	-28.9	+0.5	+0.0	26.0	40.0	-14.0	Verti 131
16	120.453M	45.2	+11.2 +0.2	+0.8	-28.8	+0.7	+0.0	29.3	43.5	-14.2	Verti 131
17	257.630M	43.1	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	30.2	46.0	-15.8	Verti 131
18	109.762M	44.2	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0	27.6	43.5	-15.9	Verti 131
19	38.186M	39.5	+12.1 +0.1	+0.5	-28.9	+0.4	+0.0	23.7	40.0	-16.3	Verti 131
20	162.735M	42.1	+11.1 +0.3	+0.9	-28.6	+0.8	+0.0	26.6	43.5	-16.9	Verti 131
21	125.137M	41.2	+12.4 +0.2	+0.8	-28.8	+0.7	+0.0	26.5	43.5	-17.0	Verti 131
22	162.255M	41.5	+11.2 +0.3	+0.9	-28.6	+0.8	+0.0	26.1	43.5	-17.4	Verti 131

CKC Laboratories, Inc. Date: 10/13/2010 Time: 10:48:27 Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 21 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 11:17:49 AM
 Equipment: **ISM Transmitter** Sequence#: 24
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 22° C
 Humidity: 37%
 Pressure: 102.6 kPa

The EUT is transmitting on 915 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

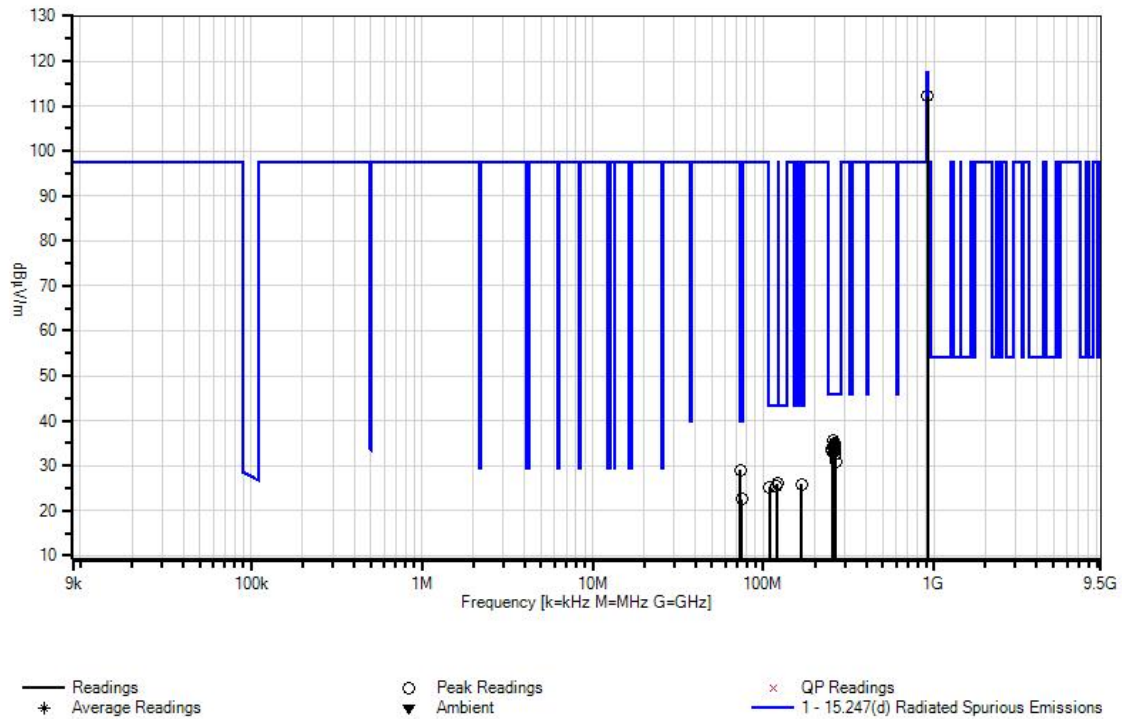
Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	T5 dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	914.926M	113.0	+23.3 +0.8	+2.3	-29.1	+1.9	+0.0	112.2	117.6	-5.4	Horiz 130
2	258.351M	48.6	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	35.7	46.0	-10.3	Horiz 130

3	73.257M	49.2	+7.4 +0.2	+0.6	-28.9	+0.5	+0.0	29.0	40.0	-11.0	Horiz 130
4	259.912M	47.7	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.9	46.0	-11.1	Horiz 130
5	261.474M	47.5	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.7	46.0	-11.3	Horiz 130
6	263.035M	47.2	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.4	46.0	-11.6	Horiz 130
7	254.387M	46.9	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	34.0	46.0	-12.0	Horiz 130
8	260.753M	46.8	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.0	46.0	-12.0	Horiz 130
9	253.546M	46.7	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	33.8	46.0	-12.2	Horiz 130
10	262.315M	46.5	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	33.7	46.0	-12.3	Horiz 130
11	252.104M	46.5	+12.7 +0.4	+1.1	-28.2	+1.0	+0.0	33.5	46.0	-12.5	Horiz 130
12	263.876M	46.3	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	33.5	46.0	-12.5	Horiz 130
13	252.825M	46.4	+12.7 +0.4	+1.1	-28.2	+1.0	+0.0	33.4	46.0	-12.6	Horiz 130
14	263.396M	45.3	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	32.5	46.0	-13.5	Horiz 130
15	264.236M	43.7	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	30.9	46.0	-15.1	Horiz 130
16	74.854M	42.5	+7.7 +0.2	+0.6	-28.9	+0.5	+0.0	22.6	40.0	-17.4	Horiz 130
17	121.174M	41.7	+11.4 +0.2	+0.8	-28.8	+0.7	+0.0	26.0	43.5	-17.5	Horiz 130
18	168.020M	41.9	+10.5 +0.3	+0.9	-28.6	+0.8	+0.0	25.8	43.5	-17.7	Horiz 130
19	120.092M	41.6	+11.1 +0.2	+0.8	-28.8	+0.7	+0.0	25.6	43.5	-17.9	Horiz 130
20	108.561M	41.8	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0	25.2	43.5	-18.3	Horiz 130

CKC Laboratories, Inc. Date: 10/13/2010 Time: 11:17:49 AM Itron, Inc. WO#: 91226
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 24 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 11:11:44
 Equipment: **ISM Transmitter** Sequence#: 23
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	Preamplifier	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 22° C
 Humidity: 37%
 Pressure: 102.6 kPa

The EUT is transmitting on 915 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

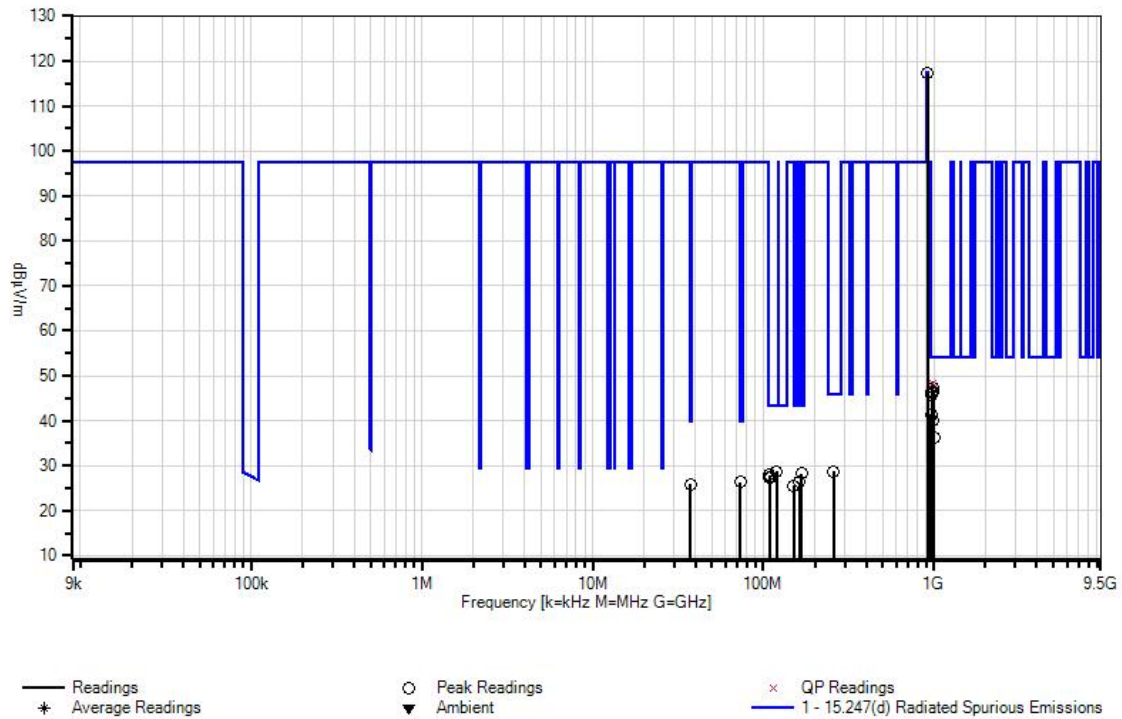
Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5 dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	914.926M	118.0	+23.3 +0.8	+2.3	-29.1	+1.9	+0.0 360	117.2	117.6 Transmitter	-0.4	Verti 131
2	983.672M QP	48.2	+24.2 +0.8	+2.3	-29.0	+1.9	+0.0 80	48.4	54.0	-5.6	Verti 131

^	983.671M	52.5	+24.2 +0.8	+2.3	-29.0	+1.9	+0.0 80	52.7	54.0	-1.3	Verti 131
^	983.721M	50.4	+24.2 +0.8	+2.3	-29.0	+1.9	+0.0 360	50.6	54.0	-3.4	Verti 131
5	979.714M	47.3	+24.1 +0.8	+2.3	-29.0	+1.9	+0.0 360	47.4	54.0	-6.6	Verti 131
6	986.288M	46.0	+24.2 +0.8	+2.4	-29.0	+2.0	+0.0 360	46.4	54.0	-7.6	Verti 131
7	971.011M	46.6	+24.0 +0.8	+2.2	-29.0	+1.8	+0.0 360	46.4	54.0	-7.6	Verti 131
8	975.081M	46.2	+24.1 +0.8	+2.3	-29.0	+1.9	+0.0 360	46.3	54.0	-7.7	Verti 131
9	972.639M	45.7	+24.1 +0.8	+2.2	-29.0	+1.8	+0.0 360	45.6	54.0	-8.4	Verti 131
10	962.934M	41.7	+23.9 +0.8	+2.2	-29.0	+1.8	+0.0 360	41.4	54.0	-12.6	Verti 131
11	73.323M	46.6	+7.4 +0.2	+0.6	-28.9	+0.5	+0.0 360	26.4	40.0	-13.6	Verti 131
12	977.397M	39.9	+24.1 +0.8	+2.3	-29.0	+1.9	+0.0 360	40.0	54.0	-14.0	Verti 131
13	37.520M	41.3	+12.4 +0.1	+0.5	-28.9	+0.4	+0.0 360	25.8	40.0	-14.2	Verti 131
14	119.972M	44.7	+11.1 +0.2	+0.8	-28.8	+0.7	+0.0 360	28.7	43.5	-14.8	Verti 131
15	168.020M	44.3	+10.5 +0.3	+0.9	-28.6	+0.8	+0.0 360	28.2	43.5	-15.3	Verti 131
16	109.041M	44.5	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0 360	27.9	43.5	-15.6	Verti 131
17	108.561M	44.1	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0 360	27.5	43.5	-16.0	Verti 131
18	109.762M	43.9	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0 360	27.3	43.5	-16.2	Verti 131
19	162.375M	41.9	+11.1 +0.3	+0.9	-28.6	+0.8	+0.0 360	26.4	43.5	-17.1	Verti 131
20	256.789M	41.6	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0 360	28.7	46.0	-17.3	Verti 131
21	995.054M	35.4	+24.3 +0.8	+2.5	-28.9	+2.1	+0.0 360	36.2	54.0	-17.8	Verti 131
22	150.002M	40.2	+12.1 +0.3	+0.9	-28.7	+0.8	+0.0 360	25.6	43.5	-17.9	Verti 131

CKC Laboratories, Inc. Date: 10/13/2010 Time: 11:11:44 Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 23 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 11:46:23 AM
 Equipment: **ISM Transmitter** Sequence#: 26
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 22° C
 Humidity: 37%
 Pressure: 102.6 kPa

The EUT is transmitting on 923.8 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

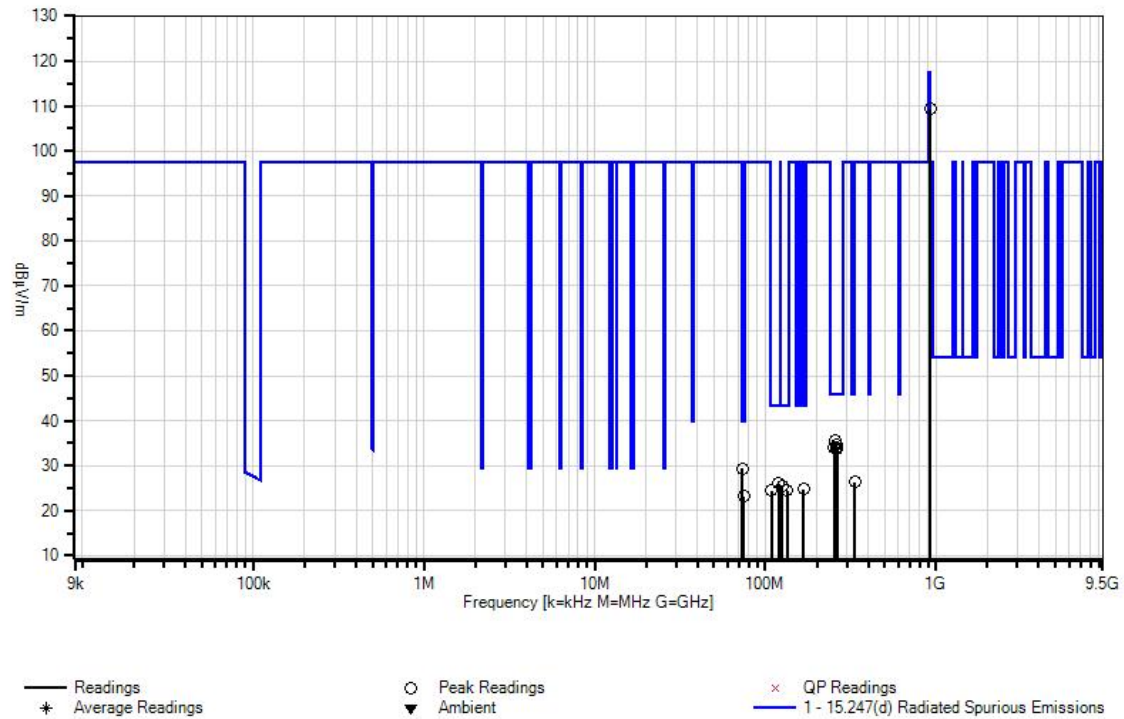
Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	T5 dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	923.815M	109.8	+23.4 +0.8	+2.4	-29.1	+2.0	+0.0	109.3	117.6	-8.3	Horiz 130
2	257.630M	48.4	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	35.5	46.0	-10.5	Horiz 130

3	73.124M	49.6	+7.4 +0.2	+0.6	-28.9	+0.5	+0.0	29.4	40.0	-10.6	Horiz 130
4	260.753M	47.6	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.8	46.0	-11.2	Horiz 130
5	261.113M	47.4	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.6	46.0	-11.4	Horiz 130
6	260.393M	46.9	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.1	46.0	-11.9	Horiz 130
7	253.666M	47.0	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0	34.1	46.0	-11.9	Horiz 130
8	262.675M	46.9	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.1	46.0	-11.9	Horiz 130
9	261.954M	46.9	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.1	46.0	-11.9	Horiz 130
10	263.035M	46.8	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.0	46.0	-12.0	Horiz 130
11	262.315M	46.8	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	34.0	46.0	-12.0	Horiz 130
12	261.474M	46.7	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	33.9	46.0	-12.1	Horiz 130
13	263.396M	46.6	+12.9 +0.4	+1.1	-28.2	+1.0	+0.0	33.8	46.0	-12.2	Horiz 130
14	74.921M	43.1	+7.7 +0.2	+0.6	-28.9	+0.5	+0.0	23.2	40.0	-16.8	Horiz 130
15	120.092M	42.0	+11.1 +0.2	+0.8	-28.8	+0.7	+0.0	26.0	43.5	-17.5	Horiz 130
16	125.378M	40.3	+12.4 +0.2	+0.8	-28.8	+0.7	+0.0	25.6	43.5	-17.9	Horiz 130
17	168.020M	40.9	+10.5 +0.3	+0.9	-28.6	+0.8	+0.0	24.8	43.5	-18.7	Horiz 130
18	109.041M	41.0	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0	24.4	43.5	-19.1	Horiz 130
19	134.387M	39.3	+12.1 +0.3	+0.8	-28.8	+0.7	+0.0	24.4	43.5	-19.1	Horiz 130
20	333.666M	37.1	+14.6 +0.4	+1.3	-28.3	+1.3	+0.0	26.4	46.0	-19.6	Horiz 130

CKC Laboratories, Inc. Date: 10/13/2010 Time: 11:46:23 AM Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 26 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 11:45:05
 Equipment: **ISM Transmitter** Sequence#: 25
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 30 - 1000 MHz; BW setting = 100 kHz
 Temp: 22° C
 Humidity: 37%
 Pressure: 102.6 kPa

The EUT is transmitting on 923.8 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

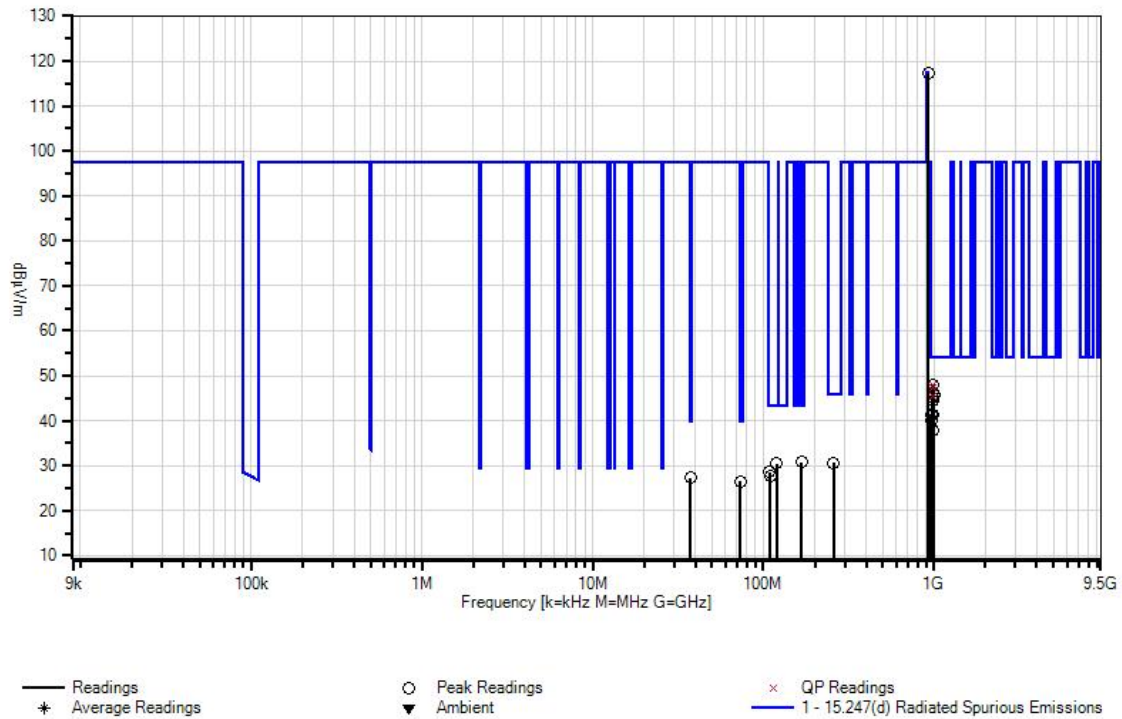
Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	T5 dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	923.695M	117.7	+23.4 +0.8	+2.4	-29.1	+2.0	+0.0 360	117.2	117.6 Transmitter	-0.4	Verti 131
2	983.846M	47.8	+24.2 +0.8	+2.3	-29.0	+1.9	+0.0 360	48.0	54.0	-6.0	Verti 131

3	992.360M QP	47.4	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 85	48.0	54.0	-6.0	Verti 115
^	992.424M	51.5	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 85	52.1	54.0	-1.9	Verti 115
^	992.424M	49.1	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 360	49.7	54.0	-4.3	Verti 131
6	991.977M QP	46.7	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 90	47.3	54.0	-6.7	Verti 145
^	991.960M	50.2	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 90	50.8	54.0	-3.2	Verti 145
^	991.923M	48.5	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 360	49.1	54.0	-4.9	Verti 131
9	989.294M	45.9	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 360	46.5	54.0	-7.5	Verti 131
10	994.741M	45.0	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 360	45.6	54.0	-8.4	Verti 131
11	990.806M QP	44.9	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 120	45.5	54.0	-8.5	Verti 171
^	990.751M	49.4	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 120	50.0	54.0	-4.0	Verti 171
^	990.796M	48.4	+24.3 +0.8	+2.4	-28.9	+2.0	+0.0 360	49.0	54.0	-5.0	Verti 131
14	979.777M	45.0	+24.1 +0.8	+2.3	-29.0	+1.9	+0.0 360	45.1	54.0	-8.9	Verti 131
15	981.342M	44.2	+24.2 +0.8	+2.3	-29.0	+1.9	+0.0 360	44.4	54.0	-9.6	Verti 131
16	982.218M	41.2	+24.2 +0.8	+2.3	-29.0	+1.9	+0.0 360	41.4	54.0	-12.6	Verti 131
17	965.689M	41.6	+24.0 +0.8	+2.2	-29.0	+1.8	+0.0 360	41.4	54.0	-12.6	Verti 131
18	37.520M	42.8	+12.4 +0.1	+0.5	-28.9	+0.4	+0.0 360	27.3	40.0	-12.7	Verti 131
19	168.020M	46.8	+10.5 +0.3	+0.9	-28.6	+0.8	+0.0 360	30.7	43.5	-12.8	Verti 131
20	120.092M	46.4	+11.1 +0.2	+0.8	-28.8	+0.7	+0.0 360	30.4	43.5	-13.1	Verti 131
21	73.057M	46.7	+7.4 +0.2	+0.6	-28.9	+0.5	+0.0 360	26.5	40.0	-13.5	Verti 131
22	971.825M	40.4	+24.0 +0.8	+2.2	-29.0	+1.8	+0.0 360	40.2	54.0	-13.8	Verti 131
23	109.041M	45.2	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0 360	28.6	43.5	-14.9	Verti 131
24	257.630M	43.5	+12.8 +0.4	+1.1	-28.2	+1.0	+0.0 360	30.6	46.0	-15.4	Verti 131
25	109.762M	44.2	+10.7 +0.2	+0.7	-28.8	+0.6	+0.0 360	27.6	43.5	-15.9	Verti 131
26	985.412M	37.3	+24.2 +0.8	+2.4	-29.0	+2.0	+0.0 360	37.7	54.0	-16.3	Verti 131

CKC Laboratories, Inc. Date: 10/13/2010 Time: 11:45:05 Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 25 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 15:13:32
 Equipment: **ISM Transmitter** Sequence#: 34
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	AN03170	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
T3	AN03123	Cable	32026-2-29801-12	10/23/2009	10/23/2011
T4	AN01271	Preamplifier	83017A	9/17/2009	9/17/2011
T5	ANP05542	Cable	Heliac	10/23/2009	10/23/2011
T6	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 36%
 Pressure: 102.2 kPa

The EUT is transmitting on 908 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

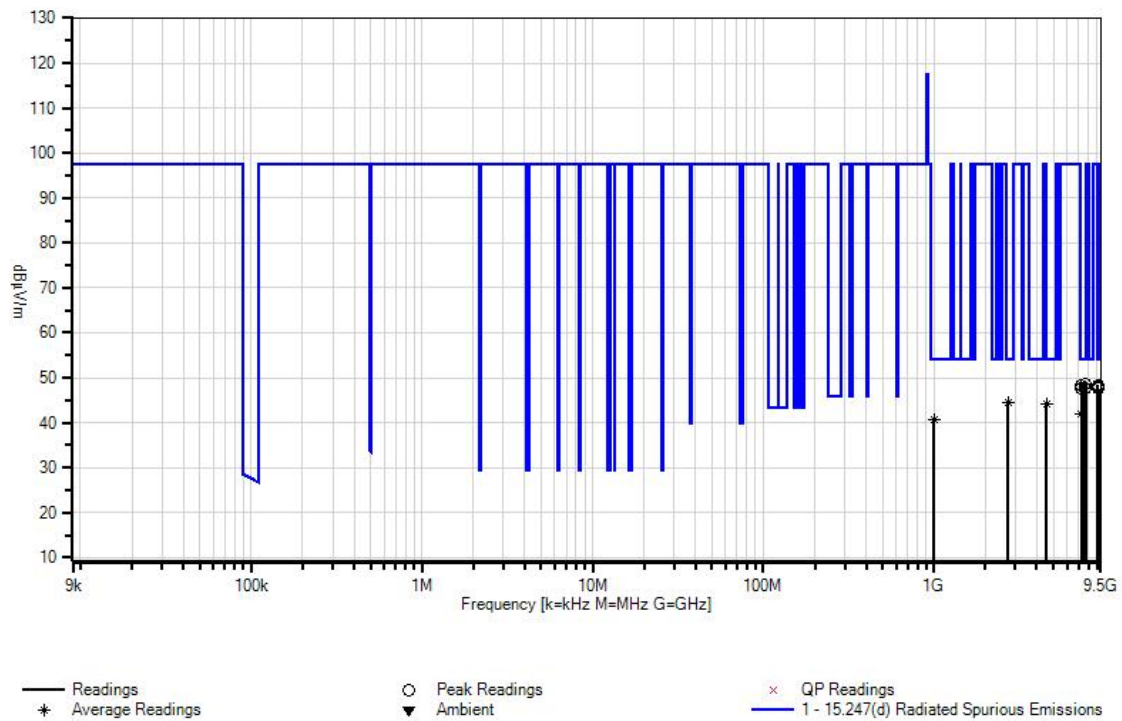
Ext Attn: 0 dB

Measurement Data:		Reading listed by margin.				Test Distance: 3 Meters					
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5	T6							
			dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	7689.683M	38.6	+36.2	+0.1	+0.5	-34.6	+0.0	48.7	54.0	-5.3	Horiz
			+5.4	+2.5			360				140

2	7701.695M	38.5	+36.2 +5.4	+0.1 +2.5	+0.5	-34.6	+0.0 360	48.6	54.0	-5.4	Horiz 140
3	9131.224M	37.2	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0 360	48.4	54.0	-5.6	Horiz 140
4	7284.278M	38.5	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0 360	48.3	54.0	-5.7	Horiz 140
5	9118.668M	37.0	+36.5 +5.7	+0.2 +2.7	+0.3	-34.3	+0.0 360	48.1	54.0	-5.9	Horiz 140
6	9112.828M	36.9	+36.5 +5.7	+0.2 +2.7	+0.3	-34.3	+0.0 360	48.0	54.0	-6.0	Horiz 140
7	7638.632M	37.8	+36.2 +5.4	+0.2 +2.6	+0.4	-34.8	+0.0 360	47.8	54.0	-6.2	Horiz 140
8	9063.772M	36.6	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0 360	47.7	54.0	-6.3	Horiz 140
9	7302.296M	37.9	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0 360	47.7	54.0	-6.3	Horiz 140
10	7648.642M	37.6	+36.2 +5.4	+0.2 +2.6	+0.5	-34.8	+0.0 360	47.7	54.0	-6.3	Horiz 140
11	7315.309M	37.8	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0 360	47.6	54.0	-6.4	Horiz 140
12	9081.876M	36.6	+36.5 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0 360	47.6	54.0	-6.4	Horiz 140
13	9102.024M	36.5	+36.5 +5.7	+0.2 +2.7	+0.3	-34.3	+0.0 360	47.6	54.0	-6.4	Horiz 140
14	9111.076M	36.4	+36.5 +5.7	+0.2 +2.7	+0.3	-34.3	+0.0 360	47.5	54.0	-6.5	Horiz 140
15	9133.560M	36.3	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0 360	47.5	54.0	-6.5	Horiz 140
16	9180.280M	36.4	+36.4 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0 360	47.5	54.0	-6.5	Horiz 140
17	2724.042M Ave	45.4	+28.4 +3.0	+0.2 +1.5	+0.3	-34.3	+0.0 235	44.5	54.0	-9.5	Horiz 139
^	2724.030M	49.0	+28.4 +3.0	+0.2 +1.5	+0.3	-34.3	+0.0 235	48.1	54.0	-5.9	Horiz 139
^	2724.020M	48.8	+28.4 +3.0	+0.2 +1.5	+0.3	-34.3	+0.0 360	47.9	54.0	-6.1	Horiz 140
20	4540.064M Ave	38.8	+32.6 +4.1	+0.3 +1.9	+0.4	-33.9	+0.0 226	44.2	54.0	-9.8	Horiz 135
^	4540.100M	44.7	+32.6 +4.1	+0.3 +1.9	+0.4	-33.9	+0.0 226	50.1	54.0	-3.9	Horiz 135
^	4540.095M	43.3	+32.6 +4.1	+0.3 +1.9	+0.4	-33.9	+0.0 360	48.7	54.0	-5.3	Horiz 140
23	7264.422M Ave	32.1	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0 194	41.9	54.0	-12.1	Horiz 130
^	7264.425M	42.5	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0 194	52.3	54.0	-1.7	Horiz 130
^	7264.430M	39.4	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0 360	49.2	54.0	-4.8	Horiz 140
26	1001.451M Ave	31.5	+23.4 +1.8	+20.2 +0.8	+0.1	-37.2	+0.0 80	40.6	54.0	-13.4	Horiz 141
^	1001.491M	44.9	+23.4 +1.8	+20.2 +0.8	+0.1	-37.2	+0.0 80	54.0	54.0	+0.0	Horiz 141

^	1001.491M	43.1	+23.4	+20.2	+0.1	-37.2	+0.0	52.2	54.0	-1.8	Horiz
			+1.8	+0.8			360				140

CKC Laboratories, Inc. Date: 10/13/2010 Time: 15:13:32 Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 34 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 14:55:11
 Equipment: **ISM Transmitter** Sequence#: 33
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	AN03170	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
T3	AN03123	Cable	32026-2-29801-12	10/23/2009	10/23/2011
T4	AN01271	Preamplifier	83017A	9/17/2009	9/17/2011
T5	ANP05542	Cable	Heliac	10/23/2009	10/23/2011
T6	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 36%
 Pressure: 102.2 kPa

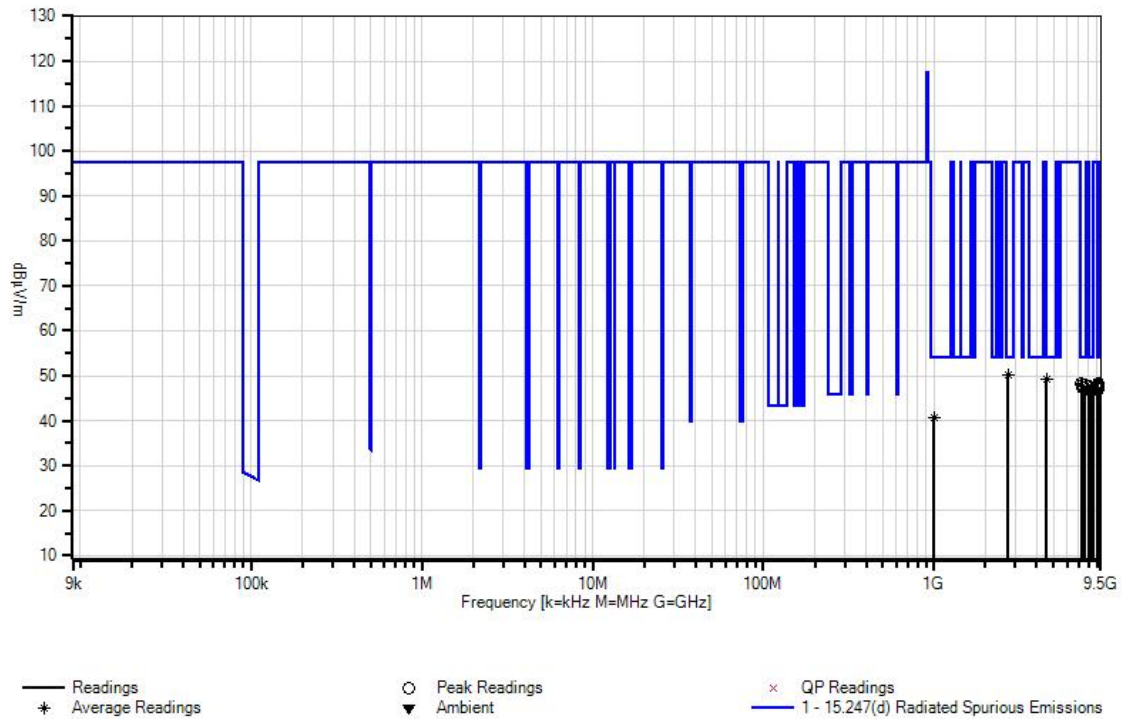
The EUT is transmitting on 908 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

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
	MHz	dBμV	T5	T6							
			dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	2724.042M	51.1	+28.4	+0.2	+0.3	-34.3	+0.0	50.2	54.0	-3.8	Verti
	Ave		+3.0	+1.5			145				130

^ 2724.130M	53.8	+28.4 +3.0	+0.2 +1.5	+0.3	-34.3	+0.0 360	52.9	54.0	-1.1	Verti 130
^ 2724.132M	53.7	+28.4 +3.0	+0.2 +1.5	+0.3	-34.3	+0.0 145	52.8	54.0	-1.2	Verti 130
4 4540.036M Ave	43.8	+32.6 +4.1	+0.3 +1.9	+0.4	-33.9	+0.0 180	49.2	54.0	-4.8	Verti 128
^ 4540.040M	48.0	+32.6 +4.1	+0.3 +1.9	+0.4	-33.9	+0.0 180	53.4	54.0	-0.6	Verti 128
^ 4540.060M	46.5	+32.6 +4.1	+0.3 +1.9	+0.4	-33.9	+0.0 360	51.9	54.0	-2.1	Verti 130
7 7264.258M	38.6	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0 360	48.4	54.0	-5.6	Verti 130
8 9059.392M	37.1	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0 360	48.2	54.0	-5.8	Verti 130
9 9132.100M	36.9	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0 360	48.1	54.0	-5.9	Verti 130
10 7339.333M	38.2	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0 360	48.0	54.0	-6.0	Verti 130
11 7619.613M	37.9	+36.2 +5.4	+0.2 +2.6	+0.4	-34.8	+0.0 360	47.9	54.0	-6.1	Verti 130
12 8073.066M	37.5	+36.2 +5.5	+0.2 +2.5	+0.4	-34.7	+0.0 360	47.6	54.0	-6.4	Verti 130
13 9061.728M	36.4	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0 360	47.5	54.0	-6.5	Verti 130
14 9191.084M	36.4	+36.4 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0 360	47.5	54.0	-6.5	Verti 130
15 8343.336M	37.4	+36.0 +5.5	+0.3 +2.5	+0.4	-34.7	+0.0 360	47.4	54.0	-6.6	Verti 130
16 7441.435M	37.4	+36.2 +5.3	+0.2 +2.4	+0.4	-34.6	+0.0 360	47.3	54.0	-6.7	Verti 130
17 9070.780M	36.3	+36.5 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0 360	47.3	54.0	-6.7	Verti 130
18 7490.484M	37.2	+36.2 +5.4	+0.2 +2.4	+0.4	-34.6	+0.0 360	47.2	54.0	-6.8	Verti 130
19 8296.289M	37.1	+36.0 +5.5	+0.3 +2.6	+0.4	-34.7	+0.0 360	47.2	54.0	-6.8	Verti 130
20 9067.276M	36.1	+36.5 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0 360	47.1	54.0	-6.9	Verti 130
21 8489.482M	36.9	+35.8 +5.6	+0.3 +2.5	+0.4	-34.6	+0.0 360	46.9	54.0	-7.1	Verti 130
22 8428.421M	36.9	+35.9 +5.6	+0.3 +2.4	+0.4	-34.7	+0.0 360	46.8	54.0	-7.2	Verti 130
23 8347.340M	36.6	+36.0 +5.6	+0.3 +2.5	+0.4	-34.7	+0.0 360	46.7	54.0	-7.3	Verti 130
24 1003.401M Ave	31.7	+23.5 +1.8	+19.9 +0.8	+0.1	-37.2	+0.0 100	40.6	54.0	-13.4	Verti 131
^ 1003.483M	44.9	+23.5 +1.8	+19.9 +0.8	+0.1	-37.2	+0.0 100	53.8	54.0	-0.2	Verti 131
^ 1003.483M	42.8	+23.5 +1.8	+19.9 +0.8	+0.1	-37.2	+0.0 360	51.7	54.0	-2.3	Verti 130

CKC Laboratories, Inc. Date: 10/13/2010 Time: 14:55:11 Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 33 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 #: **91226** Date: 10/14/2010
 Test Type: **Maximized Emissions** Time: 08:31:43
 Equipment: **ISM Transmitter** Sequence#: 36
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	AN03170	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
T3	AN03123	Cable	32026-2-29801-12	10/23/2009	10/23/2011
T4	AN01271	Preamplifier	83017A	9/17/2009	9/17/2011
T5	ANP05542	Cable	Heliac	10/23/2009	10/23/2011
T6	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 36%
 Pressure: 102.2 kPa

The EUT is transmitting on 915 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

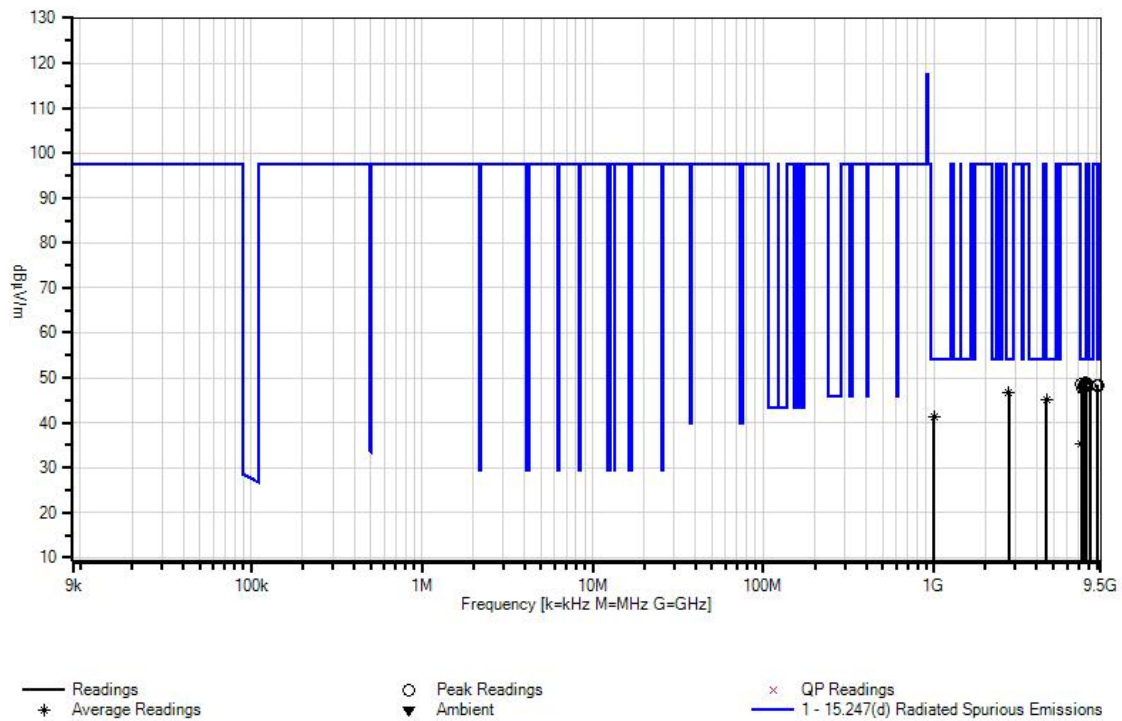
Ext Attn: 0 dB

Measurement Data:		Reading listed by margin.					Test Distance: 3 Meters				
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5	T6			Table	dBμV/m	dBμV/m	dB	Ant
1	7706.700M	38.7	+36.2	+0.1	+0.5	-34.6	+0.0	48.8	54.0	-5.2	Horiz
			+5.4	+2.5			360				140

2	7279.273M	38.9	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6 360	+0.0	48.7	54.0	-5.3	Horiz 140
3	7647.641M	38.6	+36.2 +5.4	+0.2 +2.6	+0.5	-34.8 360	+0.0	48.7	54.0	-5.3	Horiz 140
4	9042.748M	37.3	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	48.4	54.0	-5.6	Horiz 140
5	8210.203M	38.0	+36.1 +5.5	+0.3 +2.7	+0.4	-34.7 360	+0.0	48.3	54.0	-5.7	Horiz 140
6	9132.684M	37.1	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2 360	+0.0	48.3	54.0	-5.7	Horiz 140
7	7660.654M	38.1	+36.2 +5.4	+0.2 +2.5	+0.5	-34.7 360	+0.0	48.2	54.0	-5.8	Horiz 140
8	7631.625M	38.1	+36.2 +5.4	+0.2 +2.6	+0.4	-34.8 360	+0.0	48.1	54.0	-5.9	Horiz 140
9	7502.496M	38.0	+36.2 +5.4	+0.2 +2.5	+0.4	-34.6 360	+0.0	48.1	54.0	-5.9	Horiz 140
10	7616.610M	38.1	+36.2 +5.4	+0.2 +2.6	+0.4	-34.8 360	+0.0	48.1	54.0	-5.9	Horiz 140
11	7518.512M	38.0	+36.2 +5.4	+0.2 +2.5	+0.4	-34.7 360	+0.0	48.0	54.0	-6.0	Horiz 140
12	7540.534M	37.9	+36.2 +5.4	+0.2 +2.5	+0.4	-34.7 360	+0.0	47.9	54.0	-6.1	Horiz 140
13	7407.401M	37.9	+36.2 +5.3	+0.2 +2.3	+0.5	-34.6 360	+0.0	47.8	54.0	-6.2	Horiz 140
14	7437.431M	37.9	+36.2 +5.3	+0.2 +2.4	+0.4	-34.6 360	+0.0	47.8	54.0	-6.2	Horiz 140
15	7465.459M	37.8	+36.2 +5.3	+0.2 +2.4	+0.4	-34.6 360	+0.0	47.7	54.0	-6.3	Horiz 140
16	7375.369M	37.8	+36.1 +5.3	+0.2 +2.3	+0.5	-34.6 360	+0.0	47.6	54.0	-6.4	Horiz 140
17	2745.042M Ave	47.4	+28.5 +3.1	+0.2 +1.5	+0.3	-34.3 162	+0.0	46.7	54.0	-7.3	Horiz 124
^	2745.030M	50.4	+28.5 +3.1	+0.2 +1.5	+0.3	-34.3 162	+0.0	49.7	54.0	-4.3	Horiz 124
^	2745.020M	50.1	+28.5 +3.1	+0.2 +1.5	+0.3	-34.3 360	+0.0	49.4	54.0	-4.6	Horiz 140
20	4575.050M Ave	39.5	+32.6 +4.1	+0.3 +1.9	+0.4	-33.8 255	+0.0	45.0	54.0	-9.0	Horiz 136
^	4575.040M	44.9	+32.6 +4.1	+0.3 +1.9	+0.4	-33.8 255	+0.0	50.4	54.0	-3.6	Horiz 136
^	4575.040M	43.0	+32.6 +4.1	+0.3 +1.9	+0.4	-33.8 360	+0.0	48.5	54.0	-5.5	Horiz 140
23	1001.257M Ave	32.0	+23.4 +1.8	+20.3 +0.8	+0.1	-37.2 60	+0.0	41.2	54.0	-12.8	Horiz 140
^	1001.230M	45.9	+23.4 +1.8	+20.3 +0.8	+0.1	-37.2 60	+0.0	55.1	54.0	+1.1	Horiz 140
^	1001.200M	43.4	+23.4 +1.8	+20.3 +0.8	+0.1	-37.2 360	+0.0	52.6	54.0	-1.4	Horiz 140
26	7303.062M Ave	25.6	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6 120	+0.0	35.4	54.0	-18.6	Horiz 140
^	7303.050M	39.5	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6 360	+0.0	49.3	54.0	-4.7	Horiz 140

^	7303.060M	39.1	+36.1	+0.2	+0.5	-34.6	+0.0	48.9	54.0	-5.1	Horiz
			+5.2	+2.4			120				140

CKC Laboratories, Inc. Date: 10/14/2010 Time: 08:31:43 Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 36 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 #: **91226** Date: 10/13/2010
 Test Type: **Maximized Emissions** Time: 15:33:32
 Equipment: **ISM Transmitter** Sequence#: 35
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	AN03170	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
T3	AN03123	Cable	32026-2-29801-12	10/23/2009	10/23/2011
T4	AN01271	Preamplifier	83017A	9/17/2009	9/17/2011
T5	ANP05542	Cable	Heliac	10/23/2009	10/23/2011
T6	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 36%
 Pressure: 102.2 kPa

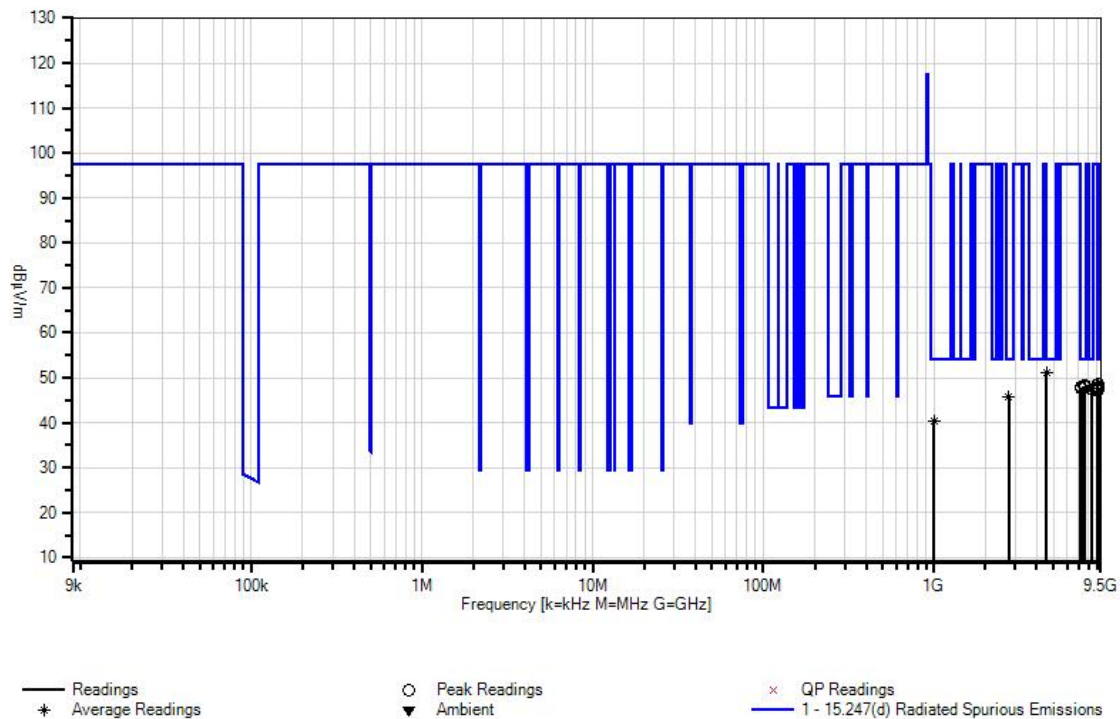
The EUT is transmitting on 915 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

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
	MHz	dBμV	T5	T6			Table	dBμV/m	dBμV/m	dB	Ant
1	4575.054M	45.5	+32.6	+0.3	+0.4	-33.8	+0.0	51.0	54.0	-3.0	Verti
	Ave		+4.1	+1.9			191				139

^ 4575.050M	49.3	+32.6 +4.1	+0.3 +1.9	+0.4	-33.8	+0.0 191	54.8	54.0	+0.8	Verti 139
^ 4575.045M	44.4	+32.6 +4.1	+0.3 +1.9	+0.4	-33.8	+0.0	49.9	54.0	-4.1	Verti 131
4 9075.452M	37.7	+36.5 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	48.7	54.0	-5.3	Verti 131
5 9043.624M	37.2	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	48.3	54.0	-5.7	Verti 131
6 7501.495M	38.1	+36.2 +5.4	+0.2 +2.5	+0.4	-34.6	+0.0	48.2	54.0	-5.8	Verti 131
7 7665.659M	38.2	+36.2 +5.4	+0.1 +2.5	+0.5	-34.7	+0.0	48.2	54.0	-5.8	Verti 131
8 7256.250M	38.1	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0	47.9	54.0	-6.1	Verti 131
9 7678.672M	37.9	+36.2 +5.4	+0.1 +2.5	+0.5	-34.7	+0.0	47.9	54.0	-6.1	Verti 131
10 9092.388M	36.9	+36.5 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	47.9	54.0	-6.1	Verti 131
11 9140.276M	36.6	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0	47.8	54.0	-6.2	Verti 131
12 9142.904M	36.6	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0	47.8	54.0	-6.2	Verti 131
13 7250.244M	38.0	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0	47.8	54.0	-6.2	Verti 131
14 9088.884M	36.8	+36.5 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	47.8	54.0	-6.2	Verti 131
15 9196.924M	36.5	+36.4 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0	47.6	54.0	-6.4	Verti 131
16 9109.324M	36.4	+36.5 +5.7	+0.2 +2.7	+0.3	-34.3	+0.0	47.5	54.0	-6.5	Verti 131
17 9158.672M	36.3	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0	47.5	54.0	-6.5	Verti 131
18 9005.998M	36.3	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	47.4	54.0	-6.6	Verti 131
19 8423.416M	37.5	+35.9 +5.6	+0.3 +2.4	+0.4	-34.7	+0.0	47.4	54.0	-6.6	Verti 131
20 9175.316M	36.2	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0	47.4	54.0	-6.6	Verti 131
21 9008.292M	36.3	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	47.4	54.0	-6.6	Verti 131
22 2745.038M Ave	46.4	+28.5 +3.1	+0.2 +1.5	+0.3	-34.3	+0.0 150	45.7	54.0	-8.3	Verti 125
^ 2745.060M	49.5	+28.5 +3.1	+0.2 +1.5	+0.3	-34.3	+0.0 150	48.8	54.0	-5.2	Verti 125
24 1003.466M Ave	31.6	+23.5 +1.8	+19.9 +0.8	+0.1	-37.2	+0.0 110	40.5	54.0	-13.5	Verti 135
^ 1003.400M	45.8	+23.5 +1.8	+19.9 +0.8	+0.1	-37.2	+0.0 110	54.7	54.0	+0.7	Verti 135
^ 1003.400M	43.2	+23.5 +1.8	+19.9 +0.8	+0.1	-37.2	+0.0	52.1	54.0	-1.9	Verti 131

CKC Laboratories, Inc. Date: 10/13/2010 Time: 15:33:32 Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 35 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 #: **91226** Date: 10/14/2010
 Test Type: **Maximized Emissions** Time: 09:10:15
 Equipment: **ISM Transmitter** Sequence#: 38
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	AN03170	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
T3	AN03123	Cable	32026-2-29801-12	10/23/2009	10/23/2011
T4	AN01271	Preamplifier	83017A	9/17/2009	9/17/2011
T5	ANP05542	Cable	Heliac	10/23/2009	10/23/2011
T6	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 36%
 Pressure: 102.2 kPa

The EUT is transmitting on 923.8 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

Ext Attn: 0 dB

Measurement Data:

Reading listed by margin.

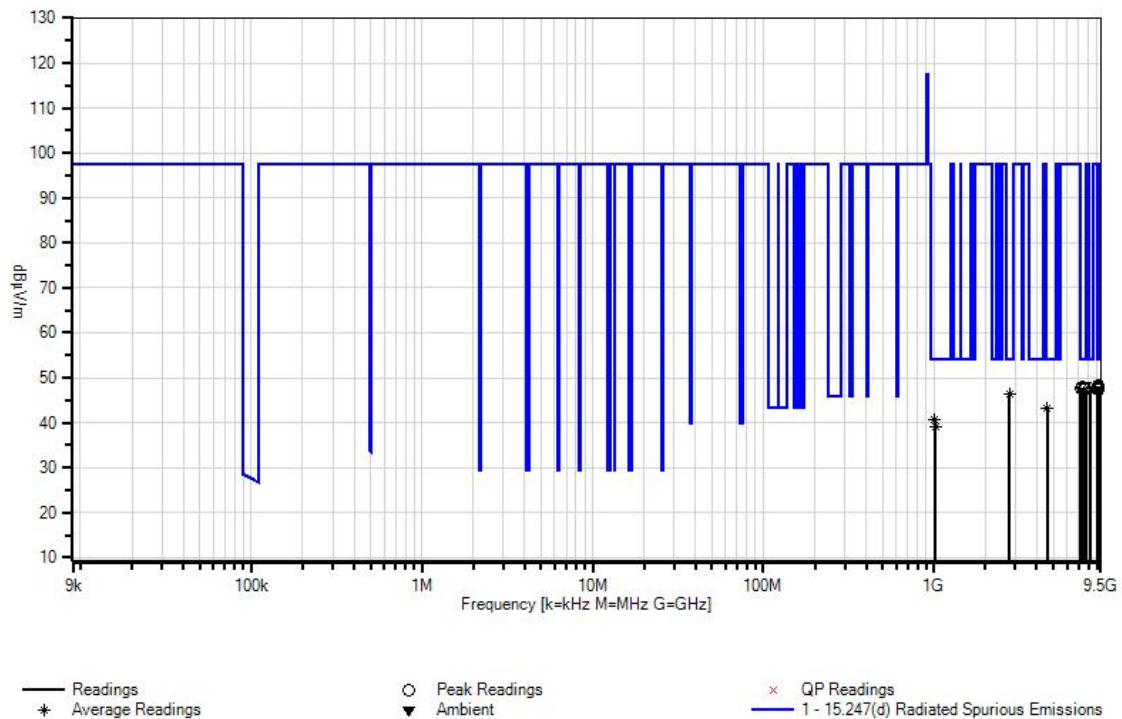
Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5	T6							
			dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	9158.088M	37.0	+36.5	+0.2	+0.3	-34.2	+0.0	48.2	54.0	-5.8	Horiz
			+5.7	+2.7							140

2	9102.024M	37.0	+36.5 +5.7	+0.2 +2.7	+0.3	-34.3	+0.0	48.1	54.0	-5.9	Horiz 140
3	7358.352M	38.2	+36.1 +5.2	+0.2 +2.3	+0.5	-34.6	+0.0	47.9	54.0	-6.1	Horiz 140
4	7278.272M	38.0	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0	47.8	54.0	-6.2	Horiz 140
5	7598.592M	37.9	+36.2 +5.4	+0.2 +2.6	+0.4	-34.9	+0.0	47.8	54.0	-6.2	Horiz 140
6	7733.727M	37.7	+36.2 +5.4	+0.1 +2.5	+0.5	-34.6	+0.0	47.8	54.0	-6.2	Horiz 140
7	8207.200M	37.4	+36.1 +5.5	+0.3 +2.7	+0.4	-34.7	+0.0	47.7	54.0	-6.3	Horiz 140
8	7262.256M	37.8	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0	47.6	54.0	-6.4	Horiz 140
9	7295.289M	37.8	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0	47.6	54.0	-6.4	Horiz 140
10	9184.076M	36.5	+36.4 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0	47.6	54.0	-6.4	Horiz 140
11	9009.168M	36.5	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	47.6	54.0	-6.4	Horiz 140
12	7325.319M	37.7	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0	47.5	54.0	-6.5	Horiz 140
13	7251.245M	37.7	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6	+0.0	47.5	54.0	-6.5	Horiz 140
14	9030.484M	36.4	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	47.5	54.0	-6.5	Horiz 140
15	8148.141M	37.3	+36.1 +5.5	+0.3 +2.6	+0.4	-34.7	+0.0	47.5	54.0	-6.5	Horiz 140
16	9190.500M	36.3	+36.4 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0	47.4	54.0	-6.6	Horiz 140
17	9199.260M	36.3	+36.4 +5.7	+0.2 +2.7	+0.3	-34.2	+0.0	47.4	54.0	-6.6	Horiz 140
18	9090.928M	36.3	+36.5 +5.7	+0.2 +2.6	+0.3	-34.3	+0.0	47.3	54.0	-6.7	Horiz 140
19	2771.442M Ave	47.0	+28.6 +3.1	+0.2 +1.6	+0.3	-34.3	+0.0 164	46.5	54.0	-7.5	Horiz 131
^	2771.500M	50.0	+28.6 +3.1	+0.2 +1.6	+0.3	-34.3	+0.0 164	49.5	54.0	-4.5	Horiz 131
21	4619.064M Ave	37.5	+32.7 +4.2	+0.3 +1.9	+0.4	-33.8	+0.0 255	43.2	54.0	-10.8	Horiz 154
^	4619.000M	43.9	+32.7 +4.2	+0.3 +1.9	+0.4	-33.8	+0.0 255	49.6	54.0	-4.4	Horiz 154
23	1004.494M Ave	31.9	+23.5 +1.8	+19.7 +0.8	+0.1	-37.2	+0.0 180	40.6	54.0	-13.4	Horiz 140
^	1004.400M	45.1	+23.5 +1.8	+19.7 +0.8	+0.1	-37.2	+0.0 180	53.8	54.0	-0.2	Horiz 140
^	1004.452M	44.2	+23.5 +1.8	+19.7 +0.8	+0.1	-37.2	+0.0	52.9	54.0	-1.1	Horiz 140
26	1015.928M Ave	32.2	+23.5 +1.8	+17.6 +0.8	+0.2	-37.1	+0.0 180	39.0	54.0	-15.0	Horiz 140
^	1016.010M	46.1	+23.5 +1.8	+17.6 +0.8	+0.2	-37.1	+0.0 180	52.9	54.0	-1.1	Horiz 140

^	1016.016M	45.0	+23.5	+17.6	+0.2	-37.1	+0.0	51.8	54.0	-2.2	Horiz
			+1.8	+0.8							140

CKC Laboratories, Inc. Date: 10/14/2010 Time: 09:10:15 Itron, Inc. WO#: 91226
 15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Horizontal Sequence#: 38 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 #: **91226** Date: 10/14/2010
 Test Type: **Maximized Emissions** Time: 08:52:22
 Equipment: **ISM Transmitter** Sequence#: 37
 Manufacturer: Itron, Inc. Tested By: Jeff Gilbert
 Model: MCLite Upgrade Kit
 S/N: n/a

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	AN03170	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
T3	AN03123	Cable	32026-2-29801-12	10/23/2009	10/23/2011
T4	AN01271	Preamplifier	83017A	9/17/2009	9/17/2011
T5	ANP05542	Cable	Heliac	10/23/2009	10/23/2011
T6	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
ISM Transmitter*	Itron, Inc.	MCLite Upgrade Kit	n/a

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	General Dynamics	IX270	ZZGEG7201ZZ7266
12VDC Deep Cycle Marine Battery	Interstate	HD-24-DP	n/a

Test Conditions / Notes:

Frequency Range Investigated: 1 - 9.3 GHz; BW setting = 100 kHz
 Temp: 24° C
 Humidity: 36%
 Pressure: 102.2 kPa

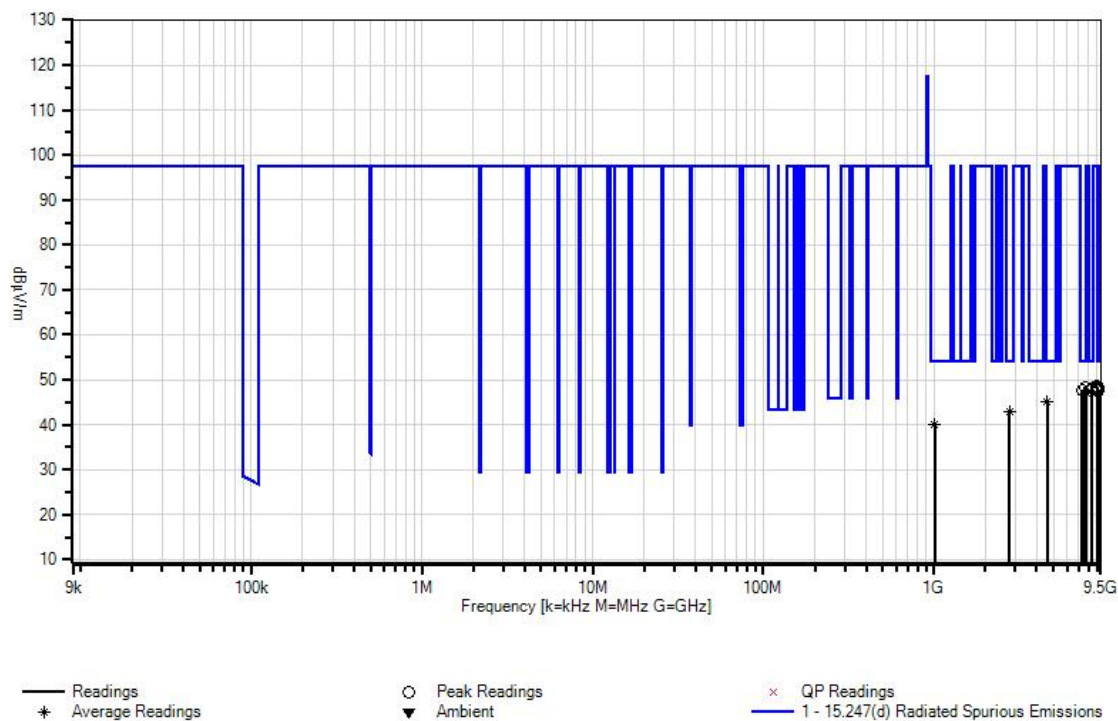
The EUT is transmitting on 923.8 MHz, FM
 The antenna of the EUT is mounted to a 52" diameter aluminum plate to represent a vehicle roof.
 The aluminum plate is supported by foam blocks on the 80cm test table; the plate is ~ 129cm above the ground plane.
 The EUT is directly below the plate, on the test table.
 The battery powering the EUT is on the turntable, under the test table.
 The USB port of the EUT is connected to a support laptop which is outside the chamber.

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
	MHz	dBμV	T5	T6			Table	dBμV/m	dBμV/m	dB	Ant
1	9035.448M	37.4	+36.6	+0.2	+0.3	-34.3	+0.0	48.5	54.0	-5.5	Verti
			+5.7	+2.6			360				130

2	7715.709M	38.3	+36.2 +5.4	+0.1 +2.5	+0.5	-34.6 360	+0.0	48.4	54.0	-5.6	Verti 130
3	7656.650M	38.2	+36.2 +5.4	+0.2 +2.5	+0.5	-34.7 360	+0.0	48.3	54.0	-5.7	Verti 130
4	9024.936M	37.2	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	48.3	54.0	-5.7	Verti 130
5	9101.732M	37.2	+36.5 +5.7	+0.2 +2.7	+0.3	-34.3 360	+0.0	48.3	54.0	-5.7	Verti 130
6	9057.640M	37.0	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	48.1	54.0	-5.9	Verti 130
7	8385.378M	38.1	+35.9 +5.6	+0.3 +2.4	+0.4	-34.7 360	+0.0	48.0	54.0	-6.0	Verti 130
8	9133.852M	36.7	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2 360	+0.0	47.9	54.0	-6.1	Verti 130
9	7347.341M	38.0	+36.1 +5.2	+0.2 +2.4	+0.5	-34.6 360	+0.0	47.8	54.0	-6.2	Verti 130
10	9023.184M	36.7	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	47.8	54.0	-6.2	Verti 130
11	9143.196M	36.6	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2 360	+0.0	47.8	54.0	-6.2	Verti 130
12	8316.309M	37.7	+36.0 +5.5	+0.3 +2.5	+0.4	-34.7 360	+0.0	47.7	54.0	-6.3	Verti 130
13	9081.876M	36.7	+36.5 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	47.7	54.0	-6.3	Verti 130
14	9053.844M	36.5	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	47.6	54.0	-6.4	Verti 130
15	9051.508M	36.5	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	47.6	54.0	-6.4	Verti 130
16	7391.385M	37.8	+36.1 +5.3	+0.2 +2.3	+0.5	-34.6 360	+0.0	47.6	54.0	-6.4	Verti 130
17	9165.680M	36.4	+36.5 +5.7	+0.2 +2.7	+0.3	-34.2 360	+0.0	47.6	54.0	-6.4	Verti 130
18	9065.816M	36.5	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	47.6	54.0	-6.4	Verti 130
19	9064.064M	36.5	+36.6 +5.7	+0.2 +2.6	+0.3	-34.3 360	+0.0	47.6	54.0	-6.4	Verti 130
20	4619.064M Ave	39.4	+32.7 +4.2	+0.3 +1.9	+0.4	-33.8 180	+0.0	45.1	54.0	-8.9	Verti 136
^	4619.100M	44.9	+32.7 +4.2	+0.3 +1.9	+0.4	-33.8 180	+0.0	50.6	54.0	-3.4	Verti 136
22	2771.446M Ave	43.3	+28.6 +3.1	+0.2 +1.6	+0.3	-34.3 154	+0.0	42.8	54.0	-11.2	Verti 140
^	2771.429M	47.1	+28.6 +3.1	+0.2 +1.6	+0.3	-34.3 154	+0.0	46.6	54.0	-7.4	Verti 140
24	1007.204M Ave	32.0	+23.5 +1.8	+19.2 +0.8	+0.1	-37.2 128	+0.0	40.2	54.0	-13.8	Verti 130
^	1007.200M	45.2	+23.5 +1.8	+19.2 +0.8	+0.1	-37.2 128	+0.0	53.4	54.0	-0.6	Verti 130
^	1007.190M	45.0	+23.5 +1.8	+19.2 +0.8	+0.1	-37.2 360	+0.0	53.2	54.0	-0.8	Verti 130

CKC Laboratories, Inc. Date: 10/14/2010 Time: 08:52:22 Itron, Inc. WO#: 91226
15.247(d) Radiated Spurious Emissions Test Distance: 3 Meters Vertical Sequence#: 37 Ext ATTN: 0 dB



Test Setup Photos



30kHz – 30MHz Test Setup



30-1000MHz Test Setup



1-9.3 GHz Test Setup

RSS-210: 99% Bandwidth

Test Engineer: J. Gilbert

Test Equipment					
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due
02872	Spectrum Analyzer	E4440A	Agilent	08/25/2009	08/25/2011
03121	Cable 10k-18G	32026-2-29080-84	Astrolab	10/23/2009	10/23/2011
P05435	Attenuator	PE7015-10	Pasternack	09/08/2010	09/08/2012

Test Conditions

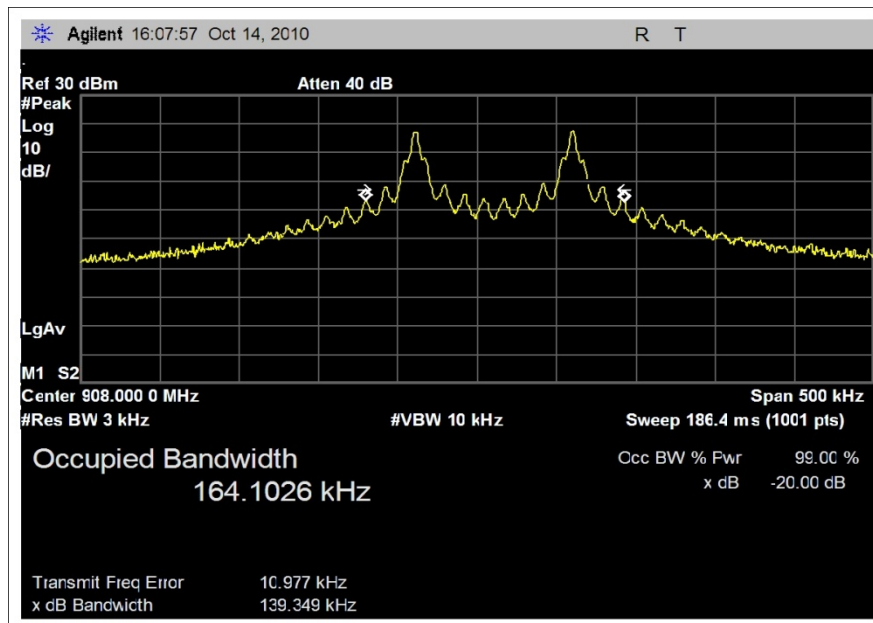
The EUT was setup on the test table and connected to a spectrum analyzer via a RF cable and 10 dB attenuator. The EUT is installed in vehicles and was therefore powered by a fully charged 12VDC automotive battery. The EUT was cycled through the different channels by test software on a support laptop, connected to the EUT by a USB cable.

Requirement: The transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured. PASS

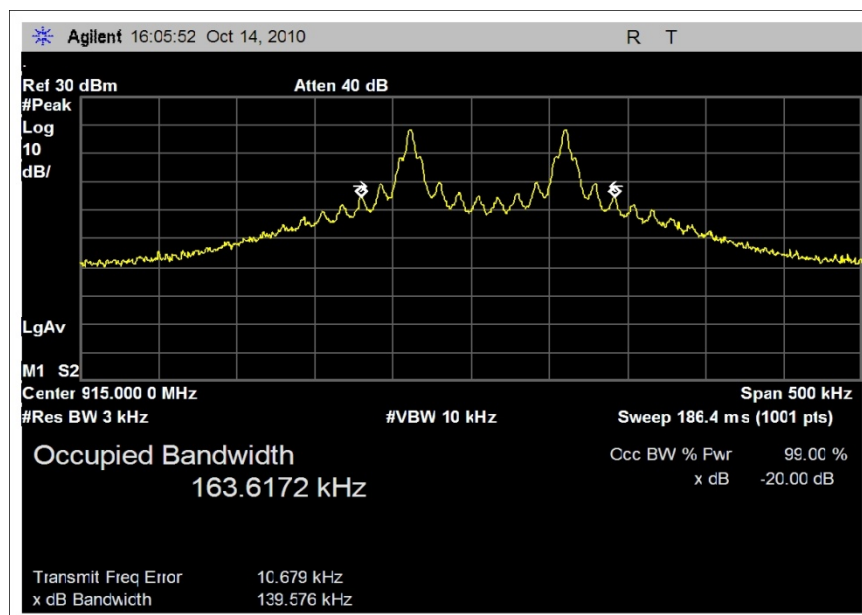
908 MHz	915 MHz	923.8 MHz
164.1 kHz	163.62 kHz	169.13 kHz

Test Procedures: ANSI C63.4, FCC DA 00-705, FCC Part 2, FCC Part 15, RSP-100, RSS-GEN, RSS-210.

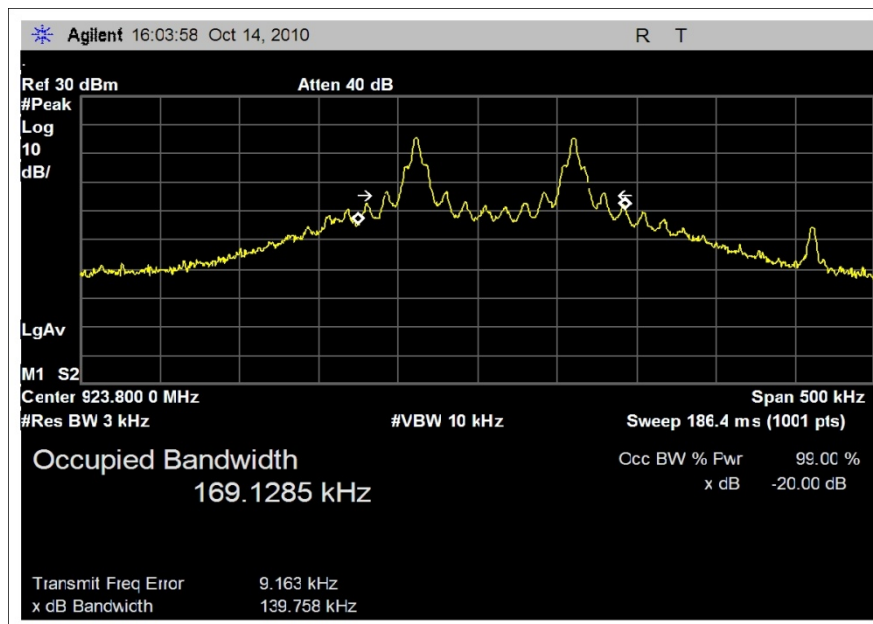
Test Data



908 MHz



915 MHz



923.8 MHz

Test Setup Photos



SUPPLEMENTAL INFORMATION

Measurement Uncertainty

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

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

Emissions Test Details

TESTING PARAMETERS

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

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

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

CORRECTION FACTORS

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

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

TEST INSTRUMENTATION AND ANALYZER SETTINGS

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

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

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

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

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.