Itron, Inc.

REVISED TEST REPORT TO 109895-10

AMR Transceiver Device for Communicating with Utility Meters
Models: IMRD-INT & IMRD-EXT

Tested to The Following Standards:

FCC Part 15 Subpart C Section(s)

15.207 & 15.247
(FHSS 902-928 MHz)

Report No.: 109895-10A

Date of issue: December 12, 2024

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 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.

Test Certificate # 803.01

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Administrative Information

Test Report Information

REPORT PREPARED FOR:

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

Representative: Jack McPeck
Customer Reference Number: 298696

REPORT PREPARED BY:

Lisa Bevington
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 109895

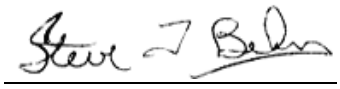
DATE OF EQUIPMENT RECEIPT: June 26, 2024
DATE(S) OF TESTING: June 26 and 27, 2024, July 1-3, 8, 19, 22, and 24, 2024 and August 1, 2024

Revision History

Original: Testing of AMR Transceiver Device for Communicating with Utility Meters, Models: IMRD-INT & IMRD-EXT, to FCC Part 15 Subpart C Sections 15.207 & 15.247 (FHSS 902-928 MHz).
Revision A: Corrected 15.247(a)(1) Carrier Separation Configuration 2, Limit applied information.

Report Authorization

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



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

Test Facility Information

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

TEST LOCATION(S):
CKC Laboratories, Inc.
Canyon Park
22116 23rd Drive S.E., Suite A
Bothell, WA 98021

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.03.20

Site Registration & Accreditation Information

Location	*NIST CB #	FCC	Canada	Japan
Canyon Park, Bothell, WA	US0103	US1024	3082C	A-0136
Brea, CA	US0103	US1024	3082D	A-0136
Fremont, CA	US0103	US1024	3082B	A-0136
Mariposa, CA	US0103	US1024	3082A	A-0136

*CKC's list of NIST designated countries can be found at: https://standards.gov/cabs/designations.html

Summary of Results

Standard / Specification: FCC Part 15 Subpart C - 15.247 (FHSS 902-928MHz)

Test Procedure	Description	Modifications	Results
15.247(a)(1)(i)	Occupied Bandwidth	NA	Pass
15.247(a)(1)	Carrier Separation	NA	Pass
15.247(a)(1)(i)	Number of Hopping Channels	NA	Pass
15.247(a)(1)(i)	Average Time of Occupancy	NA	Pass
15.247(b)(2)	Output Power	NA	Pass
15.247(d)	RF Conducted Emissions & Band Edge	NA	Pass
15.247(d)	Radiated Emissions & Band Edge	NA	Pass
15.207	AC Conducted Emissions	NA	Pass

NA = Not Applicable

ISO/IEC 17025 Decision Rule
The equipment sample utilized for testing is selected by the manufacturer. The declaration of pass or fail herein is a binary statement for simple acceptance rule (ILAC G8) based upon assessment to the specification(s) listed above, without consideration of measurement uncertainties. For performance related tests, equipment was monitored for specified criteria identified in that section of testing.

Modifications During Testing

This list is a summary of the modifications made to the equipment during testing.

Summary of Conditions
No modifications were made during testing.

Modifications listed above must be incorporated into all production units.

Conditions During Testing

This list is a summary of the conditions noted to the equipment during testing.

Summary of Conditions
None

Equipment Under Test (EUT)

During testing, numerous configurations may have been utilized. The configurations listed below support compliance to the standard(s) listed in the Summary of Results section.

Configuration 1

Equipment Tested:

Device	Manufacturer	Model #	S/N
AMR transceiver device for communicating with utility meters	Itron, Inc.	IMRD-INT	66040505

Support Equipment:

Device	Manufacturer	Model #	S/N
Laptop	Dell	Latitude E6410	3XG40P1
Tablet	Panasonic	FZ-G1	NA

Configuration 2

Equipment Tested:

Device	Manufacturer	Model #	S/N
AMR transceiver device for communicating with utility meters	Itron, Inc.	IMRD-EXT	66043569

Support Equipment:

Device	Manufacturer	Model #	S/N
Laptop	Dell	Latitude E6410	3XG40P1
Tablet	Panasonic	FZ-G1	NA
Attached Antenna	L-comm	3dBi Rubber Duck	NA

Configuration 3

Equipment Tested:

Device	Manufacturer	Model #	S/N
AMR transceiver device for communicating with utility meters	Itron, Inc.	IMRD-EXT	66043569

Support Equipment:

Device	Manufacturer	Model #	S/N
Laptop	Dell	Latitude E6410	3XG40P1
Tablet	Panasonic	FZ-G1	NA
Vehicle Antenna	PCTEL	5dBi Vehicle Mount	NA
Ground Plane	Itron	4ft	NA

Configuration 4 (Conducted RF test unit)

Equipment Tested:

Device	Manufacturer	Model #	S/N
AMR transceiver device for communicating with utility meters	Itron, Inc.	IMRD-INT	66040562

Support Equipment:

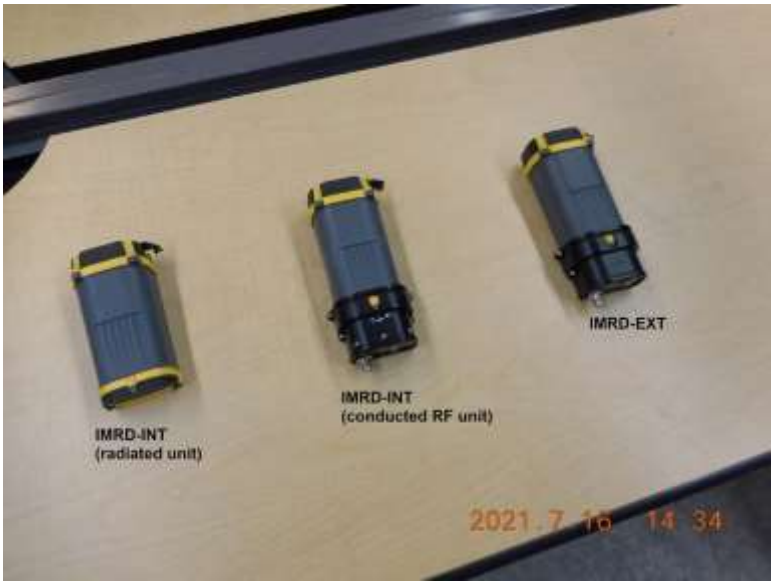
Device	Manufacturer	Model #	S/N
Laptop	Dell	Latitude E6410	3XG40P1

General Product Information:

Description of EUT
Wireless meter reader

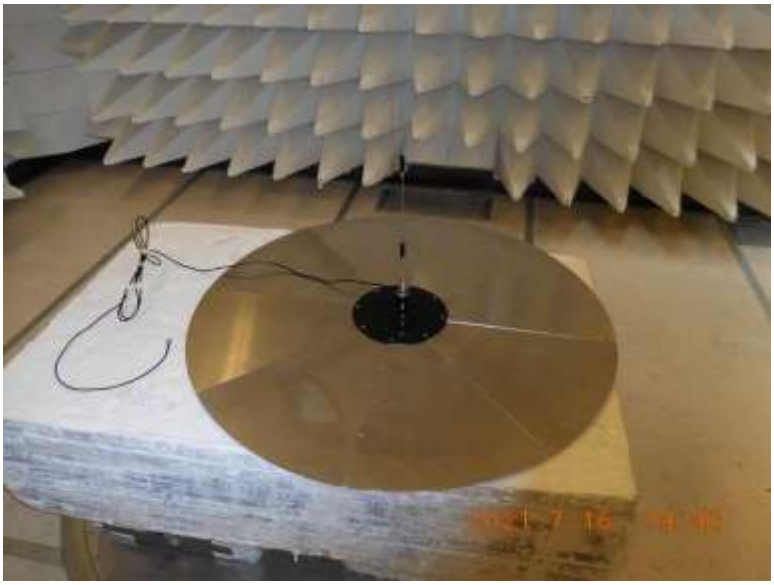
Product Information	Manufacturer-Provided Details
Operating Frequencies Tested:	908-924MHz
Equipment Type:	Stand-Alone Equipment
Type of Wideband System:	Proprietary FHSS
Maximum Duty Cycle:	Tested 100% as worst case
Modulation Type(s):	150kbps FSK
Number of TX Chains:	50
Beamforming Type:	NA
Antenna Type(s) and Gain:	Internal PIFA 1.2dBi at 915MHz and 2dBi at 952MHz External Omni Vehicle 5dBi External Omni Attached 3dBi
Antenna Connection Type:	Integral and external variant
Nominal Input Voltage:	120VAC 60Hz to AC Adapter on Internal Unit 13.8VDC on External unit
Firmware / Software Version(s):	MC3 superraptor Test version 4.2.0.0
Firmware / Software Description:	Test software for EUT
Firmware / Software Setting(s):	Internal power settings HighISMsetting=0x7B08 External power settings HighISMsetting=0x7508
Tune-up or Adjustment(s):	Radio parameters highISMsetting adjusted
Receiver Bandwidth and Synchronization:	The manufacturer declares the receiver input bandwidth matches the transmit channel bandwidth and shifts frequencies in synchronization with the transmitter.
The validity of results is dependent on the stated product details, the accuracy of which the manufacturer assumes full responsibility.	

EUT and Accessory Photo(s)



EUTs

Attached Antenna with Adapter



External Antenna + Ground Plane

Support Equipment Photo(s)

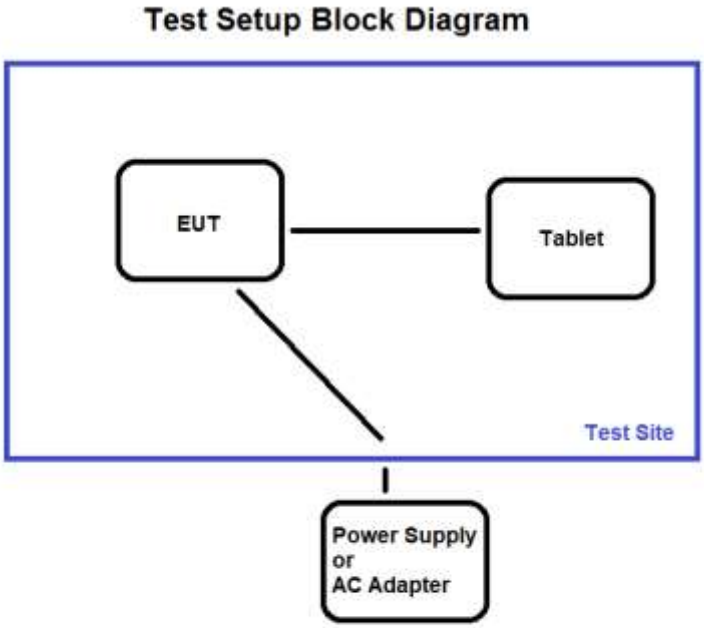
Laptop

Tablet

Block Diagram of Test Setup(s)

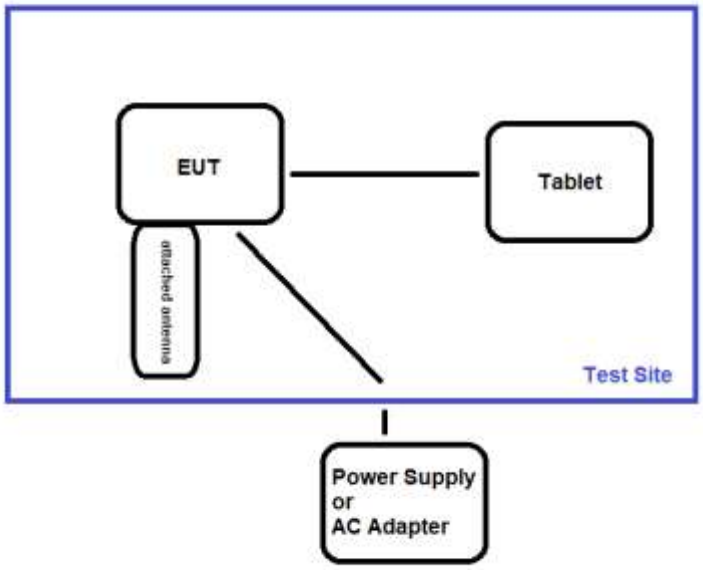
Config#	Setup Description of Block Diagram
1	EUT on a test bench connected to a support tablet.
2	EUT on a test bench connected to a support tablet.
3	Eut on a test bench connected to a support tablet
4	EUT on a test bench

Configuration 1



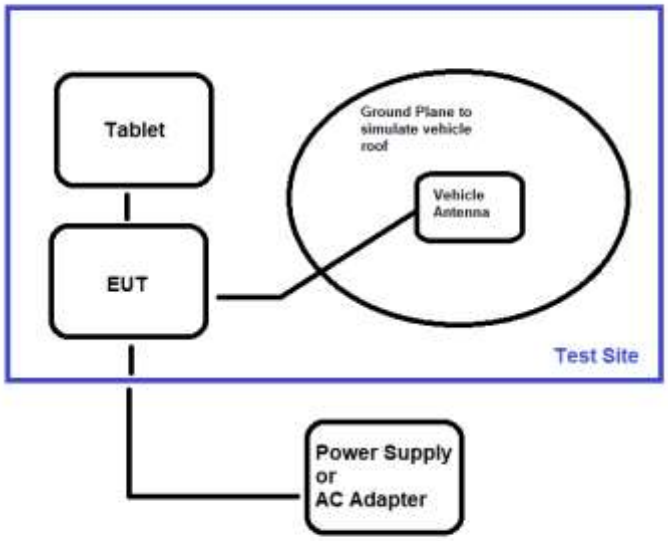
Configuration 2

Test Setup Block Diagram



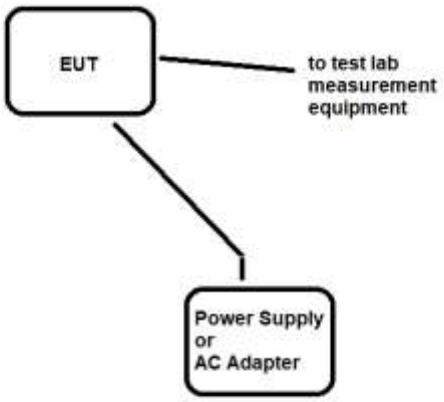
Configuration 3

Test Setup Block Diagram



Configuration 4

Test Setup Block Diagram



FCC Part 15 Subpart C

15.247(a) Transmitter Characteristics

Test Setup/Conditions			
Test Location:	Bothell Lab C3	Test Engineer:	C. Plumadore/S.Pittsford
Test Method:	ANSI C63.10 (2020)	Test Date(s):	6/27/2024
Configuration:	2 and 4		
Test Setup:	EUT connected to analyzer through cable and attenuator		

Environmental Conditions			
Temperature (ºC)	23.2	Relative Humidity (%):	45

Test Equipment					
Asset#	**Description**	**Manufacturer**	**Model**	**Cal Date**	**Cal Due**
02673	Spectrum Analyzer	Agilent	E4446A	3/8/2024	3/8/2026
P05748	Attenuator	Pasternack	PE7004-20	2/26/2024	2/26/2026
P05362	Cable	Beldon	RG-214	6/26/2024	6/26/2026

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

External - Configuration 2

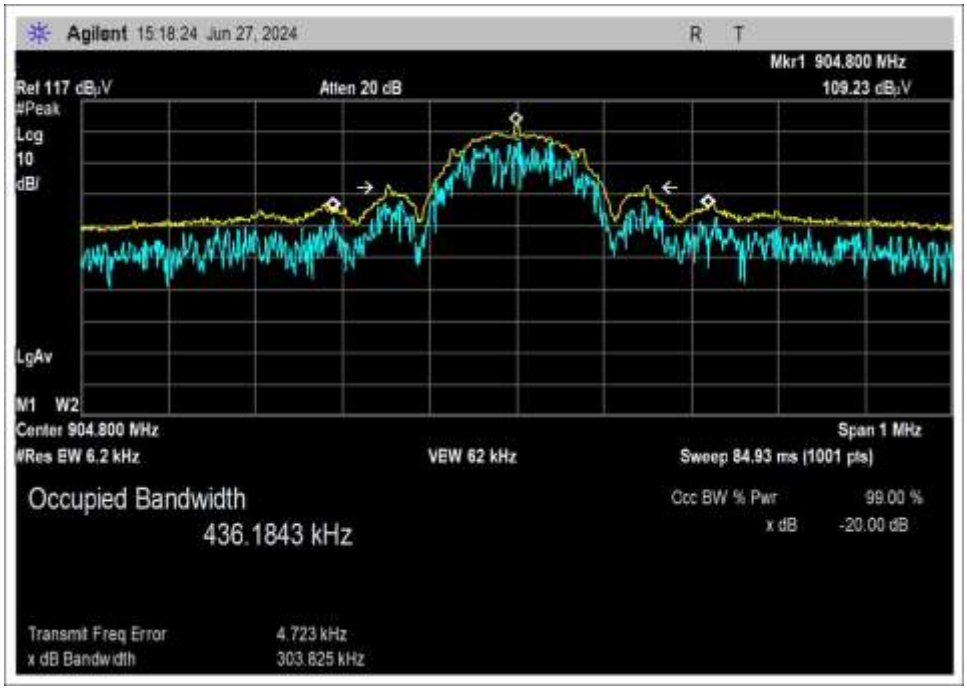
Test Data Summary					
Frequency (MHz)	**Antenna Port**	**Modulation**	**Measured (kHz)**	**Limit (kHz)**	**Results**
904.8MHz	1	150kbps FSK	303.825	≤500	Pass
914MHz	1	150kbps FSK	303.827	≤500	Pass
924.4MHz	1	150kbps FSK	304.619	≤500	Pass

Internal - Configuration 4

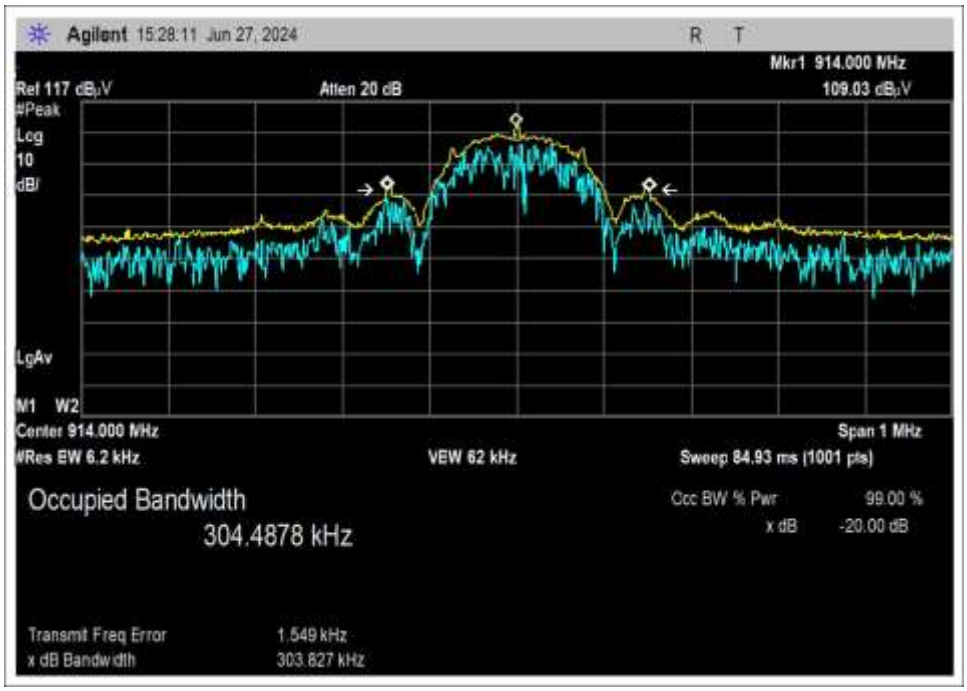
Test Data Summary					
Frequency (MHz)	**Antenna Port**	**Modulation**	**Measured (kHz)**	**Limit (kHz)**	**Results**
904.8MHz	1	150kbps FSK	303.456	≤500	Pass
914MHz	1	150kbps FSK	302.942	≤500	Pass
924.4MHz	1	150kbps FSK	309.727	≤500	Pass

Plot(s)

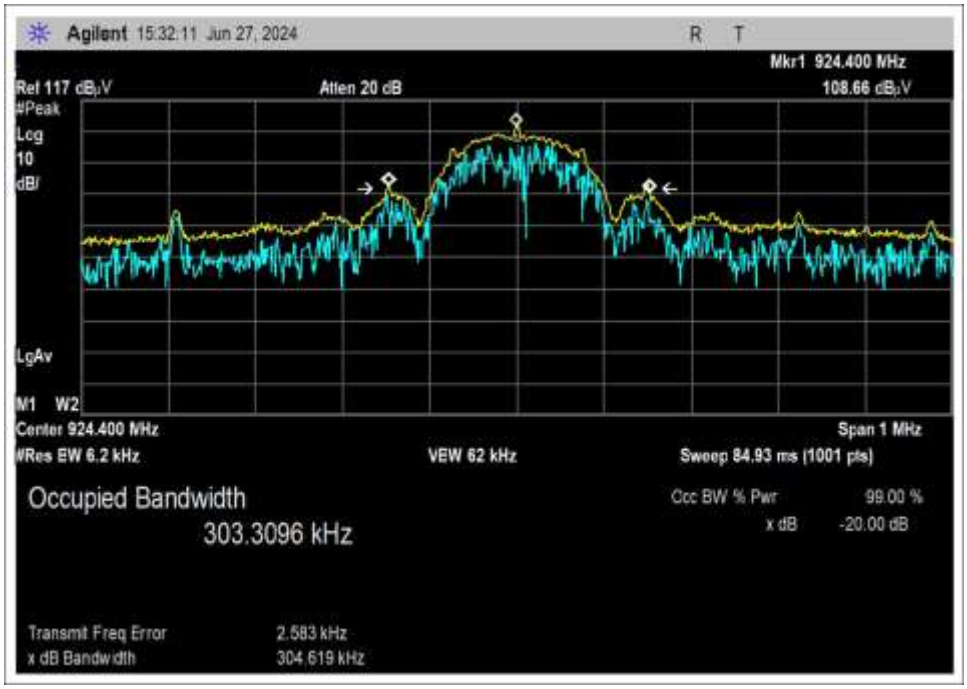
External - Configuration 2



Low Channel

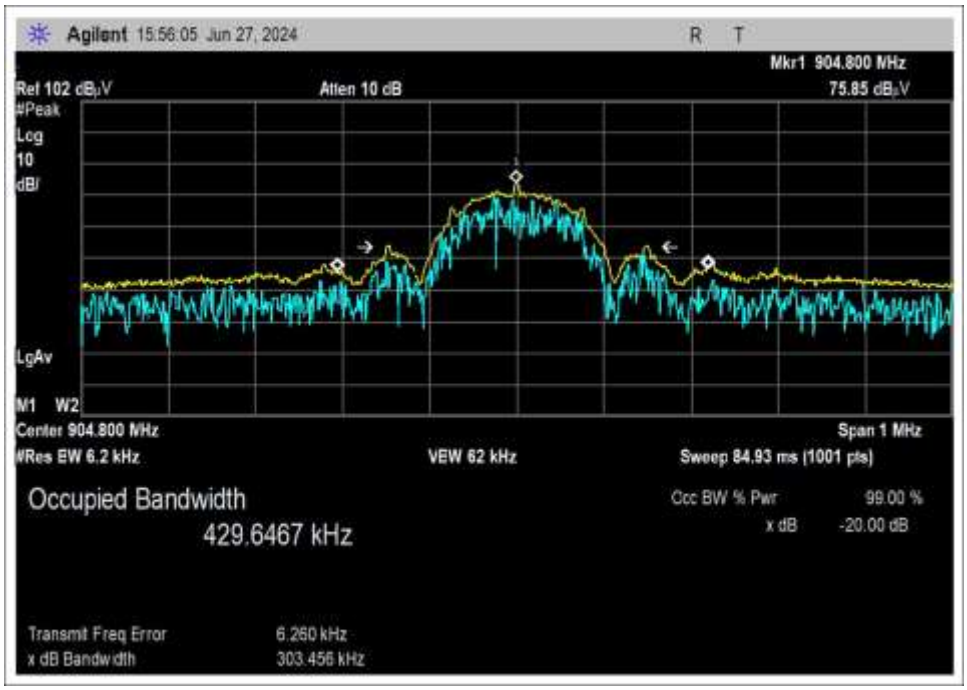


Middle Channel

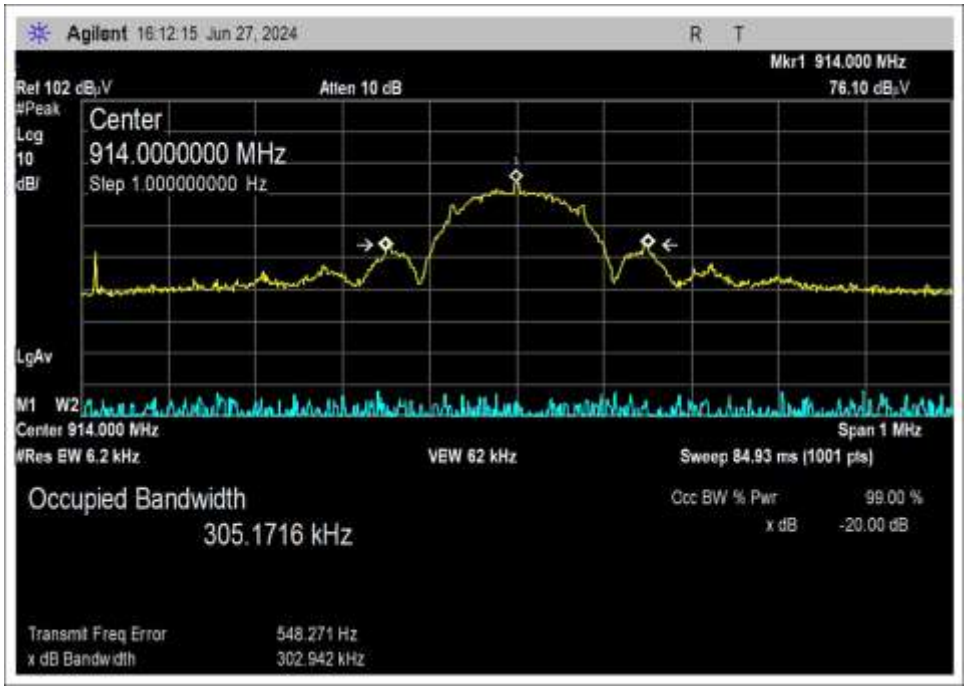


High Channel

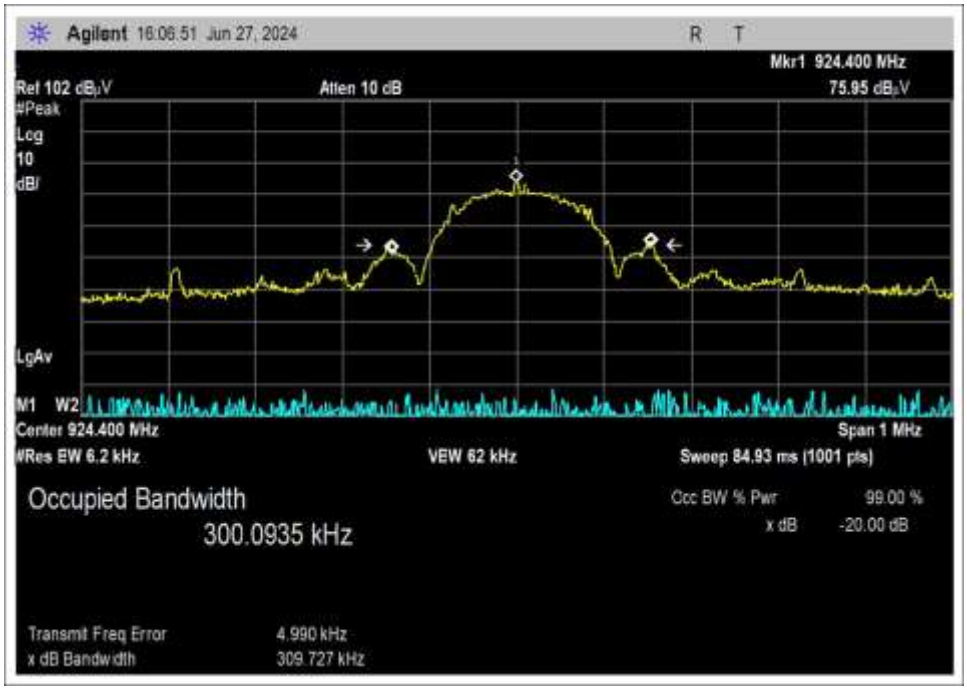
Internal - Configuration 4



Low Channel



Middle Channel



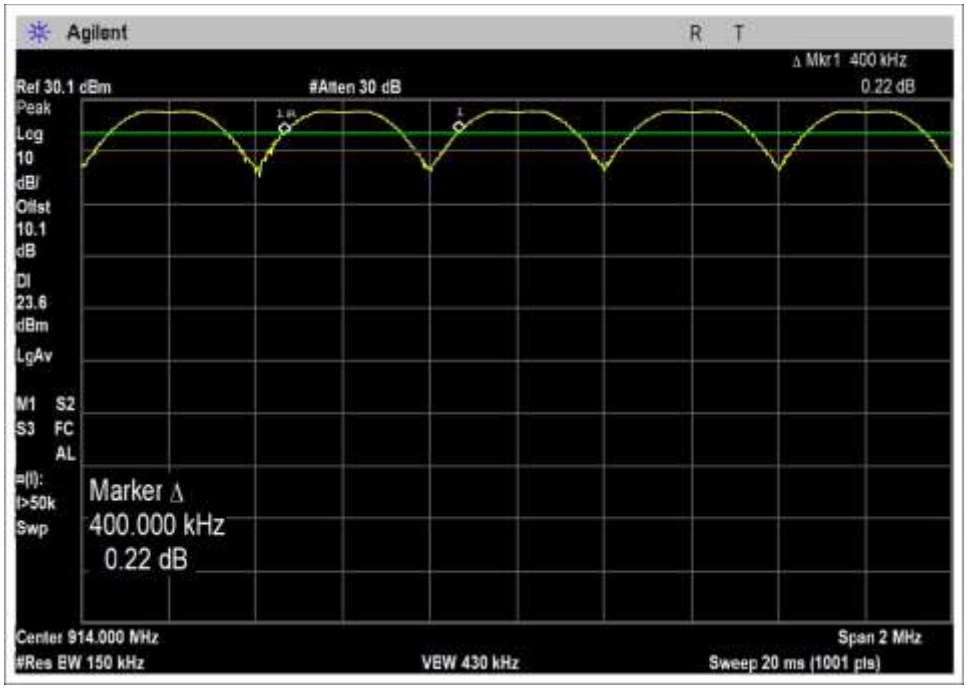
High Channel

15.247(a)(1) Carrier Separation

Configuration 2

Test Data Summary				
Limit applied: 20dB bandwidth of the hopping channel.				
Antenna Port	**Operational Mode**	**Measured (kHz)**	**Limit (kHz)**	**Results**
1	Hopping	400	>309.727	Pass

Plot(s)

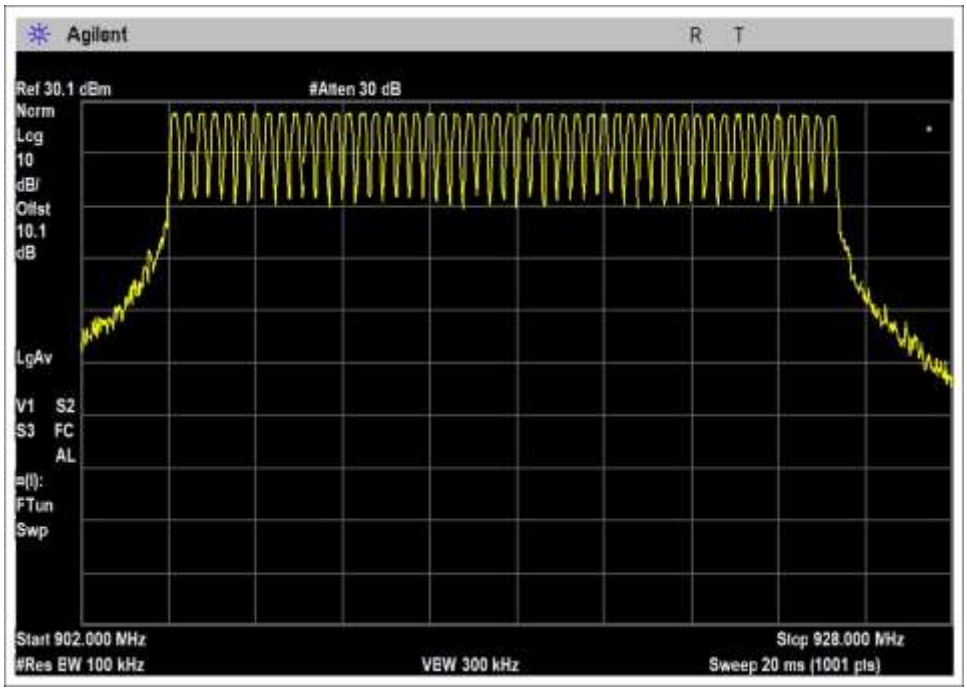


15.247(a)(1)(i) Number of Hopping Channels

Configuration 2

Test Data Summary				
$Limit = \begin{cases} \geq 50\ Channels \mid 20\ dB\ BW < 250kHz \\ \geq 25\ Channels \mid 20\ dB\ BW \geq 250kHz \end{cases}$				
Antenna Port	**Operational Mode**	**Measured (Channels)**	**Limit (Channels)**	**Results**
1	hopping	50	≥25	Pass

Plot(s)



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

Configuration 2

Test Data Summary				
Observation Period, P_{obs} is derived from the following: $P_{Obs} = \begin{cases} 20\ Seconds & \lvert 20\ dB\ BW < 250kHz \\ 10\ Seconds & \lvert 20\ dB\ BW \geq 250kHz \end{cases}$				
Antenna Port	**Operational Mode**	**Measured (ms)**	**Limit (ms/P_{obs})**	**Results**
1	hopping	48.4	≤400	Pass

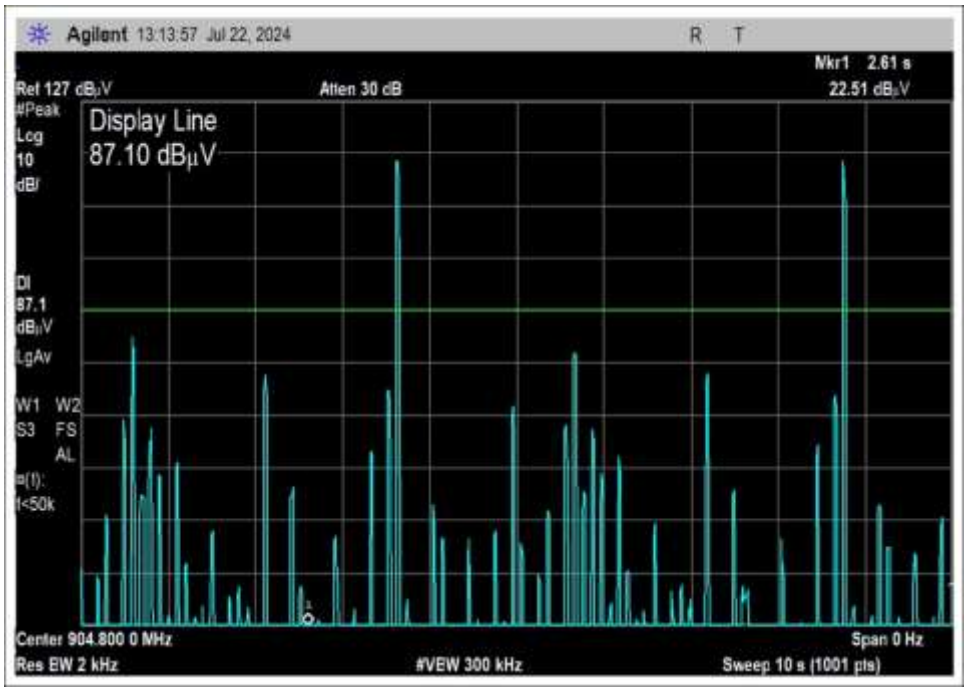
Measured results are calculated as follows:

$$Dwell\ time = \left(\sum_{Bursts} RF\ Burst\ On\ Time + \sum_{Control} Control\ Signal\ On\ time \right) \Big|_{P_{obs}}$$

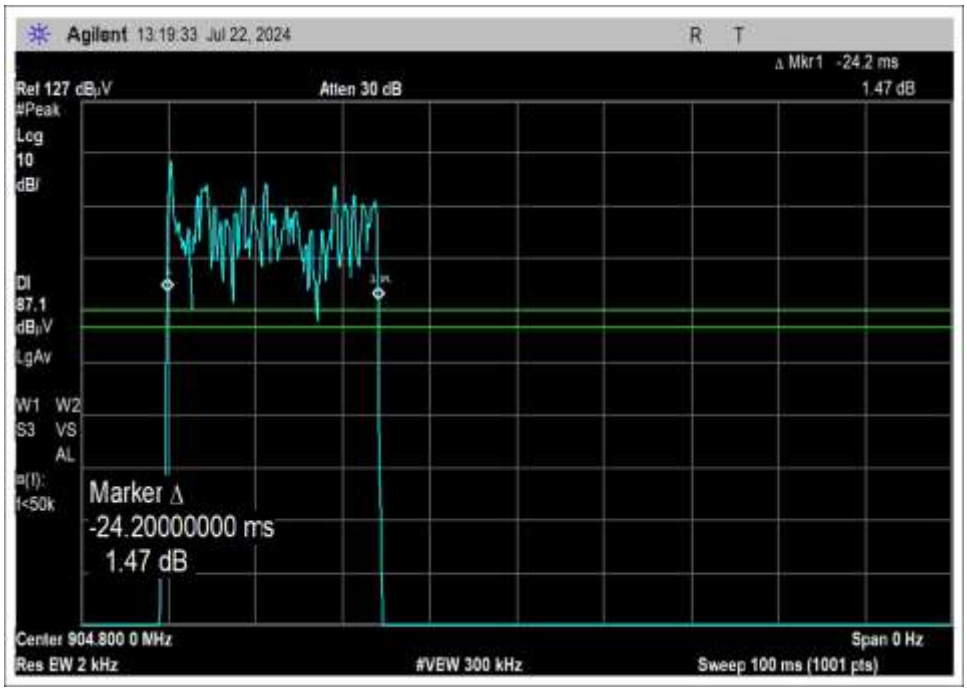
Actual Calculated Values:

Parameter	Value
Observation Period (P_{obs}):	10 seconds
Number of RF Bursts / P_{obs}:	2
On time of RF Burst:	24.2ms
Number of Control or other signals / P_{obs}:	0
On time of Control or other Signals:	0
Total Measured On Time:	48.4ms

Plot(s)

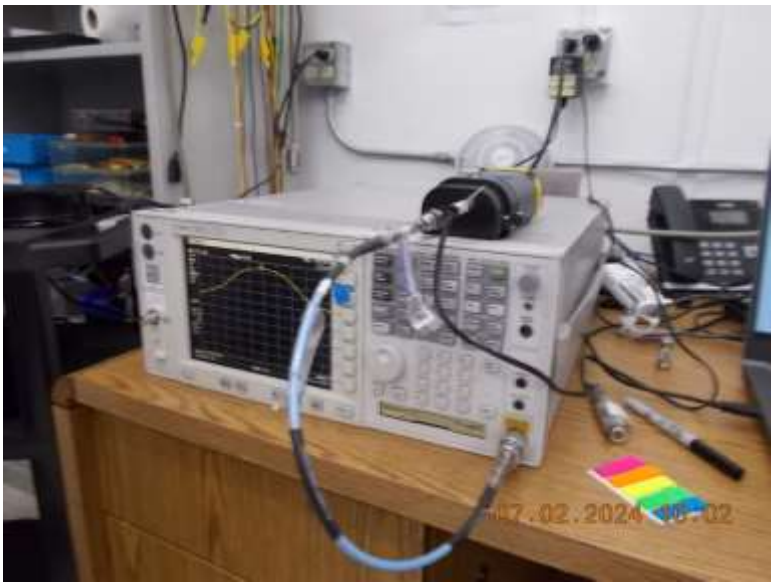


10 Seconds



Pulse Width

Test Setup Photo(s)



15.247(b)(2) Output Power

Test Setup/Conditions			
Test Location:	Bothell Lab C3	Test Engineer:	C. Plumadore/S. Pittsford
Test Method:	ANSI C63.10 (2020)	Test Date(s):	7/22/2024
Configuration:	2 and 4		
Test Setup:	EUT connected to analyzer through cable and attenuator.		

Environmental Conditions			
Temperature (ºC)	23.2	Relative Humidity (%):	45.7

Test Equipment					
Asset#	**Description**	**Manufacturer**	**Model**	**Cal Date**	**Cal Due**
02673	Spectrum Analyzer	Agilent	E4446A	3/8/2024	3/8/2026
P07505	Cable	TMS	CLU40-KMKM-02.00F	1/19/2024	1/19/2026
P06242	Attenuator	Weinschel	54A-10	2/13/2023	2/13/2025

Test Data Summary - Voltage Variations - External - Configuration 2					
Frequency (MHz)	**Modulation / Ant Port**	**$V_{Minimum}$ (dBm)**	**$V_{Nominal}$ (dBm)**	**$V_{Maximum}$ (dBm)**	**Max Deviation from $V_{Nominal}$ (dB)**
904.8MHz	150kbps FSK	24.16	24.16	24.16	0.0
914MHz	150kbps FSK	24.09	24.09	24.09	0.0
924.4MHz	150kbps FSK	23.81	23.81	23.81	0.0

Test performed using operational mode with the highest output power, representing worst case.

Parameter Definitions:

Measurements performed at input voltage Vnominal ± 15%.

Parameter	Value
$V_{Nominal}$:	13.8
$V_{Minimum}$:	11.73
$V_{Maximum}$:	15.87

Test Data Summary - RF Conducted Measurement - External - Configuration 2							
$Limit = \begin{cases} 30dBm\ Conducted/36dBm\ EIRP \mid \geq 50\ Channels \\ 24dBm\ Conducted/30dBm\ EIRP \mid < 50\ Channels\ (\min 25) \end{cases}$							
Power level 75 IMRD -EXT							
Frequency (MHz)	**Modulation**	**Ant. Type / Gain (dBi)**	**RF Conducted (dBm)**		**EIRP (dBm)**		**Results**
			Measured	**Limit**	**Calculated**	**Limit**	
904.8MHz	150kbps FSK	5*	24.16	≤30	29.16	≤36	Pass
914MHz	150kbps FSK	5*	24.09	≤30	29.09	≤36	Pass
924.4MHz	150kbps FSK	5*	23.81	≤30	28.81	≤36	Pass

*= Worse case for both external Omni vehicle and external Omni attached

Test Data Summary - RF Conducted Measurement - Internal - Configuration 4							
$Limit = \begin{cases} 30dBm\ Conducted/36dBm\ EIRP \mid \geq 50\ Channels \\ 24dBm\ Conducted/30dBm\ EIRP \mid < 50\ Channels\ (\min 25) \end{cases}$							
Power level 7B IMRD-INT							
Frequency (MHz)	**Modulation**	**Ant. Type / Gain (dBi)**	**RF Conducted (dBm)**		**EIRP (dBm)**		**Results**
			Measured	**Limit**	**Calculated**	**Limit**	
904.8MHz	150kbps FSK	1.2	28.03	≤30	29.23	≤36	Pass
914MHz	150kbps FSK	1.2	27.93	≤30	29.13	≤36	Pass
924.4MHz	150kbps FSK	1.2	27.85	≤30	29.05	≤36	Pass

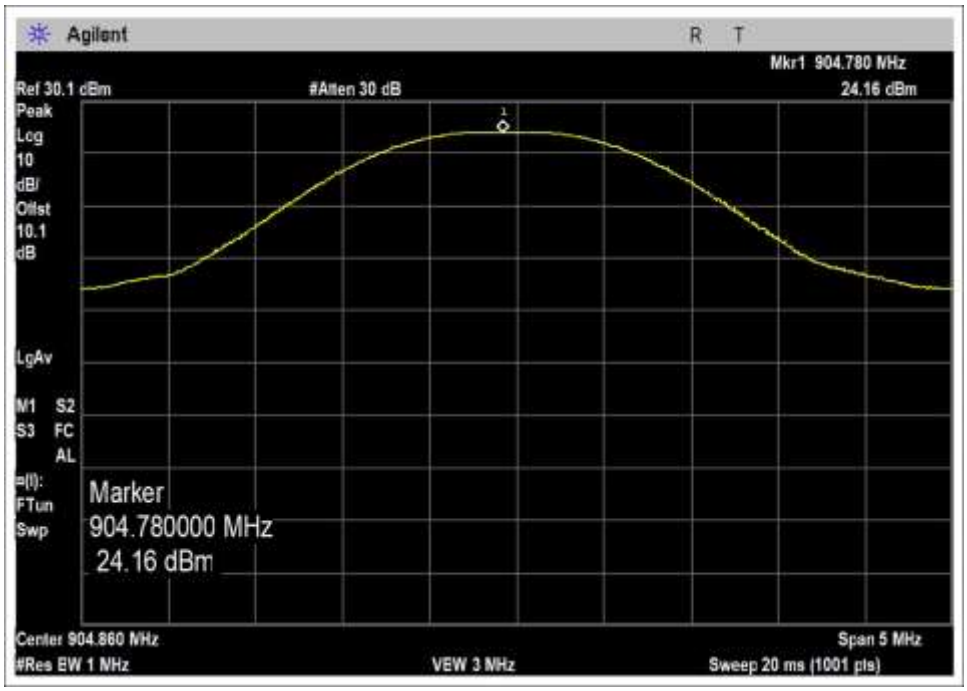
EIRP is calculated as RF conducted power (dBm) + antenna gain (dBi)

The RF conducted power limit is calculated according to the maximum allowed RF conducted power with a maximum of 6dBi gain antenna in accordance with 15.247(b):

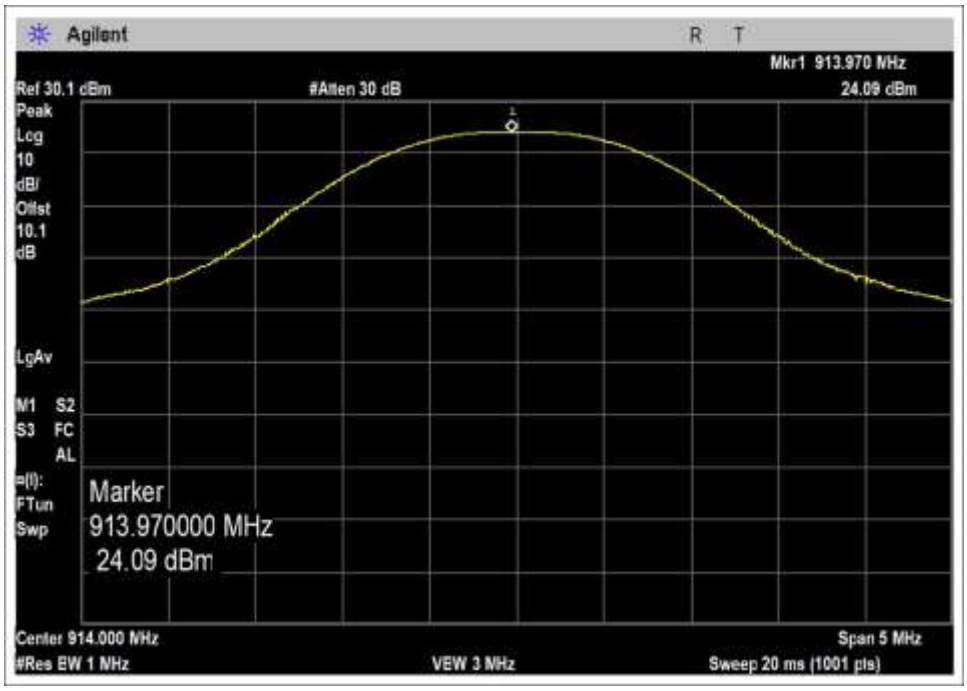
$Limit = 30\ (or\ 24) - Roundup(G - 6)$

Plots

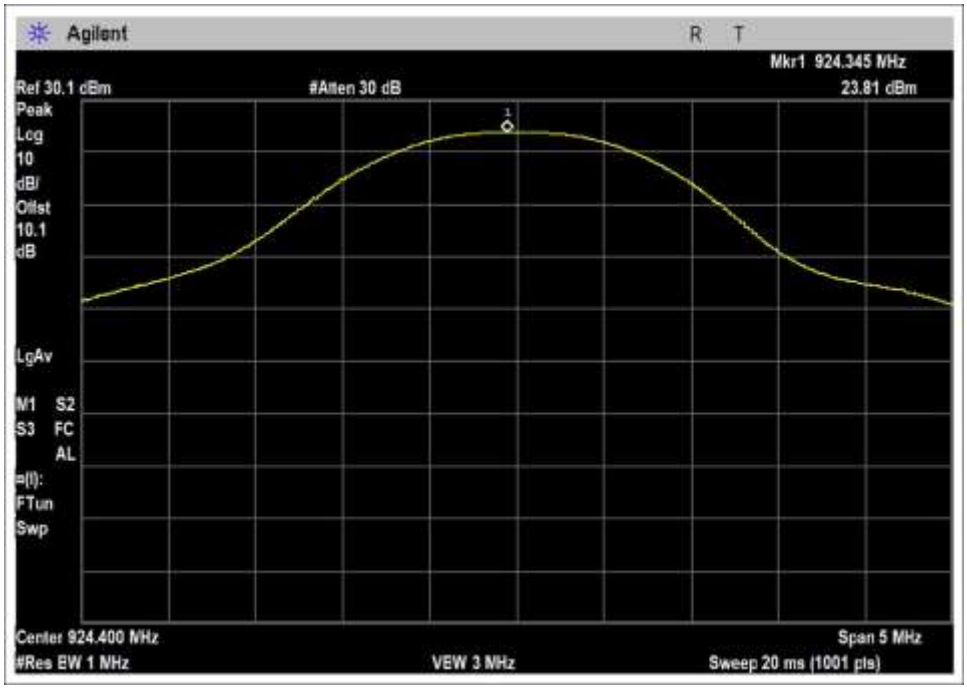
External - Configuration 2



Low Channel

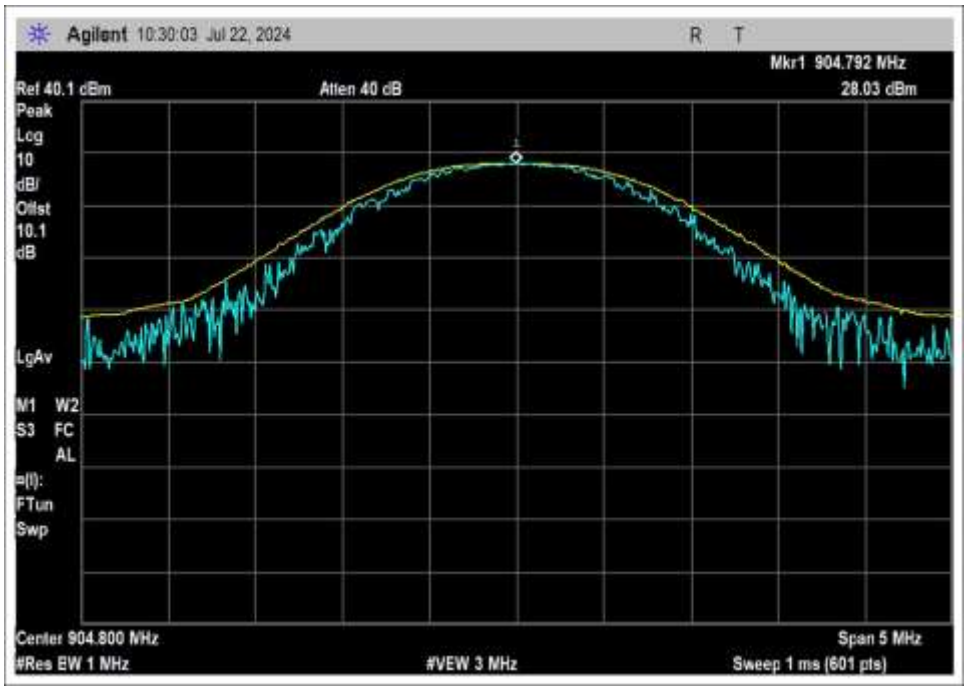


Middle Channel

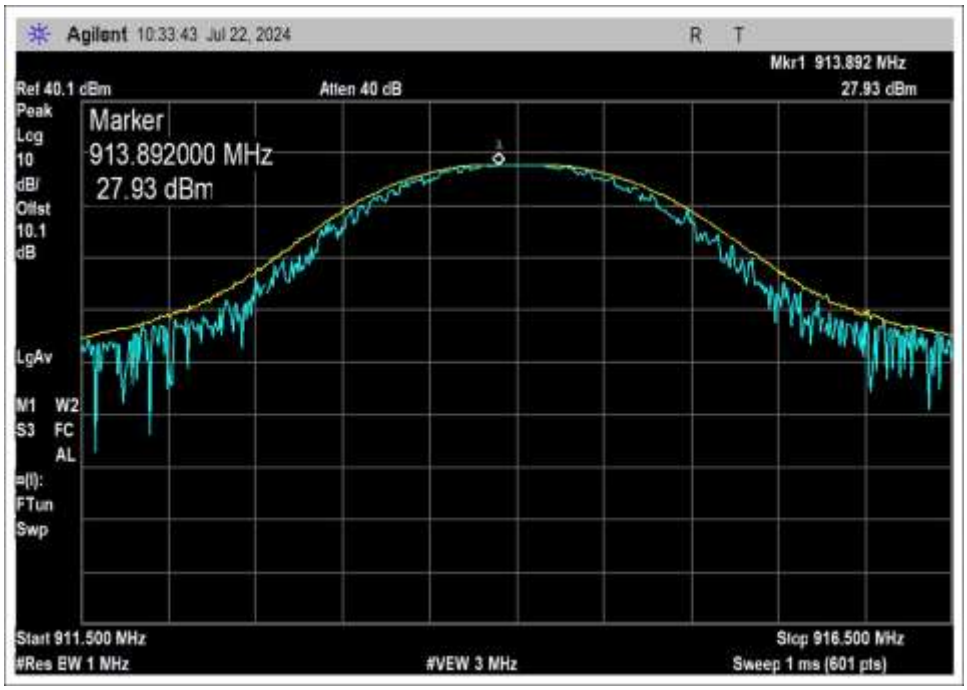


High Channel

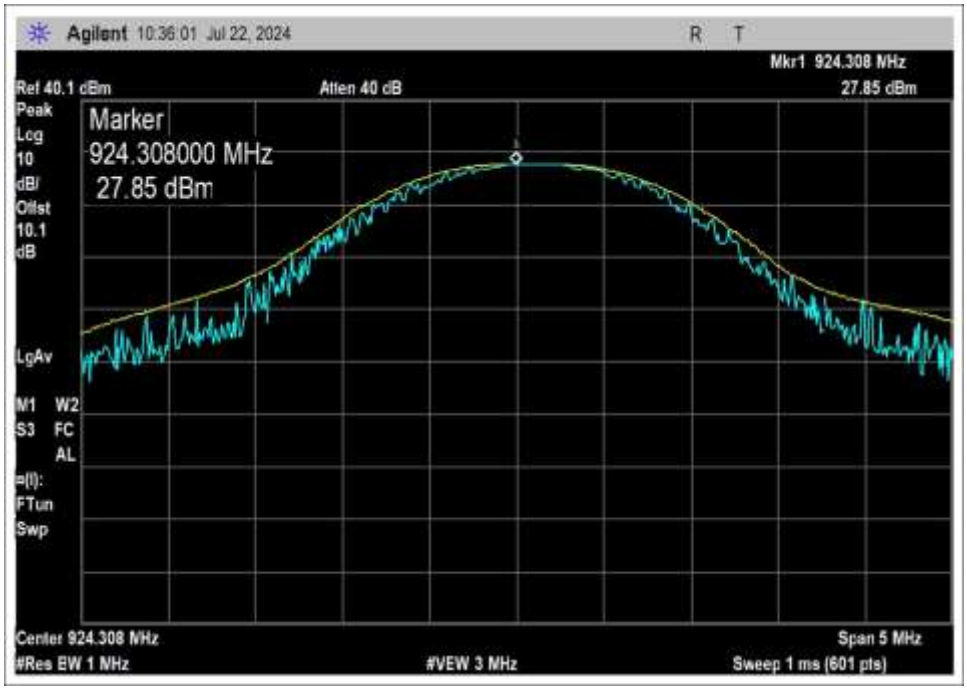
Internal - Configuration 4



Low Channel

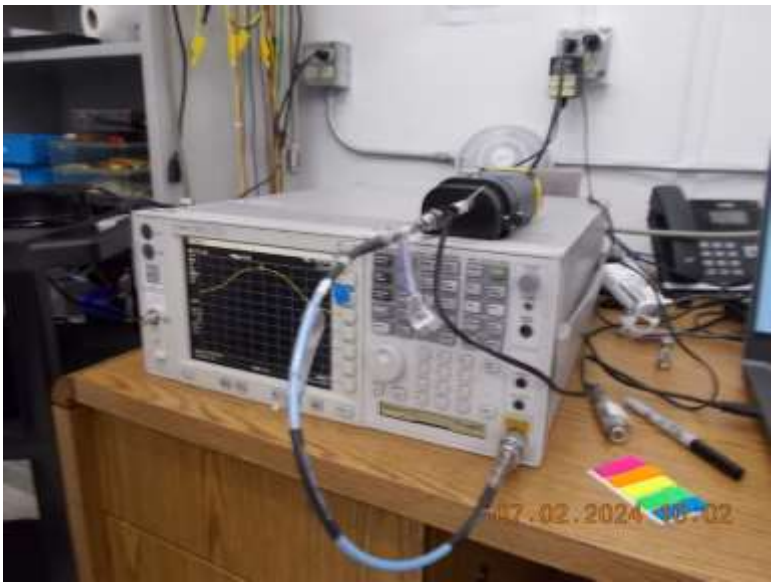


Middle Channel



High Channel

Test Setup Photo(s)



15.247(d) RF Conducted Emissions & Band Edge

Test Setup / Conditions / 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 #:	**109895**	Date:	8/1/2024
Test Type:	**Conducted Emissions**	Time:	8:01:15 AM
Tested By:	C. Plumadore	Sequence#:	1
Software:	EMITest 5.03.20		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

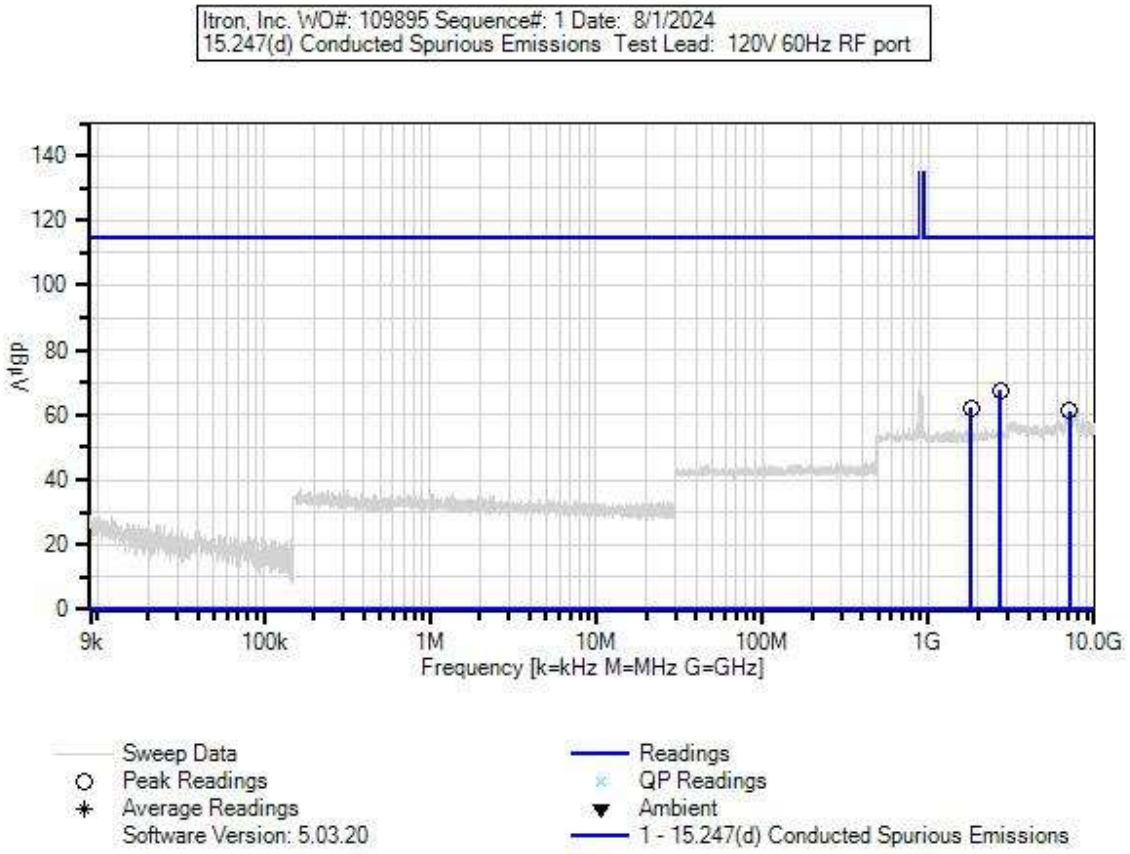
Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

EUT connected directly to spectrum analyzer
Power level 7B

Low channel 904.8MHz

Modulation type 150kbps FSK



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06242	Attenuator	54A-10	2/13/2023	2/13/2025
T2	ANP07211	Cable	32026-29801-29801-18	4/27/2023	4/27/2025
	AN03803	Spectrum Analyzer	E4440A	2/12/2024	2/12/2026

Measurement Data: Reading listed by margin. Test Lead: RF port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2715.580M	57.4	+9.8	+0.4			+0.0	67.6	114.6	-47.0	RF po
2	1809.788M	52.2	+9.8	+0.3			+0.0	62.3	114.6	-52.3	RF po
3	7039.045M	50.6	+9.9	+0.8			+0.0	61.3	114.6	-53.3	RF po

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 #:	**109895**	Date:	7/2/2024
Test Type:	**Conducted Emissions**	Time:	14:59:25
Tested By:	C. Plumadore	Sequence#:	6
Software:	EMITest 5.03.20		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

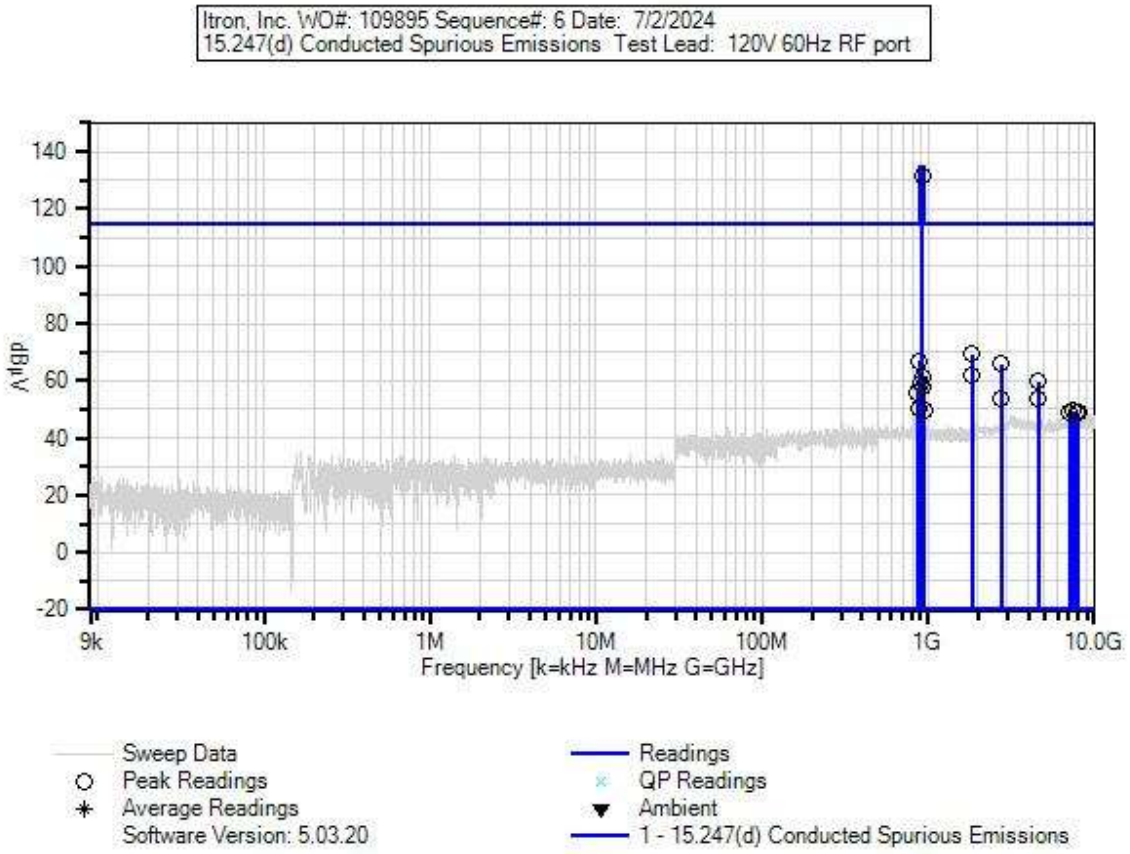
Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

EUT connected directly to spectrum analyzer.
Power level 7B

Mid channel 914MHz

Modulation type 150kbps FSK



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06242	Attenuator	54A-10	2/13/2023	2/13/2025
T2	ANP07211	Cable	32026-29801-29801-18	4/27/2023	4/27/2025
	AN03803	Spectrum Analyzer	E4440A	2/12/2024	2/12/2026

Measurement Data: Reading listed by margin. Test Lead: RF port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	914.268M	121.3	+9.8	+0.3			+0.0	131.4	134.6	-3.2	RF po
2	1827.404M	59.1	+9.8	+0.3			+0.0	69.2	114.6	-45.4	RF po
3	889.311M	56.7	+9.8	+0.3			+0.0	66.8	114.6	-47.8	RF po
4	2741.871M	55.8	+9.8	+0.4			+0.0	66.0	114.6	-48.6	RF po
5	1827.943M	51.9	+9.8	+0.3			+0.0	62.0	114.6	-52.6	RF po
6	937.757M	51.0	+9.8	+0.3			+0.0	61.1	114.6	-53.5	RF po
7	4569.756M	49.4	+9.9	+0.4			+0.0	59.7	114.6	-54.9	RF po
8	898.119M	49.4	+9.8	+0.3			+0.0	59.5	114.6	-55.1	RF po
9	930.417M	47.4	+9.8	+0.3			+0.0	57.5	114.6	-57.1	RF po
10	865.822M	45.9	+9.8	+0.3			+0.0	56.0	114.6	-58.6	RF po
11	2739.205M	43.4	+9.8	+0.4			+0.0	53.6	114.6	-61.0	RF po
12	4570.181M	43.2	+9.9	+0.4			+0.0	53.5	114.6	-61.1	RF po
13	874.630M	40.5	+9.8	+0.3			+0.0	50.6	114.6	-64.0	RF po
14	942.161M	39.7	+9.8	+0.3			+0.0	49.8	114.6	-64.8	RF po
15	7440.678M	38.8	+9.9	+0.6			+0.0	49.3	114.6	-65.3	RF po
16	8003.409M	38.4	+9.8	+0.7			+0.0	48.9	114.6	-65.7	RF po
17	7800.967M	38.1	+9.9	+0.8			+0.0	48.8	114.6	-65.8	RF po
18	7115.828M	38.2	+9.9	+0.7			+0.0	48.8	114.6	-65.8	RF po

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 #:	**109895**	Date:	7/2/2024
Test Type:	**Conducted Emissions**	Time:	15:13:49
Tested By:	C. Plumadore	Sequence#:	7
Software:	EMITest 5.03.20		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

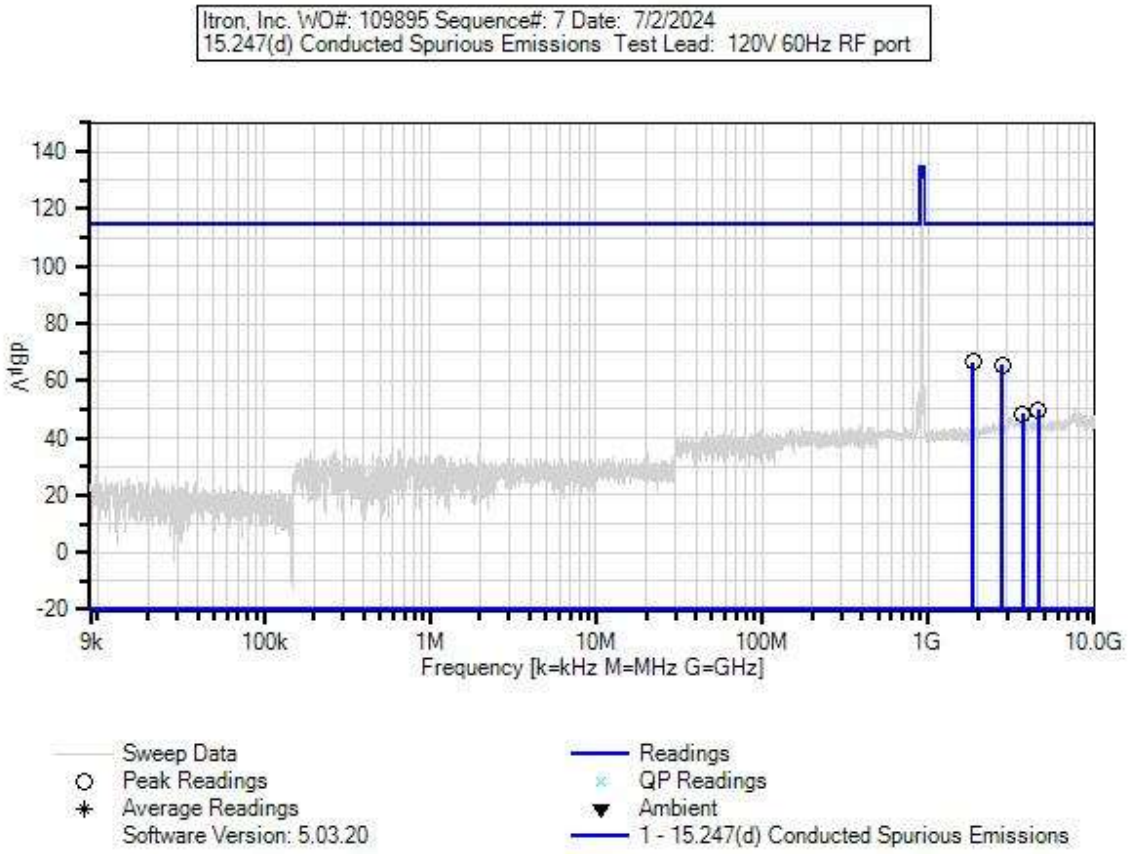
Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

EUT connected directly to spectrum analyzer
Power level 7B

High channel 924.4MHz

Modulation type 150kbps FSK



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06242	Attenuator	54A-10	2/13/2023	2/13/2025
T2	ANP07211	Cable	32026-29801-29801-18	4/27/2023	4/27/2025
	AN03803	Spectrum Analyzer	E4440A	2/12/2024	2/12/2026

Measurement Data: Reading listed by margin. Test Lead: RF port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1848.880M	56.4	+9.8	+0.3			+0.0	66.5	114.6	-48.1	RF po
2	2773.094M	55.4	+9.8	+0.4			+0.0	65.6	114.6	-49.0	RF po
3	4621.801M	39.4	+9.9	+0.4			+0.0	49.7	114.6	-64.9	RF po
4	3697.439M	38.2	+9.9	+0.5			+0.0	48.6	114.6	-66.0	RF po

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 #:	**109895**	Date:	7/22/2024
Test Type:	**Conducted Emissions**	Time:	12:04:23
Tested By:	C. Plumadore	Sequence#:	10
Software:	EMITest 5.03.20		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 4			

Support Equipment:

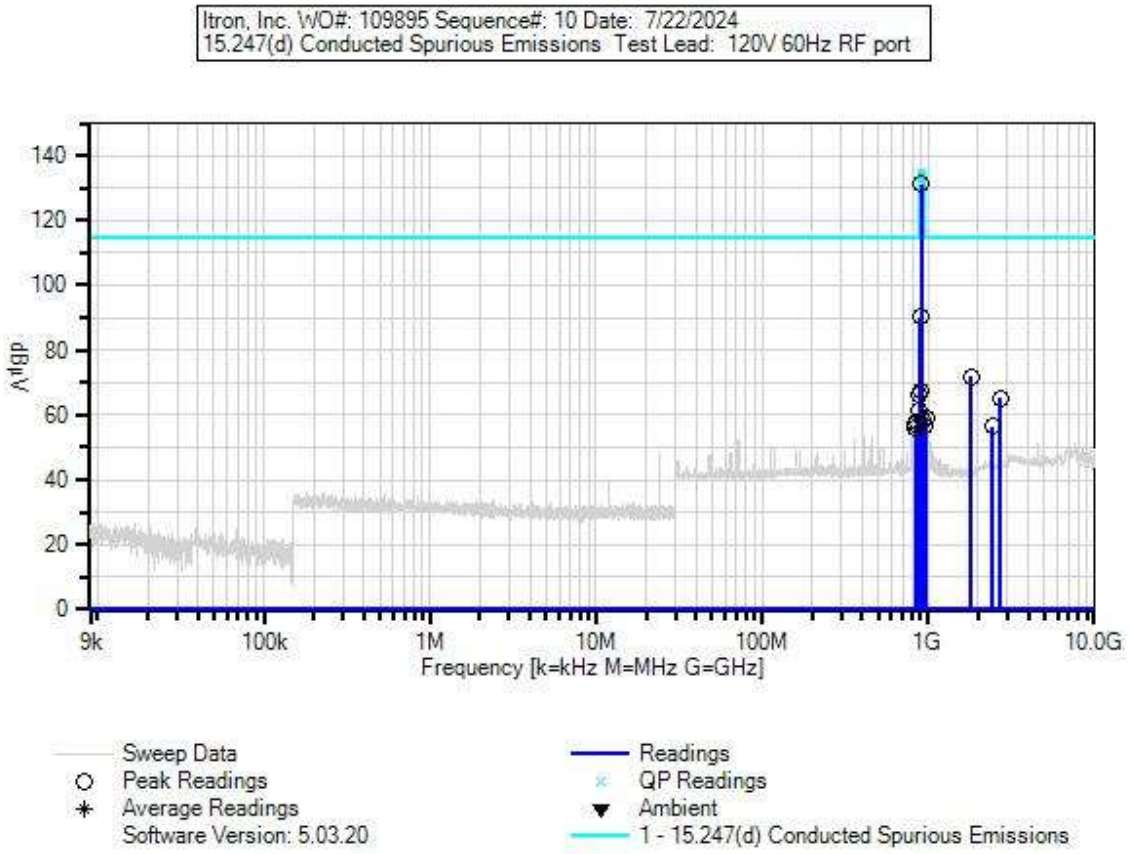
Device	Manufacturer	Model #	S/N
Configuration 4			

Test Conditions / Notes:

EUT connected directly to spectrum analyzer
Power level 7B

Low channel 904.8MHz

Modulation type 150kbps FSK



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06242	Attenuator	54A-10	2/13/2023	2/13/2025
T2	ANP07211	Cable	32026-29801-29801-18	4/27/2023	4/27/2025
	AN03803	Spectrum Analyzer	E4440A	2/12/2024	2/12/2026

Measurement Data: Reading listed by margin. Test Lead: RF port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	905.460M	121.2	+9.8	+0.3			+0.0	131.3	135.0	-3.7	RF po
2	901.056M	80.0	+9.8	+0.3			+0.0	90.1	115.0	-24.9	RF po
3	1809.528M	61.6	+9.8	+0.3			+0.0	71.7	115.0	-43.3	RF po
4	892.247M	57.2	+9.8	+0.3			+0.0	67.3	115.0	-47.7	RF po
5	880.503M	56.2	+9.8	+0.3			+0.0	66.3	115.0	-48.7	RF po
6	2715.580M	55.1	+9.8	+0.4			+0.0	65.3	115.0	-49.7	RF po
7	887.843M	51.5	+9.8	+0.3			+0.0	61.6	115.0	-53.4	RF po
8	977.395M	49.2	+9.8	+0.3			+0.0	59.3	115.0	-55.7	RF po
9	928.949M	48.5	+9.8	+0.3			+0.0	58.6	115.0	-56.4	RF po
10	936.289M	48.3	+9.8	+0.3			+0.0	58.4	115.0	-56.6	RF po
11	857.014M	47.8	+9.8	+0.3			+0.0	57.9	115.0	-57.1	RF po
12	832.057M	46.9	+9.8	+0.3			+0.0	57.0	115.0	-58.0	RF po
13	952.438M	46.8	+9.8	+0.3			+0.0	56.9	115.0	-58.1	RF po
14	2426.168M	46.3	+9.8	+0.4			+0.0	56.5	115.0	-58.5	RF po
15	839.397M	46.1	+9.8	+0.3			+0.0	56.2	115.0	-58.8	RF po

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 #:	**109895**	Date:	7/22/2024
Test Type:	**Conducted Emissions**	Time:	12:28:52 PM
Tested By:	C. Plumadore	Sequence#:	11
Software:	EMITest 5.03.20		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 4			

Support Equipment:

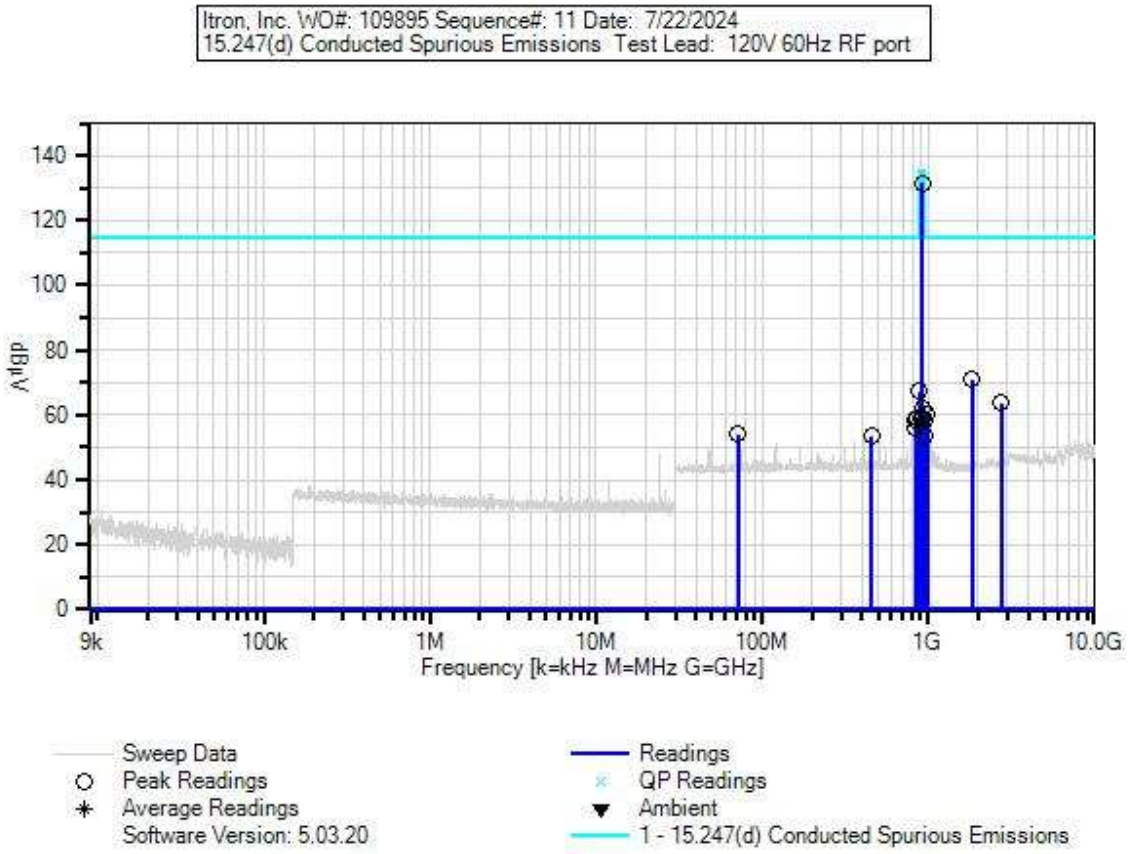
Device	Manufacturer	Model #	S/N
Configuration 4			

Test Conditions / Notes:

EUT connected directly to spectrum analyzer.
Power level 7B

Mid channel 914MHz

Modulation type 150kbps FSK



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06242	Attenuator	54A-10	2/13/2023	2/13/2025
T2	ANP07211	Cable	32026-29801-29801-18	4/27/2023	4/27/2025
	AN03803	Spectrum Analyzer	E4440A	2/12/2024	2/12/2026

Measurement Data: Reading listed by margin. Test Lead: RF port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	914.268M	121.3	+9.8	+0.3			+0.0	131.4	135.0	-3.6	RF po
2	1827.404M	60.9	+9.8	+0.3			+0.0	71.0	115.0	-44.0	RF po
3	889.311M	57.3	+9.8	+0.3			+0.0	67.4	115.0	-47.6	RF po
4	2739.205M	53.5	+9.8	+0.4			+0.0	63.7	115.0	-51.3	RF po
5	930.417M	52.2	+9.8	+0.3			+0.0	62.3	115.0	-52.7	RF po
6	986.203M	49.9	+9.8	+0.3			+0.0	60.0	115.0	-55.0	RF po
7	898.119M	49.0	+9.8	+0.3			+0.0	59.1	115.0	-55.9	RF po
8	936.289M	48.8	+9.8	+0.3			+0.0	58.9	115.0	-56.1	RF po
9	865.822M	48.8	+9.8	+0.3			+0.0	58.9	115.0	-56.1	RF po
10	961.246M	48.5	+9.8	+0.3			+0.0	58.6	115.0	-56.4	RF po
11	842.333M	48.3	+9.8	+0.3			+0.0	58.4	115.0	-56.6	RF po
12	839.397M	45.7	+9.8	+0.3			+0.0	55.8	115.0	-59.2	RF po
13	71.993M	44.1	+9.8	+0.1			+0.0	54.0	115.0	-61.0	RF po
14	946.566M	43.8	+9.8	+0.3			+0.0	53.9	115.0	-61.1	RF po
15	456.037M	43.6	+9.8	+0.2			+0.0	53.6	115.0	-61.4	RF po

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 #:	**109895**	Date:	7/22/2024
Test Type:	**Conducted Emissions**	Time:	12:38:53 PM
Tested By:	C. Plumadore	Sequence#:	12
Software:	EMITest 5.03.20		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 4			

Support Equipment:

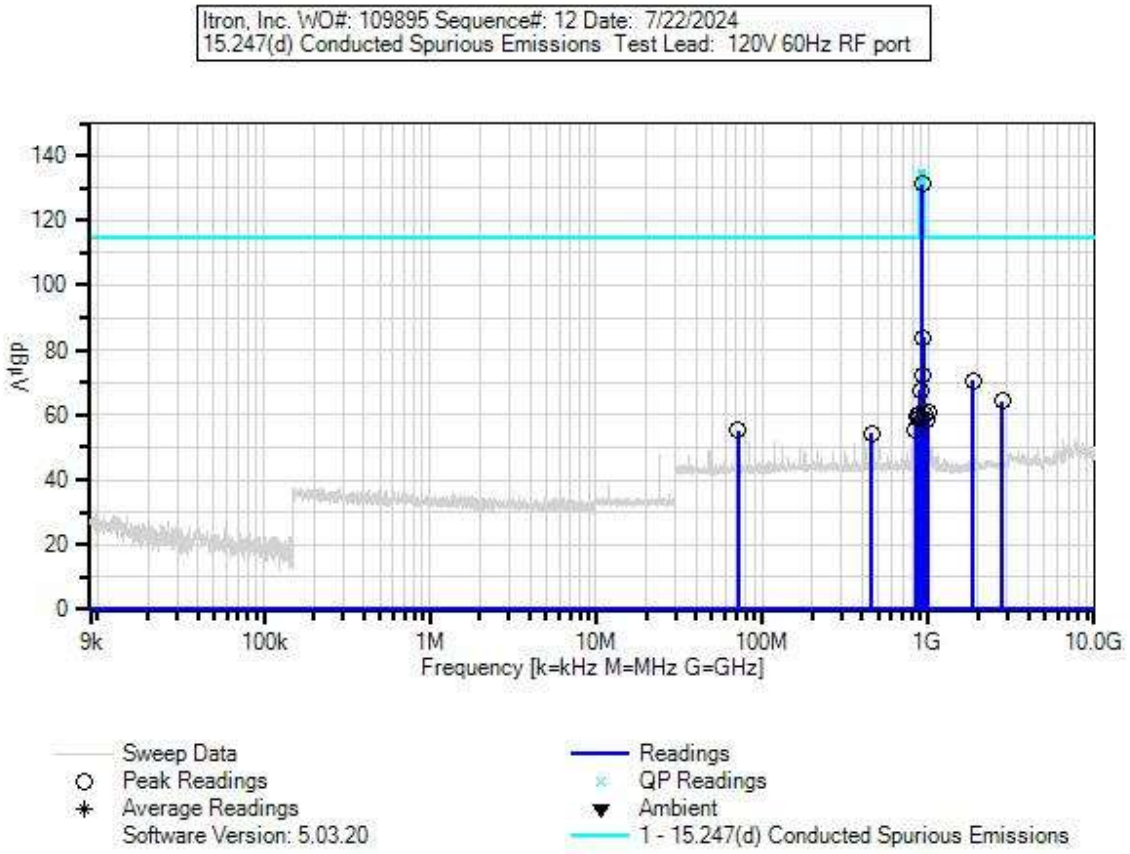
Device	Manufacturer	Model #	S/N
Configuration 4			

Test Conditions / Notes:

EUT connected directly to spectrum analyzer
Power level 7B

High channel 924.4MHz

Modulation type 150kbps FSK



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06242	Attenuator	54A-10	2/13/2023	2/13/2025
T2	ANP07211	Cable	32026-29801-29801-18	4/27/2023	4/27/2025
	AN03803	Spectrum Analyzer	E4440A	2/12/2024	2/12/2026

Measurement Data: Reading listed by margin. Test Lead: RF port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	924.545M	121.2	+9.8	+0.3			+0.0	131.3	135.0	-3.7	RF po
2	928.949M	73.8	+9.8	+0.3			+0.0	83.9	115.0	-31.1	RF po
3	936.289M	62.2	+9.8	+0.3			+0.0	72.3	115.0	-42.7	RF po
4	1849.425M	60.4	+9.8	+0.3			+0.0	70.5	115.0	-44.5	RF po
5	901.056M	57.6	+9.8	+0.3			+0.0	67.7	115.0	-47.3	RF po
6	2774.644M	54.1	+9.8	+0.4			+0.0	64.3	115.0	-50.7	RF po
7	996.480M	50.5	+9.8	+0.3			+0.0	60.6	115.0	-54.4	RF po
8	948.034M	50.4	+9.8	+0.3			+0.0	60.5	115.0	-54.5	RF po
9	876.099M	50.2	+9.8	+0.3			+0.0	60.3	115.0	-54.7	RF po
10	852.609M	49.8	+9.8	+0.3			+0.0	59.9	115.0	-55.1	RF po
11	887.843M	49.0	+9.8	+0.3			+0.0	59.1	115.0	-55.9	RF po
12	972.991M	48.5	+9.8	+0.3			+0.0	58.6	115.0	-56.4	RF po
13	839.397M	45.2	+9.8	+0.3			+0.0	55.3	115.0	-59.7	RF po
14	71.993M	45.3	+9.8	+0.1			+0.0	55.2	115.0	-59.8	RF po
15	456.037M	44.5	+9.8	+0.2			+0.0	54.5	115.0	-60.5	RF po

Band Edge

External - Configuration 2

Band Edge Summary – Single Channel Mode				
Frequency (MHz)	Modulation	Measured (dBm)	Limit (dBm)	Results
902	150kbps FSK	84.3	<114.6	Pass
928	150kbps FSK	74.7	<114.6	Pass

Band Edge Summary – Hopping Mode				
Frequency (MHz)	Modulation	Measured (dBµV)	Limit (dBµV)	Results
902	150kbps FSK	80.6	<114.6	Pass
928	150kbps FSK	72.8	<114.6	Pass

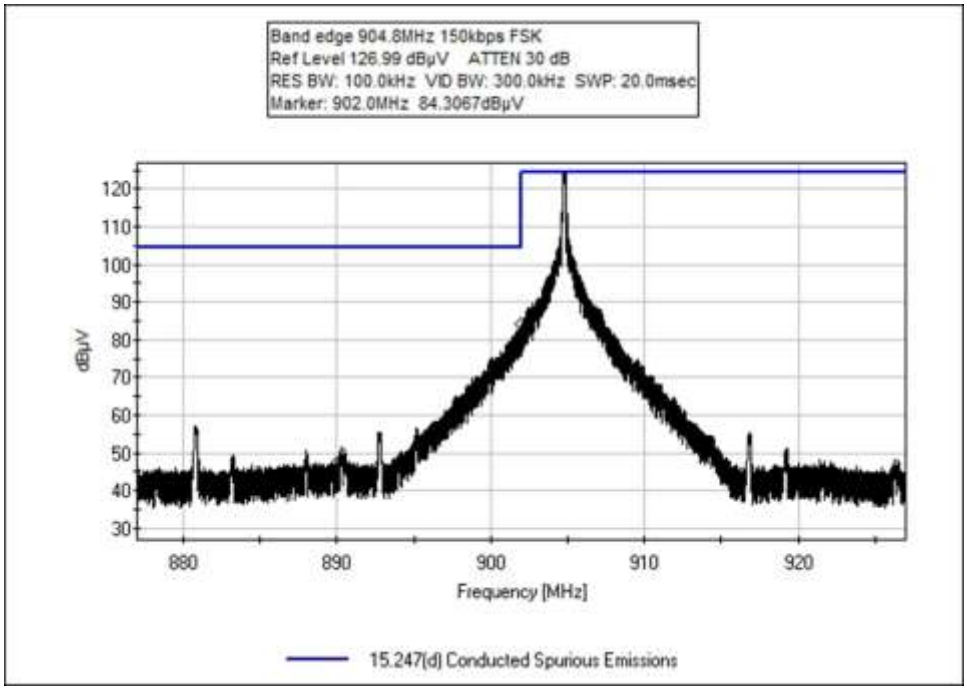
Internal - Configuration 4

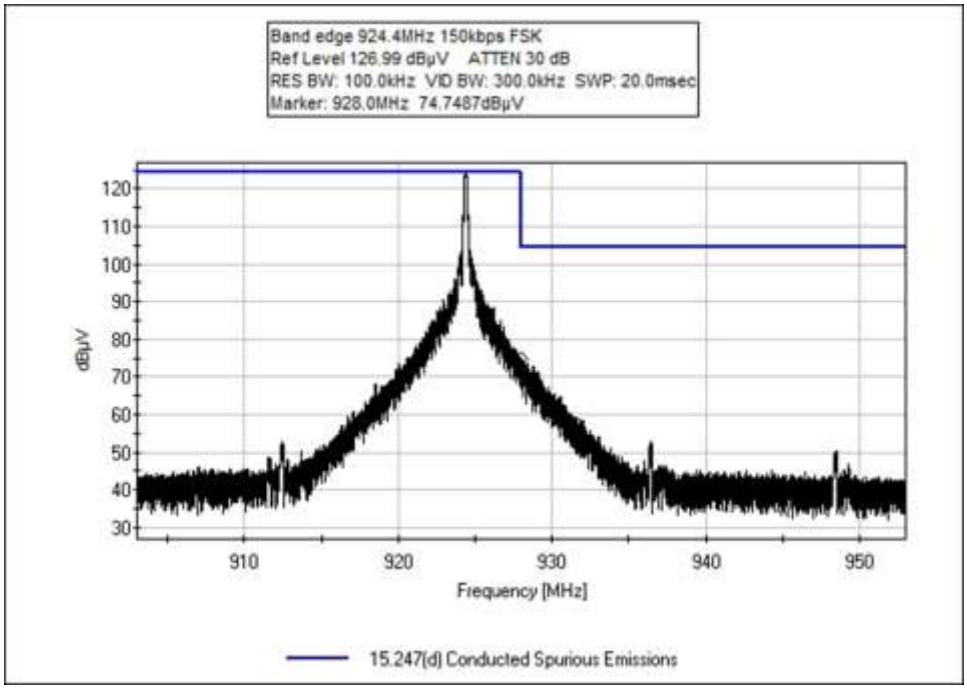
Band Edge Summary – Single Channel Mode				
Frequency (MHz)	Modulation	Measured (dBµV)	Limit (dBµV)	Results
902	150kbps FSK	93.1	<115.0	Pass
928	150kbps FSK	86.1	<115.0	Pass

Band Edge Summary – Hopping Mode				
Frequency (MHz)	Modulation	Measured (dBµV)	Limit (dBµV)	Results
902	150kbps FSK	89.8	<115.0	Pass
928	150kbps FSK	86.1	<115.0	Pass

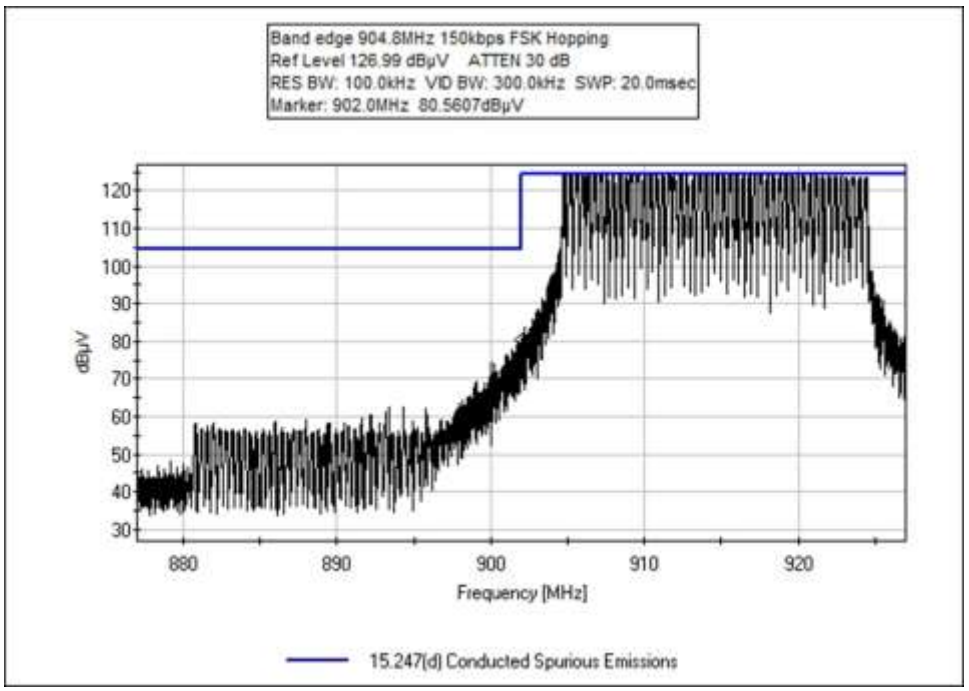
Band Edge Plots

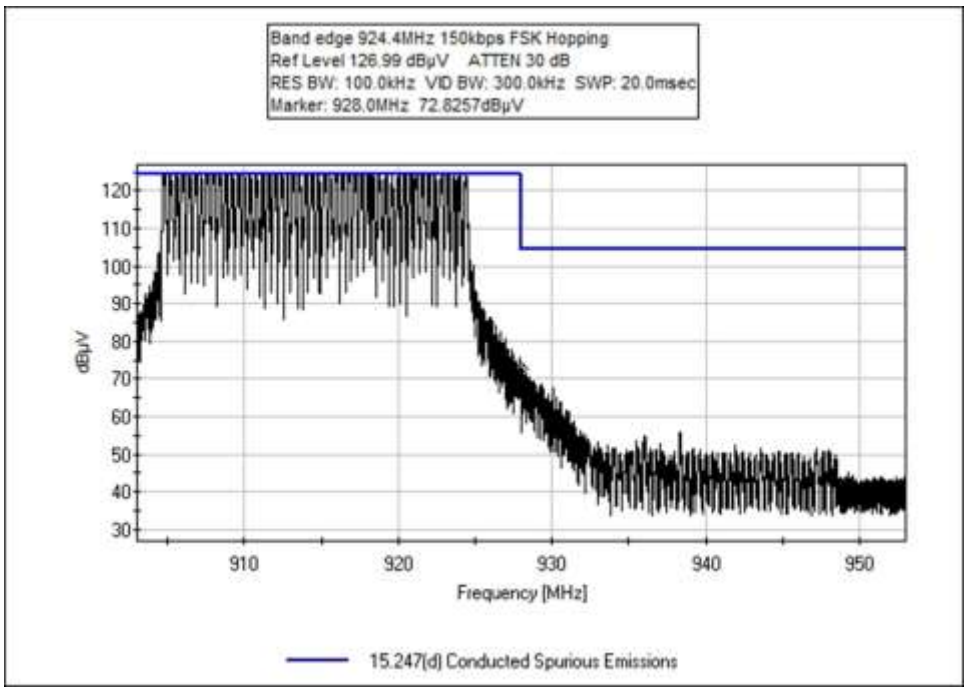
External - Configuration 2
Single Channel



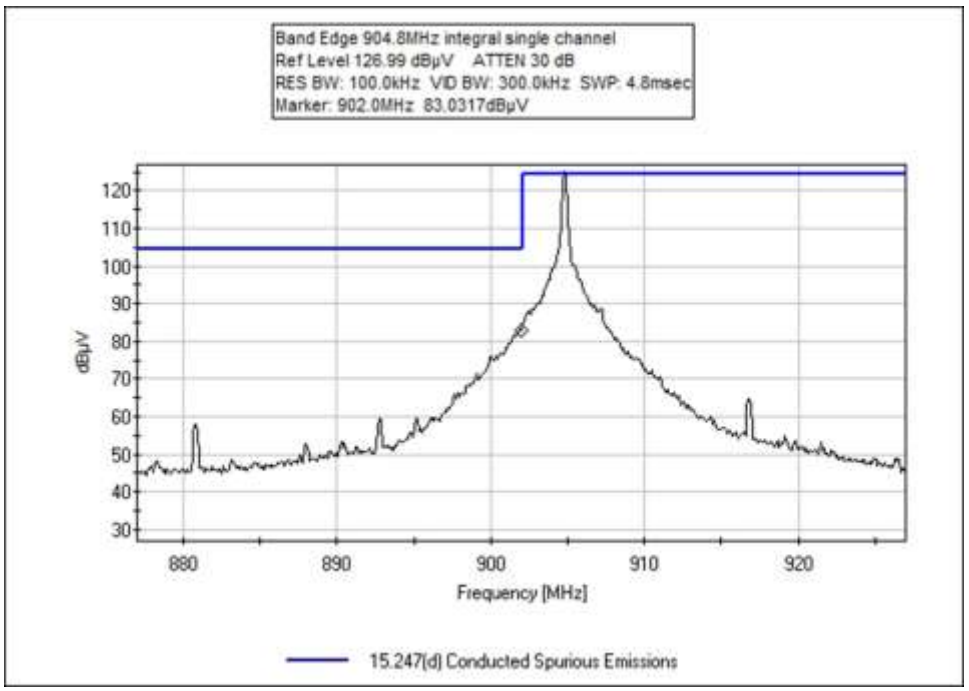


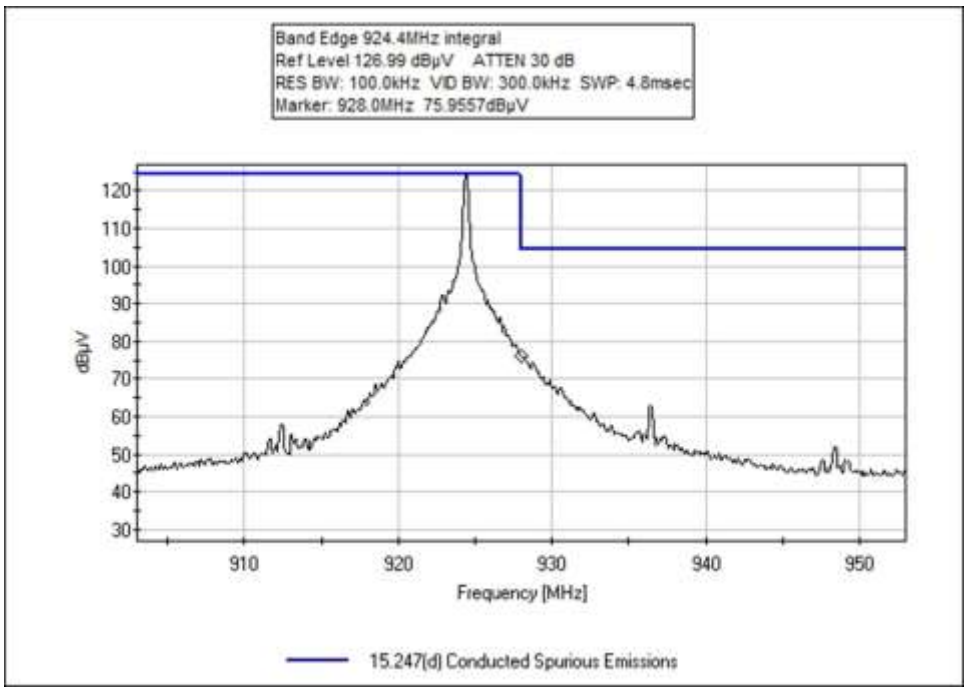
External - Configuration 2
Hopping



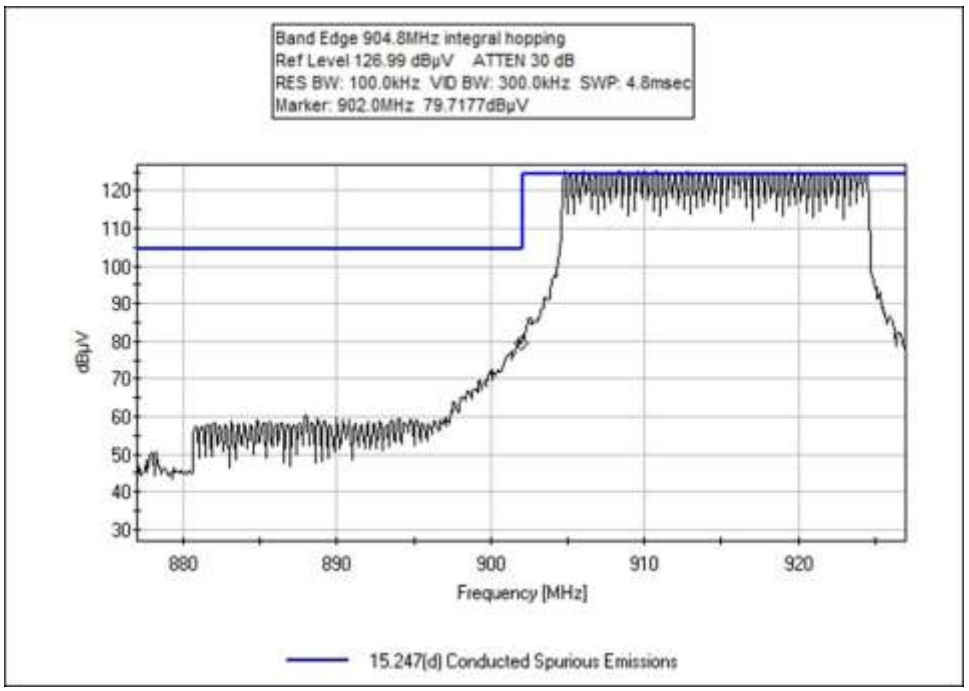


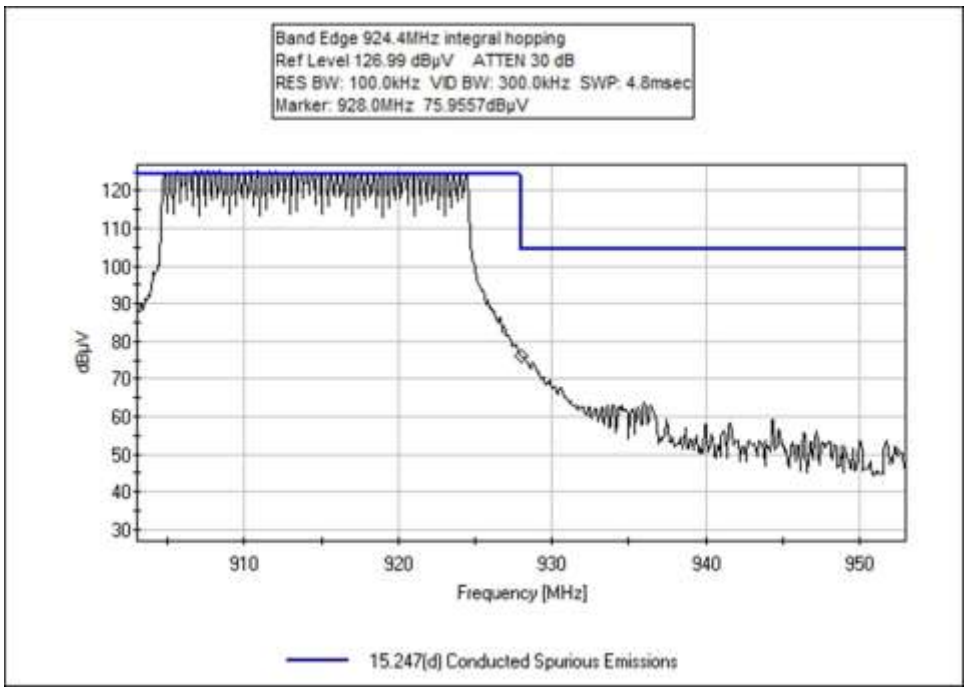
Internal - Configuration 4
Single Channel





Internal - Configuration 4
Hopping





Test Setup / Conditions / 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 #:	**109895**	Date:	7/2/2024
Test Type:	**Conducted Emissions**	Time:	15:17:43
Tested By:	C. Plumadore	Sequence#:	8
Software:	EMITest 5.03.20		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

EUT connected directly to spectrum analyzer.
Power level 7B

Mid channel 914MHz

Modulation type 150kbps FSK

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06242	Attenuator	54A-10	2/13/2023	2/13/2025
T2	ANP07211	Cable	32026-29801-29801-18	4/27/2023	4/27/2025
T3	AN03803	Spectrum Analyzer	E4440A	2/12/2024	2/12/2026

Measurement Data: Reading listed by margin. Test Lead: RF port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	902.000M	84.3	+9.8	+0.3	+0.0		+0.0	94.4	114.6	-20.2	RF po
									single channel		
2	902.000M	80.6	+9.8	+0.3	+0.0		+0.0	90.7	114.6	-23.9	RF po
									hopping		
3	928.000M	74.7	+9.8	+0.3	+0.0		+0.0	84.8	114.6	-29.8	RF po
									single channel		
4	928.000M	72.8	+9.8	+0.3	+0.0		+0.0	82.9	114.6	-31.7	RF po

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 #:	**109895**	Date:	7/22/2024
Test Type:	**Conducted Emissions**	Time:	11:10:21
Tested By:	C. Plumadore	Sequence#:	9
Software:	EMITest 5.03.20		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 4			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 4			

Test Conditions / Notes:

EUT connected directly to spectrum analyzer.
Power level 7B

Mid channel 914MHz

Modulation type 150kbps FSK

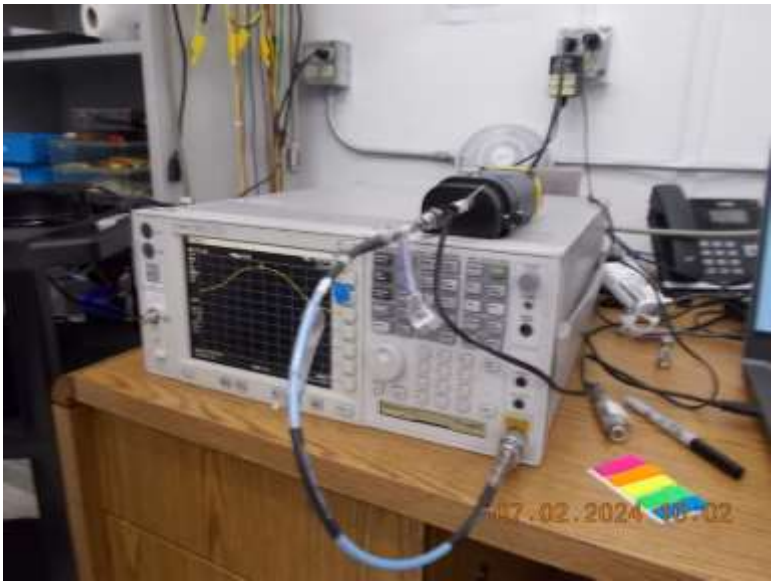
Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06242	Attenuator	54A-10	2/13/2023	2/13/2025
T2	ANP07211	Cable	32026-29801-29801-18	4/27/2023	4/27/2025
T3	AN03803	Spectrum Analyzer	E4440A	2/12/2024	2/12/2026

Measurement Data: Reading listed by margin. Test Lead: RF port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	902.000M	83.0	+9.8	+0.3	+0.0		+0.0	93.1	115.0	-21.9	RF po
									single channel		
2	902.000M	79.7	+9.8	+0.3	+0.0		+0.0	89.8	115.0	-25.2	RF po
									hopping		
3	928.000M	76.0	+9.8	+0.3	+0.0		+0.0	86.1	115.0	-28.9	RF po
									single channel		
4	928.000M	76.0	+9.8	+0.3	+0.0		+0.0	86.1	115.0	-28.9	RF po
									hopping		

Test Setup Photo(s)



15.247(d) Radiated Emissions & Band Edge

Test Setup / Conditions / 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) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/3/2024
Test Type:	**Radiated Scan**	Time:	15:28:18
Tested By:	C. Plumadore	Sequence#:	6
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

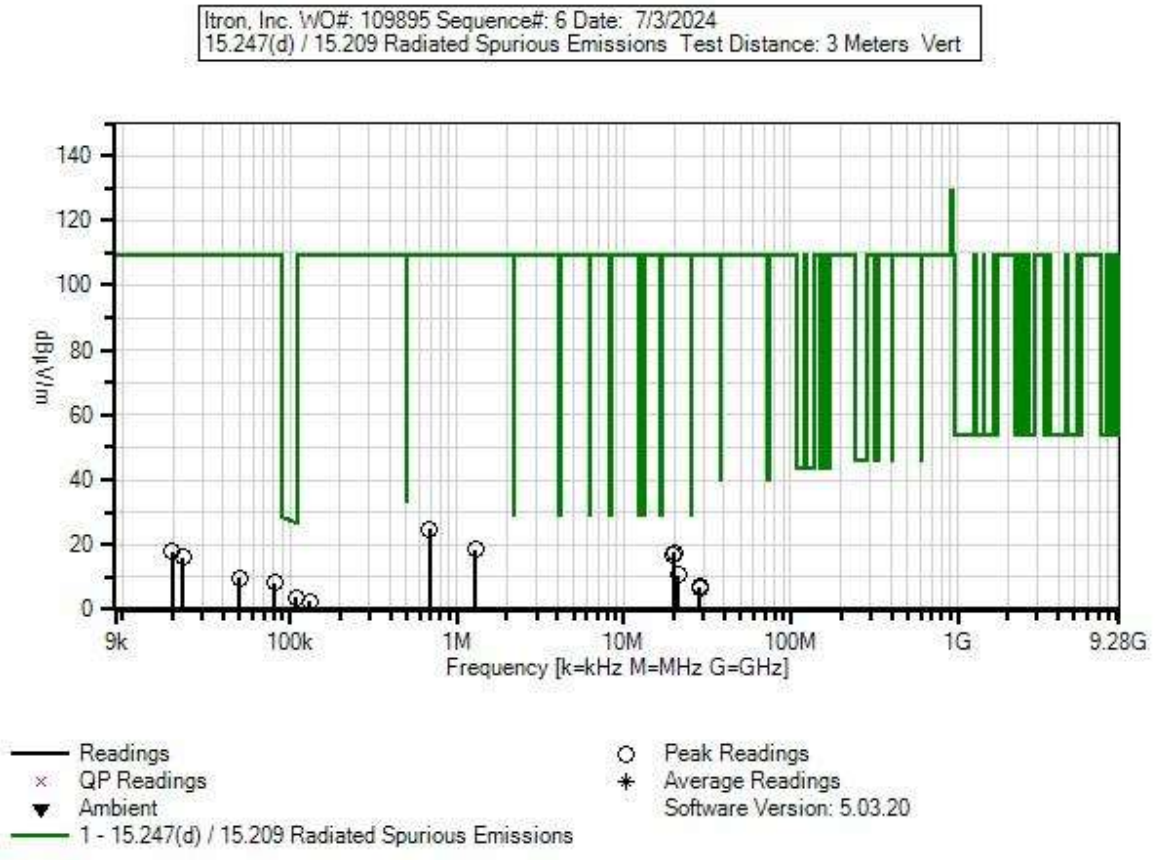
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 23.5°C
Humidity: 45.2%
Pressure: 102.2 kPa

Test Method: ANSI C63.10 (2020)

Frequency: 9kHz-30MHz

Power level 7B



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T2	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
T3	AN00052	Loop Antenna	6502	4/19/2024	4/19/2026
	ANUNITCF	Unit Conversion	dBuV/m to dBuA/m	1/1/2022	1/1/2032

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	109.674k	34.5	+0.0	+0.0	+9.3		-40.0 360	3.8	26.8	-23.0	perp 119
2	687.000k	35.3	+0.0	+0.1	+9.4		-20.0	24.8	109.5	-84.7	perp 119
3	1.284M	29.1	+0.0	+0.1	+9.4		-20.0 360	18.6	109.5	-90.9	paral 119
4	19.716k	45.1	+0.0	+0.0	+12.9		-40.0 360	18.0	109.5	-91.5	perp 119
5	20.120M	30.3	+0.0	+0.2	+7.0		-20.0	17.5	109.5	-92.0	perp 119
6	19.881M	29.7	+0.0	+0.2	+7.0		-20.0 360	16.9	109.5	-92.6	paral 119
7	22.818k	43.9	+0.0	+0.0	+12.2		-40.0	16.1	109.5	-93.4	paral 119
8	21.164M	23.4	+0.0	+0.2	+7.1		-20.0	10.7	109.5	-98.8	perp 119
9	49.749k	39.8	+0.0	+0.0	+10.0		-40.0 360	9.8	109.5	-99.7	perp 119
10	81.051k	39.0	+0.0	+0.0	+9.4		-40.0	8.4	109.5	-101.1	paral 119
11	28.388M	21.9	+0.0	+0.2	+4.9		-20.0 360	7.0	109.5	-102.5	paral 119
12	28.358M	21.6	+0.0	+0.2	+4.9		-20.0	6.7	109.5	-102.8	perp 119
13	132.375k	33.2	+0.0	+0.0	+9.3		-40.0	2.5	109.5	-107.0	paral 119
14	148.449k	28.1	+0.0	+0.0	+9.2		-40.0 360	-2.7	109.5	-112.2	perp 119

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/3/2024
Test Type:	**Radiated Scan**	Time:	10:30:11
Tested By:	C. Plumadore	Sequence#:	3
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

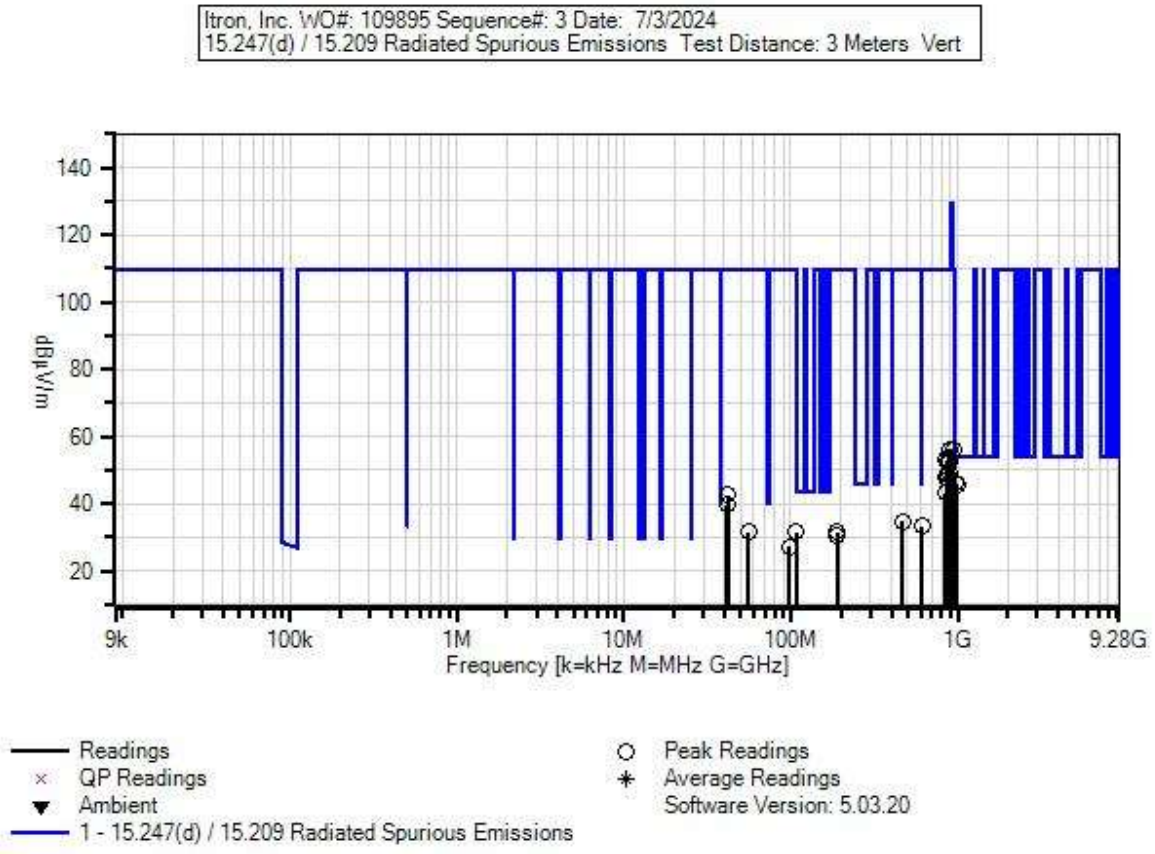
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 22.4°C
Humidity: 47%
Pressure: 102.3 kPa

Test Method: ANSI C63.10 (2020)

Frequency: 30-1000MHz

Power level 7B



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03824	Biconilog Antenna	3142E	5/9/2023	5/9/2025
T2	ANP05333	Cable	Heliax	8/8/2023	8/8/2025
T3	ANP05360	Cable	RG214	8/8/2023	8/8/2025
T4	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T5	AN02307	Preamp	8447D	8/9/2023	8/9/2025
T6	ANP08072	Band Reject Filter	BRC50722	10/3/2023	10/3/2025

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

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	960.000M	36.6	+31.1 -26.9	+1.6 +0.8	+2.6	+0.4	+0.0	46.2	54.0 924.4MHz	-7.8	Vert 150
2	986.400M	36.8	+30.4 -26.8	+1.6 +0.6	+2.6	+0.4	+0.0	45.6	54.0 914MHz	-8.4	Vert 99
3	108.020M	43.6	+14.0 -27.5	+0.5 +0.1	+0.7	+0.1	+0.0	31.5	43.5 924.4MHz	-12.0	Vert 99
4	614.000M	29.4	+27.4 -27.9	+1.2 +0.4	+2.3	+0.3	+0.0 360	33.1	46.0 924.4MHz	-12.9	Vert 99
5	890.400M	45.7	+28.9 -27.2	+1.5 +4.3	+2.5	+0.4	+0.0	56.1	109.5 914MHz	-53.4	Vert 99
6	937.900M	38.7	+31.6 -27.0	+1.5 +8.3	+2.6	+0.4	+0.0	56.1	109.5 914MHz	-53.4	Vert 99
7	852.450M	45.7	+29.6 -27.3	+1.4 +0.6	+2.5	+0.4	+0.0	52.9	109.5 924.4MHz	-56.6	Horiz 99
8	888.000M	43.2	+28.9 -27.2	+1.5 +3.2	+2.5	+0.4	+0.0	52.5	109.5 924.4MHz	-57.0	Horiz 99
9	876.400M	45.2	+28.9 -27.2	+1.5 +1.0	+2.5	+0.4	+0.0	52.3	109.5 924.4MHz	-57.2	Horiz 99
10	887.950M	39.6	+28.9 -27.2	+1.5 +3.1	+2.5	+0.4	+0.0 360	48.8	109.5 924.4MHz	-60.7	Vert 120
11	864.000M	41.4	+29.2 -27.3	+1.4 +0.7	+2.5	+0.4	+0.0	48.3	109.5 924.4MHz	-61.2	Vert 99
12	852.350M	40.5	+29.6 -27.3	+1.4 +0.6	+2.5	+0.4	+0.0 360	47.7	109.5 924.4MHz	-61.8	Vert 120
13	876.350M	40.0	+28.9 -27.2	+1.5 +1.0	+2.5	+0.4	+0.0 360	47.1	109.5 924.4MHz	-62.4	Vert 120
14	841.900M	35.7	+29.8 -27.3	+1.4 +0.5	+2.5	+0.4	+0.0	43.0	109.5 914MHz	-66.5	Vert 99
15	42.220M	54.2	+15.1 -27.7	+0.3 +0.1	+0.4	+0.0	+0.0	42.4	109.5 924.4MHz	-67.1	Vert 99
16	41.600M	51.2	+15.4 -27.7	+0.3 +0.1	+0.4	+0.0	+0.0	39.7	109.5 914MHz	-69.8	Vert 99
17	466.500M	34.8	+24.1 -27.8	+1.1 +0.3	+1.8	+0.3	+0.0	34.6	109.5 914MHz	-74.9	Vert 99
18	55.850M	45.9	+12.2 -27.7	+0.3 +0.1	+0.5	+0.1	+0.0 360	31.4	109.5 924.4MHz	-78.1	Horiz 150
19	189.330M	41.0	+15.4 -27.1	+0.7 +0.2	+1.0	+0.2	+0.0 360	31.4	109.5 924.4MHz	-78.1	Horiz 150
20	189.330M	40.0	+15.4 -27.1	+0.7 +0.2	+1.0	+0.2	+0.0	30.4	109.5 924.4MHz	-79.1	Vert 99
21	98.150M	39.5	+13.6 -27.5	+0.5 +0.1	+0.7	+0.1	+0.0 360	27.0	109.5 924.4MHz	-82.5	Horiz 150

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/1/2024
Test Type:	**Radiated Scan**	Time:	17:11:23
Tested By:	C. Plumadore	Sequence#:	5
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

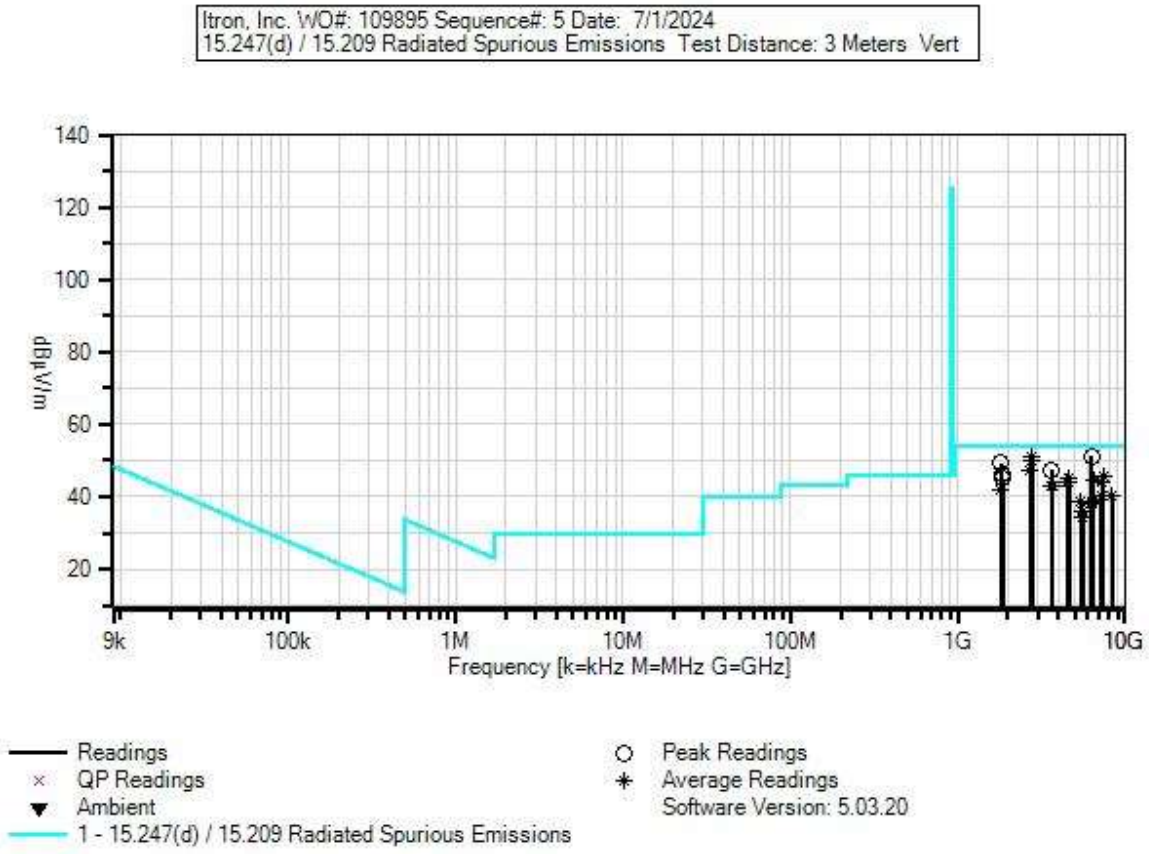
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 22.8°C
Humidity: 47.2%
Pressure: 101.8kPa

Test Method: ANSI C63.10 (2020)

Frequency: 1-10GHz

Power level 7B



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03540	Preamp	83017A	3/24/2023	3/24/2025
T2	AN02374ANSI	Horn Antenna	RGA-60	5/26/2023	5/26/2025
T3	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T4	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
T5	ANP07504	Cable	CLU40-KMKM-02.00F	1/19/2024	1/19/2026
T6	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T7	AN03170	High Pass Filter	HM1155-11SS	9/27/2023	9/27/2025

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

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	6333.275M	43.4	-34.2 +0.6	+34.7 +0.0	+1.2 +0.5	+5.0	+0.0	51.2	54.0 904.8 MHz	-2.8	Horiz
2	2741.890M Ave	51.7	-34.5 +0.5	+29.3 +0.0	+0.8 +0.3	+2.8	+0.0	50.9	54.0 914MHz	-3.1	Horiz
^	2741.890M	54.6	-34.5 +0.5	+29.3 +0.0	+0.8 +0.3	+2.8	+0.0	53.8	54.0 914MHz	-0.2	Horiz
4	2773.165M Ave	50.6	-34.5 +0.5	+29.3 +0.0	+0.8 +0.3	+2.8	+0.0	49.8	54.0 924.4MHz	-4.2	Horiz
^	2773.165M	53.6	-34.5 +0.5	+29.3 +0.0	+0.8 +0.3	+2.8	+0.0	52.8	54.0 924.4MHz	-1.2	Horiz
6	1809.460M	53.2	-35.1 +0.4	+27.4 +0.0	+0.6 +0.4	+2.3	+0.0	49.2	54.0	-4.8	Vert
7	3619.230M	44.8	-34.0 +0.4	+31.4 +0.0	+0.9 +0.4	+3.4	+0.0	47.3	54.0 904.8 MHz	-6.7	Horiz
8	2714.160M Ave	48.0	-34.5 +0.5	+29.3 +0.0	+0.8 +0.3	+2.8	+0.0	47.2	54.0 904.8 MHz	-6.8	Horiz
^	2714.160M	54.0	-34.5 +0.5	+29.3 +0.0	+0.8 +0.3	+2.8	+0.0	53.2	54.0 904.8 MHz	-0.8	Horiz
10	1827.875M	50.2	-35.1 +0.4	+27.5 +0.0	+0.6 +0.4	+2.3	+0.0	46.3	54.0 914MHz	-7.7	Vert
11	7395.250M Ave	35.9	-35.1 +0.6	+37.3 +0.0	+1.5 +0.5	+5.0	+0.0	45.7	54.0 924.4 Mhz	-8.3	Horiz
^	7395.250M	46.3	-35.1 +0.6	+37.3 +0.0	+1.5 +0.5	+5.0	+0.0	56.1	54.0 924.4Mhz	+2.1	Horiz
13	4569.640M Ave	40.8	-33.8 +0.6	+32.2 +0.0	+1.1 +0.4	+3.9	+0.0	45.2	54.0 914MHz	-8.8	Horiz
^	4569.640M	48.7	-33.8 +0.6	+32.2 +0.0	+1.1 +0.4	+3.9	+0.0	53.1	54.0 914MHz	-0.9	Horiz
15	1848.625M	48.5	-35.0 +0.4	+27.7 +0.0	+0.6 +0.4	+2.3	+0.0	44.9	54.0 924.4MHz	-9.1	Vert
16	6470.850M Ave	36.8	-34.3 +0.5	+34.7 +0.0	+1.3 +0.6	+5.2	+0.0	44.8	54.0 924.4MHz	-9.2	Horiz
^	6470.850M	45.9	-34.3 +0.5	+34.7 +0.0	+1.3 +0.6	+5.2	+0.0	53.9	54.0 924.4MHz	-0.1	Horiz
18	4524.135M Ave	39.7	-33.8 +0.7	+32.1 +0.0	+1.0 +0.4	+3.8	+0.0	43.9	54.0 904.8 MHz	-10.1	Vert
^	4524.135M	48.1	-33.8 +0.7	+32.1 +0.0	+1.0 +0.4	+3.8	+0.0	52.3	54.0 904.8 MHz	-1.7	Vert
20	7311.555M Ave	34.4	-35.0 +0.5	+37.1 +0.0	+1.5 +0.5	+4.9	+0.0	43.9	54.0 914MHz	-10.1	Vert
^	7311.555M	46.4	-35.0 +0.5	+37.1 +0.0	+1.5 +0.5	+4.9	+0.0	55.9	54.0 914MHz	+1.9	Vert
22	4622.075M Ave	39.3	-33.8 +0.5	+32.4 +0.0	+1.1 +0.5	+3.9	+0.0	43.9	54.0 924.4MHz	-10.1	Horiz
^	4622.075M	47.0	-33.8 +0.5	+32.4 +0.0	+1.1 +0.5	+3.9	+0.0	51.6	54.0 924.4MHz	-2.4	Horiz

24	3655.940M Ave	40.6	-34.0 +0.4	+31.4 +0.0	+0.9 +0.3	+3.4	+0.0	43.0	54.0 914MHz	-11.0	Horiz
^	3655.940M	47.5	-34.0 +0.4	+31.4 +0.0	+0.9 +0.3	+3.4	+0.0	49.9	54.0 914MHz	-4.1	Horiz
26	3697.435M Ave	40.0	-33.9 +0.5	+31.6 +0.0	+0.9 +0.3	+3.4	+0.0	42.8	54.0 924.4MHz	-11.2	Horiz
^	3697.435M	47.2	-33.9 +0.5	+31.6 +0.0	+0.9 +0.3	+3.4	+0.0	50.0	54.0 924.4MHz	-4.0	Horiz
28	1809.600M Ave	45.9	-35.1 +0.4	+27.4 +0.0	+0.6 +0.4	+2.3	+0.0	41.9	54.0 904.8 MHz	-12.1	Vert
29	7238.800M Ave	31.0	-35.0 +0.5	+36.9 +0.0	+1.4 +0.5	+4.9	+0.0	40.2	54.0 904.8 MHz	-13.8	Horiz
^	7238.800M	44.1	-35.0 +0.5	+36.9 +0.0	+1.4 +0.5	+4.9	+0.0	53.3	54.0 904.8 MHz	-0.7	Horiz
31	8319.650M Ave	28.2	-35.3 +1.0	+38.3 +0.0	+1.8 +0.7	+5.3	+0.0	40.0	54.0 924.4MHz	-14.0	Horiz
^	8319.650M	43.0	-35.3 +1.0	+38.3 +0.0	+1.8 +0.7	+5.3	+0.0	54.8	54.0 924.4MHz	+0.8	Horiz
33	5428.610M Ave	31.6	-33.8 +0.5	+34.4 +0.0	+1.2 +0.4	+4.2	+0.0	38.5	54.0 904.8 MHz	-15.5	Horiz
^	5428.610M	42.4	-33.8 +0.5	+34.4 +0.0	+1.2 +0.4	+4.2	+0.0	49.3	54.0 904.8 MHz	-4.7	Horiz
35	6398.365M Ave	30.4	-34.2 +0.6	+34.7 +0.0	+1.3 +0.5	+5.1	+0.0	38.4	54.0 914MHz	-15.6	Horiz
^	6398.365M	42.5	-34.2 +0.6	+34.7 +0.0	+1.3 +0.5	+5.1	+0.0	50.5	54.0 914MHz	-3.5	Horiz
37	6333.275M Ave	30.4	-34.2 +0.6	+34.7 +0.0	+1.2 +0.5	+5.0	+0.0	38.2	54.0 904.8 MHz	-15.8	Vert
38	5484.560M Ave	28.9	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	35.8	54.0 914MHz	-18.2	Horiz
^	5484.560M	43.0	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	49.9	54.0 914MHz	-4.1	Horiz
40	5547.200M Ave	27.5	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	34.4	54.0 924.4MHz	-19.6	Vert
^	5547.200M	42.2	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	49.1	54.0 924.4MHz	-4.9	Vert

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/3/2024
Test Type:	**Radiated Scan**	Time:	14:58:14
Tested By:	C. Plumadore	Sequence#:	5
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

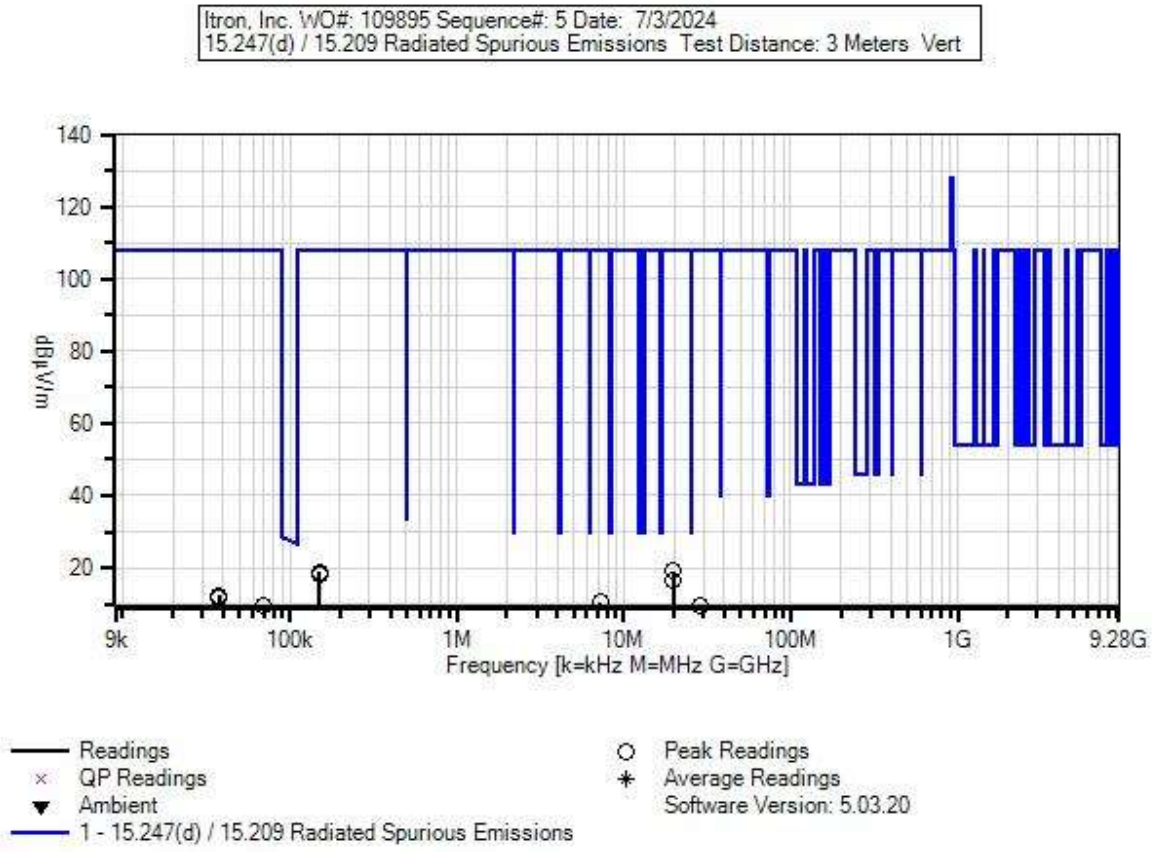
Test Conditions / Notes:

Test Environment Conditions
Temperature: 23.5°C
Humidity: 45.2%
Pressure: 102.2 kPa

Test Method: ANSI C63.10 (2020)

Frequency: 9kHz-30MHz

Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T2	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
T3	AN00052	Loop Antenna	6502	4/19/2024	4/19/2026

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	19.702M	31.9	+0.0	+0.2	+7.1		-20.0 360	19.2	108.0	-88.8	perp 119
2	150.000k	49.6	+0.0	+0.0	+9.2		-40.0 360	18.8	108.0	-89.2	perp 119
3	150.000k	49.0	+0.0	+0.0	+9.2		-40.0	18.2	108.0	-89.8	paral 119
4	19.821M	29.5	+0.0	+0.2	+7.1		-20.0	16.8	108.0	-91.2	paral 119
5	37.764k	42.0	+0.0	+0.0	+10.5		-40.0 360	12.5	108.0	-95.5	paral 119
6	37.623k	41.3	+0.0	+0.0	+10.5		-40.0	11.8	108.0	-96.2	perp 119
7	7.254M	21.0	+0.0	+0.2	+9.2		-20.0 360	10.4	108.0	-97.6	perp 119
8	28.508M	24.6	+0.0	+0.2	+4.8		-20.0	9.6	108.0	-98.4	paral 119
9	68.643k	40.0	+0.0	+0.0	+9.5		-40.0 360	9.5	108.0	-98.5	paral 119
10	28.866M	23.7	+0.0	+0.2	+4.5		-20.0 360	8.4	108.0	-99.6	perp 119
11	25.134M	20.6	+0.0	+0.2	+7.2		-20.0 360	8.0	108.0	-100.0	perp 119
12	6.329M	17.7	+0.0	+0.1	+9.2		-20.0 360	7.0	108.0	-101.0	perp 119
13	112.212k	35.8	+0.0	+0.0	+9.3		-40.0 360	5.1	108.0	-102.9	paral 119

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/3/2024
Test Type:	**Radiated Scan**	Time:	14:14:07
Tested By:	C. Plumadore	Sequence#:	4
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

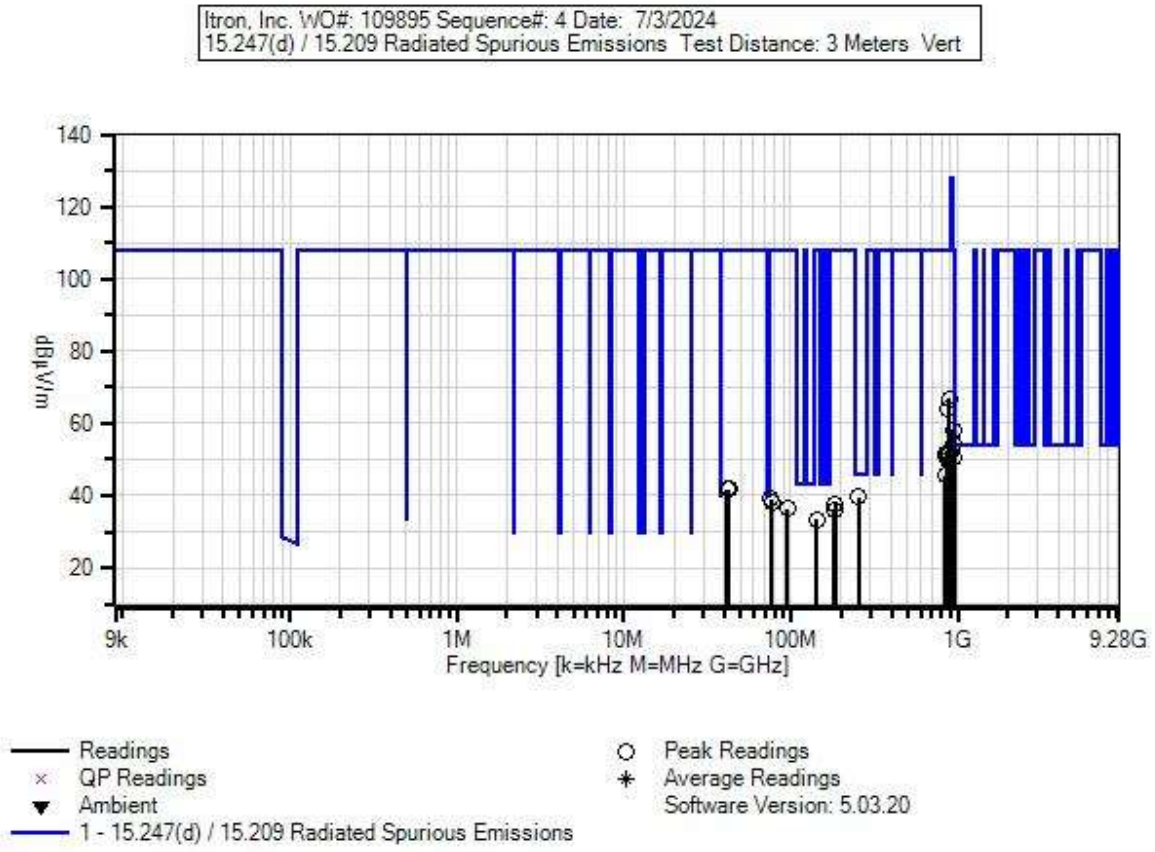
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 23.5°C
Humidity: 45.2%
Pressure: 102.2 kPa

Test Method: ANSI C63.10 (2020)

Frequency: 30MHz-1000MHz

Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03824	Biconilog Antenna	3142E	5/9/2023	5/9/2025
T2	ANP05333	Cable	Heliax	8/8/2023	8/8/2025
T3	ANP05360	Cable	RG214	8/8/2023	8/8/2025
T4	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T5	AN02307	Preamp	8447D	8/9/2023	8/9/2025
	ANP05503	Attenuator	766-10	4/28/2023	4/28/2025
T6	ANP08072	Band Reject Filter	BRC50722	10/3/2023	10/3/2025

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

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	255.000M	45.6	+18.5 -26.8	+0.8 +0.2	+1.2	+0.2	+0.0	39.7	46.0 904.8MHz	-6.3	Vert 150
2	255.000M	45.4	+18.5 -26.8	+0.8 +0.2	+1.2	+0.2	+0.0 360	39.5	46.0 914MHz	-6.5	Vert 119
3	890.400M	56.3	+28.9 -27.2	+1.5 +4.3	+2.5	+0.4	+0.0 360	66.7	108.0 914MHz	-41.3	Vert 119
4	880.700M	56.7	+28.9 -27.2	+1.5 +1.3	+2.5	+0.4	+0.0	64.1	108.0 904.8MHz	-43.9	Vert 150
5	937.900M	40.9	+31.6 -27.0	+1.5 +8.3	+2.6	+0.4	+0.0 360	58.3	108.0 914MHz	-49.7	Vert 119
6	948.600M	44.0	+31.6 -27.0	+1.5 +1.1	+2.6	+0.4	+0.0 360	54.2	108.0 924.4 MHz	-53.8	Vert 119
7	852.600M	44.5	+29.6 -27.3	+1.4 +0.6	+2.5	+0.4	+0.0 360	51.7	108.0 924.4 MHz	-56.3	Vert 119
8	888.400M	42.3	+28.9 -27.2	+1.5 +3.3	+2.5	+0.4	+0.0 360	51.7	108.0 924.4 MHz	-56.3	Vert 119
9	876.800M	44.3	+28.9 -27.2	+1.5 +1.0	+2.5	+0.4	+0.0 360	51.4	108.0 924.4 MHz	-56.6	Vert 119
10	856.400M	43.6	+29.5 -27.3	+1.4 +0.7	+2.5	+0.4	+0.0	50.8	108.0 904.8MHz	-57.2	Vert 150
11	952.500M	40.9	+31.4 -27.0	+1.5 +0.9	+2.6	+0.4	+0.0	50.7	108.0 904.8MHz	-57.3	Vert 150
12	866.100M	43.4	+29.1 -27.3	+1.4 +0.7	+2.5	+0.4	+0.0 360	50.2	108.0 914MHz	-57.8	Vert 119
13	841.900M	38.2	+29.8 -27.3	+1.4 +0.5	+2.5	+0.4	+0.0 360	45.5	108.0 914MHz	-62.5	Vert 119
14	41.600M	53.4	+15.4 -27.7	+0.3 +0.1	+0.4	+0.0	+0.0	41.9	108.0 904.8MHz	-66.1	Vert 150
15	42.600M	53.7	+14.9 -27.7	+0.3 +0.1	+0.4	+0.0	+0.0 360	41.7	108.0 914MHz	-66.3	Vert 119
16	75.600M	52.6	+12.9 -27.6	+0.4 +0.1	+0.6	+0.1	+0.0	39.1	108.0 904.8MHz	-68.9	Vert 150
17	76.600M	51.8	+12.8 -27.6	+0.4 +0.1	+0.6	+0.1	+0.0 360	38.2	108.0 924.4 MHz	-69.8	Vert 119
18	183.300M	47.1	+15.8 -27.1	+0.6 +0.2	+0.9	+0.1	+0.0 360	37.6	108.0 914MHz	-70.4	Vert 119
19	96.000M	49.1	+13.3 -27.5	+0.5 +0.1	+0.7	+0.1	+0.0 360	36.3	108.0 914MHz	-71.7	Vert 119
20	182.300M	45.5	+15.9 -27.1	+0.6 +0.2	+0.9	+0.1	+0.0 360	36.1	108.0 924.4 MHz	-71.9	Vert 119
21	142.500M	45.3	+14.0 -27.3	+0.5 +0.1	+0.8	+0.1	+0.0	33.5	108.0 904.8MHz	-74.5	Vert 150

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/24/2024
Test Type:	**Radiated Scan**	Time:	15:55:31
Tested By:	C. Plumadore	Sequence#:	6
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

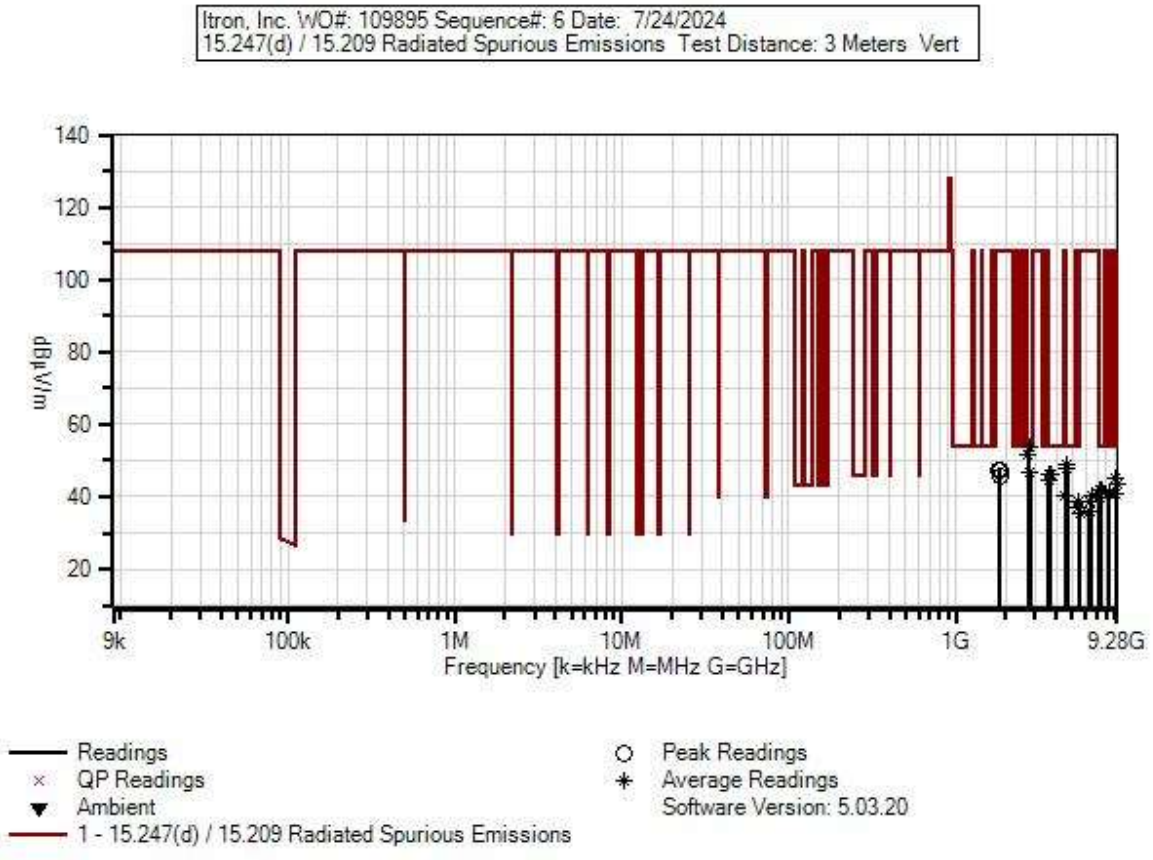
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 22.8°C
Humidity: 47.2%
Pressure: 101.8kPa

Test Method: ANSI C63.10 (2020)

Frequency: 1-10GHz

Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03540	Preamp	83017A	3/24/2023	3/24/2025
T2	AN02374ANSI	Horn Antenna	RGA-60	5/26/2023	5/26/2025
T3	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T4	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
T5	ANP07504	Cable	CLU40-KMKM-02.00F	1/19/2024	1/19/2026
T6	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T7	AN03170	High Pass Filter	HM1155-11SS	9/27/2023	9/27/2025

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

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	2741.975M	54.3	-34.5	+29.3	+0.8	+2.8	+0.0	53.5	54.0	-0.5	Horiz
	Ave		+0.5	+0.0	+0.3				914MHz		
^	2741.975M	56.2	-34.5	+29.3	+0.8	+2.8	+0.0	55.4	54.0	+1.4	Horiz
			+0.5	+0.0	+0.3				914MHz		
3	2714.295M	52.4	-34.5	+29.3	+0.8	+2.8	+0.0	51.6	54.0	-2.4	Horiz
	Ave		+0.5	+0.0	+0.3				904.8MHz		
^	2714.295M	55.3	-34.5	+29.3	+0.8	+2.8	+0.0	54.5	54.0	+0.5	Horiz
			+0.5	+0.0	+0.3				904.8MHz		
5	4569.775M	44.6	-33.8	+32.2	+1.1	+3.9	+0.0	49.0	54.0	-5.0	Horiz
	Ave		+0.6	+0.0	+0.4				914MHz		
^	4569.775M	50.1	-33.8	+32.2	+1.1	+3.9	+0.0	54.5	54.0	+0.5	Horiz
			+0.6	+0.0	+0.4				914MHz		
7	4622.120M	43.4	-33.8	+32.4	+1.1	+3.9	+0.0	48.0	54.0	-6.0	Horiz
	Ave		+0.5	+0.0	+0.5				924.4Mhz		
^	4622.120M	49.0	-33.8	+32.4	+1.1	+3.9	+0.0	53.6	54.0	-0.4	Horiz
			+0.5	+0.0	+0.5				924.4Mhz		
9	2773.180M	47.7	-34.5	+29.3	+0.8	+2.8	+0.0	46.9	54.0	-7.1	Horiz
	Ave		+0.5	+0.0	+0.3				924.4MHz		
^	2773.180M	51.6	-34.5	+29.3	+0.8	+2.8	+0.0	50.8	54.0	-3.2	Horiz
			+0.5	+0.0	+0.3				924.4Mhz		
11	3655.740M	44.0	-34.0	+31.4	+0.9	+3.4	+0.0	46.4	54.0	-7.6	Horiz
	Ave		+0.4	+0.0	+0.3				914MHz		
^	3655.740M	49.8	-34.0	+31.4	+0.9	+3.4	+0.0	52.2	54.0	-1.8	Horiz
			+0.4	+0.0	+0.3				914MHz		
13	3697.710M	43.5	-33.9	+31.6	+0.9	+3.4	+0.0	46.3	54.0	-7.7	Horiz
	Ave		+0.5	+0.0	+0.3				924.4Mhz		
^	3697.710M	49.2	-33.9	+31.6	+0.9	+3.4	+0.0	52.0	54.0	-2.0	Horiz
			+0.5	+0.0	+0.3				924.4Mhz		
15	9140.120M	32.8	-34.7	+37.7	+1.6	+6.1	+0.0	45.3	54.0	-8.7	Vert
	Ave		+0.9	+0.0	+0.9				914MHz		
^	9140.120M	44.9	-34.7	+37.7	+1.6	+6.1	+0.0	57.4	54.0	+3.4	Vert
			+0.9	+0.0	+0.9				914MHz		
17	3619.300M	42.3	-34.0	+31.4	+0.9	+3.4	+0.0	44.8	54.0	-9.2	Horiz
	Ave		+0.4	+0.0	+0.4				904.8MHz		
^	3619.300M	48.4	-34.0	+31.4	+0.9	+3.4	+0.0	50.9	54.0	-3.1	Horiz
			+0.4	+0.0	+0.4				904.8MHz		
19	7312.505M	32.1	-35.0	+37.1	+1.5	+5.0	+0.0	41.8	54.0	-12.2	Horiz
	Ave		+0.6	+0.0	+0.5				914MHz		
^	7312.505M	44.9	-35.0	+37.1	+1.5	+5.0	+0.0	54.6	54.0	+0.6	Horiz
			+0.6	+0.0	+0.5				914MHz		
21	7395.645M	31.9	-35.1	+37.3	+1.5	+5.0	+0.0	41.7	54.0	-12.3	Horiz
	Ave		+0.6	+0.0	+0.5				924.4Mhz		
^	7395.645M	44.7	-35.1	+37.3	+1.5	+5.0	+0.0	54.5	54.0	+0.5	Horiz
			+0.6	+0.0	+0.5				924.4Mhz		

23	8225.790M Ave	29.8	-35.4 +0.9	+38.5 +0.0	+1.8 +0.5	+5.3	+0.0	41.4	54.0 914MHz	-12.6	Horiz
^	8225.790M	43.2	-35.4 +0.9	+38.5 +0.0	+1.8 +0.5	+5.3	+0.0	54.8	54.0 914MHz	+0.8	Horiz
25	8319.600M Ave	29.1	-35.3 +1.0	+38.3 +0.0	+1.8 +0.7	+5.3	+0.0	40.9	54.0 924.4Mhz	-13.1	Vert
^	8319.600M	43.9	-35.3 +1.0	+38.3 +0.0	+1.8 +0.7	+5.3	+0.0	55.7	54.0 924.4Mhz	+1.7	Vert
27	9048.175M Ave	28.5	-34.8 +0.8	+37.9 +0.0	+1.7 +0.6	+6.0	+0.0	40.7	54.0 904.8MHz	-13.3	Vert
^	9048.175M	41.9	-34.8 +0.8	+37.9 +0.0	+1.7 +0.6	+6.0	+0.0	54.1	54.0 904.8MHz	+0.1	Vert
29	4524.495M Ave	35.9	-33.8 +0.7	+32.1 +0.0	+1.0 +0.4	+3.8	+0.0	40.1	54.0 904.8MHz	-13.9	Horiz
^	4524.495M	46.4	-33.8 +0.7	+32.1 +0.0	+1.0 +0.4	+3.8	+0.0	50.6	54.0 904.8MHz	-3.4	Horiz
31	5428.605M Ave	30.1	-33.8 +0.5	+34.4 +0.0	+1.2 +0.4	+4.2	+0.0	37.0	54.0 904.8MHz	-17.0	Horiz
^	5428.605M	43.5	-33.8 +0.5	+34.4 +0.0	+1.2 +0.4	+4.2	+0.0	50.4	54.0 904.8MHz	-3.6	Horiz
33	1848.955M	51.0	-35.0 +0.4	+27.7 +0.0	+0.6 +0.4	+2.3	+0.0	47.4	108.0 924.4Mhz	-60.6	Horiz
34	1809.430M	51.4	-35.1 +0.4	+27.4 +0.0	+0.6 +0.4	+2.3	+0.0	47.4	108.0 904.8MHz	-60.6	Vert
35	1827.965M	49.4	-35.1 +0.4	+27.5 +0.0	+0.6 +0.4	+2.3	+0.0	45.5	108.0 914MHz	-62.5	Horiz
36	9244.465M Ave	30.9	-34.7 +1.0	+37.8 +0.0	+1.6 +0.6	+6.2	+0.0	43.4	108.0 924.4Mhz	-64.6	Horiz
^	9244.465M	44.0	-34.7 +1.0	+37.8 +0.0	+1.6 +0.6	+6.2	+0.0	56.5	108.0 924.4Mhz	-51.5	Horiz
38	6470.435M Ave	32.0	-34.3 +0.5	+34.7 +0.0	+1.3 +0.6	+5.2	+0.0	40.0	108.0 924.4Mhz	-68.0	Horiz
^	6470.435M	43.8	-34.3 +0.5	+34.7 +0.0	+1.3 +0.6	+5.2	+0.0	51.8	108.0 924.4Mhz	-56.2	Horiz
40	7238.205M Ave	30.3	-35.0 +0.5	+36.9 +0.0	+1.4 +0.5	+4.9	+0.0	39.5	108.0 904.8MHz	-68.5	Horiz
^	7238.205M	44.0	-35.0 +0.5	+36.9 +0.0	+1.4 +0.5	+4.9	+0.0	53.2	108.0 904.8MHz	-54.8	Horiz
42	6397.585M Ave	30.9	-34.2 +0.6	+34.7 +0.0	+1.3 +0.5	+5.1	+0.0	38.9	108.0 914MHz	-69.1	Vert
^	6397.585M	43.2	-34.2 +0.6	+34.7 +0.0	+1.3 +0.5	+5.1	+0.0	51.2	108.0 914MHz	-56.8	Vert
44	5483.795M Ave	31.7	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	38.6	108.0 914MHz	-69.4	Horiz
^	5483.795M	43.3	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	50.2	108.0 914MHz	-57.8	Horiz

46	6333.060M Ave	28.2	-34.2 +0.6	+34.7 +0.0	+1.2 +0.5	+5.0	+0.0	36.0	108.0 904.8MHz	-72.0	Horiz
^	6333.060M	42.7	-34.2 +0.6	+34.7 +0.0	+1.2 +0.5	+5.0	+0.0	50.5	108.0 904.8MHz	-57.5	Horiz
48	5547.165M Ave	28.5	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	35.4	108.0 924.4Mhz	-72.6	Horiz
^	5547.165M	42.7	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	49.6	108.0 924.4Mhz	-58.4	Horiz

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/8/2024
Test Type:	**Radiated Scan**	Time:	10:22:16
Tested By:	C. Plumadore	Sequence#:	7
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

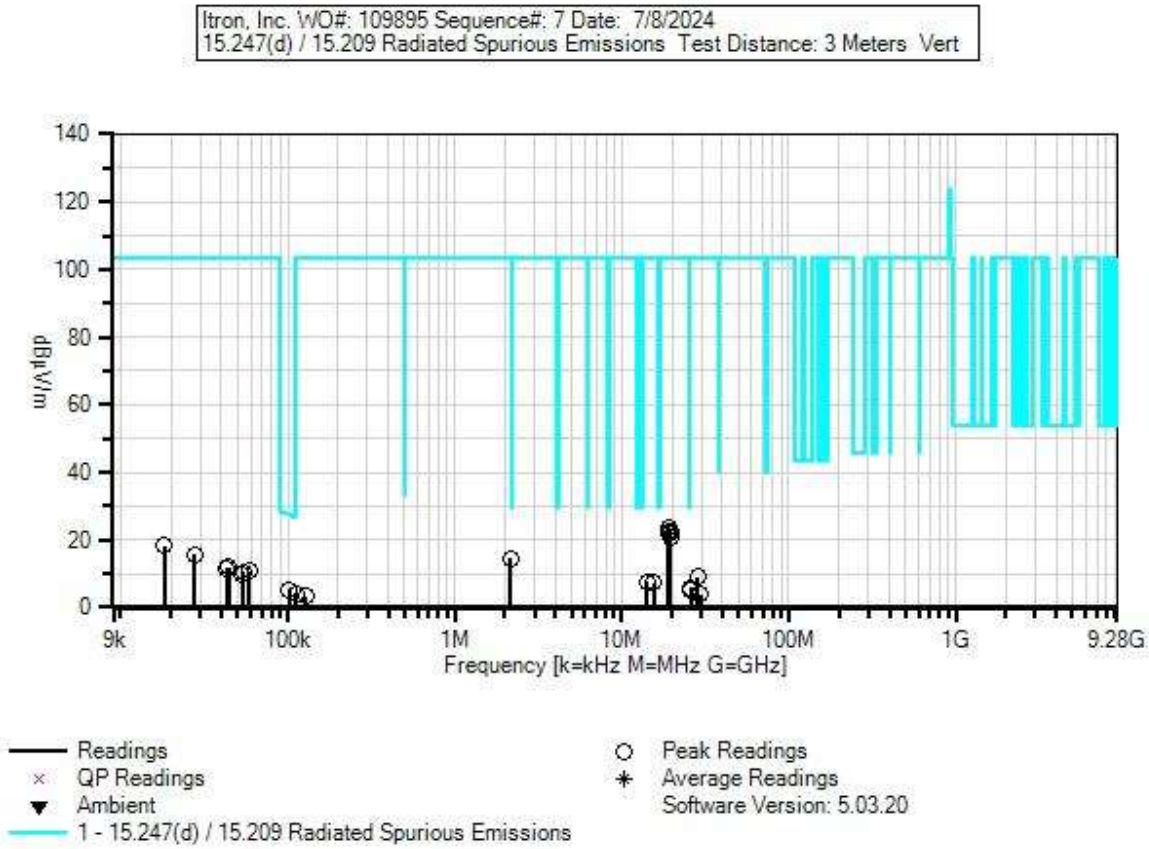
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 23.5°C
Humidity: 45.2%
Pressure: 102.2 kPa

Test Method: ANSI C63.10 (2020)

Frequency: 9kHz-30MHz

Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T2	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T3	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
T4	AN00052	Loop Antenna	6502	4/19/2024	4/19/2026
	ANUNITCF	Unit Conversion	dBuV/m to dBuA/m	1/1/2022	1/1/2032

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	101.214k	36.0	+0.0	+0.0	+0.0	+9.4	-40.0 360	5.4	27.5 914 Mhz	-22.1	perp 150
2	18.956M	36.1	+0.0	+0.0	+0.2	+7.4	-20.0 360	23.7	103.6 904.8 MHz	-79.9	perp 150
3	19.284M	36.0	+0.0	+0.0	+0.2	+7.2	-20.0	23.4	103.6 924.4 MHz	-80.2	perp 150
4	19.284M	35.3	+0.0	+0.0	+0.2	+7.2	-20.0	22.7	103.6 914 Mhz	-80.9	perp 150
5	19.612M	34.9	+0.0	+0.0	+0.2	+7.1	-20.0 360	22.2	103.6 924.4 Mhz	-81.4	paral 150
6	19.299M	34.7	+0.0	+0.0	+0.2	+7.2	-20.0	22.1	103.6 904.8 MHz	-81.5	Paral 150
7	19.642M	33.4	+0.0	+0.0	+0.2	+7.1	-20.0 360	20.7	103.6 914 MHz	-82.9	paral 150
8	18.165k	45.0	+0.0	+0.0	+0.0	+13.4	-40.0	18.4	103.6 914 MHz	-85.2	paral 150
9	27.565k	44.3	+0.0	+0.0	+0.0	+11.5	-40.0	15.8	103.6 904.8 MHz	-87.8	Paral 150
10	2.150M	25.1	+0.0	+0.0	+0.1	+9.2	-20.0 360	14.4	103.6 914 MHz	-89.2	paral 150
11	44.391k	41.7	+0.0	+0.0	+0.0	+10.2	-40.0 360	11.9	103.6 924.4 MHz	-91.7	perp 150
12	42.981k	41.5	+0.0	+0.0	+0.0	+10.2	-40.0 360	11.7	103.6 914 Mhz	-91.9	perp 150
13	58.632k	41.0	+0.0	+0.0	+0.0	+9.7	-40.0	10.7	103.6 904.8 MHz	-92.9	perp 150
14	54.120k	40.6	+0.0	+0.0	+0.0	+9.9	-40.0	10.5	103.6 904.8 MHz	-93.1	Paral 150
15	53.556k	39.9	+0.0	+0.0	+0.0	+9.9	-40.0 360	9.8	103.6 924.4 Mhz	-93.8	paral 150
16	28.463M	24.0	+0.0	+0.0	+0.2	+4.8	-20.0	9.0	103.6 904.8 MHz	-94.6	Paral 150
17	14.209M	18.3	+0.0	+0.0	+0.2	+9.0	-20.0	7.5	103.6 924.4 MHz	-96.1	perp 150
18	15.642M	18.6	+0.0	+0.0	+0.2	+8.6	-20.0 360	7.4	103.6 924.4 Mhz	-96.2	paral 150
19	25.881M	19.1	+0.0	+0.0	+0.2	+6.6	-20.0 360	5.9	103.6 924.8 MHz	-97.7	paral 150
20	25.881M	18.3	+0.0	+0.0	+0.2	+6.6	-20.0 360	5.1	103.6 904.8 MHz	-98.5	perp 150
21	112.635k	34.8	+0.0	+0.0	+0.0	+9.3	-40.0	4.1	103.6 904.8 MHz	-99.5	Paral 150
22	29.433M	19.5	+0.0	+0.0	+0.3	+4.2	-20.0	4.0	103.6 924.4 MHz	-99.6	perp 150
23	127.863k	34.0	+0.0	+0.0	+0.0	+9.3	-40.0 360	3.3	103.6 924.4 Mhz	-100.3	perp 150

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/8/2024
Test Type:	**Radiated Scan**	Time:	11:34:37
Tested By:	C. Plumadore	Sequence#:	5
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

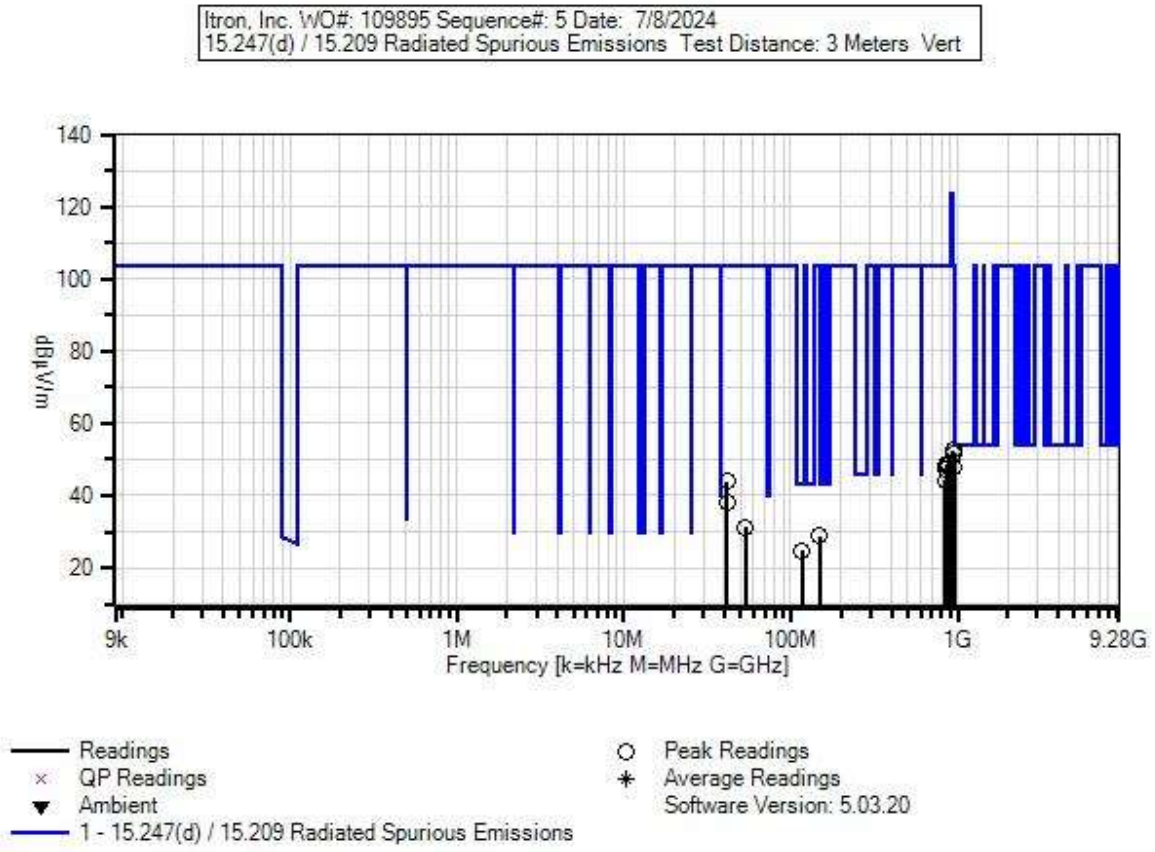
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 23.5°C
Humidity: 45.2%
Pressure: 102.2 kPa

Test Method: ANSI C63.10 (2020)

Frequency: 30-1000MHz

Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03824	Biconilog Antenna	3142E	5/9/2023	5/9/2025
T2	ANP05333	Cable	Heliax	8/8/2023	8/8/2025
T3	ANP05360	Cable	RG214	8/8/2023	8/8/2025
T4	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T5	AN02307	Preamp	8447D	8/9/2023	8/9/2025
	ANP05503	Attenuator	766-10	4/28/2023	4/28/2025
T6	ANP08072	Band Reject Filter	BRC50722	10/3/2023	10/3/2025

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

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	116.300M	37.3	+13.5 -27.4	+0.5 +0.1	+0.8	+0.1	+0.0	24.9	43.5 914 Mhz	-18.6	Vert 150
2	937.900M	35.2	+31.6 -27.0	+1.5 +8.3	+2.6	+0.4	+0.0	52.6	103.6 914 Mhz	-51.0	Vert 150
3	948.600M	41.6	+31.6 -27.0	+1.5 +1.1	+2.6	+0.4	+0.0	51.8	103.6 924.4 MHz	-51.8	Vert 99
4	866.100M	41.9	+29.1 -27.3	+1.4 +0.7	+2.5	+0.4	+0.0	48.7	103.6 914 Mhz	-54.9	Vert 150
5	875.800M	41.5	+28.9 -27.2	+1.5 +1.0	+2.5	+0.4	+0.0	48.6	103.6 924.4 MHz	-55.0	Vert 99
6	856.400M	40.9	+29.5 -27.3	+1.4 +0.7	+2.5	+0.4	+0.0	48.1	103.6 904.8 Mhz	-55.5	Vert 150
7	952.500M	37.8	+31.4 -27.0	+1.5 +0.9	+2.6	+0.4	+0.0	47.6	103.6 904.8 Mhz	-56.0	Vert 150
8	852.600M	40.0	+29.6 -27.3	+1.4 +0.6	+2.5	+0.4	+0.0	47.2	103.6 924.4 MHz	-56.4	Vert 99
9	841.900M	36.8	+29.8 -27.3	+1.4 +0.5	+2.5	+0.4	+0.0	44.1	103.6 914 Mhz	-59.5	Vert 150
10	41.600M	55.3	+15.4 -27.7	+0.3 +0.1	+0.4	+0.0	+0.0	43.8	103.6 914 Mhz	-59.8	Vert 150
11	41.600M	49.5	+15.4 -27.7	+0.3 +0.1	+0.4	+0.0	+0.0	38.0	103.6 904.8 Mhz	-65.6	Vert 150
12	53.300M	45.7	+12.2 -27.7	+0.3 +0.1	+0.5	+0.1	+0.0	31.2	103.6 924.4 MHz	-72.4	Vert 99
13	149.300M	39.2	+15.1 -27.3	+0.6 +0.2	+0.9	+0.1	+0.0	28.8	103.6 924.4 MHz	-74.8	Vert 99

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	6/26/2024
Test Type:	**Radiated Scan**	Time:	17:10:34
Tested By:	C. Plumadore	Sequence#:	4
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

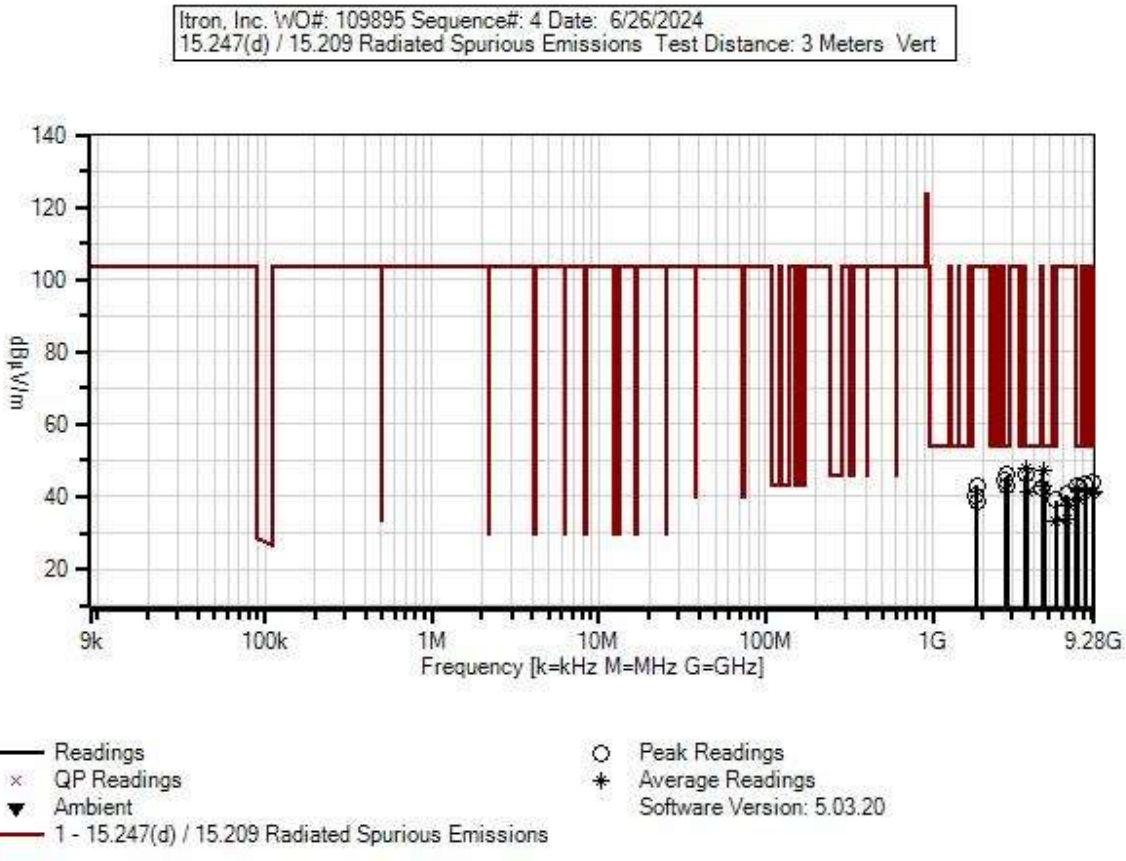
Test Conditions / Notes:

Test Environment Conditions:
Humidity: 47.2%
temperature: 22.8°C
Pressure: 101.8kPa

Test Method: ANSI 63.10

Frequency: 1-10GHz

Power set to 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03540	Preamp	83017A	3/24/2023	3/24/2025
T2	AN02374ANSI	Horn Antenna	RGA-60	5/26/2023	5/26/2025
T3	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T4	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
T5	ANP07504	Cable	CLU40-KMKM-02.00F	1/19/2024	1/19/2026
T6	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T7	AN03170	High Pass Filter	HM1155-11SS	9/27/2023	9/27/2025

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

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3655.851M	45.5	-34.0	+31.4	+0.9	+3.4	+0.0	47.9	54.0	-6.1	Vert
	Ave		+0.4	+0.0	+0.3				914MHz		
^	3655.851M	50.5	-34.0	+31.4	+0.9	+3.4	+0.0	52.9	54.0	-1.1	Vert
			+0.4	+0.0	+0.3				914MHz		
3	4570.191M	43.0	-33.8	+32.2	+1.1	+3.9	+0.0	47.4	54.0	-6.6	Vert
	Ave		+0.6	+0.0	+0.4				914MHz		
^	4570.191M	49.1	-33.8	+32.2	+1.1	+3.9	+0.0	53.5	54.0	-0.5	Vert
			+0.6	+0.0	+0.4				914MHz		
5	3619.052M	43.6	-34.0	+31.4	+0.9	+3.4	+0.0	46.1	54.0	-7.9	Horiz
			+0.4	+0.0	+0.4				904.8MHz		
6	2773.170M	46.9	-34.5	+29.3	+0.8	+2.8	+0.0	46.1	54.0	-7.9	Vert
			+0.5	+0.0	+0.3				924.4MHz		
7	2714.285M	45.6	-34.5	+29.3	+0.8	+2.8	+0.0	44.8	54.0	-9.2	Vert
			+0.5	+0.0	+0.3				904.8MHz		
8	9047.659M	31.9	-34.8	+37.9	+1.7	+6.0	+0.0	44.1	54.0	-9.9	Vert
			+0.8	+0.0	+0.6				904.8MHz		
9	8142.934M	31.8	-35.4	+38.8	+1.8	+5.3	+0.0	43.6	54.0	-10.4	Vert
			+0.8	+0.0	+0.5				904.8MHz		
10	2741.873M	43.9	-34.5	+29.3	+0.8	+2.8	+0.0	43.1	54.0	-10.9	Vert
			+0.5	+0.0	+0.3				914MHz		
11	4621.715M	38.1	-33.8	+32.4	+1.1	+3.9	+0.0	42.7	54.0	-11.3	Vert
	Ave		+0.5	+0.0	+0.5				924.4MHz		
^	4621.715M	46.5	-33.8	+32.4	+1.1	+3.9	+0.0	51.1	54.0	-2.9	Vert
			+0.5	+0.0	+0.5				924.4MHz		
13	4523.795M	38.3	-33.8	+32.1	+1.0	+3.8	+0.0	42.5	54.0	-11.5	Horiz
			+0.7	+0.0	+0.4				904.8MHz		
14	7312.025M	32.6	-35.0	+37.1	+1.5	+5.0	+0.0	42.3	54.0	-11.7	Vert
	Ave		+0.6	+0.0	+0.5				914MHz		
^	7311.950M	42.0	-35.0	+37.1	+1.5	+5.0	+0.0	51.7	54.0	-2.3	Vert
			+0.6	+0.0	+0.5				914MHz		
16	3697.220M	38.4	-33.9	+31.6	+0.9	+3.4	+0.0	41.2	54.0	-12.8	Horiz
	Ave		+0.5	+0.0	+0.3				924.4MHz		
^	3697.220M	47.8	-33.9	+31.6	+0.9	+3.4	+0.0	50.6	54.0	-3.4	Horiz
			+0.5	+0.0	+0.3				924.4MHz		
18	9140.025M	28.5	-34.7	+37.7	+1.6	+6.1	+0.0	41.0	54.0	-13.0	Vert
	Ave		+0.9	+0.0	+0.9				914MHz		
^	9140.025M	40.7	-34.7	+37.7	+1.6	+6.1	+0.0	53.2	54.0	-0.8	Vert
			+0.9	+0.0	+0.9				914MHz		
20	7395.380M	29.3	-35.1	+37.3	+1.5	+5.0	+0.0	39.1	54.0	-14.9	Vert
	Ave		+0.6	+0.0	+0.5				924.4MHz		
^	7395.380M	43.2	-35.1	+37.3	+1.5	+5.0	+0.0	53.0	54.0	-1.0	Vert
			+0.6	+0.0	+0.5				924.4MHz		
22	5428.515M	32.0	-33.8	+34.4	+1.2	+4.2	+0.0	38.9	54.0	-15.1	Vert
			+0.5	+0.0	+0.4				904.8MHz		
23	1848.805M	46.8	-35.0	+27.7	+0.6	+2.3	+0.0	43.2	103.6	-60.4	Vert
			+0.4	+0.0	+0.4				924.4MHz		

24	7238.074M	33.5	-35.0 +0.5	+36.9 +0.0	+1.4 +0.5	+4.9	+0.0	42.7	103.6 904.8MHz	-60.9	Vert
25	9244.180M Ave	28.8	-34.7 +1.0	+37.8 +0.0	+1.6 +0.6	+6.2	+0.0	41.3	103.6 924.4MHz	-62.3	Vert
^	9244.180M	43.0	-34.7 +1.0	+37.8 +0.0	+1.6 +0.6	+6.2	+0.0	55.5	103.6 924.4MHz	-48.1	Vert
27	6333.335M	32.9	-34.2 +0.6	+34.7 +0.0	+1.2 +0.5	+5.0	+0.0	40.7	103.6 904.8MHz	-62.9	Vert
28	1809.676M	44.2	-35.1 +0.4	+27.4 +0.0	+0.6 +0.4	+2.3	+0.0	40.2	103.6 904.8MHz	-63.4	Vert
29	1827.926M	42.6	-35.1 +0.4	+27.5 +0.0	+0.6 +0.4	+2.3	+0.0	38.7	103.6 914MHz	-64.9	Horiz
30	6470.980M Ave	29.5	-34.3 +0.5	+34.7 +0.0	+1.3 +0.6	+5.2	+0.0	37.5	103.6 924.4MHz	-66.1	Vert
^	6470.980M	42.0	-34.3 +0.5	+34.7 +0.0	+1.3 +0.6	+5.2	+0.0	50.0	103.6 924.4MHz	-53.6	Vert
32	6397.780M Ave	26.0	-34.2 +0.6	+34.7 +0.0	+1.3 +0.5	+5.1	+0.0	34.0	103.6 914MHz	-69.6	Vert
^	6397.780M	43.1	-34.2 +0.6	+34.7 +0.0	+1.3 +0.5	+5.1	+0.0	51.1	103.6 914MHz	-52.5	Vert
34	5484.042M Ave	26.5	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	33.4	103.6 914 MHz	-70.2	Vert
^	5484.042M	41.9	-33.8 +0.4	+34.4 +0.0	+1.2 +0.5	+4.2	+0.0	48.8	103.6 914MHz	-54.8	Vert

Band Edge

Configuration 1

Band Edge Summary – Single Channel Mode					
Frequency (MHz)	Modulation	Ant. Type	Field Strength (dBuV/m @3m)	Limit (dBuV/m @3m)	Results
614	150kbps FSK	Internal	32.2	<46	Pass
902			75.0	<109.5	Pass
928			80.3	< 109.5	Pass
960			47.1	<54	Pass

Band Edge Summary – Hopping Mode					
Frequency (MHz)	Modulation	Ant. Type	Field Strength (dBuV/m @3m)	Limit (dBuV/m @3m)	Results
902	150kbps FSK	Internal	81.8	<103.6	Pass
928			66.0	< 108.0	Pass

Configuration 2

Band Edge Summary – Single Channel Mode					
Frequency (MHz)	Modulation	Ant. Type	Field Strength (dBuV/m @3m)	Limit (dBuV/m @3m)	Results
614	150kbps FSK	External	37.8	<46	Pass
902			75.0	<108.0	Pass
928			67.4	< 108.0	Pass
960			46.0	<54	Pass

Band Edge Summary – Hopping Mode					
Frequency (MHz)	Modulation	Ant. Type	Field Strength (dBuV/m @3m)	Limit (dBuV/m @3m)	Results
902	150kbps FSK	External	80.4	<108.0	Pass
928			61.3	< 108.0	Pass

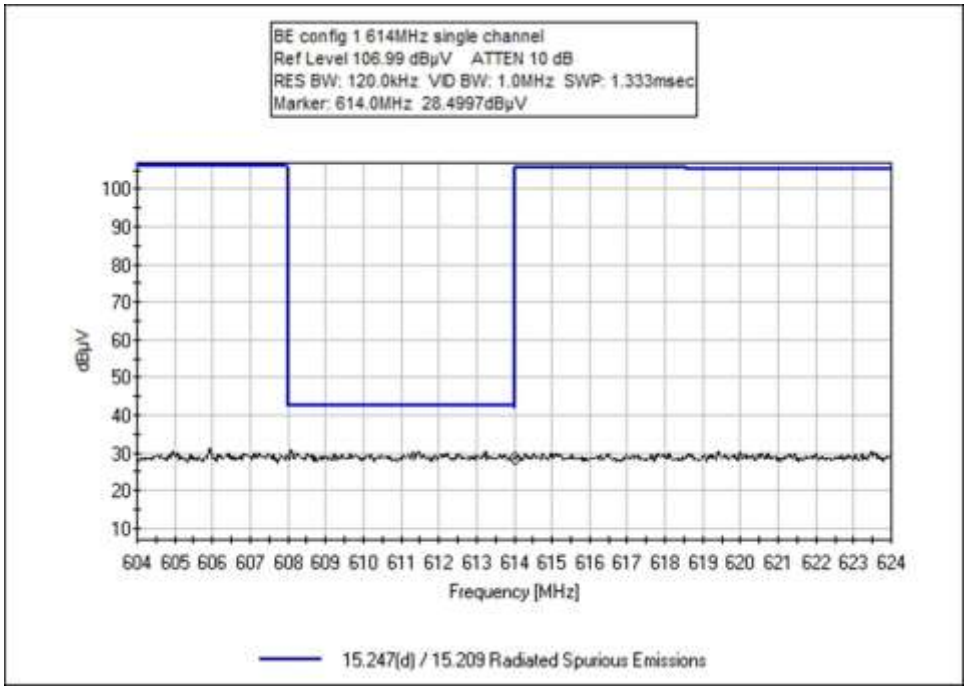
Configuration 3

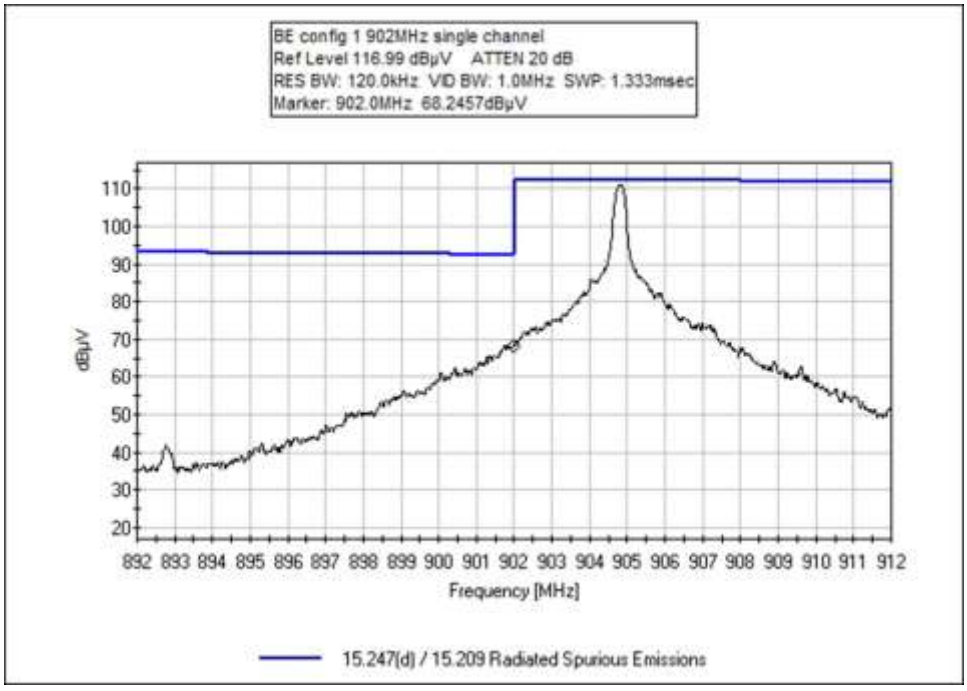
Band Edge Summary – Single Channel Mode					
Frequency (MHz)	**Modulation**	**Ant. Type**	**Field Strength (dBuV/m @3m)**	**Limit (dBuV/m @3m)**	**Results**
614	150kbps FSK	External Vehicle	32.2	<46	Pass
902			75.0	<103.6	Pass
928			80.3	< 103.6	Pass
960			47.1	<54	Pass

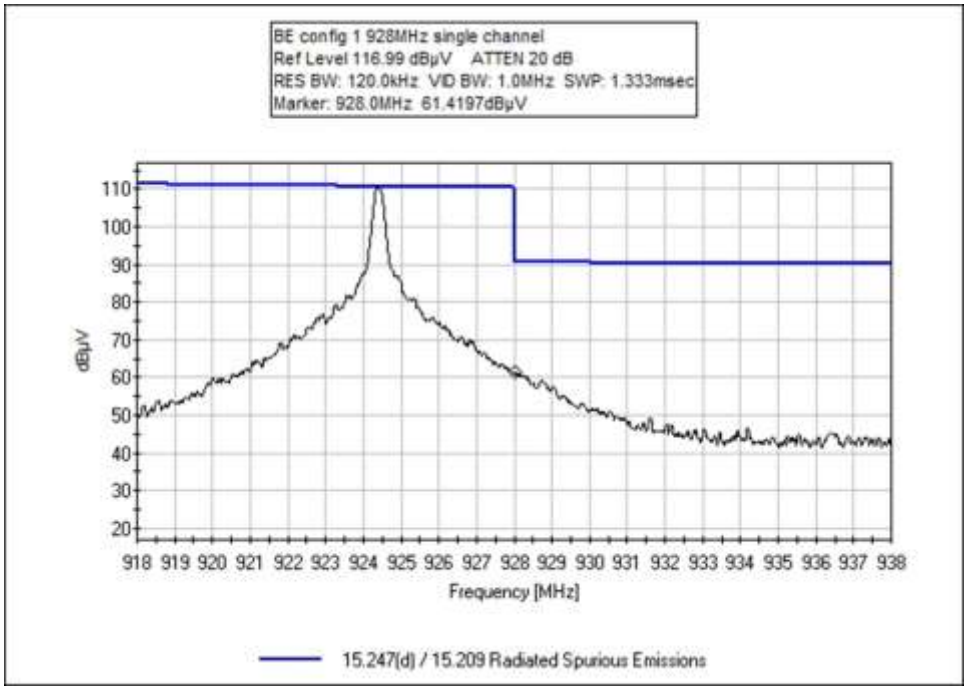
Band Edge Summary – Hopping Mode					
Frequency (MHz)	**Modulation**	**Ant. Type**	**Field Strength (dBuV/m @3m)**	**Limit (dBuV/m @3m)**	**Results**
902	150kbps FSK	External Vehicle	81.8	<103.6	Pass
928			66	< 103.6	Pass

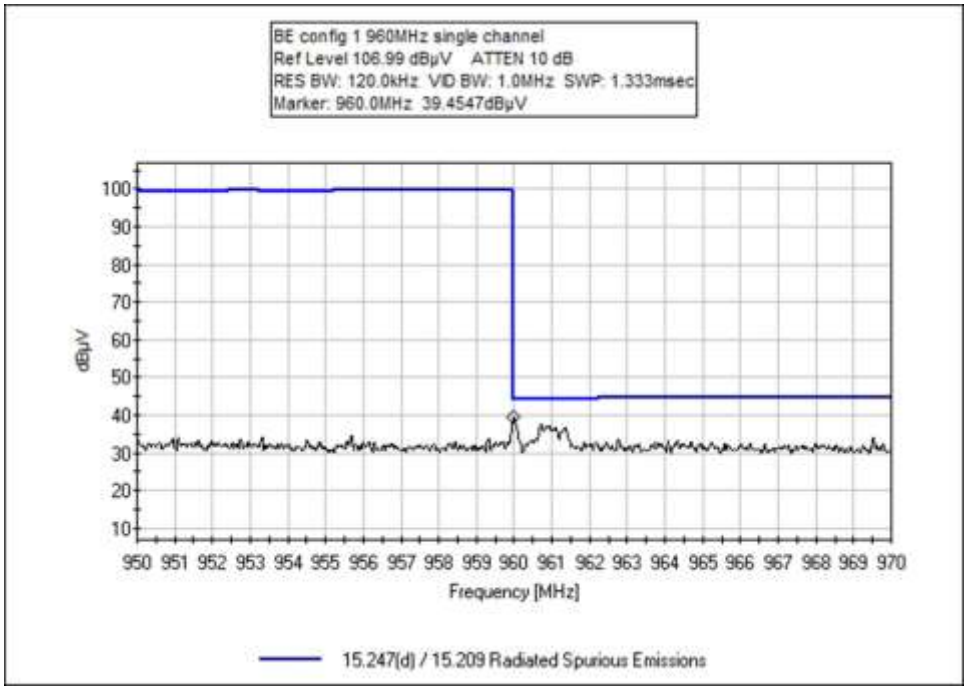
Band Edge Plots

Configuration 1
Single Channel

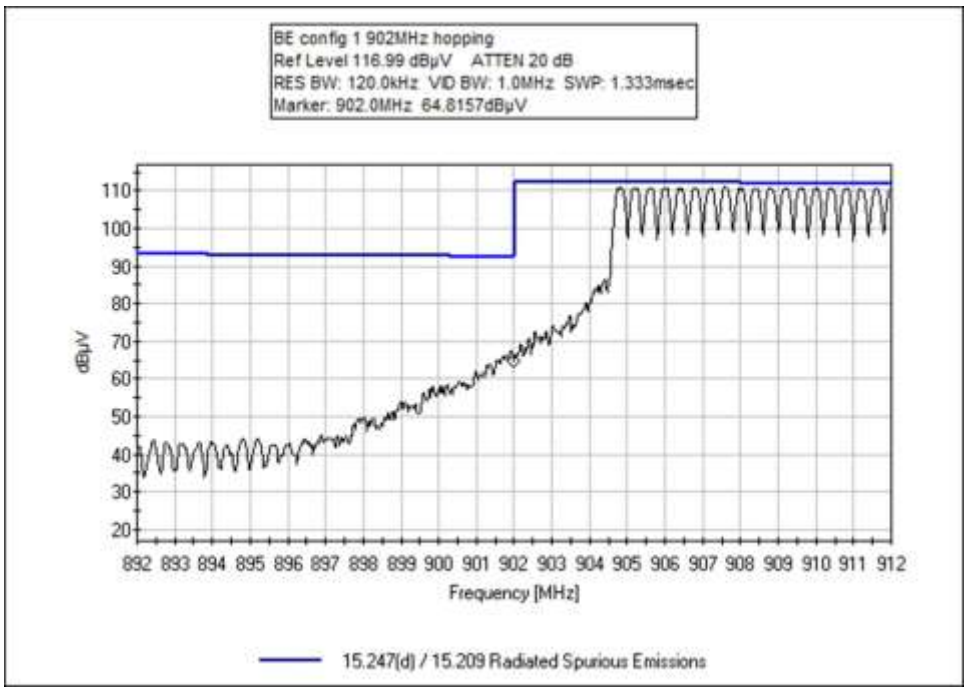


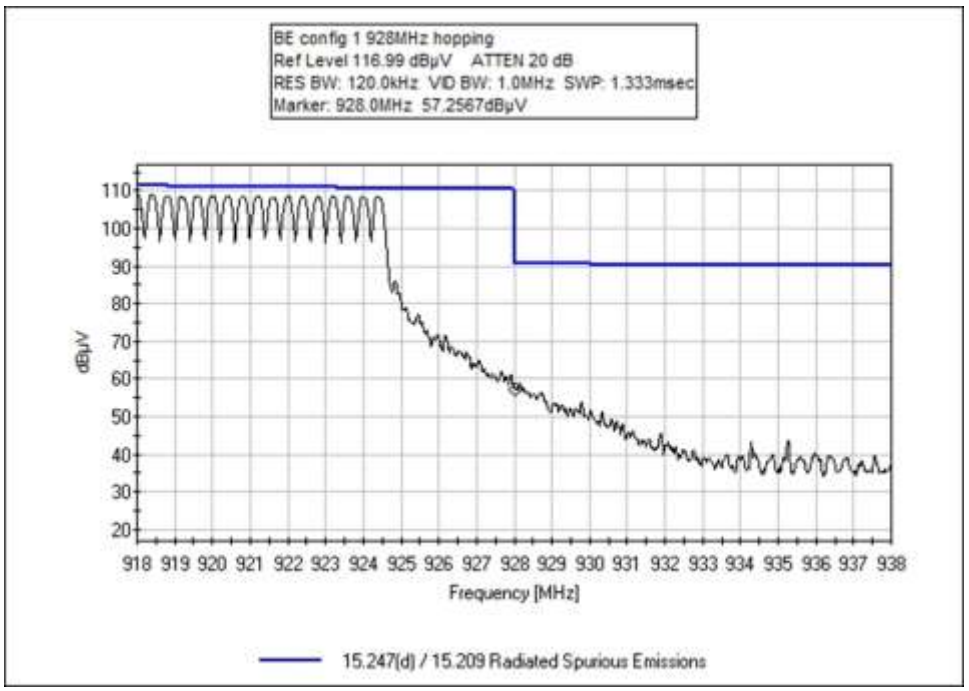



BE config 1 928MHz single channel
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 1.0MHz SWP: 1.333msec
Marker: 928.0MHz 61.4197dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

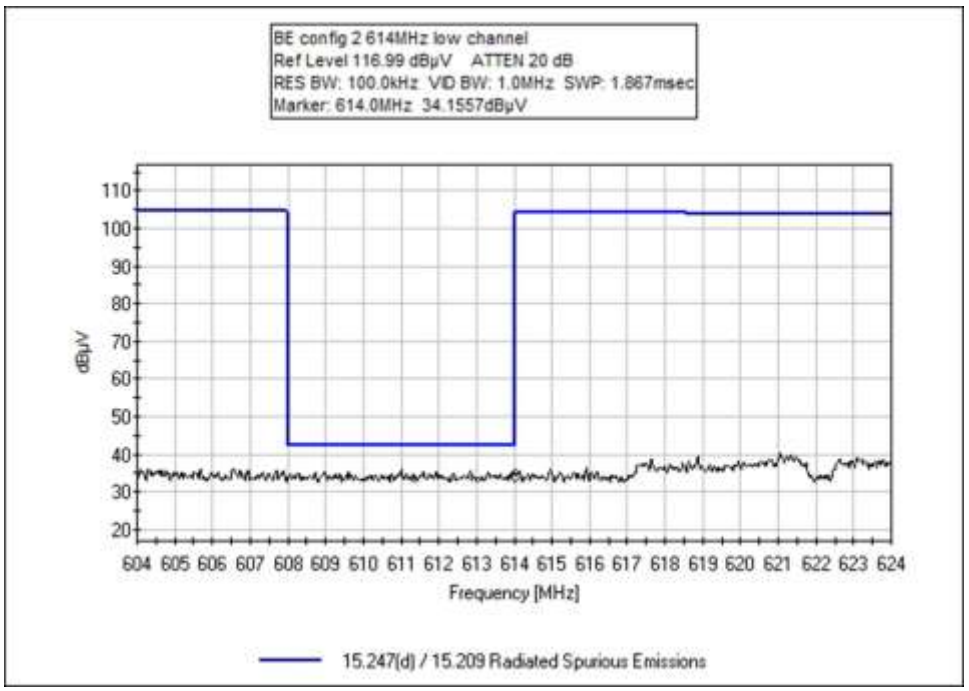

BE config 1 960MHz single channel
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 120.0kHz VID BW: 1.0MHz SWP: 1.333msec
Marker: 960.0MHz 39.4547dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

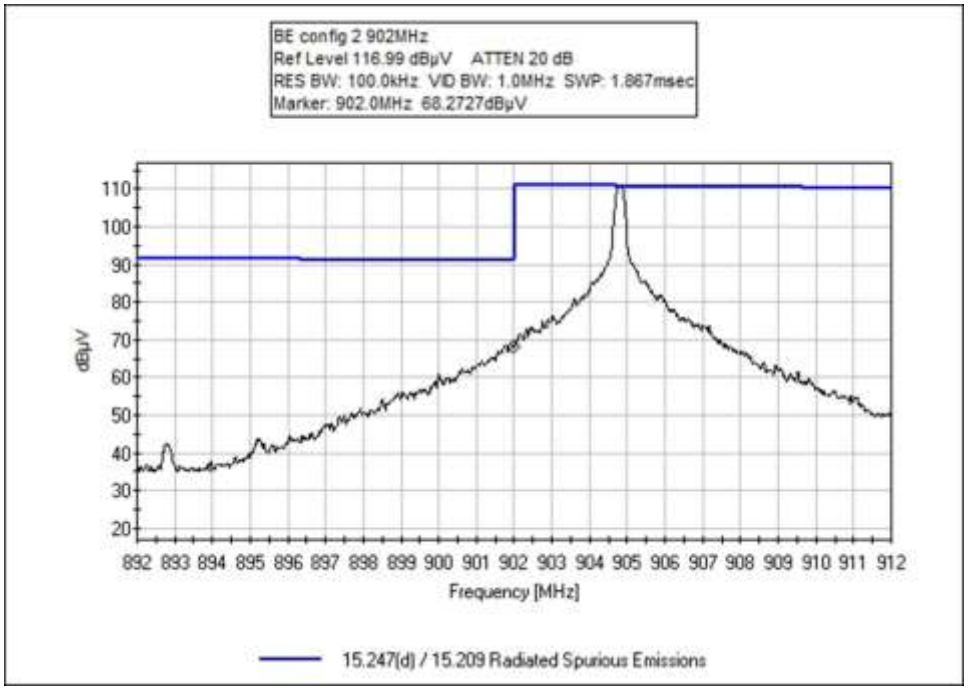
Configuration 1
Hopping

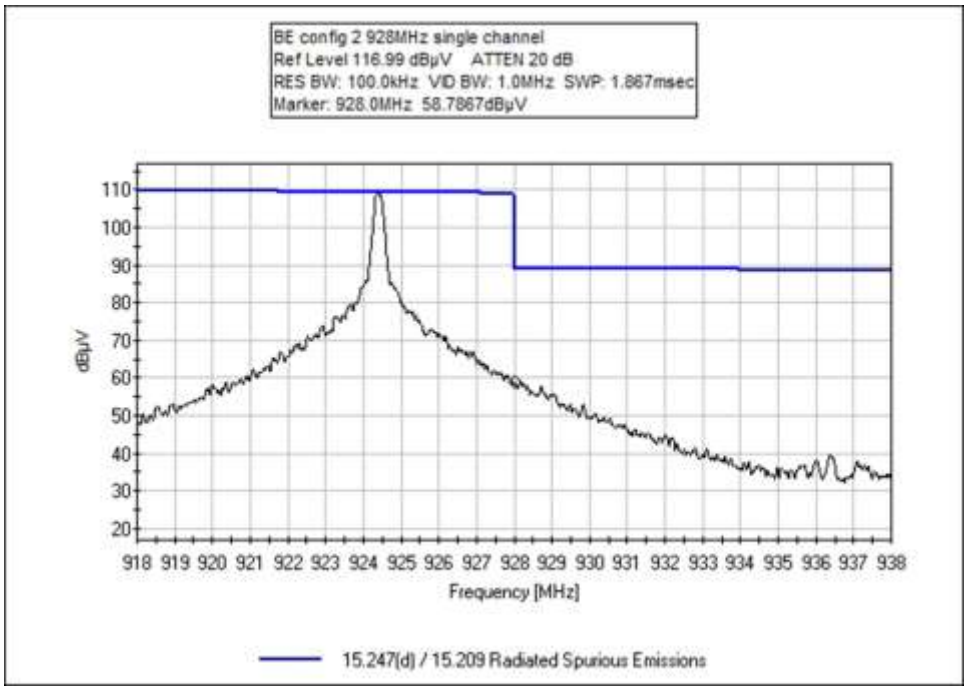


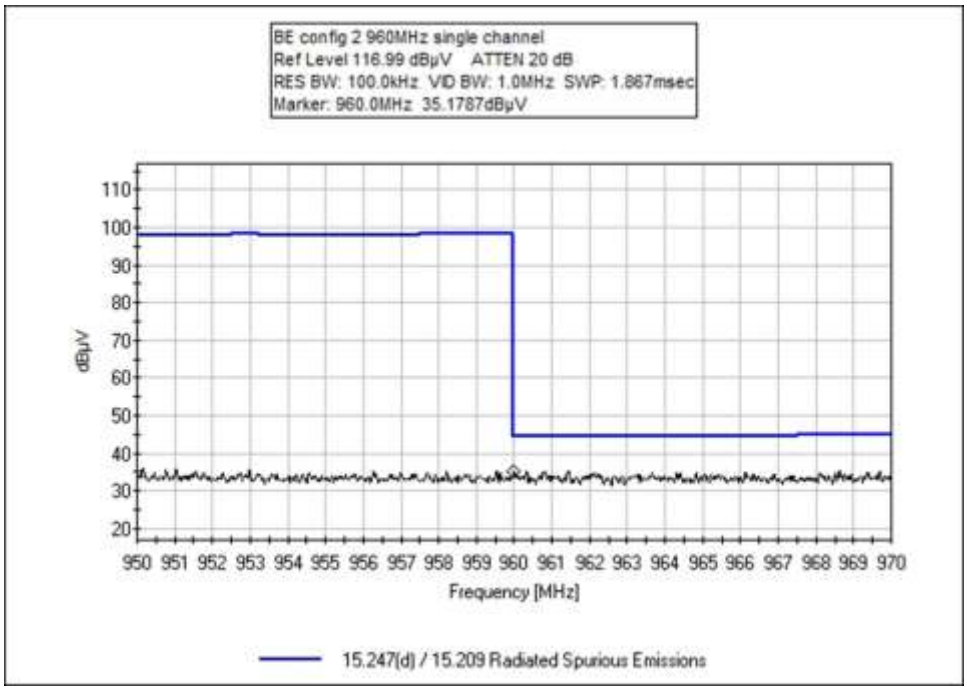


Configuration 2
Single Channel

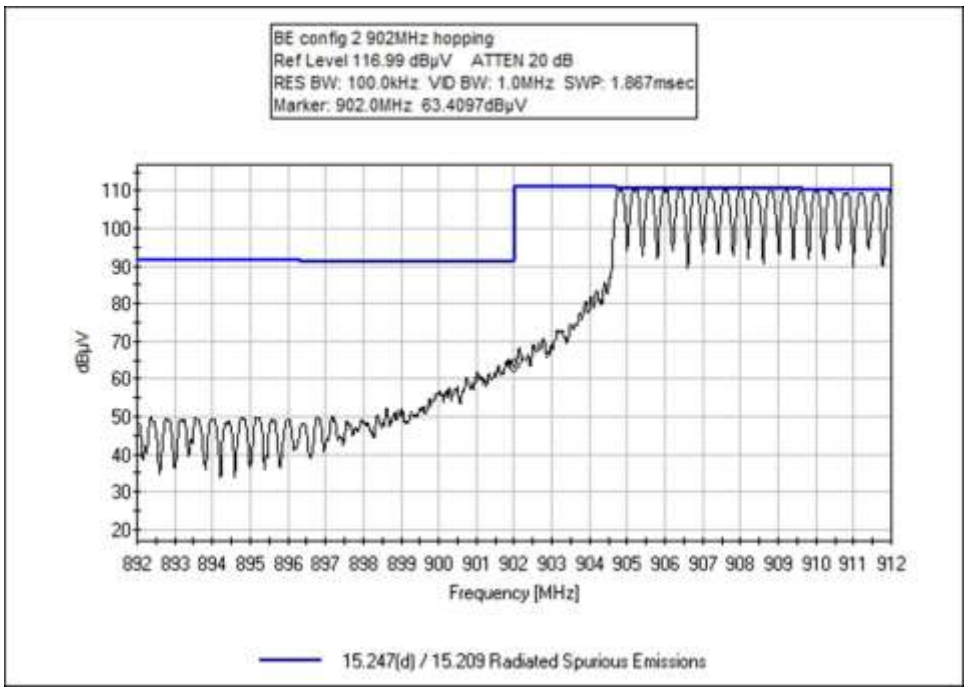


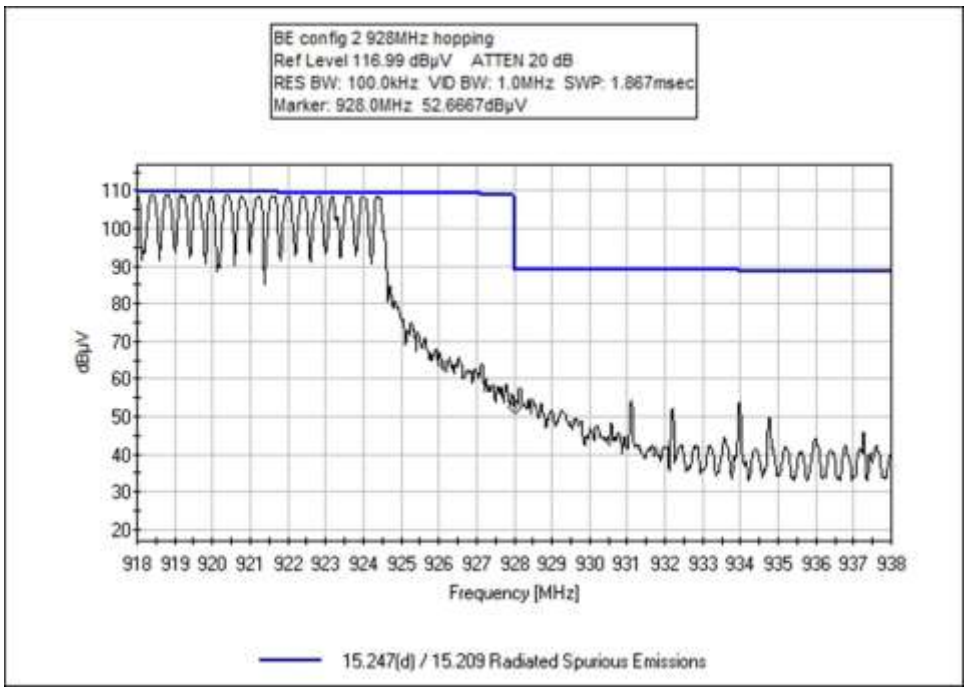



BE config 2 928MHz single channel
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 100.0kHz VID BW: 1.0MHz SWP: 1.867msec
Marker: 928.0MHz 58.7867dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

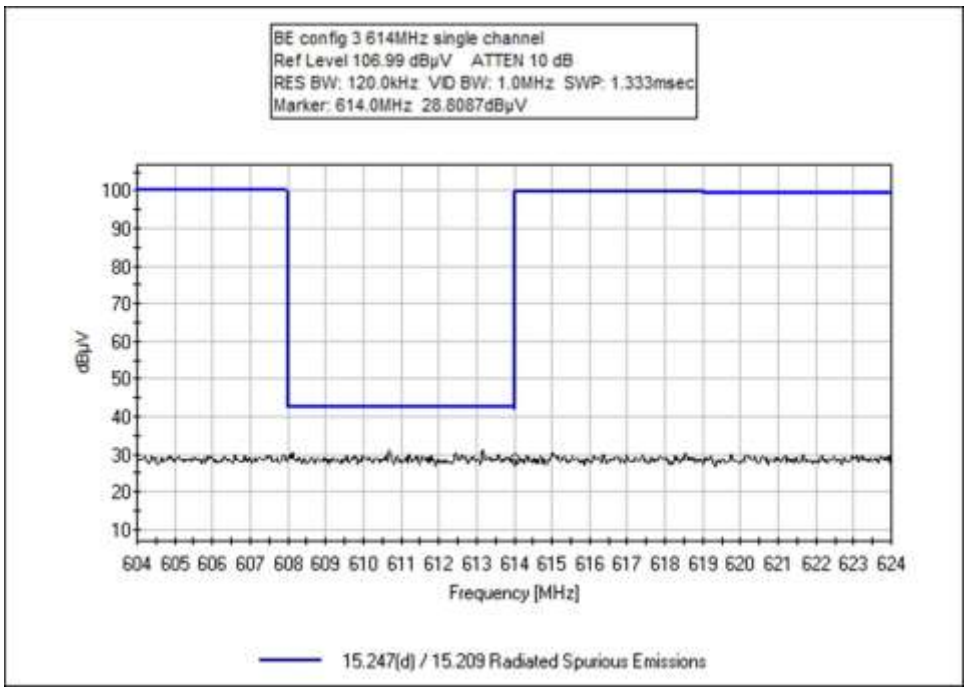

BE config 2 960MHz single channel
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 100.0kHz VID BW: 1.0MHz SWP: 1.867msec
Marker: 960.0MHz 35.1787dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

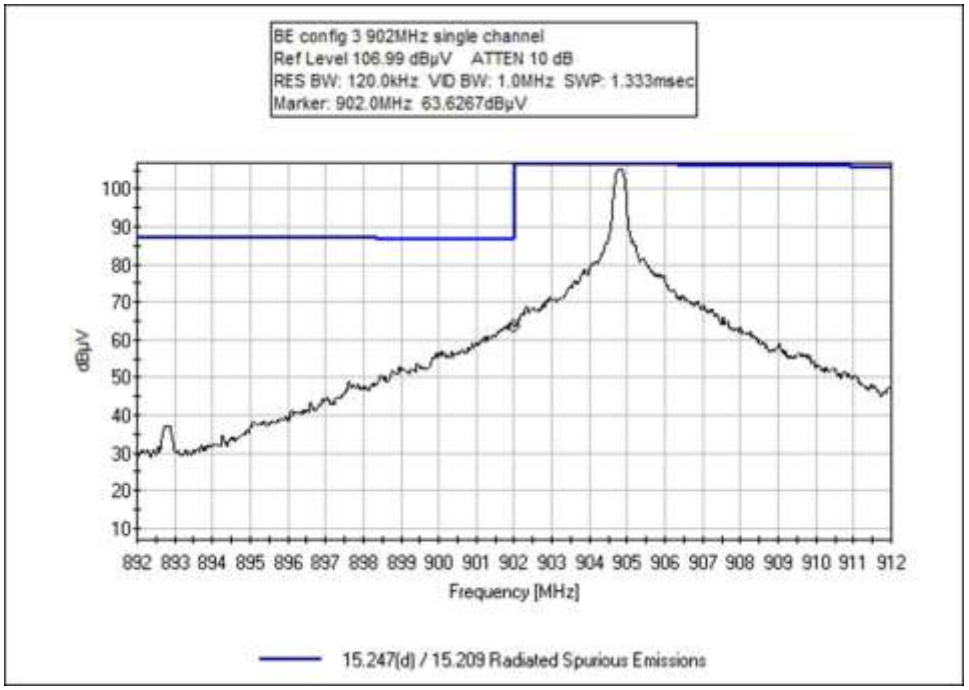
Configuration 2
Hopping

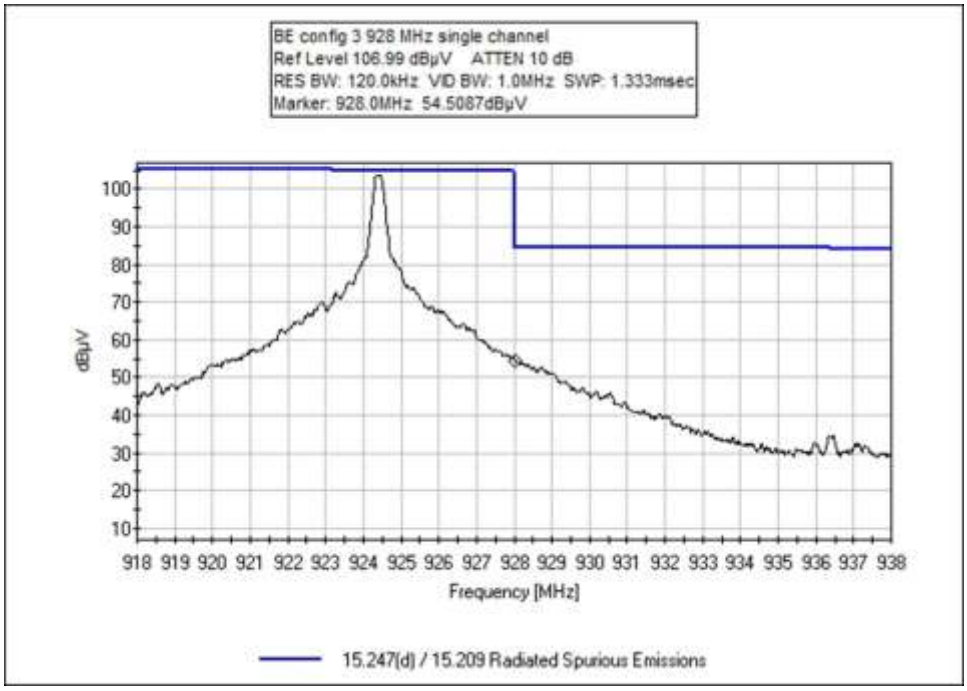


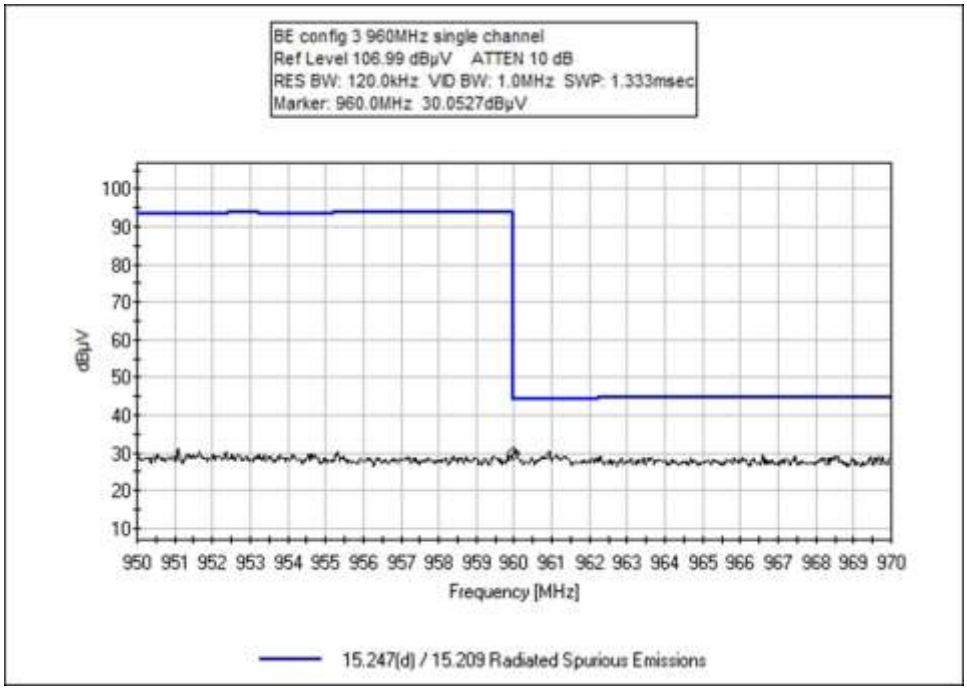


Configuration 3
Single Channel

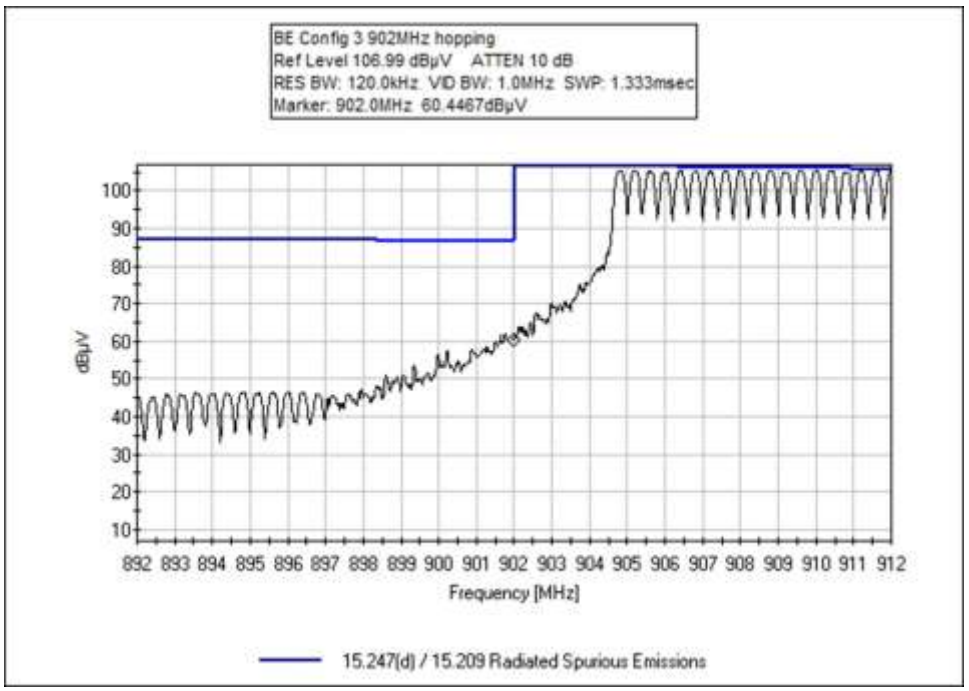


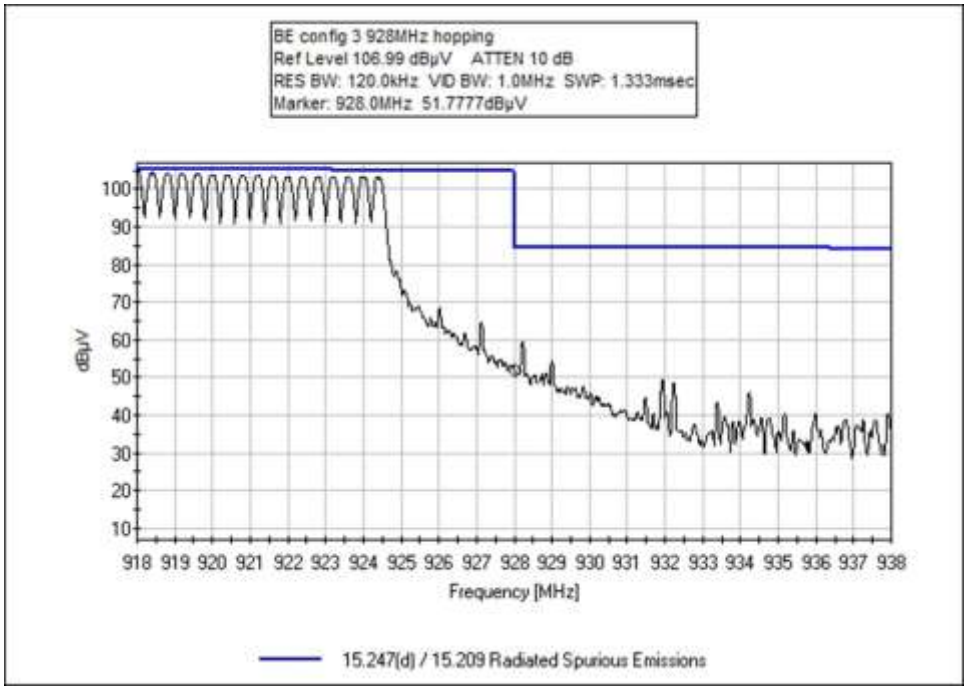



BE config 3 928 MHz single channel
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 120.0kHz VID BW: 1.0MHz SWP: 1.333msec
Marker: 928.0MHz 54.5087dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


BE config 3 960MHz single channel
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 120.0kHz VID BW: 1.0MHz SWP: 1.333msec
Marker: 960.0MHz 30.0527dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

Configuration 3
Hopping





Test Setup / Conditions / 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) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/8/2024
Test Type:	**Radiated Scan**	Time:	16:25:50
Tested By:	C. Plumadore	Sequence#:	7
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Test Environment Conditions:
Temperature: 23.5°C
Humidity: 45.2%
Pressure: 102.2 kPa

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03824	Biconilog Antenna	3142E	5/9/2023	5/9/2025
T2	ANP05333	Cable	Heliax	8/8/2023	8/8/2025
T3	ANP05360	Cable	RG214	8/8/2023	8/8/2025
T4	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T5	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T6	AN02307	Preamp	8447D	8/9/2023	8/9/2025
T7	ANP05503	Attenuator	766-10	4/28/2023	4/28/2025
T8	ANP08072	Band Reject Filter	BRC50722	10/3/2023	10/3/2025

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

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	960.000M	37.5	+31.1 +0.0	+1.6 -26.9	+2.6 +0.0	+0.4 +0.8	+0.0 360	47.1	54.0 single channel	-6.9	Vert 103
2	614.000M	28.5	+27.4 +0.0	+1.2 -27.9	+2.3 +0.0	+0.3 +0.4	+0.0 360	32.2	46.0 single channel	-13.8	Vert 103
3	902.000M	64.8	+29.5 +0.0	+1.5 -27.1	+2.5 +10.2	+0.4 +0.0	+0.0 349	81.8	109.5 hopping	-27.7	Vert 150
4	928.000M	61.4	+31.2 +0.0	+1.5 -27.0	+2.6 +10.2	+0.4 +0.0	+0.0	80.3	109.5 single channel	-29.2	Vert 150
5	902.000M	68.2	+29.5 +0.0	+1.5 -27.1	+2.5 +10.2	+0.4 +0.0	+0.0 349	75.0	109.5 single channel	-34.5	Vert 150
6	928.000M	57.3	+31.2 +0.0	+1.5 -27.0	+2.6 +10.2	+0.4 +0.0	+0.0	66.0	109.5 hopping channel	-43.5	Vert 150

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/3/2024
Test Type:	**Radiated Scan**	Time:	13:50:02
Tested By:	C. Plumadore	Sequence#:	3
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

Test Environment Conditions:
Temperature: 23.5°C
Humidity: 45.2%
Pressure: 102.2 kPa

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03824	Biconilog Antenna	3142E	5/9/2023	5/9/2025
T2	ANP05333	Cable	Heliax	8/8/2023	8/8/2025
T3	ANP05360	Cable	RG214	8/8/2023	8/8/2025
T4	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T5	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T6	AN02307	Preamp	8447D	8/9/2023	8/9/2025
T7	ANP05503	Attenuator	766-10	4/28/2023	4/28/2025
T8	ANP08072	Band Reject Filter	BRC50722	10/3/2023	10/3/2025

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

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	960.000M	36.4	+31.1 +0.0	+1.6 -26.9	+2.6 +0.0	+0.4 +0.8	+0.0	46.0	54.0 single channel	-8.0	Vert 99
2	614.000M	34.1	+27.4 +0.0	+1.2 -27.9	+2.3 +0.0	+0.3 +0.4	+0.0 220	37.8	46.0 single channel	-8.2	Vert 99
3	902.000M	63.4	+29.5 +0.0	+1.5 -27.1	+2.5 +10.2	+0.4 +0.0	+0.0 220	80.4	108.0 hopping	-27.6	Horiz 99
4	902.000M	68.2	+29.5 +0.0	+1.5 -27.1	+2.5 +10.2	+0.4 +0.0	+0.0 220	75.0	108.0 single channel	-33.0	Horiz 99
5	928.000M	58.7	+31.2 +0.0	+1.5 -27.0	+2.6 +10.2	+0.4 +0.0	+0.0 220	67.4	108.0 single channel	-40.6	Horiz 99
6	928.000M	52.6	+31.2 +0.0	+1.5 -27.0	+2.6 +10.2	+0.4 +0.0	+0.0 220	61.3	108.0 hopping	-46.7	Horiz 99

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**109895**	Date:	7/8/2024
Test Type:	**Radiated Scan**	Time:	14:05:26
Tested By:	C. Plumadore	Sequence#:	6
Software:	EMITest 5.03.20		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

Test Environment Conditions:
Temperature: 23.5°C
Humidity: 45.2%
Pressure: 102.2 kPa

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03824	Biconilog Antenna	3142E	5/9/2023	5/9/2025
T2	ANP05333	Cable	Heliax	8/8/2023	8/8/2025
T3	ANP05360	Cable	RG214	8/8/2023	8/8/2025
T4	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T5	AN02673	Spectrum Analyzer	E4446A	3/8/2024	3/8/2026
T6	AN02307	Preamp	8447D	8/9/2023	8/9/2025
T7	ANP05503	Attenuator	766-10	4/28/2023	4/28/2025
T8	ANP08072	Band Reject Filter	BRC50722	10/3/2023	10/3/2025

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

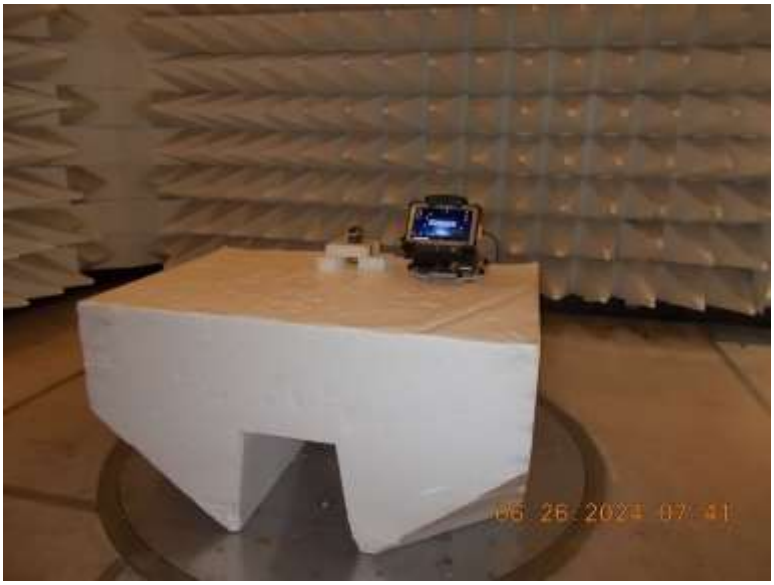
#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	614.000M	28.8	+27.4 +0.0	+1.2 -27.9	+2.3 +0.0	+0.3 +0.4	+0.0	32.5	46.0 single channel	-13.5	Vert 99
2	960.000M	30.0	+31.1 +0.0	+1.6 -26.9	+2.6 +0.0	+0.4 +0.8	+0.0 120	39.6	54.0 single channel	-14.4	Vert 99
3	902.000M	63.6	+29.5 +0.0	+1.5 -27.1	+2.5 +10.2	+0.4 +0.0	+0.0 120	80.6	103.6 single channel	-23.0	Vert 99
4	902.000M	60.4	+29.5 +0.0	+1.5 -27.1	+2.5 +10.2	+0.4 +0.0	+0.0 120	77.4	103.6 hopping channel	-26.2	Vert 99
5	928.000M	54.5	+31.2 +0.0	+1.5 -27.0	+2.6 +10.2	+0.4 +0.0	+0.0 120	63.2	103.6 single channel	-40.4	Vert 99
6	928.000M	51.7	+31.2 +0.0	+1.5 -27.0	+2.6 +10.2	+0.4 +0.0	+0.0 120	60.4	103.6 hopping	-43.2	Vert 99

Test Setup Photo(s)

Configuration 1

Below 1GHz; X-Axis

Below 1GHz; Y-Axis



Below 1GHz; Z-Axis

Above 1GHz

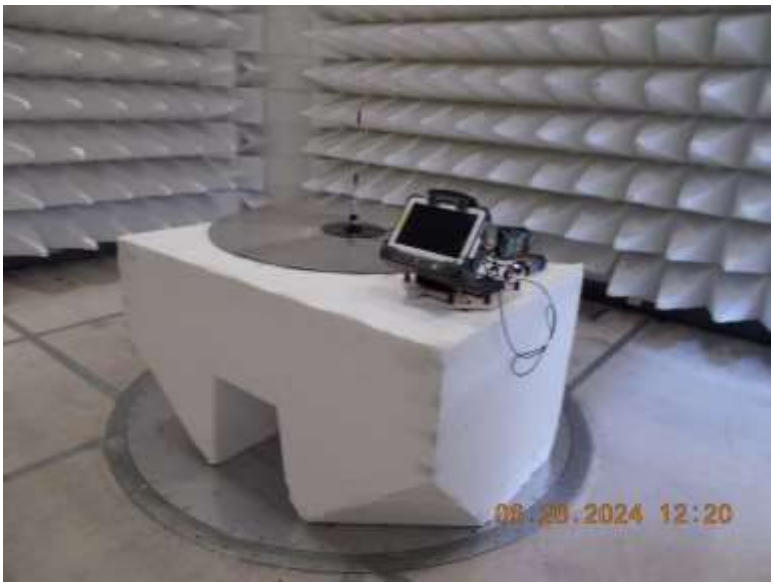
Configuration 2

Below 1GHz; X-Axis

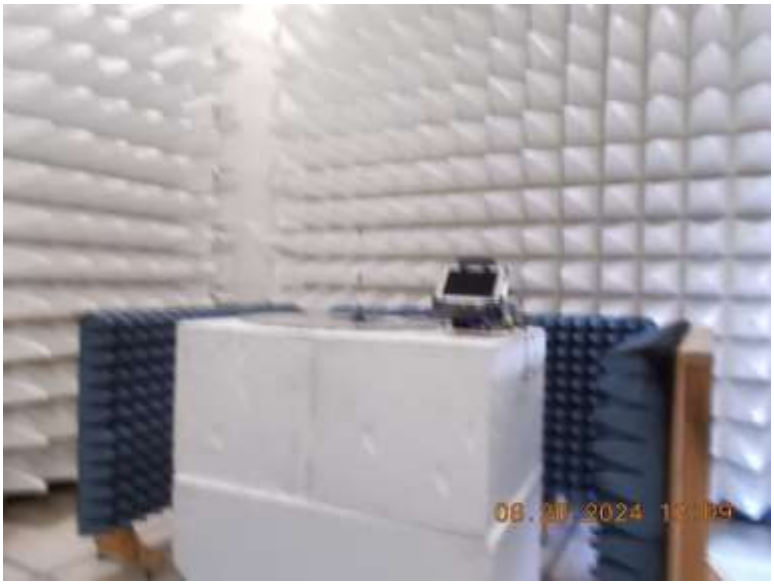
Below 1GHz; Y-Axis

Below 1GHz; Z-Axis

Configuration 3



Below 1GHz



Above 1GHz

15.207 AC Conducted Emissions

Test Setup / Conditions / Data

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron**		
Specification:	**15.207 AC Mains - Average**		
Work Order #:	**109895**	Date:	7/19/2024
Test Type:	**Conducted Emissions**	Time:	13:38:38
Tested By:	Samaya Bernardo	Sequence#:	3
Software:	EMITest 5.03.20		115V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

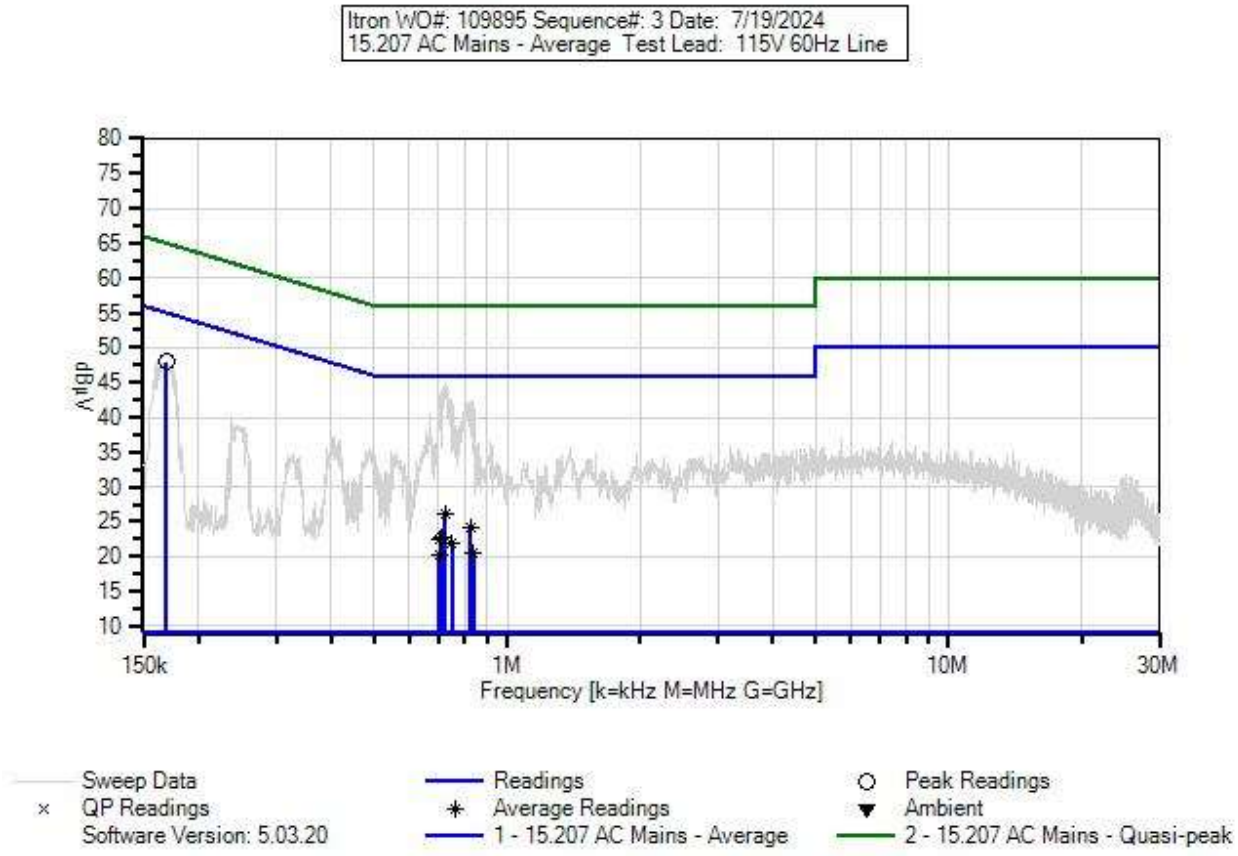
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 24°C
Humidity: 41%
Pressure: 102kPa

Frequency: 150k-30MHz

Test Method: ANSI C63.10 (2020)

Setup:
Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T2	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
	AN01311	50uH LISN-Line1 (L)	3816/2	2/9/2024	2/9/2026
T3	AN01311	50uH LISN-Line2 (N)	3816/2	2/9/2024	2/9/2026
	AN03807	Spectrum Analyzer	E4440A	10/10/2023	10/10/2025
T4	AN02611	High Pass Filter	HE9615-150K-50-720B	11/27/2023	11/27/2025
T5	ANP06219	Attenuator	768-10	3/25/2024	3/25/2026

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	168.906k	38.5	+0.0 +9.0	+0.0	+0.0	+0.4	+0.0	47.9	55.0	-7.1	Line
2	723.037k Ave	17.0	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	26.2	46.0	-19.8	Line
^	723.037k	35.5	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	44.7	46.0	-1.3	Line
4	824.846k Ave	15.0	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	24.2	46.0	-21.8	Line
^	824.846k	33.1	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.3	46.0	-3.7	Line
6	709.220k Ave	13.6	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	22.8	46.0	-23.2	Line
7	707.039k Ave	13.2	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	22.4	46.0	-23.6	Line
^	709.220k	34.3	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	43.5	46.0	-2.5	Line
^	707.038k	34.1	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	43.3	46.0	-2.7	Line
10	748.490k Ave	12.8	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	22.0	46.0	-24.0	Line
^	748.489k	33.2	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.4	46.0	-3.6	Line
12	837.209k Ave	11.2	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	20.4	46.0	-25.6	Line
^	837.208k	33.3	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.5	46.0	-3.5	Line
14	700.494k Ave	10.9	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	20.1	46.0	-25.9	Line
^	700.493k	33.7	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.9	46.0	-3.1	Line

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron**		
Specification:	**15.207 AC Mains - Average**		
Work Order #:	**109895**	Date:	7/19/2024
Test Type:	**Conducted Emissions**	Time:	13:33:00
Tested By:	Samaya Bernardo	Sequence#:	2
Software:	EMITest 5.03.20		115V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

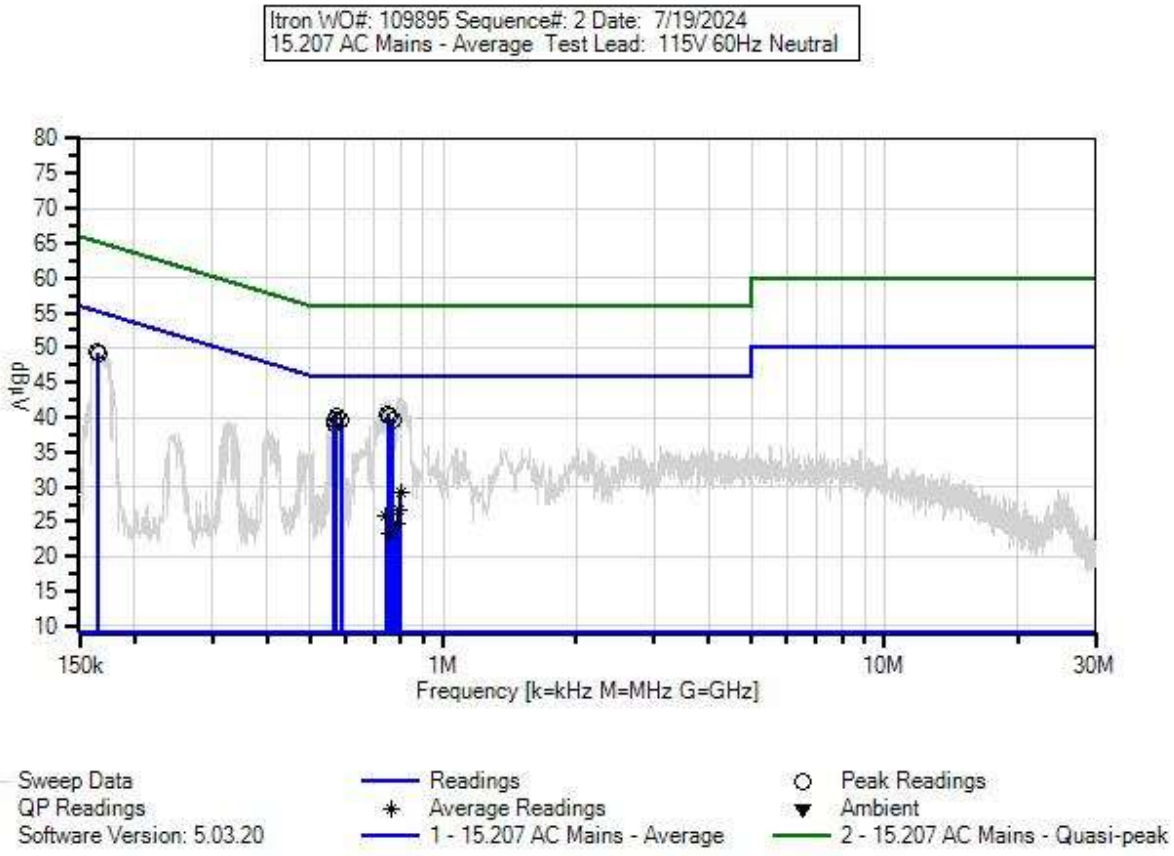
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 24°C
Humidity: 41%
Pressure: 102kPa

Frequency: 150k-30MHz

Test Method: ANSI C63.10 (2020)

Setup:
Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T2	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
T3	AN01311	50uH LISN-Line1 (L)	3816/2	2/9/2024	2/9/2026
	AN01311	50uH LISN-Line2 (N)	3816/2	2/9/2024	2/9/2026
	AN03807	Spectrum Analyzer	E4440A	10/10/2023	10/10/2025
T4	AN02611	High Pass Filter	HE9615-150K-50-720B	11/27/2023	11/27/2025
T5	ANP06219	Attenuator	768-10	3/25/2024	3/25/2026

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	750.671k	31.1	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	40.3	46.0	-5.7	Neutr
2	573.232k	30.9	+0.0 +9.0	+0.1	+0.0	+0.2	+0.0	40.2	46.0	-5.8	Neutr
3	164.543k	39.8	+0.0 +9.0	+0.0	+0.0	+0.5	+0.0	49.3	55.2	-5.9	Neutr
4	752.125k	30.9	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	40.1	46.0	-5.9	Neutr
5	165.997k	39.7	+0.0 +9.0	+0.0	+0.0	+0.5	+0.0	49.2	55.2	-6.0	Neutr
6	566.688k	30.3	+0.0 +9.0	+0.1	+0.0	+0.2	+0.0	39.6	46.0	-6.4	Neutr
7	768.851k	30.4	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	39.6	46.0	-6.4	Neutr
8	587.777k	30.3	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	39.5	46.0	-6.5	Neutr
9	571.051k	29.7	+0.0 +9.0	+0.1	+0.0	+0.2	+0.0	39.0	46.0	-7.0	Neutr
10	799.394k Ave	20.0	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	29.2	46.0	-16.8	Neutr
^	799.393k	33.5	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.7	46.0	-3.3	Neutr
12	792.849k Ave	17.5	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	26.7	46.0	-19.3	Neutr
^	792.849k	33.1	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.3	46.0	-3.7	Neutr
14	742.672k Ave	16.6	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	25.8	46.0	-20.2	Neutr
^	742.671k	33.2	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.4	46.0	-3.6	Neutr
16	784.850k Ave	15.6	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	24.8	46.0	-21.2	Neutr
^	784.849k	33.7	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.9	46.0	-3.1	Neutr
18	757.216k Ave	14.2	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	23.4	46.0	-22.6	Neutr
^	757.216k	33.4	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.6	46.0	-3.4	Neutr
^	755.034k	32.8	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	42.0	46.0	-4.0	Neutr

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron**		
Specification:	**15.207 AC Mains - Quasi-peak**		
Work Order #:	**109895**	Date:	7/19/2024
Test Type:	**Conducted Emissions**	Time:	12:50:00
Tested By:	Samaya Bernardo	Sequence#:	1
Software:	EMITest 5.03.20		115V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

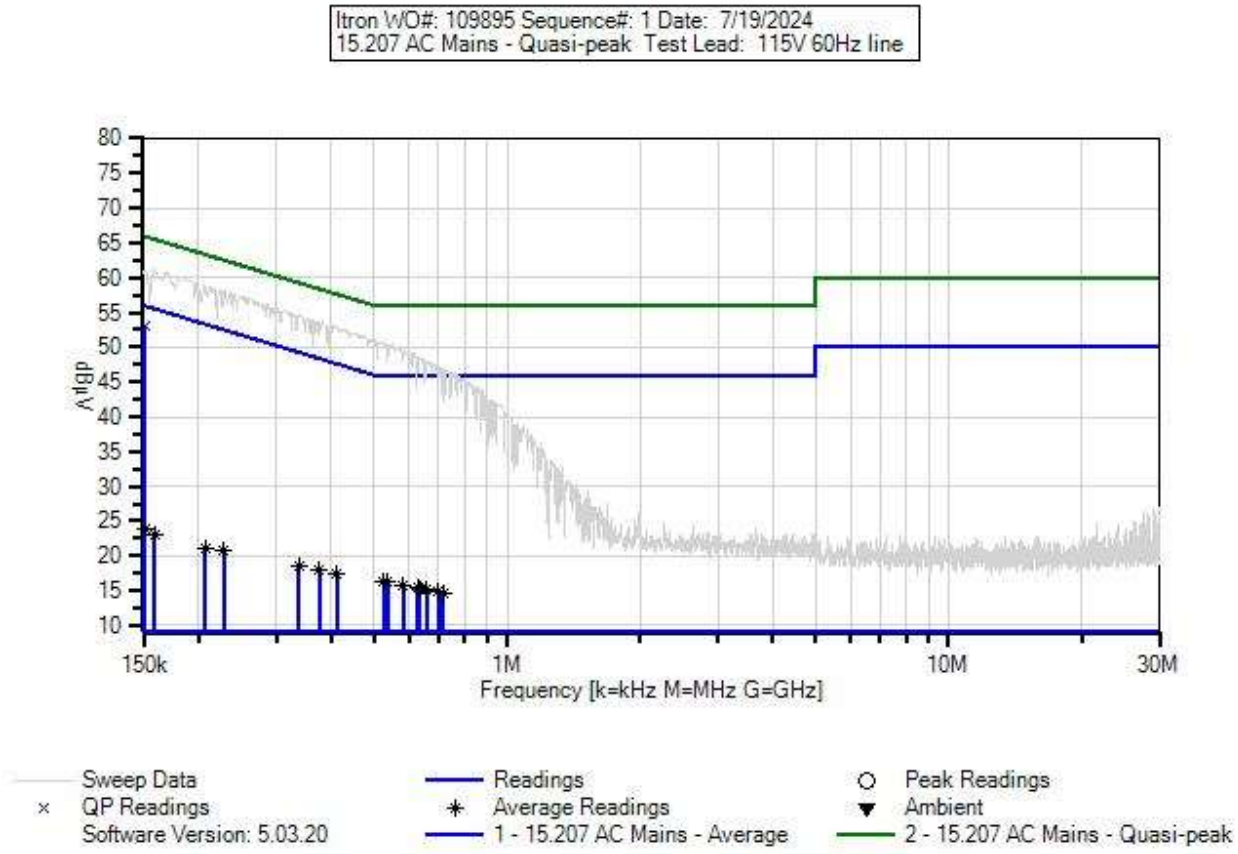
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 24°C
Humidity: 41%
Pressure: 102kPa

Frequency: 150k-30MHz

Test Method: ANSI C63.10 (2020)

Setup:
Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T2	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
	AN01311	50uH LISN-Line1 (L)	3816/2	2/9/2024	2/9/2026
T3	AN01311	50uH LISN-Line2 (N)	3816/2	2/9/2024	2/9/2026
	AN03807	Spectrum Analyzer	E4440A	10/10/2023	10/10/2025
T4	AN02611	High Pass Filter	HE9615-150K-50-720B	11/27/2023	11/27/2025
T5	ANP06219	Attenuator	768-10	3/25/2024	3/25/2026

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	151.454k	42.8	+0.0	+0.0	+0.0	+1.2	+0.0	53.0	65.9	-12.9	Line
	QP		+9.0								
2	525.238k	7.1	+0.0	+0.1	+0.0	+0.2	+0.0	16.4	46.0	-29.6	Line
	Ave		+9.0								
^	525.238k	41.5	+0.0	+0.1	+0.0	+0.2	+0.0	50.8	46.0	+4.8	Line
			+9.0								
4	536.874k	7.0	+0.0	+0.1	+0.0	+0.2	+0.0	16.3	46.0	-29.7	Line
	Ave		+9.0								
^	536.873k	41.1	+0.0	+0.1	+0.0	+0.2	+0.0	50.4	46.0	+4.4	Line
			+9.0								
6	580.506k	6.6	+0.0	+0.1	+0.0	+0.1	+0.0	15.8	46.0	-30.2	Line
	Ave		+9.0								
^	580.505k	40.3	+0.0	+0.1	+0.0	+0.1	+0.0	49.5	46.0	+3.5	Line
			+9.0								
8	411.794k	8.2	+0.0	+0.1	+0.0	+0.1	+0.0	17.4	47.6	-30.2	Line
	Ave		+9.0								
^	411.794k	43.8	+0.0	+0.1	+0.0	+0.1	+0.0	53.0	47.6	+5.4	Line
			+9.0								
10	375.434k	8.7	+0.0	+0.1	+0.0	+0.1	+0.0	17.9	48.4	-30.5	Line
	Ave		+9.0								
^	375.433k	44.5	+0.0	+0.1	+0.0	+0.1	+0.0	53.7	48.4	+5.3	Line
			+9.0								
12	338.346k	9.5	+0.0	+0.1	+0.0	+0.0	+0.0	18.6	49.2	-30.6	Line
	Ave		+9.0								
^	338.346k	45.6	+0.0	+0.1	+0.0	+0.0	+0.0	54.7	49.2	+5.5	Line
			+9.0								
14	627.774k	6.2	+0.0	+0.1	+0.0	+0.1	+0.0	15.4	46.0	-30.6	Line
	Ave		+9.0								
^	627.774k	39.3	+0.0	+0.1	+0.0	+0.1	+0.0	48.5	46.0	+2.5	Line
			+9.0								
16	632.865k	6.1	+0.0	+0.1	+0.0	+0.1	+0.0	15.3	46.0	-30.7	Line
	Ave		+9.0								
^	632.864k	39.3	+0.0	+0.1	+0.0	+0.1	+0.0	48.5	46.0	+2.5	Line
			+9.0								
18	658.317k	5.9	+0.0	+0.1	+0.0	+0.1	+0.0	15.1	46.0	-30.9	Line
	Ave		+9.0								
^	658.316k	38.8	+0.0	+0.1	+0.0	+0.1	+0.0	48.0	46.0	+2.0	Line
			+9.0								
20	697.586k	5.6	+0.0	+0.1	+0.0	+0.1	+0.0	14.8	46.0	-31.2	Line
	Ave		+9.0								
^	697.586k	38.0	+0.0	+0.1	+0.0	+0.1	+0.0	47.2	46.0	+1.2	Line
			+9.0								
22	717.948k	5.4	+0.0	+0.1	+0.0	+0.1	+0.0	14.6	46.0	-31.4	Line
	Ave		+9.0								
^	717.947k	37.7	+0.0	+0.1	+0.0	+0.1	+0.0	46.9	46.0	+0.9	Line
			+9.0								

24	228.538k	11.5	+0.0	+0.1	+0.0	+0.1	+0.0	20.7	52.5	-31.8	Line
	Ave		+9.0								
^	228.538k	49.0	+0.0	+0.1	+0.0	+0.1	+0.0	58.2	52.5	+5.7	Line
			+9.0								
26	151.454k	13.6	+0.0	+0.0	+0.0	+1.2	+0.0	23.8	55.9	-32.1	Line
	Ave		+9.0								
^	151.454k	50.8	+0.0	+0.0	+0.0	+1.2	+0.0	61.0	55.9	+5.1	Line
			+9.0								
28	206.722k	12.0	+0.0	+0.0	+0.0	+0.1	+0.0	21.1	53.3	-32.2	Line
	Ave		+9.0								
^	206.722k	49.8	+0.0	+0.0	+0.0	+0.1	+0.0	58.9	53.3	+5.6	Line
			+9.0								
30	158.726k	13.4	+0.0	+0.0	+0.0	+0.6	+0.0	23.0	55.5	-32.5	Line
	Ave		+9.0								
^	158.726k	51.7	+0.0	+0.0	+0.0	+0.6	+0.0	61.3	55.5	+5.8	Line
			+9.0								

Test Location:	CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717		
Customer:	**Itron**		
Specification:	**15.207 AC Mains - Quasi-peak**		
Work Order #:	**109895**	Date:	7/19/2024
Test Type:	**Conducted Emissions**	Time:	13:13:51
Tested By:	Samaya Bernardo	Sequence#:	2
Software:	EMITest 5.03.20		115V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

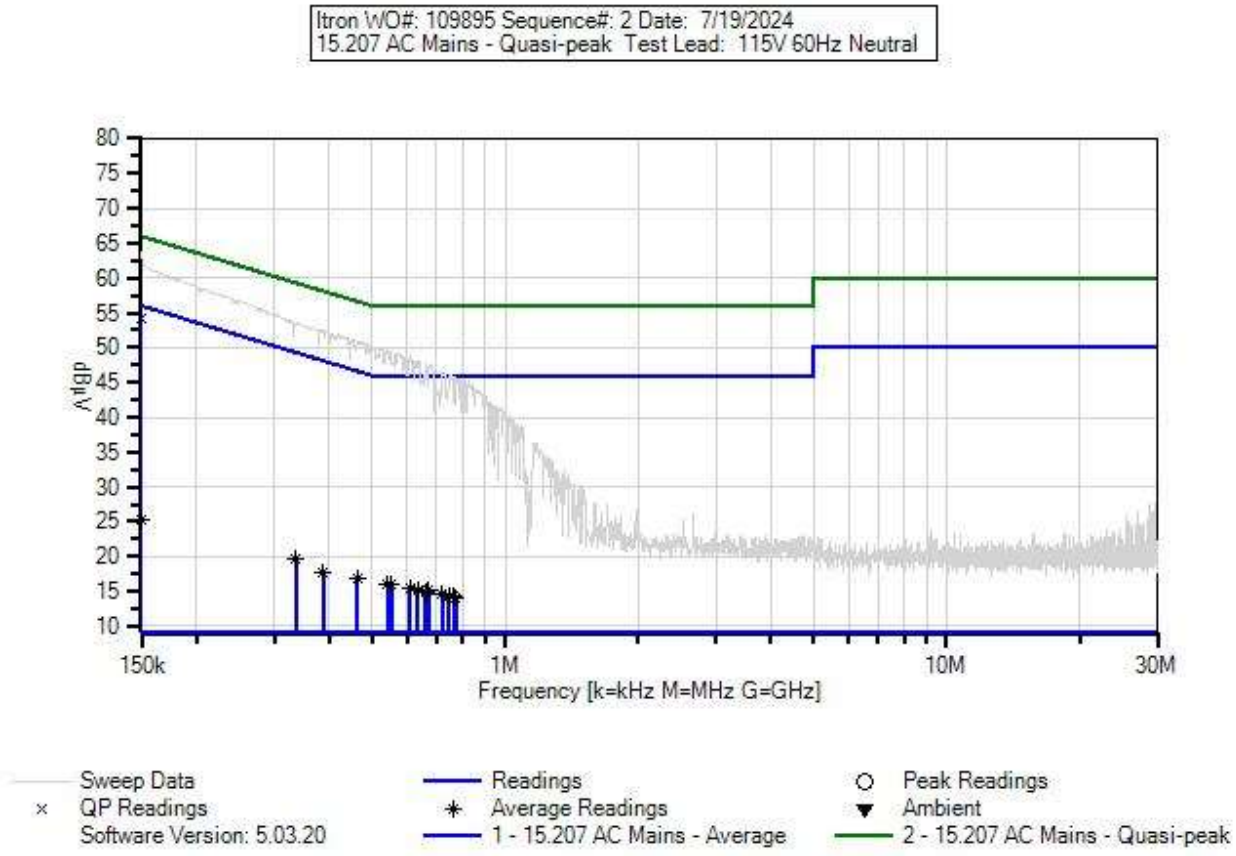
Test Conditions / Notes:

Test Environment Conditions:
Temperature: 24°C
Humidity: 41%
Pressure: 102kPa

Frequency: 150k-30MHz

Test Method: ANSI C63.10 (2020)

Setup:
Power level 75



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06011	Cable	Heliax	11/16/2023	11/16/2025
T2	ANP06515	Cable	Heliax	2/28/2024	2/28/2026
T3	AN01311	50uH LISN-Line1 (L)	3816/2	2/9/2024	2/9/2026
	AN01311	50uH LISN-Line2 (N)	3816/2	2/9/2024	2/9/2026
	AN03807	Spectrum Analyzer	E4440A	10/10/2023	10/10/2025
T4	AN02611	High Pass Filter	HE9615-150K-50-720B	11/27/2023	11/27/2025
T5	ANP06219	Attenuator	768-10	3/25/2024	3/25/2026

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	150.000k	42.6	+0.0	+0.0	+0.0	+2.6	+0.0	54.2	66.0	-11.8	Neutr
	QP		+9.0								
2	336.165k	10.6	+0.0	+0.1	+0.0	+0.0	+0.0	19.7	59.3	-39.6	Neutr
	Ave		+9.0								
^	336.164k	44.5	+0.0	+0.1	+0.0	+0.0	+0.0	53.6	59.3	-5.7	Neutr
			+9.0								
4	462.699k	7.6	+0.0	+0.1	+0.0	+0.1	+0.0	16.8	56.6	-39.8	Neutr
	Ave		+9.0								
^	462.698k	41.8	+0.0	+0.1	+0.0	+0.1	+0.0	51.0	56.6	-5.6	Neutr
			+9.0								
6	541.237k	6.8	+0.0	+0.1	+0.0	+0.2	+0.0	16.1	56.0	-39.9	Neutr
	Ave		+9.0								
^	541.236k	40.5	+0.0	+0.1	+0.0	+0.2	+0.0	49.8	56.0	-6.2	Neutr
			+9.0								
8	551.418k	6.7	+0.0	+0.1	+0.0	+0.2	+0.0	16.0	56.0	-40.0	Neutr
	Ave		+9.0								
^	551.417k	40.1	+0.0	+0.1	+0.0	+0.2	+0.0	49.4	56.0	-6.6	Neutr
			+9.0								
10	387.796k	8.4	+0.0	+0.1	+0.0	+0.1	+0.0	17.6	58.1	-40.5	Neutr
	Ave		+9.0								
^	387.796k	43.5	+0.0	+0.1	+0.0	+0.1	+0.0	52.7	58.1	-5.4	Neutr
			+9.0								
12	608.140k	6.3	+0.0	+0.1	+0.0	+0.1	+0.0	15.5	56.0	-40.5	Neutr
	Ave		+9.0								
^	608.139k	39.6	+0.0	+0.1	+0.0	+0.1	+0.0	48.8	56.0	-7.2	Neutr
			+9.0								
14	632.865k	6.1	+0.0	+0.1	+0.0	+0.1	+0.0	15.3	56.0	-40.7	Neutr
	Ave		+9.0								
^	632.864k	39.0	+0.0	+0.1	+0.0	+0.1	+0.0	48.2	56.0	-7.8	Neutr
			+9.0								
16	150.000k	13.7	+0.0	+0.0	+0.0	+2.6	+0.0	25.3	66.0	-40.7	Neutr
	Ave		+9.0								
^	150.000k	52.1	+0.0	+0.0	+0.0	+2.6	+0.0	63.7	66.0	-2.3	Neutr
			+9.0								
18	672.134k	5.9	+0.0	+0.1	+0.0	+0.1	+0.0	15.1	56.0	-40.9	Neutr
	Ave		+9.0								
^	672.133k	38.2	+0.0	+0.1	+0.0	+0.1	+0.0	47.4	56.0	-8.6	Neutr
			+9.0								
20	664.862k	5.8	+0.0	+0.1	+0.0	+0.1	+0.0	15.0	56.0	-41.0	Neutr
	Ave		+9.0								
21	660.499k	5.8	+0.0	+0.1	+0.0	+0.1	+0.0	15.0	56.0	-41.0	Neutr
	Ave		+9.0								
^	660.498k	38.5	+0.0	+0.1	+0.0	+0.1	+0.0	47.7	56.0	-8.3	Neutr
			+9.0								
^	664.861k	37.9	+0.0	+0.1	+0.0	+0.1	+0.0	47.1	56.0	-8.9	Neutr
			+9.0								

24 Ave	719.402k	5.3	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	14.5	56.0	-41.5	Neutr
^	719.402k	37.5	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	46.7	56.0	-9.3	Neutr
26 Ave	746.309k	5.1	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	14.3	56.0	-41.7	Neutr
^	746.308k	37.0	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	46.2	56.0	-9.8	Neutr
28 Ave	764.489k	5.0	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	14.2	56.0	-41.8	Neutr
^	764.489k	36.7	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	45.9	56.0	-10.1	Neutr
30 Ave	771.761k	4.9	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	14.1	56.0	-41.9	Neutr
^	771.761k	36.6	+0.0 +9.0	+0.1	+0.0	+0.1	+0.0	45.8	56.0	-10.2	Neutr

Test Setup Photo(s)

Configuration 1; Test Setup

Configuration 2; Test Setup

Supplemental Information

Measurement Uncertainty

Uncertainty Value	Parameter
5.77 dB	Radiated Emissions
0.673 dB	RF Conducted Measurements
5.77×10^{-10}	Frequency Deviation
0.00005 s	Time Deviation
3.18 dB	Mains Conducted Emissions

Uncertainties reported are worst case for all CKC Laboratories' sites and represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

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

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

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

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit. Individual measurements were compared with the displayed limit value in the margin column. The margin was calculated based on subtracting the limit value from the corrected measurement value; a positive margin represents a measurement exceeding the limit, while a negative margin represents a measurement less than the limit.

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

TEST INSTRUMENTATION AND ANALYZER SETTINGS

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

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

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

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

Peak

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

Quasi-Peak

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

Average

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

End of Report