Itron, Inc.

TEST REPORT FOR

500C
Models: WPITC, WRMTC, and GRMTC

Tested to The Following Standards:

FCC Part 15 Subpart C Section(s)

15.247
(FHSS 902-928MHz)

Report No.: 105380-15

Date of issue: August 13, 2021

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

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

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

Representative: Jay Holcomb
Customer Reference Number: 240357

REPORT PREPARED BY:

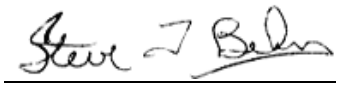
Kim Romero
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 105380

DATE OF EQUIPMENT RECEIPT: May 20, 2021
DATE(S) OF TESTING: May 20, 21, and 24, 2021
June 7, 9, and 11, 2021
July 13 and 19, 2021

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.
110 Olinda Place
Brea, CA 92823

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.03.19 & 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	NP
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	NA1

NA = Not Applicable
NA1 = Not applicable because manufacturer declares the EUT is battery operated.
NP = CKC Laboratories was not contract to perform test.

ISO/IEC 17025 Decision Rule
The declaration of pass or fail herein is based upon assessment to the specification(s) listed above, including where applicable, assessment 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
500C	Itron, Inc.	GRMTC	RAD2

Support Equipment:

Device	Manufacturer	Model #	S/N
Laptop	Dell	Latitude E6420	8P954R1
Laptop Power Supply	Dell	ADP-65JB	NA
Power Supply	Extech Instruments	382225	P99250026

Configuration 2

Equipment Tested:

Device	Manufacturer	Model #	S/N
500C	Itron, Inc.	WRMTC	RAD2

Support Equipment:

Device	Manufacturer	Model #	S/N
Laptop	Dell	Latitude E6420	8P954R1
Power Supply	Extech Instruments	382225	P99250026

Configuration 3

Equipment Tested:

Device	Manufacturer	Model #	S/N
500C	Itron, Inc.	WPITC	RAD2

Support Equipment:

Device	Manufacturer	Model #	S/N
Laptop	Dell	Latitude E6420	8P954R1
Laptop Power Supply	Dell	ADP-65JB	NA
Power Supply	Extech Instruments	382225	P99250026

Configuration 4

Equipment Tested:

Device	Manufacturer	Model #	S/N
500C	Itron, Inc.	WPITC	CON2

Support Equipment:

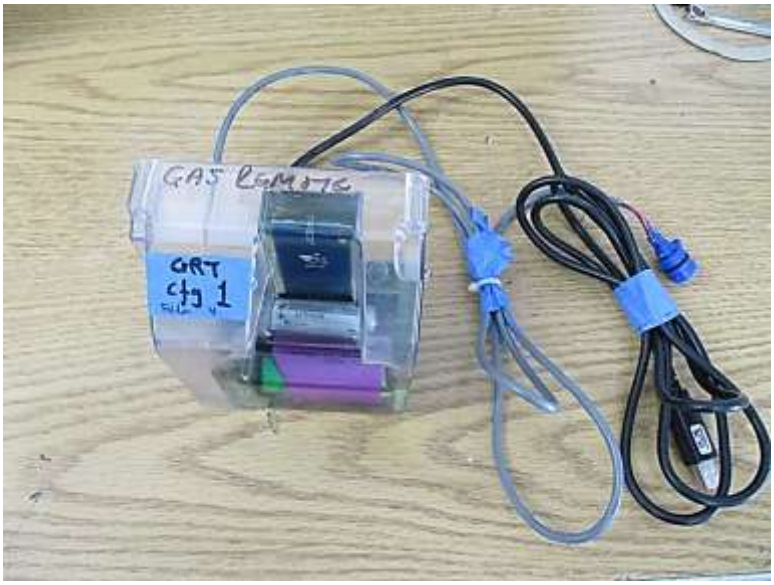
Device	Manufacturer	Model #	S/N
Power Supply	Extech Instruments	382225	P99250026
Laptop	Dell	Latitude E6420	8P954R1
Laptop Power Supply	Dell	ADP-65JB	NA
Power Supply	Extech Instruments	382225	P99250026

General Product Information:

Product Information	Manufacturer-Provided Details
Equipment Type:	Stand-Alone Equipment
Type of Wideband System:	Proprietary Low power and FHSS
Operating Frequency Range:	903 – 926.8MHz, 200kHz steps, 120 channels, 16384 OOK LV1 903 – 926.8MHz, 200kHz steps, 120 channels, 16384 OOK LV3 902.4 – 927.6MHz, 400kHz steps, 64 channels, 300kbps GFSK LV3
Number of Hopping Channels:	120 (OOK) and 64 (GFSK)
Receiver Bandwidth and Synchronization:	The manufacturer declares the receiver input bandwidth matches the transmit channel bandwidth and shifts frequencies in synchronization with the transmitter.
Modulation Type(s):	16384 OOK and 300kbps GFSK
Maximum Duty Cycle:	GFSK: 45% OOK: 28.05%
Number of TX Chains:	1
Antenna Type(s) and Gain:	PCB trace / 1.1 dB
Beamforming Type:	NA
Antenna Connection Type:	Integral (External connector provided to facilitate testing)
Nominal Input Voltage:	3.6V dc Battery
Firmware / Software used for Test:	App Version: 0.0.25.0, CSL version: 8.1.3.0 Hardware Rev: 12
*The validity of results is dependent on the stated product details, the accuracy of which the manufacturer assumes full responsibility.	

EUT Photo(s)

Configuration 1; View 1



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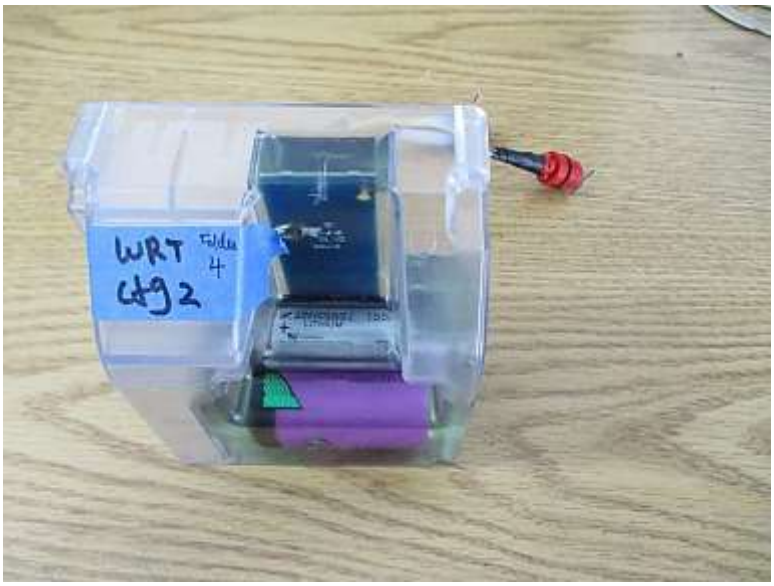

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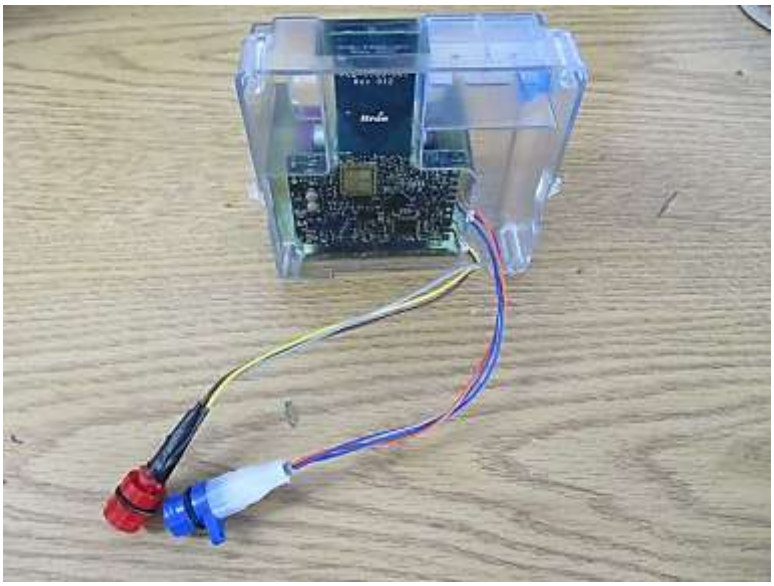
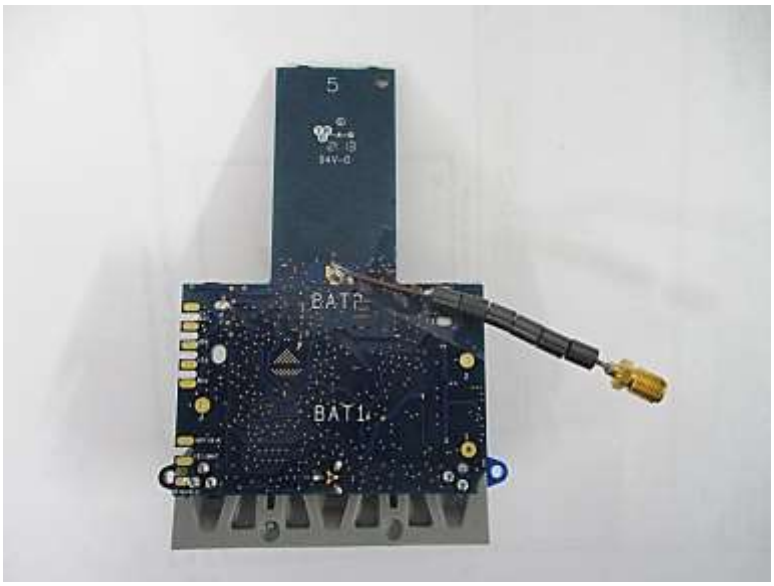


Configuration 2; View 2

Configuration 3; View 1

Configuration 3, View 2

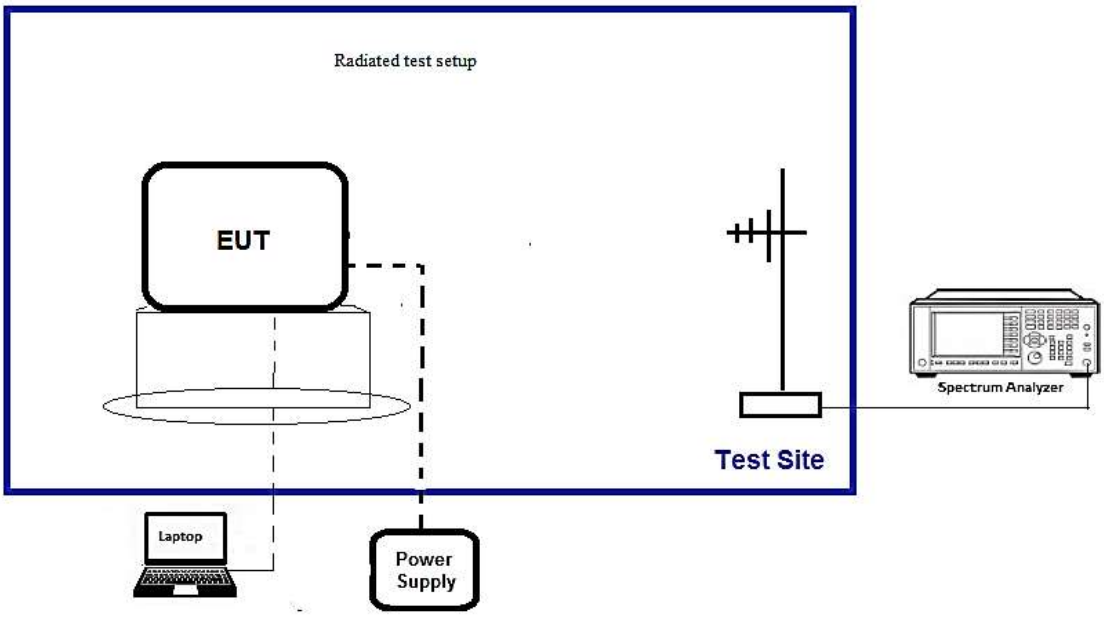
Configuration 4, View 1

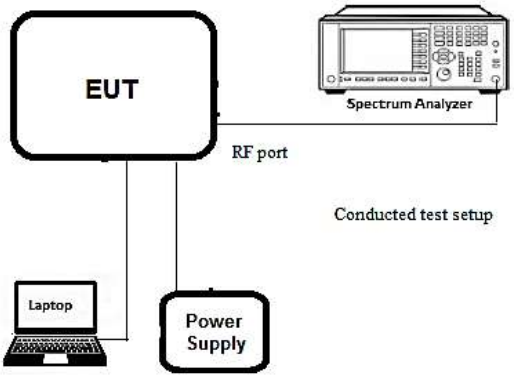


Configuration 4, View 2

Support Equipment Photo(s)

Block Diagram of Test Setup(s)





FCC Part 15 Subpart C

15.247(a) Transmitter Characteristics

Test Setup/Conditions			
Test Location:	Brea Lab A	Test Engineer:	E. Wong
Test Method:	ANSI C63.10 (2013)	Test Date(s):	6/11/2021
Configuration:	4		
Test Setup:	The EUT is placed on test bench and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes. Note: Three EUTs have the same internal hardware. Conducted data measured on one EUT represents for all three EUTs.		

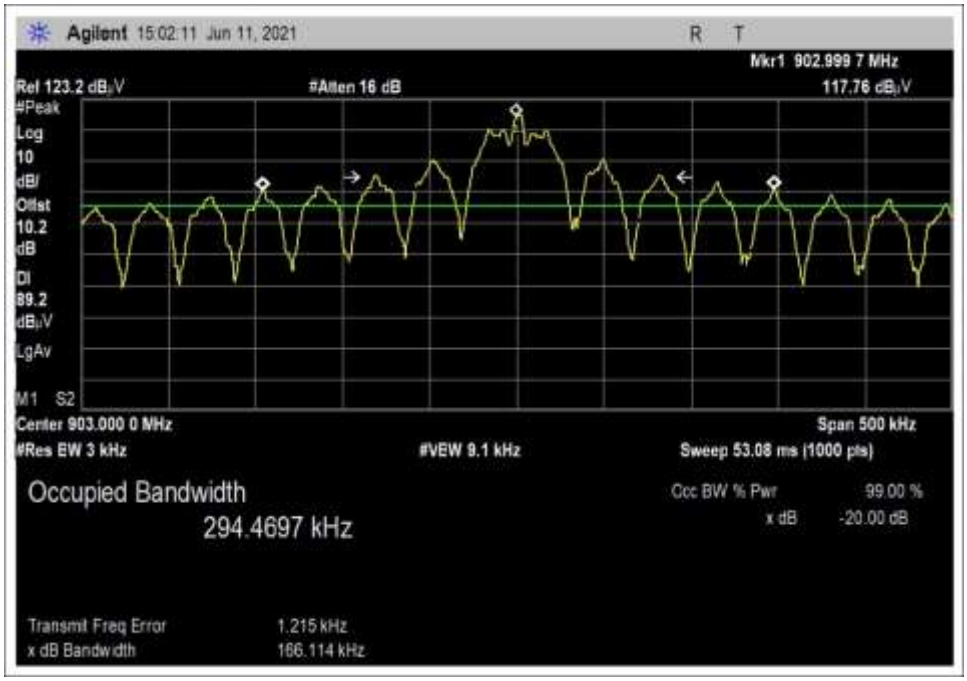
Environmental Conditions			
Temperature (ºC)	21.5	Relative Humidity (%):	41

Test Equipment					
Asset#	**Description**	**Manufacturer**	**Model**	**Cal Date**	**Cal Due**
02672	Spectrum Analyzer	Agilent	E4446A	4/29/2020	4/29/2022
03430	Attenuator	Aeroflex/ Weinschel	75A-10-12	12/20/2019	12/20/2021
07659	Cable	Astrolab, Inc.	32022-29094K-29094K-24TC	7/30/2020	7/30/2022

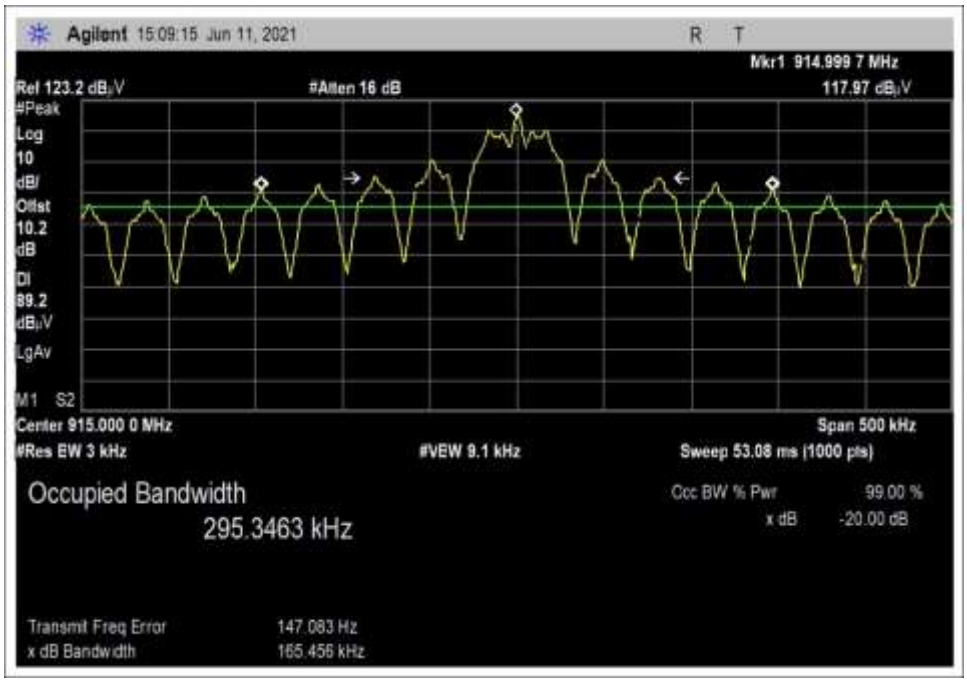
15.247(a)(1)(i) 20 dB Bandwidth

Test Data Summary					
Frequency (MHz)	**Antenna Port**	**Modulation**	**Measured (kHz)**	**Limit (kHz)**	**Results**
903.0	1	16384 OOK LV3	166.114	≤500	Pass
915.0	1	16384 OOK LV3	165.456	≤500	Pass
926.8	1	16384 OOK LV3	165.456	≤500	Pass
902.4	1	300k GFSK LV3	364.095	≤500	Pass
915.2	1	300k GFSK LV3	358.817	≤500	Pass
927.6	1	300k GFSK LV3	359.418	≤500	Pass

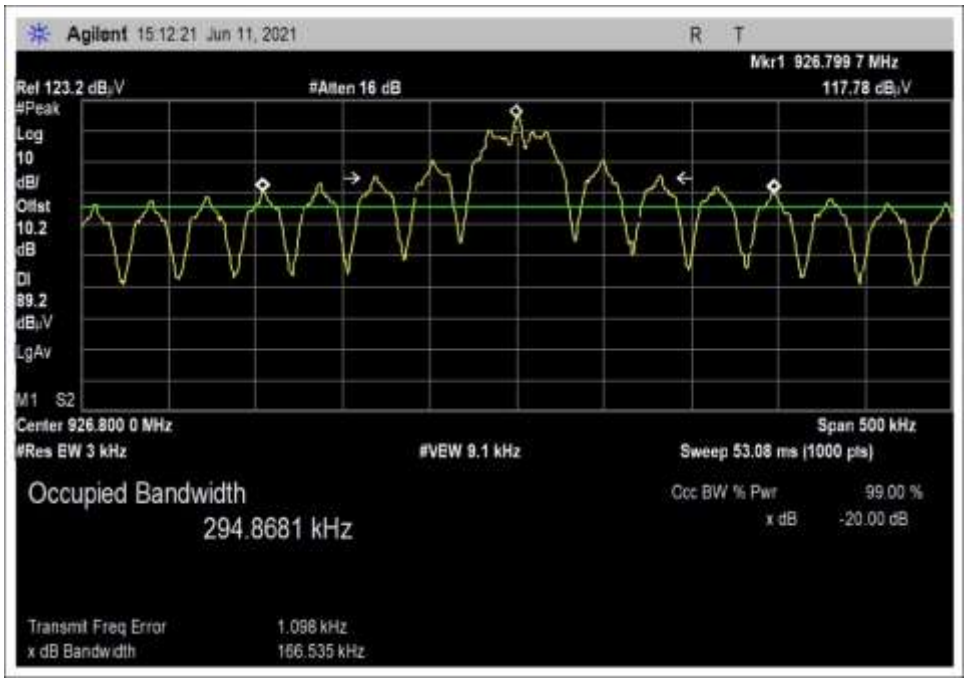
Plot(s)



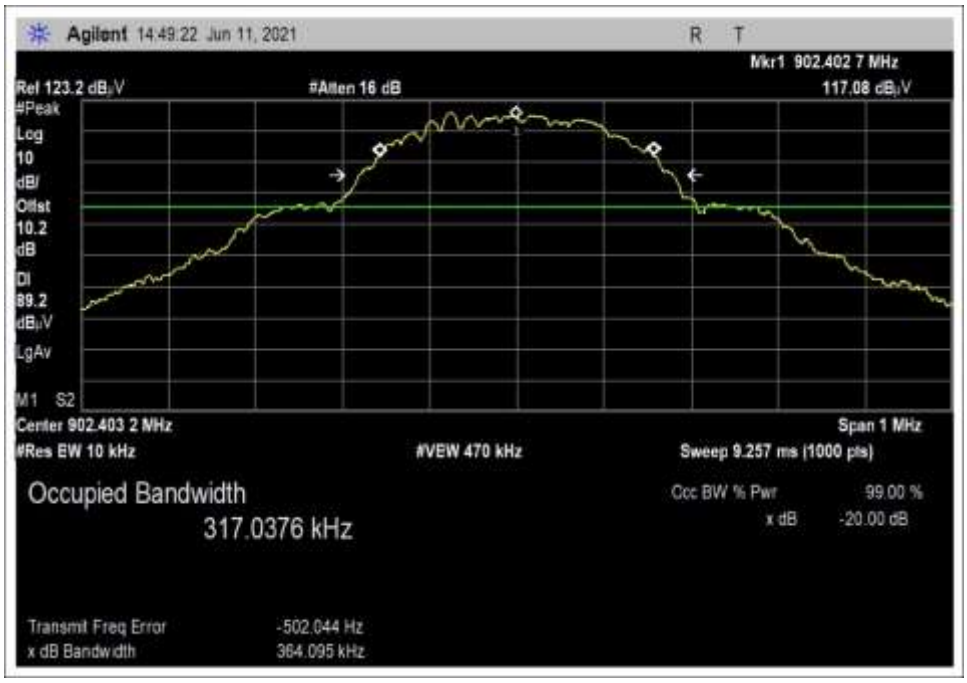
OOK LV3; Low Channel



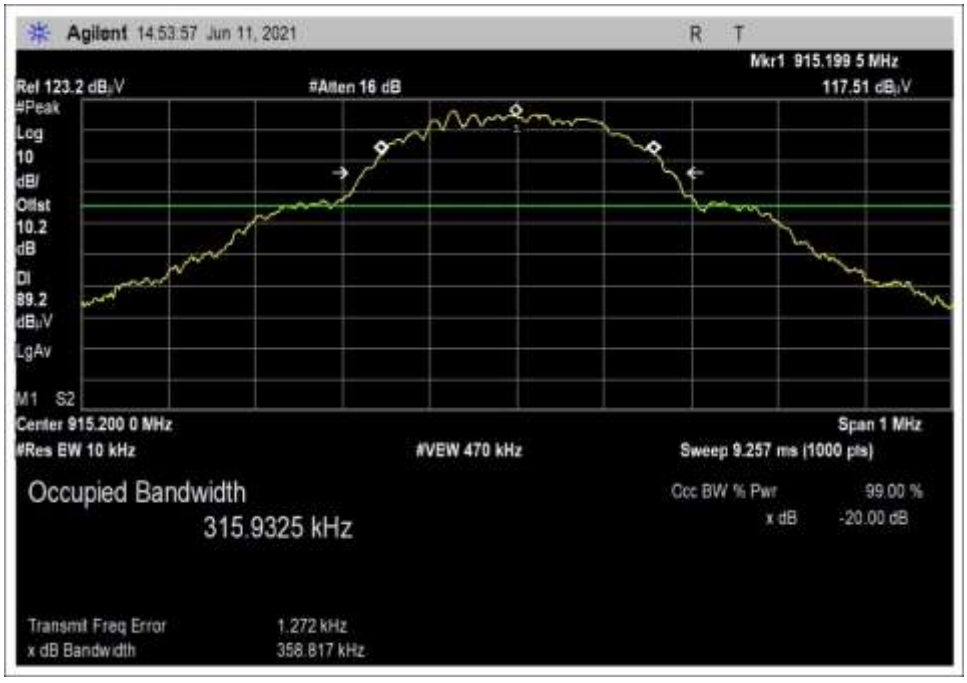
OOK LV3; Middle Channel



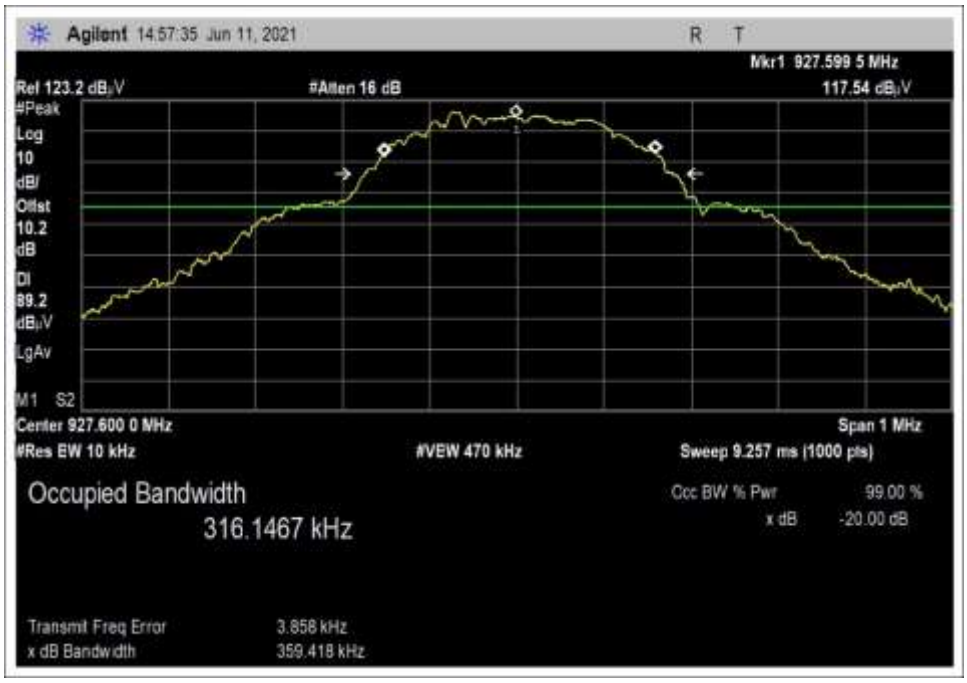
OOK LV3; High Channel



GFSK LV3; Low Channel



GFSK LV3; Middle Channel

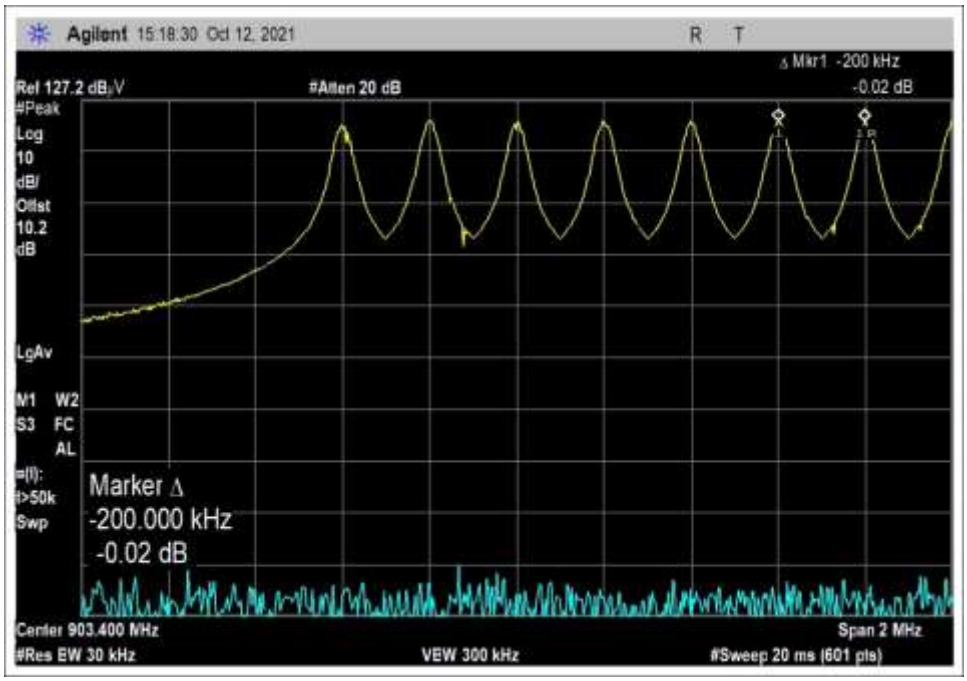


GFSK LV3; High Channel

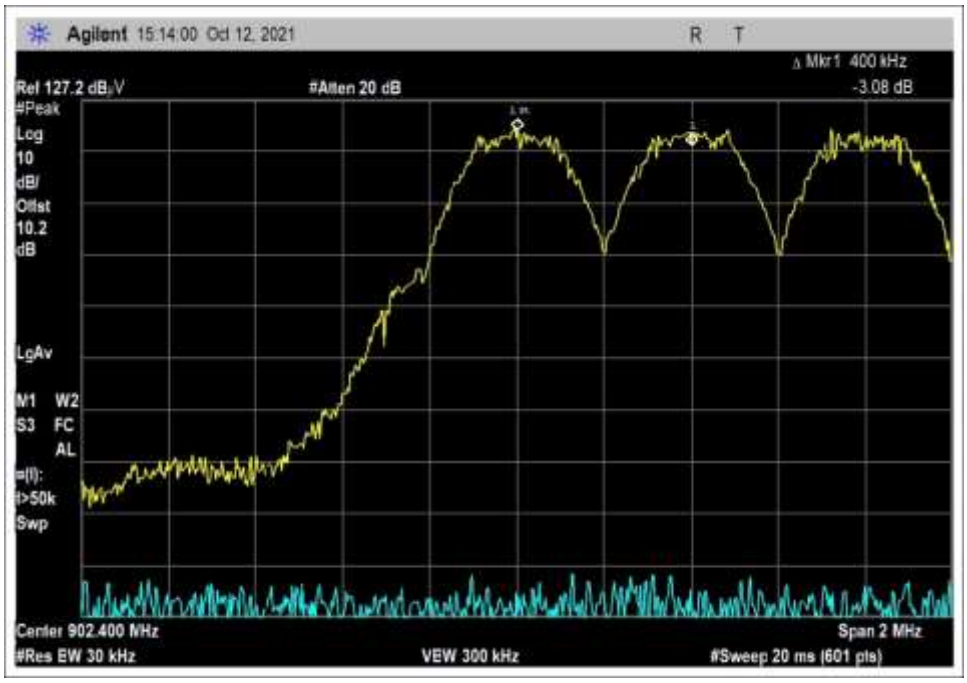
15.247(a)(1) Carrier Separation

Test Data Summary				
Limit applied: 20dB bandwidth of the hopping channel.				
Antenna Port	**Operational Mode**	**Measured (kHz)**	**Limit (kHz)**	**Results**
1	16384 OOK LV3	200	>166.114	Pass
1	300k GFSK LV3	400	>364.095	Pass

Plot(s)



OOK LV3

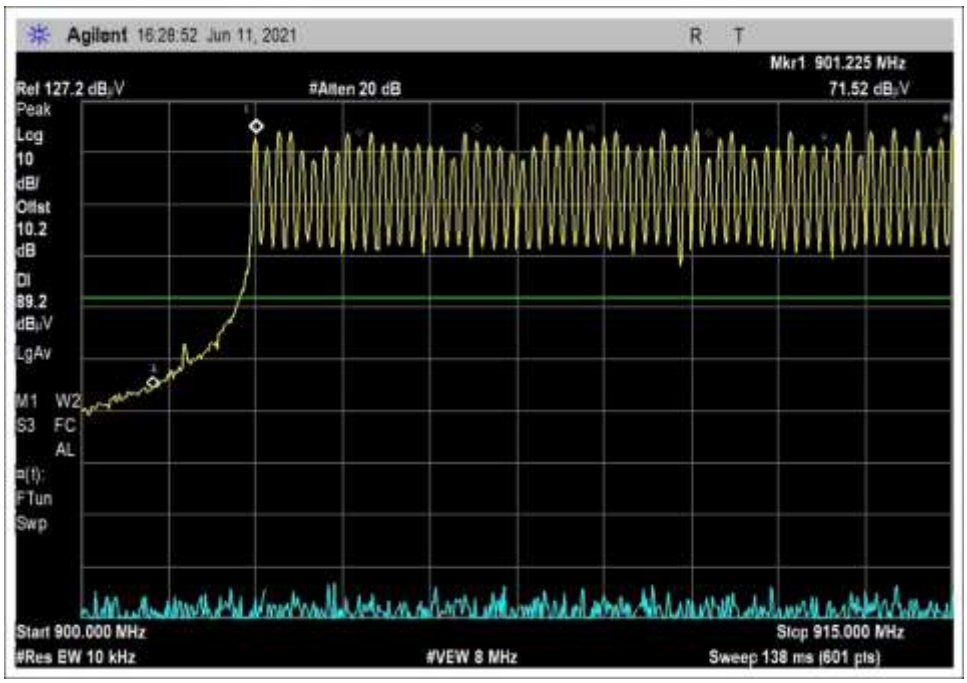

Agilent 15:14:00 Oct 12, 2021
R T
Mkr1 400 kHz
-3.08 dB
Ref 127.2 dBµV
#Atten 20 dB
#Peak
Log
10
dB/
Offst
10.2
dB
LgAv
M1 W2
S3 FC
AL
#(!):
#>50k
Swp
Center 902.400 MHz
Span 2 MHz
#Res BW 30 kHz
VBW 300 kHz
#Sweep 20 ms (601 pts)

GFSK LV3

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

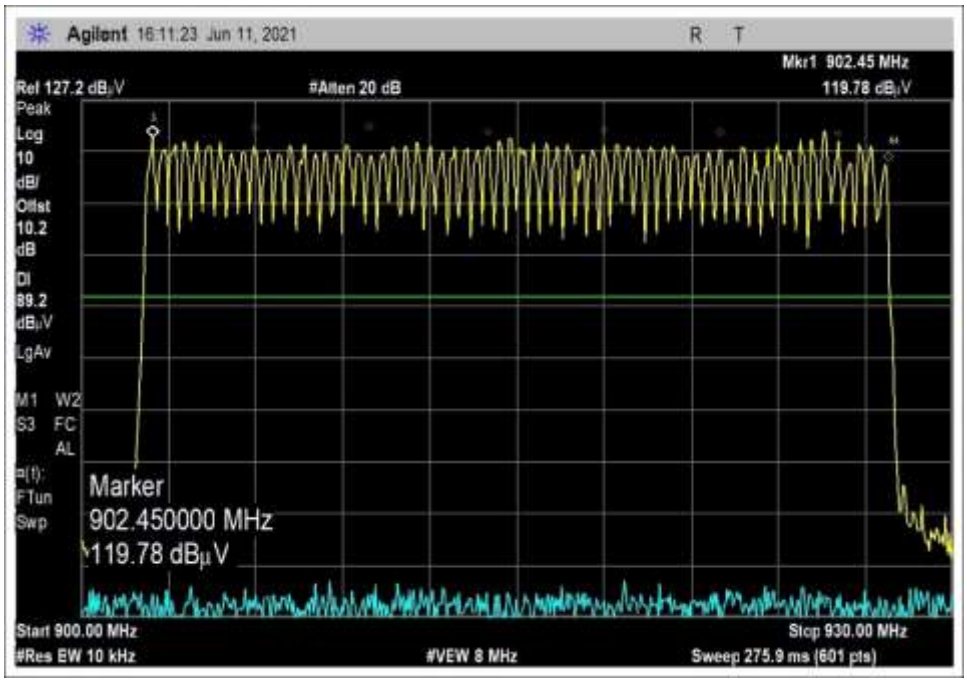
Test Data Summary				
$Limit = \begin{cases} 50\ Channels \mid 20\ dB\ BW < 250kHz \\ 25\ Channels \mid 20\ dB\ BW \geq 250kHz \end{cases}$				
Antenna Port	**Operational Mode**	**Measured (Channels)**	**Limit (Channels)**	**Results**
1	16384 OOK LV3	120	≥ 50	Pass
1	300k GFSK LV3	64	≥ 25	Pass

Plot(s)



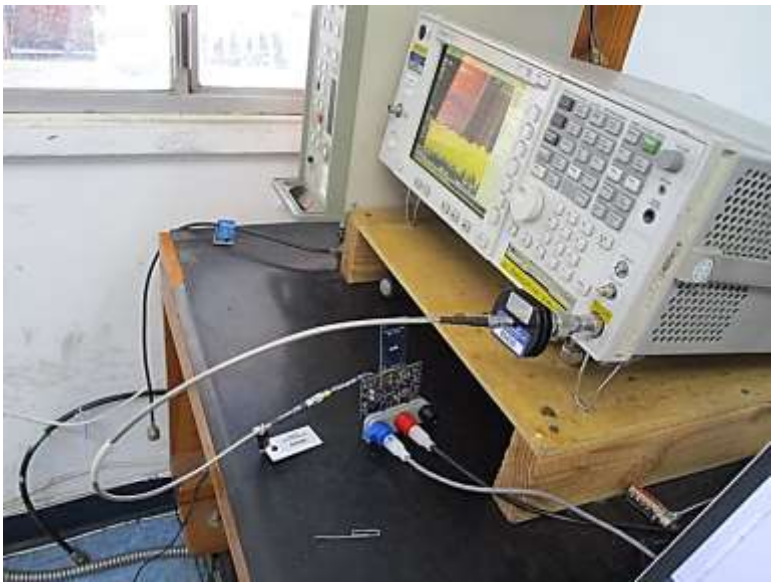
OOK LV3

OOK LV3



GFSK LV3

Test Setup Photo(s)



15.247(b)(2) Output Power

Test Setup/Conditions			
Test Location:	Brea Lab A	Test Engineer:	E. Wong
Test Method:	ANSI C63.10 (2013)	Test Date(s):	7/13/2021
Configuration:	4		
Test Setup:	The EUT is placed on test bench and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes. Note: Three EUTs have the same internal hardware. Conducted data measured on one EUT represents for all three EUTs. Correction factor is compensated for.		

Environmental Conditions			
Temperature (ºC)	25	Relative Humidity (%):	30

Test Equipment					
Asset#	Description	Manufacturer	Model	Cal Date	Cal Due
02672	Spectrum Analyzer	Agilent	E4446A	4/29/2020	4/29/2022
03430	Attenuator	Aeroflex/ Weinschel	75A-10-12	12/20/2019	12/20/2021
07659	Cable	Astrolab, Inc.	32022-29094K-29094K-24TC	7/30/2020	7/30/2022

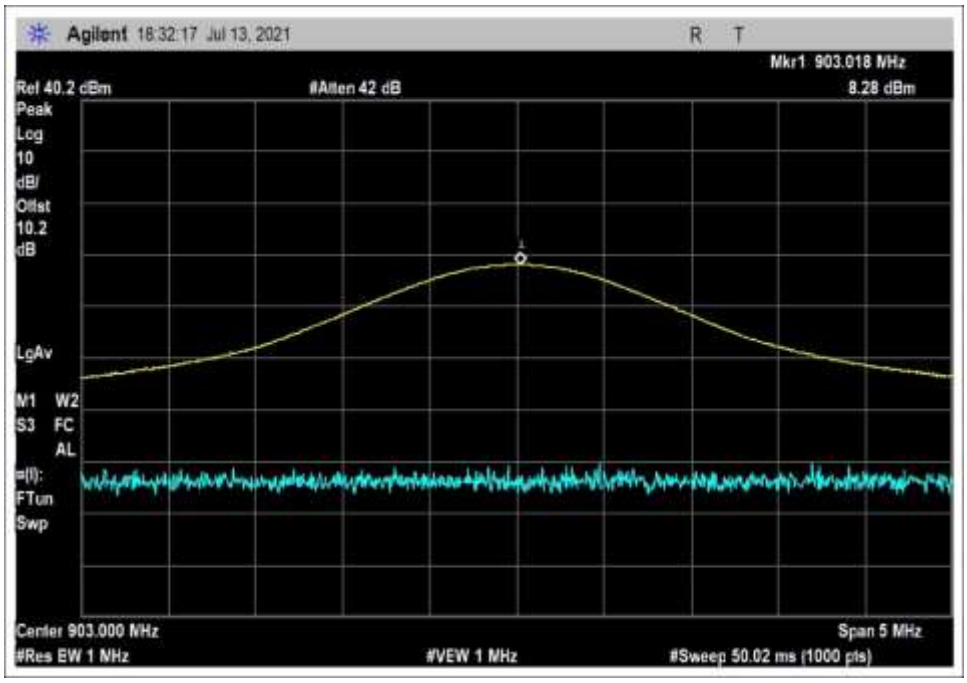
Test Data Summary - Voltage Variations

This equipment is battery powered. Power output tests were performed with a DC power supply set at 3.6V to simulate a fresh battery.

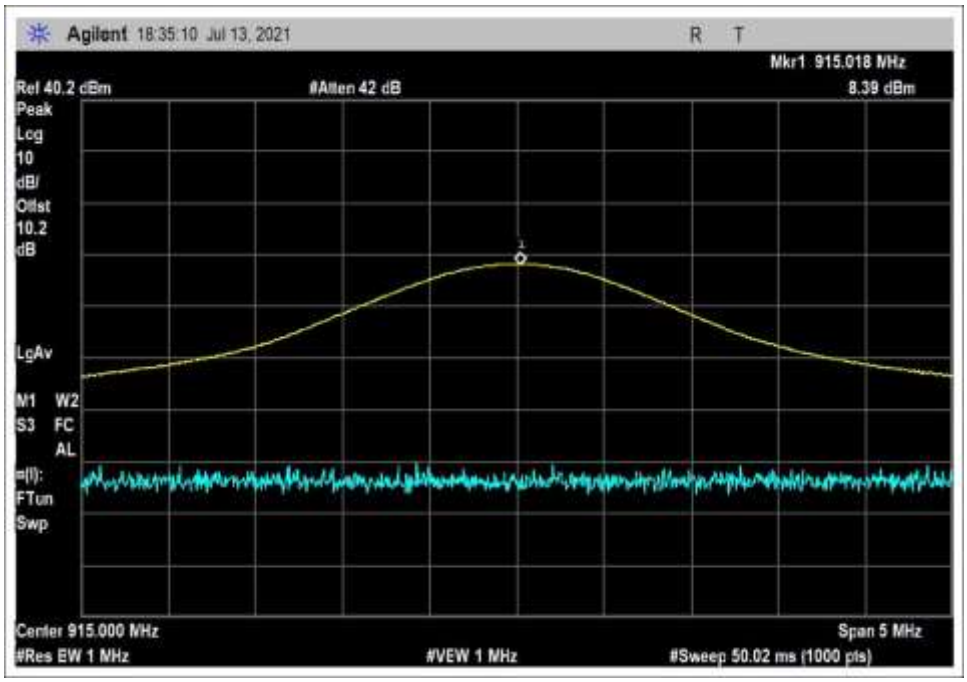
Test Data Summary - RF Conducted Measurement					
$Limit = \begin{cases} 30dBm\ Conducted/36dBm\ EIRP \mid \geq 50\ Channels \\ 24dBm\ Conducted/30dBm\ EIRP \mid < 50\ Channels\ (\min 25) \end{cases}$					
Frequency (MHz)	**Modulation**	**Ant. Type / Gain (dBi)**	**Measured (dBm)**	**Limit (dBm)**	**Results**
903	16384 OOK LV1	PCB trace / 1.1 dB	8.3	≤ 30	Pass
915	16384 OOK LV1	PCB trace / 1.1 dB	8.4	≤ 30	Pass
926.8	16384 OOK LV1	PCB trace / 1.1 dB	8.4	≤ 30	Pass
903	16384 OOK LV3	PCB trace / 1.1 dB	16.3	≤ 30	Pass
915	16384 OOK LV3	PCB trace / 1.1 dB	16.4	≤ 30	Pass
926.8	16384 OOK LV3	PCB trace / 1.1 dB	16.4	≤ 30	Pass
902.4	300k GFSK LV3	PCB trace / 1.1 dB	16.2	≤ 30	Pass
915.2	300k GFSK LV3	PCB trace / 1.1 dB	16.4	≤ 30	Pass
927.6	300k GFSK LV3	PCB trace / 1.1 dB	16.3	≤ 30	Pass
Folder 3					

Test Data Summary - RF Conducted Measurement					
$Limit = \begin{cases} 30dBm\ Conducted/36dBm\ EIRP \mid \geq 50\ Channels \\ 24dBm\ Conducted/30dBm\ EIRP \mid < 50\ Channels\ (\min 25) \end{cases}$					
Frequency (MHz)	**Modulation**	**Ant. Type / Gain (dBi)**	**Measured (dBm)**	**Limit (dBm)**	**Results**
903	16384 OOK LV1	PCB trace / 1.1 dB	8.3	≤ 30	Pass
915	16384 OOK LV1	PCB trace / 1.1 dB	8.4	≤ 30	Pass
926.8	16384 OOK LV1	PCB trace / 1.1 dB	8.4	≤ 30	Pass
903	16384 OOK LV3	PCB trace / 1.1 dB	15.5	≤ 30	Pass
915	16384 OOK LV3	PCB trace / 1.1 dB	15.6	≤ 30	Pass
926.8	16384 OOK LV3	PCB trace / 1.1 dB	15.6	≤ 30	Pass
902.4	300k GFSK LV3	PCB trace / 1.1 dB	15.5	≤ 30	Pass
915.2	300k GFSK LV3	PCB trace / 1.1 dB	15.6	≤ 30	Pass
927.6	300k GFSK LV3	PCB trace / 1.1 dB	15.5	≤ 30	Pass
Folder 4					

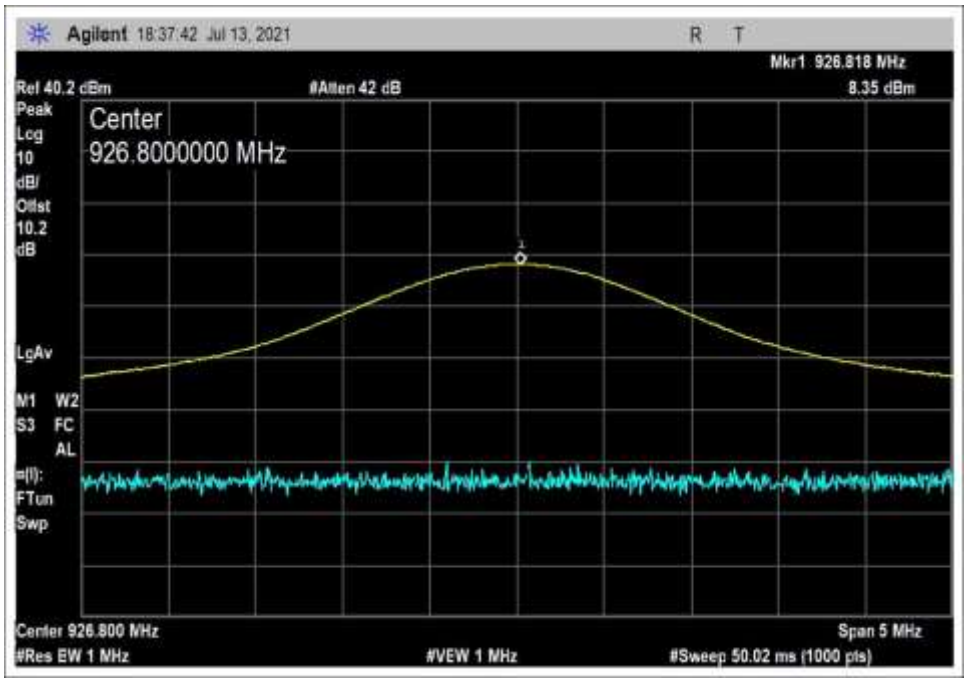
OOK LV1 Plot(s) – Folder 3



Low Channel

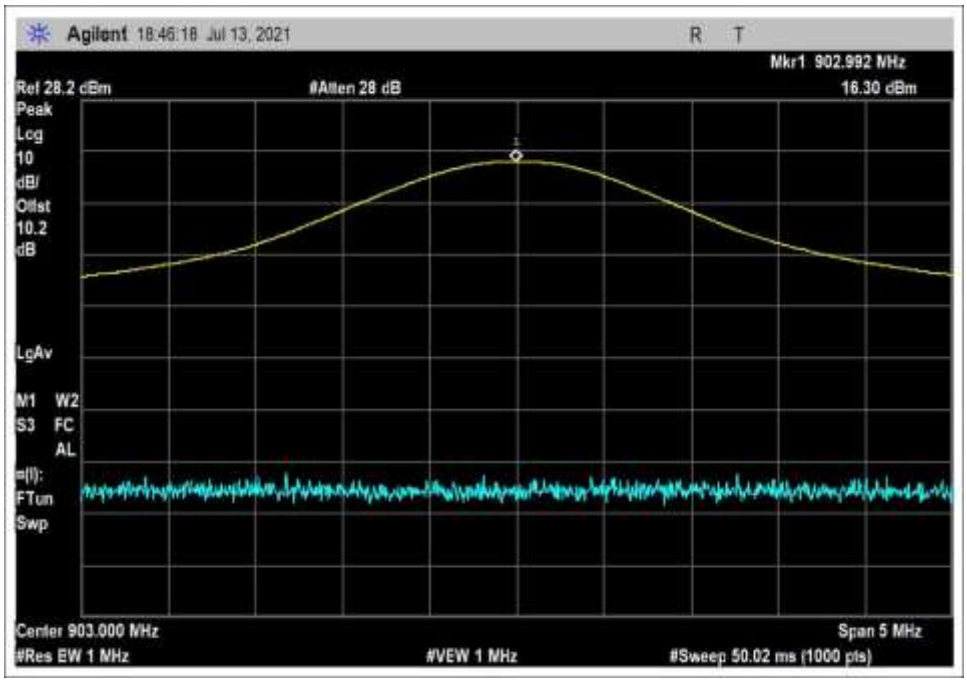


Middle Channel



High Channel

OOK LV3 Plot(s) - Folder 3



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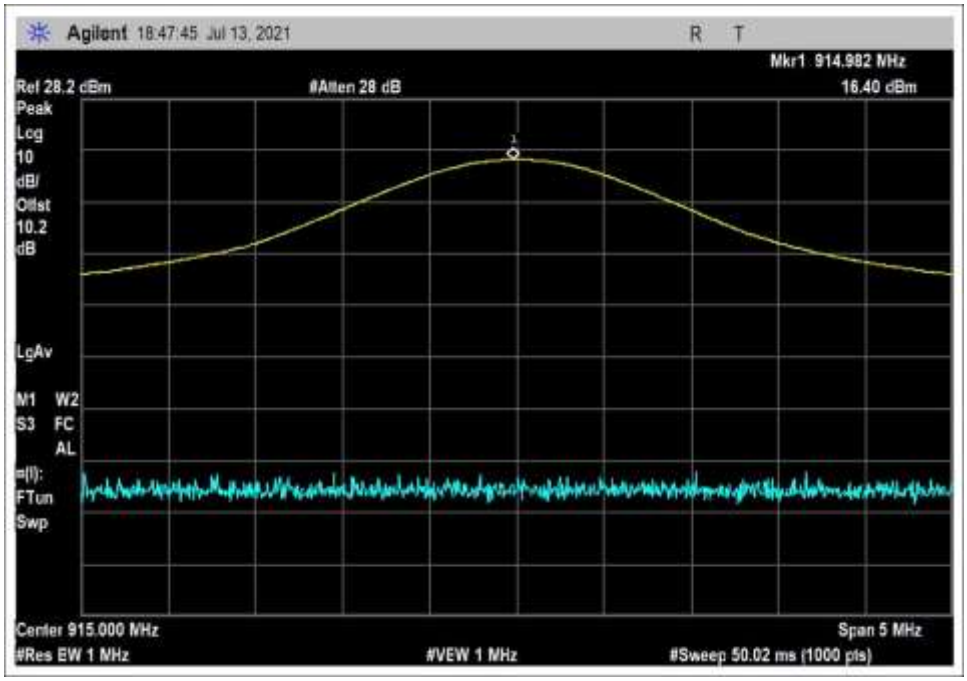

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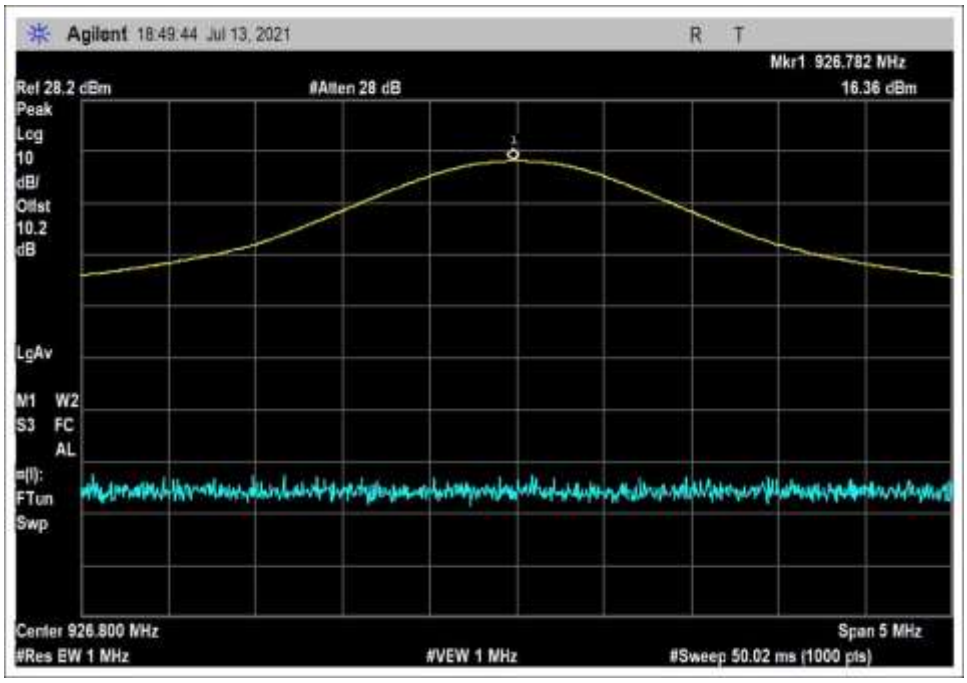
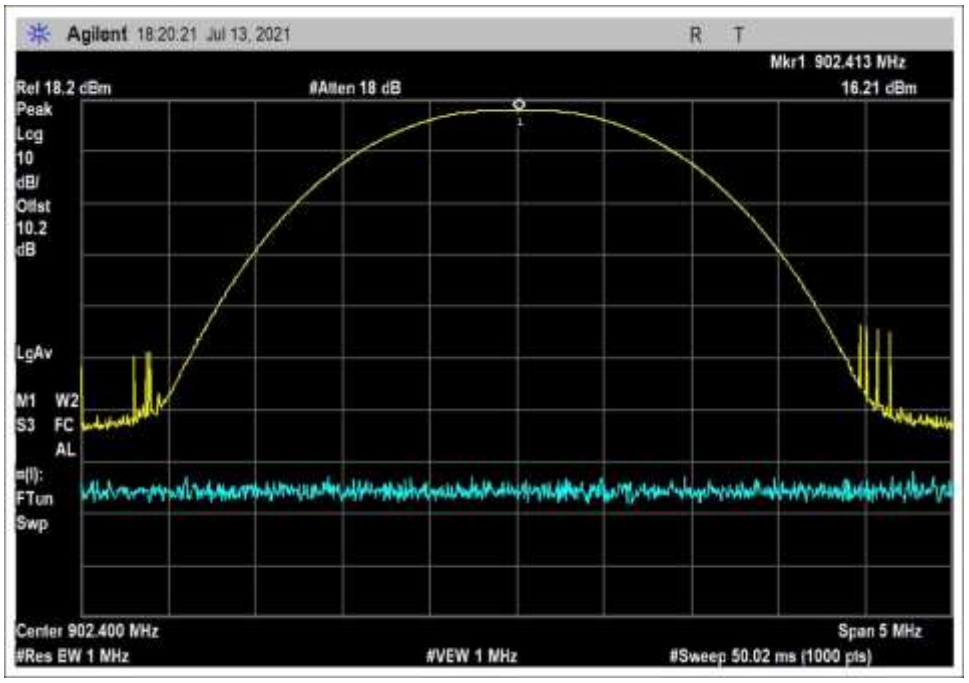


High Channel

GFSK LV3 Plot(s) - Folder 3



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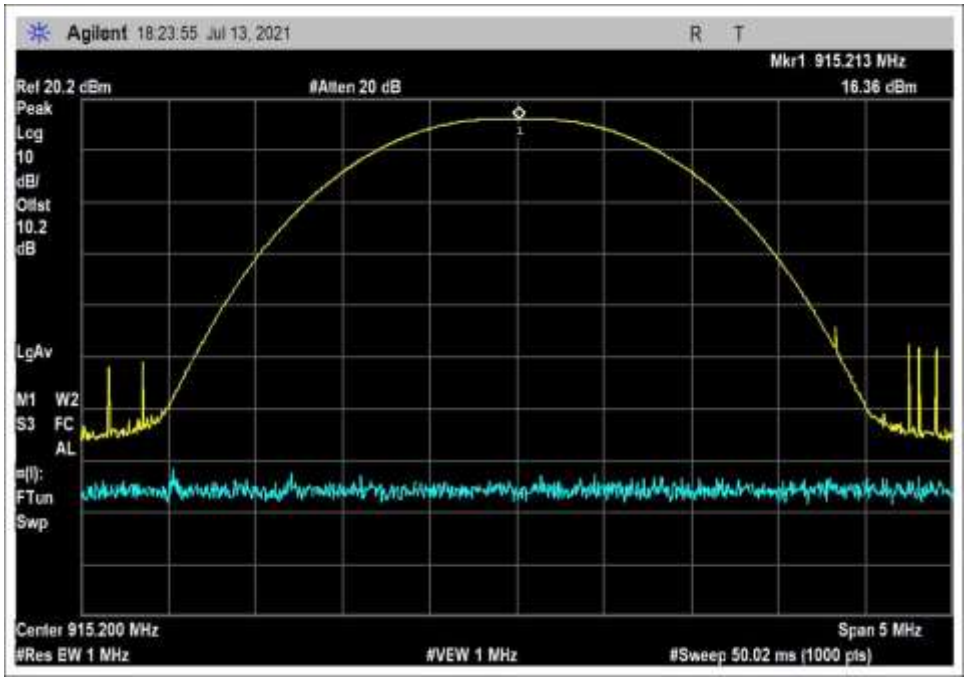

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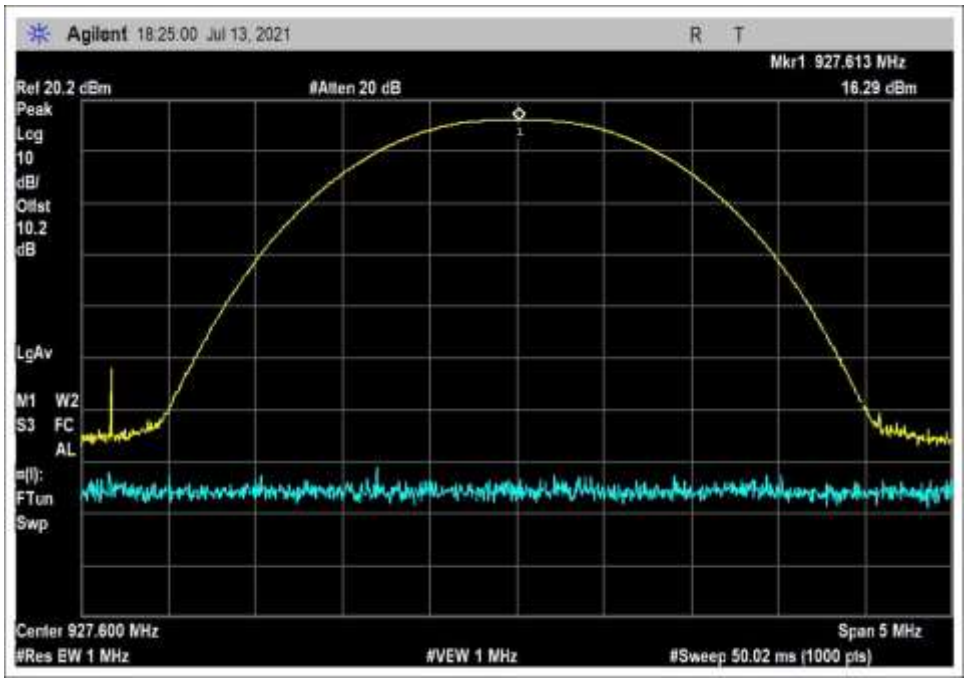
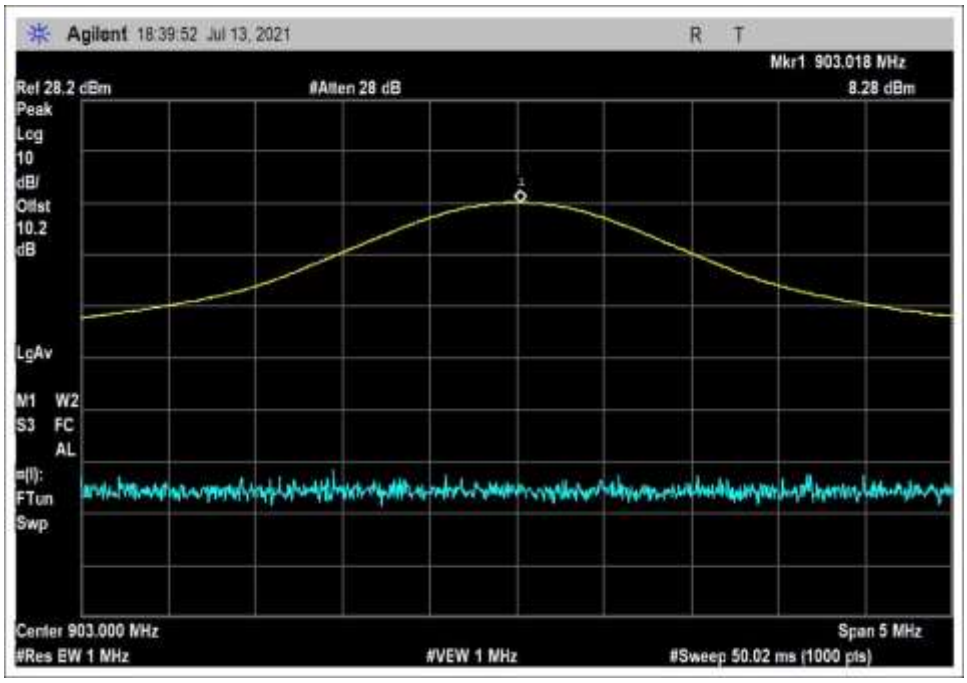
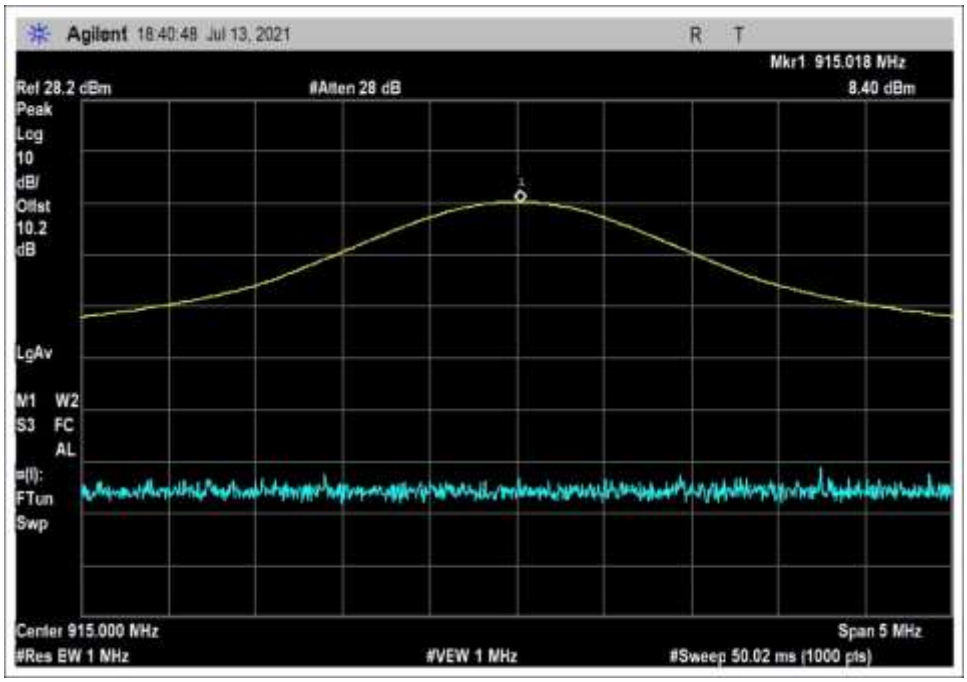


High Channel

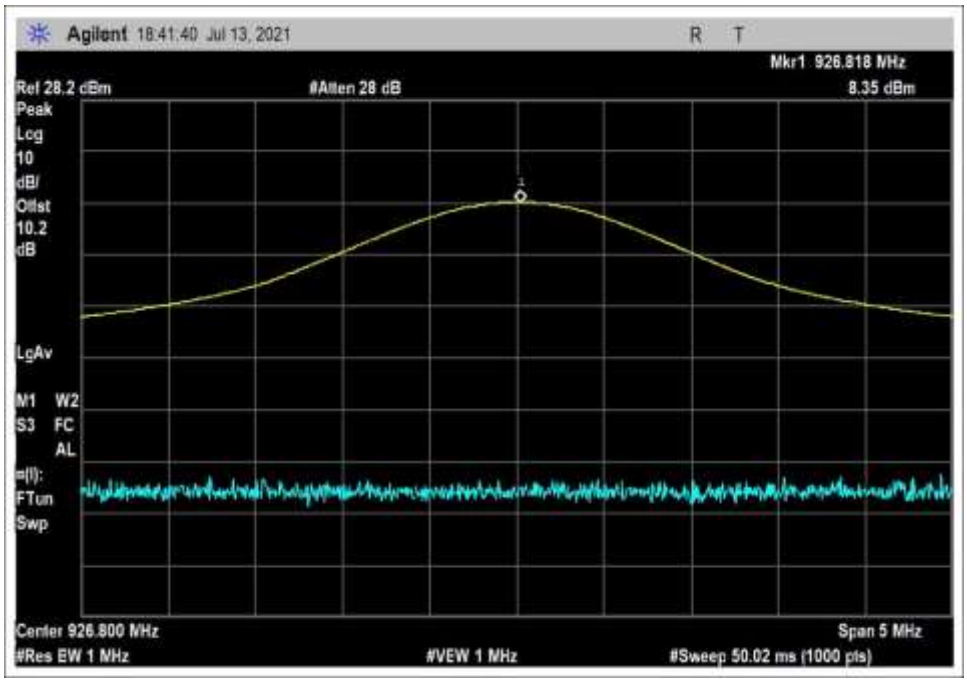
OOK LV1 Plot(s) – Folder 4



Low Channel

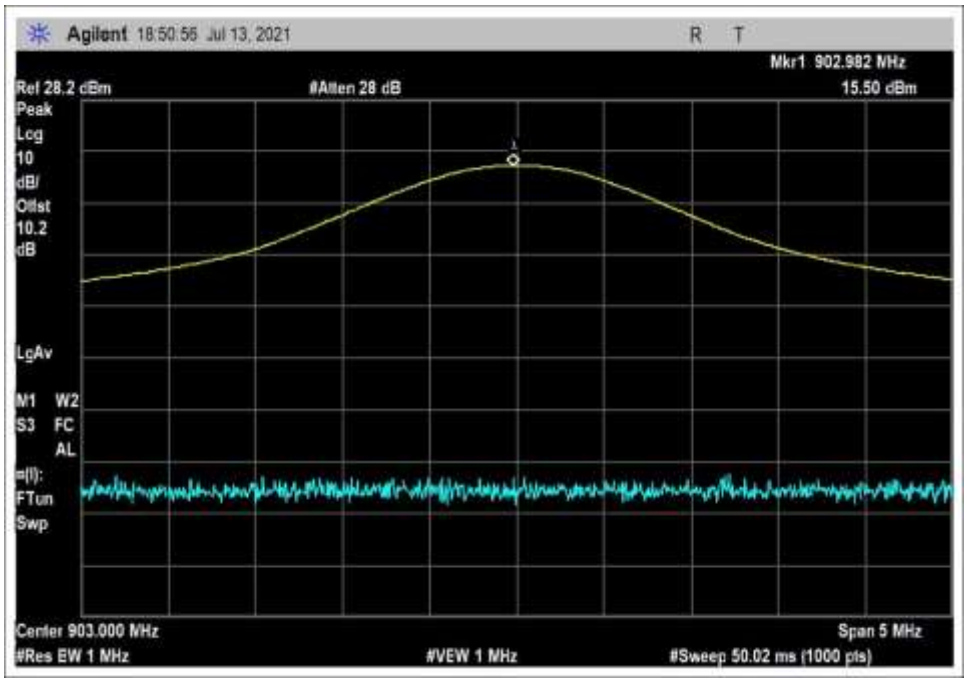


Middle Channel

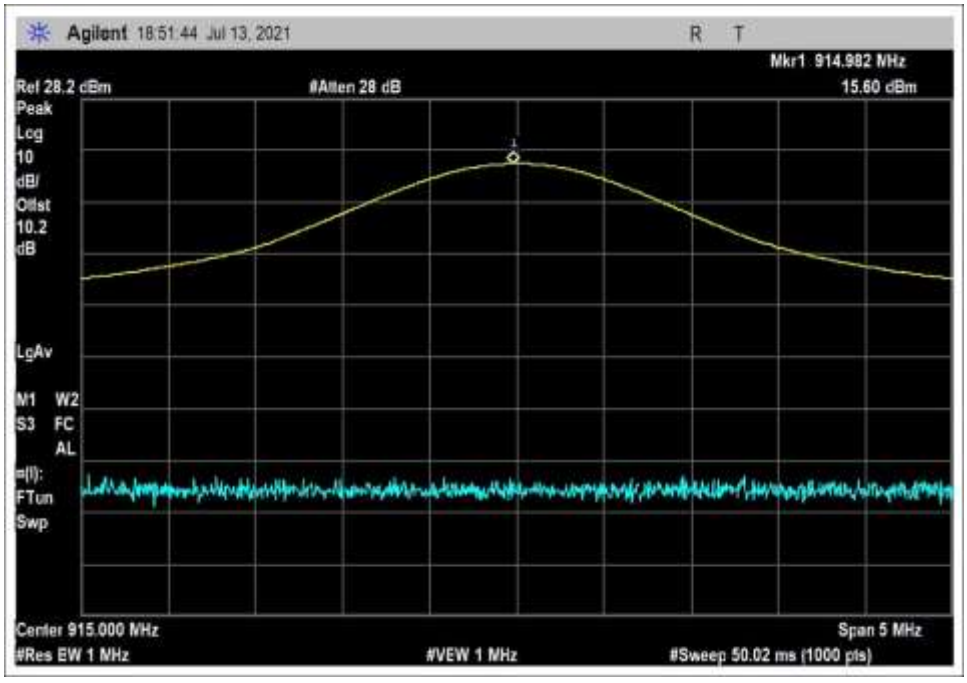


High Channel

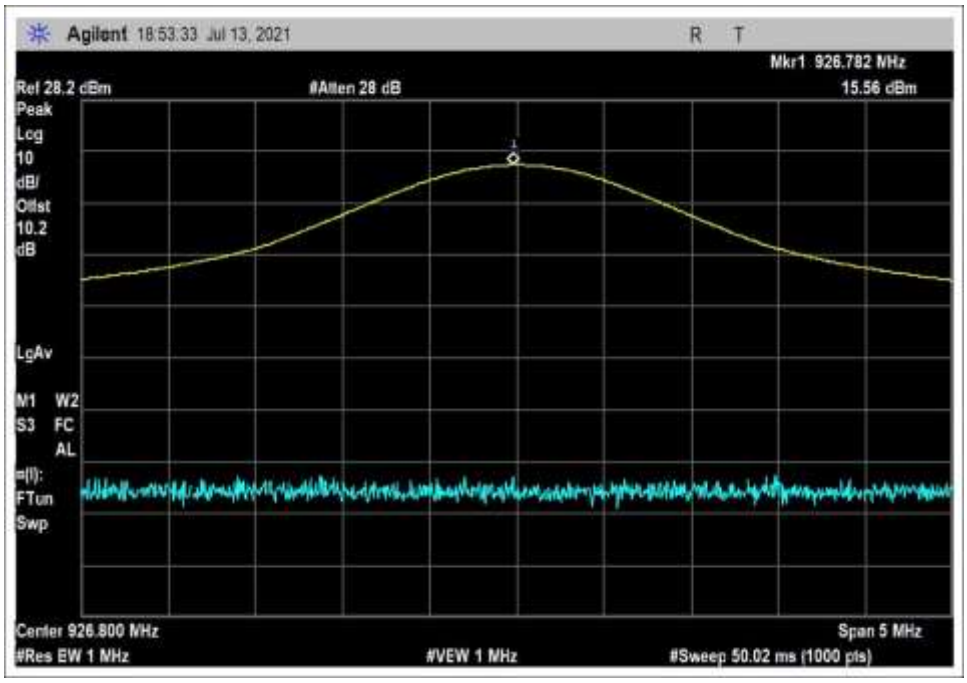
OOK LV3 Plot(s) - Folder 4



Low Channel

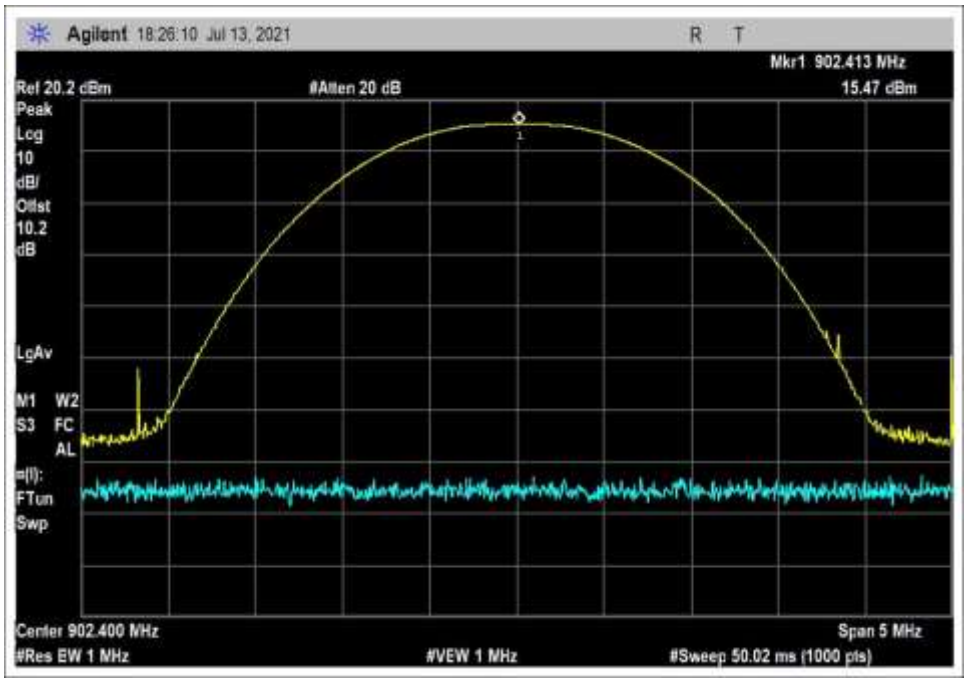


Middle Channel

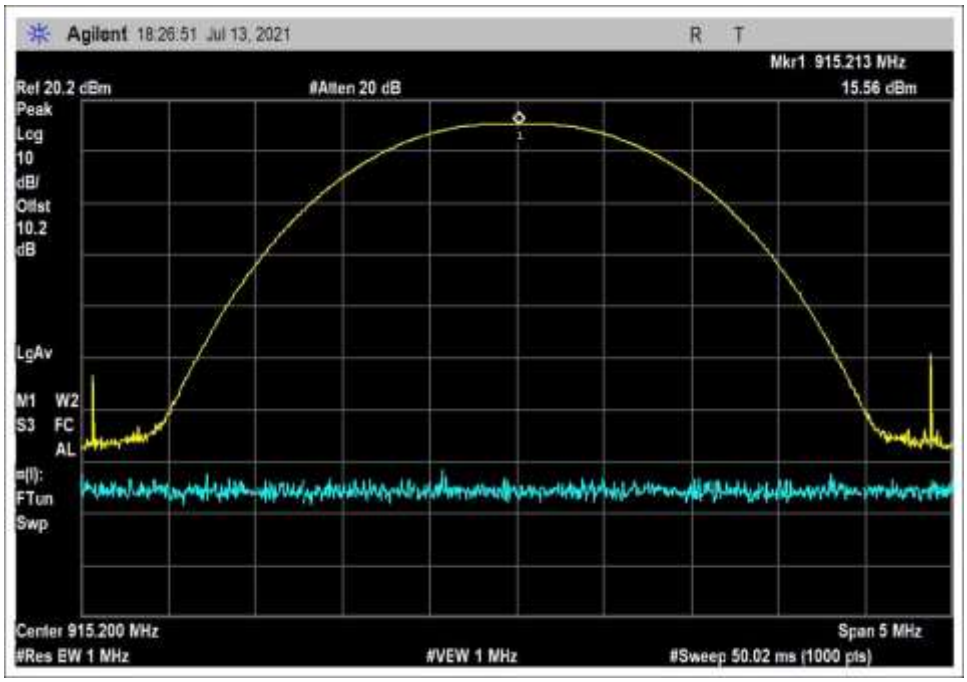


High Channel

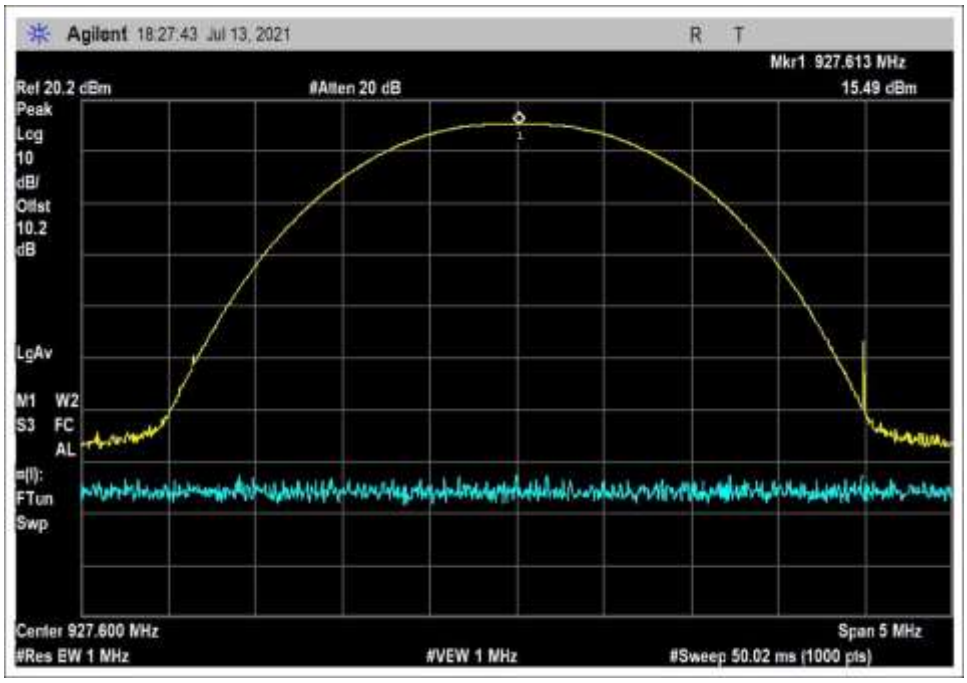
GFSK LV3 Plot(s) - Folder 4



Low Channel

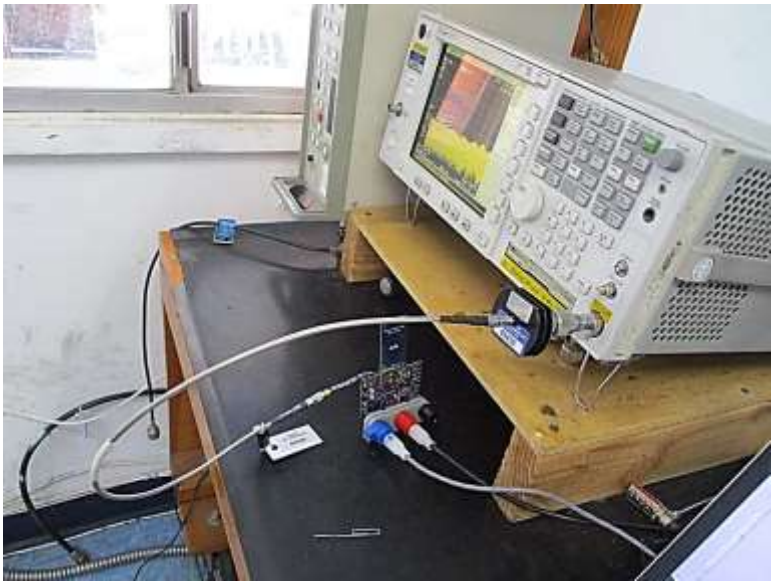


Middle Channel



High Channel

Test Setup Photo(s)



15.35(c) Duty Cycle Correction Factor

Summary

300k GFSK LV3:
The manufacturer declares the worst case duty cycle is 45ms per 100ms. Duty cycle correction factor= 20log(45ms/100ms) = -6.9dB.

16384 OOK LV3, LV1
The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB

*The validity of results is dependent on the stated product details, the accuracy of which the manufacturer assumes full responsibility.

15.247(d) RF Conducted Emissions & Band Edge

Test Setup / Conditions / Data

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Conducted Spurious Emissions**		
Work Order #:	**105380**	Date:	7/19/2021
Test Type:	**Conducted Emissions**	Time:	18:17:09
Tested By:	E. Wong	Sequence#:	43
Software:	EMITest 5.03.19		3.6V DC

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 4			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 4			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's red port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable. All port fill, black port is connected to a section of unterminated cable.
EUT has fixed orientation per manufacture's specification.

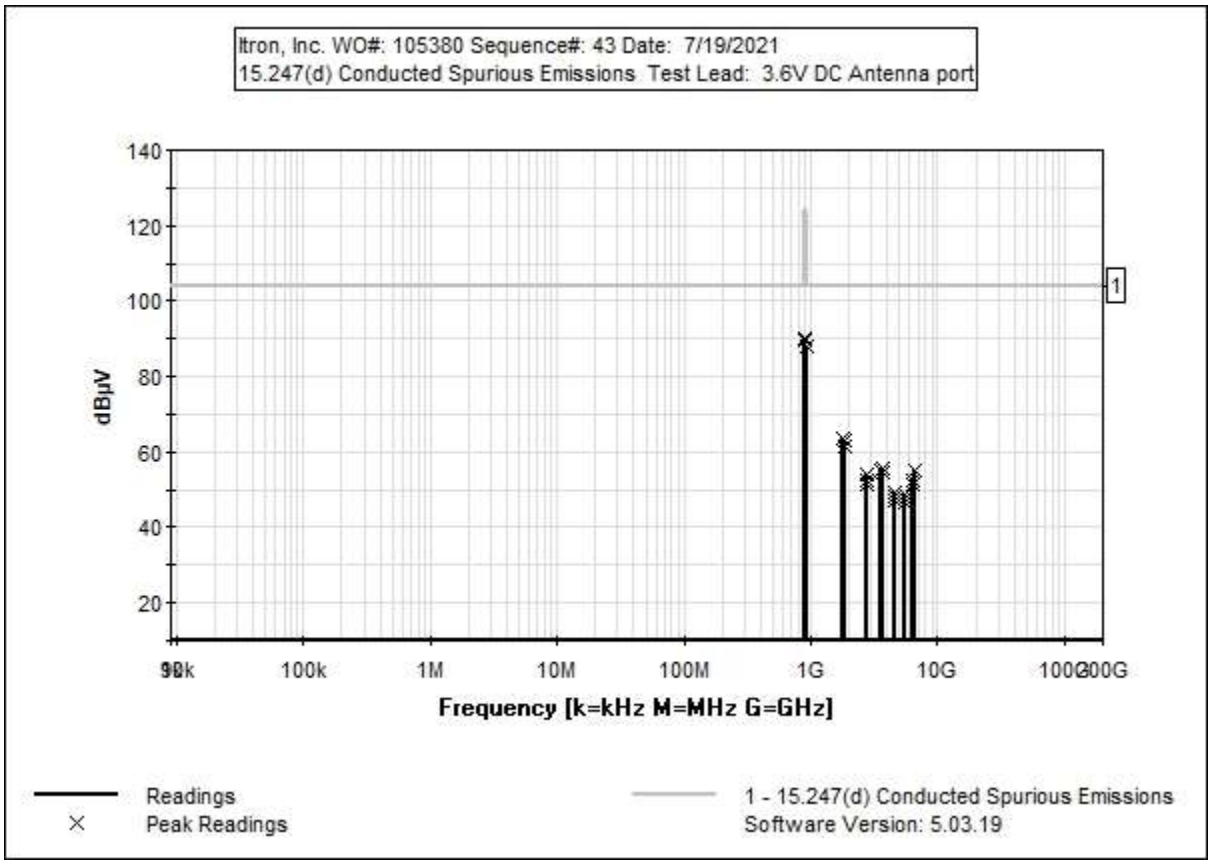
Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV3, folder 3

Frequency of Measurement: 9k-9280MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN03430	Attenuator	75A-10-12	12/20/2019	12/20/2021
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022

Measurement Data: Reading listed by margin. Test Lead: Antenna 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	79.9	+0.0	+10.0	+0.2		+0.0	90.1	104.0 Bandedge_L_OOK _LV3	-13.9	Anten
2	902.000M	79.4	+0.0	+10.0	+0.2		+0.0	89.6	104.0 Bandedge_L_OOK _LV3_hopping	-14.4	Anten
3	928.000M	77.9	+0.0	+10.0	+0.2		+0.0	88.1	104.0 Bandedge_H_OOK _LV3	-15.9	Anten
4	928.000M	77.8	+0.0	+10.0	+0.2		+0.0	88.0	104.0 Bandedge_H_OOK _LV3_Hopping	-16.0	Anten
5	1806.000M	53.6	+0.0	+9.8	+0.3		+0.0	63.7	104.0 L	-40.3	Anten
6	1830.000M	52.7	+0.0	+9.8	+0.3		+0.0	62.8	104.0 M	-41.2	Anten
7	1853.600M	51.5	+0.0	+9.8	+0.3		+0.0	61.6	104.0 H	-42.4	Anten
8	3660.000M	45.2	+0.0	+10.1	+0.5		+0.0	55.8	104.0 M	-48.2	Anten
9	6487.600M	44.5	+0.0	+10.0	+0.7		+0.0	55.2	104.0 H	-48.8	Anten
10	3612.000M	44.3	+0.0	+10.1	+0.5		+0.0	54.9	104.0 L	-49.1	Anten
11	3707.200M	43.9	+0.0	+10.1	+0.5		+0.0	54.5	104.0 H	-49.5	Anten
12	2709.000M	43.5	+0.0	+10.0	+0.3		+0.0	53.8	104.0 L	-50.2	Anten
13	2745.000M	42.1	+0.0	+10.0	+0.3		+0.0	52.4	104.0 M	-51.6	Anten
14	6405.000M	41.6	+0.0	+10.0	+0.7		+0.0	52.3	104.0 M	-51.7	Anten
15	6321.000M	40.9	+0.0	+10.0	+0.7		+0.0	51.6	104.0 L	-52.4	Anten
16	2780.400M	41.0	+0.0	+10.0	+0.3		+0.0	51.3	104.0 H	-52.7	Anten
17	4575.000M	38.8	+0.0	+10.2	+0.5		+0.0	49.5	104.0 M	-54.5	Anten
18	5418.000M	38.2	+0.0	+10.1	+0.7		+0.0	49.0	104.0 L	-55.0	Anten
19	4515.000M	37.5	+0.0	+10.2	+0.5		+0.0	48.2	104.0 L	-55.8	Anten
20	5490.000M	36.9	+0.0	+10.1	+0.7		+0.0	47.7	104.0 M	-56.3	Anten
21	4634.000M	36.2	+0.0	+10.2	+0.5		+0.0	46.9	104.0 H	-57.1	Anten
22	5560.800M	35.8	+0.0	+10.1	+0.7		+0.0	46.6	104.0 H	-57.4	Anten

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) Conducted Spurious Emissions**		
Work Order #:	**105380**	Date:	7/19/2021
Test Type:	**Conducted Emissions**	Time:	18:02:11
Tested By:	E. Wong	Sequence#:	43
Software:	EMITest 5.03.19		3.6V DC

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 4			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 4			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's red port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable. All port fill, black port is connected to a section of unterminated cable.
EUT has fixed orientation per manufacture's specification.

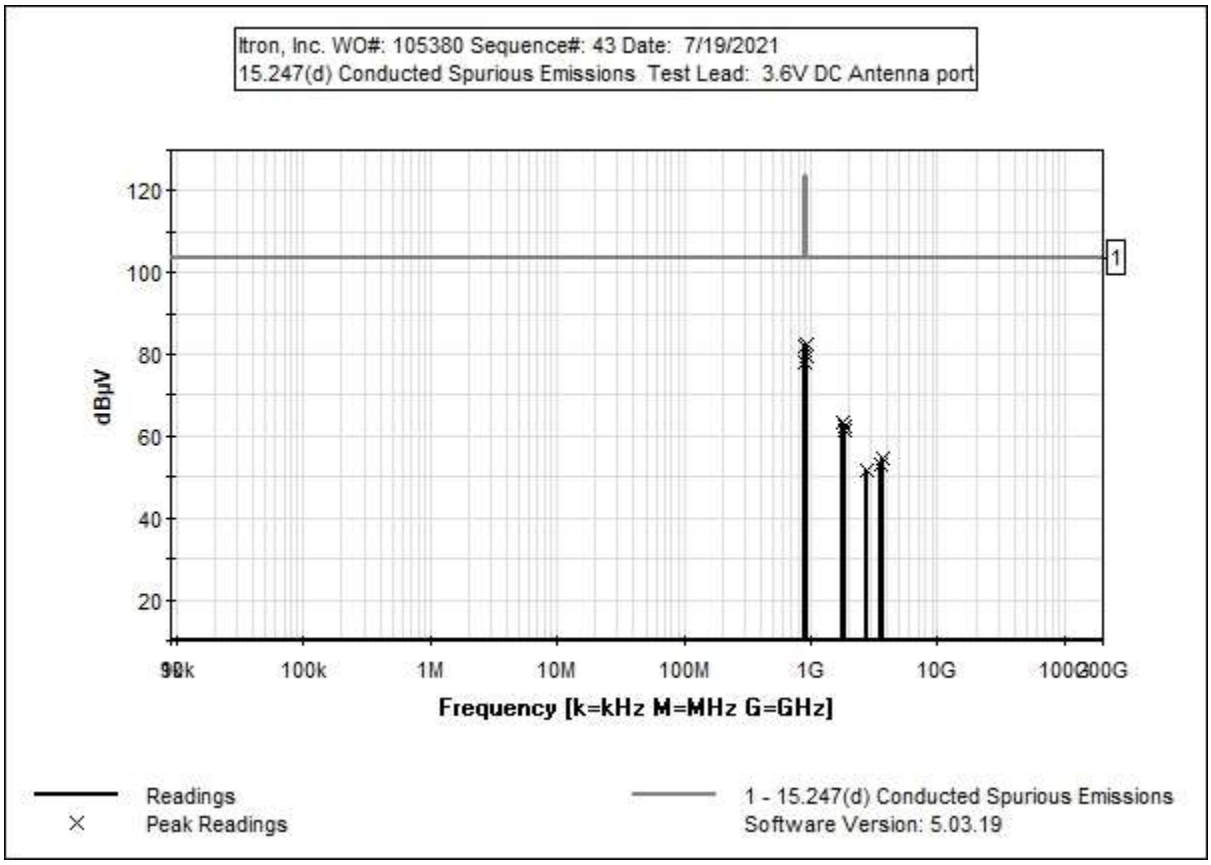
Operating Frequency / Mode:
902.4MHz, 915.2MHz, 927.6MHz, 400kHz steps, 64 channels, 300k GFSK LV3 Folder 3

Frequency of Measurement: 9kHz-9280MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN03430	Attenuator	75A-10-12	12/20/2019	12/20/2021
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	928.000M	72.5	+0.0	+10.0	+0.2		+0.0	82.7	103.5 Bandedge_H_GFSK	-20.8	Anten
2	902.000M	72.0	+0.0	+10.0	+0.2		+0.0	82.2	103.5 Bandedge L_GFSK_	-21.3	Anten
3	928.000M	69.3	+0.0	+10.0	+0.2		+0.0	79.5	103.5 Bandedge_H_GFSK_hopping	-24.0	Anten
4	902.000M	67.8	+0.0	+10.0	+0.2		+0.0	78.0	103.5 bandedge_L_hopping	-25.5	Anten
5	1804.967M	53.3	+0.0	+9.8	+0.3		+0.0	63.4	103.5 L	-40.1	Anten
6	1830.550M	52.5	+0.0	+9.8	+0.3		+0.0	62.6	103.5 M	-40.9	Anten
7	1855.050M	51.2	+0.0	+9.8	+0.3		+0.0	61.3	103.5 H	-42.2	Anten
8	3710.100M	44.2	+0.0	+10.1	+0.5		+0.0	54.8	103.5 H	-48.7	Anten
9	3661.125M	44.0	+0.0	+10.1	+0.5		+0.0	54.6	103.5 M	-48.9	Anten
10	3609.883M	42.5	+0.0	+10.1	+0.5		+0.0	53.1	103.5 L	-50.4	Anten
11	2745.850M	41.1	+0.0	+10.0	+0.3		+0.0	51.4	103.5 M	-52.1	Anten

Band Edge

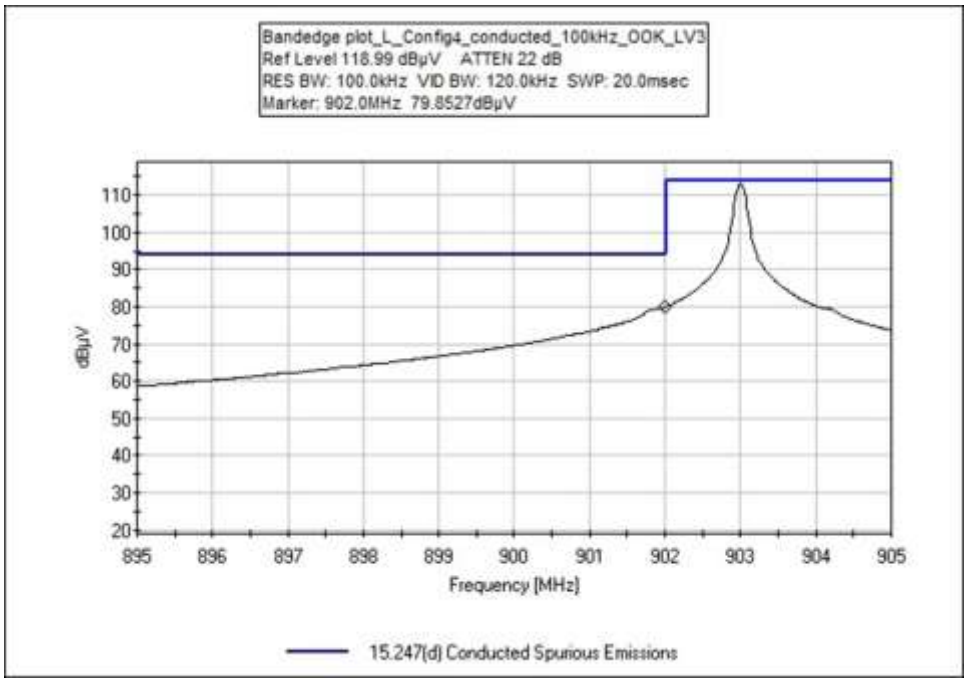
Band Edge Summary				
Limit applied: Max Power/100kHz - 20dB. Operating Mode: Single Channel (Low and High) Folder 3: Worst Case of OOK				
Frequency (MHz)	**Modulation**	**Measured (dBm)**	**Limit (dBm)**	**Results**
902	16384 OOK LV3	-16.9	< - 3.0	Pass
928	16384 OOK LV3	-18.9	< - 3.0	Pass

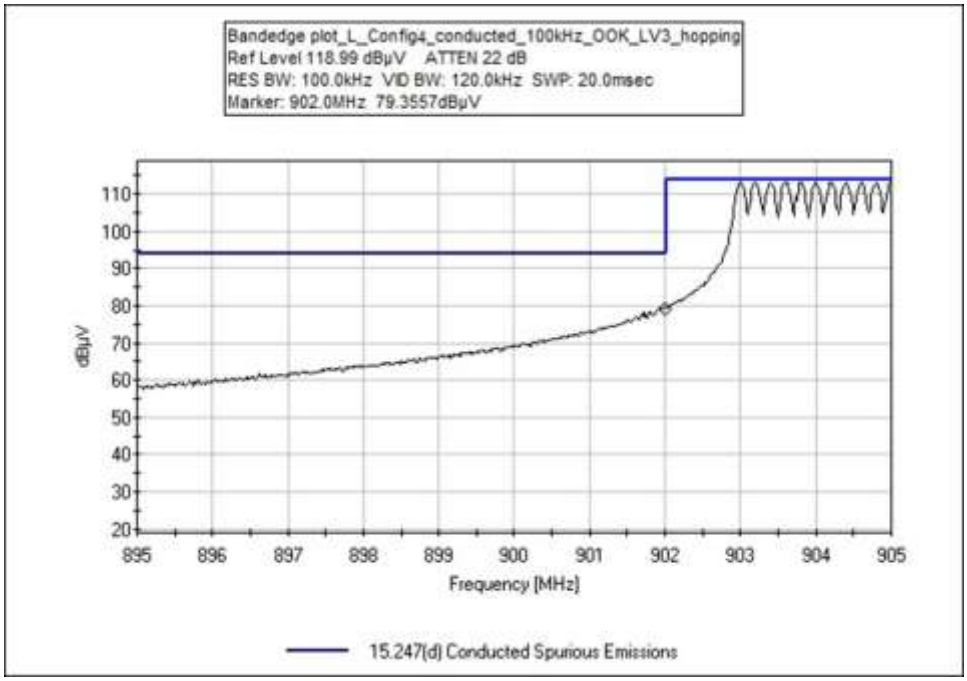
Band Edge Summary				
Limit applied: Max Power/100kHz - 20dB. Operating Mode: Hopping Folder 3: Worst Case of OOK				
Frequency (MHz)	**Modulation**	**Measured (dBm)**	**Limit (dBm)**	**Results**
902	16384 OOK LV3	-17.4	< - 3.0	Pass
928	16384 OOK LV3	-19.0	< - 3.0	Pass

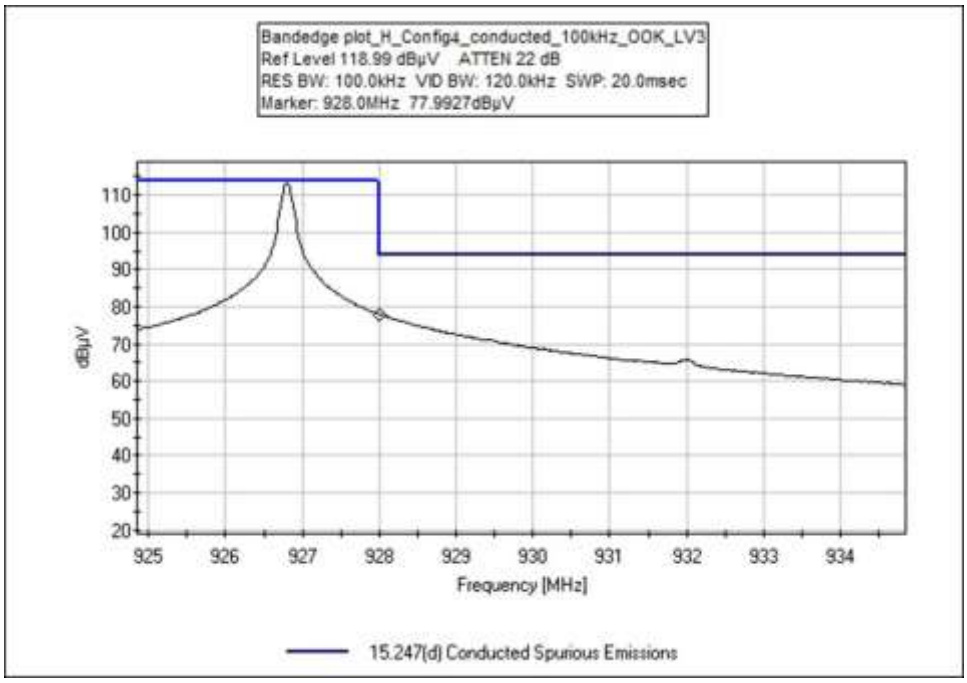
Band Edge Summary				
Limit applied: Max Power/100kHz - 20dB. Operating Mode: Single Channel (Low and High) Folder 3				
Frequency (MHz)	**Modulation**	**Measured (dBm)**	**Limit (dBm)**	**Results**
902	300k GFSK LV3	-24.8	< -3.5	Pass
928	300k GFSK LV3	-24.3	< -3.5	Pass

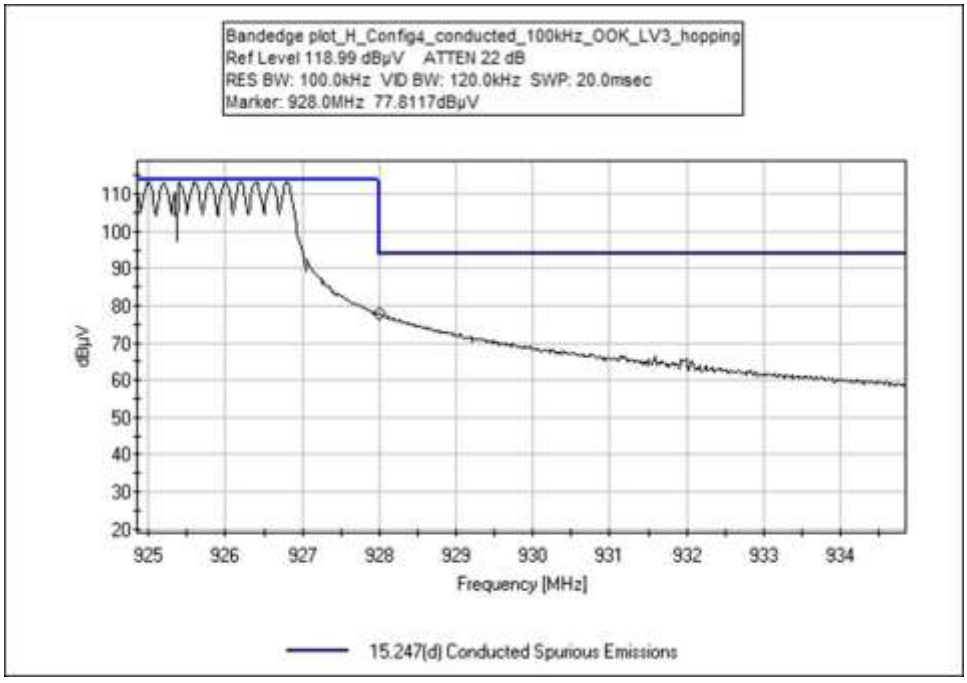
Band Edge Summary				
Limit applied: Max Power/100kHz - 20dB. Operating Mode: Hopping Folder 3				
Frequency (MHz)	**Modulation**	**Measured (dBm)**	**Limit (dBm)**	**Results**
902	300k GFSK LV3	-29.0	< -3.5	Pass
928	300k GFSK LV3	-27.5	< -3.5	Pass

OOK LV3 Band Edge Plots

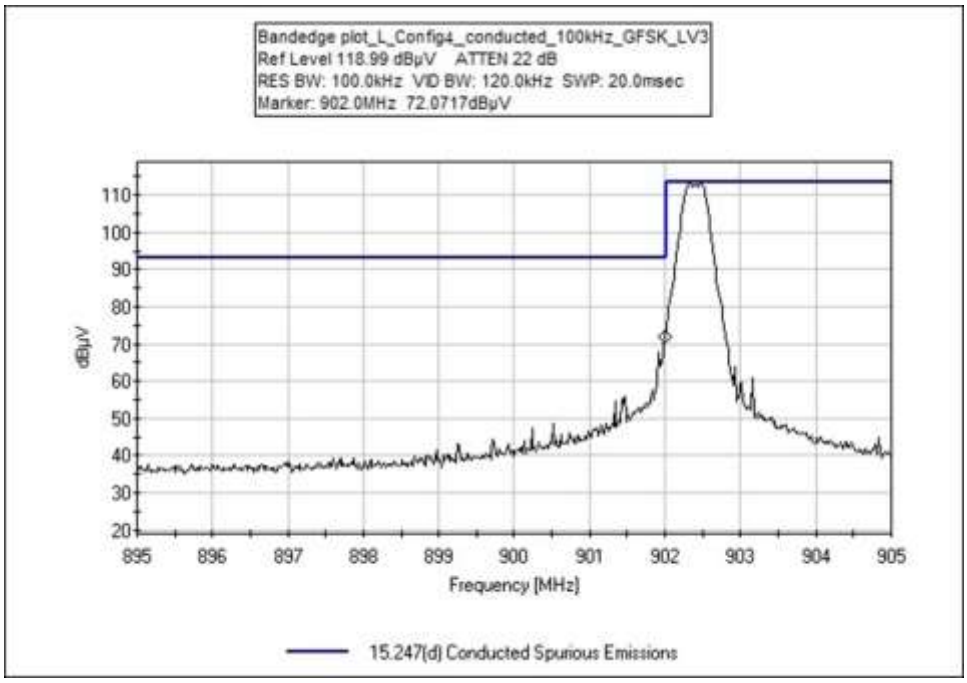


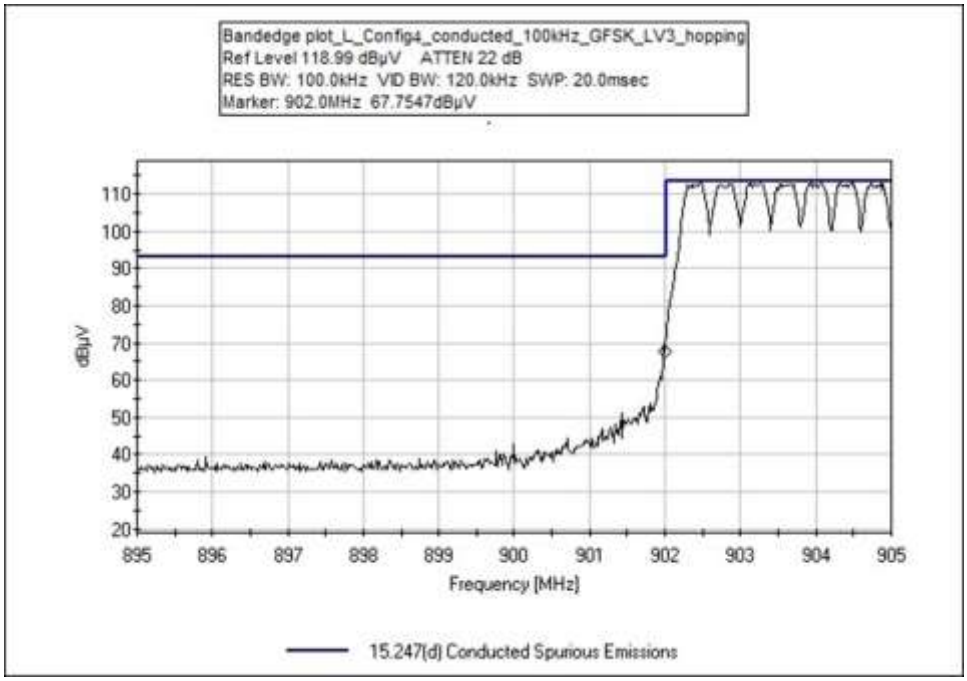


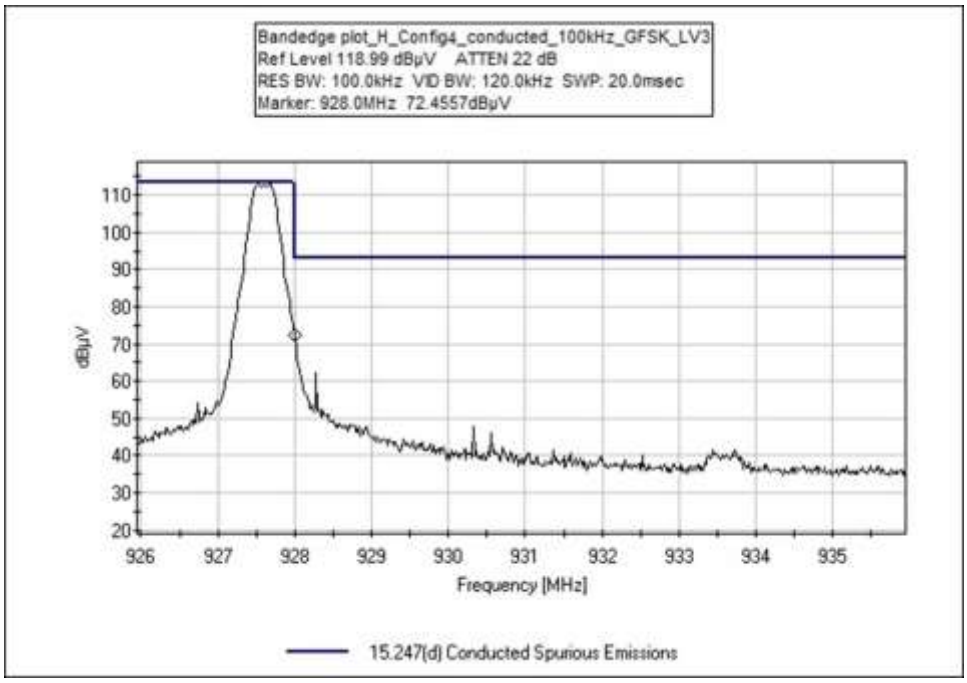

Bandedge plot_H_Config4_conducted_100kHz_OOK_LV3
Ref Level 118.99 dBµV ATTEN 22 dB
RES BW: 100.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 77.9927dBµV
dBµV
Frequency [MHz]
15.247(d) Conducted Spurious Emissions

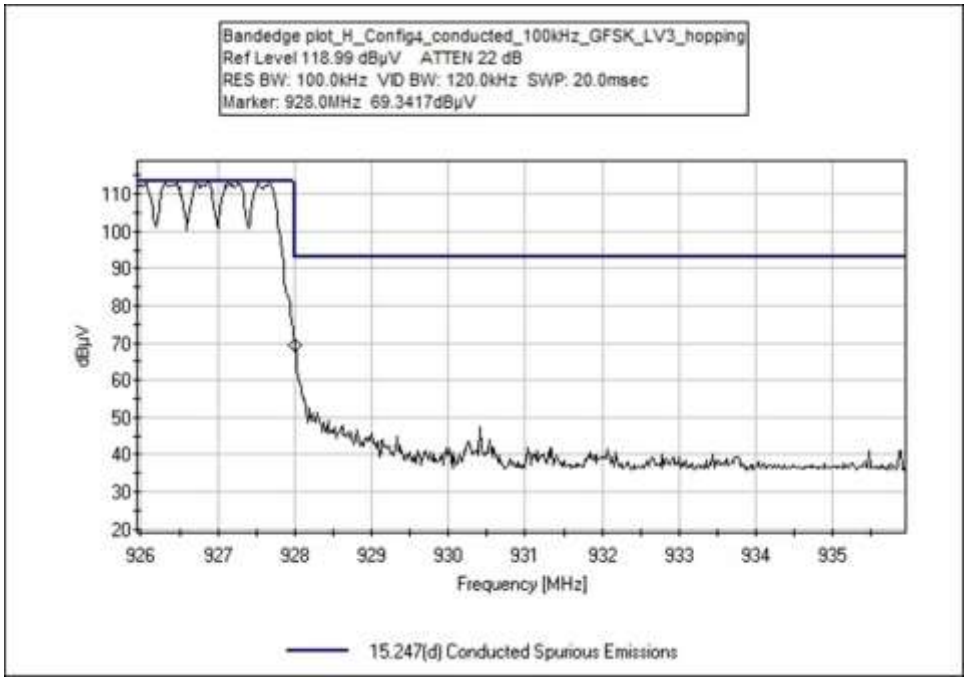

Bandedge plot_H_Config4_conducted_100kHz_OOK_LV3_hopping
Ref Level 118.99 dBµV ATTEN 22 dB
RES BW: 100.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 77.8117dBµV
dBµV
Frequency [MHz]
15.247(d) Conducted Spurious Emissions

GFSK LV3 Band Edge Plots

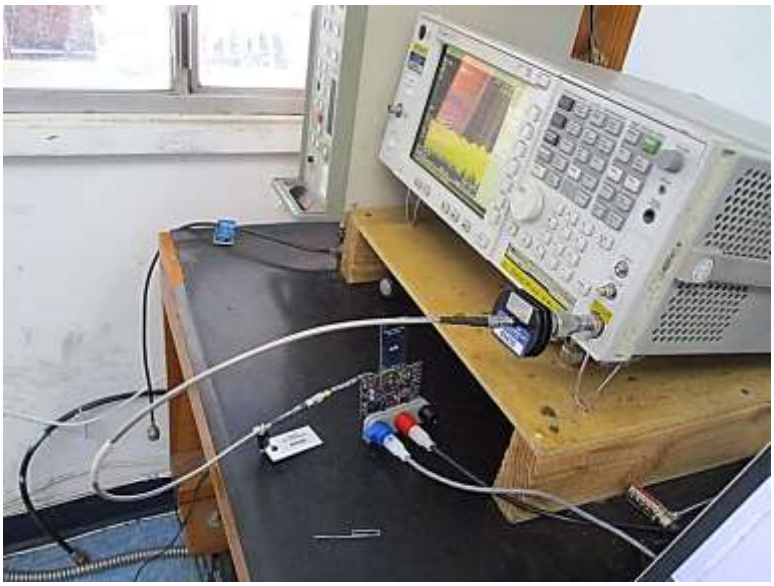





Bandedge plot_H_Config4_conducted_100kHz_GFSK_LV3
Ref Level 118.99 dBµV ATTEN 22 dB
RES BW: 100.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 72.4557dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
926
927
928
929
930
931
932
933
934
935
Frequency [MHz]
15.247(d) Conducted Spurious Emissions


Bandedge plot_H_Config4_conducted_100kHz_GFSK_LV3_hopping
Ref Level 118.99 dBµV ATTEN 22 dB
RES BW: 100.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 69.3417dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
926
927
928
929
930
931
932
933
934
935
Frequency [MHz]
15.247(d) Conducted Spurious Emissions

Test Setup Photo(s)



15.247(d) Radiated Emissions & Band Edge

Test Setup / Conditions / Data

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	5/24/2021
Test Type:	**Radiated Scan**	Time:	11:21:06
Tested By:	E. Wong	Sequence#:	13
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV1 Folder 4

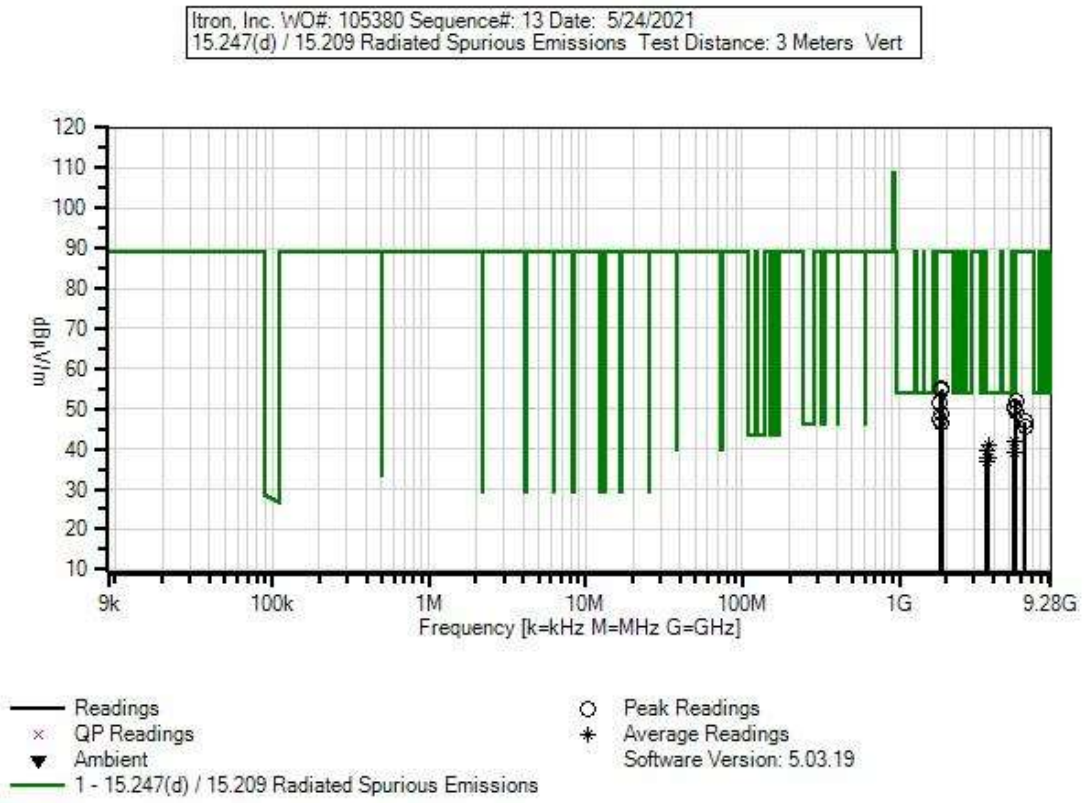
Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
	ANP05505	Attenuator	NAT-6	5/26/2021	5/26/2023
	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
	AN00309	Preamp	8447D	12/24/2019	12/24/2021
	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	5417.960M	49.9	+0.0	+34.0	+0.7	-37.2	+0.0	41.8	54.0	-12.2	Vert
	Ave		+5.1	+0.0	+0.3	-11.0	131		L		168
^	5417.960M	49.6	+0.0	+34.0	+0.7	-37.2	+0.0	52.5	54.0	-1.5	Vert
			+5.1	+0.0	+0.3	+0.0	131		L		168
3	3707.200M	52.7	+0.0	+32.2	+0.5	-38.1	+0.0	40.8	54.0	-13.2	Vert
	Ave		+4.0	+0.0	+0.5	-11.0	354		H		190
^	3707.200M	52.7	+0.0	+32.2	+0.5	-38.1	+0.0	51.8	54.0	-2.2	Vert
			+4.0	+0.0	+0.5	+0.0	354		H		190
5	3611.973M	51.6	+0.0	+31.8	+0.5	-38.1	+0.0	39.4	54.0	-14.6	Vert
	Ave		+4.0	+0.0	+0.6	-11.0	199		L		151
^	3611.973M	51.6	+0.0	+31.8	+0.5	-38.1	+0.0	50.4	54.0	-3.6	Vert
			+4.0	+0.0	+0.6	+0.0	199		L		151
7	5417.960M	47.2	+0.0	+34.0	+0.7	-37.2	+0.0	39.1	54.0	-14.9	Horiz
	Ave		+5.1	+0.0	+0.3	-11.0	100		L		109
^	5417.960M	47.2	+0.0	+34.0	+0.7	-37.2	+0.0	50.1	54.0	-3.9	Horiz
			+5.1	+0.0	+0.3	+0.0	289		L		109
9	3660.000M	50.0	+0.0	+32.0	+0.5	-38.1	+0.0	38.0	54.0	-16.0	Vert
	Ave		+4.0	+0.0	+0.6	-11.0	131		H		225
^	3660.000M	50.0	+0.0	+32.0	+0.5	-38.1	+0.0	49.0	54.0	-5.0	Vert
			+4.0	+0.0	+0.6	+0.0	131		M		225
11	3660.000M	49.9	+0.0	+32.0	+0.5	-38.1	+0.0	37.9	54.0	-16.1	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	249		M		104
^	3660.000M	49.9	+0.0	+32.0	+0.5	-38.1	+0.0	48.9	54.0	-5.1	Horiz
			+4.0	+0.0	+0.6	+0.0	249		M		104
13	3707.200M	49.5	+0.0	+32.2	+0.5	-38.1	+0.0	37.6	54.0	-16.4	Horiz
	Ave		+4.0	+0.0	+0.5	-11.0	43		H		138
^	3707.200M	49.5	+0.0	+32.2	+0.5	-38.1	+0.0	48.6	54.0	-5.4	Horiz
			+4.0	+0.0	+0.5	+0.0	43		H		138
15	3611.973M	48.9	+0.0	+31.8	+0.5	-38.1	+0.0	36.7	54.0	-17.3	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	45		H		118
^	3611.973M	48.9	+0.0	+31.8	+0.5	-38.1	+0.0	47.7	54.0	-6.3	Horiz
			+4.0	+0.0	+0.6	+0.0	45		L		118
17	1853.567M	63.3	+0.0	+27.0	+0.3	-38.8	+0.0	55.1	90.5	-35.4	Vert
			+2.9	+0.4	+0.0	+0.0	33		H		114
18	1830.000M	62.9	+0.0	+26.9	+0.3	-38.8	+0.0	54.5	90.5	-36.0	Vert
			+2.8	+0.4	+0.0	+0.0	82		M		109
19	5560.803M	49.2	+0.0	+34.1	+0.7	-37.3	+0.0	52.1	90.5	-38.4	Vert
			+5.1	+0.0	+0.3	+0.0	237		H		171
20	1806.005M	60.1	+0.0	+26.7	+0.3	-38.8	+0.0	51.5	90.5	-39.0	Horiz
			+2.8	+0.4	+0.0	+0.0	207		L		134
21	5490.000M	47.7	+0.0	+34.1	+0.7	-37.2	+0.0	50.7	90.5	-39.8	Vert
			+5.1	+0.0	+0.3	+0.0	90		M		100
22	5489.850M	47.2	+0.0	+34.1	+0.7	-37.2	+0.0	50.2	90.5	-40.3	Horiz
			+5.1	+0.0	+0.3	+0.0	262		M		100
23	5560.803M	46.5	+0.0	+34.1	+0.7	-37.3	+0.0	49.4	90.5	-41.1	Horiz
			+5.1	+0.0	+0.3	+0.0	226		H		136

24	1830.000M	57.3	+0.0	+26.9	+0.3	-38.8	+0.0	48.9	90.5	-41.6	Horiz
			+2.8	+0.4	+0.0	+0.0	360	M			109
25	1806.005M	56.0	+0.0	+26.7	+0.3	-38.8	+0.0	47.4	90.5	-43.1	Vert
			+2.8	+0.4	+0.0	+0.0	5	L			135
26	6320.953M	42.9	+0.0	+34.4	+0.7	-37.0	+0.0	46.9	90.5	-43.6	Vert
			+5.7	+0.0	+0.2	+0.0	89	L			168
27	1853.600M	54.8	+0.0	+27.0	+0.3	-38.8	+0.0	46.6	90.5	-43.9	Horiz
			+2.9	+0.4	+0.0	+0.0	202	H			182
28	6320.953M	41.7	+0.0	+34.4	+0.7	-37.0	+0.0	45.7	90.5	-44.8	Horiz
			+5.7	+0.0	+0.2	+0.0	242	L			109

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	5/21/2021
Test Type:	**Radiated Scan**	Time:	15:21:17
Tested By:	E. Wong	Sequence#:	12
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV3 Folder 4

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
	ANP05505	Attenuator	NAT-6	5/26/2021	5/26/2023
	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
	AN00309	Preamp	8447D	12/24/2019	12/24/2021
	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3660.000M	60.9	+0.0	+32.0	+0.5	-38.1	+0.0	48.9	54.0	-5.1	Vert
	Ave		+4.0	+0.0	+0.6	-11.0			M		219
^	3660.000M	60.9	+0.0	+32.0	+0.5	-38.1	+0.0	59.9	54.0	+5.9	Vert
			+4.0	+0.0	+0.6	+0.0			M		219
3	3707.283M	60.4	+0.0	+32.2	+0.5	-38.1	+0.0	48.5	54.0	-5.5	Vert
	Ave		+4.0	+0.0	+0.5	-11.0			H		213
^	3707.283M	60.4	+0.0	+32.2	+0.5	-38.1	+0.0	59.5	54.0	+5.5	Vert
			+4.0	+0.0	+0.5	+0.0			H		213
5	4634.017M	45.9	+0.0	+32.7	+0.5	-37.4	+0.0	46.5	54.0	-7.5	Vert
			+4.5	+0.0	+0.3	+0.0	266		H		165
6	4515.000M	45.8	+0.0	+32.5	+0.5	-37.4	+0.0	46.2	54.0	-7.8	Vert
			+4.5	+0.0	+0.3	+0.0	21		L		218
7	4515.000M	45.7	+0.0	+32.5	+0.5	-37.4	+0.0	46.1	54.0	-7.9	Horiz
			+4.5	+0.0	+0.3	+0.0			L		106
8	4575.000M	44.5	+0.0	+32.6	+0.5	-37.4	+0.0	45.0	54.0	-9.0	Vert
			+4.5	+0.0	+0.3	+0.0	342		M		172
9	3707.173M	56.4	+0.0	+32.2	+0.5	-38.1	+0.0	44.5	54.0	-9.5	Horiz
	Ave		+4.0	+0.0	+0.5	-11.0	259		H		126
^	3707.173M	56.4	+0.0	+32.2	+0.5	-38.1	+0.0	55.5	54.0	+1.5	Horiz
			+4.0	+0.0	+0.5	+0.0	259		H		126
11	3612.000M	56.6	+0.0	+31.8	+0.5	-38.1	+0.0	44.4	54.0	-9.6	Vert
	Ave		+4.0	+0.0	+0.6	-11.0	227		L		165
^	3612.000M	56.6	+0.0	+31.8	+0.5	-38.1	+0.0	55.4	54.0	+1.4	Vert
			+4.0	+0.0	+0.6	+0.0	227		L		165
13	5418.000M	52.5	+0.0	+34.0	+0.7	-37.2	+0.0	44.4	54.0	-9.6	Vert
	Ave		+5.1	+0.0	+0.3	-11.0	134		L		152
^	5418.000M	52.3	+0.0	+34.0	+0.7	-37.2	+0.0	55.2	54.0	+1.2	Vert
			+5.1	+0.0	+0.3	+0.0	134		L		152
15	4575.000M	43.7	+0.0	+32.6	+0.5	-37.4	+0.0	44.2	54.0	-9.8	Horiz
			+4.5	+0.0	+0.3	+0.0	340		M		137
16	3660.000M	56.0	+0.0	+32.0	+0.5	-38.1	+0.0	44.0	54.0	-10.0	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	26		M		121
^	3660.000M	56.0	+0.0	+32.0	+0.5	-38.1	+0.0	55.0	54.0	+1.0	Horiz
			+4.0	+0.0	+0.6	+0.0	26		M		121
18	3612.000M	55.2	+0.0	+31.8	+0.5	-38.1	+0.0	43.0	54.0	-11.0	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	231		L		124
^	3612.000M	55.1	+0.0	+31.8	+0.5	-38.1	+0.0	53.9	54.0	-0.1	Horiz
			+4.0	+0.0	+0.6	+0.0	231		L		124
20	5418.000M	50.9	+0.0	+34.0	+0.7	-37.2	+0.0	42.8	54.0	-11.2	Horiz
	Ave		+5.1	+0.0	+0.3	-11.0	280		L		100
^	5418.000M	50.9	+0.0	+34.0	+0.7	-37.2	+0.0	53.8	54.0	-0.2	Horiz
			+5.1	+0.0	+0.3	+0.0	280		L		100
22	2780.380M	52.2	+0.0	+29.8	+0.3	-38.5	+0.0	42.6	54.0	-11.4	Horiz
	Ave		+3.5	+0.0	+6.3	-11.0	170		H		156
^	2780.380M	52.2	+0.0	+29.8	+0.3	-38.5	+0.0	53.6	54.0	-0.4	Horiz
			+3.5	+0.0	+6.3	+0.0	170		H		156

24	2709.000M	46.7	+0.0	+29.5	+0.3	-38.5	+0.0	42.6		54.0	-11.4	Horiz
	Ave		+3.4	+0.0	+12.2	-11.0	272		L			134
^	2709.000M	46.7	+0.0	+29.5	+0.3	-38.5	+0.0	53.6		54.0	-0.4	Horiz
			+3.4	+0.0	+12.2	+0.0	272		L			134
26	2709.000M	46.1	+0.0	+29.5	+0.3	-38.5	+0.0	42.0		54.0	-12.0	Vert
	Ave		+3.4	+0.0	+12.2	-11.0	236		L			132
^	2709.000M	46.1	+0.0	+29.5	+0.3	-38.5	+0.0	53.0		54.0	-1.0	Vert
			+3.4	+0.0	+12.2	+0.0	236		L			132
28	4633.967M	41.4	+0.0	+32.7	+0.5	-37.4	+0.0	42.0		54.0	-12.0	Horiz
			+4.5	+0.0	+0.3	+0.0	314		H			126
29	2745.000M	48.0	+0.0	+29.7	+0.3	-38.5	+0.0	41.1		54.0	-12.9	Vert
	Ave		+3.4	+0.0	+9.2	-11.0	40		M			215
^	2745.000M	48.0	+0.0	+29.7	+0.3	-38.5	+0.0	52.1		54.0	-1.9	Vert
			+3.4	+0.0	+9.2	+0.0	40		M			215
31	2745.000M	48.0	+0.0	+29.7	+0.3	-38.5	+0.0	41.1		54.0	-12.9	Horiz
	Ave		+3.4	+0.0	+9.2	-11.0	48		M			220
^	2745.000M	48.0	+0.0	+29.7	+0.3	-38.5	+0.0	52.1		54.0	-1.9	Horiz
			+3.4	+0.0	+9.2	+0.0	48		M			220
33	2780.500M	50.6	+0.0	+29.8	+0.3	-38.5	+0.0	41.0		54.0	-13.0	Vert
	Ave		+3.5	+0.0	+6.3	-11.0	219		H			122
^	2780.500M	50.0	+0.0	+29.8	+0.3	-38.5	+0.0	51.4		54.0	-2.6	Vert
			+3.5	+0.0	+6.3	+0.0	219		H			122
35	1806.000M	73.2	+0.0	+26.7	+0.3	-38.8	+0.0	64.6		90.5	-25.9	Vert
			+2.8	+0.4	+0.0	+0.0	161		L			133
36	1830.000M	72.4	+0.0	+26.9	+0.3	-38.8	+0.0	64.0		90.5	-26.5	Vert
			+2.8	+0.4	+0.0	+0.0	172		M			151
37	1853.583M	69.4	+0.0	+27.0	+0.3	-38.8	+0.0	61.2		90.5	-29.3	Vert
			+2.9	+0.4	+0.0	+0.0	133		H			100
38	1853.583M	67.9	+0.0	+27.0	+0.3	-38.8	+0.0	59.7		90.5	-30.8	Horiz
			+2.9	+0.4	+0.0	+0.0	173		H			100
39	1830.000M	65.7	+0.0	+26.9	+0.3	-38.8	+0.0	57.3		90.5	-33.2	Horiz
			+2.8	+0.4	+0.0	+0.0	213		M			151
40	1806.000M	64.8	+0.0	+26.7	+0.3	-38.8	+0.0	56.2		90.5	-34.3	Horiz
			+2.8	+0.4	+0.0	+0.0	116		L			133
41	5560.867M	50.7	+0.0	+34.1	+0.7	-37.3	+0.0	53.6		90.5	-36.9	Vert
			+5.1	+0.0	+0.3	+0.0	138		H			165
42	5490.000M	50.2	+0.0	+34.1	+0.7	-37.2	+0.0	53.2		90.5	-37.3	Vert
			+5.1	+0.0	+0.3	+0.0	91		M			172
43	5490.000M	49.0	+0.0	+34.1	+0.7	-37.2	+0.0	52.0		90.5	-38.5	Horiz
			+5.1	+0.0	+0.3	+0.0	56		M			115
44	6321.000M	47.2	+0.0	+34.4	+0.7	-37.0	+0.0	51.2		90.5	-39.3	Vert
			+5.7	+0.0	+0.2	+0.0	306		L			152
45	5560.760M	48.3	+0.0	+34.1	+0.7	-37.3	+0.0	51.2		90.5	-39.3	Horiz
			+5.1	+0.0	+0.3	+0.0	307		H			126
46	6321.000M	46.1	+0.0	+34.4	+0.7	-37.0	+0.0	50.1		90.5	-40.4	Horiz
			+5.7	+0.0	+0.2	+0.0	23		L			100
47	6405.000M	42.8	+0.0	+34.4	+0.7	-37.1	+0.0	46.8		90.5	-43.7	Vert
			+5.8	+0.0	+0.2	+0.0	259		M			172
48	6405.000M	41.8	+0.0	+34.4	+0.7	-37.1	+0.0	45.8		90.5	-44.7	Horiz
			+5.8	+0.0	+0.2	+0.0	338		M			115
49	6487.553M	37.4	+0.0	+34.4	+0.7	-37.2	+0.0	41.4		90.5	-49.1	Horiz
			+5.8	+0.0	+0.3	+0.0	195		H			126

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	5/20/2021
Test Type:	**Radiated Scan**	Time:	14:14:20
Tested By:	E. Wong	Sequence#:	9
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
902.4MHz, 915.2MHz, 927.6MHz, 400kHz steps, 64 channels, 300k GFSK LV3. Folder 4

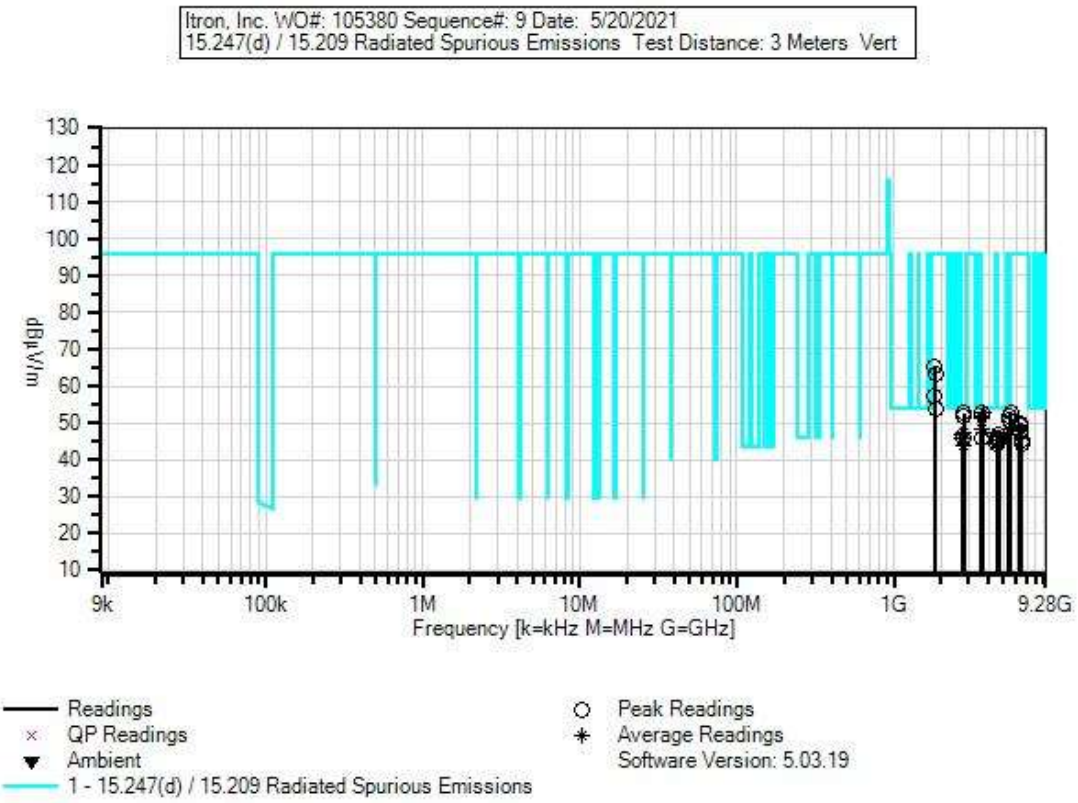
Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 45ms per 100ms. Duty cycle correction factor= 20log(45ms/100ms) = -6.9dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
	ANP05505	Attenuator	NAT-6	5/26/2021	5/26/2023
	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
	AN00309	Preamp	8447D	12/24/2019	12/24/2021
	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3710.467M	60.6	+0.0	+32.2	+0.5	-38.1	+0.0	52.8	54.0	-1.2	Vert
	Ave		+4.0	+0.0	+0.5	-6.9	360		H		222
^	3710.467M	60.6	+0.0	+32.2	+0.5	-38.1	+0.0	59.7	54.0	+5.7	Vert
			+4.0	+0.0	+0.5	+0.0	360		H		222
3	2782.850M	51.4	+0.0	+29.8	+0.3	-38.5	+0.0	52.6	54.0	-1.4	Vert
			+3.5	+0.0	+6.1	+0.0	229		H		100
4	3609.533M	53.8	+0.0	+31.8	+0.5	-38.1	+0.0	52.6	54.0	-1.4	Horiz
			+4.0	+0.0	+0.6	+0.0	250		L		167
5	2782.733M	50.7	+0.0	+29.8	+0.3	-38.5	+0.0	51.9	54.0	-2.1	Horiz
			+3.5	+0.0	+6.1	+0.0	126		H		137
6	3609.600M	59.7	+0.0	+31.8	+0.5	-38.1	+0.0	51.6	54.0	-2.4	Vert
	Ave		+4.0	+0.0	+0.6	-6.9			L		218
^	3609.600M	59.7	+0.0	+31.8	+0.5	-38.1	+0.0	58.5	54.0	+4.5	Vert
			+4.0	+0.0	+0.6	+0.0			L		218
8	3660.800M	59.0	+0.0	+32.0	+0.5	-38.1	+0.0	51.1	54.0	-2.9	Vert
	Ave		+4.0	+0.0	+0.6	-6.9	3		M		269
^	3660.800M	59.0	+0.0	+32.0	+0.5	-38.1	+0.0	58.0	54.0	+4.0	Vert
			+4.0	+0.0	+0.6	+0.0	3		M		269
10	5414.133M	52.3	+0.0	+34.0	+0.7	-37.2	+0.0	48.3	54.0	-5.7	Vert
	Ave		+5.1	+0.0	+0.3	-6.9	129		L		212
^	5414.133M	52.3	+0.0	+34.0	+0.7	-37.2	+0.0	55.2	54.0	+1.2	Vert
			+5.1	+0.0	+0.3	+0.0	129		L		212
12	3660.800M	56.1	+0.0	+32.0	+0.5	-38.1	+0.0	48.2	54.0	-5.8	Horiz
	Ave		+4.0	+0.0	+0.6	-6.9	250		M		201
^	3660.800M	56.1	+0.0	+32.0	+0.5	-38.1	+0.0	55.1	54.0	+1.1	Horiz
			+4.0	+0.0	+0.6	+0.0	250		M		201
14	5414.350M	52.2	+0.0	+34.0	+0.7	-37.2	+0.0	48.2	54.0	-5.8	Horiz
	Ave		+5.1	+0.0	+0.3	-6.9	228		L		224
^	5414.350M	52.2	+0.0	+34.0	+0.7	-37.2	+0.0	55.1	54.0	+1.1	Horiz
			+5.1	+0.0	+0.3	+0.0	228		L		224
16	3710.767M	55.3	+0.0	+32.2	+0.5	-38.1	+0.0	47.5	54.0	-6.5	Horiz
	Ave		+4.0	+0.0	+0.5	-6.9	265		H		175
^	3710.767M	55.3	+0.0	+32.2	+0.5	-38.1	+0.0	54.4	54.0	+0.4	Horiz
			+4.0	+0.0	+0.5	+0.0	265		H		175
18	2745.600M	50.3	+0.0	+29.7	+0.3	-38.5	+0.0	47.4	54.0	-6.6	Horiz
	Ave		+3.4	+0.0	+9.1	-6.9	162		M		165
^	2745.600M	50.3	+0.0	+29.7	+0.3	-38.5	+0.0	54.3	54.0	+0.3	Horiz
			+3.4	+0.0	+9.1	+0.0	162		M		165
20	4638.083M	46.2	+0.0	+32.7	+0.5	-37.4	+0.0	46.8	54.0	-7.2	Vert
			+4.5	+0.0	+0.3	+0.0	207		H		175
21	2707.200M	46.5	+0.0	+29.5	+0.3	-38.5	+0.0	46.7	54.0	-7.3	Vert
	Ave		+3.4	+0.0	+12.4	-6.9	285		L		191
^	2707.200M	46.5	+0.0	+29.5	+0.3	-38.5	+0.0	53.6	54.0	-0.4	Vert
			+3.4	+0.0	+12.4	+0.0	285		L		191

23	2706.933M	45.8	+0.0	+29.5	+0.3	-38.5	+0.0	46.0		54.0	-8.0	Horiz
	Ave		+3.4	+0.0	+12.4	-6.9	164		L			165
^	2706.933M	45.8	+0.0	+29.5	+0.3	-38.5	+0.0	52.9		54.0	-1.1	Horiz
			+3.4	+0.0	+12.4	+0.0	216		L			165
25	4512.300M	45.5	+0.0	+32.5	+0.5	-37.4	+0.0	45.9		54.0	-8.1	Vert
			+4.5	+0.0	+0.3	+0.0	329		L			125
26	4576.000M	45.2	+0.0	+32.6	+0.5	-37.4	+0.0	45.7		54.0	-8.3	Vert
			+4.5	+0.0	+0.3	+0.0	210		M			109
27	3609.533M	53.8	+0.0	+31.8	+0.5	-38.1	+0.0	45.7		54.0	-8.3	Horiz
			+4.0	+0.0	+0.6	-6.9	250		L			167
28	2782.850M	51.4	+0.0	+29.8	+0.3	-38.5	+0.0	45.7		54.0	-8.3	Vert
			+3.5	+0.0	+6.1	-6.9	229		H			100
29	2782.733M	51.3	+0.0	+29.8	+0.3	-38.5	+0.0	45.6		54.0	-8.4	Horiz
			+3.5	+0.0	+6.1	-6.9	126		H			137
30	4638.083M	44.9	+0.0	+32.7	+0.5	-37.4	+0.0	45.5		54.0	-8.5	Horiz
			+4.5	+0.0	+0.3	+0.0	257		H			200
31	4576.000M	44.6	+0.0	+32.6	+0.5	-37.4	+0.0	45.1		54.0	-8.9	Horiz
			+4.5	+0.0	+0.3	+0.0	92		M			197
32	4511.933M	43.9	+0.0	+32.5	+0.5	-37.4	+0.0	44.3		54.0	-9.7	Horiz
			+4.5	+0.0	+0.3	+0.0	-1		L			167
33	2745.600M	47.0	+0.0	+29.7	+0.3	-38.5	+0.0	44.1		54.0	-9.9	Vert
	Ave		+3.4	+0.0	+9.1	-6.9	200		M			171
^	2745.600M	46.8	+0.0	+29.7	+0.3	-38.5	+0.0	50.8		54.0	-3.2	Vert
			+3.4	+0.0	+9.1	+0.0	200		M			171
35	1804.800M	73.9	+0.0	+26.7	+0.3	-38.8	+0.0	65.3		90.5	-25.2	Vert
			+2.8	+0.4	+0.0	+0.0	44		L			128
36	1830.400M	71.8	+0.0	+26.9	+0.3	-38.8	+0.0	63.4		90.5	-27.1	Vert
			+2.8	+0.4	+0.0	+0.0	333		M			100
37	1804.800M	65.9	+0.0	+26.7	+0.3	-38.8	+0.0	57.3		90.5	-33.2	Horiz
			+2.8	+0.4	+0.0	+0.0	221		L			169
38	1830.400M	62.3	+0.0	+26.9	+0.3	-38.8	+0.0	53.9		90.5	-36.6	Horiz
			+2.8	+0.4	+0.0	+0.0	6		M			100
39	5565.583M	50.0	+0.0	+34.1	+0.7	-37.3	+0.0	52.9		90.5	-37.6	Vert
			+5.1	+0.0	+0.3	+0.0	133		H			175
40	5491.200M	48.9	+0.0	+34.1	+0.7	-37.2	+0.0	51.9		90.5	-38.6	Horiz
			+5.1	+0.0	+0.3	+0.0	235		M			197
41	5491.200M	48.0	+0.0	+34.1	+0.7	-37.2	+0.0	51.0		90.5	-39.5	Vert
			+5.1	+0.0	+0.3	+0.0	360		M			163
42	5565.583M	47.4	+0.0	+34.1	+0.7	-37.3	+0.0	50.3		90.5	-40.2	Horiz
			+5.1	+0.0	+0.3	+0.0	208		H			195
43	6406.400M	45.8	+0.0	+34.4	+0.7	-37.1	+0.0	49.8		90.5	-40.7	Horiz
			+5.8	+0.0	+0.2	+0.0	310		M			197
44	6316.533M	45.2	+0.0	+34.4	+0.7	-37.0	+0.0	49.2		90.5	-41.3	Vert
			+5.7	+0.0	+0.2	+0.0	92		L			164
45	6316.833M	43.9	+0.0	+34.4	+0.7	-37.0	+0.0	47.9		90.5	-42.6	Horiz
			+5.7	+0.0	+0.2	+0.0	353		L			180
46	6406.400M	43.1	+0.0	+34.4	+0.7	-37.1	+0.0	47.1		90.5	-43.4	Vert
			+5.8	+0.0	+0.2	+0.0			M			165
47	6493.200M	41.5	+0.0	+34.4	+0.7	-37.2	+0.0	45.5		90.5	-45.0	Horiz
			+5.8	+0.0	+0.3	+0.0	256		H			195
48	6493.200M	40.6	+0.0	+34.4	+0.7	-37.2	+0.0	44.6		90.5	-45.9	Vert
			+5.8	+0.0	+0.3	+0.0	158		H			175

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/9/2021
Test Type:	**Radiated Scan**	Time:	13:50:23
Tested By:	E. Wong	Sequence#:	22
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903 MHz, 915.0MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV1 Folder 4

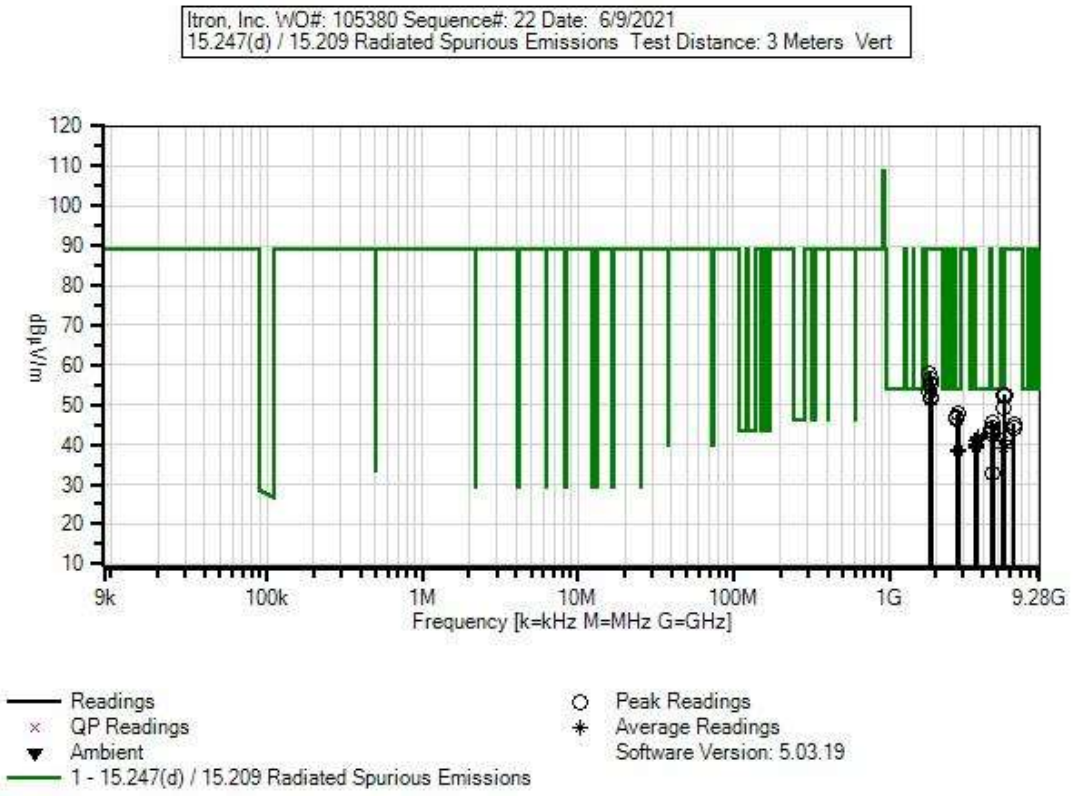
Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T9	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T10	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
T11	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T12	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T13	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	2780.400M	46.5	+0.0 +3.5 +0.0 +0.0	+29.8 +0.0 +0.0	+0.3 +6.3 +0.0	-38.5 +0.0 +0.0	+0.0 228	47.9	54.0 H	-6.1	Vert 164
2	2744.950M	43.6	+0.0 +3.4 +0.0 +0.0	+29.7 +0.0 +0.0	+0.3 +9.2 +0.0	-38.5 +0.0 +0.0	+0.0 185	47.7	54.0 M	-6.3	Horiz 167
3	2708.975M	40.2	+0.0 +3.4 +0.0 +0.0	+29.5 +0.0 +0.0	+0.3 +12.2 +0.0	-38.5 +0.0 +0.0	+0.0 337	47.1	54.0 L	-6.9	Vert 185
4	2708.975M	39.7	+0.0 +3.4 +0.0 +0.0	+29.5 +0.0 +0.0	+0.3 +12.2 +0.0	-38.5 +0.0 +0.0	+0.0 295	46.6	54.0 L	-7.4	Horiz 178
5	4634.000M	44.9	+0.0 +4.5 +0.0 +0.0	+32.7 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 91	45.5	54.0 H	-8.5	Vert 178
6	4574.917M	43.8	+0.0 +4.5 +0.0 +0.0	+32.6 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 234	44.3	54.0 M	-9.7	Vert 156
7	4515.008M	43.2	+0.0 +4.5 +0.0 +0.0	+32.5 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 30	43.6	54.0 L	-10.4	Horiz 154
8	4574.917M	42.8	+0.0 +4.5 +0.0 +0.0	+32.6 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0	43.3	54.0 M	-10.7	Horiz 156
9	4514.958M	42.2	+0.0 +4.5 +0.0 +0.0	+32.5 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 360	42.6	54.0 L	-11.4	Vert 211
10	3707.200M Ave	53.8	+0.0 +4.0 +0.0 +0.0	+32.2 +0.0 +0.0	+0.5 +0.5 +0.0	-38.1 -11.0 +0.0	+0.0	41.9	54.0 H	-12.1	Vert 208
^	3707.200M	53.8	+0.0 +4.0 +0.0 +0.0	+32.2 +0.0 +0.0	+0.5 +0.5 +0.0	-38.1 +0.0 +0.0	+0.0	52.9	54.0 H	-1.1	Vert 208

12	3707.200M Ave	53.4	+0.0 +4.0 +0.0 +0.0	+32.2 +0.0 +0.0	+0.5 +0.5 +0.0	-38.1 -11.0 +0.0	+0.0 234	41.5	H	54.0	-12.5	Horiz 153
^	3707.200M	53.4	+0.0 +4.0 +0.0 +0.0	+32.2 +0.0 +0.0	+0.5 +0.5 +0.0	-38.1 +0.0 +0.0	+0.0 234	52.5	H	54.0	-1.5	Horiz 153
14	5417.950M Ave	49.3	+0.0 +5.1 +0.0 +0.0	+34.0 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 -11.0 +0.0	+0.0 120	41.2	L	54.0	-12.8	Vert 192
^	5417.950M	49.2	+0.0 +5.1 +0.0 +0.0	+34.0 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 120	52.1	L	54.0	-1.9	Vert 192
16	3611.967M Ave	53.1	+0.0 +4.0 +0.0 +0.0	+31.8 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -11.0 +0.0	+0.0 -9	40.9	L	54.0	-13.1	Vert 218
^	3611.967M	53.1	+0.0 +4.0 +0.0 +0.0	+31.8 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 -9	51.9	L	54.0	-2.1	Vert 218
18	3612.017M Ave	52.3	+0.0 +4.0 +0.0 +0.0	+31.8 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -11.0 +0.0	+0.0 358	40.1	L	54.0	-13.9	Horiz 154
^	3612.017M	52.3	+0.0 +4.0 +0.0 +0.0	+31.8 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 358	51.1	L	54.0	-2.9	Horiz 154
20	3659.933M Ave	51.8	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -11.0 +0.0	+0.0 205	39.8	M	54.0	-14.2	Vert 183
^	3659.933M	51.7	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 205	50.7	M	54.0	-3.3	Vert 183
22	5418.000M Ave	47.2	+0.0 +5.1 +0.0 +0.0	+34.0 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 -11.0 +0.0	+0.0 153	39.1	L	54.0	-14.9	Horiz 175
^	5418.000M	46.9	+0.0 +5.1 +0.0 +0.0	+34.0 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 153	49.8	L	54.0	-4.2	Horiz 175

24	3659.933M Ave	51.0	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -11.0 +0.0	+0.0 262	39.0	M	54.0	-15.0	Horiz 156
^	3659.933M	51.0	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 262	50.0	M	54.0	-4.0	Horiz 156
26	2780.400M Ave	48.1	+0.0 +3.5 +0.0 +0.0	+29.8 +0.0 +0.0	+0.3 +6.3 +0.0	-38.5 -11.0 +0.0	+0.0	38.5	H	54.0	-15.5	Horiz 169
^	2780.400M	48.1	+0.0 +3.5 +0.0 +0.0	+29.8 +0.0 +0.0	+0.3 +6.3 +0.0	-38.5 +0.0 +0.0	+0.0 321	49.5	H	54.0	-4.5	Horiz 169
28	2744.950M Ave	45.2	+0.0 +3.4 +0.0 +0.0	+29.7 +0.0 +0.0	+0.3 +9.2 +0.0	-38.5 -11.0 +0.0	+0.0 25	38.3	M	54.0	-15.7	Vert 157
^	2744.950M	45.1	+0.0 +3.4 +0.0 +0.0	+29.7 +0.0 +0.0	+0.3 +9.2 +0.0	-38.5 +0.0 +0.0	+0.0 25	49.2	M	54.0	-4.8	Vert 157
30	4634.000M	43.3	+0.0 +4.5 +0.0 +0.0	+32.7 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 -11.0 +0.0	+0.0 72	32.9	H	54.0	-21.1	Horiz 153
31	1805.983M	66.5	+0.0 +2.8 +0.0 +0.0	+26.7 +0.4 +0.0 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 235	57.9	L	89.0	-31.1	Vert 134
32	1853.600M	64.9	+0.0 +2.9 +0.0 +0.0	+27.0 +0.4 +0.0 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 88	56.7	H	89.0	-32.3	Vert 175
33	1829.967M	63.4	+0.0 +2.8 +0.0 +0.0	+26.9 +0.4 +0.0 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 91	55.0	M	89.0	-34.0	Vert 127
34	1805.983M	61.8	+0.0 +2.8 +0.0 +0.0	+26.7 +0.4 +0.0 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 102	53.2	L	89.0	-35.8	Horiz 184
35	5560.800M	49.5	+0.0 +5.1 +0.0 +0.0	+34.1 +0.0 +0.0	+0.7 +0.3 +0.0	-37.3 +0.0 +0.0	+0.0 360	52.4	H	89.0	-36.6	Vert 178
36	5489.900M	49.3	+0.0 +5.1 +0.0 +0.0	+34.1 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 239	52.3	M	89.0	-36.7	Vert 167

37	1853.600M	60.2	+0.0 +2.9 +0.0 +0.0	+27.0 +0.4 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 304	52.0	H	89.0	-37.0	Horiz 223
38	1829.967M	59.9	+0.0 +2.8 +0.0 +0.0	+26.9 +0.4 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 209	51.5	M	89.0	-37.5	Horiz 157
39	5489.900M	46.0	+0.0 +5.1 +0.0 +0.0	+34.1 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 186	49.0	M	89.0	-40.0	Horiz 156
40	6320.992M	41.1	+0.0 +5.7 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.2 +0.0	-37.0 +0.0 +0.0	+0.0 32	45.1	L	89.0	-43.9	Horiz 175
41	6320.942M	40.2	+0.0 +5.7 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.2 +0.0	-37.0 +0.0 +0.0	+0.0 47	44.2	L	89.0	-44.8	Vert 192
42	5560.800M	49.6	+0.0 +5.1 +0.0 +0.0	+34.1 +0.0 +0.0	+0.7 +0.3 +0.0	-37.3 -11.0 +0.0	+0.0 154	41.5	H	89.0	-47.5	Horiz 200

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/9/2021
Test Type:	**Radiated Scan**	Time:	13:21:36
Tested By:	E. Wong	Sequence#:	21
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV3 Folder4

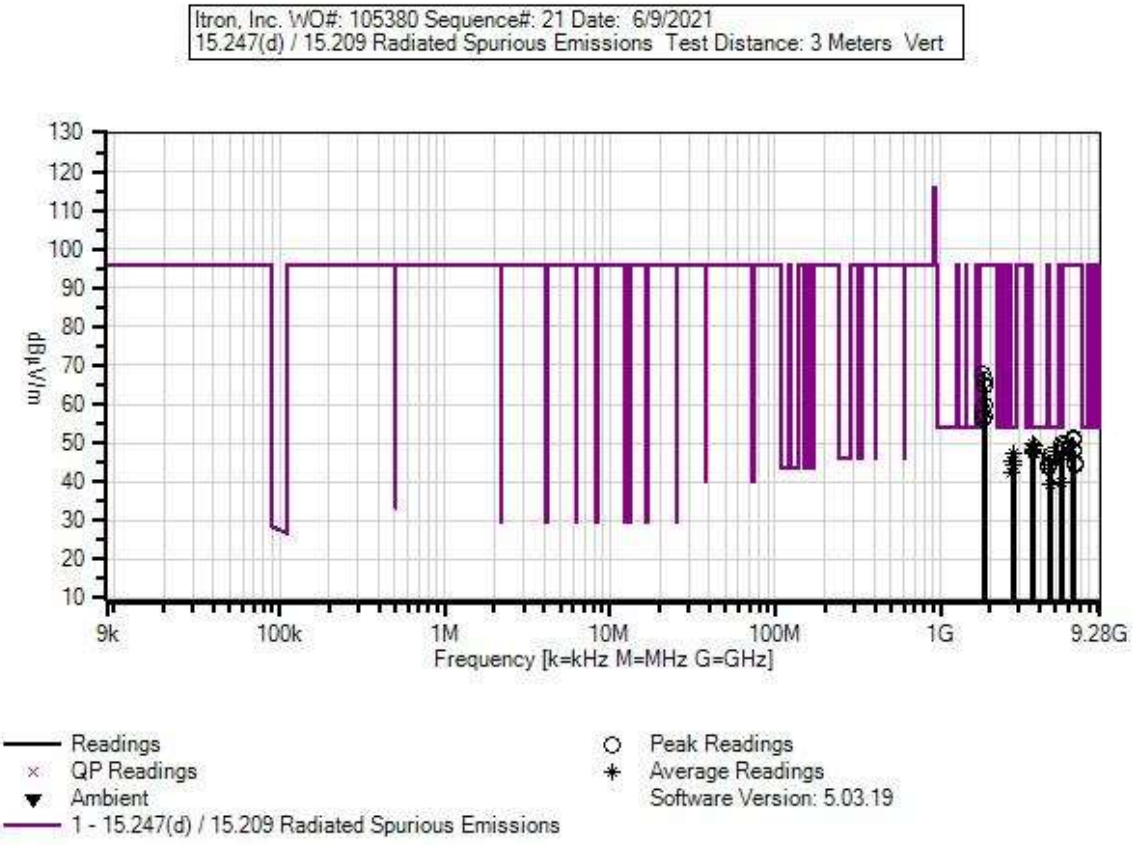
Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
	AN00309	Preamp	8447D	12/24/2019	12/24/2021
	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3660.008M	61.9	+0.0	+32.0	+0.5	-38.1	+0.0	49.9	54.0	-4.1	Vert
	Ave		+4.0	+0.0	+0.6	-11.0			M		218
^	3660.008M	61.9	+0.0	+32.0	+0.5	-38.1	+0.0	60.9	54.0	+6.9	Vert
			+4.0	+0.0	+0.6	+0.0			M		218
3	3707.158M	61.3	+0.0	+32.2	+0.5	-38.1	+0.0	49.4	54.0	-4.6	Vert
	Ave		+4.0	+0.0	+0.5	-11.0	12		H		223
^	3707.158M	61.3	+0.0	+32.2	+0.5	-38.1	+0.0	60.4	54.0	+6.4	Vert
			+4.0	+0.0	+0.5	+0.0	12		H		223
5	3611.973M	60.3	+0.0	+31.8	+0.5	-38.1	+0.0	48.1	54.0	-5.9	Vert
	Ave		+4.0	+0.0	+0.6	-11.0	360		L		213
^	3611.973M	60.3	+0.0	+31.8	+0.5	-38.1	+0.0	59.1	54.0	+5.1	Vert
			+4.0	+0.0	+0.6	+0.0	360		L		213
7	3659.992M	60.0	+0.0	+32.0	+0.5	-38.1	+0.0	48.0	54.0	-6.0	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	22		M		190
^	3659.992M	60.0	+0.0	+32.0	+0.5	-38.1	+0.0	59.0	54.0	+5.0	Horiz
			+4.0	+0.0	+0.6	+0.0	22		M		190
9	3707.150M	59.4	+0.0	+32.2	+0.5	-38.1	+0.0	47.5	54.0	-6.5	Horiz
	Ave		+4.0	+0.0	+0.5	-11.0	21		H		186
^	3707.150M	59.4	+0.0	+32.2	+0.5	-38.1	+0.0	58.5	54.0	+4.5	Horiz
			+4.0	+0.0	+0.5	+0.0	21		H		186
11	5417.976M	44.5	+0.0	+34.0	+0.7	-37.2	+0.0	47.4	54.0	-6.6	Horiz
			+5.1	+0.0	+0.3	+0.0	56		L		183
12	3611.990M	59.6	+0.0	+31.8	+0.5	-38.1	+0.0	47.4	54.0	-6.6	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	18		L		214
^	3611.990M	59.6	+0.0	+31.8	+0.5	-38.1	+0.0	58.4	54.0	+4.4	Horiz
			+4.0	+0.0	+0.6	+0.0	18		L		214
14	2780.433M	56.8	+0.0	+29.8	+0.3	-38.5	+0.0	47.2	54.0	-6.8	Vert
	Ave		+3.5	+0.0	+6.3	-11.0	190		H		172
^	2780.433M	56.8	+0.0	+29.8	+0.3	-38.5	+0.0	58.2	54.0	+4.2	Vert
			+3.5	+0.0	+6.3	+0.0	190		H		172
16	4575.025M	46.2	+0.0	+32.6	+0.5	-37.4	+0.0	46.7	54.0	-7.3	Vert
			+4.5	+0.0	+0.3	+0.0	226		M		218
17	4575.008M	45.2	+0.0	+32.6	+0.5	-37.4	+0.0	45.7	54.0	-8.3	Horiz
			+4.5	+0.0	+0.3	+0.0	242		M		177
18	2708.980M	49.5	+0.0	+29.5	+0.3	-38.5	+0.0	45.4	54.0	-8.6	Vert
	Ave		+3.4	+0.0	+12.2	-11.0	45		L		218
^	2708.980M	49.5	+0.0	+29.5	+0.3	-38.5	+0.0	56.4	54.0	+2.4	Vert
			+3.4	+0.0	+12.2	+0.0	45		L		218
20	2780.367M	54.8	+0.0	+29.8	+0.3	-38.5	+0.0	45.2	54.0	-8.8	Horiz
	Ave		+3.5	+0.0	+6.3	-11.0	20		H		144
^	2780.367M	54.8	+0.0	+29.8	+0.3	-38.5	+0.0	56.2	54.0	+2.2	Horiz
			+3.5	+0.0	+6.3	+0.0	20		H		144
22	4633.875M	44.5	+0.0	+32.7	+0.5	-37.4	+0.0	45.1	54.0	-8.9	Horiz
			+4.5	+0.0	+0.3	+0.0	291		H		173

23	2745.033M	51.4	+0.0	+29.7	+0.3	-38.5	+0.0	44.5		54.0	-9.5	Vert
	Ave		+3.4	+0.0	+9.2	-11.0	212		M			176
^	2745.033M	51.4	+0.0	+29.7	+0.3	-38.5	+0.0	55.5		54.0	+1.5	Vert
			+3.4	+0.0	+9.2	+0.0	212		M			176
25	2744.992M	51.2	+0.0	+29.7	+0.3	-38.5	+0.0	44.3		54.0	-9.7	Horiz
	Ave		+3.4	+0.0	+9.2	-11.0	314		M			171
^	2744.992M	51.0	+0.0	+29.7	+0.3	-38.5	+0.0	55.1		54.0	+1.1	Horiz
			+3.4	+0.0	+9.2	+0.0	314		M			171
27	4514.983M	43.8	+0.0	+32.5	+0.5	-37.4	+0.0	44.2		54.0	-9.8	Horiz
			+4.5	+0.0	+0.3	+0.0	292		L			151
28	4514.966M	43.7	+0.0	+32.5	+0.5	-37.4	+0.0	44.1		54.0	-9.9	Vert
			+4.5	+0.0	+0.3	+0.0	172		L			213
29	2708.980M	46.4	+0.0	+29.5	+0.3	-38.5	+0.0	42.3		54.0	-11.7	Horiz
	Ave		+3.4	+0.0	+12.2	-11.0	155		L			145
^	2708.980M	46.4	+0.0	+29.5	+0.3	-38.5	+0.0	53.3		54.0	-0.7	Horiz
			+3.4	+0.0	+12.2	+0.0	155		L			145
31	5417.960M	48.2	+0.0	+34.0	+0.7	-37.2	+0.0	40.1		54.0	-13.9	Vert
	Ave		+5.1	+0.0	+0.3	-11.0	147		L			155
^	5417.960M	48.2	+0.0	+34.0	+0.7	-37.2	+0.0	51.1		54.0	-2.9	Vert
			+5.1	+0.0	+0.3	+0.0	147		L			155
33	4633.933M	49.8	+0.0	+32.7	+0.5	-37.4	+0.0	39.4		54.0	-14.6	Vert
	Ave		+4.5	+0.0	+0.3	-11.0	198		H			186
^	4633.933M	49.8	+0.0	+32.7	+0.5	-37.4	+0.0	50.4		54.0	-3.6	Vert
			+4.5	+0.0	+0.3	+0.0	198		H			186
35	1805.987M	76.6	+0.0	+26.7	+0.3	-38.8	+0.0	68.0		96.3	-28.3	Vert
			+2.8	+0.4	+0.0	+0.0	157		L			146
36	1830.033M	74.6	+0.0	+26.9	+0.3	-38.8	+0.0	66.2		96.3	-30.1	Vert
			+2.8	+0.4	+0.0	+0.0	119		M			196
37	1853.542M	72.8	+0.0	+27.0	+0.3	-38.8	+0.0	64.6		96.3	-31.7	Vert
			+2.9	+0.4	+0.0	+0.0	359		H			166
38	1853.542M	67.9	+0.0	+27.0	+0.3	-38.8	+0.0	59.7		96.3	-36.6	Horiz
			+2.9	+0.4	+0.0	+0.0	131		H			166
39	1805.987M	67.0	+0.0	+26.7	+0.3	-38.8	+0.0	58.4		96.3	-37.9	Horiz
			+2.8	+0.4	+0.0	+0.0	300		L			176
40	1830.017M	65.4	+0.0	+26.9	+0.3	-38.8	+0.0	57.0		96.3	-39.3	Horiz
			+2.8	+0.4	+0.0	+0.0	117		M			198
41	1805.987M	64.7	+0.0	+26.7	+0.3	-38.8	+0.0	56.1		96.3	-40.2	Horiz
			+2.8	+0.4	+0.0	+0.0	358		L			148
42	6320.969M	47.4	+0.0	+34.4	+0.7	-37.0	+0.0	51.4		96.3	-44.9	Horiz
			+5.7	+0.0	+0.2	+0.0	180		L			183
43	6320.953M	46.8	+0.0	+34.4	+0.7	-37.0	+0.0	50.8		96.3	-45.5	Vert
			+5.7	+0.0	+0.2	+0.0	178		L			155
44	5490.042M	46.7	+0.0	+34.1	+0.7	-37.2	+0.0	49.7		96.3	-46.6	Vert
			+5.1	+0.0	+0.3	+0.0	41		M			218
45	5560.658M	46.3	+0.0	+34.1	+0.7	-37.3	+0.0	49.2		96.3	-47.1	Vert
			+5.1	+0.0	+0.3	+0.0	359		H			186
46	6405.058M	44.1	+0.0	+34.4	+0.7	-37.1	+0.0	48.1		96.3	-48.2	Vert
			+5.8	+0.0	+0.2	+0.0	179		M			218
47	5490.025M	45.1	+0.0	+34.1	+0.7	-37.2	+0.0	48.1		96.3	-48.2	Horiz
			+5.1	+0.0	+0.3	+0.0	187		M			177

48	6405.042M	44.0	+0.0 +5.8	+34.4 +0.0	+0.7 +0.2	-37.1 +0.0	+0.0 239	48.0	M	96.3	-48.3	Horiz 177
49	5560.908M	44.9	+0.0 +5.1	+34.1 +0.0	+0.7 +0.3	-37.3 +0.0	+0.0 197	47.8	H	96.3	-48.5	Horiz 173
50	6487.508M	40.9	+0.0 +5.8	+34.4 +0.0	+0.7 +0.3	-37.2 +0.0	+0.0 351	44.9	H	96.3	-51.4	Vert 186
51	6487.633M	40.5	+0.0 +5.8	+34.4 +0.0	+0.7 +0.3	-37.2 +0.0	+0.0 23	44.5	H	96.3	-51.8	Horiz 173

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/9/2021
Test Type:	**Radiated Scan**	Time:	13:35:30
Tested By:	E. Wong	Sequence#:	17
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:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wired with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the cable is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating frequency / mode
902.4MHz, 915.2MHz, 927.6MHz, 400kHz steps, 64 channels, 300k GFSK LV3. Folder 4

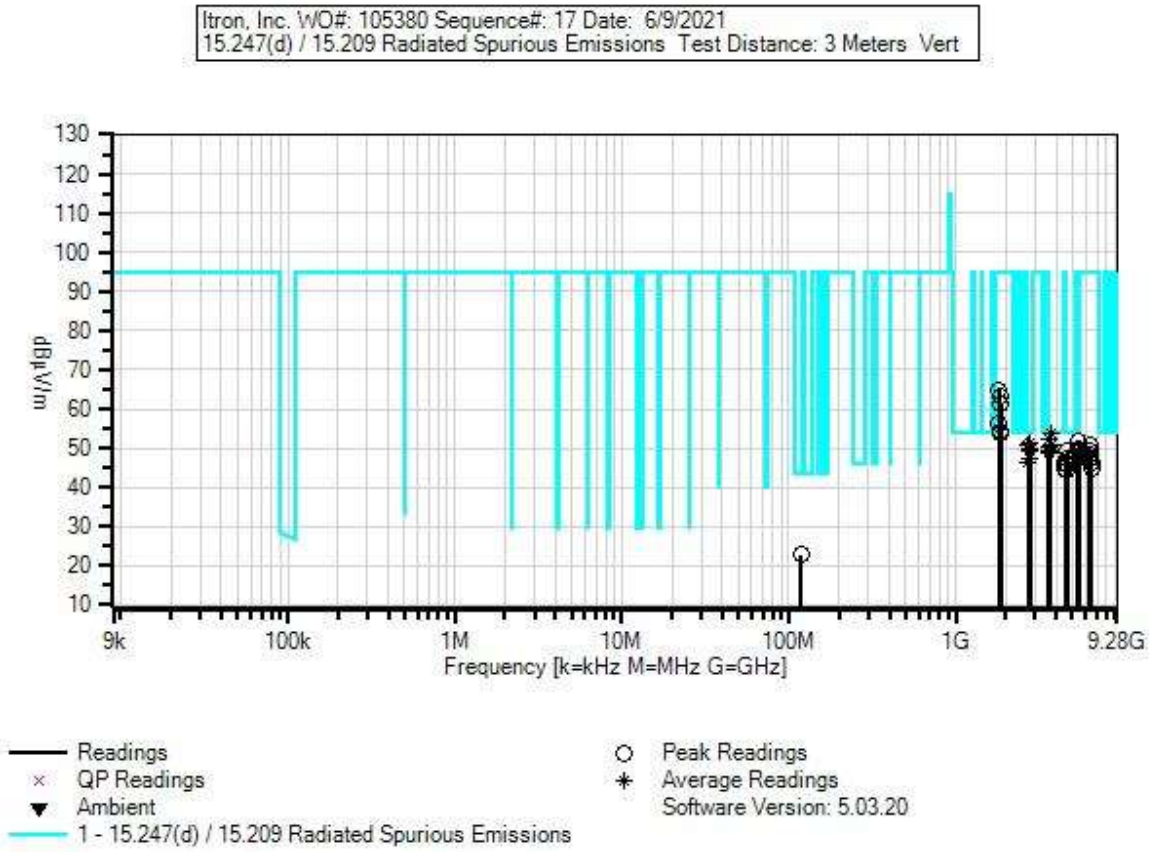
Frequency of measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 45ms per 100ms. Duty cycle correction factor= 20log(45ms/100ms) = -6.9dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test environment conditions:
Temperature: 22°C
Relative Humidity 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.4-2014 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T9	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T10	ANP05505	Attenuator	NAT-6	5/26/2021	5/26/2023
T11	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T12	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T13	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3710.700M Ave	61.6	+0.0 +4.0 +0.0 +0.0	+32.2 +0.0 +0.0	+0.5 +0.5 +0.0	-38.1 -6.9 +0.0	+0.0 360	53.8	54.0 H_	-0.2	Vert 218
^	3710.700M	61.6	+0.0 +4.0 +0.0 +0.0	+32.2 +0.0 +0.0	+0.5 +0.5 +0.0	-38.1 +0.0 +0.0	+0.0 360	60.7	54.0 H_	+6.7	Vert 218
3	3660.800M Ave	60.4	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -6.9 +0.0	+0.0 1	52.5	54.0 M	-1.5	Vert 209
^	3660.800M	60.4	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 1	59.4	54.0 M	+5.4	Vert 209
5	2745.417M Ave	54.3	+0.0 +3.4 +0.0 +0.0	+29.7 +0.0 +0.0	+0.3 +9.1 +0.0	-38.5 -6.9 +0.0	+0.0 37	51.4	54.0 M	-2.6	Vert 197
^	2745.417M	54.3	+0.0 +3.4 +0.0 +0.0	+29.7 +0.0 +0.0	+0.3 +9.1 +0.0	-38.5 +0.0 +0.0	+0.0 37	58.3	54.0 M	+4.3	Vert 197
7	3710.333M Ave	58.5	+0.0 +4.0 +0.0 +0.0	+32.2 +0.0 +0.0	+0.5 +0.5 +0.0	-38.1 -6.9 +0.0	+0.0 353	50.7	54.0 H	-3.3	Horiz 100
^	3710.333M	58.5	+0.0 +4.0 +0.0 +0.0	+32.2 +0.0 +0.0	+0.5 +0.5 +0.0	-38.1 +0.0 +0.0	+0.0 353	57.6	54.0 H	+3.6	Horiz 100
9	2707.308M Ave	50.4	+0.0 +3.4 +0.0 +0.0	+29.5 +0.0 +0.0	+0.3 +12.4 +0.0	-38.5 -6.9 +0.0	+0.0 77	50.6	54.0 L	-3.4	Vert 100
^	2707.308M	50.4	+0.0 +3.4 +0.0 +0.0	+29.5 +0.0 +0.0	+0.3 +12.4 +0.0	-38.5 +0.0 +0.0	+0.0 77	57.5	54.0 L	+3.5	Vert 100

11	3660.733M Ave	58.4	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -6.9 +0.0	+0.0 27	50.5	M	54.0	-3.5	Horiz 100
^	3660.733M	58.4	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 27	57.4	M	54.0	+3.4	Horiz 100
13	3609.600M Ave	58.2	+0.0 +4.0 +0.0 +0.0	+31.8 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -6.9 +0.0	+0.0 19	50.1	L	54.0	-3.9	Vert 206
^	3609.600M	58.2	+0.0 +4.0 +0.0 +0.0	+31.8 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 19	57.0	L	54.0	+3.0	Vert 206
15	2783.117M Ave	55.4	+0.0 +3.5 +0.0 +0.0	+29.8 +0.0 +0.0	+0.3 +6.0 +0.0	-38.5 -6.9 +0.0	+0.0 27	49.6	H	54.0	-4.4	Vert 212
^	2783.117M	55.1	+0.0 +3.5 +0.0 +0.0	+29.8 +0.0 +0.0	+0.3 +6.0 +0.0	-38.5 +0.0 +0.0	+0.0 27	56.2	H	54.0	+2.2	Vert 212
17	5414.333M	46.5	+0.0 +5.1 +0.0 +0.0	+34.0 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 90	49.4	L	54.0	-4.6	Horiz 148
18	4637.883M	48.8	+0.0 +4.5 +0.0 +0.0	+32.7 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 211	49.4	H	54.0	-4.6	Vert 210
19	2782.617M Ave	54.9	+0.0 +3.5 +0.0 +0.0	+29.8 +0.0 +0.0	+0.3 +6.1 +0.0	-38.5 -6.9 +0.0	+0.0 30	49.2	H	54.0	-4.8	Horiz 100
^	2782.617M	54.2	+0.0 +3.5 +0.0 +0.0	+29.8 +0.0 +0.0	+0.3 +6.1 +0.0	-38.5 +0.0 +0.0	+0.0 30	55.4	H	54.0	+1.4	Horiz 100
21	3609.600M Ave	57.3	+0.0 +4.0 +0.0 +0.0	+31.8 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -6.9 +0.0	+0.0 34	49.2	L	54.0	-4.8	Horiz 100
^	3609.600M	57.3	+0.0 +4.0 +0.0 +0.0	+31.8 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 34	56.1	L	54.0	+2.1	Horiz 100

23	3661.017M Ave	56.7	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 -6.9 +0.0	+0.0 67	48.8	M	54.0	-5.2	Horiz 152
^	3661.017M	56.7	+0.0 +4.0 +0.0 +0.0	+32.0 +0.0 +0.0	+0.5 +0.6 +0.0	-38.1 +0.0 +0.0	+0.0 67	55.7	M	54.0	+1.7	Horiz 152
25	4575.717M	46.8	+0.0 +4.5 +0.0 +0.0	+32.6 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 261	47.3	M	54.0	-6.7	Vert 178
26	5414.700M Ave	51.2	+0.0 +5.1 +0.0 +0.0	+34.0 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 -6.9 +0.0	+0.0 134	47.2	L	54.0	-6.8	Vert 153
^	5414.700M	51.2	+0.0 +5.1 +0.0 +0.0	+34.0 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 134	54.1	L	54.0	+0.1	Vert 153
28	2745.500M Ave	50.0	+0.0 +3.4 +0.0 +0.0	+29.7 +0.0 +0.0	+0.3 +9.1 +0.0	-38.5 -6.9 +0.0	+0.0 233	47.1	M	54.0	-6.9	Horiz 147
^	2745.500M	50.0	+0.0 +3.4 +0.0 +0.0	+29.7 +0.0 +0.0	+0.3 +9.1 +0.0	-38.5 +0.0 +0.0	+0.0 233	54.0	M	54.0	+0.0	Horiz 147
30	4511.667M	46.1	+0.0 +4.5 +0.0 +0.0	+32.5 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 9	46.5	L	54.0	-7.5	Vert 133
31	2707.167M Ave	46.0	+0.0 +3.4 +0.0 +0.0	+29.5 +0.0 +0.0	+0.3 +12.4 +0.0	-38.5 -6.9 +0.0	+0.0 206	46.2	L	54.0	-7.8	Horiz 187
^	2707.167M	45.8	+0.0 +3.4 +0.0 +0.0	+29.5 +0.0 +0.0	+0.3 +12.4 +0.0	-38.5 +0.0 +0.0	+0.0 206	52.9	L	54.0	-1.1	Horiz 187
33	4638.050M	45.3	+0.0 +4.5 +0.0 +0.0	+32.7 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 169	45.9	H	54.0	-8.1	Horiz 100
34	4511.925M	44.7	+0.0 +4.5 +0.0 +0.0	+32.5 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 193	45.1	L	54.0	-8.9	Horiz 148
35	4576.100M	44.0	+0.0 +4.5 +0.0 +0.0	+32.6 +0.0 +0.0	+0.5 +0.3 +0.0	-37.4 +0.0 +0.0	+0.0 270	44.5	M	54.0	-9.5	Horiz 152

36	118.220M	31.3	+0.0 +0.0 +11.3 +0.1	+0.0 +0.0 +6.1	+0.0 +0.0 +1.9	+0.0 +0.0 -28.0	+0.0 43	22.7	43.5	-20.8	Vert 116
37	1804.817M	73.5	+0.0 +2.8 +0.0 +0.0	+26.7 +0.4 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 109	64.9 L	90.5	-25.6	Vert 109
38	1830.333M	71.8	+0.0 +2.8 +0.0 +0.0	+26.9 +0.4 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 149	63.4 M	90.5	-27.1	Vert 100
39	1854.950M	69.4	+0.0 +2.9 +0.0 +0.0	+27.0 +0.4 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 113	61.2 H	90.5	-29.3	Vert 100
40	1804.817M	64.7	+0.0 +2.8 +0.0 +0.0	+26.7 +0.4 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 2	56.1 L	90.5	-34.4	Horiz 100
41	1855.433M	62.7	+0.0 +2.9 +0.0 +0.0	+27.0 +0.4 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 41	54.5 H	90.5	-36.0	Horiz 100
42	1830.333M	62.3	+0.0 +2.8 +0.0 +0.0	+26.9 +0.4 +0.0	+0.3 +0.0 +0.0	-38.8 +0.0 +0.0	+0.0 275	53.9 M	90.5	-36.6	Horiz 100
43	5490.750M	49.0	+0.0 +5.1 +0.0 +0.0	+34.1 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 1	52.0 M	90.5	-38.5	Vert 178
44	6317.108M	46.7	+0.0 +5.7 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.2 +0.0	-37.0 +0.0 +0.0	+0.0 246	50.7 L	90.5	-39.8	Vert 153
45	5491.183M	47.0	+0.0 +5.1 +0.0 +0.0	+34.1 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 293	50.0 M	90.5	-40.5	Horiz 152
46	5565.600M	46.6	+0.0 +5.1 +0.0 +0.0	+34.1 +0.0 +0.0	+0.7 +0.3 +0.0	-37.3 +0.0 +0.0	+0.0 91	49.5 H	90.5	-41.0	Vert 210
47	6316.742M	45.5	+0.0 +5.7 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.2 +0.0	-37.0 +0.0 +0.0	+0.0 233	49.5 L	90.5	-41.0	Horiz 148
48	6405.833M	44.3	+0.0 +5.8 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.2 +0.0	-37.1 +0.0 +0.0	+0.0 183	48.3 M	90.5	-42.2	Vert 178

49	5565.767M	45.0	+0.0 +5.1 +0.0 +0.0	+34.1 +0.0 +0.0	+0.7 +0.3 +0.0	-37.3 +0.0 +0.0	+0.0 267	47.9	H	90.5	-42.6	Horiz 100
50	6405.833M	43.5	+0.0 +5.8 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.2 +0.0	-37.1 +0.0 +0.0	+0.0 150	47.5	M	90.5	-43.0	Vert 178
51	6406.267M	43.5	+0.0 +5.8 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.2 +0.0	-37.1 +0.0 +0.0	+0.0 234	47.5	M	90.5	-43.0	Horiz 152
52	6493.317M	42.2	+0.0 +5.8 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 19	46.2	H	90.5	-44.3	Vert 210
53	6494.033M	40.9	+0.0 +5.8 +0.0 +0.0	+34.4 +0.0 +0.0	+0.7 +0.3 +0.0	-37.2 +0.0 +0.0	+0.0 227	44.9	H	90.5	-45.6	Horiz 100

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/7/2021
Test Type:	**Radiated Scan**	Time:	10:29:44
Tested By:	E. Wong	Sequence#:	5
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's red port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable. All port fill, black port is connected to a section of unterminated cable.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915.0MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV1, folder 3

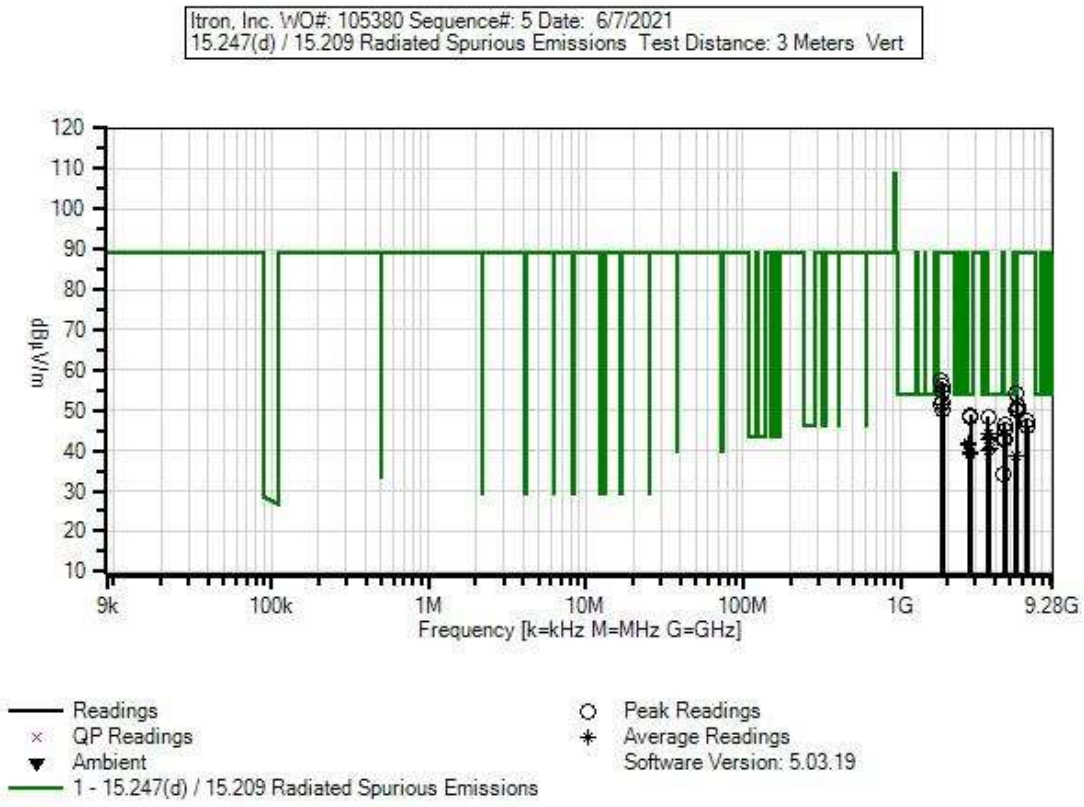
Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00309	Preamp	8447D	12/24/2019	12/24/2021
	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	2780.400M	47.5	+0.0	+29.8	+0.3	-38.5	+0.0	48.9	54.0	-5.1	Vert
			+3.5	+0.0	+6.3	+0.0	292		H		129
2	3612.000M	49.7	+0.0	+31.8	+0.5	-38.1	+0.0	48.5	54.0	-5.5	Horiz
			+4.0	+0.0	+0.6	+0.0	65		L		177
3	2780.400M	46.7	+0.0	+29.8	+0.3	-38.5	+0.0	48.1	54.0	-5.9	Vert
			+3.5	+0.0	+6.3	+0.0	-1		H		149
4	4575.000M	46.0	+0.0	+32.6	+0.5	-37.4	+0.0	46.5	54.0	-7.5	Vert
			+4.5	+0.0	+0.3	+0.0	9		M		218
5	4634.000M	44.6	+0.0	+32.7	+0.5	-37.4	+0.0	45.2	54.0	-8.8	Vert
			+4.5	+0.0	+0.3	+0.0			H		180
6	4575.000M	44.4	+0.0	+32.6	+0.5	-37.4	+0.0	44.9	54.0	-9.1	Horiz
			+4.5	+0.0	+0.3	+0.0	192		M		143
7	3660.000M	56.0	+0.0	+32.0	+0.5	-38.1	+0.0	44.0	54.0	-10.0	Vert
	Ave		+4.0	+0.0	+0.6	-11.0			M		234
^	3660.000M	56.0	+0.0	+32.0	+0.5	-38.1	+0.0	55.0	54.0	+1.0	Vert
			+4.0	+0.0	+0.6	+0.0			M		234
9	3707.200M	55.1	+0.0	+32.2	+0.5	-38.1	+0.0	43.2	54.0	-10.8	Vert
	Ave		+4.0	+0.0	+0.5	-11.0	360		H		227
^	3707.200M	55.1	+0.0	+32.2	+0.5	-38.1	+0.0	54.2	54.0	+0.2	Vert
			+4.0	+0.0	+0.5	+0.0	360		H		227
11	3612.000M	55.2	+0.0	+31.8	+0.5	-38.1	+0.0	43.0	54.0	-11.0	Vert
	Ave		+4.0	+0.0	+0.6	-11.0			L		226
^	3612.000M	55.2	+0.0	+31.8	+0.5	-38.1	+0.0	54.0	54.0	+0.0	Vert
			+4.0	+0.0	+0.6	+0.0			L		226
13	4515.033M	42.6	+0.0	+32.5	+0.5	-37.4	+0.0	43.0	54.0	-11.0	Horiz
			+4.5	+0.0	+0.3	+0.0	287		L		177
14	4634.000M	42.0	+0.0	+32.7	+0.5	-37.4	+0.0	42.6	54.0	-11.4	Horiz
			+4.5	+0.0	+0.3	+0.0	191		H		162
15	2709.033M	45.8	+0.0	+29.5	+0.3	-38.5	+0.0	41.7	54.0	-12.3	Horiz
	Ave		+3.4	+0.0	+12.2	-11.0	1		L		190
^	2709.033M	45.8	+0.0	+29.5	+0.3	-38.5	+0.0	52.7	54.0	-1.3	Horiz
			+3.4	+0.0	+12.2	+0.0	1		L		190
17	2709.000M	45.5	+0.0	+29.5	+0.3	-38.5	+0.0	41.4	54.0	-12.6	Vert
	Ave		+3.4	+0.0	+12.2	-11.0	360		L		158
^	2709.000M	45.5	+0.0	+29.5	+0.3	-38.5	+0.0	52.4	54.0	-1.6	Vert
			+3.4	+0.0	+12.2	+0.0	360		L		158
19	3707.200M	52.2	+0.0	+32.2	+0.5	-38.1	+0.0	40.3	54.0	-13.7	Horiz
	Ave		+4.0	+0.0	+0.5	-11.0	250		H		180
^	3707.200M	52.2	+0.0	+32.2	+0.5	-38.1	+0.0	51.3	54.0	-2.7	Horiz
			+4.0	+0.0	+0.5	+0.0	250		H		180
21	3660.000M	52.2	+0.0	+32.0	+0.5	-38.1	+0.0	40.2	54.0	-13.8	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	227		M		223
^	3660.000M	52.2	+0.0	+32.0	+0.5	-38.1	+0.0	51.2	54.0	-2.8	Horiz
			+4.0	+0.0	+0.6	+0.0	227		M		223

23	2745.000M	46.4	+0.0	+29.7	+0.3	-38.5	+0.0	39.5		54.0	-14.5	Vert
	Ave		+3.4	+0.0	+9.2	-11.0	50		M			191
^	2745.000M	46.4	+0.0	+29.7	+0.3	-38.5	+0.0	50.5		54.0	-3.5	Vert
			+3.4	+0.0	+9.2	+0.0	50		M			191
25	2745.000M	46.2	+0.0	+29.7	+0.3	-38.5	+0.0	39.3		54.0	-14.7	Horiz
	Ave		+3.4	+0.0	+9.2	-11.0	14		M			170
^	2745.000M	46.2	+0.0	+29.7	+0.3	-38.5	+0.0	50.3		54.0	-3.7	Horiz
			+3.4	+0.0	+9.2	+0.0	14		M			170
27	5418.000M	46.7	+0.0	+34.0	+0.7	-37.2	+0.0	38.6		54.0	-15.4	Horiz
	Ave		+5.1	+0.0	+0.3	-11.0	264		L			158
^	5418.033M	46.5	+0.0	+34.0	+0.7	-37.2	+0.0	49.4		54.0	-4.6	Horiz
			+5.1	+0.0	+0.3	+0.0	264		L			158
29	4515.033M	44.6	+0.0	+32.5	+0.5	-37.4	+0.0	34.0		54.0	-20.0	Vert
			+4.5	+0.0	+0.3	-11.0	360		L			176
30	1806.000M	66.0	+0.0	+26.7	+0.3	-38.8	+0.0	57.4		90.5	-33.1	Vert
			+2.8	+0.4	+0.0	+0.0	87		L			137
31	1853.600M	64.2	+0.0	+27.0	+0.3	-38.8	+0.0	56.0		90.5	-34.5	Vert
			+2.9	+0.4	+0.0	+0.0	61		H			182
32	1830.000M	63.2	+0.0	+26.9	+0.3	-38.8	+0.0	54.8		90.5	-35.7	Vert
			+2.8	+0.4	+0.0	+0.0	241		M			131
33	5490.000M	51.1	+0.0	+34.1	+0.7	-37.2	+0.0	54.1		90.5	-36.4	Vert
			+5.1	+0.0	+0.3	+0.0	136		M			224
34	1830.000M	60.3	+0.0	+26.9	+0.3	-38.8	+0.0	51.9		90.5	-38.6	Horiz
			+2.8	+0.4	+0.0	+0.0	342		M			131
35	1806.000M	60.0	+0.0	+26.7	+0.3	-38.8	+0.0	51.4		90.5	-39.1	Horiz
			+2.8	+0.4	+0.0	+0.0	71		L			190
36	5560.800M	48.0	+0.0	+34.1	+0.7	-37.3	+0.0	50.9		90.5	-39.6	Vert
			+5.1	+0.0	+0.3	+0.0	353		H			180
37	1853.600M	58.5	+0.0	+27.0	+0.3	-38.8	+0.0	50.3		90.5	-40.2	Horiz
			+2.9	+0.4	+0.0	+0.0	121		H			212
38	5490.000M	47.2	+0.0	+34.1	+0.7	-37.2	+0.0	50.2		90.5	-40.3	Horiz
			+5.1	+0.0	+0.3	+0.0	243		M			143
39	5560.800M	47.0	+0.0	+34.1	+0.7	-37.3	+0.0	49.9		90.5	-40.6	Horiz
			+5.1	+0.0	+0.3	+0.0	54		H			162
40	6321.033M	43.5	+0.0	+34.4	+0.7	-37.0	+0.0	47.5		90.5	-43.0	Horiz
			+5.7	+0.0	+0.2	+0.0	139		L			158
41	6405.000M	42.1	+0.0	+34.4	+0.7	-37.1	+0.0	46.1		90.5	-44.4	Horiz
			+5.8	+0.0	+0.2	+0.0	163		M			143

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/7/2021
Test Type:	**Radiated Scan**	Time:	10:04:05
Tested By:	E. Wong	Sequence#:	4
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's red port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable. All port fill, black port is connected to a section of unterminated cable.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV3, folder 3

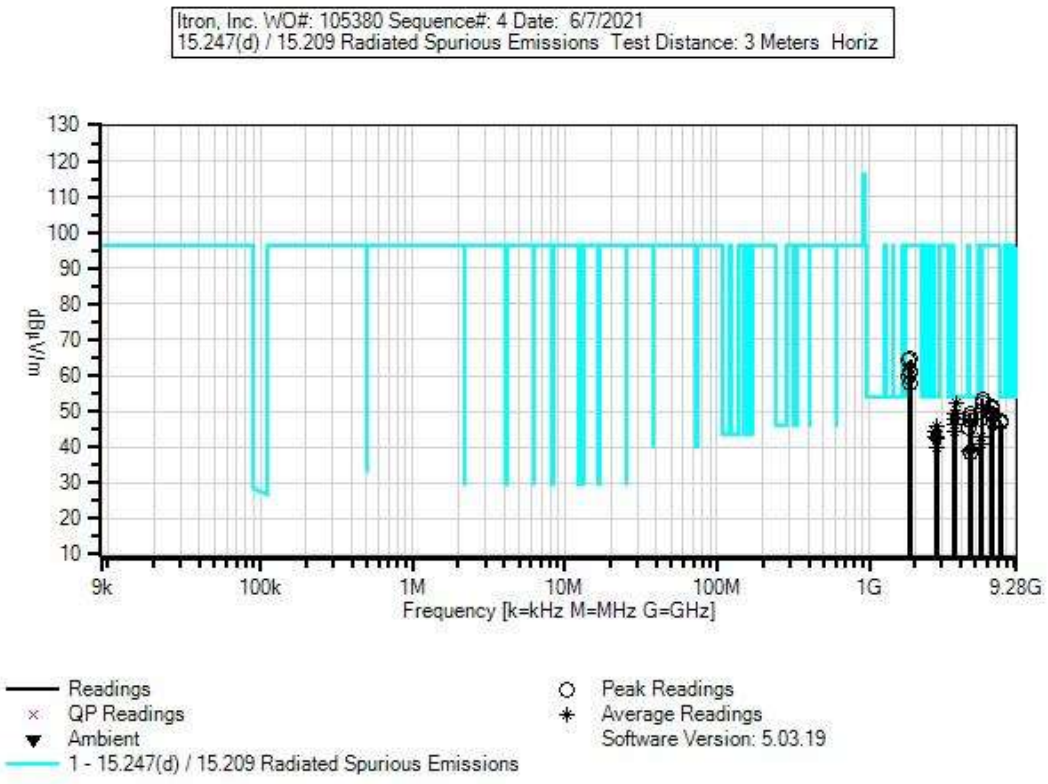
Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions: 22°C
Relative Humidity: 54%
Pressure:100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
	AN00309	Preamp	8447D	12/24/2019	12/24/2021
	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3707.200M	64.1	+0.0	+32.2	+0.5	-38.1	+0.0	52.2	54.0	-1.8	Vert
	Ave		+4.0	+0.0	+0.5	-11.0	359		H		231
^	3707.200M	64.1	+0.0	+32.2	+0.5	-38.1	+0.0	63.2	54.0	+9.2	Vert
			+4.0	+0.0	+0.5	+0.0	359		H		231
3	3707.200M	61.4	+0.0	+32.2	+0.5	-38.1	+0.0	49.5	54.0	-4.5	Horiz
	Ave		+4.0	+0.0	+0.5	-11.0	260		H		216
^	3707.200M	61.4	+0.0	+32.2	+0.5	-38.1	+0.0	60.5	54.0	+6.5	Horiz
			+4.0	+0.0	+0.5	+0.0	260		H		216
5	4574.917M	49.0	+0.0	+32.6	+0.5	-37.4	+0.0	49.5	54.0	-4.5	Vert
			+4.5	+0.0	+0.3	+0.0	7		M		176
6	3611.942M	61.3	+0.0	+31.8	+0.5	-38.1	+0.0	49.1	54.0	-4.9	Vert
	Ave		+4.0	+0.0	+0.6	-11.0	9		L		222
^	3611.942M	61.3	+0.0	+31.8	+0.5	-38.1	+0.0	60.1	54.0	+6.1	Vert
			+4.0	+0.0	+0.6	+0.0	9		L		222
8	4634.000M	47.5	+0.0	+32.7	+0.5	-37.4	+0.0	48.1	54.0	-5.9	Horiz
			+4.5	+0.0	+0.3	+0.0	240		H		240
9	3660.133M	60.0	+0.0	+32.0	+0.5	-38.1	+0.0	48.0	54.0	-6.0	Vert
	Ave		+4.0	+0.0	+0.6	-11.0	333		M		164
^	3660.133M	60.0	+0.0	+32.0	+0.5	-38.1	+0.0	59.0	54.0	+5.0	Vert
			+4.0	+0.0	+0.6	+0.0	333		M		164
11	4575.100M	46.6	+0.0	+32.6	+0.5	-37.4	+0.0	47.1	54.0	-6.9	Horiz
			+4.5	+0.0	+0.3	+0.0	232		M		184
12	7320.200M	40.8	+0.0	+36.2	+0.7	-37.3	+0.0	46.7	54.0	-7.3	Horiz
			+6.1	+0.0	+0.2	+0.0			M		184
13	3660.067M	58.2	+0.0	+32.0	+0.5	-38.1	+0.0	46.2	54.0	-7.8	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	234		M		181
^	3660.067M	57.9	+0.0	+32.0	+0.5	-38.1	+0.0	56.9	54.0	+2.9	Horiz
			+4.0	+0.0	+0.6	+0.0	234		M		181
15	2780.400M	55.3	+0.0	+29.8	+0.3	-38.5	+0.0	45.7	54.0	-8.3	Vert
	Ave		+3.5	+0.0	+6.3	-11.0	34		H		159
^	2780.400M	55.3	+0.0	+29.8	+0.3	-38.5	+0.0	56.7	54.0	+2.7	Vert
			+3.5	+0.0	+6.3	+0.0	34		H		159
17	4515.042M	44.9	+0.0	+32.5	+0.5	-37.4	+0.0	45.3	54.0	-8.7	Horiz
			+4.5	+0.0	+0.3	+0.0	96		L		211
18	2709.000M	48.6	+0.0	+29.5	+0.3	-38.5	+0.0	44.5	54.0	-9.5	Vert
	Ave		+3.4	+0.0	+12.2	-11.0	72		L		173
^	2709.000M	48.6	+0.0	+29.5	+0.3	-38.5	+0.0	55.5	54.0	+1.5	Vert
			+3.4	+0.0	+12.2	+0.0	72		L		173
20	3612.042M	56.5	+0.0	+31.8	+0.5	-38.1	+0.0	44.3	54.0	-9.7	Horiz
	Ave		+4.0	+0.0	+0.6	-11.0	248		L		233
^	3612.042M	56.5	+0.0	+31.8	+0.5	-38.1	+0.0	55.3	54.0	+1.3	Horiz
			+4.0	+0.0	+0.6	+0.0	248		L		233
22	5418.042M	51.1	+0.0	+34.0	+0.7	-37.2	+0.0	43.0	54.0	-11.0	Horiz
	Ave		+5.1	+0.0	+0.3	-11.0	260		L		192
^	5418.042M	50.0	+0.0	+34.0	+0.7	-37.2	+0.0	52.9	54.0	-1.1	Horiz
			+5.1	+0.0	+0.3	+0.0	260		L		192

24	2745.100M	49.8	+0.0	+29.7	+0.3	-38.5	+0.0	42.9		54.0	-11.1	Vert
	Ave		+3.4	+0.0	+9.2	-11.0	73		M			167
^	2745.100M	49.8	+0.0	+29.7	+0.3	-38.5	+0.0	53.9		54.0	-0.1	Vert
			+3.4	+0.0	+9.2	+0.0	73		M			167
26	2709.042M	46.8	+0.0	+29.5	+0.3	-38.5	+0.0	42.7		54.0	-11.3	Horiz
	Ave		+3.4	+0.0	+12.2	-11.0	43		L			180
^	2709.042M	46.8	+0.0	+29.5	+0.3	-38.5	+0.0	53.7		54.0	-0.3	Horiz
			+3.4	+0.0	+12.2	+0.0	43		L			180
28	2780.400M	51.8	+0.0	+29.8	+0.3	-38.5	+0.0	42.2		54.0	-11.8	Horiz
	Ave		+3.5	+0.0	+6.3	-11.0	59		H			174
^	2780.400M	51.8	+0.0	+29.8	+0.3	-38.5	+0.0	53.2		54.0	-0.8	Horiz
			+3.5	+0.0	+6.3	+0.0	59		H			174
30	5418.042M	49.1	+0.0	+34.0	+0.7	-37.2	+0.0	41.0		54.0	-13.0	Vert
	Ave		+5.1	+0.0	+0.3	-11.0	308		L			167
^	5418.042M	49.1	+0.0	+34.0	+0.7	-37.2	+0.0	52.0		54.0	-2.0	Vert
			+5.1	+0.0	+0.3	+0.0	308		L			167
32	2745.100M	46.6	+0.0	+29.7	+0.3	-38.5	+0.0	39.7		54.0	-14.3	Horiz
	Ave		+3.4	+0.0	+9.2	-11.0	132		M			150
^	2745.100M	46.2	+0.0	+29.7	+0.3	-38.5	+0.0	50.3		54.0	-3.7	Horiz
			+3.4	+0.0	+9.2	+0.0	132		M			150
34	4634.000M	49.9	+0.0	+32.7	+0.5	-37.4	+0.0	39.5		54.0	-14.5	Vert
	Ave		+4.5	+0.0	+0.3	-11.0	16		H			137
^	4634.000M	49.9	+0.0	+32.7	+0.5	-37.4	+0.0	50.5		54.0	-3.5	Vert
			+4.5	+0.0	+0.3	+0.0	16		H			137
36	4515.042M	49.6	+0.0	+32.5	+0.5	-37.4	+0.0	39.0		54.0	-15.0	Vert
	Ave		+4.5	+0.0	+0.3	-11.0			L			181
^	4515.042M	49.6	+0.0	+32.5	+0.5	-37.4	+0.0	50.0		54.0	-4.0	Vert
			+4.5	+0.0	+0.3	+0.0			L			181
38	4574.917M	49.0	+0.0	+32.6	+0.5	-37.4	+0.0	38.5		54.0	-15.5	Vert
			+4.5	+0.0	+0.3	-11.0	7		M			176
39	1853.600M	72.9	+0.0	+27.0	+0.3	-38.8	+0.0	64.7		90.5	-25.8	Vert
			+2.9	+0.4	+0.0	+0.0	257		H			147
40	1853.600M	72.9	+0.0	+27.0	+0.3	-38.8	+0.0	64.7		90.5	-25.8	Horiz
			+2.9	+0.4	+0.0	+0.0	257		H			147
41	1806.000M	72.7	+0.0	+26.7	+0.3	-38.8	+0.0	64.1		90.5	-26.4	Vert
			+2.8	+0.4	+0.0	+0.0	192		L			158
42	1830.067M	69.6	+0.0	+26.9	+0.3	-38.8	+0.0	61.2		90.5	-29.3	Horiz
			+2.8	+0.4	+0.0	+0.0	66		M			169
43	1830.067M	69.3	+0.0	+26.9	+0.3	-38.8	+0.0	60.9		90.5	-29.6	Vert
			+2.8	+0.4	+0.0	+0.0			M			158
44	1806.000M	68.4	+0.0	+26.7	+0.3	-38.8	+0.0	59.8		90.5	-30.7	Horiz
			+2.8	+0.4	+0.0	+0.0	326		L			213
45	1853.600M	66.0	+0.0	+27.0	+0.3	-38.8	+0.0	57.8		90.5	-32.7	Horiz
			+2.9	+0.4	+0.0	+0.0	137		H			147
46	5560.800M	50.6	+0.0	+34.1	+0.7	-37.3	+0.0	53.5		90.5	-37.0	Vert
			+5.1	+0.0	+0.3	+0.0	206		H			137
47	5560.800M	49.5	+0.0	+34.1	+0.7	-37.3	+0.0	52.4		90.5	-38.1	Horiz
			+5.1	+0.0	+0.3	+0.0	255		H			240
48	6405.167M	47.3	+0.0	+34.4	+0.7	-37.1	+0.0	51.3		90.5	-39.2	Horiz
			+5.8	+0.0	+0.2	+0.0	157		M			184
49	6321.042M	46.8	+0.0	+34.4	+0.7	-37.0	+0.0	50.8		90.5	-39.7	Horiz
			+5.7	+0.0	+0.2	+0.0	310		L			192

50	5490.133M	46.9	+0.0	+34.1	+0.7	-37.2	+0.0	49.9	90.5	-40.6	Horiz
			+5.1	+0.0	+0.3	+0.0	357	M			184
51	6321.042M	45.2	+0.0	+34.4	+0.7	-37.0	+0.0	49.2	90.5	-41.3	Vert
			+5.7	+0.0	+0.2	+0.0	239	L			167
52	6487.600M	45.0	+0.0	+34.4	+0.7	-37.2	+0.0	49.0	90.5	-41.5	Horiz
			+5.8	+0.0	+0.3	+0.0	178	H			201
53	6404.983M	44.8	+0.0	+34.4	+0.7	-37.1	+0.0	48.8	90.5	-41.7	Vert
			+5.8	+0.0	+0.2	+0.0	158	M			176
54	5489.950M	44.9	+0.0	+34.1	+0.7	-37.2	+0.0	47.9	90.5	-42.6	Vert
			+5.1	+0.0	+0.3	+0.0	28	M			176
55	7224.042M	41.4	+0.0	+35.9	+0.7	-37.1	+0.0	47.2	90.5	-43.3	Vert
			+6.1	+0.0	+0.2	+0.0	31	L			157
56	6487.600M	42.8	+0.0	+34.4	+0.7	-37.2	+0.0	46.8	90.5	-43.7	Vert
			+5.8	+0.0	+0.3	+0.0	360	H			137

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/7/2021
Test Type:	**Radiated Scan**	Time:	09:19:22
Tested By:	E. Wong	Sequence#:	3
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's red port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable. All port fill, black port is connected to a section of unterminated cable.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode
902.4MHz, 915.2MHz, 927.6MHz, 400kHz steps, 64 channels, 300k GFSK LV3 Folder 3

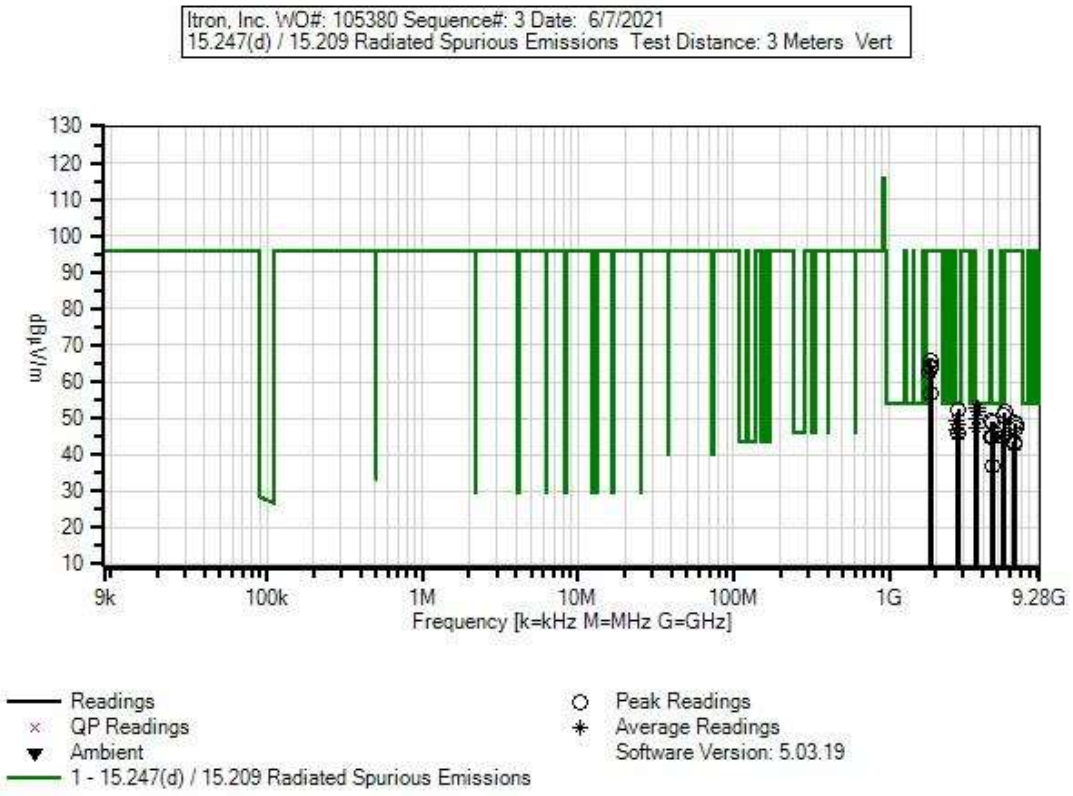
Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 45ms per 100ms. Duty cycle correction factor= 20log(45ms/100ms) = -6.9dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019



Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
T2	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
T3	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
T4	AN00786	Preamp	83017A	5/20/2020	5/20/2022
T5	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
T6	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
T7	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
T8	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
	AN00309	Preamp	8447D	12/24/2019	12/24/2021
	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3609.250M	61.0	+0.0	+31.8	+0.5	-38.1	+0.0	52.9	54.0	-1.1	Vert
	Ave		+4.0	+0.0	+0.6	-6.9	8		L		226
^	3609.250M	61.0	+0.0	+31.8	+0.5	-38.1	+0.0	59.8	54.0	+5.8	Vert
			+4.0	+0.0	+0.6	+0.0	8		L		226
3	3660.800M	60.7	+0.0	+32.0	+0.5	-38.1	+0.0	52.8	54.0	-1.2	Vert
	Ave		+4.0	+0.0	+0.6	-6.9			M		186
^	3660.800M	60.7	+0.0	+32.0	+0.5	-38.1	+0.0	59.7	54.0	+5.7	Vert
			+4.0	+0.0	+0.6	+0.0	368		M		186
5	3710.790M	60.6	+0.0	+32.2	+0.5	-38.1	+0.0	52.8	54.0	-1.2	Vert
	Ave		+4.0	+0.0	+0.5	-6.9	360		H		210
^	3710.790M	60.6	+0.0	+32.2	+0.5	-38.1	+0.0	59.7	54.0	+5.7	Vert
			+4.0	+0.0	+0.5	+0.0	360		H		210
7	2782.823M	51.3	+0.0	+29.8	+0.3	-38.5	+0.0	52.5	54.0	-1.5	Horiz
			+3.5	+0.0	+6.1	+0.0	236		H		174
8	3710.440M	59.4	+0.0	+32.2	+0.5	-38.1	+0.0	51.6	54.0	-2.4	Horiz
	Ave		+4.0	+0.0	+0.5	-6.9	237		H		177
^	3710.440M	59.4	+0.0	+32.2	+0.5	-38.1	+0.0	58.5	54.0	+4.5	Horiz
			+4.0	+0.0	+0.5	+0.0	237		H		177
10	3660.800M	57.8	+0.0	+32.0	+0.5	-38.1	+0.0	49.9	54.0	-4.1	Horiz
	Ave		+4.0	+0.0	+0.6	-6.9	62		M		147
^	3660.800M	57.6	+0.0	+32.0	+0.5	-38.1	+0.0	56.6	54.0	+2.6	Horiz
			+4.0	+0.0	+0.6	+0.0	62		M		147
12	4511.683M	48.9	+0.0	+32.5	+0.5	-37.4	+0.0	49.3	54.0	-4.7	Vert
			+4.5	+0.0	+0.3	+0.0			L		192
13	2707.200M	49.0	+0.0	+29.5	+0.3	-38.5	+0.0	49.2	54.0	-4.8	Vert
	Ave		+3.4	+0.0	+12.4	-6.9	45		L		175
^	2707.200M	49.0	+0.0	+29.5	+0.3	-38.5	+0.0	56.1	54.0	+2.1	Vert
			+3.4	+0.0	+12.4	+0.0	45		L		175
15	4637.557M	48.4	+0.0	+32.7	+0.5	-37.4	+0.0	49.0	54.0	-5.0	Vert
			+4.5	+0.0	+0.3	+0.0			H		125
16	4576.000M	48.4	+0.0	+32.6	+0.5	-37.4	+0.0	48.9	54.0	-5.1	Vert
			+4.5	+0.0	+0.3	+0.0	360		M		185
17	2782.990M	54.1	+0.0	+29.8	+0.3	-38.5	+0.0	48.4	54.0	-5.6	Vert
	Ave		+3.5	+0.0	+6.1	-6.9	45		H		210
^	2782.990M	54.1	+0.0	+29.8	+0.3	-38.5	+0.0	55.3	54.0	+1.3	Vert
			+3.5	+0.0	+6.1	+0.0	45		H		210
19	2745.600M	51.0	+0.0	+29.7	+0.3	-38.5	+0.0	48.1	54.0	-5.9	Vert
	Ave		+3.4	+0.0	+9.1	-6.9	51		M		196
^	2745.600M	51.0	+0.0	+29.7	+0.3	-38.5	+0.0	55.0	54.0	+1.0	Vert
			+3.4	+0.0	+9.1	+0.0	51		M		196
21	3609.450M	55.4	+0.0	+31.8	+0.5	-38.1	+0.0	47.3	54.0	-6.7	Horiz
	Ave		+4.0	+0.0	+0.6	-6.9	65		L		181
^	3609.450M	54.9	+0.0	+31.8	+0.5	-38.1	+0.0	53.7	54.0	-0.3	Horiz
			+4.0	+0.0	+0.6	+0.0	65		L		181

23	2707.050M	46.8	+0.0	+29.5	+0.3	-38.5	+0.0	47.0		54.0	-7.0	Horiz
	Ave		+3.4	+0.0	+12.4	-6.9	213		L			163
^	2707.050M	46.2	+0.0	+29.5	+0.3	-38.5	+0.0	53.3		54.0	-0.7	Horiz
			+3.4	+0.0	+12.4	+0.0	213		L			163
25	5414.050M	50.4	+0.0	+34.0	+0.7	-37.2	+0.0	46.4		54.0	-7.6	Vert
	Ave		+5.1	+0.0	+0.3	-6.9	137		L			200
^	5414.050M	50.4	+0.0	+34.0	+0.7	-37.2	+0.0	53.3		54.0	-0.7	Vert
			+5.1	+0.0	+0.3	+0.0	137		L			200
27	2782.823M	51.7	+0.0	+29.8	+0.3	-38.5	+0.0	46.0		54.0	-8.0	Horiz
			+3.5	+0.0	+6.1	-6.9	236		H			174
28	2745.600M	48.6	+0.0	+29.7	+0.3	-38.5	+0.0	45.7		54.0	-8.3	Horiz
	Ave		+3.4	+0.0	+9.1	-6.9	144		M			131
^	2745.600M	48.6	+0.0	+29.7	+0.3	-38.5	+0.0	52.6		54.0	-1.4	Horiz
			+3.4	+0.0	+9.1	+0.0	144		M			131
30	5414.667M	49.4	+0.0	+34.0	+0.7	-37.2	+0.0	45.4		54.0	-8.6	Horiz
	Ave		+5.1	+0.0	+0.3	-6.9	155		L			142
^	5414.667M	49.4	+0.0	+34.0	+0.7	-37.2	+0.0	52.3		54.0	-1.7	Horiz
			+5.1	+0.0	+0.3	+0.0	155		L			142
32	4511.850M	44.5	+0.0	+32.5	+0.5	-37.4	+0.0	44.9		54.0	-9.1	Horiz
			+4.5	+0.0	+0.3	+0.0	121		L			196
33	4638.040M	44.1	+0.0	+32.7	+0.5	-37.4	+0.0	44.7		54.0	-9.3	Horiz
			+4.5	+0.0	+0.3	+0.0	93		H			159
34	4576.000M	43.4	+0.0	+32.6	+0.5	-37.4	+0.0	37.0		54.0	-17.0	Horiz
			+4.5	+0.0	+0.3	-6.9	174		M			183
35	1830.267M	74.3	+0.0	+26.9	+0.3	-38.8	+0.0	65.9		90.5	-24.6	Vert
			+2.8	+0.4	+0.0	+0.0	105		M			134
36	1830.400M	72.9	+0.0	+26.9	+0.3	-38.8	+0.0	64.5		90.5	-26.0	Horiz
			+2.8	+0.4	+0.0	+0.0	95		M			139
37	1855.290M	72.1	+0.0	+27.0	+0.3	-38.8	+0.0	63.9		90.5	-26.6	Vert
			+2.9	+0.4	+0.0	+0.0	124		H			208
38	1804.483M	71.6	+0.0	+26.7	+0.3	-38.8	+0.0	63.0		90.5	-27.5	Horiz
			+2.8	+0.4	+0.0	+0.0	85		L			141
39	1804.800M	71.5	+0.0	+26.7	+0.3	-38.8	+0.0	62.9		90.5	-27.6	Vert
			+2.8	+0.4	+0.0	+0.0	154		L			100
40	1855.157M	65.0	+0.0	+27.0	+0.3	-38.8	+0.0	56.8		90.5	-33.7	Horiz
			+2.9	+0.4	+0.0	+0.0	234		H			177
41	5565.357M	48.9	+0.0	+34.1	+0.7	-37.3	+0.0	51.8		90.5	-38.7	Vert
			+5.1	+0.0	+0.3	+0.0	129		H			184
42	5565.840M	48.7	+0.0	+34.1	+0.7	-37.3	+0.0	51.6		90.5	-38.9	Horiz
			+5.1	+0.0	+0.3	+0.0	164		H			126
43	5491.200M	47.6	+0.0	+34.1	+0.7	-37.2	+0.0	50.6		90.5	-39.9	Vert
			+5.1	+0.0	+0.3	+0.0	299		M			189
44	6406.400M	44.6	+0.0	+34.4	+0.7	-37.1	+0.0	48.6		90.5	-41.9	Vert
			+5.8	+0.0	+0.2	+0.0	148		M			189
45	6493.840M	44.5	+0.0	+34.4	+0.7	-37.2	+0.0	48.5		90.5	-42.0	Vert
			+5.8	+0.0	+0.3	+0.0	197		H			151

46	6493.340M	43.5	+0.0	+34.4	+0.7	-37.2	+0.0	47.5	90.5	-43.0	Vert
			+5.8	+0.0	+0.3	+0.0	62	H			151
47	5491.200M	48.9	+0.0	+34.1	+0.7	-37.2	+0.0	45.0	90.5	-45.5	Horiz
			+5.1	+0.0	+0.3	-6.9	159	M			182
48	6317.067M	46.5	+0.0	+34.4	+0.7	-37.0	+0.0	43.6	90.5	-46.9	Horiz
			+5.7	+0.0	+0.2	-6.9	72	L			187
49	6406.400M	46.0	+0.0	+34.4	+0.7	-37.1	+0.0	43.1	90.5	-47.4	Horiz
			+5.8	+0.0	+0.2	-6.9	197	M			178
50	6316.483M	45.6	+0.0	+34.4	+0.7	-37.0	+0.0	42.7	90.5	-47.8	Vert
			+5.7	+0.0	+0.2	-6.9	45	L			200

Band Edge

Band Edge Summary Configuration 1 GRT					
Operating Mode: Single Channel (Low and High)					
Frequency (MHz)	**Modulation**	**Ant. Type**	**Field Strength (dBuV/m @3m)**	**Limit (dBuV/m @3m)**	**Results**
614	OOK Level1	PCB trace	29.7	<46	Pass
902	OOK Level1	PCB trace	75.9	<89.0	Pass
928	OOK Level1	PCB trace	73.2	< 89.0	Pass
960	OOK Level1	PCB trace	38,2	<54	Pass
614	OOK Level3	PCB trace	29.6	<46	Pass
902	OOK Level3	PCB trace	82.9	<96.3	Pass
928	OOK Level3	PCB trace	82.4	< 96.3	Pass
960	OOK Level3	PCB trace	41.0	<54	Pass
614	GFSK Level3	PCB trace	39.5	<46	Pass
902	GFSK Level3	PCB trace	75.3	<96	Pass
928	GFSK Level3	PCB trace	76.3	< 96	Pass
960	GFSK Level3	PCB trace	44.0	<54	Pass

Band Edge Summary Configuration 1 GRT					
Operating Mode: Hopping					
Frequency (MHz)	**Modulation**	**Ant. Type**	**Field Strength (dBuV/m @3m)**	**Limit (dBuV/m @3m)**	**Results**
614	OOK Level1	PCB trace	73.9	<46	Pass
902	OOK Level1	PCB trace	30.7	<89.0	Pass
928	OOK Level1	PCB trace	71.7	< 89.0	Pass
960	OOK Level1	PCB trace	38.7	<54	Pass
614	OOK Level3	PCB trace	30.8	<46	Pass
902	OOK Level3	PCB trace	78.2	<96.3	Pass
928	OOK Level3	PCB trace	81.2	< 96.3	Pass
960	OOK Level3	PCB trace	43.9	<54	Pass
614	GFSK Level3	PCB trace	30.8	<46	Pass
902	GFSK Level3	PCB trace	71.2	<96	Pass
928	GFSK Level3	PCB trace	75.8	< 96	Pass
960	GFSK Level3	PCB trace	38.0	<54	Pass

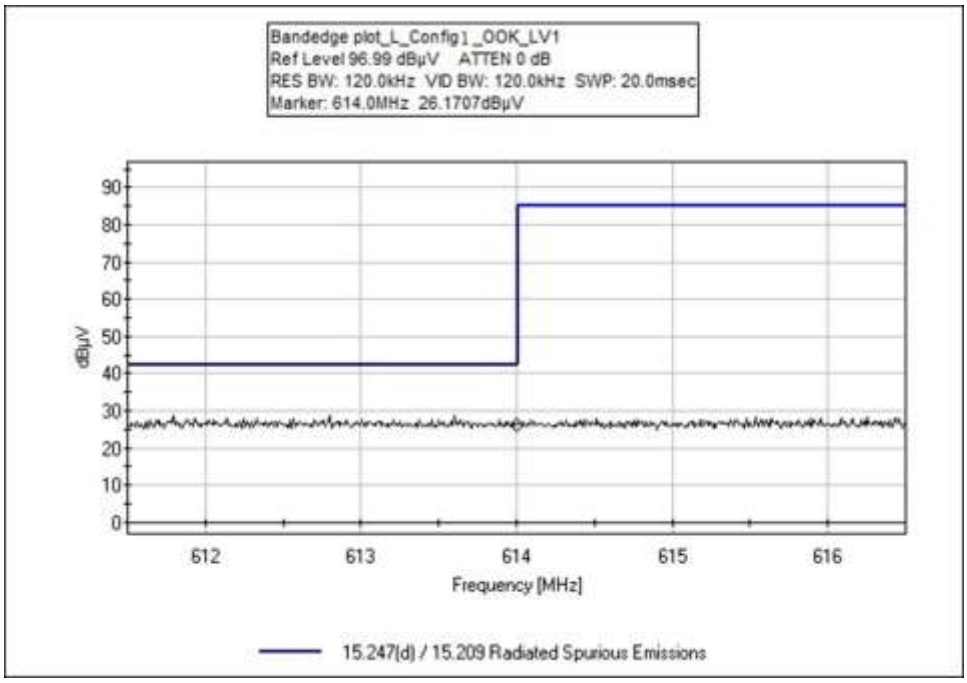
Band Edge Summary Configuration 2 WRT					
Operating Mode: Single Channel (Low and High)					
Frequency (MHz)	**Modulation**	**Ant. Type**	**Field Strength (dBuV/m @3m)**	**Limit (dBuV/m @3m)**	**Results**
614	OOK Level1	PCB trace	31.0	<46	Pass
902	OOK Level1	PCB trace	75.4	< 89	Pass
928	OOK Level1	PCB trace	72.3	< 89	Pass
960	OOK Level1	PCB trace	38.9	<54	Pass
614	OOK Level3	PCB trace	29.5	<46	Pass
902	OOK Level3	PCB trace	80.8	<93.5	Pass
928	OOK Level3	PCB trace	80.9	< 96	Pass
960	OOK Level3	PCB trace	38.9	<54	Pass
614	GFSK Level3	PCB trace	30.7	<46	Pass
902	GFSK Level3	PCB trace	72.1	<93	Pass
928	GFSK Level3	PCB trace	76.0	< 95	Pass
960	GFSK Level3	PCB trace	37.5	<54	Pass

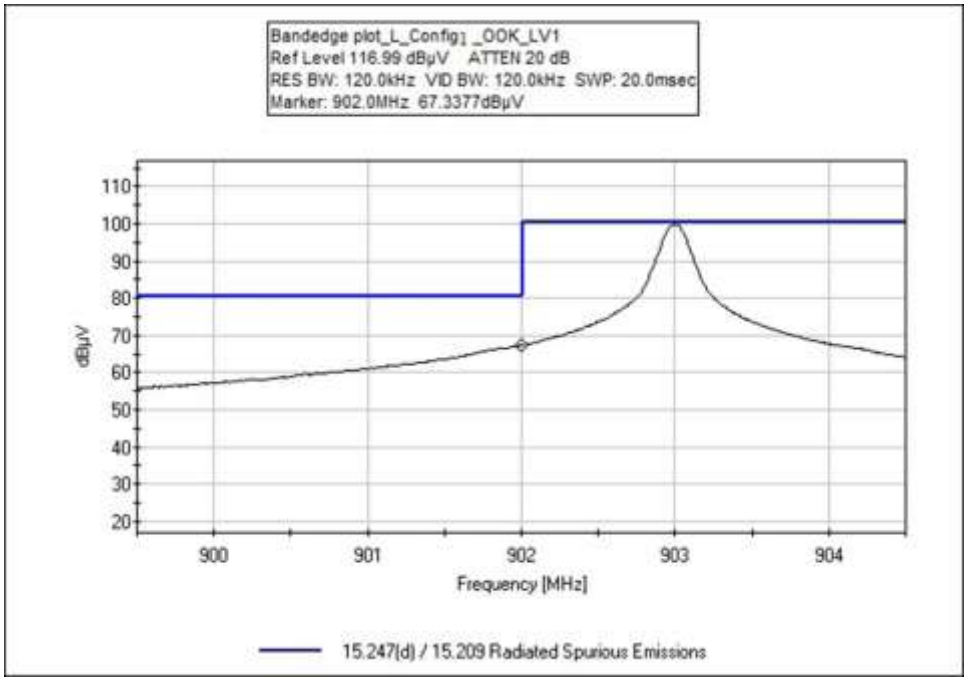
Band Edge Summary Configuration 2 WRT					
Operating Mode: Hopping					
Frequency (MHz)	**Modulation**	**Ant. Type**	**Field Strength (dBuV/m @3m)**	**Limit (dBuV/m @3m)**	**Results**
614	OOK Level1	PCB trace	30.2	<46	Pass
902	OOK Level1	PCB trace	75.1	<89	Pass
928	OOK Level1	PCB trace	73.5	< 89	Pass
960	OOK Level1	PCB trace	30.2	<54	Pass
614	OOK Level3	PCB trace	30.9	<46	Pass
902	OOK Level3	PCB trace	80.0	<93.5	Pass
928	OOK Level3	PCB trace	80.3	< 96	Pass
960	OOK Level3	PCB trace	41.3	<54	Pass
614	GFSK Level3	PCB trace	31.2	<46	Pass
902	GFSK Level3	PCB trace	70.3	<93	Pass
928	GFSK Level3	PCB trace	73.3	< 95	Pass
960	GFSK Level3	PCB trace	37.8	<54	Pass

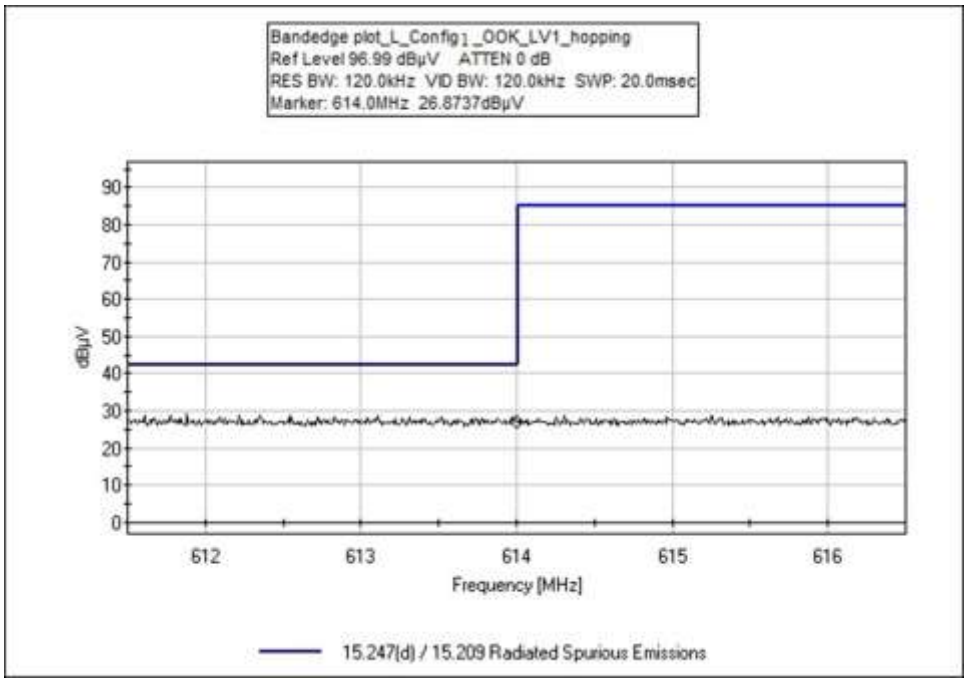
Band Edge Summary Configuration 3 PIT					
Operating Mode: Single Channel (Low and High)					
Frequency (MHz)	**Modulation**	**Ant. Type**	**Field Strength (dBuV/m @3m)**	**Limit (dBuV/m @3m)**	**Results**
614	OOK Level1	PCB trace	32.6	<46	Pass
902	OOK Level1	PCB trace	73.4	<89	Pass
928	OOK Level1	PCB trace	72.8	< 89	Pass
960	OOK Level1	PCB trace	37.8	<54	Pass
614	OOK Level3	PCB trace	30.2	<46	Pass
902	OOK Level3	PCB trace	82.8	<96.3	Pass
928	OOK Level3	PCB trace	81.1	< 96.3	Pass
960	OOK Level3	PCB trace	42.1	<54	Pass
614	GFSK Level3	PCB trace	31.8	<46	Pass
902	GFSK Level3	PCB trace	77.2	<96	Pass
928	GFSK Level3	PCB trace	76.6	< 96	Pass
960	GFSK Level3	PCB trace	38.1	<54	Pass

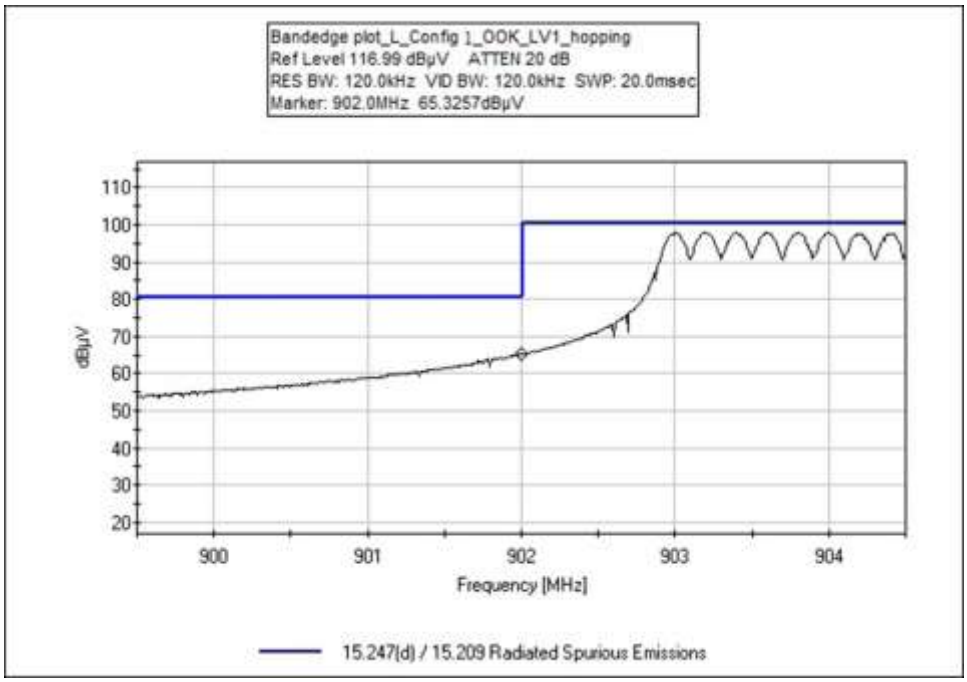
Band Edge Summary Configuration 3 PIT					
Operating Mode: Hopping					
Frequency (MHz)	**Modulation**	**Ant. Type**	**Field Strength (dBuV/m @3m)**	**Limit (dBuV/m @3m)**	**Results**
614	OOK Level1	PCB trace	31.9	<46	Pass
902	OOK Level1	PCB trace	74.3	< 89	Pass
928	OOK Level1	PCB trace	71.4	< 89	Pass
960	OOK Level1	PCB trace	38.5	<54	Pass
614	OOK Level3	PCB trace	32.0	<46	Pass
902	OOK Level3	PCB trace	80.0	<96.3	Pass
928	OOK Level3	PCB trace	81.0	< 96.3	Pass
960	OOK Level3	PCB trace	42.6	<54	Pass
614	GFSK Level3	PCB trace	32.3	<46	Pass
902	GFSK Level3	PCB trace	77.1	<96	Pass
928	GFSK Level3	PCB trace	76.6	< 96	Pass
960	GFSK Level3	PCB trace	36.8	<54	Pass

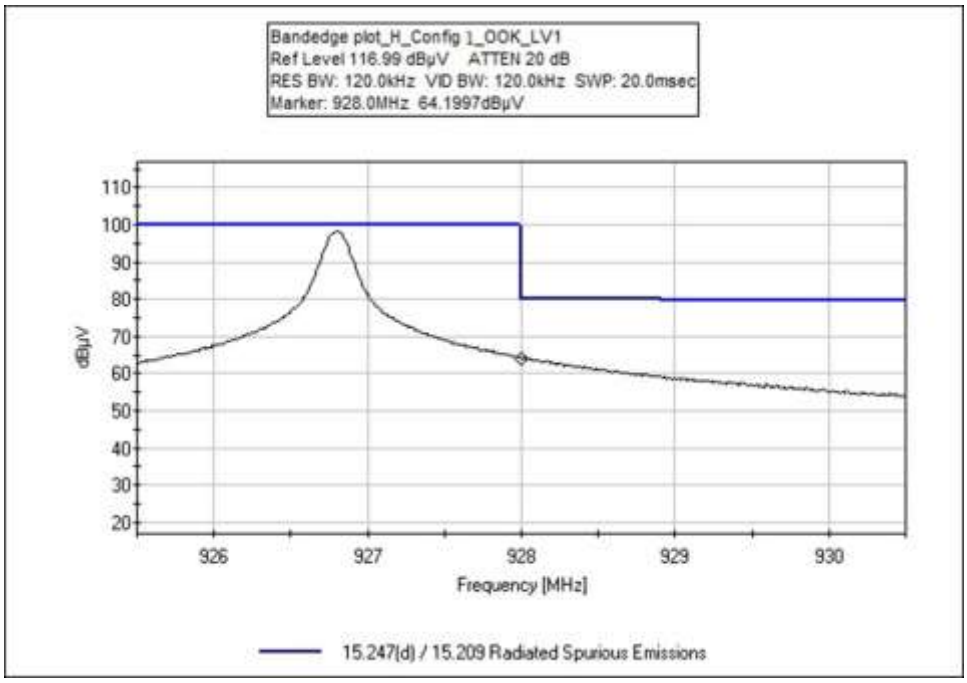
Configuration 1 OOK LV1 Band Edge Plots

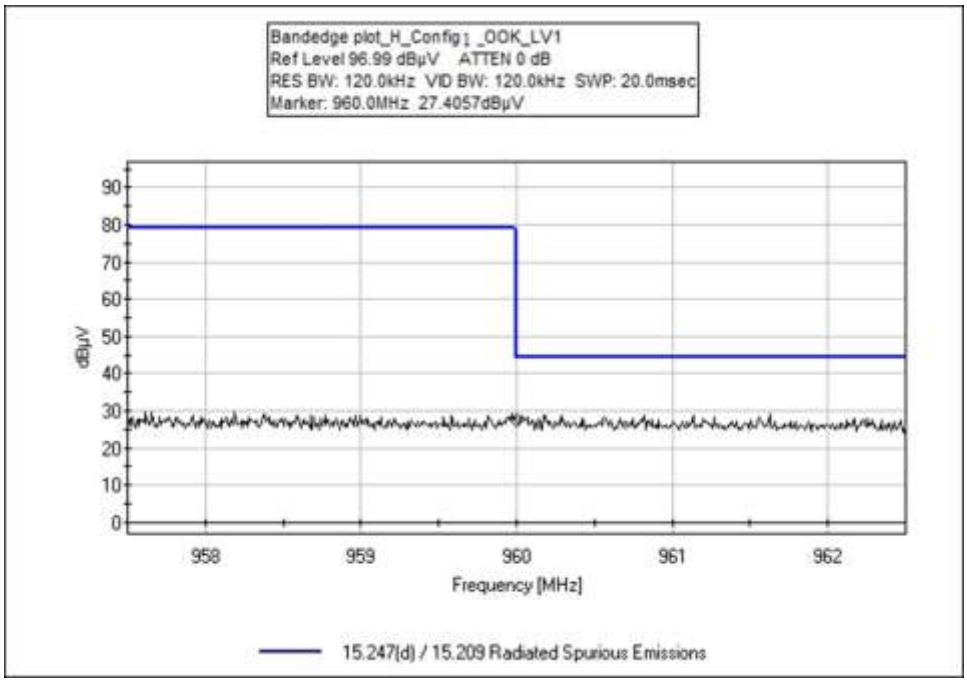


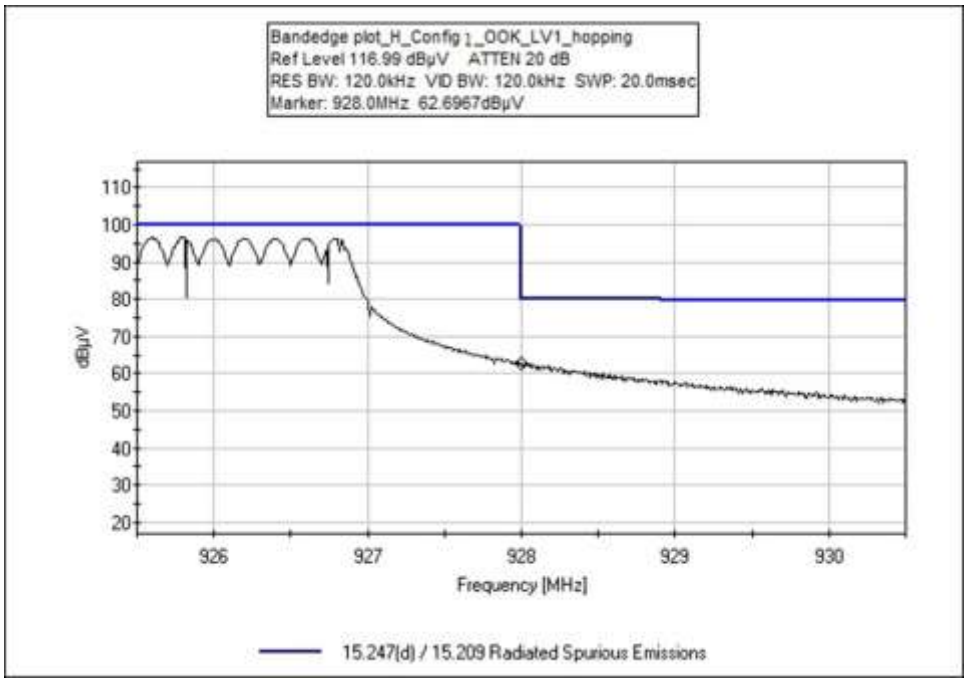


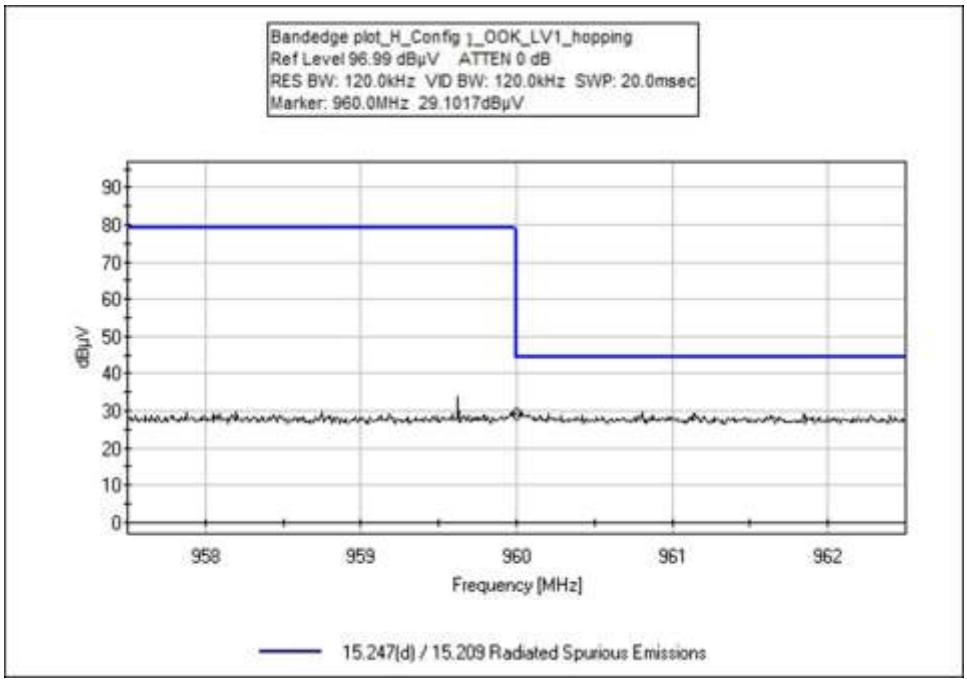

Bandedge plot_L_Config 1 _OOK_LV1_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 26.8737dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge plot_L_Config 1_OOK_LV1_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 65.3257dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
900
901
902
903
904
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

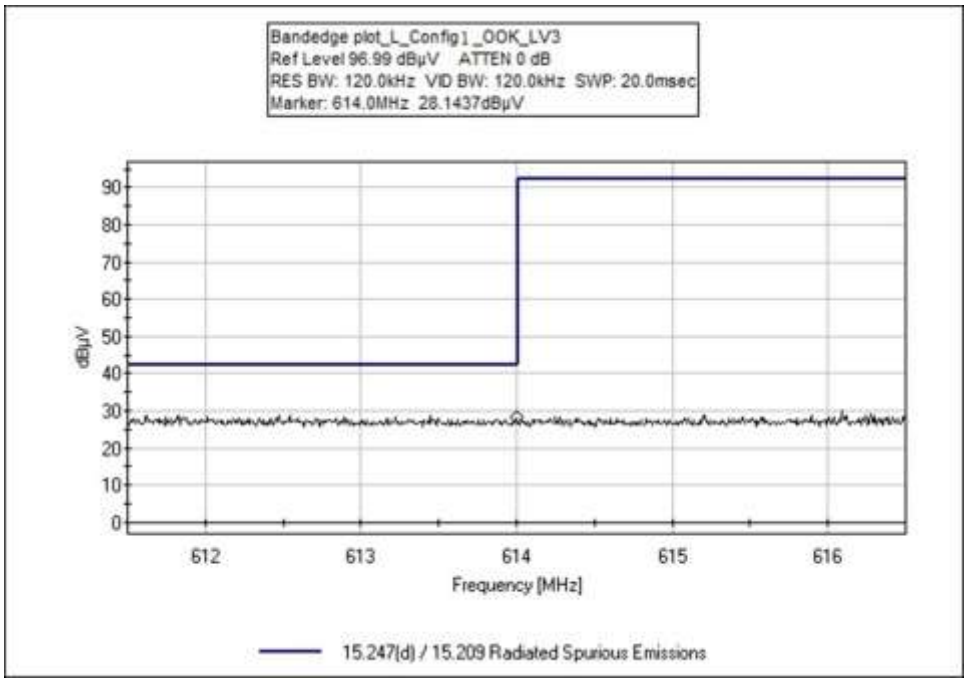

Bandedge plot_H_Config 1_OOK_LV1
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 64.1997dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

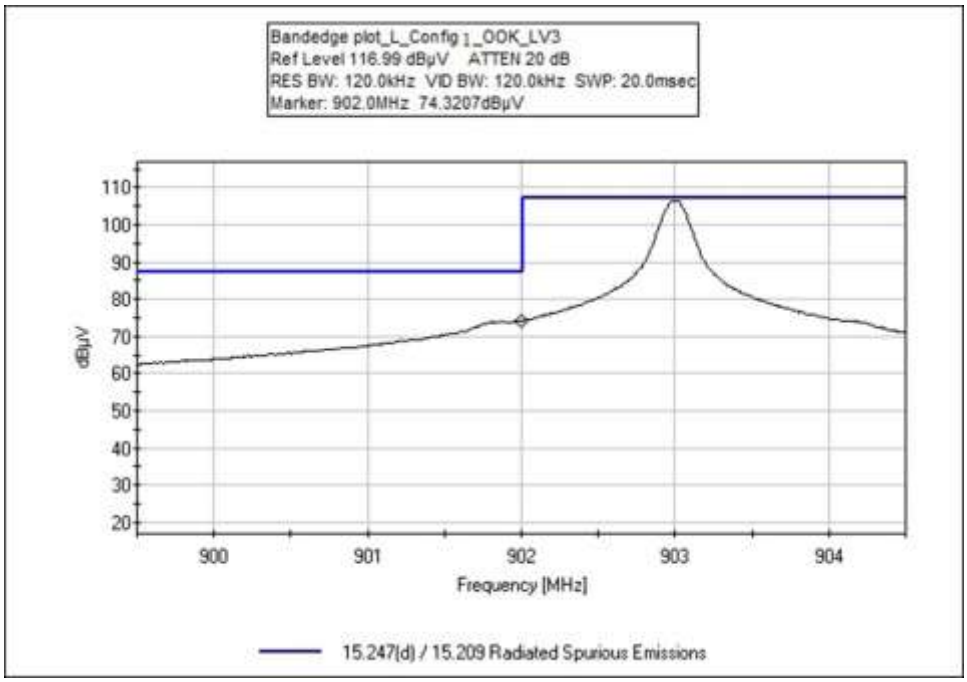

Bandedge plot_H_Config 1 _OOK_LV1
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 27.4057dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

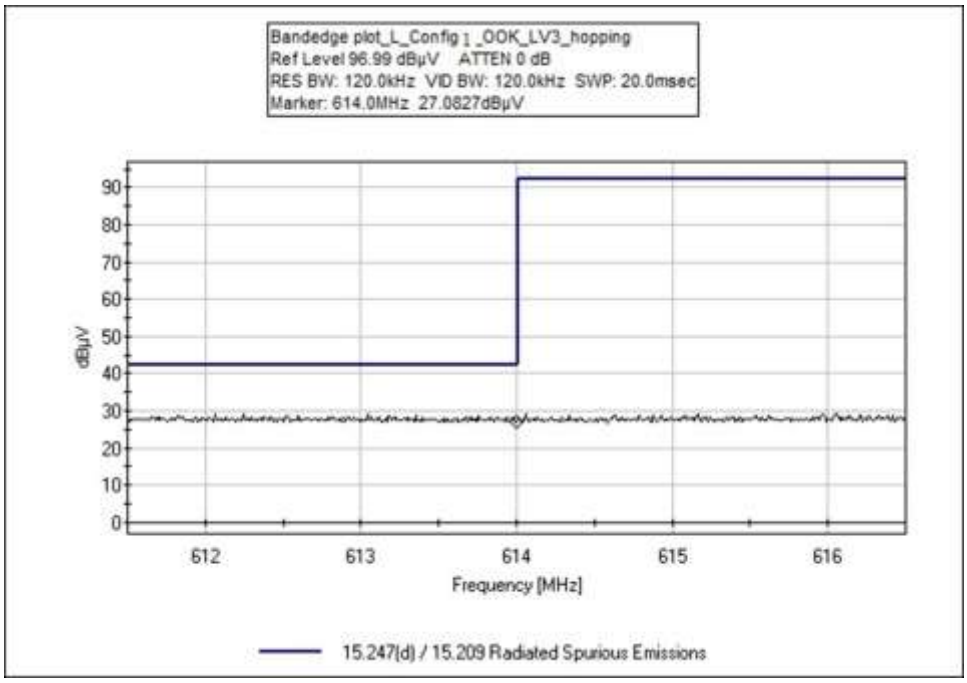

Bandedge plot_H_Config 1_OOK_LV1_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 62.6967dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

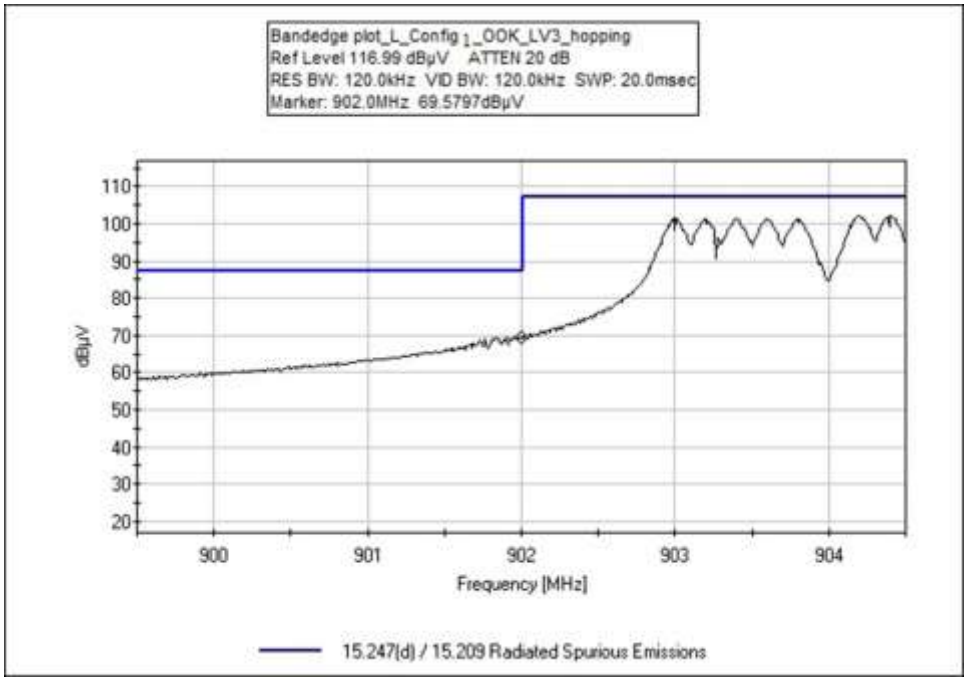

Bandedge plot_H_Config 1_OOK_LV1_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 29.1017dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

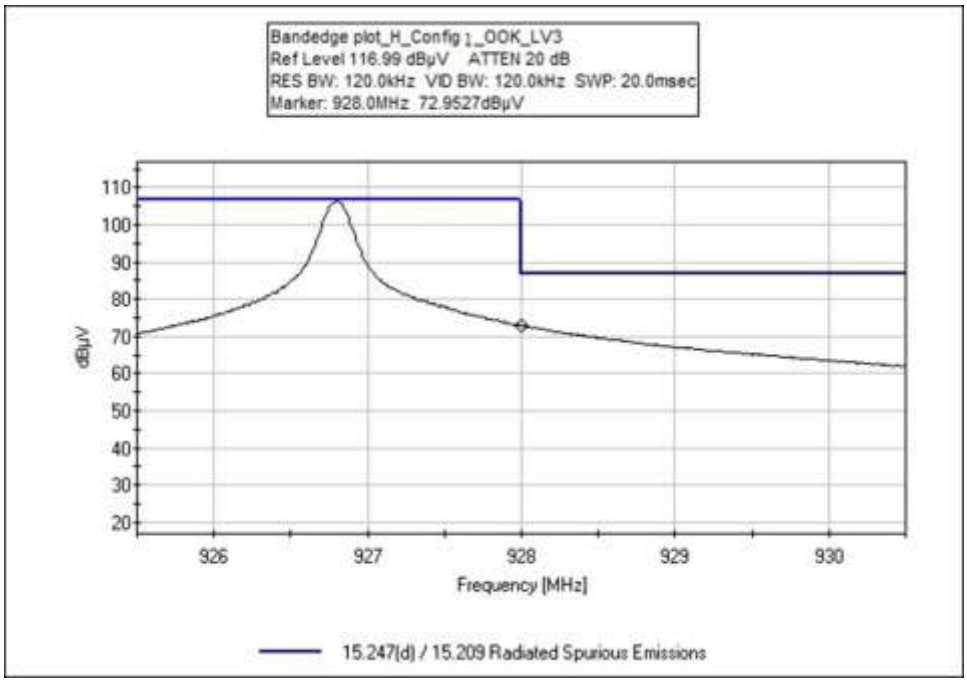
Configuration 1 OOK LV3 Band Edge Plots

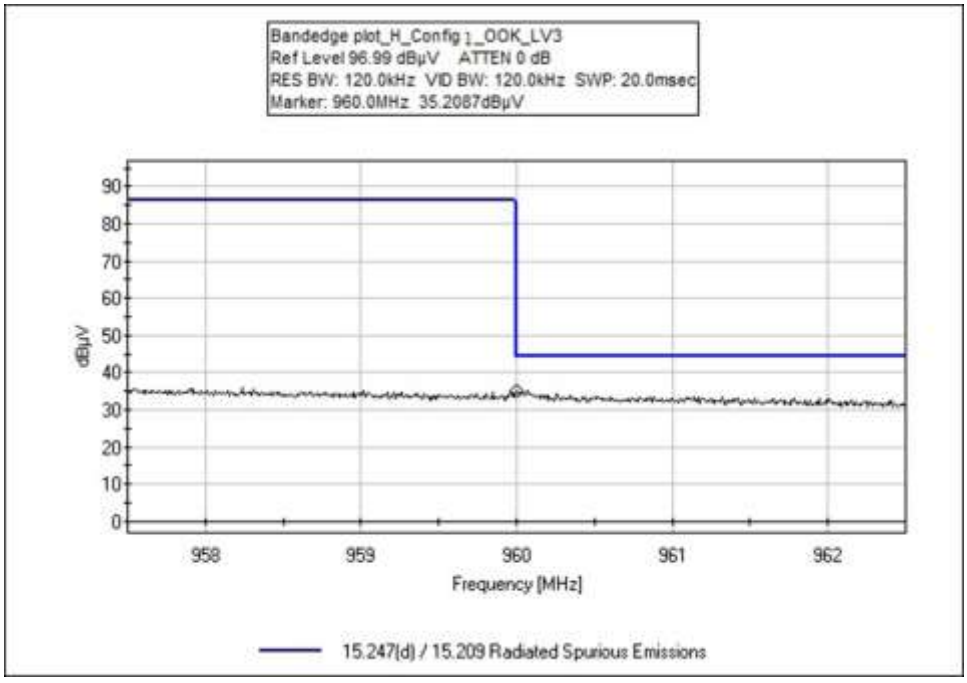


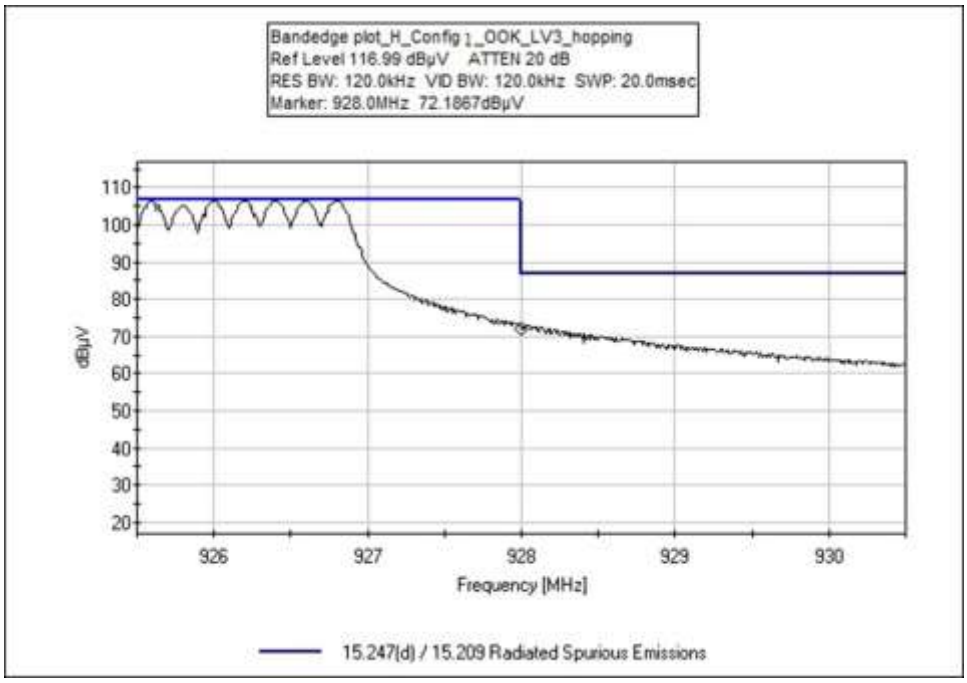


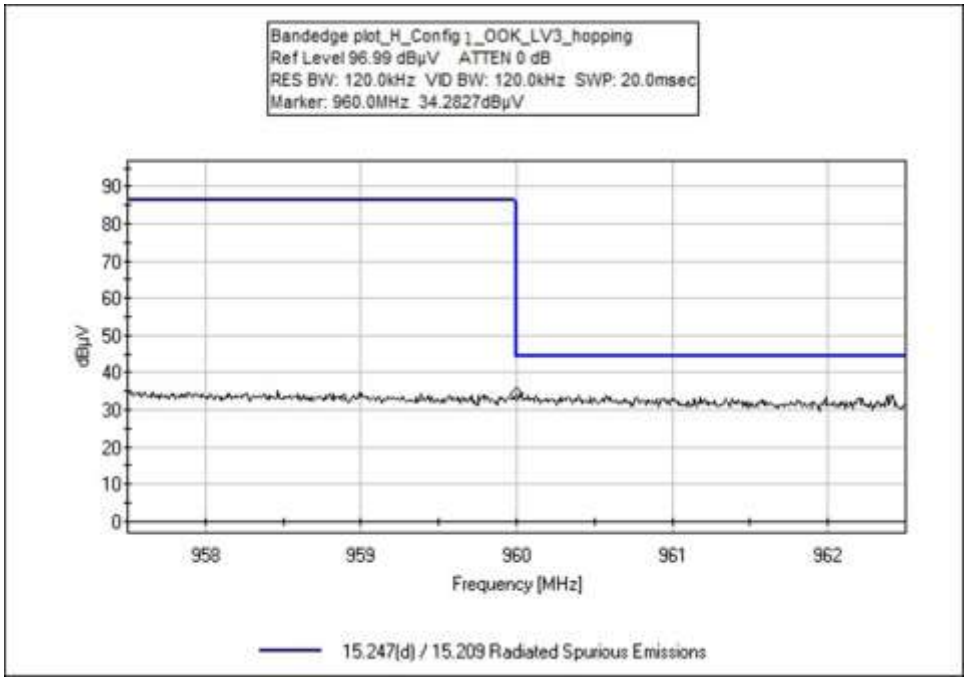

Bandedge plot_L_Config 1 _OOK_LV3_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 27.0827dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge plot_L_Config 1 _OOK_LV3_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 69.5797dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
900
901
902
903
904
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

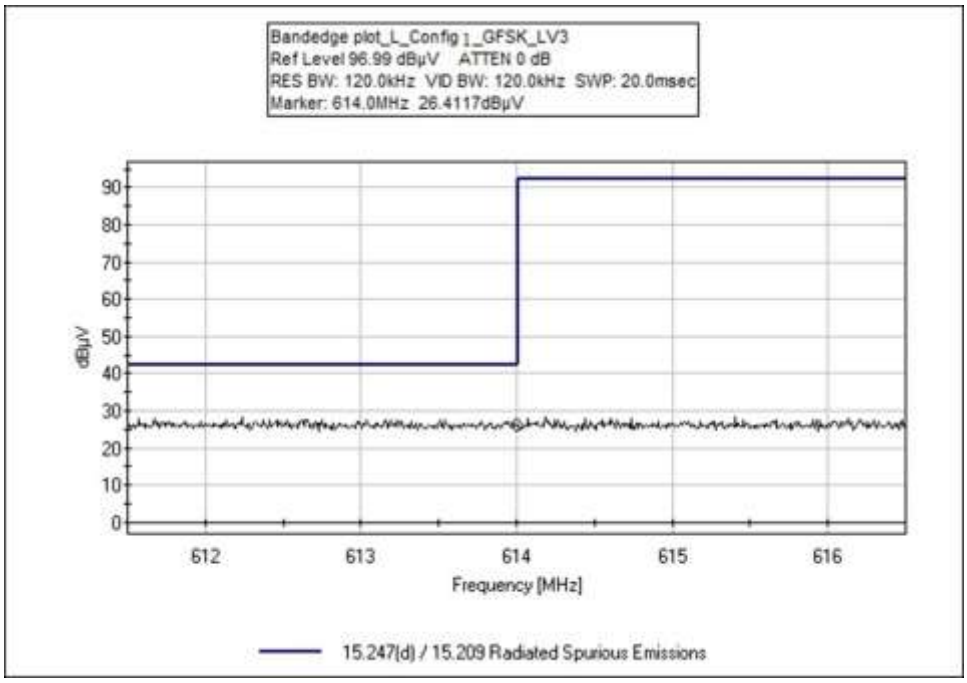

Bandedge plot_H_Config 1_OOK_LV3
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 72.9527dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

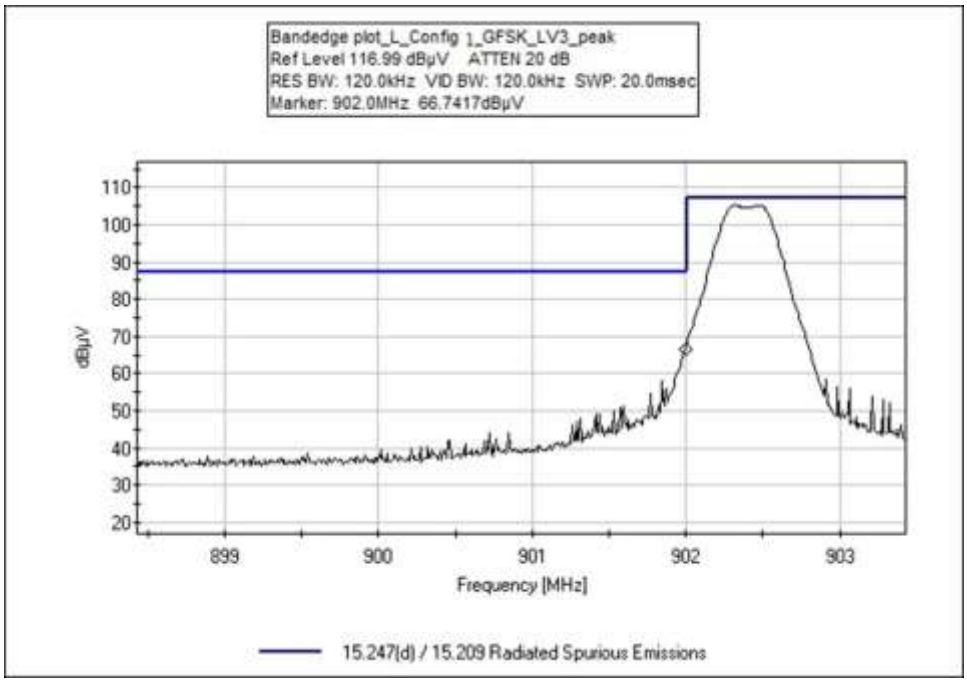

Bandedge plot_H_Config 1_OOK_LV3
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 35.2087dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

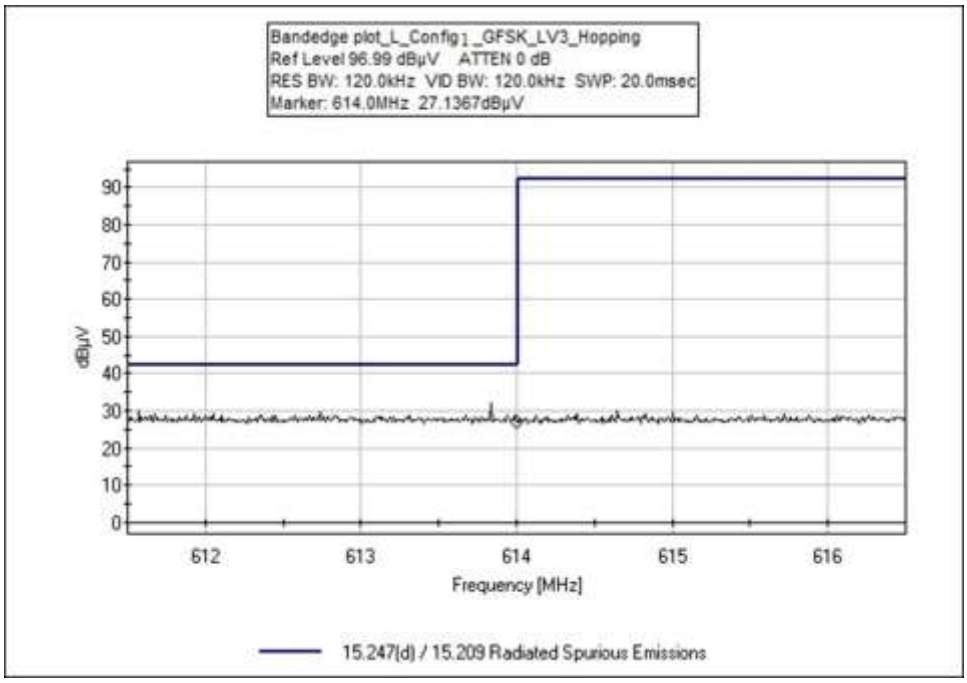

Bandedge plot_H_Config 1_OOK_LV3_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 72.1867dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
926
927
928
929
930
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

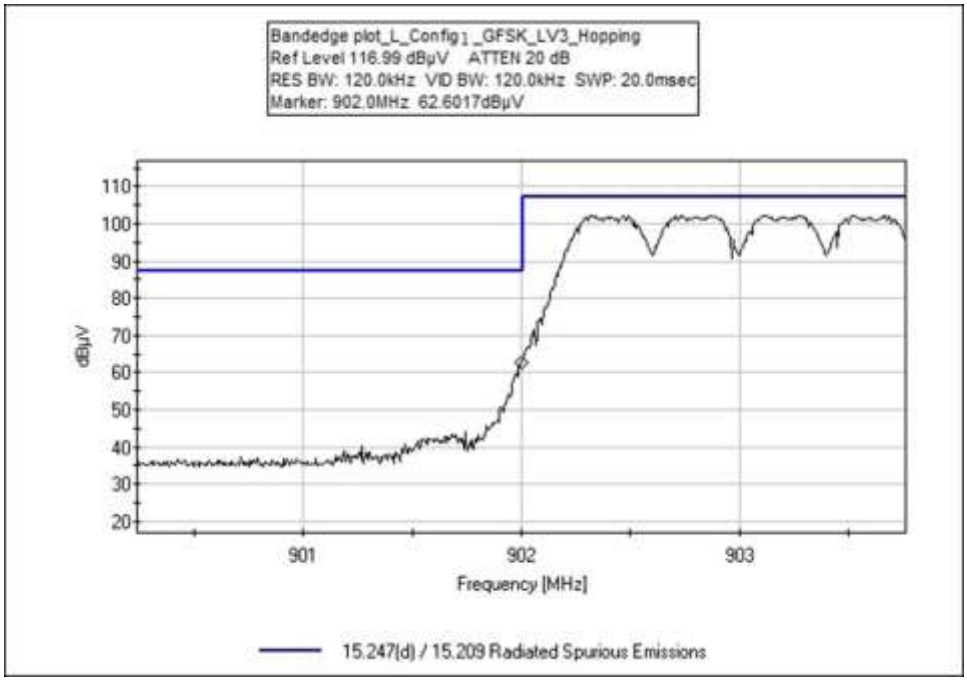

Bandedge plot_H_Config 1_OOK_LV3_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 34.2827dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
958
959
960
961
962
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

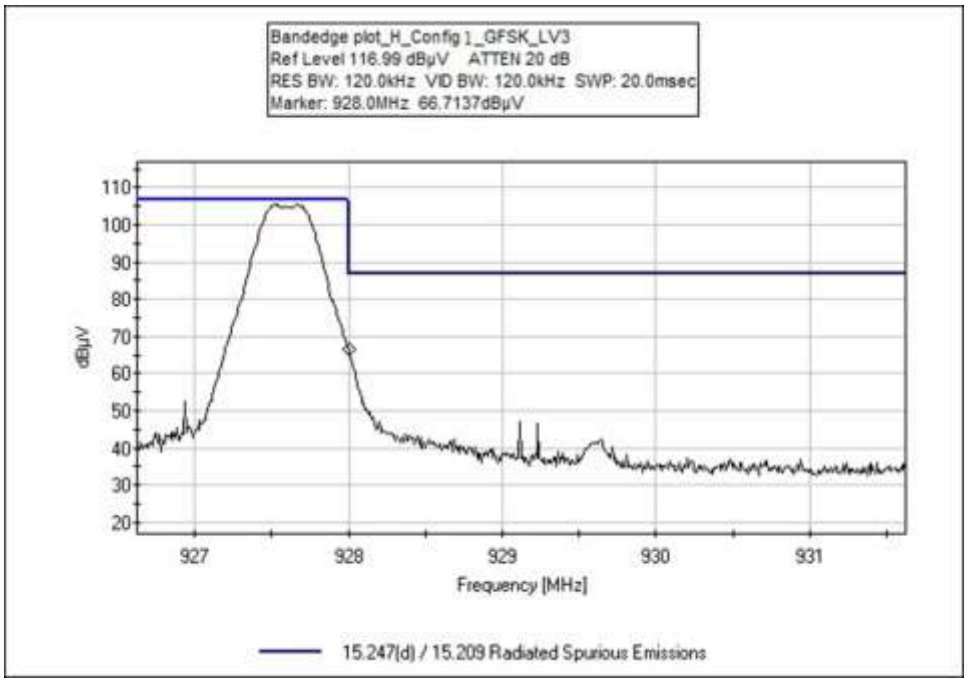
Configuration 1 GFSK LV3 Band Edge Plots

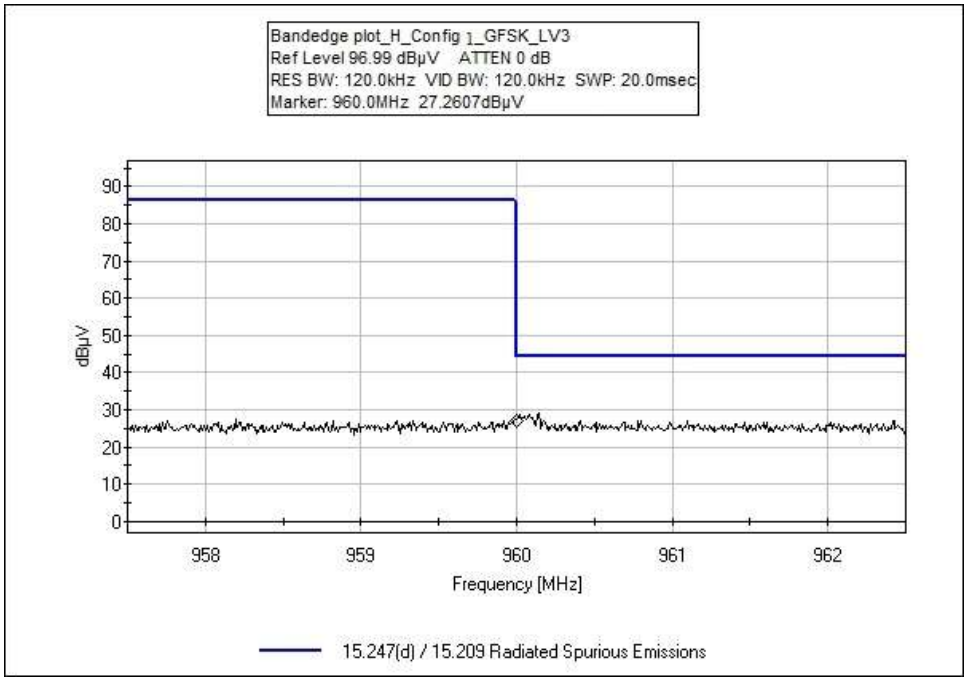


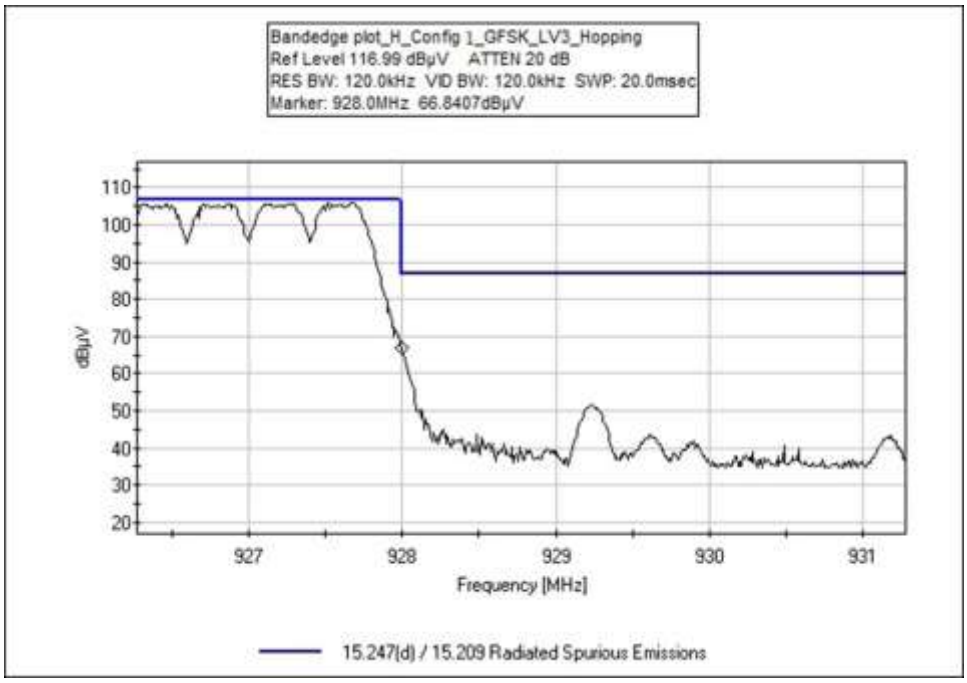


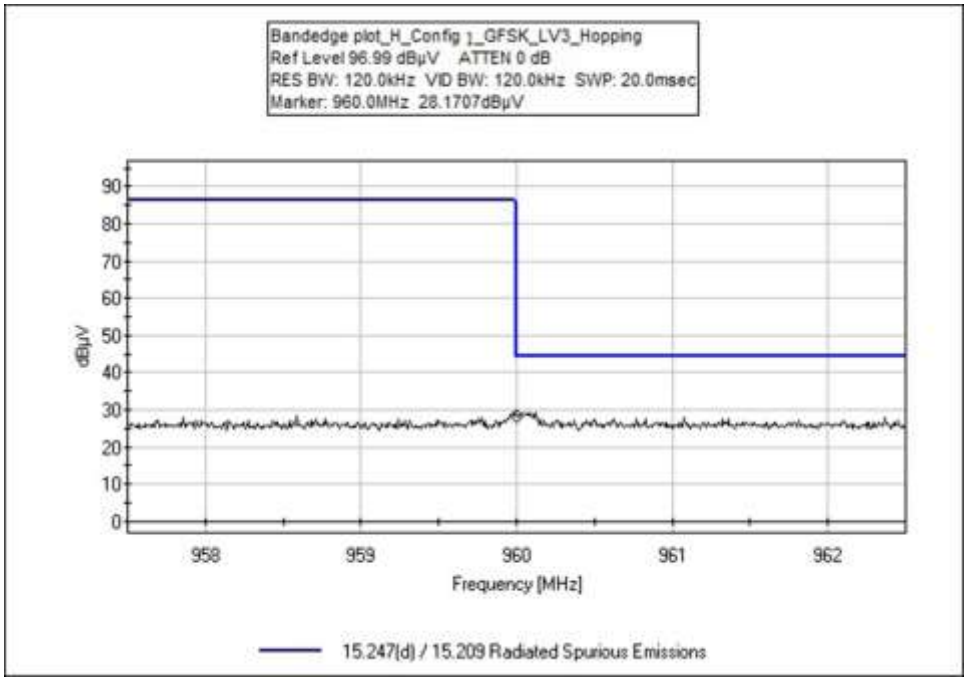

Bandedge plot_L_Config1 _GFSK_LV3_Hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 27.1367dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge plot_L_Config1 _GFSK_LV3_Hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 62.6017dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
901
902
903
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

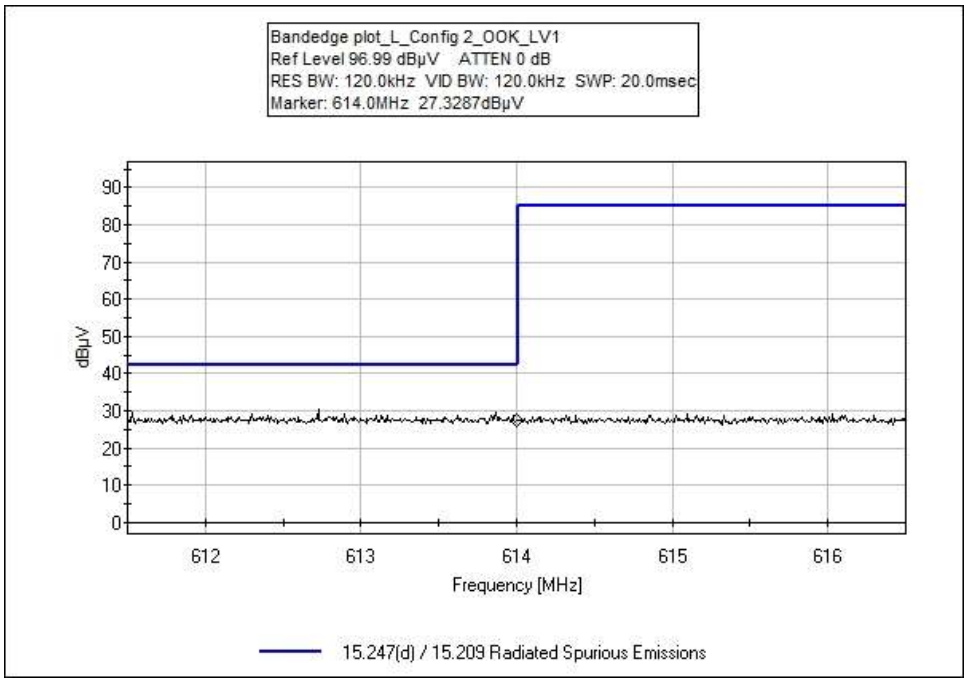

Bandedge plot_H_Config 1_GFSK_LV3
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 66.7137dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
927
928
929
930
931
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

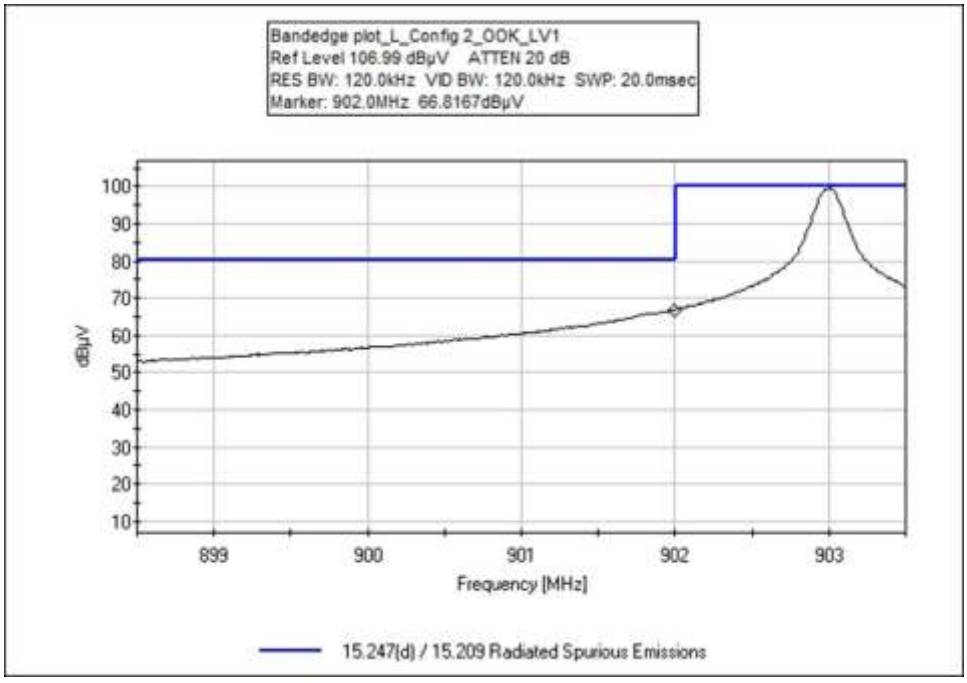

Bandedge plot_H_Config 1_GFSK_LV3
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 27.2607dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
958
959
960
961
962
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

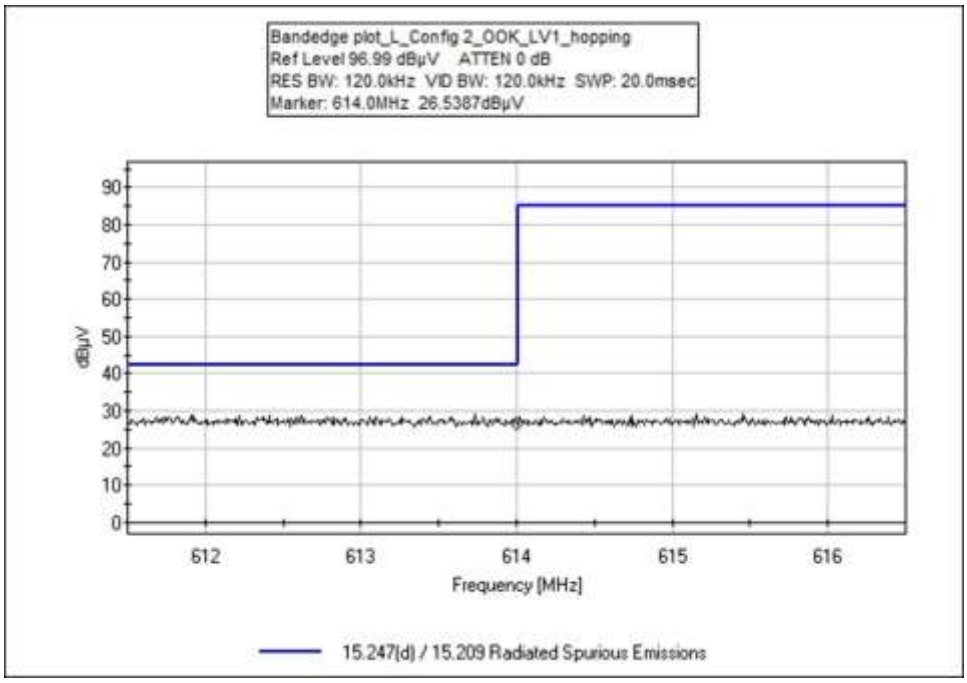

Bandedge plot_H_Config 1_GFSK_LV3_Hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 66.8407dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

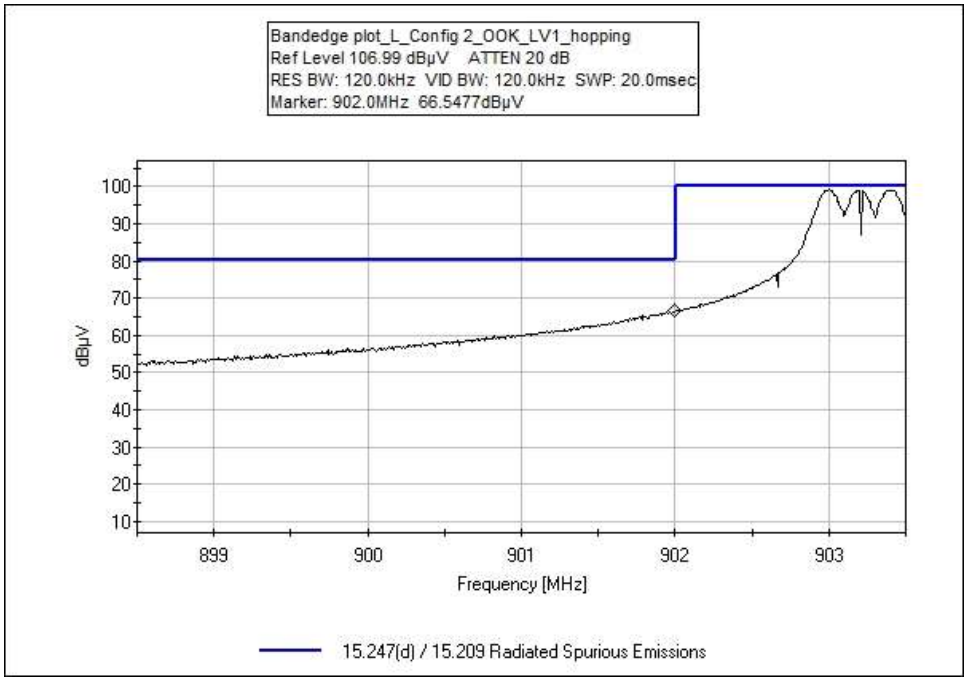

Bandedge plot_H_Config 1_GFSK_LV3_Hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 28.1707dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

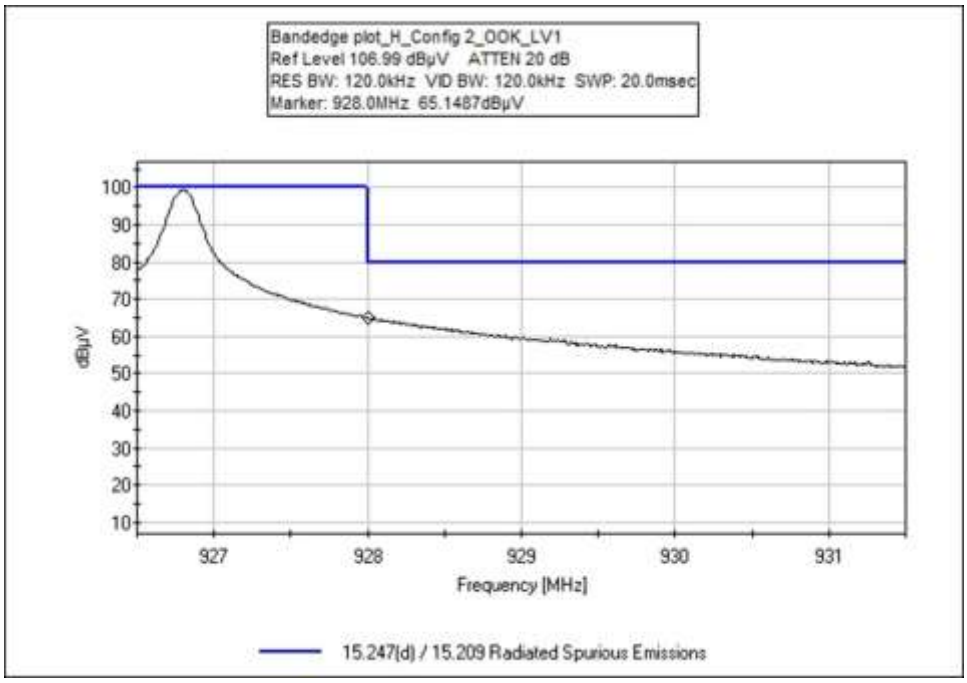
Configuration 2 OOK LV1 Band Edge Plots

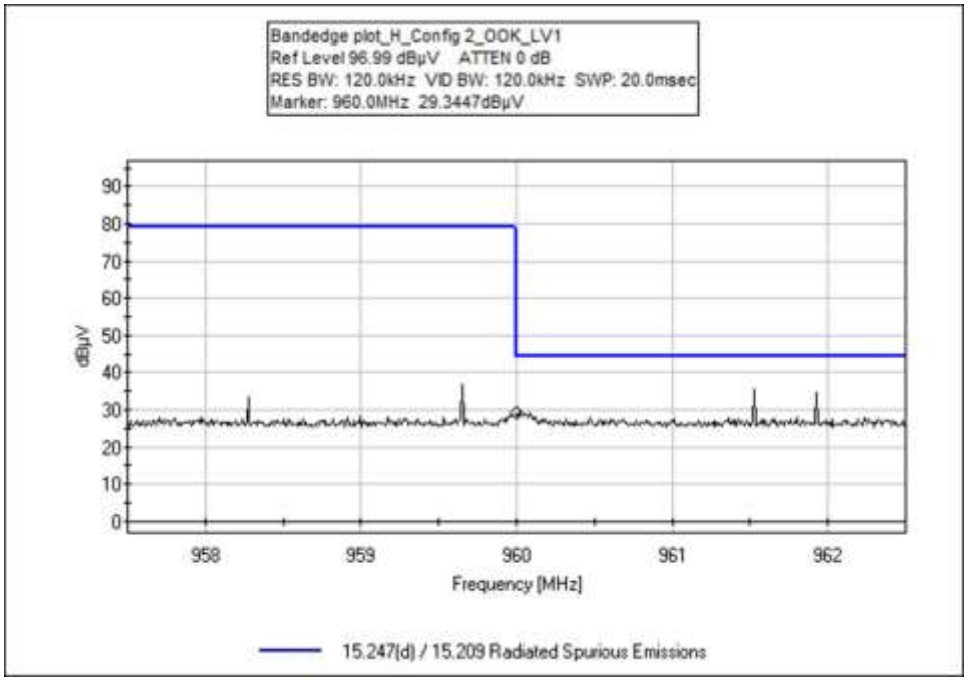


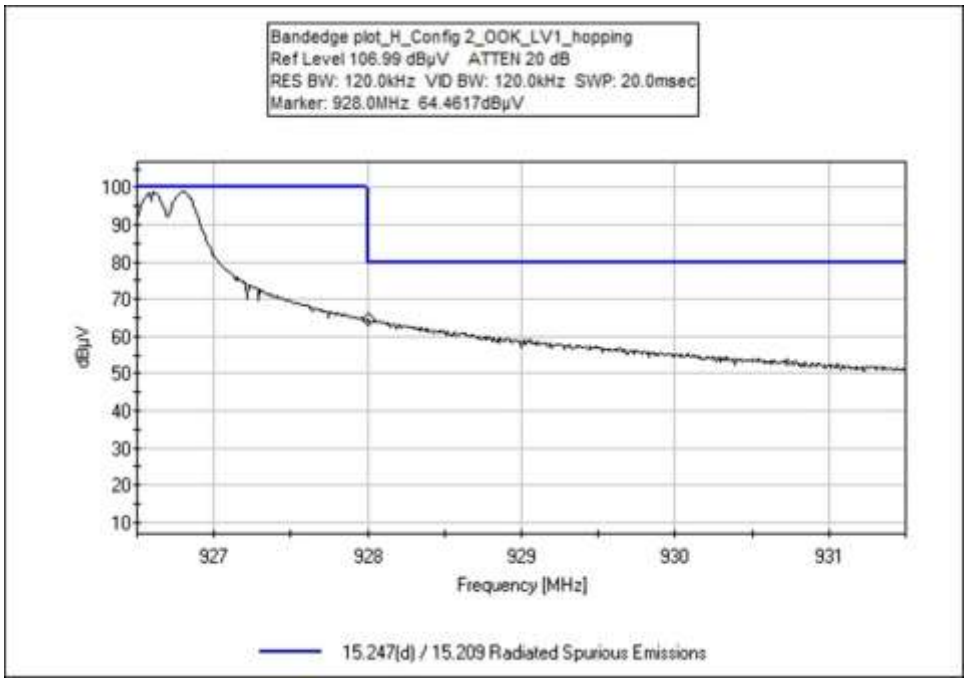


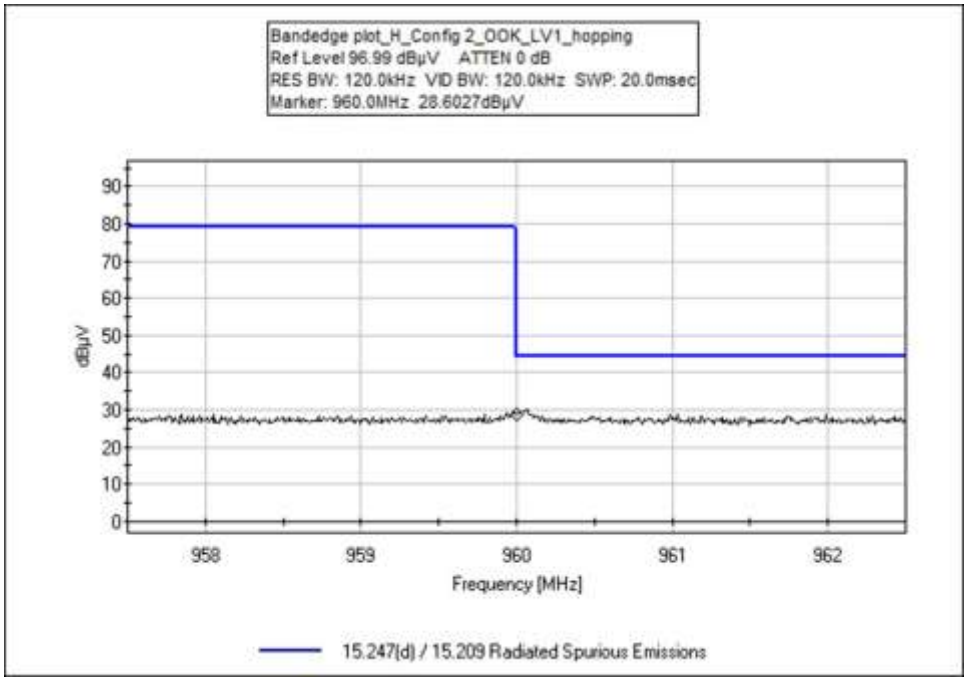

Bandedge plot_L_Config 2_OOK_LV1_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 26.5387dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge plot_L_Config 2_OOK_LV1_hopping
Ref Level 106.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 66.5477dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
899
900
901
902
903
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

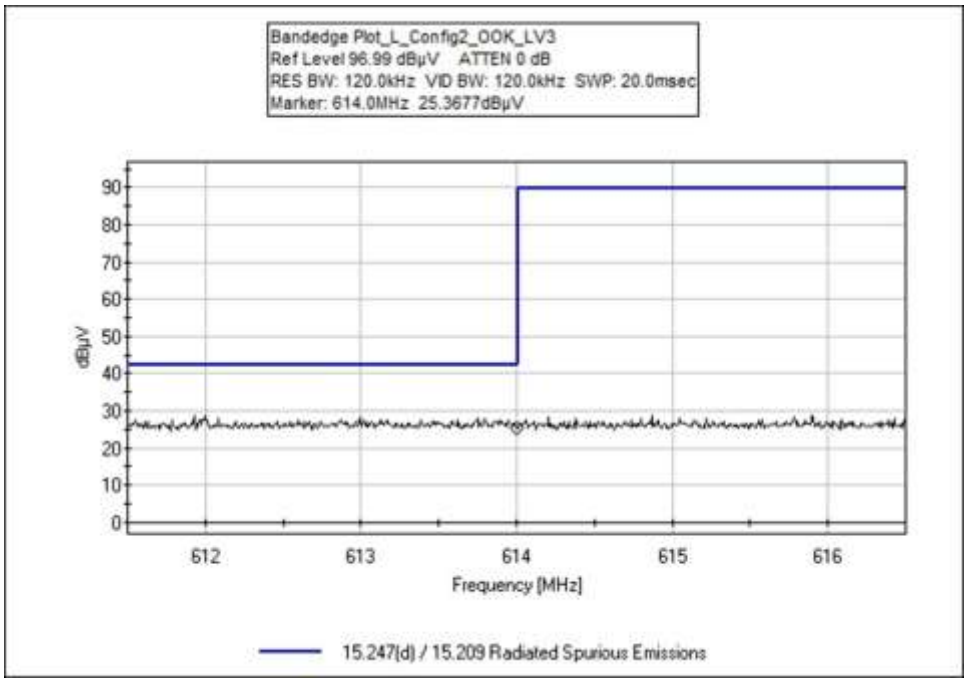

Bandedge plot_H_Config 2_OOK_LV1
Ref Level 106.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 65.1487dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
930
931
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

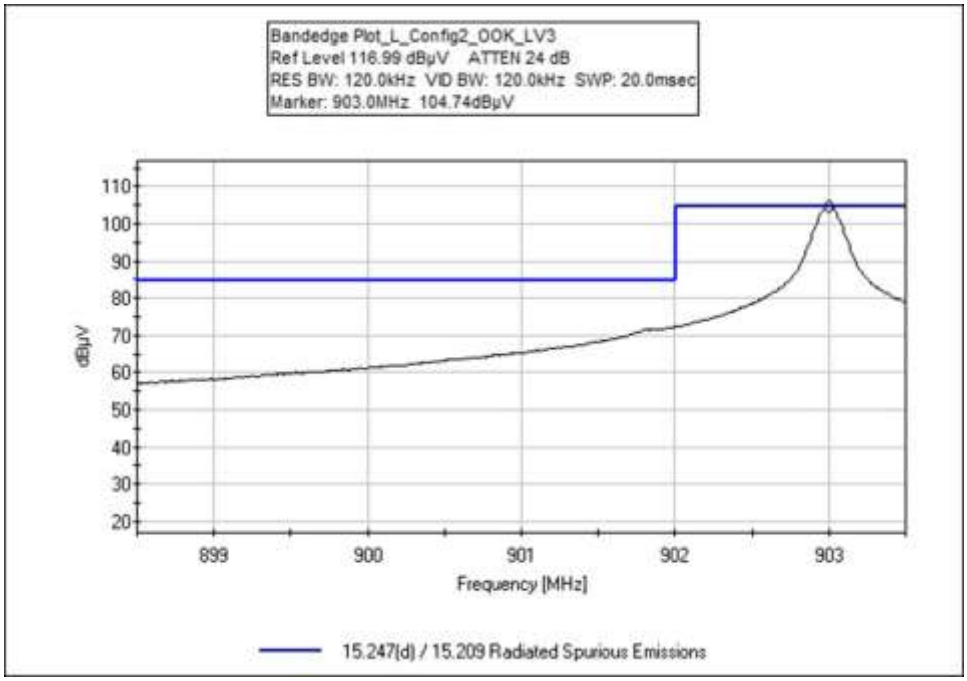

Bandedge plot_H_Config 2_OOK_LV1
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 29.3447dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
958
959
960
961
962
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

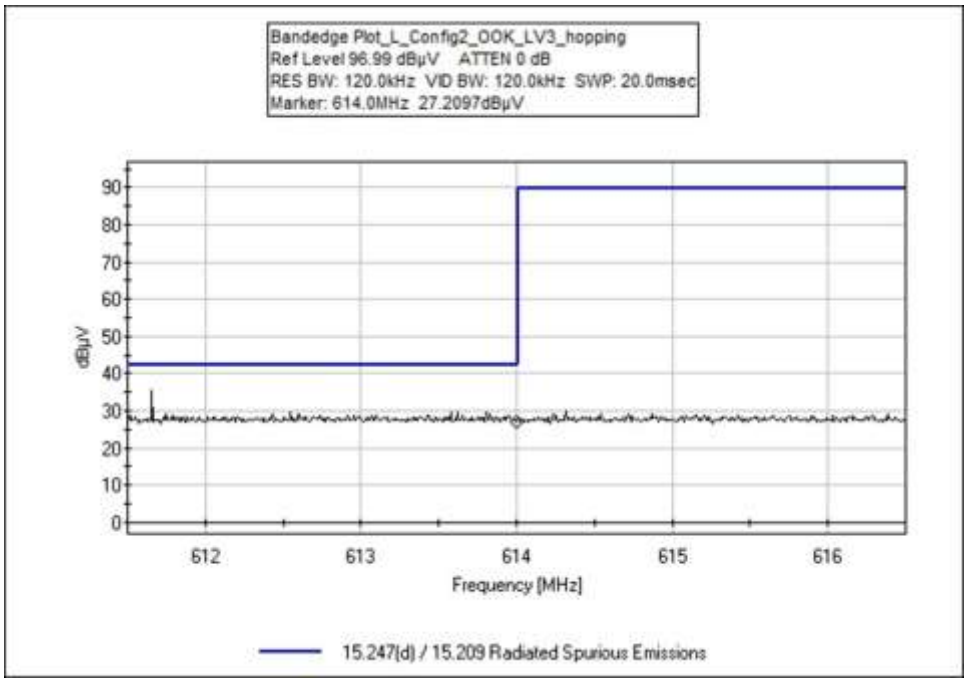

Bandedge plot_H_Config 2_OOK_LV1_hopping
Ref Level 106.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 64.4617dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

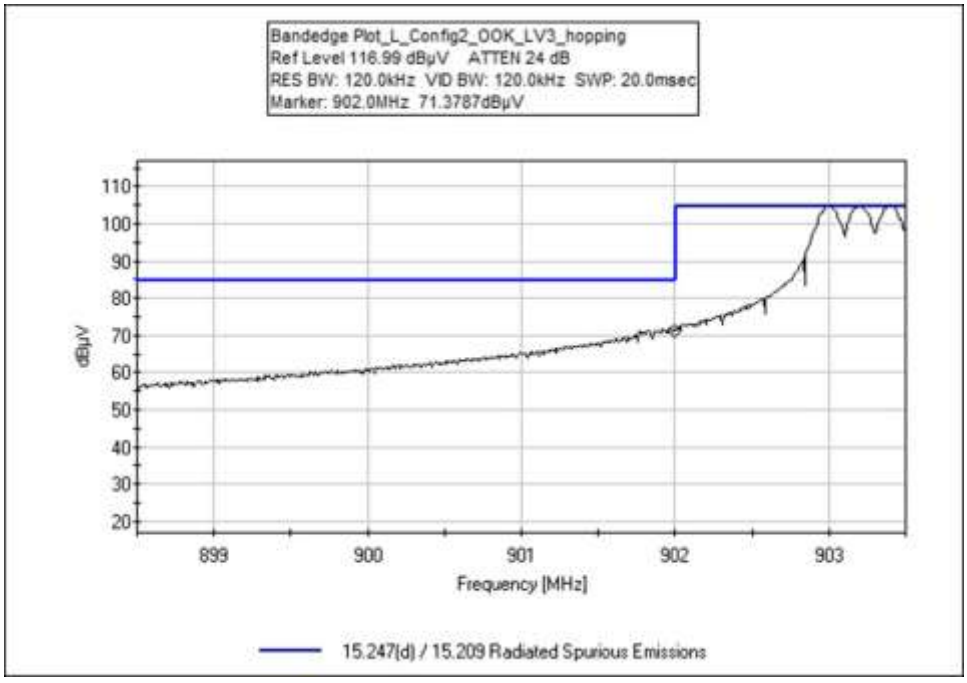

Bandedge plot_H_Config 2_OOK_LV1_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 28.6027dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

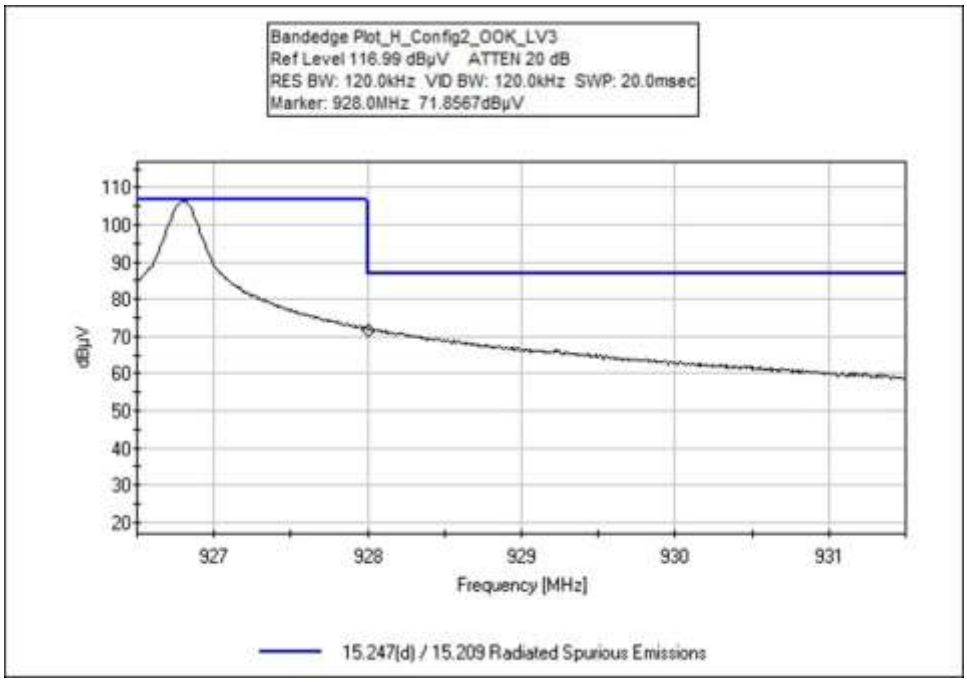
Configuration 2 OOK LV3 Band Edge Plots

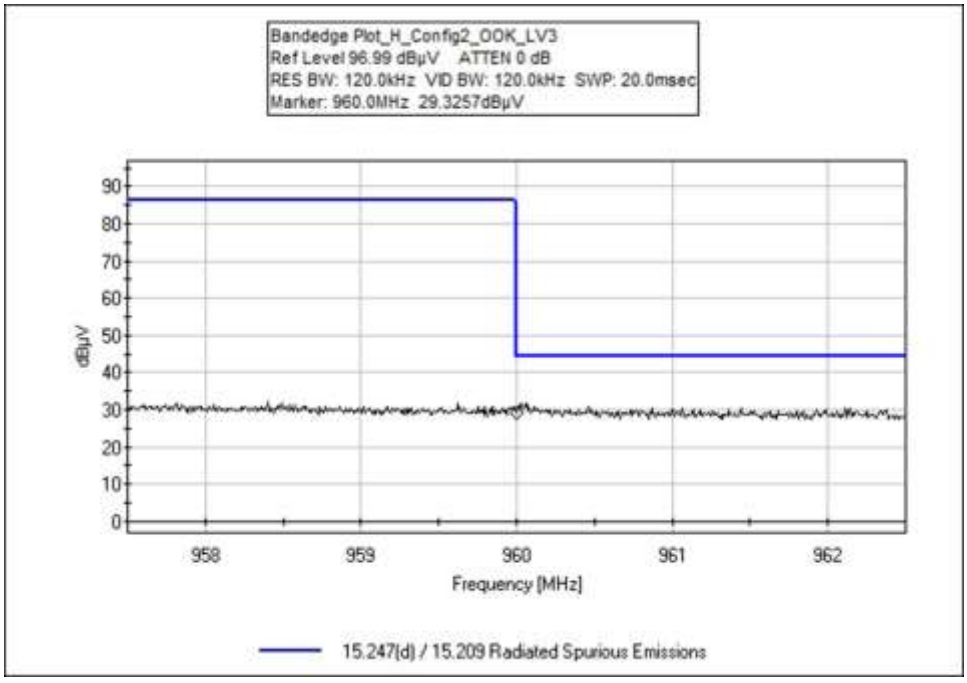


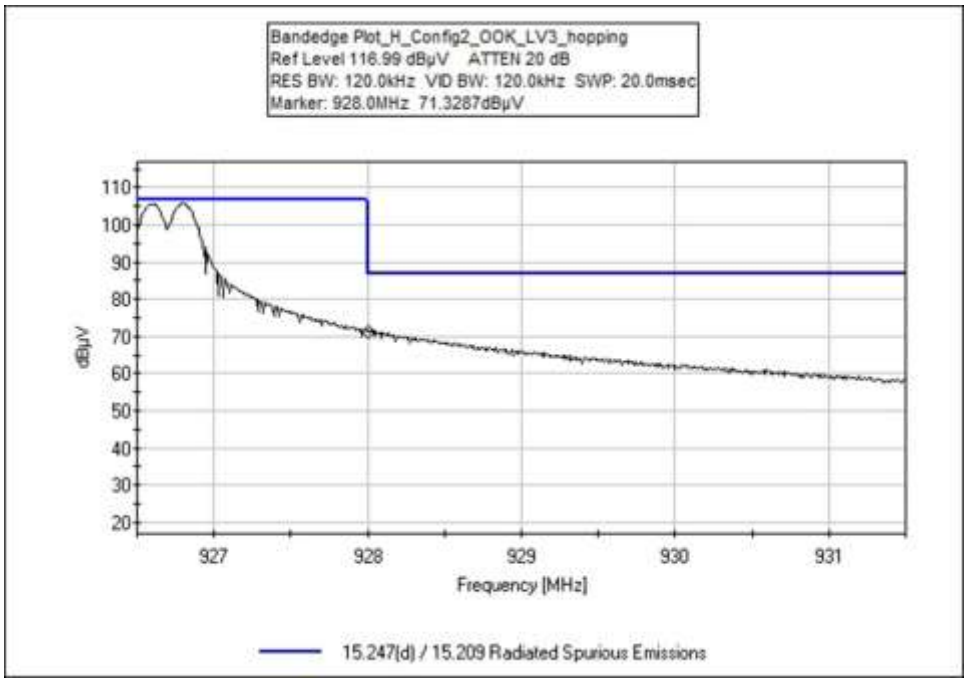


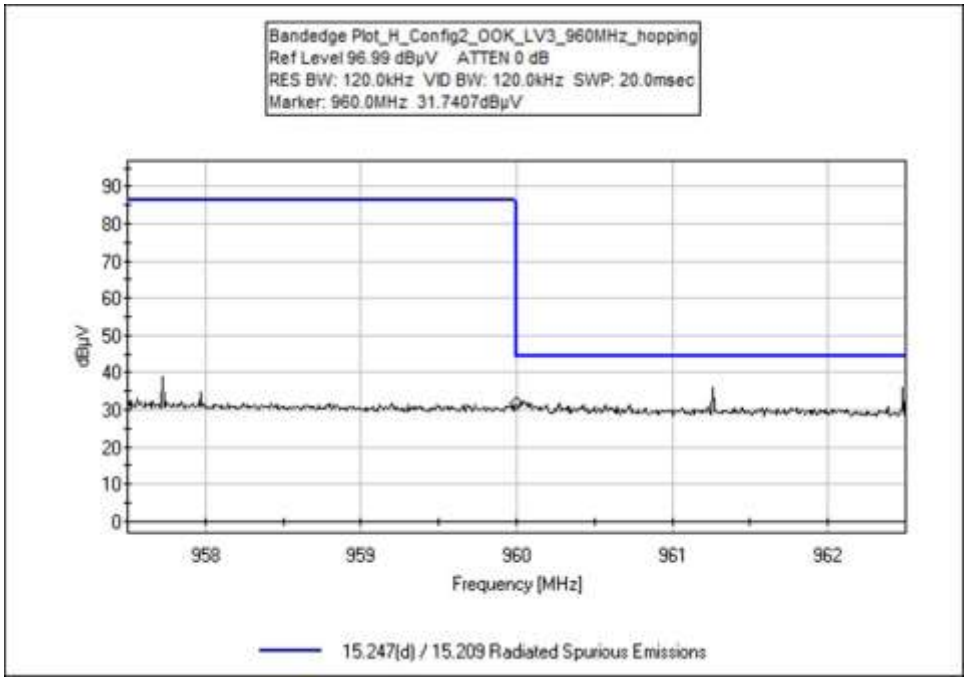

Bandedge Plot_L_Config2_OOK_LV3_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 27.2097dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge Plot_L_Config2_OOK_LV3_hopping
Ref Level 116.99 dBµV ATTEN 24 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 71.3787dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
899
900
901
902
903
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

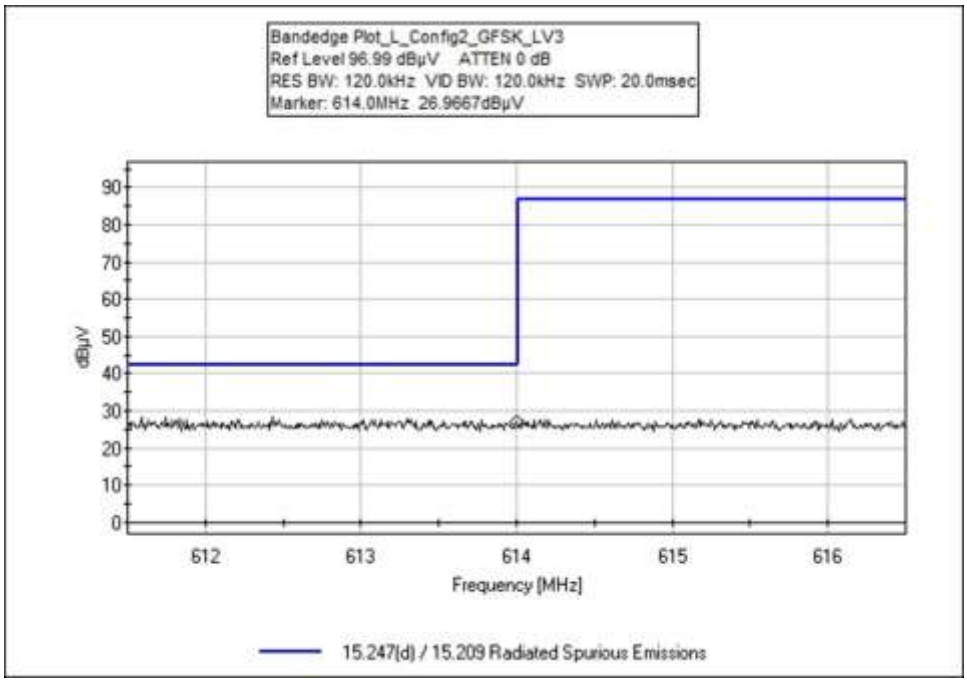

Bandedge Plot_H_Config2_OOK_LV3
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 71.8567dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

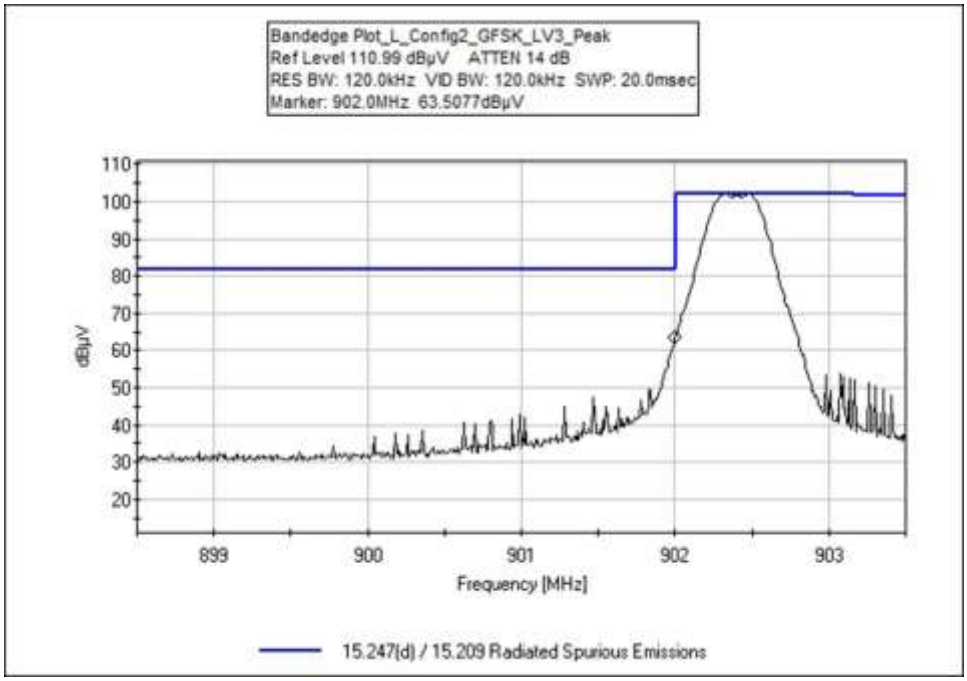

Bandedge Plot_H_Config2_OOK_LV3
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 29.3257dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

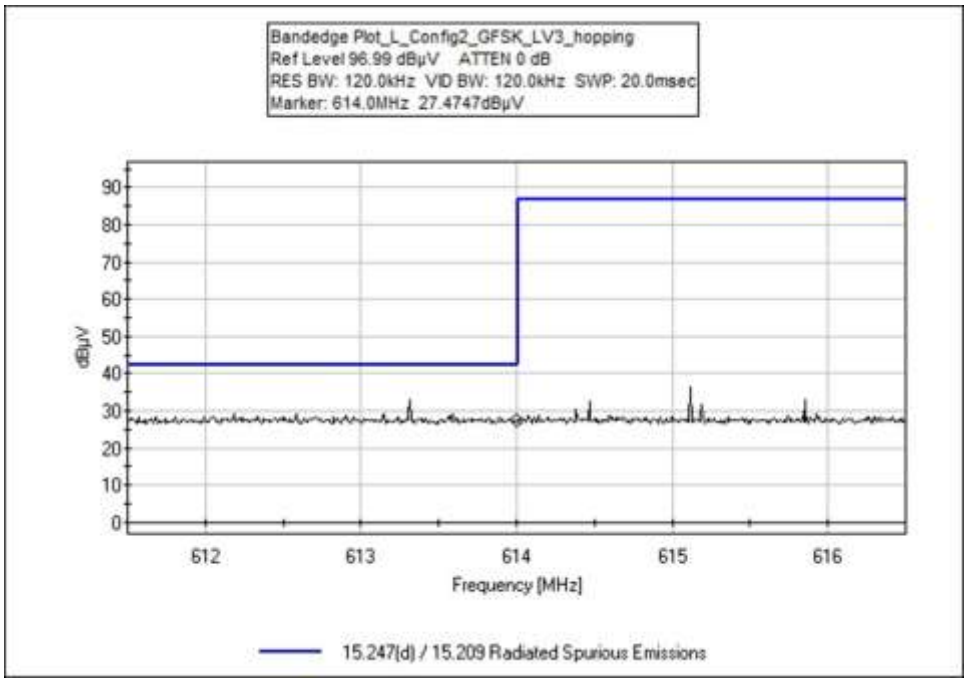

Bandedge Plot_H_Config2_OOK_LV3_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 71.3287dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
927
928
929
930
931
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

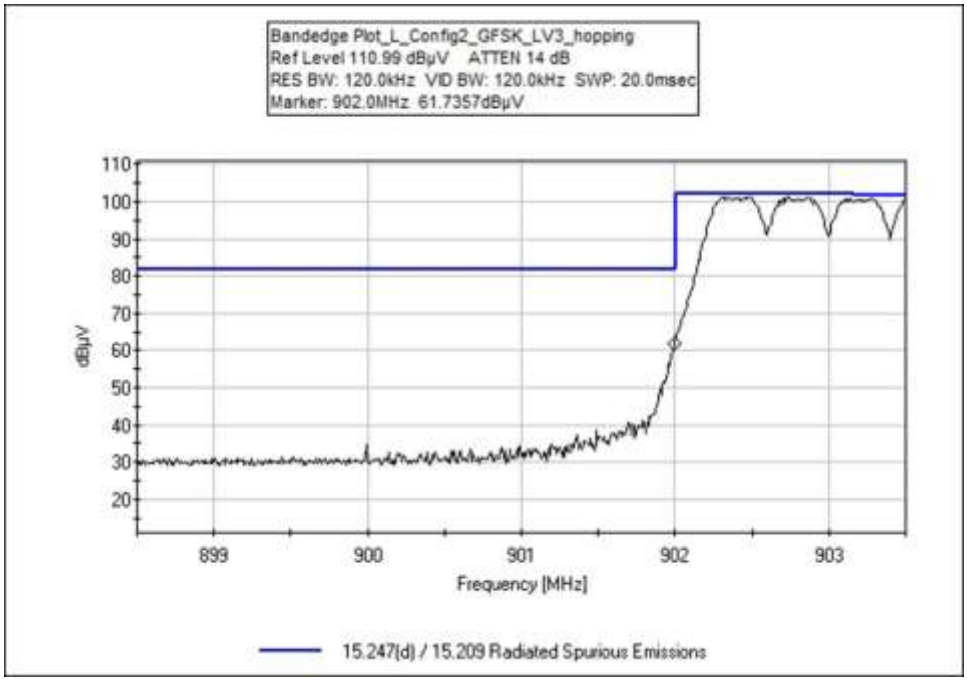

Bandedge Plot_H_Config2_OOK_LV3_960MHz_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 31.7407dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
958
959
960
961
962
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

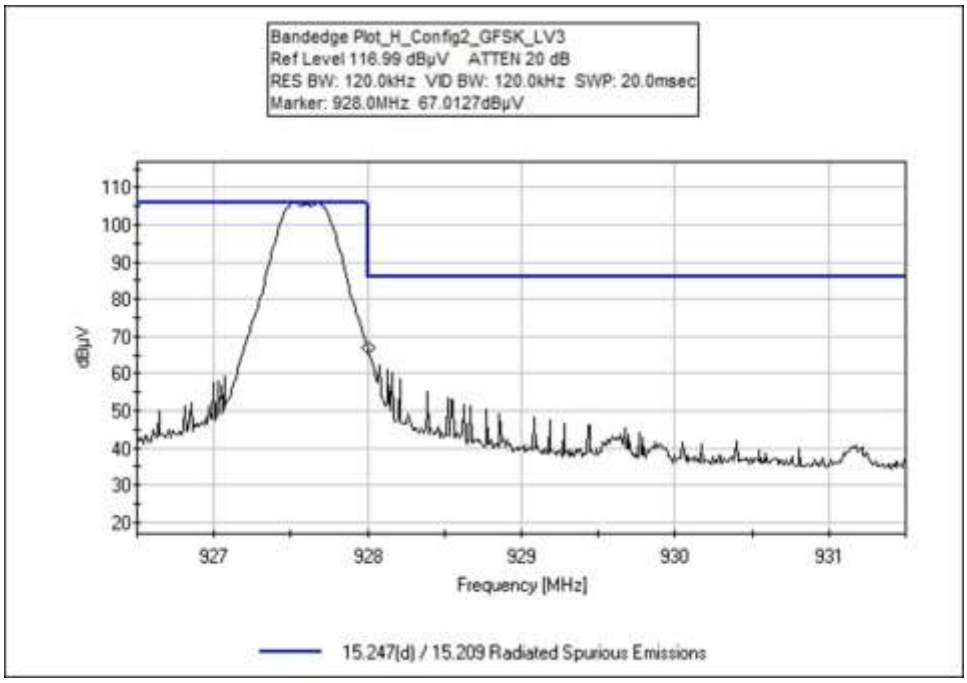
Configuration 2 GFSK LV3 Band Edge Plots

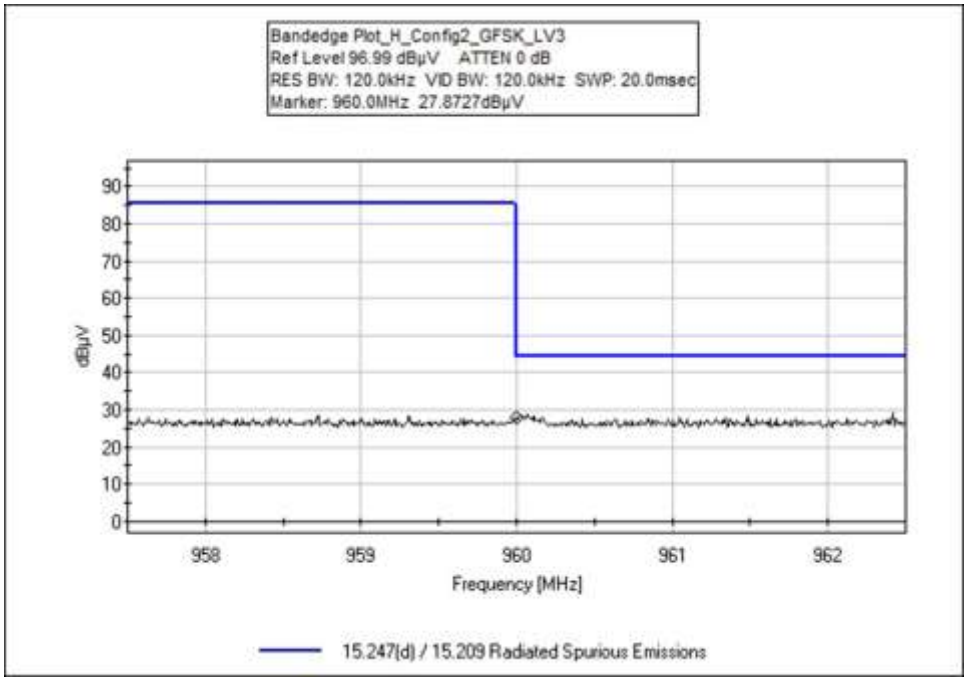


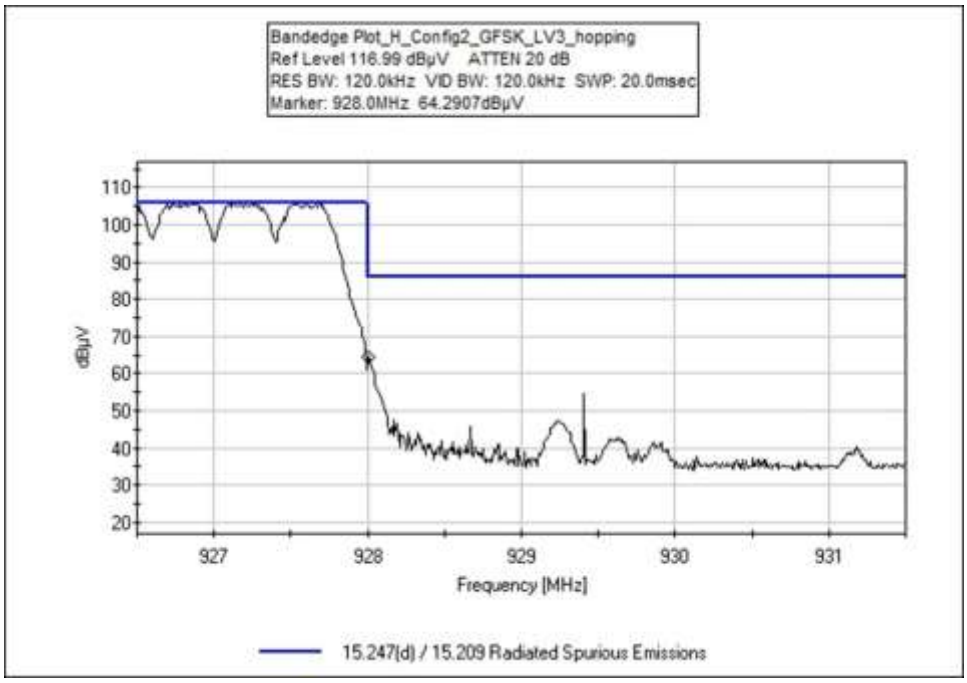


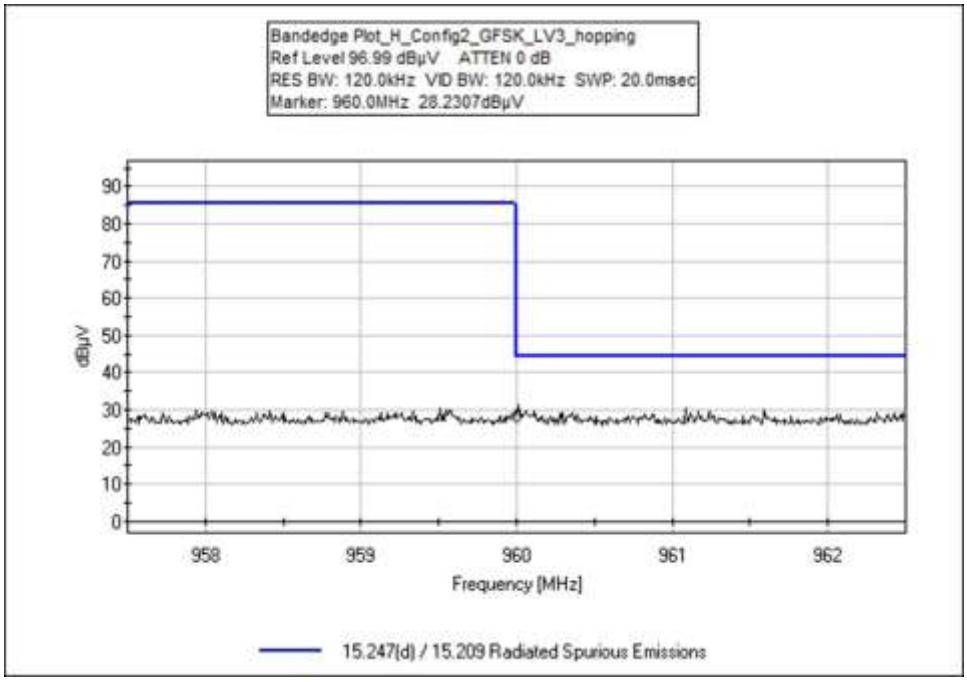

Bandedge Plot_L_Config2_GFSK_LV3_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 27.4747dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge Plot_L_Config2_GFSK_LV3_hopping
Ref Level 110.99 dBµV ATTEN 14 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 61.7357dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
899
900
901
902
903
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

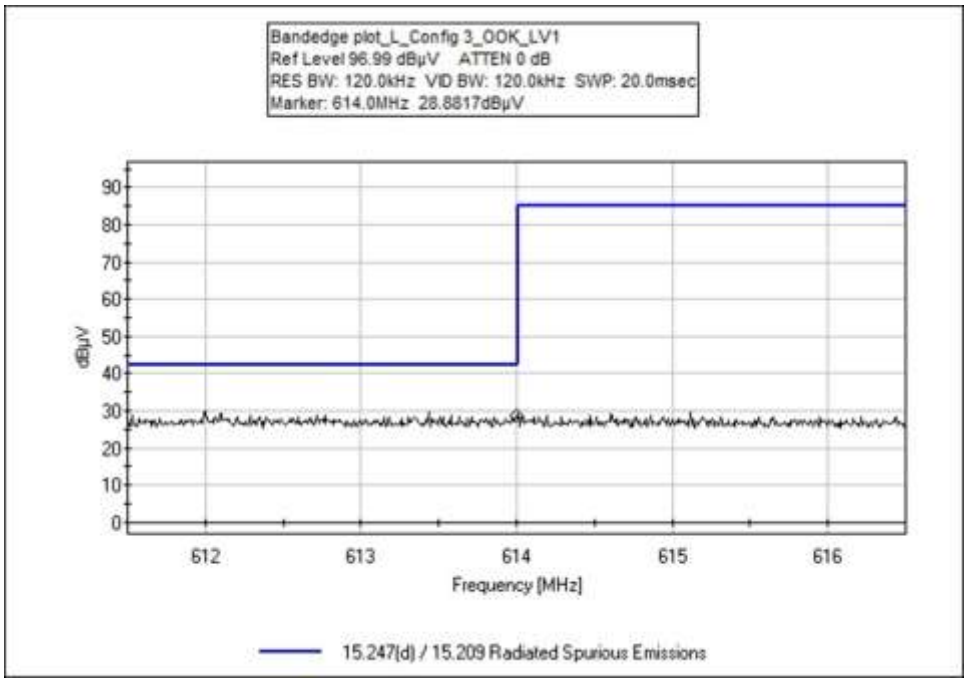

Bandedge Plot_H_Config2_GFSK_LV3
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 67.0127dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
927
928
929
930
931
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

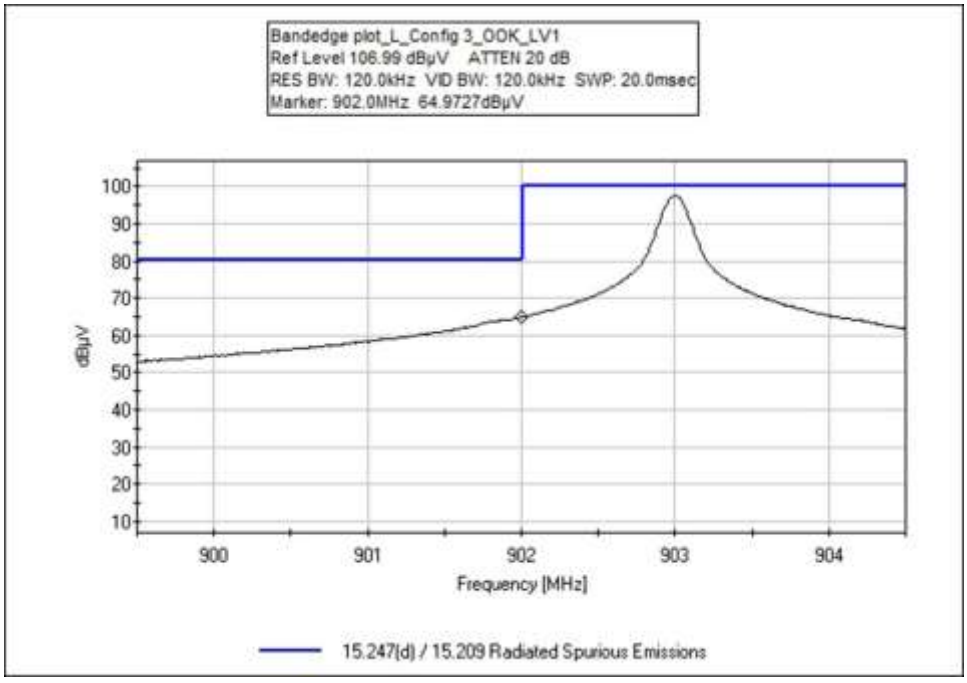

Bandedge Plot_H_Config2_GFSK_LV3
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 27.8727dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
958
959
960
961
962
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

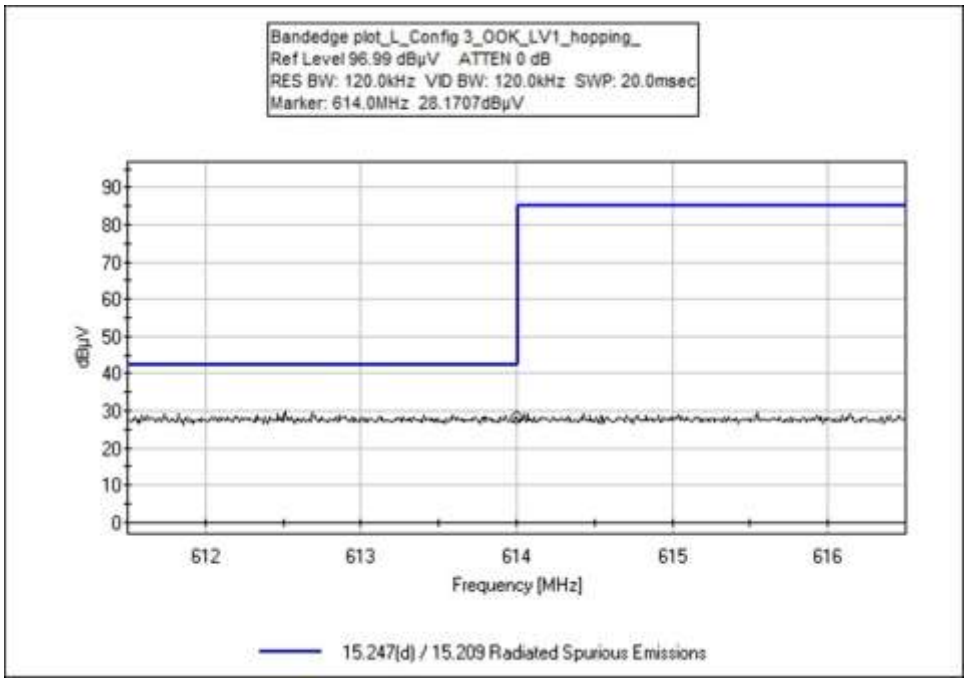

Bandedge Plot_H_Config2_GFSK_LV3_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 64.2907dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

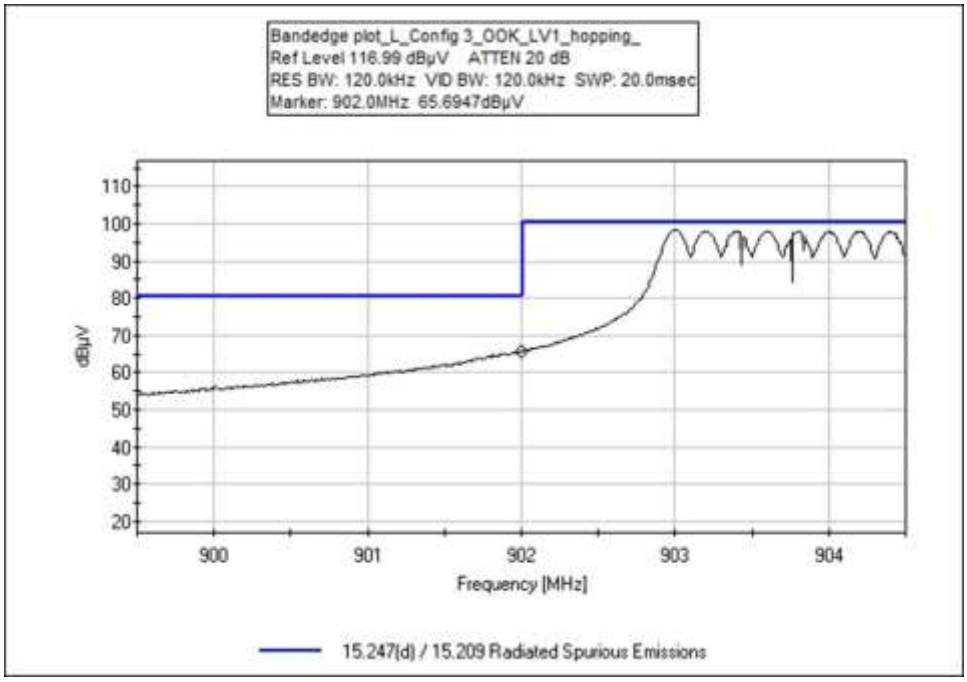

Bandedge Plot_H_Config2_GFSK_LV3_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 28.2307dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

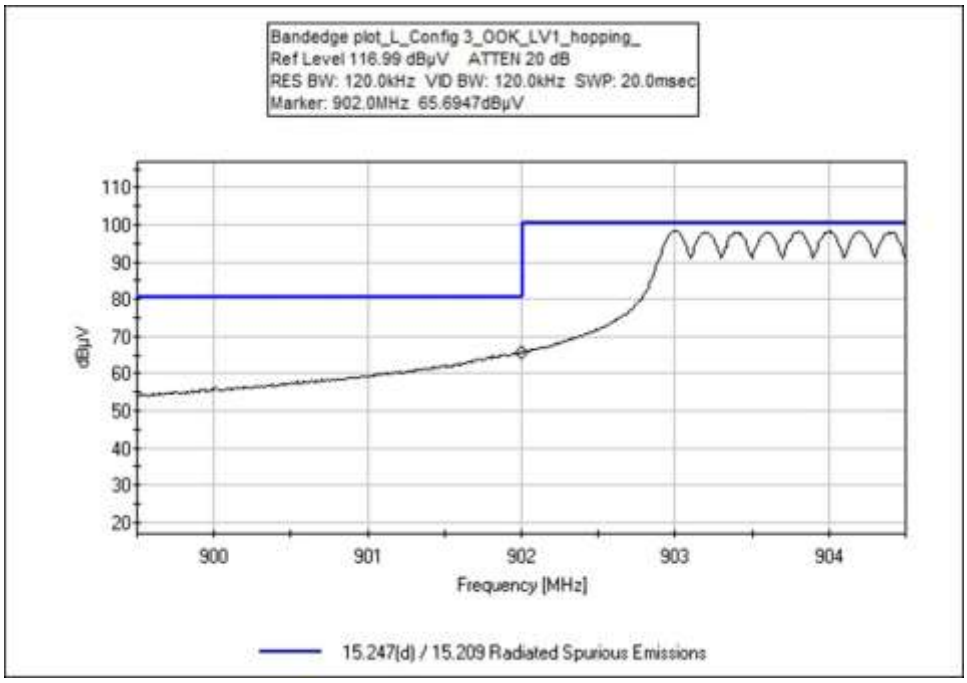
Configuration 3 OOK LV1 Band Edge Plots

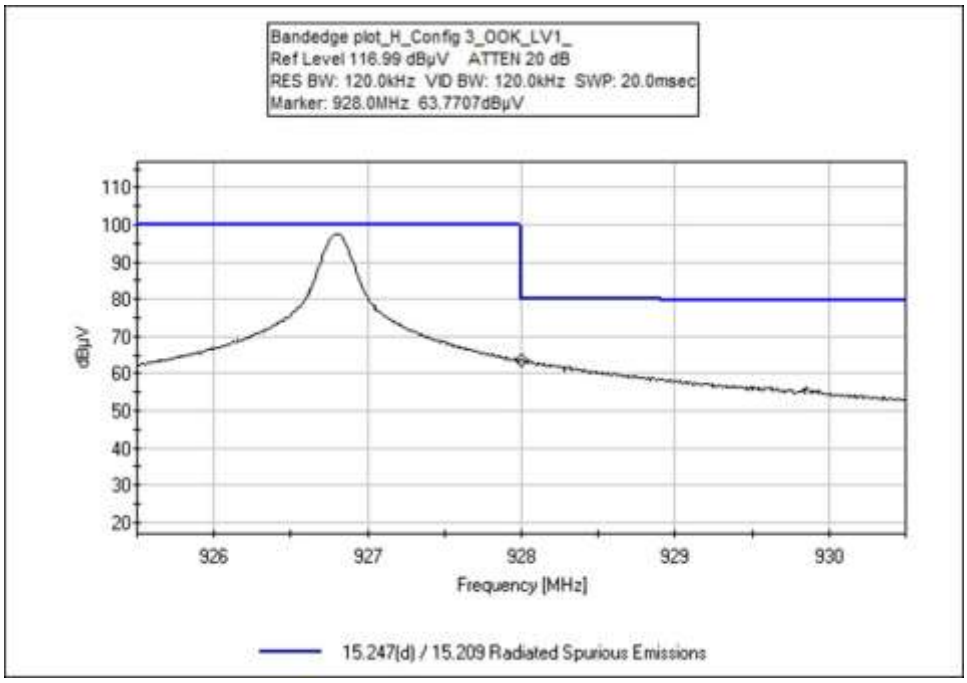


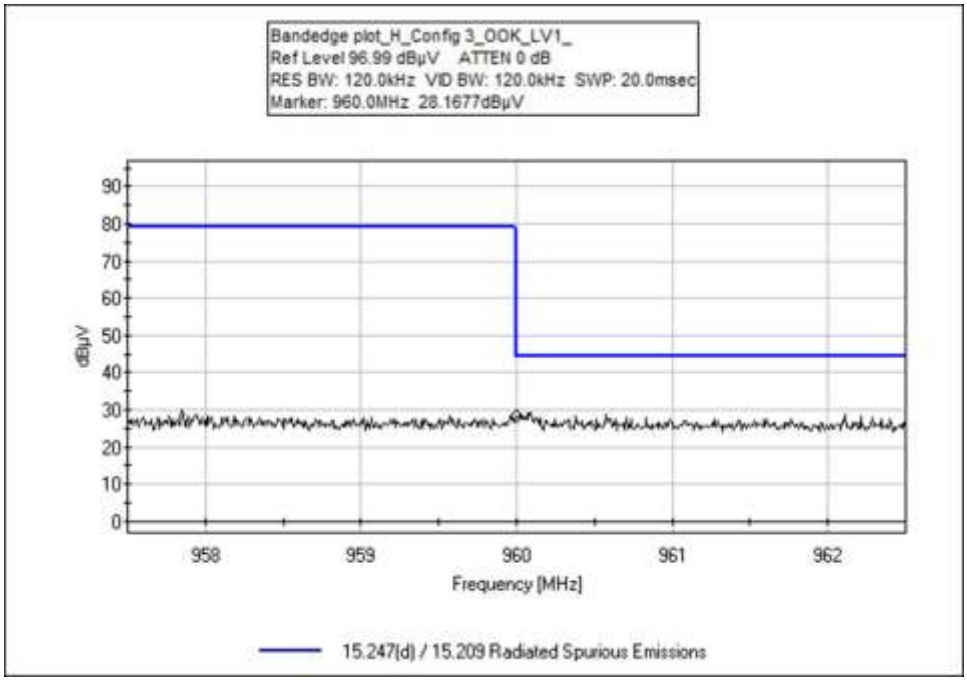


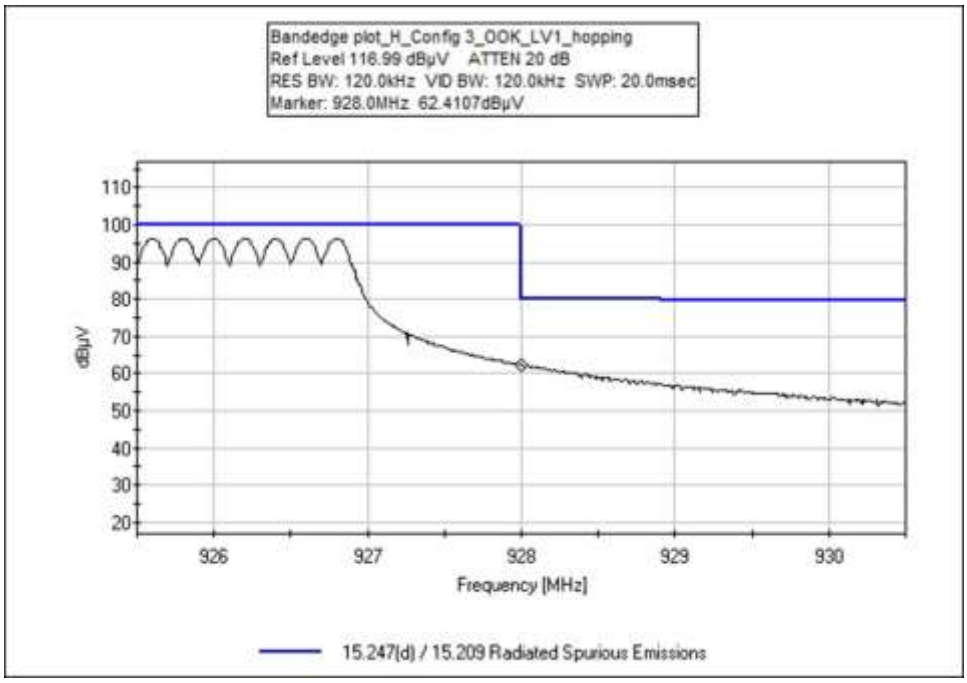

Bandedge plot_L_Config 3_OOK_LV1_hopping_
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 28.1707dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

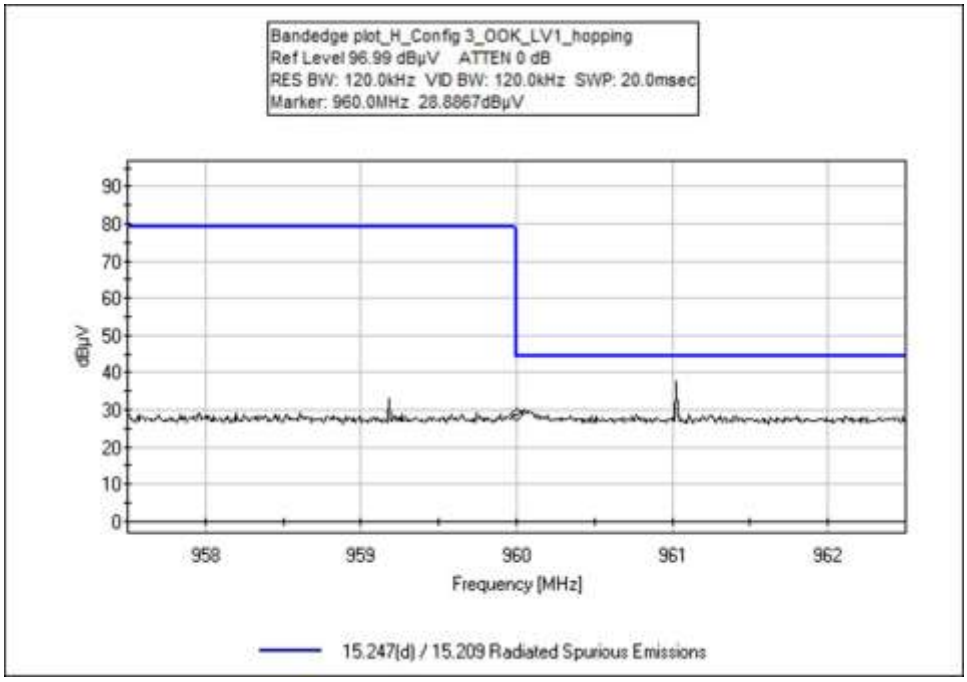

Bandedge plot_L_Config 3_OOK_LV1_hopping_
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 65.6947dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
900
901
902
903
904
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge plot_L_Config 3_OOK_LV1_hopping_
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 65.6947dBµV
110
100
90
80
70
60
50
40
30
20
dBµV
900
901
902
903
904
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

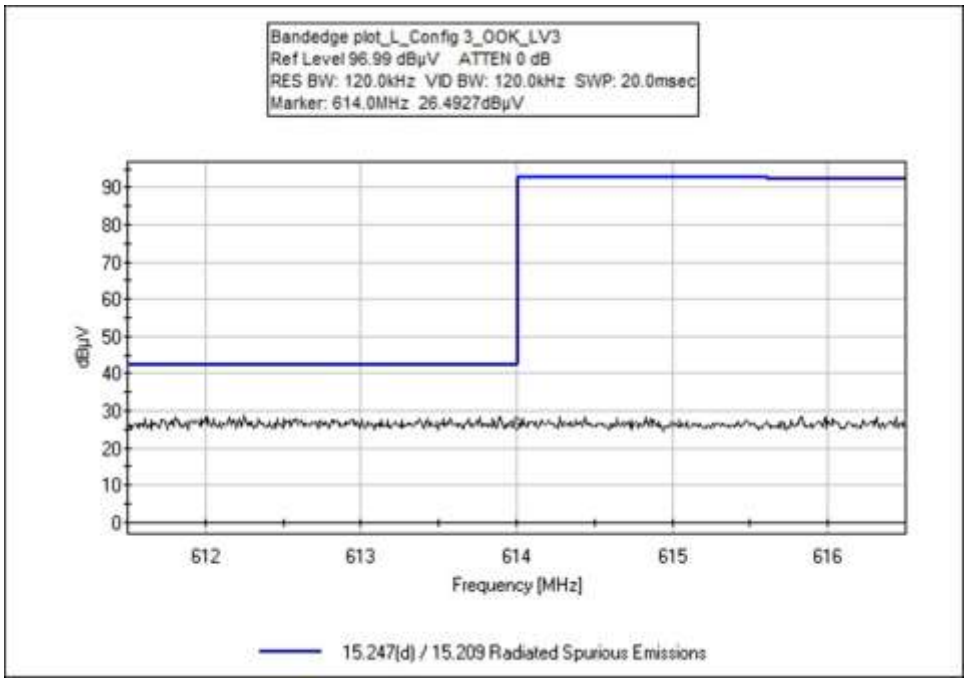

Bandedge plot_H_Config 3_OOK_LV1_
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 63.7707dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
926
927
928
929
930
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

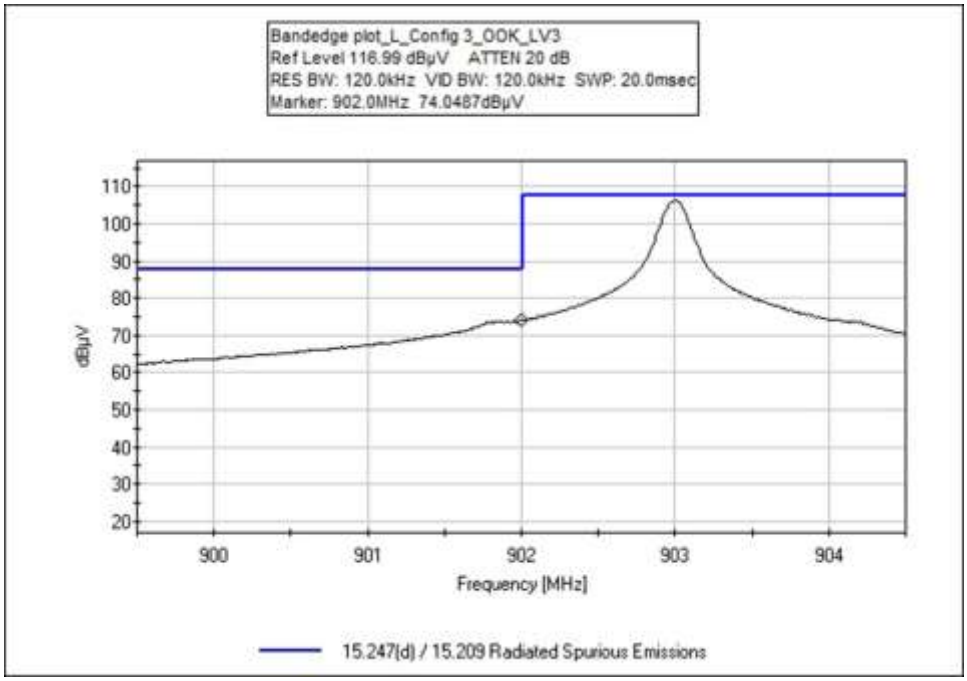

Bandedge plot_H_Config 3_OOK_LV1_
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 28.1677dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
958
959
960
961
962
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

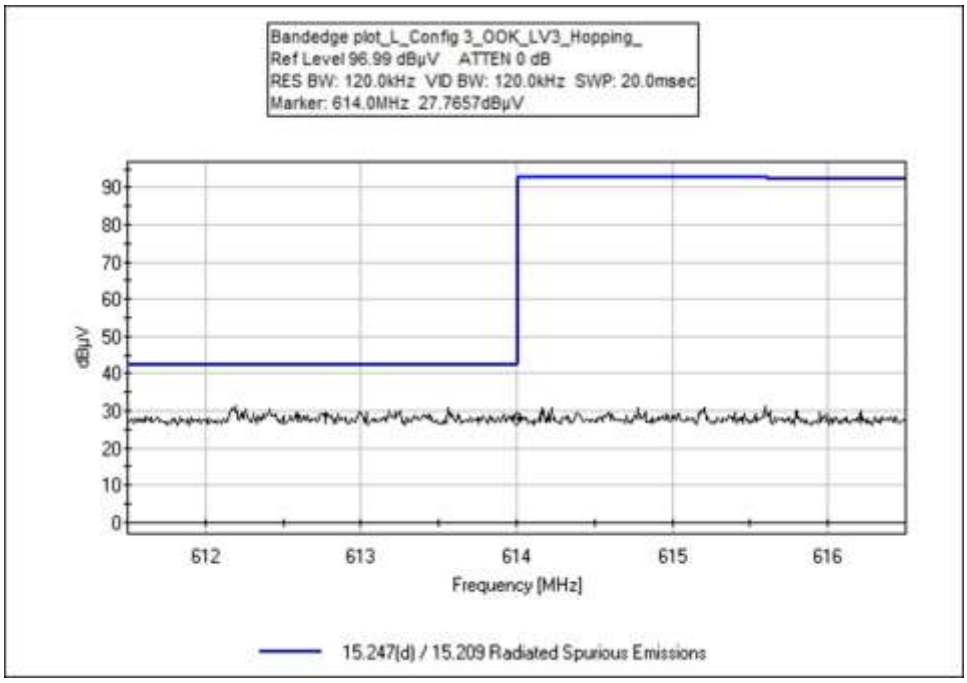

Bandedge plot_H_Config 3_OOK_LV1_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 62.4107dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

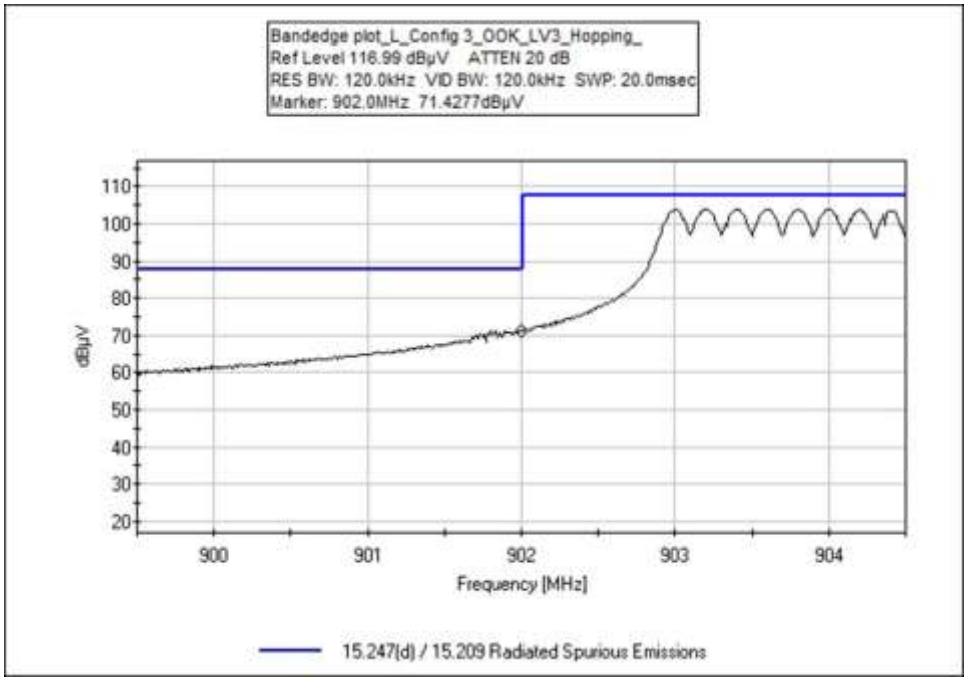

Bandedge plot_H_Config 3_OOK_LV1_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 28.8867dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

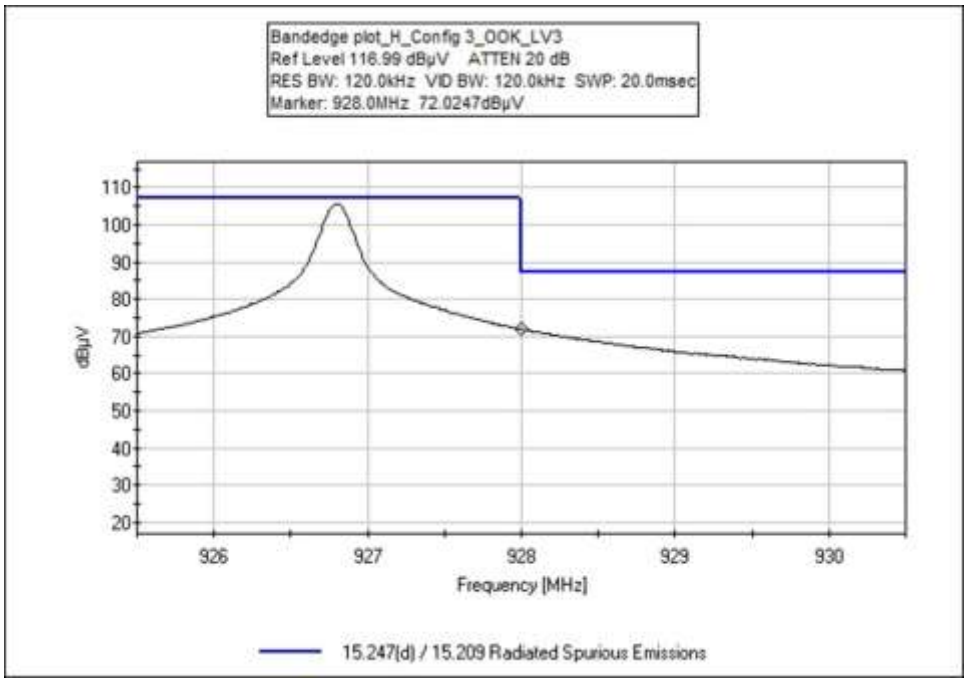
Configuration 3 OOK LV3 Band Edge Plots

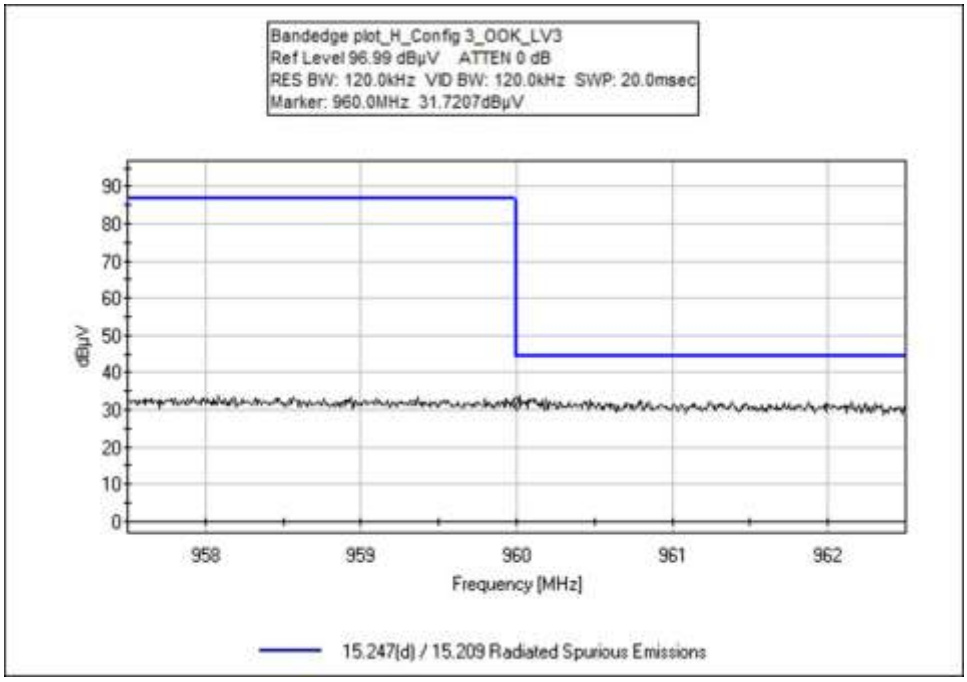


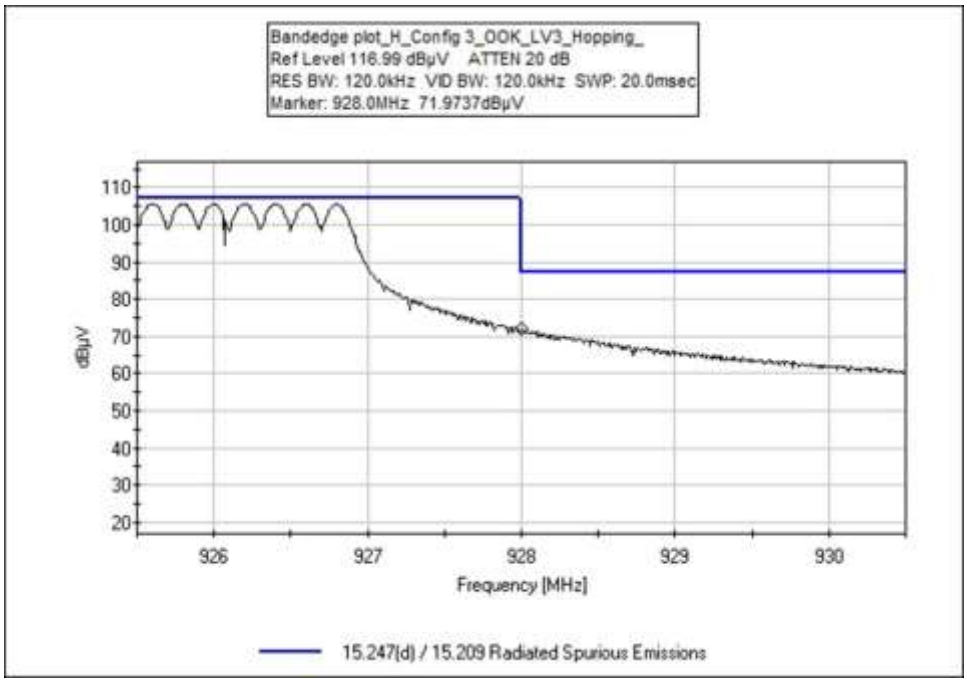


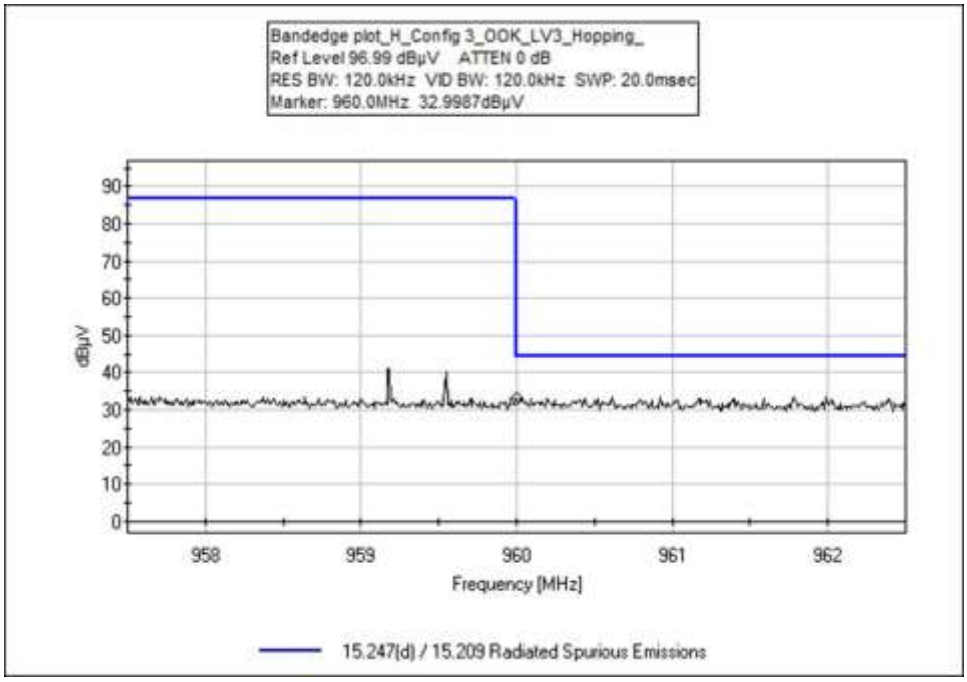

Bandedge plot_L_Config 3_OOK_LV3_Hopping_
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 27.7657dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge plot_L_Config 3_OOK_LV3_Hopping_
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 71.4277dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
900
901
902
903
904
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

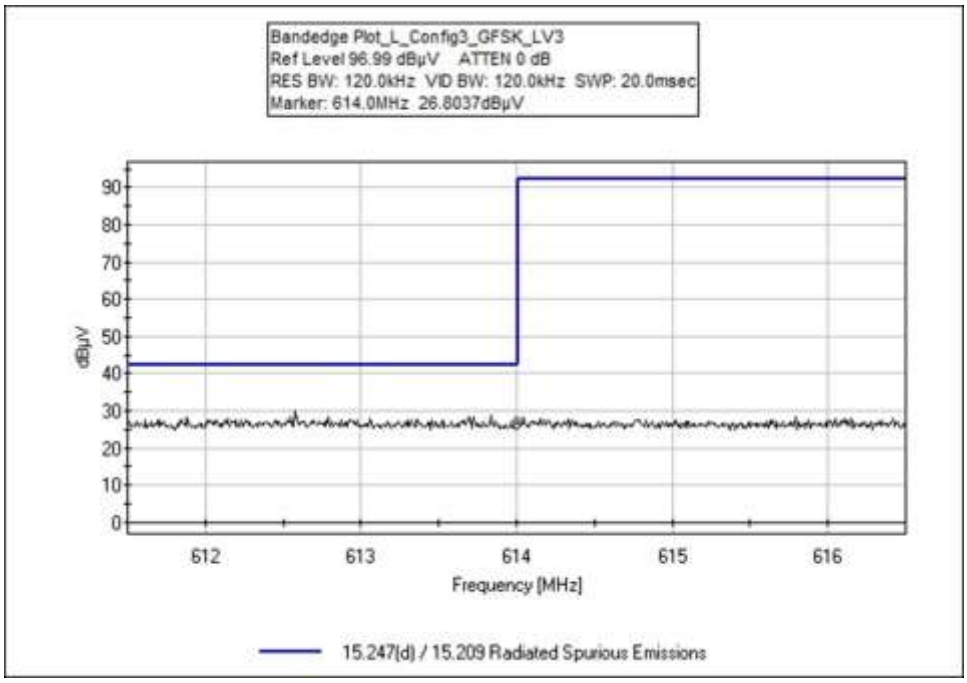

Bandedge plot_H_Config 3_OOK_LV3
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 72.0247dBµV
110
100
90
80
70
60
50
40
30
20
dBµV
926
927
928
929
930
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

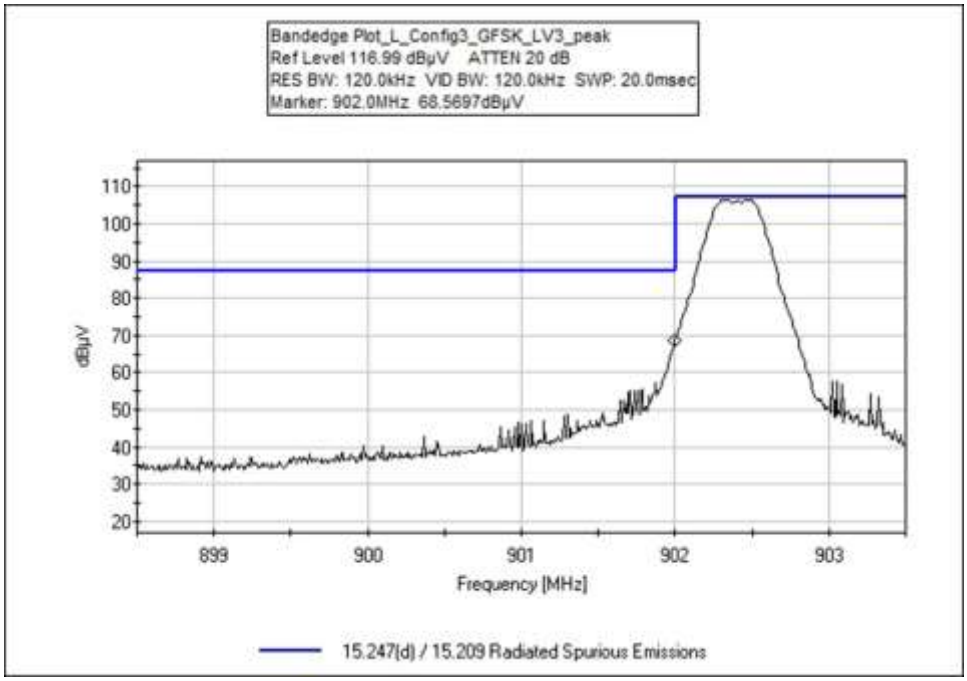

Bandedge plot_H_Config 3_OOK_LV3
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 31.7207dBµV
90
80
70
60
50
40
30
20
10
0
dBµV
958
959
960
961
962
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

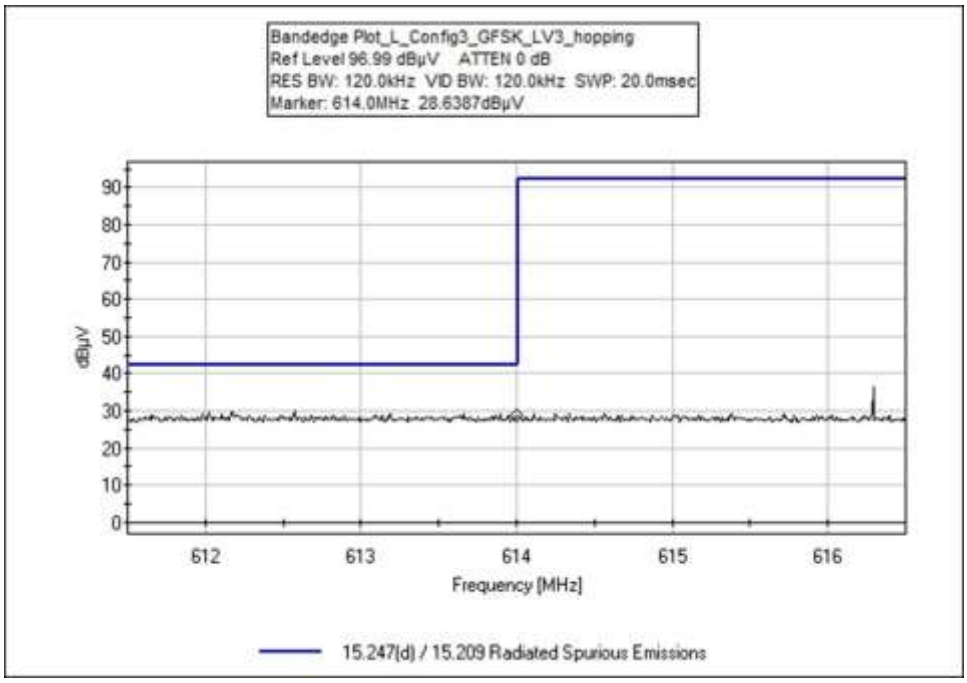

Bandedge plot_H_Config 3_OOK_LV3_Hopping_
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 71.9737dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

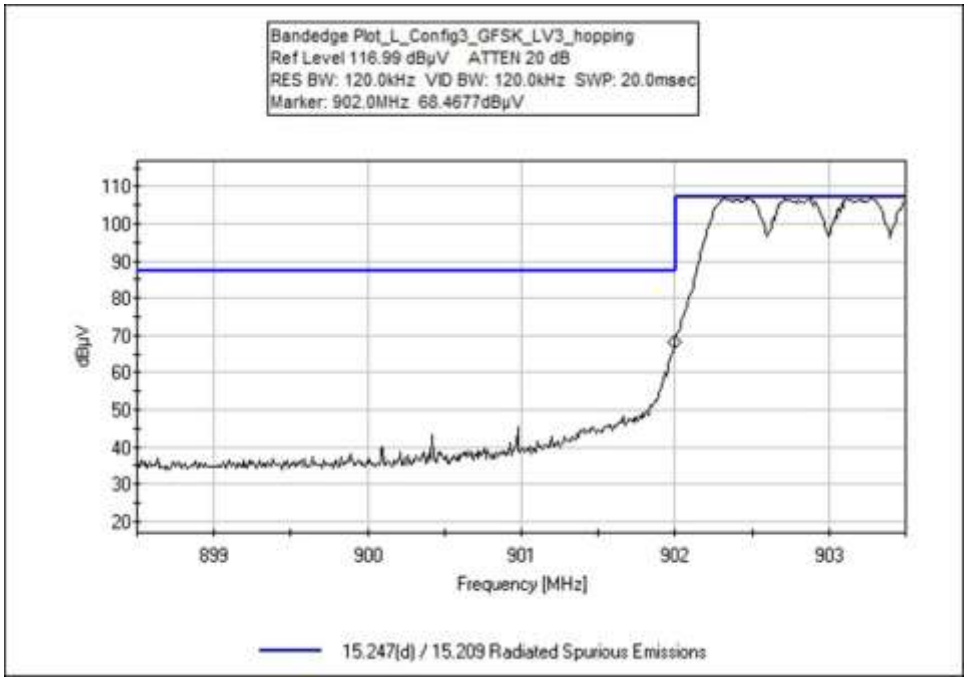

Bandedge plot_H_Config 3_OOK_LV3_Hopping_
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 32.9987dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

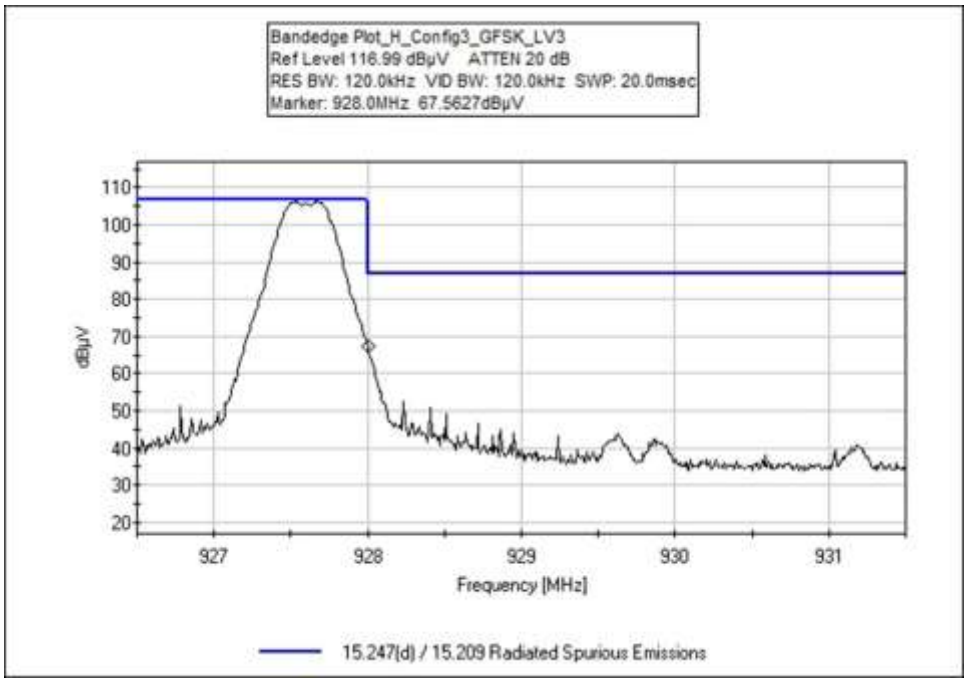
Configuration 3 GFSK LV3 Band Edge Plots

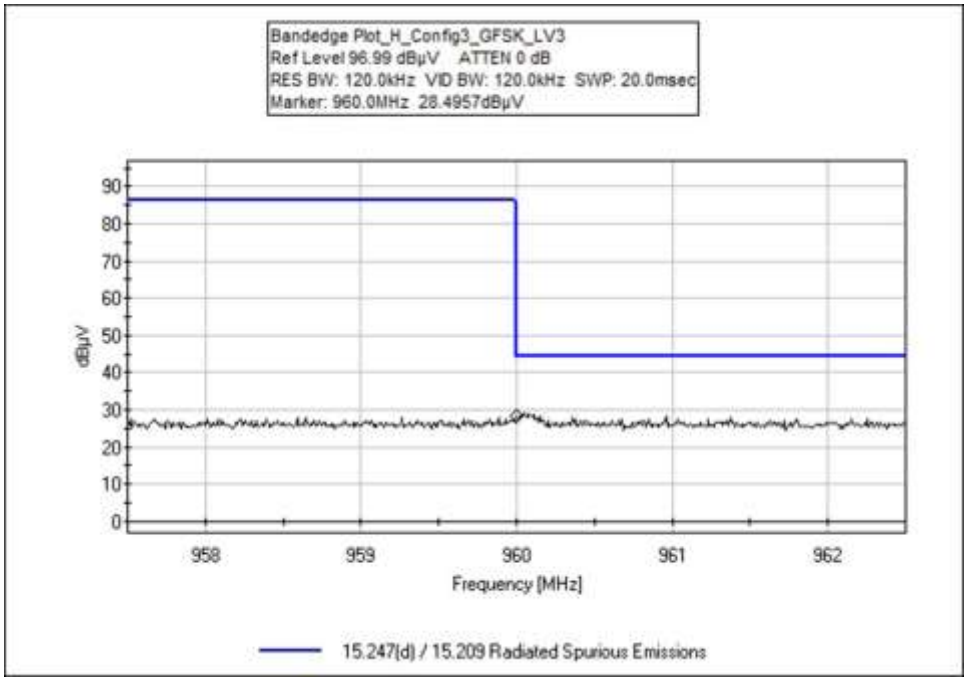


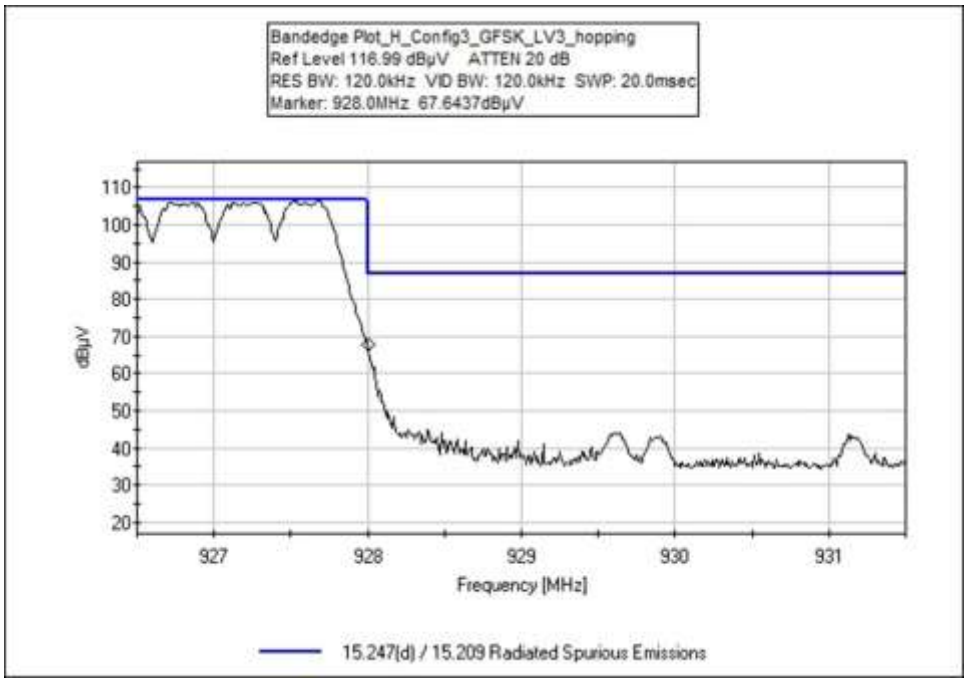


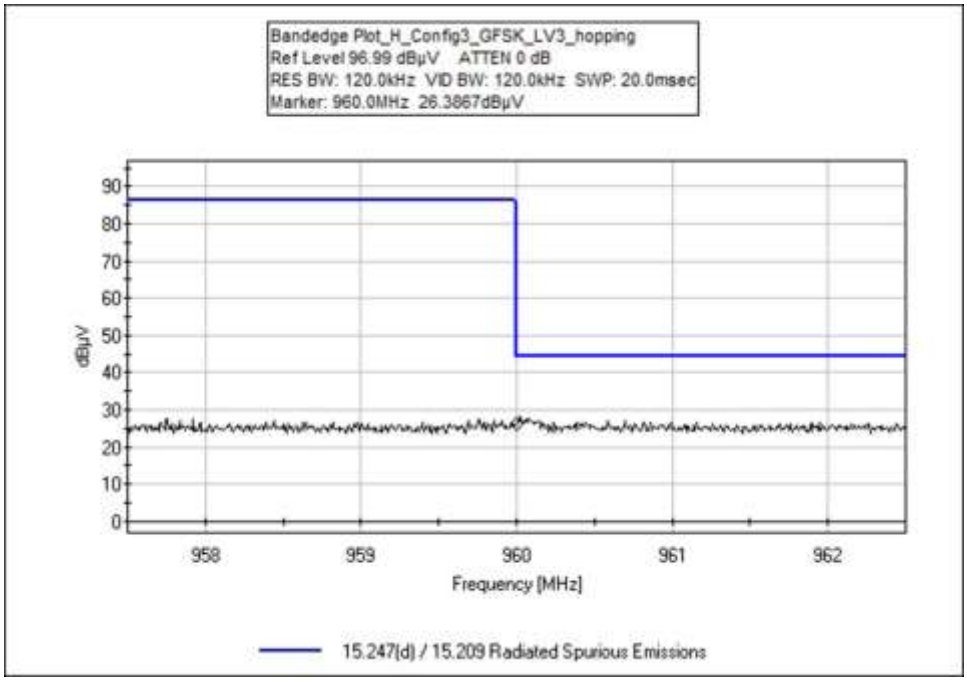

Bandedge Plot_L_Config3_GFSK_LV3_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 614.0MHz 28.6387dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
612
613
614
615
616
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge Plot_L_Config3_GFSK_LV3_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 902.0MHz 68.4677dBµV
dBµV
110
100
90
80
70
60
50
40
30
20
899
900
901
902
903
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge Plot_H_Config3_GFSK_LV3
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 67.5627dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge Plot_H_Config3_GFSK_LV3
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 28.4957dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge Plot_H_Config3_GFSK_LV3_hopping
Ref Level 116.99 dBµV ATTEN 20 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 928.0MHz 67.6437dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


Bandedge Plot_H_Config3_GFSK_LV3_hopping
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 120.0kHz SWP: 20.0msec
Marker: 960.0MHz 26.3867dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

Test Setup / Conditions / Data

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	5/24/2021
Test Type:	**Radiated Scan**	Time:	11:21:06
Tested By:	E. Wong	Sequence#:	13
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV1 Folder 4

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	ANP05505	Attenuator	NAT-6	5/26/2021	5/26/2023
T4	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T5	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T6	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	902.000M	67.3	+0.0 -27.1	+23.1 +0.5	+6.3	+5.8	+0.0 266	75.9	89.0 Bandedge_L	-13.1	Vert 117
2	902.000M	65.3	+0.0 -27.1	+23.1 +0.5	+6.3	+5.8	+0.0 255	73.9	89.0 bandedge_L_hopping	-15.1	Vert 117
3	960.000M	29.1	+0.0 -27.2	+24.0 +0.5	+6.3	+6.0	+0.0 255	38.7	54.0 bandedge_H_hopping	-15.3	Vert 117
4	614.000M	27.0	+0.0 -27.4	+20.0 +0.3	+6.2	+4.6	+0.0 255	30.7	46.0 bandedge_L_hopping	-15.3	Vert 117
5	960.000M	28.6	+0.0 -27.2	+24.0 +0.5	+6.3	+6.0	+0.0 255	38.2	54.0 Bandedge_H	-15.8	Vert 117
6	928.000M	64.2	+0.0 -27.2	+23.5 +0.5	+6.3	+5.9	+0.0 255	73.2	89.0 Bandedge_H	-15.8	Vert 117
7	614.000M	26.0	+0.0 -27.4	+20.0 +0.3	+6.2	+4.6	+0.0 266	29.7	46.0 Bandedge_L	-16.3	Vert 117
8	928.000M	62.7	+0.0 -27.2	+23.5 +0.5	+6.3	+5.9	+0.0 255	71.7	89.0 bandedge_H_hopping	-17.3	Vert 117

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	5/21/2021
Test Type:	**Radiated Scan**	Time:	15:21:17
Tested By:	E. Wong	Sequence#:	12
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV3 Folder 4

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	ANP05505	Attenuator	NAT-6	5/26/2021	5/26/2023
T4	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T5	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T6	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	34.3	+0.0 -27.2	+24.0 +0.5	+6.3	+6.0	+0.0 270	43.9	54.0 Bandedge_H_hopping	-10.1	Vert 132
2	960.000M	31.4	+0.0 -27.2	+24.0 +0.5	+6.3	+6.0	+0.0 270	41.0	54.0 Bandedge_H	-13.0	Vert 132
3	902.000M	74.3	+0.0 -27.1	+23.1 +0.5	+6.3	+5.8	+0.0 270	82.9	96.3 Bandedge_L	-13.4	Vert 132
4	928.000M	73.4	+0.0 -27.2	+23.5 +0.5	+6.3	+5.9	+0.0 270	82.4	96.3 Bandedge_H	-13.9	Vert 132
5	928.000M	72.2	+0.0 -27.2	+23.5 +0.5	+6.3	+5.9	+0.0 270	81.2	96.3 Bandedge_H_hopping	-15.1	Vert 132
6	614.000M	27.1	+0.0 -27.4	+20.0 +0.3	+6.2	+4.6	+0.0 270	30.8	46.0 Bandedge_L_hopping	-15.2	Vert 132
7	614.000M	25.9	+0.0 -27.4	+20.0 +0.3	+6.2	+4.6	+0.0 270	29.6	46.0 Bandedge_L	-16.4	Vert 132
8	902.000M	69.6	+0.0 -27.1	+23.1 +0.5	+6.3	+5.8	+0.0 270	78.2	96.3 Bandedge_L_hopping	-18.1	Vert 132

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	5/20/2021
Test Type:	**Radiated Scan**	Time:	14:14:20
Tested By:	E. Wong	Sequence#:	9
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
902.4MHz, 915.2MHz, 927.6MHz, 400kHz steps, 64 channels, 300k GFSK LV3. Folder 4

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 45ms per 100ms. Duty cycle correction factor= 20log(45ms/100ms) = -6.9dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	ANP05505	Attenuator	NAT-6	5/26/2021	5/26/2023
T4	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T5	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T6	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	614.000M	27.1	+0.0 -27.4	+20.0 +0.3	+6.2	+4.6	+0.0 360	30.8	46.0 Bandedge_L_hopping	-15.2	Vert 120
2	614.000M	26.7	+0.0 -27.4	+20.0 +0.3	+6.2	+4.6	+0.0 360	30.4	46.0 Bandedge_L	-15.6	Vert 120
3	960.000M	28.4	+0.0 -27.2	+24.0 +0.5	+6.3	+6.0	+0.0 360	38.0	54.0 Bandedge_H_hopping	-16.0	Vert 120
4	960.000M	27.3	+0.0 -27.2	+24.0 +0.5	+6.3	+6.0	+0.0 360	36.9	54.0 Bandedge_H	-17.1	Vert 120
5	928.000M	67.3	+0.0 -27.2	+23.5 +0.5	+6.3	+5.9	+0.0 360	76.3	96.0 Bandedge_H	-19.7	Vert 120
6	928.000M	66.8	+0.0 -27.2	+23.5 +0.5	+6.3	+5.9	+0.0 360	75.8	96.0 Bandedge_H_hopping	-20.2	Vert 120
7	902.000M	66.7	+0.0 -27.1	+23.1 +0.5	+6.3	+5.8	+0.0 222	75.3	96.0 Bandedge_L	-20.7	Vert 120
8	902.000M	62.6	+0.0 -27.1	+23.1 +0.5	+6.3	+5.8	+0.0 360	71.2	96.0 Bandedge_L_hopping	-24.8	Vert 120

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/9/2021
Test Type:	**Radiated Scan**	Time:	13:50:23
Tested By:	E. Wong	Sequence#:	22
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915.0MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV1 Folder 4

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
T4	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T5	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T6	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	902.000M	66.8	+0.0 +5.8	+23.1 +6.3	+0.5	-27.1	+0.0 305	75.4	89.0 Bandedge_L	-13.6	Vert 124
2	902.000M	66.5	+0.0 +5.8	+23.1 +6.3	+0.5	-27.1	+0.0 305	75.1	89.0 Bandedge_L_hopping	-13.9	Vert 124
3	614.000M	27.3	+0.0 +4.6	+20.0 +6.2	+0.3	-27.4	+0.0 305	31.0	46.0 Bandedge_L	-15.0	Vert 124
4	960.000M	29.3	+0.0 +6.0	+24.0 +6.3	+0.5	-27.2	+0.0 106	38.9	54.0 bandedge_H	-15.1	Vert 115
5	928.000M	64.5	+0.0 +5.9	+23.5 +6.3	+0.5	-27.2	+0.0 106	73.5	89.0 Bandedge_H_hopping	-15.5	Vert 115
6	614.000M	26.5	+0.0 +4.6	+20.0 +6.2	+0.3	-27.4	+0.0 305	30.2	46.0 Bandedge_L_hopping	-15.8	Vert 124
7	960.000M	28.6	+0.0 +6.0	+24.0 +6.3	+0.5	-27.2	+0.0 106	38.2	54.0 Bandedge_H_hopping	-15.8	Vert 115
8	928.000M	63.3	+0.0 +5.9	+23.5 +6.3	+0.5	-27.2	+0.0 305	72.3	89.0 Bandedge_H	-16.7	Vert 124

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/9/2021
Test Type:	**Radiated Scan**	Time:	13:21:36
Tested By:	E. Wong	Sequence#:	21
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wire with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the laptop is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV3 Folder4

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T4	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
T5	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T6	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	902.000M	72.2	+0.0 +5.8	+23.1 +6.3	-27.1	+0.5	+0.0 311	80.8	93.5 bandedge_L_hopping	-12.7	Vert 117
2	960.000M	31.7	+0.0 +6.0	+24.0 +6.3	-27.2	+0.5	+0.0 300	41.3	54.0 Bandedge_H_hopping	-12.7	Vert 123
3	902.000M	71.4	+0.0 +5.8	+23.1 +6.3	-27.1	+0.5	+0.0 311	80.0	93.5 bandedge_L	-13.5	Vert 117
4	614.000M	27.2	+0.0 +4.6	+20.0 +6.2	-27.4	+0.3	+0.0 311	30.9	46.0 bandedge_L_hopping	-15.1	Vert 117
5	960.000M	29.3	+0.0 +6.0	+24.0 +6.3	-27.2	+0.5	+0.0 300	38.9	54.0 Bandedge_H	-15.1	Vert 123
6	928.000M	71.9	+0.0 +5.9	+23.5 +6.3	-27.2	+0.5	+0.0 300	80.9	96.0 Bandedge_H	-15.1	Vert 123
7	928.000M	71.3	+0.0 +5.9	+23.5 +6.3	-27.2	+0.5	+0.0 300	80.3	96.0 bandedge_H_hopping	-15.7	Vert 123
8	614.000M	25.8	+0.0 +4.6	+20.0 +6.2	-27.4	+0.3	+0.0 311	29.5	46.0 bandedge_L	-16.5	Vert 117

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/9/2021
Test Type:	**Radiated Scan**	Time:	13:35:30
Tested By:	E. Wong	Sequence#:	17
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:

The EUT is placed on Styrofoam platform and the Blue port is connected to a section of wired with a shorting tip to activate internal battery. The EUT's data port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable for configuration purposes, once configured, the cable is removed from remote connection during course of testing. Fresh battery is used.
EUT has fixed orientation per manufacture's specification.

Operating frequency / mode
902.4MHz, 915.2MHz, 927.6MHz, 400kHz steps, 64 channels, 300k GFSK LV3. Folder 4

Frequency of measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 45ms per 100ms. Duty cycle correction factor= 20log(45ms/100ms) = -6.9dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test environment conditions:
Temperature: 22°C
Relative Humidity 54%
Pressure: 100kPa
Site A
ANSI C63.4-2014 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	ANP05505	Attenuator	NAT-6	5/26/2021	5/26/2023
T4	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T5	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T6	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	614.000M	27.5	+0.0 -27.4	+20.0 +0.3	+6.2	+4.6	+0.0 161	31.2	46.0 Bandedge_L_hopping	-14.8	Vert 117
2	614.000M	27.0	+0.0 -27.4	+20.0 +0.3	+6.2	+4.6	+0.0 161	30.7	46.0 Bandedge_L	-15.3	Vert 117
3	960.000M	28.2	+0.0 -27.2	+24.0 +0.5	+6.3	+6.0	+0.0 292	37.8	54.0 Bandedge_H-hopping	-16.2	Vert 129
4	960.000M	27.9	+0.0 -27.2	+24.0 +0.5	+6.3	+6.0	+0.0 292	37.5	54.0 Bandedge_H	-16.5	Vert 129
5	902.000M	63.5	+0.0 -27.1	+23.1 +0.5	+6.3	+5.8	+0.0 161	72.1	90.5 Bandedge L	-18.4	Vert 117
6	928.000M	67.0	+0.0 -27.2	+23.5 +0.5	+6.3	+5.9	+0.0 292	76.0	95.0 Bandedge_H	-19.0	Vert 129
7	902.000M	61.7	+0.0 -27.1	+23.1 +0.5	+6.3	+5.8	+0.0 161	70.3	90.5 Bandedge_L_hopping	-20.2	Vert 117
8	928.000M	64.3	+0.0 -27.2	+23.5 +0.5	+6.3	+5.9	+0.0 292	73.3	95.0 Bandedge_H_hopping	-21.7	Vert 129

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/7/2021
Test Type:	**Radiated Scan**	Time:	10:29:44
Tested By:	E. Wong	Sequence#:	5
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's red port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable. All port fill, black port is connected to a section of unterminated cable.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915.0MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV1, folder 3

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
T4	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T5	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T6	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	614.000M	28.9	+0.0 +4.6	+20.0 +6.2	+0.3	-27.4	+0.0 222	32.6	46.0 Bandedge_L	-13.4	Vert 160
2	614.000M	28.2	+0.0 +4.6	+20.0 +6.2	+0.3	-27.4	+0.0 181	31.9	46.0 Bandedge_L_hopping	-14.1	Vert 152
3	902.000M	65.7	+0.0 +5.8	+23.1 +6.3	+0.5	-27.1	+0.0 181	74.3	89.0 Bandedge_L_hopping	-14.7	Vert 152
4	960.000M	28.9	+0.0 +6.0	+24.0 +6.3	+0.5	-27.2	+0.0 237	38.5	54.0 Bandedge_H_hopping	-15.5	Vert 152
5	902.000M	64.8	+0.0 +5.8	+23.1 +6.3	+0.5	-27.1	+0.0 222	73.4	89.0 Bandedge_L	-15.6	Vert 160
6	960.000M	28.2	+0.0 +6.0	+24.0 +6.3	+0.5	-27.2	+0.0 237	37.8	54.0 Bandedge_H	-16.2	Vert 152
7	928.000M	63.8	+0.0 +5.9	+23.5 +6.3	+0.5	-27.2	+0.0 237	72.8	89.0 Bandedge_H	-16.2	Vert 152
8	928.000M	62.4	+0.0 +5.9	+23.5 +6.3	+0.5	-27.2	+0.0 237	71.4	89.0 Bandedge_H_hopping	-17.6	Vert 152

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/7/2021
Test Type:	**Radiated Scan**	Time:	10:04:05
Tested By:	E. Wong	Sequence#:	4
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's red port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable. All port fill, black port is connected to a section of unterminated cable.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
903MHz, 915MHz, 926.8MHz, 200kHz steps, 120 channels 384kbps OOK LV3, folder 3

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 28.05ms per 100ms. Duty cycle correction factor= 20log(28.05ms/100ms) = -11.04dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T4	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
T5	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T6	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	33.0	+0.0 +6.0	+24.0 +6.3	-27.2	+0.5	+0.0 330	42.6	54.0 Bandedge_H_hopping	-11.4	Vert 170
2	960.000M	32.5	+0.0 +6.0	+24.0 +6.3	-27.2	+0.5	+0.0 284	42.1	54.0 Bandedge_H	-11.9	Vert 170
3	902.000M	74.2	+0.0 +5.8	+23.1 +6.3	-27.1	+0.5	+0.0 254	82.8	96.3 Bandedge_L	-13.5	Vert 170
4	614.000M	28.3	+0.0 +4.6	+20.0 +6.2	-27.4	+0.3	+0.0 330	32.0	46.0 Bandedge_L_hopping	-14.0	Vert 170
5	928.000M	72.1	+0.0 +5.9	+23.5 +6.3	-27.2	+0.5	+0.0 284	81.1	96.3 Bandedge_H	-15.2	Vert 170
6	928.000M	72.0	+0.0 +5.9	+23.5 +6.3	-27.2	+0.5	+0.0 284	81.0	96.3 Bandedge_H_hopping	-15.3	Vert 170
7	614.000M	26.5	+0.0 +4.6	+20.0 +6.2	-27.4	+0.3	+0.0 254	30.2	46.0 Bandedge_L	-15.8	Vert 170
8	902.000M	71.4	+0.0 +5.8	+23.1 +6.3	-27.1	+0.5	+0.0 330	80.0	96.3 Bandedge_L_hopping	-16.3	Vert 170

Test Location:	CKC Laboratories Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • 714-993-6112		
Customer:	**Itron, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**105380**	Date:	6/7/2021
Test Type:	**Radiated Scan**	Time:	09:19:22
Tested By:	E. Wong	Sequence#:	3
Software:	EMITest 5.03.19		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

The EUT is placed on Styrofoam platform and the Blue port receives power from remotely located support power supply set 3.6Vdc to simulate a fresh battery. The EUT's red port is connected to a remote located laptop running CLI Tool ver.2.0.1.24 via USB cable. All port fill, black port is connected to a section of unterminated cable.
EUT has fixed orientation per manufacture's specification.

Operating Frequency / Mode:
902.4MHz, 915.2MHz, 927.6MHz, 400kHz steps, 64 channels, 300k GFSK LV3 Folder 3

Frequency of Measurement: 9k-9280MHz
9kHz to 150kHz RBW=0.2kHz, VBW=0.6kHz
150kHz to 30MHz RBW=9kHz, VBW=27kHz
30-1000MHz, RBW=120kHz, VBW=360kHz
1000-9280MHz, RBW=1MHz, VBW=3MHz
-20dBc limit, RBW=100kHz, VBW=300kHz

Note: The manufacturer declares the worst case duty cycle is 45ms per 100ms. Duty cycle correction factor= 20log(45ms/100ms) = -6.9dB. Average readings in restricted band are calculated from peak readings with duty cycle correction factor.

Test Environment Conditions:
Temperature: 22°C
Relative Humidity: 54%
Pressure: 100kPa

Site A

Test Method: ANSI C63.10-2013 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	4/29/2020	4/29/2022
	AN00849	Horn Antenna	3115	3/17/2020	3/17/2022
	ANP07659	Cable	32022-29094K-29094K-24TC	7/30/2020	7/30/2022
	AN00786	Preamp	83017A	5/20/2020	5/20/2022
	ANP06360	Cable	L1-PNMNM-48	8/8/2019	8/8/2021
	AN02749	High Pass Filter	9SH10-1000/T10000-O/O	7/15/2019	7/15/2021
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	5/17/2021	5/17/2023
	ANDCCF	Duty Cycle Correction Factor		1/1/2021	1/1/2025
T2	AN00851	Biconilog Antenna	CBL6111C	4/14/2020	4/14/2022
T3	ANP05050	Cable	RG223/U	12/24/2020	12/24/2022
T4	ANP05198	Cable-Amplitude +15C to +45C (dB)	8268	12/21/2020	12/21/2022
T5	AN00309	Preamp	8447D	12/24/2019	12/24/2021
T6	AN05505	Attenuator		5/26/2021	5/26/2023
	AN00314	Loop Antenna	6502	4/13/2020	4/13/2022

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	614.000M	28.6	+0.0 -27.4	+20.0 +6.2	+0.3	+4.6	+0.0 254	32.3	46.0 Bandedge_L_hopping	-13.7	Vert 171
2	614.000M	28.0	+0.0 -27.4	+20.0 +6.2	+0.3	+4.6	+0.0 248	31.7	46.0 Bandedge_L	-14.3	Vert 171
3	960.000M	28.5	+0.0 -27.2	+24.0 +6.3	+0.5	+6.0	+0.0 293	38.1	54.0 Bandedge_H_	-15.9	Vert 171
4	960.000M	27.2	+0.0 -27.2	+24.0 +6.3	+0.5	+6.0	+0.0 293	36.8	54.0 Bandedge_H_hopping	-17.2	Vert 171
5	902.000M	68.6	+0.0 -27.1	+23.1 +6.3	+0.5	+5.8	+0.0 248	77.2	96.0 bandedge_L_	-18.8	Vert 171
6	902.000M	68.5	+0.0 -27.1	+23.1 +6.3	+0.5	+5.8	+0.0 254	77.1	96.0 Bandedge_L_hopping	-18.9	Vert 171
7	928.000M	67.6	+0.0 -27.2	+23.5 +6.3	+0.5	+5.9	+0.0 293	76.6	96.0 Bandedge_H_	-19.4	Vert 171
8	928.000M	67.6	+0.0 -27.2	+23.5 +6.3	+0.5	+5.9	+0.0 254	76.6	96.0 Bandedge_H_hopping	-19.4	Vert 171

Test Setup Photo(s)

Configuration 1; Below 1GHz, View 1

Configuration 1; Below 1GHz, View 2

Configuration 1; Above 1GHz, View 1

Configuration 1; Above 1GHz, View 2

Configuration 2, Below 1GHz, View 1

Configuration 2, Below 1GHz, View 2

Configuration 2; Above 1GHz, View 1

Configuration 2; Above 1GHz, View 2

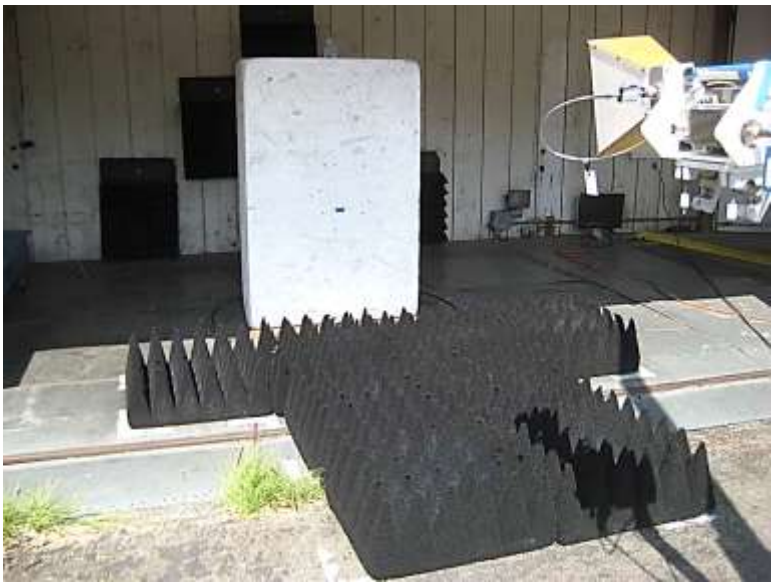
Configuration 3; Below 1GHz, View 1

Configuration 3; Below 1GHz, View 2

Configuration 3; Above 1GHz, View 1

Configuration 3; Above 1GHz, View 2

Above 1GHz; View 1



Above 1GHz; View 2

SUPPLEMENTAL INFORMATION

Measurement Uncertainty

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

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.