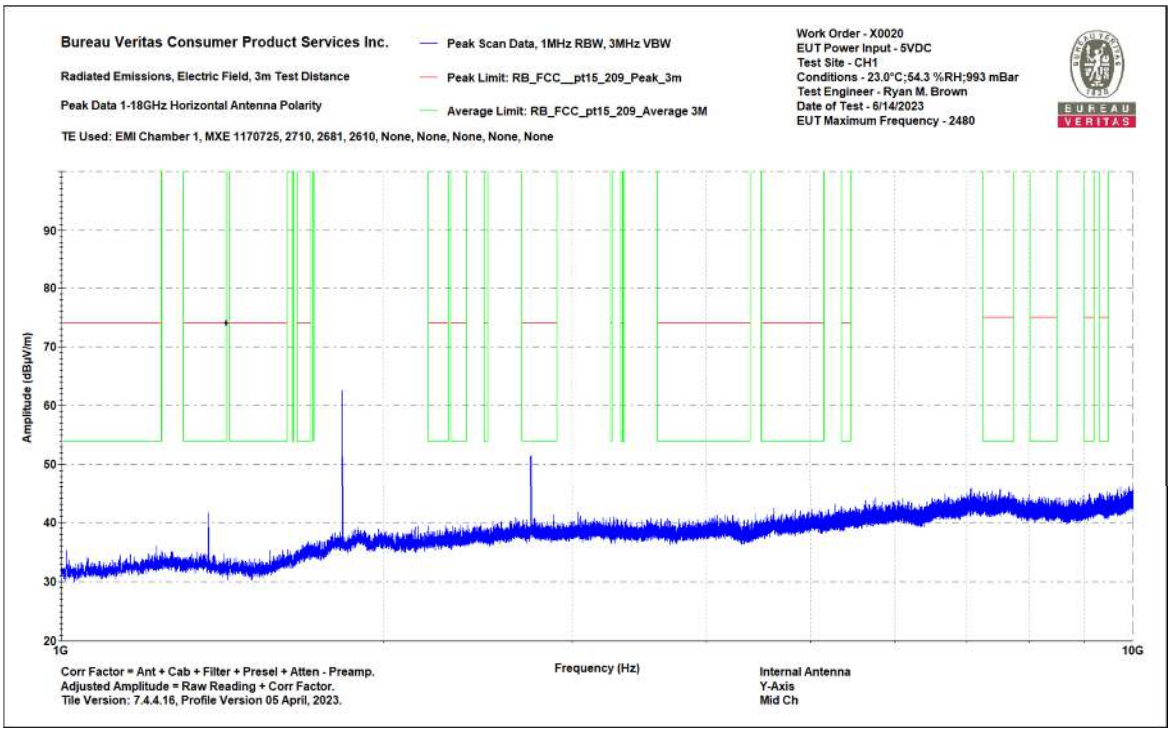
Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 23.0°C;54.3 %RH;993 mBar
Internal Antenna	Test Engineer - Ryan M. Brown
Y-Axis	Date of Test - 6/14/2023
Mid Ch	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2745.2	43.3	37.45	8.2	51.5	45.65	74	-22.5	PASS	-22.5	54	-8.35	PASS	-8.35	176	314
4234.9	32.2	29.75	9.1	41.3	38.85	74	-32.7	PASS	--	54	-15.15	PASS	--	181	128
5458.9	29.8	29.39	11.5	41.3	40.89	74	-32.7	PASS	--	54	-13.11	PASS	--	125	95
9112	31.6	26.9	13.2	44.8	40.1	74	-29.2	PASS	--	54	-13.9	PASS	--	139	53

1-10GHz Horizontal Data Table



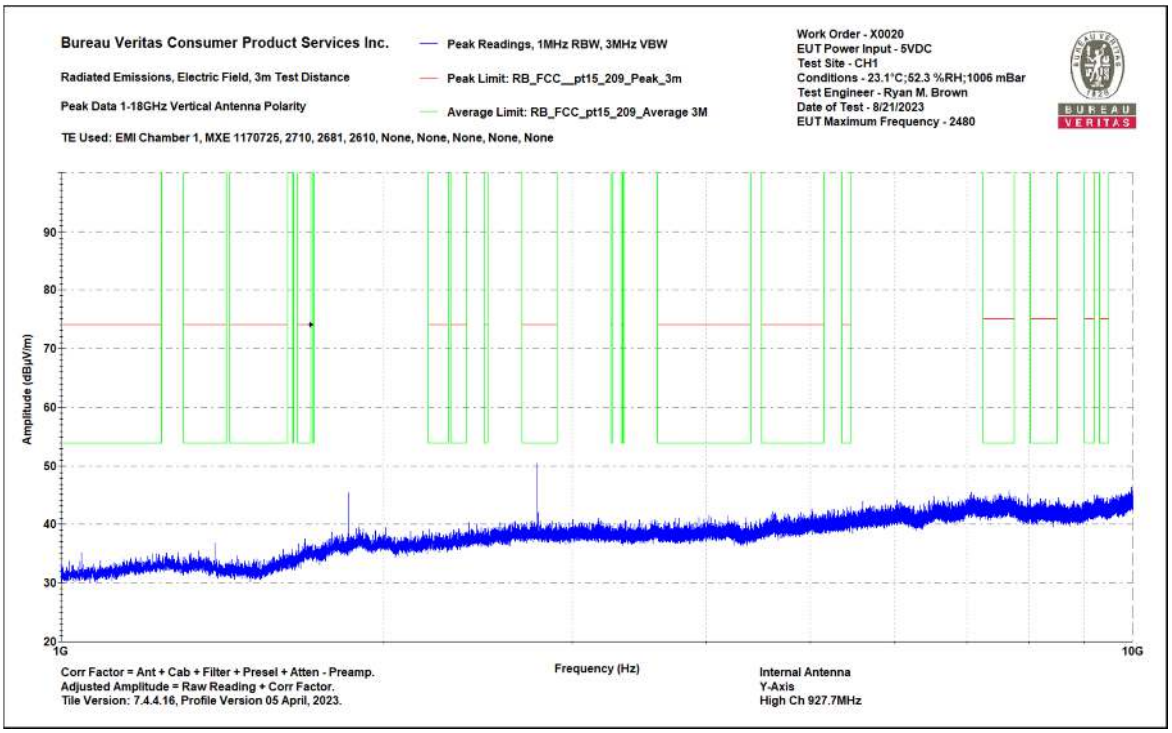
1-10GHz Horizontal Plot

Results for High Channel

Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Vertical Data	Test Site - CH1
Notes:	Conditions - 23.1°C;52.3 %RH;1006 mBar
Internal Antenna	Test Engineer - Ryan M. Brown
Y-Axis	Date of Test - 8/21/2023
High Ch 927.7MHz	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2783.1	42.4	39.81	8.1	50.5	47.91	74	-23.5	PASS	-23.5	54	-6.09	PASS	-6.09	200	289
3337.9	30.2	29.7	8	38.2	37.7	74	-35.8	PASS	--	54	-16.3	PASS	--	158	102
4022.6	32.4	28	8	40.4	36	74	-33.6	PASS	--	54	-18	PASS	--	100	95

1-10GHz Vertical Data Table

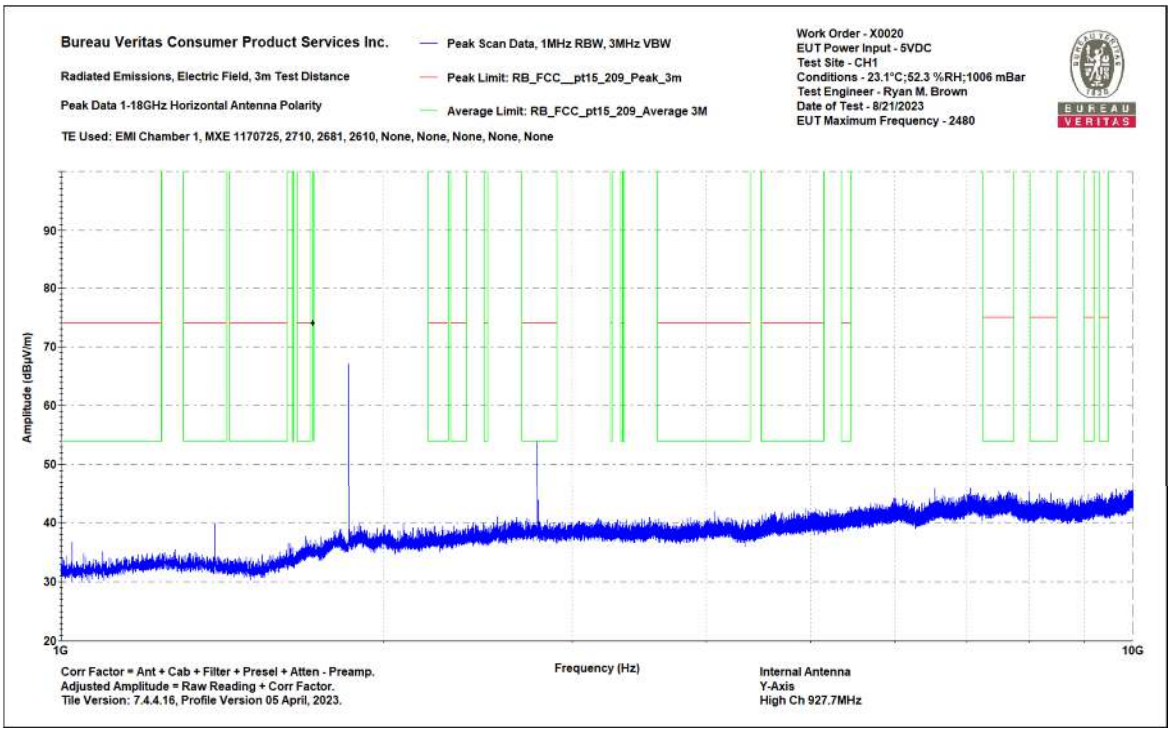


1-10GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 23.1°C;52.3 %RH;1006 mBar
Internal Antenna	Test Engineer - Ryan M. Brown
Y-Axis	Date of Test - 8/21/2023
High Ch 927.7MHz	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2783.2	45.8	42.26	8.1	53.9	50.36	74	-20.1	PASS	-20.1	54	-3.64	PASS	-3.64	200	12
3335.8	29.5	29.5	8	37.5	37.5	74	-36.5	PASS	--	54	-16.5	PASS	--	119	214
4070.8	32.8	32.8	9	41.8	41.8	74	-32.2	PASS	--	54	-12.2	PASS	--	175	1
9091.9	31.6	31.6	13.2	44.8	44.8	74	-29.2	PASS	--	54	-9.2	PASS	--	100	171

1-10GHz Horizontal Data Table



1-10GHz Horizontal Plot

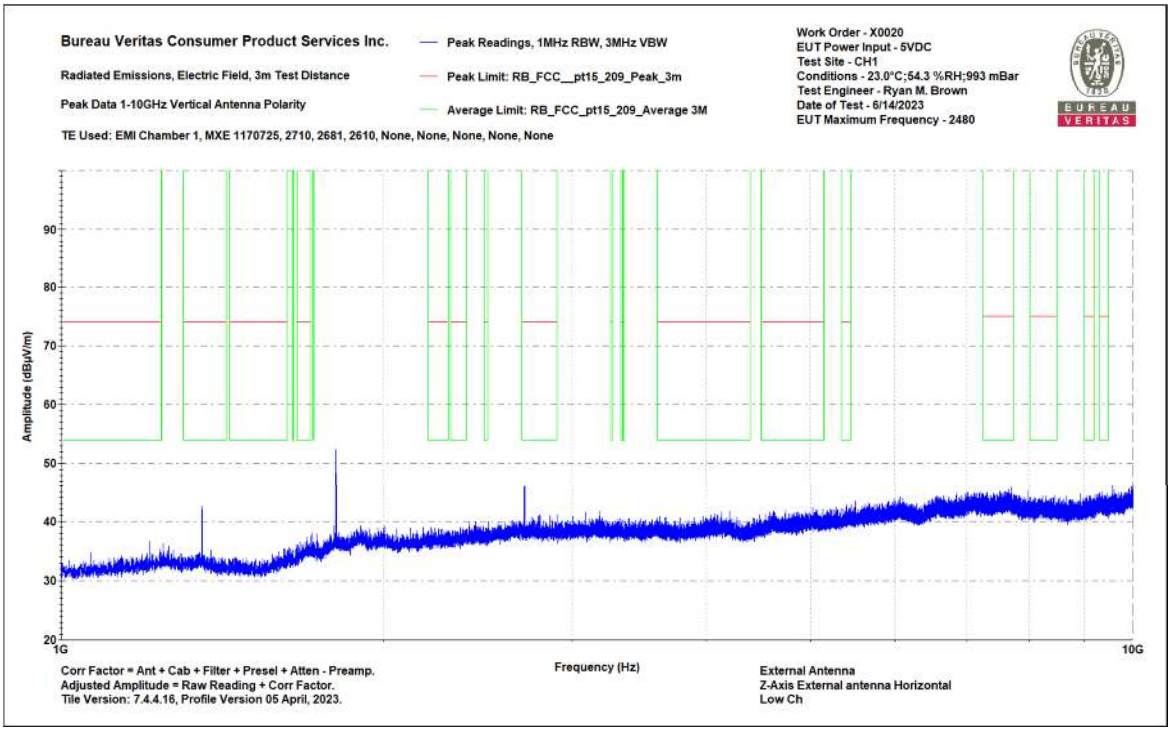
External Antenna

Results for Low Channel

Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Vertical Data	Test Site - CH1
Notes:	Conditions - 23.0°C;54.3 %RH;993 mBar
External Antenna	Test Engineer - Ryan M. Brown
Z-Axis External antenna Horizontal	Date of Test - 6/14/2023
Low Ch	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2706.6	38.2	38.2	7.8	46	46	74	-28	PASS	-28	54	-8	PASS	-8	100	6
3336.4	29.8	29.8	8	37.8	37.8	74	-36.2	PASS	--	54	-16.2	PASS	--	184	1
4203.7	32.2	32.2	9.4	41.6	41.6	74	-32.4	PASS	--	54	-12.4	PASS	--	200	307

1-10GHz Vertical Data Table

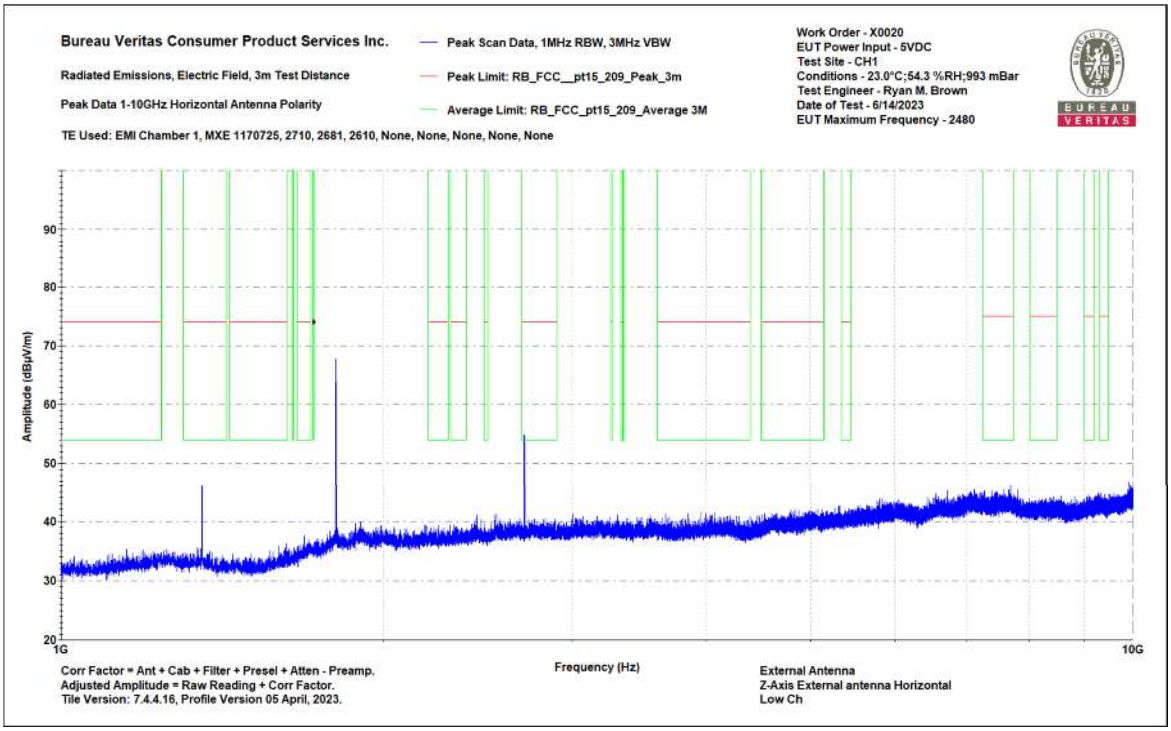


1-10GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 23.0°C;54.3 %RH;993 mBar
External Antenna	Test Engineer - Ryan M. Brown
Z-Axis External antenna Horizontal	Date of Test - 6/14/2023
Low Ch	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2706.7	47	32.02	7.8	54.8	39.82	74	-19.2	PASS	-19.2	54	-14.18	PASS	--	200	84
3956.5	32.6	32.6	9	41.6	41.6	74	-32.4	PASS	--	54	-12.4	PASS	-12.4	110	85
9100	31.3	28.2	13.2	44.5	41.4	74	-29.5	PASS	--	54	-12.6	PASS	--	106	41

1-10GHz Horizontal Data Table



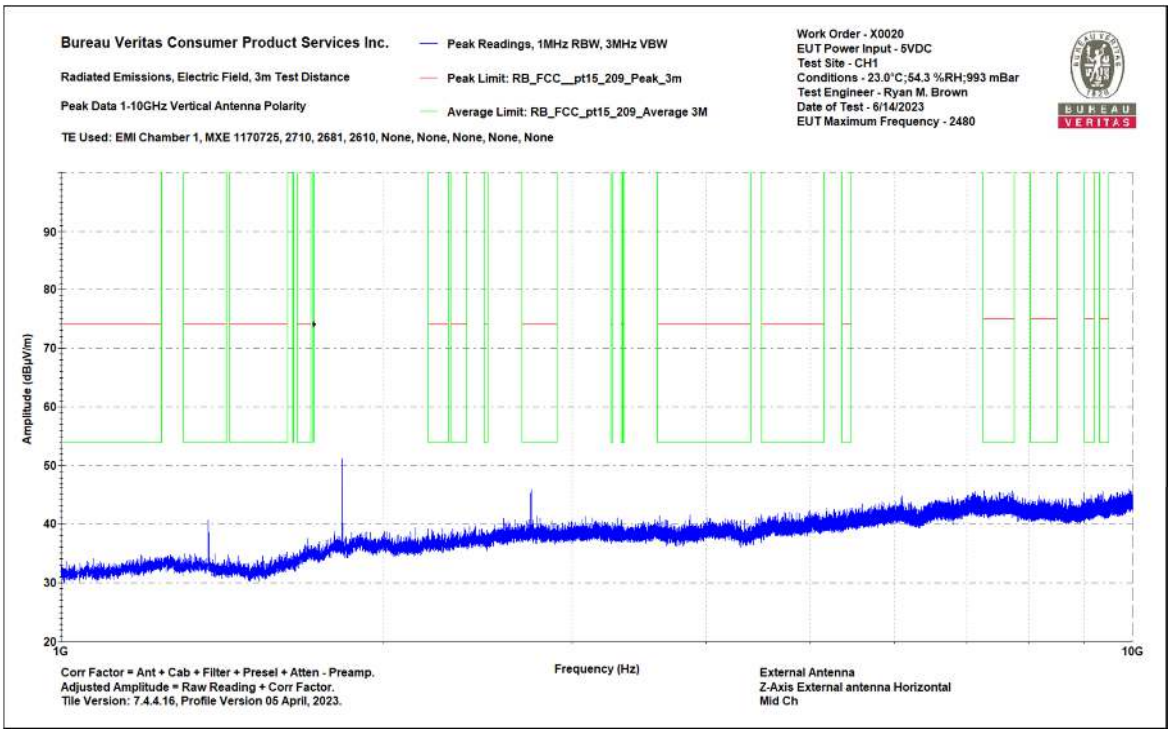
1-10GHz Horizontal Plot

Mid Channel

Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Vertical Data	Test Site - CH1
Notes:	Conditions - 23.0°C;54.3 %RH;993 mBar
External Antenna	Test Engineer - Ryan M. Brown
Z-Axis External antenna Horizontal	Date of Test - 6/14/2023
Mid Ch	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2744.9	37.5	37.5	8.2	45.7	45.7	74	-28.3	PASS	-28.3	54	-8.3	PASS	-8.3	100	25
3338.8	29.3	29.3	8	37.3	37.3	74	-36.7	PASS	--	54	-16.7	PASS	--	155	123
3862.6	32.6	32.6	8.8	41.4	41.4	74	-32.6	PASS	--	54	-12.6	PASS	--	200	282
5457	29.4	29.4	11.5	40.9	40.9	74	-33.1	PASS	--	54	-13.1	PASS	--	134	134
9003.1	32	32	13.1	45.1	45.1	74	-28.9	PASS	--	54	-8.9	PASS	--	200	318

1-10GHz Vertical Data Table

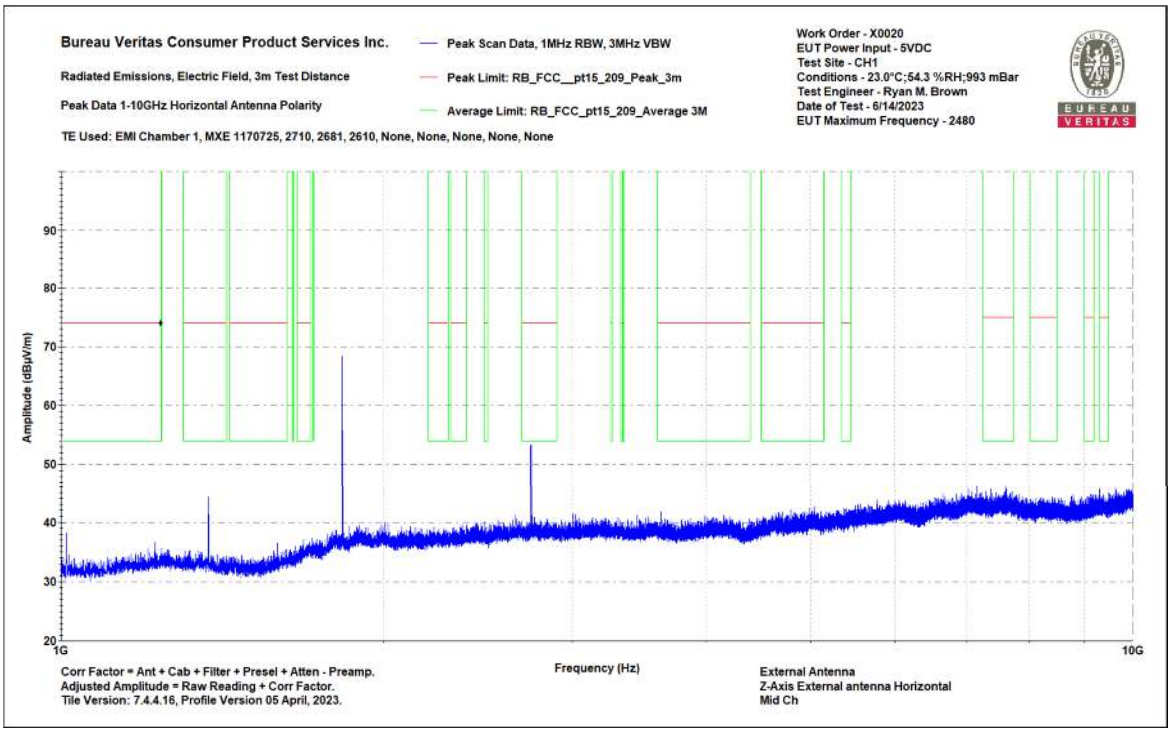


1-10GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 23.0°C;54.3 %RH;993 mBar
External Antenna	Test Engineer - Ryan M. Brown
Z-Axis External antenna Horizontal	Date of Test - 6/14/2023
Mid Ch	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2744.9	45.1	37.15	8.2	53.3	45.35	74	-20.7	PASS	-20.7	54	-8.65	PASS	-8.65	186	95
3338.9	31.5	31.5	8	39.5	39.5	74	-34.5	PASS	--	54	-14.5	PASS	--	161	33
3628.5	33.3	33.3	8.5	41.8	41.8	74	-32.2	PASS	--	54	-12.2	PASS	--	148	56
9133.6	31.4	31.4	13.2	44.6	44.6	74	-29.4	PASS	--	54	-9.4	PASS	--	176	194

1-10GHz Horizontal Data Table



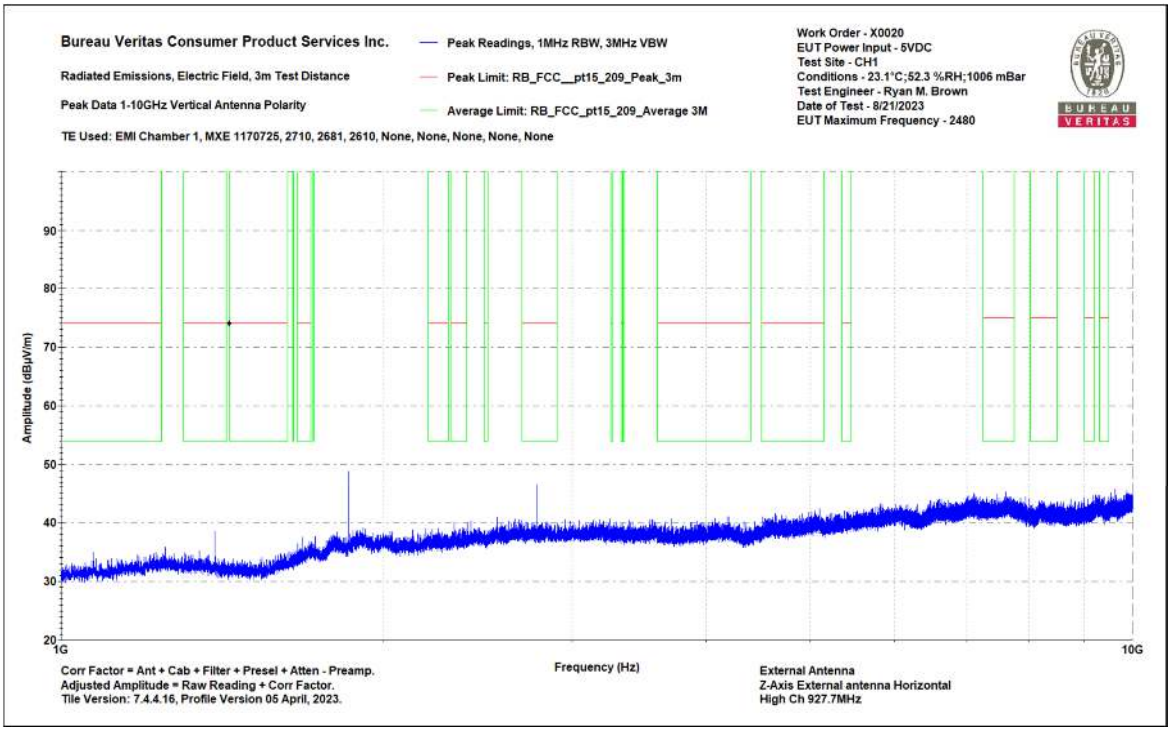
1-10GHz Horizontal Plot

High Channel

Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Vertical Data	Test Site - CH1
Notes:	Conditions - 23.1°C;54.3 %RH;1006 mBar
External Antenna	Test Engineer - Ryan M. Brown
Z-Axis External antenna Horizontal	Date of Test - 8/21/2023
High Ch	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2783.2	38.6	38.6	8.1	46.7	46.7	74	-27.3	PASS	-27.3	54	-7.3	PASS	-7.3	100	79
4184.6	31.6	27.3	9.4	41	36.7	74	-33	PASS	--	54	-17.3	PASS	--	200	335
9196.6	31.1	31.1	13.4	44.5	44.5	74	-29.5	PASS	--	54	-9.5	PASS	--	200	302

1-10GHz Vertical Data Table

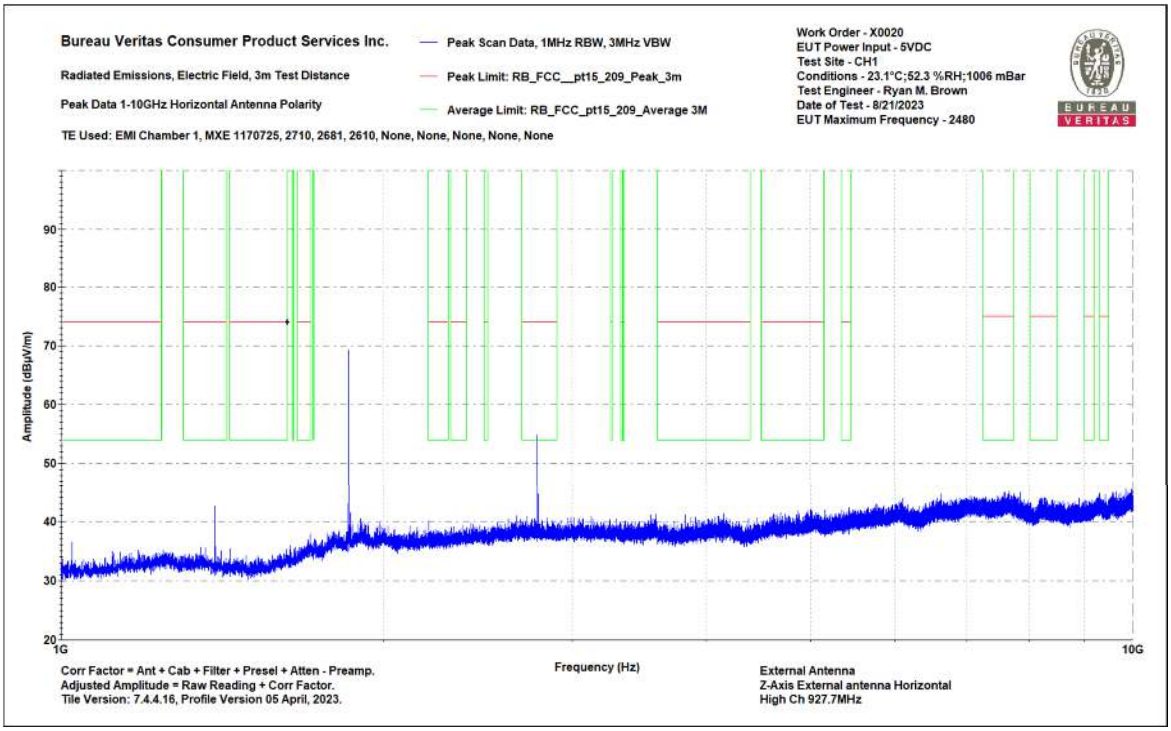


1-10GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - X0020
Radiated Emissions Electric Field 3m Distance	EUT Power Input - 5VDC
1-10GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 23.1°C;52.3 %RH;1006 mBar
External Antenna	Test Engineer - Ryan M. Brown
Z-Axis External antenna Horizontal	Date of Test - 8/21/2023
High Ch	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2783.1	46.7	40.01	8.1	54.8	48.11	74	-19.2	PASS	-19.2	54	-5.89	PASS	-5.89	151	321
4153.8	31.9	31.9	9.3	41.2	41.2	74	-32.8	PASS	--	54	-12.8	PASS	--	191	61
5457.8	29.1	29.1	11.5	40.6	40.6	74	-33.4	PASS	--	54	-13.4	PASS	--	125	199

1-10GHz Horizontal Data Table



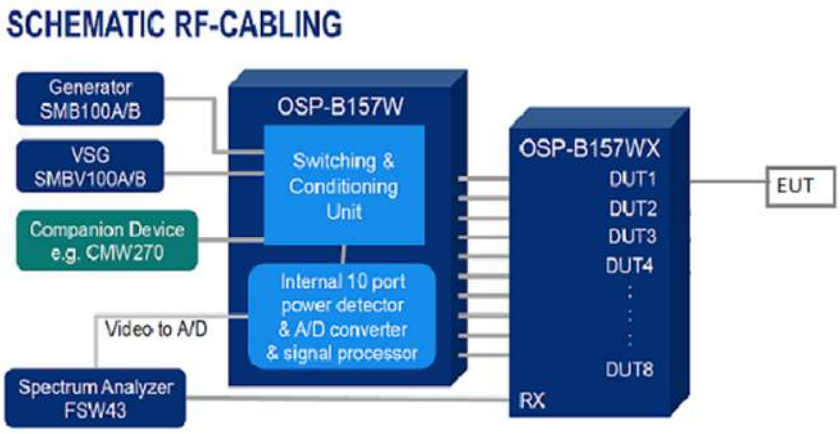
1-10GHz Horizontal Plot

4.3 NUMBER OF HOPPING FREQUENCIES

4.3.1 LIMIT OF HOPPING FREQUENCY USED

For frequency hopping systems operating in the 902–928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies.

4.3.2 TEST SETUP



4.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Asset No.	Model No.	Serial No.	Last Cal.	Next Cal.
Cable	Carlisle	2595	UTiFLEX	N/A	1/17/2023	1/17/2024
Signal Analyzer	Rohde-Schwarz	2200	FSV 40	101551	10/09/2023	10/09/2024
OSP-B157W8	Rohde-Schwarz	2558	OSP_B157W8	100955	8/26/2021	2/26/2024
10dB Attenuator	Min Circuits	10dB-01-Brown	N/A	N/A	2/13/23	2/13/24

4.3.4 TEST PROCEDURES

In accordance with ANSI C63.10-2013 Section 7.8.3.

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 TEST RESULTS

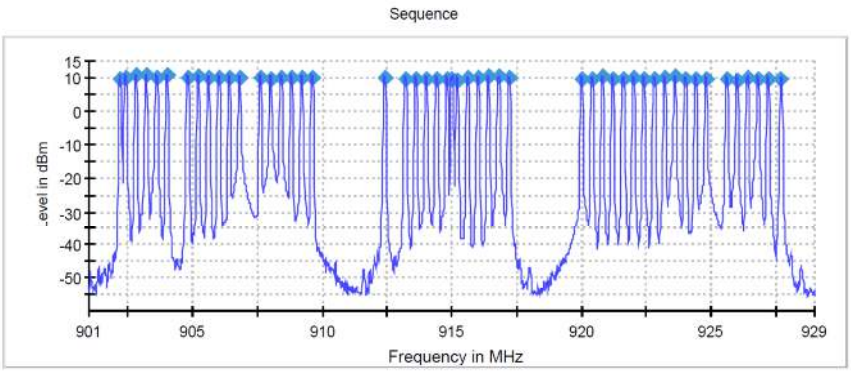
There are 50 hopping frequencies in hopping mode.

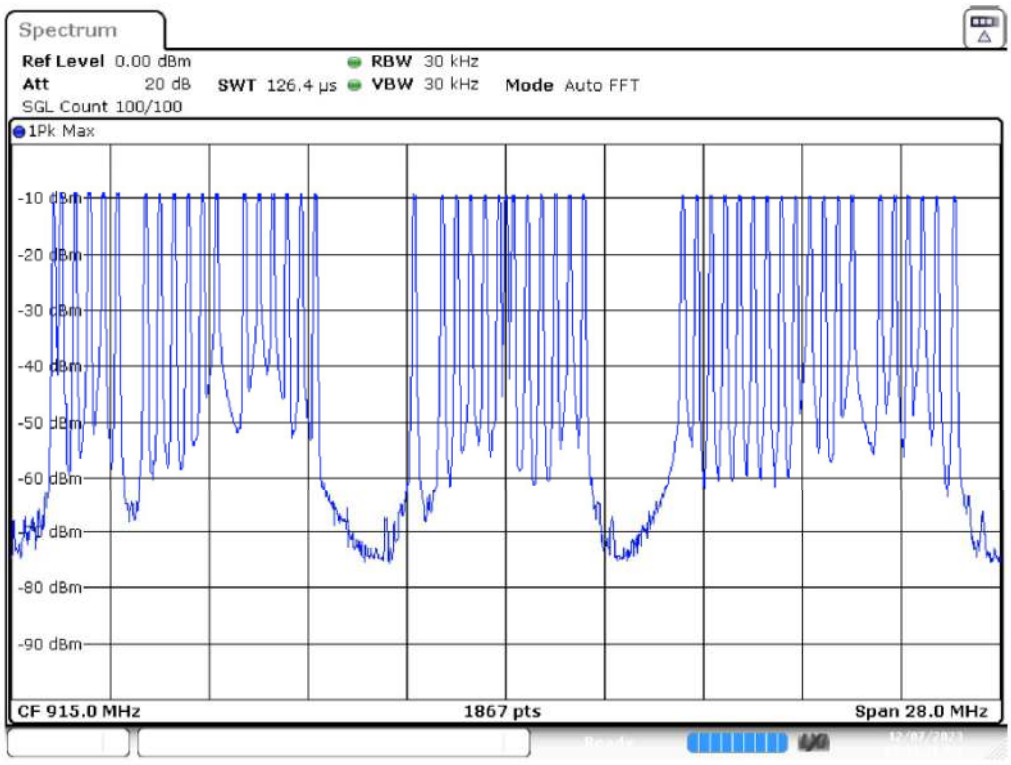
External Antenna

Test Date: 12/7/2023

Channels

Channels	Limit Min	Limit Max	Result
50	50	---	PASS



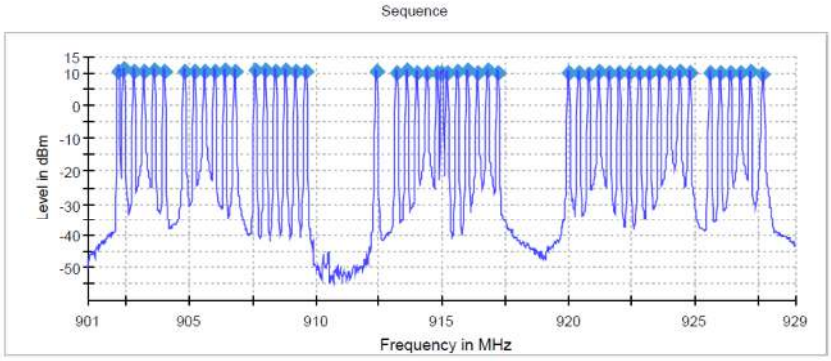


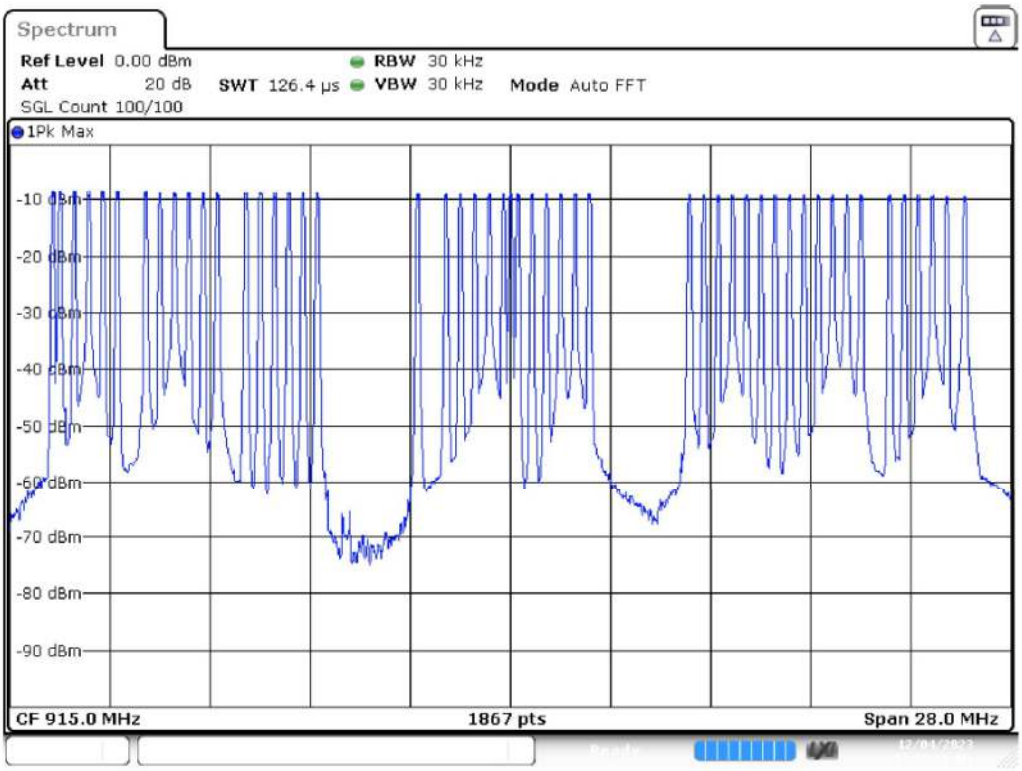
Internal Antenna

Test Date: 12/4/2023

Channels

Channels	Limit Min	Limit Max	Result
50	50	---	PASS





4.4 DWELL TIME ON EACH CHANNEL

4.4.1 LIMIT OF DWELL TIME USED

For frequency hopping systems operating in the 902–928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period.

4.4.2 TEST SETUP

Refer to section 4.3.2 of this report.

4.4.3 TEST INSTRUMENTS

Refer to section 4.3.3 of this report.

4.4.4 TEST PROCEDURES

In accordance with ANSI C63.10-2013 Section 7.8.4.

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

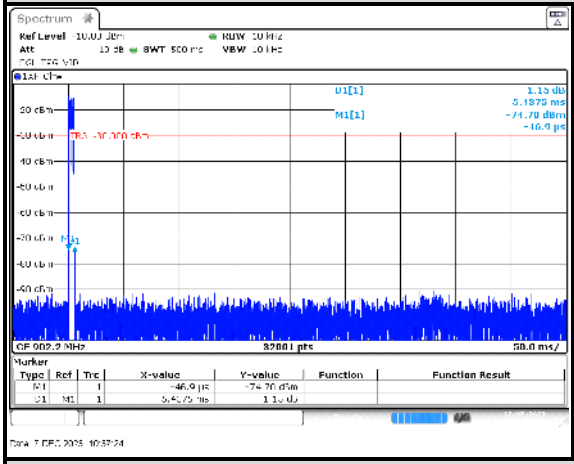
4.4.6 TEST RESULTS

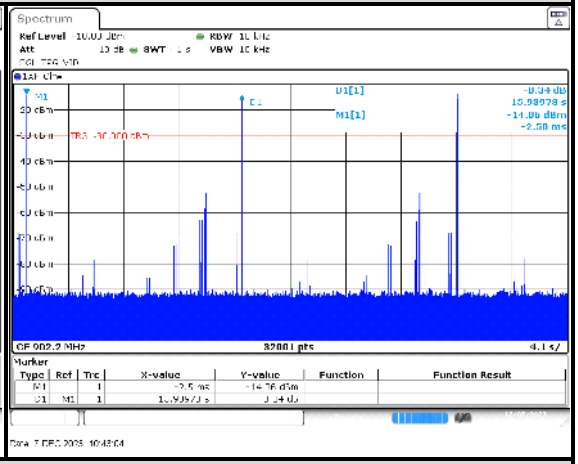
	Frequency (MHz)	Number of Pulses in 20sec	Pulse Width (ms)	Total Dwell Time (ms)	Max Limit (ms)	Verdict
External Antenna	902.2	2	5.4375	10.875	400.0	Pass
	915	4	19.3438	77.3752	400.0	Pass
	927.7	4	19.3438	77.3752	400.0	Pass
Internal Antenna	902.2	2	5.4375	10.875	400.0	Pass
	915	4	19.3438	77.3752	400.0	Pass
	927.7	4	19.3438	77.3752	400.0	Pass

External Antenna

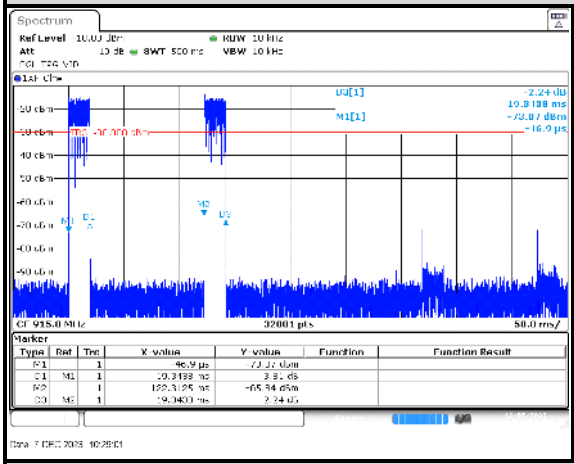
Test Date: 12/7/2023

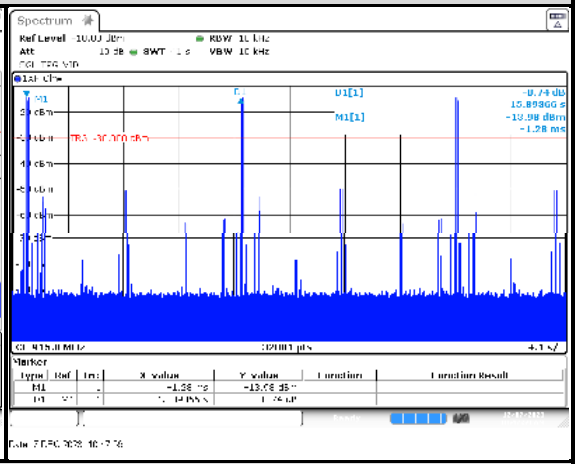
902.2MHz



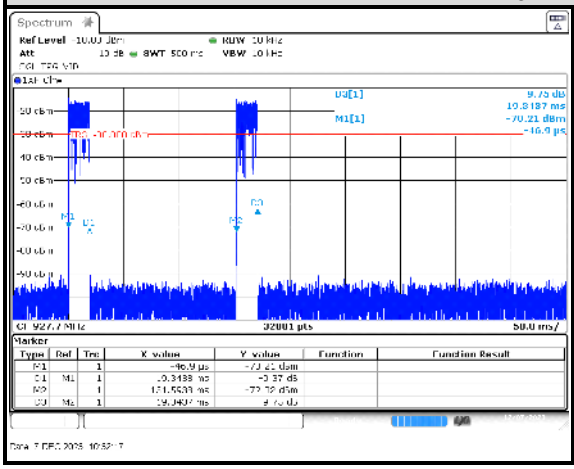


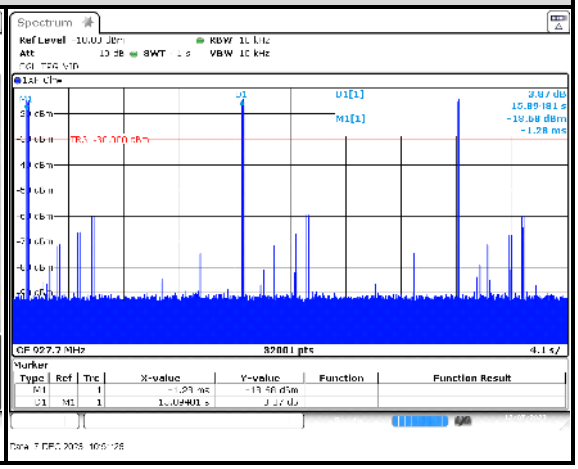
915MHz





927.7MHz

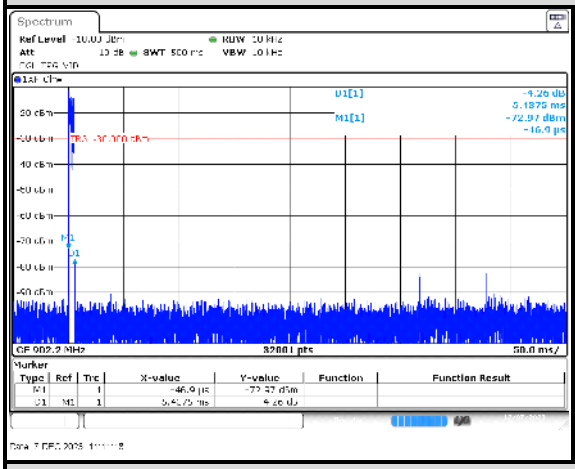


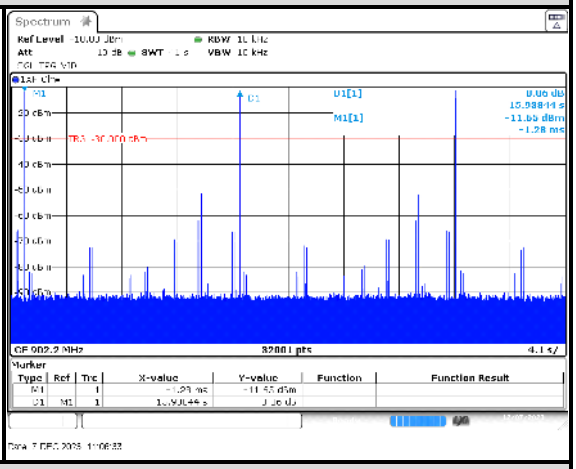


Internal Antenna

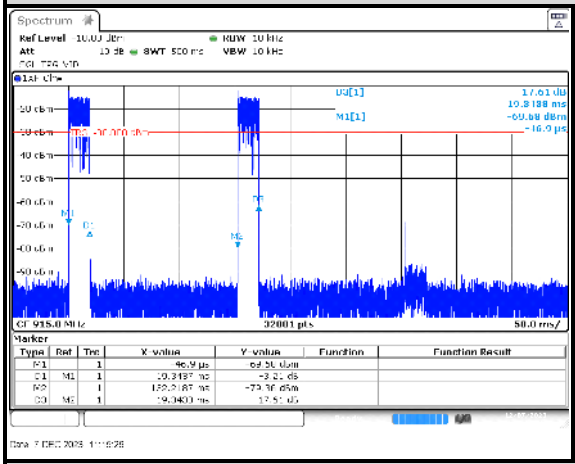
Test Date: 12/7/2023

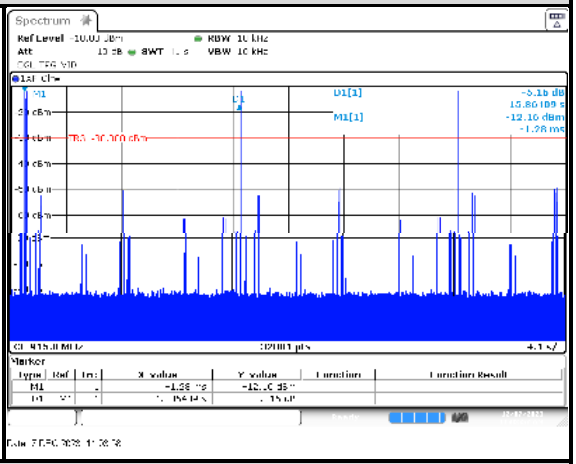
902.2MHz



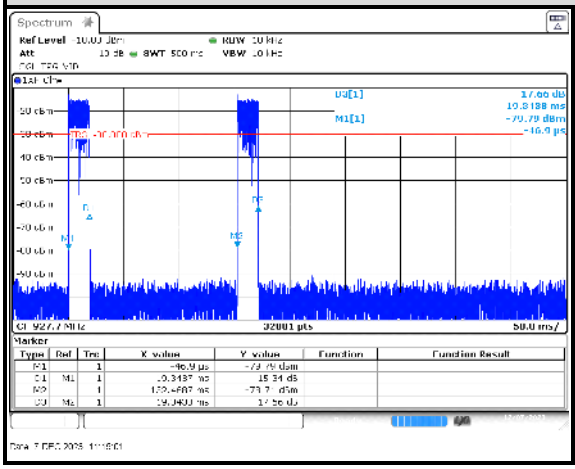


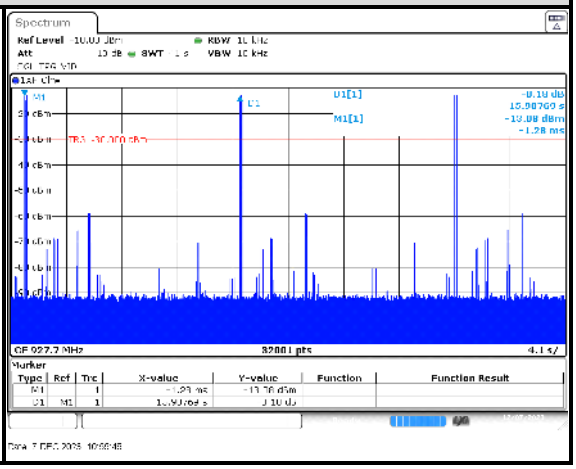
915MHz





927.7MHz





4.5 CHANNEL BANDWIDTH (20DB) AND OCCUPIED BANDWIDTH (99%)

4.5.1 LIMITS OF CHANNEL BANDWIDTH

The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz. 99% Occupied Bandwidth is for reporting purposes.

4.5.2 TEST SETUP

Refer to section 4.3.2 of this report.

4.5.3 TEST INSTRUMENTS

Refer to section 4.3.3 of this report.

4.5.4 TEST PROCEDURE

20dB bandwidth: In accordance with ANSI C63.10-2013 Section 6.9.2.
99% OBW: In accordance with RSS-Gen Issue 5 Section 6.7.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 TEST RESULTS

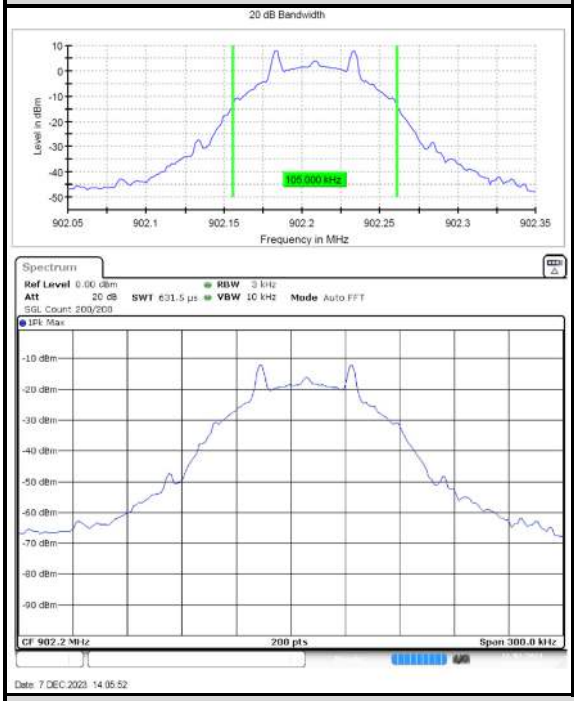
External Antenna

Test Date: 12/7/2023

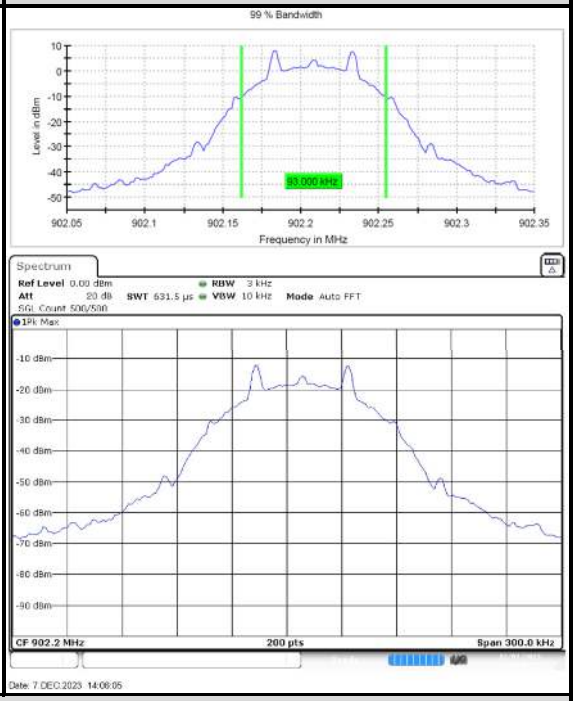
CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (kHz)	99% Occupied Bandwidth (kHz)
902.2	105.0	93.0
915	105.0	96.0
927.7	106.5	94.5

902.2MHz

20dB BW

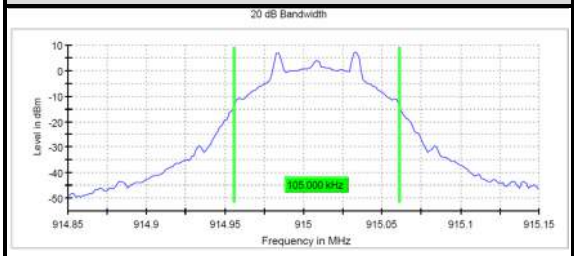


99% OBW

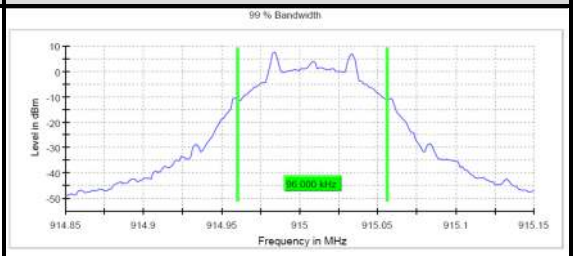


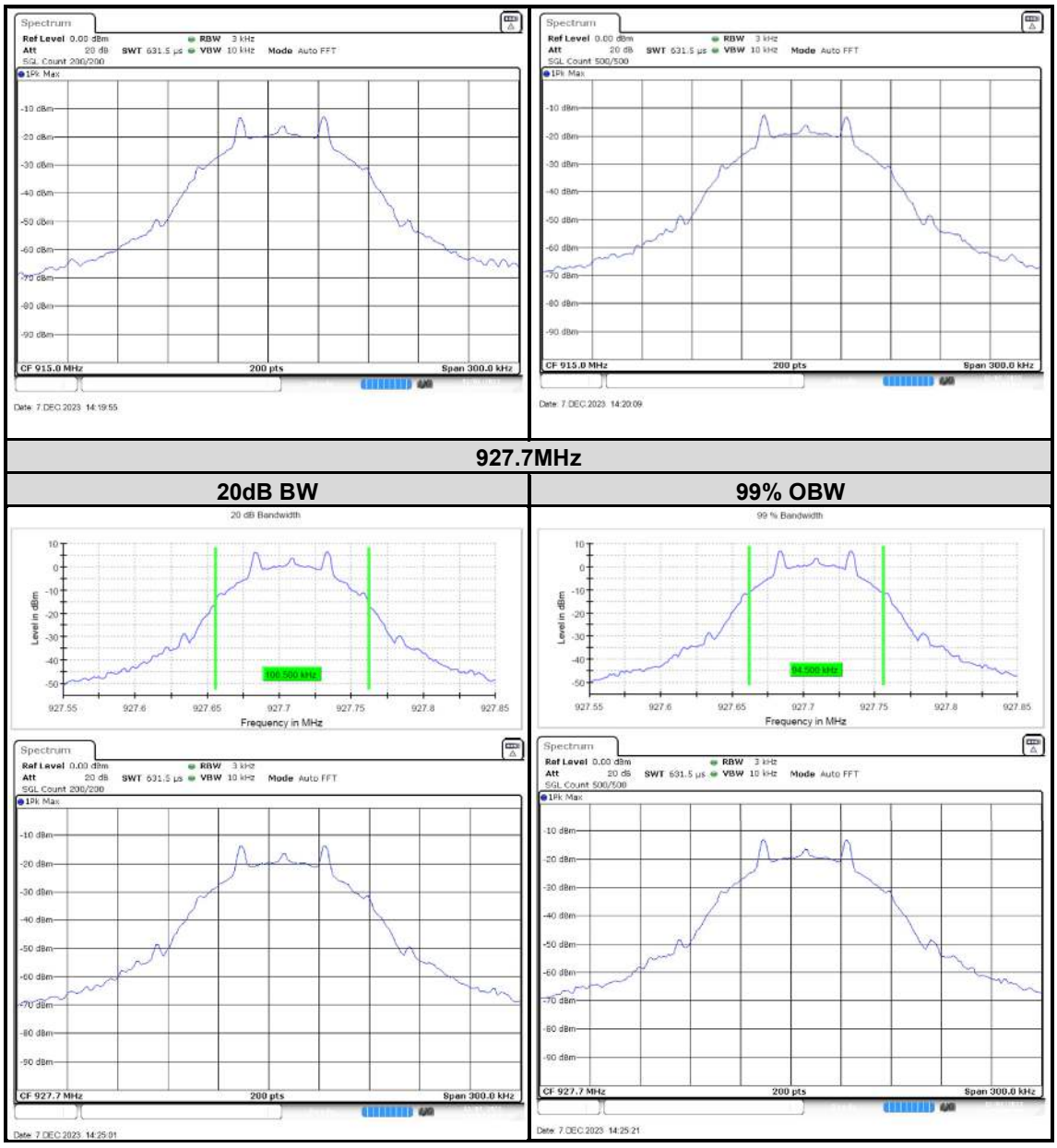
915MHz

20dB BW



99% OBW




Spectrum
Ref Level 0.00 dBm
RBW 3 kHz
Att 20 dB
SWT 631.5 µs
VBW 10 kHz
Mode Auto FFT
SGL Count 200/200
1Pk Max
CF 915.0 MHz
200 pts
Span 300.0 kHz
Date: 7.DEC.2023 14:19:55
Spectrum
Ref Level 0.00 dBm
RBW 3 kHz
Att 20 dB
SWT 631.5 µs
VBW 10 kHz
Mode Auto FFT
SGL Count 500/500
1Pk Max
CF 915.0 MHz
200 pts
Span 300.0 kHz
Date: 7.DEC.2023 14:20:09
927.7MHz
20dB BW
99% OBW
20 dB Bandwidth
Level in dBm
Frequency in MHz
99 % Bandwidth
Level in dBm
Frequency in MHz
Spectrum
Ref Level 0.00 dBm
RBW 3 kHz
Att 20 dB
SWT 631.5 µs
VBW 10 kHz
Mode Auto FFT
SGL Count 200/200
1Pk Max
CF 927.7 MHz
200 pts
Span 300.0 kHz
Date: 7.DEC.2023 14:25:01
Spectrum
Ref Level 0.00 dBm
RBW 3 kHz
Att 20 dB
SWT 631.5 µs
VBW 10 kHz
Mode Auto FFT
SGL Count 500/500
1Pk Max
CF 927.7 MHz
200 pts
Span 300.0 kHz
Date: 7.DEC.2023 14:25:21

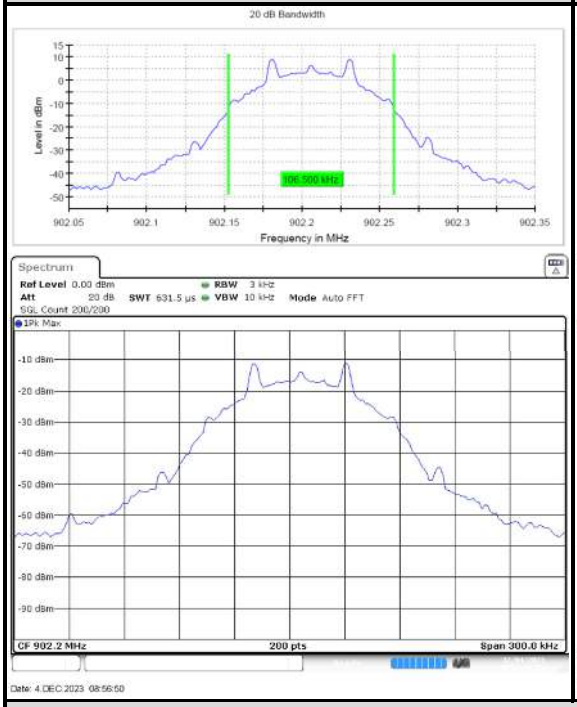
Internal Antenna

Test Date: 12/4/2023

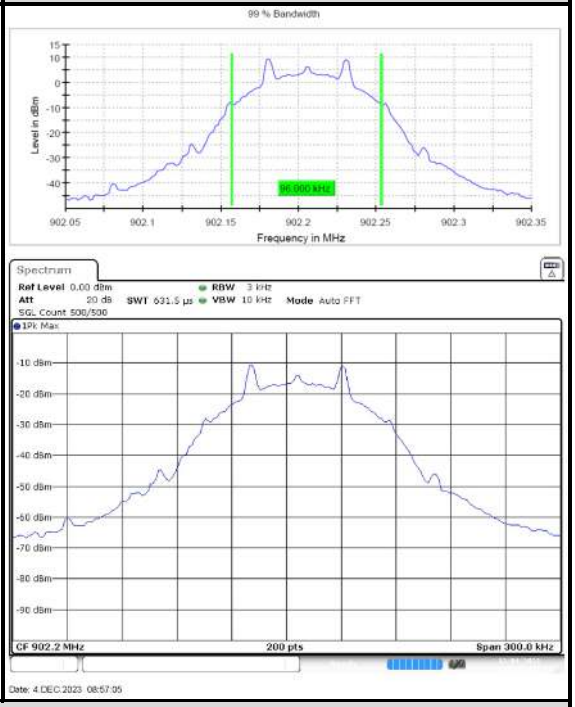
CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (kHz)	99% Occupied Bandwidth (kHz)
902.2	106.5	96.0
915	106.5	99.0
927.7	105.0	97.5

902.2MHz

20dB BW

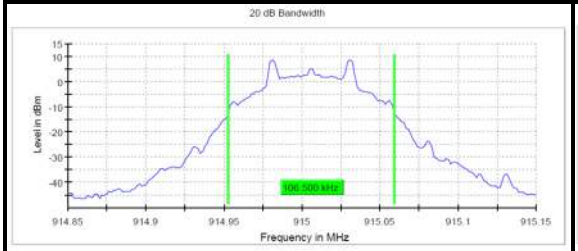


99% OBW

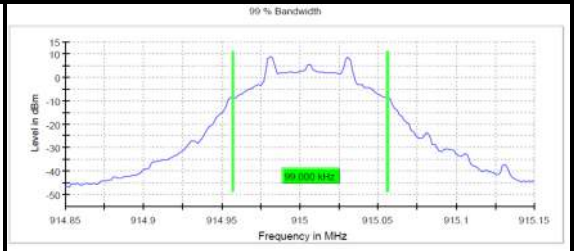


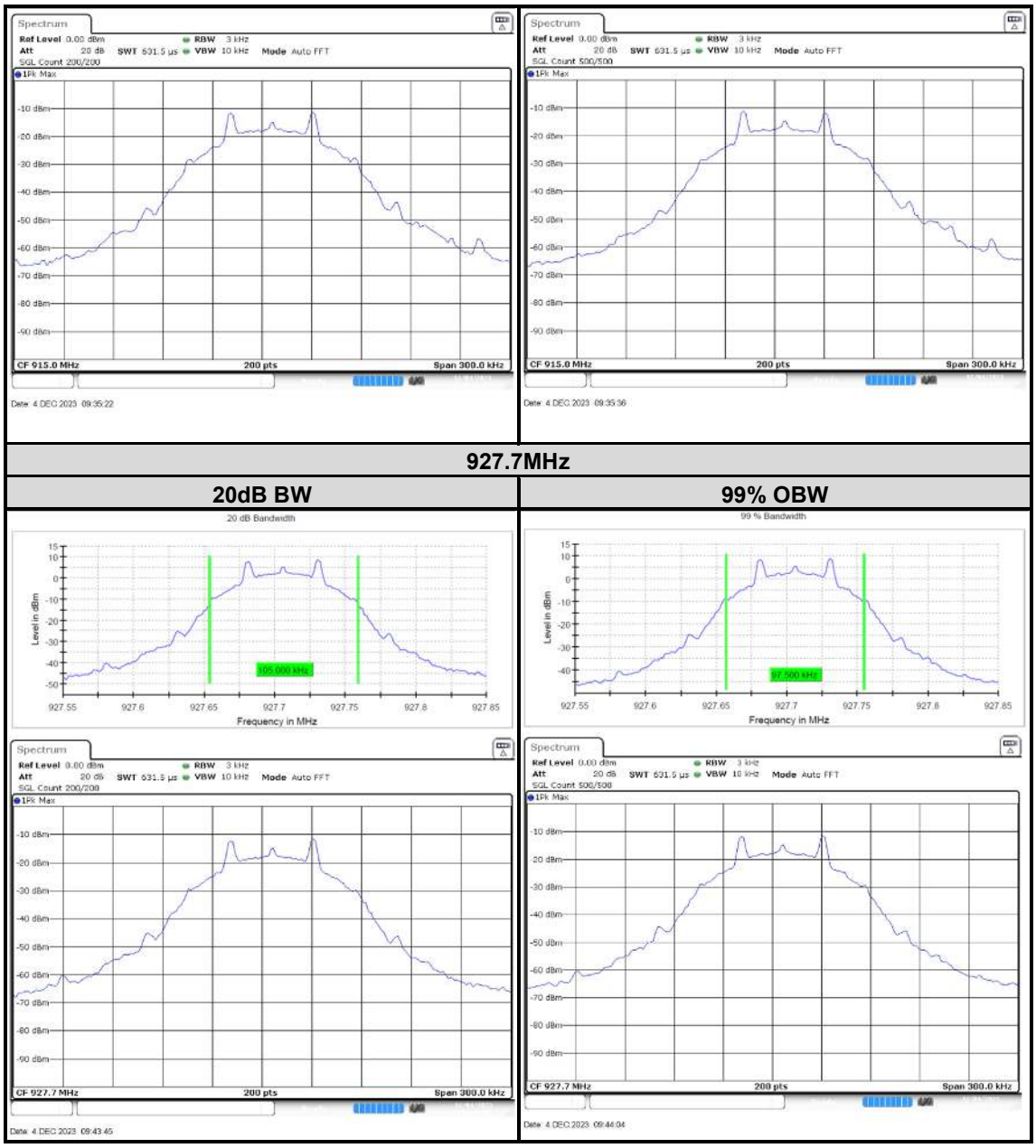
915MHz

20dB BW



99% OBW




Spectrum
Ref Level 0.00 dBm
RBW 3 kHz
Att 20 dB
SWT 631.5 µs
VBW 10 kHz
Mode Auto FFT
SGL Count 200/200
1Pk Max
CF 915.0 MHz
200 pts
Span 300.0 kHz
Date: 4.DEC.2023 09:35:22
Spectrum
Ref Level 0.00 dBm
RBW 3 kHz
Att 20 dB
SWT 631.5 µs
VBW 10 kHz
Mode Auto FFT
SGL Count 500/500
1Pk Max
CF 915.0 MHz
200 pts
Span 300.0 kHz
Date: 4.DEC.2023 09:35:36
927.7MHz
20dB BW
99% OBW
20 dB Bandwidth
Level in dBm
105.000 kHz
Frequency in MHz
99 % Bandwidth
Level in dBm
97.500 kHz
Frequency in MHz
Spectrum
Ref Level 0.00 dBm
RBW 3 kHz
Att 20 dB
SWT 631.5 µs
VBW 10 kHz
Mode Auto FFT
SGL Count 200/200
1Pk Max
CF 927.7 MHz
200 pts
Span 300.0 kHz
Date: 4.DEC.2023 09:43:45
Spectrum
Ref Level 0.00 dBm
RBW 3 kHz
Att 20 dB
SWT 631.5 µs
VBW 10 kHz
Mode Auto FFT
SGL Count 500/500
1Pk Max
CF 927.7 MHz
200 pts
Span 300.0 kHz
Date: 4.DEC.2023 09:44:04

4.6 HOPPING CHANNEL SEPARATION

4.6.1 LIMIT OF HOPPING CHANNEL SEPARATION

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

4.6.2 TEST SETUP

Refer to section 4.3.2 of this report.

4.6.3 TEST INSTRUMENTS

Refer to section 4.3.3 of this report.

4.6.4 TEST PROCEDURES

In accordance with ANSI C63.10-2013 Section 7.8.2.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 TEST RESULTS

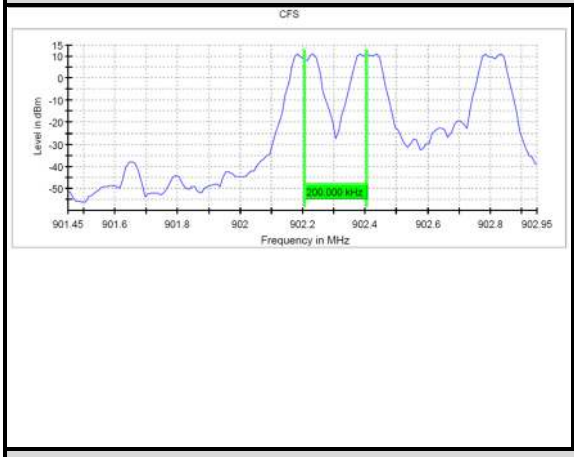
External Antenna

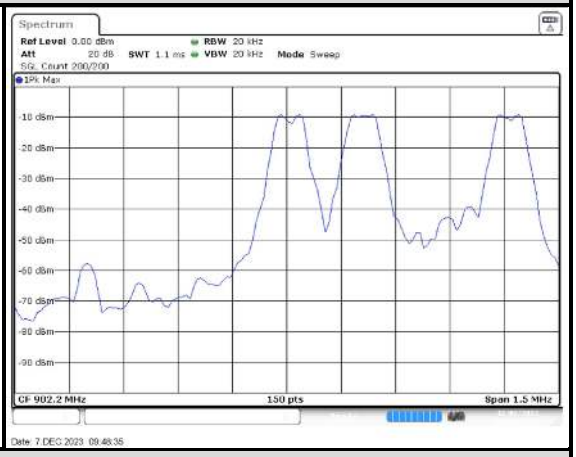
Test Date: 12/7/2023

FREQUENCY (MHz)	ADJACENT CHANNEL SEPARATION (KHz)	MINIMUM LIMIT (KHz)	PASS / FAIL
902.2	200.0	105.0	PASS
915	200.0	105.0	PASS
927.7	500.0	106.5	PASS

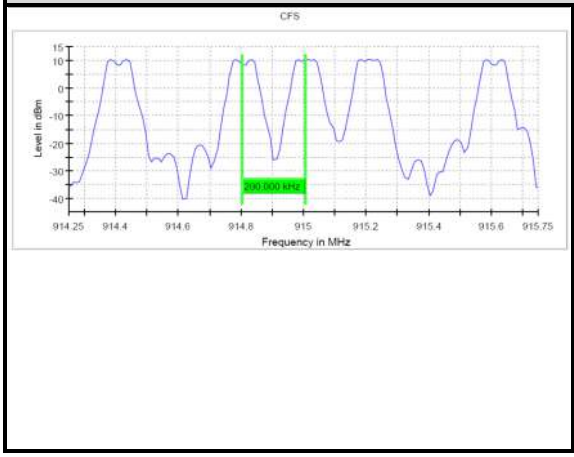
NOTE: The minimum limit is the 20dB bandwidth.

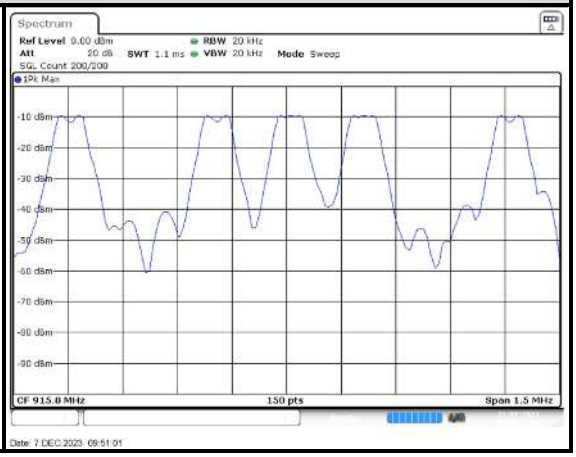
902.2MHz



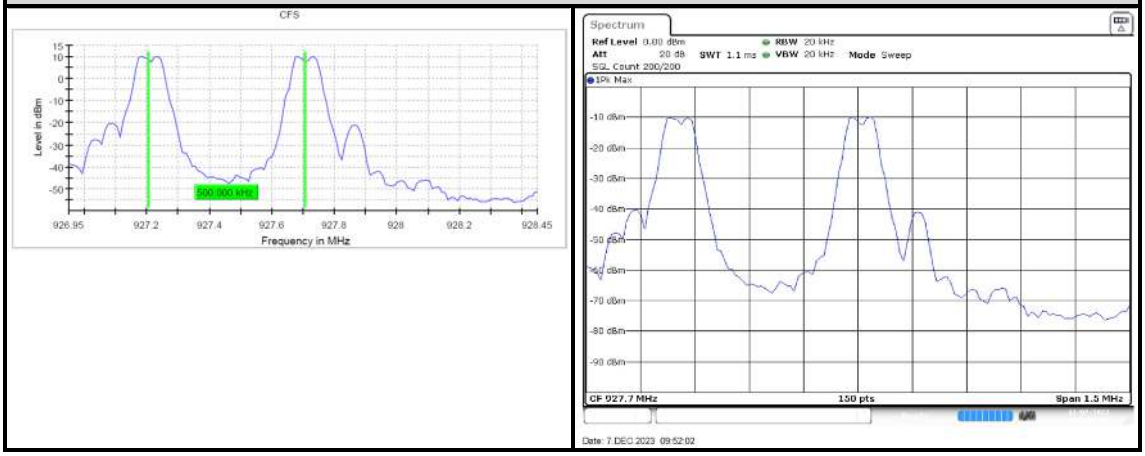


915MHz





927.7MHz



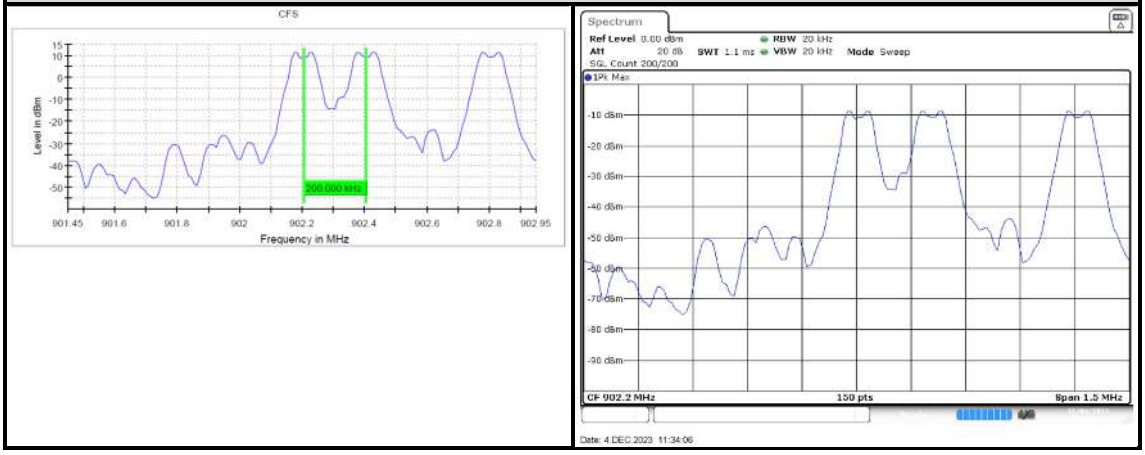
Internal Antenna

Test Date: 12/4/2023

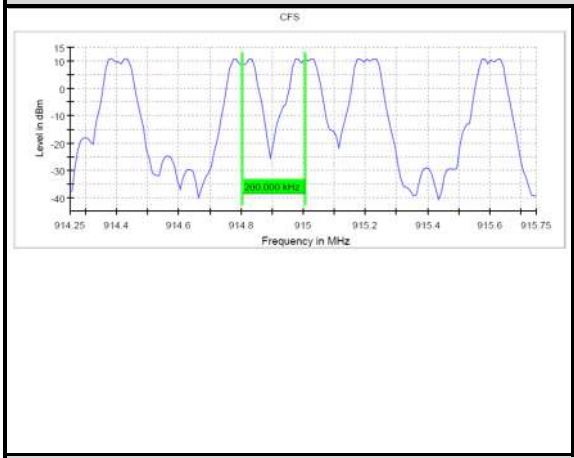
FREQUENCY (MHz)	ADJACENT CHANNEL SEPARATION (KHz)	MINIMUM LIMIT (KHz)	PASS / FAIL
902.2	200.0	106.5	PASS
915	200.0	106.5	PASS
927.7	500.0	105.0	PASS

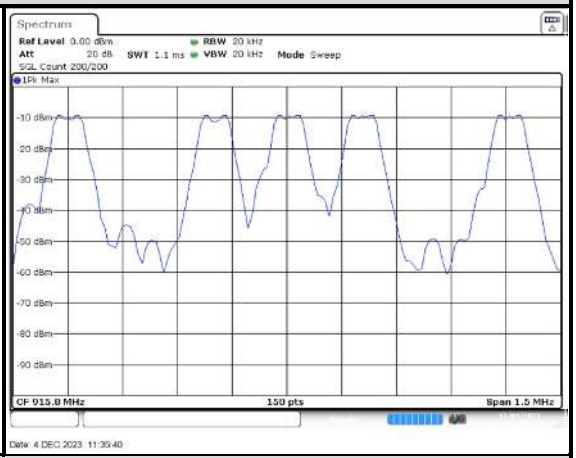
NOTE: The minimum limit is the 20dB bandwidth.

902.2MHz

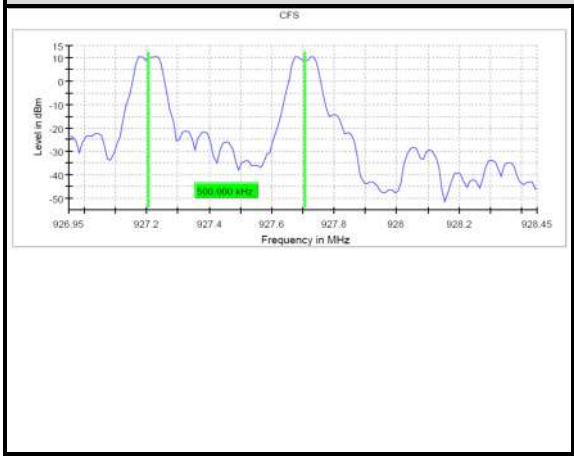


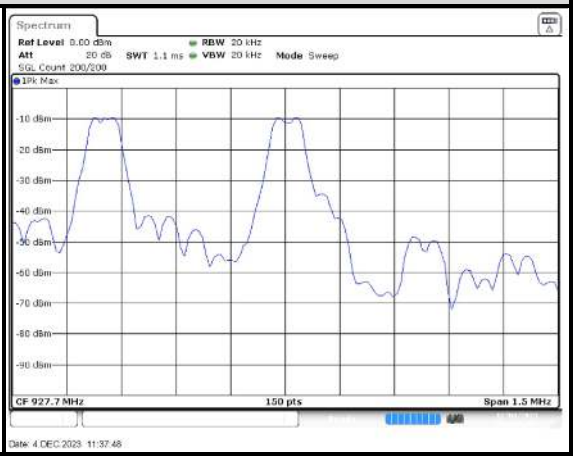
915MHz





927.7MHz





4.7 CONDUCTED PEAK OUTPUT POWER

4.7.1 LIMITS OF CONDUCTED PEAK OUTPUT POWER MEASUREMENT

For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels.

4.7.2 TEST SETUP

Refer to section 4.3.2 of this report.

4.7.3 TEST INSTRUMENTS

Refer to section 4.3.3 of this report.

4.7.4 TEST PROCEDURES

In accordance with ANSI C63.10-2013 Section 7.8.5.

4.7.5 DEVIATION FROM TEST STANDARD

No deviation.

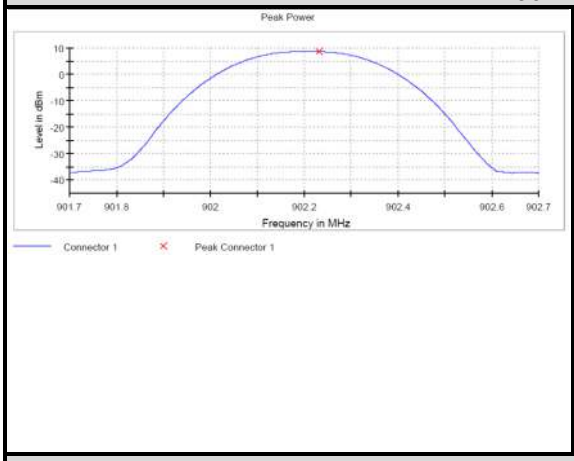
4.7.6 TEST RESULTS

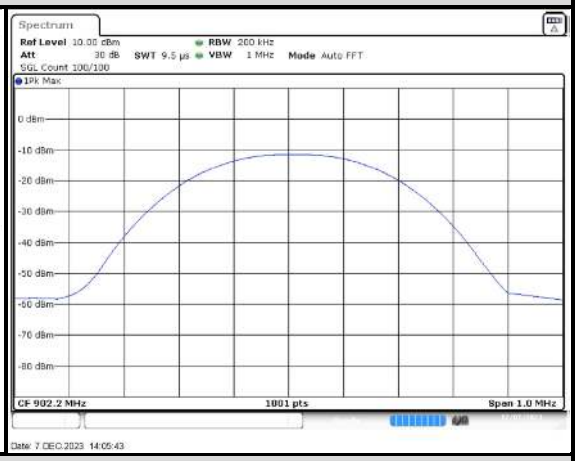
External Antenna

Test date: 12/7/2023

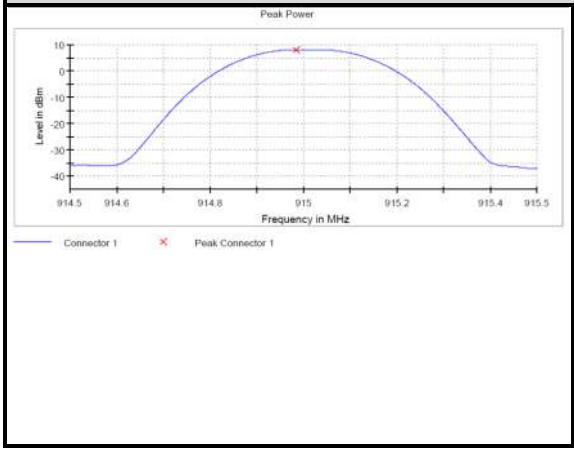
CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
902.2	8.5	7.1	1.0	PASS
915	8.1	6.5	1.0	PASS
927.7	7.5	5.6	1.0	PASS

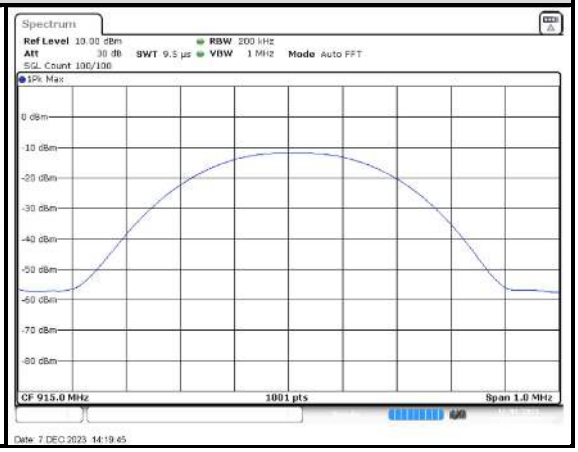
902.2MHz



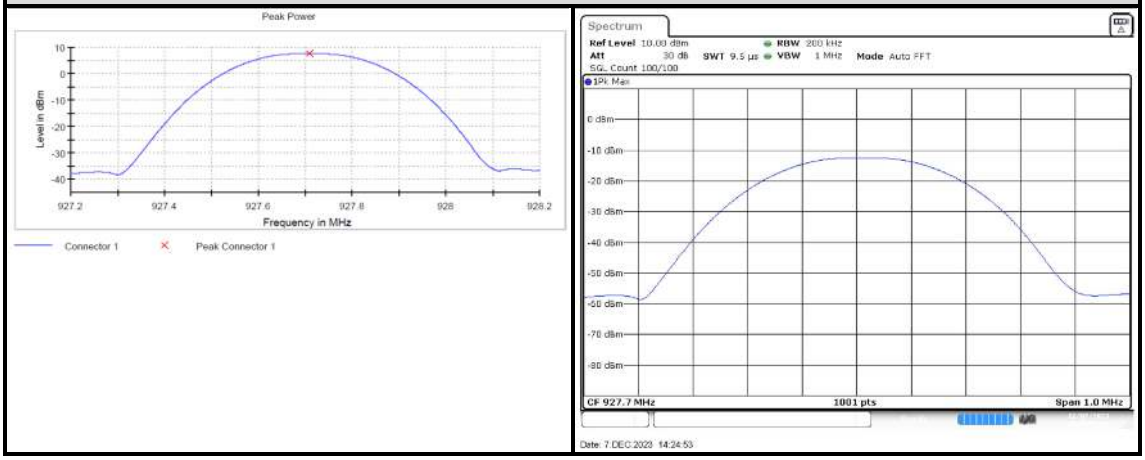


915MHz





927.7MHz

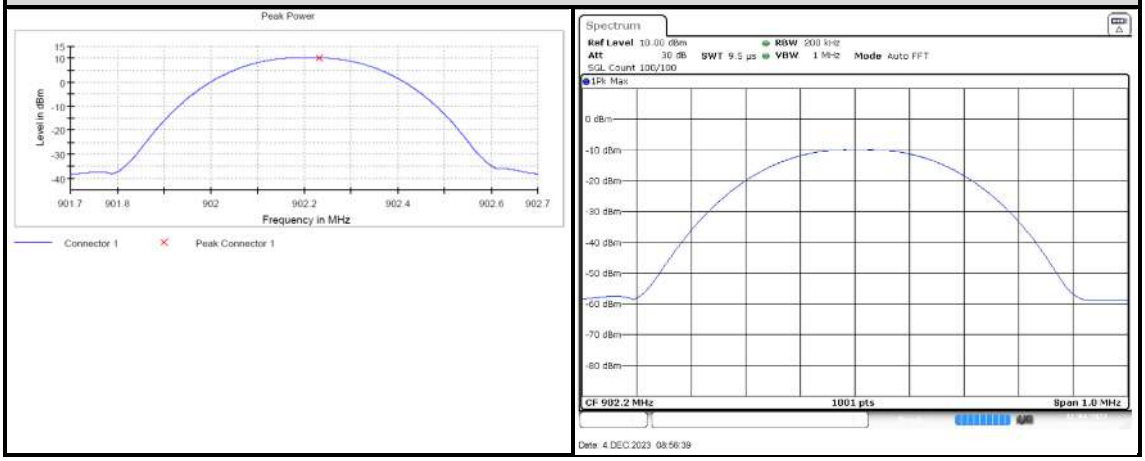


Internal Antenna

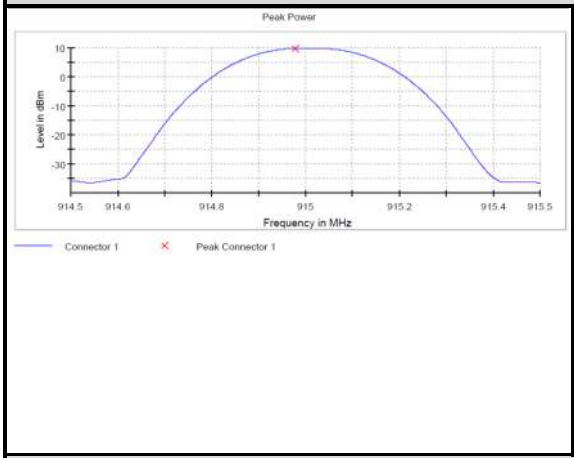
Test date: 12/4/2023

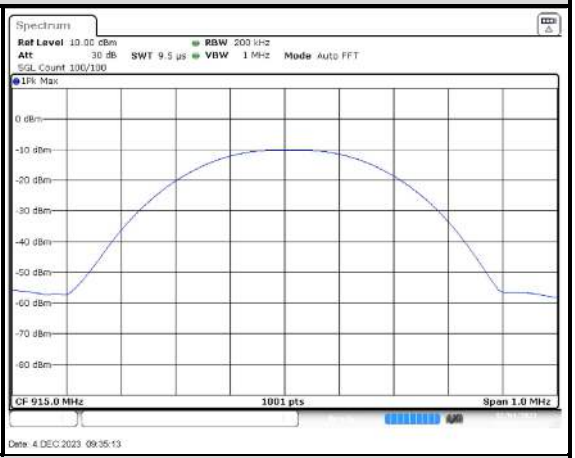
CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
902.2	10.0	10.0	1.0	PASS
915	9.7	9.3	1.0	PASS
927.7	9.2	8.3	1.0	PASS

902.2MHz

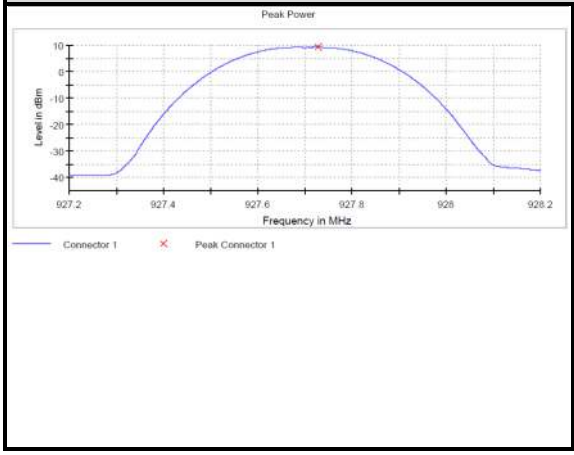


915MHz





927.7MHz



4.8 OUT OF BAND EMISSION MEASUREMENT

4.8.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

20dB below the highest level of the fundamental in 100 kHz RBW.

4.8.2 TEST SETUP

Refer to section 4.3.2 of this report.

4.8.3 TEST INSTRUMENT

Refer to section 4.3.3 of this report.

4.8.4 TEST PROCEDURE

For conducted band-edge: In accordance with ANSI C63.10-2013 Section 7.8.6.
For conducted spurious: In accordance with ANSI C63.10-2013 Section 7.8.8.

4.8.5 DEVIATION FROM TEST STANDARD

No deviation.

4.8.6 TEST RESULTS

External Antenna

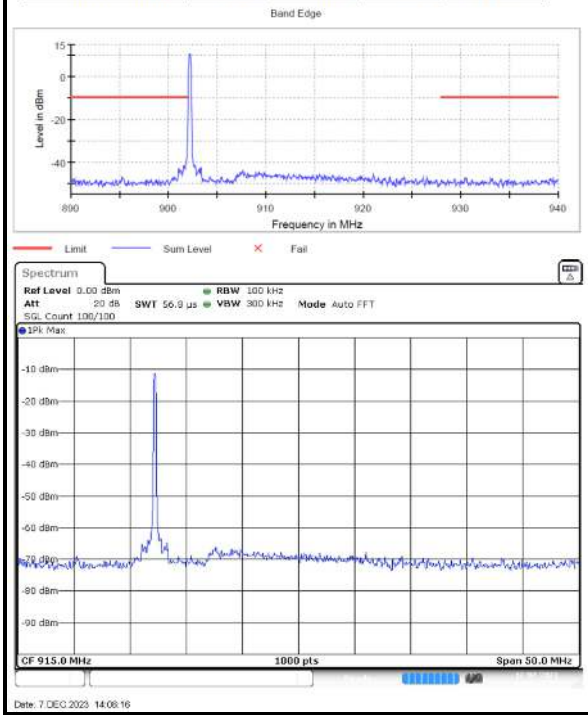
Test date: 12/7/2023

Low Channel Band Edge – Single Channel

In-band Peak: 10.6dBm

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
901.975000	-32.7	23.3	-9.4	PASS
901.925000	-37.6	28.2	-9.4	PASS
901.875000	-39.3	29.9	-9.4	PASS
901.825000	-40.7	31.3	-9.4	PASS
901.625000	-41.8	32.4	-9.4	PASS
901.575000	-41.8	32.4	-9.4	PASS
901.775000	-42.0	32.6	-9.4	PASS
901.675000	-42.2	32.8	-9.4	PASS
901.725000	-43.1	33.7	-9.4	PASS
901.075000	-43.2	33.8	-9.4	PASS
901.025000	-43.4	34.0	-9.4	PASS
901.525000	-43.9	34.5	-9.4	PASS
901.275000	-44.0	34.6	-9.4	PASS
901.375000	-44.2	34.8	-9.4	PASS
901.325000	-44.2	34.8	-9.4	PASS

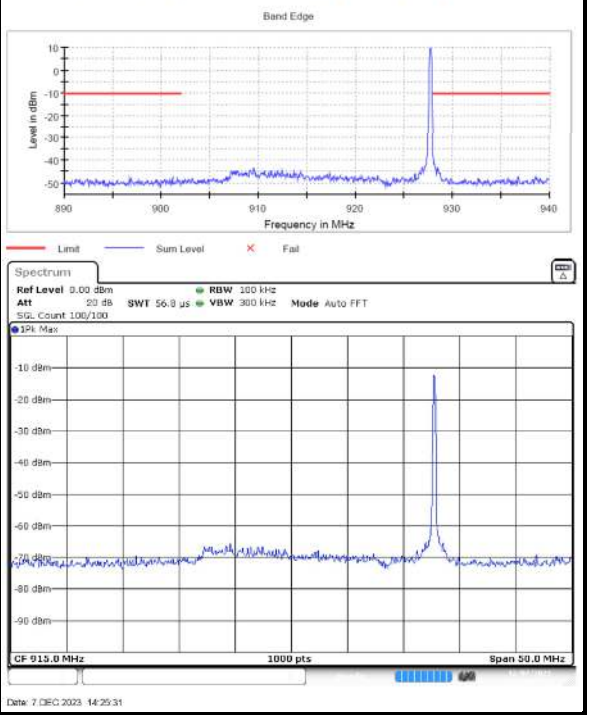


High Channel Band Edge – Single Channel

In-band Peak: 9.6dBm

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
928.025000	-39.3	28.9	-10.4	PASS
928.075000	-41.5	31.1	-10.4	PASS
928.175000	-41.5	31.1	-10.4	PASS
928.125000	-41.9	31.5	-10.4	PASS
928.475000	-43.3	32.9	-10.4	PASS
928.525000	-43.4	33.0	-10.4	PASS
928.225000	-43.6	33.2	-10.4	PASS
928.275000	-43.9	33.5	-10.4	PASS
928.325000	-44.4	34.0	-10.4	PASS
928.425000	-44.6	34.2	-10.4	PASS
928.575000	-45.4	35.0	-10.4	PASS
928.725000	-45.8	35.4	-10.4	PASS
928.675000	-45.9	35.5	-10.4	PASS
928.625000	-46.1	35.7	-10.4	PASS
928.375000	-46.3	35.9	-10.4	PASS

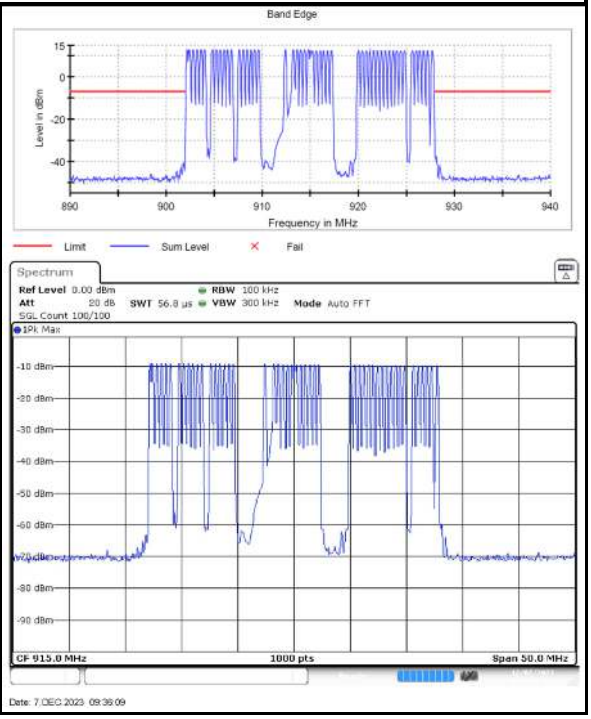


Band Edge – Hopping

In-band Peak: 13dBm

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
928.075000	-37.9	30.9	-7.0	PASS
928.125000	-38.1	31.1	-7.0	PASS
928.025000	-39.1	32.1	-7.0	PASS
928.175000	-40.9	33.9	-7.0	PASS
901.825000	-41.2	34.2	-7.0	PASS
901.775000	-41.5	34.5	-7.0	PASS
901.975000	-41.5	34.5	-7.0	PASS
928.225000	-41.8	34.8	-7.0	PASS
928.475000	-42.0	35.0	-7.0	PASS
901.875000	-42.1	35.1	-7.0	PASS
928.425000	-42.2	35.2	-7.0	PASS
901.525000	-43.3	36.3	-7.0	PASS
901.575000	-43.7	36.7	-7.0	PASS
901.925000	-43.7	36.7	-7.0	PASS
901.725000	-43.9	36.9	-7.0	PASS

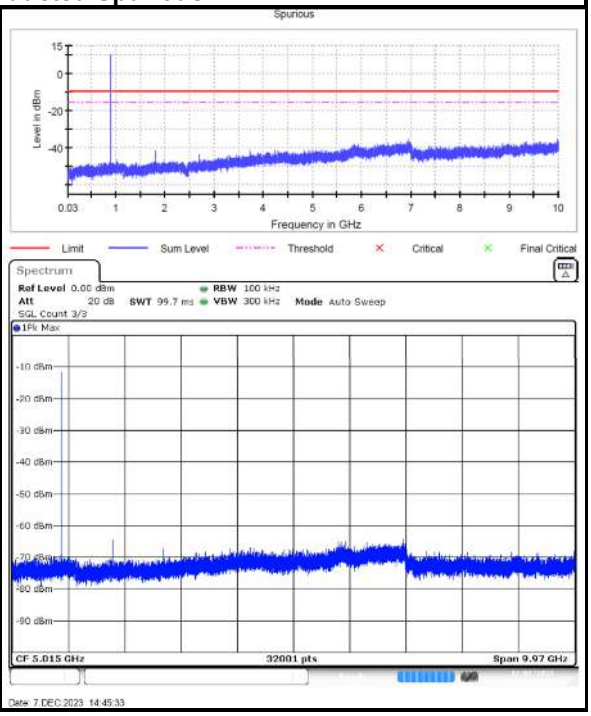


Low Channel Conducted Spurious

In-band Peak: 10.3dBm at 902.192MHz

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
901.880410	-25.2	15.5	-9.7
9989.874535	-35.7	26.0	-9.7
6955.350614	-35.7	26.0	-9.7
9992.055405	-36.3	26.6	-9.7
9349.322052	-36.4	26.7	-9.7
6959.089247	-36.4	26.7	-9.7
9643.427862	-36.5	26.8	-9.7
9318.478329	-36.9	27.2	-9.7
9984.889691	-37.0	27.3	-9.7
9746.863379	-37.0	27.3	-9.7
9935.975907	-37.0	27.3	-9.7
9827.243992	-37.0	27.3	-9.7
6927.622418	-37.1	27.4	-9.7
6968.435830	-37.1	27.4	-9.7
6992.425393	-37.2	27.5	-9.7

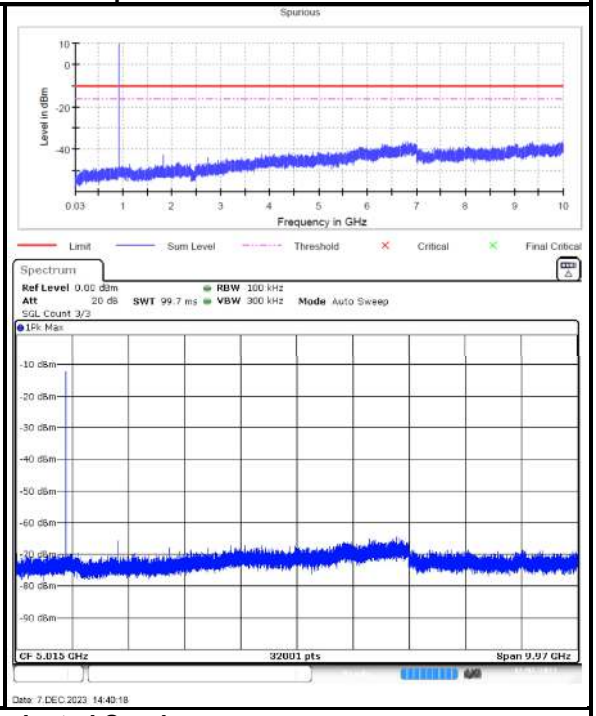


Mid Channel Conducted Spurious

In-band Peak: 9.8dBm at 914.966MHz

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
6780.569513	-36.2	26.0	-10.2
9969.935158	-36.5	26.3	-10.2
6828.548639	-36.5	26.3	-10.2
9368.015218	-36.5	26.3	-10.2
9913.232555	-36.6	26.4	-10.2
9333.744414	-36.8	26.6	-10.2
6716.701197	-36.9	26.7	-10.2
6882.135715	-36.9	26.7	-10.2
9367.703666	-37.0	26.8	-10.2
9571.147620	-37.1	26.9	-10.2
9890.489203	-37.2	27.0	-10.2
9994.236274	-37.2	27.0	-10.2
9963.392550	-37.2	27.0	-10.2
9942.518515	-37.2	27.0	-10.2
6904.567514	-37.2	27.0	-10.2

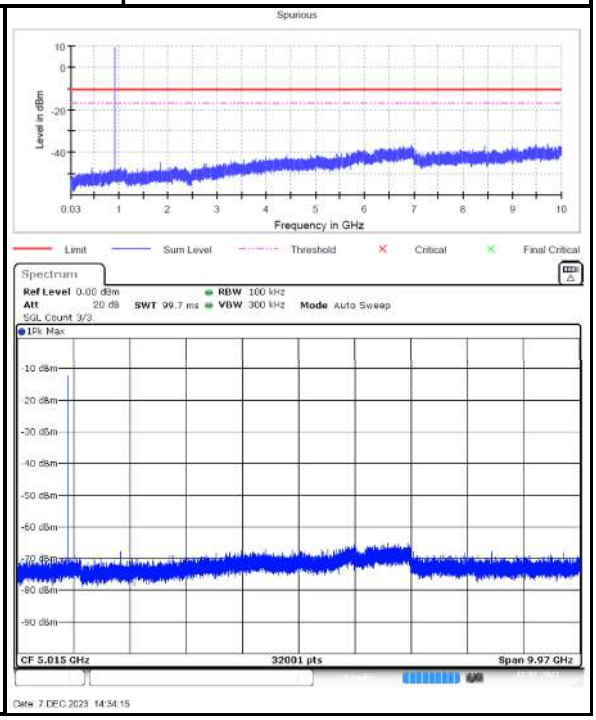


High Channel Conducted Spurious

In-band Peak: 9.5dBm at 927.739MHz

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
928.050842	-17.8	7.3	-10.5
9707.296178	-35.9	25.4	-10.5
6942.576951	-36.5	26.0	-10.5
9480.174213	-36.5	26.0	-10.5
9480.485766	-36.8	26.3	-10.5
9961.211681	-36.9	26.4	-10.5
8437.718665	-37.0	26.5	-10.5
6782.127277	-37.0	26.5	-10.5
9493.882535	-37.0	26.5	-10.5
6781.815725	-37.1	26.6	-10.5
9430.948877	-37.1	26.6	-10.5
9366.457454	-37.1	26.6	-10.5
9002.563826	-37.2	26.7	-10.5
6976.224649	-37.3	26.8	-10.5
9337.171495	-37.3	26.8	-10.5



Internal Antenna

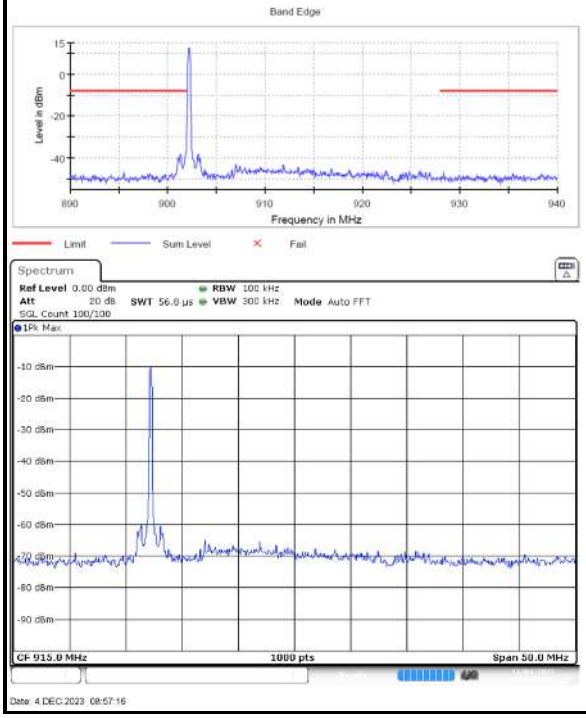
Test date: 12/4/2023

Low Channel Band Edge – Single Channel

In-band Peak: 12.1dBm

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
901.975000	-30.3	22.4	-7.9	PASS
901.925000	-36.7	28.8	-7.9	PASS
901.375000	-38.3	30.4	-7.9	PASS
901.875000	-38.3	30.4	-7.9	PASS
901.325000	-38.4	30.5	-7.9	PASS
901.275000	-39.3	31.4	-7.9	PASS
901.825000	-39.6	31.7	-7.9	PASS
901.425000	-39.8	31.9	-7.9	PASS
901.075000	-40.1	32.2	-7.9	PASS
901.225000	-40.2	32.3	-7.9	PASS
901.025000	-40.3	32.4	-7.9	PASS
901.125000	-40.4	32.5	-7.9	PASS
901.775000	-40.7	32.8	-7.9	PASS
901.175000	-41.9	34.0	-7.9	PASS
901.725000	-42.4	34.5	-7.9	PASS

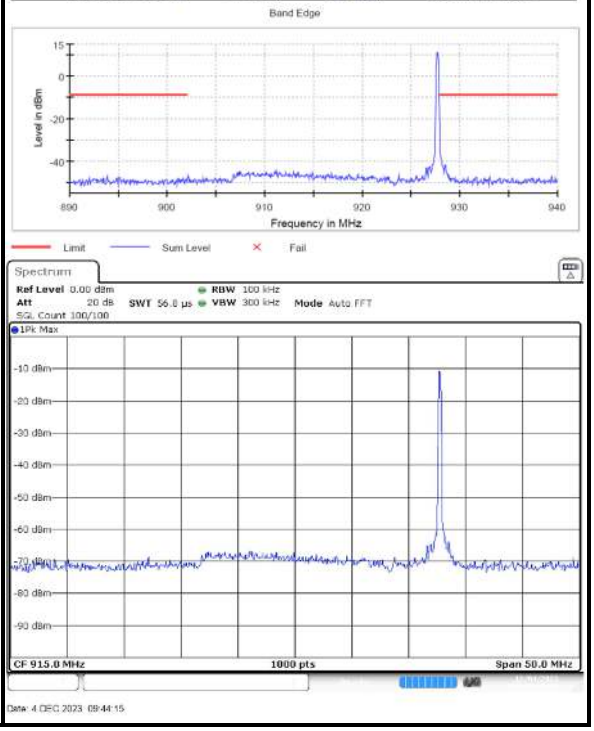


High Channel Band Edge – Single Channel

In-band Peak: 11.2dBm

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
928.025000	-38.5	29.7	-8.8	PASS
928.075000	-38.7	29.9	-8.8	PASS
928.125000	-40.1	31.3	-8.8	PASS
928.475000	-41.8	33.0	-8.8	PASS
928.175000	-42.0	33.2	-8.8	PASS
928.525000	-42.0	33.2	-8.8	PASS
928.275000	-42.3	33.5	-8.8	PASS
928.225000	-42.4	33.6	-8.8	PASS
928.425000	-42.8	34.0	-8.8	PASS
928.325000	-44.3	35.5	-8.8	PASS
928.575000	-44.4	35.6	-8.8	PASS
928.375000	-45.0	36.2	-8.8	PASS
928.625000	-45.6	36.8	-8.8	PASS
928.675000	-45.6	36.8	-8.8	PASS
928.825000	-46.4	37.6	-8.8	PASS

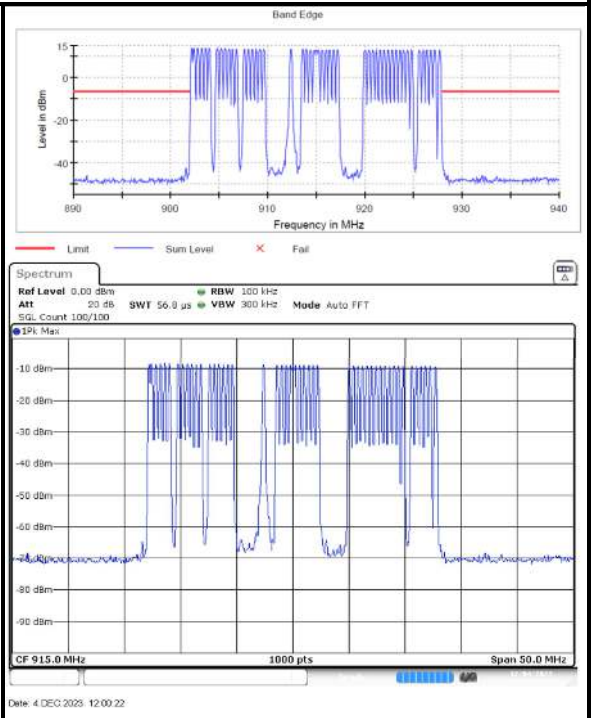


Band Edge – Hopping

In-band Peak: 13.5dBm

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
901.975000	-34.3	27.8	-6.5	PASS
901.625000	-42.9	36.4	-6.5	PASS
901.575000	-43.2	36.7	-6.5	PASS
928.125000	-43.8	37.3	-6.5	PASS
901.675000	-43.8	37.3	-6.5	PASS
928.025000	-43.8	37.3	-6.5	PASS
928.075000	-43.8	37.3	-6.5	PASS
901.875000	-45.3	38.8	-6.5	PASS
901.925000	-45.4	38.9	-6.5	PASS
928.225000	-45.5	39.0	-6.5	PASS
901.525000	-45.6	39.1	-6.5	PASS
928.175000	-45.9	39.4	-6.5	PASS
901.825000	-46.0	39.5	-6.5	PASS
928.275000	-46.1	39.6	-6.5	PASS
928.475000	-46.2	39.7	-6.5	PASS

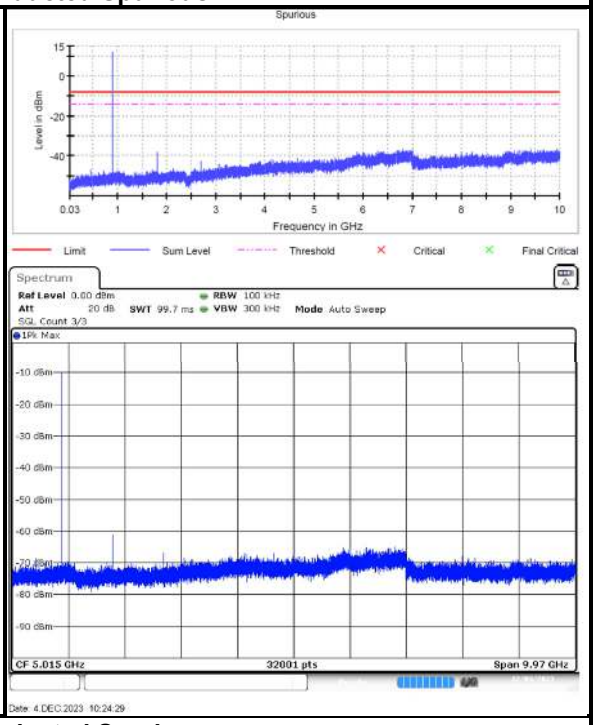


Low Channel Conducted Spurious

In-band Peak: 12dBm at 902.192MHz

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
901.880410	-23.3	15.3	-8.0
9941.583857	-36.5	28.5	-8.0
6805.182182	-36.6	28.6	-8.0
9937.533671	-36.7	28.7	-8.0
9937.222118	-36.7	28.7	-8.0
9552.766007	-36.9	28.9	-8.0
6941.019187	-36.9	28.9	-8.0
9199.153620	-37.0	29.0	-8.0
9274.549389	-37.1	29.1	-8.0
6722.932252	-37.2	29.2	-8.0
9672.402269	-37.2	29.2	-8.0
9550.273585	-37.2	29.2	-8.0
9820.078279	-37.3	29.3	-8.0
9314.116590	-37.3	29.3	-8.0
9820.389832	-37.3	29.3	-8.0

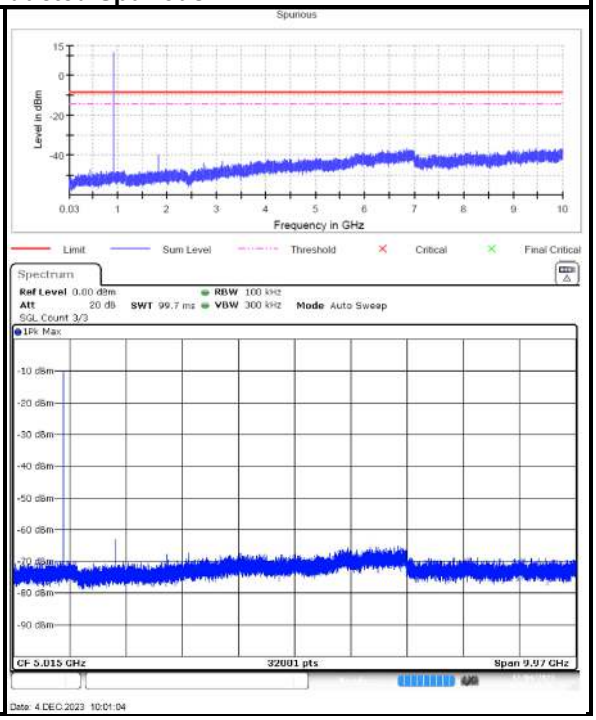


Mid Channel Conducted Spurious

In-band Peak: 11.6dBm at 914.966MHz

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
9460.546389	-36.6	28.2	-8.4
6841.010750	-36.7	28.3	-8.4
9339.975470	-36.8	28.4	-8.4
9995.794038	-36.9	28.5	-8.4
9853.725977	-37.0	28.6	-8.4
9339.663917	-37.0	28.6	-8.4
9944.387832	-37.0	28.6	-8.4
9952.488203	-37.0	28.6	-8.4
9959.030812	-37.1	28.7	-8.4
9658.382394	-37.1	28.7	-8.4
9987.070560	-37.2	28.8	-8.4
9619.126746	-37.2	28.8	-8.4
9964.327209	-37.2	28.8	-8.4
6783.373488	-37.2	28.8	-8.4
6888.366770	-37.2	28.8	-8.4

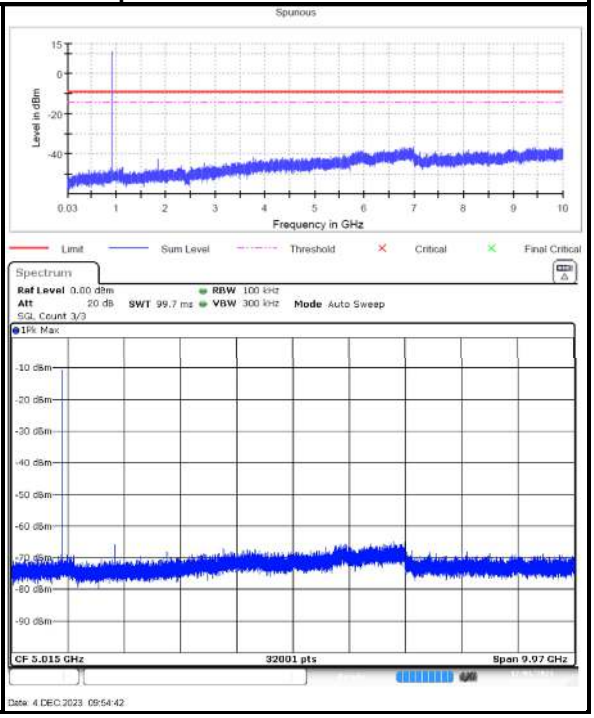


High Channel Conducted Spurious

In-band Peak: 11.3dBm at 927.739MHz

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
928.050842	-17.4	8.7	-8.7
6797.393363	-36.5	27.8	-8.7
6995.852473	-36.5	27.8	-8.7
9438.426143	-36.6	27.9	-8.7
9738.139902	-36.7	28.0	-8.7
9788.299897	-36.8	28.1	-8.7
9964.015656	-36.9	28.2	-8.7
9863.384113	-37.0	28.3	-8.7
9341.533233	-37.0	28.3	-8.7
9396.366520	-37.1	28.4	-8.7
6940.396081	-37.1	28.4	-8.7
6912.356333	-37.2	28.5	-8.7
6755.956845	-37.2	28.5	-8.7
6921.702916	-37.2	28.5	-8.7
9748.732696	-37.2	28.5	-8.7



5 PHOTOGRAPHS OF THE TEST CONFIGURATIONS

Please refer to the Test Setup Photos exhibit.

6 MODIFICATIONS TO THE EUT DURING TESTING

None.

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