



FCC RF Test Report

APPLICANT : Ring LLC
EQUIPMENT : Smart Controller
BRAND NAME : ring
MODEL NAME : 7PFYA3
FCC ID : 2AEUP-7PFYA3
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DSS) Spread Spectrum Transmitter
TEST DATE(S) : Oct. 31, 2025 ~ Dec. 02, 2025

We, Sporton International Inc. (ShenZhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (ShenZhen), the test report shall not be reproduced except in full.

Fly Liang

Approved by: Fly Liang



Sporton International Inc. (ShenZhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China



TABLE OF CONTENTS

REVISION HISTORY.....	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION.....	5
1.1 Applicant.....	5
1.2 Product Feature of Equipment Under Test.....	5
1.3 Product Specification of Equipment Under Test.....	5
1.4 Modification of EUT	5
1.5 Testing Location	6
1.6 Test Software.....	6
1.7 Applicable Standards.....	6
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST.....	7
2.1 Carrier Frequency Channel	7
2.2 Test Mode.....	9
2.3 Connection Diagram of Test System.....	10
2.4 EUT Operation Test Setup	10
2.5 Measurement Results Explanation Example.....	10
3 TEST RESULT	11
3.1 Number of Channel Measurement	11
3.2 Hopping Channel Separation Measurement	15
3.3 Dwell Time Measurement.....	21
3.4 20dB and 99% Bandwidth Measurement	25
3.5 Output Power Measurement.....	36
3.6 Conducted Band Edges Measurement.....	37
3.7 Conducted Spurious Emission Measurement	44
3.8 Radiated Spurious Emission Measurement	54
3.9 AC Conducted Emission Measurement.....	58
3.10 Antenna Requirements.....	60
4 LIST OF MEASURING EQUIPMENT.....	61
5 UNCERTAINTY OF EVALUATION.....	62
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. AC CONDUCTED EMISSION TEST RESULT	
APPENDIX C. RADIATED SPURIOUS EMISSION	
APPENDIX D. RADIATED SPURIOUS EMISSION PLOTS	
APPENDIX E. DUTY CYCLE PLOTS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR5N0312D	Rev. 01	Initial issue of report	Nov. 26, 2025
FR5N0312D	Rev. 02	Added Middle channel test data for RSE below 1GHz test. This report is an updated version, replacing the report issued on Nov. 26, 2025.	Dec. 03, 2025
FR5N0312D	Rev. 03	Removed test data for Radiated Band Edges This report is an updated version, replacing the report issued on Dec. 03, 2025.	Dec. 09, 2025

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(1)(i)	Number of Channels	15.247(a)(1)(i)	Pass	-
3.2	15.247(a)(1)	Hopping Channel Separation	20dB Bandwidth	Pass	-
3.3	15.247(a)(1)(i)	Dwell Time of Each Channel	$\leq 0.4\text{sec}$	Pass	-
3.4	15.247(a)(1)(i)	20dB Bandwidth	$\leq 500\text{kHz}$	Pass	-
3.4	-	99% Bandwidth	-	Pass	-
3.5	15.247(b)(2)	Peak Output Power	$\leq 1\text{W}$	Pass	-
3.6	15.247(d)	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
3.7	15.247(d)	Conducted Spurious Emission	$\leq 20\text{dBc}$	Pass	-
3.8	15.247(d)	Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 7.17 dB at 2783.40 MHz
3.9	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 10.76 dB at 1.721 MHz
3.10	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

Conformity Assessment Condition:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



1 General Description

1.1 Applicant

Ring LLC

12515 Cerise Ave, Hawthorne, CA 90250, USA

1.2 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Controller
Brand Name	ring
Model Name	7PFYA3
FCC ID	2AEUP-7PFYA3
SN Code	N/A
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.3 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	902 MHz ~ 928 MHz
Number of Channels / Data Rate	129 chs for 50kbps 64 chs for 150kbps 51 chs for 250kbps
Maximum Output Power to Antenna	Data Rate 50kbps : 21.40 dBm (0.1380 W) Data Rate 150kbps : 21.42 dBm (0.1387 W) Data Rate 250kbps : 21.41 dBm (0.1384 W)
99% Occupied Bandwidth	Data Rate 50kbps : 0.104 MHz Data Rate 150kbps : 0.157 MHz Data Rate 250kbps : 0.256 MHz
Antenna Type / Gain	PCB Monopole antenna with gain 1.38 dBi
Type of Modulation	FSK

1.4 Modification of EUT

No modifications are made to the EUT during all test items.



1.5 Testing Location

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ 03CH03-SZ CO02-SZ	CN1256	421272

1.6 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH03-SZ	AUDIX	E3	6.2009-8-24
2.	CO02-SZ	R&S	EMC32	10.60.20

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 15 Subpart C §15.247
- ♦ FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- ♦ ANSI C63.10-2020

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
902-928 MHz (50Kbps)	1	902.2	44	910.8	87	919.4
	2	902.4	45	911	88	919.6
	3	902.6	46	911.2	89	919.8
	4	902.8	47	911.4	90	920
	5	903	48	911.6	91	920.2
	6	903.2	49	911.8	92	920.4
	7	903.4	50	912	93	920.6
	8	903.6	51	912.2	94	920.8
	9	903.8	52	912.4	95	921
	10	904	53	912.6	96	921.2
	11	904.2	54	912.8	97	921.4
	12	904.4	55	913	98	921.6
	13	904.6	56	913.2	99	921.8
	14	904.8	57	913.4	100	922
	15	905	58	913.6	101	922.2
	16	905.2	59	913.8	102	922.4
	17	905.4	60	914	103	922.6
	18	905.6	61	914.2	104	922.8
	19	905.8	62	914.4	105	923
	20	906	63	914.6	106	923.2
	21	906.2	64	914.8	107	923.4
	22	906.4	65	915	108	923.6
	23	906.6	66	915.2	109	923.8
	24	906.8	67	915.4	110	924
	25	907	68	915.6	111	924.2
	26	907.2	69	915.8	112	924.4
	27	907.4	70	916	113	924.6
	28	907.6	71	916.2	114	924.8
	29	907.8	72	916.4	115	925
	30	908	73	916.6	116	925.2
	31	908.2	74	916.8	117	925.4
	32	908.4	75	917	118	925.6
	33	908.6	76	917.2	119	925.8
	34	908.8	77	917.4	120	926
	35	909	78	917.6	121	926.2
	36	909.2	79	917.8	122	926.4
	37	909.4	80	918	123	926.6
	38	909.6	81	918.2	124	926.8
	39	909.8	82	918.4	125	927
	40	910	83	918.6	126	927.2
	41	910.2	84	918.8	127	927.4
	42	910.4	85	919	128	927.6
	43	910.6	86	919.2	129	927.8

Note: The above EUT's information was declared by manufacturer.



Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
902-928 MHz (150Kbps)	1	902.4	23	911.2	45	920
	2	902.8	24	911.6	46	920.4
	3	903.2	25	912	47	920.8
	4	903.6	26	912.4	48	921.2
	5	904	27	912.8	49	921.6
	6	904.4	28	913.2	50	922
	7	904.8	29	913.6	51	922.4
	8	905.2	30	914	52	922.8
	9	905.6	31	914.4	53	923.2
	10	906	32	914.8	54	923.6
	11	906.4	33	915.2	55	924
	12	906.8	34	915.6	56	924.4
	13	907.2	35	916	57	924.8
	14	907.6	36	916.4	58	925.2
	15	908	37	916.8	59	925.6
	16	908.4	38	917.2	60	926
	17	908.8	39	917.6	61	926.4
	18	909.2	40	918	62	926.8
	19	909.6	41	918.4	63	927.2
	20	910	42	918.8	64	927.6
	21	910.4	43	919.2		
	22	910.8	44	919.6		

Note: The above EUT's information was declared by manufacturer.

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
902-928 MHz (250Kbps)	1	902.5	18	911.0	35	919.5
	2	903.0	19	911.5	36	920.0
	3	903.5	20	912.0	37	920.5
	4	904.0	21	912.5	38	921.0
	5	904.5	22	913.0	39	921.5
	6	905.0	23	913.5	40	922.0
	7	905.5	24	914.0	41	922.5
	8	906.0	25	914.5	42	923.0
	9	906.5	26	915.0	43	923.5
	10	907.0	27	915.5	44	924.0
	11	907.5	28	916.0	45	924.5
	12	908.0	29	916.5	46	925.0
	13	908.5	30	917.0	47	925.5
	14	909.0	31	917.5	48	926.0
	15	909.5	32	918.0	49	926.5
	16	910.0	33	918.5	50	927.0
	17	910.5	34	919.0	51	927.5

Note: The above EUT's information was declared by manufacturer.

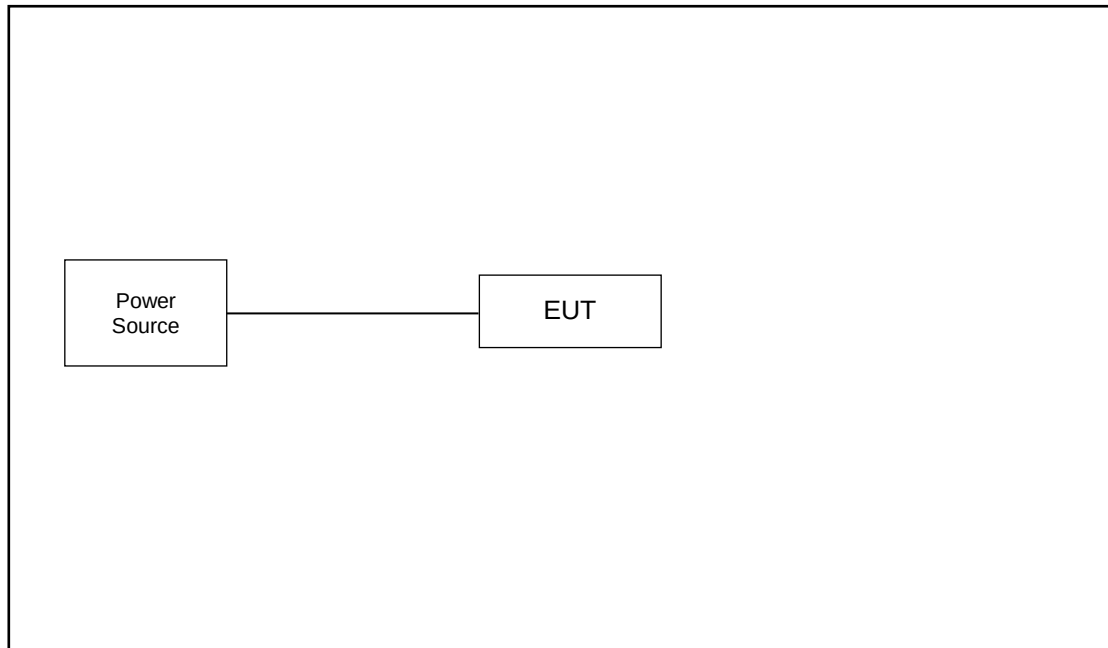
2.2 Test Mode

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower) For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report,
- b. AC power line Conducted Emission was tested under maximum output power.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

Summary table of Test Cases			
Test Item	Modulation / Data Rate		
	FSK FHSS / 50kbps	FSK FHSS / 150kbps	FSK FHSS / 250kbps
Conducted Test Cases	Low: 902.2 MHz	Low: 902.4 MHz	Low: 902.5 MHz
	Mid: 915 MHz	Mid: 915.2 MHz	Mid: 915 MHz
	High: 927.8 MHz	High: 927.6 MHz	High: 927.5 MHz
Radiated Test Cases	Low: 902.2 MHz	Low: 902.4 MHz	Low: 902.5 MHz
	Mid: 915 MHz	Mid: 915.2 MHz	Mid: 915 MHz
	High: 927.8 MHz	High: 927.6 MHz	High: 927.5 MHz
AC Conducted Emission	Mode 1: Lora Tx + AC Power Cable		

2.3 Connection Diagram of Test System



2.4 EUT Operation Test Setup

For FSK FHSS function, the engineering test program was provided and enabled to make EUT continuous transmit.

2.5 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 0.3 dB and 20dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 0.3 + 20 = 20.3 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 Number of Channel Measurement

3.1.1 Limits of Number of Hopping Frequency

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; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

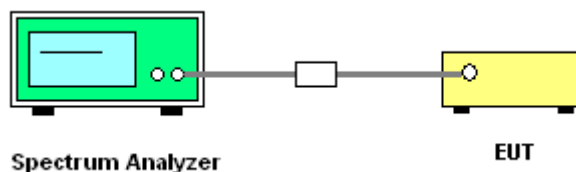
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedure

1. The testing follows ANSI C63.10-2020 clause 7.8.3.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Enable the EUT hopping function.
5. Use the following spectrum analyzer settings: Span = the frequency band of operation; RBW = 50kHz, VBW = 200kHz; Sweep = auto; Detector function = peak; Trace = max hold.
6. The number of hopping frequency used is defined as the number of total channel.
7. Record the measurement data derived from spectrum analyzer.

3.1.4 Test Setup

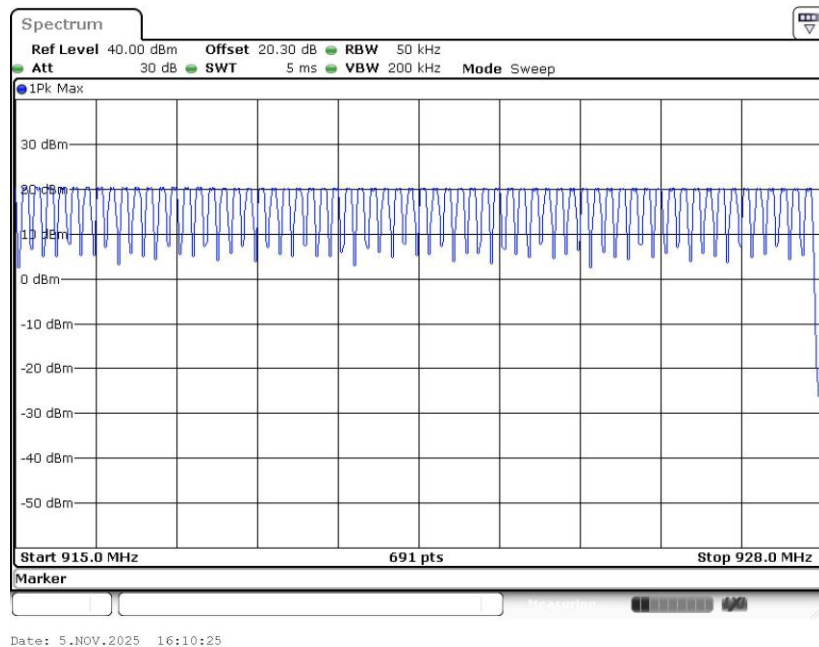
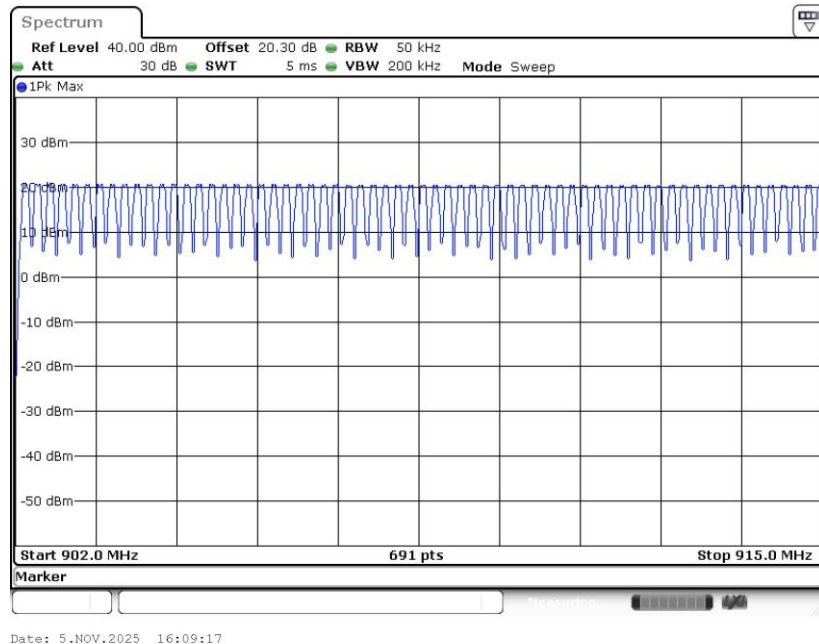




3.1.5 Test Result of Number of Hopping Frequency

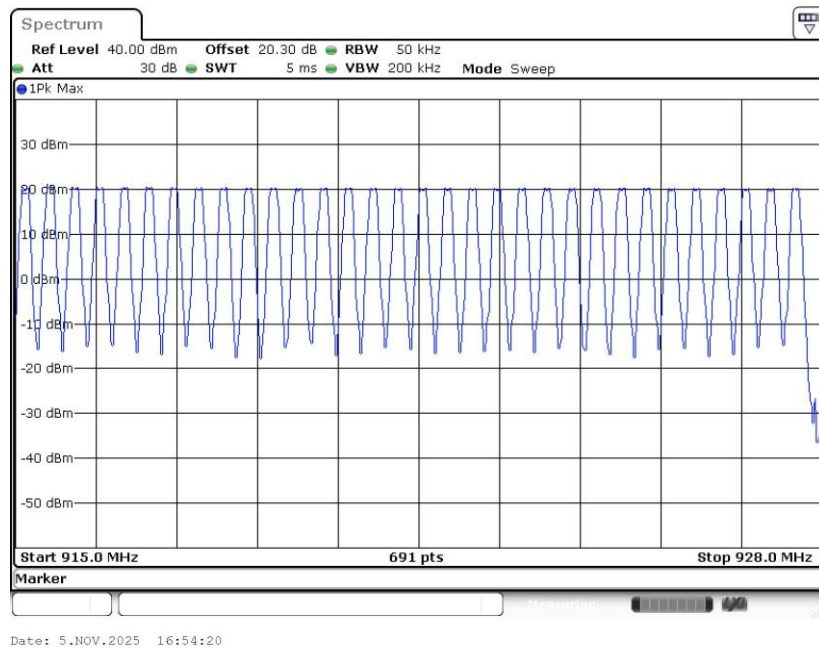
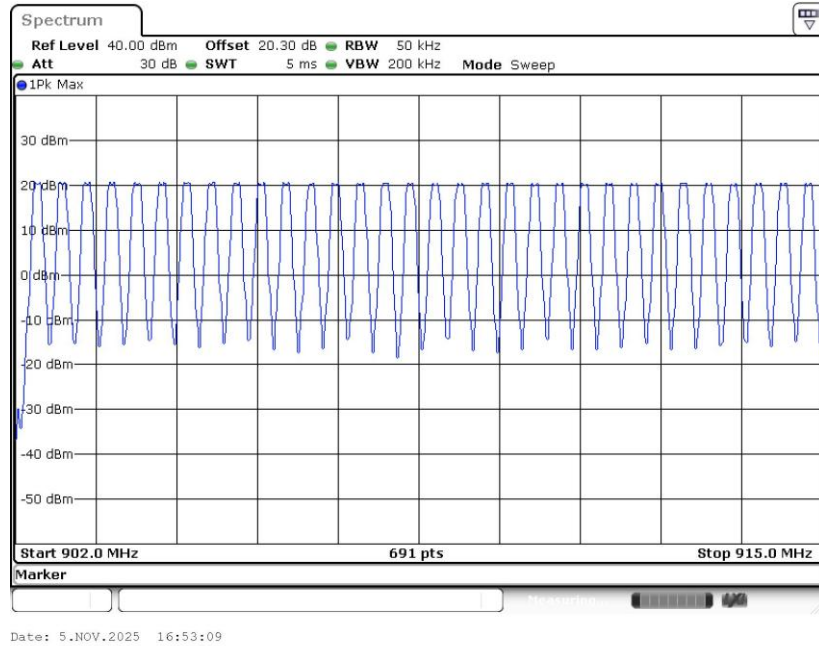
Please refer to Appendix A.

Number of Hopping Channel Plot (Data Rate 50kbps)



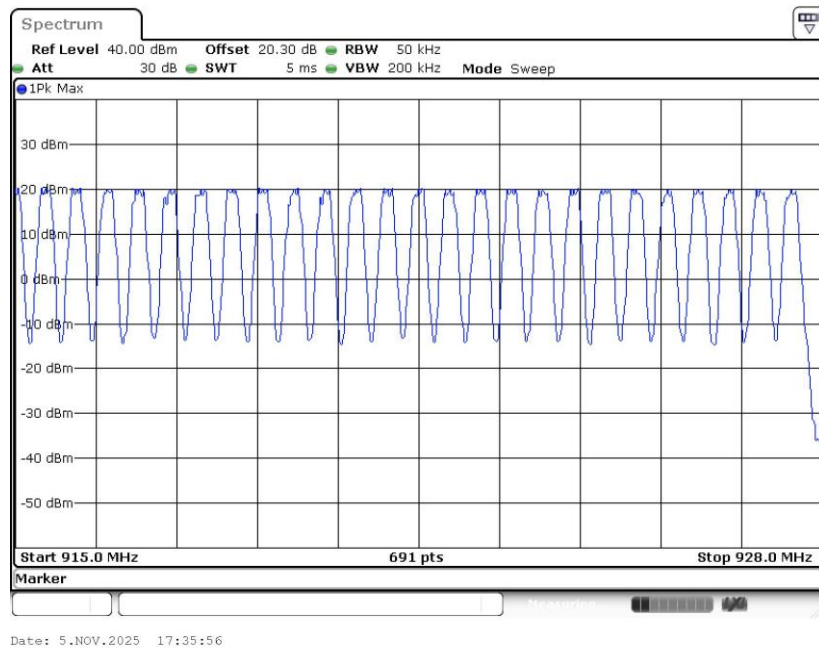
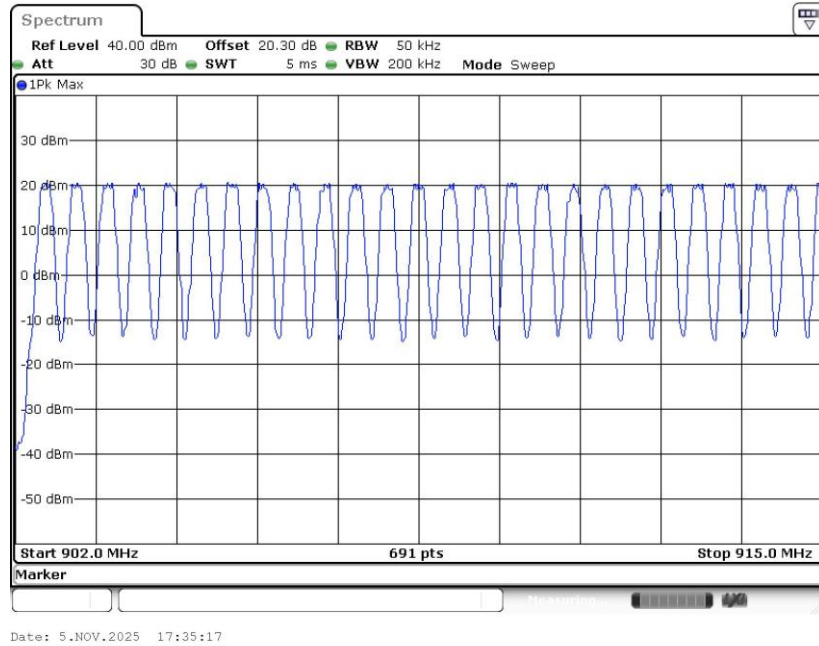


Number of Hopping Channel Plot (Data Rate 150kbps)





Number of Hopping Channel Plot (Data Rate 250kbps)



3.2 Hopping Channel Separation Measurement

3.2.1 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.

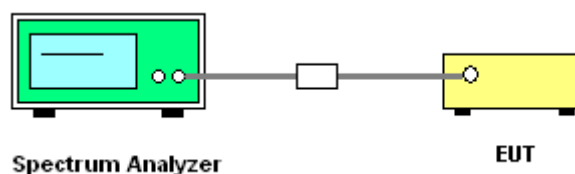
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The testing follows ANSI C63.10-2020 clause 7.8.2.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Enable the EUT hopping function.
5. Use the following spectrum analyzer settings:
Span = wide enough to capture the peaks of two adjacent channels;
RBW = 50kHz, VBW = 200kHz (for 50kbps);
RBW = 100kHz, VBW = 300kHz (for 150kbps);
RBW = 100kHz, VBW = 300kHz (for 250kbps);
Sweep = auto; Detector function = peak; Trace = max hold.
6. Measure and record the results in the test report.

3.2.4 Test Setup



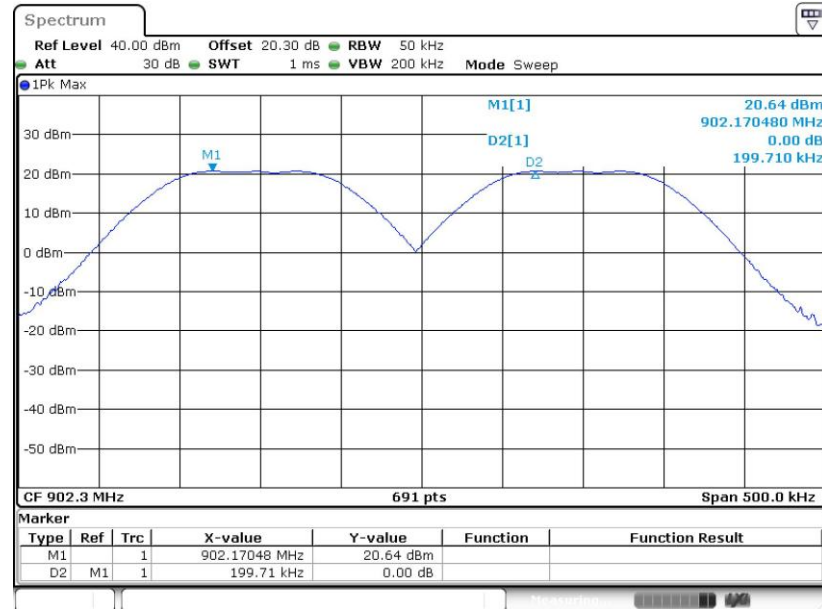
3.2.5 Test Result of Hopping Channel Separation

Please refer to Appendix A.



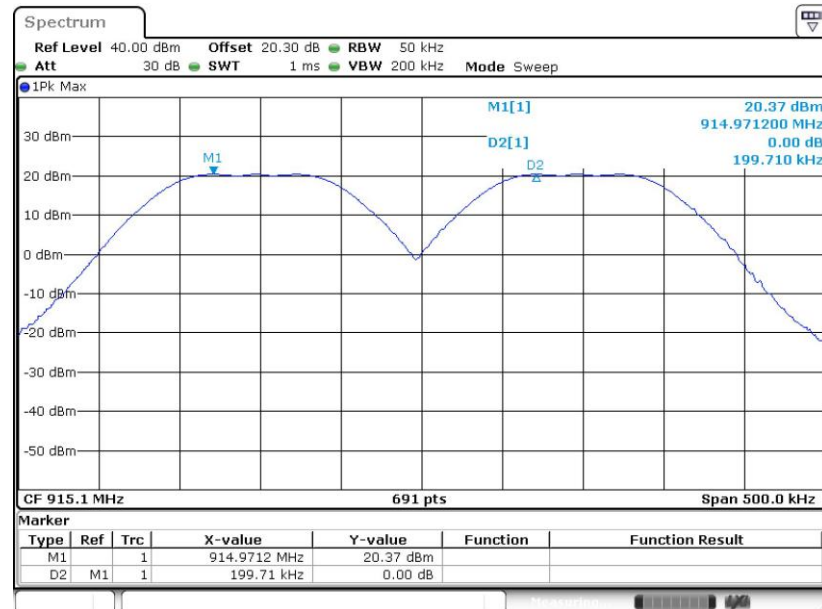
<Data Rate 50kbps>

Channel Separation Plot on Low CH



Date: 5.NOV.2025 15:48:34

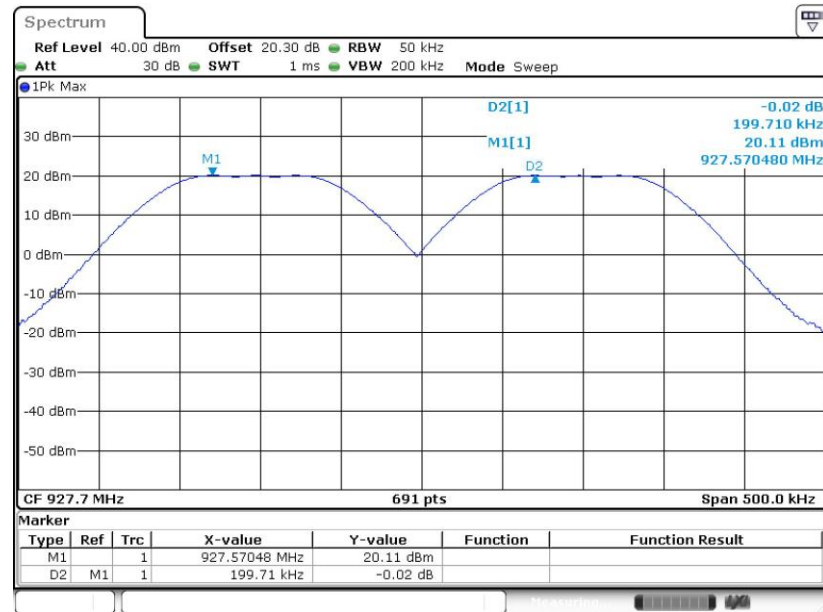
Channel Separation Plot on Mid CH



Date: 5.NOV.2025 15:54:36



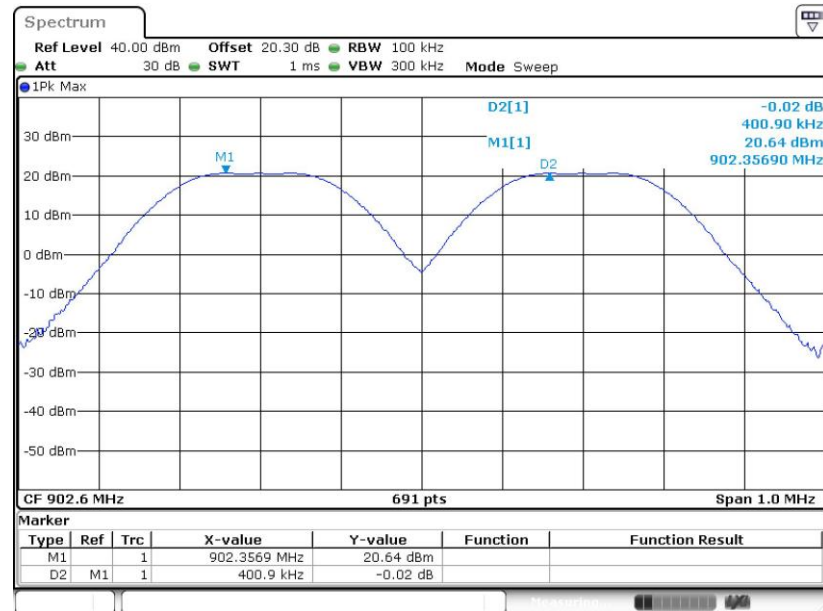
Channel Separation Plot on High CH



Date: 5.NOV.2025 16:01:01

<Data Rate 150kbps>

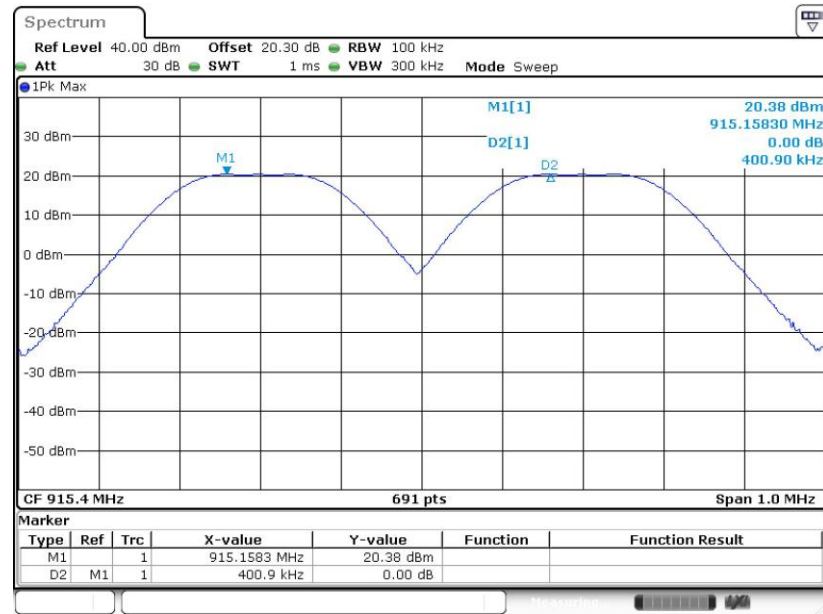
Channel Separation Plot on Low CH



Date: 5.NOV.2025 16:29:31

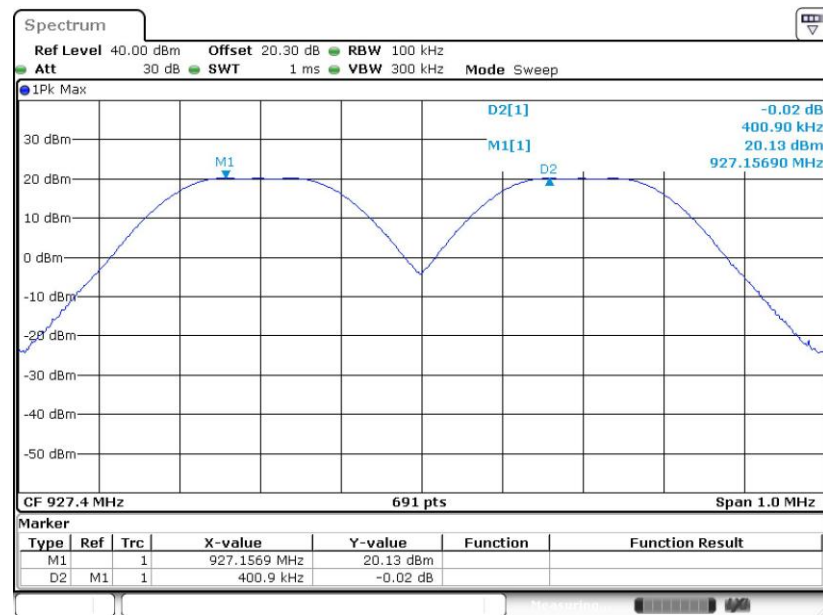


Channel Separation Plot on Mid CH



Date: 5.NOV.2025 16:35:50

Channel Separation Plot on High CH

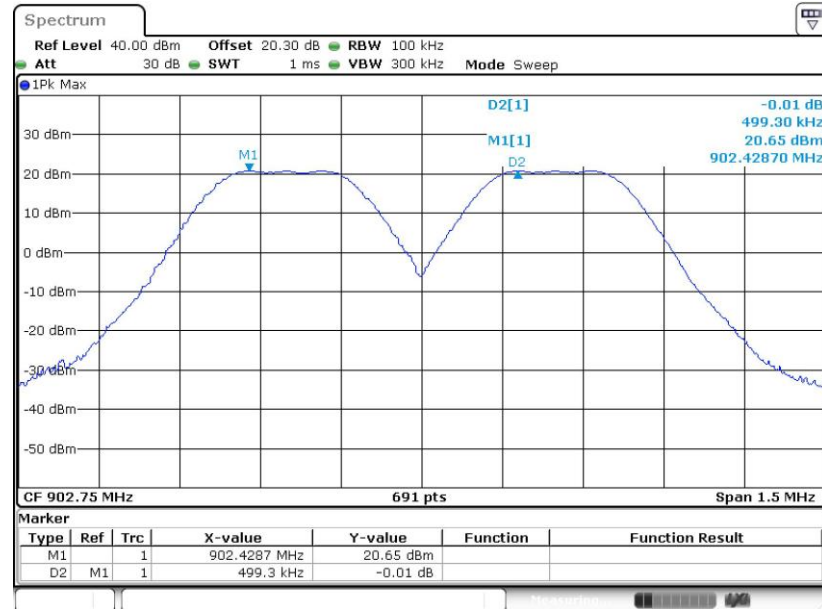


Date: 5.NOV.2025 16:46:20

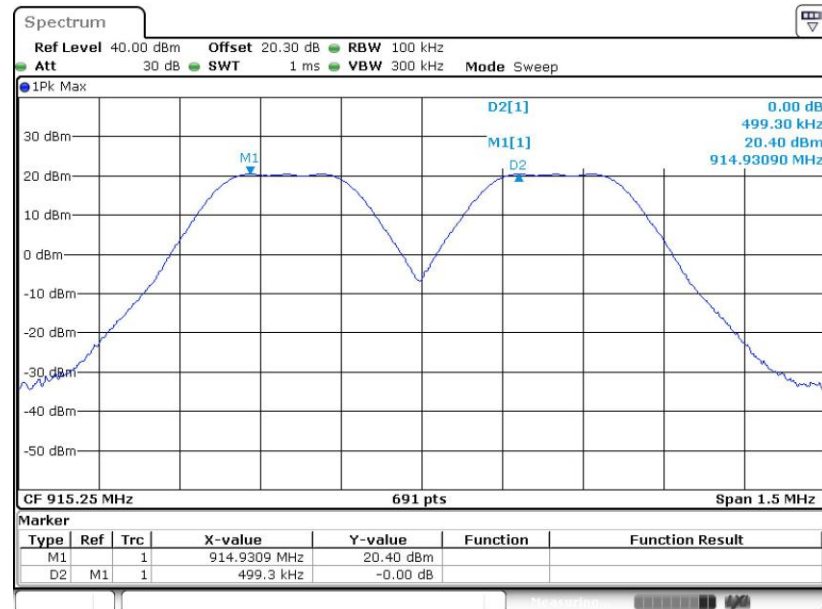


<Data Rate 250kbps>

Channel Separation Plot on Low CH

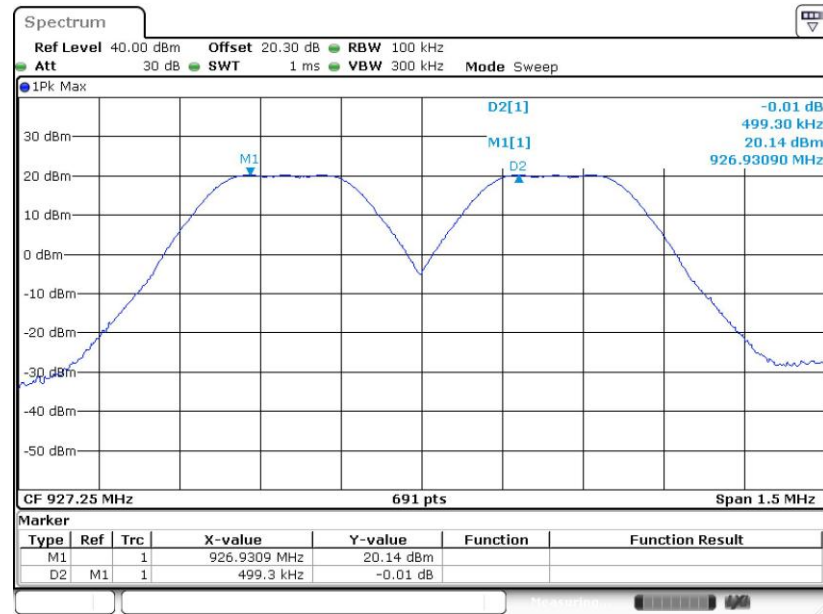


Channel Separation Plot on Mid CH





Channel Separation Plot on High CH



Date: 5.NOV.2025 17:27:16

3.3 Dwell Time Measurement

3.3.1 Limit of Dwell Time

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; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

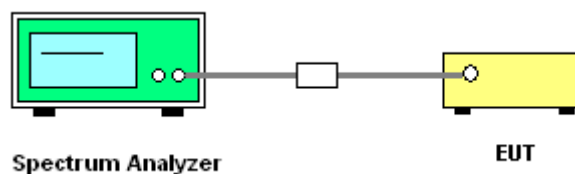
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The testing follows ANSI C63.10-2020 clause 7.8.4.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Enable the EUT hopping function.
5. Use the following spectrum analyzer settings: Span = zero span, centered on a hopping channel; RBW = 100 KHz; VBW = 300 KHz; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold.
6. Measure and record the results in the test report.

3.3.4 Test Setup

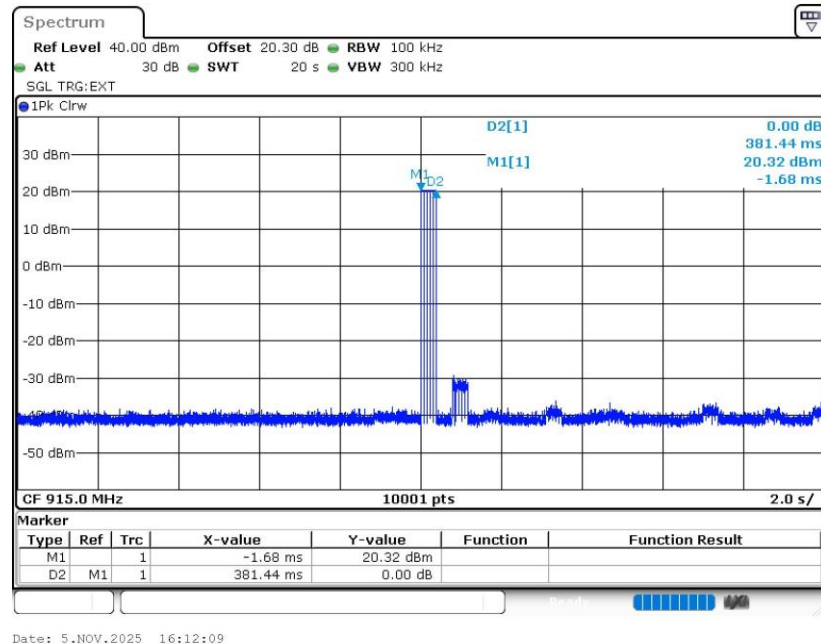




3.3.5 Test Result of Dwell Time

Please refer to Appendix A.

DT on-time and Hops over 20 sec period for Data Rate 50kbps

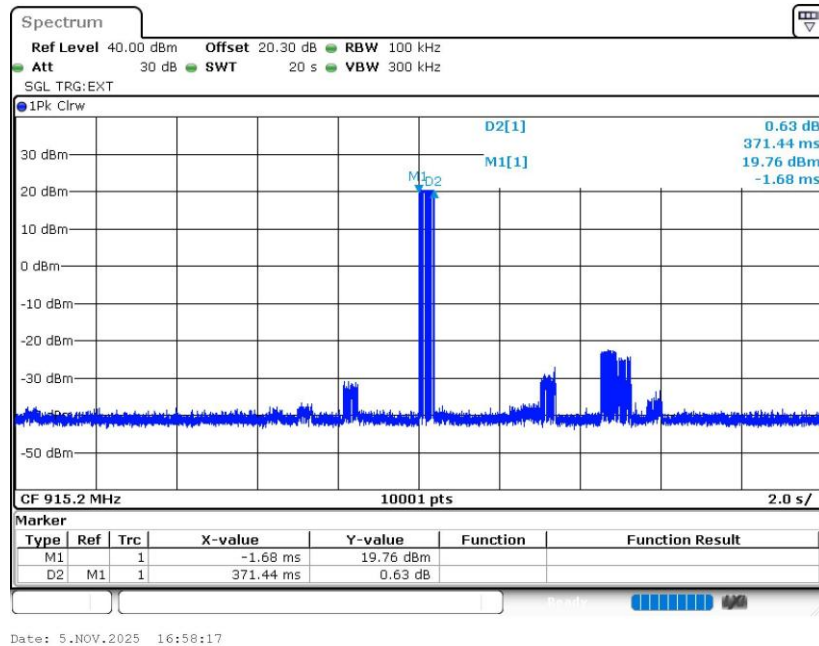


Remark:

Dwell Time(s) = Hops Over Occupancy Time (hops) x Package Transfer Time
= 1 (hop) x 381.44 (ms)
= 0.381 (sec)



DT on-time and Hops over 20 sec period for Data Rate 150kbps

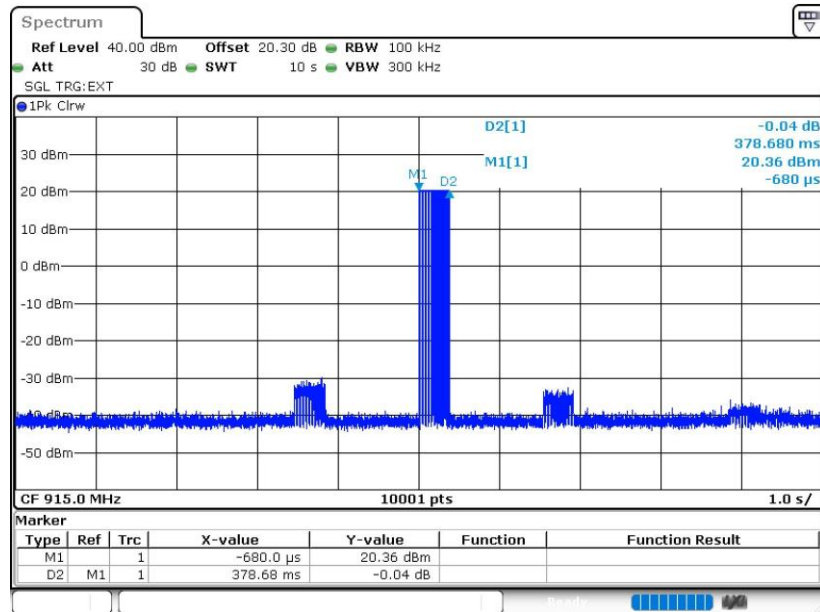


Remark:

Dwell Time(s) = Hops Over Occupancy Time (hops) x Package Transfer Time
= 1 (hop) x 371.44 (ms)
= 0.371 (sec)



DT on-time and Hops over 10 sec period for Data Rate 250kbps



Date: 5.NOV.2025 17:37:47

Remark:

Dwell Time(s) = Hops Over Occupancy Time (hops) x Package Transfer Time
= 1 (hop) x 378.68 (ms)
= 0.379 (sec)

3.4 20dB and 99% Bandwidth Measurement

3.4.1 Limit of 20dB and 99% Bandwidth

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

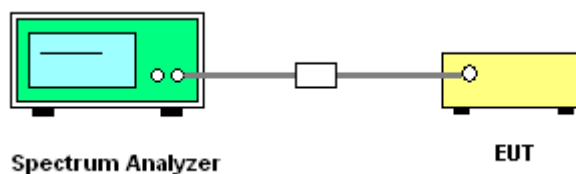
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows ANSI C63.10-2020 clause 6.9.2 and 6.9.3.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Use the following spectrum analyzer settings for 20dB Bandwidth measurement.
Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel;
The RBW is set to 1% to 5% of the 99% OBW, the VBW is set to 3 times the RBW;
Sweep = auto; Detector function = peak; Trace = max hold.
5. Use the following spectrum analyzer settings for 99 % Bandwidth measurement.
The RBW is set to 1% to 5% of the 99% OBW, the VBW is set to 3 times the RBW;
Sweep = auto; Detector function = peak; Trace = max hold.
6. Measure and record the results in the test report.

3.4.4 Test Setup



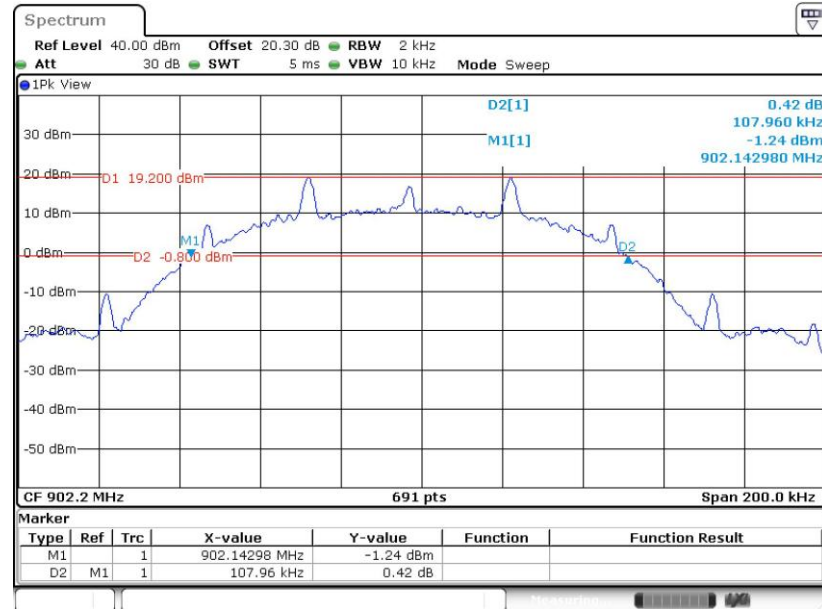
3.4.5 Test Result of 20dB Bandwidth

Please refer to Appendix A.



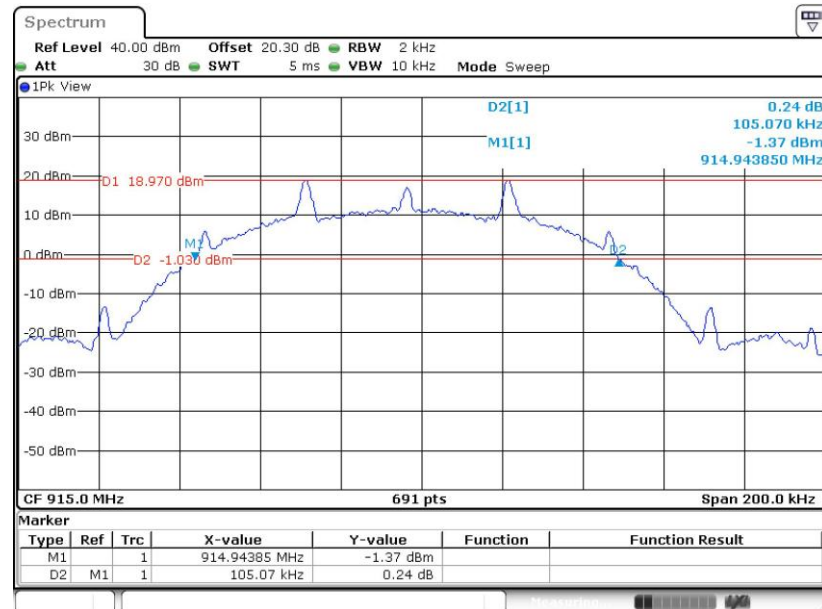
<Data Rate 50kbps>

20 dB Bandwidth Plot on Low Channel



Date: 5.NOV.2025 15:44:21

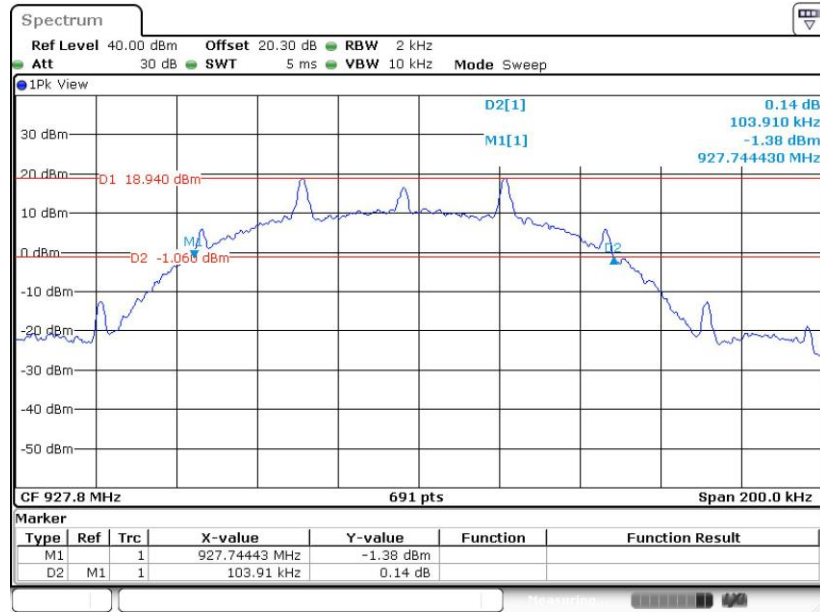
20 dB Bandwidth Plot on Mid Channel



Date: 5.NOV.2025 15:50:56



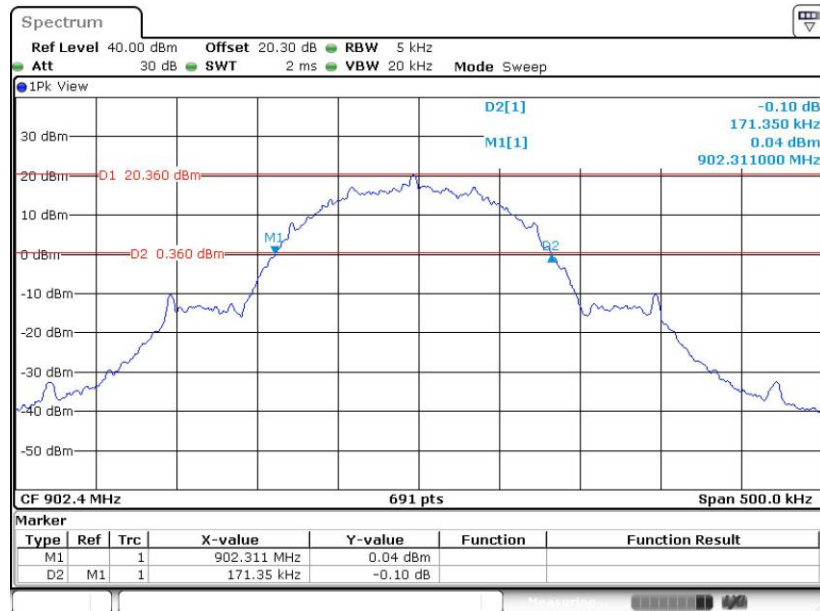
20 dB Bandwidth Plot on High Channel



Date: 5.NOV.2025 15:56:49

<Data Rate 150kbps>

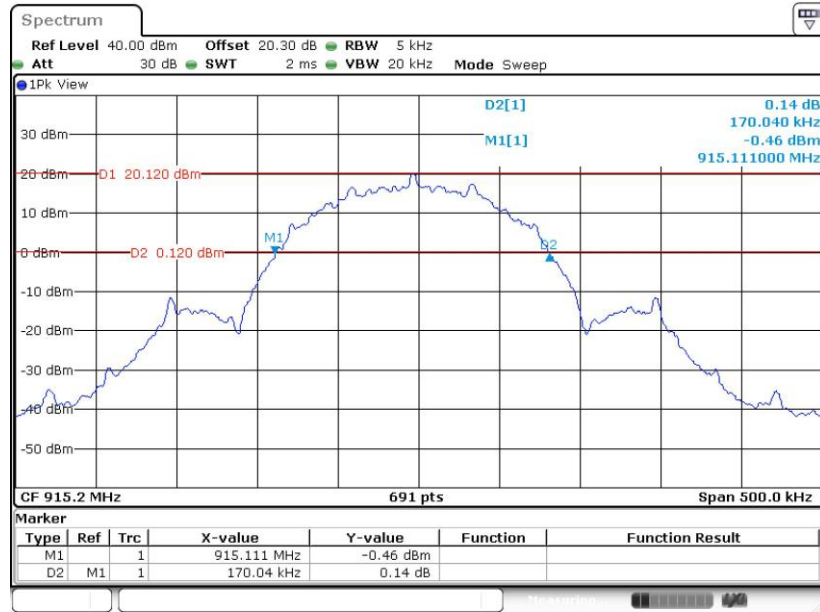
20 dB Bandwidth Plot on Low Channel



Date: 5.NOV.2025 16:21:55

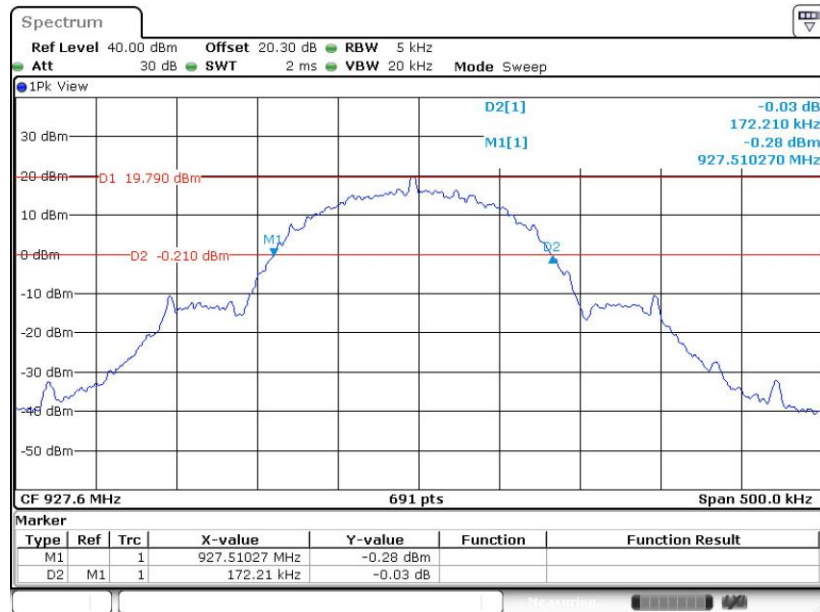


20 dB Bandwidth Plot on Mid Channel



Date: 5.NOV.2025 16:31:26

20 dB Bandwidth Plot on High Channel

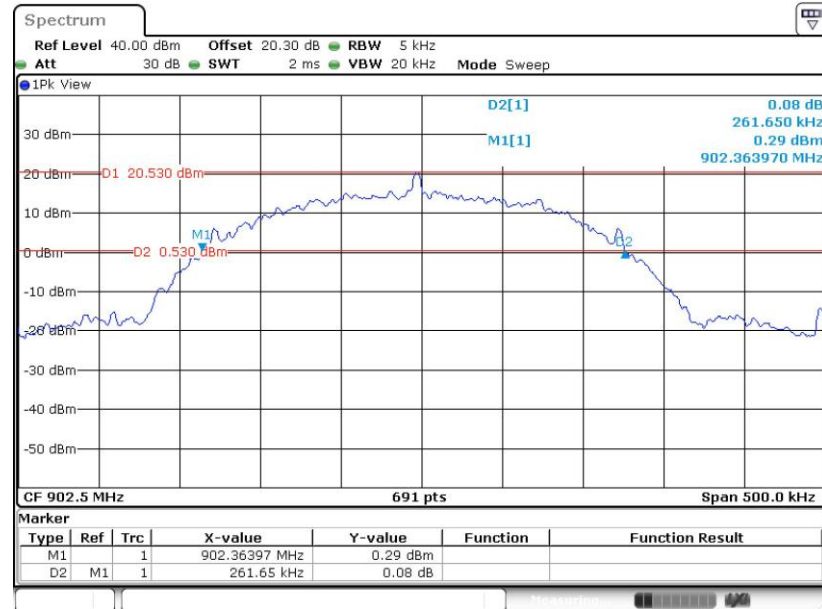


Date: 5.NOV.2025 16:38:22



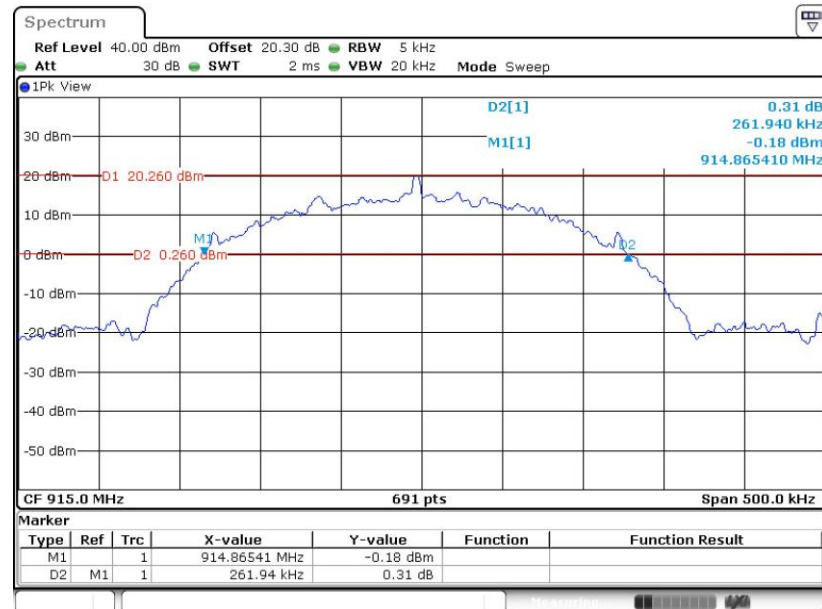
<Data Rate 250kbps>

20 dB Bandwidth Plot on Low Channel



Date: 5.NOV.2025 17:10:30

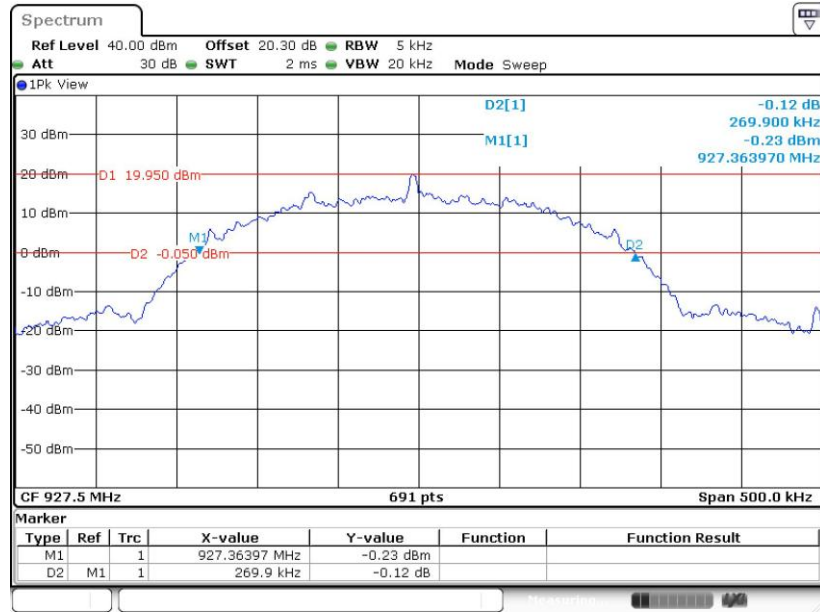
20 dB Bandwidth Plot on Mid Channel



Date: 5.NOV.2025 17:16:26



20 dB Bandwidth Plot on High Channel



Date: 5.NOV.2025 17:22:49

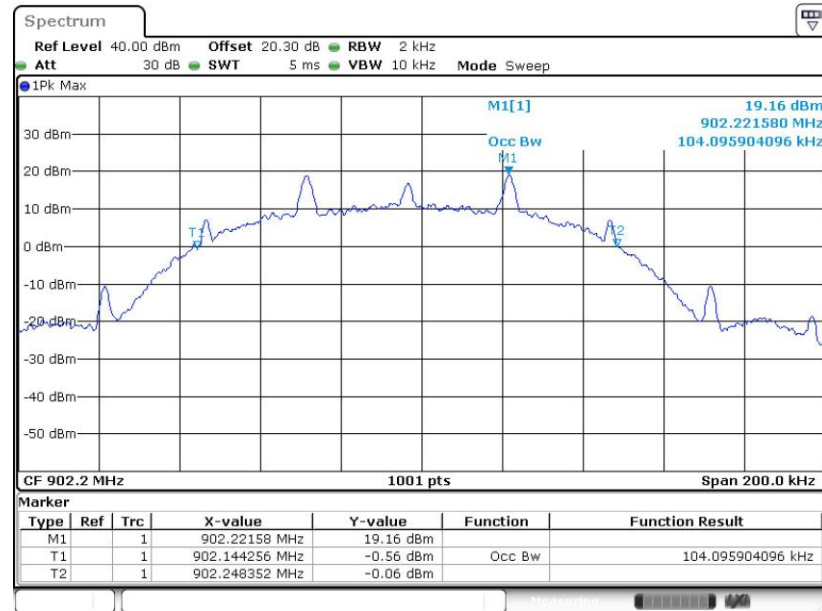


3.4.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

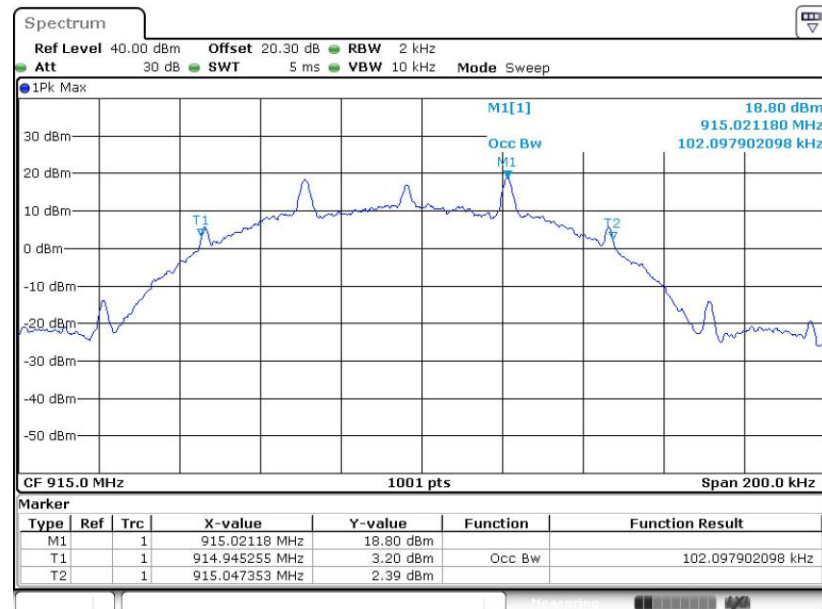
<Data Rate 50kbps>

99% Occupied Bandwidth Plot on Low Channel



Date: 5.NOV.2025 15:44:58

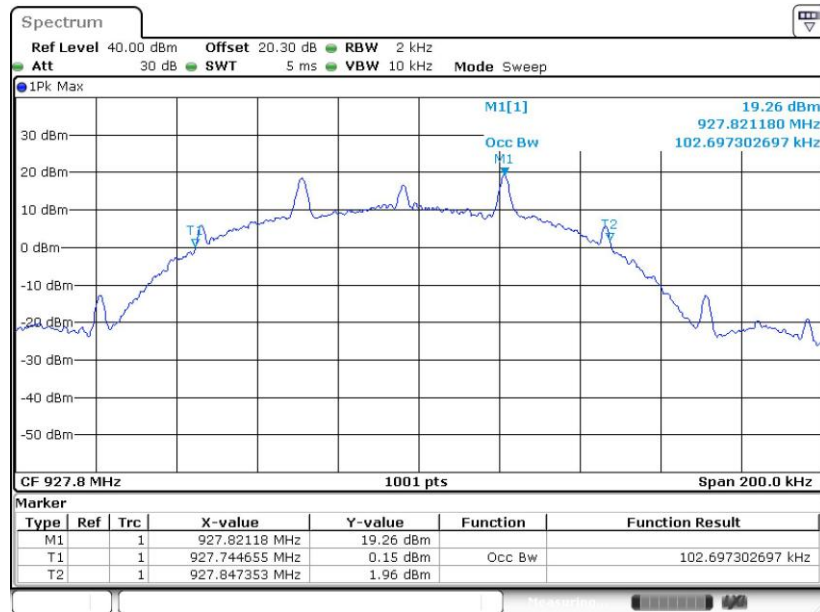
99% Occupied Bandwidth Plot on Mid Channel



Date: 5.NOV.2025 15:51:51



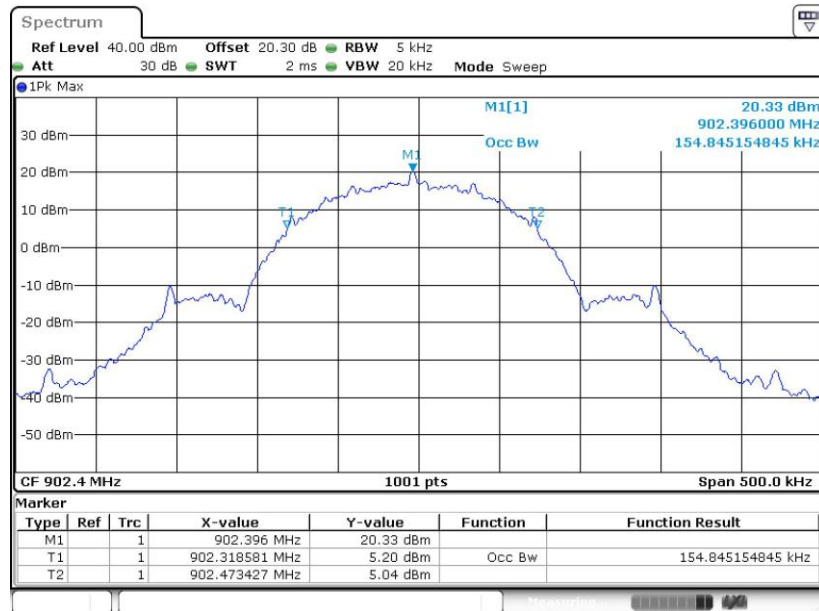
99% Occupied Bandwidth Plot on High Channel



Date: 5.NOV.2025 15:57:42

<Data Rate 150kbps>

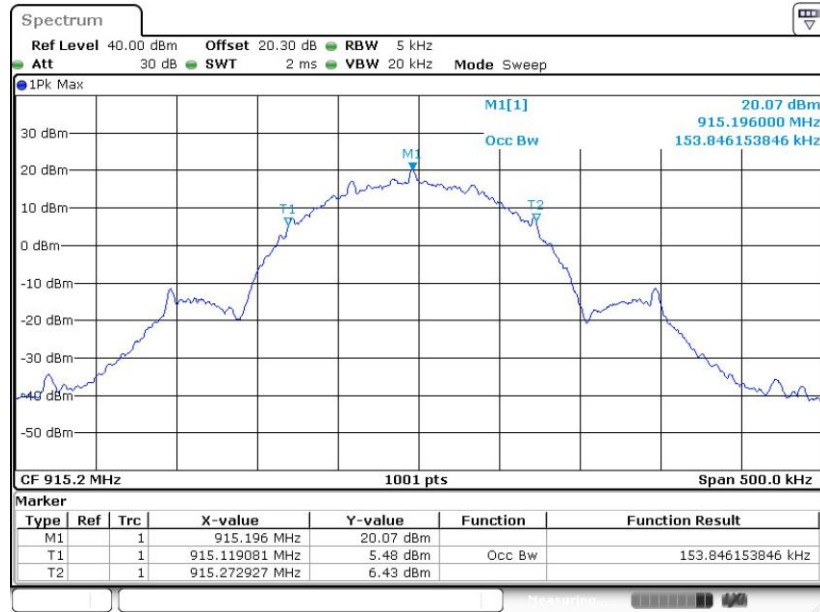
99% Occupied Bandwidth Plot on Low Channel



Date: 5.NOV.2025 16:22:55

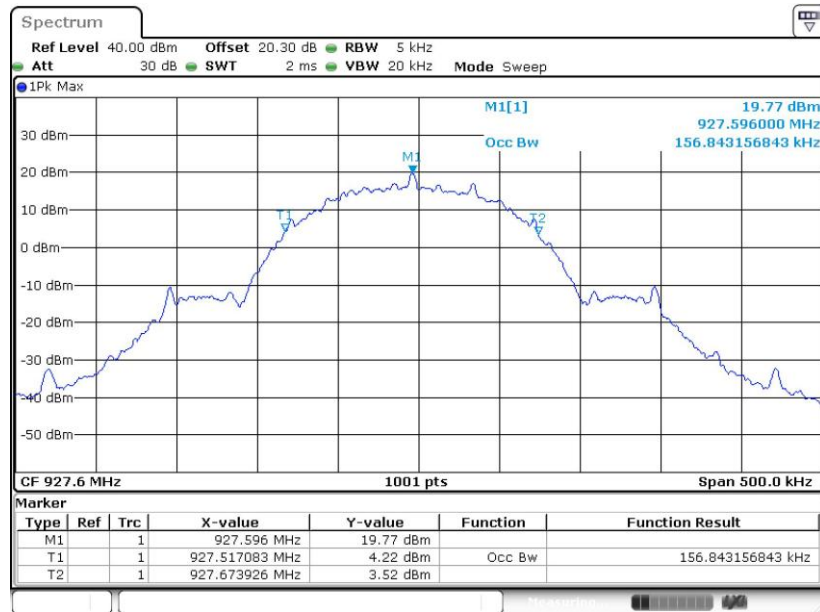


99% Occupied Bandwidth Plot on Mid Channel



Date: 5.NOV.2025 16:32:25

99% Occupied Bandwidth Plot on High Channel

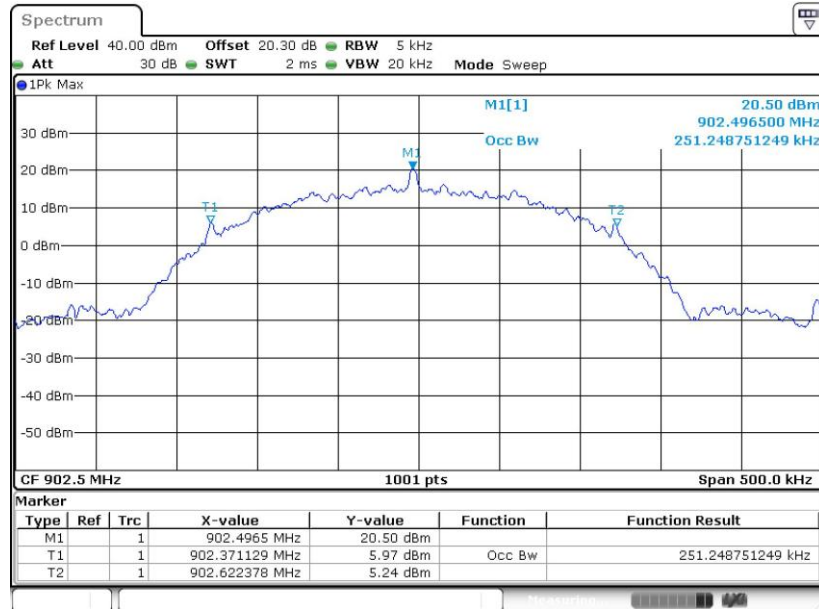


Date: 5.NOV.2025 16:38:57



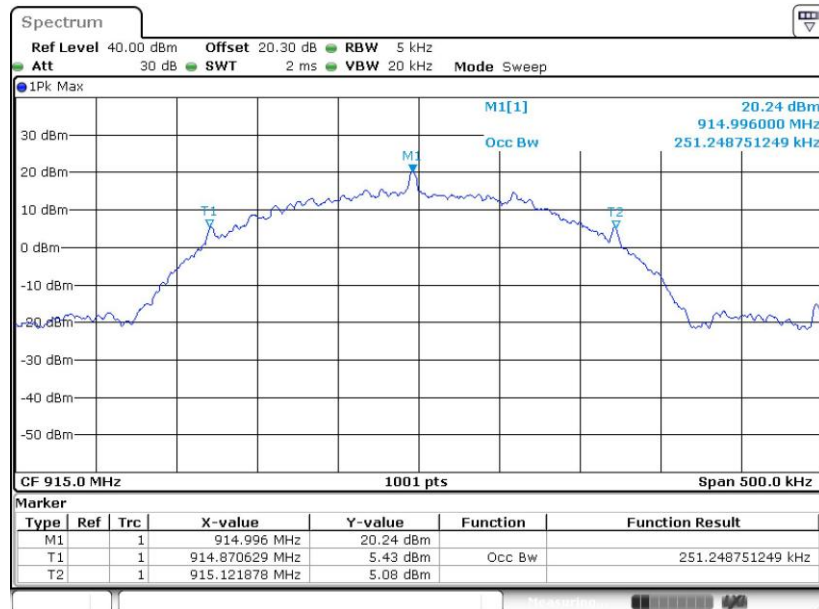
<Data Rate 250kbps>

99% Occupied Bandwidth Plot on Low Channel



Date: 5.NOV.2025 17:11:00

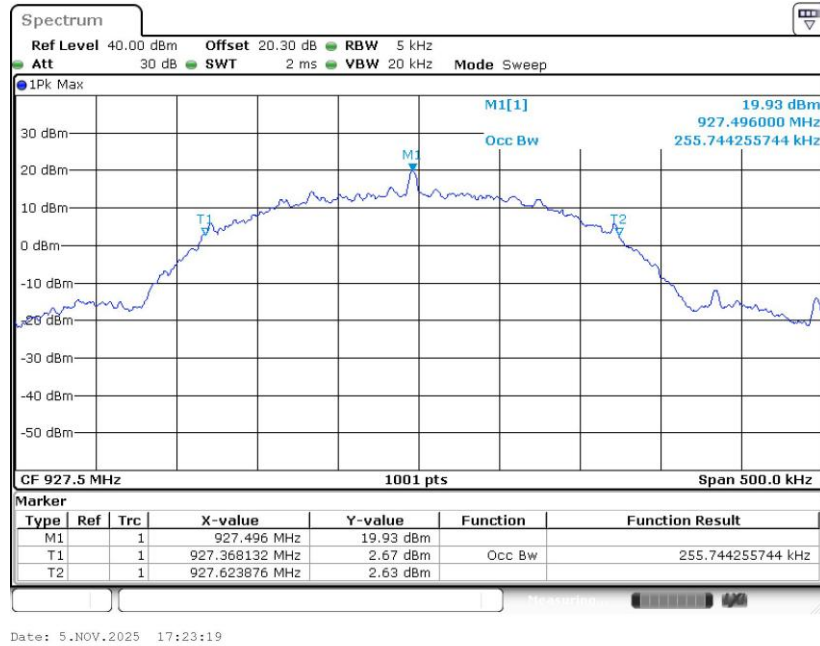
99% Occupied Bandwidth Plot on Mid Channel



Date: 5.NOV.2025 17:17:13



99% Occupied Bandwidth Plot on High Channel



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.5 Output Power Measurement

3.5.1 Limit of Output Power

The maximum peak conducted output power of the intentional radiator shall not exceed the following:
For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

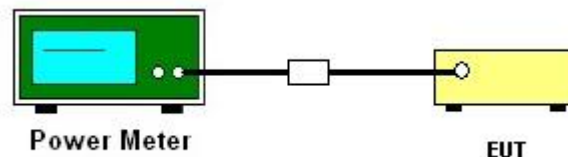
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The testing follows ANSI C63.10-2020 clause 7.8.5.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power with cable loss and record the results in the test report.
5. Measure and record the results in the test report.

3.5.4 Test Setup



3.5.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.6 Conducted Band Edges Measurement

3.6.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

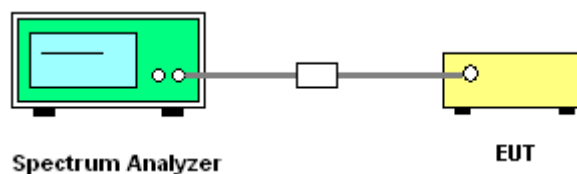
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. The testing follows ANSI C63.10-2020 clause 7.8.7.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW = 100kHz, VBW = 300kHz. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.
4. Enable hopping function of the EUT and then repeat step 2. and 3.
5. Measure and record the results in the test report.

3.6.4 Test Setup

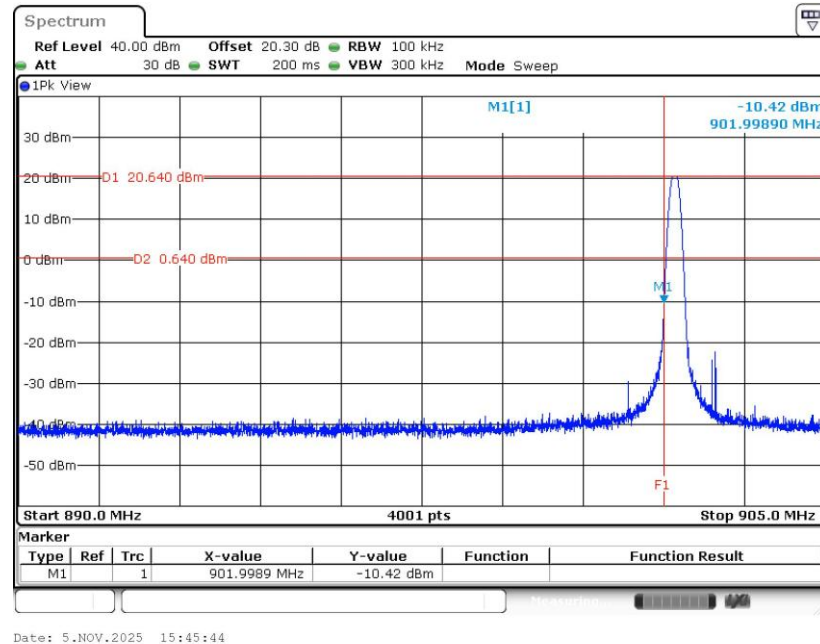




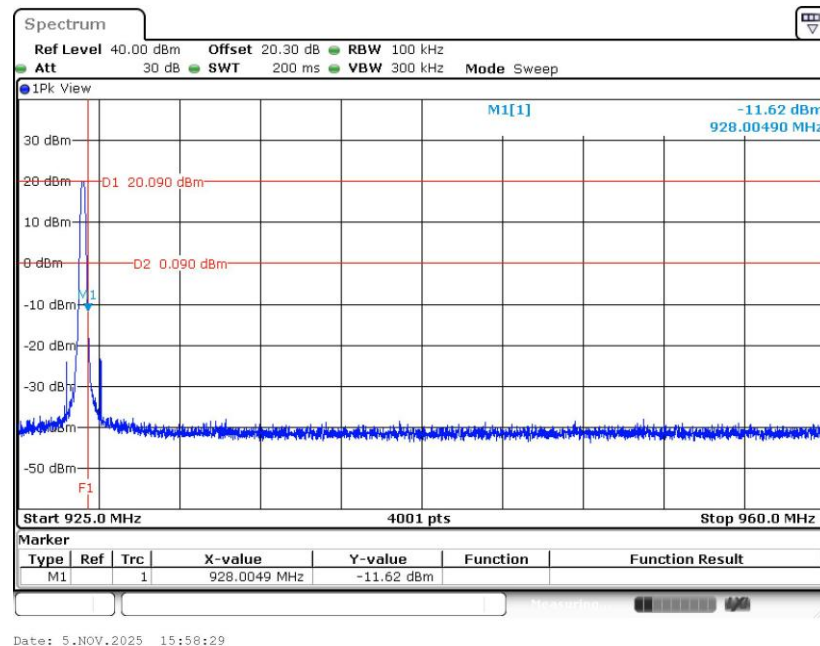
3.6.5 Test Result of Conducted Band Edges

<Data Rate 50kbps>

Low Band Edge Plot



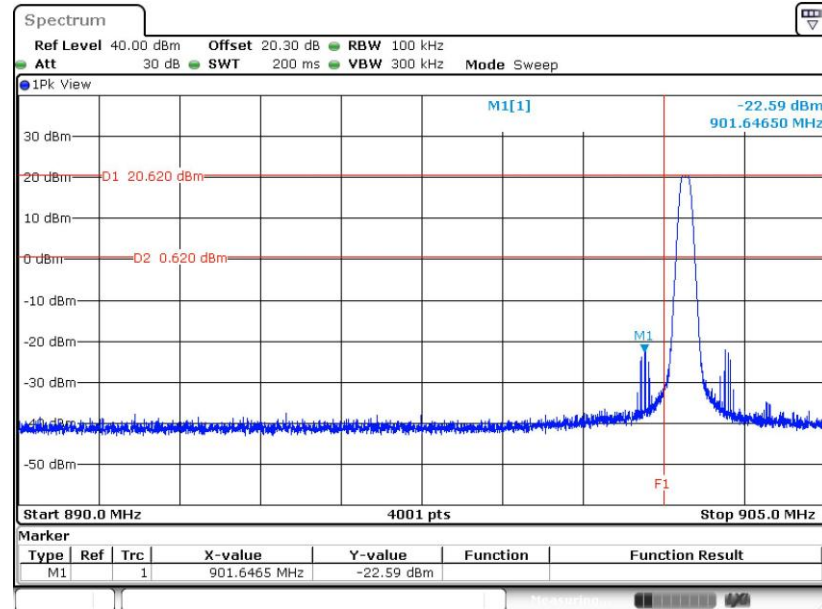
High Band Edge Plot





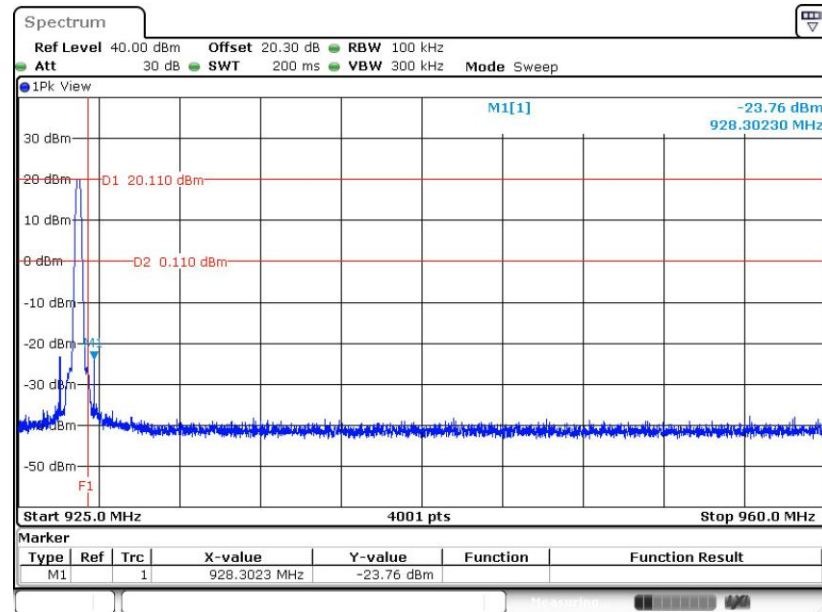
<Data Rate 150kbps>

Low Band Edge Plot



Date: 5.NOV.2025 16:24:36

High Band Edge Plot

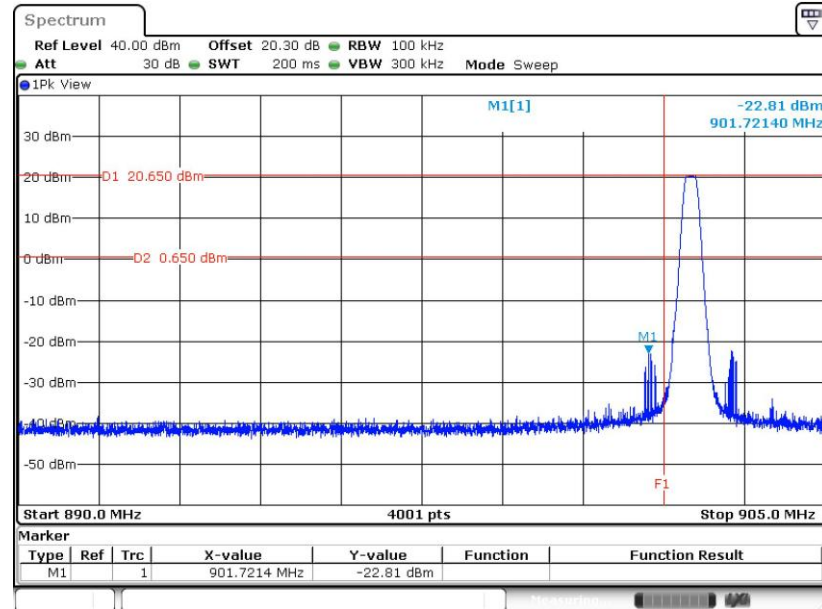


Date: 5.NOV.2025 16:42:01



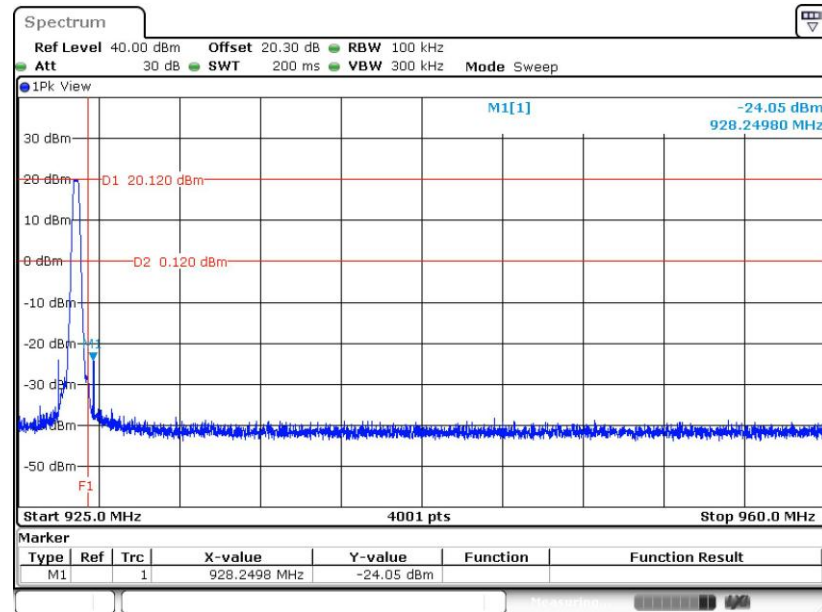
<Data Rate 250kbps>

Low Band Edge Plot



Date: 5.NOV.2025 17:11:52

High Band Edge Plot



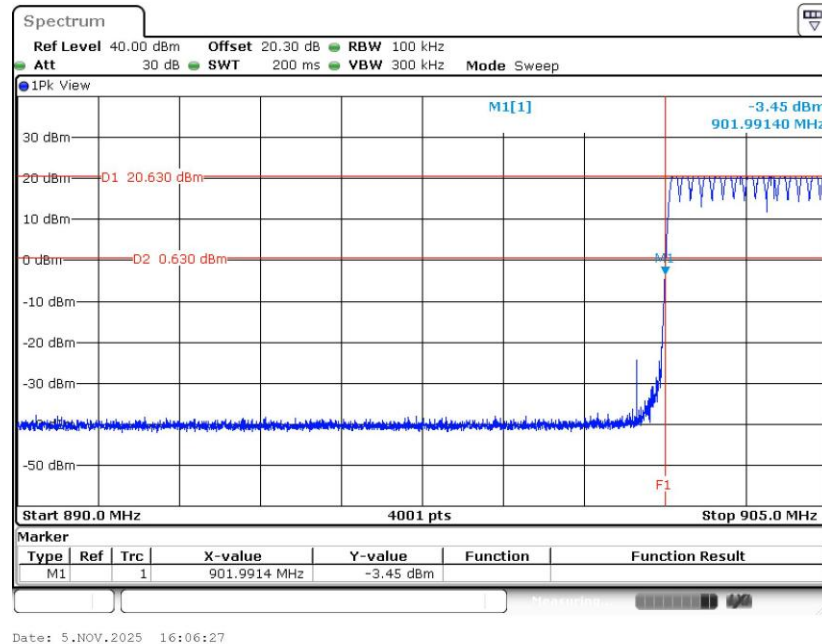
Date: 5.NOV.2025 17:24:08



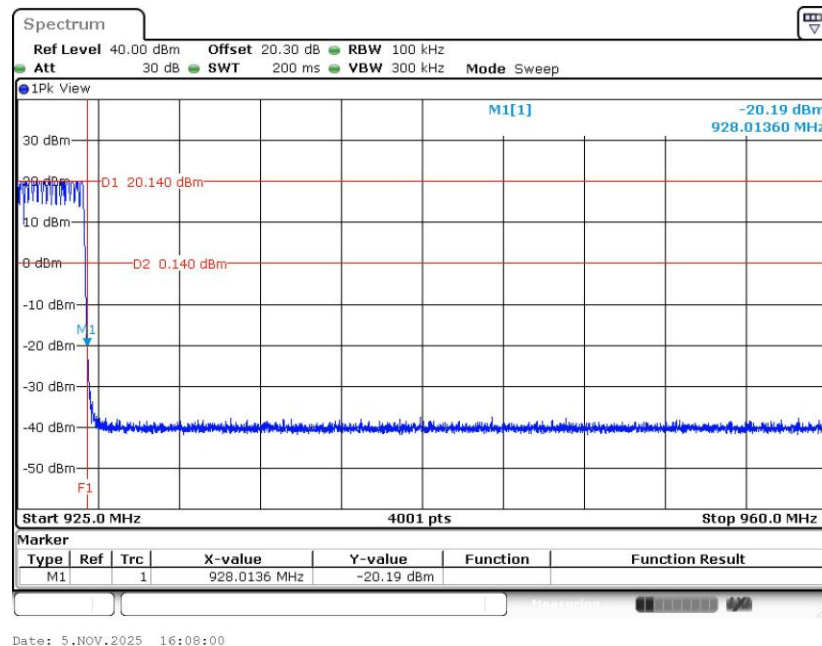
3.6.6 Test Result of Conducted Hopping Mode Band Edges

<Data Rate 50kbps>

Hopping Mode Low Band Edge Plot



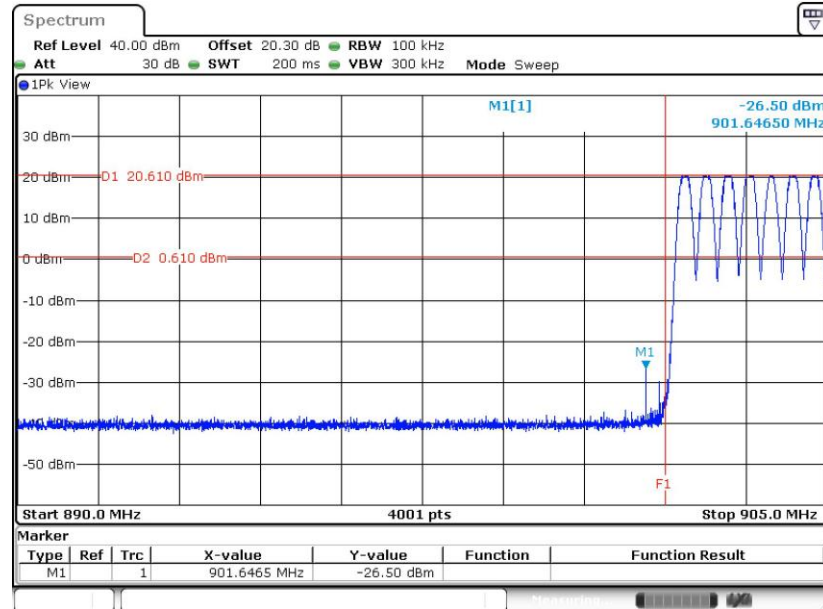
Hopping Mode High Band Edge Plot





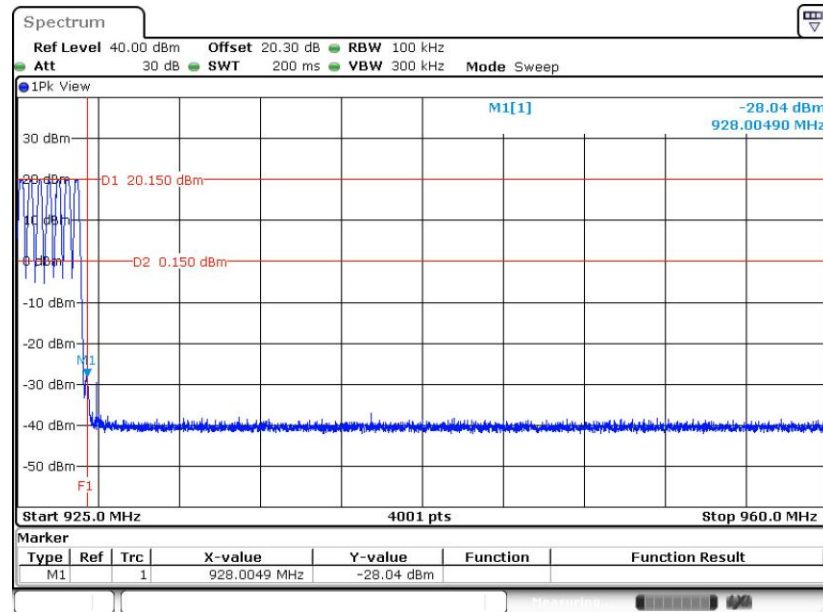
<Data Rate 150kbps>

Hopping Mode Low Band Edge Plot



Date: 5.NOV.2025 16:50:10

Hopping Mode High Band Edge Plot

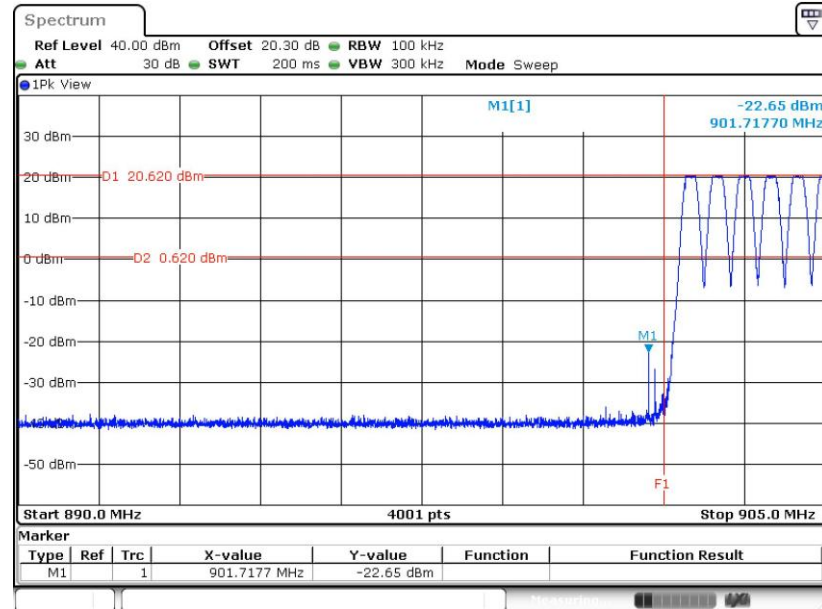


Date: 5.NOV.2025 16:52:00



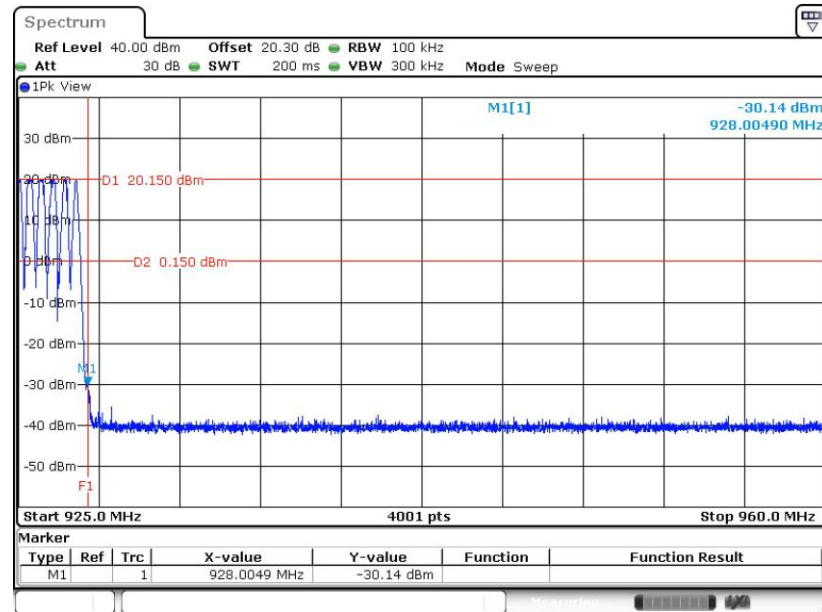
<Data Rate 250kbps>

Hopping Mode Low Band Edge Plot



Date: 5.NOV.2025 17:31:43

Hopping Mode High Band Edge Plot



Date: 5.NOV.2025 17:32:55

3.7 Conducted Spurious Emission Measurement

3.7.1 Limit of Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

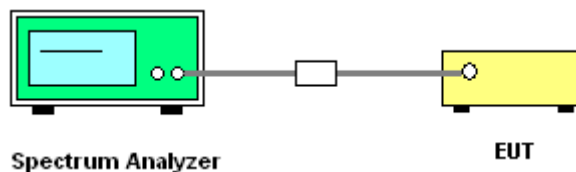
3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedure

1. The testing follows ANSI C63.10-2020 clause 7.8.7.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

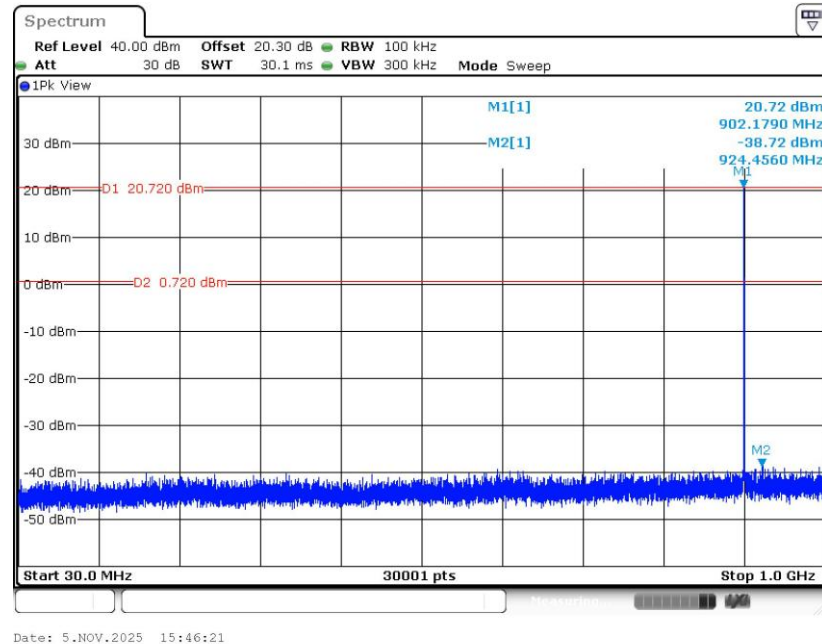
3.7.4 Test Setup



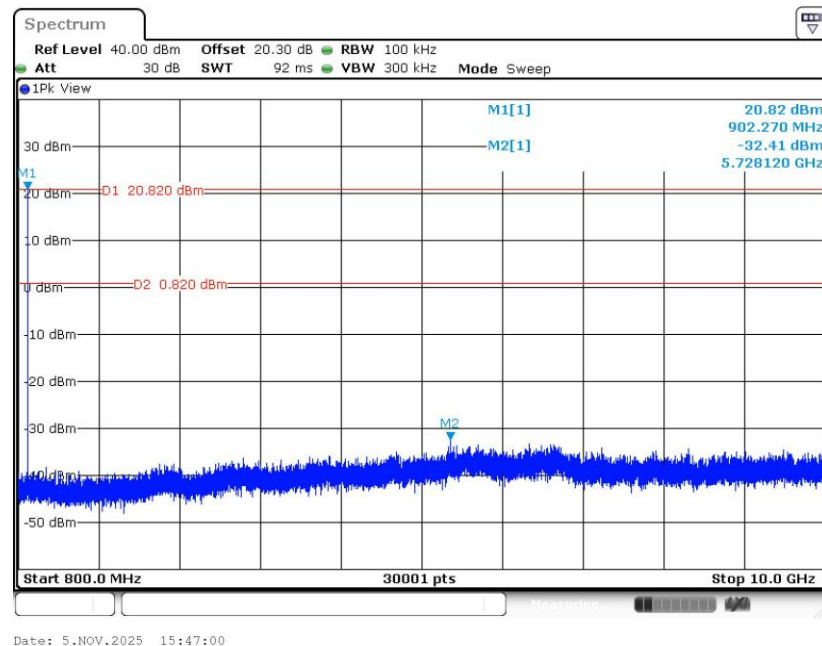
3.7.5 Test Result of Conducted Spurious Emission

<Data Rate 50kbps>

Low CH CSE Plot

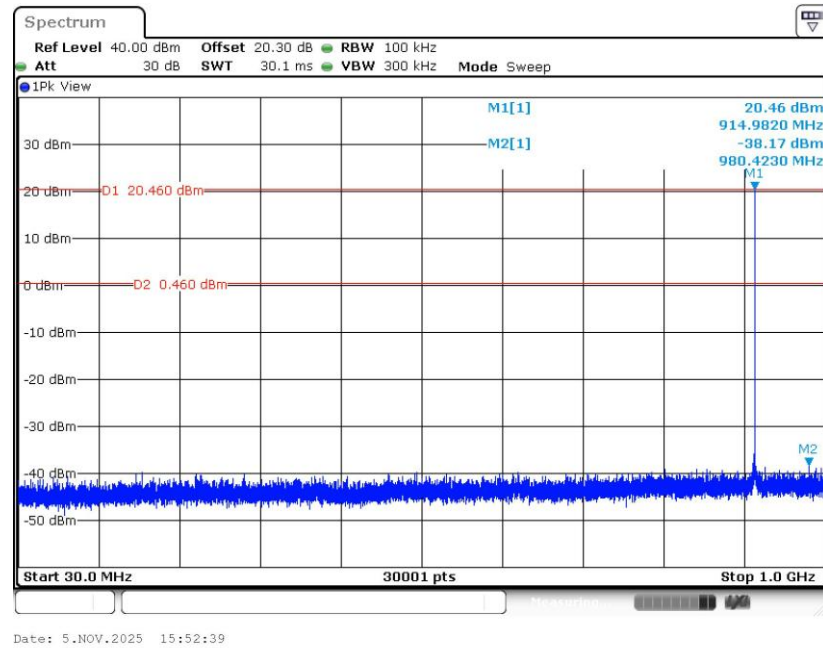


Low CH CSE Plot

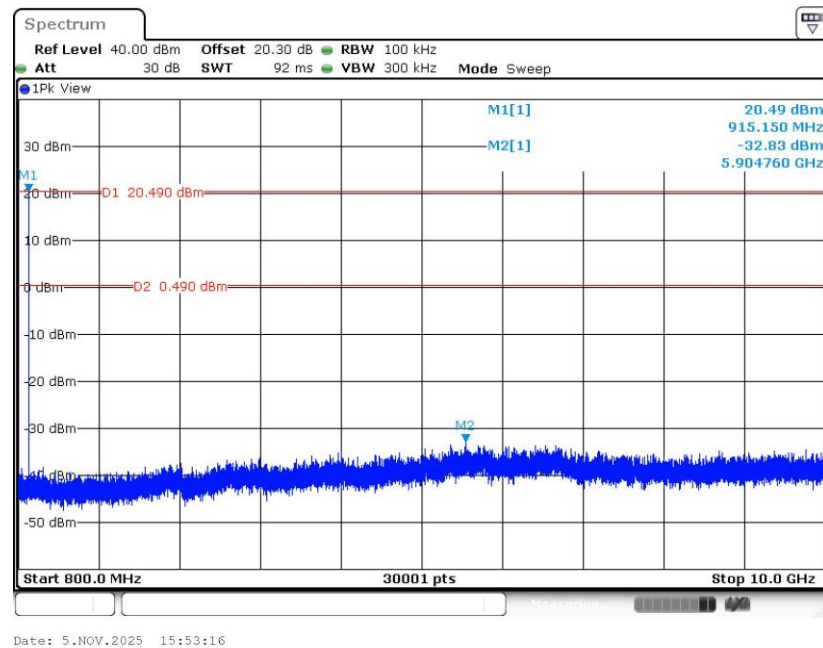




Mid CH CSE Plot

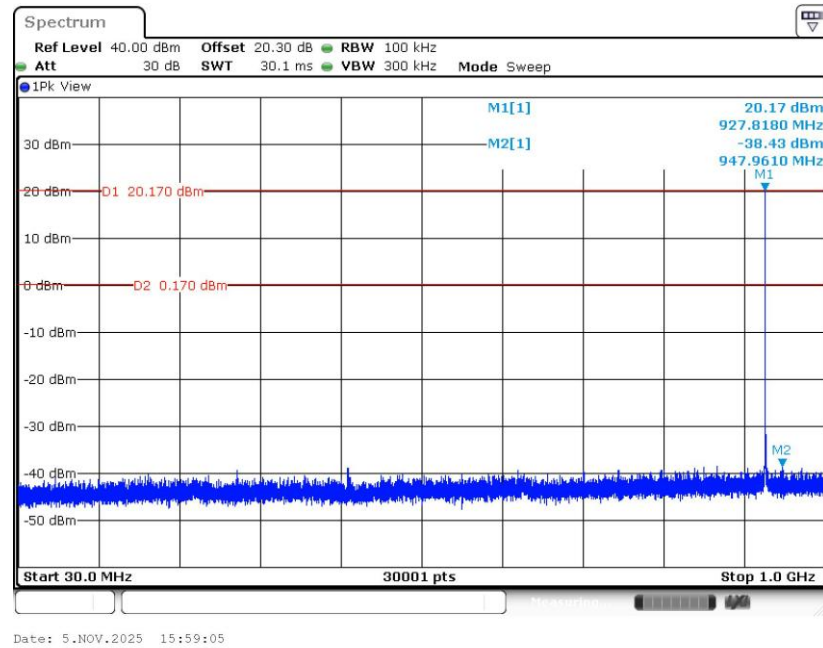


Mid CH CSE Plot

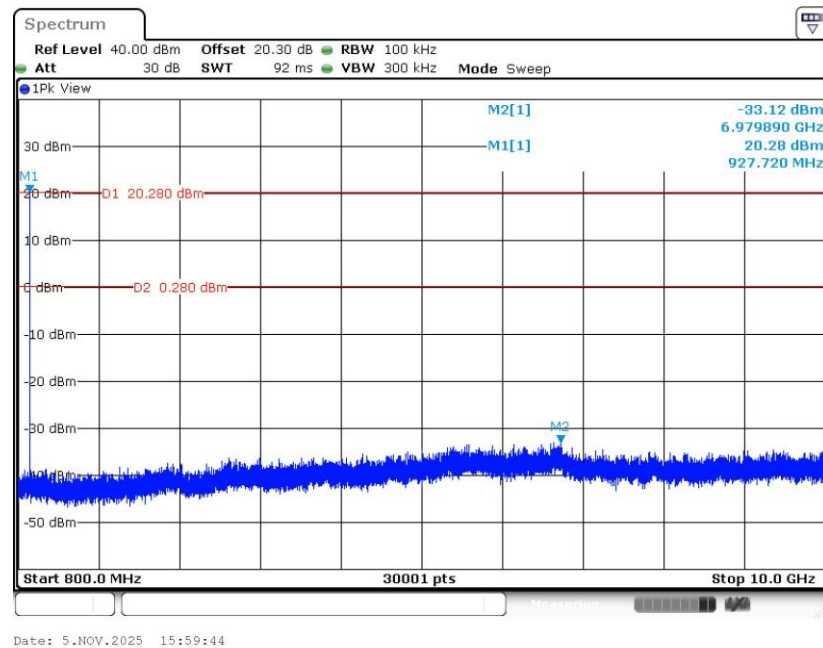




High CH CSE Plot



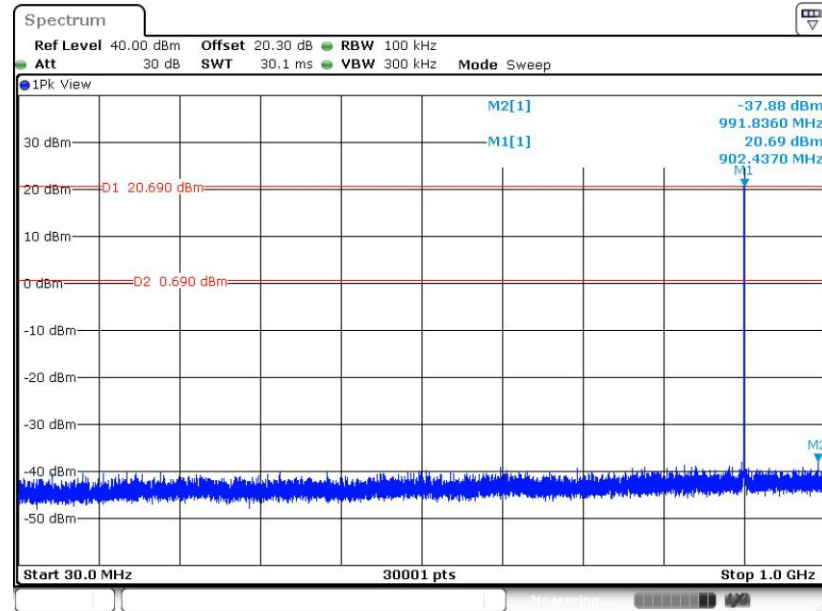
High CH CSE Plot



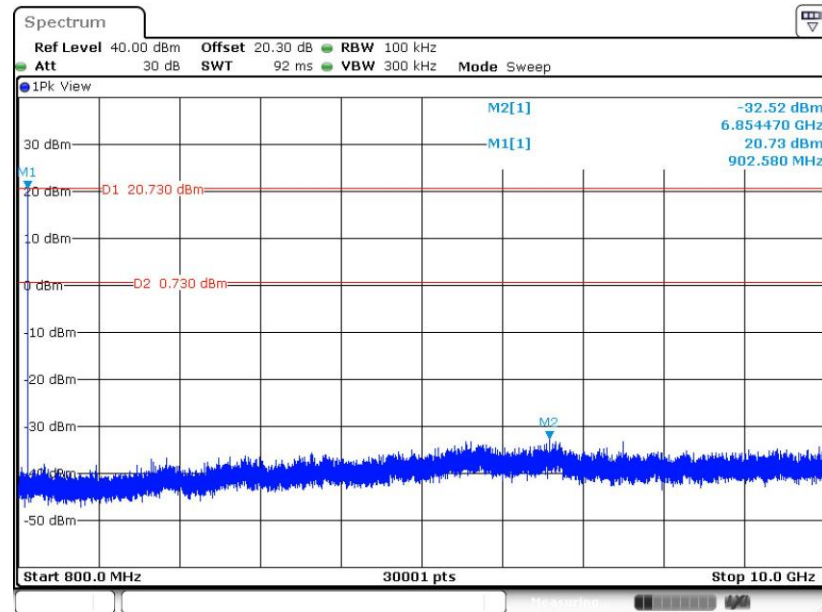


<Data Rate 150kbps>

Low CH CSE Plot

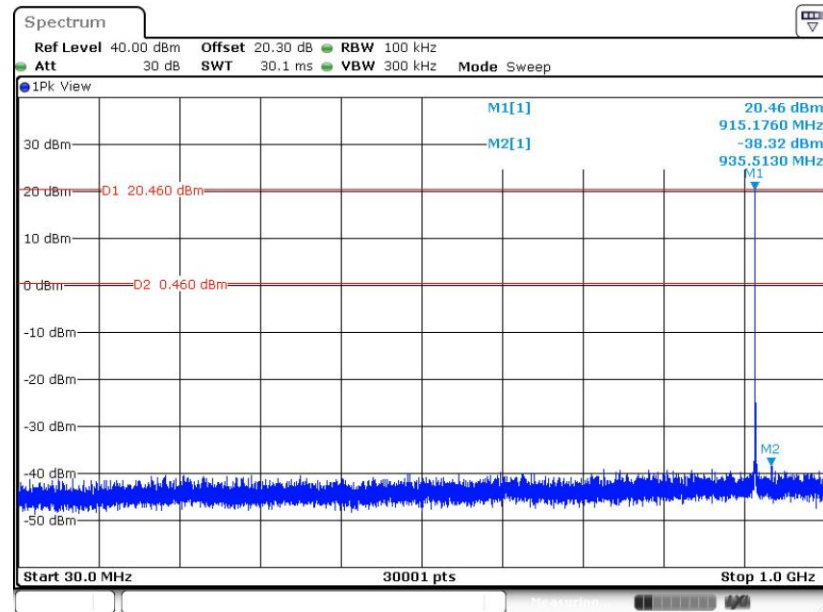


Low CH CSE Plot



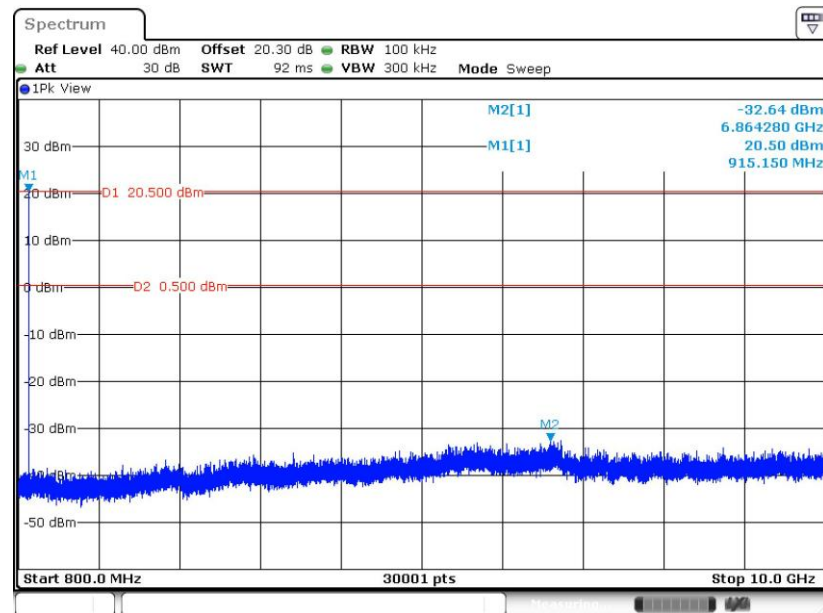


Mid CH CSE Plot



Date: 5.NOV.2025 16:33:32

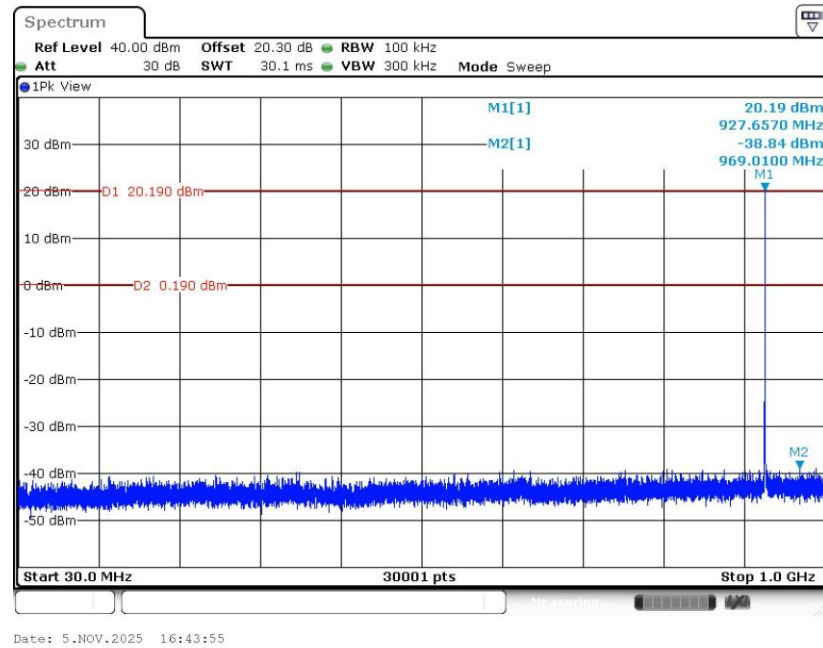
Mid CH CSE Plot



Date: 5.NOV.2025 16:34:17



High CH CSE Plot



High CH CSE Plot

