



FCC RF Test Report

APPLICANT : Xiamen Milesight IoT Co., Ltd.
EQUIPMENT : Smart Radiator Thermostat
BRAND NAME : Milesight
MODEL NAME : WT101-915M, NN101-915M
FCC ID : 2AYHY-WT101
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System
TEST DATE(S) : Apr. 15, 2026 ~ Apr. 17, 2026

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



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR631607B	Rev. 01	Initial issue of report	Apr. 24, 2026

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	99% Bandwidth	-	Report Only	-
3.2	15.247(b)(3)	Conducted Output Power	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	Power Spectral Density	$\leq 8\text{dBm/3kHz}$	Pass	-
3.4	15.247(d)	Conducted Band Edges and Spurious Emission	$\leq 20\text{dBc}$	Pass	-
3.5	15.247(d)	Radiated Band Edges and Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 1.56 dB at 8338.50 MHz
-	15.207	AC Conducted Emission	15.207(a)	Not Applicable	1
3.6	15.203 & 15.247(b)	Antenna Requirement	15.203 & 15.247(b)	Pass	-

Remark 1: The EUT not connect to the AC mains, only powered by batteries.

Conformity Assessment Condition:

1. 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.
2. 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

Xiamen Milesight IoT Co., Ltd.

Building C09, Software Park Phase III, Xiamen 361024, Fujian, China

1.2 Manufacturer

Xiamen Milesight IoT Co., Ltd.

Building C09, Software Park Phase III, Xiamen 361024, Fujian, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Radiator Thermostat
Brand Name	Milesight
Model Name	WT101-915M, NN101-915M
FCC ID	2AYHY-WT101
SN Code	Conducted: 6714E3649774001116 Radiation: 6714E36806830005
EUT Stage	Production Unit

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. For details of different models, please refer to the WT101-915M, NN101-915M_Operational Description of Product Equality Declaration exhibit separately. After evaluation, the differences will not affect RF performance, so we choose the model WT101-915M to full test.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	902 MHz ~ 928 MHz
Number of Channels	31
Bandwidth / Spread Factor	500kHz / 7, 8, 9, 10, 11, 12
Maximum Output Power to Antenna	LoRa DTS SF7 : 8.45 dBm (0.0070 W) LoRa DTS SF8 : 8.43 dBm (0.0070 W) LoRa DTS SF9 : 8.43 dBm (0.0070 W) LoRa DTS SF10 : 8.43 dBm (0.0070 W) LoRa DTS SF11 : 8.48 dBm (0.0070 W) LoRa DTS SF12 : 8.45 dBm (0.0070 W)
99% Occupied Bandwidth	LoRa DTS SF7 : 0.52 MHz LoRa DTS SF8 : 0.52 MHz LoRa DTS SF9 : 0.52 MHz LoRa DTS SF10 : 0.52 MHz LoRa DTS SF11 : 0.53 MHz LoRa DTS SF12 : 0.53 MHz
Antenna Type / Gain	PCB Antenna with gain -0.83 dBi
Type of Modulation	CSS



1.5 Modification of EUT

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

1.6 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	CN1256	421272

1.7 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH03-SZ	AUDIX	E3	6.2009-8-24

1.8 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+Cor.1-2023

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)
902-928 MHz	1	902.5	17	915.3
	2	903.3	18	916.1
	3	904.1	19	916.9
	4	904.9	20	917.7
	5	905.7	21	918.5
	6	906.5	22	919.3
	7	907.3	23	920.1
	8	908.1	24	920.9
	9	908.9	25	921.7
	10	909.7	26	922.5
	11	910.5	27	923.3
	12	911.3	28	924.1
	13	912.1	29	924.9
	14	912.9	30	925.7
	15	913.7	31	926.5
	16	914.5	-	-

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

2.2 Test Mode

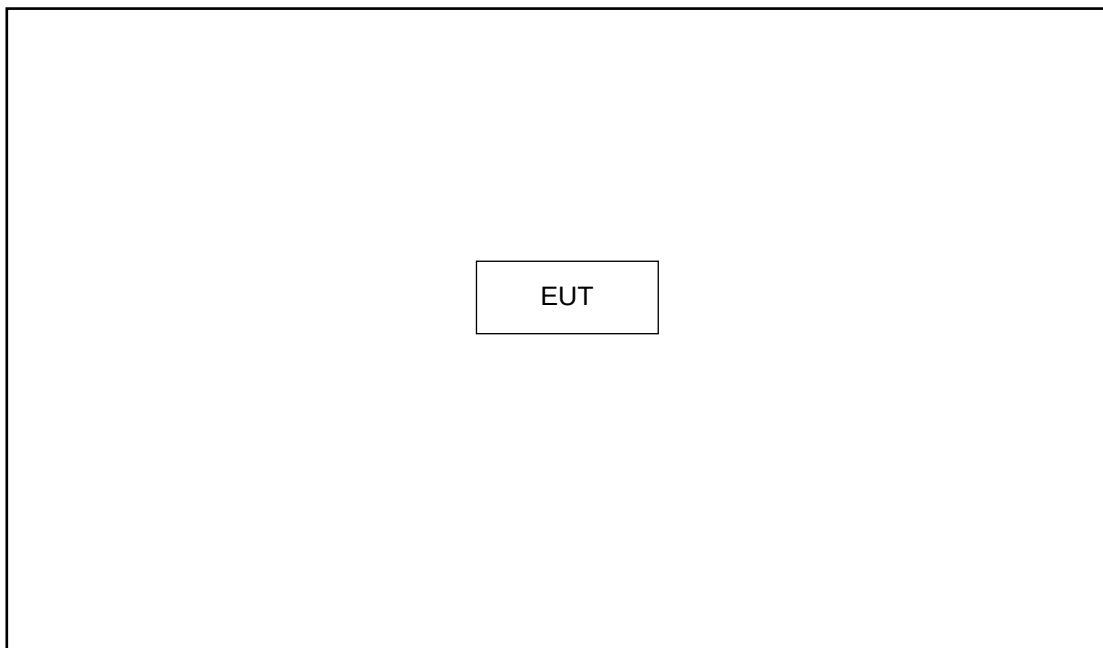
- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever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

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

Summary table of Test Cases	
Test Item	Modulation
	Lora 500kHz DTS
Conducted TCs	Mode 1: LoRa Tx CH01_902.5 MHz
	Mode 2: LoRa Tx CH16_914.5 MHz
	Mode 3: LoRa Tx CH31_926.5 MHz
Radiated TCs	Mode 1: LoRa Tx CH01_902.5 MHz
	Mode 2: LoRa Tx CH16_914.5 MHz
	Mode 3: LoRa Tx CH31_926.5 MHz

2.3 Connection Diagram of Test System

Radiated Emission:



2.4 EUT Operation Test Setup

For LoRa 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 0.6 dB and 20dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 0.6 + 20 = 20.60 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

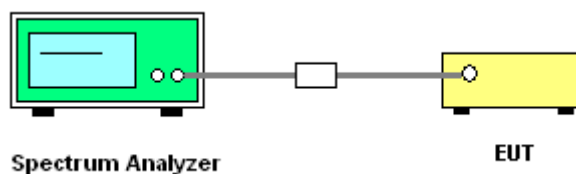
3.1.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.1.3 Test Procedures

1. The testing follows ANSI C63.10-2020 clause 11.8.1 for 6dB BW and 6.9.3 for 99% occupied bandwidth measurements
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. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz. Set the Video bandwidth (VBW) $\geq 3 \times \text{RBW}$. Detector = Peak. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1%~5% of OBW and set the Video bandwidth (VBW) approximately three times the RBW.
6. Measure and record the results in the test report.

3.1.4 Test Setup



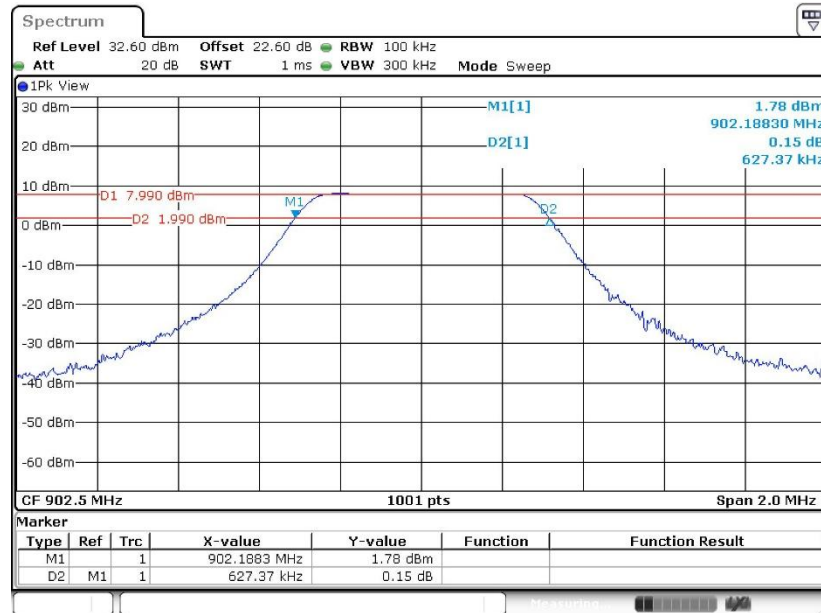


3.1.5 Test Result of 6dB Bandwidth

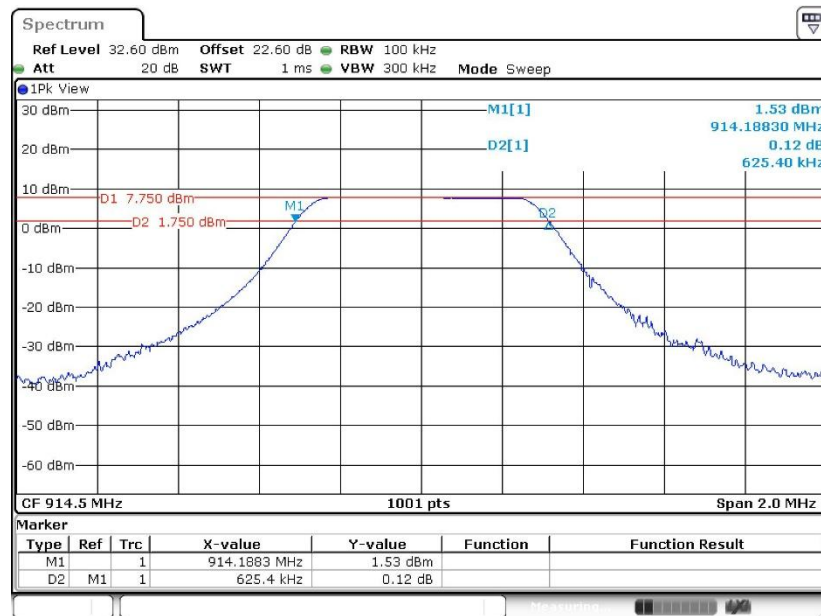
Please refer to Appendix A.

For SF7:

6 dB Bandwidth Plot on 902.5MHz

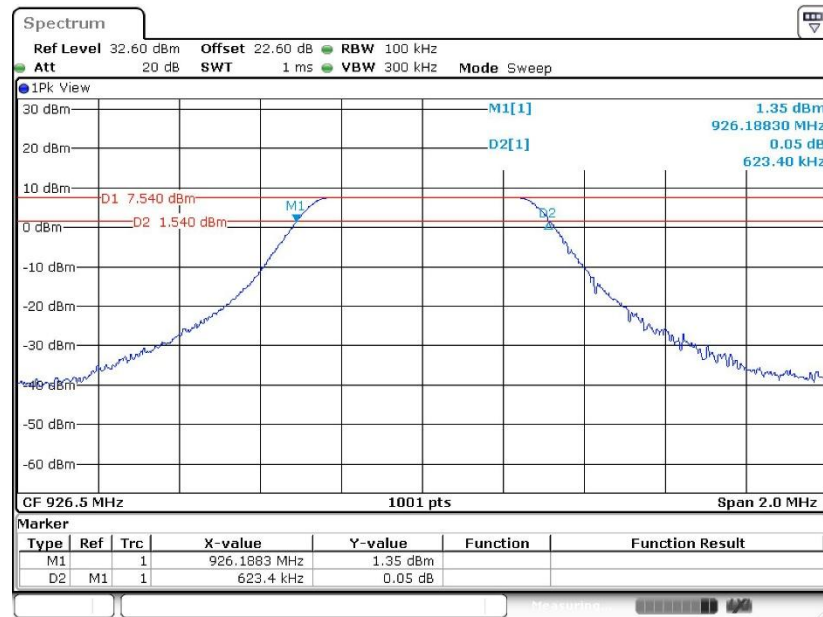


6 dB Bandwidth Plot on 914.5 MHz





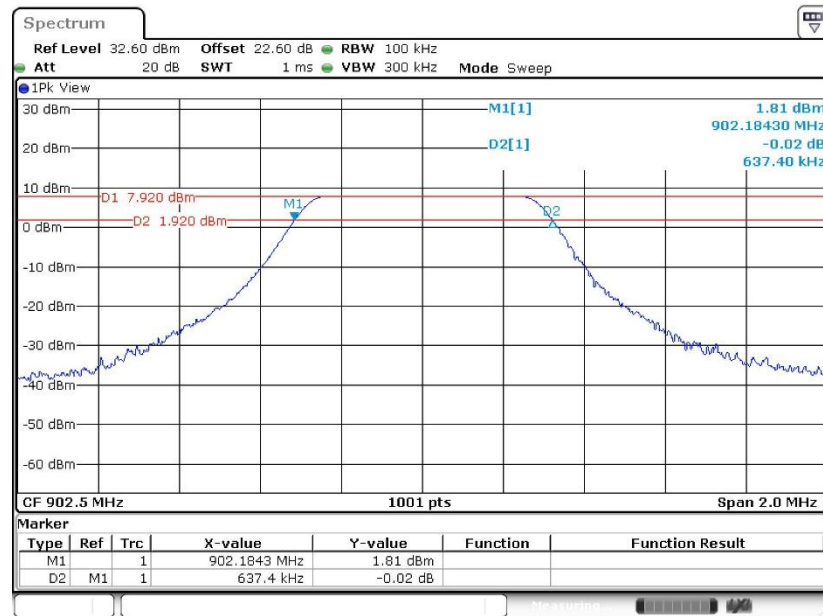
6 dB Bandwidth Plot on 926.5 MHz



Date: 15.APR.2026 09:20:24

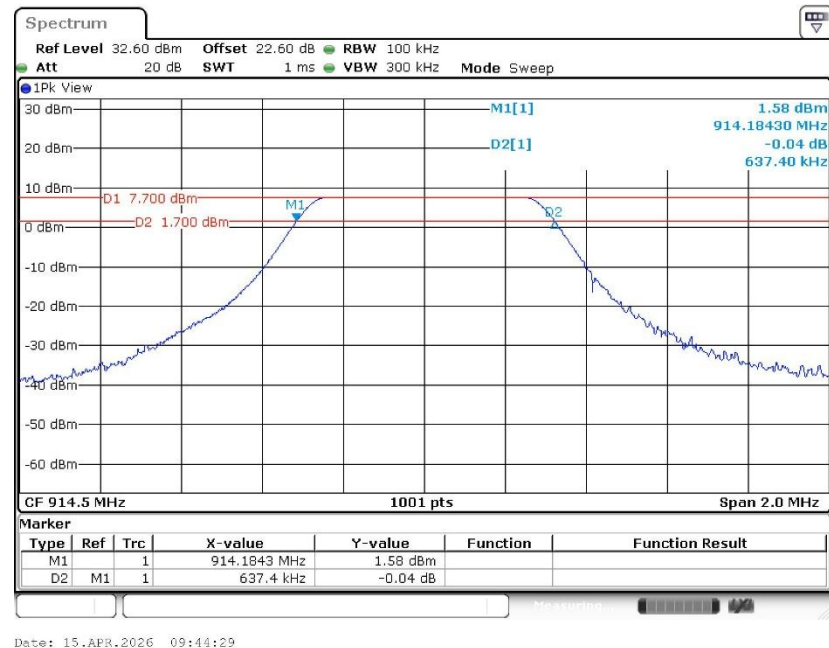
For SF8:

6 dB Bandwidth Plot on 902.5 MHz

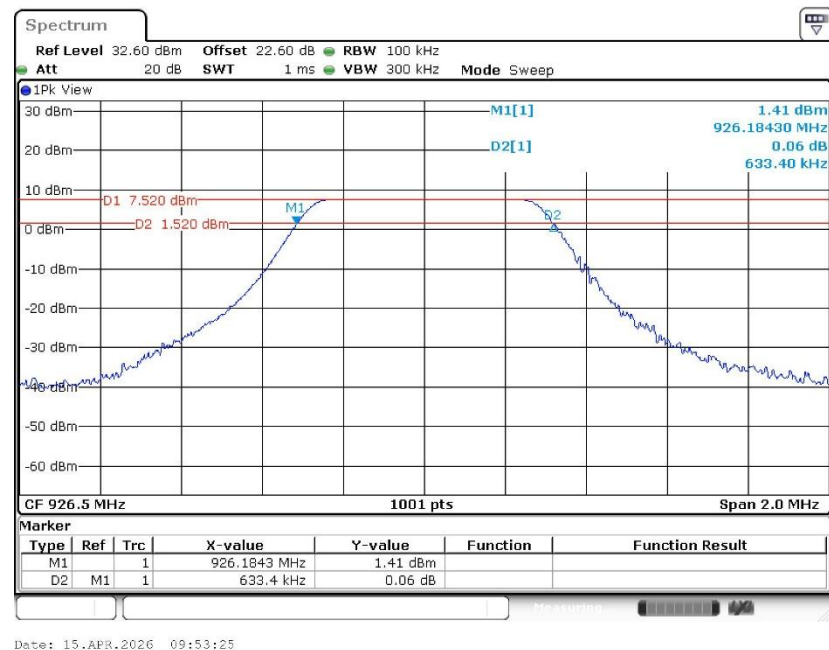


Date: 15.APR.2026 09:36:28

6 dB Bandwidth Plot on 914.5 MHz



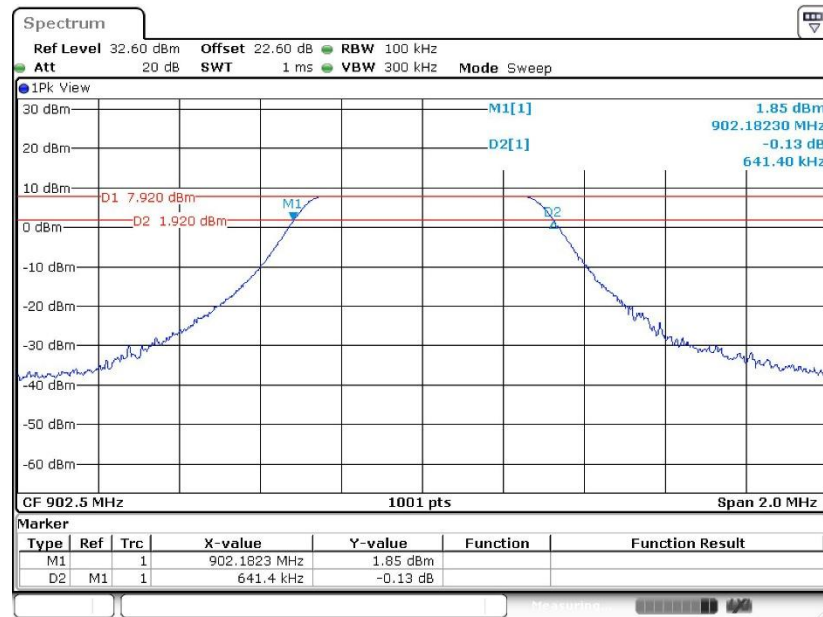
6 dB Bandwidth Plot on 926.5 MHz





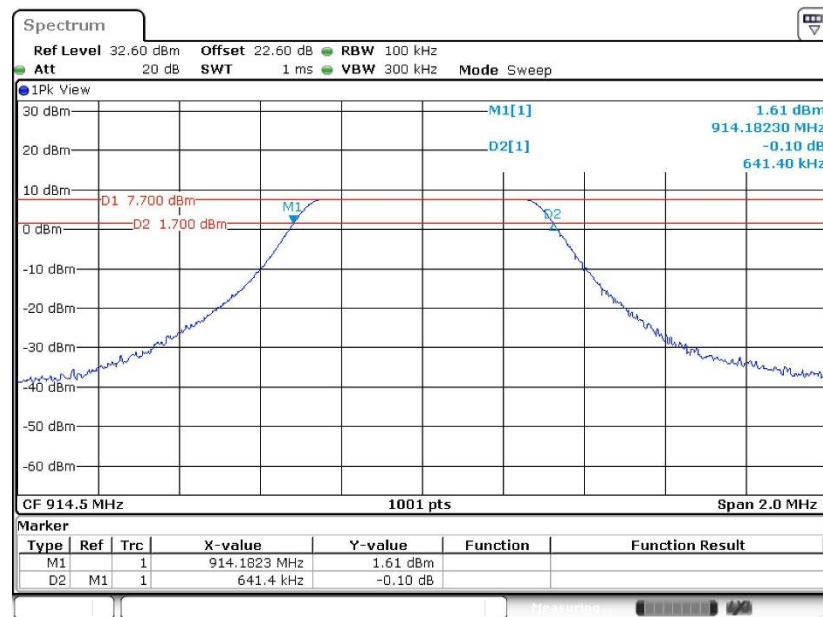
For SF9:

6 dB Bandwidth Plot on 902.5 MHz



Date: 15.APR.2026 10:17:09

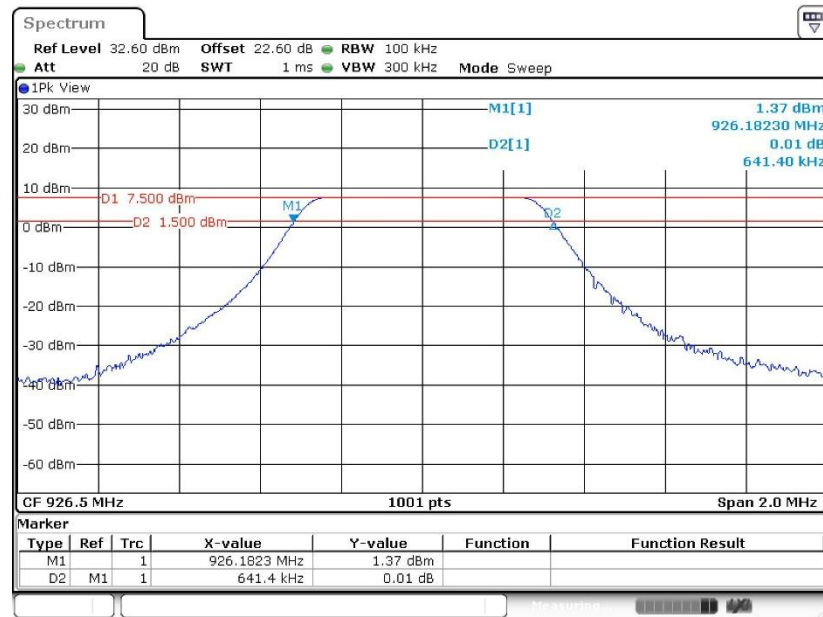
6 dB Bandwidth Plot on 914.5 MHz



Date: 15.APR.2026 10:25:56



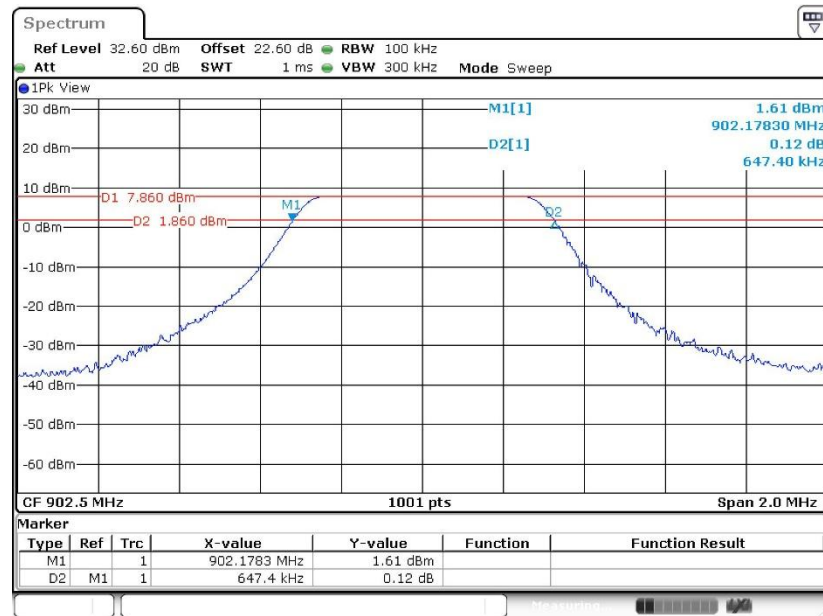
6 dB Bandwidth Plot on 926.5 MHz



Date: 15.APR.2026 10:35:43

For SF10:

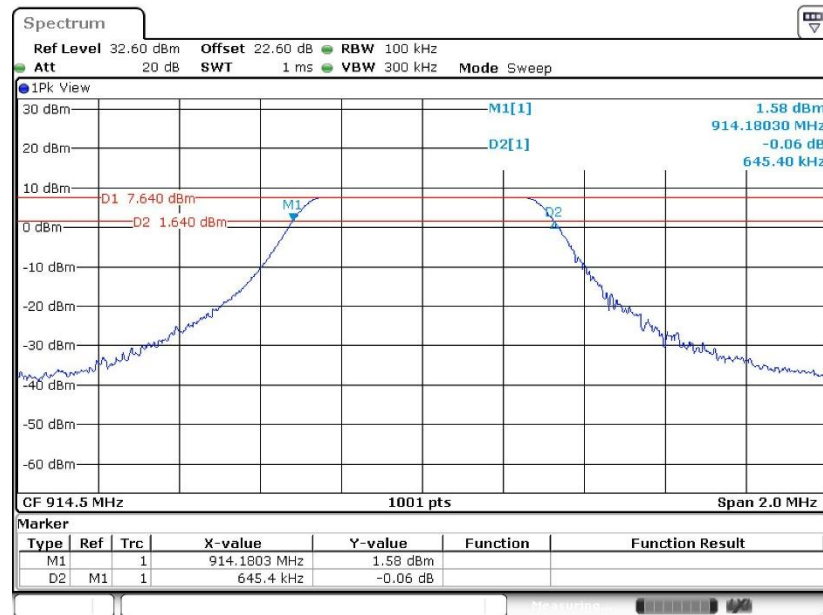
6 dB Bandwidth Plot on 902.5 MHz



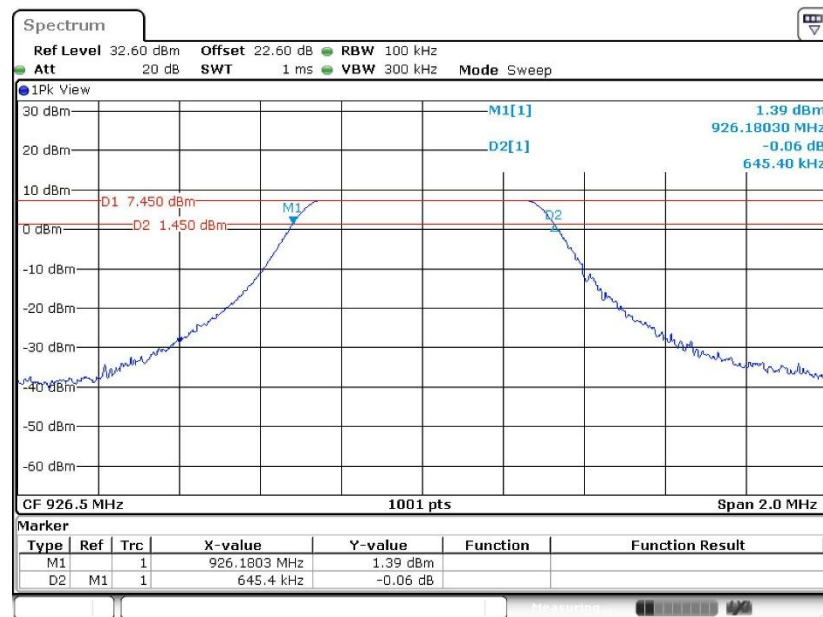
Date: 15.APR.2026 10:51:41



6 dB Bandwidth Plot on 914.5 MHz



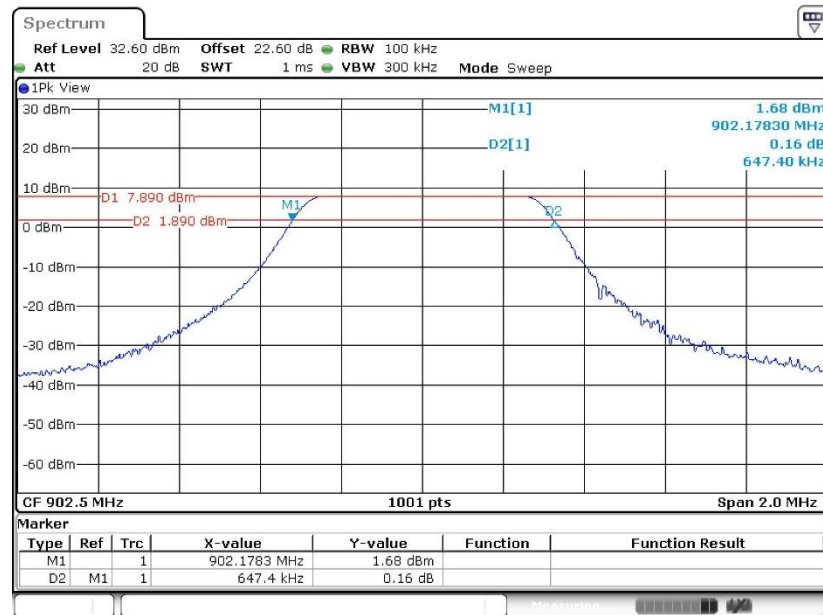
6 dB Bandwidth Plot on 926.5 MHz





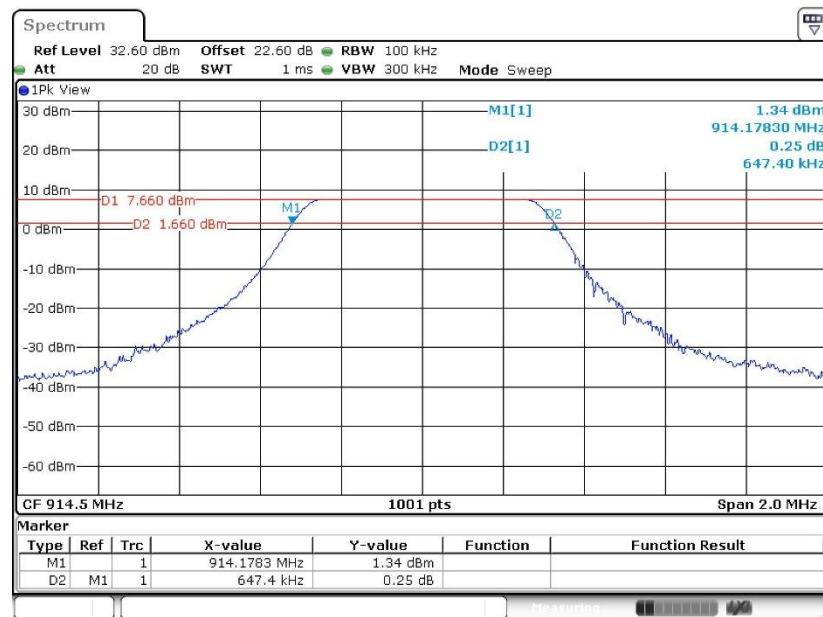
For SF11:

6 dB Bandwidth Plot on 902.5 MHz



Date: 15.APR.2026 11:37:09

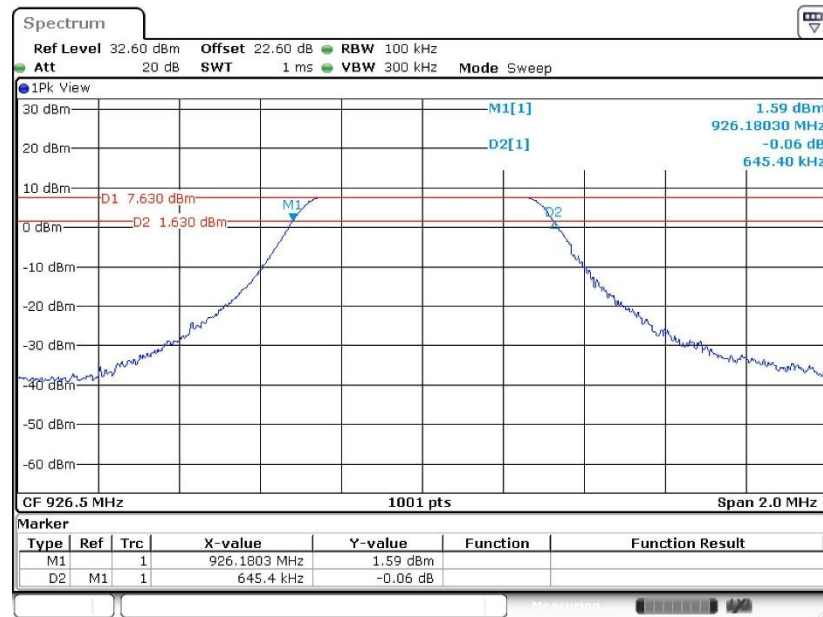
6 dB Bandwidth Plot on 914.5 MHz



Date: 15.APR.2026 11:47:12



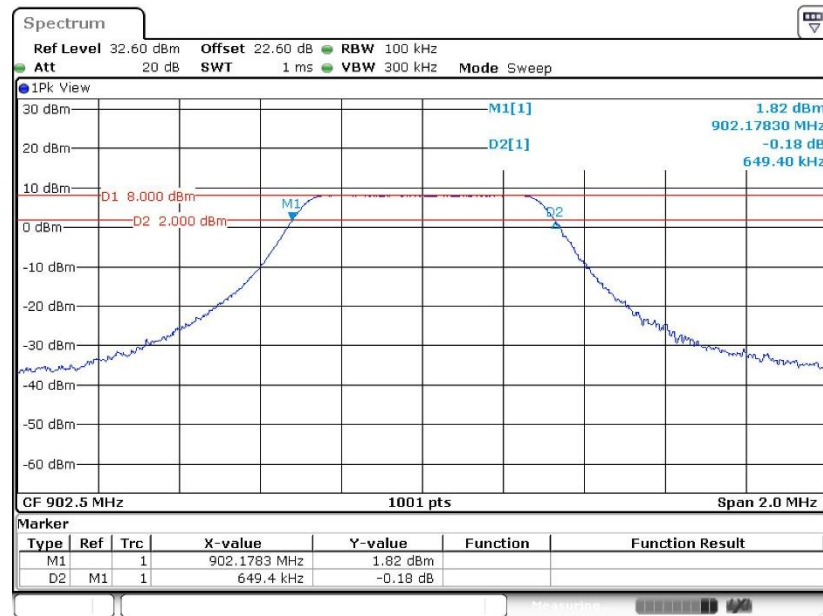
6 dB Bandwidth Plot on 926.5 MHz



Date: 15.APR.2026 13:04:36

For SF12:

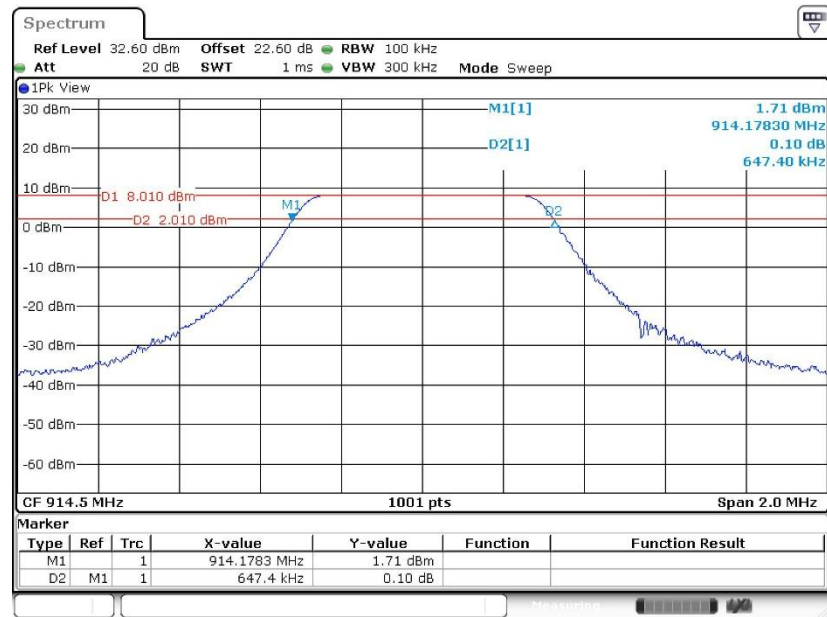
6 dB Bandwidth Plot on 902.5MHz



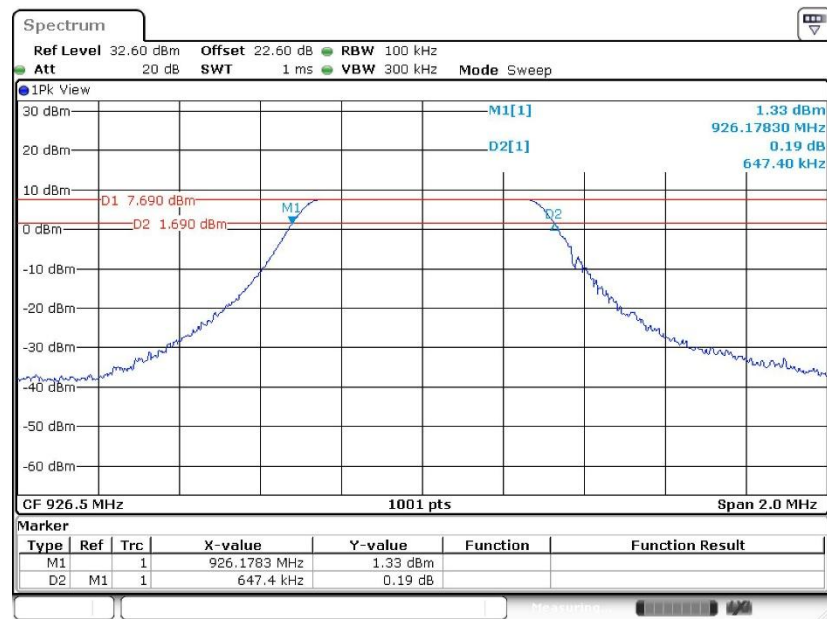
Date: 15.APR.2026 13:23:24



6 dB Bandwidth Plot on 914.5 MHz



6 dB Bandwidth Plot on 926.5 MHz



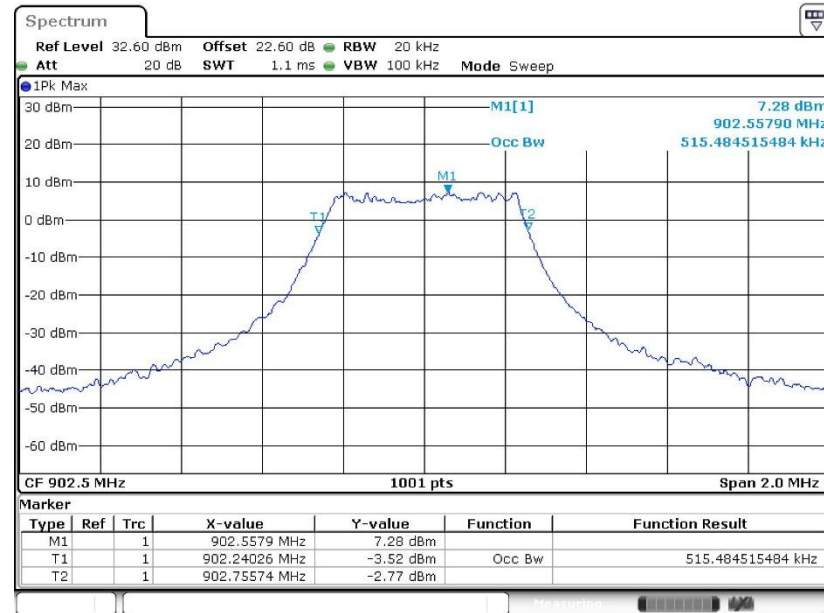


3.1.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

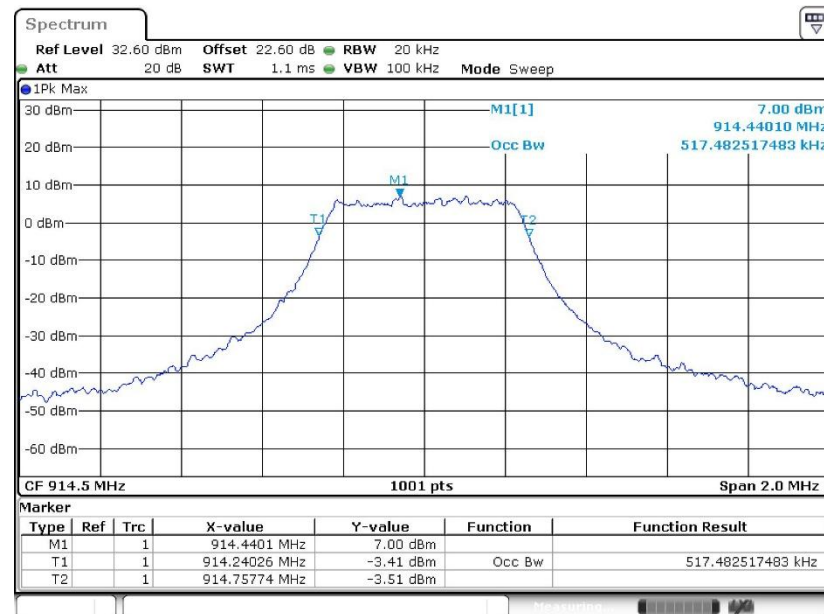
For SF7:

99% Bandwidth Plot on 902.5 MHz



Date: 15.APR.2026 08:59:07

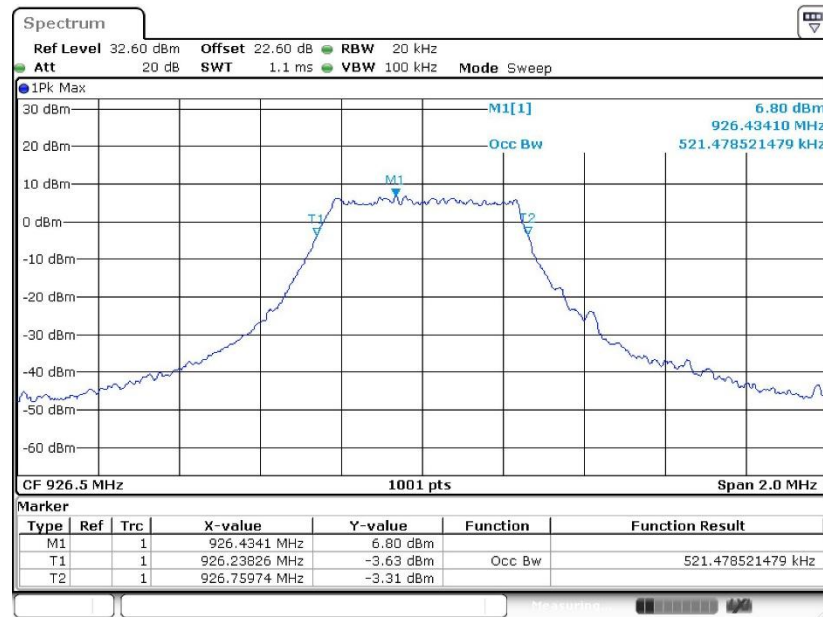
99% Occupied Bandwidth Plot on 914.5 MHz



Date: 15.APR.2026 09:09:24

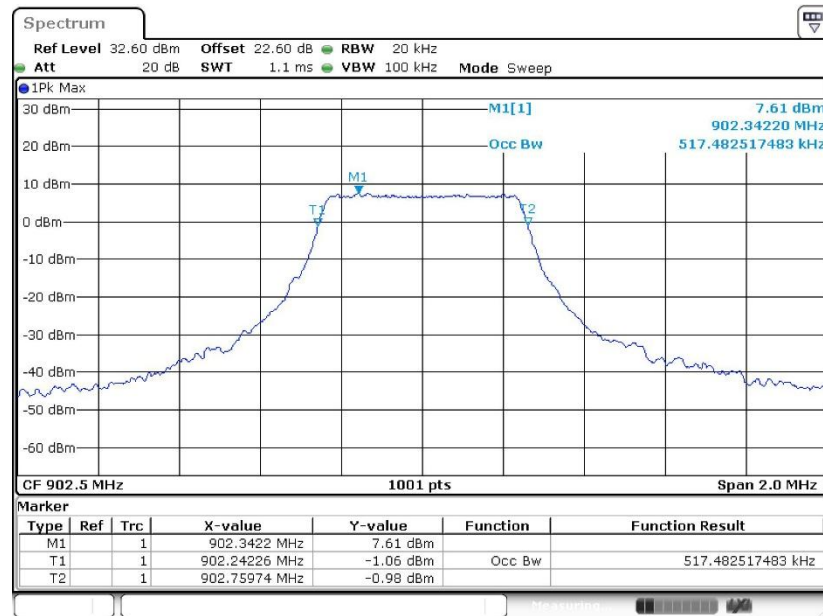


99% Occupied Bandwidth Plot on 926.5 MHz



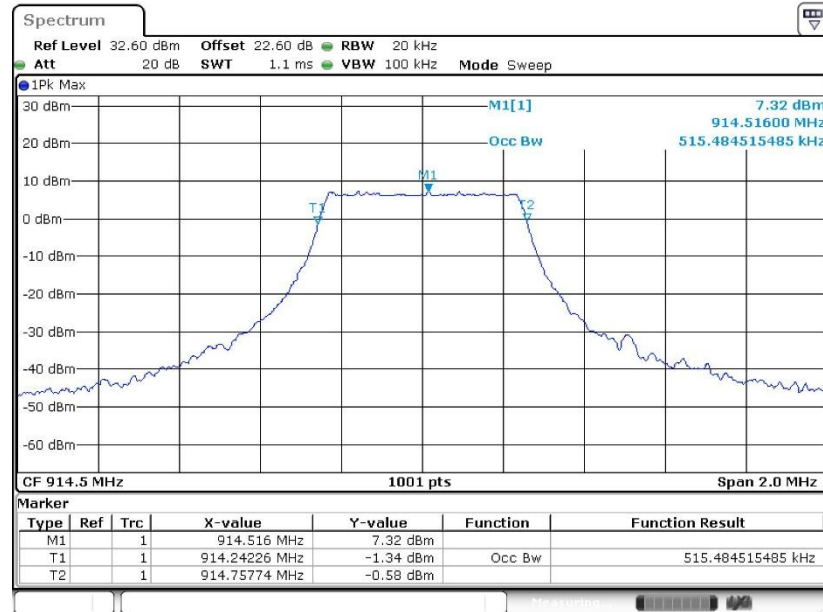
For SF8:

99% Bandwidth Plot on 902.5 MHz



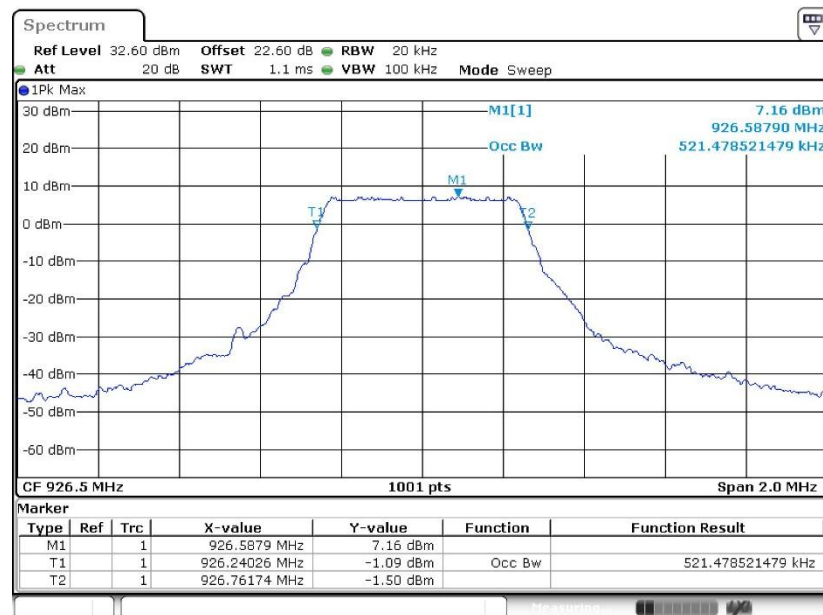


99% Occupied Bandwidth Plot on 914.5 MHz



Date: 15.APR.2026 09:42:23

99% Occupied Bandwidth Plot on 926.5 MHz

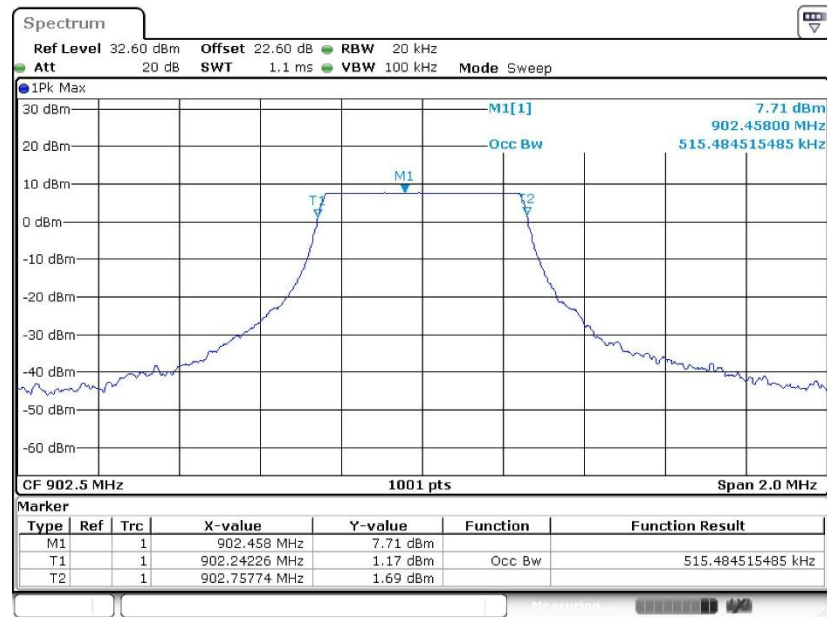


Date: 15.APR.2026 09:51:09

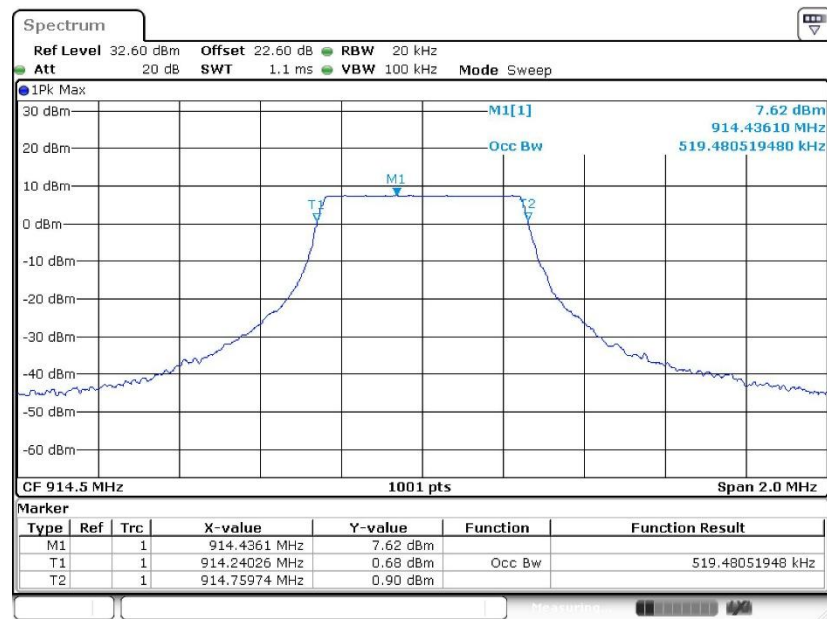


For SF9:

99% Bandwidth Plot on 902.5 MHz

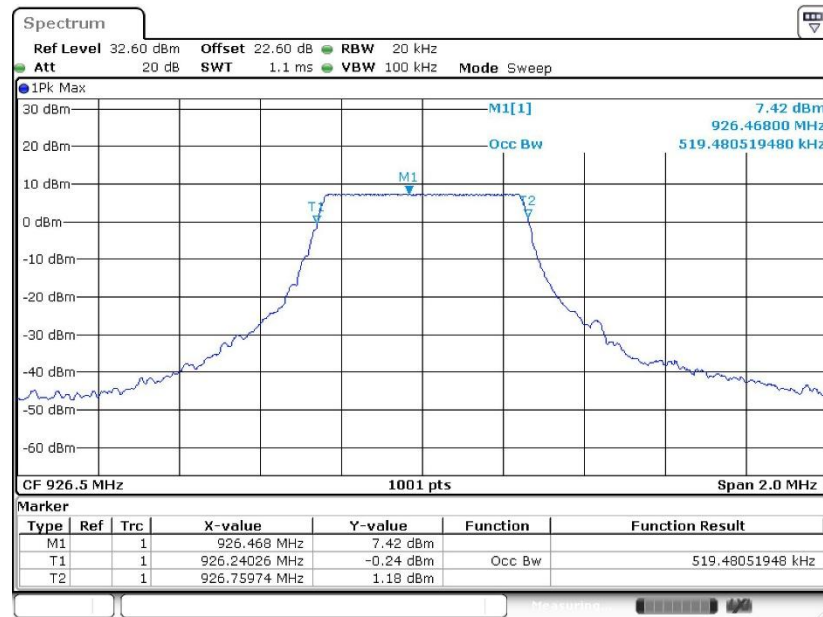


99% Occupied Bandwidth Plot on 914.5 MHz





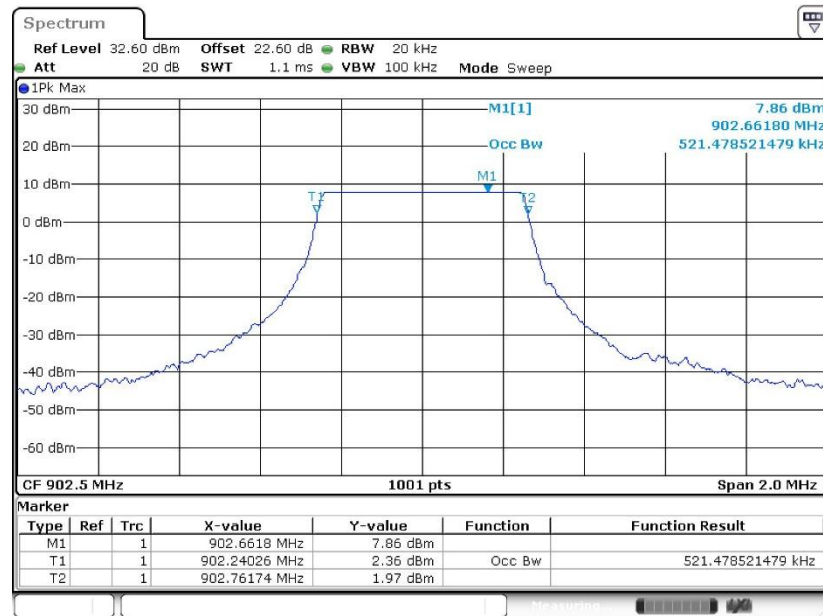
99% Occupied Bandwidth Plot on 926.5 MHz



Date: 15.APR.2026 10:33:05

For SF10:

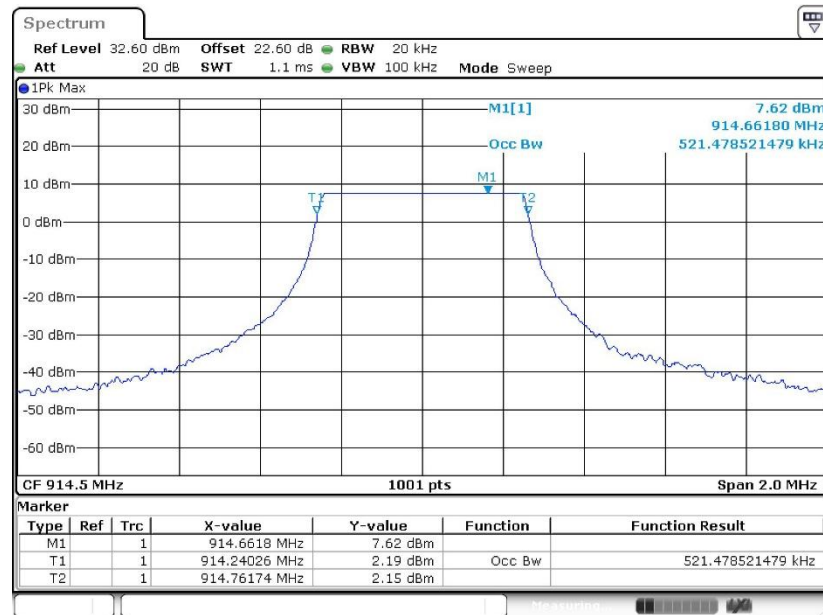
99% Bandwidth Plot on 902.5 MHz



Date: 15.APR.2026 10:49:37



99% Occupied Bandwidth Plot on 914.5 MHz



Date: 15.APR.2026 10:58:40

99% Occupied Bandwidth Plot on 926.5 MHz

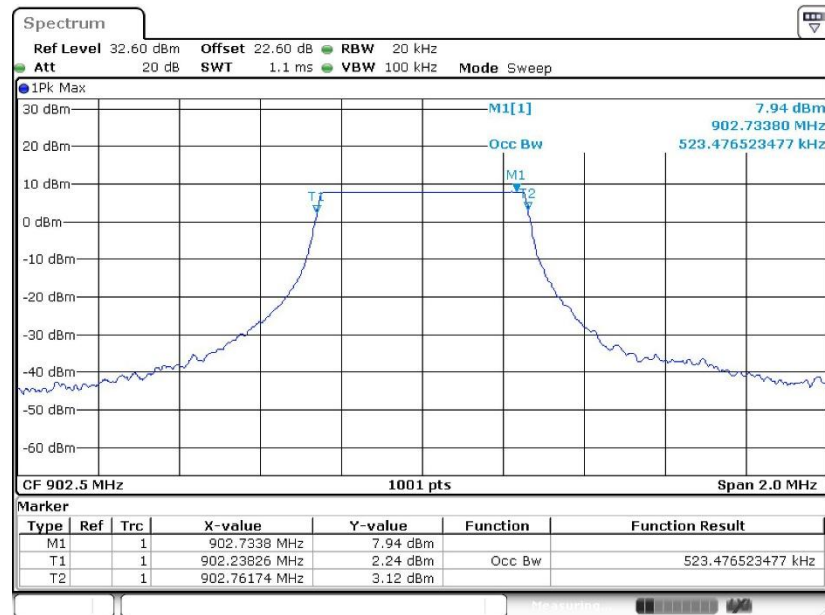


Date: 15.APR.2026 11:06:10

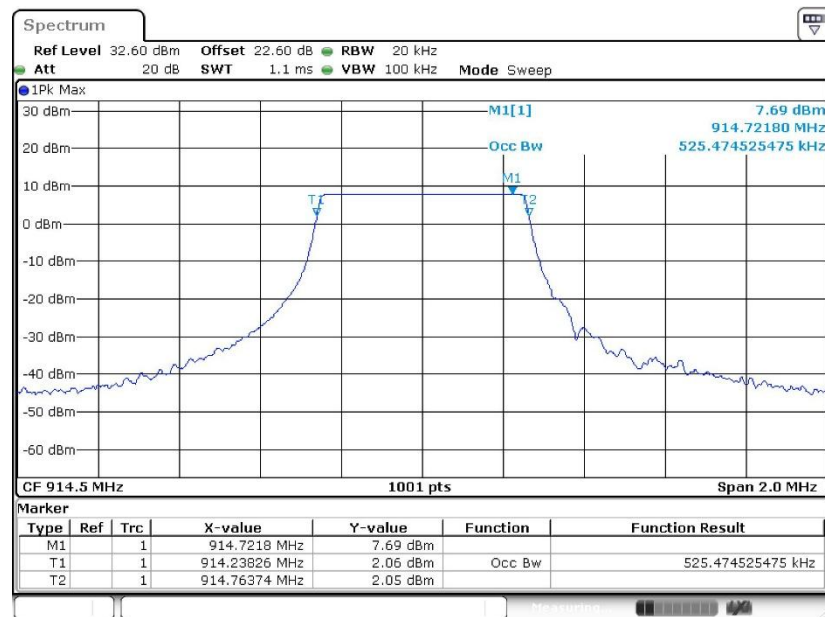


For SF11:

99% Bandwidth Plot on 902.5 MHz

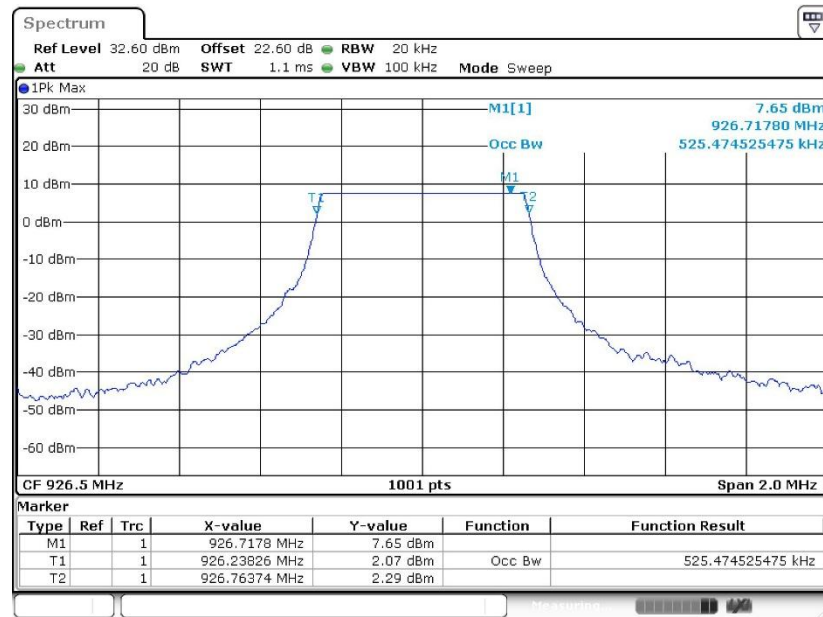


99% Occupied Bandwidth Plot on 914.5 MHz



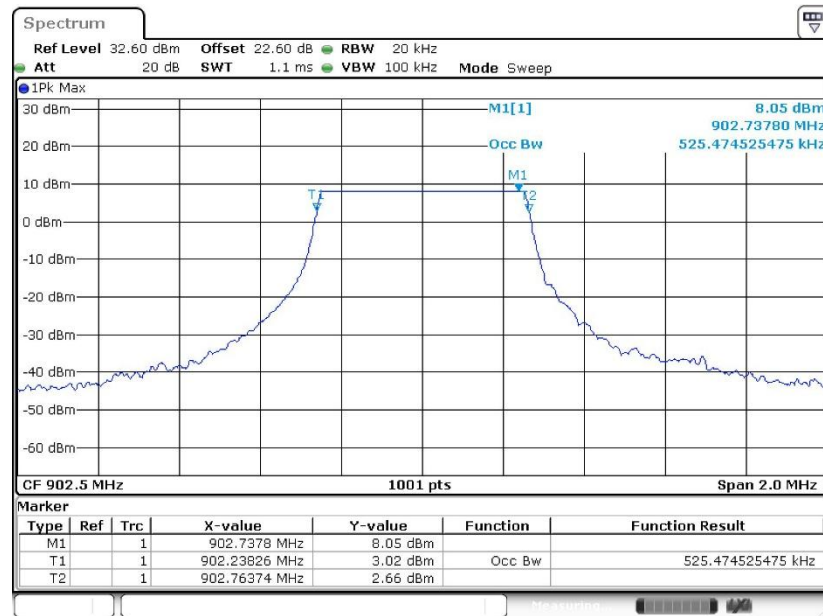


99% Occupied Bandwidth Plot on 926.5 MHz



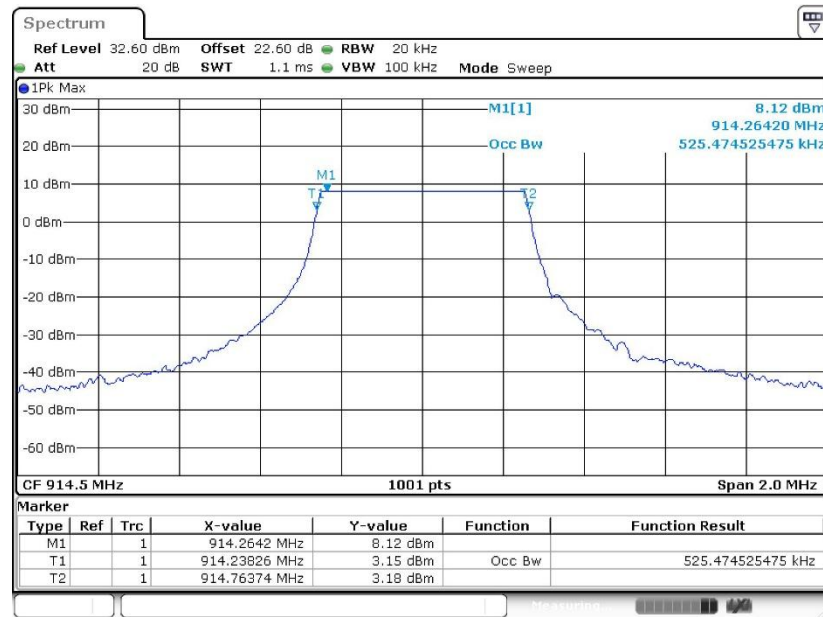
For SF12:

99% Bandwidth Plot on 902.5MHz

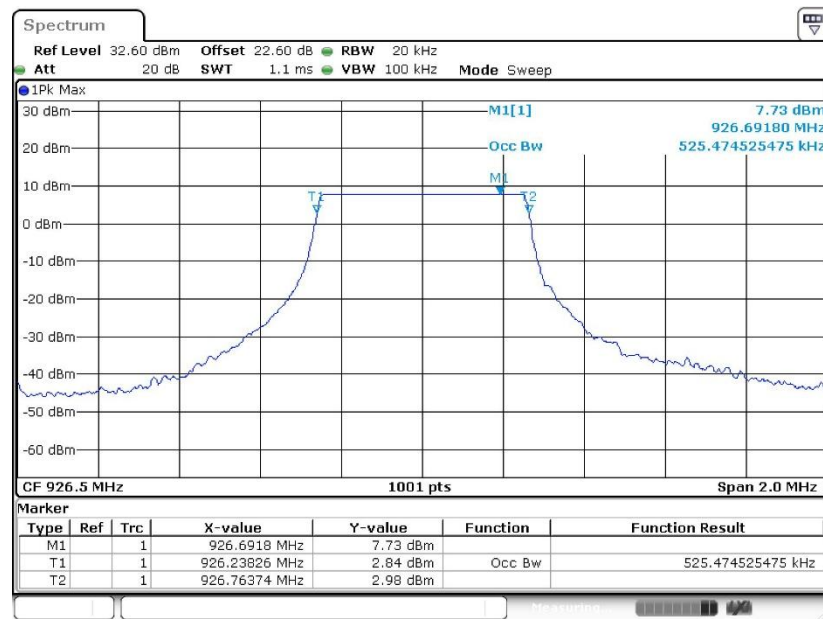




99% Bandwidth Plot on 914.5 MHz



99% Bandwidth Plot on 926.5 MHz



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

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 902-928MHz, the limit for output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi is used, the output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

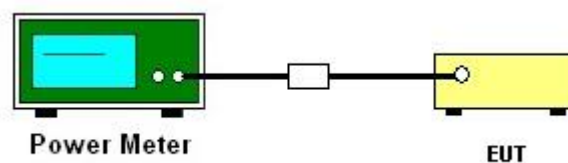
3.2.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.2.3 Test Procedures

7. The testing follows the Measurement Procedure of ANSI C63.10-2020 clause 11.9.1.2 PKPM1 Peak power meter or ANSI C63.10-2020 clause 11.9.2.3.1 Method AVGPM method.
8. 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.
9. Set to the maximum power setting and enable the EUT transmit continuously.
10. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.2.6 Test Result of Average Output Power (Reporting Only)

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

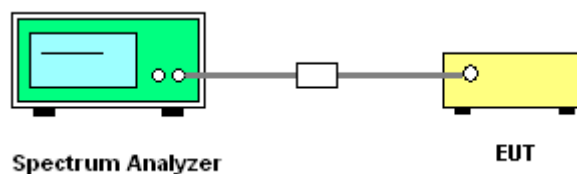
3.3.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure of ANSI C63.10-2020 clause 11.10.2 Method PKPSD.
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. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. The Measured power density (dBm)/ 100kHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

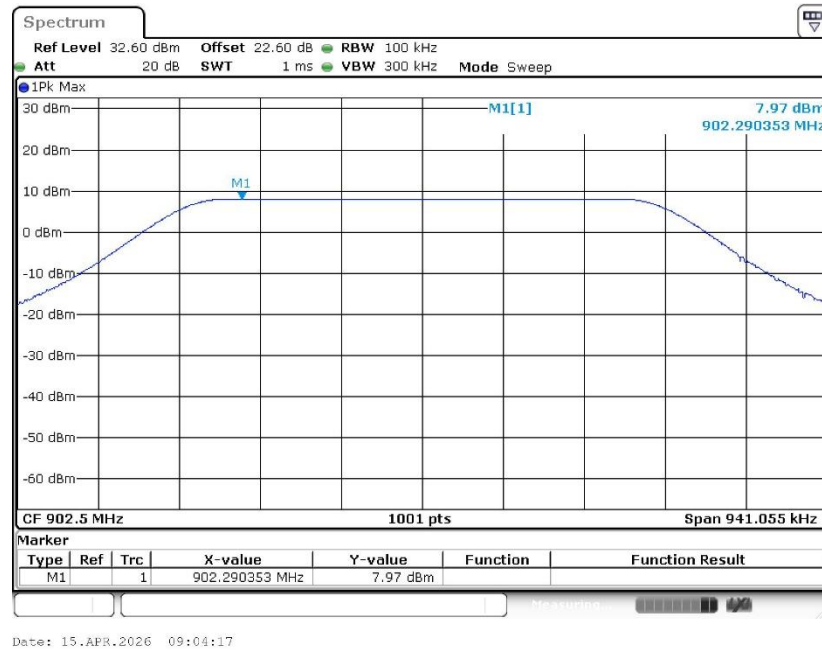
Please refer to Appendix A.



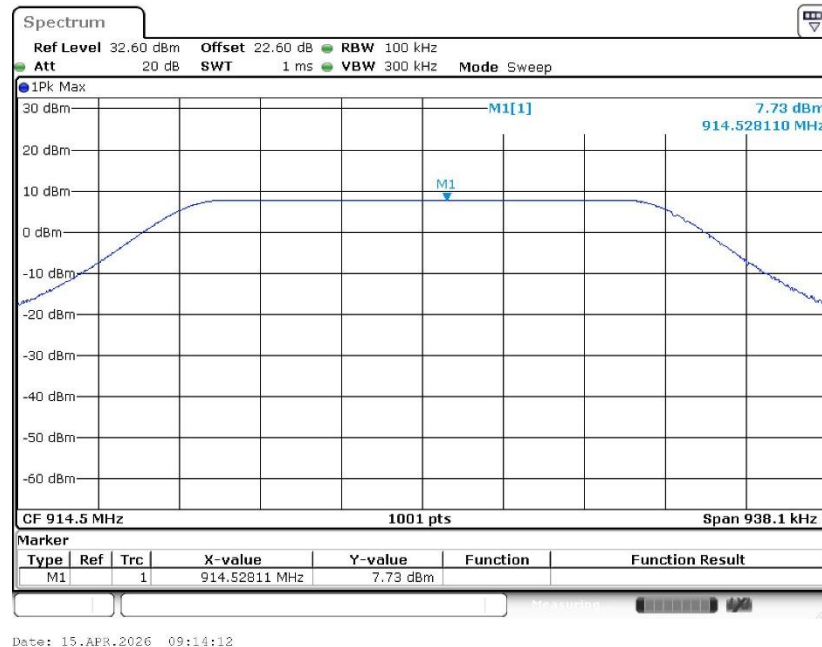
3.3.6 Test Result of Power Spectral Density Plots (100kHz)

For SF7:

PSD 100kHz Plot on 902.5 MHz

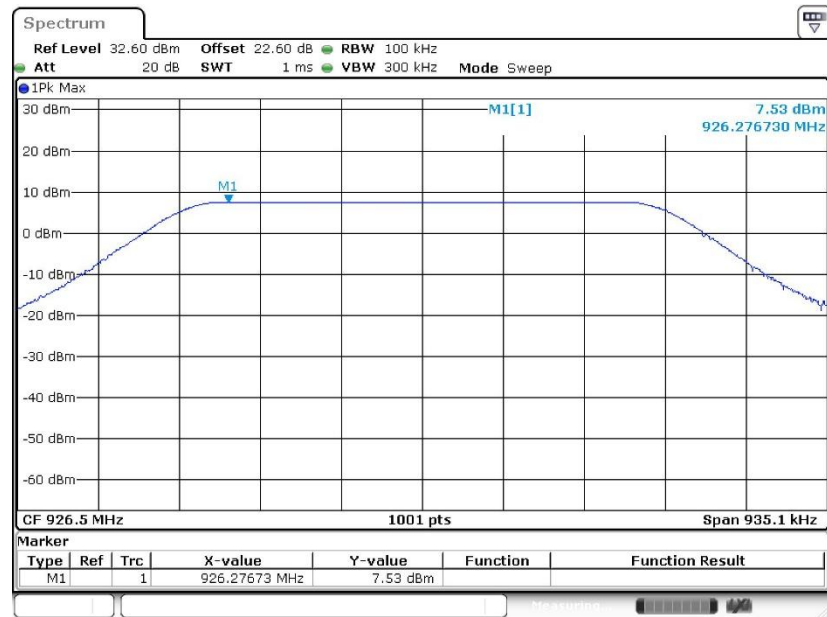


PSD 100kHz Plot on 914.5 MHz





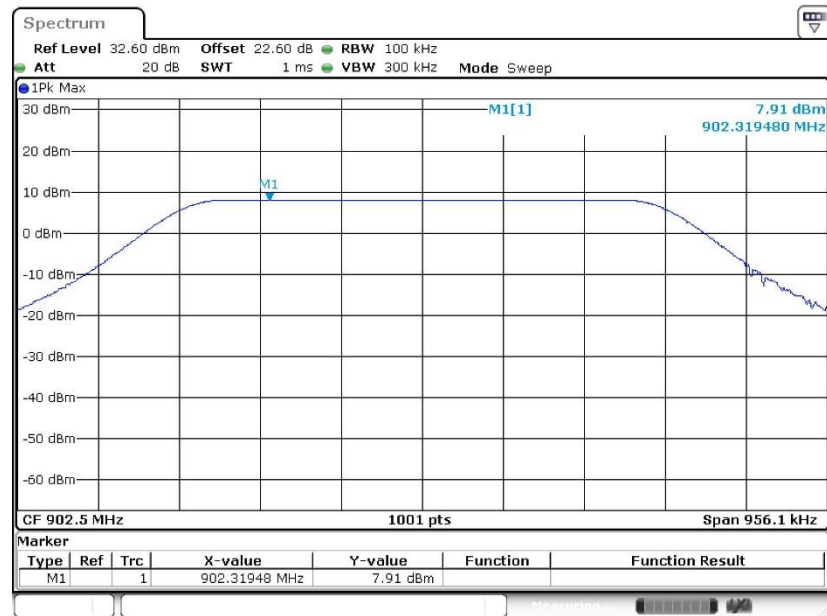
PSD 100kHz Plot on 926.5 MHz



Date: 15.APR.2026 09:23:50

For SF8:

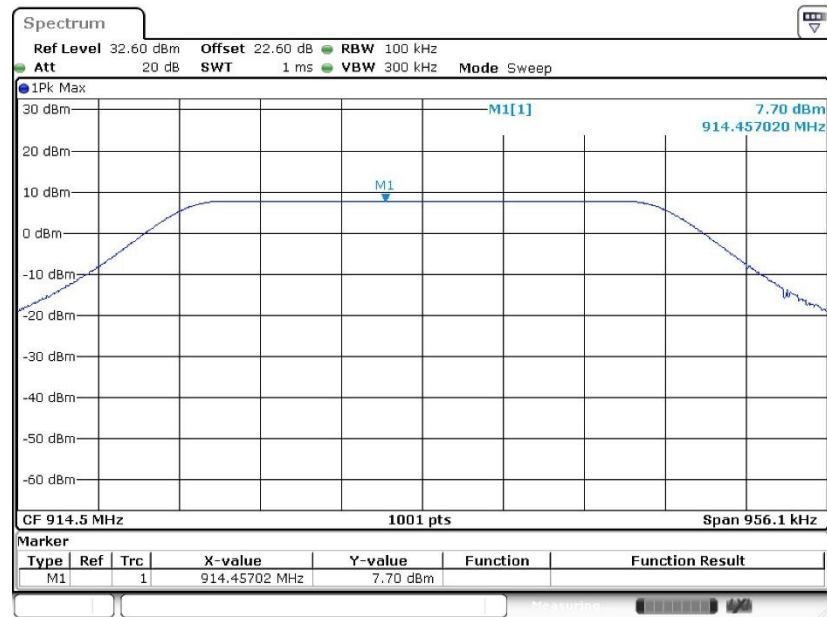
PSD 100kHz Plot on 902.5 MHz



Date: 15.APR.2026 09:39:03

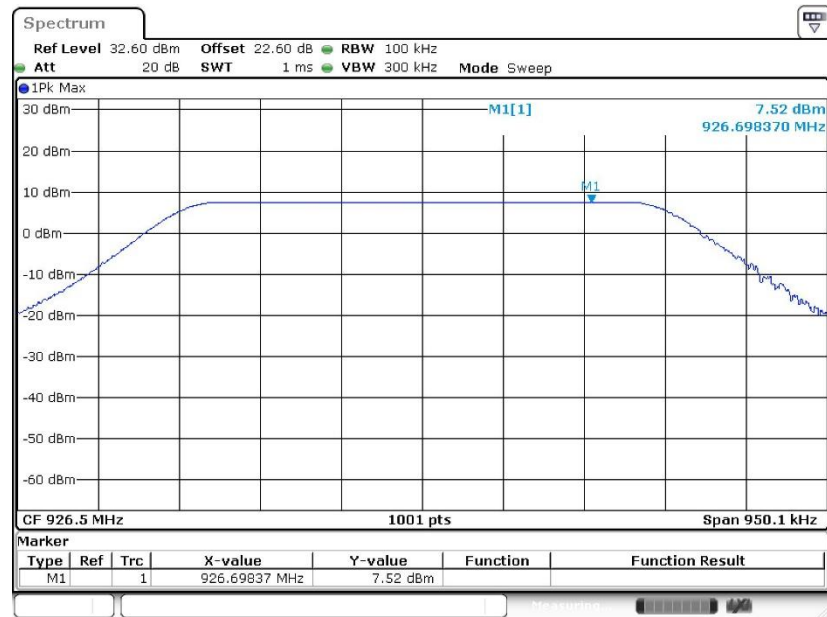


PSD 100kHz Plot on 914.5 MHz



Date: 15.APR.2026 09:47:20

PSD 100kHz Plot on 926.5 MHz

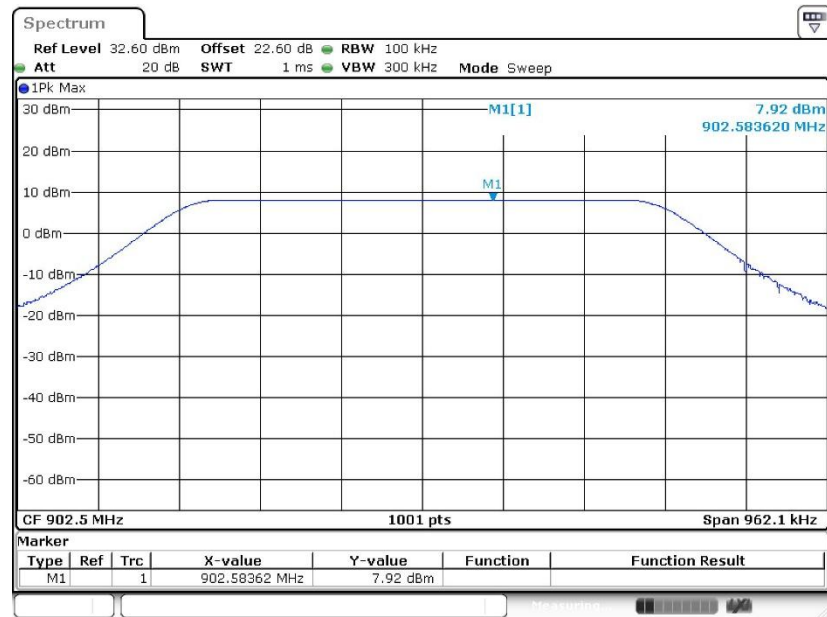


Date: 15.APR.2026 09:56:03



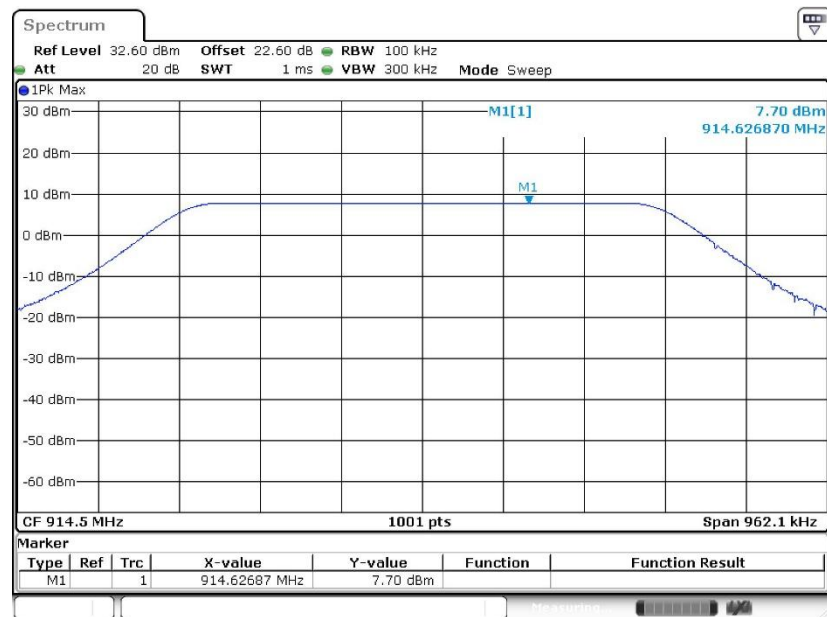
For SF9:

PSD 100kHz Plot on 902.5 MHz



Date: 15.APR.2026 10:19:52

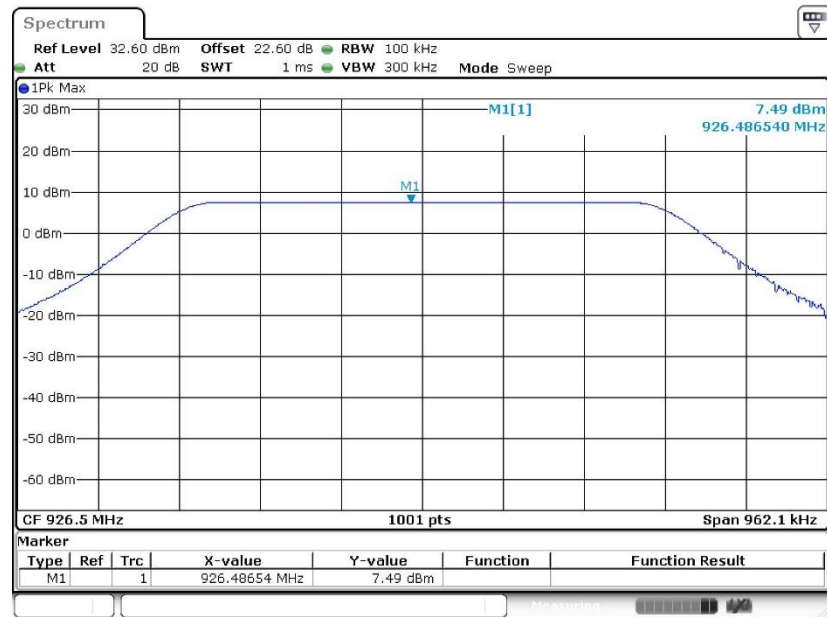
PSD 100kHz Plot on 914.5 MHz



Date: 15.APR.2026 10:30:32



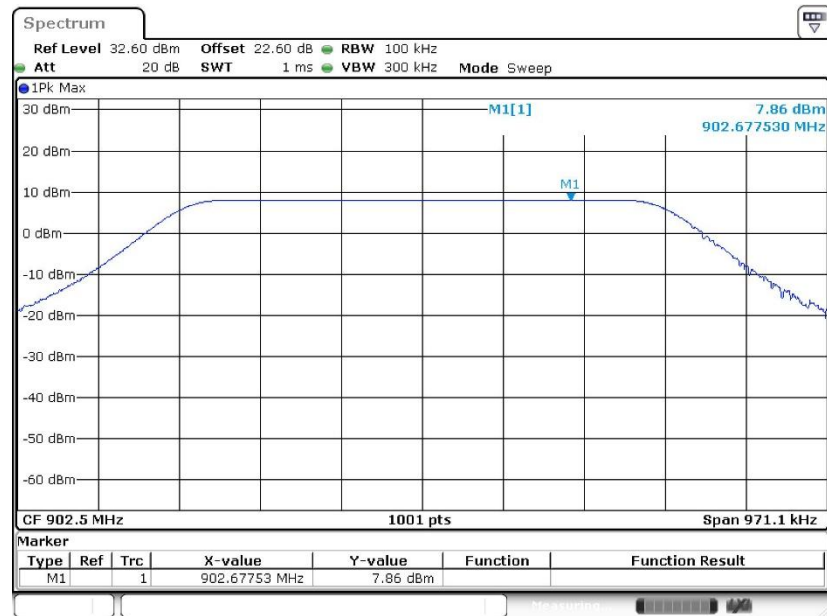
PSD 100kHz Plot on 926.5 MHz



Date: 15.APR.2026 10:41:29

For SF10:

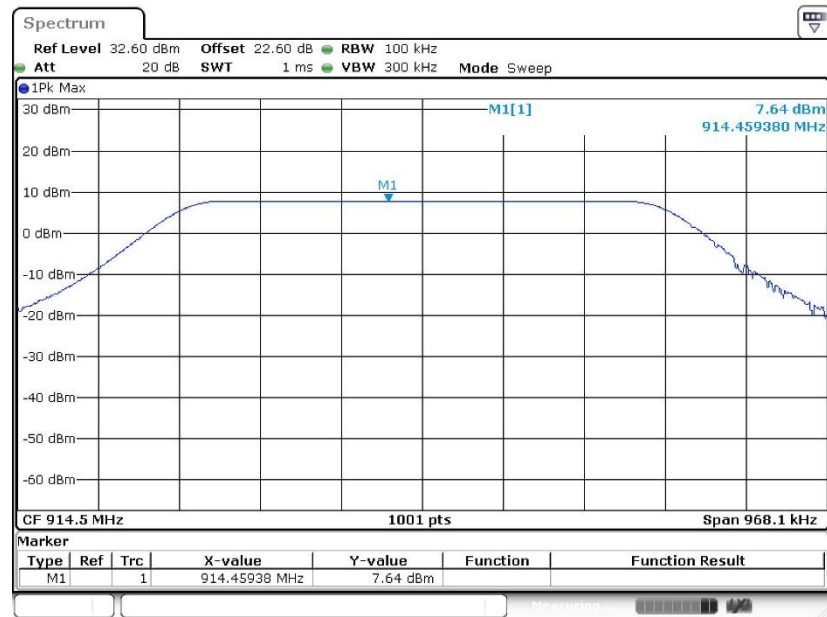
PSD 100kHz Plot on 902.5 MHz



Date: 15.APR.2026 10:54:17

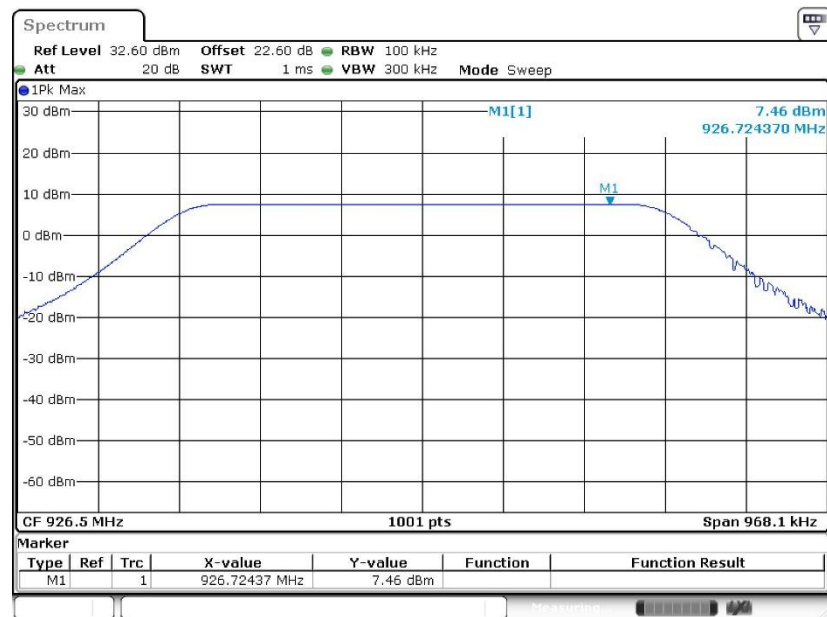


PSD 100kHz Plot on 914.5 MHz



Date: 15.APR.2026 11:03:11

PSD 100kHz Plot on 926.5 MHz

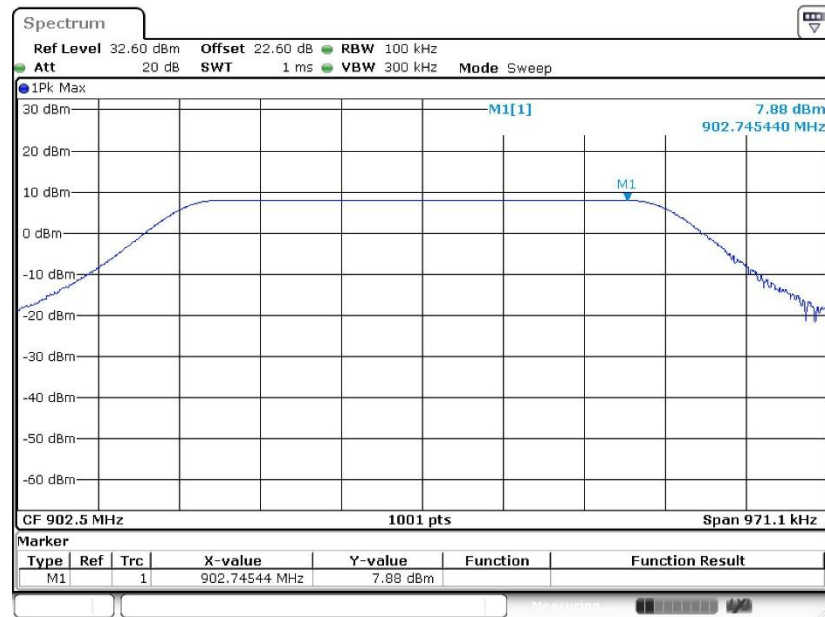


Date: 15.APR.2026 11:11:21



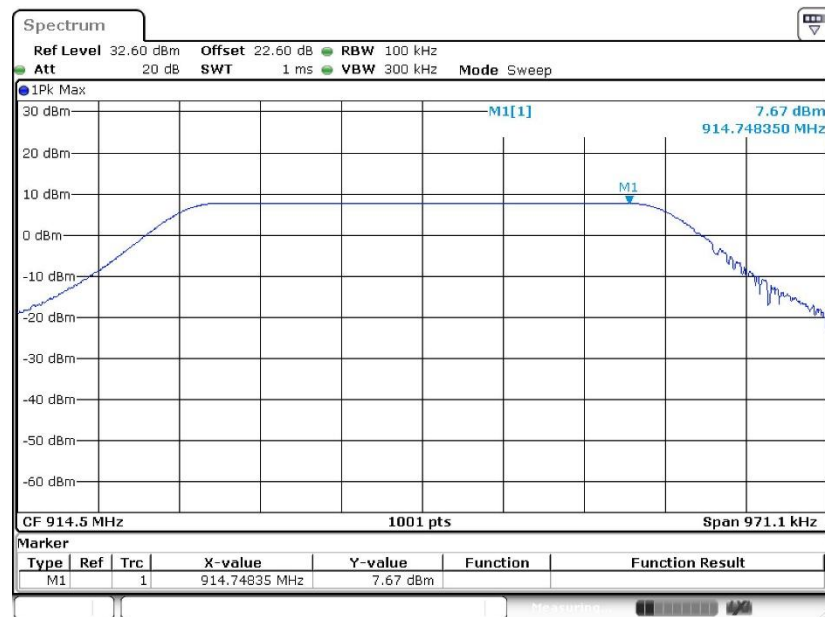
For SF11:

PSD 100kHz Plot on 902.5 MHz



Date: 15.APR.2026 11:41:13

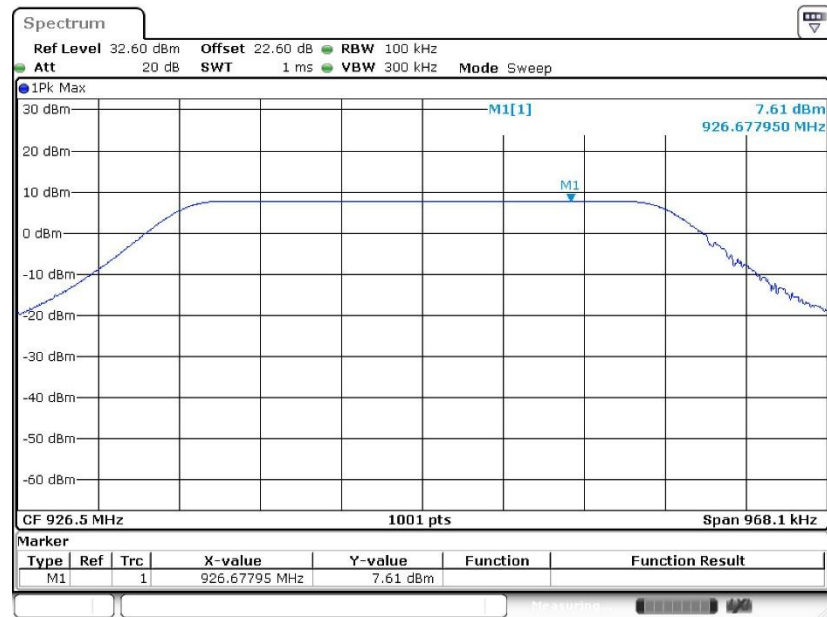
PSD 100kHz Plot on 914.5 MHz



Date: 15.APR.2026 11:52:58



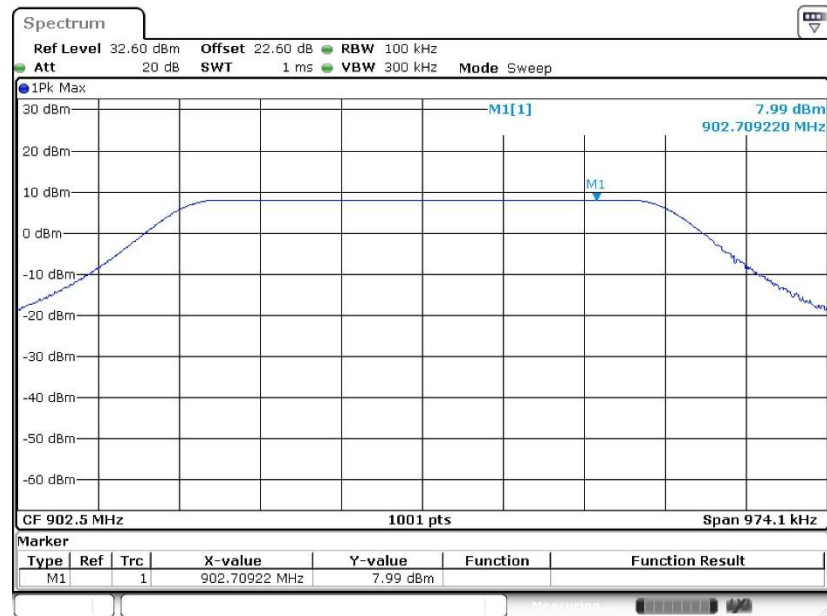
PSD 100kHz Plot on 926.5 MHz



Date: 15.APR.2026 13:09:01

For SF12:

PSD 100kHz Plot on 902.5 MHz



Date: 15.APR.2026 13:28:51