

Prüfbericht-Nr.: <i>Test report no.:</i>	CN25C9WI 003	Auftrags-Nr.: <i>Order no.:</i>	168568650	Seite 1 von 29 Page 1 of 29
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2025-08-06	
Auftraggeber: <i>Client:</i>	LEEDARSON LIGHTING CO., LTD. Xingda Road, Xingtai Industrial Zone, Changtai County, Zhangzhou, Fujian China			
Prüfgegenstand: <i>Test item:</i>	Ring Beacon			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	6LFYA2			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	CFR Title 47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 4 July 2025 RSS-Gen Issue 5 February 2021			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2025-09-16	Please refer to Photo Document		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A004092312-001~008			
Prüfzeitraum: <i>Testing period:</i>	2025-09-18 - 2025-10-018			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	genehmigt von: <i>authorized by:</i>			
Datum: <i>Date:</i> 2025-10-20	Ausstellungsdatum: <i>Issue date:</i> 2025-10-20			
Stellung / Position:	Sachverständige(r)/Expert	Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / <i>Other:</i>	FCC ID: 2AB2Q-6LFYA2 IC: 10256A-6LFYA2 HVIN: 6LFYA2 This report for Lora function.			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfbedingungen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 6dB BANDWIDTH

RESULT: Pass

5.1.5 20dB BANDWIDTH

RESULT: Pass

5.1.6 99% BANDWIDTH

RESULT: Pass

5.1.7 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.8 CARRIER FREQUENCY SEPARATION

RESULT: Pass

5.1.9 NUMBER OF HOPPING FREQUENCY

RESULT: Pass

5.1.10 TIME OF OCCUPANCY

RESULT: Pass

5.1.11 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.12 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results.

Appendix B: Photographs of the Test Set-up.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, China

FCC Registration No.: 694916

ISED Wireless Device Testing Laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (TS8997)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
Signal Analyzer	R&S	FSV 40	101441	2025-09-23	2026-09-22
OSP	R&S	OSP 150	101017	2024-10-31	2025-10-30
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A	N/A
Power Meter	R&S	NRP2	107105	2024-10-31	2025-10-30
Wideband Power Sensor	R&S	NRP-Z81	105677	2025-09-23	2026-09-22
Shielding Room	Albatross	SR1	APC17151-SR1	2024-09-14	2027-09-13
Unwanted Emission Testing (TS9975)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2025-09-22	2026-09-21
Signal Analyzer	R&S	FSV 40	101439	2025-09-22	2026-09-21
System Controller Interface	R&S	SCI-100	S10010038	N/A	N/A
Filterbank	R&S	Wlan	100759	2025-09-22	2026-09-21
OSP	R&S	OSP 120	102040	N/A	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2025-09-22	2026-09-21
Amplifier	R&S	SCU-18F	180070	2025-09-22	2026-09-21
Amplifier	R&S	SCU40A	100475	2025-09-22	2026-09-21
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-09-28	2026-09-27
Double-Ridged Antenna(1 -18 GHz)	ETS-LINDGREN	3117	00218717	2024-09-28	2026-09-27
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2024-09-28	2026-09-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2024-09-28	2026-09-27
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A	N/A

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Control PC	Dell	OptiPlex 7050	36NV9P2	N/A	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-09-14	2027-09-13

Conducted Emission on AC Mains				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102680	2026-02-09
Artificial Mains Network	R&S	ENV216	102333	2026-07-18
Artificial Mains Network	R&S	ENV216	101445	2026-02-09
EMC32 Test Software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	± 4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.24 dB / ± 3.24 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

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2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Ring Beacon which supports Bluetooth low energy and Lora functions.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	Ring Beacon
Type Designation:	6LFYA2
FCC ID:	2AB2Q-6LFYA2
IC:	10256A-6LFYA2
HVIN:	6LFYA2
Operating Voltage:	Battery operated or USB operated (5Vdc, 2A)
Operating Temperature Range:	-20 °C ~ +50 °C
Technical Specification of Lora DTS	
Operating Frequency:	902MHz to 928MHz
Type of Modulation:	FSK, Lora
Channel Number:	Lora DTS SF7: 30 channels Lora DTS SF11: 30 channels FSK DTS (100kbps): 31 channels
Channel Separation:	Lora DTS SF7/ SF11: 500kHz FSK DTS (100kbps): 100kHz
Antenna Type:	Integral antenna
Antenna Gain:	2.29 dBi (Provided by the Client)
Technical Specification of Lora FHSS	
Operating Frequency:	902MHz to 928MHz
Type of Modulation:	FHSS
Channel Number:	FSK FHSS (50kbps): 129 channels FSK FHSS (150kbps): 64 channels FSK FHSS (250kbps): 51 channels Lora FHSS SF7 (125kbps): 128 channels Lora FHSS SF11 (125kbps): 128 channels
Channel Separation:	FSK FHSS (50kbps): 50kHz FSK FHSS (150kbps): 150kHz FSK FHSS (250kbps): 250kHz Lora FHSS SF7 (125kbps): 125kHz Lora FHSS SF11 (125kbps): 125kHz
Antenna Type:	Integral antenna
Antenna Gain:	2.29 dBi (Provided by the Client)

Note: The correctness of all data provided by customer in the test report is ensured and responsible of the customer. Any misjudgment of the test results caused by the use of incorrect data provided by customer shall be borne by the customer.

Table 4: RF Channel and Frequency of Lora DTS

Lora DTS SF7/SF11							
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
1	902.5	--	--	--	--	--	--
--	--	15	914.5	--	--	30	926.5

FSK DTS (100kbps)							
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	902.9	--	--	--	--	--	--
--	--	15	914.9	--	--	30	926.9

Table 5: RF Channel and Frequency of Lora FHSS

Lora FHSS SF7/SF11							
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	902.4	--	--	--	--	--	--
--	--	64	915	--	--	127	927.6

FSK FHSS (50kbps)							
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	902.2	--	--	--	--	--	--
--	--	64	915	--	--	128	927.8

FSK FHSS (150kbps)							
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	902.4	--	--	--	--	--	--
--	--	32	915.2	--	--	63	927.6

FSK FHSS (250kbps)							
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	902.5	--	--	--	--	--	--
--	--	25	915	--	--	50	927.5

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Lora transmitting mode (DTS & FHSS)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Transmitting on Hopping channel (FHSS)
- C. On, Charging + Normal working
- D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|-------------------------|----------------------------------|
| - Application Form | - User Manual |
| - Operation Description | - FCC/IC Label and Location Info |

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024.

According to clause 3.1, all tests were performed on model 6LFYA2 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	Remark
Laptop	Lenovo	T480	S/N: PF-16A6N8
AC/DC Adapter	MI	MDY-14-EU	Output: DC 5V, 3A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

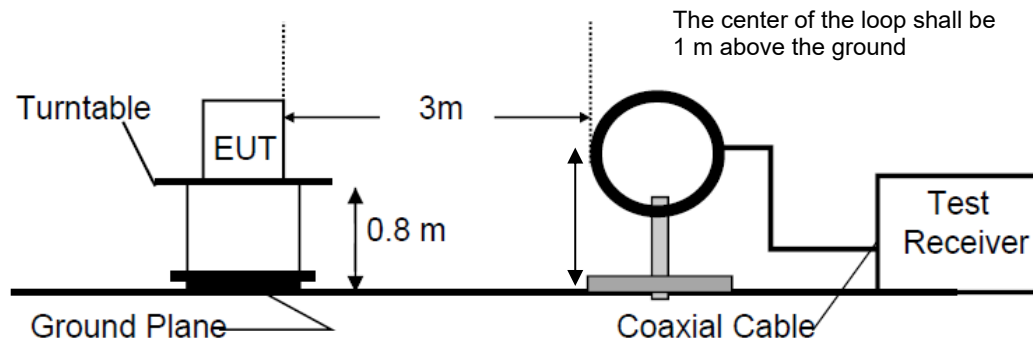


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

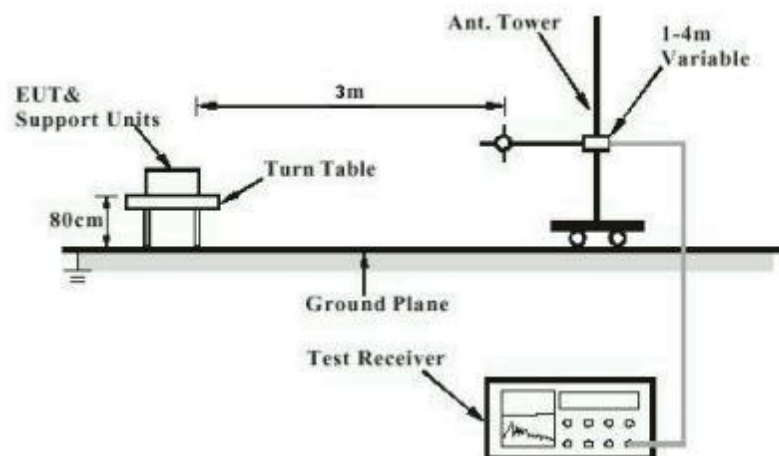


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

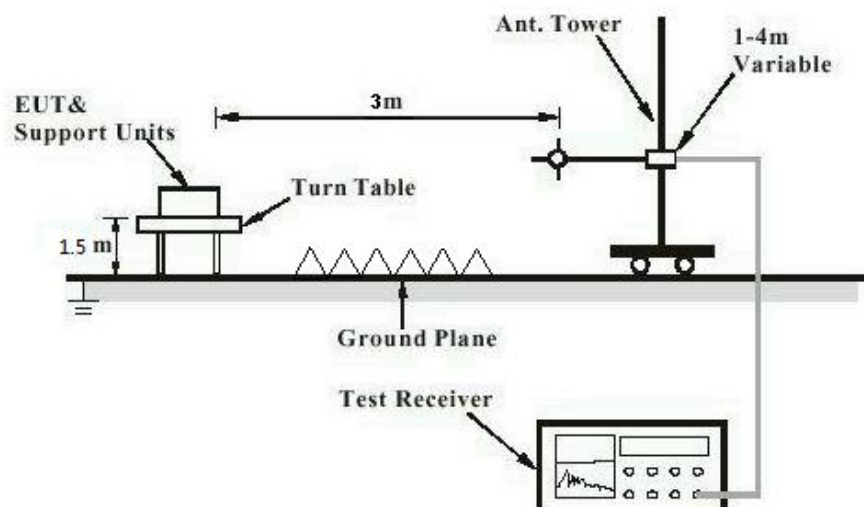


Diagram of Measurement Configuration for Mains Conduction Measurement

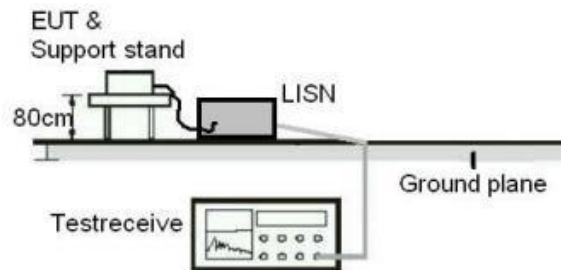
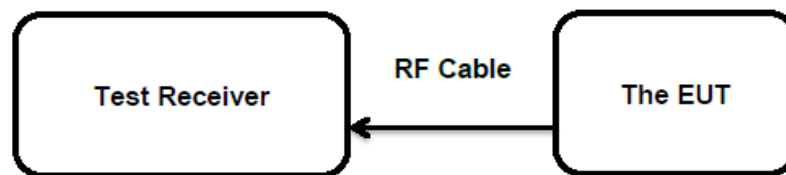


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203
RSS-Gen Clause 6.8

According to the manufacturer declared, the EUT has Integral antenna, permanent attachment and no consideration of replacement, refer to section 3.2 for details.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

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5.1.2 Maximum Conducted Output Power

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(b)(2)&(3) RSS-247 Clause 5.4(a)&(d)
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Limits	: < 1.0 W (30 dBm) for antenna gain less than 6dBi
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-19 to 2025-10-18
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 22.9 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For details refer to following test result.

Table 7: Test Result of Maximum Conducted Output Power, Lora DTS

Test Mode	Test Channel (MHz)	Measured Conducted Power		Limit
		(dBm)	(W)	
Lora DTS SF7 (500kbps)	902.5	20.85	0.1216	< 1.0 W (30 dBm)
	914.5	20.70	0.1175	
	926.5	20.68	0.1169	
Lora DTS SF11 (500kbps)	902.5	20.41	0.1099	
	914.5	20.34	0.1081	
	926.5	20.28	0.1067	
FSK DTS (100kbps)	902.9	17.30	0.0537	
	914.9	17.09	0.0512	
	926.9	17.00	0.0501	
Max. Measured Value		20.85	0.1216	

Table 8: Test Result of Maximum Conducted Output Power, Lora FHSS

Test Mode	Test Channel (MHz)	Measured Conducted Power		Limit (W)
		(dBm)	(W)	
FSK FHSS (50kbps)	902.2	20.97	0.1250	< 1.0 W (30 dBm)
	915	20.82	0.1208	
	927.8	20.74	0.1186	
FSK FHSS (150kbps)	902.4	21.65	0.1462	
	915.2	21.61	0.1449	
	927.6	21.62	0.1452	
FSK FHSS (250kbps)	902.5	21.47	0.1403	
	915	21.43	0.1390	
	927.5	21.33	0.1358	
Lora FHSS SF7 (125kbps)	902.4	20.47	0.1114	
	915	20.48	0.1117	
	927.6	20.35	0.1084	
Lora FHSS SF11 (125kbps)	902.4	20.46	0.1112	
	915	20.38	0.1091	
	927.6	20.32	0.1076	
Max. Measured Value		21.65	0.1462	

Max. e.i.r.p.=21.65dBm+2.29dBi=23.94dBm, which is less than 36dBm=4W.

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G) : 2.29 dBi,

5.1.3 Conducted Power Spectral Density

RESULT:
Pass
Test Specification

Test standard	: FCC Part 15.247(e), FCC Part 15.247(f) RSS-247 Clause 5.2(b), RSS-247 Clause 5.3
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Limits	: < 8 dBm / 3kHz for antenna gain less than 6dBi
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-19 to 2025-10-18
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 22.9 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

Table 9: Test Result of Maximum Power Spectral Density, Lora DTS

Test Mode	Test Channel (MHz)	Measured Power Spectral Density (dBm/3kHz)
Lora DTS SF7 (500kbps)	902.5	2.15
	914.5	0.20
	926.5	0.55
Lora DTS SF11 (500kbps)	902.5	2.45
	914.5	0.36
	926.5	0.52
FSK DTS (100kbps)	902.9	6.41
	914.9	6.29
	926.9	6.51
Maximum Measured Value		6.51

5.1.4 6dB Bandwidth

RESULT:
Pass
Test Specification

Test standard	: FCC Part 15.247(a)(2) RSS-247 Clause 5.2(a)
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Limits	: At least 500kHz for bandwidth(DTS)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-19 to 2025-10-18
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 22.9 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

Table 10: Test Result of 6dB Bandwidth, Lora DTS

Test Mode	Test Channel (MHz)	6dB Bandwidth (kHz)	Limit (MHz)
Lora DTS SF7 (500kbps)	902.5	596.2	>500kHz
	914.5	625.2	
	926.5	622.3	
FSK DTS (100kbps)	902.9	526.8	
	914.9	529.7	
	926.9	521.0	
Maximum Measured Value		625.2	

Note: the test was performed on Lora DTS SF7 and Lora DTS SF11, here the worst case was shown.

5.1.5 20dB Bandwidth

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(a)(1) (i) RSS-247 Clause 5.1(a)
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024 Not more than 500kHz and
Limits	: < 250kHz for at least 50 hopping frequencies >=250kHz for at least 25 hopping frequencies
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-19 to 2025-10-18
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 22.9 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

Table 11: Test Result of 20dB Bandwidth, Lora FHSS

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)
FSK FHSS (50kbps)	902.2	107.7	<500kHz
	915	110.0	
	927.8	108.8	
FSK FHSS (150kbps)	902.4	167.9	
	915.2	164.4	
	927.6	160.9	
FSK FHSS (250kbps)	902.5	267.7	
	915	272.1	
	927.5	267.7	
Lora FHSS SF7 (125kbps)	902.4	138.9	
	915	151.7	
	927.6	155.1	

Note: the test was performed on Lora FHSS SF7 and Lora FHSS SF11, here the worst case was shown.

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5.1.6 99% Bandwidth

RESULT:

Pass

Test Specification

Test standard	: RSS-Gen Clause 6.7
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-19 to 2025-10-18
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

Table 12: Test Result of 99% Bandwidth, Lora DTS

Test Mode	Test Channel (MHz)	99% Bandwidth (kHz)	Limit (MHz)
Lora DTS SF7 (500kbps)	902.5	463.1	/
	914.5	506.5	
	926.5	500.7	
FSK DTS (100kbps)	902.9	463.1	
	914.9	468.9	
	926.9	457.3	
Maximum Measured Value		506.5	

Note: the test was performed on Lora DTS SF7 and Lora DTS SF11, here the worst case was shown.

Table 13: Test Result of 99% Bandwidth, Lora FHSS

Test Mode	Channel Frequency (MHz)	99% Bandwidth (kHz)	Limit (MHz)
FSK FHSS (50kbps)	902.2	103.0	/
	915	104.2	
	927.8	103.0	
FSK FHSS (150kbps)	902.4	156.3	
	915.2	158.6	
	927.6	152.8	
FSK FHSS (250kbps)	902.5	253.3	
	915	253.3	
	927.5	250.4	
Lora FHSS SF7 (125kbps)	902.4	119.2	
	915	128.5	
	927.6	129.7	
Maximum Measured Value		253.3	

Note: the test was performed on Lora FHSS SF7 and Lora FHSS SF11, here the worst case was shown.

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Test Report No.:Seite 23 von 30
Page 23 of 30**5.1.7 Conducted Spurious Emissions Measured in 100 kHz Bandwidth****RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-19 to 2025-10-18
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 22.9 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A.

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5.1.8 Carrier Frequency Separation

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Limits	: ≥ 20 dB bandwidth
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-19 to 2025-10-18
Input voltage	: Fully charged battery
Operation mode	: B
Test channel	: Low / Middle / High
Ambient temperature	: 22.9 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

Table 14: Test Result of Carrier Frequency Separation

Test Mode	Channel	Measured Channel Separation (kHz)	Limit (kHz)	Result
FSK FHSS (50kbps)	Low Channel	200.7	≥ 20dB bandwidth	Pass
	Adjacency Channel			
	Middle Channel	200.7		Pass
	Adjacency Channel			
	High Channel	200.7		Pass
	Adjacency Channel			
FSK FHSS (150kbps)	Low Channel	400.1	≥ 20dB bandwidth	Pass
	Adjacency Channel			
	Middle Channel	401.2		Pass
	Adjacency Channel			
	High Channel	401.2		Pass
	Adjacency Channel			
FSK FHSS (250kbps)	Low Channel	500.0	≥ 20dB bandwidth	Pass
	Adjacency Channel			
	Middle Channel	500.4		Pass
	Adjacency Channel			
	High Channel	500.4		Pass
	Adjacency Channel			
Lora FHSS SF7 (125kbps)	Low Channel	200.7	≥ 20dB bandwidth	Pass
	Adjacency Channel			
	Middle Channel	200.7		Pass
	Adjacency Channel			
	High Channel	200.7		Pass
	Adjacency Channel			

Note: the test was performed on Lora FHSS SF7 and Lora FHSS SF11, here the worst case was shown.

5.1.9 Number of Hopping Frequency

RESULT:**Pass****Test Specification**

Test standard	: FCC part 15.247(a)(1)(iii) RSS-247 Clause 5.1(d)
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Limits	: ≥ 15 non-overlapping channels
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-19 to 2025-10-18
Input voltage	: Fully charged battery
Operation mode	: B
Ambient temperature	: 22.9 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

Table 15: Test result of hopping channel number

Test Mode	Hopping Frequencies	Limit
FSK FHSS (50kbps)	129	>50
FSK FHSS (150kbps)	64	>50
FSK FHSS (250kbps)	51	>50
Lora FHSS SF7 (125kbps)	128	>50
Lora FHSS SF11 (125kbps)	128	>50

5.1.10 Time of Occupancy**RESULT:****Pass****Test Specification**

Test standard : FCC part 15.247(f)
RSS-247 Clause 5.3

Basic standard : ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+
C63.10a:2024

Limits : < 0.4s

Kind of test site : Shielded Room

Test Setup

Date of testing : 2025-09-19 to 2025-10-18

Input voltage : Fully charged battery

Operation mode : B

Test channel : Low / Middle / High

Ambient temperature : 22.9 °C

Relative humidity : 53 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

Table 16: Test result of Channel Occupancy

Test Mode	Period (s)	Channel Occupancy Time (ms)	Limit (ms)
FSK FHSS (50kbps)	20	318.8	400
FSK FHSS (150kbps)	20	376.8	400
FSK FHSS (250kbps)	10	391.3	400
Lora FHSS SF7 (125kbps)	20	376.8	400

Note: the test was performed on Lora FHSS SF7 and Lora FHSS SF11, here the worst case was shown.

Prüfbericht - Nr.: **CN25C9WI 003**
Test Report No.:Seite 28 von 30
Page 28 of 30**5.1.11 Radiated Spurious Emission****RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Limits	: Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2025-09-29 to 2025-10-01
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

This test have considered of Bluetooth and LORA operating simultaneously.

For the measurement records, refer to the appendix A.

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Page 29 of 30**5.1.12 Conducted Emission on AC Mains****RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	: ANSI C63.10:2020 and ANSI C63.10:2020+Cor. 1:2023+ C63.10a:2024
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a) RSS-Gen Table 3
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-09-18
Input voltage	: Fully charged battery
Operation mode	: C
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

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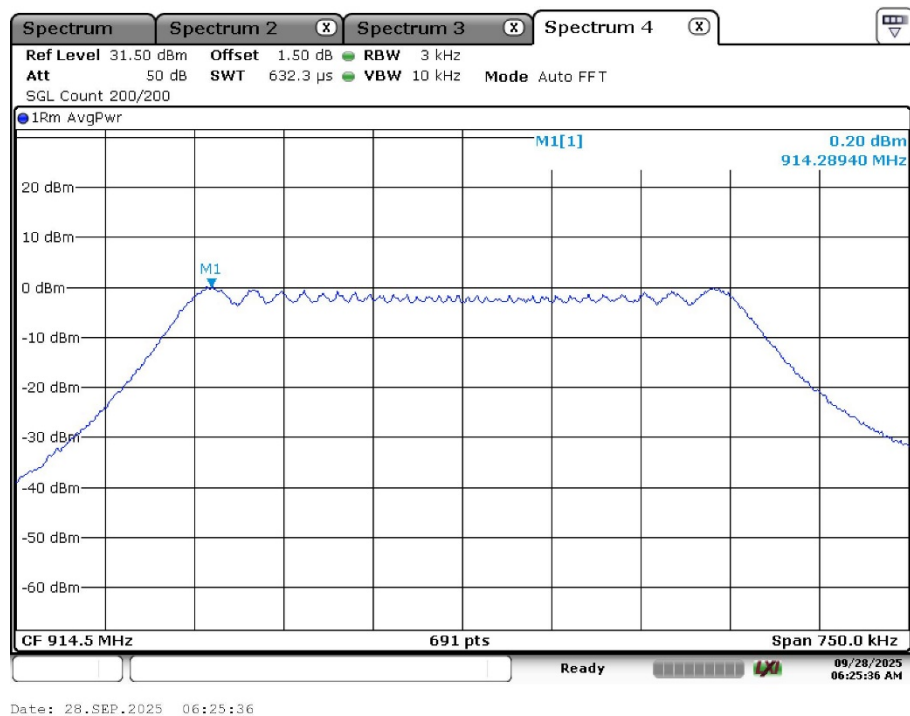
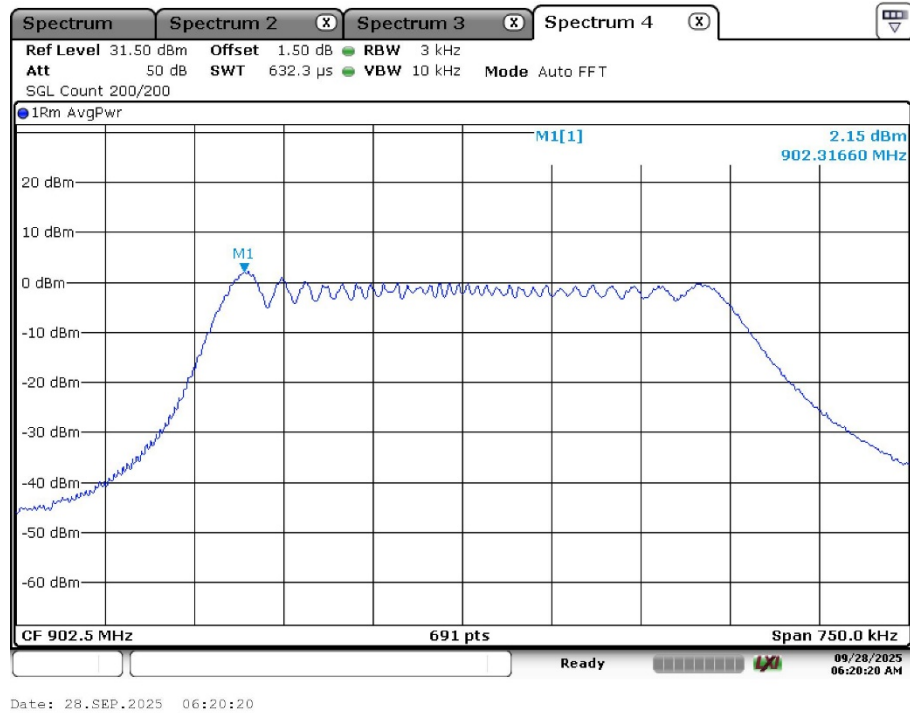
Appendix A: Test Results of Lora

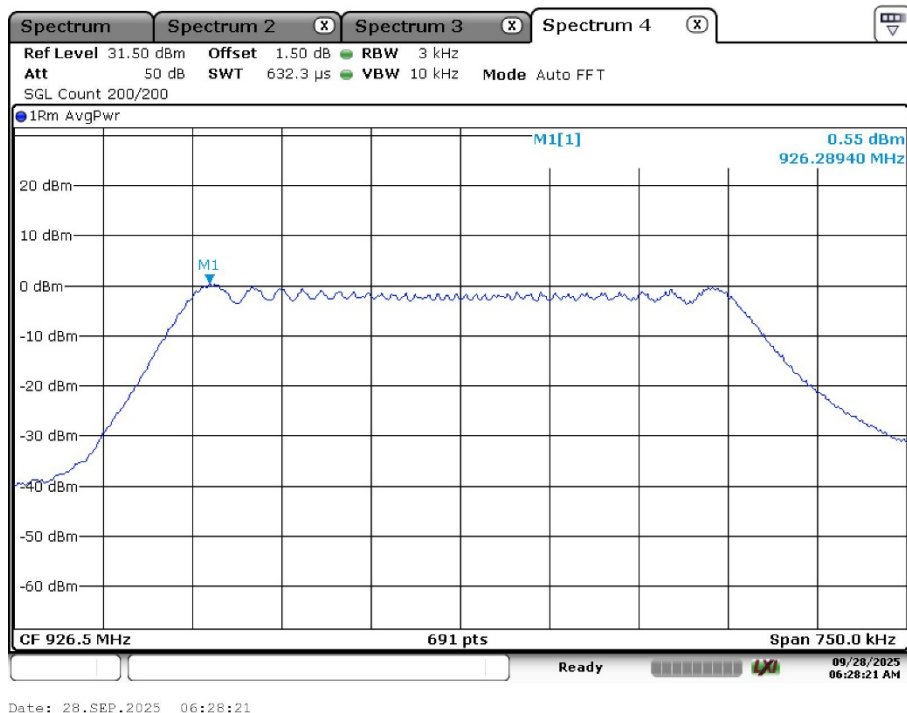
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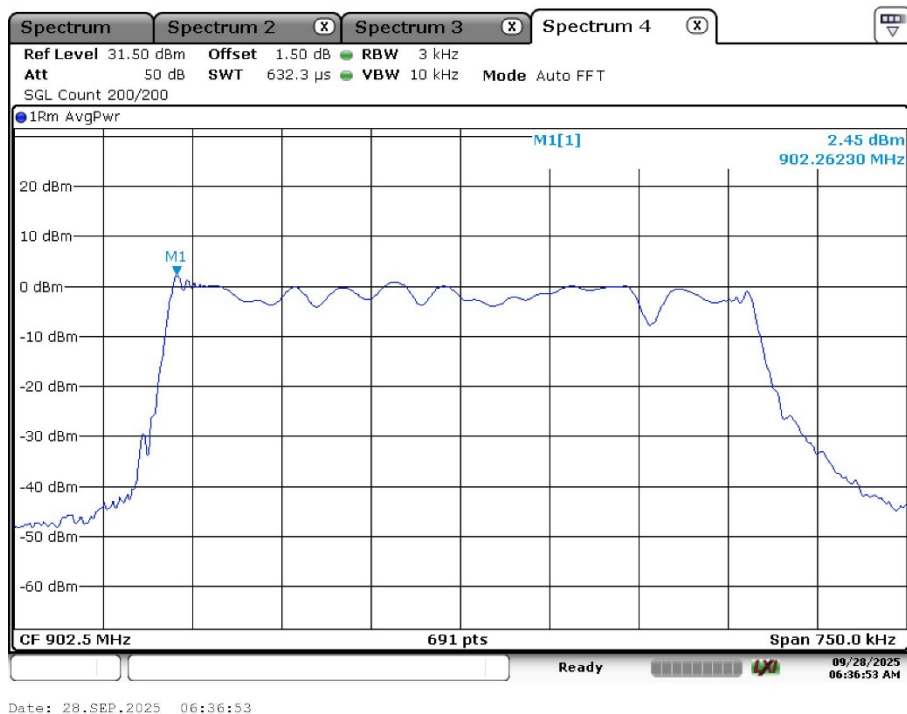
Appendix A.1: Test Results of Conducted Power Spectral Density

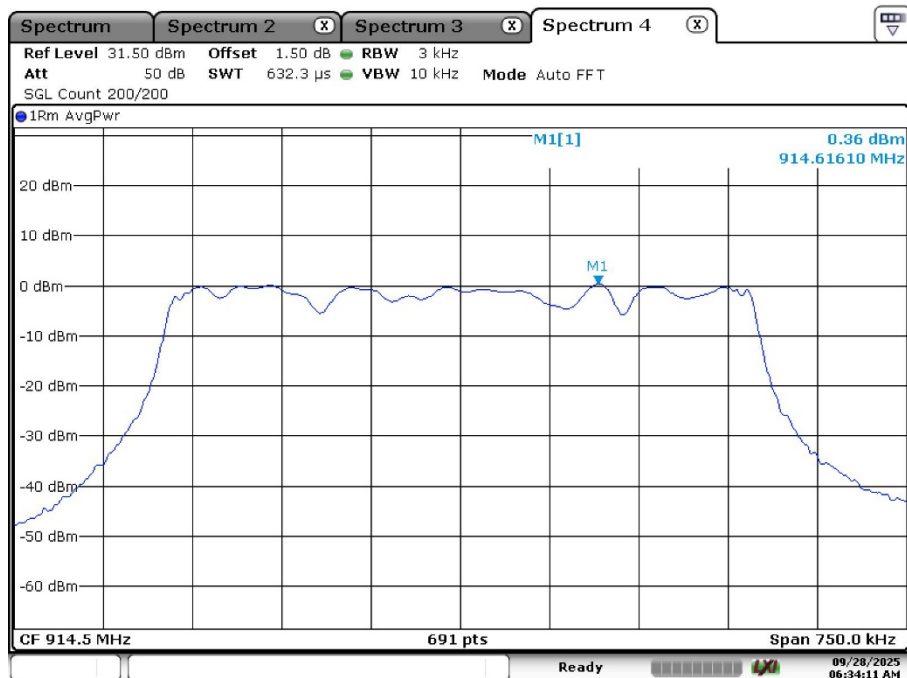
Lora DTS SF7



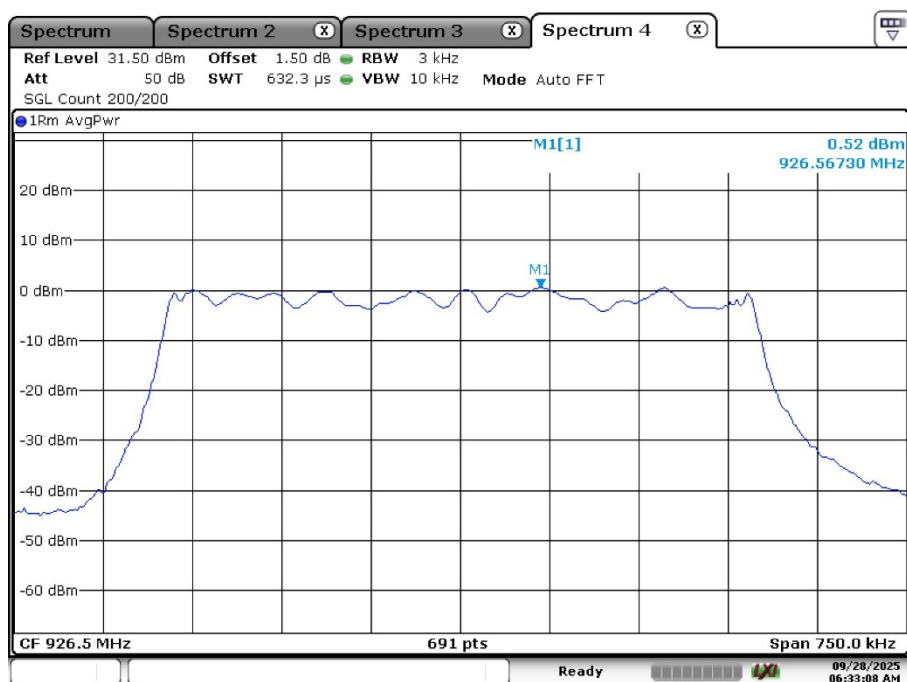


Lora DTS SF11



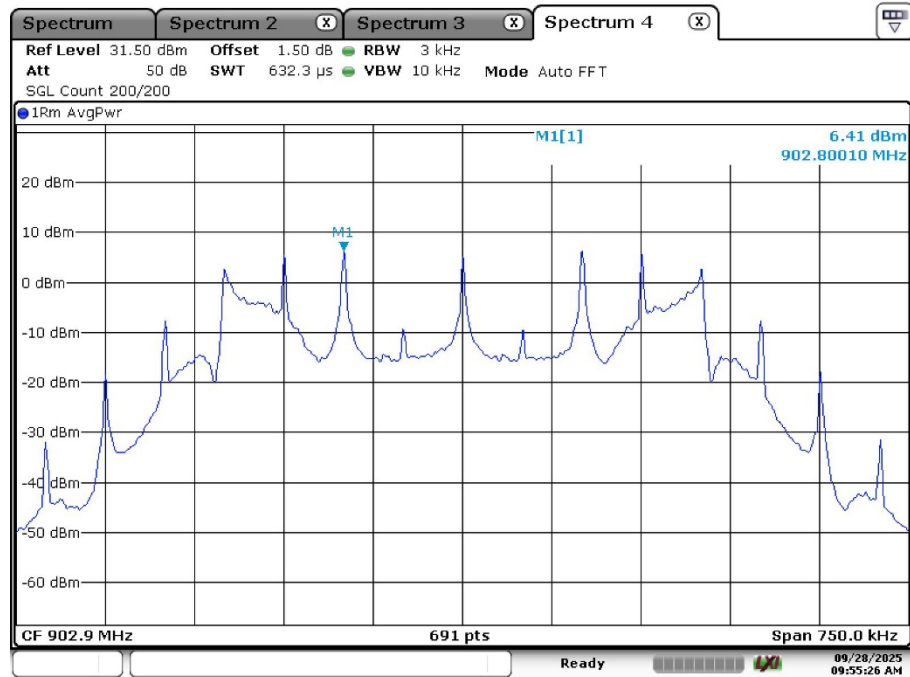


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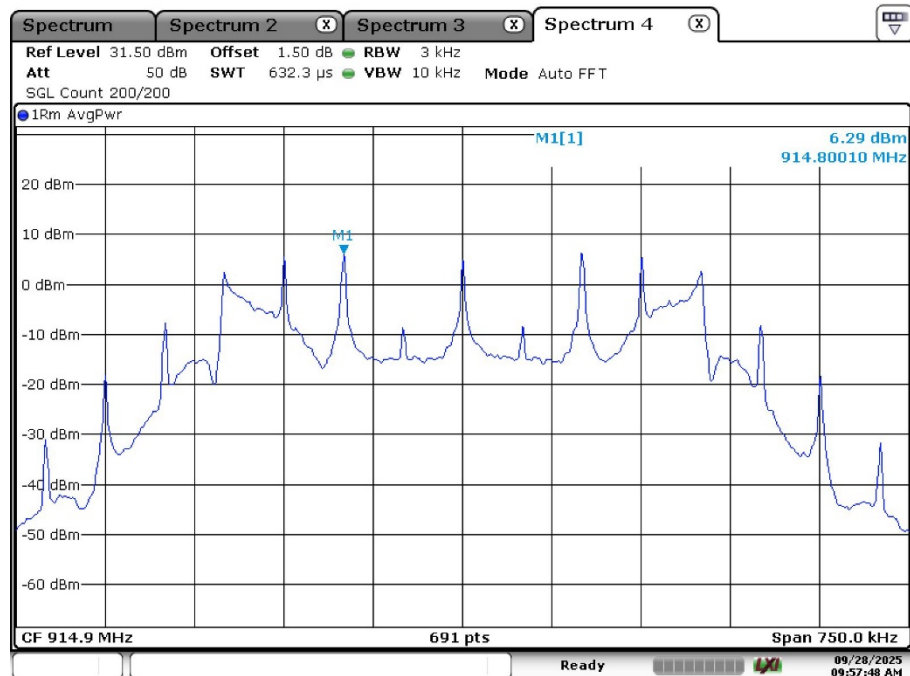


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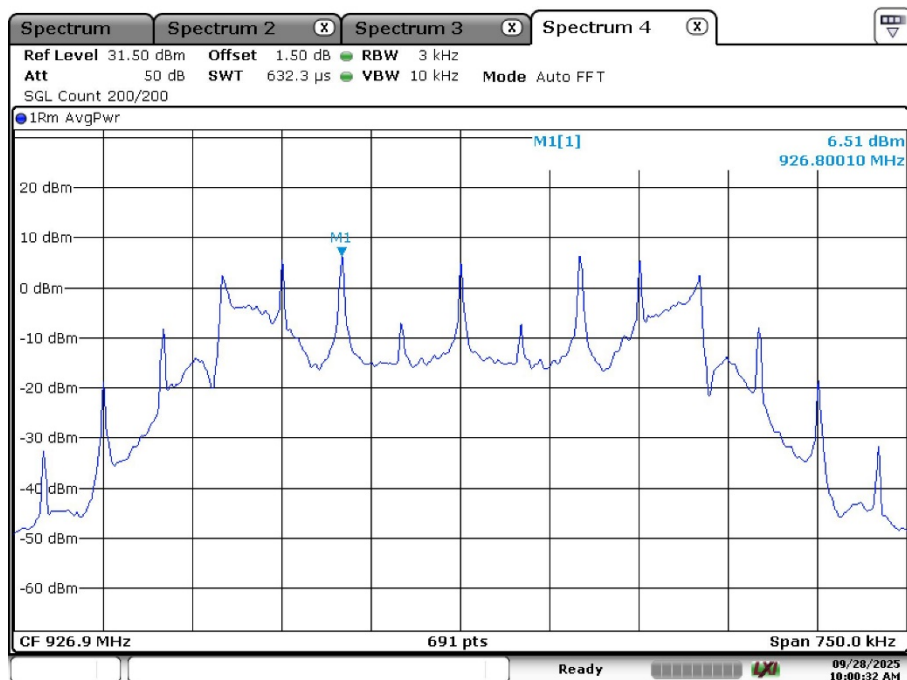
FSK DTS (100kbps)



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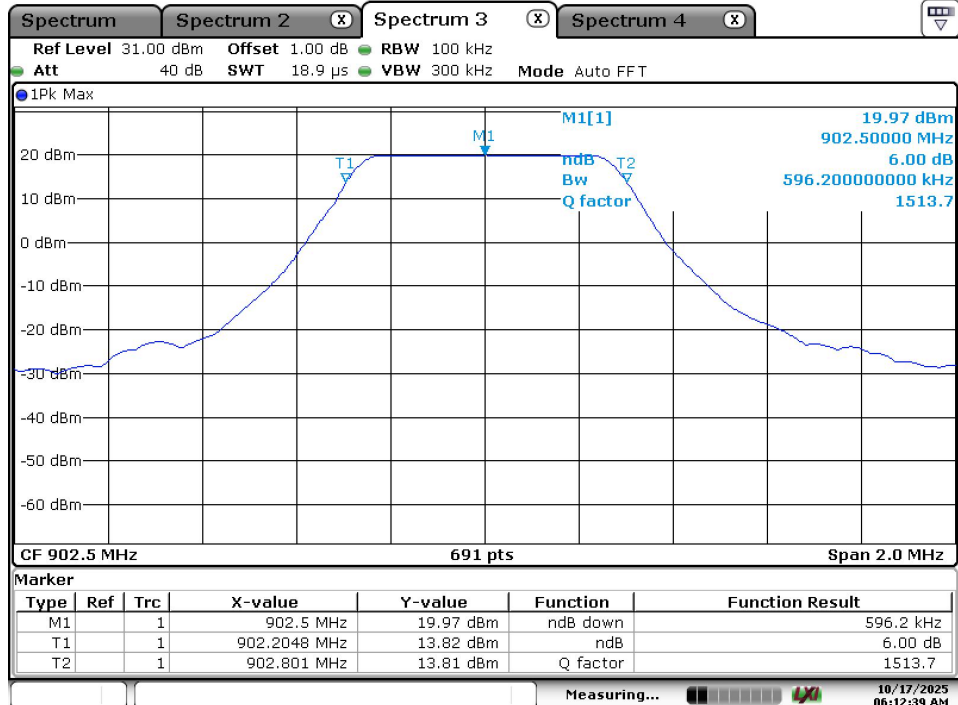
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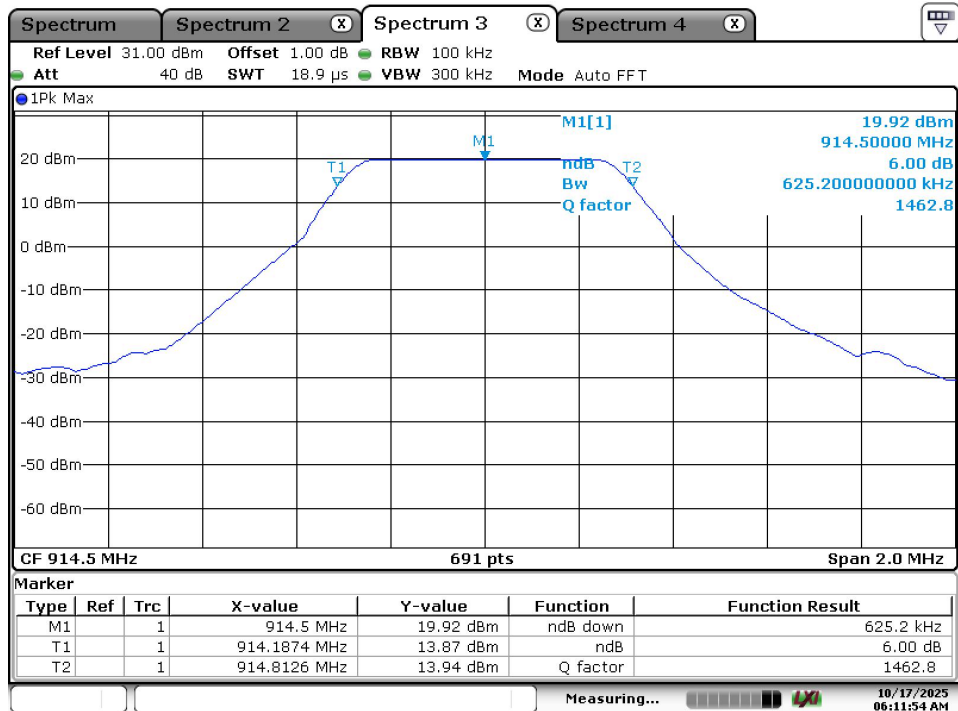
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Appendix A.2: Test Results of 6dB Bandwidth

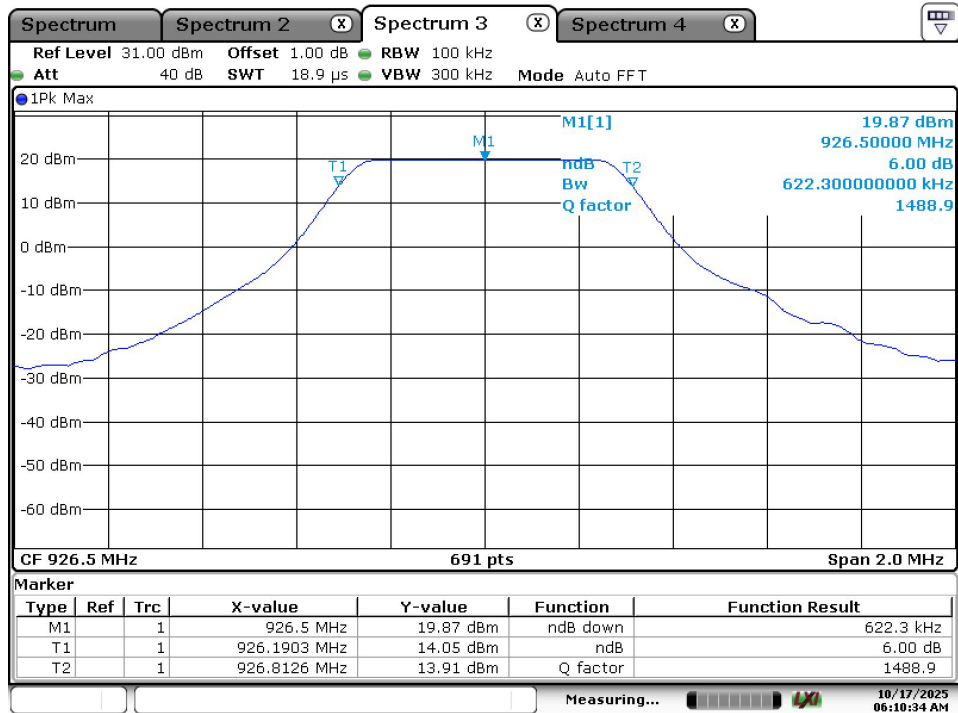
Lora DTS SF7



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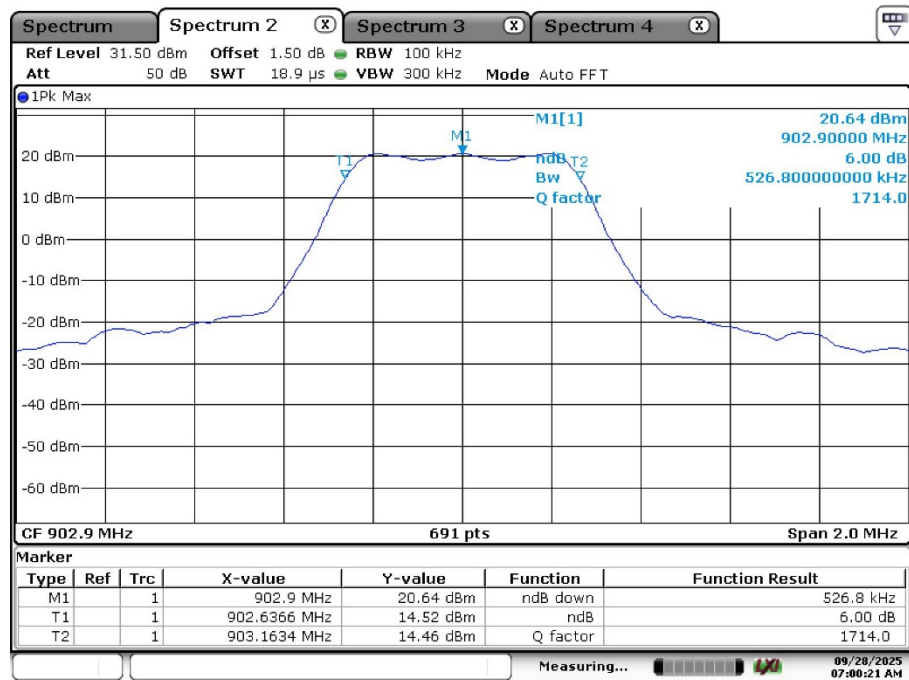


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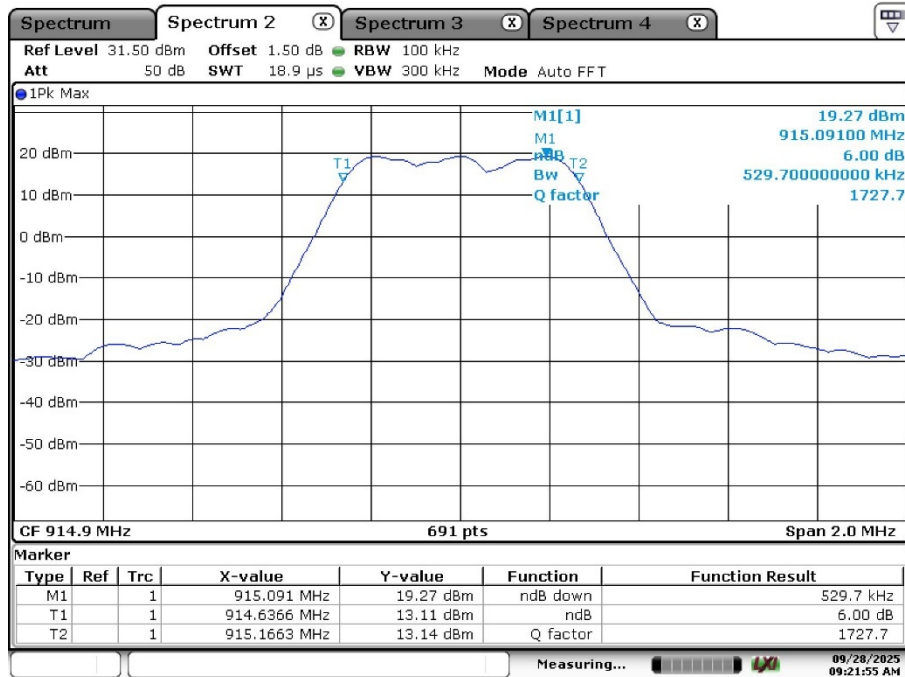


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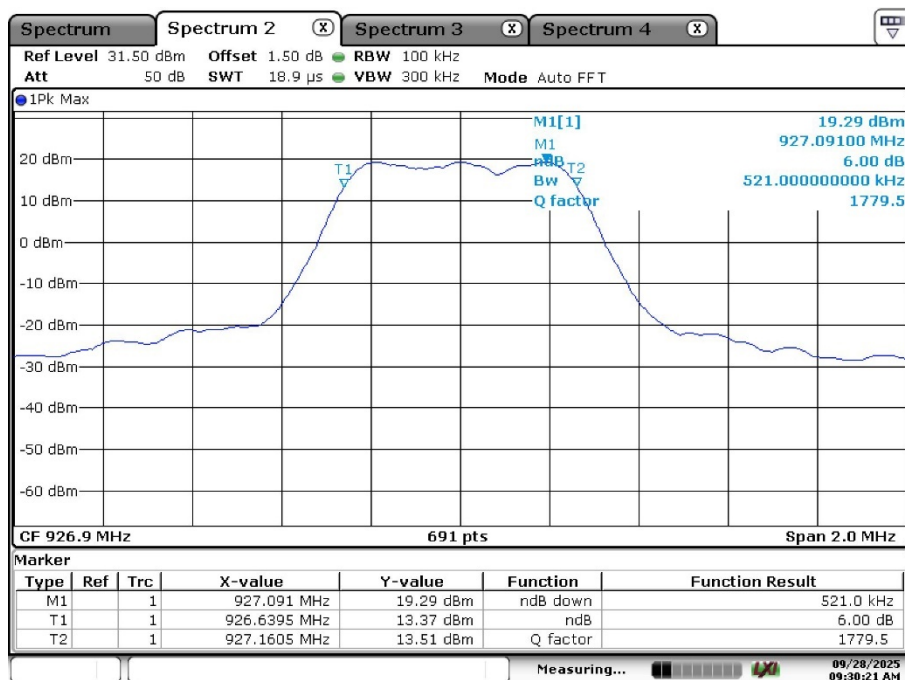
FSK DTS (100kbps)



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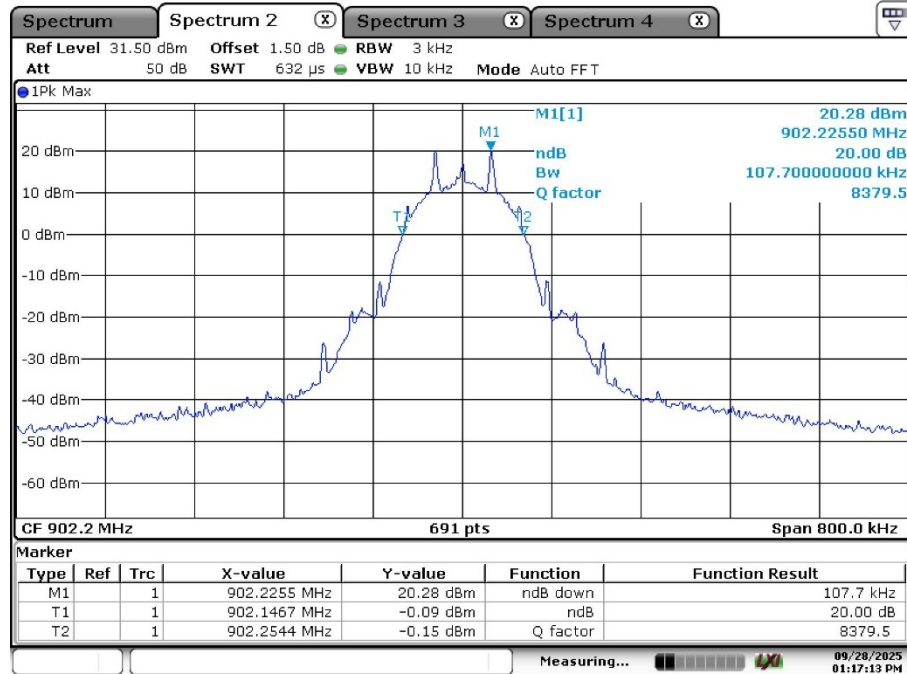
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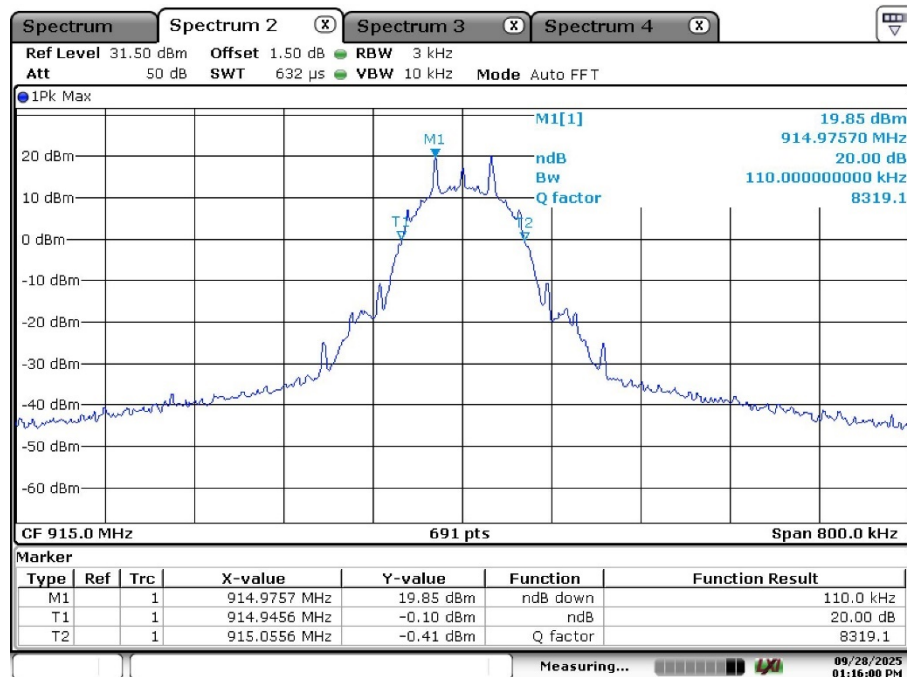
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Appendix A.3: Test Results of 20dB Bandwidth

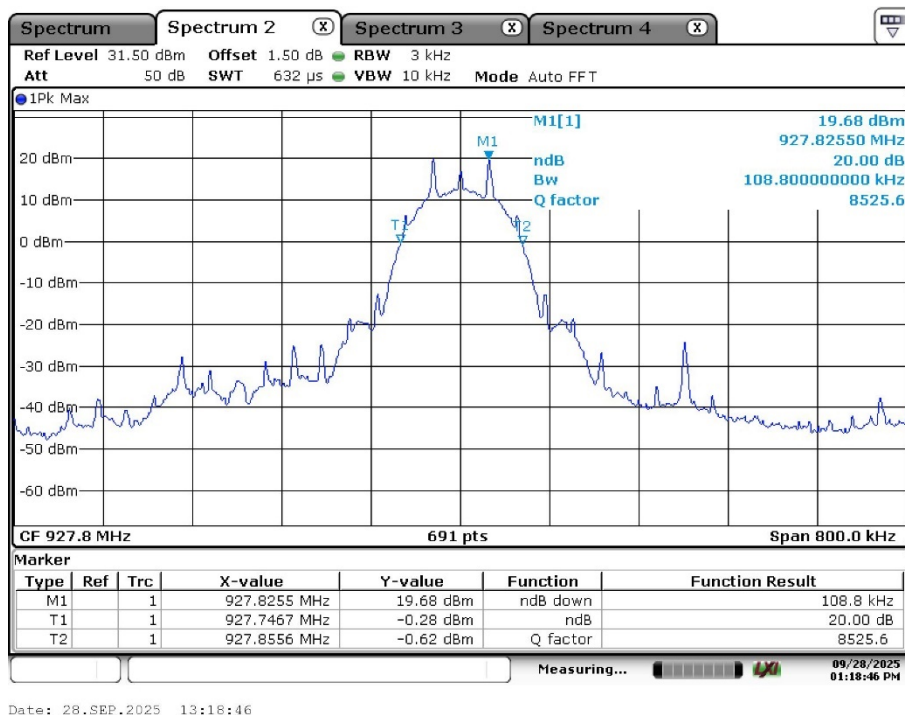
FSK FHSS (50kbps)



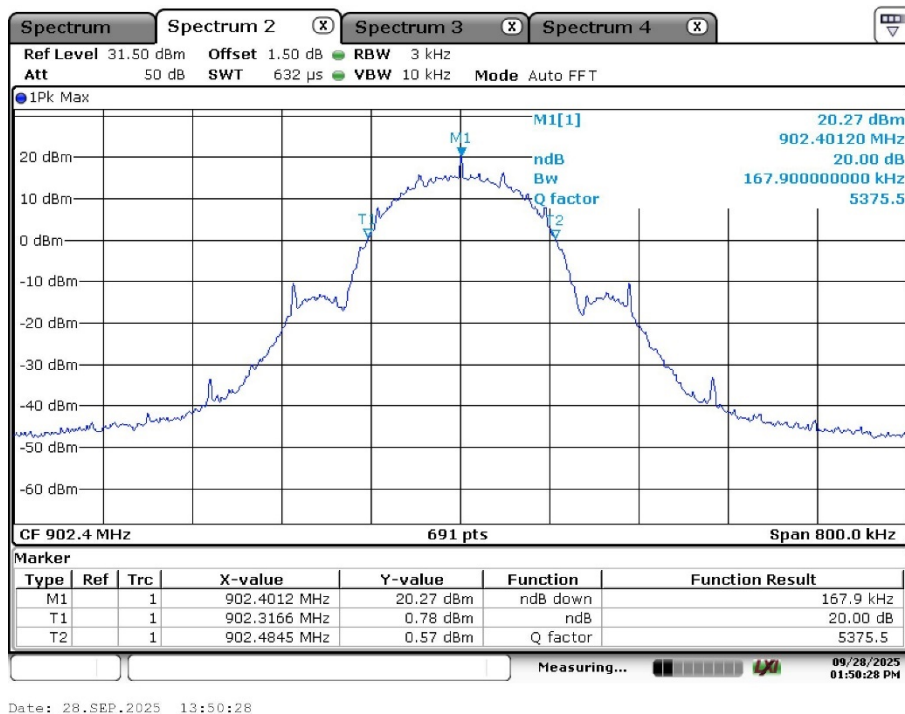
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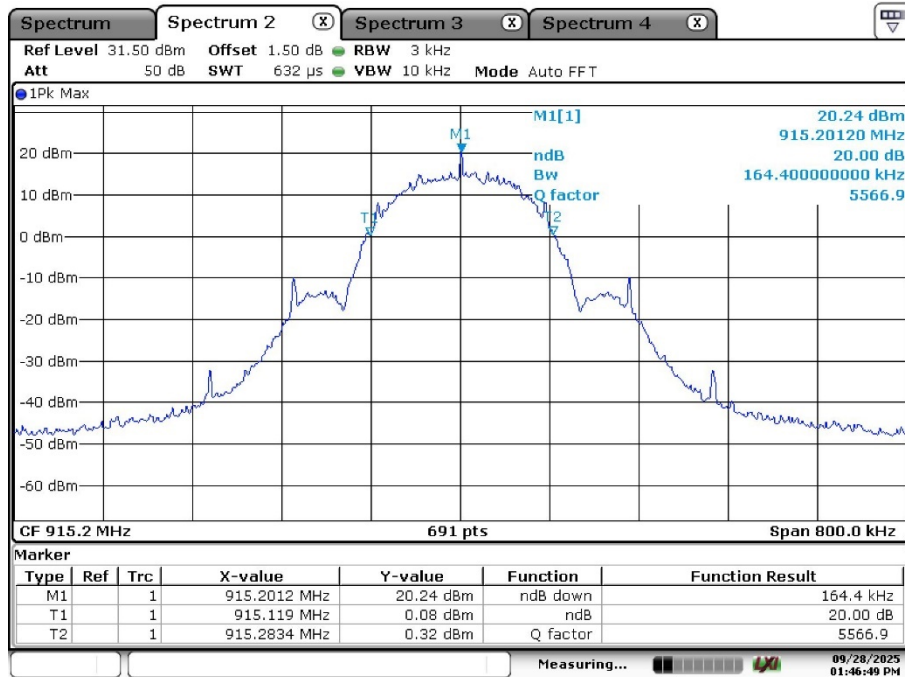


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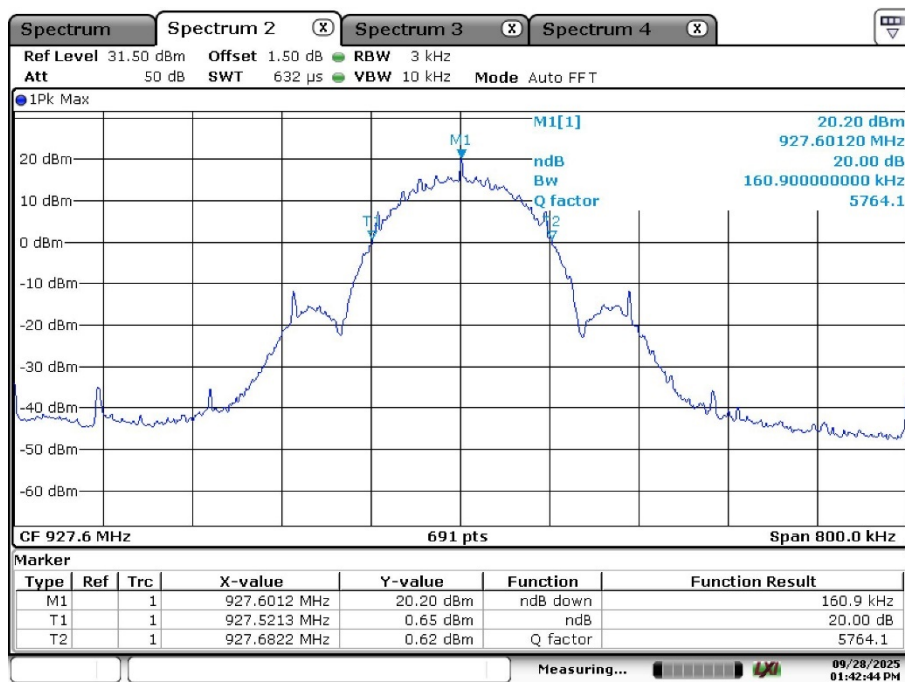


FSK FHSS (150kbps)



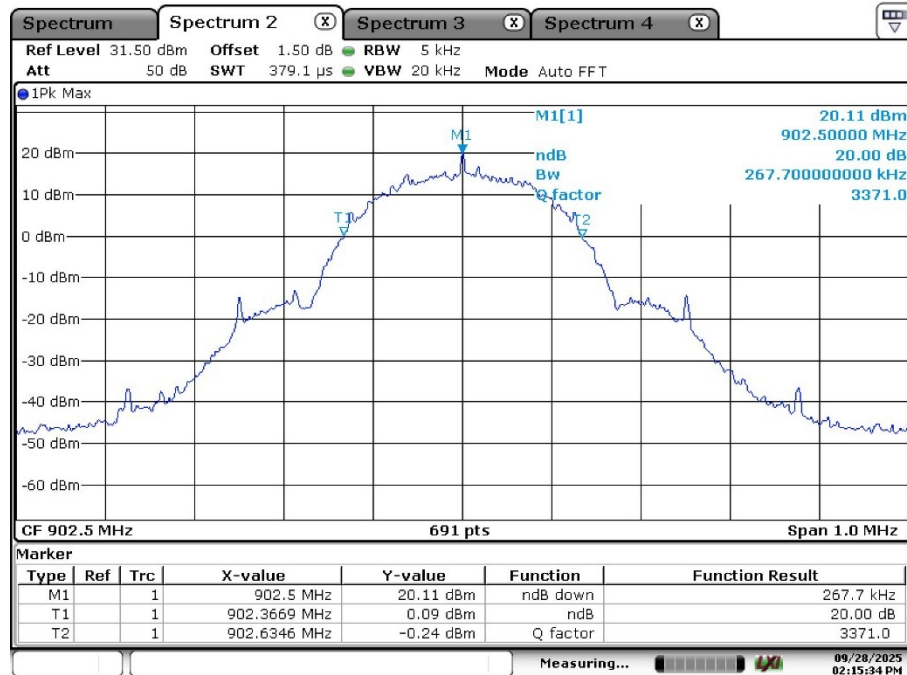


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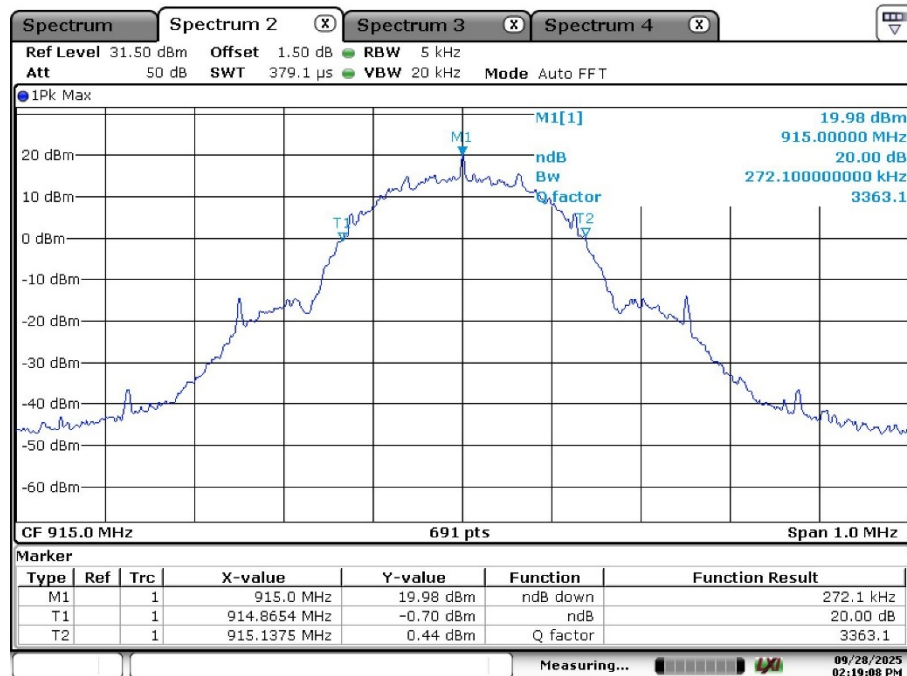


Date: 28.SEP.2025 13:42:45

FSK FHSS (250kbps)



Date: 28.SEP.2025 14:15:34



Date: 28.SEP.2025 14:19:08