FCC Part 15.247

TEST REPORT

For

M2communication INC.

17F-3, No. 32, Gaotie 2nd Rd., Zhubei City, Hsinchu County ,Taiwan (R.O.C.)

FCC ID: 2AFXU-EXT01

Report Type:	**Product Type:**
Original Report	Extender

Report Producer : Coco Lin

Report Number : RXZ250722086RF02

Report Date : 2025-10-15

Reviewed By: Andy Shih

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Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
0.0	RXZ250722086	RXZ250722086RF02	2025-10-15	Original Report	Coco Lin

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1 General Information

1.1 Product Description for Equipment under Test (EUT)

Applicant	M2communication INC.
	17F-3, No. 32, Gaotie 2nd Rd., Zhubei City, Hsinchu County ,Taiwan (R.O.C.)
Brand Name	M2COMM
Product (Equipment)	Extender
Main Model Name	Extender
Series Model Name	N/A
Frequency Range	LoRa Mode: 903 ~ 927 MHz
Maximum Conducted Peak Output Power	LoRa Mode: 18.11 dBm
Modulation Technique	GFSK
Power Operation (Voltage Range)	5Vdc from Adapter , 48Vdc from POE
Received Date	2025/07/22

*All measurement and test data in this report was gathered from production sample serial number: RXZ250722086-1. (Assigned by BACL, New Taipei Laboratory).

1.2 Objective

This report is prepared on behalf of *M2communication INC.* in accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communication Commission's rules.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
KDB 558074 D01 15.247 Meas Guidance v05r02

1.4 Statement of Compliance

Decision Rule: No, (The test results do not include MU judgment)

1. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (New Taipei Laboratory).
2. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.
3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
4. The determination of the test results does not require consideration of the uncertainty of the measurement, unless the assessment is required by customer agreement, regulation or standard document specification.
5. Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) is not responsible for the authenticity of the information provided by the applicant that affects the test results.

1.5 Measurement Uncertainty

Parameter		Uncertainty
AC Mains		+/- 3.02 dB
RF output power, conducted		+/- 0.57 dB
Occupied Bandwidth		+/- 0.09 %
Unwanted Emissions, conducted		+/- 1.09 dB
Emissions, radiated	9 kHz~30 MHz	+/- 3.20 dB
	30 MHz~1 GHz	+/- 3.30 dB
	1 GHz~18 GHz	+/- 5.14 dB
Temperature		+/- 0.76 °C
Humidity		+/- 0.41 %

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

1.6 Environmental Conditions

Test Site	Test Date	Temperature (℃)	Relative Humidity (%)	Test Engineer
AC Line Conducted Emissions	2025/8/5	23.6	51	Jing
Radiation Spurious Emissions	2025/8/1~2025/9/2	21~23.4	61~63	Nick
Duty Cycle	2025/8/11	27.4	52	Sean
Conducted Spurious Emissions	2025/8/11	27.4	52	Sean
Emission Bandwidth	2025/8/11	27.4	52	Sean
Maximum Output Power	2025/8/11	27.4	52	Sean
100 kHz Bandwidth of Frequency Band Edge	2025/8/11	27.4	52	Sean
Power Spectral Density	2025/8/11	27.4	52	Sean

1.7 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) to collect test data is located on

☒70, Lane 169, Sec. 2, Datong Road, Xizhi Dist., New Taipei City 22183, Taiwan, R.O.C.

Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3732) and the FCC designation No.TW3732 under the Mutual Recognition Agreement (MRA) in FCC Test.

2 System Test Configuration

2.1 Description of Test Configuration

For LoRa mode, 97 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	903	21	908	41	913	61	918	81	923
2	903.25	22	908.25	42	913.25	62	918.25	82	923.25
3	903.5	23	908.5	43	913.5	63	918.5	83	923.5
4	903.75	24	908.75	44	913.75	64	918.75	84	923.75
5	904	25	909	45	914	65	919	85	924
6	904.25	26	909.25	46	914.25	66	919.25	86	924.25
7	904.5	27	909.5	47	914.5	67	919.5	87	924.5
8	904.75	28	909.75	48	914.75	68	919.75	88	924.75
9	905	29	910	49	915	69	920	89	925
10	905.25	30	910.25	50	915.25	70	920.25	90	925.25
11	905.5	31	910.5	51	915.5	71	920.5	91	925.5
12	905.75	32	910.75	52	915.75	72	920.75	92	925.75
13	906	33	911	53	916	73	921	93	926
14	906.25	34	911.25	54	916.25	74	921.25	94	926.25
15	906.5	35	911.5	55	916.5	75	921.5	95	926.5
16	906.75	36	911.75	56	916.75	76	921.75	96	926.75
17	907	37	912	57	917	77	922	97	927
18	907.25	38	912.25	58	917.25	78	922.25	/	/
19	907.5	39	912.5	59	917.5	79	922.5	/	/
20	907.75	40	912.75	60	917.75	80	922.75	/	/

Were tested with channel 1, 49 and 97.

2.2 Equipment Modifications

No modification was made to the EUT.

2.3 EUT Exercise Software

The test software was used “Tera Term v4.95”

The system was configured for testing in engineering mode, which was provided by Applicant.

Test Channel	Low	Middle	High
Power Level Setting	Default	Default	Default

2.4 Support Equipment List and Details

Description	Manufacturer	Model Number	Serial Number
NB	DELL	E6410	8N7PXN1
POE	Tp-link	POE150S	224B623011475
Adapter	DEE VAN ENTERPRISE CO.,LTD.	DSA-12PFT-05 FUS 050200	N/A
Fixture	M2COMM	0C1-0001-02	N/A

2.5 External Cable List and Details

Description	Manufacturer	Model Number	Length(m)
RJ-45 Cable	YIH FONE	SS-0288	1.5

2.6 Test Mode

Pre-scan

Mode 1: model: Extender + Adapter

Mode 2: model: Extender + POE

Worst case is the Mode 2

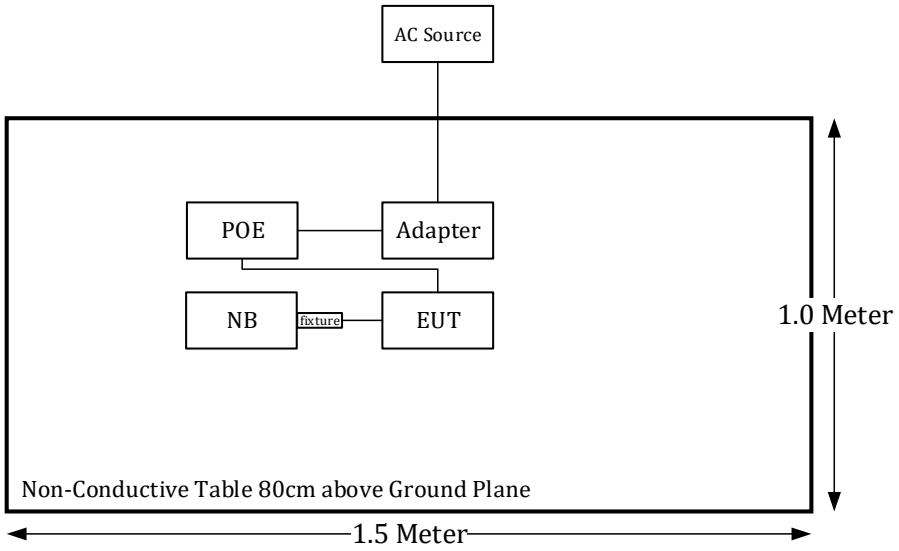
Full System (model: Extender + POE) for all test item.

2.7 Block Diagram of Test Setup

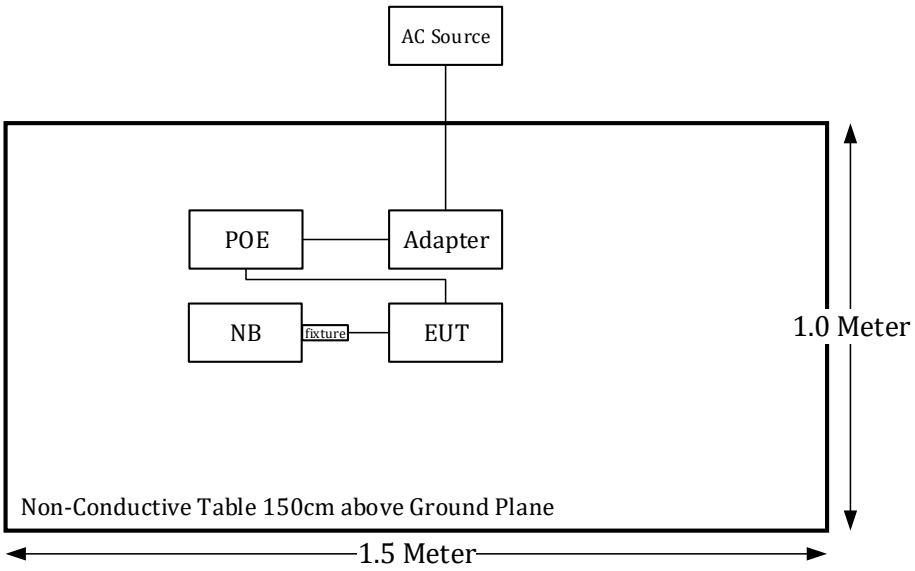
See test photographs attached in setup photos for the actual connections between EUT and support equipment.

Radiation:

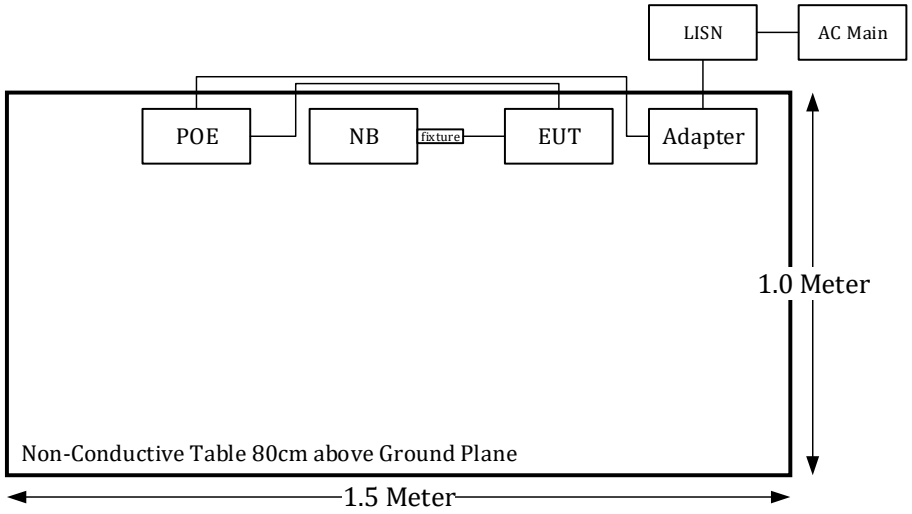
Below 1GHz:



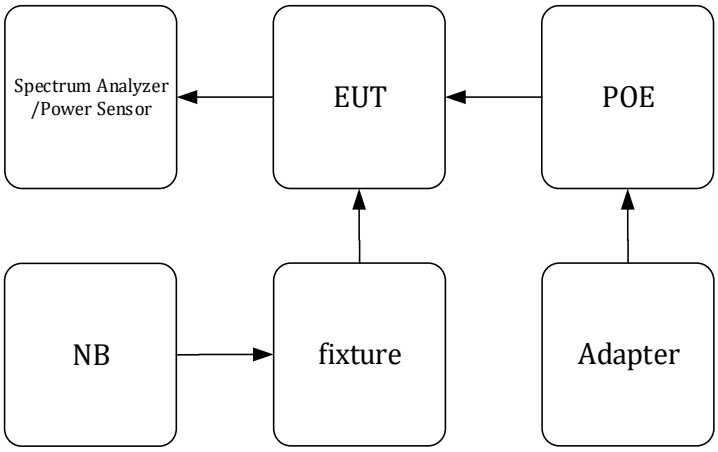
Above 1GHz:



Conduction:



Conducted:



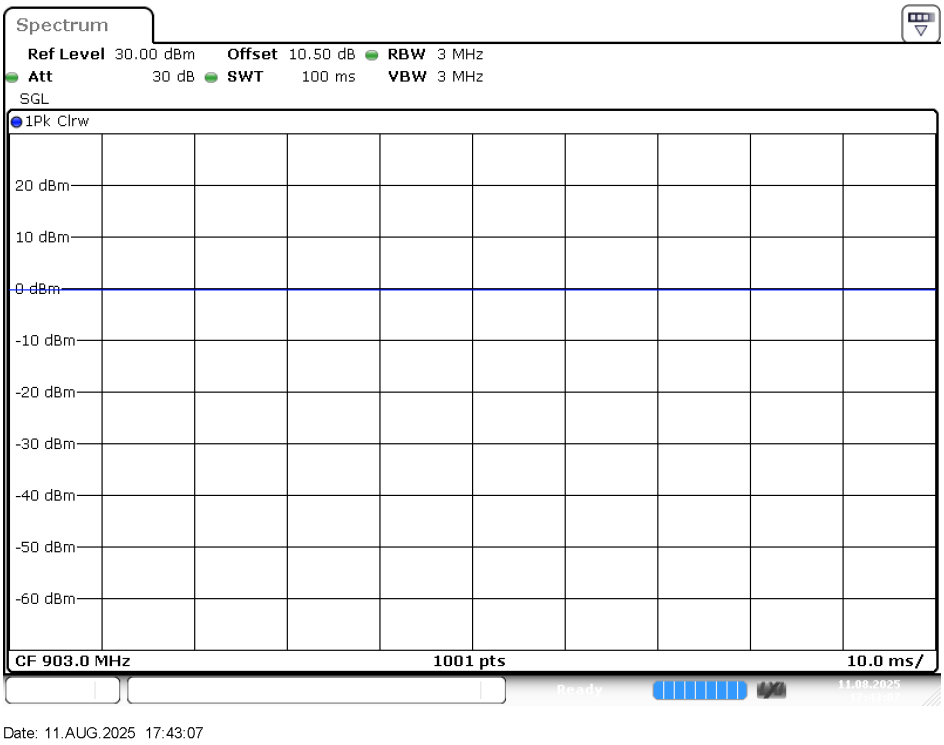
2.8 Duty Cycle

The duty cycle as below:

Radio Mode	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	1/T (kHz)	1/T VBW setting (kHz)
LoRa	100	100	100	/	0.01

Please refer to the following plots.

LoRa Mode



3 Summary of Test Results

FCC Rules	Description of Test	Results
§15.203	Antenna Requirement	Compliance
§15.207(a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247(a)(2)	6 dB Emission Bandwidth	Compliance
§15.247(b)(3)	Maximum Peak Output Power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance

4 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conduction Room (CON-A)					
LISN	Rohde & Schwarz	ENV216	101612	2025/2/17	2026/2/17
EMI Test Receiver	Rohde & Schwarz	ESR	102759	2024/9/19	2025/9/19
RF Cable	EMEC	EM-CB5D	1	2025/6/30	2026/6/30
Software	AUDIX	E3	V9.150826k	N.C.R	N.C.R
Radiation 3M Room - Below 1GHz (966-A)					
Active Loop Antenna	ETS-Lindgren	6502	35796	2025/3/27	2026/3/27
Bilog Antenna with 6 dB Attenuator	SUNOL SCIENCES & MINI-CIRCUITS	JB6/UNAT-6+	A050115/15542_01	2025/1/16	2026/1/16
Preamplifier	Sonoma	310N	130602	2025/6/17	2026/6/17
EMI Test Receiver	Rohde & Schwarz(R&S)	ESR3	102759	2024/9/19	2025/9/19
Microflex Cable	UTIFLEX	UFB197C-1-2362-70U-70U	225757-001	2024/12/20	2025/12/20
Coaxial Cable	UTIFLEX	UFB311A-Q-1440-300300	220490-006	2024/12/20	2025/12/20
Coaxial Cable	COMMATE	PEWC	8Dr	2024/12/20	2025/12/20
Cable	EMC	EMC105-SM-SM-10000	201003	2024/12/20	2025/12/20
Coaxial Cable	JUNFLON	J12J102248-00-B-5	AUG-07-15-044	2024/12/20	2025/12/20
Band-reject filter	MICRO-TRONICS	BRC50722	G014	2024/10/2	2025/10/2
Software	AUDIX	E3	18621a	N.C.R	N.C.R
Radiation 3M Room - Above 1GHz (966-A)					
Horn Antenna	ETS-Lindgren	3115	40736	2025/5/6	2026/5/6
Preamplifier	Channel	ERA-100M-18G-01D1748	EC2300051	2025/4/10	2026/4/10
Spectrum Analyzer	Rohde & Schwarz	FSV40	101939	2025/3/27	2026/3/27
Microflex Cable	UTIFLEX	UFB197C-1-2362-70U-70U	225757-001	2024/12/20	2025/12/20
Coaxial Cable	UTIFLEX	UFB311A-Q-1440-300300	220490-006	2024/12/20	2025/12/20
Coaxial Cable	COMMATE	PEWC	8Dr	2024/12/20	2025/12/20
Cable	EMC	EMC105-SM-SM-10000	201003	2024/12/20	2025/12/20
Coaxial Cable	JUNFLON	J12J102248-00-B-5	AUG-07-15-044	2024/12/20	2025/12/20
High-pass filter	XINGBOKEJI	XBLBQ-GTA54	200108-3-2	2024/10/19	2025/10/19
High-pass filter	XINGBOKEJI	XBLBQ-GTA11	200121-3-23	2024/10/19	2025/10/19
Software	AUDIX	E3	18621a	N.C.R	N.C.R
Conducted Room					
Spectrum Analyzer	Rohde & Schwarz	FSV40	101204	2025/6/4	2026/6/4
Cable	UTIFLEX	UFA210A	9435	2024/10/1	2025/10/1
Power Sensor	Boonton	RTP5006	11037	2025/5/16	2026/5/16
Attenuator	MCL	BW-S10W5+	1419	2025/3/6	2026/3/6

***Statement of Traceability:** BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to the SI System of Units via the R.O.C. Center for Measurement Standards of the Electronics Testing Center, Taiwan (ETC) or to another internationally recognized National Metrology Institute (NMI), and were compliant with the current Taiwan Accreditation Foundation (TAF) requirements.

5 FCC §15.203 – Antenna Requirements

5.1 Applicable Standard

According to § 15.203,

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§ 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna does not exceed 6dBi.

5.2 Antenna Information

Model	Type	Antenna Gain
RFA-S1-C21-M62-10886	Dipole Antenna	0.52 dBi

Unit was professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Result: Compliance

6 FCC §15.207(a) – AC Line Conducted Emissions

6.1 Applicable Standard

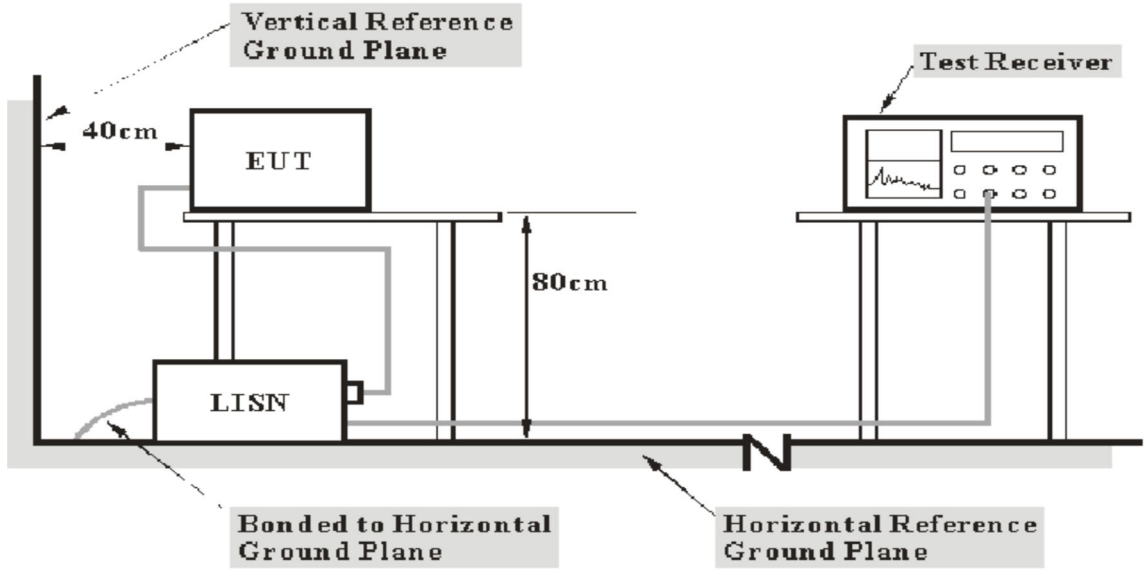
According to §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note 1	56 to 46 Note 1
0.5-5	56	46
5-30	60	50

Note 1: Decreases with the logarithm of the frequency.

6.2 EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was with the FCC Part 15.207 limits.

6.3 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150kHz to 30MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations

Frequency Range	IF B/W
150kHz – 30MHz	9kHz

6.4 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

6.5 Corrected Factor & Margin Calculation

The factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation

The “Over Limit” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit of -7 dB means the emission is 7 dB below the limit. The equation for Over Limit calculation is as follows:

Over Limit = Result – Limit Line

6.6 Test Results

Test Mode: Transmitting

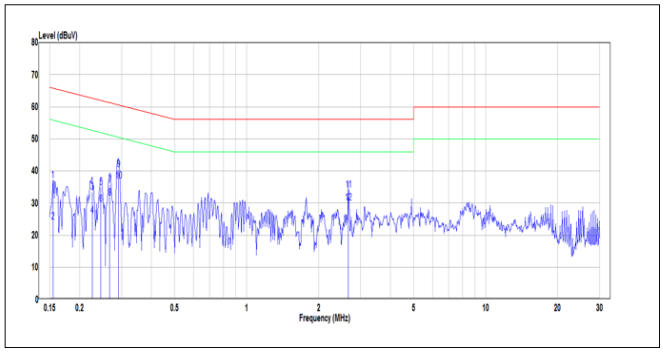
Main: AC120 V, 60 Hz

(Worst case is Middle Channel)

Line

Description: RBW:9kHz/VBW:30kHz

2025-08-05

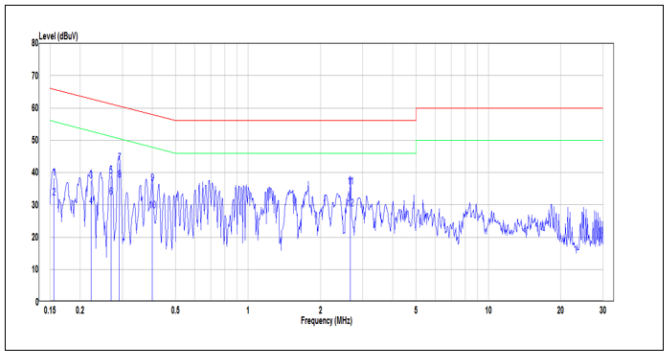


No.	Frequency	Reading	Correct Factor	Result	Limit	Over limit	Remark	Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.155	27.19	9.78	36.97	65.74	-28.77	QP	Line
2	0.155	14.39	9.78	24.17	55.74	-31.57	Average	Line
3	0.226	23.64	9.77	33.41	62.61	-29.20	QP	Line
4	0.226	16.20	9.77	25.97	52.61	-26.64	Average	Line
5	0.246	25.20	9.77	34.97	61.91	-26.94	QP	Line
6	0.246	19.92	9.77	29.69	51.91	-22.22	Average	Line
7	0.267	25.81	9.76	35.57	61.20	-25.63	QP	Line
8	0.267	21.82	9.76	31.58	51.20	-19.62	Average	Line
9	0.291	30.62	9.76	40.38	60.50	-20.12	QP	Line
10	0.291	27.02	9.76	36.78	50.50	-13.72	Average	Line
11	2.664	24.33	9.81	34.14	56.00	-21.86	QP	Line
12	2.664	20.24	9.81	30.05	46.00	-15.95	Average	Line

Neutral

Description: RBW:9kHz/VBW:30kHz

2025-08-05



No.	Frequency	Reading	Correct Factor	Result	Limit	Over limit	Remark	Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.156	28.59	9.74	38.33	65.69	-27.36	QP	Neutral
2	0.156	22.34	9.74	32.08	55.69	-23.61	Average	Neutral
3	0.222	27.83	9.73	37.56	62.74	-25.18	QP	Neutral
4	0.222	19.79	9.73	29.52	52.74	-23.22	Average	Neutral
5	0.269	29.21	9.72	38.93	61.16	-22.23	QP	Neutral
6	0.269	22.70	9.72	32.42	51.16	-18.74	Average	Neutral
7	0.291	33.18	9.72	42.90	60.50	-17.60	QP	Neutral
8	0.291	28.05	9.72	37.77	50.50	-12.73	Average	Neutral
9	0.400	26.83	9.70	36.53	57.86	-21.33	QP	Neutral
10	0.400	18.47	9.70	28.17	47.86	-19.69	Average	Neutral
11	2.664	25.78	9.78	35.56	56.00	-20.44	QP	Neutral
12	2.664	18.98	9.78	28.76	46.00	-17.24	Average	Neutral

Note:

Result = Reading + Factor

Over Limit = Result – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

7 FCC §15.209, §15.205 , §15.247(d) – Spurious Emissions

7.1 Applicable Standard

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1MHz.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	608 – 614	4. 5 – 5. 15
0.495 – 0.505	16.69475 – 16.69525	960 – 1240	5. 35 – 5. 46
2.1735 – 2.1905	16.80425 – 16.80475	1300 – 1427	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1435 – 1626.5	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1645.5 – 1646.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1660 – 1710	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1718.8 – 1722.2	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	2200 – 2300	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2310 – 2390	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2483.5 – 2500	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2690 – 2900	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	3260 – 3267	22.01 – 23.12
8.41425 – 8.41475	162.0125 –167.17	3.332 – 3.339	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3 3458 – 3 358	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3.600 – 4.400	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4		Above 38.6
13.36 – 13.41	399.9 – 410		

As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

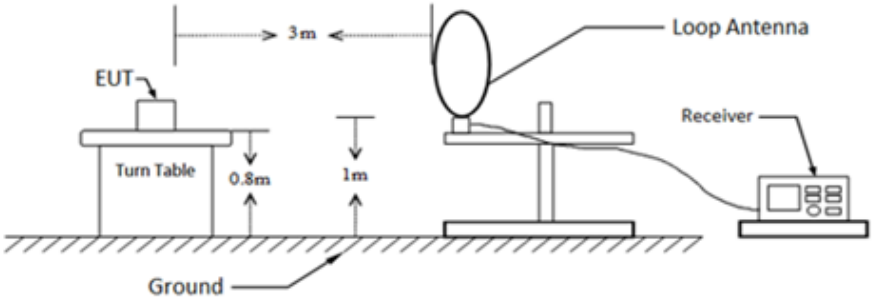
Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

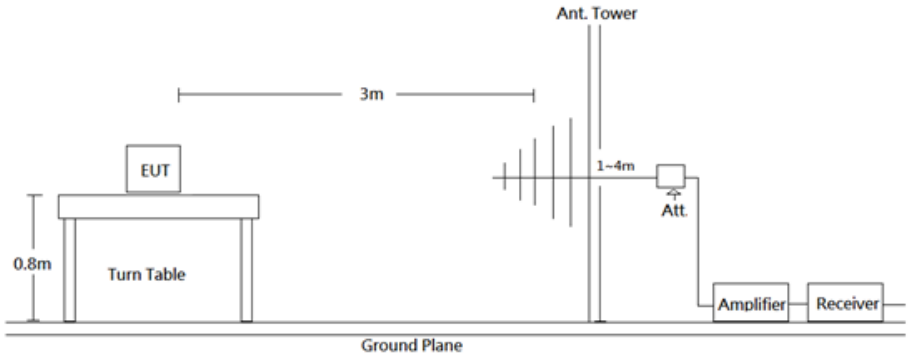
As per FCC §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c).

7.2 EUT Setup

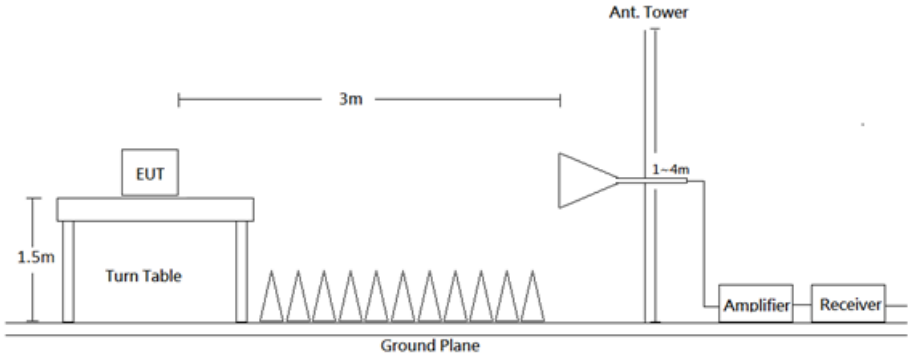
9kHz-30MHz:



30MHz-1GHz:



1-18 GHz:



Radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC Part 15.209 and FCC 15.247 Limits.

7.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 18 GHz. During the radiated emission test, the EMI test receiver was set with the following configurations measurement method 6.3 in ANSI C63.10.

Frequency Range	RBW	Video B/W	IF B/W	Duty cycle	Measurement method	Detector
9 kHz - 150 kHz	300 Hz	1 kHz	200 Hz	/	QP/AV	QP/AV
150 kHz - 30 MHz	10 kHz	30 kHz	9 kHz	/	QP/AV	QP/AV
30-1000 MHz	100 kHz	300 kHz	/	/	PK	PK
	/	/	120 kHz	/	QP	QP
Above 1 GHz	Pre-scan :					
	1 MHz	3 MHz	/	/	PK	PK
	1 MHz	1 kHz	/	>98%	Ave	PK
	1 MHz	≥ 1/Ton, not less than 1 kHz	/	<98%	Ave	PK
	Final measurement for emission identified during pre-scan :					
	1 MHz	3 MHz	/	/	PK	PK
	1 MHz	10 Hz	/	>98%	Ave	PK
	1 MHz	≥ 1/Ton	/	<98%	Ave	PK

Note: T is minimum transmission duration

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

7.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in Quasi-peak and average detector mode from 9 kHz to 30 MHz, Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

7.5 Corrected Factor & Margin Calculation

The Correct Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Level – Limit

7.6 Test Results

Test Mode: Transmitting

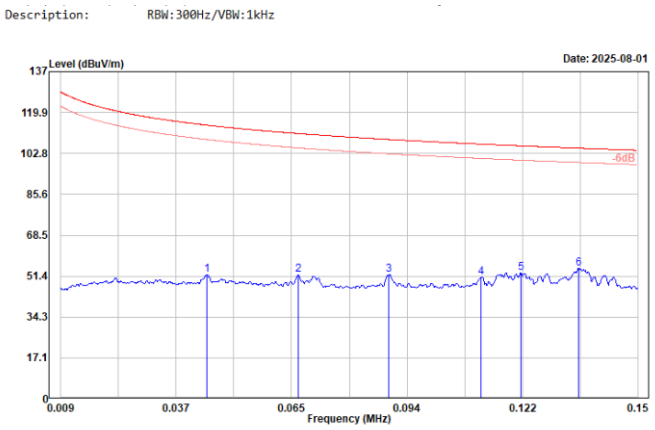
(Pre-scan with three orthogonal axis, and worse case as Z axis.)

9kHz-30MHz:

(worst case is Middle channel)

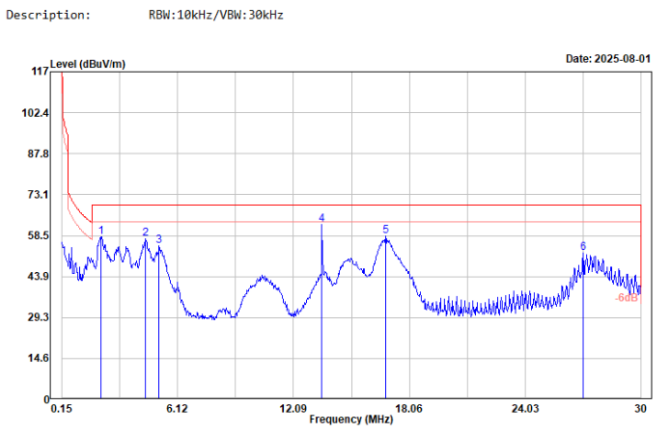
(Pre-scan using three directional polarities, worst case as parallel.)

9kHz-150kHz



Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Height (cm)	Degree (°)	Remark
0.045	38.99	13.10	52.09	114.58	-62.49	100	129	Average
0.067	40.30	11.71	52.01	111.09	-59.08	100	247	Average
0.089	40.32	11.68	52.00	108.59	-56.59	100	66	Average
0.112	39.19	11.66	50.85	106.65	-55.80	100	324	Average
0.121	41.11	11.69	52.80	105.92	-53.12	100	159	Average
0.135	42.89	11.75	54.64	104.97	-50.33	100	38	Average

150kHz-30MHz

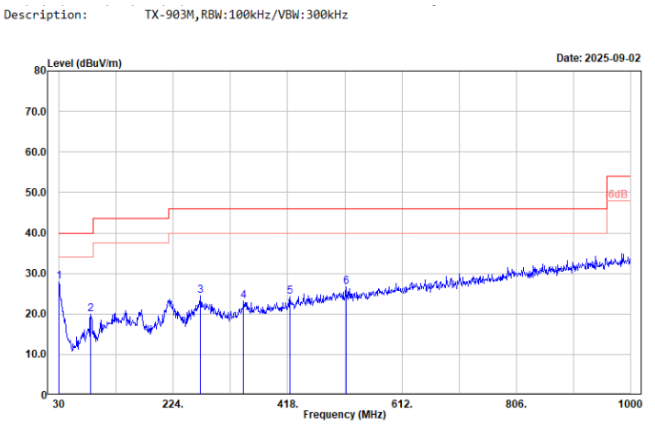


Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Height (cm)	Degree (°)	Remark
2.180	47.20	10.80	58.00	69.54	-11.54	100	78	QP
4.478	46.53	10.80	57.33	69.54	-12.21	100	126	QP
5.165	43.72	11.00	54.72	69.54	-14.82	100	258	QP
13.553	50.86	11.58	62.44	69.54	-7.10	100	29	QP
16.836	46.61	11.64	58.25	69.54	-11.29	100	173	QP
27.015	40.60	11.87	52.47	69.54	-17.07	100	306	QP

30MHz-1GHz:

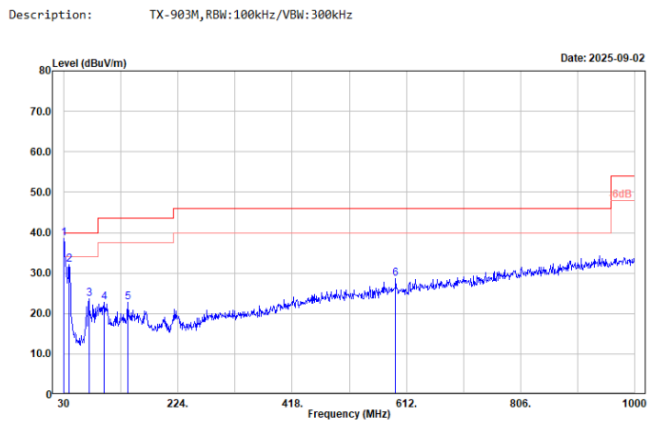
Low channel

Horizontal



Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Height (cm)	Degree (°)	Remark
30.000	32.21	-4.32	27.89	40.00	-12.11	100	59	QP
83.350	37.56	-17.53	20.03	40.00	-19.97	100	3	QP
270.560	34.88	-10.38	24.50	46.00	-21.50	100	248	QP
343.310	32.40	-9.12	23.28	46.00	-22.72	100	252	QP
421.880	30.84	-6.65	24.19	46.00	-21.81	100	8	QP
516.940	30.99	-4.41	26.58	46.00	-19.42	100	331	QP

Vertical

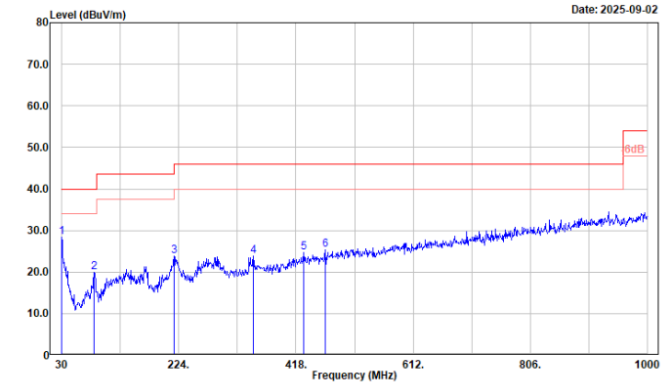


Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Height (cm)	Degree (°)	Remark
30.000	42.98	-4.32	38.66	40.00	-1.34	100	230	QP
38.730	42.46	-10.44	32.02	40.00	-7.98	100	0	QP
72.680	40.55	-17.02	23.53	40.00	-16.47	100	88	QP
98.870	37.78	-15.07	22.71	43.50	-20.79	100	319	QP
138.640	33.85	-11.13	22.72	43.50	-20.78	100	95	QP
593.570	31.70	-3.19	28.51	46.00	-17.49	100	303	QP

Middle channel

Horizontal

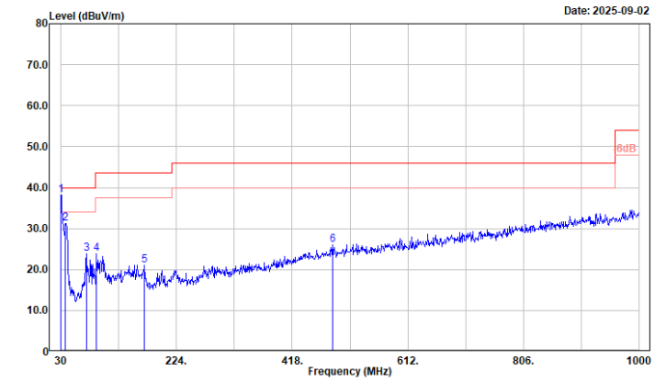
Description: TX-915M,RBW:100kHz/VBW:300kHz



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
30.000	32.68	-4.32	28.36	40.00	-11.64	100	89	QP
84.320	37.46	-17.59	19.87	40.00	-20.13	100	2	QP
216.240	37.20	-13.31	23.89	46.00	-22.11	100	324	QP
347.190	33.01	-9.07	23.94	46.00	-22.06	100	254	QP
430.610	31.02	-6.37	24.65	46.00	-21.35	100	360	QP
466.500	30.88	-5.51	25.37	46.00	-20.63	100	143	QP

Vertical

Description: TX-915M,RBW:100kHz/VBW:300kHz

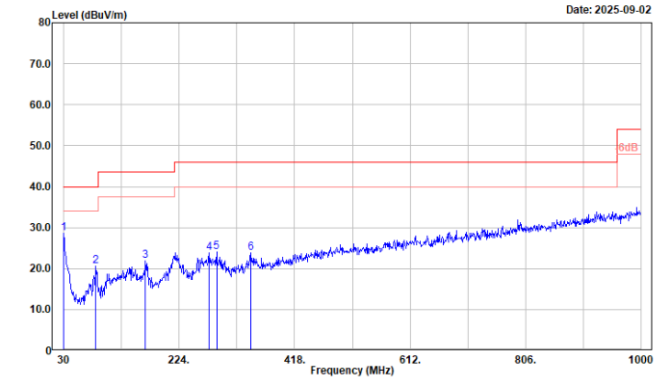


Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
30.000	42.44	-4.32	38.12	40.00	-1.88	100	299	QP
37.760	41.03	-9.71	31.32	40.00	-8.68	100	287	QP
72.680	40.93	-17.02	23.91	40.00	-16.09	100	73	QP
90.140	41.05	-17.12	23.93	43.50	-19.57	100	42	QP
170.650	33.63	-12.63	21.00	43.50	-22.50	100	280	QP
485.900	30.89	-4.96	25.93	46.00	-20.07	100	32	QP

High channel

Horizontal

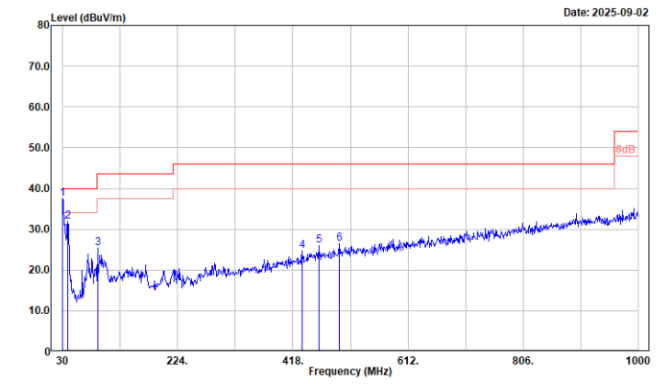
Description: TX-927M,RBW:100kHz/VBW:300kHz



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
30.000	33.02	-4.32	28.70	40.00	-11.30	100	339	QP
84.320	38.12	-17.59	20.53	40.00	-19.47	100	350	QP
167.740	34.28	-12.38	21.90	43.50	-21.60	100	105	QP
274.440	34.10	-10.27	23.83	46.00	-22.17	100	258	QP
287.050	34.06	-9.93	24.13	46.00	-21.87	100	335	QP
344.280	32.90	-9.11	23.79	46.00	-22.21	100	244	QP

Vertical

Description: TX-927M,RBW:100kHz/VBW:300kHz



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
30.000	41.74	-4.32	37.42	40.00	-2.58	100	213	QP
38.730	42.21	-10.44	31.77	40.00	-8.23	100	298	QP
89.170	42.66	-17.31	25.35	43.50	-18.15	100	10	QP
433.520	30.87	-6.18	24.69	46.00	-21.31	100	98	QP
461.650	31.55	-5.63	25.92	46.00	-20.08	100	14	QP
496.570	31.28	-4.75	26.53	46.00	-19.47	100	45	QP

Level = Reading + Factor.

Margin = Level – Limit.

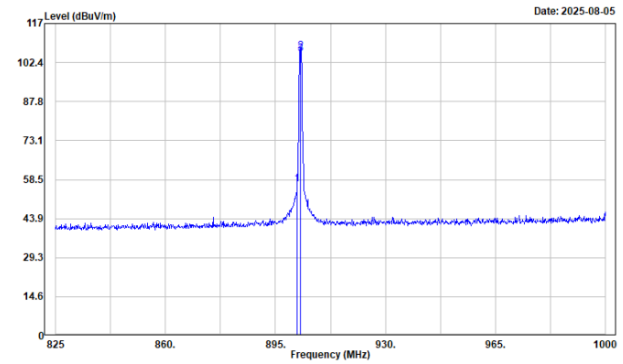
Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Band-Edge:

Low channel

Horizontal

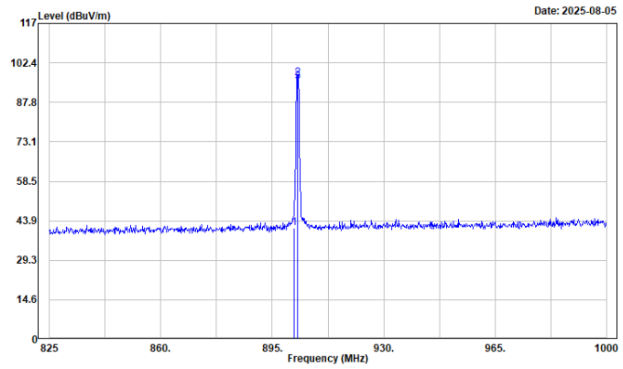
Description: Lora-TX-903,RBW:100kHz/VBW:300kHz



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
902.000	54.35	2.48	56.83	85.72	-28.89	100	147	QP
903.000	103.95	2.51	106.46			100	147	Peak
903.000	103.21	2.51	105.72			100	147	QP

Vertical

Description: Lora-TX-903,RBW:100kHz/VBW:300kHz

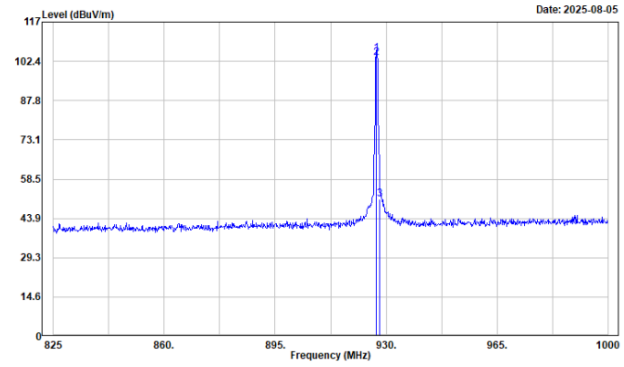


Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
902.000	38.84	2.48	41.32	75.32	-34.00	184	150	QP
903.000	94.34	2.51	96.85			184	150	Peak
903.000	92.81	2.51	95.32			184	150	QP

High channel

Horizontal

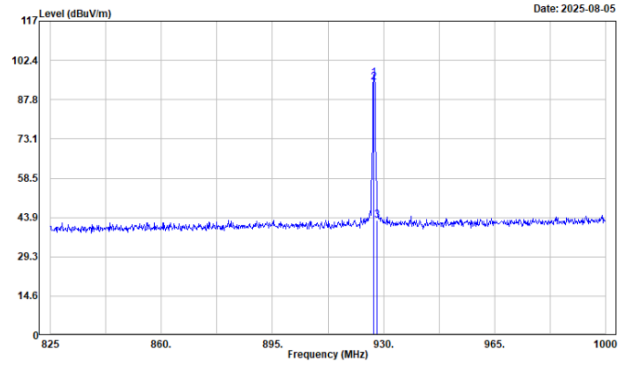
Description: Lora-TX-927,RBW:100kHz/VBW:300kHz



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
927.000	102.26	3.12	105.38			101	143	Peak
927.000	100.63	3.12	103.75			101	143	QP
928.000	47.75	3.17	50.92	83.75	-32.83	101	143	QP

Vertical

Description: Lora-TX-927,RBW:100kHz/VBW:300kHz



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
927.000	92.51	3.12	95.63			187	159	Peak
927.000	90.96	3.12	94.08			187	159	QP
928.000	39.60	3.17	42.77	74.08	-31.31	187	159	QP

Level = Reading + Factor.

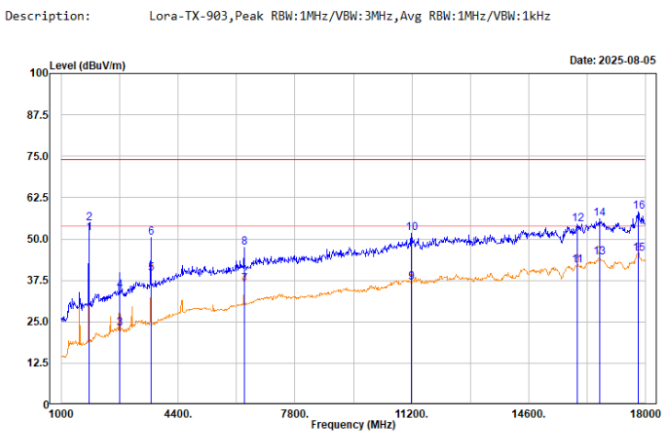
Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

1GHz-18GHz:

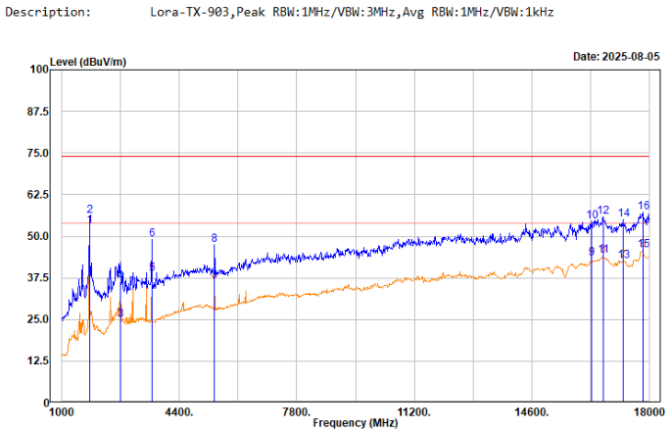
(worst case is low channel)

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1806.000	65.56	-13.74	51.82	54.00	-2.18	177	232	Average
1806.000	68.53	-13.74	54.79	74.00	-19.21	177	232	Peak
2709.000	31.99	-9.03	22.96	54.00	-31.04	126	318	Average
2709.000	43.47	-9.03	34.44	74.00	-39.56	126	318	Peak
3601.000	47.27	-7.79	39.48	54.00	-14.52	150	112	Average
3601.000	58.14	-7.79	50.35	74.00	-23.65	150	112	Peak
6321.000	38.23	-1.90	36.33	54.00	-17.67	150	306	Average
6321.000	49.25	-1.90	47.35	74.00	-26.65	150	306	Peak
11183.000	28.71	8.15	36.86	54.00	-17.14	150	58	Average
11183.000	43.67	8.15	51.82	74.00	-22.18	150	58	Peak
16011.000	31.76	10.29	42.05	54.00	-11.95	150	87	Average
16011.000	44.26	10.29	54.55	74.00	-19.45	150	87	Peak
16657.000	31.75	12.56	44.31	54.00	-9.69	150	129	Average
16657.000	43.41	12.56	55.97	74.00	-18.03	150	129	Peak
17796.000	32.25	13.41	45.66	54.00	-8.34	150	257	Average
17796.000	44.74	13.41	58.15	74.00	-15.85	150	257	Peak

Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1806.000	66.79	-13.74	53.05	54.00	-0.95	145	119	Average
1806.000	69.73	-13.74	55.99	74.00	-18.01	145	119	Peak
2709.000	33.92	-9.03	24.89	54.00	-29.11	189	103	Average
2709.000	45.41	-9.03	36.38	74.00	-37.62	189	103	Peak
3601.000	46.42	-7.79	38.63	54.00	-15.37	150	29	Average
3601.000	56.96	-7.79	49.17	74.00	-24.83	150	29	Peak
5420.000	40.14	-3.70	36.44	54.00	-17.56	150	67	Average
5420.000	51.13	-3.70	47.43	74.00	-26.57	150	67	Peak
16334.000	31.94	11.29	43.23	54.00	-10.77	150	124	Average
16334.000	43.27	11.29	54.56	74.00	-19.44	150	124	Peak
16657.000	31.54	12.56	44.10	54.00	-9.90	150	189	Average
16657.000	43.25	12.56	55.81	74.00	-18.19	150	189	Peak
17235.000	29.60	12.94	42.54	54.00	-11.46	150	257	Average
17235.000	42.12	12.94	55.06	74.00	-18.94	150	257	Peak
17813.000	32.28	13.46	45.74	54.00	-8.26	150	305	Average
17813.000	43.60	13.46	57.06	74.00	-16.94	150	305	Peak

Level = Reading + Factor.

Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Above 1GHz

Low channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1806.000	65.56	-13.74	51.82	54.00	-2.18	177	232	Average
1806.000	68.53	-13.74	54.79	74.00	-19.21	177	232	Peak
2709.000	31.99	-9.03	22.96	54.00	-31.04	126	318	Average
2709.000	43.47	-9.03	34.44	74.00	-39.56	126	318	Peak
3601.000	47.27	-7.79	39.48	54.00	-14.52	150	112	Average
3601.000	58.14	-7.79	50.35	74.00	-23.65	150	112	Peak
6321.000	38.23	-1.90	36.33	54.00	-17.67	150	306	Average
6321.000	49.25	-1.90	47.35	74.00	-26.65	150	306	Peak
11183.000	28.71	8.15	36.86	54.00	-17.14	150	58	Average
11183.000	43.67	8.15	51.82	74.00	-22.18	150	58	Peak
16011.000	31.76	10.29	42.05	54.00	-11.95	150	87	Average
16011.000	44.26	10.29	54.55	74.00	-19.45	150	87	Peak
16657.000	31.75	12.56	44.31	54.00	-9.69	150	129	Average
16657.000	43.41	12.56	55.97	74.00	-18.03	150	129	Peak
17796.000	32.25	13.41	45.66	54.00	-8.34	150	257	Average
17796.000	44.74	13.41	58.15	74.00	-15.85	150	257	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1806.000	66.79	-13.74	53.05	54.00	-0.95	145	119	Average
1806.000	69.73	-13.74	55.99	74.00	-18.01	145	119	Peak
2709.000	33.92	-9.03	24.89	54.00	-29.11	189	103	Average
2709.000	45.41	-9.03	36.38	74.00	-37.62	189	103	Peak
3601.000	46.42	-7.79	38.63	54.00	-15.37	150	29	Average
3601.000	56.96	-7.79	49.17	74.00	-24.83	150	29	Peak
5420.000	40.14	-3.70	36.44	54.00	-17.56	150	67	Average
5420.000	51.13	-3.70	47.43	74.00	-26.57	150	67	Peak
16334.000	31.94	11.29	43.23	54.00	-10.77	150	124	Average
16334.000	43.27	11.29	54.56	74.00	-19.44	150	124	Peak
16657.000	31.54	12.56	44.10	54.00	-9.90	150	189	Average
16657.000	43.25	12.56	55.81	74.00	-18.19	150	189	Peak
17235.000	29.60	12.94	42.54	54.00	-11.46	150	257	Average
17235.000	42.12	12.94	55.06	74.00	-18.94	150	257	Peak
17813.000	32.28	13.46	45.74	54.00	-8.26	150	305	Average
17813.000	43.60	13.46	57.06	74.00	-16.94	150	305	Peak

Middle channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1830.000	65.37	-13.42	51.95	54.00	-2.05	144	83	Average
1830.000	68.23	-13.42	54.81	74.00	-19.19	144	83	Peak
2745.000	49.19	-9.33	39.86	54.00	-14.14	135	316	Average
2745.000	55.87	-9.33	46.54	74.00	-27.46	135	316	Peak
3652.000	39.99	-7.65	32.34	54.00	-21.66	150	29	Average
3652.000	49.36	-7.65	41.71	74.00	-32.29	150	29	Peak
5488.000	39.10	-3.65	35.45	54.00	-18.55	150	68	Average
5488.000	49.53	-3.65	45.88	74.00	-28.12	150	68	Peak
6406.000	39.31	-1.68	37.63	54.00	-16.37	150	124	Average
6406.000	50.66	-1.68	48.98	74.00	-25.02	150	124	Peak
16521.000	30.44	12.39	42.83	54.00	-11.17	150	258	Average
16521.000	43.13	12.39	55.52	74.00	-18.48	150	258	Peak
16759.000	30.60	12.50	43.10	54.00	-10.90	150	326	Average
16759.000	43.20	12.50	55.70	74.00	-18.30	150	326	Peak
17762.000	32.13	13.17	45.30	54.00	-8.70	150	157	Average
17762.000	44.13	13.17	57.30	74.00	-16.70	150	157	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1830.000	61.79	-13.42	48.37	54.00	-5.63	101	121	Average
1830.000	64.59	-13.42	51.17	74.00	-22.83	101	121	Peak
2745.000	34.20	-9.33	24.87	54.00	-29.13	152	233	Average
2745.000	43.15	-9.33	33.82	74.00	-40.18	152	233	Peak
3652.000	40.72	-7.65	33.07	54.00	-20.93	150	55	Average
3652.000	50.17	-7.65	42.52	74.00	-31.48	150	55	Peak
5488.000	38.57	-3.65	34.92	54.00	-19.08	150	147	Average
5488.000	49.15	-3.65	45.50	74.00	-28.50	150	147	Peak
16623.000	31.09	12.54	43.63	54.00	-10.37	150	258	Average
16623.000	42.66	12.54	55.20	74.00	-18.80	150	258	Peak
17320.000	29.36	12.72	42.08	54.00	-11.92	150	306	Average
17320.000	42.64	12.72	55.36	74.00	-18.64	150	306	Peak
17813.000	32.22	13.46	45.68	54.00	-8.32	150	99	Average
17813.000	43.93	13.46	57.39	74.00	-16.61	150	99	Peak

High channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1854.000	65.79	-13.36	52.43	54.00	-1.57	160	277	Average
1854.000	68.79	-13.36	55.43	74.00	-18.57	160	277	Peak
2781.000	49.34	-9.35	39.99	54.00	-14.01	152	264	Average
2781.000	56.43	-9.35	47.08	74.00	-26.92	152	264	Peak
5556.000	39.54	-3.48	36.06	54.00	-17.94	150	29	Average
5556.000	49.77	-3.48	46.29	74.00	-27.71	150	29	Peak
6491.000	37.30	-1.30	36.00	54.00	-18.00	150	124	Average
6491.000	47.19	-1.30	45.89	74.00	-28.11	150	124	Peak
16674.000	31.19	12.58	43.77	54.00	-10.23	150	257	Average
16674.000	43.57	12.58	56.15	74.00	-17.85	150	257	Peak
17303.000	29.26	12.86	42.12	54.00	-11.88	150	326	Average
17303.000	43.29	12.86	56.15	74.00	-17.85	150	326	Peak
17881.000	30.00	13.77	43.77	54.00	-10.23	150	88	Average
17881.000	43.39	13.77	57.16	74.00	-16.84	150	88	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1854.000	61.24	-13.36	47.88	54.00	-6.12	100	119	Average
1854.000	64.21	-13.36	50.85	74.00	-23.15	100	119	Peak
2781.000	36.52	-9.35	27.17	54.00	-26.83	174	288	Average
2781.000	45.85	-9.35	36.50	74.00	-37.50	174	288	Peak
3057.000	46.07	-8.15	37.92	54.00	-16.08	150	324	Average
3057.000	48.92	-8.15	40.77	74.00	-33.23	150	324	Peak
5556.000	37.80	-3.48	34.32	54.00	-19.68	150	128	Average
5556.000	48.38	-3.48	44.90	74.00	-29.10	150	128	Peak
6491.000	35.98	-1.30	34.68	54.00	-19.32	150	267	Average
6491.000	47.14	-1.30	45.84	74.00	-28.16	150	267	Peak
16708.000	31.07	12.59	43.66	54.00	-10.34	150	54	Average
16708.000	42.94	12.59	55.53	74.00	-18.47	150	54	Peak
17762.000	32.46	13.17	45.63	54.00	-8.37	150	89	Average
17762.000	43.75	13.17	56.92	74.00	-17.08	150	89	Peak

Level = Reading + Factor.

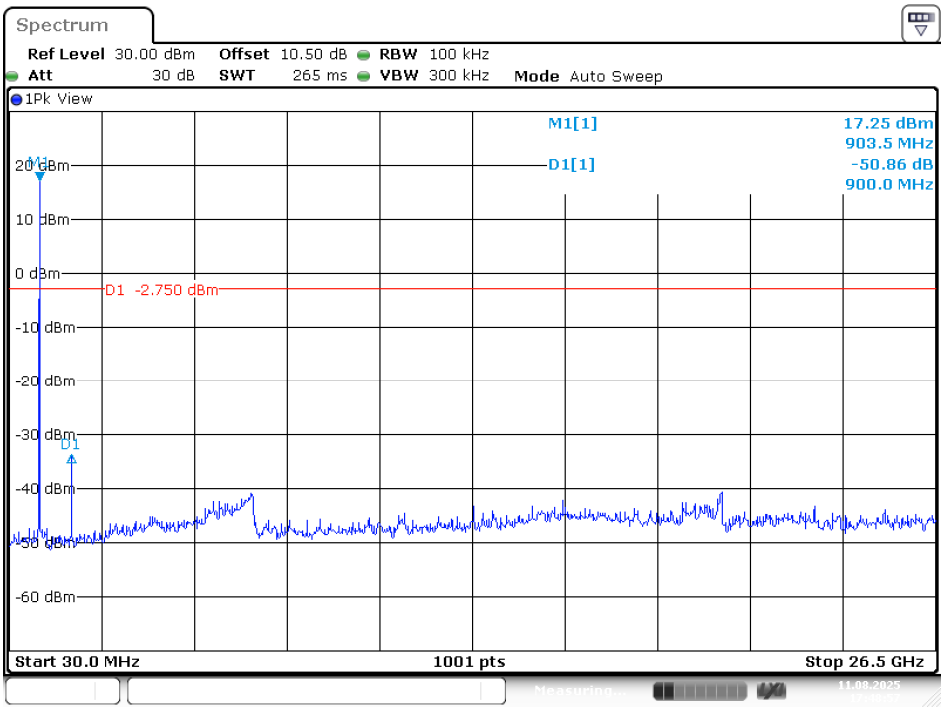
Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Conducted Spurious Emissions:

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
Low	903	50.86	≥ 20	PASS
Middle	915	49.29	≥ 20	PASS
High	927	52.11	≥ 20	PASS

Low Channel



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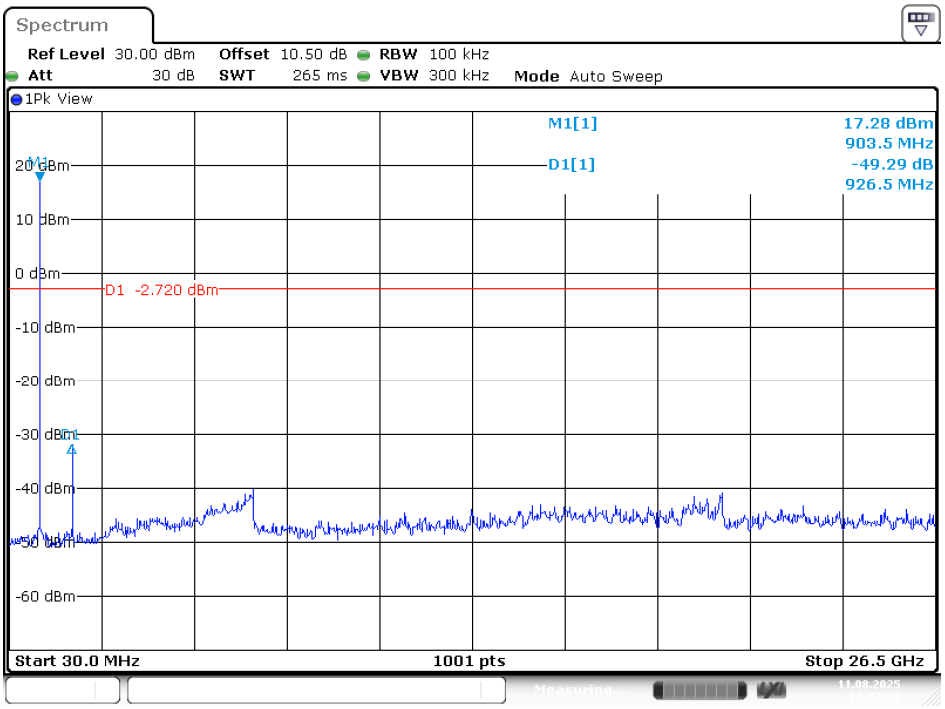
Middle Channel



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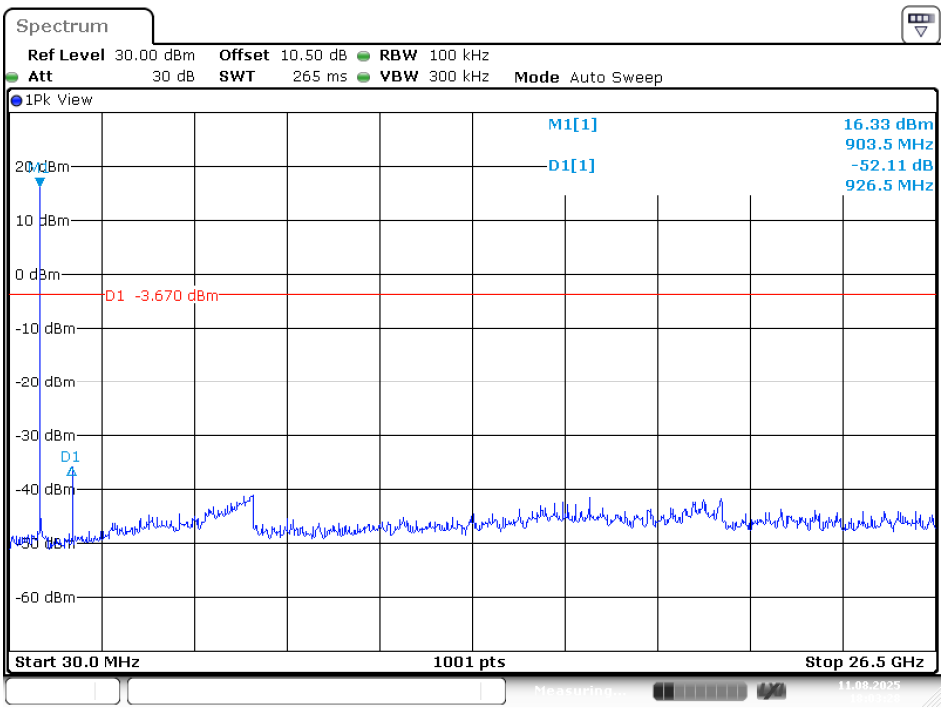
High Channel



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8 FCC §15.247(a)(2) – 6 dB Emission Bandwidth

8.1 Applicable Standard

According to FCC §15.247(a)(2).

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

8.2 Test Procedure

According to ANSI C63.10-2020, section 11.8

The steps for the first option are as follows:

a) Set RBW = 100 kHz.

b) Set the VBW ≥ [3 × RBW].

c) Detector = peak.

d) Trace mode = max hold.

e) Sweep = auto couple.

f) Allow the trace to stabilize.

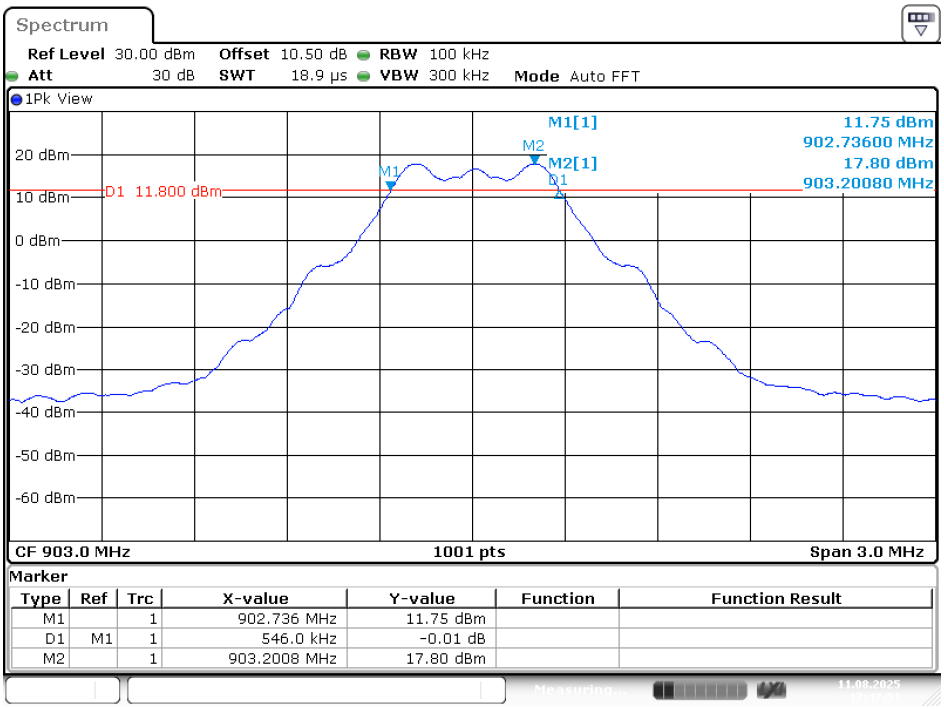
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

8.3 Test Results

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (kHz)	Result
Low	903	0.55	> 500	Compliance
Middle	915	0.55	> 500	Compliance
High	927	0.55	> 500	Compliance

Please refer to the following plots

Low Channel



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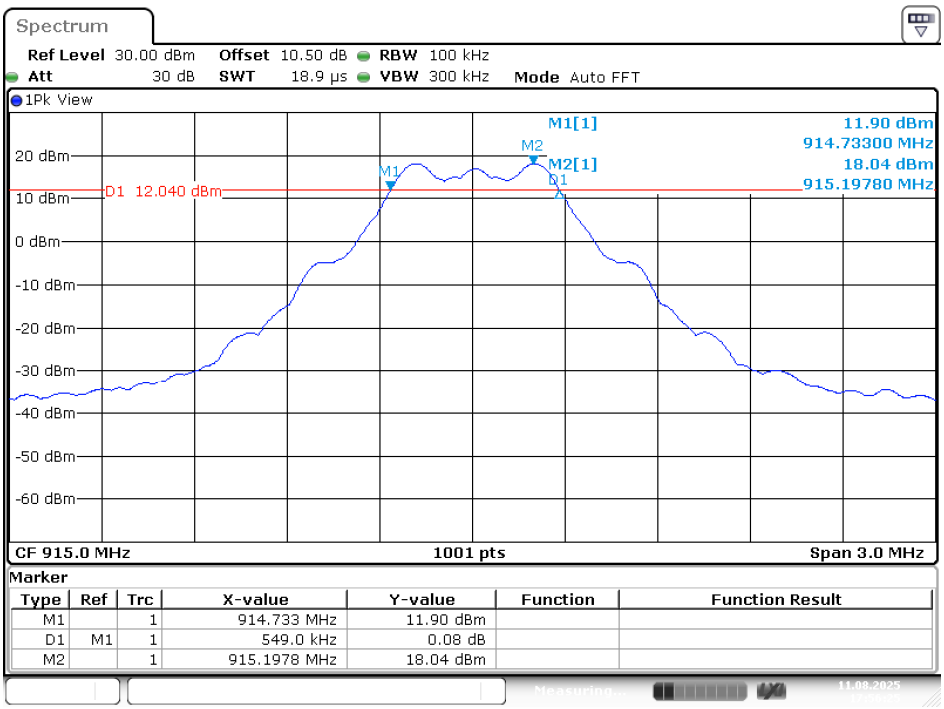
Middle Channel



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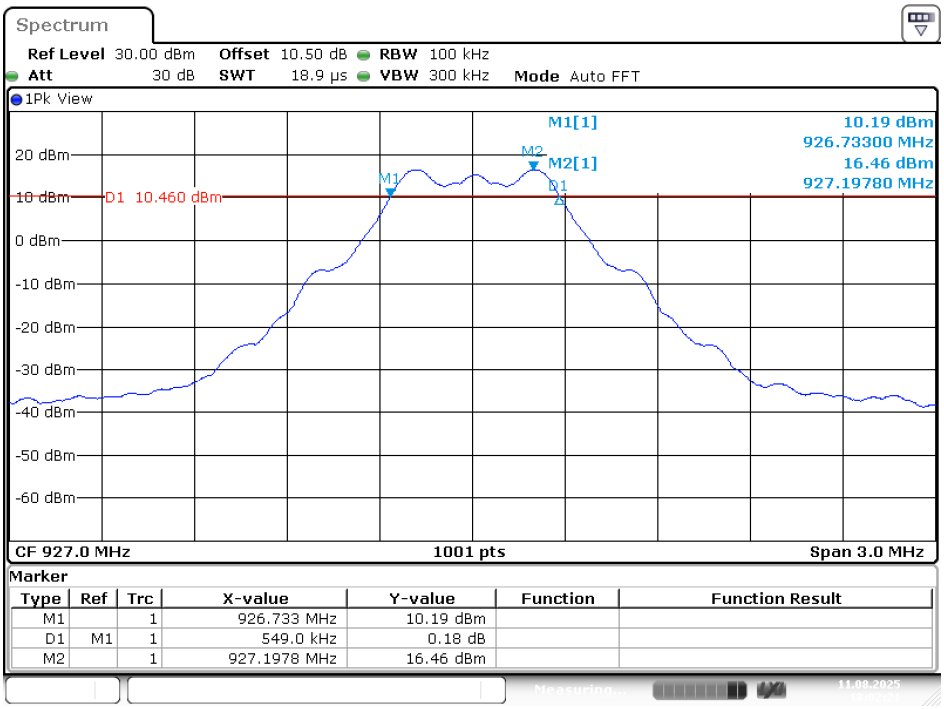
High Channel



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9 FCC §15.247(b)(3) – Maximum Output Power

9.1 Applicable Standard

According to FCC §15.247(b) (3).

Systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

9.2 Test Procedure

According to ANSI C63.10-2020, section 11.9.1.2

1. Place the EUT on a bench and set it in transmitting mode.

2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to measuring equipment.

9.3 Test Results

Conducted Peak Output Power

Channel	Frequency (MHz)	Conducted Peak Output Power (dBm)	Limit (dBm)	Result
LoRa Mode				
Low	903	17.94	30	PASS
Middle	915	18.11	30	PASS
High	927	16.58	30	PASS

10 FCC§15.247(d) – 100 kHz Bandwidth of Frequency Band Edge

10.1 Applicable Standard

According to FCC §15.247(d).

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

10.2 Test Procedure

According to ANSI C63.10-2020 Section 11.11

1. Set the center frequency and span to encompass frequency range to be measured.
2. Set the RBW = 100 kHz.
3. Set the VBW ≥ [3 × RBW].
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

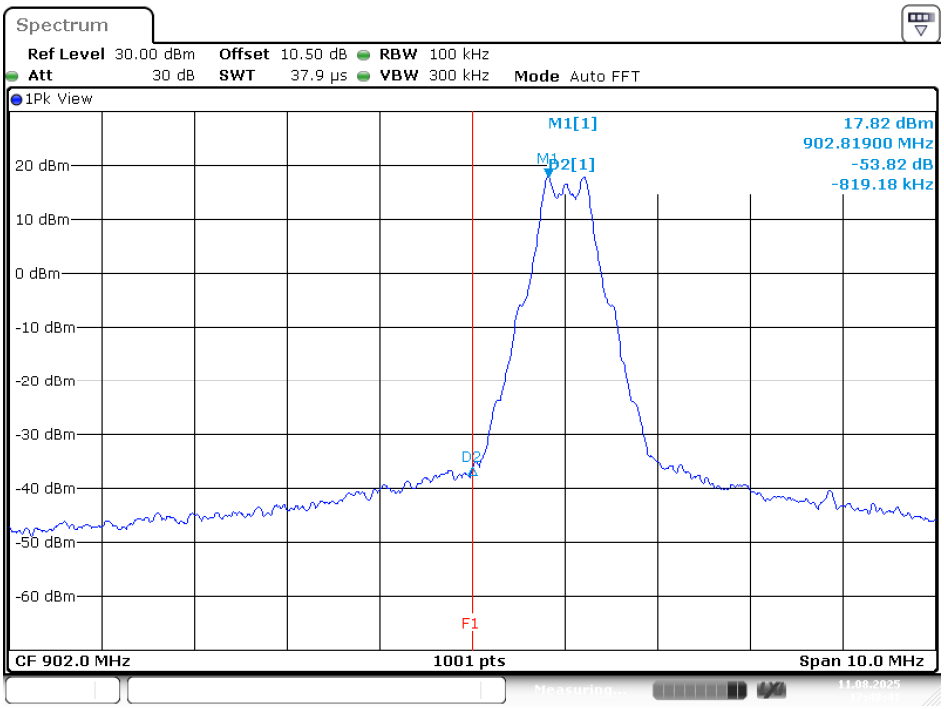
Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

10.3 Test Results

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
Low	903	53.82	≥ 20	PASS
High	927	52.66	≥ 20	PASS

Please refer to the following plots

Band Edge, Left Side



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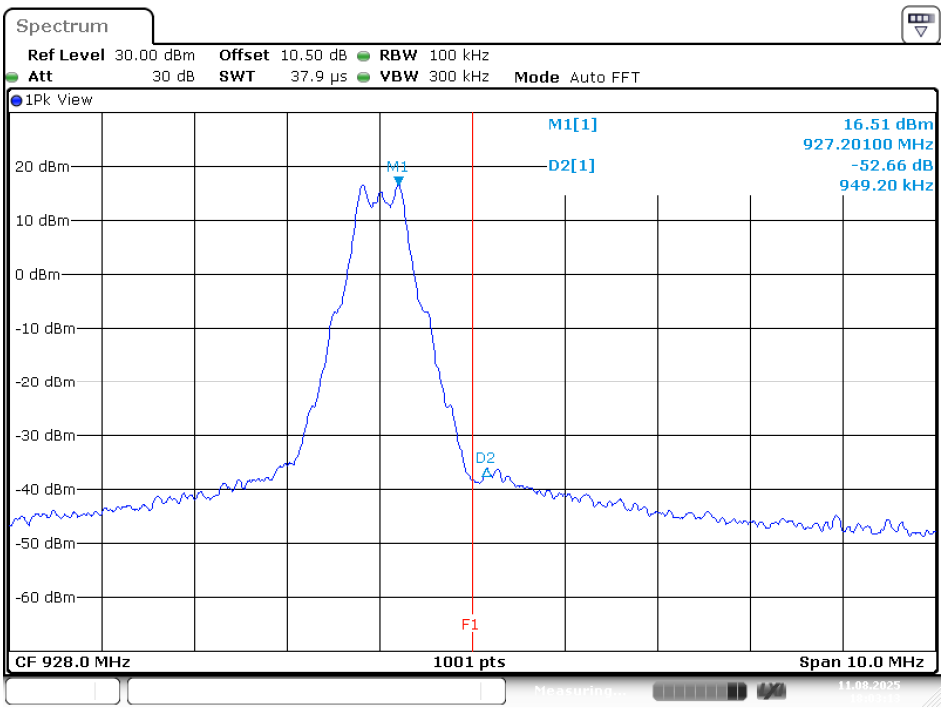
Band Edge, Right Side



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11 FCC §15.247(e) – Power Spectral Density

11.1 Applicable Standard

According to FCC §15.247(e).

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

11.2 Test Procedure

According to ANSI C63.10-2020, section 11.10.2

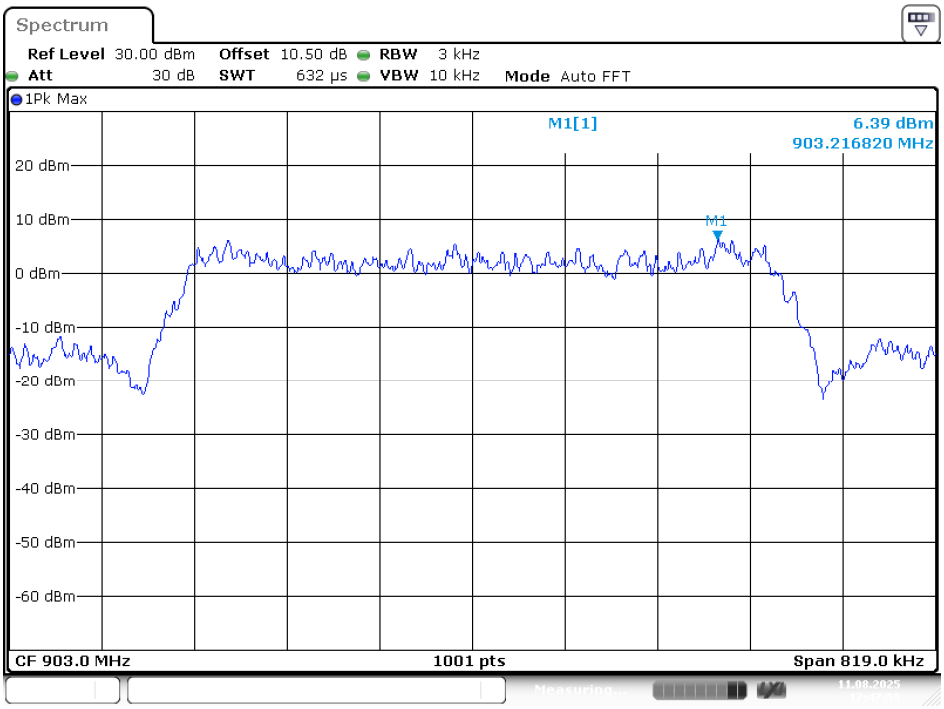
1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span >1.5 times the DTS bandwidth
3. Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ [3 × RBW].
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat

11.3 Test Results

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Limit (dBm/3 kHz)	Result
Low	903	6.39	8	Compliance
Middle	915	6.65	8	Compliance
High	927	5.05	8	Compliance

Please refer to the following plots

Low Channel



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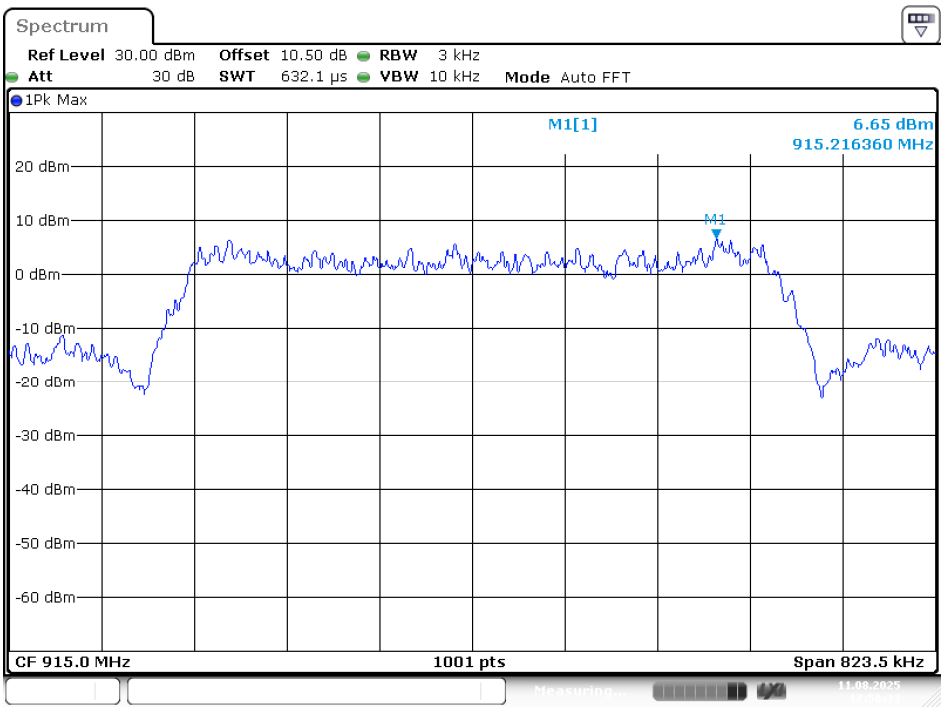
Middle Channel



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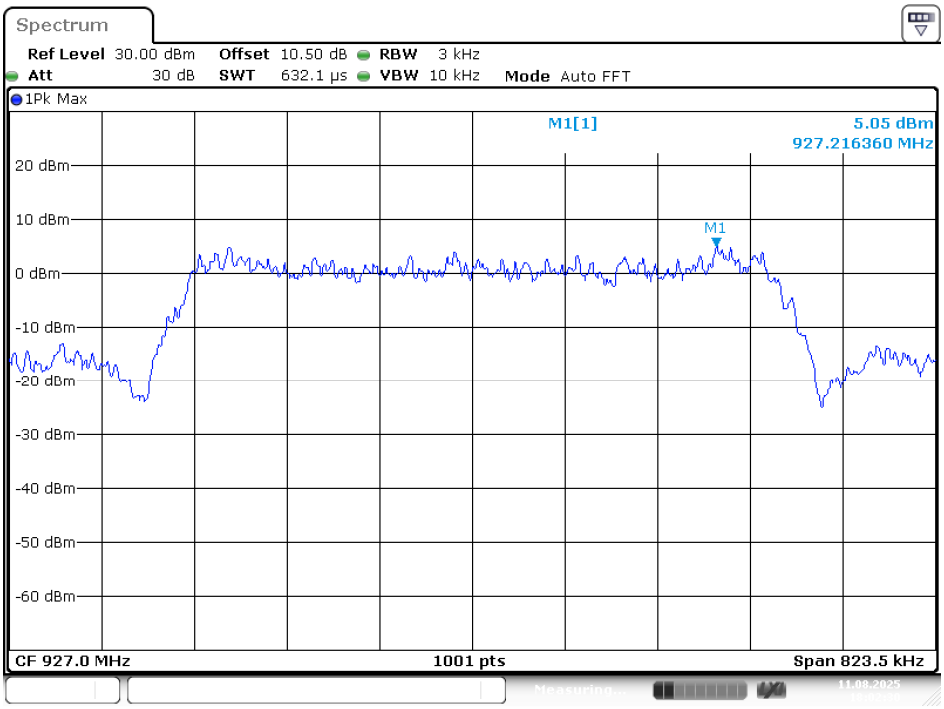
High Channel



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