



FCC RF Test Report

APPLICANT : Persimmon Kaki LLC
EQUIPMENT : Digital Media Receiver
MODEL NAME : G6A87E
FCC ID : 2A8UX-2892
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System
TEST DATE(S) : Feb. 12, 2023 ~ Jul. 24, 2023

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.

Jason Jia



Approved by: Jason Jia

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
FR2N0202-01E	Rev. 01	Initial issue of report	Jul. 27, 2023

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)	Output Power	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	Conducted Band Edges and Spurious Emission	$\leq 20\text{dBc}$ for SF7 $\leq 30\text{dBc}$ for SF11& OFDM-LR	Pass	-
3.5	15.247(d)	Radiated Band Edges and Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.32 dB at 2779.500 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 12.76 dB at 0.596 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	15.203 & 15.247(b)	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Persimmon Kaki LLC

6975 Union Park Avenue, Suite 600, Cottonwood Heights, Utah 84047

1.2 Product Feature of Equipment Under Test

Product Feature	
Equipment	Digital Media Receiver
Model Name	G6A87E
FCC ID	2A8UX-2892
SN	Conducted: P0B33R01302503S3 Conduction: G0B2JK013055002A Radiation: G0B2JK0130550029

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

1.3 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	902 MHz ~ 928 MHz
Number of Channels	LoRa DTS 500kHz SF7: 31 LoRa DTS 500kHz SF11: 30 OFDM-LR 1.4kbps: 30
Bandwidth / Spread Factor	500kHz / 7, 11
Maximum Output Power to Antenna	LoRa DTS 500kHz SF7 : 25.53 dBm (0.3573 W) (Peak) LoRa DTS 500kHz SF11 : 25.40 dBm (0.3467 W) (Average) OFDM-LR 1.4kbps : 25.40 dBm (0.3467 W) (Average)
99% Occupied Bandwidth	LoRa DTS 500kHz SF7 : 0.549 MHz LoRa DTS 500kHz SF11 : 0.549 MHz OFDM-LR 1.4kbps : 0.633 MHz
Antenna Type / Gain	FPC IFA Antenna with gain 4.0 dBi
Type of Modulation	LoRa OFDM-LR

1.4 Modification of EUT

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



1.5 Testing Location

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

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ	CN1256	421272

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 China 518103 TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO02-SZ; 03CH02-SZ	CN1256	421272

1.6 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH02-SZ	AUDIX	E3	6.2009-8-24a
2.	CO02-SZ	AUDIX	E3	6.2009-8-24aI

1.7 Applicable Standards

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

- ♦ 47 CFR Part 15 Subpart C §15.247
- ♦ FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- ♦ ANSI C63.10-2013

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:

1. The above EUT's information was declared by manufacturer.
2. The device does not support Channel 1 (902.5MHz) for LoRa DTS 500kHz SF11 & OFDM-LR 1.4kbps modes.

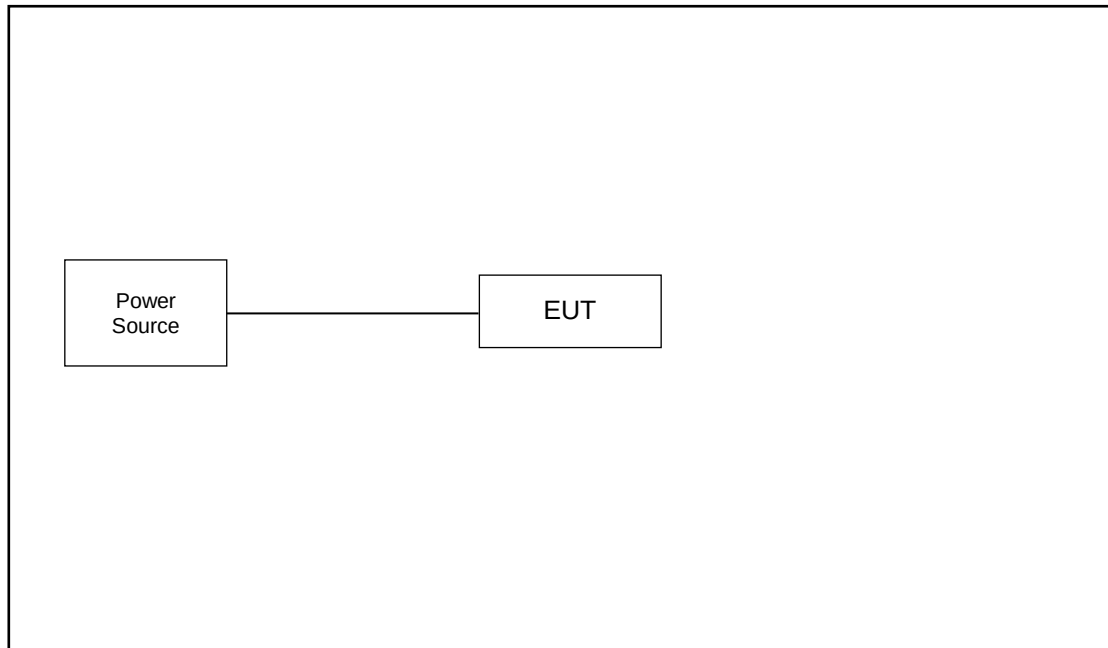
2.2 Test Mode

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

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

Summary table of Test Cases	
Test Item	Modulation
	LoRa DTS 500kHz / OFDM-LR
Conducted TCs / Radiated TCs	<i>LoRa DTS 500kHz SF7:</i> Mode 1: LoRa Tx CH01_902.5 MHz Mode 2: LoRa Tx CH16_914.5 MHz Mode 3: LoRa Tx CH31_926.5 MHz <i>LoRa DTS 500kHz SF11:</i> Mode 1: LoRa Tx CH02_903.3 MHz Mode 2: LoRa Tx CH16_914.5 MHz Mode 3: LoRa Tx CH31_926.5 MHz <i>OFDM-LR 1.4Kbps:</i> Mode 1: LoRa Tx CH02_903.3 MHz Mode 2: LoRa Tx CH16_914.5 MHz Mode 3: LoRa Tx CH31_926.5 MHz
AC Conducted Emission	Mode 1 : Lora Tx + Bluetooth Tx + WLAN(2.4G) Tx + Zigbee Tx + USB Cable(Charging form Adapter)

2.3 Connection Diagram of Test System



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 0.1 dB and 20dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 0.1 + 20 = 20.1 \text{ (dB)}\end{aligned}$$

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.

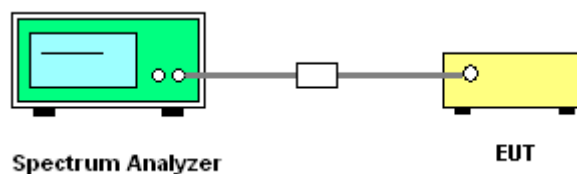
3.1.2 Measuring Instruments

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 C63.10-2013 clause 11.8
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) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. 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) is set 30kHz and set the Video bandwidth (VBW) = 100kHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup



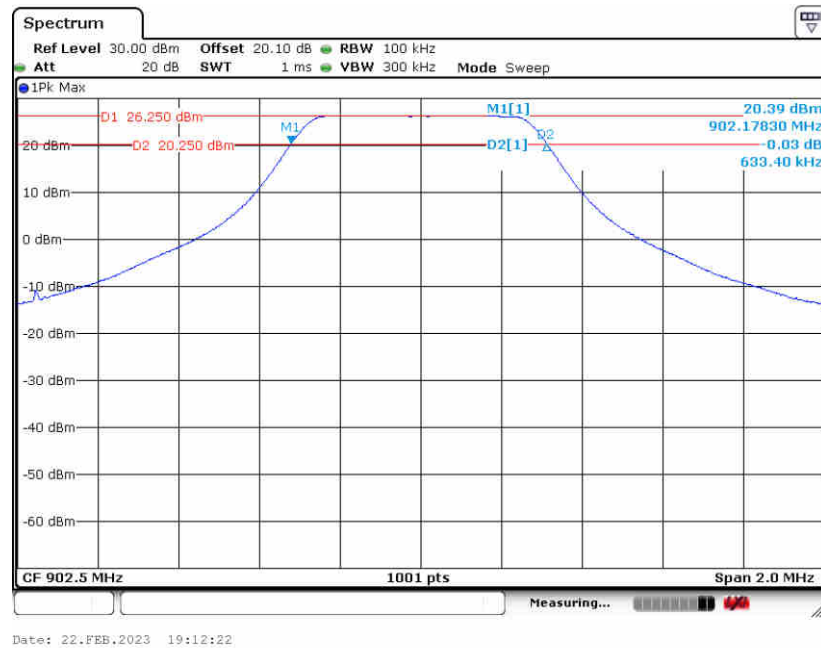


3.1.5 Test Result of 6dB Bandwidth

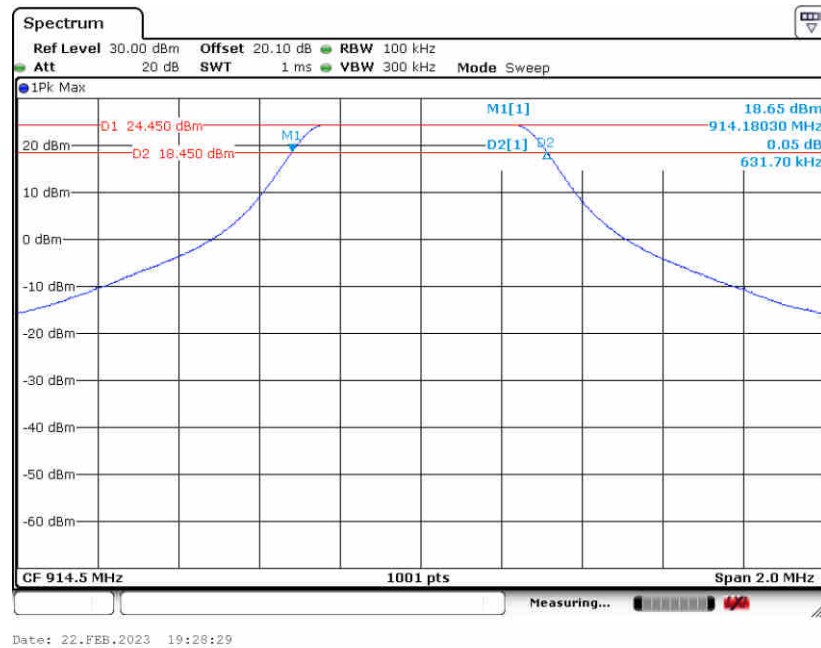
Please refer to Appendix A.

For LoRa DTS SF7:

6 dB Bandwidth Plot on 902.5 MHz

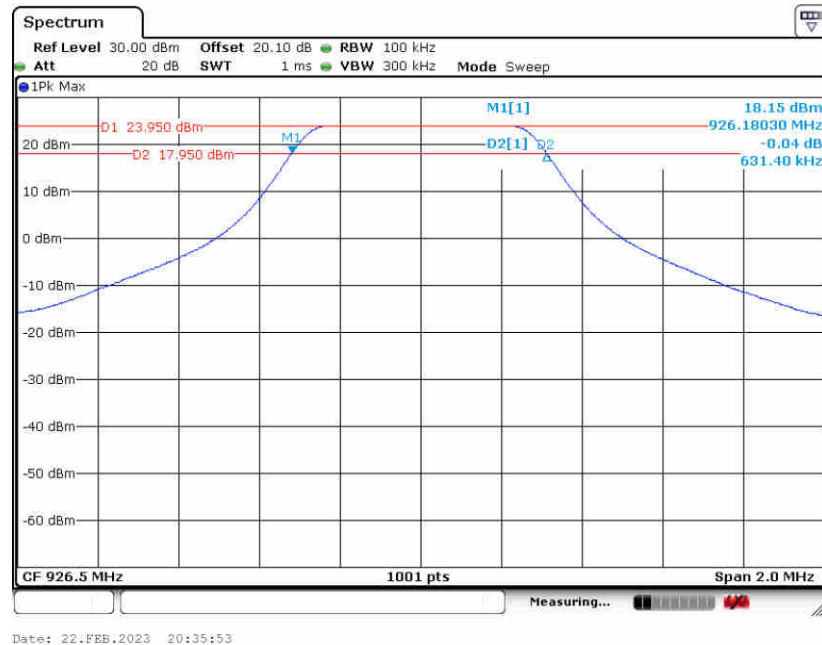


6 dB Bandwidth Plot on 914.5 MHz



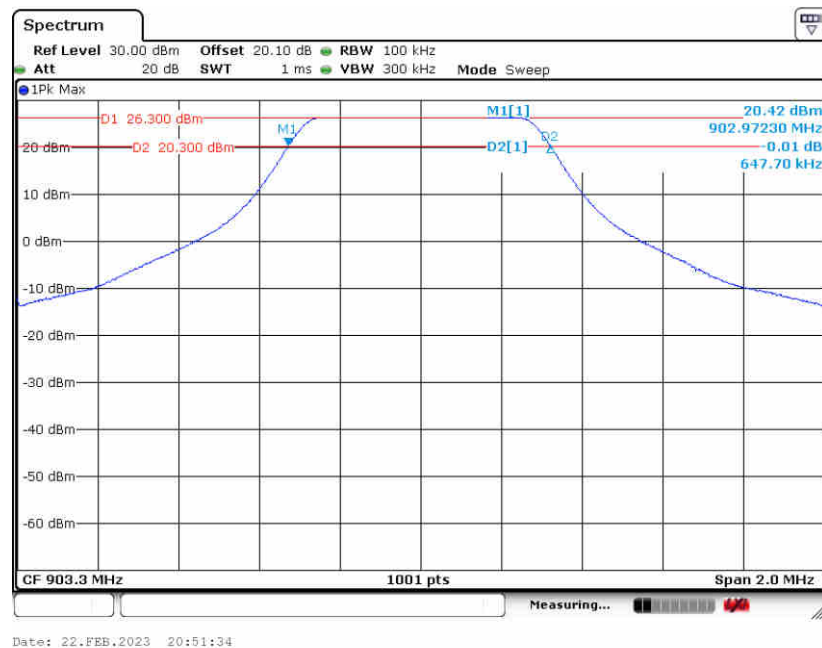


6 dB Bandwidth Plot on 926.5 MHz



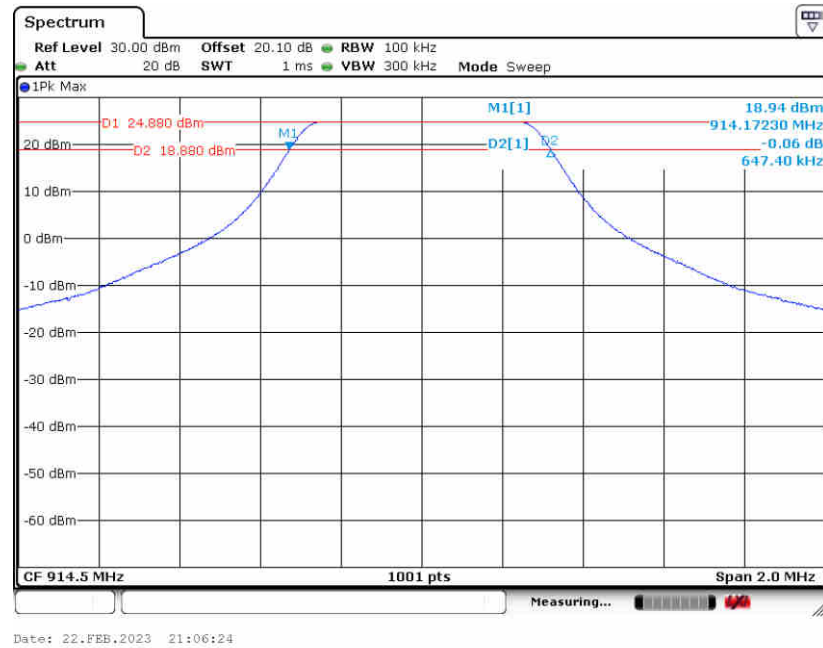
For LoRa DTS SF11:

6 dB Bandwidth Plot on 903.3MHz

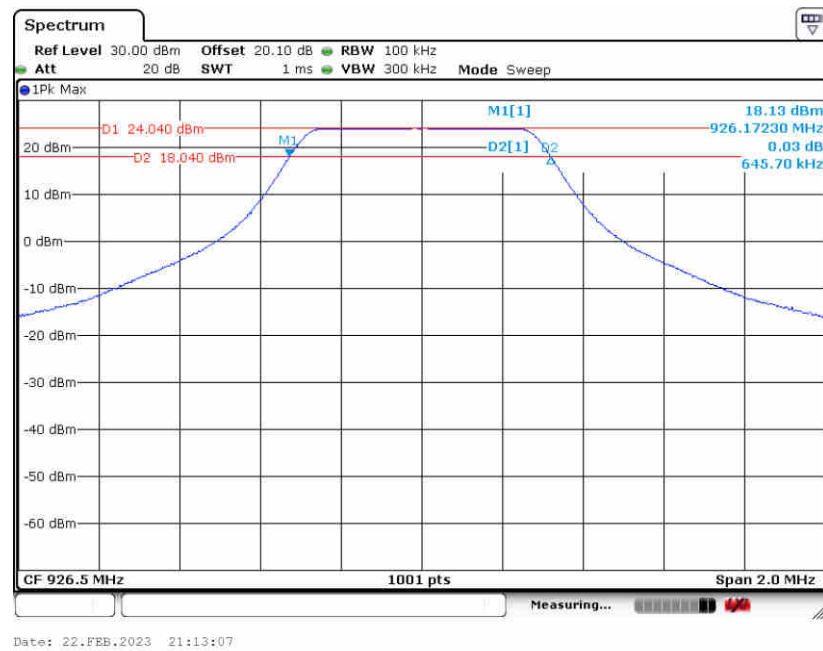




6 dB Bandwidth Plot on 914.5 MHz



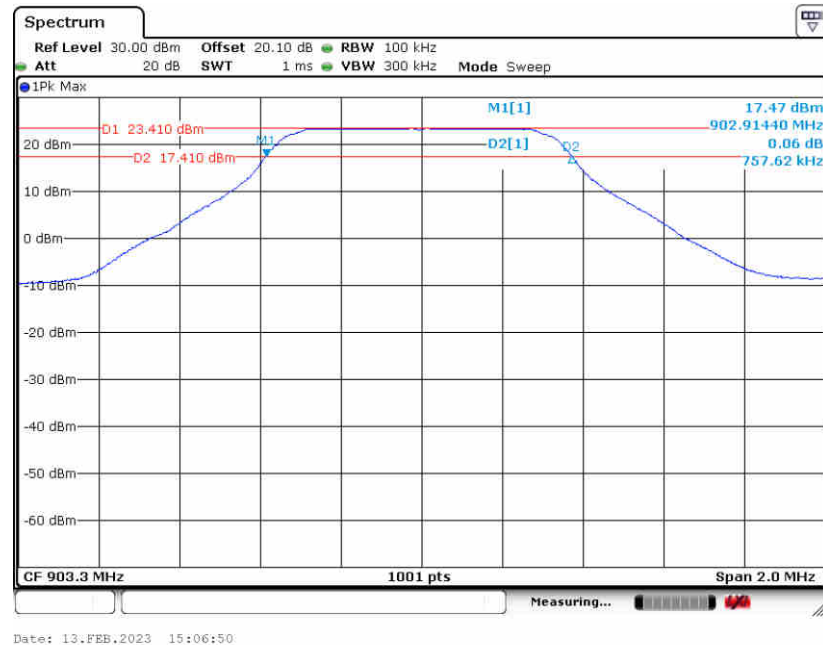
6 dB Bandwidth Plot on 926.5 MHz



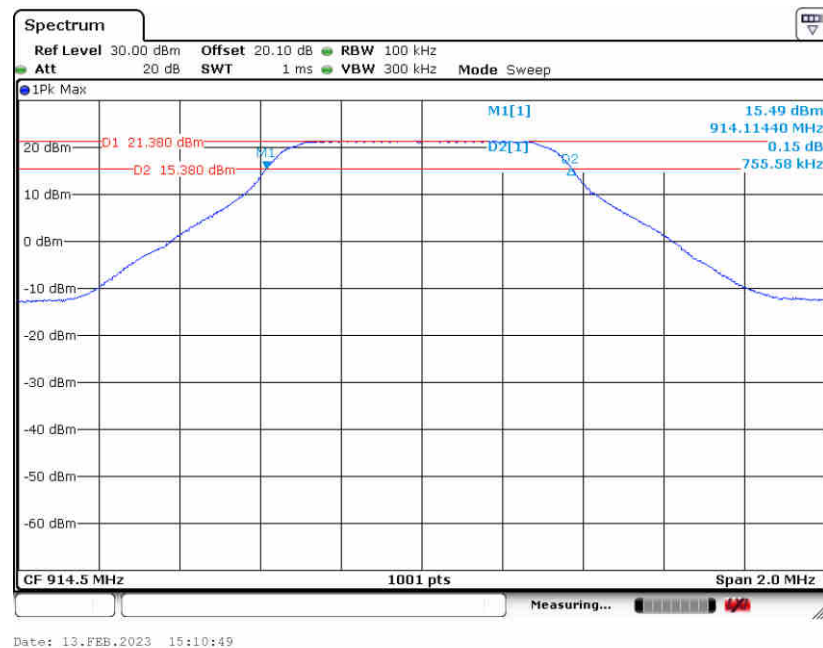


For OFDM-LR:

6 dB Bandwidth Plot on 903.3MHz

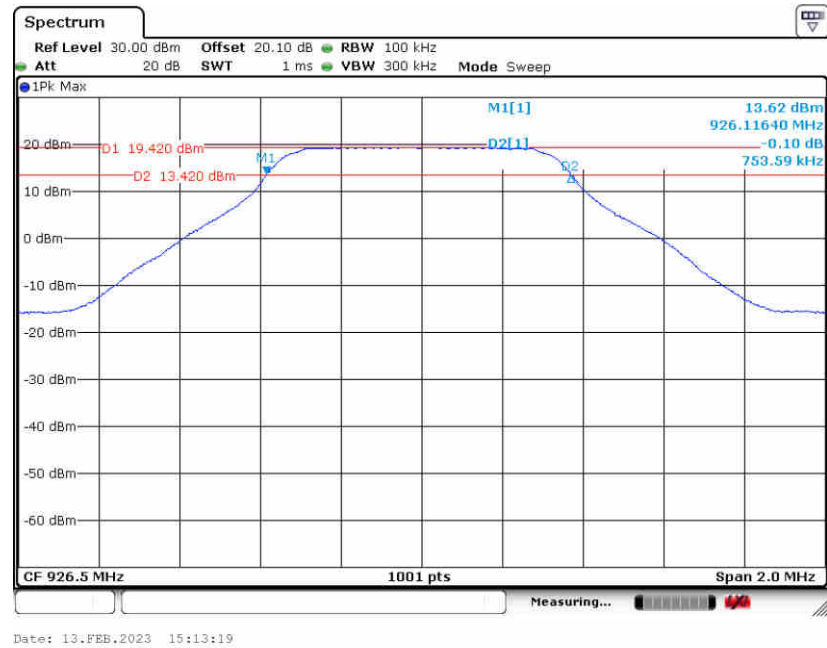


6 dB Bandwidth Plot on 914.5 MHz





6 dB Bandwidth Plot on 926.5 MHz



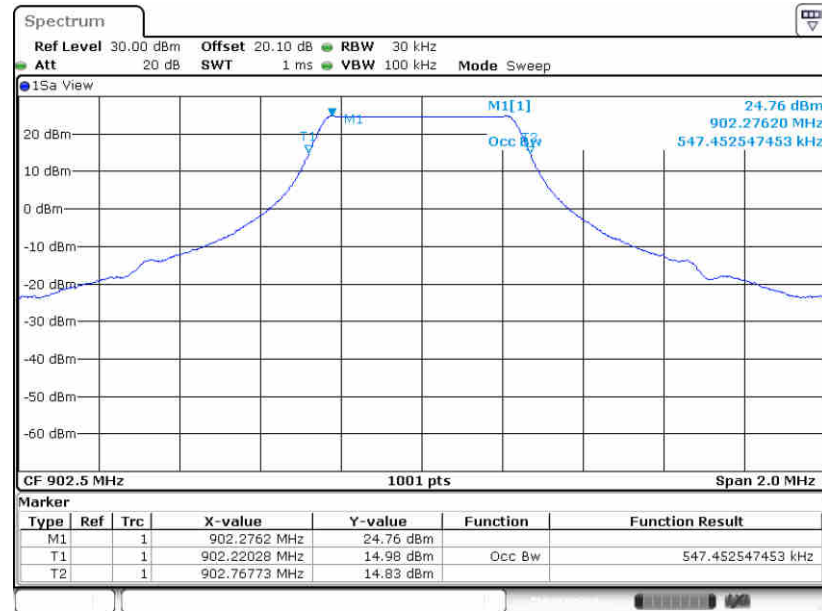


3.1.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

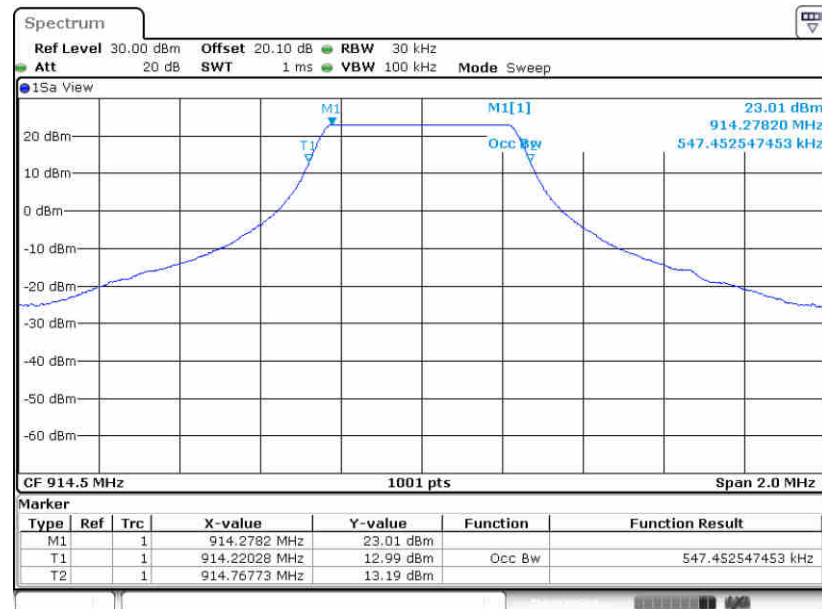
For LoRa DTS SF7:

99% Bandwidth Plot on 902.5 MHz



Date: 22.FEB,2023 20:24:54

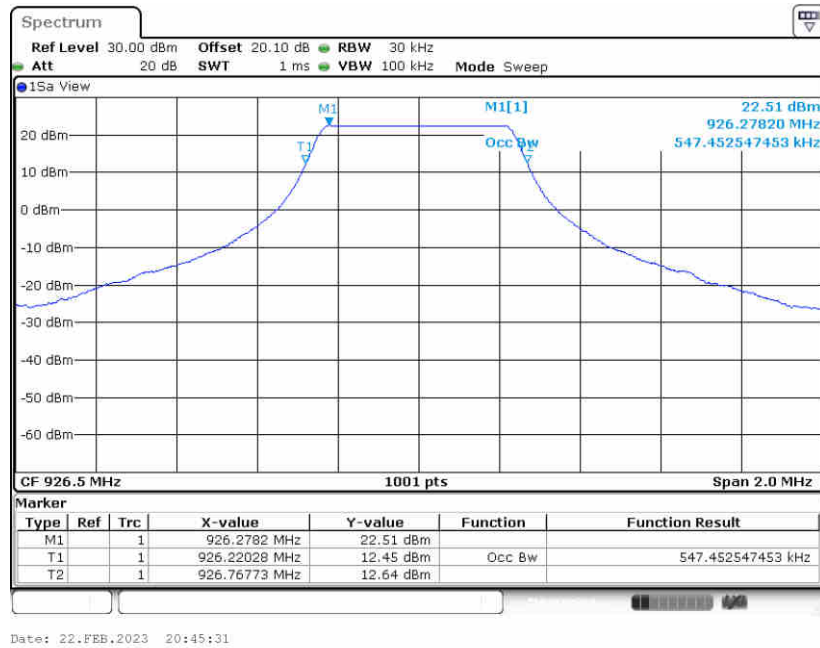
99% Occupied Bandwidth Plot on 914.5 MHz



Date: 22.FEB,2023 20:09:22

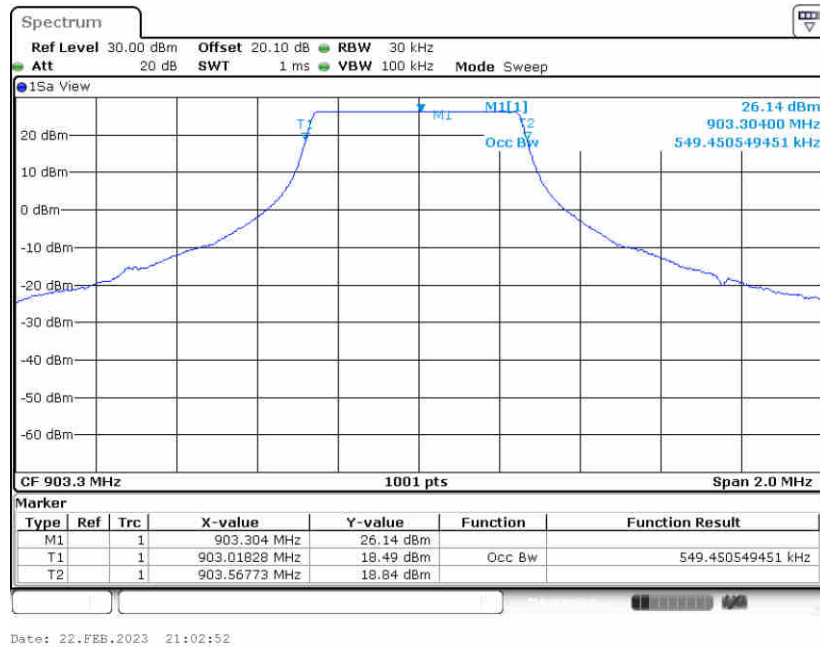


99% Occupied Bandwidth Plot on 926.5 MHz



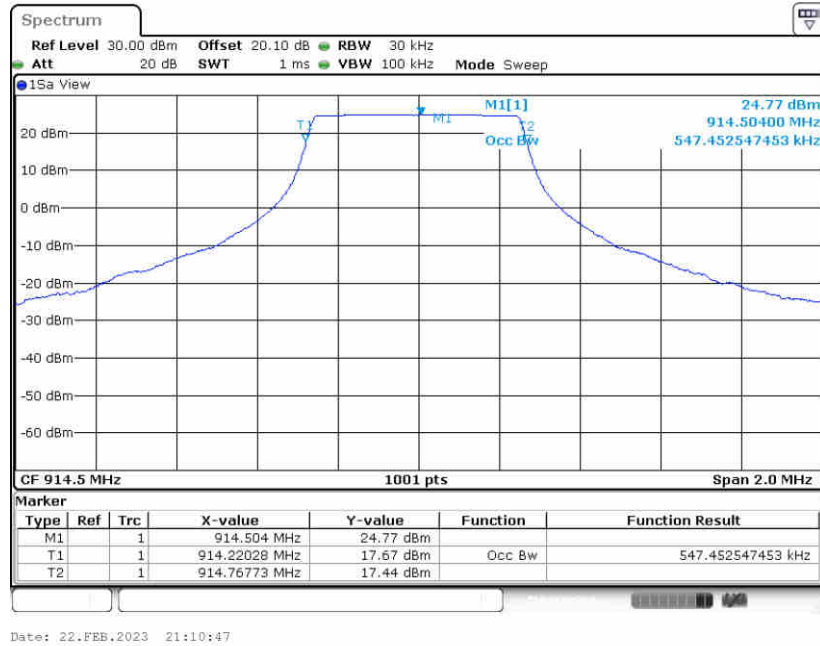
For LoRa DTS SF11:

99% Bandwidth Plot on 903.3MHz

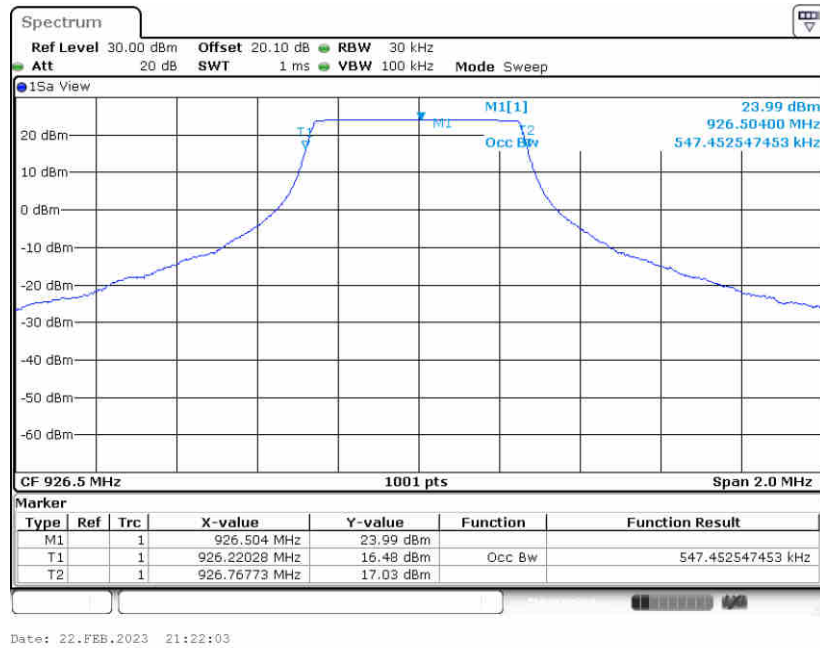




99% Bandwidth Plot on 914.5 MHz



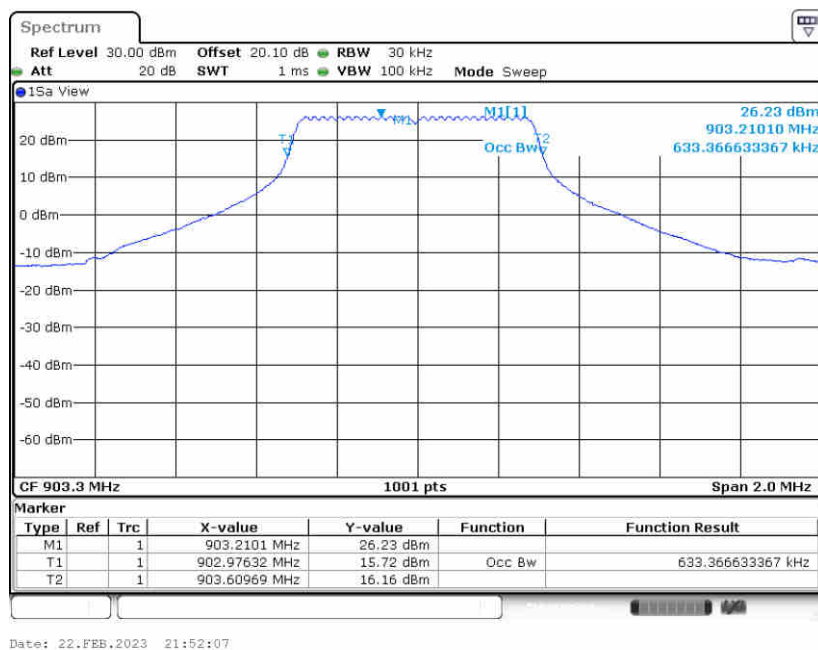
99% Bandwidth Plot on 926.5 MHz



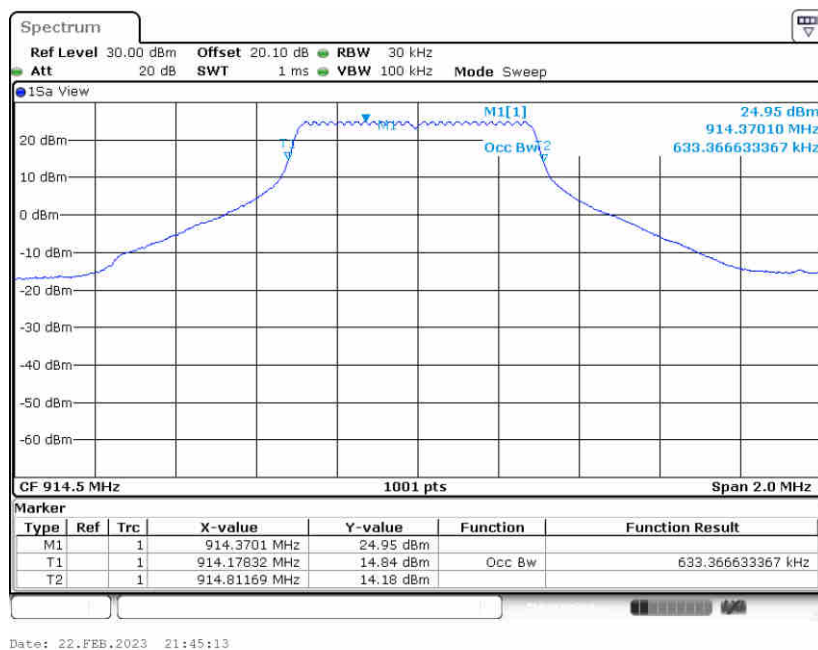


For OFDM-LR:

99% Bandwidth Plot on 903.3MHz

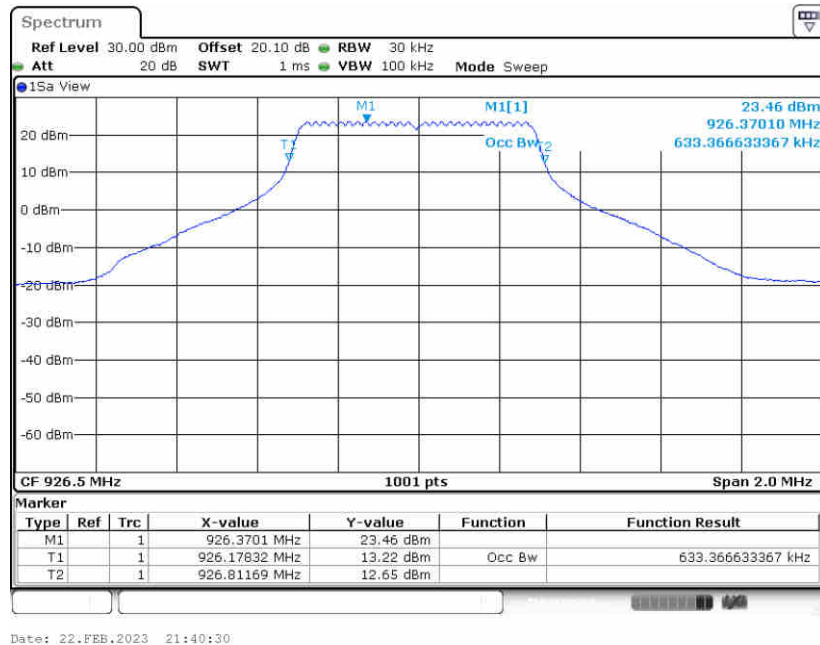


99% Bandwidth Plot on 914.5 MHz





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.

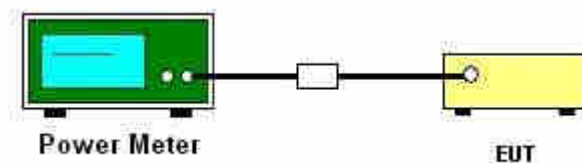
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 clause 11.9.1.3 PKPM1 Peak power meter or ANSI C63.10-2013 clause 11.9.2.3.2 Method AVGPM-G method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

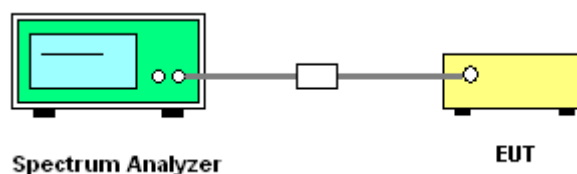
3.3.2 Measuring Instruments

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 C63.10-2013 11.10.5 Method AVGPSD-2.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. 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 = power averaging (rms), Sweep time = auto couple. Use the peak marker function to determine the maximum power level.
6. Employ trace averaging (rms) mode over a minimum of 100 traces.
7. Ensure that the number of measurement points in the sweep $\geq [2 \times \text{span} / \text{RBW}]$.
8. Measure and record the results in the test report.
9. Add $[10 \log (1 / D)]$, where D is the duty cycle.
10. The Measured power density (dBm)/ 100kHz is a reference level and used as 20/30dBc 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

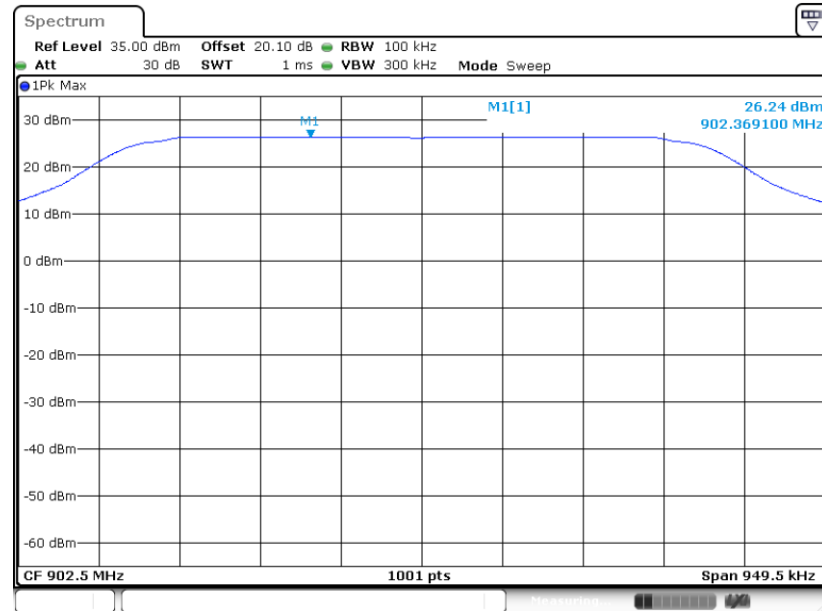
Please refer to Appendix A.



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

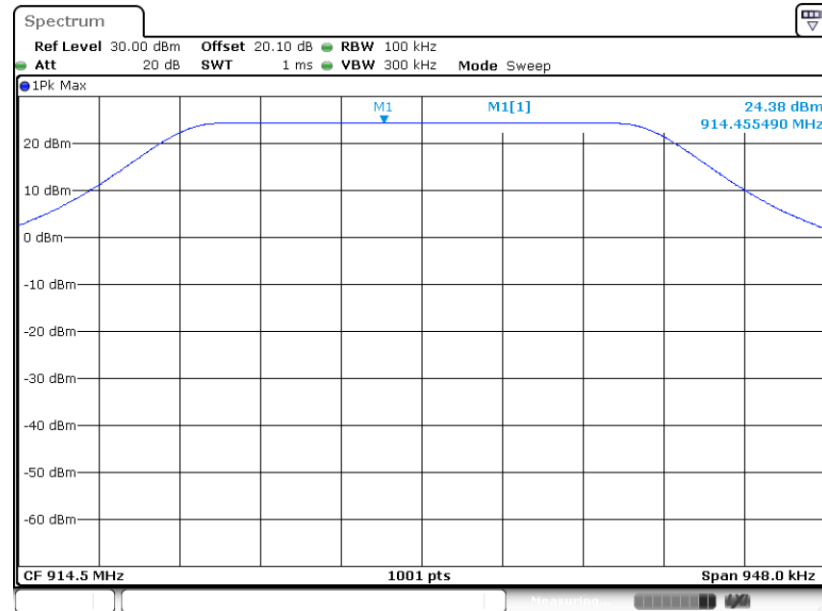
For LoRa DTS SF7:

PSD 100kHz Plot on 902.5 MHz



Date: 25.FEB.2023 17:37:20

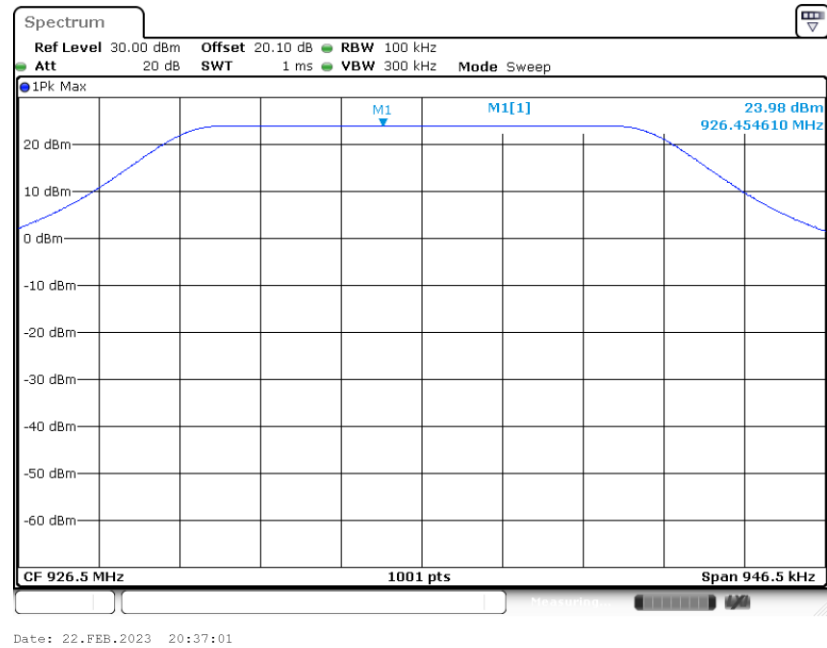
PSD 100kHz Plot on 914.5 MHz



Date: 22.FEB.2023 20:02:22

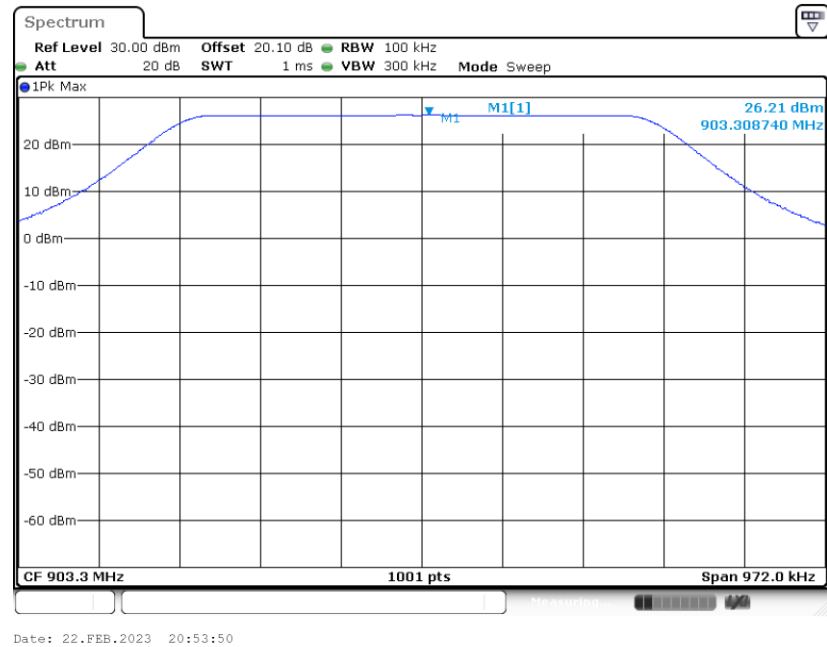


PSD 100kHz Plot on 926.5 MHz



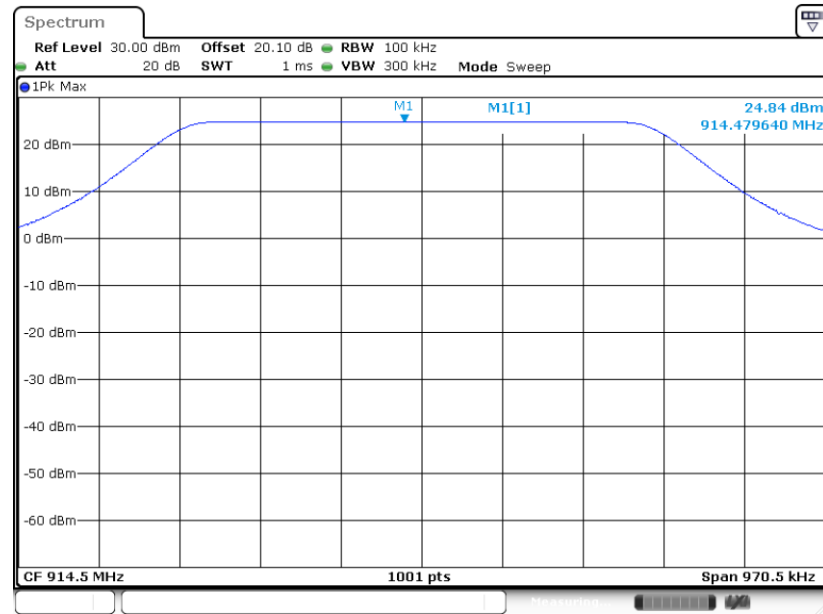
For LoRa DTS SF11:

PSD 100kHz Plot on 903.3 MHz



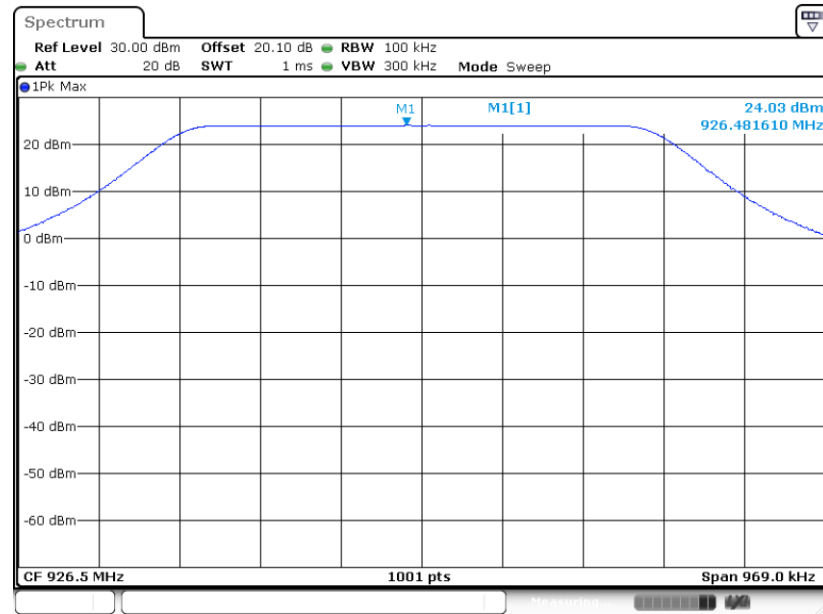


PSD 100kHz Plot on 914.5 MHz



Date: 22.FEB.2023 21:08:06

PSD 100kHz Plot on 926.5 MHz

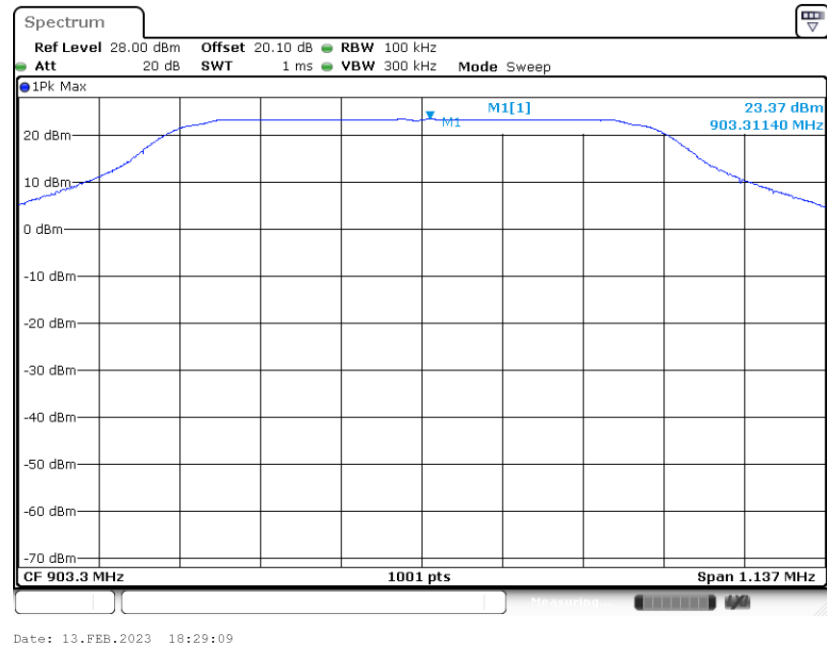


Date: 22.FEB.2023 21:14:15

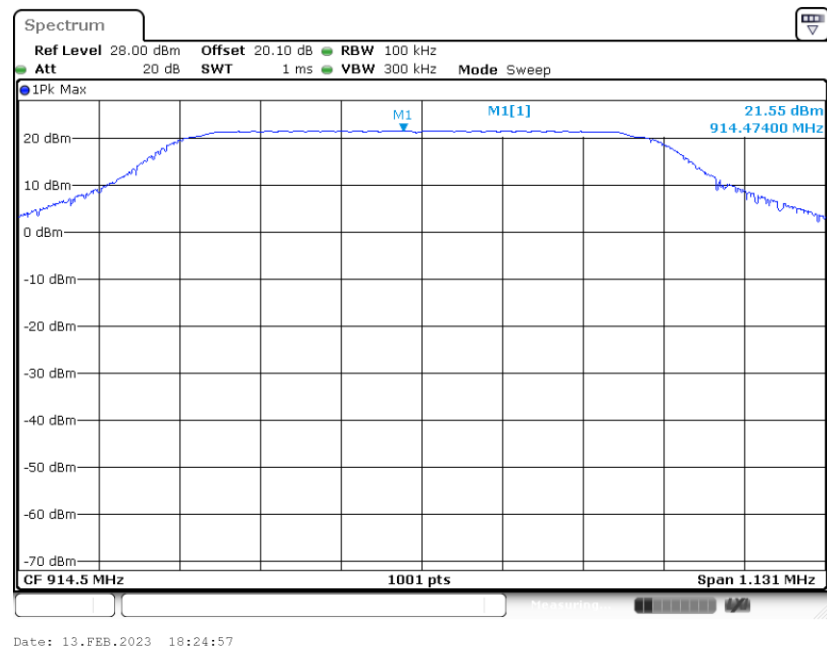


For OFDM-LR:

PSD 100kHz Plot on 903.3 MHz

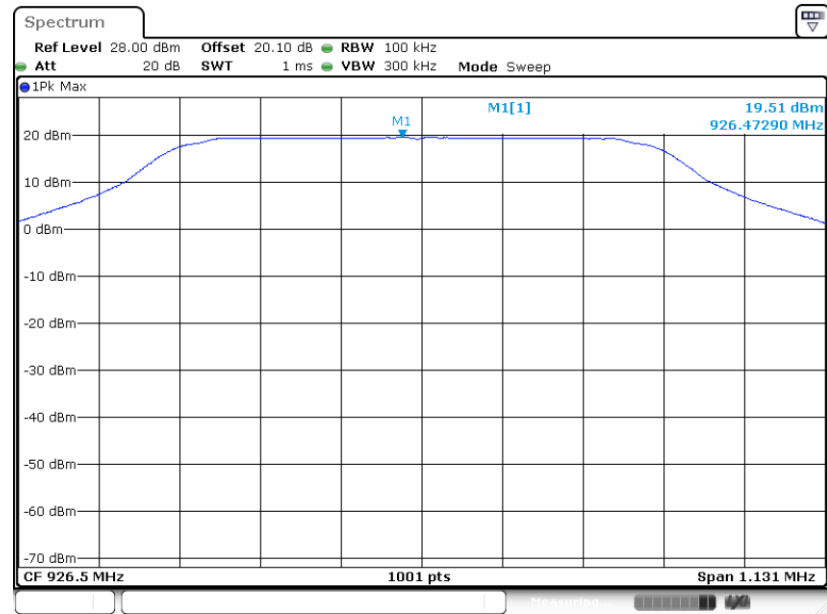


PSD 100kHz Plot on 914.5 MHz





PSD 100kHz Plot on 926.5 MHz



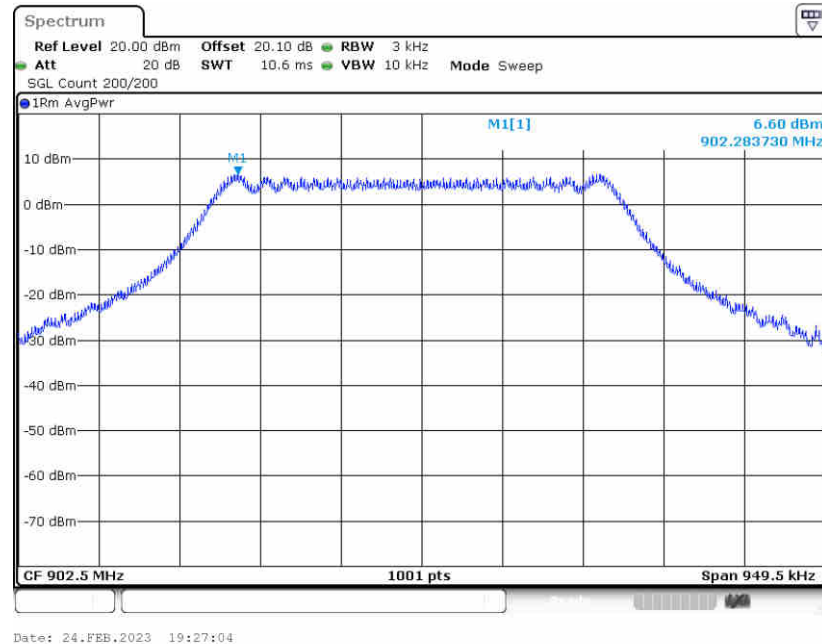
Date: 13.FEB.2023 18:36:42



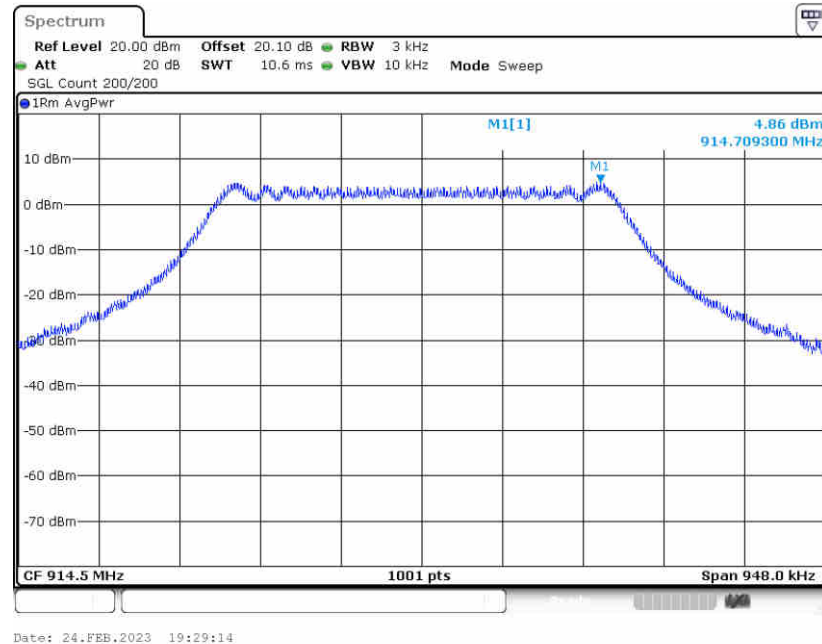
3.3.7 Test Result of Power Spectral Density Plots (3kHz)

For LoRa DTS SF7:

PSD 3kHz Plot on 902.5 MHz

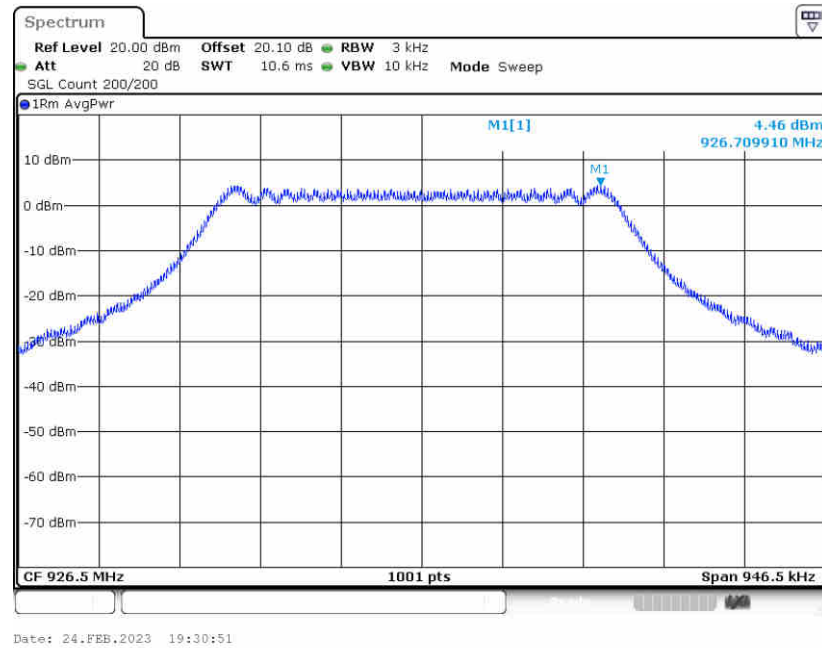


PSD 3kHz Plot on 914.5 MHz



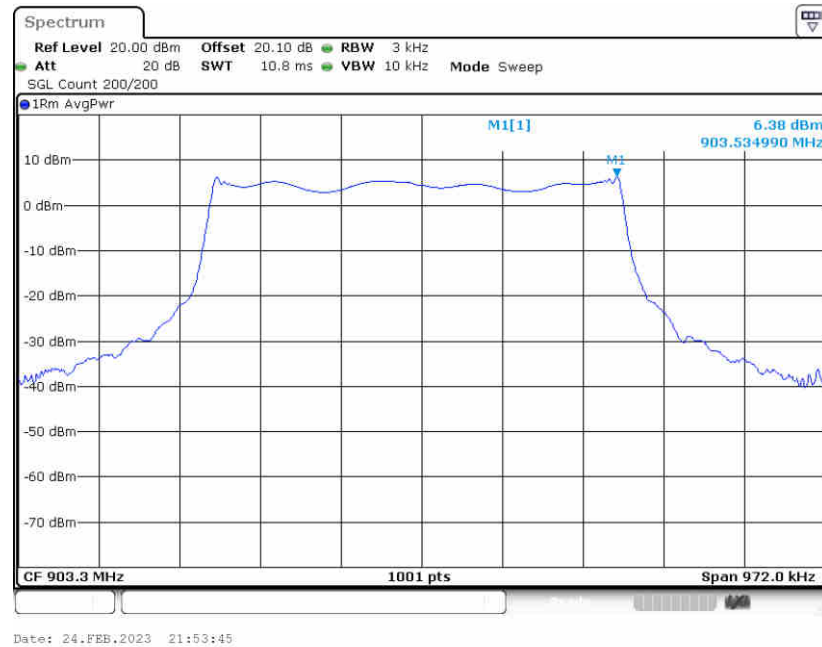


PSD 3kHz Plot on 926.5 MHz



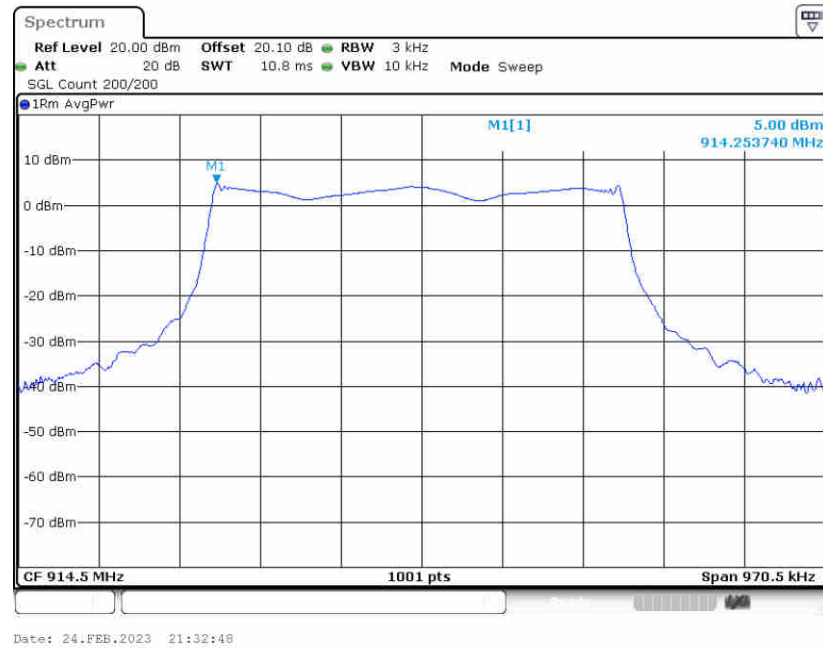
For LoRa DTS SF11:

PSD 3kHz Plot on 903.3 MHz

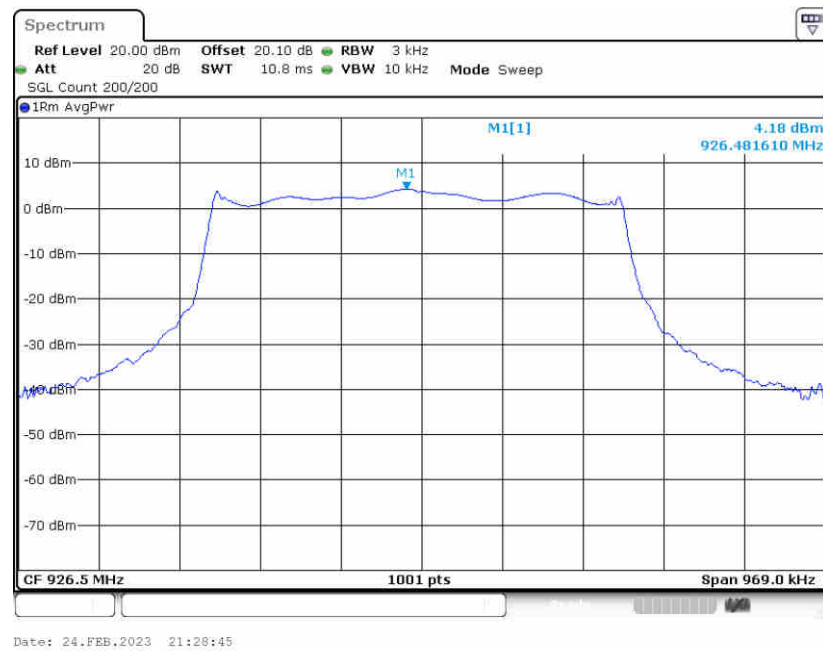




PSD 3kHz Plot on 914.5 MHz



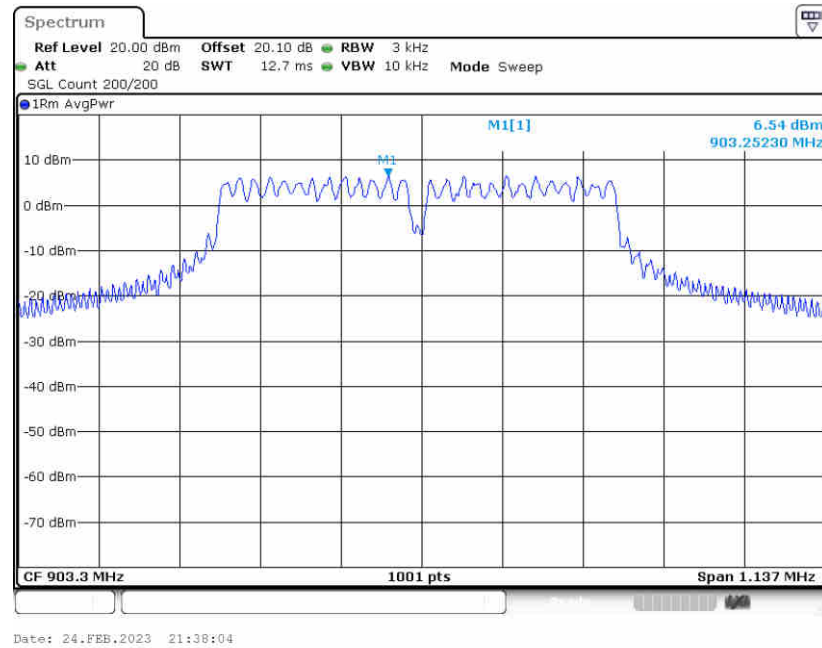
PSD 3kHz Plot on 926.5 MHz



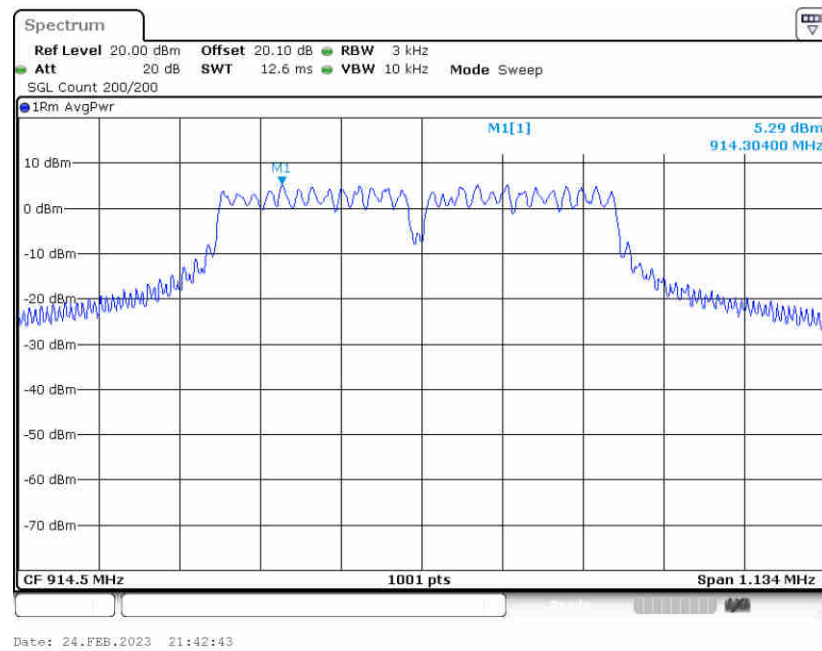


For OFDM-LR:

PSD 3kHz Plot on 903.3 MHz

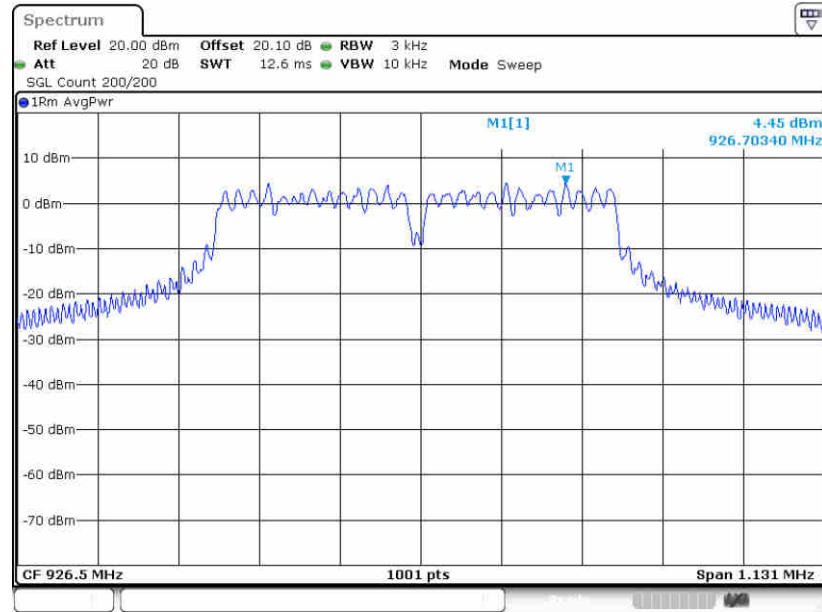


PSD 3kHz Plot on 914.5 MHz





PSD 3kHz Plot on 926.5 MHz



Date: 24.FEB.2023 21:44:59

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 20/30 dB down from the highest emission level within the authorized band.

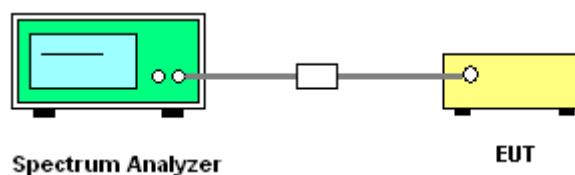
3.4.2 Measuring Instruments

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

3.4.3 Test Procedure

1. The testing follows ANSI C63.10-2013 clause 11.13
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz when the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

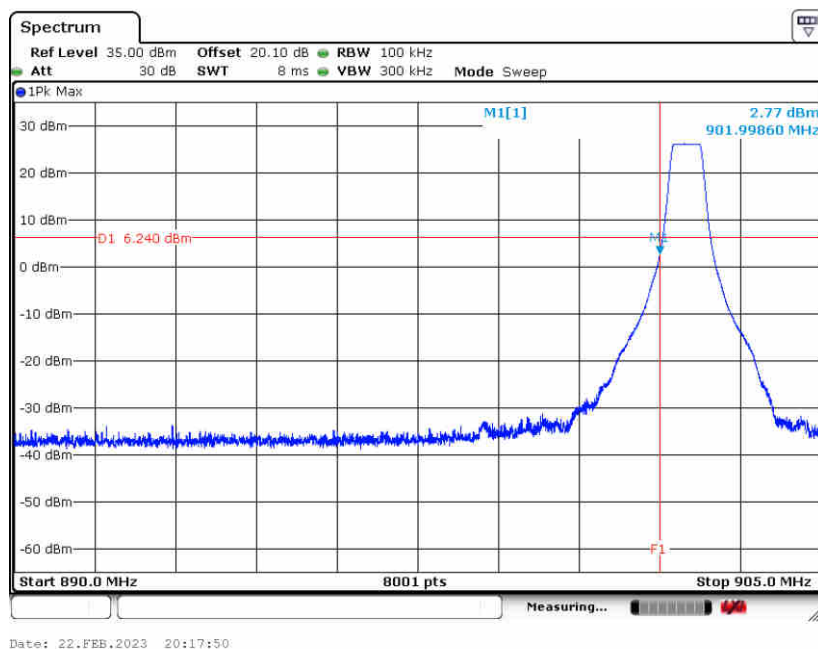




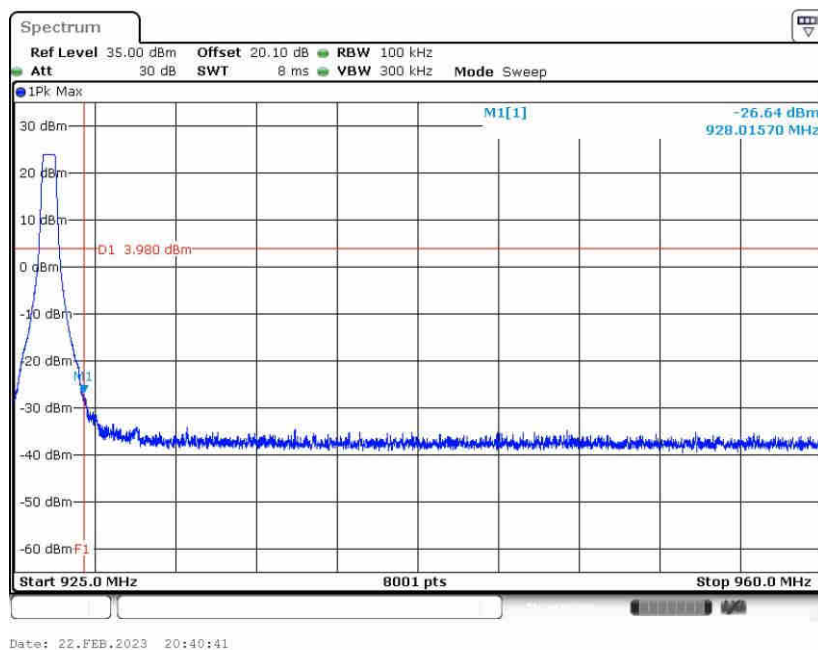
3.4.5 Test Result of Conducted Band Edges Plots

For LoRa DTS SF7:

Low Band Edge Plot on 902.5 MHz

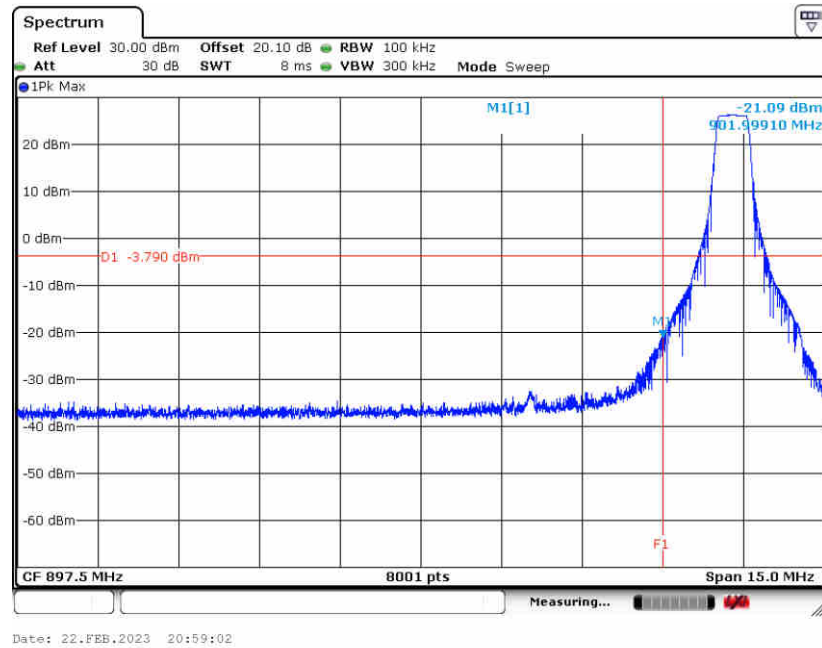


High Band Edge Plot on 926.5 MHz

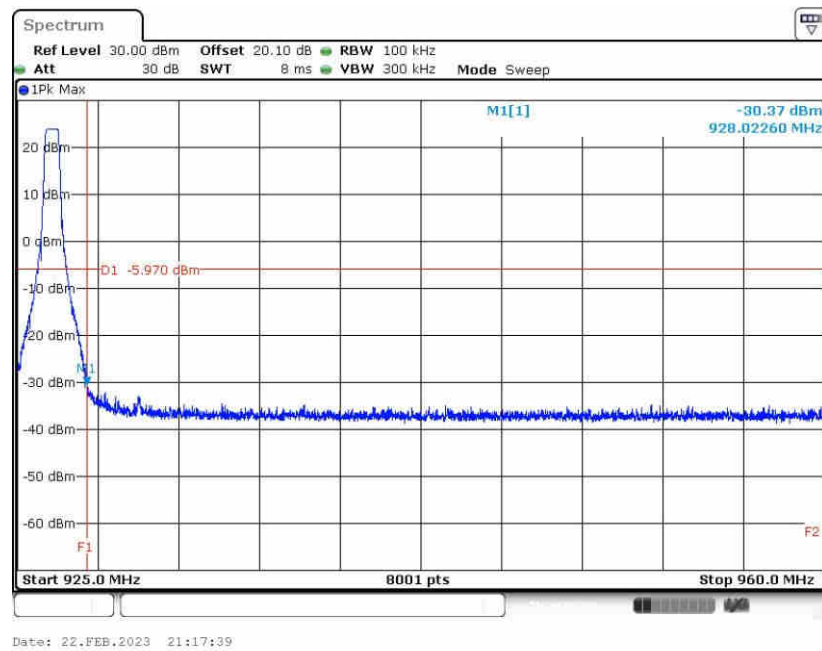


For LoRa DTS SF11:

Low Band Edge Plot on 903.3 MHz



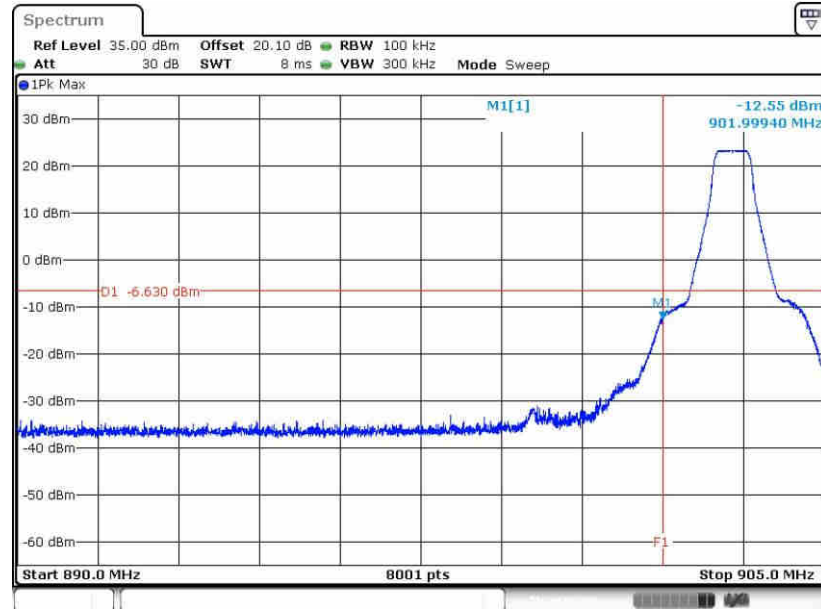
High Band Edge Plot on 926.5 MHz





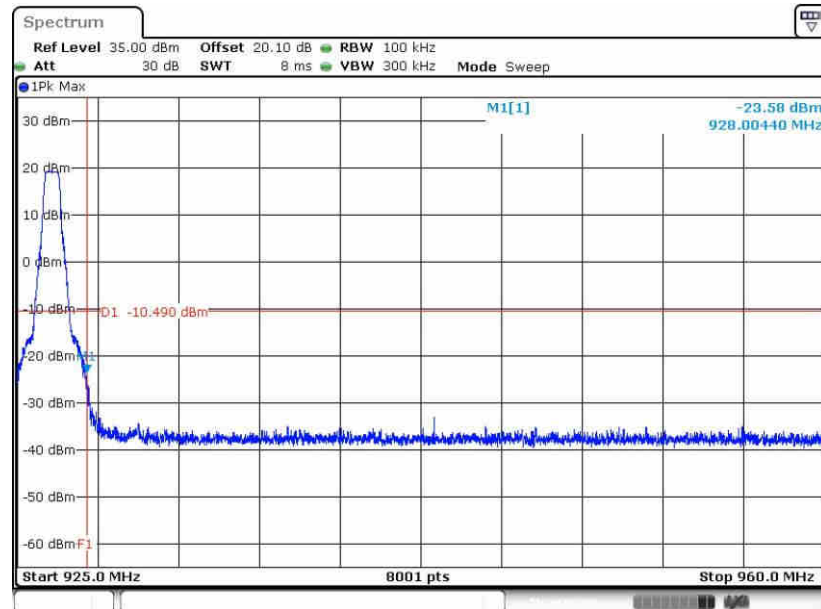
For OFDM-LR:

Low Band Edge Plot on 903.3 MHz



Date: 13.FEB.2023 18:34:15

High Band Edge Plot on 926.5 MHz

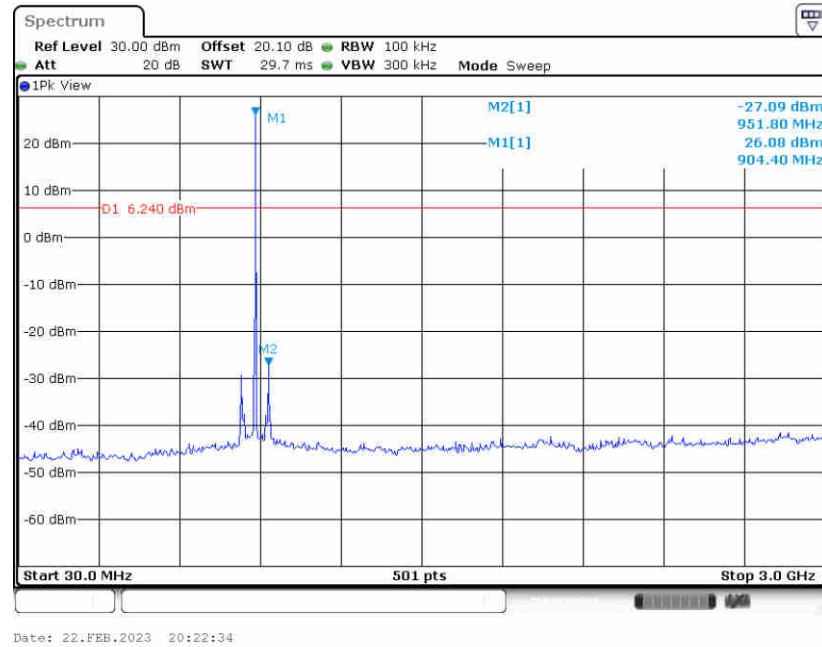


Date: 13.FEB.2023 18:40:28

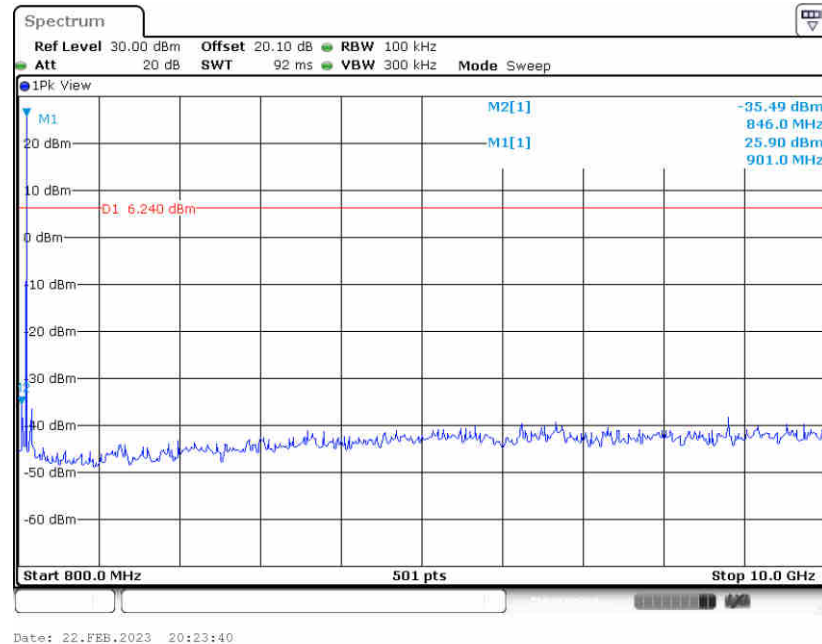
3.4.6 Test Result of Conducted Spurious Emission Plots

For LoRa DTS SF7:

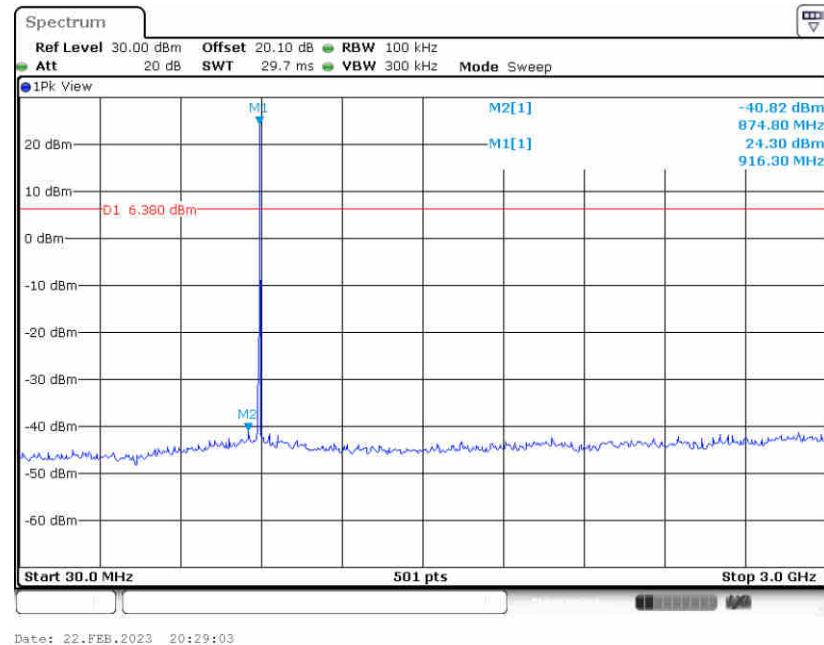
Conducted Spurious Emission Plot on 902.5 MHz



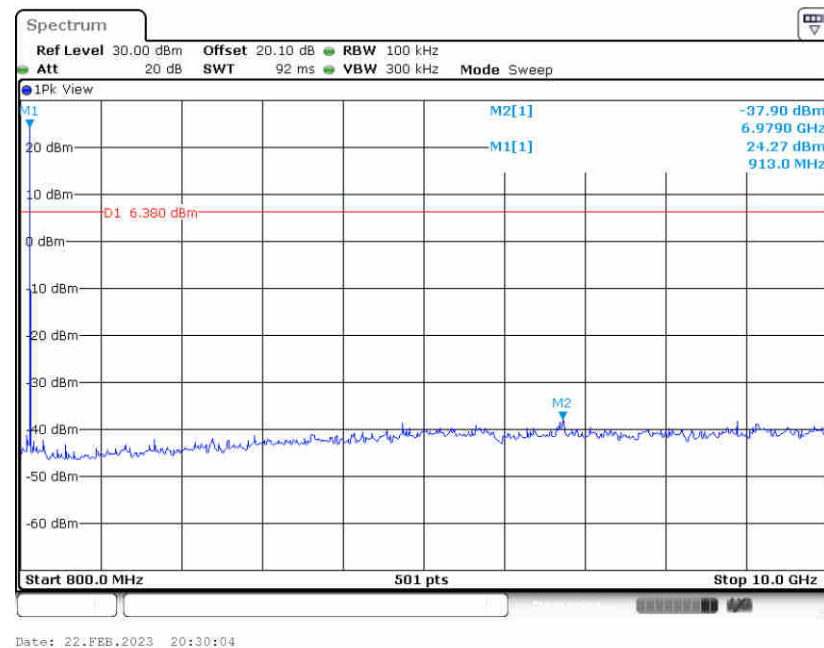
Conducted Spurious Emission Plot on 902.5 MHz



Conducted Spurious Emission Plot on 914.5 MHz

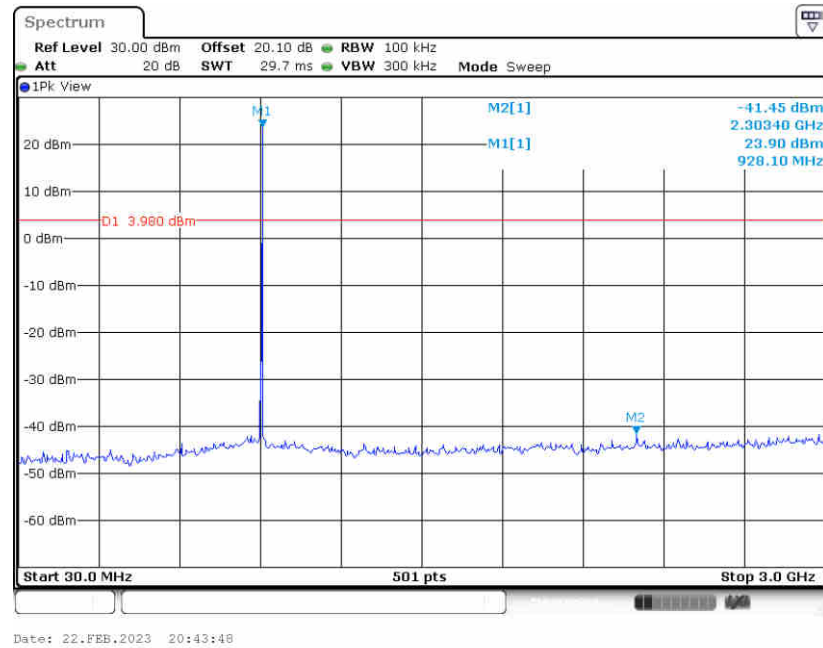


Conducted Spurious Emission Plot on 914.5 MHz

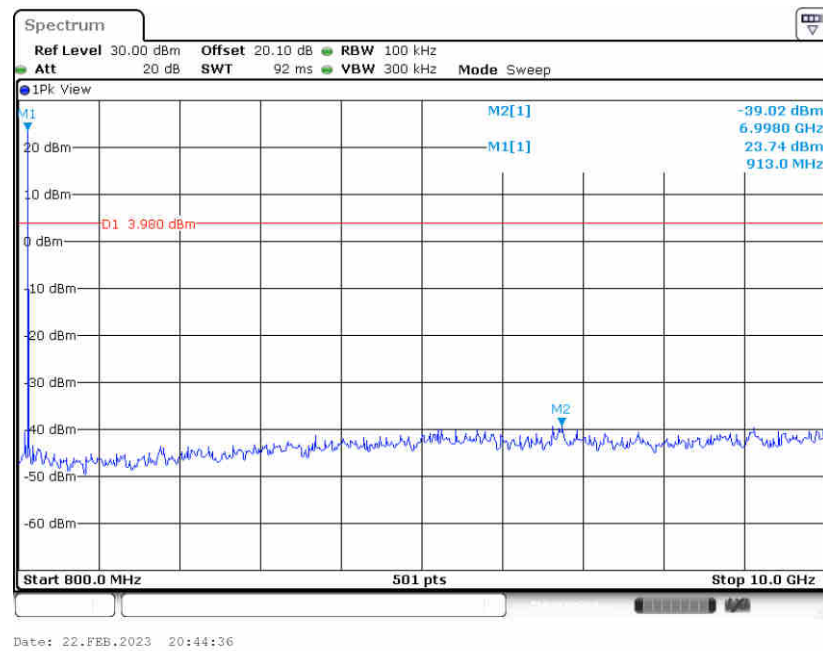




Conducted Spurious Emission Plot on 926.5 MHz



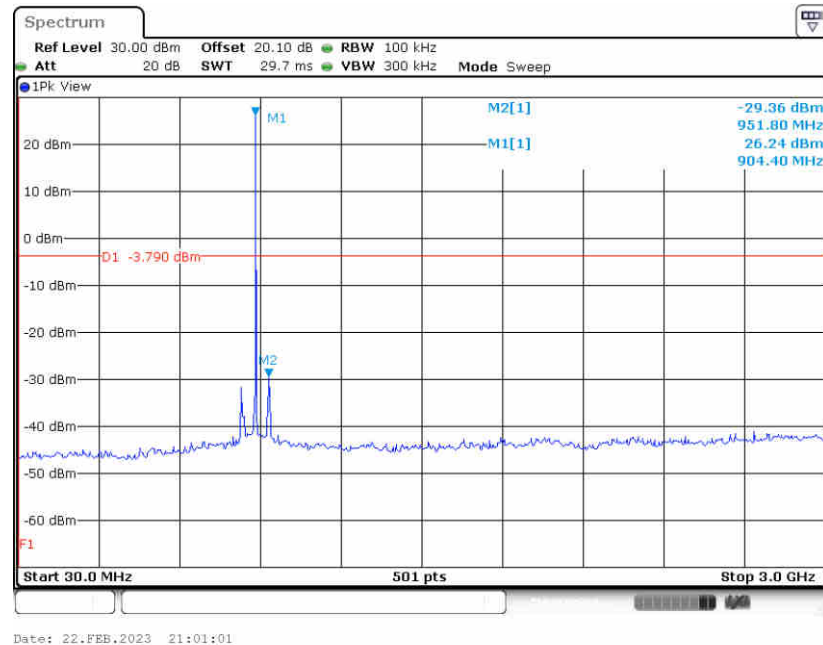
Conducted Spurious Emission Plot on 926.5 MHz



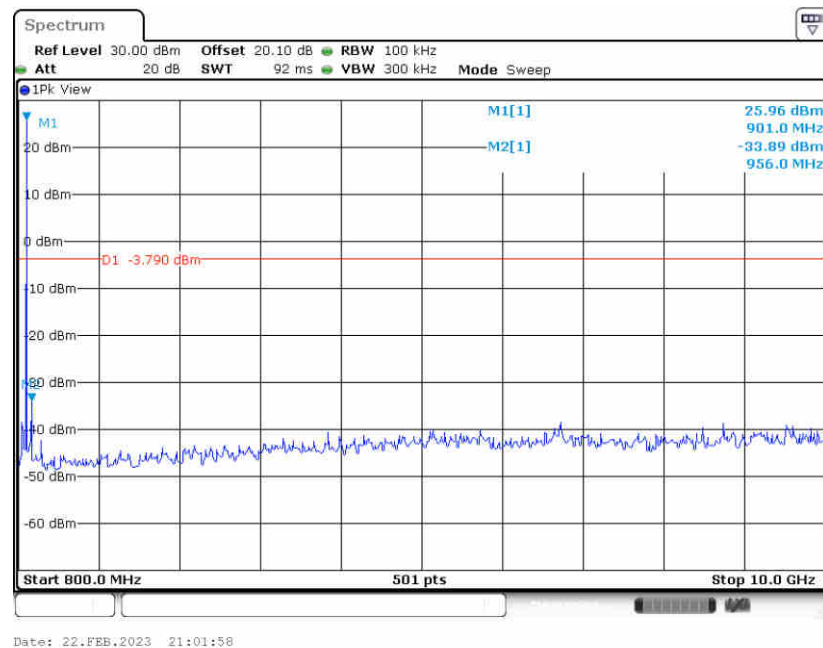


For LoRa DTS SF11:

Conducted Spurious Emission Plot on 903.3 MHz

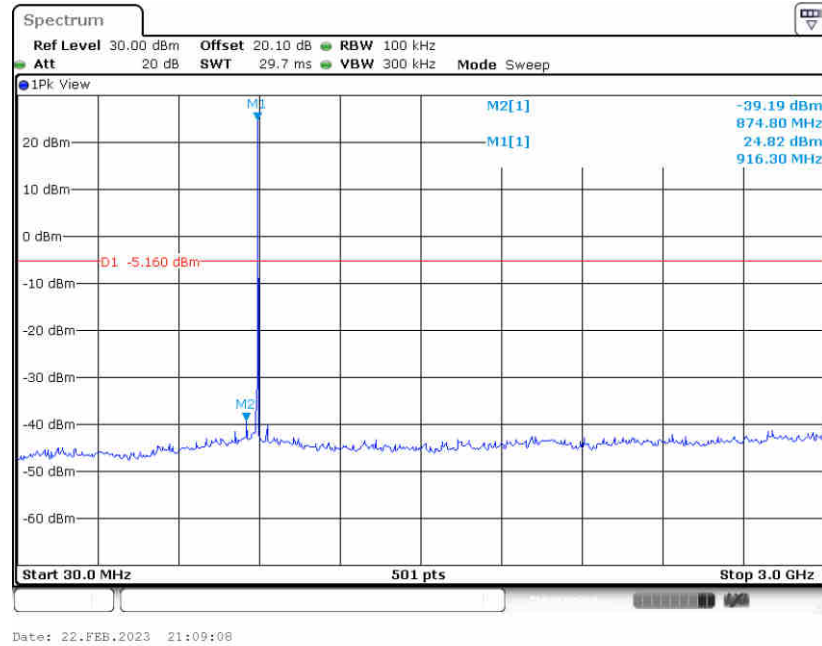


Conducted Spurious Emission Plot on 903.3 MHz

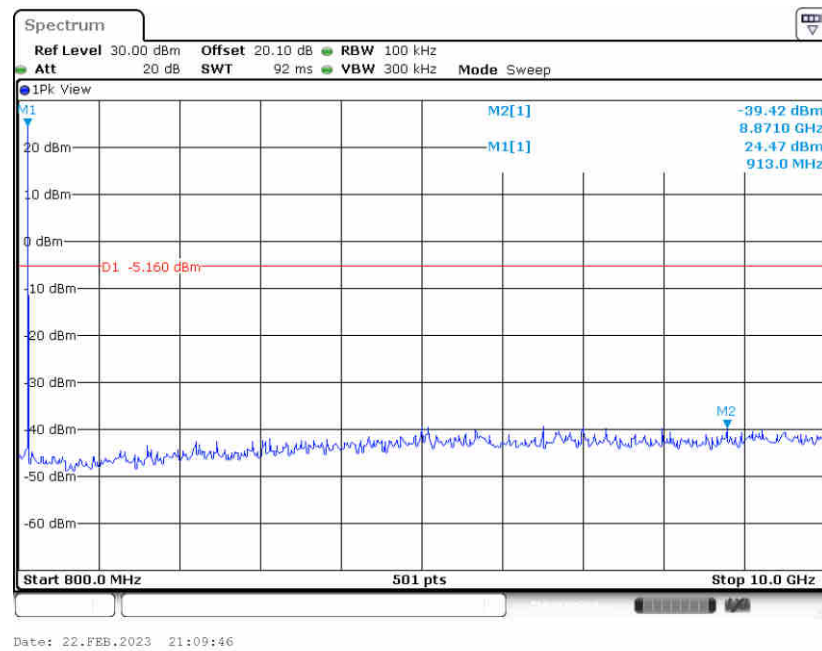




Conducted Spurious Emission Plot on 914.5 MHz

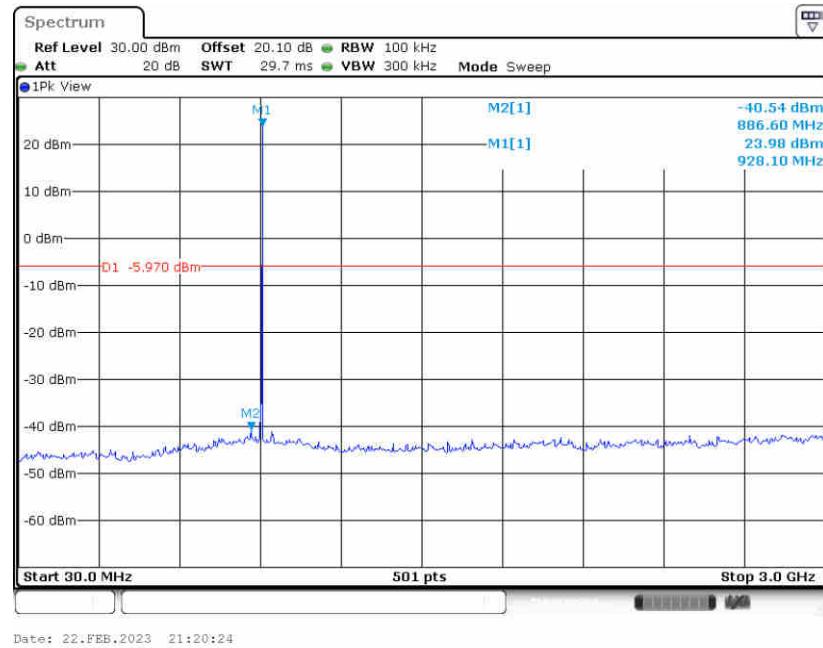


Conducted Spurious Emission Plot on 914.5 MHz

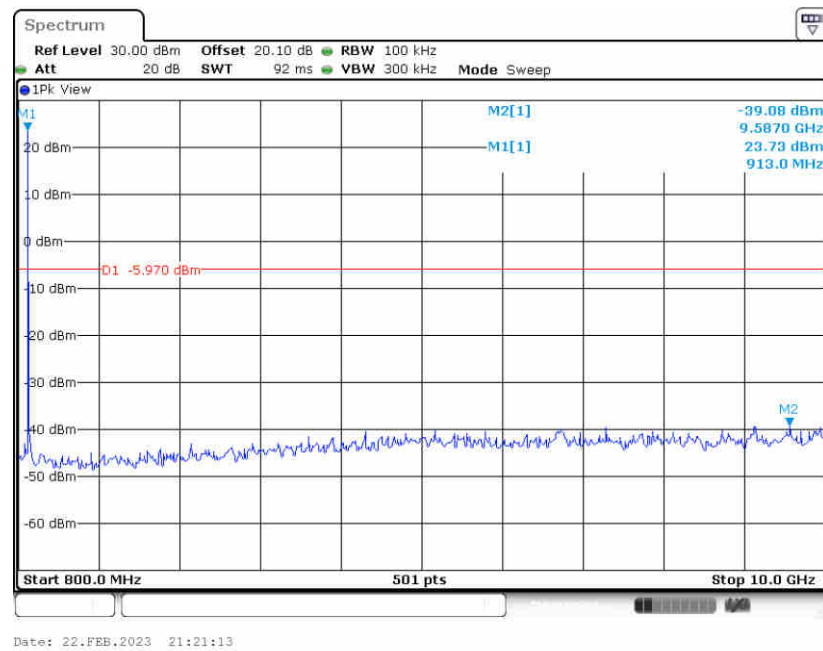




Conducted Spurious Emission Plot on 926.5 MHz



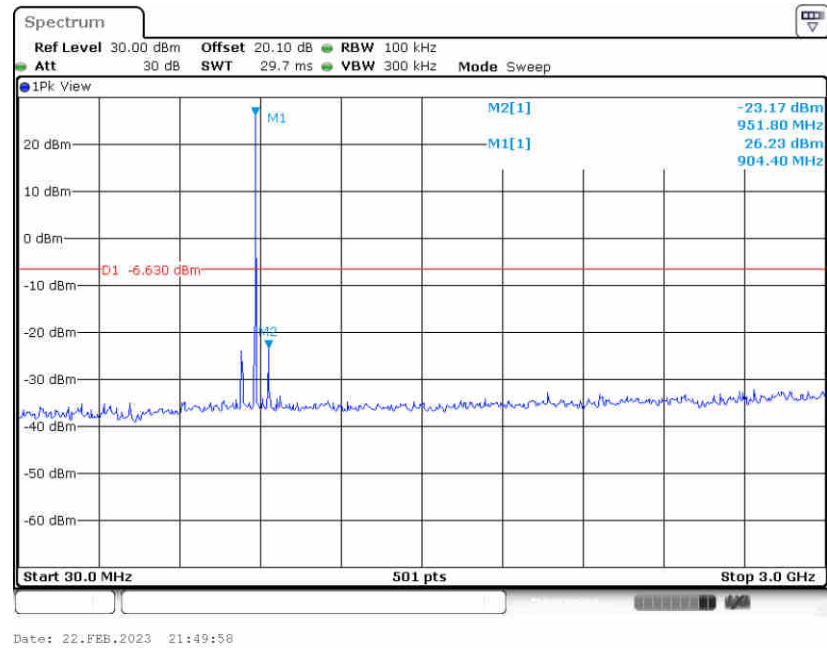
Conducted Spurious Emission Plot on 926.5 MHz



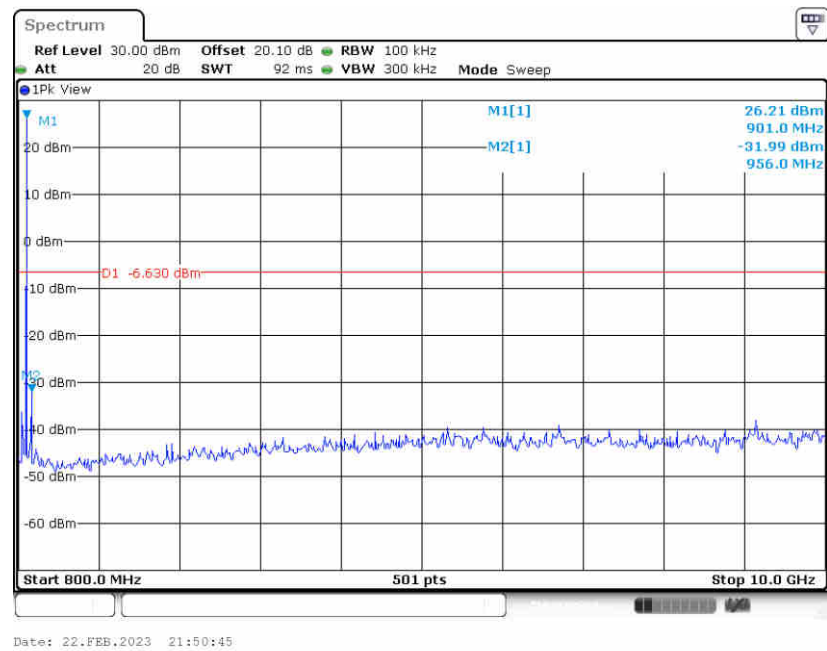


For OFDM-LR:

Conducted Spurious Emission Plot on 903.3 MHz

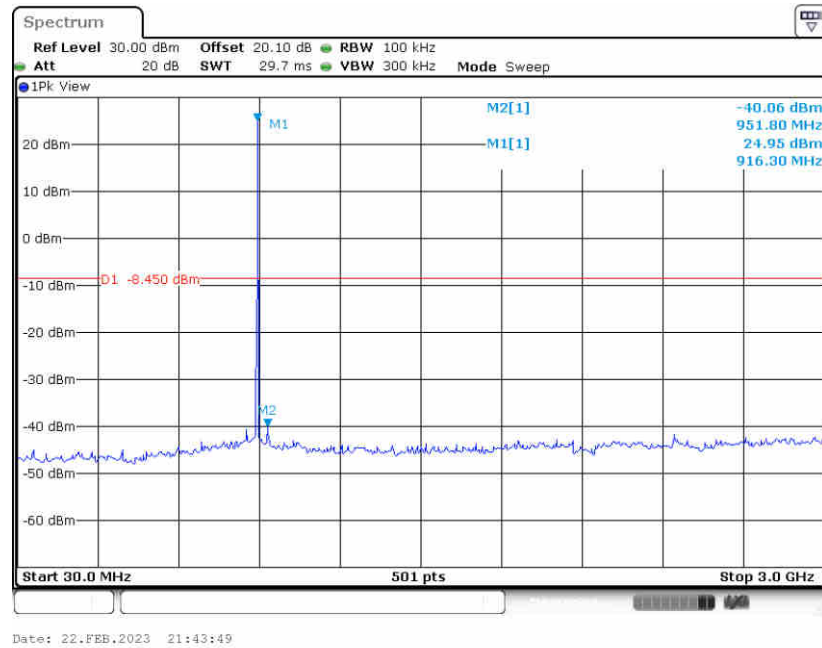


Conducted Spurious Emission Plot on 903.3 MHz

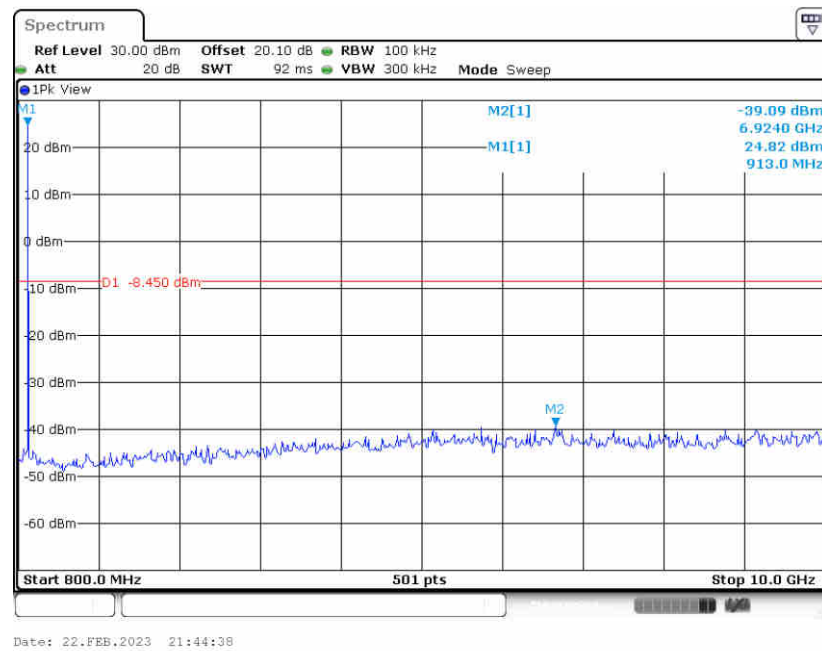




Conducted Spurious Emission Plot on 914.5 MHz

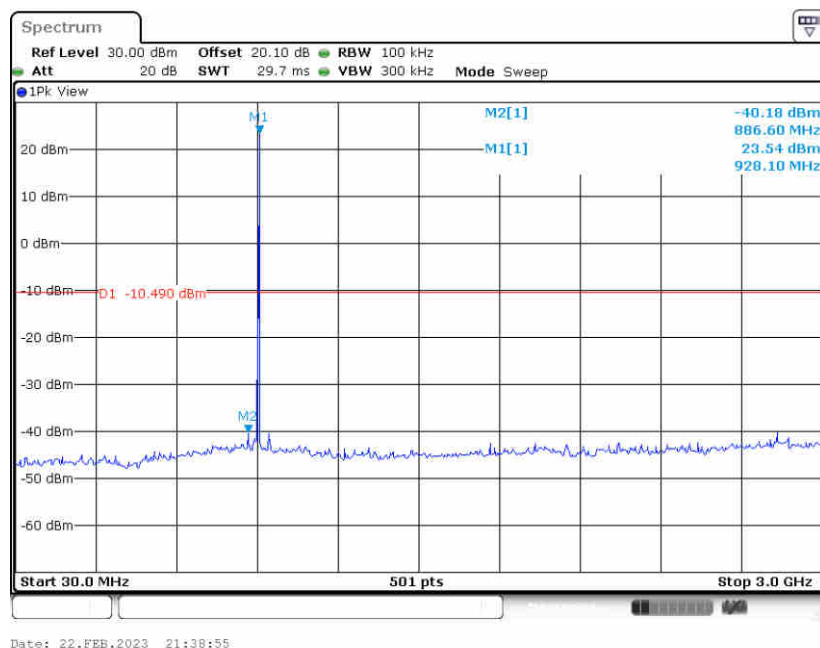


Conducted Spurious Emission Plot on 914.5 MHz

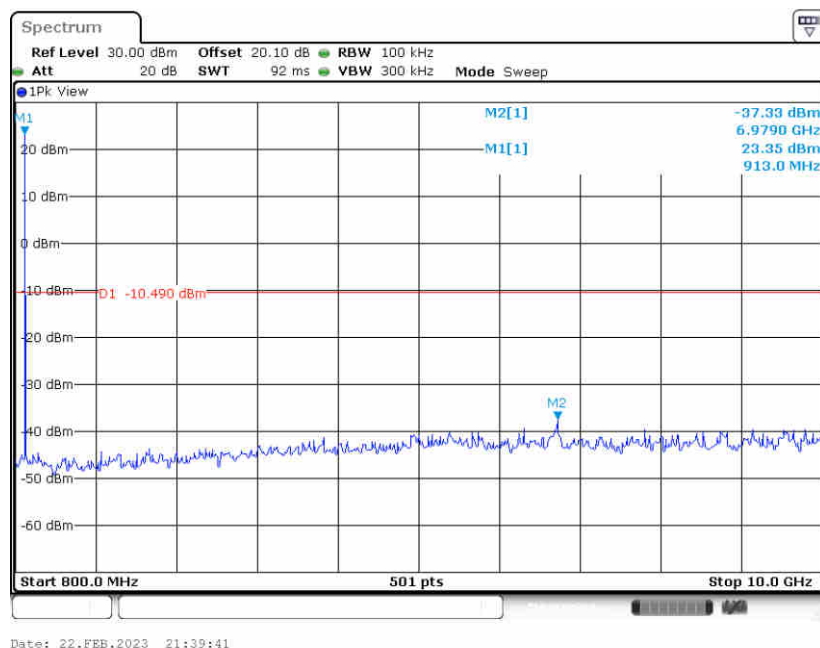




Conducted Spurious Emission Plot on 926.5 MHz



Conducted Spurious Emission Plot on 926.5 MHz



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/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

3.5.2 Measuring Instruments

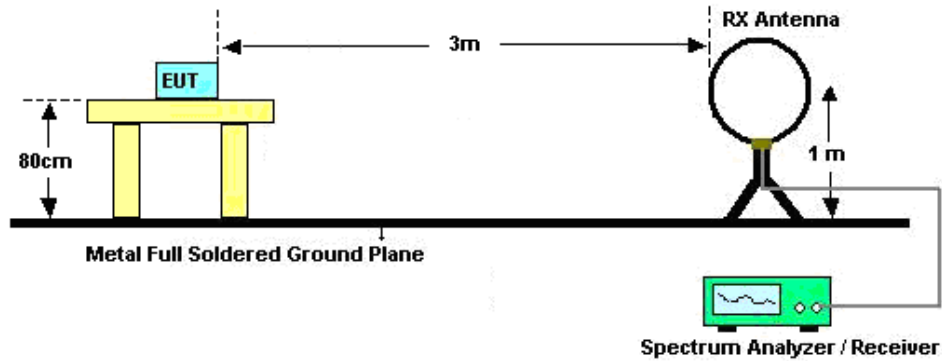
The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.5.3 Test Procedures

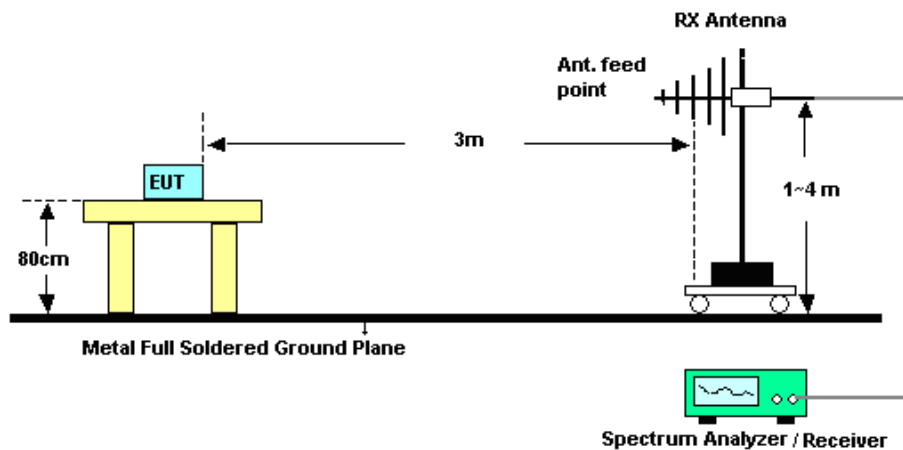
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; $VBW \geq RBW$; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.
For average measurement:
 - $VBW = 10$ Hz, when duty cycle is no less than 98 percent.
 - $VBW \geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

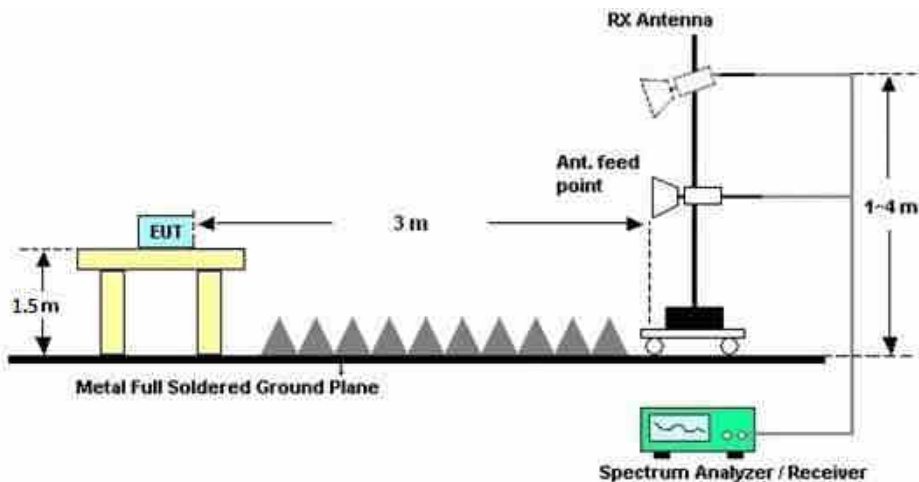
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



**3.5.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C&D.

3.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C&D.

3.5.8 Duty cycle

Mode	Duty Cycle
LoRa DTS SF7	100%
LoRa DTS SF11	100%
OFDM-LR	100%

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment 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.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

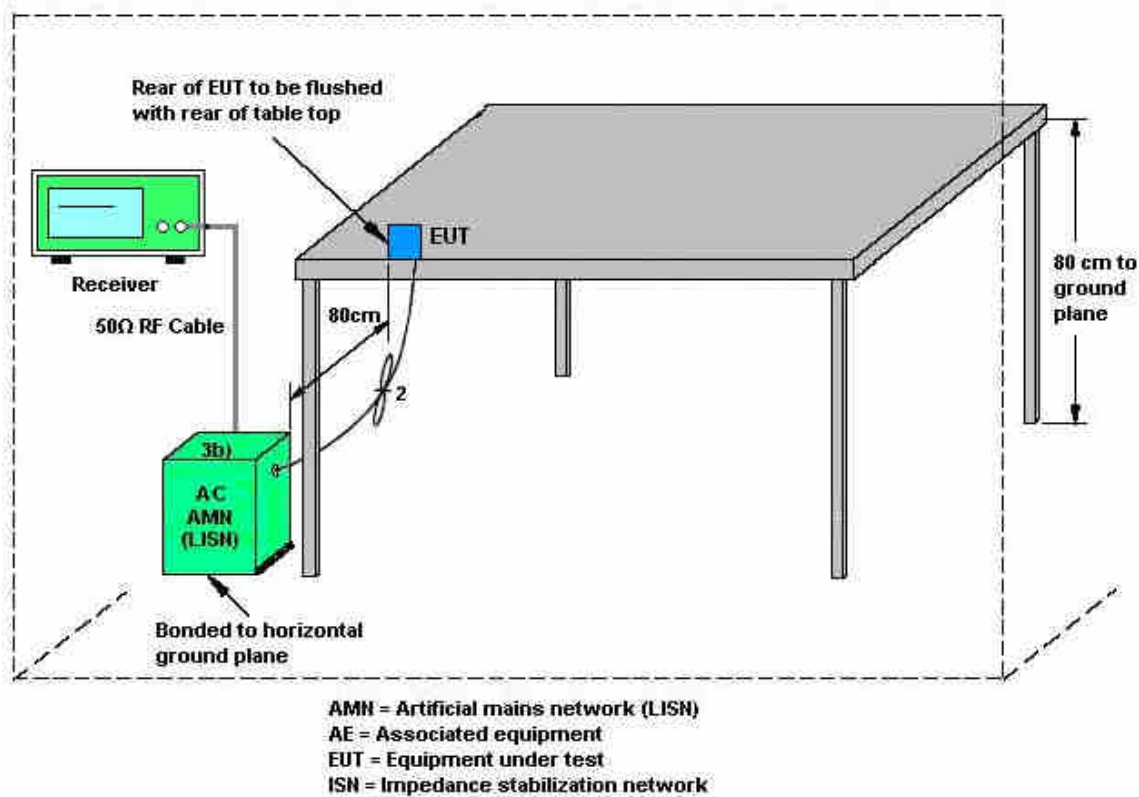
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. 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 rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 07, 2022	Feb. 13, 2023~ Feb. 25, 2023	Apr. 06, 2023	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1339473	30MHz~40GHz	Dec. 27, 2022	Feb. 13, 2023~ Feb. 25, 2023	Dec. 26, 2023	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1542004	50MHz Bandwidth	Dec. 27, 2022	Feb. 13, 2023~ Feb. 25, 2023	Dec. 26, 2023	Conducted (TH01-SZ)
Attenuator	MICROWAV	EMVE2214-10	2	30MHz~26.5GHz	Feb. 22, 2022	Feb. 13, 2023~ Feb. 25, 2023	Feb. 22, 2023	Conducted (TH01-SZ)
Attenuator	MICROWAV	EMVE2214-10	2	30MHz~26.5GHz	Feb. 22, 2023		Feb. 22, 2024	Conducted (TH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2022	Feb. 12, 2023~ Jul. 24, 2023	Jul. 06, 2023	Radiation (03CH02-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2023		Jul. 06, 2024	Radiation (03CH02-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Feb. 12, 2023~ Jul. 24, 2023	Jul. 27, 2024	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz~2GHz	Sep. 28, 2021	Feb. 12, 2023~ Jul. 24, 2023	Sep. 27, 2023	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2022	Feb. 12, 2023~ Jul. 24, 2023	Jul. 06, 2023	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2023		Jul. 06, 2024	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 07, 2022	Feb. 12, 2023~ Jul. 24, 2023	Jul. 06, 2023	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 07, 2023		Jul. 06, 2024	Radiation (03CH02-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Apr. 10, 2022	Feb. 12, 2023~ Jul. 24, 2023	Apr. 09, 2023	Radiation (03CH02-SZ)
LF Amplifier	Burgeon	BPA-530	102211	0.01~3000Mhz	Oct. 19, 2022	Feb. 12, 2023~ Jul. 24, 2023	Oct. 18, 2023	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1943528	1GHz~18GHz	Oct. 19, 2022	Feb. 12, 2023~ Jul. 24, 2023	Oct. 18, 2023	Radiation (03CH02-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5GHz	Oct. 19, 2022	Feb. 12, 2023~ Jul. 24, 2023	Oct. 18, 2023	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010003043	N/A	Nov. 10, 2022	Feb. 12, 2023~ Jul. 24, 2023	Nov. 09, 2023	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Feb. 12, 2023~ Jul. 24, 2023	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Feb. 12, 2023~ Jul. 24, 2023	NCR	Radiation (03CH02-SZ)
EMI Receiver	R&S	ESR7	102297	9kHz~7GHz;	Jul. 06, 2022	Feb. 16, 2023	Jul. 05, 2023	Conduction (CO02-SZ)
AC LISN	R&S	ENV216	101499	9kHz~30MHz	Jul. 06, 2022	Feb. 16, 2023	Jul. 05, 2023	Conduction (CO02-SZ)
AC Power Source	CHROMA	61601	616010002470	100Vac~250Vac	Nov. 10, 2022	Feb. 16, 2023	Nov. 09, 2023	Conduction (CO02-SZ)

NCR: No Calibration Required

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	± 1.34 dB
Conducted Emissions	± 1.34 dB
Occupied Channel Bandwidth	± 0.13 %
Conducted Power Spectral Density	± 1.32 dB

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.7dB
---	-------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
---	-------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1dB
---	-------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1dB
---	-------



Appendix A. Conducted Test Results

Test Engineer:	Chen Ran	Temperature:	20~26°C
Test Date:	2023/2/13~2023/2/25	Relative Humidity:	40~51%

LoRa-DTS-Spreading Factor 7**TEST RESULTS DATA**
6dB and 99% Occupied Bandwidth

Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
SF7	1	902.5MHz	0.547	0.633	0.500	Pass
SF7	16	914.5MHz	0.549	0.632	0.500	Pass
SF7	31	926.5MHz	0.549	0.631	0.500	Pass

TEST RESULTS DATA
Peak Power Table

Mod.	Channel	Freq. (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Pass /Fail	Setting
SF7	1	902.5MHz	25.53	30.00	Pass	4
SF7	16	914.5MHz	24.75	30.00	Pass	0.5
SF7	31	926.5MHz	24.67	30.00	Pass	-0.5

TEST RESULTS DATA
Peak Power Density

Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
SF7	1	902.5MHz	26.24	6.60	4.00	8.00	Pass
SF7	16	914.5MHz	24.38	4.86	4.00	8.00	Pass
SF7	31	926.5MHz	23.98	4.46	4.00	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 20dBc limit.

LoRa-DTS-Spreading Factor 11**TEST RESULTS DATA**
6dB and 99% Occupied Bandwidth

Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
SF11	2	903.3MHz	0.549	0.648	0.500	Pass
SF11	16	914.5MHz	0.547	0.647	0.500	Pass
SF11	31	926.5MHz	0.547	0.646	0.500	Pass

TEST RESULTS DATA
Average Power Table

Mod.	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	Conducted Power Limit (dBm)	Pass /Fail
SF11	2	903.3MHz	0.00	25.40	30.00	Pass
SF11	16	914.5MHz	0.00	24.80	30.00	Pass
SF11	31	926.5MHz	0.00	24.40	30.00	Pass

Setting
4
1
-0.5

TEST RESULTS DATA
Peak Power Density

Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	AVG PSD (dBm /3kHz)	DG (dBi)	AVG PSD Limit (dBm /3kHz)	Pass/Fail
SF11	2	903.3MHz	26.21	6.38	4.00	8.00	Pass
SF11	16	914.5MHz	24.84	5.00	4.00	8.00	Pass
SF11	31	926.5MHz	24.03	4.18	4.00	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

LoRa-OFDM-LR

TEST RESULTS DATA						
6dB and 99% Occupied Bandwidth						
Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
OFDM-LR	2	903.3MHz	0.633	0.758	0.500	Pass
OFDM-LR	16	914.5MHz	0.633	0.756	0.500	Pass
OFDM-LR	31	926.5MHz	0.633	0.754	0.500	Pass

TEST RESULTS DATA						
Average Power Table						
Mod.	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	Conducted Power Limit (dBm)	Pass /Fail
OFDM-LR	2	903.3MHz	0.00	25.40	30.00	Pass
OFDM-LR	16	914.5MHz	0.00	24.80	30.00	Pass
OFDM-LR	31	926.5MHz	0.00	24.00	30.00	Pass

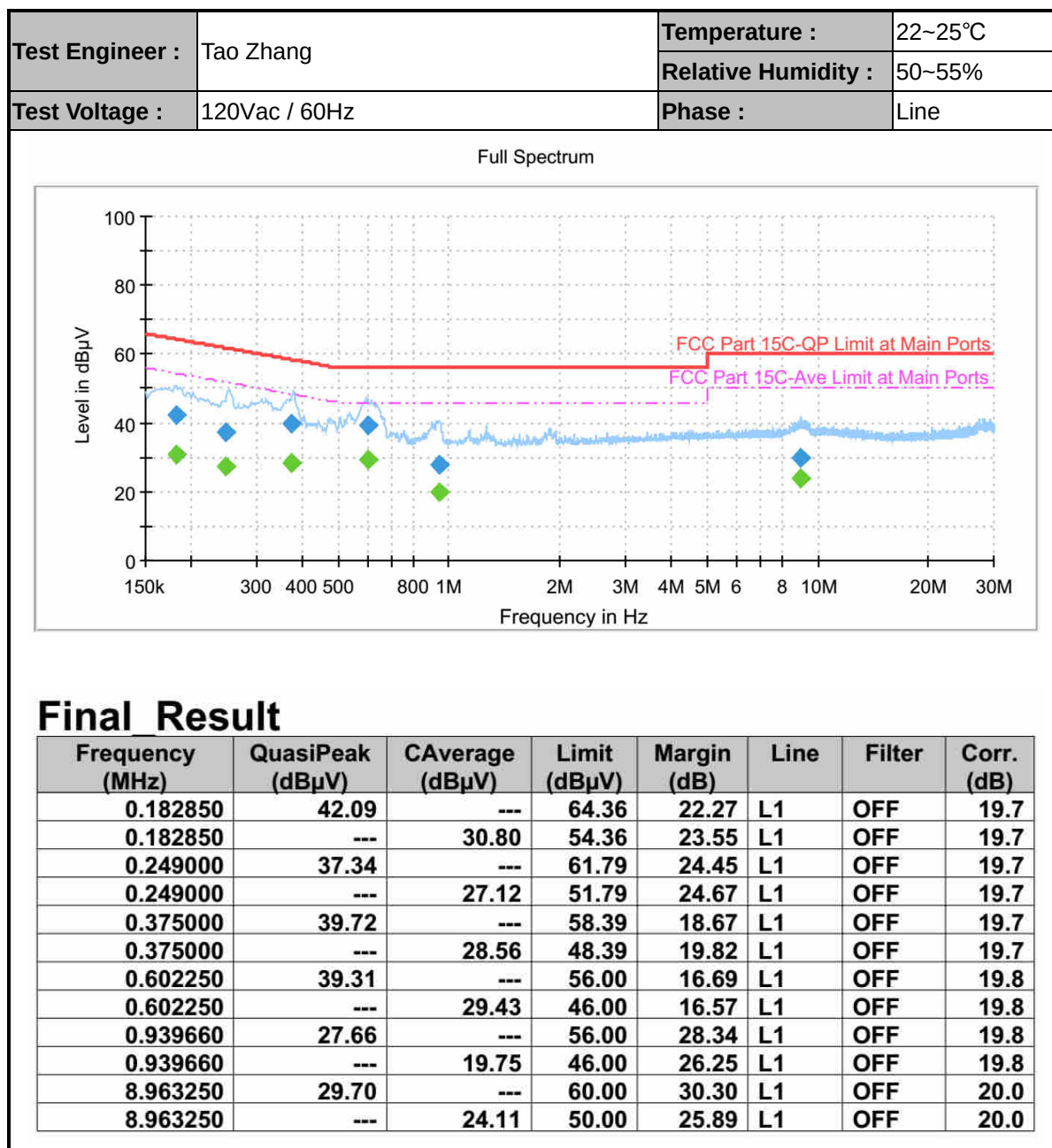
Setting
4.5
1
-1

TEST RESULTS DATA							
Peak Power Density							
Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	AVG PSD (dBm /3kHz)	DG (dBi)	AVG PSD Limit (dBm /3kHz)	Pass/Fail
OFDM-LR	2	903.3MHz	23.37	6.54	4.00	8.00	Pass
OFDM-LR	16	914.5MHz	21.55	5.29	4.00	8.00	Pass
OFDM-LR	31	926.5MHz	19.51	4.45	4.00	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

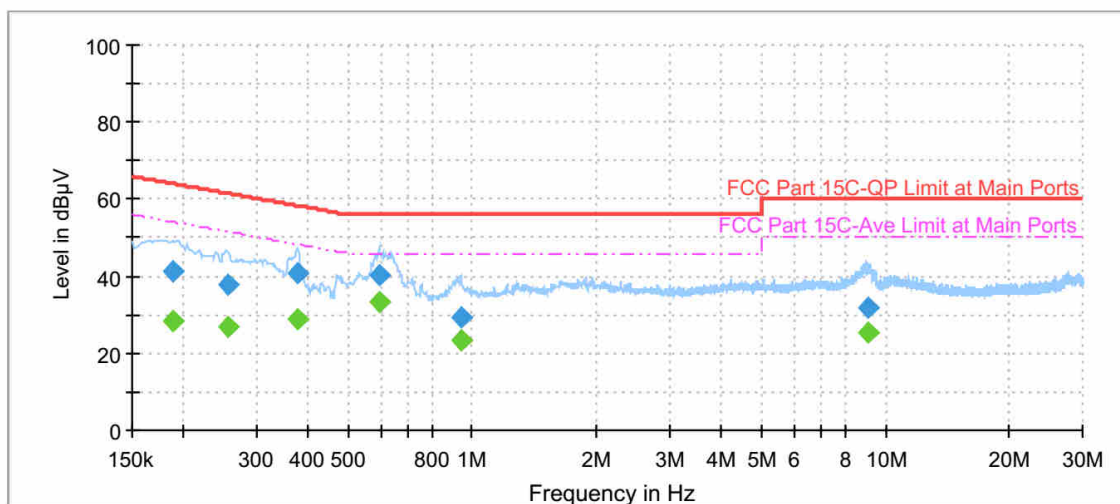


Appendix B. AC Conducted Emission Test Results



Test Engineer :	Tao Zhang	Temperature :	22~25°C
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.188250	41.15	---	64.11	22.97	N	OFF	19.7
0.188250	---	28.49	54.11	25.63	N	OFF	19.7
0.255750	37.91	---	61.57	23.66	N	OFF	19.7
0.255750	---	26.74	51.57	24.82	N	OFF	19.7
0.377340	41.04	---	58.34	17.30	N	OFF	19.7
0.377340	---	28.82	48.34	19.51	N	OFF	19.7
0.596220	40.30	---	56.00	15.70	N	OFF	19.7
0.596220	---	33.24	46.00	12.76	N	OFF	19.7
0.939570	29.26	---	56.00	26.74	N	OFF	19.7
0.939570	---	23.42	46.00	22.58	N	OFF	19.7
9.060000	31.82	---	60.00	28.18	N	OFF	20.0
9.060000	---	25.43	50.00	24.57	N	OFF	20.0



Appendix C. Radiated Spurious Emission

902~928MHz

LoRa DTS SF=7 (Band Edge @ 3m)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Cable	Preampl	Ant	Table	Peak	Pol.
		(MHz)	(dBμV/m)	(dB)	Line (dBμV/m)	Level (dBμV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	(H/V)
902.5MHz		853.53	47.58	-47.97	95.55	50.12	26.41	3.1	32.05	-	-	P	H
		902.5	115.55	-	-	117.08	26.61	3.15	31.29	-	-	P	H
		958.29	45.99	-49.56	95.55	46.85	27.01	3.28	31.15	-	-	P	H
		861.29	42.58	-50.64	93.22	43.29	26.44	3.11	30.26	-	-	P	V
		902.5	113.22	-	-	113.75	26.61	3.15	30.29	-	-	P	V
		959.26	42.63	-50.59	93.22	42.4	27.01	3.28	30.06	-	-	P	V
914.5MHz		864.2	44.82	-49.18	94	47.11	26.46	3.11	31.86	-	-	P	H
		914.5	114	-	-	115.36	26.7	3.18	31.24	-	-	P	H
		935.98	44.33	-49.67	94	45.41	26.85	3.23	31.16	-	-	P	H
		860.32	40.85	-49.03	89.88	43.21	26.44	3.11	31.91	-	-	P	V
		914.5	109.88	-	-	111.24	26.7	3.18	31.24	-	-	P	V
		958.29	41.79	-48.09	89.88	42.65	27.01	3.28	31.15	-	-	P	V
926.5MHz		886.51	47.26	-46.95	94.21	49.11	26.55	3.14	31.54	-	-	P	H
		926.5	114.21	-	-	115.41	26.78	3.21	31.19	-	-	P	H
		938.89	45.15	-49.06	94.21	46.19	26.87	3.24	31.15	-	-	P	H
		900.09	39.29	-50.48	89.77	40.84	26.6	3.15	31.3	-	-	P	V
		926.5	109.77	-	-	110.97	26.78	3.21	31.19	-	-	P	V
		945.68	41.14	-48.63	89.77	42.09	26.92	3.25	31.12	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 20dB.												



LoRa DTS SF=7 (Harmonic @ 3m)

	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		1805	46.51	-49.04	95.55	68.35	30.72	5.42	57.98	-	-	P	H
		2707.5	53.27	-20.73	74	71.33	32.8	6.92	57.78	166	344	P	H
		2707.5	50.42	-3.58	54	68.48	32.8	6.92	57.78	166	344	A	H
		3610	46.27	-27.73	74	62.65	33.6	8.08	58.06	-	-	P	H
		4510	44.6	-29.4	74	58.79	34.6	9.11	57.9	-	-	P	H
		1805	49.05	-44.17	93.22	70.89	30.72	5.42	57.98	-	-	P	V
		2707.5	52.33	-21.67	74	70.39	32.8	6.92	57.78	161	57	P	V
		2707.5	49.75	-4.25	54	67.81	32.8	6.92	57.78	161	57	A	V
		3610	46.12	-27.88	74	62.5	33.6	8.08	58.06	-	-	P	V
		4510	45.09	-28.91	74	59.28	34.6	9.11	57.9	-	-	P	V
914.5MHz		1829	45.09	-48.91	94	66.63	30.97	5.42	57.93	-	-	P	H
		2743.5	53.28	-20.72	74	71.12	32.9	7.01	57.75	178	353	P	H
		2743.5	50.4	-3.6	54	68.24	32.9	7.01	57.75	178	353	A	H
		1829	48.46	-40.42	89.88	70	30.97	5.42	57.93	-	-	P	V
		2743.5	51.11	-22.89	74	68.95	32.9	7.01	57.75	100	59	P	V
		2743.5	45.94	-8.06	54	63.78	32.9	7.01	57.75	100	59	A	V
926.5MHz		1853	48.02	-46.19	94.21	69.36	31.09	5.48	57.91	-	-	P	H
		2779.5	53.99	-20.01	74	71.65	32.97	7.1	57.73	235	344	P	H
		2779.5	50.68	-3.32	54	68.34	32.97	7.1	57.73	235	344	A	H
		3709	48.83	-25.17	74	64.92	33.67	8.19	57.95	-	-	P	H
		4636	46.36	-27.64	74	60.48	34.52	9.26	57.9	-	-	P	H
		1853	47.31	-42.46	89.77	68.65	31.09	5.48	57.91	-	-	P	V
		2779.5	51.53	-22.47	74	69.19	32.97	7.1	57.73	266	269	P	V
		2779.5	47.73	-6.27	54	65.39	32.97	7.1	57.73	266	269	A	V
		3709	49.43	-24.57	74	65.52	33.67	8.19	57.95	-	-	P	V
		4636	45.32	-28.68	74	59.44	34.52	9.26	57.9	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 20dB.												



LoRa DTS SF= 11 (Band Edge @ 3m)

	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
903.3MHz		899.12	54.58	-31.46	86.04	56.13	26.6	3.15	31.3	-	-	P	H
		903.3	116.04	-	-	117.55	26.62	3.16	31.29	-	-	P	H
		936.95	44.22	-41.82	86.04	45.29	26.86	3.23	31.16	-	-	P	H
		899.12	45.44	-37.62	83.06	46.99	26.6	3.15	31.3	-	-	P	V
		903.3	113.06	-	-	114.57	26.62	3.16	31.29	-	-	P	V
		955.38	42.41	-40.65	83.06	43.29	26.99	3.27	31.14	-	-	P	V
914.5MHz		874.87	43.36	-41.52	84.88	45.46	26.5	3.12	31.72	-	-	P	H
		914.5	114.88	-	-	116.24	26.7	3.18	31.24	-	-	P	H
		935.01	43.38	-41.5	84.88	44.47	26.84	3.23	31.16	-	-	P	H
		885.54	40.98	-40.9	81.88	42.84	26.54	3.14	31.54	-	-	P	V
		914.5	111.88	-	-	113.24	26.7	3.18	31.24	-	-	P	V
		956.35	42.16	-39.72	81.88	43.04	26.99	3.27	31.14	-	-	P	V
926.5MHz		877.78	43.13	-41.34	84.47	45.17	26.51	3.13	31.68	-	-	P	H
		926.5	114.47	-	-	115.67	26.78	3.21	31.19	-	-	P	H
		931.13	51.75	-32.72	84.47	52.89	26.82	3.22	31.18	-	-	P	H
		898.15	39.62	-44.82	84.44	41.23	26.59	3.15	31.35	-	-	P	V
		926.5	111.44	-	-	112.64	26.78	3.21	31.19	-	-	P	V
		929.19	50.91	-33.53	84.44	52.08	26.8	3.21	31.18	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LoRa DTS SF= 11 (Harmonic @ 3m)

	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
903.3MHz		1806.6	46.92	-39.12	86.04	68.76	30.72	5.42	57.98	-	-	P	H
		2709.9	52.84	-21.16	74	70.86	32.83	6.92	57.77	238	339	P	H
		2709.9	50.6	-3.4	54	68.62	32.83	6.92	57.77	238	339	A	H
		1806.6	48.4	-34.66	83.06	70.24	30.72	5.42	57.98	-	-	P	V
		2709.9	51.19	-22.81	74	69.21	32.83	6.92	57.77	160	57	P	V
		2709.9	48.23	-5.77	54	66.25	32.83	6.92	57.77	160	57	A	V
914.5MHz		1829	47.47	-37.41	84.88	69.01	30.97	5.42	57.93	124	323	P	H
		2743.5	54.71	-19.29	74	72.55	32.9	7.01	57.75	144	344	P	H
		2743.5	50.37	-3.63	54	68.21	32.9	7.01	57.75	144	344	A	H
		1829	49.43	-32.45	81.88	70.97	30.97	5.42	57.93	122	267	P	V
		2743.5	52.81	-21.19	74	70.65	32.9	7.01	57.75	378	66	P	V
		2743.5	47.93	-6.07	54	65.77	32.9	7.01	57.75	378	66	A	V
926.5MHz		1853	47.53	-36.94	84.47	68.87	31.09	5.48	57.91	122	325	P	H
		2779.5	54.84	-19.16	74	72.5	32.97	7.1	57.73	163	347	P	H
		2779.5	50.49	-3.51	54	68.15	32.97	7.1	57.73	163	347	A	H
		3709	47.76	-26.24	74	63.85	33.67	8.19	57.95	-	-	P	H
		1853	49.05	-32.39	81.44	70.39	31.09	5.48	57.91	111	273	P	V
		2779.5	53.09	-20.91	74	70.75	32.97	7.1	57.73	336	75	P	V
		2779.5	48.5	-5.5	54	66.16	32.97	7.1	57.73	336	75	A	V
		3709	48.45	-25.55	74	64.54	33.67	8.19	57.95	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



OFDM-LR 1.4kbps (Band Edge @ 3m)

	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
903.3MHz		900.09	55.55	-27.7	86.25	57.1	26.6	3.15	31.3	-	-	P	H
		903.3	116.25	-	-	117.76	26.62	3.16	31.29	-	-	P	H
		942.77	44.77	-41.48	86.25	45.77	26.9	3.24	31.14	-	-	P	H
		900.09	52.2	-30.82	83.02	53.75	26.6	3.15	31.3	-	-	P	V
		903.3	113.02	-	-	114.53	26.62	3.16	31.29	-	-	P	V
		956.35	42.92	-40.1	83.02	43.8	26.99	3.27	31.14	-	-	P	V
914.5MHz		899.12	43.55	-41.3	84.85	45.1	26.6	3.15	31.3	-	-	P	H
		914.5	114.85	-	-	116.21	26.7	3.18	31.24	-	-	P	H
		935.01	43.76	-41.09	84.85	44.85	26.84	3.23	31.16	-	-	P	H
		874.87	40.59	-41.49	82.08	42.69	26.5	3.12	31.72	-	-	P	V
		914.5	112.08	-	-	113.44	26.7	3.18	31.24	-	-	P	V
		963.14	41.49	-40.49	82.08	42.34	27.04	3.28	31.17	-	-	P	V
927.5MHz		873.9	41.63	-42.29	83.92	43.73	26.5	3.12	31.72	-	-	P	H
		926.5	113.92	-	-	115.12	26.78	3.21	31.19	-	-	P	H
		929.19	57.48	-26.44	83.92	58.65	26.8	3.21	31.18	-	-	P	H
		893.3	40.15	-40.82	80.97	41.83	26.57	3.14	31.39	-	-	P	V
		926.5	110.97	-	-	112.17	26.78	3.21	31.19	-	-	P	V
		929.19	55.38	-25.59	80.97	56.55	26.8	3.21	31.18	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



OFDM-LR 1.4kbps (Harmonic @ 3m)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
903.3MHz		1806.6	46.8	-39.45	86.25	68.64	30.72	5.42	57.98	-	-	P	H
		2709.9	53.55	-20.45	74	71.57	32.83	6.92	57.77	115	204	P	H
		2709.9	50.44	-3.56	54	68.46	32.83	6.92	57.77	115	204	A	H
		3613.2	47.42	-26.58	74	63.8	33.6	8.08	58.06	-	-	P	H
		4516.5	48.74	-25.26	74	62.94	34.59	9.11	57.9	-	-	P	H
		1806.6	48.01	-35.01	83.02	69.85	30.72	5.42	57.98	-	-	P	V
		2709.9	53.04	-20.96	74	71.06	32.83	6.92	57.77	388	76	P	V
		2709.9	49.84	-4.16	54	67.86	32.83	6.92	57.77	388	76	A	V
		3613.2	47.78	-26.22	74	64.16	33.6	8.08	58.06	-	-	P	V
		4516.5	49.27	-24.73	74	63.47	34.59	9.11	57.9	-	-	P	V
914.5MHz		1829	45.98	-38.87	84.85	67.52	30.97	5.42	57.93	-	-	P	H
		2743.5	53.45	-20.55	74	71.29	32.9	7.01	57.75	191	201	P	H
		2743.5	50.62	-3.38	54	68.46	32.9	7.01	57.75	191	201	A	H
		3658	46.87	-27.13	74	63.12	33.62	8.14	58.01	-	-	P	H
		4573	45.18	-28.82	74	59.31	34.56	9.21	57.9	-	-	P	H
		1829	49.19	-32.89	82.08	70.73	30.97	5.42	57.93	-	-	P	V
		2743.5	52.28	-21.72	74	70.12	32.9	7.01	57.75	339	270	P	V
		2743.5	49.11	-4.89	54	66.95	32.9	7.01	57.75	339	270	A	V
		3658	47.37	-26.63	74	63.62	33.62	8.14	58.01	-	-	P	V
		4573	46.54	-27.46	74	60.67	34.56	9.21	57.9	-	-	P	V
927.5MHz		1853	45.41	-38.51	83.92	66.75	31.09	5.48	57.91	-	-	P	H
		2779.5	52.6	-21.4	74	70.26	32.97	7.1	57.73	148	196	P	H
		2779.5	49.08	-4.92	54	66.74	32.97	7.1	57.73	148	196	A	H
		3707	47.11	-26.89	74	63.2	33.67	8.19	57.95	-	-	P	H
		4631	45.51	-28.49	74	59.63	34.52	9.26	57.9	-	-	P	H
		1853	47.52	-33.45	80.97	68.86	31.09	5.48	57.91	-	-	P	V
		2779.5	50.57	-23.43	74	68.23	32.97	7.1	57.73	-	-	P	V
		3707	46.95	-27.05	74	63.04	33.67	8.19	57.95	-	-	P	V
		4631	44.42	-29.58	74	58.54	34.52	9.26	57.9	-	-	P	V



Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.
3. Non-restricted band limit is 100kHz-PSD down 30dB.

LoRa DTS SF=7 (Below 1GHz @ 3m)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
926.5MHz		112.45	29.09	-14.41	43.5	42.55	17.54	1.12	32.12	-	-	P	H
		172.59	29.12	-14.38	43.5	44.02	15.5	1.38	31.78	-	-	P	H
	*	926.5	114.21	-	-	115.41	26.78	3.21	31.19	-	-	P	H
		111.48	26.76	-16.74	43.5	40.27	17.49	1.12	32.12	-	-	P	V
		171.62	28.61	-14.89	43.5	43.47	15.54	1.38	31.78	-	-	P	V
	*	926.5	109.77	-	-	110.97	26.78	3.21	31.19	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 20dB.												

OFDM-LR 1.4Kbps (Below 1GHz @ 3m)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
914.5MHz		242.43	33.51	-12.49	46	46.21	17.69	1.62	32.01	-	-	P	H
		326.82	30.73	-15.27	46	41.02	19.78	1.88	31.95	-	-	P	H
	*	914.5	114.85	-	-	116.21	26.7	3.18	31.24	-	-	P	H
		242.43	27.79	-18.21	46	40.49	17.69	1.62	32.01	-	-	P	V
		329.73	28.48	-17.52	46	38.69	19.85	1.88	31.94	-	-	P	V
	*	914.5	112.08	-	-	113.44	26.7	3.18	31.24	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

BLE	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 00 2402MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =
Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
= 55.45 (dBμV/m)
2. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
= 43.54 (dBμV/m)
2. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 43.54(dBμV/m) – 54(dBμV/m)
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Radiated Spurious Emission Plots

Note symbol

-L	Low channel location
-R	High channel location



LoRa 500kHz DTS SF=7 (Band Edge @ 3m)

LoRa	902~928MHz Band Edge @ 3m																																																																																																																							
	LoRa 500kHz DTS SF=7 CH01 902.5																																																																																																																							
	Horizontal					Vertical																																																																																																																		
Peak	Date: 1 Date: 2023-07-20 Site : 03CH02-SZ Condition : PMWT-TSC_LORA 3m LF: CBL6112D_35407_22 HORIZONTAL REBW: 100.000kHz VEW: 300.000kHz Project : 2N0202-01 Mode : Mode 1 SN : #69 GRESJAK0130550029 Plane : Y with Accessories SF7 500kHz power setting 4 <table><tr><th>Peak</th><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th></th><th>Hz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>893.53</td><td>47.58</td><td>-----</td><td>58.12</td><td>26.41</td><td>3.18</td><td>32.85</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>902.58</td><td>115.55</td><td>-14.45</td><td>130.00</td><td>117.08</td><td>26.41</td><td>3.15</td><td>31.29</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>958.29</td><td>45.99</td><td>-----</td><td>46.85</td><td>27.81</td><td>3.28</td><td>33.15</td><td>---</td><td>---</td><td>Peak</td></tr></table>					Peak	Freq	Level	Limit	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark		Hz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg		1	893.53	47.58	-----	58.12	26.41	3.18	32.85	---	---	Peak	2	902.58	115.55	-14.45	130.00	117.08	26.41	3.15	31.29	---	Peak	3	958.29	45.99	-----	46.85	27.81	3.28	33.15	---	---	Peak	Date: 2 Date: 2023-07-20 Site : 03CH02-SZ Condition : PMWT-TSC_LORA 3m LF: CBL6112D_35407_22 VERTICAL REBW: 100.000kHz VEW: 300.000kHz Project : 2N0202-01 Mode : Mode 1 SN : #69 GRESJAK0130550029 Plane : Y with Accessories SF7 500kHz power setting 4 <table><tr><th>Peak</th><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th></th><th>Hz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>893.29</td><td>42.58</td><td>-----</td><td>43.29</td><td>26.44</td><td>3.11</td><td>30.26</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>902.58</td><td>113.55</td><td>-16.78</td><td>130.00</td><td>113.75</td><td>26.45</td><td>3.15</td><td>30.29</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>959.26</td><td>42.63</td><td>-----</td><td>42.88</td><td>27.83</td><td>3.28</td><td>30.86</td><td>---</td><td>---</td><td>Peak</td></tr></table>					Peak	Freq	Level	Limit	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark		Hz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg		1	893.29	42.58	-----	43.29	26.44	3.11	30.26	---	---	Peak	2	902.58	113.55	-16.78	130.00	113.75	26.45	3.15	30.29	---	Peak	3	959.26	42.63	-----	42.88	27.83	3.28	30.86	---	---	Peak
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LoRa	902~928MHz Band Edge @ 3m																																																																																											
	LoRa 500kHz DTS SF=7 CH16 914.5																																																																																											
	Horizontal	Vertical																																																																																										
Peak	Date: 1 Level (dBuV/m) Date: 2023-07-20 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL Project : RSNV 100.000MHz VSW 300.000kHz Mode : 2M0202-01 SN : #69 CBL6112D130550029 Plane : Y with Accessories SPT 500kHz power setting 0.5 <table><thead><tr><th>Peak</th><th>Freq</th><th>Level</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr></thead><tbody><tr><td>1</td><td>864.29</td><td>44.82</td><td>-----</td><td>47.11</td><td>26.46</td><td>3.11</td><td>31.86</td><td>--- Peak</td></tr><tr><td>2</td><td>914.58</td><td>114.88</td><td>-16.88</td><td>138.88</td><td>115.36</td><td>3.18</td><td>31.24</td><td>--- Peak</td></tr><tr><td>3</td><td>935.58</td><td>44.33</td><td>-----</td><td>45.41</td><td>26.85</td><td>3.13</td><td>31.16</td><td>--- Peak</td></tr></tbody></table>	Peak	Freq	Level	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark		MHz	dBuV/m	dB	dBuV/m	dB	cm	deg		1	864.29	44.82	-----	47.11	26.46	3.11	31.86	--- Peak	2	914.58	114.88	-16.88	138.88	115.36	3.18	31.24	--- Peak	3	935.58	44.33	-----	45.41	26.85	3.13	31.16	--- Peak	Date: 2 Level (dBuV/m) Date: 2023-07-20 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL Project : RSNV 100.000MHz VSW 300.000kHz Mode : 2M0202-01 SN : #69 CBL6112D130550029 Plane : Y with Accessories SPT 500kHz power setting 0.5 <table><thead><tr><th>Peak</th><th>Freq</th><th>Level</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr></thead><tbody><tr><td>1</td><td>869.32</td><td>48.85</td><td>-----</td><td>43.21</td><td>26.44</td><td>3.11</td><td>31.91</td><td>--- Peak</td></tr><tr><td>2</td><td>914.58</td><td>149.88</td><td>-20.12</td><td>139.88</td><td>111.24</td><td>3.18</td><td>31.24</td><td>--- Peak</td></tr><tr><td>3</td><td>959.29</td><td>41.78</td><td>-----</td><td>42.85</td><td>27.81</td><td>3.18</td><td>31.15</td><td>--- Peak</td></tr></tbody></table>	Peak	Freq	Level	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark		MHz	dBuV/m	dB	dBuV/m	dB	cm	deg		1	869.32	48.85	-----	43.21	26.44	3.11	31.91	--- Peak	2	914.58	149.88	-20.12	139.88	111.24	3.18	31.24	--- Peak	3	959.29	41.78	-----	42.85	27.81	3.18	31.15	--- Peak
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LoRa		902~928MHz Band Edge @ 3m	
		LoRa 500kHz DTS SF=7 CH31 926.5	



LoRa 500kHz DTS SF=7 (Harmonic @ 3m)

LoRa	902~928MHz Harmonic @ 3m									
LoRa 500kHz DTS SF=7 CH01 902.5										



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Peak	Date: 14 Level (dBuV/m) Date: 2023-02-12 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 2 SN : #69 0802JAG0138550029 Plane : Y with Accessories SF7 500kHz power setting 0.5 <table><tr><th></th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>1829.00</td><td>45.09</td><td>-28.91</td><td>74.00</td><td>66.63</td><td>38.97</td><td>5.42</td><td>57.95</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2743.58</td><td>53.38</td><td>-20.71</td><td>74.00</td><td>71.12</td><td>32.90</td><td>7.01</td><td>57.75</td><td>178</td><td>353</td><td>Peak</td></tr><tr><td>3</td><td>2743.58</td><td>58.48</td><td>-3.68</td><td>54.00</td><td>68.24</td><td>32.90</td><td>7.01</td><td>57.75</td><td>178</td><td>353</td><td>Average</td></tr></table> Date: 15 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 2 SN : #69 0802JAG0138550029 Plane : Y with Accessories SF7 500kHz power setting 0.5 <table><tr><th></th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>1829.00</td><td>48.40</td><td>-25.54</td><td>74.00</td><td>70.00</td><td>38.97</td><td>5.42</td><td>57.95</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2743.58</td><td>53.11</td><td>-21.89</td><td>74.00</td><td>68.95</td><td>32.90</td><td>7.01</td><td>57.75</td><td>180</td><td>59</td><td>Peak</td></tr><tr><td>3</td><td>2743.58</td><td>45.04</td><td>-8.06</td><td>54.00</td><td>63.78</td><td>32.90</td><td>7.01</td><td>57.75</td><td>180</td><td>59</td><td>Average</td></tr></table>												Freq	Level	Limit	Over	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		1	1829.00	45.09	-28.91	74.00	66.63	38.97	5.42	57.95	---	---	Peak	2	2743.58	53.38	-20.71	74.00	71.12	32.90	7.01	57.75	178	353	Peak	3	2743.58	58.48	-3.68	54.00	68.24	32.90	7.01	57.75	178	353	Average		Freq	Level	Limit	Over	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		1	1829.00	48.40	-25.54	74.00	70.00	38.97	5.42	57.95	---	---	Peak	2	2743.58	53.11	-21.89	74.00	68.95	32.90	7.01	57.75	180	59	Peak	3	2743.58	45.04	-8.06	54.00	63.78	32.90	7.01	57.75	180	59	Average
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Peak	Date: 14 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 3 SN : #69 G9EJW0136550029 Plane : Y with Accessories SF7 500kHz power setting 0.5 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>deg</th></tr><tr><td>1</td><td>1255.000</td><td>48.02</td><td>-25.00</td><td>74.00</td><td>69.36</td><td>31.89</td><td>5.48</td><td>57.91</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2779.500</td><td>53.99</td><td>-20.00</td><td>74.00</td><td>71.65</td><td>32.97</td><td>7.18</td><td>57.73</td><td>235</td><td>344 Peak</td></tr><tr><td>3</td><td>2779.500</td><td>58.68</td><td>-3.32</td><td>54.00</td><td>68.34</td><td>32.97</td><td>7.18</td><td>57.73</td><td>235</td><td>344 Average</td></tr><tr><td>4</td><td>3779.000</td><td>48.63</td><td>-25.17</td><td>74.00</td><td>64.52</td><td>33.97</td><td>6.33</td><td>57.95</td><td>---</td><td>Peak</td></tr><tr><td>5</td><td>4636.000</td><td>46.36</td><td>-27.64</td><td>74.00</td><td>68.48</td><td>34.52</td><td>9.26</td><td>57.98</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	1	1255.000	48.02	-25.00	74.00	69.36	31.89	5.48	57.91	---	Peak	2	2779.500	53.99	-20.00	74.00	71.65	32.97	7.18	57.73	235	344 Peak	3	2779.500	58.68	-3.32	54.00	68.34	32.97	7.18	57.73	235	344 Average	4	3779.000	48.63	-25.17	74.00	64.52	33.97	6.33	57.95	---	Peak	5	4636.000	46.36	-27.64	74.00	68.48	34.52	9.26	57.98	---	Peak	Date: 15 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 3 SN : #69 G9EJW0136550029 Plane : Y with Accessories SF7 500kHz power setting 0.5 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>deg</th></tr><tr><td>1</td><td>1255.000</td><td>47.31</td><td>-26.69</td><td>74.00</td><td>68.65</td><td>31.89</td><td>5.48</td><td>57.91</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2779.500</td><td>51.53</td><td>-22.47</td><td>74.00</td><td>69.39</td><td>32.97</td><td>7.18</td><td>57.73</td><td>266</td><td>269 Peak</td></tr><tr><td>3</td><td>2779.500</td><td>47.73</td><td>-4.27</td><td>54.00</td><td>65.39</td><td>32.97</td><td>7.18</td><td>57.73</td><td>266</td><td>269 Average</td></tr><tr><td>4</td><td>3779.000</td><td>49.43</td><td>-24.57</td><td>74.00</td><td>65.32</td><td>33.67</td><td>8.19</td><td>57.95</td><td>---</td><td>Peak</td></tr><tr><td>5</td><td>4636.000</td><td>45.32</td><td>-28.68</td><td>74.00</td><td>59.44</td><td>34.52</td><td>9.26</td><td>57.98</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	1	1255.000	47.31	-26.69	74.00	68.65	31.89	5.48	57.91	---	Peak	2	2779.500	51.53	-22.47	74.00	69.39	32.97	7.18	57.73	266	269 Peak	3	2779.500	47.73	-4.27	54.00	65.39	32.97	7.18	57.73	266	269 Average	4	3779.000	49.43	-24.57	74.00	65.32	33.67	8.19	57.95	---	Peak	5	4636.000	45.32	-28.68	74.00	59.44	34.52	9.26	57.98	---	Peak
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LoRa 500kHz DTS SF=11 (Band Edge @ 3m)

LoRa	902~928MHz Band Edge @ 3m																																																																																																															
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Peak	Date: 1 Date: 2023-07-20 Site : 03CH02-SZ Condition : PWR11 15C_LORA 3m LF: CBL6112D_35407_22 HORIZONTAL REBW: 100.000kHz VBW: 300.000kHz Project : 2N0202-01 Mode : Mode 4 SN : #69 GRESJAK0130550029 Plane : Y with Accessories SF11 500kHz power setting 4 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>Hz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>899.12</td><td>54.58</td><td>-----</td><td>56.13</td><td>26.68</td><td>3.15</td><td>31.38</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>903.38</td><td>116.84</td><td>-13.86</td><td>138.48</td><td>117.55</td><td>26.62</td><td>3.16</td><td>31.29</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>936.95</td><td>44.22</td><td>-----</td><td>45.29</td><td>26.86</td><td>3.23</td><td>31.16</td><td>---</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	Over	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Hz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg			1	899.12	54.58	-----	56.13	26.68	3.15	31.38	---	---	Peak	2	903.38	116.84	-13.86	138.48	117.55	26.62	3.16	31.29	---	Peak	3	936.95	44.22	-----	45.29	26.86	3.23	31.16	---	---	Peak	Date: 2 Date: 2023-07-20 Site : 03CH02-SZ Condition : PWR11 15C_LORA 3m LF: CBL6112D_35407_22 VERTICAL REBW: 100.000kHz VBW: 300.000kHz Project : 2N0202-01 Mode : Mode 4 SN : #69 GRESJAK0130550029 Plane : Y with Accessories SF11 500kHz power setting 4 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>Hz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>899.12</td><td>45.44</td><td>-----</td><td>46.99</td><td>26.68</td><td>3.15</td><td>31.38</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>903.38</td><td>111.86</td><td>-16.94</td><td>138.48</td><td>114.57</td><td>26.62</td><td>3.16</td><td>31.29</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>955.38</td><td>42.41</td><td>-----</td><td>43.29</td><td>26.99</td><td>3.27</td><td>31.14</td><td>---</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	Over	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Hz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg			1	899.12	45.44	-----	46.99	26.68	3.15	31.38	---	---	Peak	2	903.38	111.86	-16.94	138.48	114.57	26.62	3.16	31.29	---	Peak	3	955.38	42.41	-----	43.29	26.99	3.27	31.14	---	---	Peak
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Peak	Date: 1 Level (dBuV/m) Date: 2023-07-20 150.0 118.1 101.3 84.4 67.5 50.6 33.8 16.0 500 600 700 800 900 1000 Frequency (MHz) Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL PRTW 100.000kHz VBW 300.000kHz Project : 2N0202-01 Mode : Mode 0 SN : #69 CBL6112D130550029 Plane : Y with Accessories SF 11 500kHz power setting 1 <table><tr><th>Peak</th><th>Freq</th><th>Level</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>874.87</td><td>43.36</td><td>-----</td><td>45.46</td><td>26.58</td><td>3.12</td><td>31.72</td><td>--- Peak</td></tr><tr><td>2</td><td>914.58</td><td>114.88</td><td>-15.12</td><td>139.88</td><td>116.24</td><td>26.78</td><td>3.18</td><td>31.24 --- Peak</td></tr><tr><td>3</td><td>935.81</td><td>43.38</td><td>-----</td><td>46.47</td><td>26.64</td><td>3.23</td><td>31.18</td><td>--- Peak</td></tr></table>	Peak	Freq	Level	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark		MHz	dBuV/m	dB	dBuV/m	dB	cm	deg		1	874.87	43.36	-----	45.46	26.58	3.12	31.72	--- Peak	2	914.58	114.88	-15.12	139.88	116.24	26.78	3.18	31.24 --- Peak	3	935.81	43.38	-----	46.47	26.64	3.23	31.18	--- Peak	Date: 2 Level (dBuV/m) Date: 2023-07-20 150.0 118.1 101.3 84.4 67.5 50.6 33.8 16.0 500 600 700 800 900 1000 Frequency (MHz) Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL PRTW 100.000kHz VBW 300.000kHz Project : 2N0202-01 Mode : Mode 0 SN : #69 CBL6112D130550029 Plane : Y with Accessories SF 11 500kHz power setting 1 <table><tr><th>Peak</th><th>Freq</th><th>Level</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>885.54</td><td>48.98</td><td>-----</td><td>42.84</td><td>26.54</td><td>3.14</td><td>31.54</td><td>--- Peak</td></tr><tr><td>2</td><td>914.58</td><td>111.88</td><td>-16.12</td><td>138.88</td><td>113.24</td><td>26.78</td><td>3.18</td><td>31.24 --- Peak</td></tr><tr><td>3</td><td>936.35</td><td>42.16</td><td>-----</td><td>43.84</td><td>26.58</td><td>3.27</td><td>31.14</td><td>--- Peak</td></tr></table>	Peak	Freq	Level	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark		MHz	dBuV/m	dB	dBuV/m	dB	cm	deg		1	885.54	48.98	-----	42.84	26.54	3.14	31.54	--- Peak	2	914.58	111.88	-16.12	138.88	113.24	26.78	3.18	31.24 --- Peak	3	936.35	42.16	-----	43.84	26.58	3.27	31.14	--- Peak
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Peak	Date: 1 Date: 2023-07-20 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF: CBL6112D_35407_22 HORIZONTAL Project : R2N1 100.000MHz VSW: 300.000kHz Mode : 2N0202-01 SN : #69 CBL6112D130550029 Plane : Y with Accessories SF: 11 500kHz power setting -0.5 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>877.78</td><td>43.13</td><td>-----</td><td>45.17</td><td>26.51</td><td>3.13</td><td>31.68</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>926.59</td><td>114.47</td><td>-15.53</td><td>139.89</td><td>115.67</td><td>26.78</td><td>3.21</td><td>31.19</td><td>Peak</td></tr><tr><td>3</td><td>929.13</td><td>51.75</td><td>-----</td><td>52.89</td><td>26.82</td><td>3.22</td><td>31.18</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg		1	877.78	43.13	-----	45.17	26.51	3.13	31.68	---	Peak	2	926.59	114.47	-15.53	139.89	115.67	26.78	3.21	31.19	Peak	3	929.13	51.75	-----	52.89	26.82	3.22	31.18	---	Peak	Date: 2 Date: 2023-07-20 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF: CBL6112D_35407_22 VERTICAL Project : R2N1 100.000MHz VSW: 300.000kHz Mode : 2N0202-01 SN : #69 CBL6112D130550029 Plane : Y with Accessories SF: 11 500kHz power setting -0.5 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>898.15</td><td>39.62</td><td>-----</td><td>41.23</td><td>26.59</td><td>3.15</td><td>31.35</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>926.59</td><td>111.44</td><td>-16.56</td><td>138.00</td><td>112.64</td><td>26.78</td><td>3.21</td><td>31.19</td><td>Peak</td></tr><tr><td>3</td><td>929.19</td><td>59.91</td><td>-----</td><td>62.00</td><td>26.89</td><td>3.23</td><td>31.18</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg		1	898.15	39.62	-----	41.23	26.59	3.15	31.35	---	Peak	2	926.59	111.44	-16.56	138.00	112.64	26.78	3.21	31.19	Peak	3	929.19	59.91	-----	62.00	26.89	3.23	31.18	---	Peak
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2	926.59	114.47	-15.53	139.89	115.67	26.78	3.21	31.19	Peak																																																																																													
3	929.13	51.75	-----	52.89	26.82	3.22	31.18	---	Peak																																																																																													
Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark																																																																																													
MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg																																																																																														
1	898.15	39.62	-----	41.23	26.59	3.15	31.35	---	Peak																																																																																													
2	926.59	111.44	-16.56	138.00	112.64	26.78	3.21	31.19	Peak																																																																																													
3	929.19	59.91	-----	62.00	26.89	3.23	31.18	---	Peak																																																																																													



LoRa 500kHz DTS SF=11 (Harmonic @ 3m)

LoRa	902~928MHz Band Harmonic @ 3m																																																										
	LoRa 500kHz DTS SF=11 CH02 903.3																																																										
	Horizontal																																																										
Peak	Date: 15 Date: 2023-02-12 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 4 SN : #69 GB02JK0130550029 Plane : Y with Accessories SF11 500kHz power setting 4 <table><tr><th>Freq</th><th>Level</th><th>Line1</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th>dB</th><th>cm</th><th>deg</th><th>Remark</th></tr><tr><td>1</td><td>1806.68</td><td>46.92</td><td>-27.88</td><td>74.00</td><td>68.76</td><td>38.72</td><td>5.42</td><td>57.98</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2789.98</td><td>52.84</td><td>-21.18</td><td>74.00</td><td>78.86</td><td>32.83</td><td>6.92</td><td>57.77</td><td>238</td><td>339</td><td>Peak</td></tr><tr><td>3</td><td>2790.98</td><td>58.68</td><td>-15.48</td><td>54.00</td><td>68.62</td><td>32.83</td><td>6.92</td><td>57.77</td><td>238</td><td>339</td><td>Average</td></tr></table>											Freq	Level	Line1	Line	Level	Factor	Loss	Factor	dB	cm	deg	Remark	1	1806.68	46.92	-27.88	74.00	68.76	38.72	5.42	57.98	---	---	Peak	2	2789.98	52.84	-21.18	74.00	78.86	32.83	6.92	57.77	238	339	Peak	3	2790.98	58.68	-15.48	54.00	68.62	32.83	6.92	57.77	238	339	Average
	Freq	Level	Line1	Line	Level	Factor	Loss	Factor	dB	cm	deg	Remark																																															
1	1806.68	46.92	-27.88	74.00	68.76	38.72	5.42	57.98	---	---	Peak																																																
2	2789.98	52.84	-21.18	74.00	78.86	32.83	6.92	57.77	238	339	Peak																																																
3	2790.98	58.68	-15.48	54.00	68.62	32.83	6.92	57.77	238	339	Average																																																
Date: 16 Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 4 SN : #69 GB02JK0130550029 Plane : Y with Accessories SF11 500kHz power setting 4 <table><tr><th>Freq</th><th>Level</th><th>Line1</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th>dB</th><th>cm</th><th>deg</th><th>Remark</th></tr><tr><td>1</td><td>1806.68</td><td>48.48</td><td>-25.68</td><td>74.00</td><td>78.24</td><td>38.72</td><td>5.42</td><td>57.98</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2789.98</td><td>51.19</td><td>-22.81</td><td>74.00</td><td>69.21</td><td>32.83</td><td>6.92</td><td>57.77</td><td>168</td><td>57</td><td>Peak</td></tr><tr><td>3</td><td>2790.98</td><td>48.21</td><td>-15.77</td><td>54.00</td><td>66.25</td><td>32.83</td><td>6.92</td><td>57.77</td><td>168</td><td>57</td><td>Average</td></tr></table>											Freq	Level	Line1	Line	Level	Factor	Loss	Factor	dB	cm	deg	Remark	1	1806.68	48.48	-25.68	74.00	78.24	38.72	5.42	57.98	---	---	Peak	2	2789.98	51.19	-22.81	74.00	69.21	32.83	6.92	57.77	168	57	Peak	3	2790.98	48.21	-15.77	54.00	66.25	32.83	6.92	57.77	168	57	Average	
Freq	Level	Line1	Line	Level	Factor	Loss	Factor	dB	cm	deg	Remark																																																
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2	2789.98	51.19	-22.81	74.00	69.21	32.83	6.92	57.77	168	57	Peak																																																
3	2790.98	48.21	-15.77	54.00	66.25	32.83	6.92	57.77	168	57	Average																																																



LoRa	902~928MHz Harmonic @ 3m																																																																																																													
	LoRa 500kHz DTS SF=11 CH16 914.5																																																																																																													
	Horizontal					Vertical																																																																																																								
Peak	Date: 14 Level (dBuV/m) Date: 2023-02-12 PEAK_74 Avg_54 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 5 SN : #69 GREZAK013050029 Plane : Y with Accessories SF11 500kHz power setting 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>Hz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>1029.00</td><td>47.47</td><td>-26.53</td><td>74.00</td><td>69.81</td><td>38.97</td><td>5.42</td><td>57.93</td><td>124 323 Peak</td></tr><tr><td>2</td><td>2743.58</td><td>54.71</td><td>-35.29</td><td>74.00</td><td>72.55</td><td>32.98</td><td>7.01</td><td>57.75</td><td>144 344 Peak</td></tr><tr><td>3</td><td>2743.58</td><td>58.37</td><td>-3.63</td><td>54.00</td><td>68.21</td><td>32.98</td><td>7.01</td><td>57.75</td><td>144 344 Average</td></tr></table>					Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Hz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	1	1029.00	47.47	-26.53	74.00	69.81	38.97	5.42	57.93	124 323 Peak	2	2743.58	54.71	-35.29	74.00	72.55	32.98	7.01	57.75	144 344 Peak	3	2743.58	58.37	-3.63	54.00	68.21	32.98	7.01	57.75	144 344 Average	Date: 15 Level (dBuV/m) Date: 2023-02-13 PEAK_74 Avg_54 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 5 SN : #69 GREZAK013050029 Plane : Y with Accessories SF11 500kHz power setting 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>Hz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>1029.00</td><td>49.43</td><td>-24.57</td><td>74.00</td><td>70.97</td><td>38.97</td><td>5.42</td><td>57.93</td><td>122 267 Peak</td></tr><tr><td>2</td><td>2743.58</td><td>52.81</td><td>-21.19</td><td>74.00</td><td>70.65</td><td>32.98</td><td>7.01</td><td>57.75</td><td>378 66 Peak</td></tr><tr><td>3</td><td>2743.58</td><td>47.93</td><td>-6.07</td><td>54.00</td><td>65.77</td><td>32.98</td><td>7.01</td><td>57.75</td><td>378 66 Average</td></tr></table>					Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Hz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	1	1029.00	49.43	-24.57	74.00	70.97	38.97	5.42	57.93	122 267 Peak	2	2743.58	52.81	-21.19	74.00	70.65	32.98	7.01	57.75	378 66 Peak	3	2743.58	47.93	-6.07	54.00	65.77	32.98	7.01	57.75	378 66 Average
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark																																																																																																				
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LoRa	902~928MHz Harmonic @ 3m																																																																																																																																
	LoRa 500kHz DTS SF=11 CH31 926.5																																																																																																																																
	Horizontal	Vertical																																																																																																																															
Peak	Date: 16 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 6 SN : #69 G8EJW0136550029 Plane : Y with Accessories SF11 500kHz power setting 0.5 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>Level Factor</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dBm</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>1853.000</td><td>47.53</td><td>-26.47</td><td>74.00</td><td>68.87</td><td>31.89</td><td>5.48</td><td>57.91</td><td>122</td><td>525 Peak</td></tr><tr><td>2</td><td>2779.500</td><td>56.56</td><td>-19.15</td><td>74.00</td><td>72.58</td><td>32.97</td><td>7.18</td><td>57.73</td><td>163</td><td>347 Peak</td></tr><tr><td>3</td><td>2779.500</td><td>58.49</td><td>-13.51</td><td>54.00</td><td>68.15</td><td>32.97</td><td>7.18</td><td>57.73</td><td>163</td><td>347 Average</td></tr><tr><td>4</td><td>3789.000</td><td>47.79</td><td>-26.34</td><td>74.00</td><td>63.85</td><td>33.67</td><td>6.15</td><td>57.95</td><td>---</td><td>Peak</td></tr></table> Date: 17 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 6 SN : #69 G8EJW0136550029 Plane : Y with Accessories SF11 500kHz power setting 0.5 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>Level Factor</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dBm</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>1853.000</td><td>49.40</td><td>-24.95</td><td>74.00</td><td>78.39</td><td>31.89</td><td>5.48</td><td>57.91</td><td>111</td><td>273 Peak</td></tr><tr><td>2</td><td>2779.500</td><td>53.89</td><td>-20.91</td><td>74.00</td><td>78.75</td><td>32.97</td><td>7.18</td><td>57.73</td><td>336</td><td>75 Peak</td></tr><tr><td>3</td><td>2779.500</td><td>48.58</td><td>-15.98</td><td>54.00</td><td>66.14</td><td>32.97</td><td>7.18</td><td>57.73</td><td>336</td><td>75 Average</td></tr><tr><td>4</td><td>3789.000</td><td>48.45</td><td>-21.55</td><td>74.00</td><td>66.14</td><td>33.67</td><td>6.15</td><td>57.95</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	Line	Level Factor	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dBm	dB	cm	deg		1	1853.000	47.53	-26.47	74.00	68.87	31.89	5.48	57.91	122	525 Peak	2	2779.500	56.56	-19.15	74.00	72.58	32.97	7.18	57.73	163	347 Peak	3	2779.500	58.49	-13.51	54.00	68.15	32.97	7.18	57.73	163	347 Average	4	3789.000	47.79	-26.34	74.00	63.85	33.67	6.15	57.95	---	Peak	Freq	Level	Limit	Line	Level Factor	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dBm	dB	cm	deg		1	1853.000	49.40	-24.95	74.00	78.39	31.89	5.48	57.91	111	273 Peak	2	2779.500	53.89	-20.91	74.00	78.75	32.97	7.18	57.73	336	75 Peak	3	2779.500	48.58	-15.98	54.00	66.14	32.97	7.18	57.73	336	75 Average	4	3789.000	48.45	-21.55	74.00	66.14	33.67	6.15	57.95	---	Peak
Freq	Level	Limit	Line	Level Factor	Cable	Preamp	A/Pos	T/Pos	Remark																																																																																																																								
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OFDM-LR 1.4kbps (Band Edge @ 3m)

LoRa	902~928MHz Band Edge @ 3m																																																																																											
	OFDM-LR 1.4kbps CH02 903.3																																																																																											
	Horizontal	Vertical																																																																																										
Peak	Date: 1 Date: 2023-07-20 Site : 03CH02-SZ Condition : PWR1 ISC_LORA 3m LF CBL6112D_35A07_22 HORIZONTAL REBW 100.000kHz VBW 300.000kHz Project : 2N0202-01 Mode : Mode 25 SN : #69 GRESJAK0130550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting 4.5 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>Level Factor</th><th>Cable Loss Factor</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>Hz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>900.89</td><td>55.55</td><td>-----</td><td>57.18</td><td>26.68</td><td>3.15</td><td>31.38</td><td>--- Peak</td></tr><tr><td>2</td><td>903.38</td><td>116.25</td><td>-13.75</td><td>130.00</td><td>117.76</td><td>26.62</td><td>3.16</td><td>31.29 --- Peak</td></tr><tr><td>3</td><td>942.77</td><td>64.77</td><td>-----</td><td>45.77</td><td>26.98</td><td>3.24</td><td>31.14</td><td>--- Peak</td></tr></table>	Freq	Level	Limit	Line	Level Factor	Cable Loss Factor	A/Pos	T/Pos	Remark	Hz	dBuV/m	dB	dBuV/m	dBuV	dB	cm	deg		1	900.89	55.55	-----	57.18	26.68	3.15	31.38	--- Peak	2	903.38	116.25	-13.75	130.00	117.76	26.62	3.16	31.29 --- Peak	3	942.77	64.77	-----	45.77	26.98	3.24	31.14	--- Peak	Date: 2 Date: 2023-07-20 Site : 03CH02-SZ Condition : PWR1 ISC_LORA 3m LF CBL6112D_35A07_22 VERTICAL REBW 100.000kHz VBW 300.000kHz Project : 2N0202-01 Mode : Mode 25 SN : #69 GRESJAK0130550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting 4.5 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>Level Factor</th><th>Cable Loss Factor</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>Hz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>900.89</td><td>52.20</td><td>-----</td><td>53.75</td><td>26.68</td><td>3.15</td><td>31.38</td><td>--- Peak</td></tr><tr><td>2</td><td>903.38</td><td>111.82</td><td>-16.98</td><td>130.80</td><td>114.53</td><td>26.62</td><td>3.16</td><td>31.29 --- Peak</td></tr><tr><td>3</td><td>956.35</td><td>42.92</td><td>-----</td><td>43.88</td><td>26.99</td><td>3.27</td><td>31.14</td><td>--- Peak</td></tr></table>	Freq	Level	Limit	Line	Level Factor	Cable Loss Factor	A/Pos	T/Pos	Remark	Hz	dBuV/m	dB	dBuV/m	dBuV	dB	cm	deg		1	900.89	52.20	-----	53.75	26.68	3.15	31.38	--- Peak	2	903.38	111.82	-16.98	130.80	114.53	26.62	3.16	31.29 --- Peak	3	956.35	42.92	-----	43.88	26.99	3.27	31.14	--- Peak
Freq	Level	Limit	Line	Level Factor	Cable Loss Factor	A/Pos	T/Pos	Remark																																																																																				
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Peak	Date: 1 Date: 2023-07-20 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF, CBL6112D_35407_22 HORIZONTAL FREQ: 100.000MHz VSW: 300.000MHz Project : 2N0202-01 Mode : Mode 2B SN : #69 CBL6112D130550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>899.12</td><td>43.55</td><td>-----</td><td>45.18</td><td>26.68</td><td>3.15</td><td>31.38</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>914.58</td><td>114.85</td><td>-15.15</td><td>139.88</td><td>116.21</td><td>26.78</td><td>3.18</td><td>31.24</td><td>Peak</td></tr><tr><td>3</td><td>935.81</td><td>43.79</td><td>-----</td><td>44.85</td><td>26.84</td><td>3.13</td><td>31.18</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg		1	899.12	43.55	-----	45.18	26.68	3.15	31.38	---	Peak	2	914.58	114.85	-15.15	139.88	116.21	26.78	3.18	31.24	Peak	3	935.81	43.79	-----	44.85	26.84	3.13	31.18	---	Peak	Date: 2 Date: 2023-07-20 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF, CBL6112D_35407_22 VERTICAL FREQ: 100.000MHz VSW: 300.000MHz Project : 2N0202-01 Mode : Mode 2B SN : #69 CBL6112D130550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>874.87</td><td>48.59</td><td>-----</td><td>42.69</td><td>26.58</td><td>3.12</td><td>31.72</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>914.58</td><td>112.88</td><td>-17.92</td><td>139.88</td><td>113.44</td><td>26.78</td><td>3.18</td><td>31.24</td><td>Peak</td></tr><tr><td>3</td><td>935.14</td><td>41.46</td><td>-----</td><td>42.54</td><td>27.86</td><td>3.18</td><td>31.17</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg		1	874.87	48.59	-----	42.69	26.58	3.12	31.72	---	Peak	2	914.58	112.88	-17.92	139.88	113.44	26.78	3.18	31.24	Peak	3	935.14	41.46	-----	42.54	27.86	3.18	31.17	---	Peak
Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark																																																																																													
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3	935.81	43.79	-----	44.85	26.84	3.13	31.18	---	Peak																																																																																													
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LoRa	902~928MHz Band Edge @ 3m																																																																																																			
	OFDM-LR 1.4kbps CH31 926.5																																																																																																			
	Horizontal	Vertical																																																																																																		
Peak	Date: 1 Date: 2023-07-20 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF: CBL6112D_35407_22 HORIZONTAL Project : R2N1 100.000MHz VSW: 300.000kHz Mode : 2N0202-01 SN : #69 C062JK0130550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting-1 <table><tr><th>Freq</th><th>Level</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>873.98</td><td>41.63</td><td>-----</td><td>43.73</td><td>26.58</td><td>3.12</td><td>31.72</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>926.58</td><td>113.92</td><td>-16.88</td><td>138.88</td><td>115.12</td><td>26.78</td><td>3.21</td><td>31.19</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>929.19</td><td>37.48</td><td>-----</td><td>58.65</td><td>26.88</td><td>3.13</td><td>31.18</td><td>---</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dB	cm	deg		1	873.98	41.63	-----	43.73	26.58	3.12	31.72	---	---	Peak	2	926.58	113.92	-16.88	138.88	115.12	26.78	3.21	31.19	---	Peak	3	929.19	37.48	-----	58.65	26.88	3.13	31.18	---	---	Peak	Date: 2 Date: 2023-07-20 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF: CBL6112D_35407_22 VERTICAL Project : R2N1 100.000MHz VSW: 300.000kHz Mode : 2N0202-01 SN : #69 C062JK0130550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting-1 <table><tr><th>Freq</th><th>Level</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>893.38</td><td>48.15</td><td>-----</td><td>41.83</td><td>26.57</td><td>3.14</td><td>31.39</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>926.58</td><td>118.97</td><td>-19.83</td><td>138.88</td><td>112.17</td><td>26.78</td><td>3.21</td><td>31.19</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>929.19</td><td>35.36</td><td>-----</td><td>56.35</td><td>26.88</td><td>3.13</td><td>31.18</td><td>---</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dB	cm	deg		1	893.38	48.15	-----	41.83	26.57	3.14	31.39	---	---	Peak	2	926.58	118.97	-19.83	138.88	112.17	26.78	3.21	31.19	---	Peak	3	929.19	35.36	-----	56.35	26.88	3.13	31.18	---	---	Peak
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OFDM-LR 1.4kbps (Harmonic @ 3m)

LoRa	902~928MHz Harmonic @ 3m	
	OFDM-LR 1.4kbps CH02 903.3	
	Horizontal	Vertical
Peak	Date: 14 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 Frequency (MHz) 1000 2000 4000 6000 8200 10000 PEAK_T4 AVG_S4 Site : 03CH02-SZ Condition : PEAK_74.3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 25 SN : #69 G0B2J00130550029 Plane : Y with Accessories OTM-LR 1.4kbps power setting 4.5 Over Limit ReadAntenna Cable Preamp A/Pos T/Pos Freq Level Line Level Factor Loss Factor MHz dBuV/m dB dBuV/m dBuV/m dB dB cm deg 1 1806.68 46.88 -27.28 74.00 68.64 38.72 5.42 57.98 --- --- Peak 2 2789.08 53.55 -28.45 74.00 71.57 32.83 6.92 57.77 115 284 Peak 3 2789.08 58.44 -31.58 54.00 68.46 32.83 6.92 57.77 115 284 Average 4 3613.28 44.42 -29.58 74.00 68.88 33.68 8.88 58.86 --- --- Peak 5 4535.58 45.74 -29.58 74.00 59.34 34.59 9.11 57.98 --- --- Peak	Date: 15 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 Frequency (MHz) 1000 2000 4000 6000 8200 10000 PEAK_T4 AVG_S4 Site : 03CH02-SZ Condition : PEAK_74.3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 25 SN : #69 G0B2J00130550029 Plane : Y with Accessories OTM-LR 1.4kbps power setting 4.5 Over Limit ReadAntenna Cable Preamp A/Pos T/Pos Freq Level Line Level Factor Loss Factor MHz dBuV/m dB dBuV/m dBuV/m dB dB cm deg 1 1806.68 48.81 -25.99 74.00 69.85 38.72 5.42 57.98 --- --- Peak 2 2789.08 53.84 -28.96 74.00 71.86 32.83 6.92 57.77 388 76 Peak 3 2789.08 60.58 -31.65 54.00 67.58 32.83 6.92 57.77 388 76 Average 4 3613.28 44.78 -29.22 74.00 63.18 33.68 8.88 58.86 --- --- Peak 5 4535.58 46.27 -27.73 74.00 68.47 34.59 9.11 57.98 --- --- Peak



LoRa	902~928MHz Harmonic @ 3m																																																																																																																																																							
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Peak	Date: 14 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 26 SN : #69 G86JAG138550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB</th><th>dB</th><th>deg</th><th></th></tr><tr><td>1</td><td>1829.00</td><td>45.98</td><td>-28.82</td><td>74.00</td><td>67.52</td><td>58.97</td><td>5.42</td><td>57.95</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2743.58</td><td>55.45</td><td>-20.55</td><td>74.00</td><td>71.29</td><td>52.90</td><td>7.81</td><td>57.75</td><td>191</td><td>200</td><td>Peak</td></tr><tr><td>3</td><td>2743.58</td><td>58.62</td><td>-3.38</td><td>54.00</td><td>68.46</td><td>52.90</td><td>7.81</td><td>57.75</td><td>191</td><td>200</td><td>Average</td></tr><tr><td>4</td><td>3029.00</td><td>46.87</td><td>-27.13</td><td>74.00</td><td>63.12</td><td>53.62</td><td>8.14</td><td>58.81</td><td>---</td><td>Peak</td></tr><tr><td>5</td><td>4573.00</td><td>45.18</td><td>-28.82</td><td>74.00</td><td>59.31</td><td>54.56</td><td>9.21</td><td>57.98</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	Line	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	deg		1	1829.00	45.98	-28.82	74.00	67.52	58.97	5.42	57.95	---	Peak	2	2743.58	55.45	-20.55	74.00	71.29	52.90	7.81	57.75	191	200	Peak	3	2743.58	58.62	-3.38	54.00	68.46	52.90	7.81	57.75	191	200	Average	4	3029.00	46.87	-27.13	74.00	63.12	53.62	8.14	58.81	---	Peak	5	4573.00	45.18	-28.82	74.00	59.31	54.56	9.21	57.98	---	Peak	Date: 15 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 26 SN : #69 G86JAG138550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB</th><th>dB</th><th>deg</th><th></th></tr><tr><td>1</td><td>1829.00</td><td>49.10</td><td>-24.81</td><td>74.00</td><td>78.73</td><td>58.97</td><td>5.42</td><td>57.95</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2743.58</td><td>52.28</td><td>-21.72</td><td>74.00</td><td>78.32</td><td>52.90</td><td>7.81</td><td>57.75</td><td>339</td><td>270</td><td>Peak</td></tr><tr><td>3</td><td>2743.58</td><td>49.11</td><td>-4.89</td><td>54.00</td><td>66.95</td><td>52.90</td><td>7.81</td><td>57.75</td><td>339</td><td>270</td><td>Average</td></tr><tr><td>4</td><td>3029.00</td><td>47.37</td><td>-26.63</td><td>74.00</td><td>63.62</td><td>53.62</td><td>8.14</td><td>58.81</td><td>---</td><td>Peak</td></tr><tr><td>5</td><td>4573.00</td><td>46.54</td><td>-27.46</td><td>74.00</td><td>60.67</td><td>54.56</td><td>9.21</td><td>57.98</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	Line	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	deg		1	1829.00	49.10	-24.81	74.00	78.73	58.97	5.42	57.95	---	Peak	2	2743.58	52.28	-21.72	74.00	78.32	52.90	7.81	57.75	339	270	Peak	3	2743.58	49.11	-4.89	54.00	66.95	52.90	7.81	57.75	339	270	Average	4	3029.00	47.37	-26.63	74.00	63.62	53.62	8.14	58.81	---	Peak	5	4573.00	46.54	-27.46	74.00	60.67	54.56	9.21	57.98	---	Peak
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Peak	Date: 18 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 27 SN : #69 G982JAG138550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting -1 <table><tr><th>Peak</th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>dBuV/m</th><th></th><th></th><th></th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>1853.00</td><td>45.41</td><td>-28.59</td><td>74.00</td><td>66.75</td><td>31.89</td><td>5.48</td><td>57.91</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2779.58</td><td>52.08</td><td>-21.48</td><td>74.00</td><td>78.16</td><td>32.37</td><td>7.18</td><td>57.73</td><td>148</td><td>198</td><td>Peak</td></tr><tr><td>3</td><td>2779.58</td><td>49.88</td><td>-4.32</td><td>54.00</td><td>66.74</td><td>32.37</td><td>7.18</td><td>57.73</td><td>148</td><td>198</td><td>Average</td></tr><tr><td>4</td><td>3787.00</td><td>47.11</td><td>-26.89</td><td>74.00</td><td>63.28</td><td>33.37</td><td>8.33</td><td>57.95</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>5</td><td>4631.00</td><td>45.51</td><td>-28.49</td><td>74.00</td><td>59.63</td><td>34.32</td><td>9.26</td><td>57.98</td><td>---</td><td>---</td><td>Peak</td></tr></table> Date: 19 Level (dBuV/m) Date: 2023-02-13 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 27 SN : #69 G982JAG138550029 Plane : Y with Accessories OFDM-LR 1.4kbps power setting -1 <table><tr><th>Peak</th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>dBuV/m</th><th></th><th></th><th></th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>1853.00</td><td>47.52</td><td>-26.48</td><td>74.00</td><td>68.86</td><td>31.89</td><td>5.48</td><td>57.91</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>2779.58</td><td>56.52</td><td>-21.43</td><td>74.00</td><td>68.23</td><td>32.37</td><td>7.18</td><td>57.73</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>3787.00</td><td>46.95</td><td>-27.05</td><td>74.00</td><td>63.84</td><td>33.67</td><td>8.19</td><td>57.95</td><td>---</td><td>---</td><td>Peak</td></tr><tr><td>4</td><td>4631.00</td><td>44.41</td><td>-29.58</td><td>74.00</td><td>58.54</td><td>34.32</td><td>9.26</td><td>57.98</td><td>---</td><td>---</td><td>Peak</td></tr></table>											Peak	Freq	Level	Limit	Over	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	dBuV/m				dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	1	1853.00	45.41	-28.59	74.00	66.75	31.89	5.48	57.91	---	---	Peak	2	2779.58	52.08	-21.48	74.00	78.16	32.37	7.18	57.73	148	198	Peak	3	2779.58	49.88	-4.32	54.00	66.74	32.37	7.18	57.73	148	198	Average	4	3787.00	47.11	-26.89	74.00	63.28	33.37	8.33	57.95	---	---	Peak	5	4631.00	45.51	-28.49	74.00	59.63	34.32	9.26	57.98	---	---	Peak	Peak	Freq	Level	Limit	Over	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	dBuV/m				dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	1	1853.00	47.52	-26.48	74.00	68.86	31.89	5.48	57.91	---	---	Peak	2	2779.58	56.52	-21.43	74.00	68.23	32.37	7.18	57.73	---	---	Peak	3	3787.00	46.95	-27.05	74.00	63.84	33.67	8.19	57.95	---	---	Peak	4	4631.00	44.41	-29.58	74.00	58.54	34.32	9.26	57.98	---	---	Peak
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LoRa 500KHz DTS SF=7 (Below 1GHz @ 3m)

LoRa	902.5~926.5 Below 1GHz @ 3m																																																																																																											
ANT	LoRa 500KHz DTS SF=7 CH31 926.5																																																																																																											
	Horizontal	Vertical																																																																																																										
Peak	Date: 1 Date: 2023-07-21 Site : 03CH02-SZ Condition : PMUT-15C_LORA-3m LF_CBL6112D_35407_22 HORIZONTAL Project : 2N0202-01 Mode : Mode 3 SN : #69 G0B2AK0130550029 Plane : Y with Accessories SPT 500kHz power setting -0.5 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>Limit</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th></th><th></th></tr><tr><td>1</td><td>112.45</td><td>29.89</td><td>-14.41</td><td>43.58</td><td>42.55</td><td>17.54</td><td>1.12</td><td>32.12</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>172.59</td><td>29.12</td><td>-14.38</td><td>43.58</td><td>44.82</td><td>15.58</td><td>1.38</td><td>31.78</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>926.58</td><td>114.11</td><td>68.21</td><td>46.88</td><td>115.41</td><td>26.78</td><td>3.21</td><td>31.19</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Over	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor			1	112.45	29.89	-14.41	43.58	42.55	17.54	1.12	32.12	---	Peak	2	172.59	29.12	-14.38	43.58	44.82	15.58	1.38	31.78	---	Peak	3	926.58	114.11	68.21	46.88	115.41	26.78	3.21	31.19	---	Peak	Date: 2 Date: 2023-07-21 Site : 03CH02-SZ Condition : PMUT-15C_LORA-3m LF_CBL6112D_35407_22 VERTICAL Project : 2N0202-01 Mode : Mode 3 SN : #69 G0B2AK0130550029 Plane : Y with Accessories SPT 500kHz power setting -0.5 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Line</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>Limit</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th></th><th></th></tr><tr><td>1</td><td>111.48</td><td>26.76</td><td>-16.74</td><td>43.58</td><td>48.27</td><td>17.49</td><td>1.12</td><td>32.12</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>171.62</td><td>28.61</td><td>-14.89</td><td>43.58</td><td>43.47</td><td>15.54</td><td>1.38</td><td>31.78</td><td>---</td><td>Peak</td></tr><tr><td>3</td><td>926.58</td><td>189.77</td><td>63.77</td><td>46.88</td><td>118.97</td><td>26.78</td><td>3.21</td><td>31.19</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Over	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor			1	111.48	26.76	-16.74	43.58	48.27	17.49	1.12	32.12	---	Peak	2	171.62	28.61	-14.89	43.58	43.47	15.54	1.38	31.78	---	Peak	3	926.58	189.77	63.77	46.88	118.97	26.78	3.21	31.19	---	Peak
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OFDM-LR 1.4Kbps (Below 1GHz @ 3m)

LoRa	902.5~926.5 Below 1GHz @ 3m																																																																																																															
ANT	OFDM-LR 1.4Kbps CH16 914.5																																																																																																															
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Peak	Date: 3 Level (dBuV/m) Date: 2023-07-24 Site : 03CH02-SZ Condition : PMUT_15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL Project : 2W0202-01 Mode : Mode 20 SN : #69 G0B2JK0130550029 Plane : Y with Accessories OFDM-LR 1.4Kbps power setting 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>242.43</td><td>33.51</td><td>-12.49</td><td>46.00</td><td>46.21</td><td>17.69</td><td>1.62</td><td>32.81</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>326.62</td><td>38.73</td><td>-15.27</td><td>46.00</td><td>41.82</td><td>19.78</td><td>1.88</td><td>31.95</td><td>---</td><td>Peak</td></tr><tr><td>3 *</td><td>924.98</td><td>114.05</td><td>-65.85</td><td>46.00</td><td>116.21</td><td>26.78</td><td>3.18</td><td>31.24</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		1	242.43	33.51	-12.49	46.00	46.21	17.69	1.62	32.81	---	Peak	2	326.62	38.73	-15.27	46.00	41.82	19.78	1.88	31.95	---	Peak	3 *	924.98	114.05	-65.85	46.00	116.21	26.78	3.18	31.24	---	Peak	Date: 4 Level (dBuV/m) Date: 2023-07-24 Site : 03CH02-SZ Condition : PMUT_15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL Project : 2W0202-01 Mode : Mode 20 SN : #69 G0B2JK0130550029 Plane : Y with Accessories OFDM-LR 1.4Kbps power setting 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>242.43</td><td>27.79</td><td>-18.21</td><td>46.00</td><td>48.49</td><td>17.69</td><td>1.62</td><td>32.81</td><td>---</td><td>Peak</td></tr><tr><td>2</td><td>329.73</td><td>28.48</td><td>-17.52</td><td>46.00</td><td>38.69</td><td>19.85</td><td>1.88</td><td>31.94</td><td>---</td><td>Peak</td></tr><tr><td>3 *</td><td>924.98</td><td>112.06</td><td>-66.89</td><td>46.00</td><td>113.44</td><td>26.78</td><td>3.18</td><td>31.24</td><td>---</td><td>Peak</td></tr></table>	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		1	242.43	27.79	-18.21	46.00	48.49	17.69	1.62	32.81	---	Peak	2	329.73	28.48	-17.52	46.00	38.69	19.85	1.88	31.94	---	Peak	3 *	924.98	112.06	-66.89	46.00	113.44	26.78	3.18	31.24	---	Peak
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