Prüfbericht-Nr.: *Test report no.:*	**DE22JF8U 001**	**Auftrags-Nr.:** *Order no.:*	**168382800** **P00257162**	**Seite 1 von 25** *Page 1 of 25*
Kunden-Referenz-Nr.: *Client reference no.:*	**N/A**	**Auftragsdatum:** *Order date:*	2022-07-20	
Auftraggeber: *Client:*	**KERLINK SA** 1, Rue Jacqueline Auriol 35235 Thorigne-Fouillard FRANCE			
Prüfgegenstand: *Test item:*	Wirnet™ iZeptoCell			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	PDTIOT-IZEE900 (Trademark: Kerlink)			
Auftrags-Inhalt: *Order content:*	Test Report			
Prüfgrundlage: *Test specification:*	47 CFR 15.247 47 CFR 15.207 47 CFR 15.209		RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 February 2021	

Wareneingangsdatum: *Date of sample receipt:*	2022-07-25	Please refer to Photo Document
Prüfmuster-Nr.: *Test sample no:*	A003273434-001~002	
Prüfzeitraum: *Testing period:*	2022-07-28 – 2022-09-05	
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result*:*	Pass	

geprüft von: *tested by:*	X Andy Yan	**genehmigt von:** *authorized by:*	X Hardy Suo
Datum: *Date:* 2022-09-07		**Ausstellungsdatum:** *Issue date:* 2022-09-09	
Stellung */ Position:*	**Sachverständige(r)/Expert**	**Stellung** */ Position:*	**Sachverständige(r)/Expert**

Sonstiges */ Other:* FCC ID: 2AFYS-KLKZEE900
IC: 20637-KLKZEE900 HVIN: PDTIOT-IZEE900

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: *Pass*

5.1.2 MAXIMUM CONDUCTED OUTPUT POWER
RESULT: *Pass*

5.1.3 CONDUCTED POWER SPECTRAL DENSITY
RESULT: *Pass*

5.1.4 6DB BANDWIDTH
RESULT: *Pass*

5.1.5 20DB BANDWIDTH
RESULT: *Pass*

5.1.6 99% BANDWIDTH
RESULT: *Pass*

5.1.7 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: *Pass*

5.1.8 RADIATED SPURIOUS EMISSION
RESULT: *Pass*

5.1.9 CARRIER FREQUENCY SEPARATION
RESULT: *Pass*

5.1.10 NUMBER OF HOPPING FREQUENCY
RESULT: *Pass*

5.1.11 TIME OF OCCUPANCY
RESULT: *Pass*

5.1.12 CONDUCTED EMISSION ON AC MAINS
RESULT: *Pass*

Contents

1 General Remarks

1.1 Complementary Materials

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

Appendix A: Test Results

Appendix B: Photographs of the Test Set-up

1.2 List of Document Change

No.	Report No.	Description
1	DE22JF8U 001	First released.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China
FCC Registration No.: 694916 & IC Registration Number: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (TS8997)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until (DD.MM.YYYY)**
Signal Analyzer	R&S	FSV 40	101441	01.08.2023
OSP	R&S	OSP 150	101017	02.12.2022
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A
Power Meter	R&S	NRP2	107105	02.12.2022
Wideband Power Sensor	R&S	NRP-Z81	105677	01.08.2023
Shielding Room 8#	Albatross	SR8	APC17151-SR8	22.06.2024
Unwanted Emission Testing (TS9975)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until (DD.MM.YYYY)**
EMI Test Receiver	R&S	ESR 7	102021	02.08.2023

Signal Analyzer	R&S	FSV 40	101439	01.08.2023
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	01.08.2023
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	02.08.2023
Amplifier	R&S	SCU-18F	180070	02.08.2023
Amplifier	R&S	SCU40A	100475	02.08.2023
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	06.08.2024
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	06.08.2024
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	08.09.2022
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	06.08.2024
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	22.06.2024
Conducted Emission				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until** (DD.MM.YYYY)
EMI Test Receiver	R&S	ESR3	102680	27.02.2023
Artificial Mains Network	R&S	ENV216	101445	27.02.2023
EMC32 test software	R&S	EMC32 (Ver.10.50.00)	N/A	N/A

2.3 Traceability

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

2.4 Calibration

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

2.5 Measurement Uncertainty

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

Parameter	Uncertainty (k=2)
Occupied Channel Bandwidth	± 2.08 %
RF output power, conducted	± 0.99 dB
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	± 4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

2.6 Location of Original Data

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

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The Wirnet ™iZeptoCell Ethernet is the ideal gateway to support you in your smart city, smart building or every smart project that requests dedicated indoor coverage and/or network densification, providing both a unique superior LoRa® coverage and operational excellence with Ethernet backhaul.

Following LoRA's configurations are used in the EUT:

Data Rate	Configuration	Indicative physical bit rate [bit/sec]
1	LoRa Modulation: SF9 / Bandwidth 125 kHz	1760
8	LoRa Modulation: SF12 / Bandwidth 500 kHz	980
9	LoRa Modulation: SF11 / Bandwidth 500 kHz	1760
10	LoRa Modulation: SF10 / Bandwidth 500 kHz	3900
11	LoRa Modulation: SF9 / Bandwidth 500 kHz	7000
12	LoRa Modulation: SF8 / Bandwidth 500 kHz	12500
13	LoRa Modulation: SF7 / Bandwidth 500 kHz	21900

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

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	**Value**
Kind of Equipment	Wirnet™ iZeptoCell
Type Designation	PDTIOT-IZEE900
Trademark	Kerlink
FCC ID	2AFYS-KLKZEE900
IC	20637-KLKZEE900
HVIN	PDTIOT-IZEE900
Hardware Version	V4B
Operating Voltage	USB operated (DC 4.5V~5.5V)
Technical Specification of Lora DTS	
Operating Frequency	923.3 - 927.5MHz
Type of Modulation	Lora
Data Rate	SF7 – SF12 / DR8 – DR13
Rated Power (Max.)	27 dBm
Channel Number	8 channels
Channel Separation	600 KHz
Occupied Bandwidth	500 KHz
Technical Specification of Lora Hybrid	

Frequency Range	903.9MHz - 905.3MHz
Type of Modulation	Lora
Data Rate	SF9 / DR1
Rated Power (Max.)	24 dBm
Channel Number	8 channels
Channel Separation	200 KHz
Occupied Bandwidth	125 KHz
Technical Specification of Lora Hybrid	
Operating Frequency	904.6MHz
Type of Modulation	Lora
Data Rate	SF11 / DR9
Rated Power (Max.)	24 dBm
Channel Number	1 channel
Occupied Bandwidth	500 KHz

Table 3: RF Channel and Frequency of Lora DTS

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	**923.3**	2	924.5	**4**	**925.7**	6	926.9
1	923.9	3	925.1	5	926.3	**7**	**927.5**

Table 4: RF Channel and Frequency of Lora Hybrid

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	**903.9**	2	904.3	4	904.7	6	905.1
1	904.1	**3**	**904.5**	5	904.9	**7**	**905.3**

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Lora transmitting mode (DTS & Hybrid)
    1) Low Channel
    2) Middle Channel
    3) High Channel

B. On, Transmitting on Hopping channel (Hybrid)

C. On, Normal working

D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

☒ User Manual
☒ Circuit Diagram
☒ Block Diagram
☒ Schematics
☐ Model Difference Letter
☒ Rating Label
☒ PCB Layout
☒ Photo Document
☒ Parts List

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

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

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

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013 and KDB 558074 D01 v05r02.

According to clause 3.1, all tests were performed on model PDTIOT-IZEE900 in this report.

Table 5: List of Frequencies under Test

Operation Mode	Operational Frequency band or bands (MHz)	Low channel (MHz)	Middle channel (MHz)	High channel (MHz)
DTS	923.3 MHz to 927.5 MHz	923.3	925.7	927.5
Hybrid (SF9)	903.9 MHz to 905.3 MHz	903.9	904.5	905.3
Hybrid (SF11)	903.9 MHz to 905.3 MHz	/	904.6	/

4.3 Special Accessories and Auxiliary Equipment

Table 6: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N	Rating
Laptop PC	Dell	E5430	9V28XY1	N/A
Wirnet iFemtoCell-evolution 915	Kerlink	PDTIOT-IFE04	005DGa010003	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF). No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

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

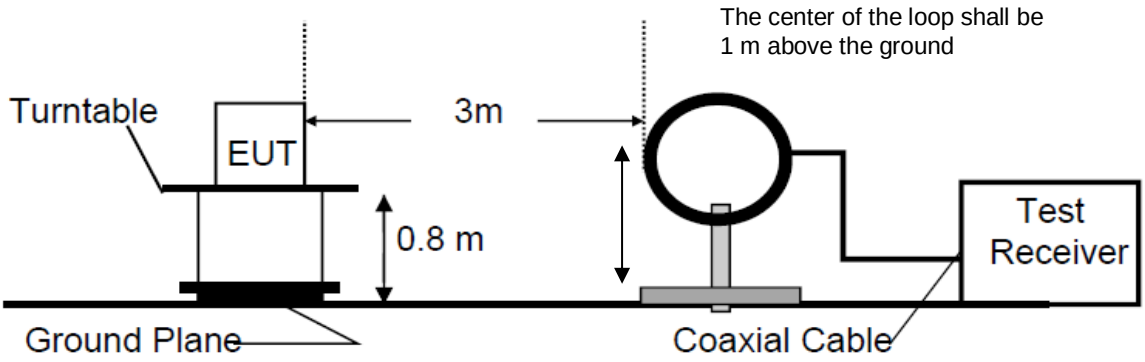


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

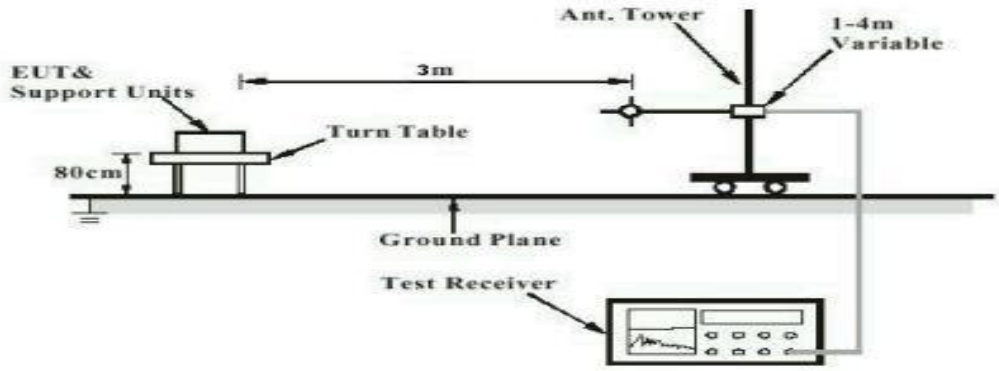


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

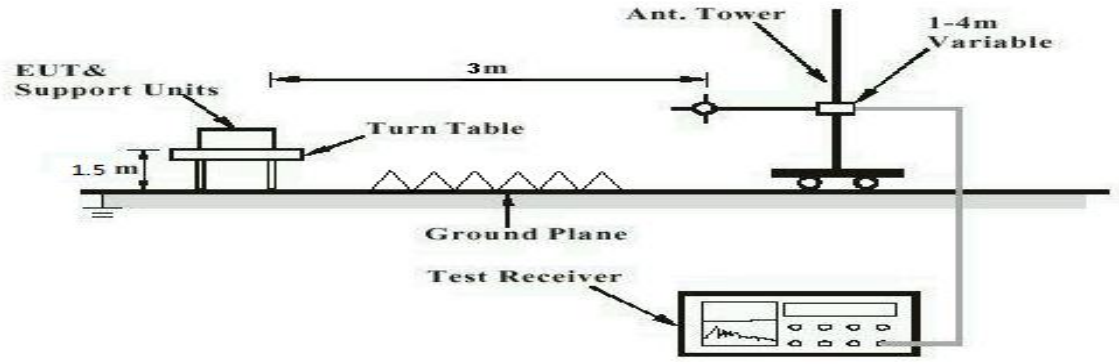


Diagram of Measurement Configuration for Mains Conduction Measurement

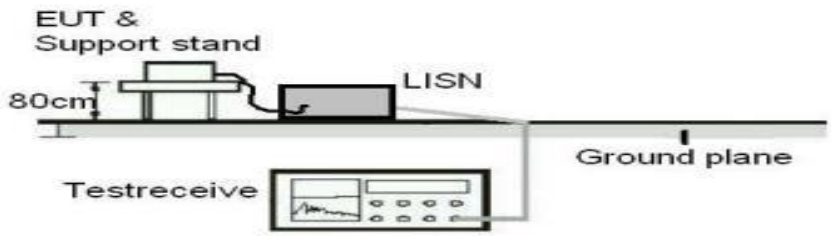
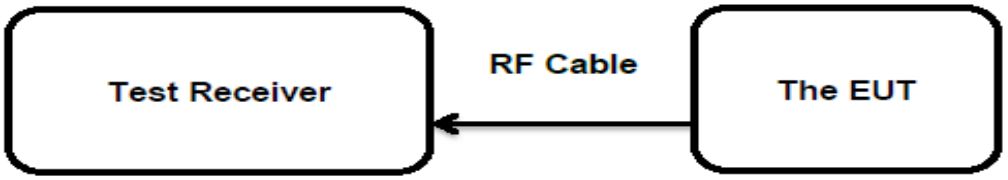


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification

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

According to the manufacturer declared, the EUT has a Ceramic antenna, the maximum directional gain of antenna is 2.0 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.
Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Conducted Output Power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(2)&(3) RSS-247 Clause 5.4(a)&(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 1.0 W (30 dBm) for antenna gain less than 6dBi
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-08-12
Input voltage	:	DC 5V from USB port
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

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

Test Mode	Test Channel (MHz)	Measured Conducted Power		Limit
		(dBm)	(W)	
Lora DTS SF7	923.3	26.21	0.4178	< 1.0 W (30 dBm)
	925.7	26.48	0.4446	
	927.5	26.2	0.4169	
Lora DTS SF12	923.3	26.08	0.4055	
	925.7	26.09	0.4064	
	927.5	25.65	0.3673	
Lora Hybrid SF11	904.6	22.83	0.1919	
Max. Measured Value		26.48	0.4446	

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

Test Mode	Test Channel (MHz)	Measured Conducted Power		Limit (W)
		(dBm)	(W)	
Lora Hybrid SF9	903.9	22.31	0.1702	< 1.0 W (30 dBm)
	905.3	22.21	0.1702	
Max. Measured Value		22.31	0.1702	

Note:
1) The cable loss is taken into account in results.
2) Antenna gain (G) : 2.0 dBi,
Maximum e.i.r.p.= 28.48 dBm = 0.7047 W, which is far below the 4 W

5.1.3 Conducted Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(e), FCC Part 15.247(f) RSS-247 Clause 5.2(b), RSS-247 Clause 5.3
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 8 dBm / 3kHz for antenna gain less than 6dBi
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-08-12
Input voltage	:	DC 5V from USB port
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

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

Test Mode	Test Channel (MHz)	Measured Power Spectral Density (dBm/3KHz)
Lora DTS SF7	923.3	4.1
	925.7	4.05
	927.5	4.19
Lora DTS SF12	923.3	3.94
	925.7	4.06
	927.5	3.69
Lora DTS SF11	904.6	2.2
Maximum Measured Value		4.19

Table 10: Test Result of Maximum Power Spectral Density, Lora Hybrid

Test Mode	Test Channel (MHz)	Measured Power Spectral Density (dBm/3KHz)
Lora Hybrid SF9	903.9	7.62
	905.3	7.26
Maximum Measured Value		7.62

5.1.4 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(2) RSS-247 Clause 5.2(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	At least 500kHz for bandwidth(DTS)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-09-05
Input voltage	:	DC 5V from USB port
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

Table 11: Test Result of 6dB Bandwidth, Lora DTS

Test Mode	Test Channel (MHz)	6dB Bandwidth (kHz)	Limit (MHz)
Lora DTS SF7	923.3	631.0	>500KHz
	925.7	659.9	
	927.5	659.9	
Lora DTS SF12	923.3	625.2	
	925.7	639.7	
	927.5	633.9	
Lora DTS SF11	904.6	633.9	
Min. Bandwidth		625.20	

5.1.5 20dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(1) (i) RSS-247 Clause 5.1(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	Not more than 500kHz and < 250KHz for at least 50 hopping frequencies >=250KHz for at least 25 hooping frequencies
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-08-12
Input voltage	:	DC 5V from USB port
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

Table 12: Test Result of 20dB Bandwidth, Lora Hybrid

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)
Lora Hybrid SF9	903.9	139.65	<500KHz
	905.3	139.65	
Min. Bandwidth		139.65	

5.1.6 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	RSS-Gen Clause 6.7
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-08-12
Input voltage	:	DC 5V from USB port
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

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

Test Mode	Test Channel (MHz)	99% Bandwidth (KHz)	Limit (MHz)
Lora DTS SF7	923.3	509.41	/
	925.7	538.35	
	927.5	526.77	
Lora DTS SF12	923.3	503.62	
	925.7	503.62	
	927.5	503.62	
Lora DTS SF11	904.6	500.72	
Min. Bandwidth		500.72	

Table 14: Test Result of 99% Bandwidth, Lora Hybrid

Test Mode	Test Channel (MHz)	99% Bandwidth (KHz)	Limit (MHz)
Lora Hybrid SF9	903.9	124.46	/
	905.3	125.18	
Min. Bandwidth		124.46	

5.1.7 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	:	ANSI C63.10: 2013
Limits	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-08-12
Input voltage	:	DC 5V from USB port
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

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

For the measurement records, refer to the appendix A.

5.1.8 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2022-07-28 to 2022-08-12
Input voltage	:	DC 5V from USB port
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

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

For the measurement records, refer to the appendix A.

5.1.9 Carrier Frequency Separation

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 20dB bandwidth
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-08-12
Input voltage	:	DC 5V from USB port
Operation mode	:	B
Test channel	:	Low / Middle / High
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

Table 15: Test Result of Carrier Frequency Separation

Test Mode	Channel	Channel Frequency (MHz)	Measured Channel Separation (KHz)	Limit (kHz)	Result
Lora Hybrid (FHSS SF9)	Low Channel	903.9016	199.70	≥ 20dB bandwidth	Pass
	Adjacency Channel	904.1013			
	High Channel	905.2999	199.7		Pass
	Adjacency Channel	905.1002			

Note:

The limit is maximum 20 dB bandwidth: 139.65KHz.

5.1.10 Number of Hopping Frequency

RESULT: **Pass**

Test Specification

Test standard	:	FCC part 15.247(a)(1)(iii) RSS-247 Clause 5.1(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 15 non-overlapping channels
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-09-05
Input voltage	:	DC 5V from USB port
Operation mode	:	B
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

Table 16: Test result of hopping channel number

Test Mode	Hopping frequencies	Limit
Lora Hybrid (FHSS SF9)	8	/

5.1.11 Time of Occupancy

RESULT: **Pass**

Test Specification

Test standard	:	FCC part 15.247(f) RSS-247 Clause 5.3
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 0.4s
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-08-12
Input voltage	:	DC 5V from USB port
Operation mode	:	B
Test channel	:	Low / Middle / High
Ambient temperature	:	24.5 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

Table 17: Test result of Channel Occupancy

Test Mode	Period (s)	Channel Occupancy Time (ms)	Limit (ms)
Lora Hybrid (FHSS SF9)	20	249.3	400

5.1.12 Conducted Emission on AC Mains

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) RSS-Gen Table 3
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-07-28 to 2022-08-25
Input voltage	:	DC 5V from USB port
Operation mode	:	C
Earthing	:	Not connected
Ambient temperature	:	23.7 ℃
Relative humidity	:	53.4 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

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

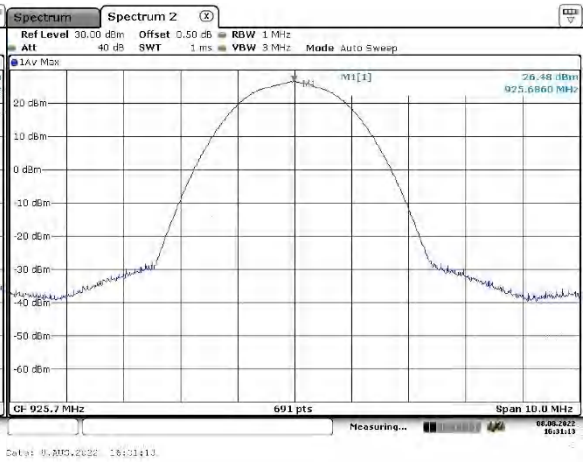
7 List of Tables

========== END OF REPORT ==========

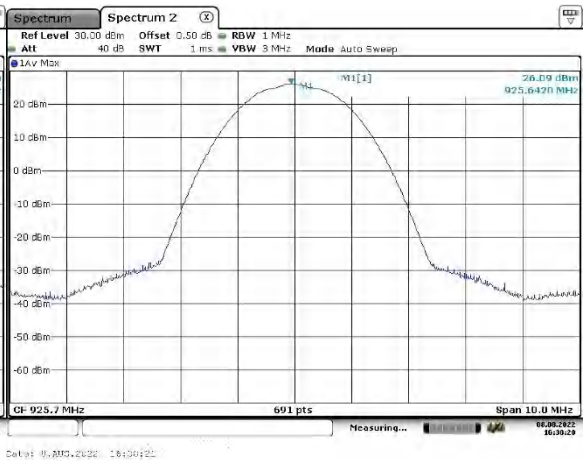
Appendix A: Test Results

Appendix A.1: Conducted Output Power

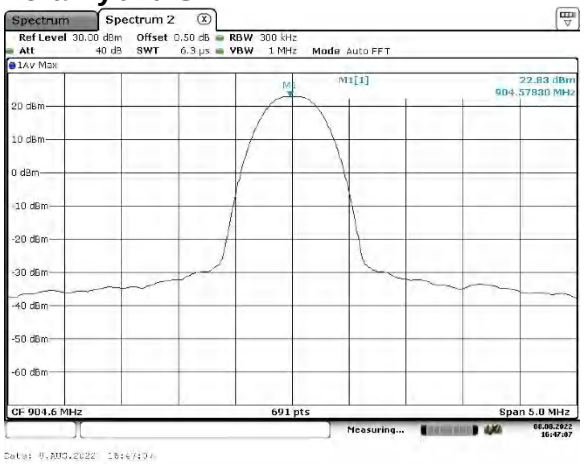
Lora DTS SF7



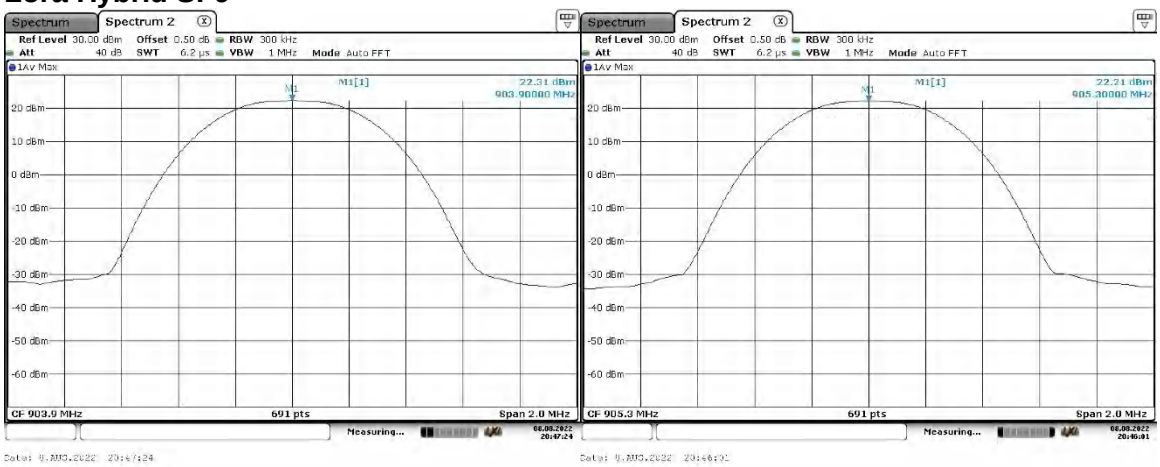
Lora DTS SF12



Lora Hybrid SF11

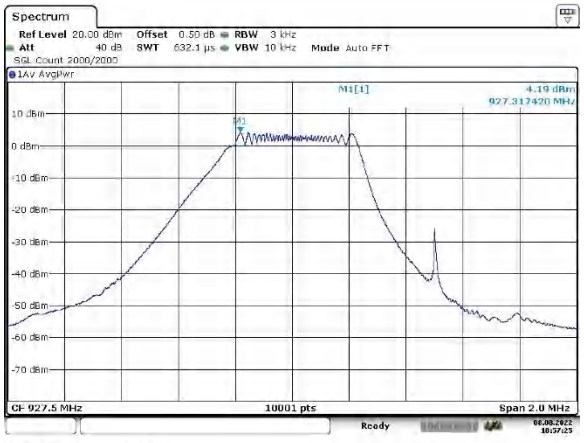


Lora Hybrid SF9

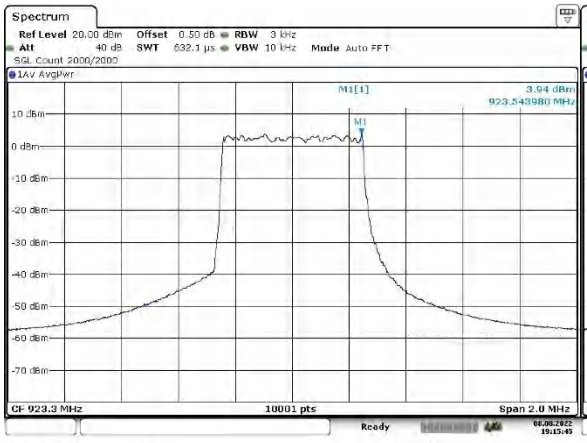


Appendix A.2: Conducted Power Spectral Density

Lora DTS SF7



Lora DTS SF12

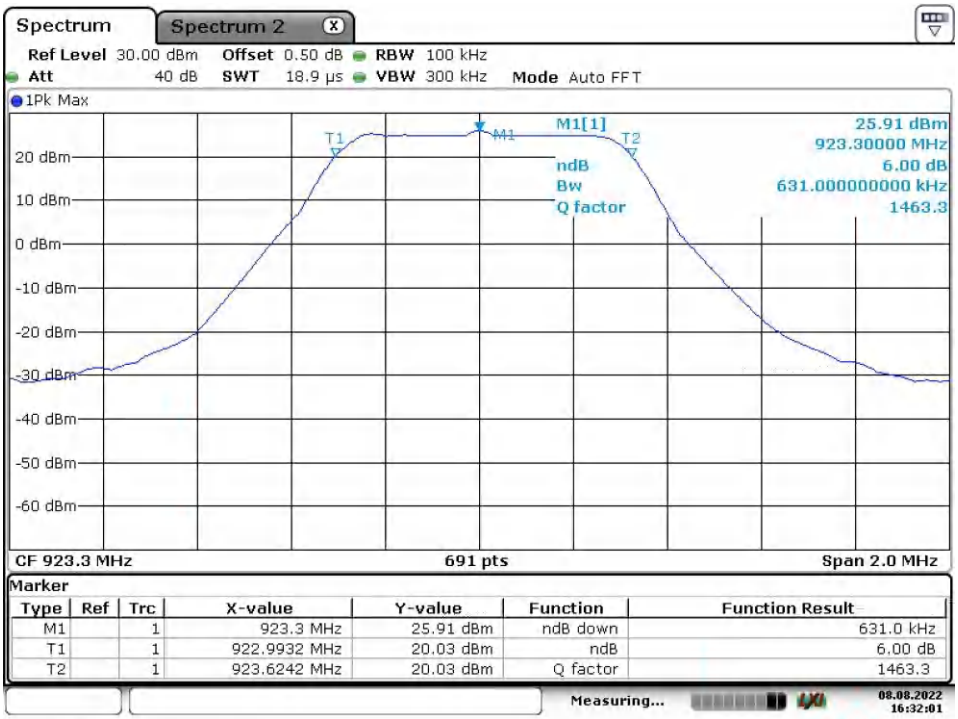


Lora Hybrid SF11

Lora Hybrid SF9

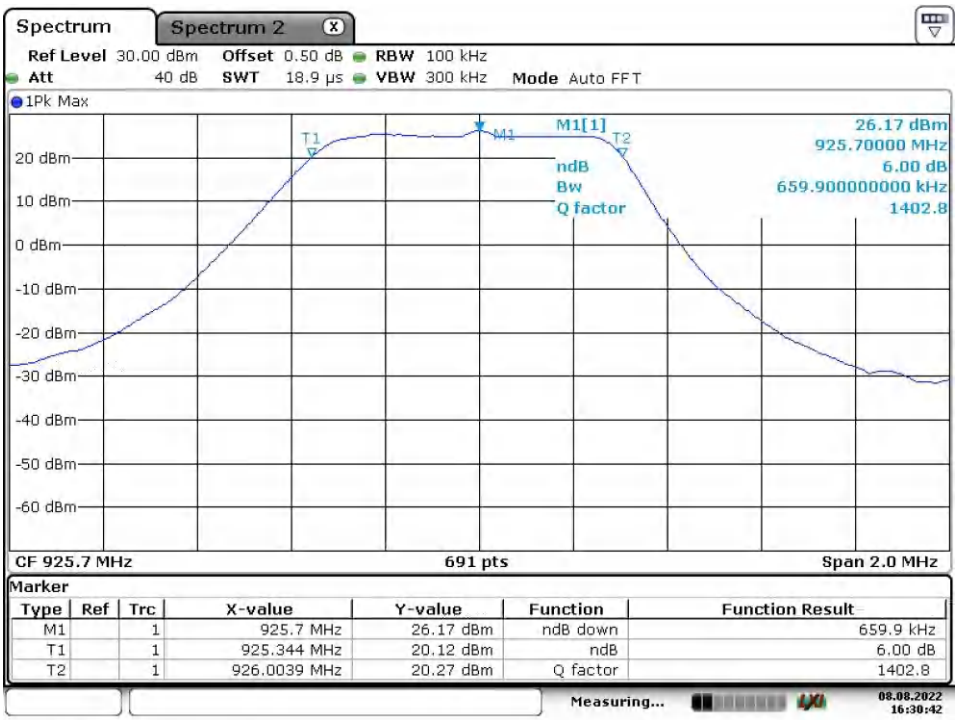
Appendix A.3: 6dB Bandwidth

Lora DTS SF7
Low Channel



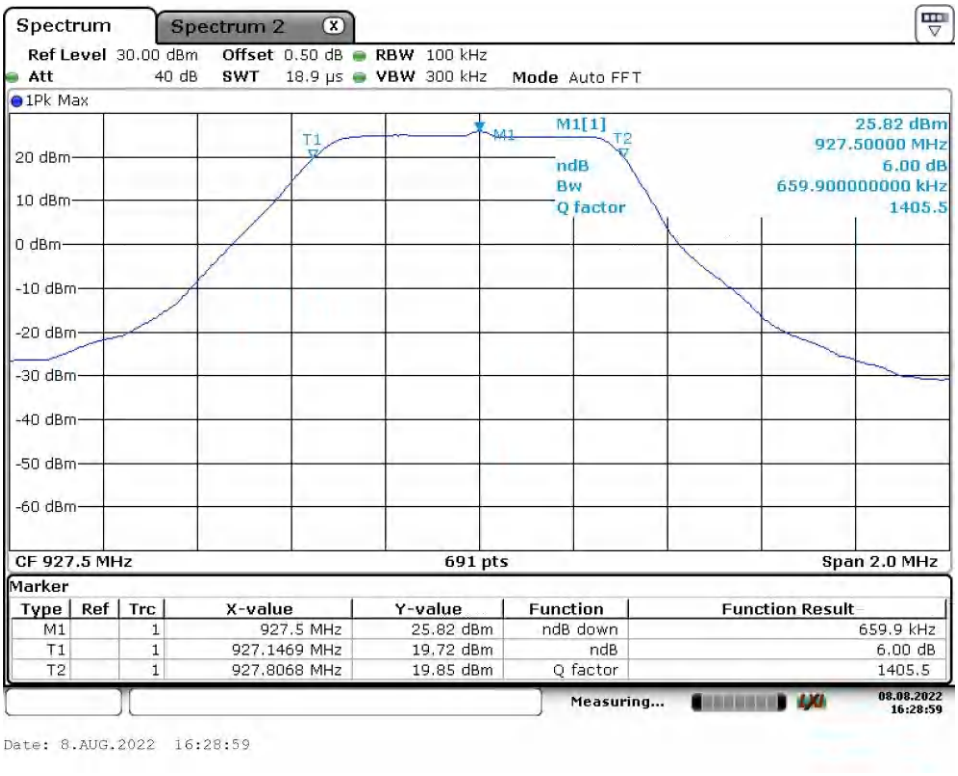
Date: 8.AUG.2022 16:32:02

Middle Channel

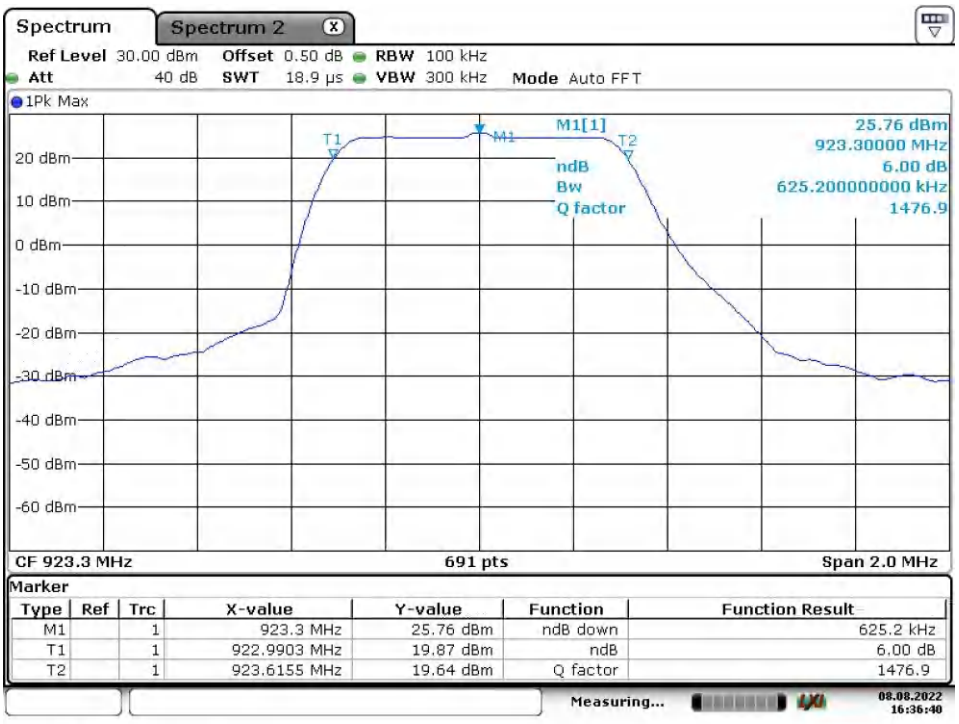


Date: 8.AUG.2022 16:30:43

High Channel

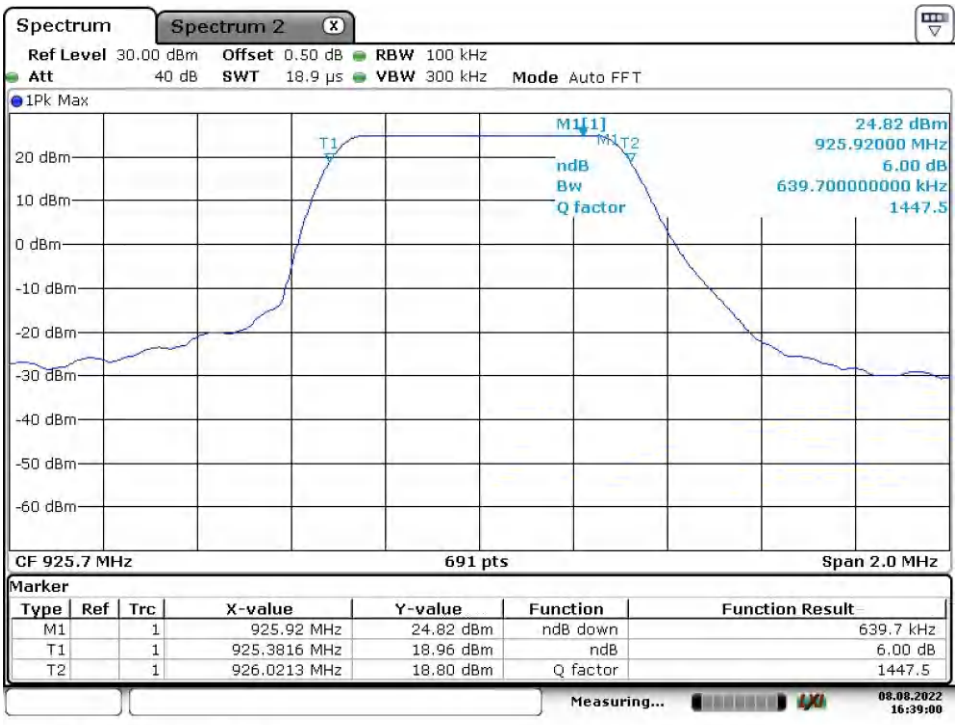


Lora DTS SF12
Low Channel



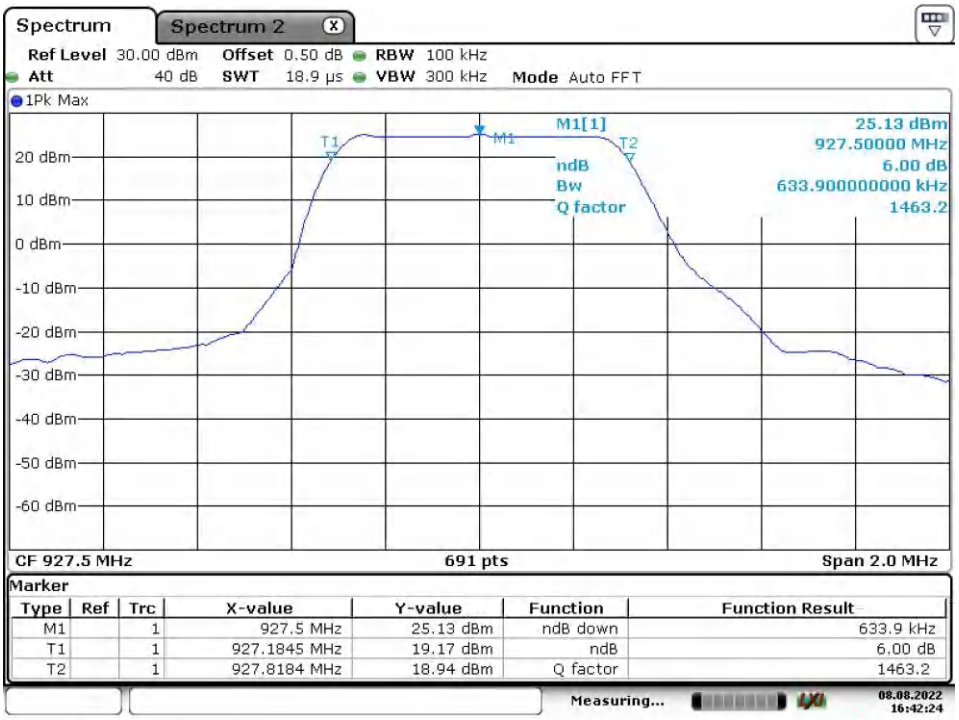
Date: 8.AUG.2022 16:36:40

Middle Channel



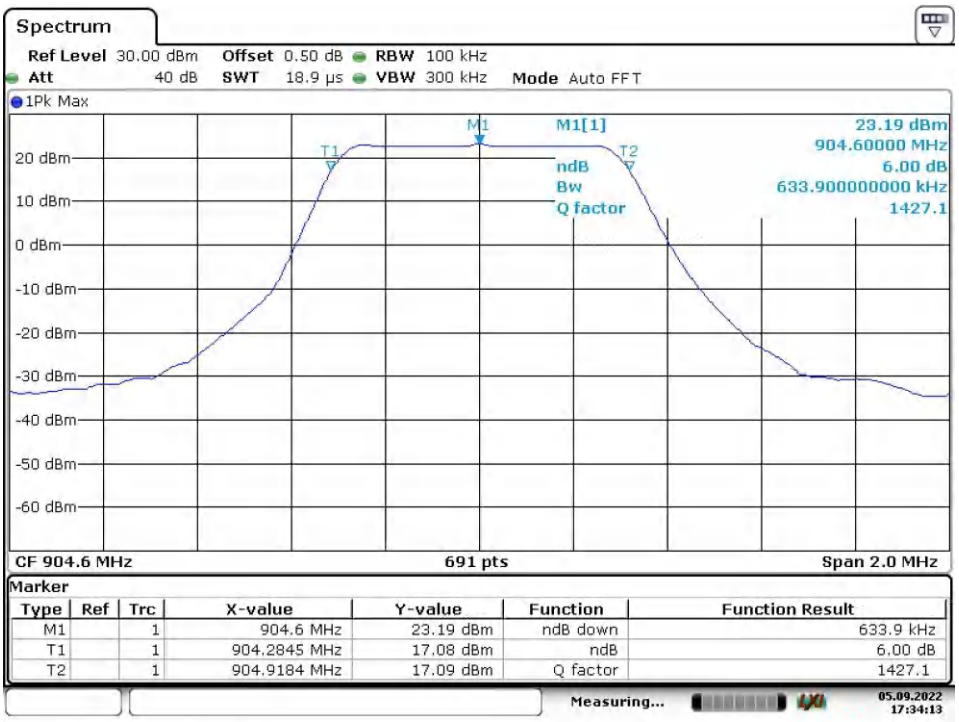
Date: 8.AUG.2022 16:39:00

High Channel



Date: 8.AUG.2022 16:42:24

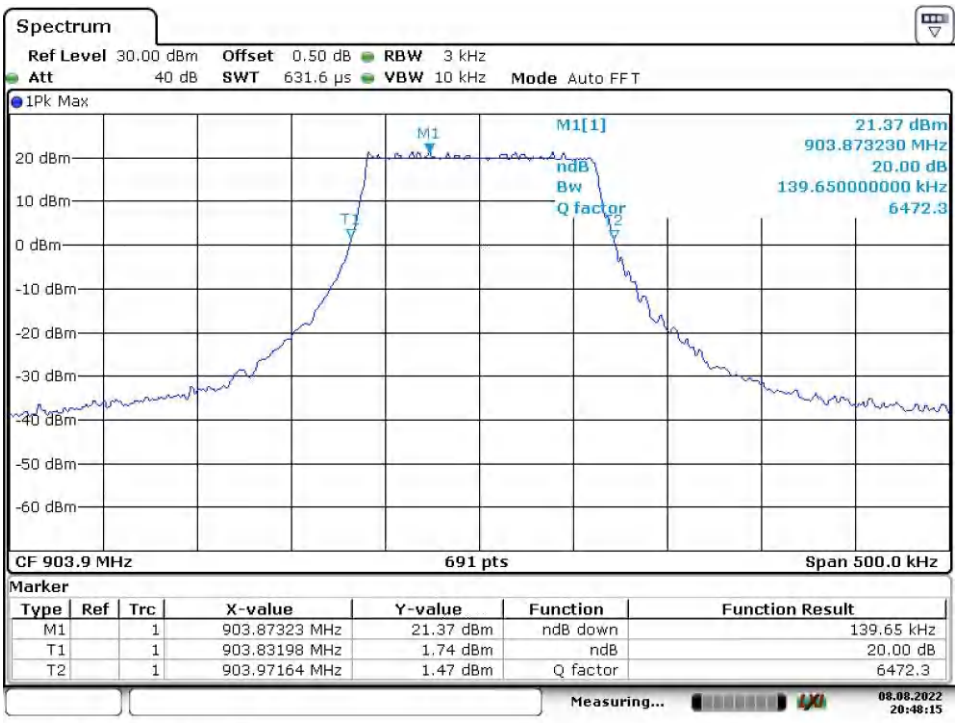
Lora Hybrid SF11



Date: 5.SEP.2022 17:34:14

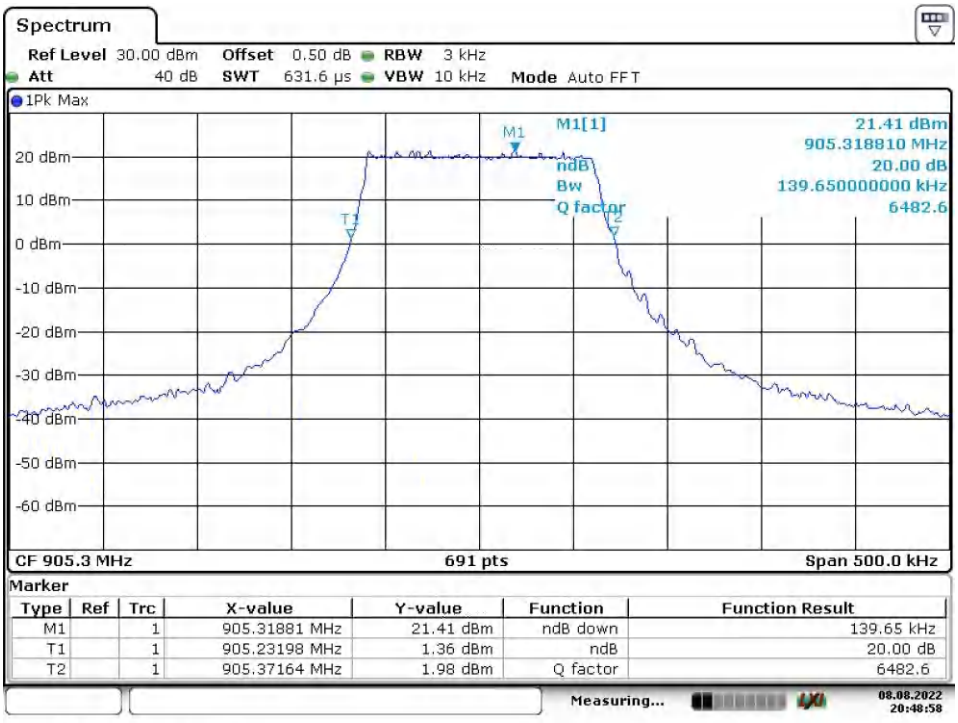
Appendix A.4: 20dB Bandwidth

Lora Hybrid SF9
Low Channel



Date: 8.AUG.2022 20:48:15

High Channel



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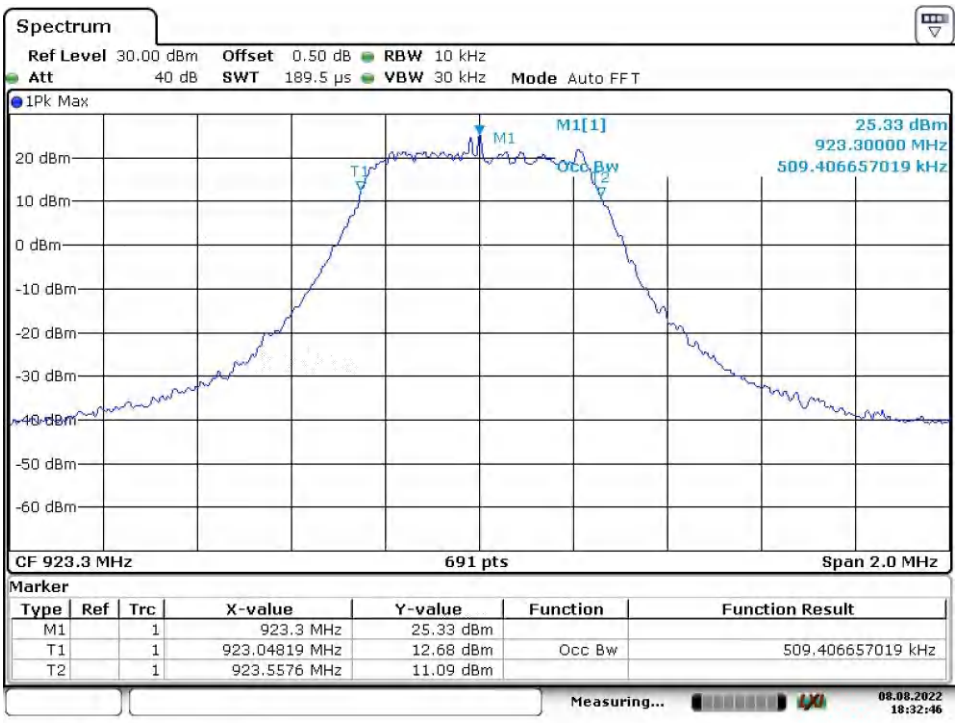
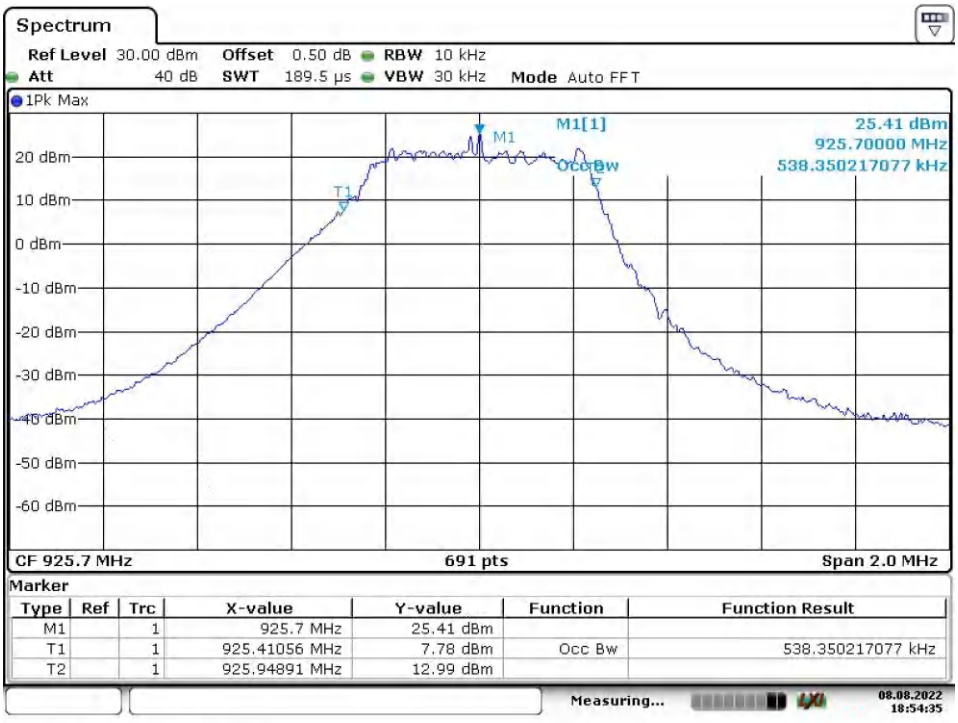
Appendix A.5: 99% Bandwidth

Lora DTS SF7
Low Channel



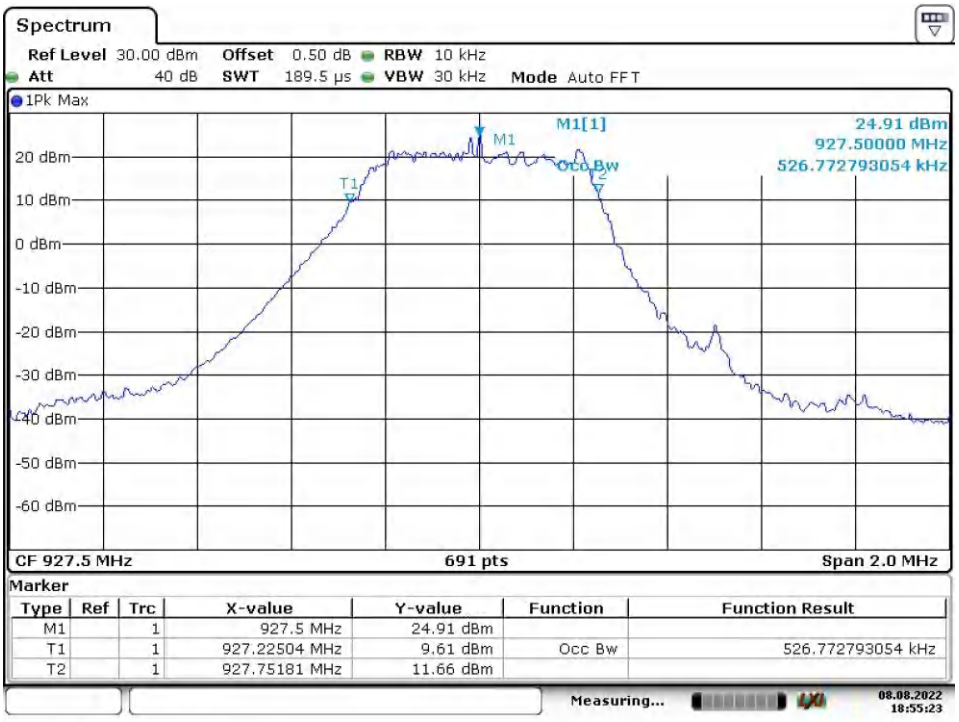
Date: 8.AUG.2022 18:32:46

Middle Channel



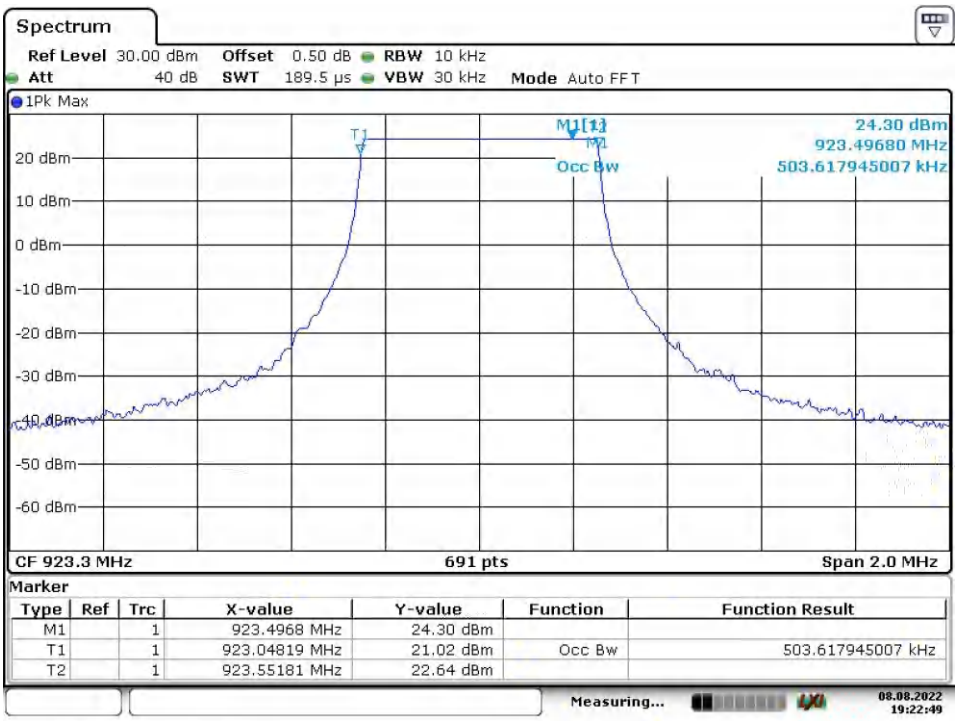
Date: 8.AUG.2022 18:54:36

High Channel



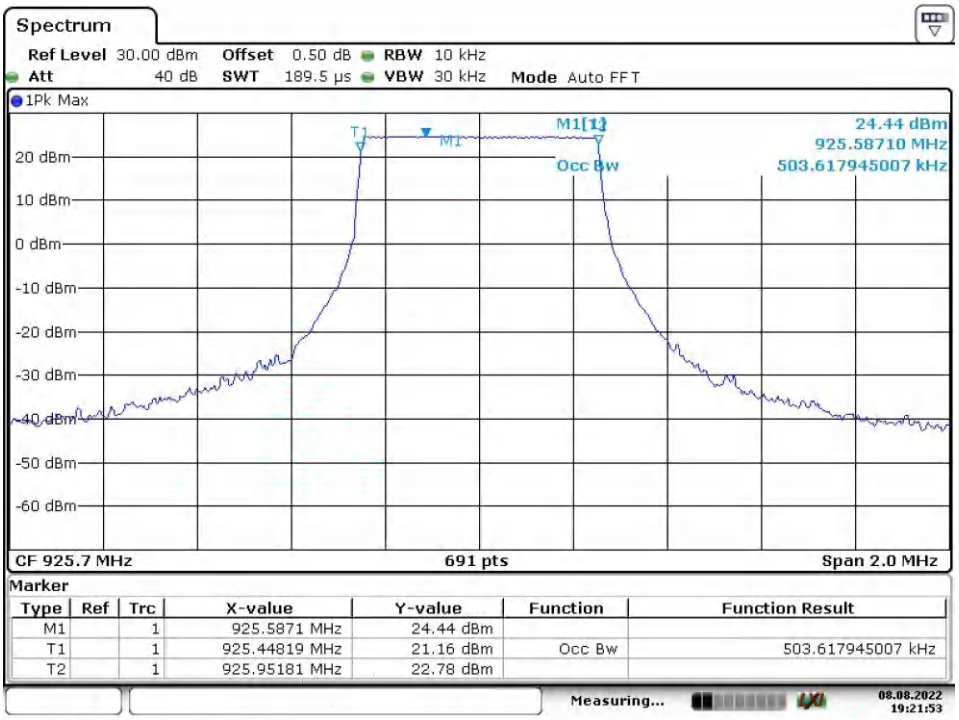
Date: 8.AUG.2022 18:55:23

Lora DTS SF12
Low Channel



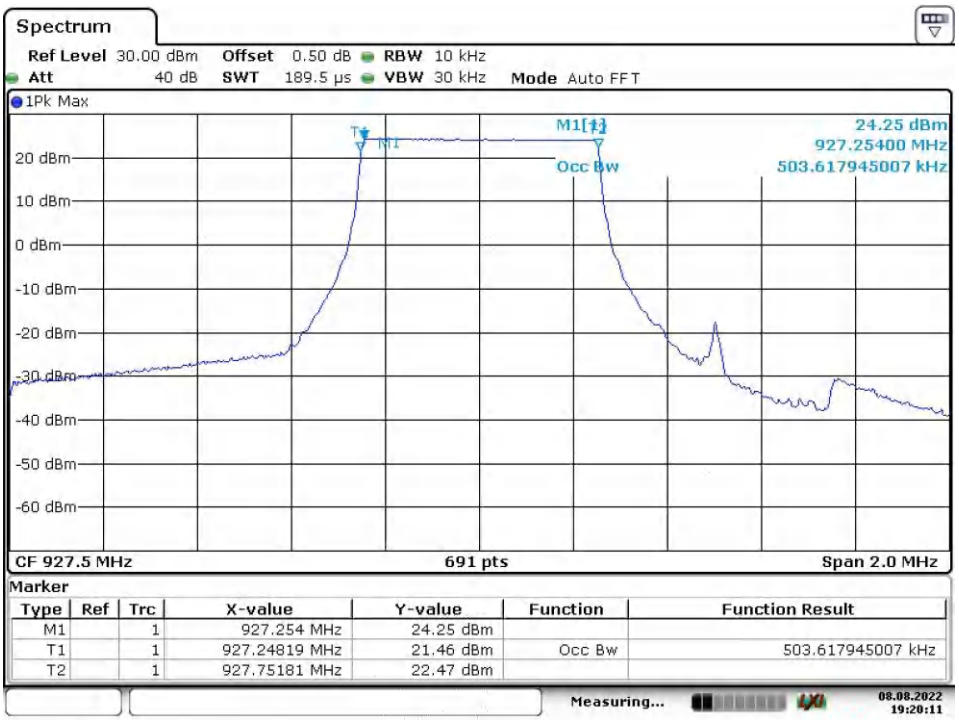
Date: 8.AUG.2022 19:22:50

Middle Channel



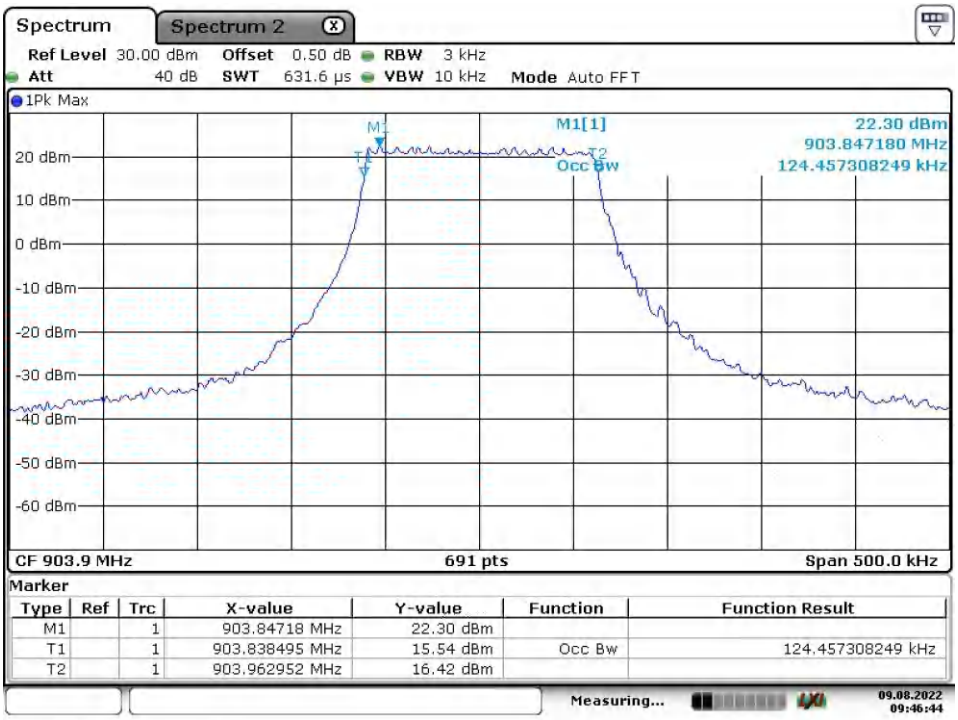
Date: 8.AUG.2022 19:21:53

High Channel



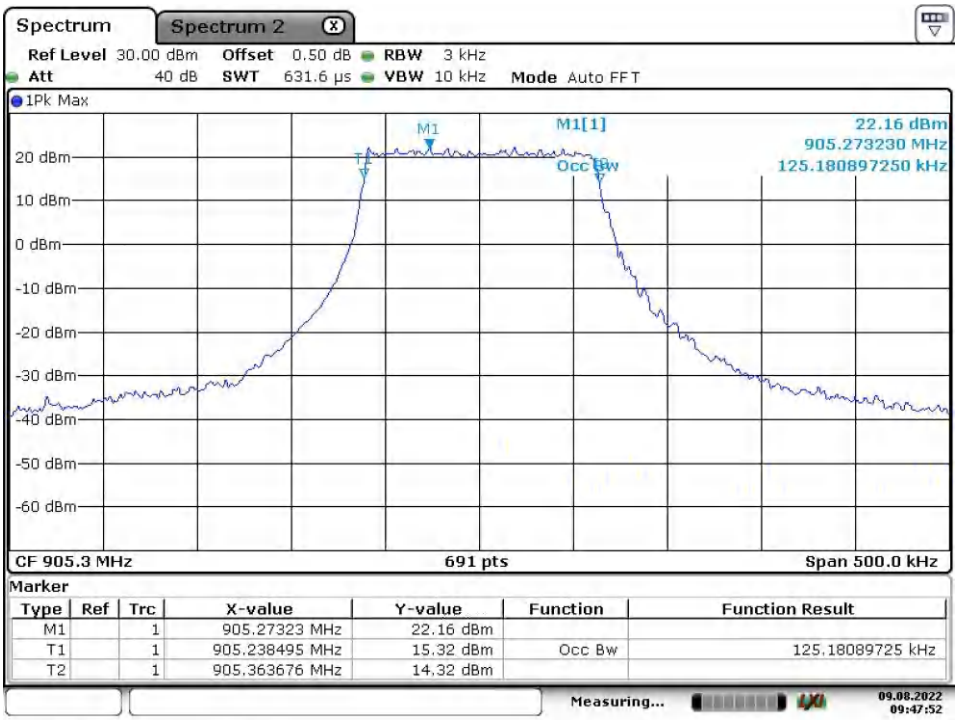
Date: 8.AUG.2022 19:20:11

Lora Hybrid SF9
Low Channel



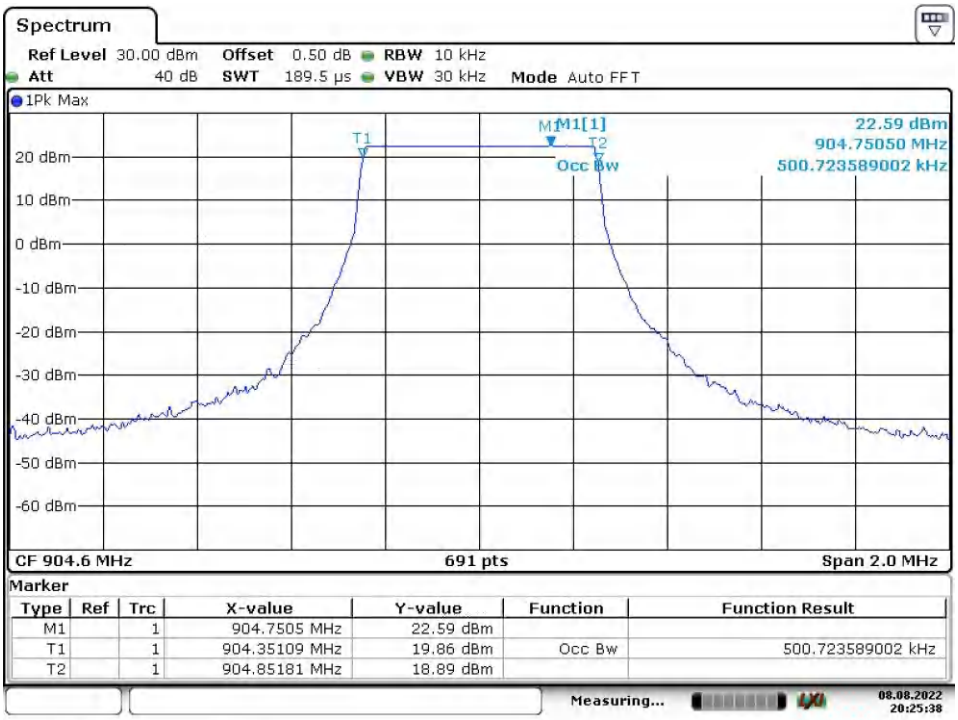
Date: 9.AUG.2022 09:46:44

High Channel



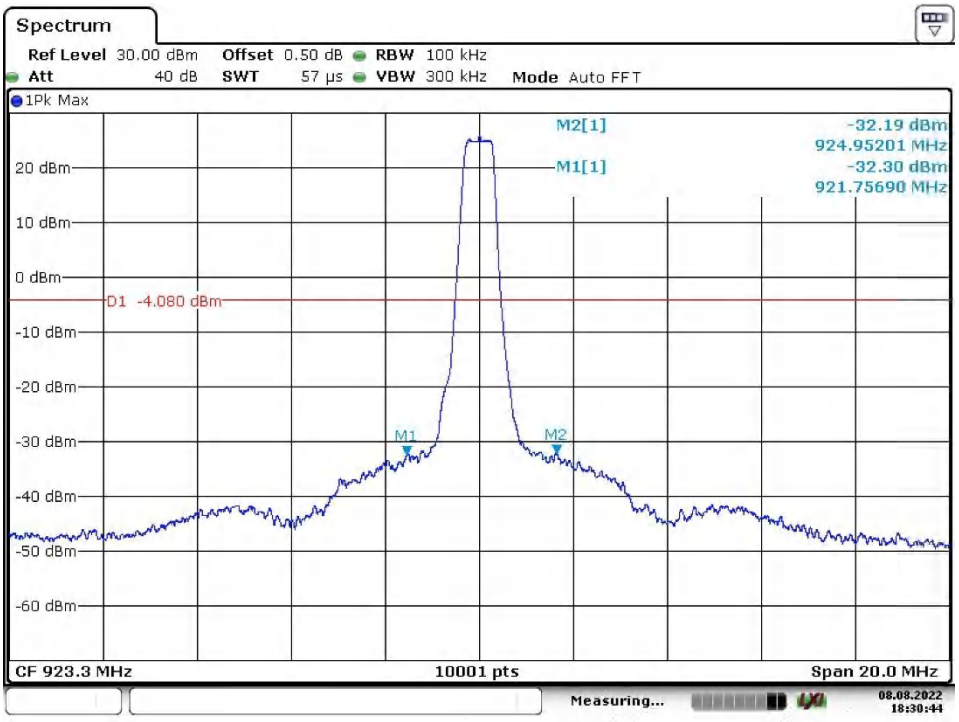
Date: 9.AUG.2022 09:47:53

Lora Hybrid SF11
904.6MHz



Appendix A.6: Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Lora DTS SF7
Low Channel



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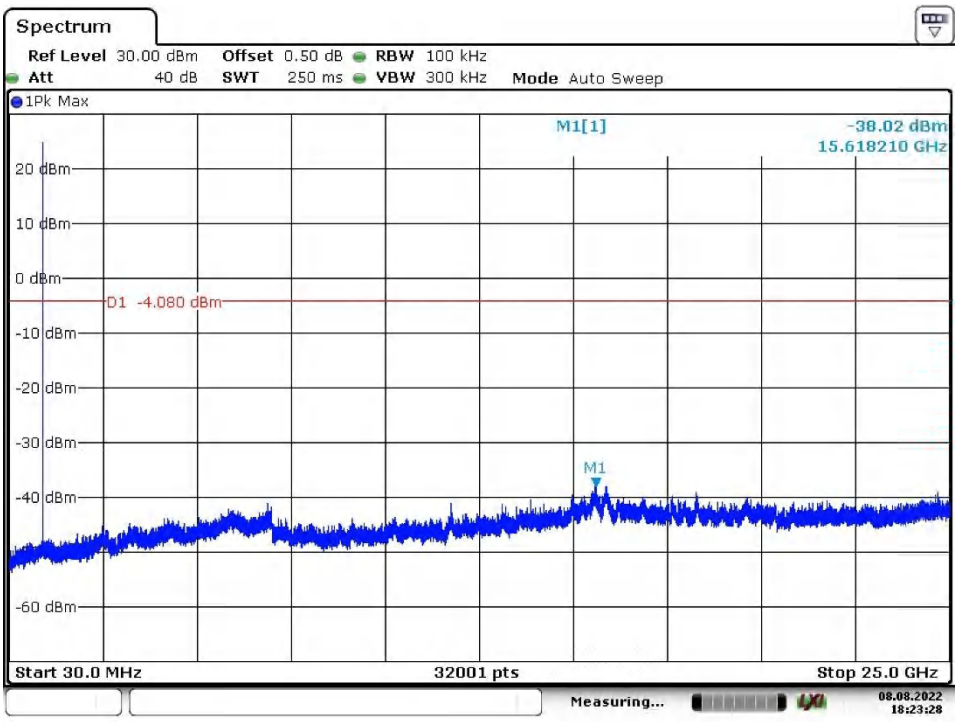
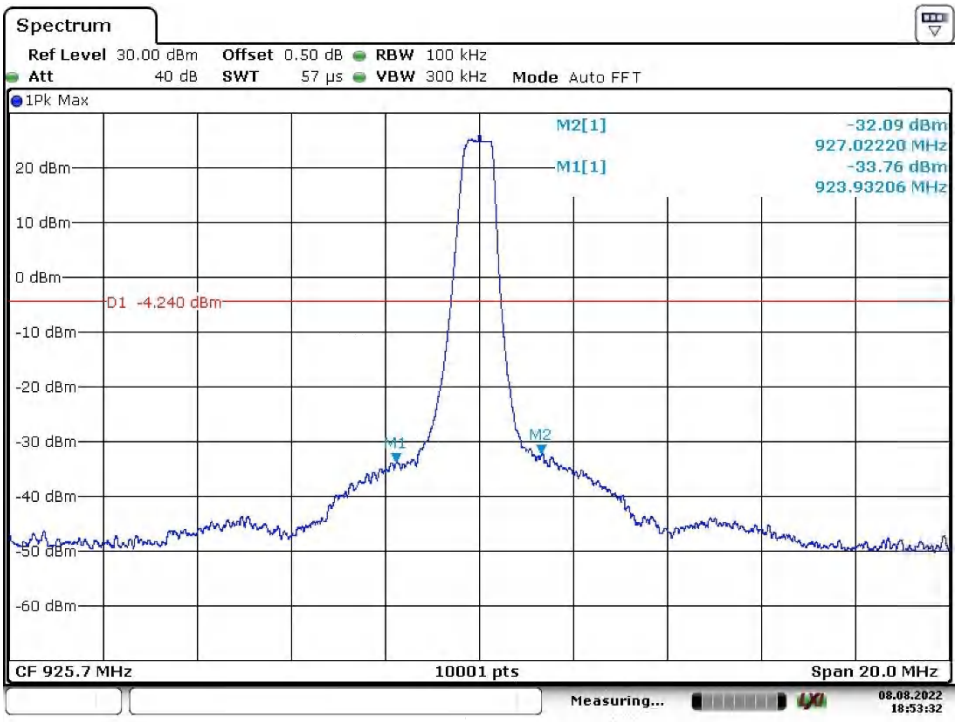
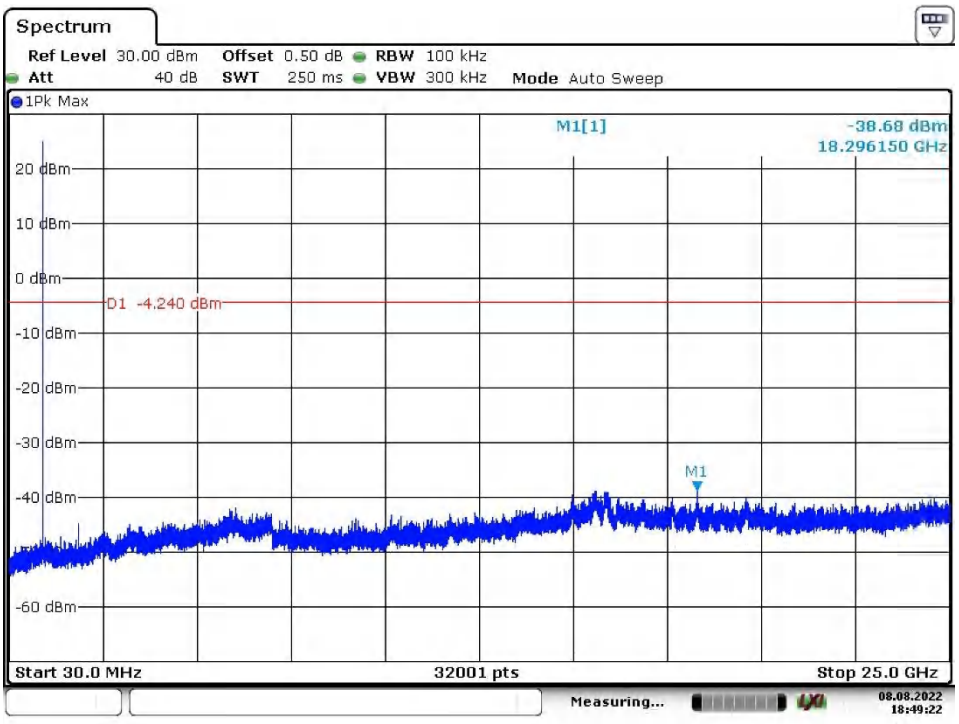


Date: 8.AUG.2022 18:23:29

Middle Channel

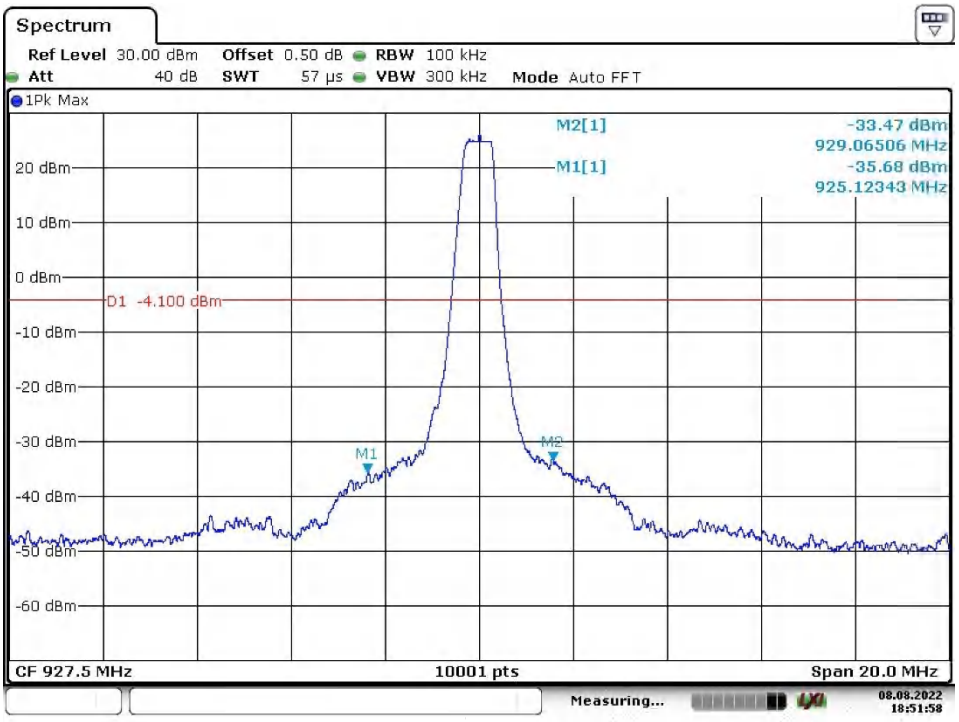


Date: 8.AUG.2022 18:53:33

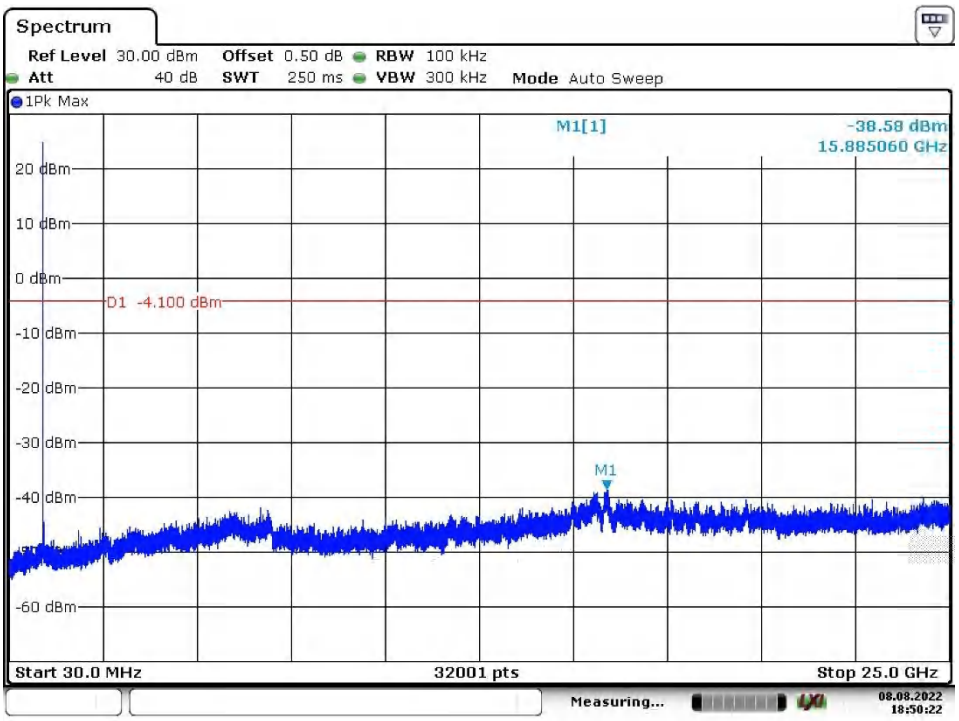


Date: 8.AUG.2022 18:49:23

High Channel

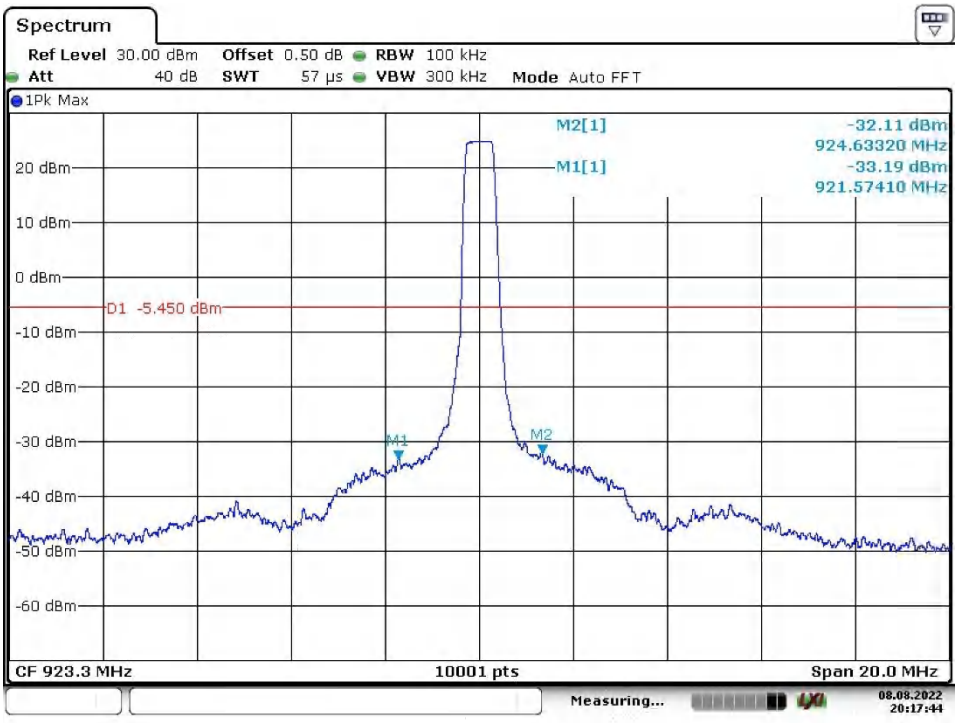


Date: 8.AUG.2022 18:51:58

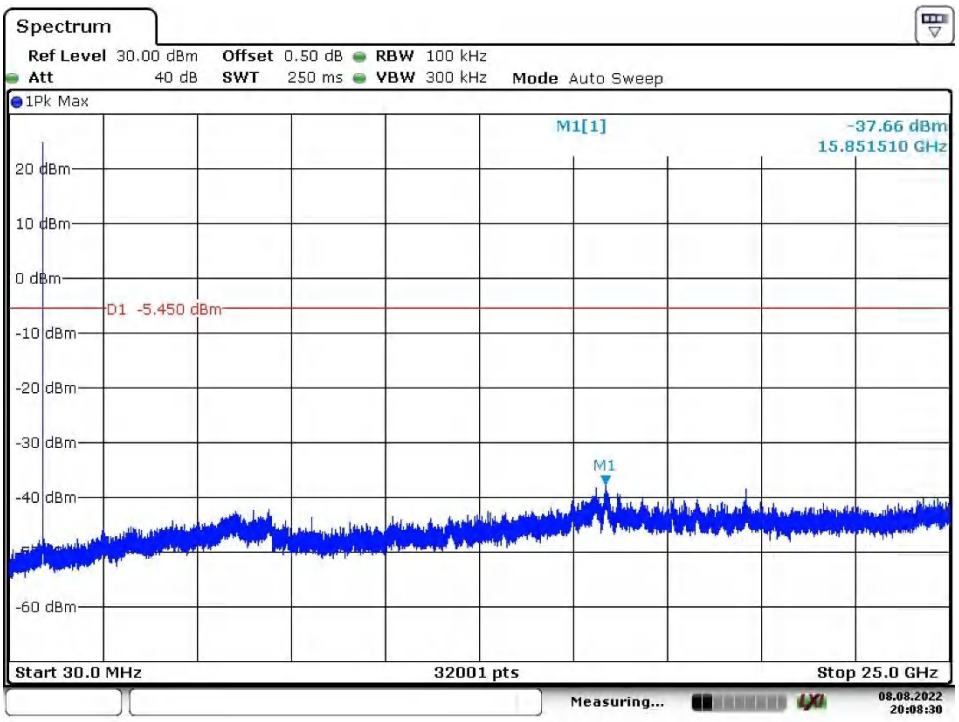


Date: 8.AUG.2022 18:50:22

Lora DTS SF12
Low Channel

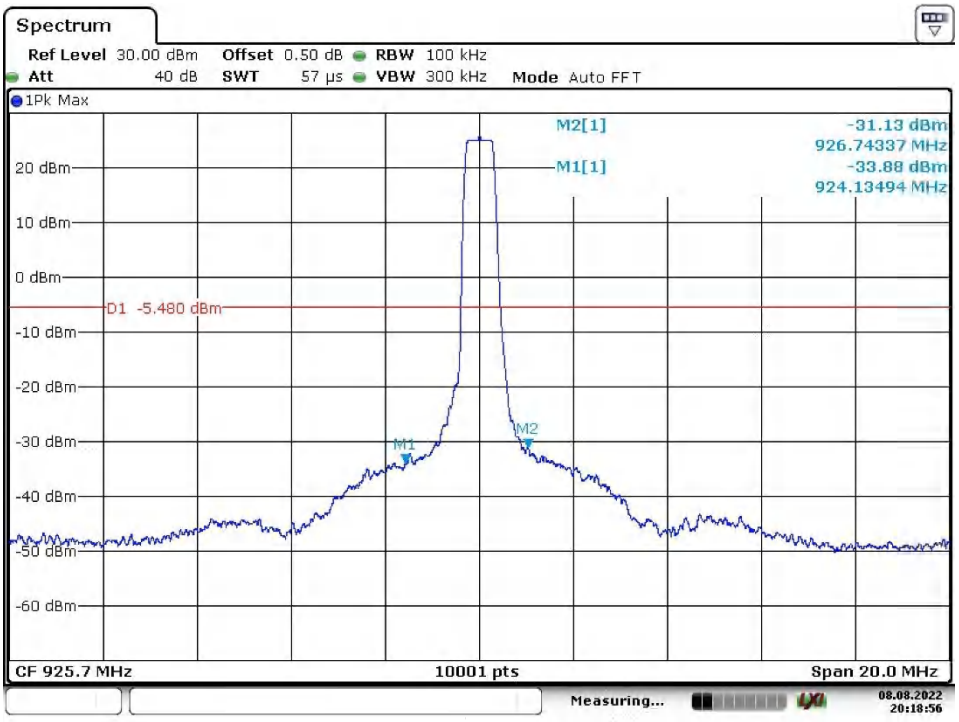


Date: 8.AUG.2022 20:17:44



Date: 8.AUG.2022 20:08:30

Middle Channel



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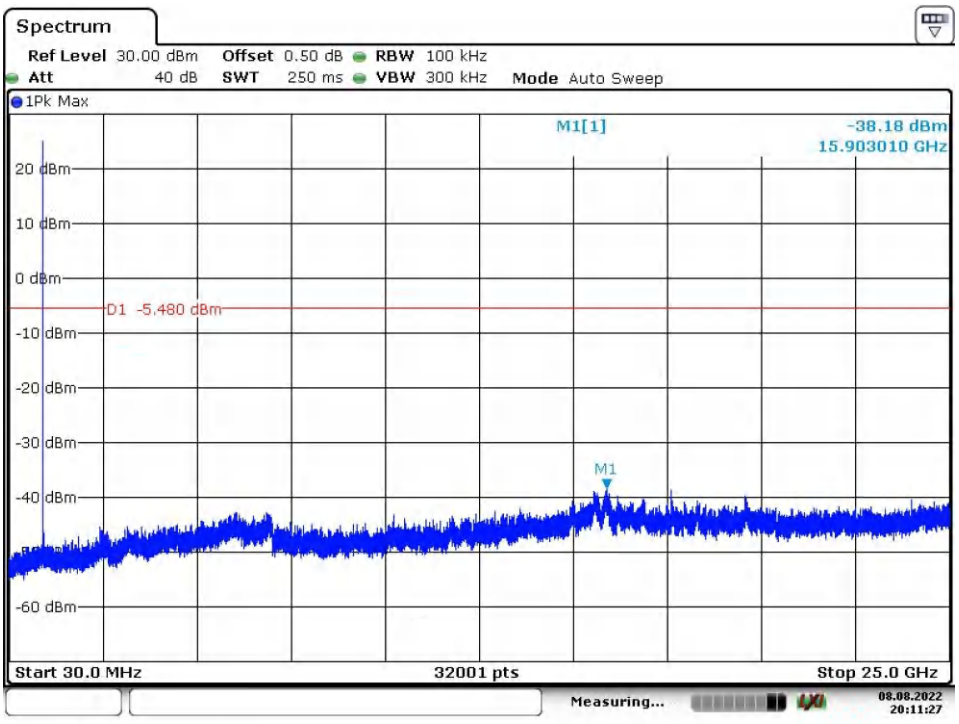
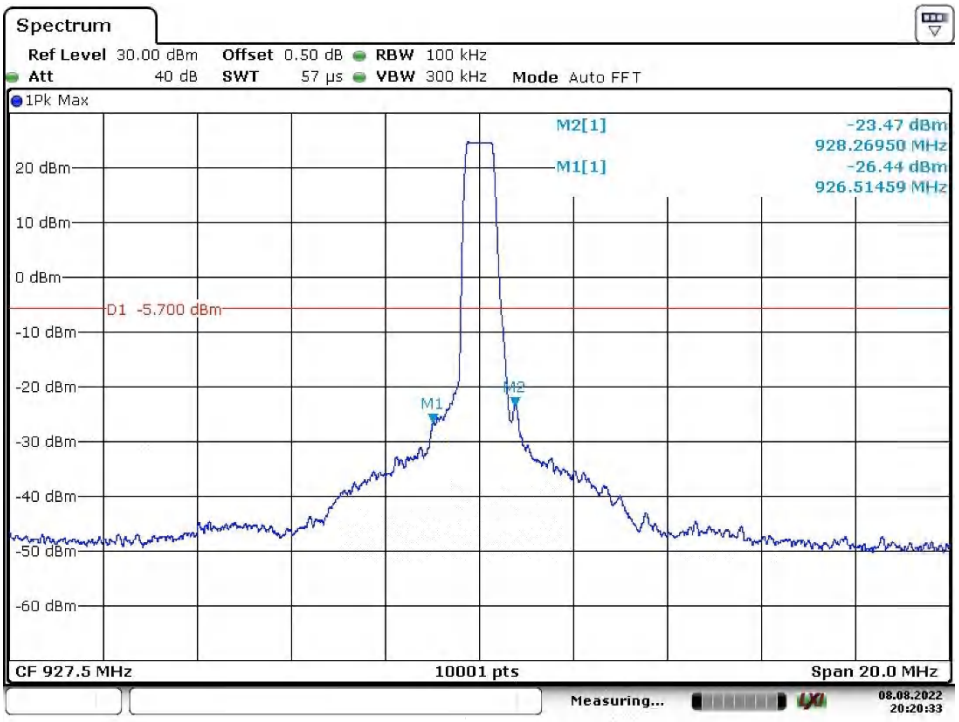
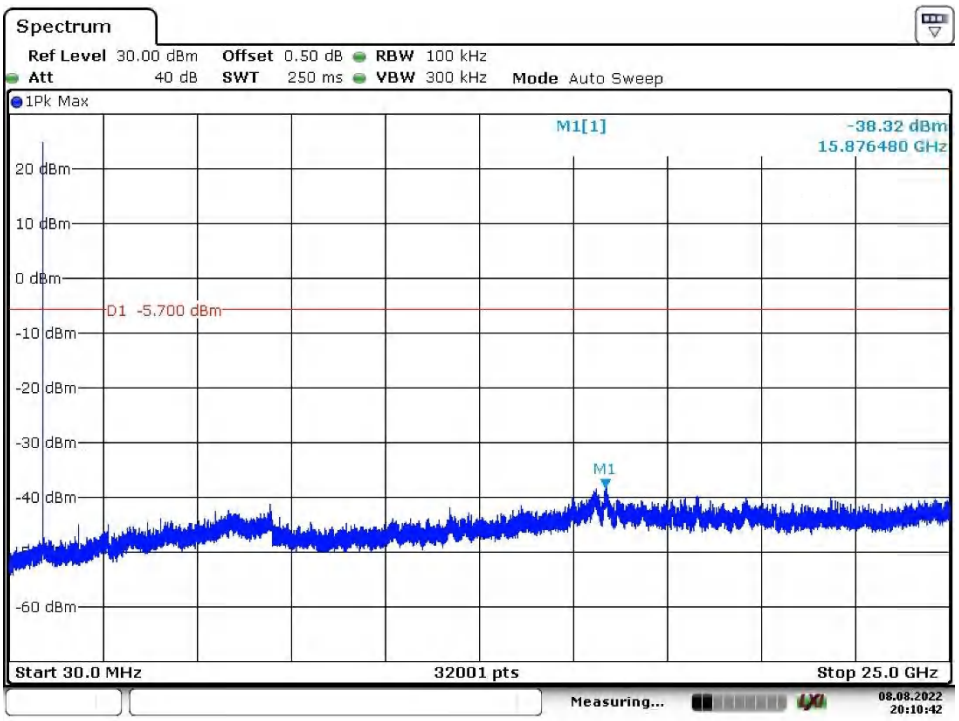


Date: 8.AUG.2022 20:11:27

High Channel

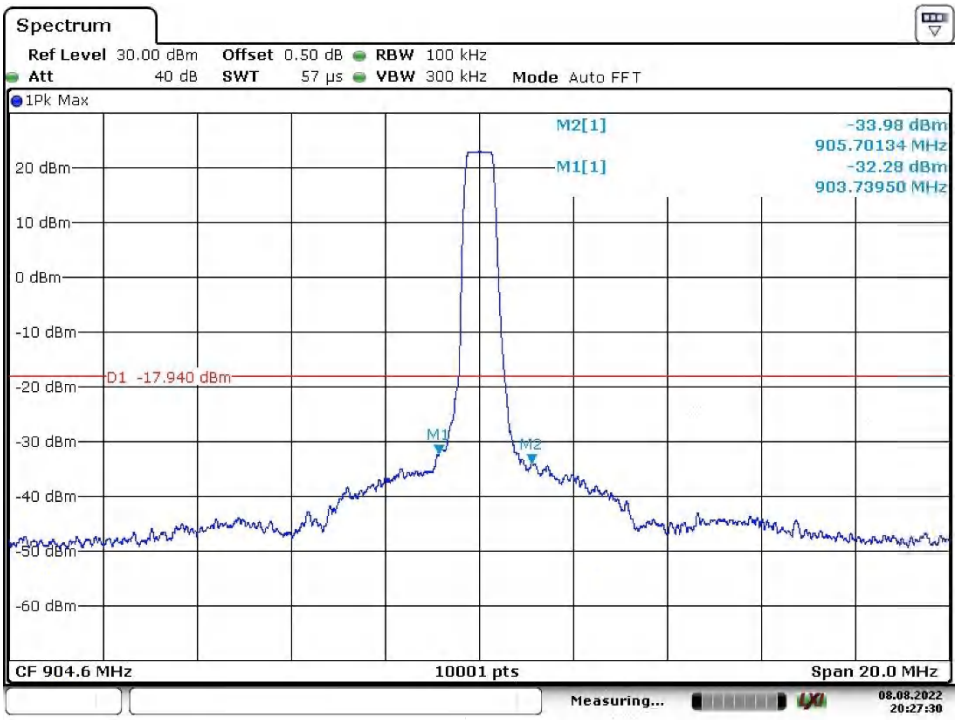


Date: 8.AUG.2022 20:20:33

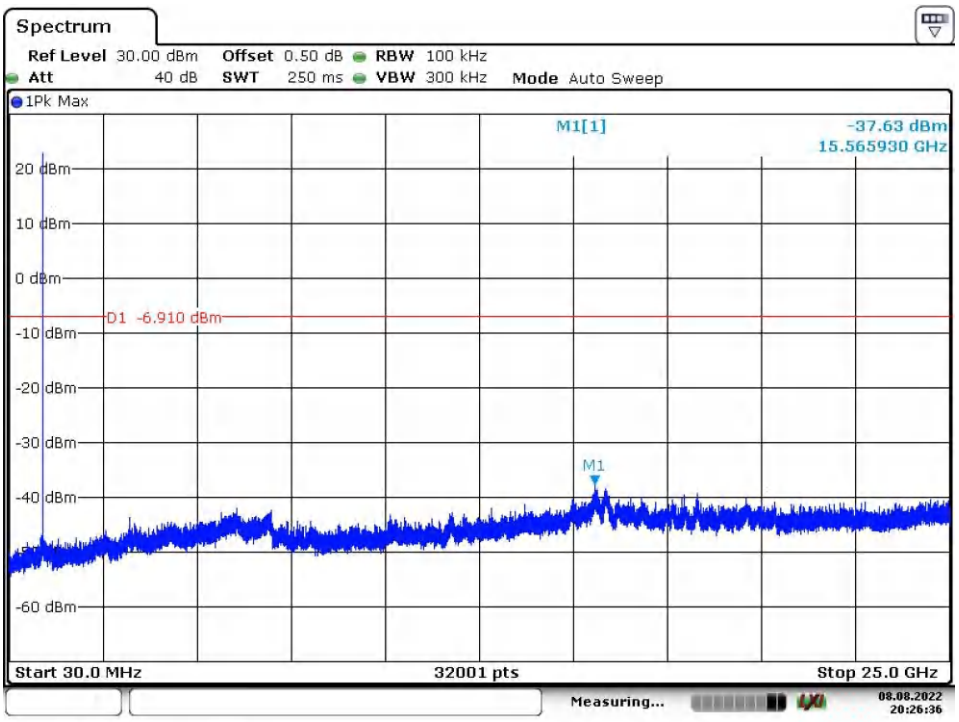


Date: 8.AUG.2022 20:10:42

Lora Hybrid SF11
904.6MHz



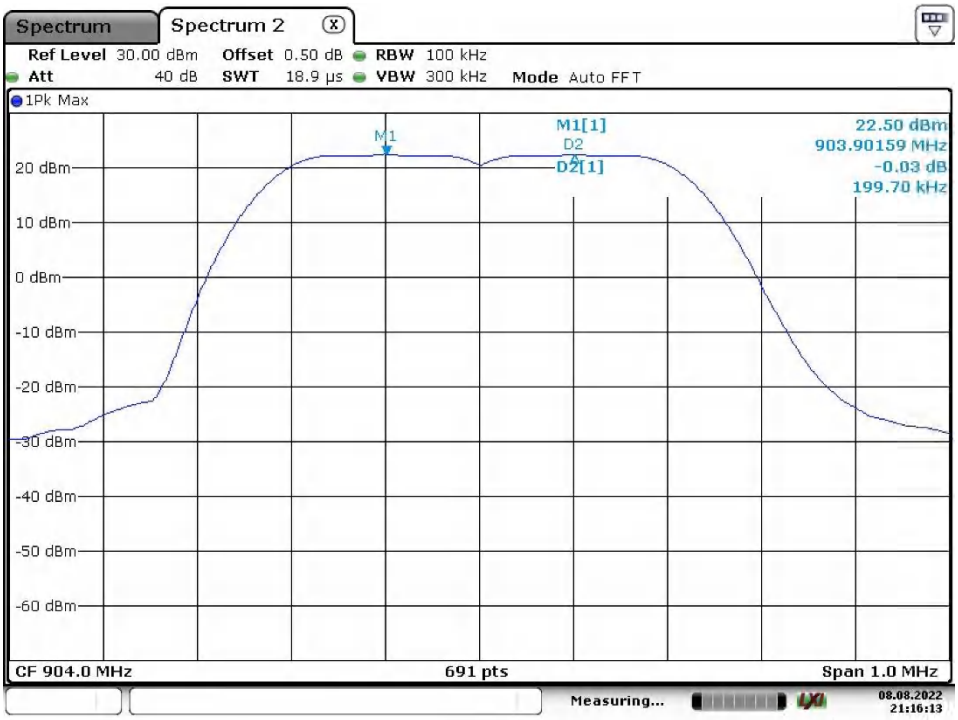
Date: 8.AUG.2022 20:27:29



Date: 8.AUG.2022 20:26:36

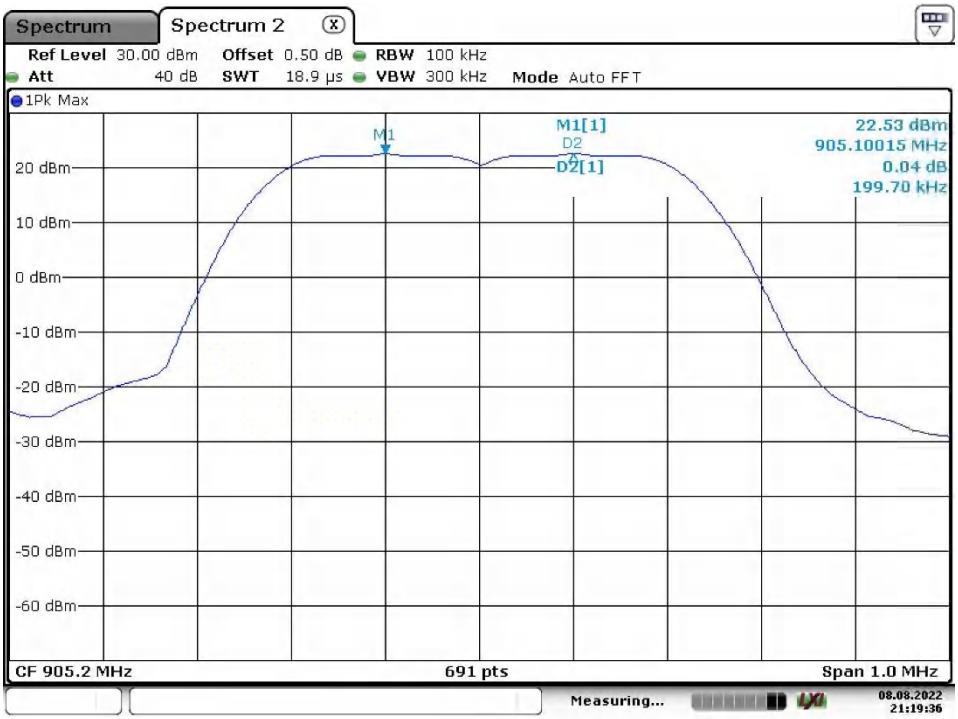
Appendix A.7: Carrier Frequency Separation

Lora Hybrid SF9
Low Channel



Date: 8.AUG.2022 21:16:13

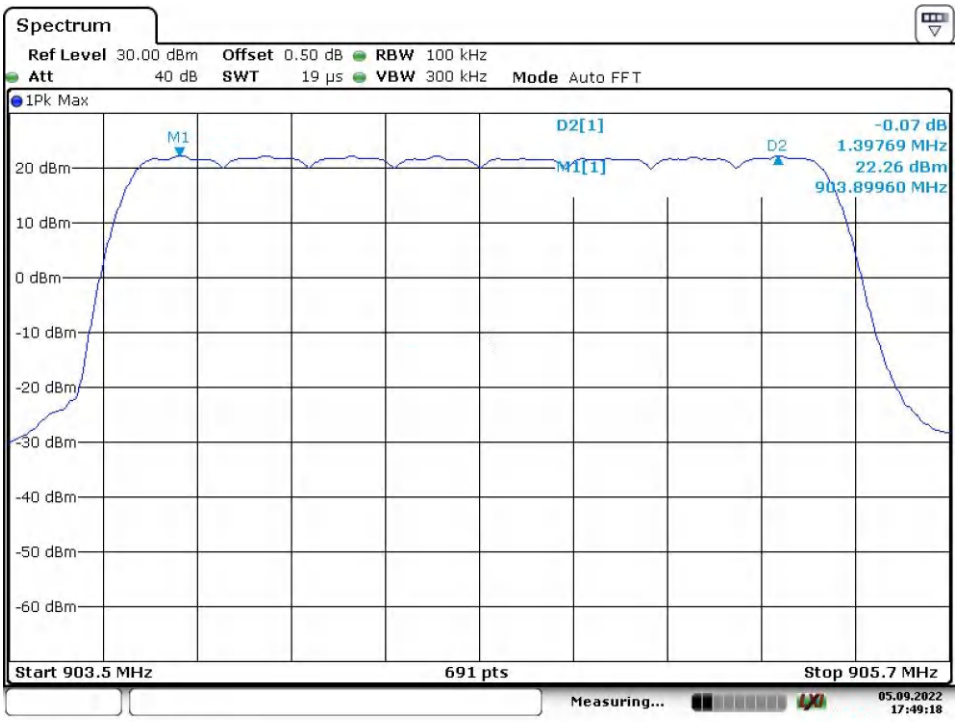
High Channel



Date: 8.AUG.2022 21:19:36

Appendix A.8: Number of Hopping Frequency

Lora Hybrid SF9



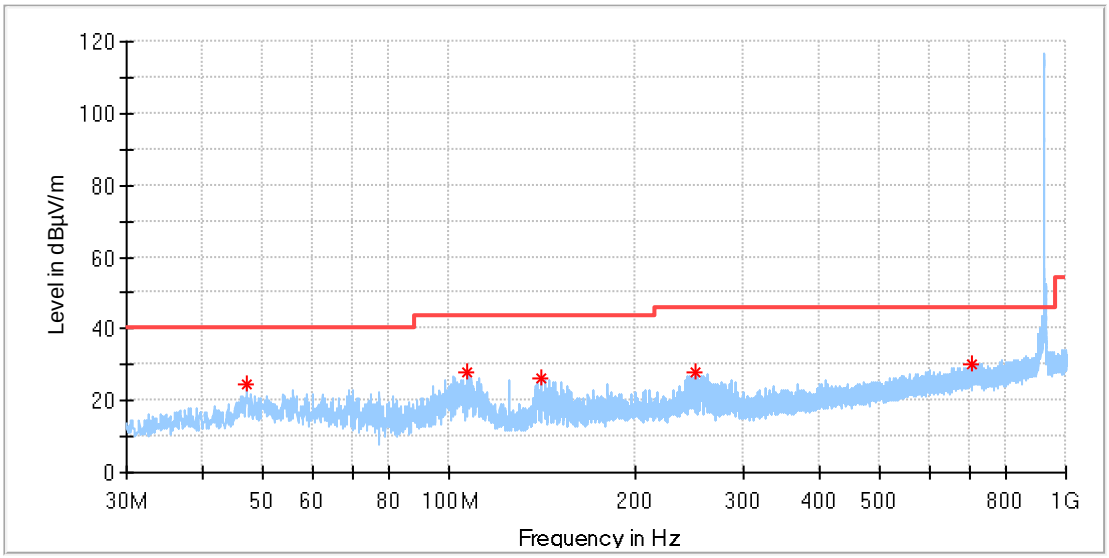
Date: 5.SEP.2022 17:49:19

Appendix A.9: Test Results of Radiated Spurious Emissions

Lora DTS SF7
30 MHz – 1 GHz
Low Channel

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_923.3MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

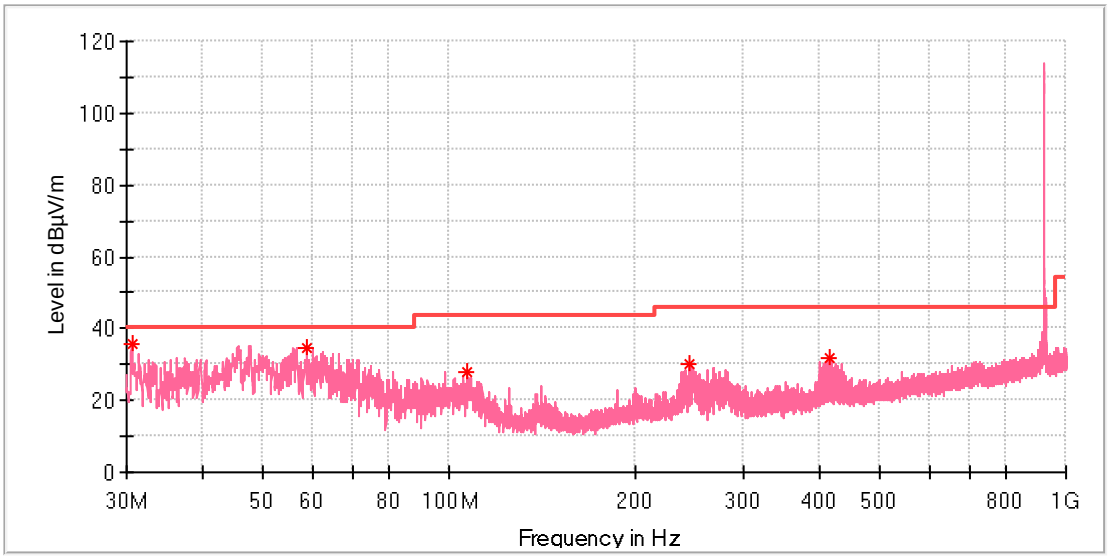
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
46.863077	24.80	40.00	15.20	100.0	H	304.0	-18.9
106.741923	28.07	43.50	15.43	100.0	H	180.0	-19.2
141.214231	26.27	43.50	17.23	100.0	H	329.0	-22.6
250.376539	27.97	46.00	18.03	100.0	H	228.0	-17.7
702.844231	30.02	46.00	15.98	100.0	H	113.0	-8.4

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_923.3MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.596923	35.44	40.00	4.56	100.0	V	199.0	-23.2
58.726923	34.77	40.00	5.23	100.0	V	199.0	-19.2
106.741923	28.15	43.50	15.35	100.0	V	279.0	-19.2
245.862308	29.93	46.00	16.07	100.0	V	230.0	-17.8
412.776923	32.08	46.00	13.92	100.0	V	101.0	-13.9

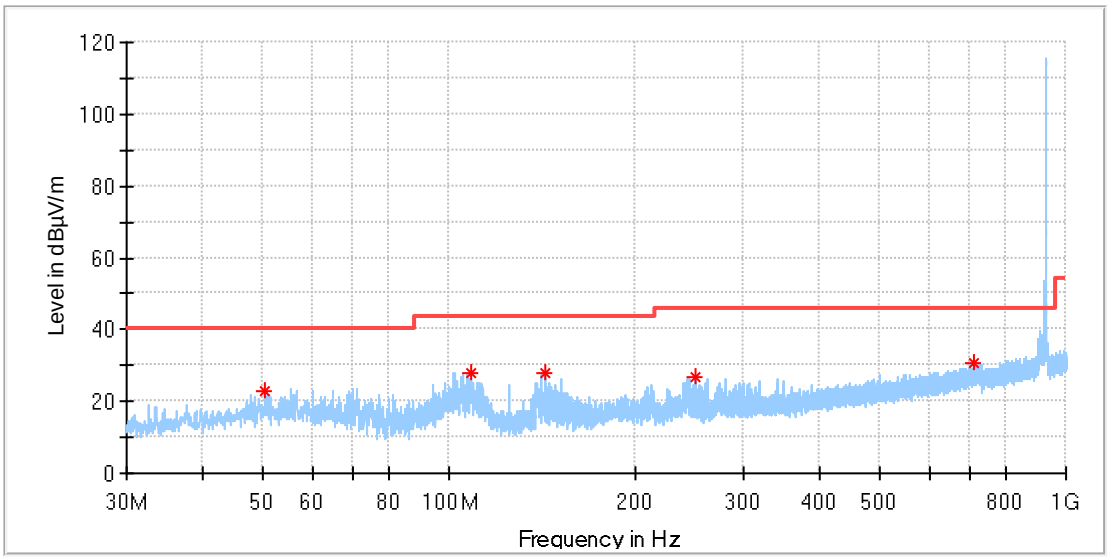
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Middle Channel

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
50.407308	22.67	40.00	17.33	100.0	H	203.0	-18.6
108.793846	27.97	43.50	15.53	100.0	H	210.0	-19.3
143.266154	27.97	43.50	15.53	100.0	H	337.0	-22.6
250.003462	26.83	46.00	19.17	100.0	H	265.0	-17.7
707.395769	30.85	46.00	15.15	100.0	H	13.0	-8.3

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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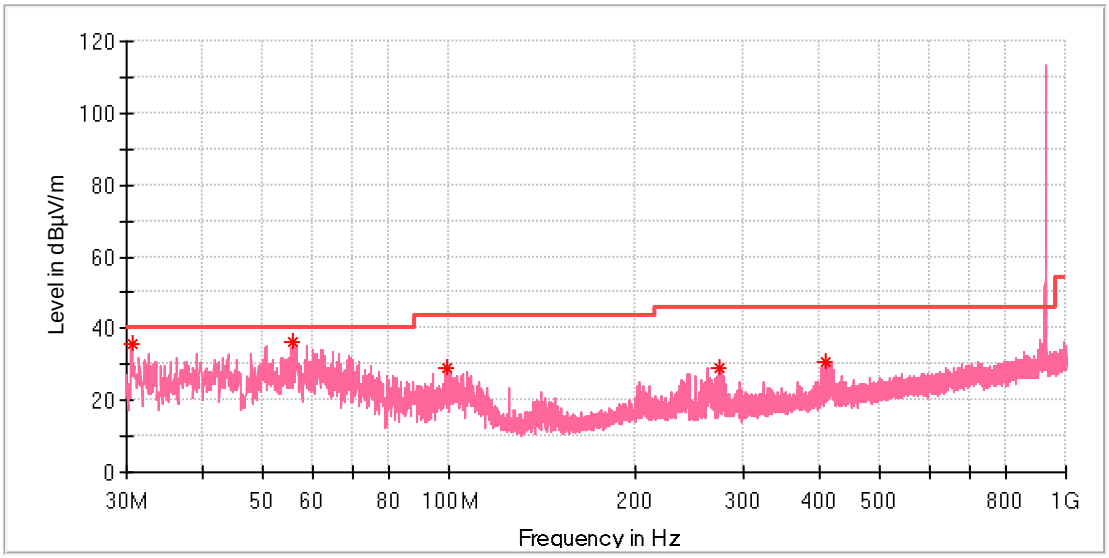
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.596923	35.52	40.00	4.48	100.0	V	239.0	-23.2
56.003462	36.43	40.00	3.57	100.0	V	175.0	-18.8
98.944615	28.98	43.50	14.52	100.0	V	29.0	-19.5
273.544615	29.11	46.00	16.89	100.0	V	134.0	-17.2
406.994231	30.65	46.00	15.35	100.0	V	86.0	-14.0

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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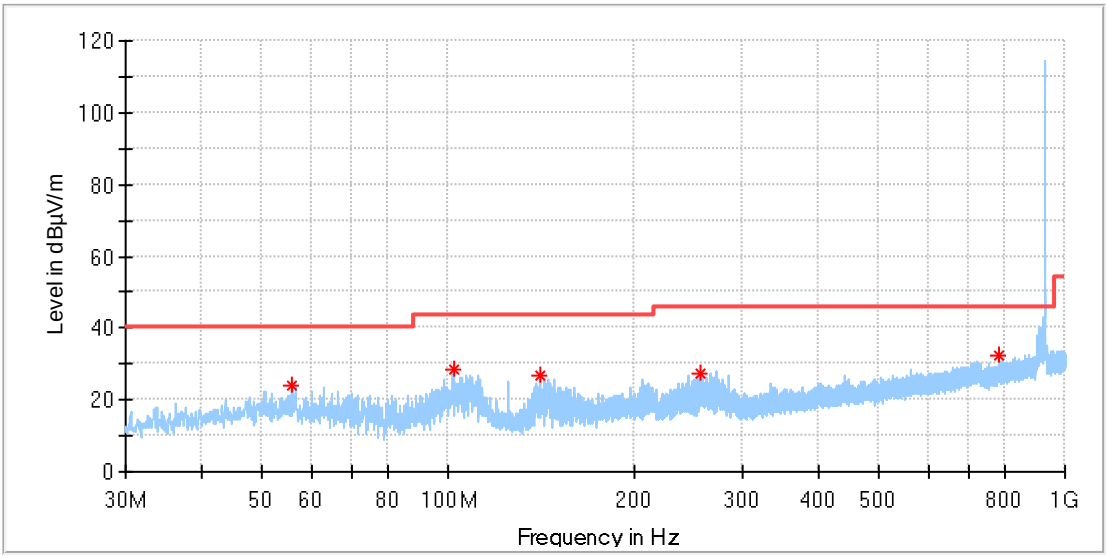
High Channel

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_927.5MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
56.003462	23.84	40.00	16.16	100.0	H	213.0	-18.8
101.891923	28.20	43.50	15.30	100.0	H	213.0	-19.2
141.176923	26.82	43.50	16.68	100.0	H	1.0	-22.6
255.636923	27.32	46.00	18.68	100.0	H	221.0	-17.6
782.906539	32.26	46.00	13.74	100.0	H	4.0	-7.1

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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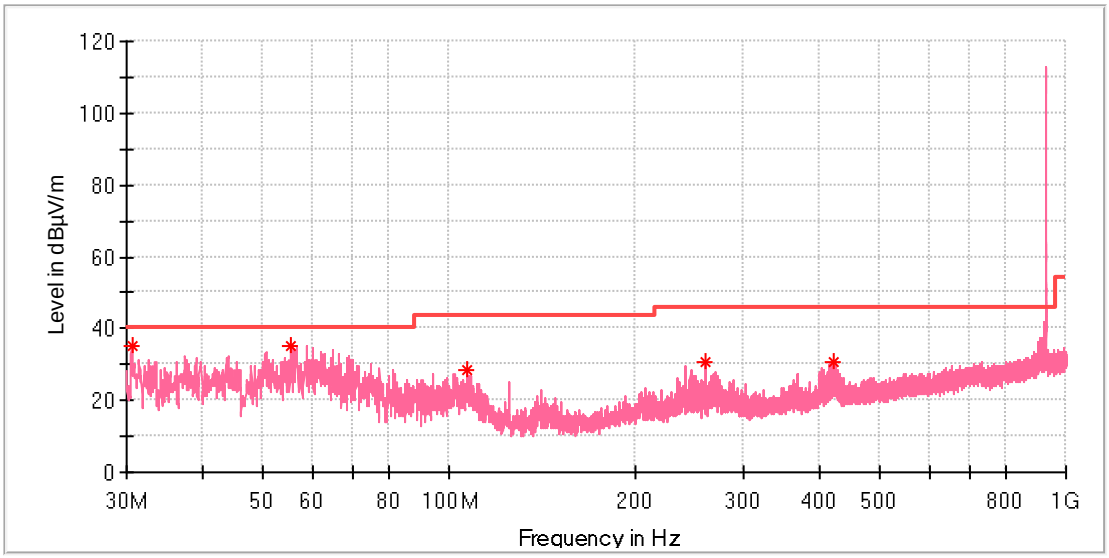
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_927.5MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.596923	35.29	40.00	4.71	100.0	V	217.0	-23.2
55.294615	35.12	40.00	4.88	100.0	V	244.0	-18.8
106.704615	28.35	43.50	15.15	100.0	V	276.0	-19.2
259.666154	30.97	46.00	15.03	100.0	V	200.0	-17.5
421.171154	30.90	46.00	15.10	100.0	V	101.0	-13.7

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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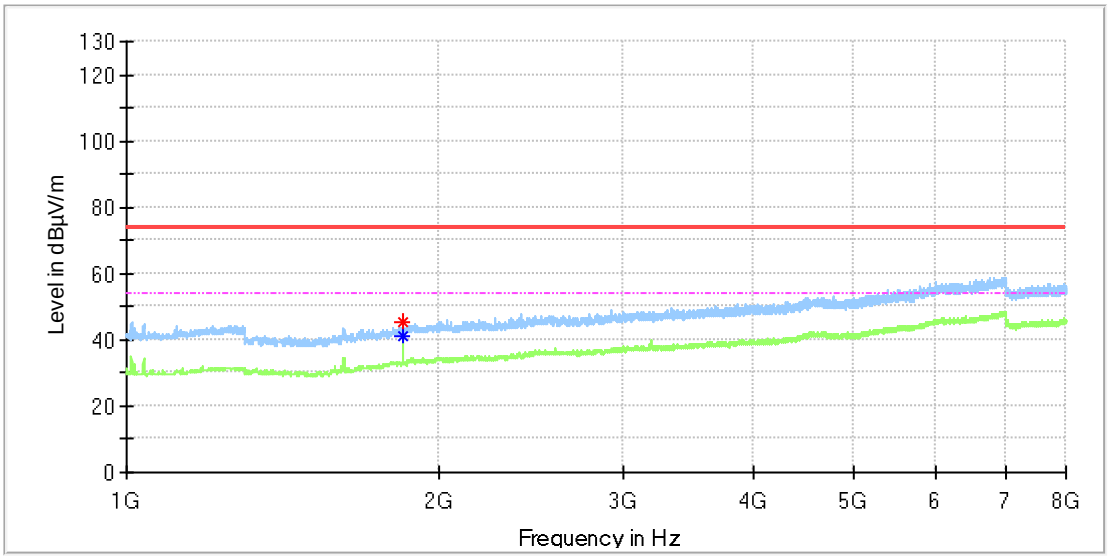
1 GHz – 10 GHz
Low Channel

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_923.3MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1846.050000	---	40.92	54.00	13.08	100.0	H	81.0	5.0
1846.887500	45.41	---	74.00	28.59	100.0	H	81.0	5.0

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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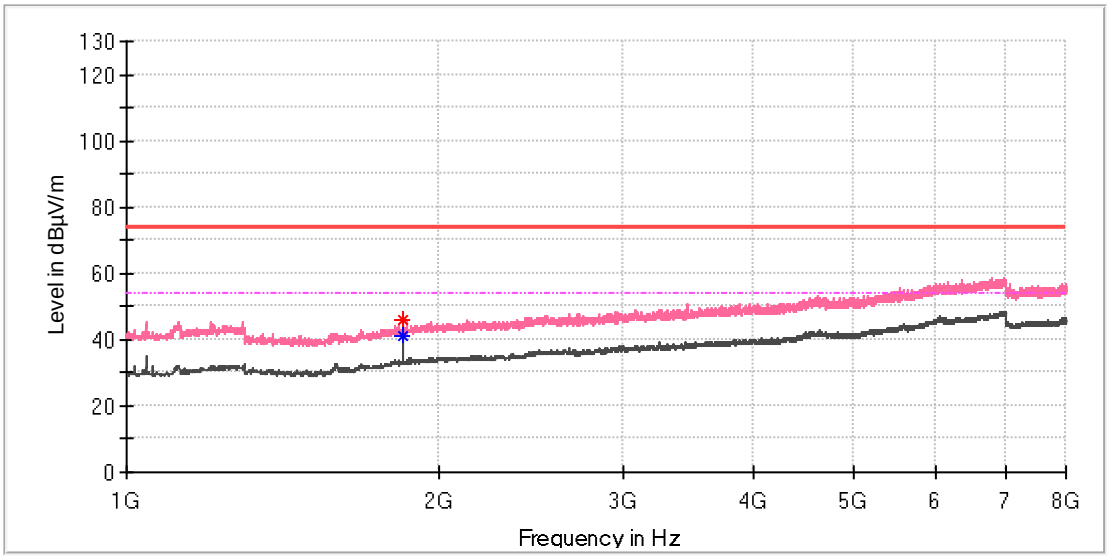
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_923.3MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1846.050000	---	41.12	54.00	12.88	100.0	V	161.0	5.0
1846.887500	45.96	---	74.00	28.04	100.0	V	161.0	5.0

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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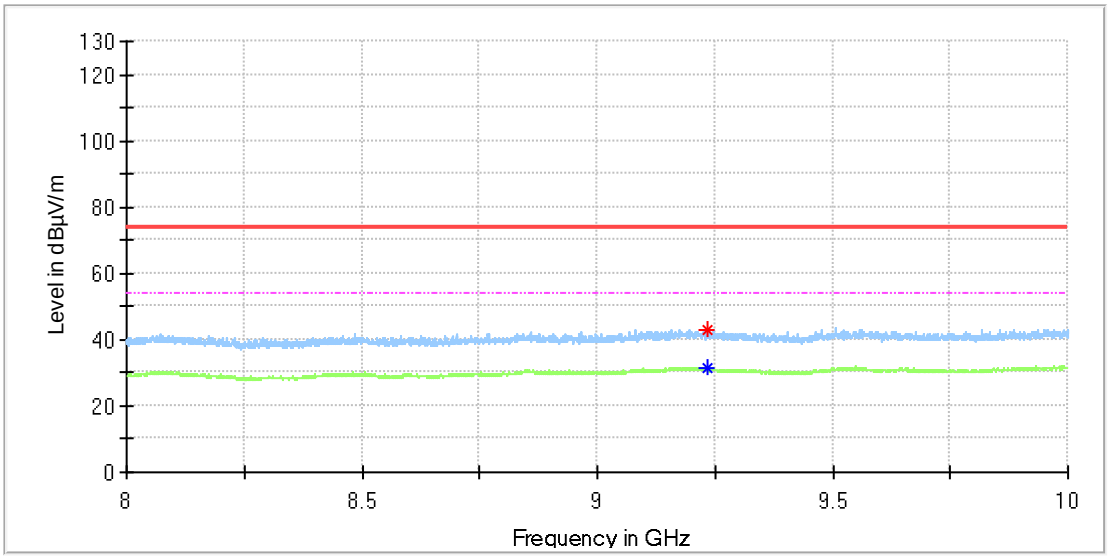
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_923.3MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9233.500000	42.75	---	74.00	31.25	100.0	H	314.0	10.4
9235.500000	---	31.22	54.00	22.78	100.0	H	359.0	10.4

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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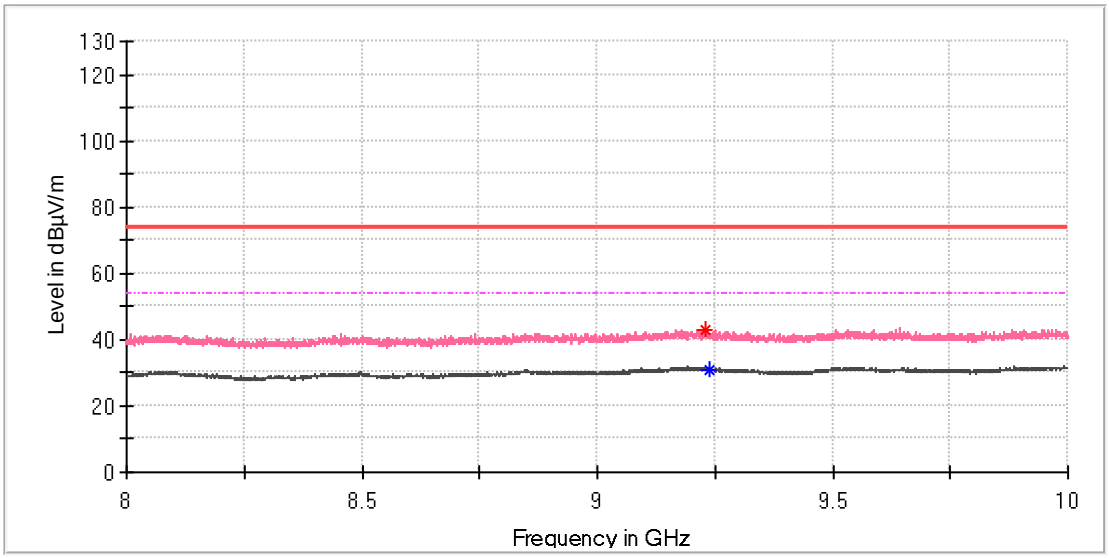
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_923.3MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9230.000000	42.92	---	74.00	31.08	100.0	V	47.0	10.4
9237.000000	---	31.13	54.00	22.87	100.0	V	0.0	10.4

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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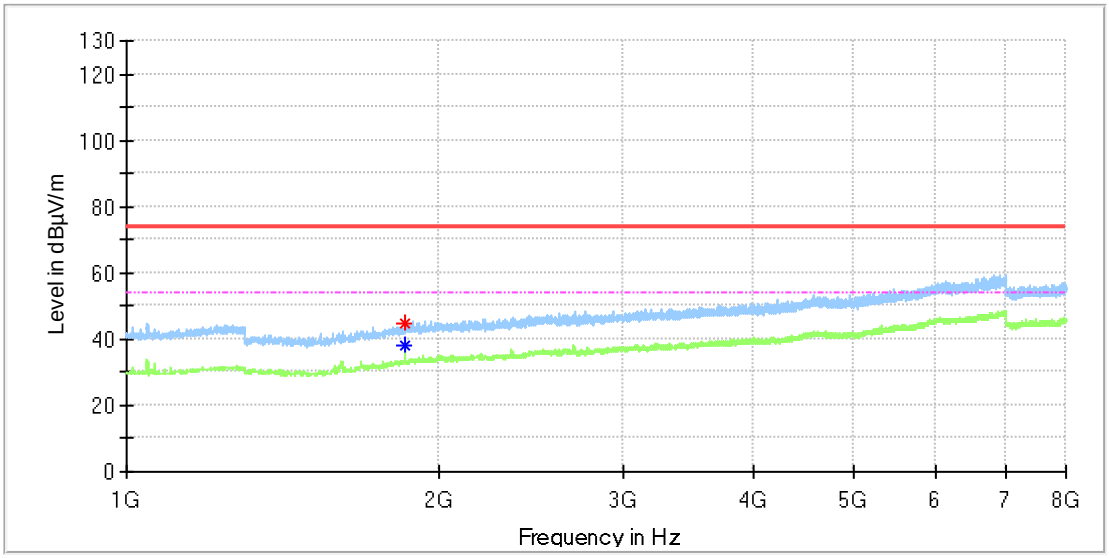
Middle Channel

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

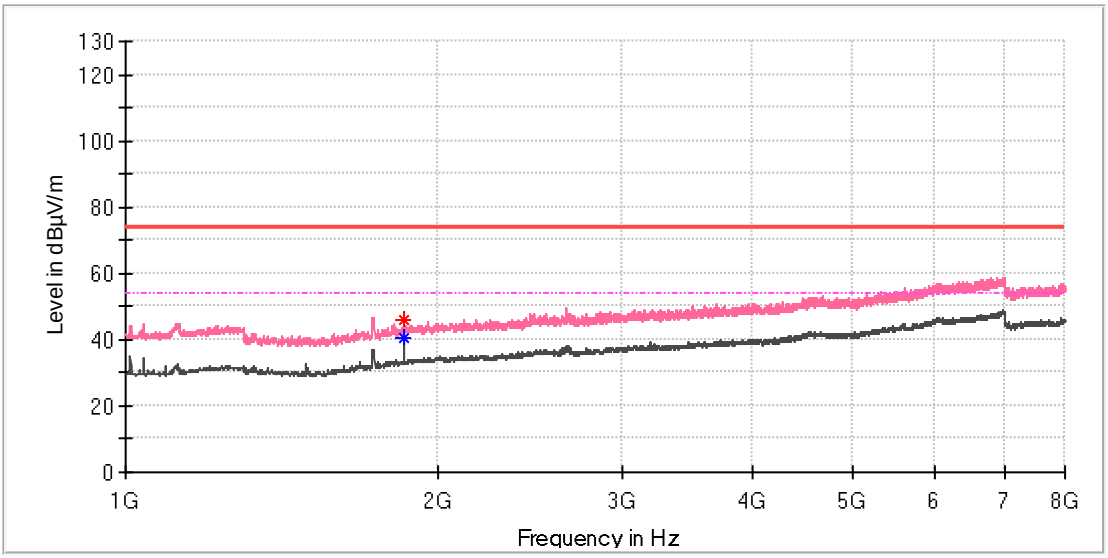
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1851.075000	44.52	---	74.00	29.48	100.0	H	68.0	5.0
1851.075000	---	37.96	54.00	16.04	100.0	H	68.0	5.0

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1851.075000	---	40.38	54.00	13.62	100.0	V	311.0	5.0
1851.075000	45.85	---	74.00	28.15	100.0	V	311.0	5.0

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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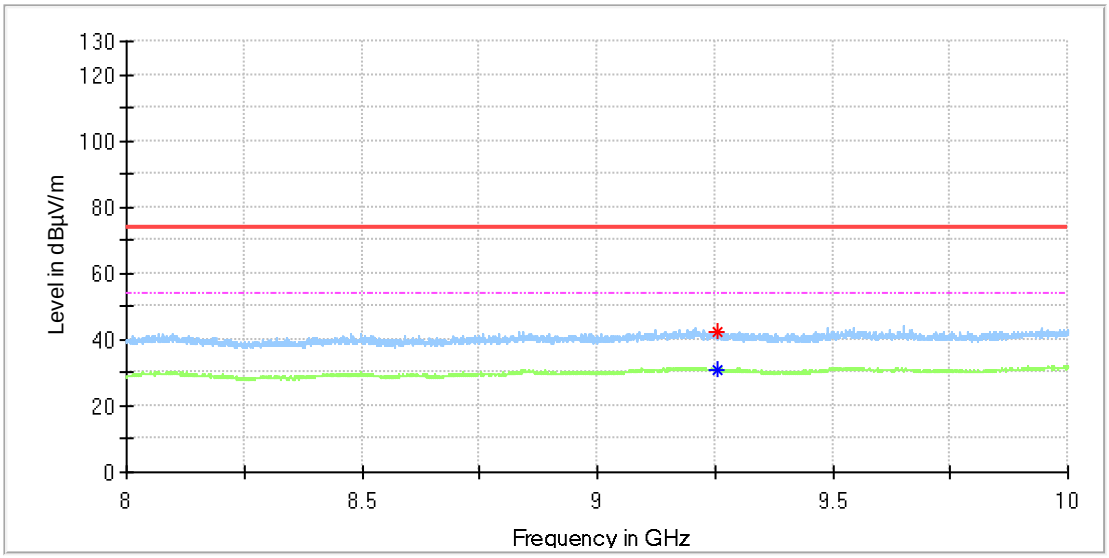
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

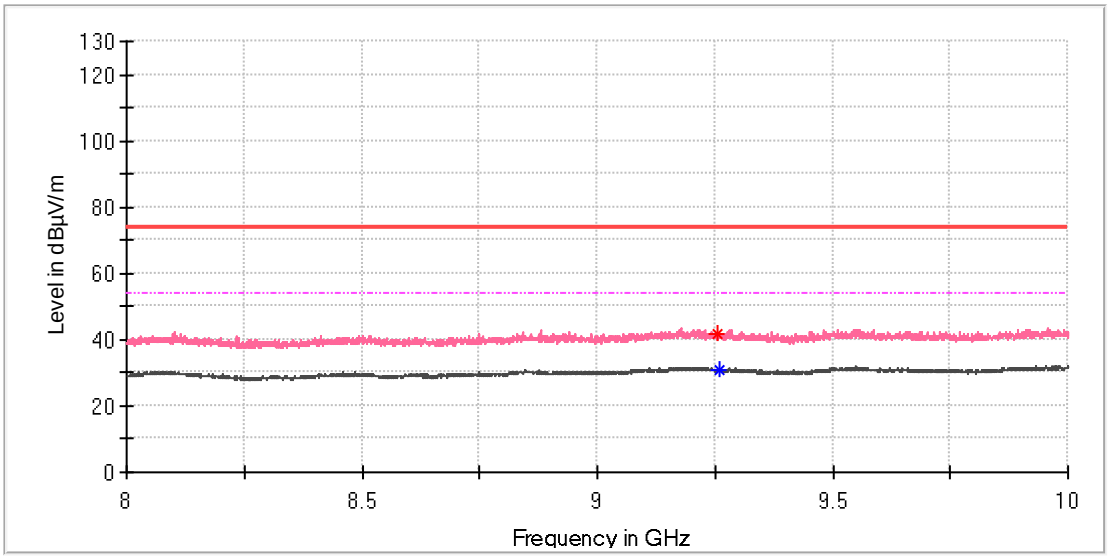
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9256.000000	42.48	---	74.00	31.52	100.0	H	357.0	10.4
9256.000000	---	31.07	54.00	22.93	100.0	H	357.0	10.4

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9254.000000	41.74	---	74.00	32.26	100.0	V	52.0	10.4
9258.000000	---	31.00	54.00	23.00	100.0	V	36.0	10.4

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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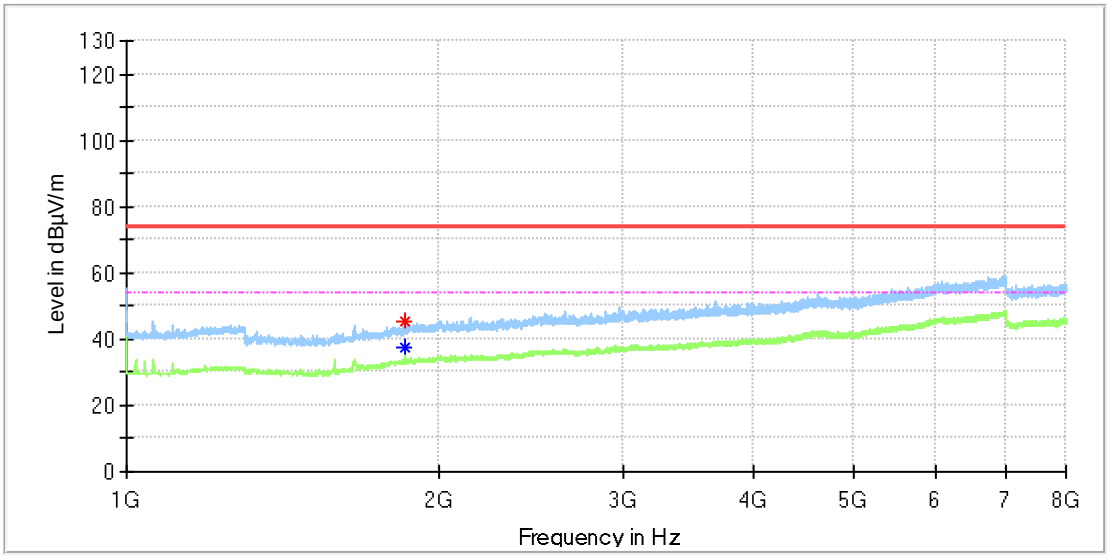
High Channel

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_927.5MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1854.425000	45.18	---	74.00	28.82	100.0	H	102.0	5.0
1854.425000	---	37.74	54.00	16.26	100.0	H	102.0	5.0

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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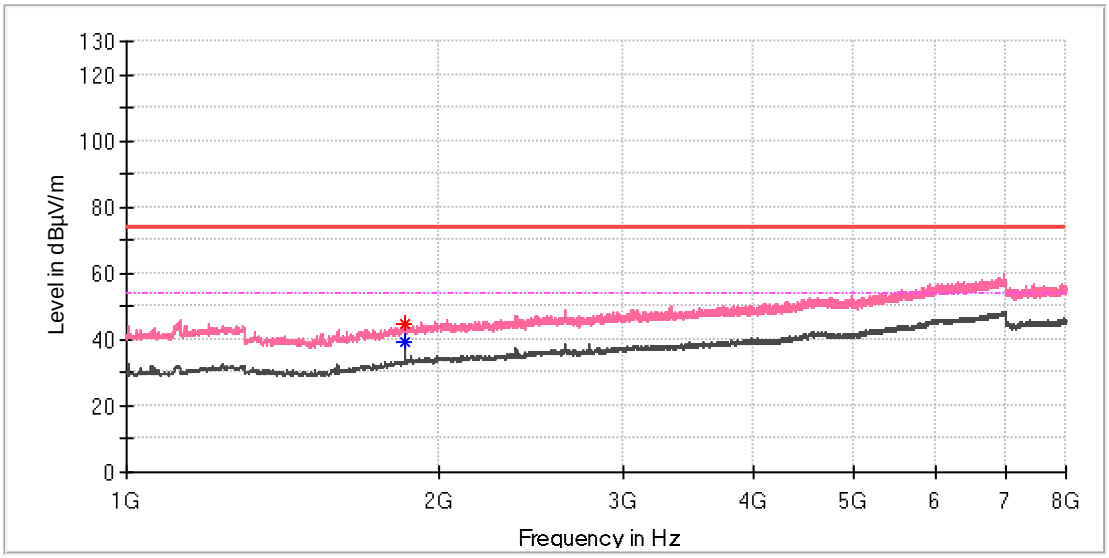
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_927.5MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1854.425000	44.76	---	74.00	29.24	100.0	V	8.0	5.0
1854.425000	---	39.50	54.00	14.50	100.0	V	8.0	5.0

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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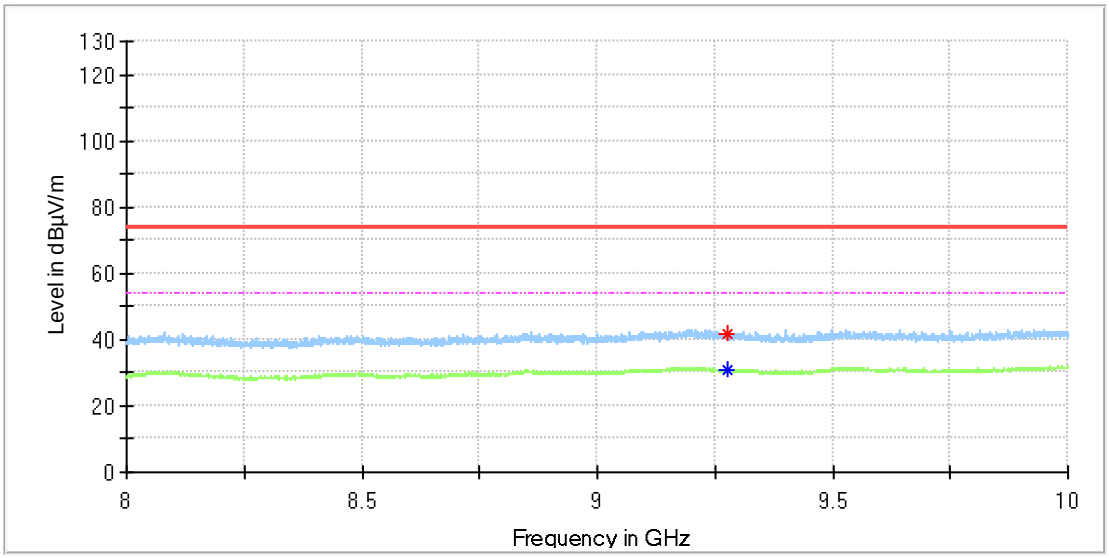
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_927.5MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

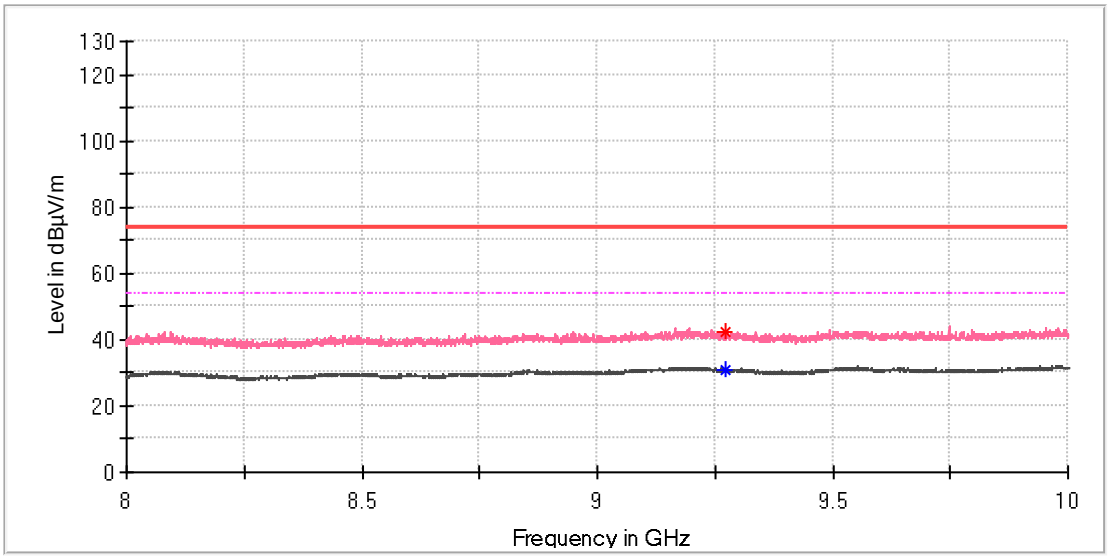
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9274.500000	41.60	---	74.00	32.40	100.0	H	100.0	10.2
9276.500000	---	30.95	54.00	23.05	100.0	H	195.0	10.2

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF7_927.5MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9271.000000	42.40	---	74.00	31.60	100.0	V	312.0	10.2
9271.500000	---	31.02	54.00	22.98	100.0	V	337.0	10.2

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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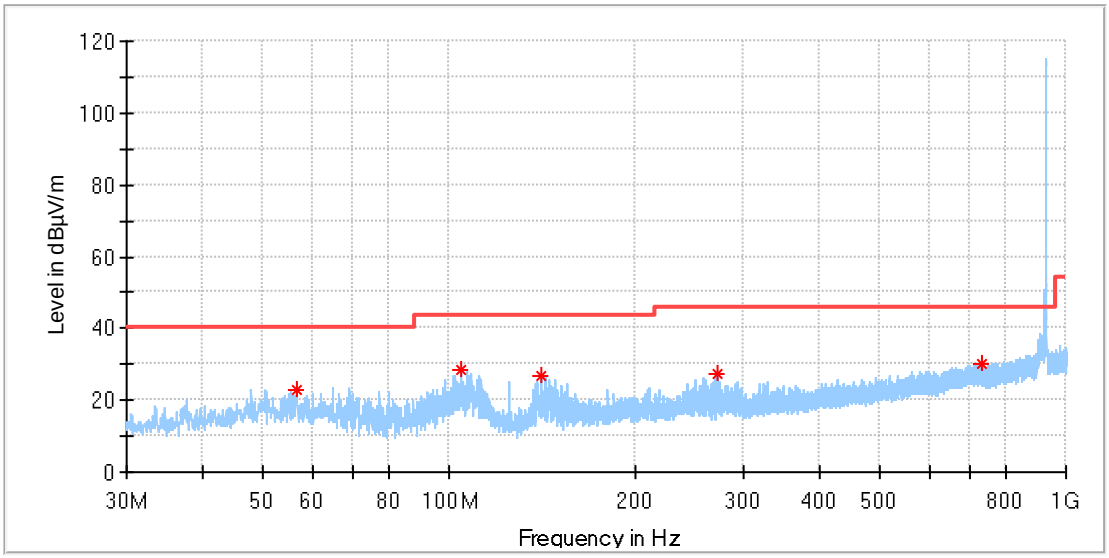
Lora DTS SF12
30 MHz – 1 GHz
Middle Channel

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF12_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

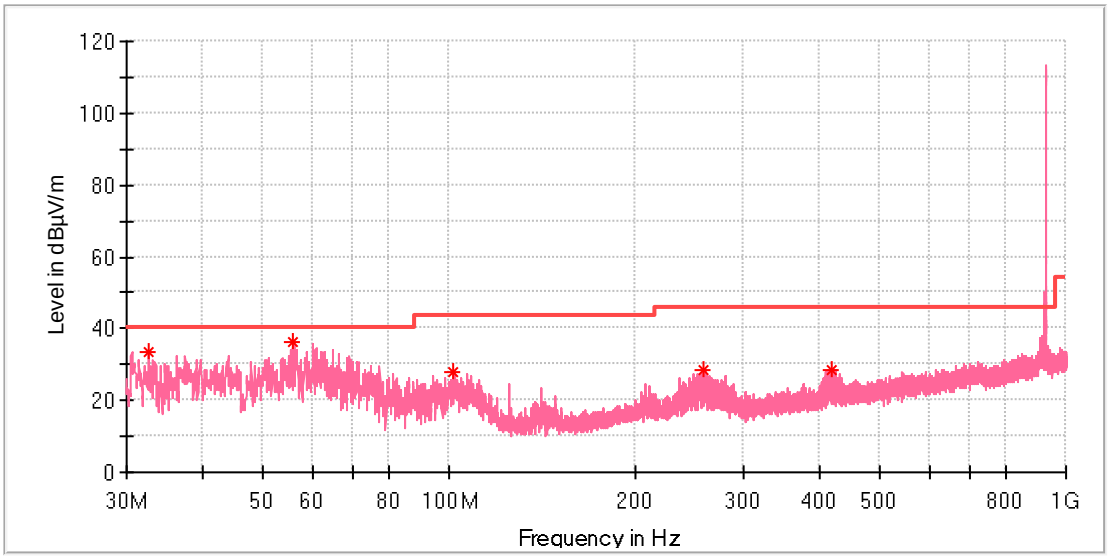
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
56.525769	22.87	40.00	17.13	100.0	H	198.0	-18.9
104.727308	28.22	43.50	15.28	100.0	H	198.0	-19.1
141.176923	26.90	43.50	16.60	100.0	H	0.0	-22.6
271.306154	27.15	46.00	18.85	100.0	H	44.0	-17.2
729.183462	30.10	46.00	15.90	100.0	H	23.0	-7.9

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF12_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
32.574231	33.28	40.00	6.72	100.0	V	251.0	-22.9
56.003462	36.09	40.00	3.91	100.0	V	165.0	-18.8
101.854615	27.67	43.50	15.83	100.0	V	54.0	-19.2
258.173846	28.61	46.00	17.39	100.0	V	227.0	-17.5
415.425769	28.38	46.00	17.62	100.0	V	141.0	-13.8

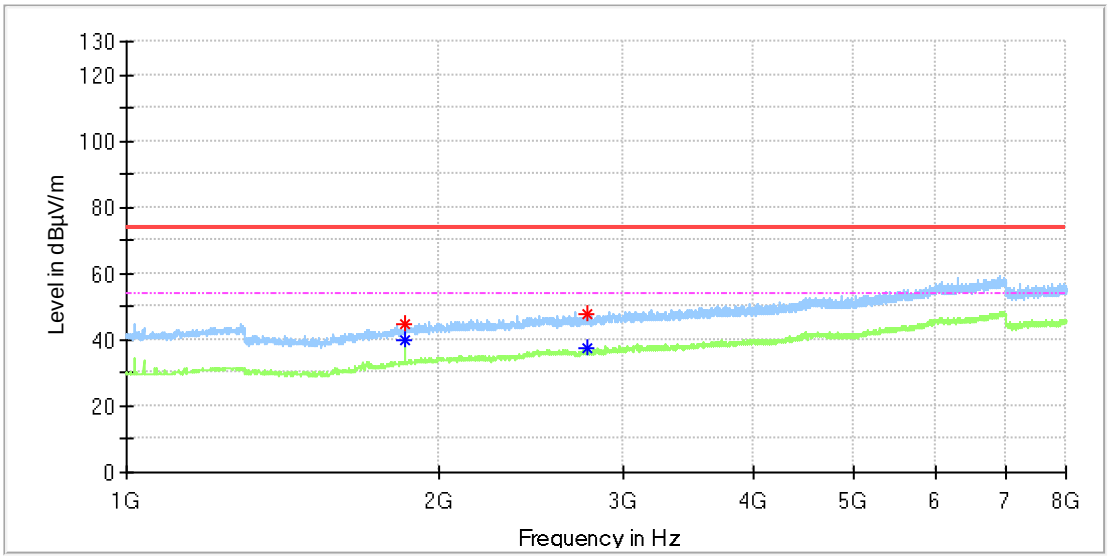
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1 GHz – 10 GHz
Middle Channel

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF12_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

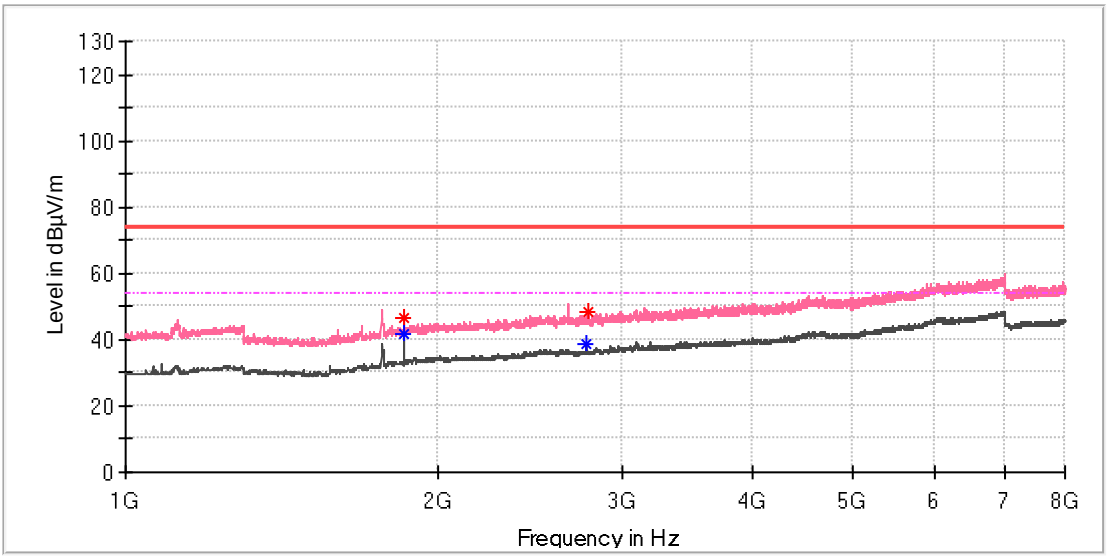
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1851.075000	44.93	---	74.00	29.07	100.0	H	80.0	5.0
1851.075000	---	39.75	54.00	14.25	100.0	H	80.0	5.0
2774.837500	47.70	---	74.00	26.30	100.0	H	37.0	7.9
2777.350000	---	37.25	54.00	16.75	100.0	H	168.0	7.9

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF12_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

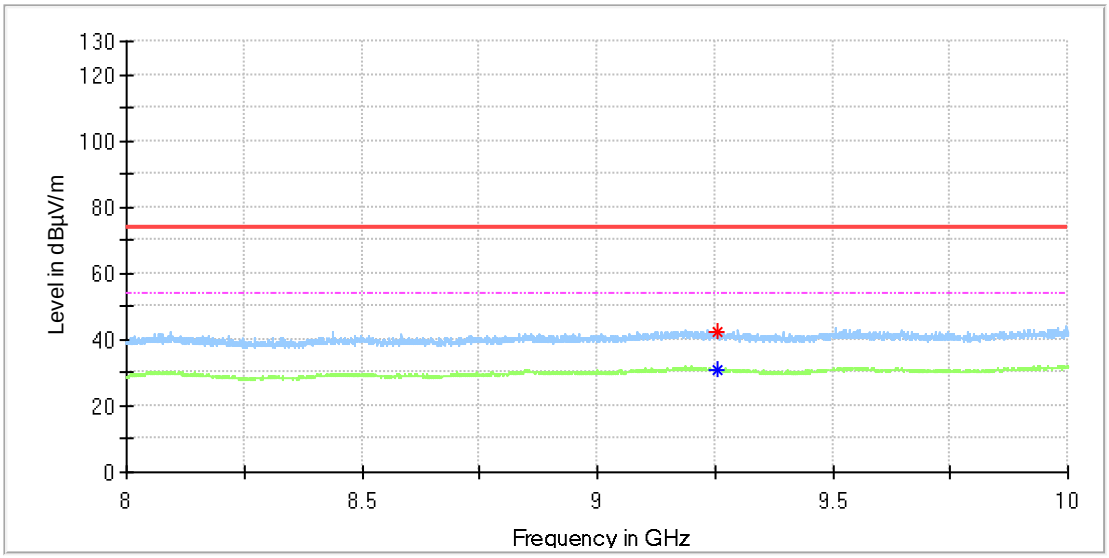
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1851.075000	46.65	---	74.00	27.35	100.0	V	309.0	5.0
1851.075000	---	41.47	54.00	12.53	100.0	V	309.0	5.0
2777.350000	---	38.68	54.00	15.32	100.0	V	309.0	7.9
2779.862500	48.65	---	74.00	25.35	100.0	V	139.0	7.9

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF12_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9254.000000	42.30	---	74.00	31.70	100.0	H	88.0	10.4
9256.000000	---	30.97	54.00	23.03	100.0	H	70.0	10.4

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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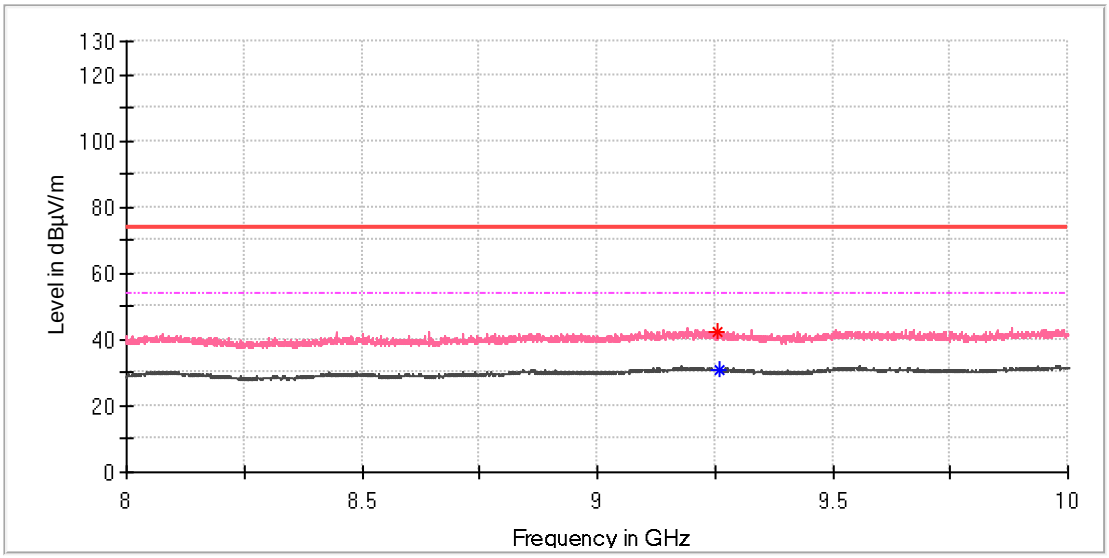
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF12_925.7MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9254.500000	42.50	---	74.00	31.50	100.0	V	213.0	10.4
9259.500000	---	31.13	54.00	22.87	100.0	V	0.0	10.4

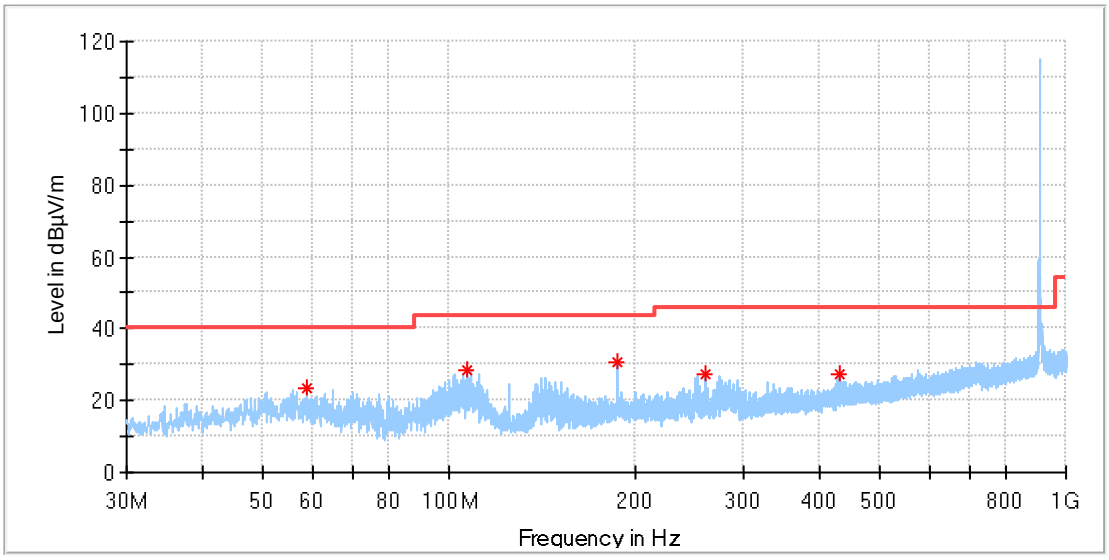
Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Lora DTS SF11
30 MHz – 1 GHz

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF11_904.6MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
58.689615	23.43	40.00	16.57	100.0	H	213.0	-19.1
106.741923	28.30	43.50	15.20	100.0	H	213.0	-19.2
187.848846	30.87	43.50	12.63	100.0	H	124.0	-20.1
259.703462	27.36	46.00	18.64	100.0	H	124.0	-17.5
428.222308	27.09	46.00	18.91	100.0	H	293.0	-13.6

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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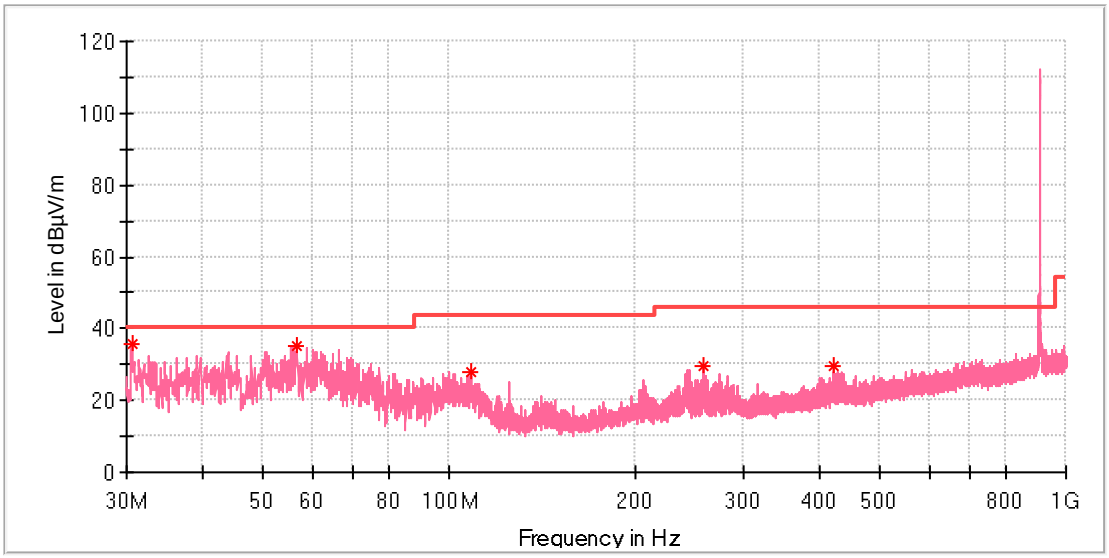
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF11_904.6MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.596923	35.63	40.00	4.37	100.0	V	275.0	-23.2
56.749615	35.17	40.00	4.83	100.0	V	243.0	-18.9
108.793846	28.02	43.50	15.48	100.0	V	275.0	-19.3
258.584231	29.83	46.00	16.17	100.0	V	3.0	-17.5
420.984615	29.66	46.00	16.34	100.0	V	70.0	-13.7

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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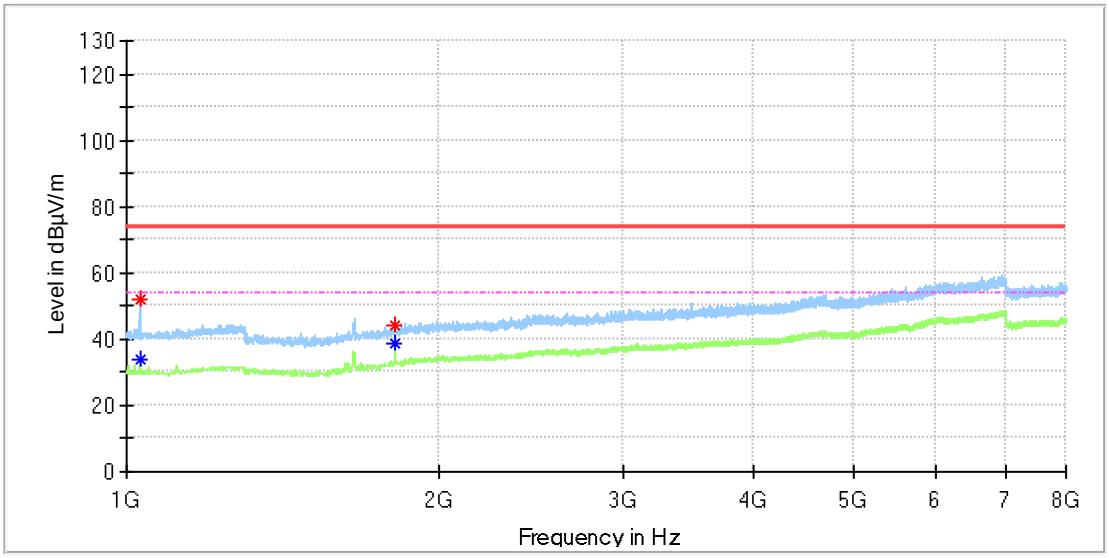
1 GHz – 10 GHz

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF11_904.6MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1029.500000	51.98	---	74.00	22.02	100.0	H	0.0	-0.2
1030.000000	---	34.09	54.00	19.91	100.0	H	0.0	-0.2
1808.362500	---	38.93	54.00	15.07	100.0	H	264.0	4.8
1809.200000	44.42	---	74.00	29.58	100.0	H	264.0	4.8

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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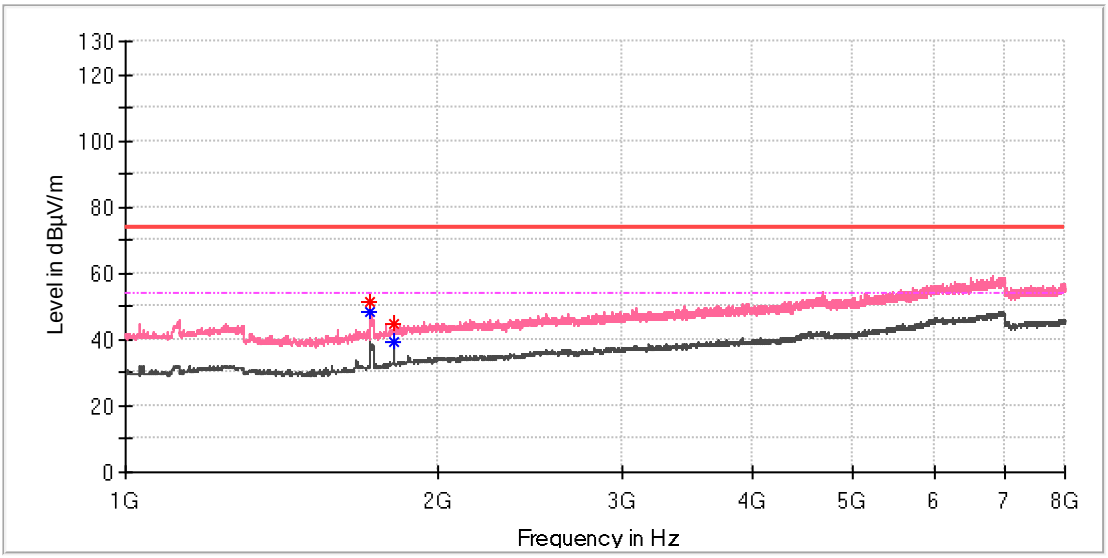
EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF11_904.6MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

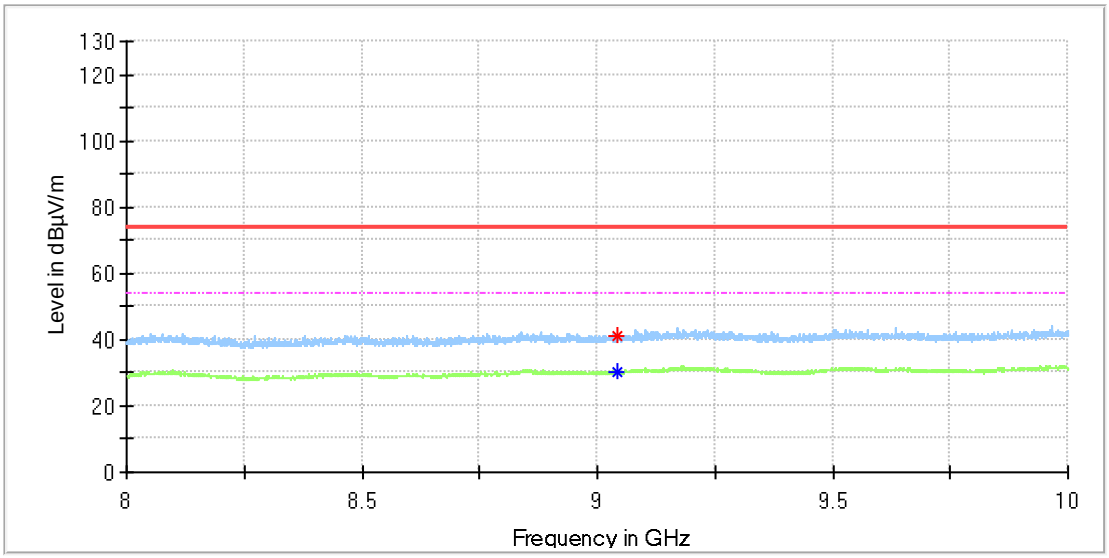
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1718.750000	51.25	---	74.00	22.75	100.0	V	317.0	3.4
1718.750000	---	48.54	54.00	5.46	100.0	V	317.0	3.4
1808.362500	45.03	---	74.00	28.97	100.0	V	325.0	4.8
1808.362500	---	39.08	54.00	14.92	100.0	V	325.0	4.8

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF11_904.6MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

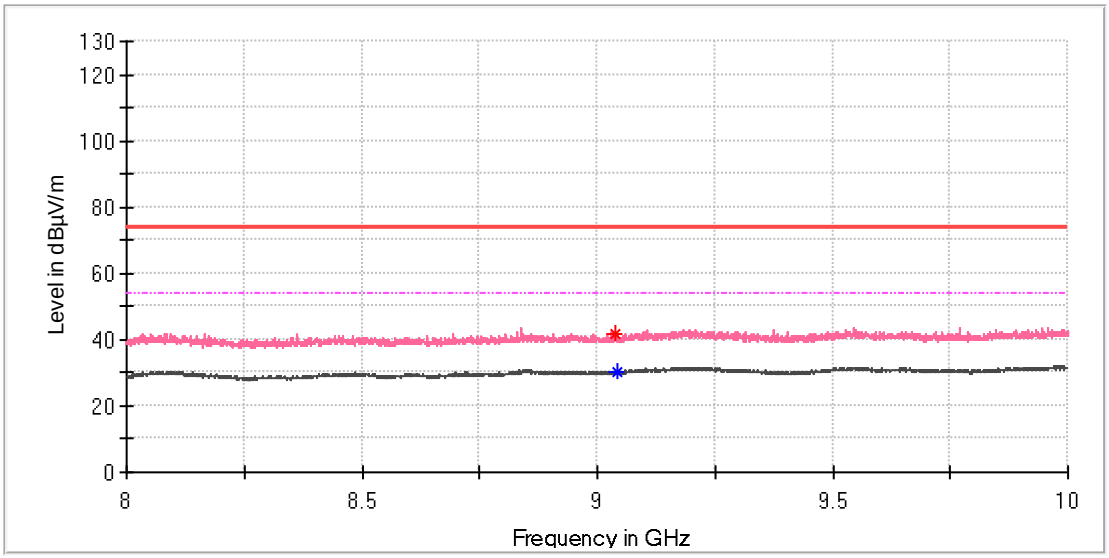
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9043.000000	41.34	---	74.00	32.66	100.0	H	68.0	8.9
9043.000000	---	30.35	54.00	23.65	100.0	H	68.0	8.9

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Model:	PDTIOT-IZEE900
Test Mode:	Lora_DTS 500K_SF11_904.6MHz
Order No/Sample No:	168382800/A003273434-002
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9038.000000	41.84	---	74.00	32.16	100.0	V	42.0	8.9
9044.000000	---	30.30	54.00	23.70	100.0	V	119.0	8.9

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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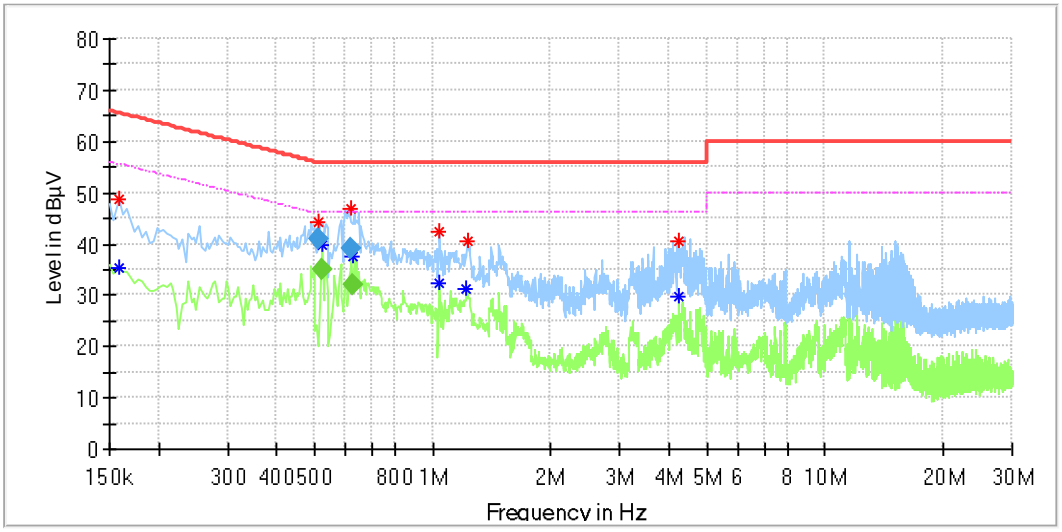
Appendix A.10: Test Results of Conducted Emission on AC Mains
Live

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Order Number:	168382800
Model:	PDTIOT-IZEE900
Test Mode:	On, LoRA SF7_500K_925.7 MHz
Test Voltage:	5V via USB port
Test By:/Review By:	Charlie Zha/Gary Chen
Test Standard:	FCC Part 15C
Tem./Hum./Pressure:	23.7°C/52.4%//101kPa
Remark:	SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.158000	48.71	---	65.57	16.86	L1	9.9
0.158000	---	35.42	55.57	20.15	L1	9.9
0.513500	44.34	---	56.00	11.66	L1	10.0
0.525500	---	39.90	46.00	6.10	L1	10.0
0.617500	47.05	---	56.00	8.95	L1	10.0
0.626500	---	37.70	46.00	8.30	L1	10.0
1.042000	42.42	---	56.00	13.58	L1	10.0
1.042000	---	32.38	46.00	13.62	L1	10.0
1.218000	---	31.22	46.00	14.78	L1	10.1
1.226000	40.67	---	56.00	15.33	L1	10.1
4.230000	40.46	---	56.00	15.54	L1	10.2
4.230000	---	29.71	46.00	16.29	L1	10.2

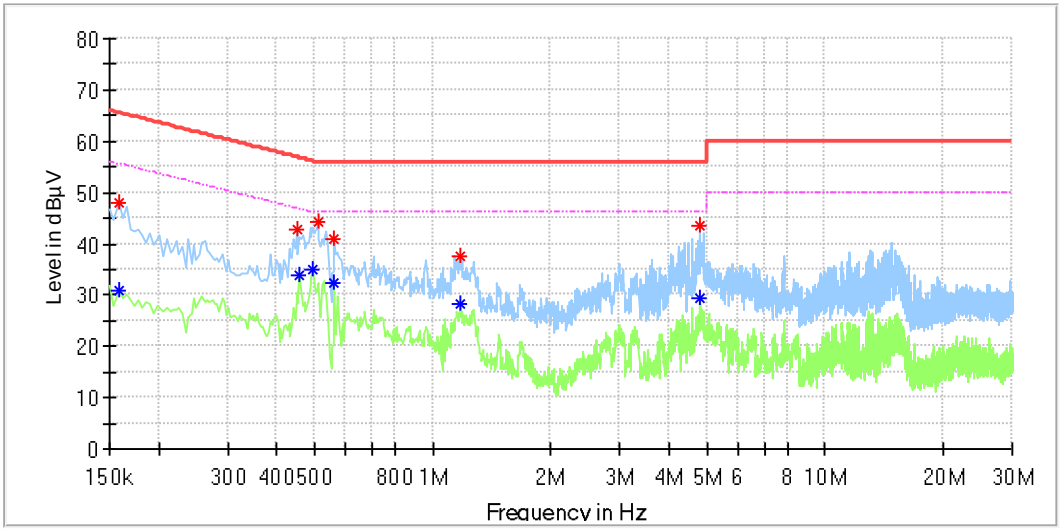
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.513500	41.06	---	56.00	14.94	3000.0	9.000	L1	10.0
0.525500	---	35.02	46.00	10.98	3000.0	9.000	L1	10.0
0.617500	39.21	---	56.00	16.79	3000.0	9.000	L1	10.0
0.626500	---	31.91	46.00	14.09	3000.0	9.000	L1	10.0

Neutral

EUT Information

EUT Name:	Wirnet™ iZeptoCell
Order Number:	168382800
Model:	PDTIOT-IZEE900
Test Mode:	On, LoRA SF7_500K_925.7 MHz
Test Voltage:	5V via USB port
Test By:/Review By:	Charlie Zha/Gary Chen
Test Standard:	FCC Part 15C
Tem./Hum./Pressure:	23.7°C/52.4%//101kPa
Remark:	SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.158000	---	30.73	55.57	24.84	N	9.8
0.158000	48.03	---	65.57	17.54	N	9.8
0.450000	42.74	---	56.88	14.14	N	9.8
0.458000	---	33.72	46.73	13.01	N	9.8
0.494000	---	35.10	46.10	11.01	N	9.8
0.510000	44.13	---	56.00	11.87	N	9.8
0.562000	41.04	---	56.00	14.96	N	9.8
0.562000	---	32.55	46.00	13.45	N	9.8
1.170000	37.55	---	56.00	18.45	N	9.8
1.174000	---	28.35	46.00	17.65	N	9.8
4.786000	43.39	---	56.00	12.61	N	9.9
4.822000	---	29.40	46.00	16.60	N	9.9

========== END OF APPENDIX ==========