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# FCC Test Report

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Report No.: AGC00688201002FE02A

**PRODUCT DESIGNATION** : LR FAMILY  
**BRAND NAME** : N/A  
**MODEL NAME** : IDF32XXXX  
**APPLICANT** : ELA Innovation  
**DATE OF ISSUE** : Mar. 11, 2021  
**STANDARD(S)** : FCC Part 15.247  
**REPORT VERSION** : V1.2

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**REPORT REVISE RECORD**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Nov. 27, 2020	Invalid	Initial Release
V1.1	1st	Jan. 27, 2021	Invalid	Update the comments.
V1.2	2st	Mar. 11, 2021	Valid	Update the comments.

**Note:** The original test report Ref. No. AGC00688201002FE02 (dated 2021-02-02), was modified on 2021-03-11 to change the product designation, no further testing necessary.

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## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

The EUT is designed as a “LR FAMILY”. It is designed by way of utilizing the LoRa technology to achieve the system operation.

A major technical description of EUT is described as following

<b>Operation Frequency</b>	902 MHz to 928MHz
<b>RF Output Power</b>	0.402dBm (Max)
<b>Modulation</b>	LoRa
<b>BW/Frequency Range</b>	UP: 1.6MHz Down: 0.6MHz
<b>Number of channels</b>	UP: 8 Channel Down:8 Channel
<b>Antenna Designation</b>	PCB Antenna (Comply with requirements of the FCC part 15.203)
<b>Antenna Gain</b>	0dBi
<b>Hardware Version</b>	V1.02
<b>Software Version</b>	V1.0
<b>Power Supply</b>	DC 3.6V by battery

### 2.2. TABLE OF CARRIER FREQUENCIES

uplink

Frequency Band	Channel Number	Frequency(MHz)
903-914.2 MHz	<b>0</b>	<b>903.0</b>
	1	904.6
	2	906.2
	<b>3</b>	<b>907.8</b>
	4	909.4
	5	911.0
	6	912.6
	<b>7</b>	<b>914.2</b>

Note: The channel spacing is 1.6MHz.

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**Downlink**

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

Note: The channel spacing is 0.6MHz.

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### 2.3. RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: RVVELOR AHL1** filing to comply with the FCC Part 15.247 requirements.

### 2.4. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

### 2.5. SPECIAL ACCESSORIES

Refer to section 5.2.

### 2.6. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

### 2.7. ANTENNA REQUIREMENT

This intentional radiator is designed with a permanently attached antenna of an antenna to ensure that no antenna other than that furnished by the responsible party shall be used with the device.  
For more information of the antenna, please refer to the APPENDIX B: PHOTOGRAPHS OF EUT.

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### 3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95%.

- Uncertainty of Conducted Emission,  $U_c = \pm 3.1$  dB
- Uncertainty of Radiated Emission below 1GHz,  $U_c = \pm 4.0$  dB
- Uncertainty of Radiated Emission above 1GHz,  $U_c = \pm 4.8$  dB
- Uncertainty of total RF power, conducted,  $U_c = \pm 0.8$  dB
- Uncertainty of RF power density, conducted,  $U_c = \pm 2.6$  dB
- Uncertainty of spurious emissions, conducted,  $U_c = \pm 2.7$  dB
- Uncertainty of Occupied Channel Bandwidth:  $U_c = \pm 2$  %

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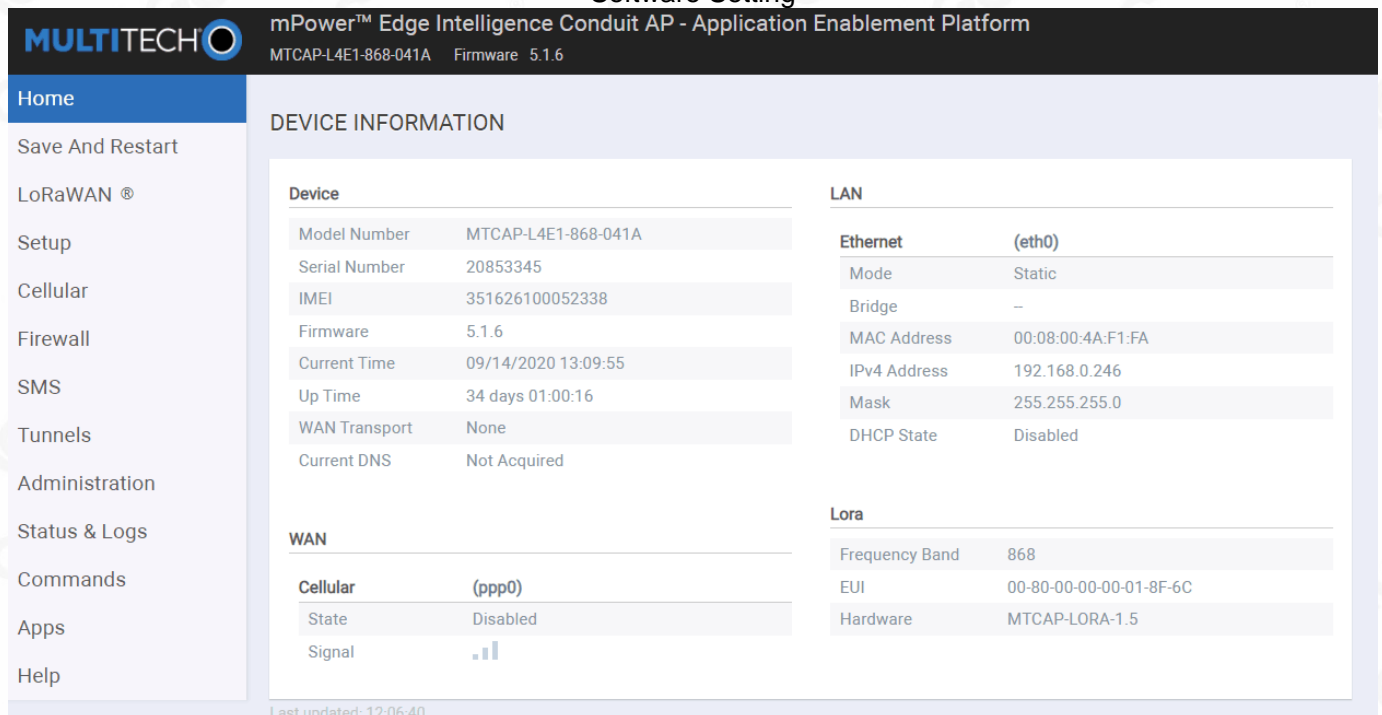
#### 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX

Note:

1. Only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

#### Software Setting



The screenshot shows the web interface for the Multitech mPower™ Edge Intelligence Conduit AP. The page title is "mPower™ Edge Intelligence Conduit AP - Application Enablement Platform" with device ID "MTCAP-L4E1-868-041A" and firmware "5.1.6". A left sidebar contains navigation options: Home, Save And Restart, LoRaWAN®, Setup, Cellular, Firewall, SMS, Tunnels, Administration, Status & Logs, Commands, Apps, and Help. The main content area is titled "DEVICE INFORMATION" and is divided into three sections: Device, LAN, and WAN. The Device section lists: Model Number (MTCAP-L4E1-868-041A), Serial Number (20853345), IMEI (351626100052338), Firmware (5.1.6), Current Time (09/14/2020 13:09:55), Up Time (34 days 01:00:16), WAN Transport (None), and Current DNS (Not Acquired). The LAN section includes Ethernet (eth0) with Mode (Static), Bridge (–), MAC Address (00:08:00:4A:F1:FA), IPv4 Address (192.168.0.246), Mask (255.255.255.0), and DHCP State (Disabled). The WAN section includes Cellular (ppp0) with State (Disabled) and Signal strength (represented by a bar chart icon). A footer note states "Last updated: 12:06:40".

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## 5. SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF TESTED SYSTEM

Radiated Emission Configure:



### 5.2. EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	LR FAMILY	IDF32XXXX	RVVELOR AHL1	EUT

### 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
15.247 (b)(3)	Peak Output Power	Compliant
15.247 (a)(2)	6 dB Bandwidth	Compliant
15.247 (d)	Conducted Spurious Emission	Compliant
15.247 (e)	Maximum Conducted Output Power Density	Compliant
15.209	Radiated Emission	Compliant
15.207	Conducted Emission	N/A

Note: The conducted emission tests at AC port are not required for devices which only employ battery power for operation.

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## 6. TEST FACILITY

<b>Test Site</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd
<b>Location</b>	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
<b>Designation Number</b>	CN1259
<b>FCC Test Firm Registration Number</b>	975832
<b>A2LA Cert. No.</b>	5054.02
<b>Description</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd is accredited by A2LA

## TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2021
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 12, 2019	Dec. 11, 2020
2.4GHz Filter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2019	Sep. 20, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May 17, 2019	May 16, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 03, 2020	Sep. 02, 2022
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 09, 2019	Jan. 08, 2021
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A

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## 7. PEAK OUTPUT POWER

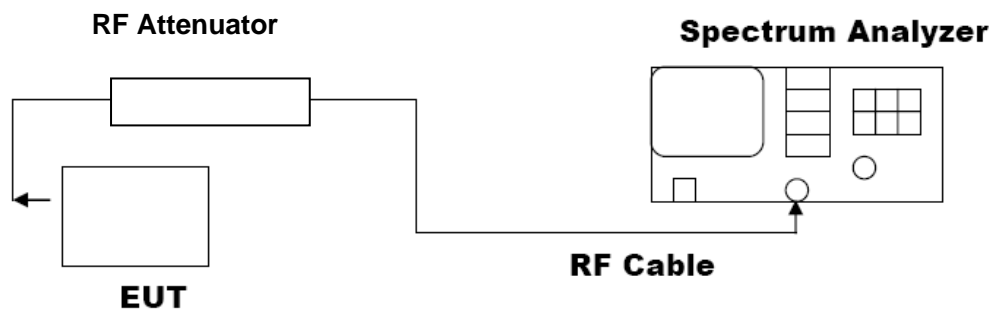
### 7.1. MEASUREMENT PROCEDURE

For peak power test:

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2.  $RBW \geq DTS$  bandwidth
3.  $VBW \geq 3 * RBW$ .
4.  $SPAN \geq VBW$ .
5. Sweep: Auto.
6. Detector function: Peak.
7. Trace: Max hold.

Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

### 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) PEAK POWER TEST SETUP



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**7.3. LIMITS AND MEASUREMENT RESULT**  
**Uplink**

PEAK OUTPUT POWER MEASUREMENT RESULT FOR LORA MOUDULATION			
Frequency (MHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
903.00	0.402	30	Pass
907.80	-0.287	30	Pass
914.20	-1.246	30	Pass

CH0

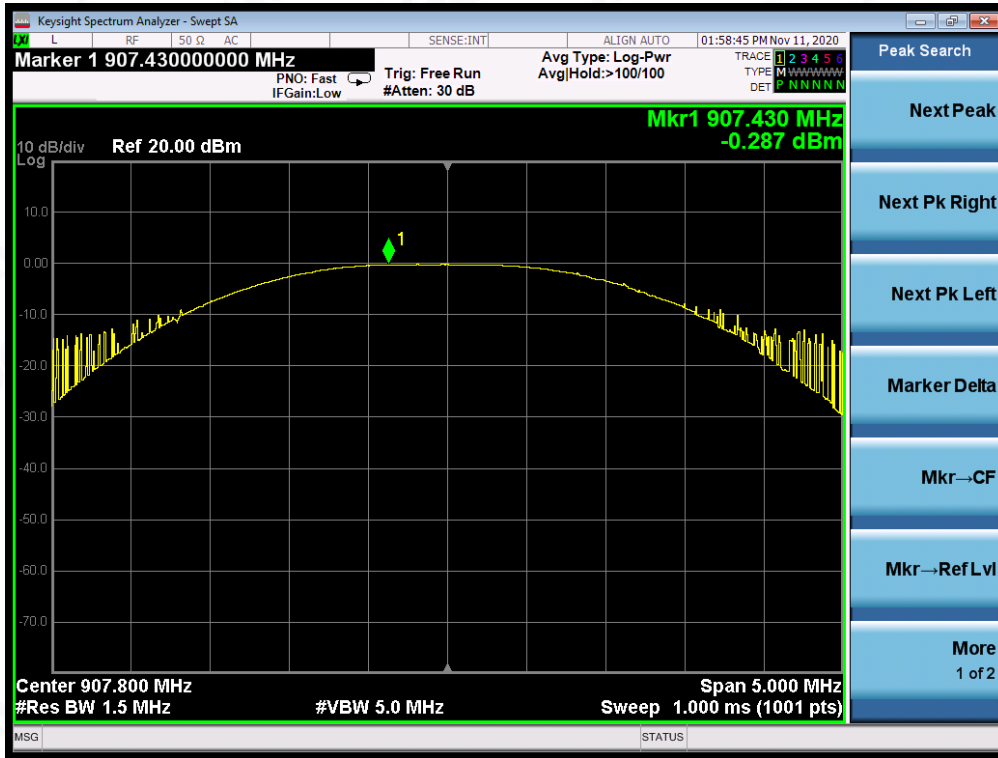


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CH3



CH7



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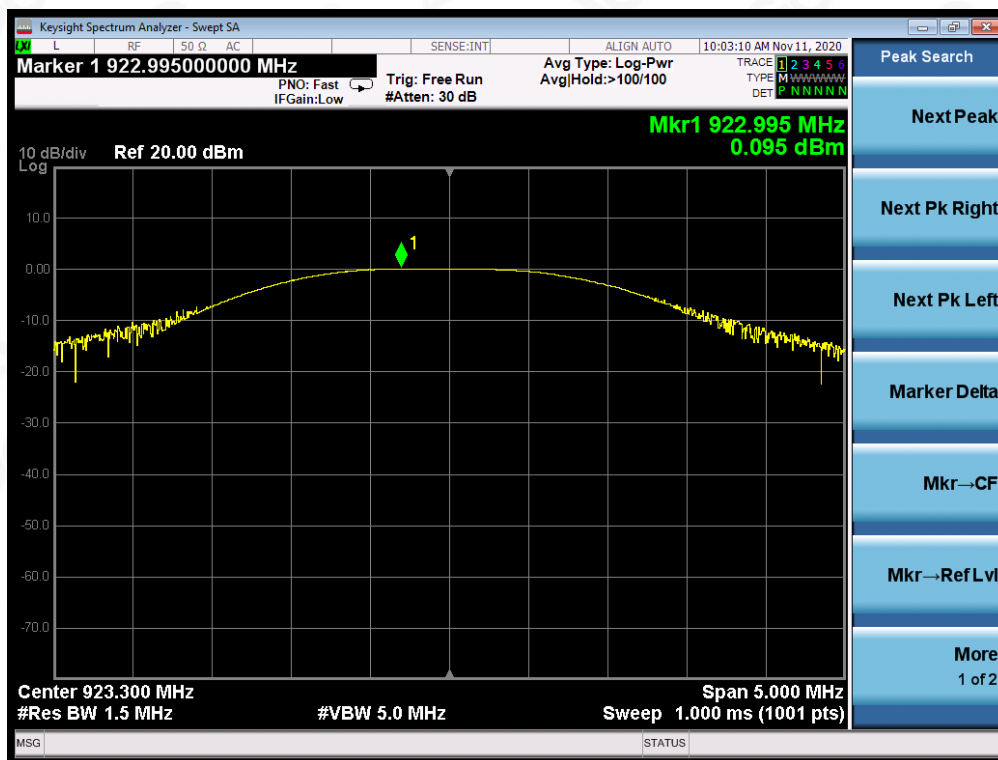
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PEAK OUTPUT POWER MEASUREMENT RESULT FOR LORA MOUDULATION			
Frequency (MHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
923.30	0.095	30	Pass
925.10	-0.783	30	Pass
927.50	-5.198	30	Pass

CH0

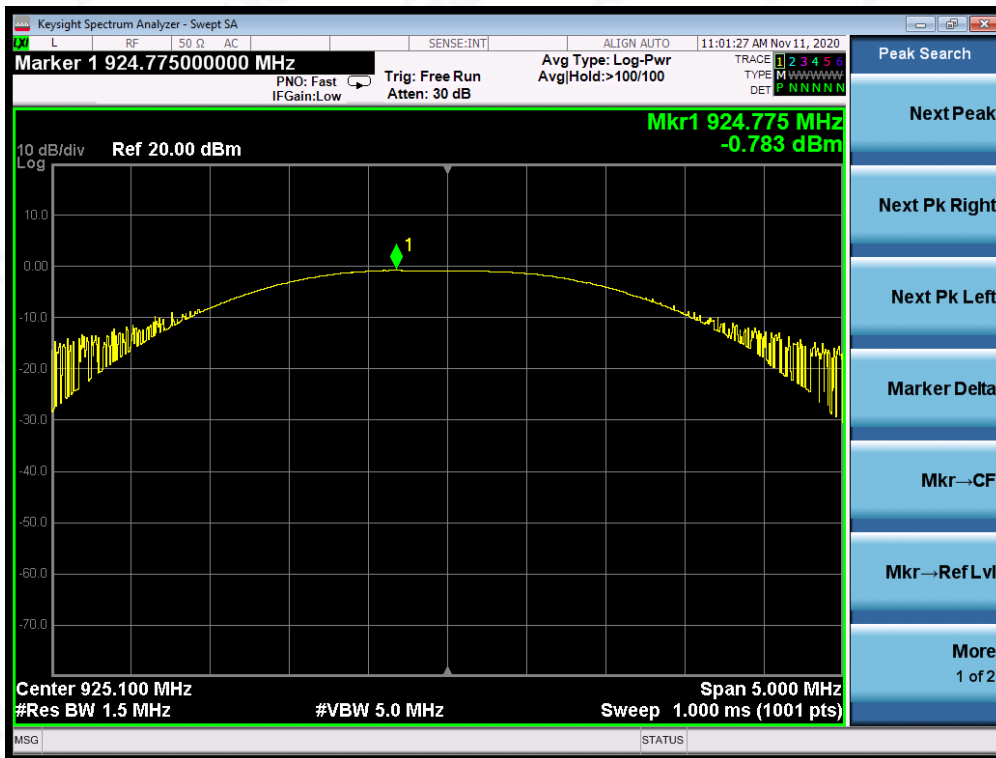


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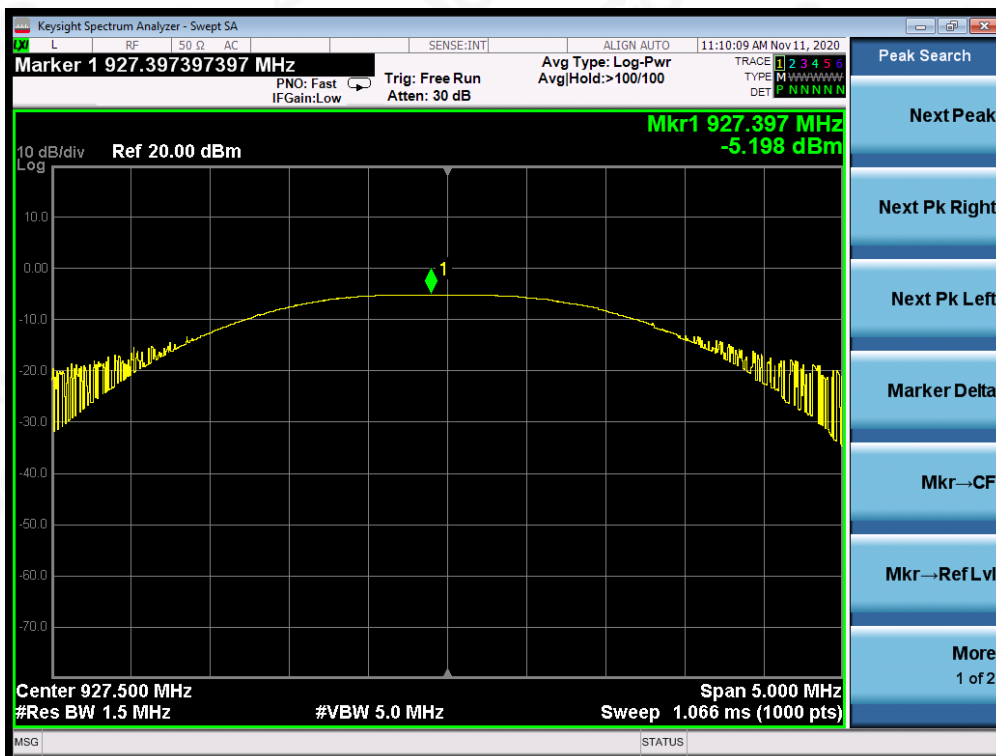
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## 8. 6 DB BANDWIDTH

### 8.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 kHz, VBW $\geq$ 3 $\times$ RBW.
4. Set SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

### 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

### 8.3. LIMITS AND MEASUREMENT RESULTS

#### Uplink

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Applicable Limits		
	Test Channel (MHz)	-6DB BANDWIDTH (KHz)	Criteria
>500KHz	903.00	760.2	PASS
	907.80	765.9	PASS
	914.20	759.6	PASS

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL (-6DB BANDWIDTH)



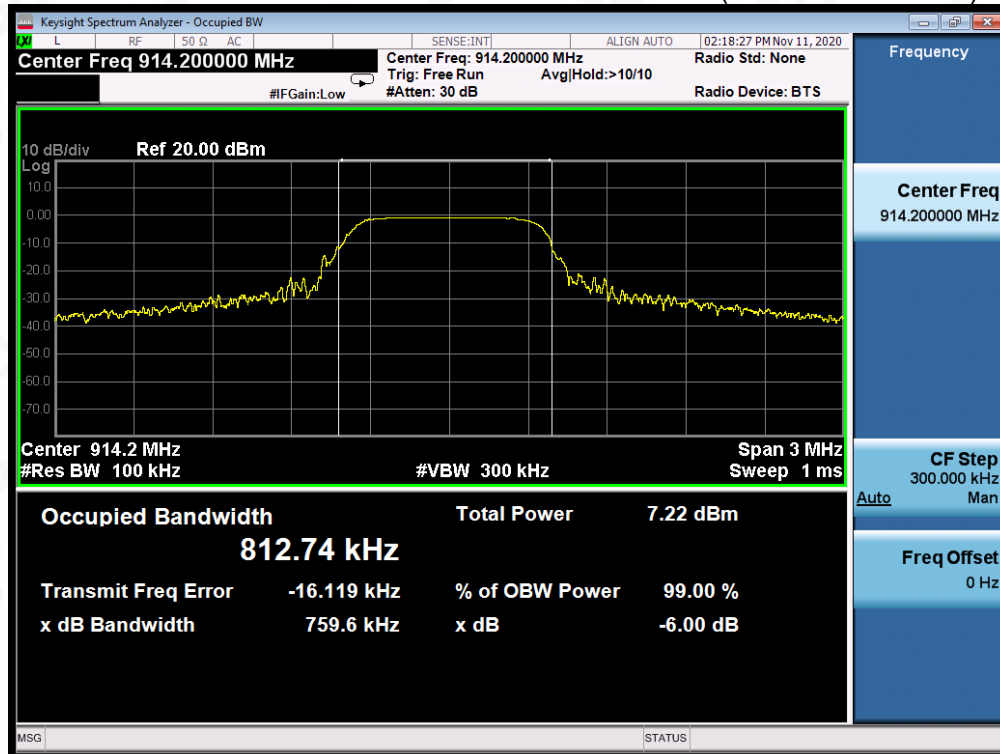
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TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL (-6DB BANDWIDTH)



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL (-6DB BANDWIDTH)



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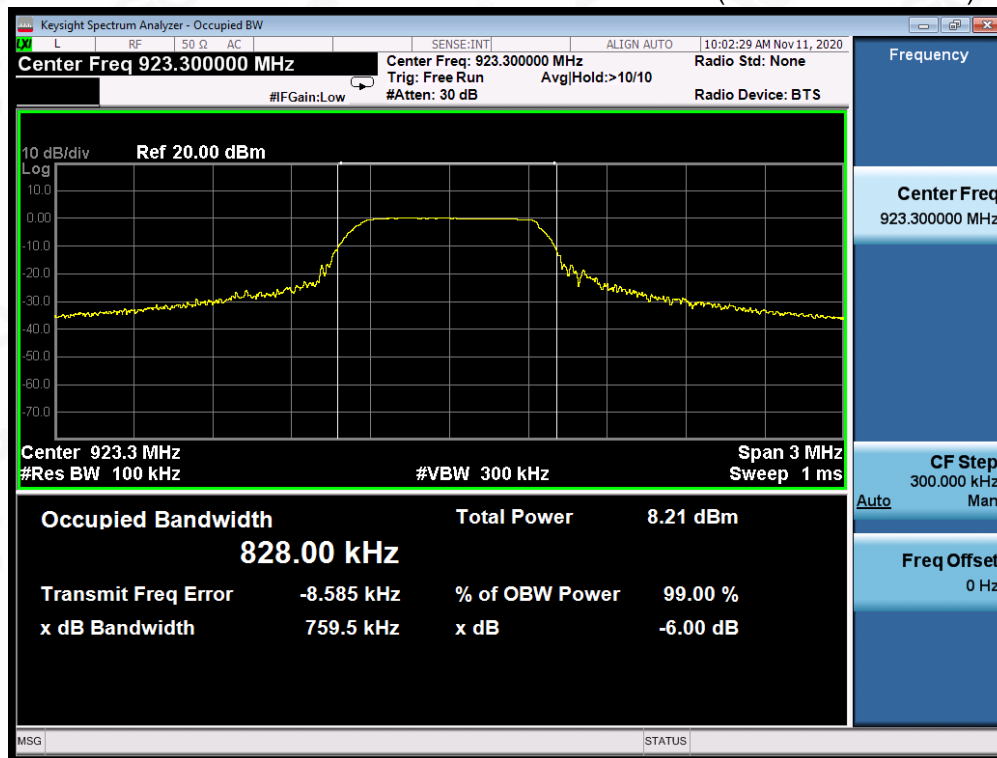
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LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Applicable Limits		
	Test Channel (MHz)	-6DB BANDWIDTH (KHz)	Criteria
>500KHz	923.30	759.5	PASS
	925.10	754.8	PASS
	927.50	741.9	PASS

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL (-6DB BANDWIDTH)



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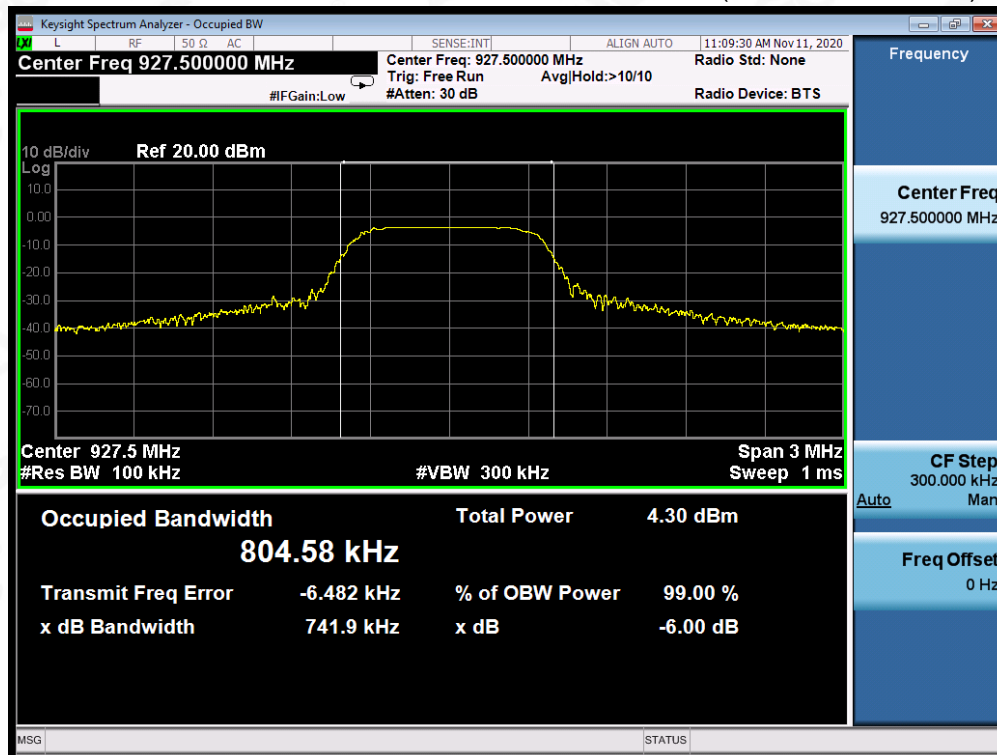
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TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL (-6DB BANDWIDTH)



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL (-6DB BANDWIDTH)



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## 9. CONDUCTED SPURIOUS EMISSION

### 9.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

### 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

### 9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

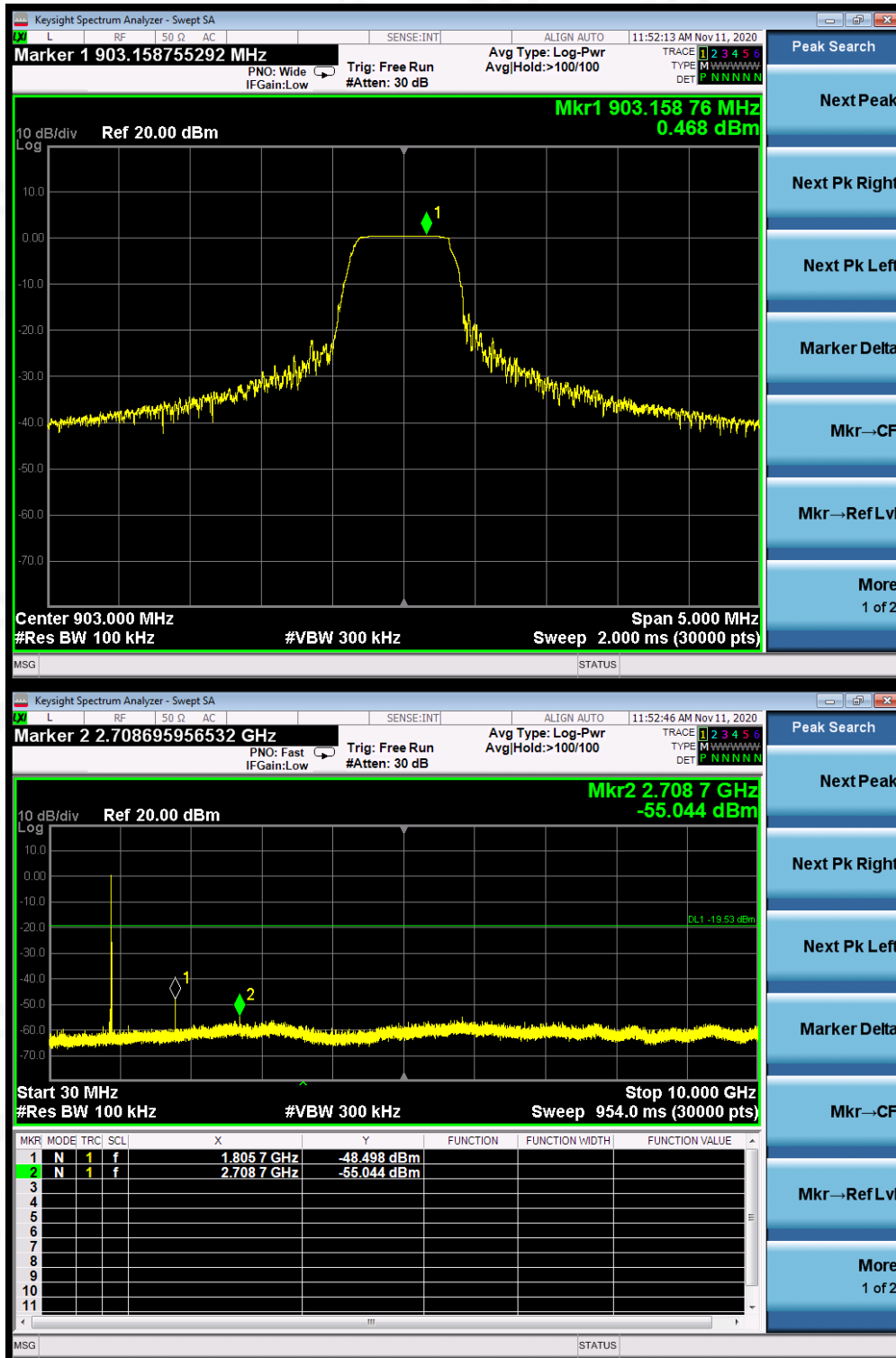
### 9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test Data	Criteria
In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power.	At least -20dBc than the reference level	PASS

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**TEST RESULT FOR ENTIRE FREQUENCY RANGE-uplink  
LORA MODULATION IN LOW CHANNEL**

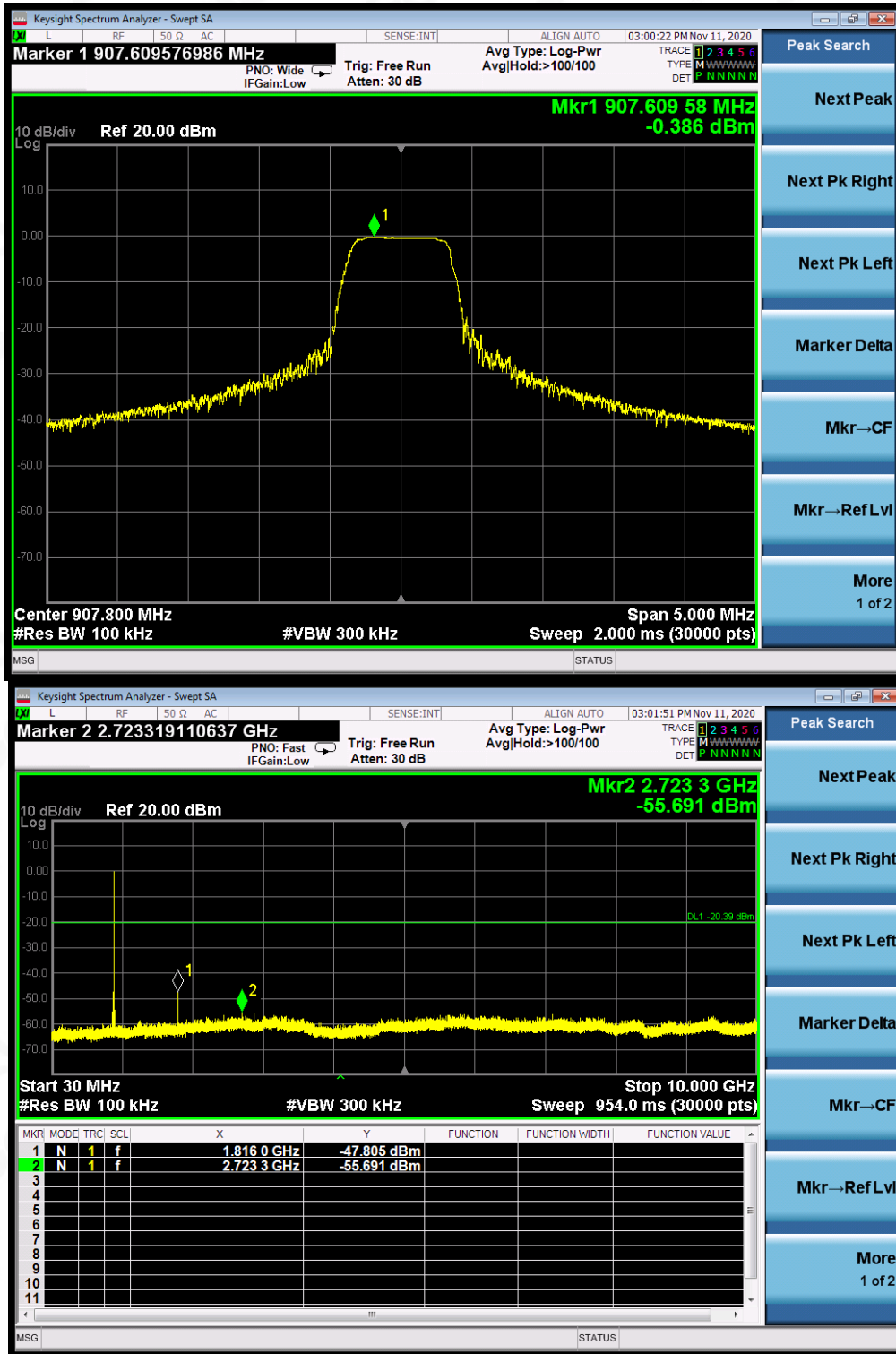


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### LORA MODULATION IN MIDDLE CHANNEL

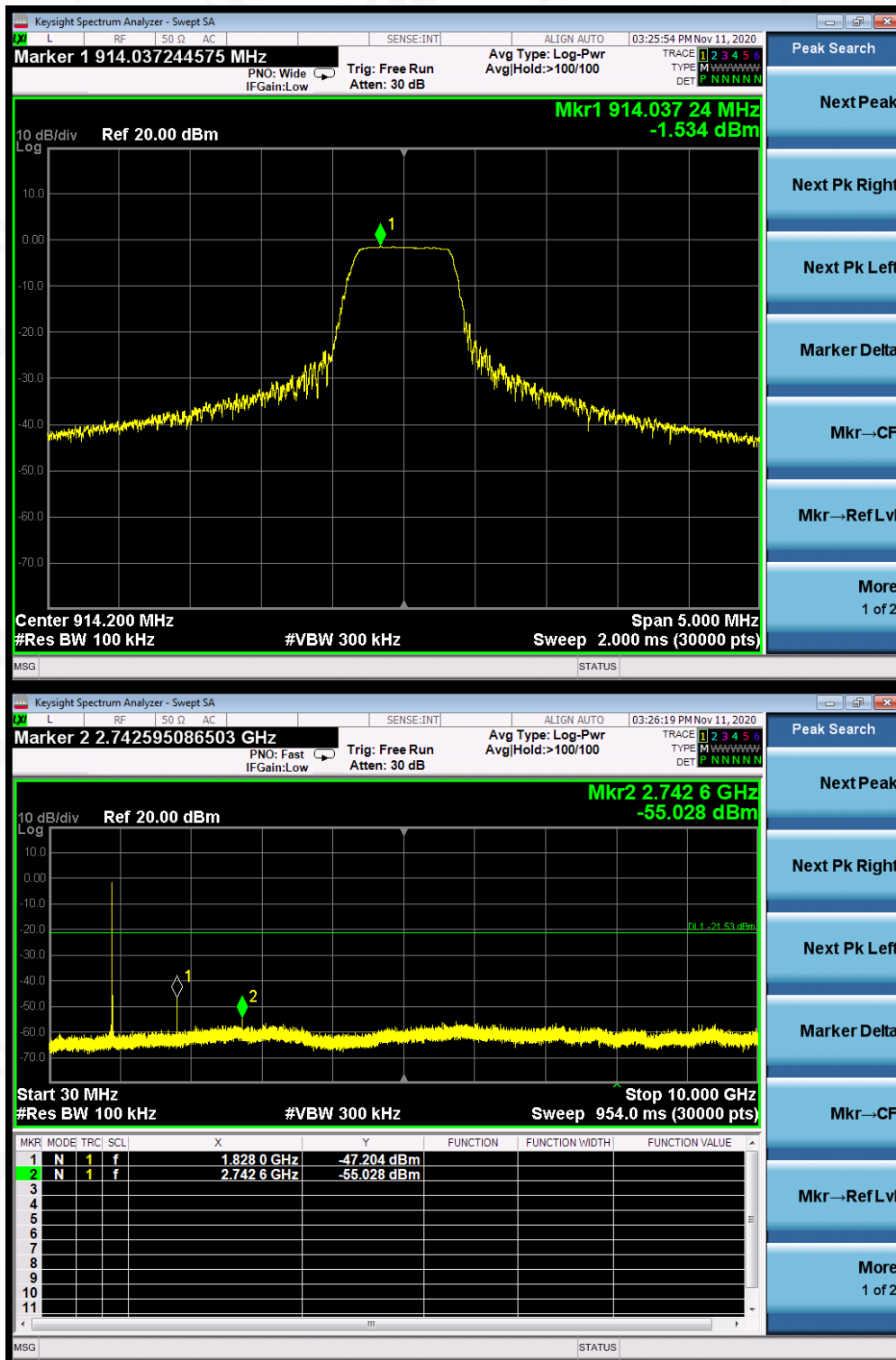


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LORA MODULATION IN HIGH CHANNEL



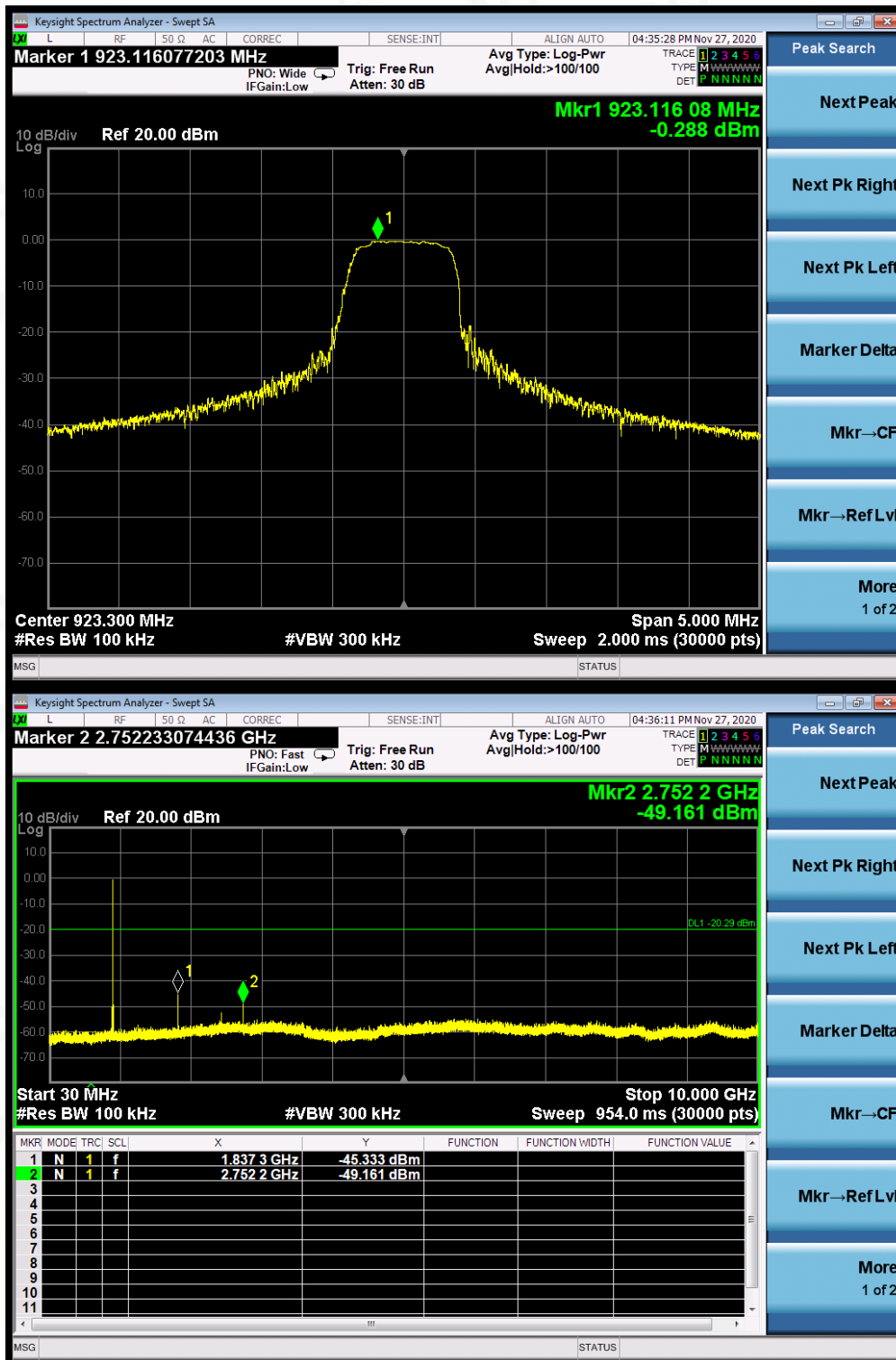
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**TEST RESULT FOR ENTIRE FREQUENCY RANGE- downlink  
LORA MODULATION IN LOW CHANNEL**

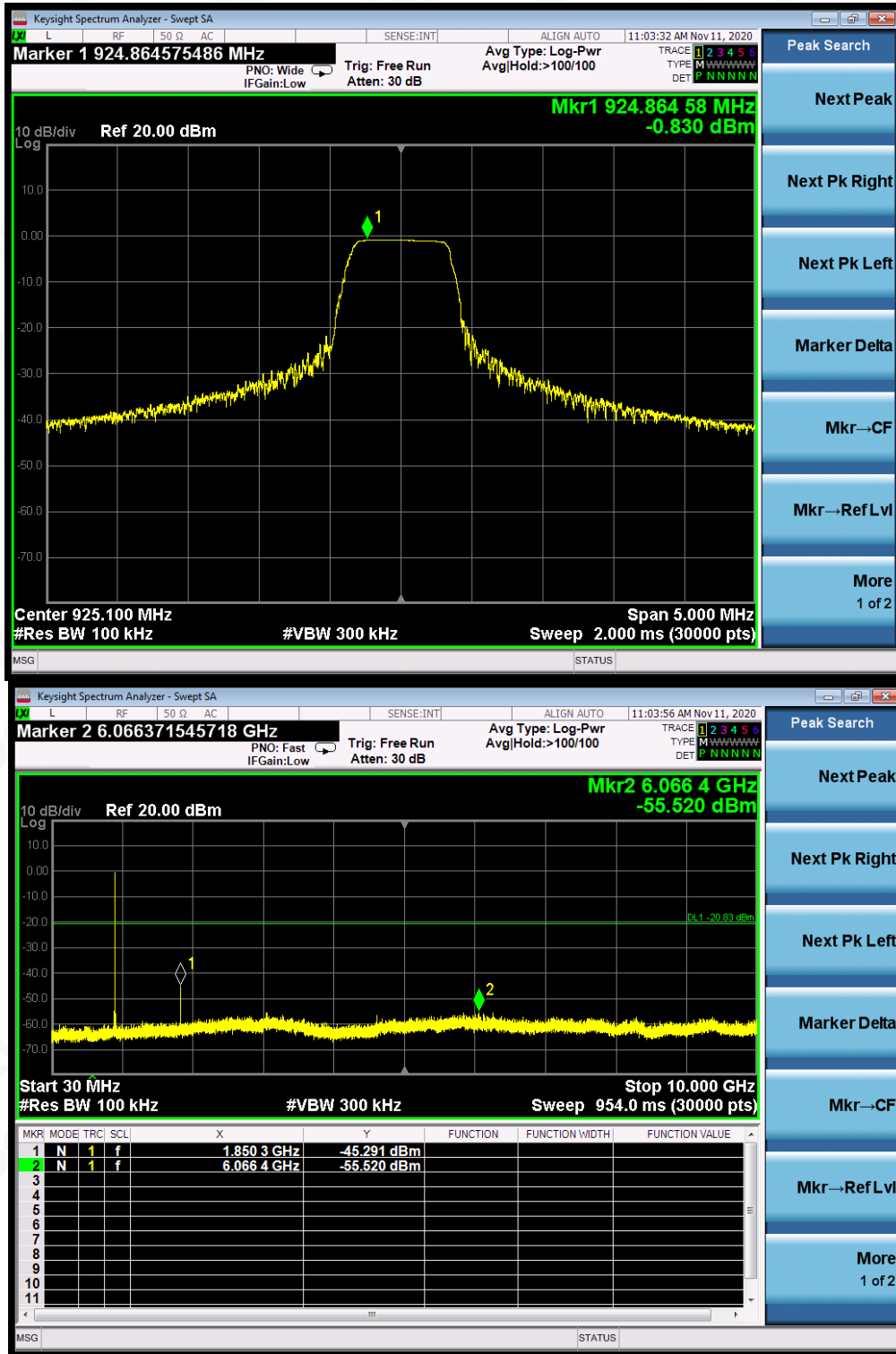


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### LORA MODULATION IN MIDDLE CHANNEL

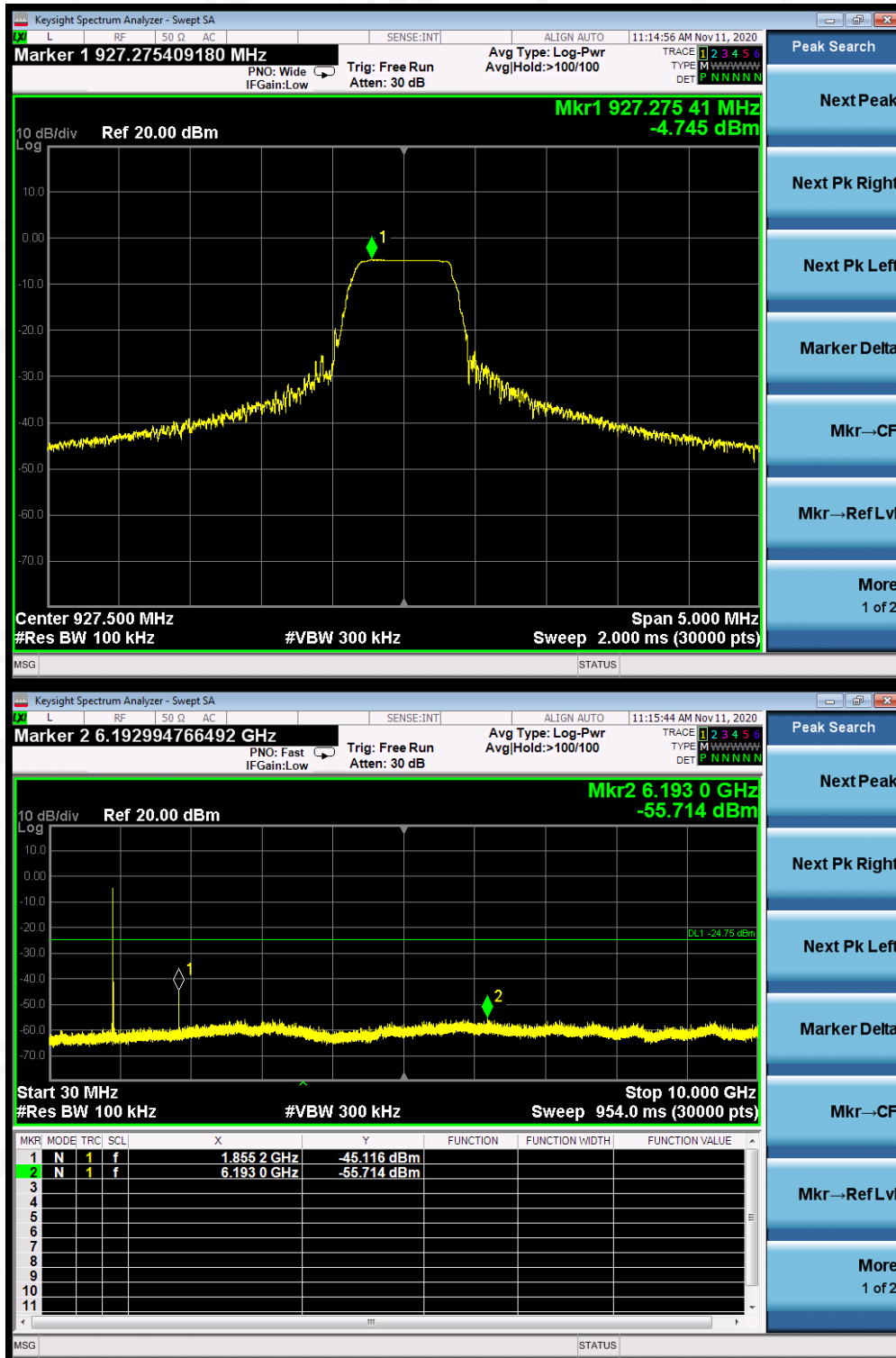


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### LORA MODULATION IN HIGH CHANNEL



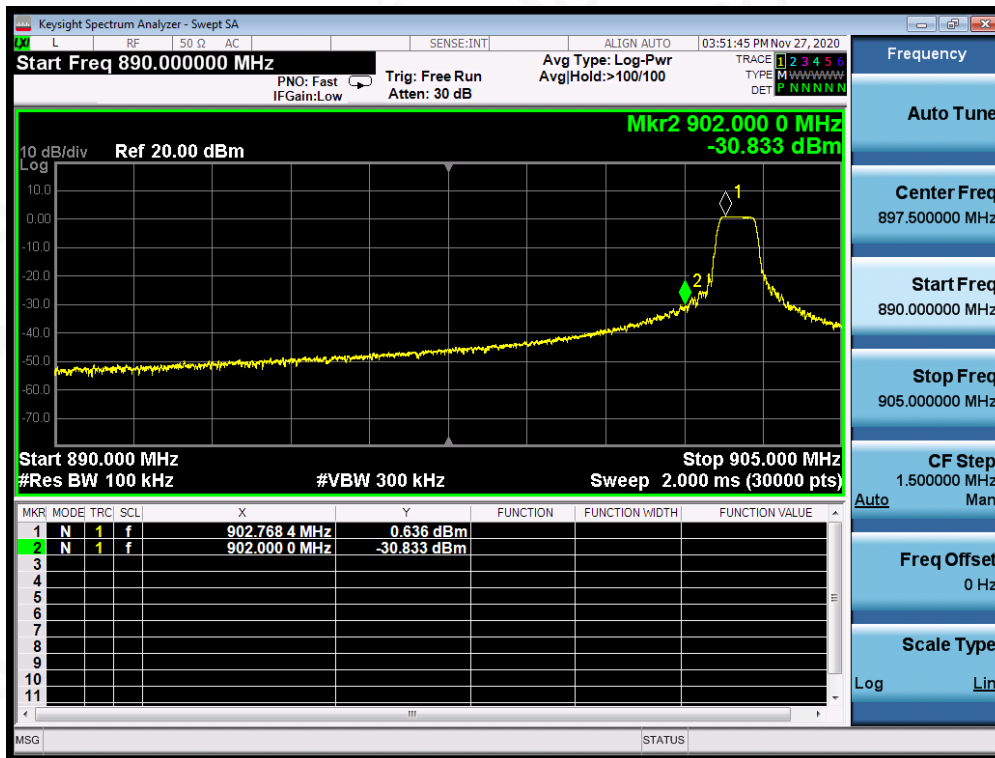
Note: The peak emissions without marker on the above plots are fundamental wave and need not to compare with the limit.

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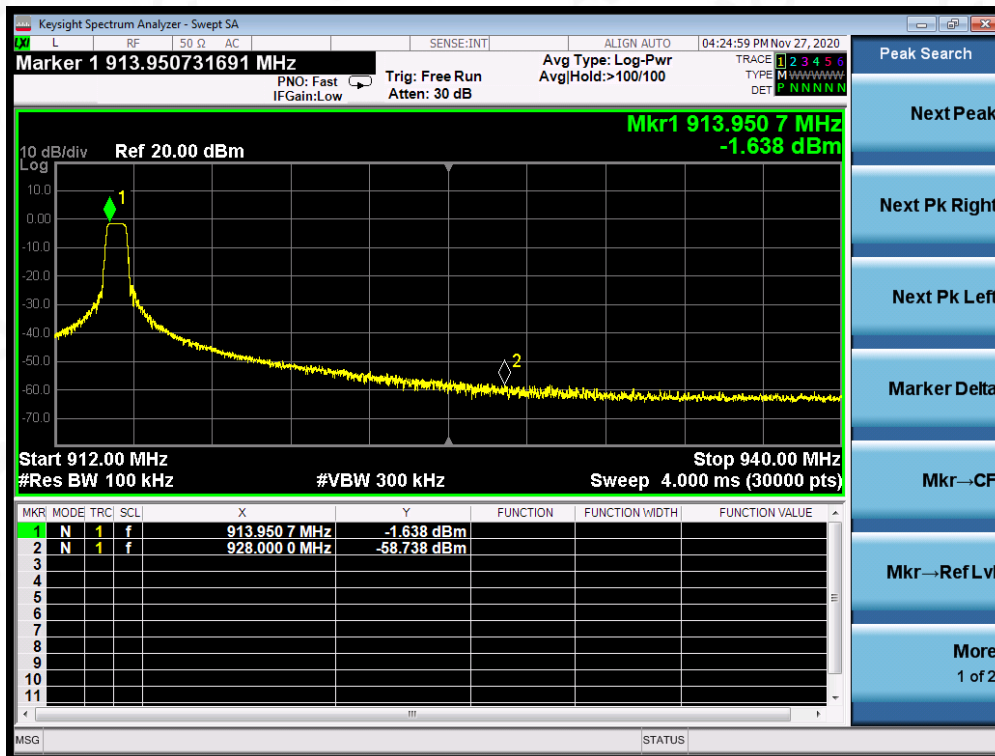
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### TEST RESULT FOR BAND EDGE- uplink LORA MODULATION IN LOW CHANNEL



### LORA MODULATION IN HIGH CHANNEL

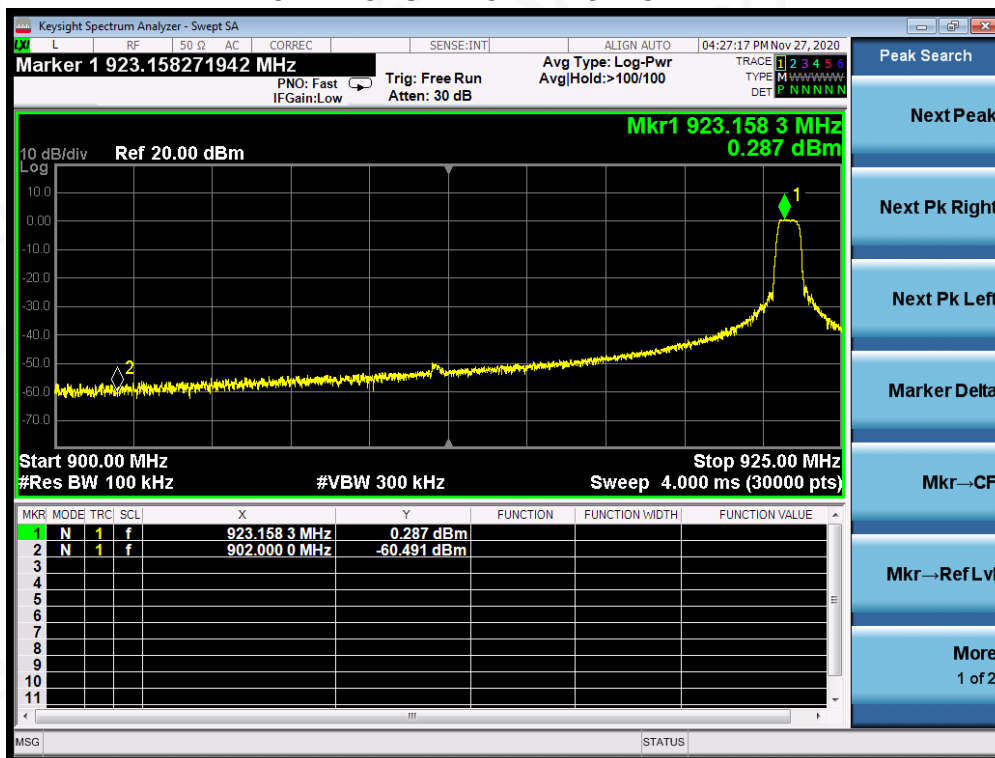


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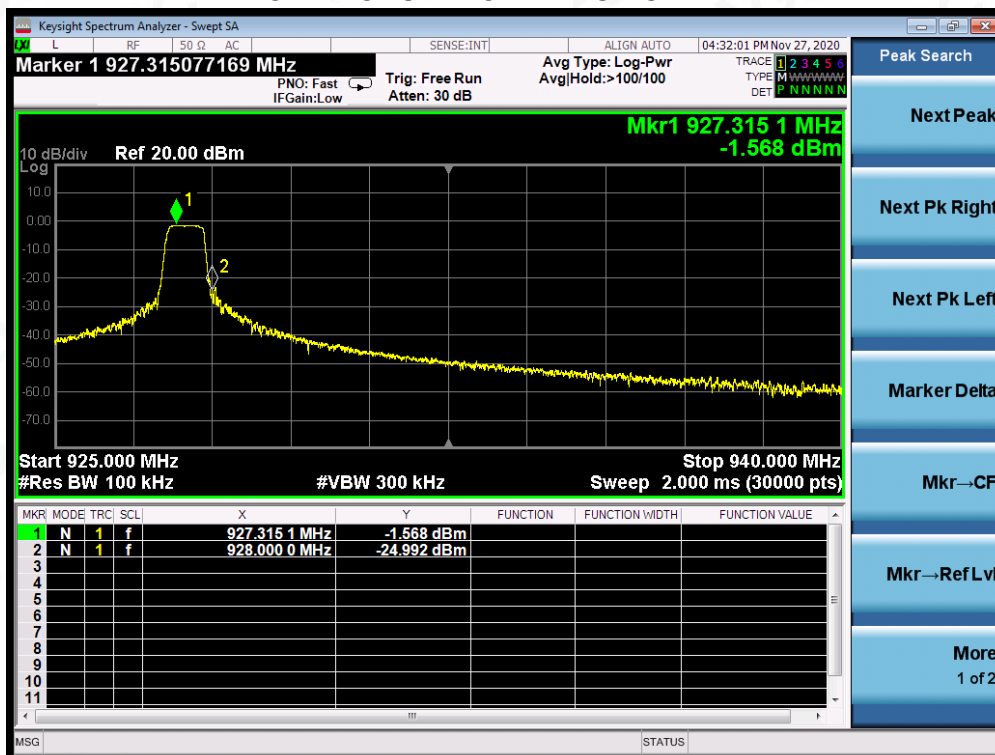
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### TEST RESULT FOR BAND EDGE- downlink LORA MODULATION IN LOW CHANNEL



### LORA MODULATION IN HIGH CHANNEL



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## 10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

### 10.1. MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set the SPA Trace 1 Max hold, then View.

Note: The method of PKPSD in the KDB 558074 item 10.2 was used in this testing.

### 10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer to Section 7.2.

### 10.3. MEASUREMENT EQUIPMENT USED

Refer to Section 6.

### 10.4. LIMITS AND MEASUREMENT RESULT

#### Uplink

Channel No.	LORA PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	-9.534	8	Pass
Middle Channel	-10.538	8	Pass
High Channel	-11.377	8	Pass

TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



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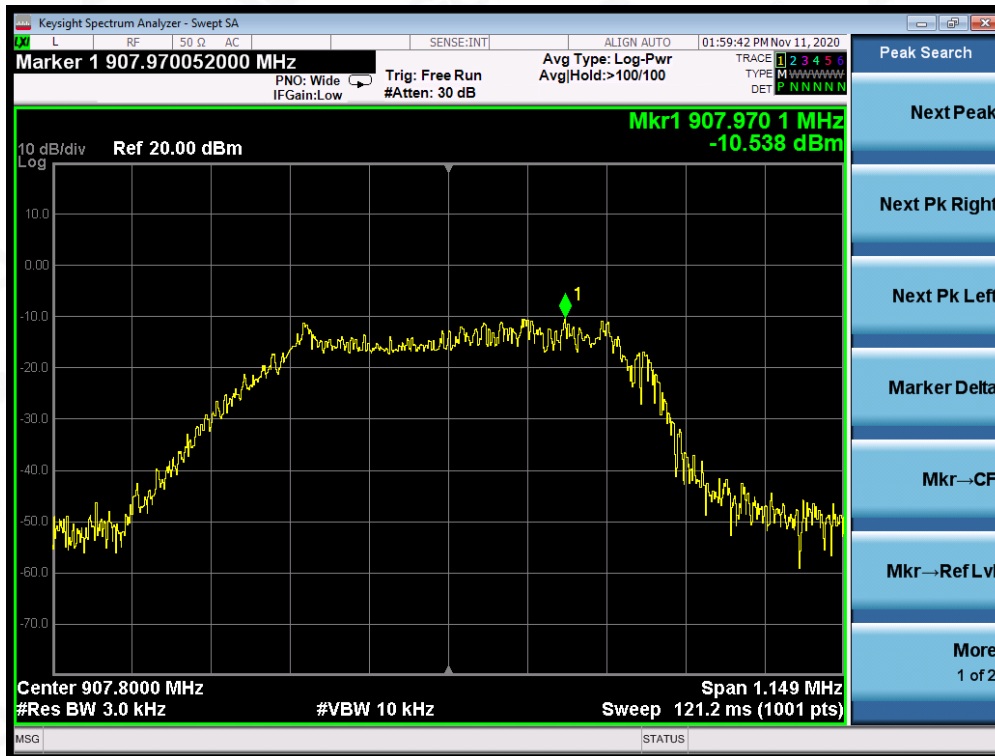


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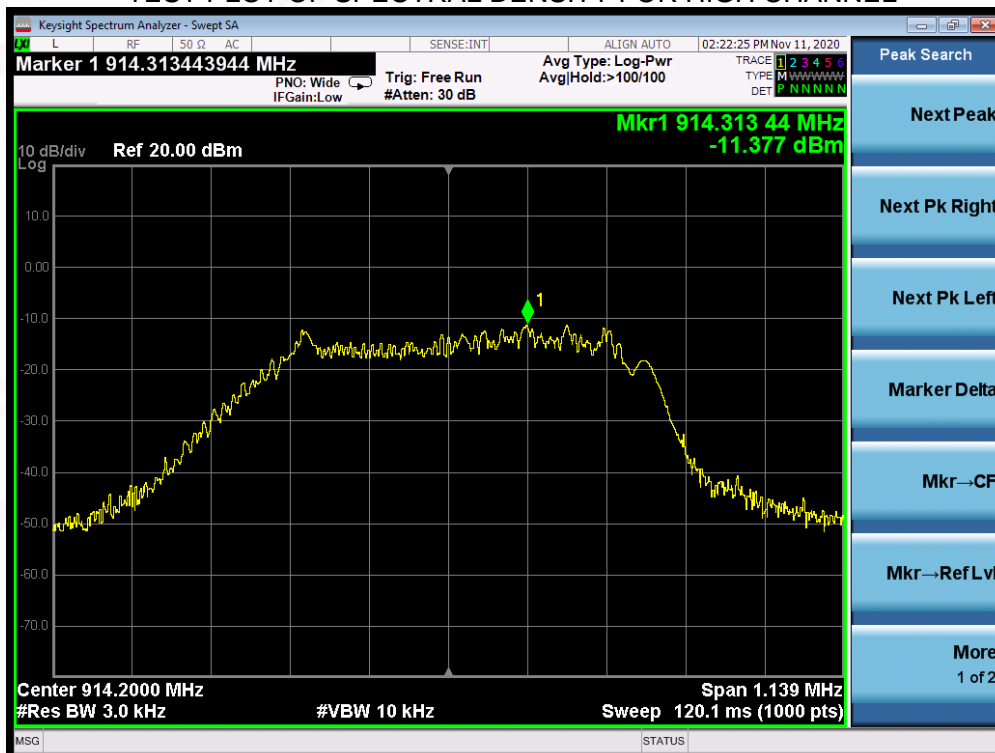
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TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



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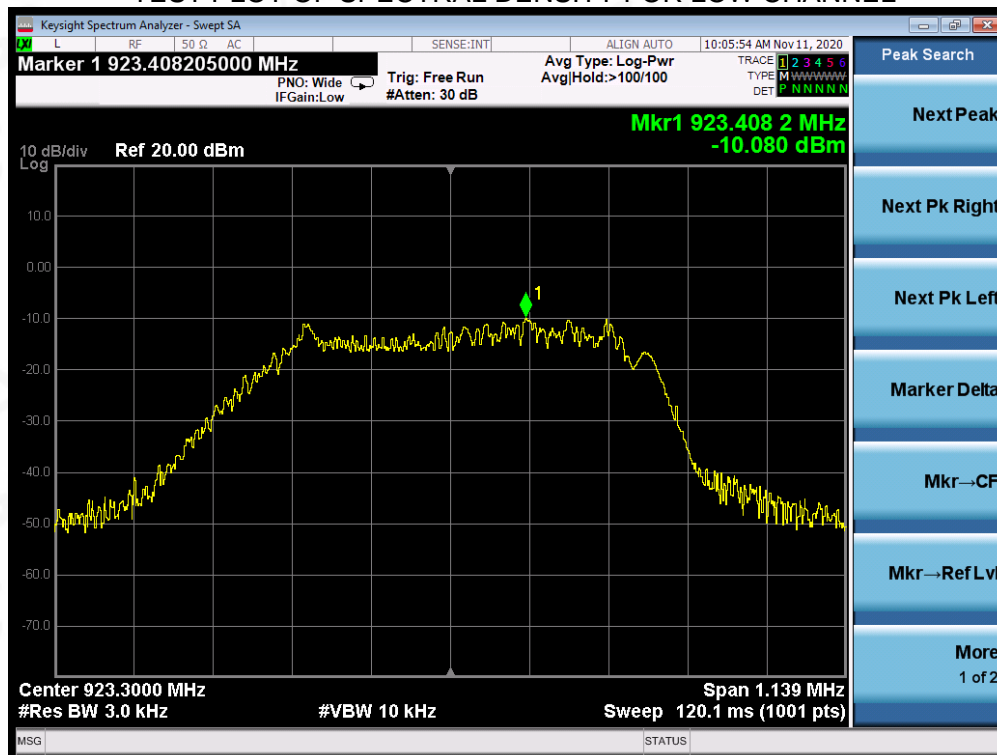




**Downlink**

Channel No.	LORA PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	-10.080	8	Pass
Middle Channel	-10.886	8	Pass
High Channel	-15.152	8	Pass

**TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL**



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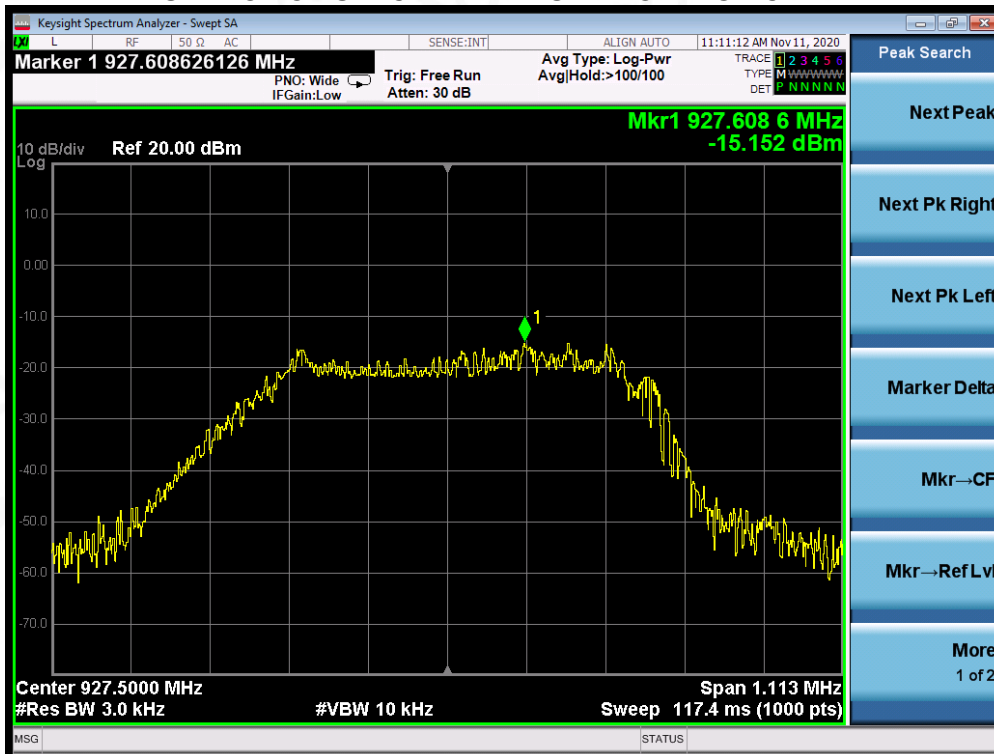
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TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



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## 11. RADIATED EMISSION

### 11.1. MEASUREMENT PROCEDURE

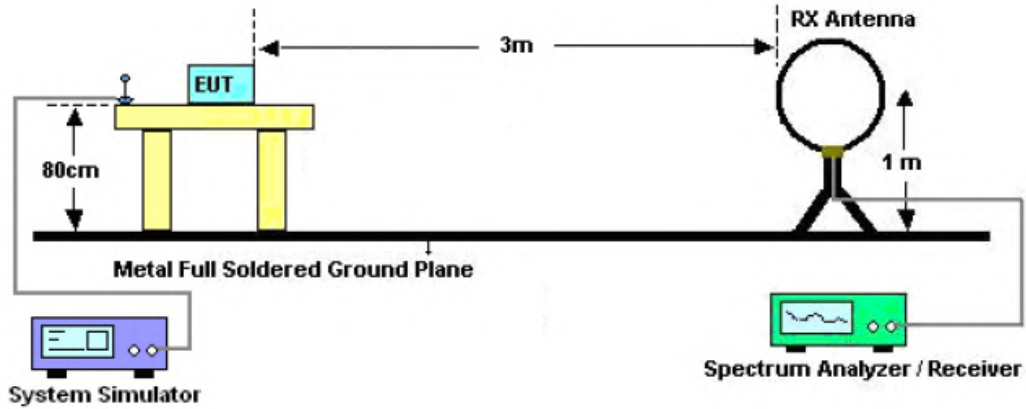
1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

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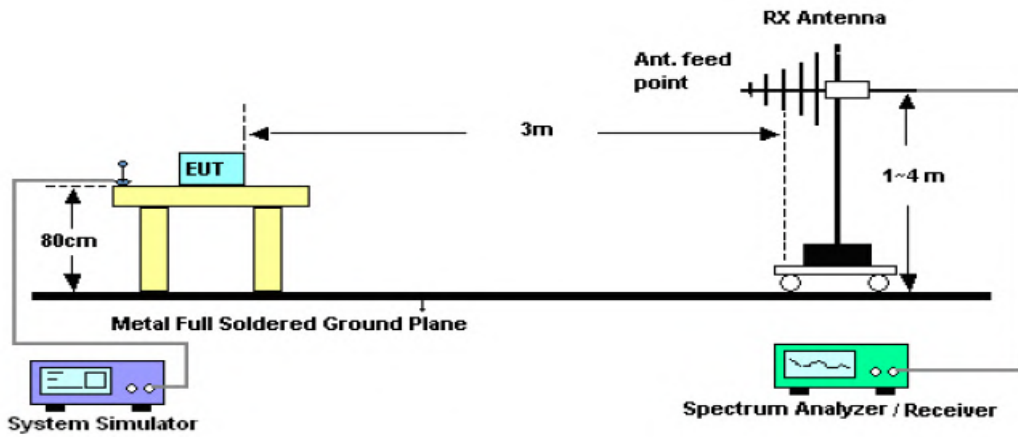


### 11.2. TEST SETUP

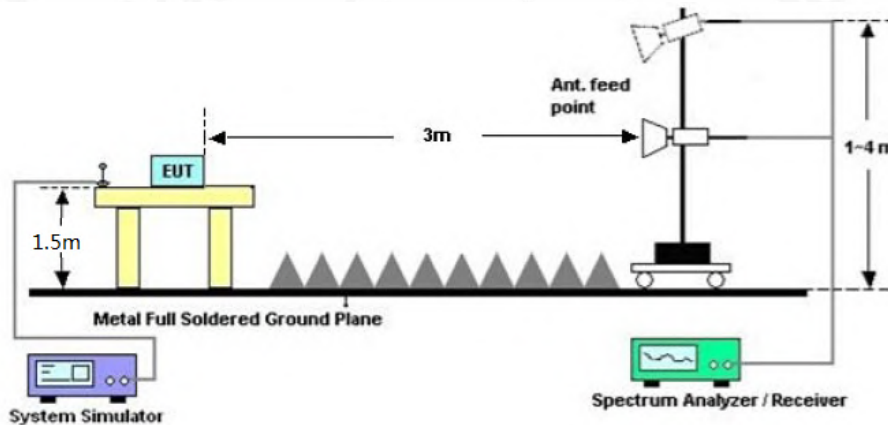
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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### 11.3. LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (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

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

### 11.4. TEST RESULT

#### RADIATED EMISSION BELOW 30MHz

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

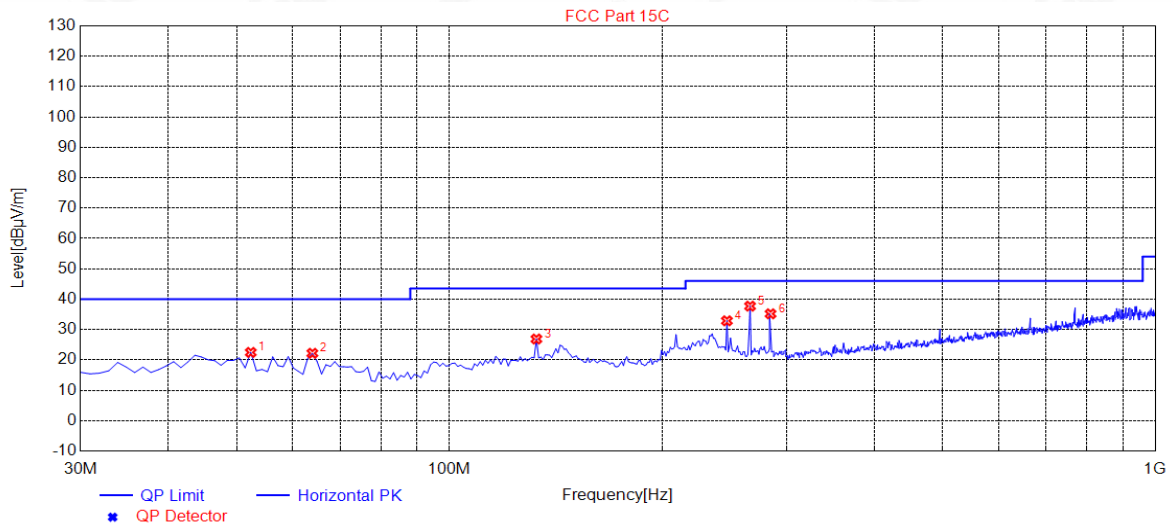
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**RADIATED EMISSION BELOW 1GHZ**

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Horizontal



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	52.3100	22.47	11.49	40.00	17.53	150	240	Horizontal
2	63.9500	22.18	10.25	40.00	17.82	150	120	Horizontal
3	132.8200	26.88	14.35	43.50	16.62	150	250	Horizontal
4	247.2800	32.87	14.73	46.00	13.13	150	250	Horizontal
5	266.6800	37.70	15.13	46.00	8.30	150	160	Horizontal
6	285.1100	35.18	16.24	46.00	10.82	150	130	Horizontal

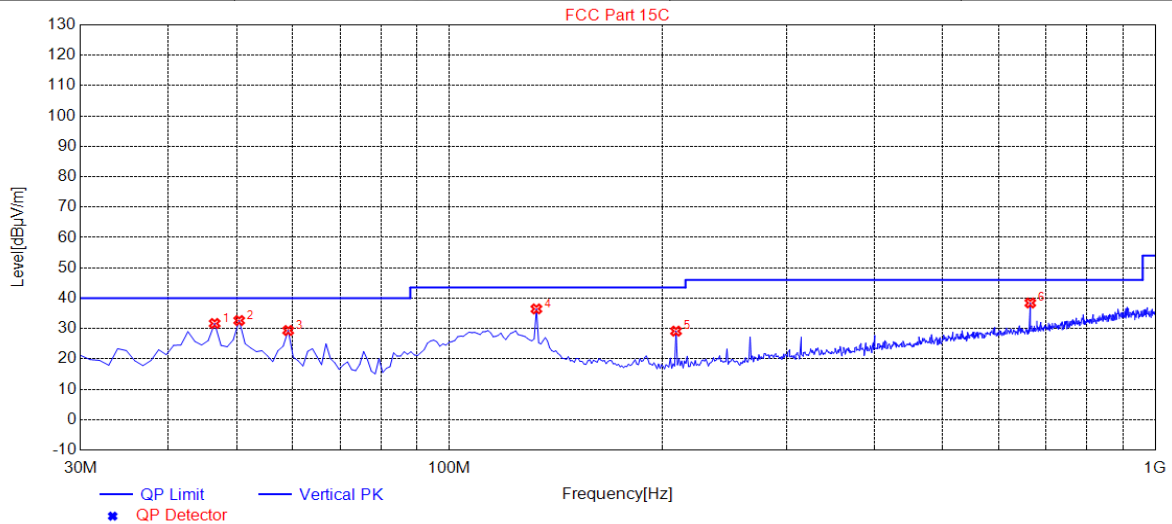
**RESULT: PASS**

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<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Vertical



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	46.4900	31.67	11.77	40.00	8.33	150	280	Vertical
2	50.3700	32.64	11.64	40.00	7.36	150	220	Vertical
3	59.1000	29.35	10.98	40.00	10.65	150	120	Vertical
4	132.8200	36.46	14.35	43.50	7.04	150	220	Vertical
5	209.4500	29.15	12.63	43.50	14.35	150	30	Vertical
6	665.3500	38.41	25.39	46.00	7.59	150	100	Vertical

**RESULT: PASS**

**Note:**

1. Factor=Antenna Factor + Cable loss, Margin=Limit-Level.
2. All test modes had been tested. The mode 3 is the worst case and recorded in the report.

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**RADIATED EMISSION ABOVE 1GHZ**

**Uplink**

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 1	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1806.000	45.97	0.08	46.05	74	-27.95	peak
1806.000	36.21	0.08	36.29	54	-17.71	AVG
2709.000	39.42	2.21	41.63	74	-32.37	peak
2709.000	29.31	2.21	31.52	54	-22.48	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 1	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1806.000	45.36	0.08	45.44	74	-28.56	peak
1806.000	36.85	0.08	36.93	54	-17.07	AVG
2709.000	39.61	2.21	41.82	74	-32.18	peak
2709.000	30.26	2.21	32.47	54	-21.53	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

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<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 2	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1815.600	46.29	0.14	46.43	74	-27.57	peak
1815.600	36.27	0.14	36.41	54	-17.59	AVG
2723.400	40.58	2.36	42.94	74	-31.06	peak
2723.400	30.22	2.36	32.58	54	-21.42	AVG
<b>Remark:</b>						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 2	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1815.600	46.29	0.14	46.43	74	-27.57	peak
1815.600	35.48	0.14	35.62	54	-18.38	AVG
2723.400	40.18	2.36	42.54	74	-31.46	peak
2723.400	39.42	2.36	41.78	54	-12.22	AVG
<b>Remark:</b>						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

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<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1828.400	46.38	0.22	46.6	74	-27.4	peak
1828.400	37.44	0.22	37.66	54	-16.34	AVG
2742.600	41.95	2.64	44.59	74	-29.41	peak
2742.600	31.87	2.64	34.51	54	-19.49	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1828.400	47.15	0.22	47.37	74	-26.63	peak
1828.400	37.92	0.22	38.14	54	-15.86	AVG
2742.600	38.25	2.64	40.89	74	-33.11	peak
2742.600	30.59	2.64	33.23	54	-20.77	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

**RESULT: PASS**

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**Downlink**

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 1	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1846.600	46.38	0.08	46.46	74	-27.54	peak
1846.600	38.15	0.08	38.23	54	-15.77	AVG
2769.900	41.29	2.21	43.5	74	-30.5	peak
2769.900	30.83	2.21	33.04	54	-20.96	AVG
<b>Remark:</b>						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 1	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1846.600	44.69	0.08	44.77	74	-29.23	peak
1846.600	35.87	0.08	35.95	54	-18.05	AVG
2769.900	39.62	2.21	41.83	74	-32.17	peak
2769.900	30.54	2.21	32.75	54	-21.25	AVG
<b>Remark:</b>						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

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<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 2	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1850.200	45.98	0.14	46.12	74	-27.88	peak
1850.200	36.22	0.14	36.36	54	-17.64	AVG
2775.300	40.87	2.36	43.23	74	-30.77	peak
2775.300	30.41	2.36	32.77	54	-21.23	AVG
<b>Remark:</b>						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 2	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1850.200	46.91	0.14	47.05	74	-26.95	peak
1850.200	35.72	0.14	35.86	54	-18.14	AVG
2775.300	41.35	2.36	43.71	74	-30.29	peak
2775.300	30.66	2.36	33.02	54	-20.98	AVG
<b>Remark:</b>						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

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<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1855.000	46.29	0.22	46.51	74	-27.49	peak
1855.000	36.21	0.22	36.43	54	-17.57	AVG
2782.500	40.29	2.64	42.93	74	-31.07	peak
2782.500	29.98	2.64	32.62	54	-21.38	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

<b>EUT</b>	LR FAMILY	<b>Model Name</b>	IDF32XXXX
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
1855.000	46.29	0.22	46.51	74	-27.49	peak
1855.000	35.48	0.22	35.7	54	-18.3	AVG
2782.500	41.58	2.64	44.22	74	-29.78	peak
2782.500	30.24	2.64	32.88	54	-21.12	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

**RESULT: PASS**

**Note:**

The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

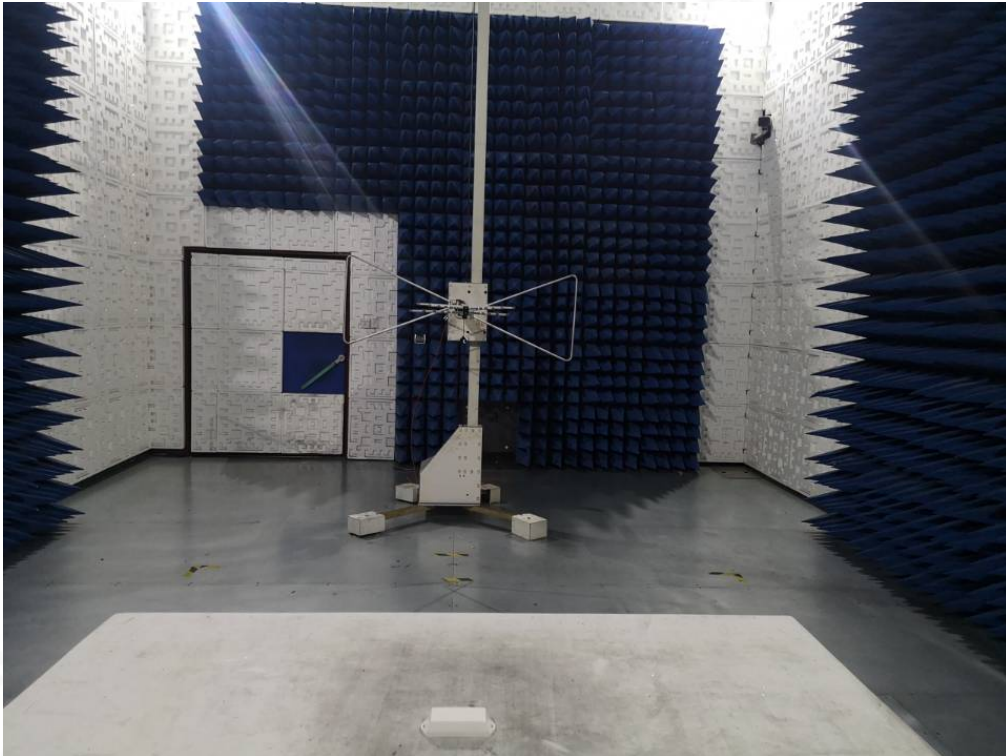
The “Factor” value can be calculated automatically by software of measurement system.

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## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

### RADIATED EMISSION TEST SETUP BELOW 1GHZ



### RADIATED EMISSION TEST SETUP ABOVE 1GHZ

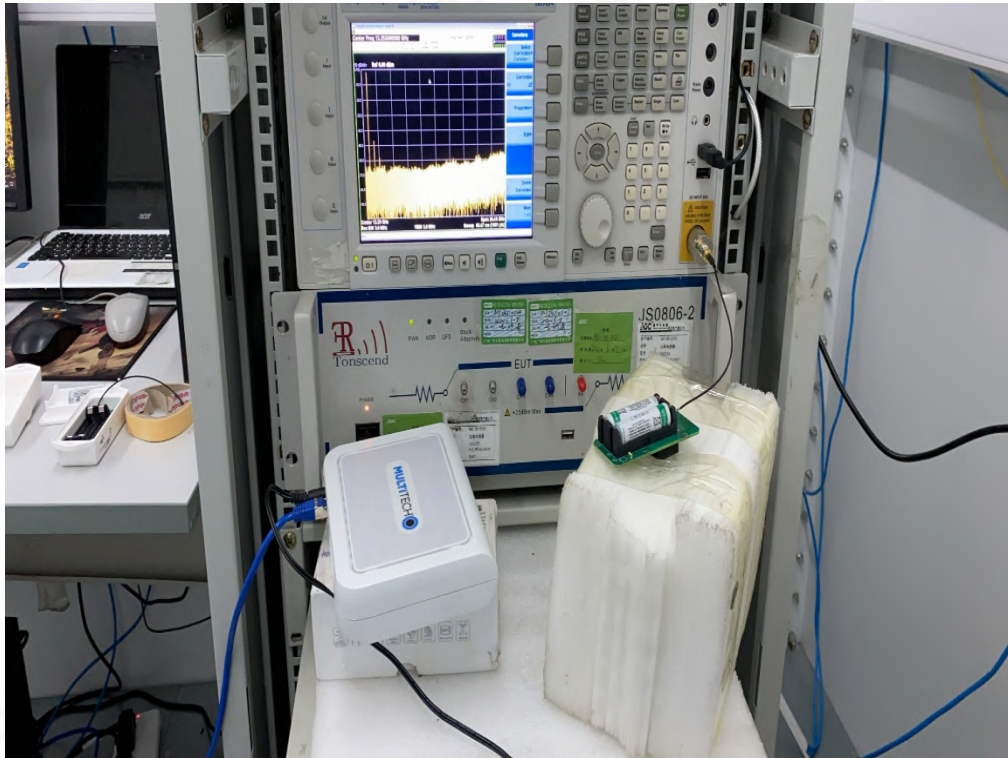


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### CONDUCTED TEST SETUP

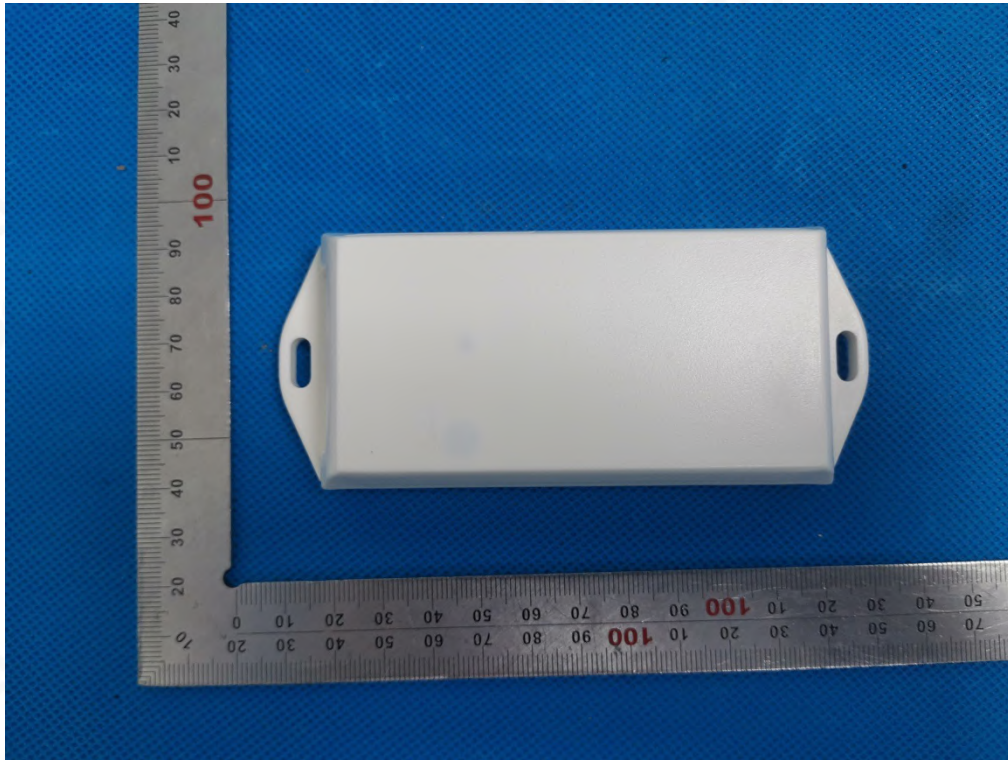


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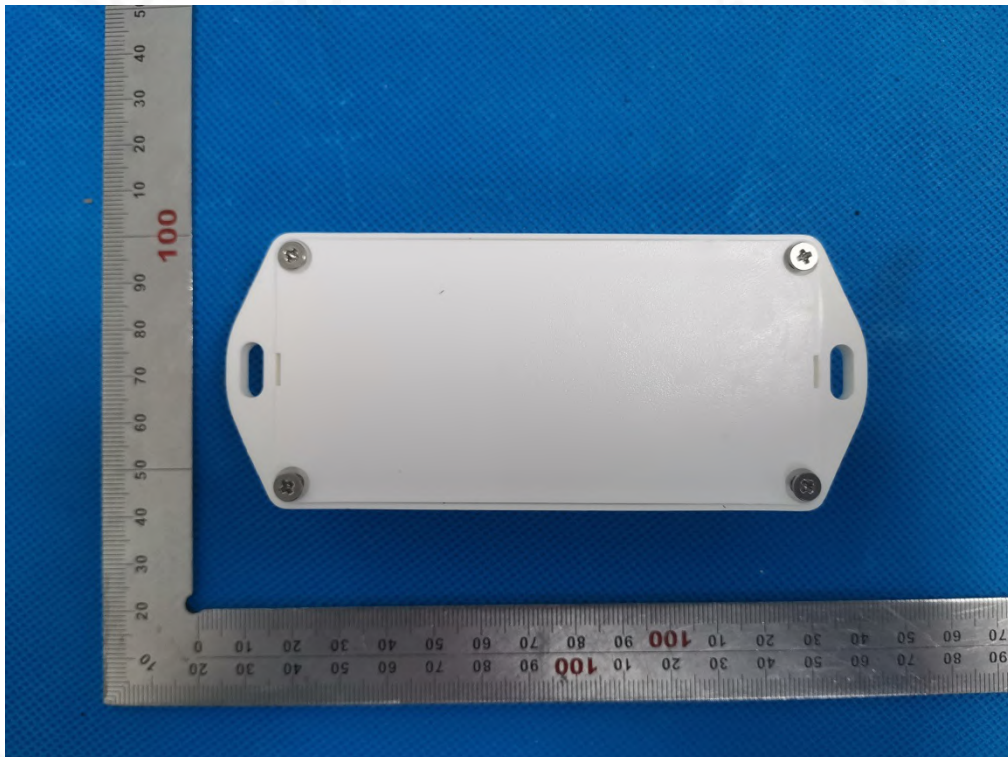
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**APPENDIX B: PHOTOGRAPHS OF EUT**  
EXTERNAL VIEW-1 OF EUT



EXTERNAL VIEW-2 OF EUT



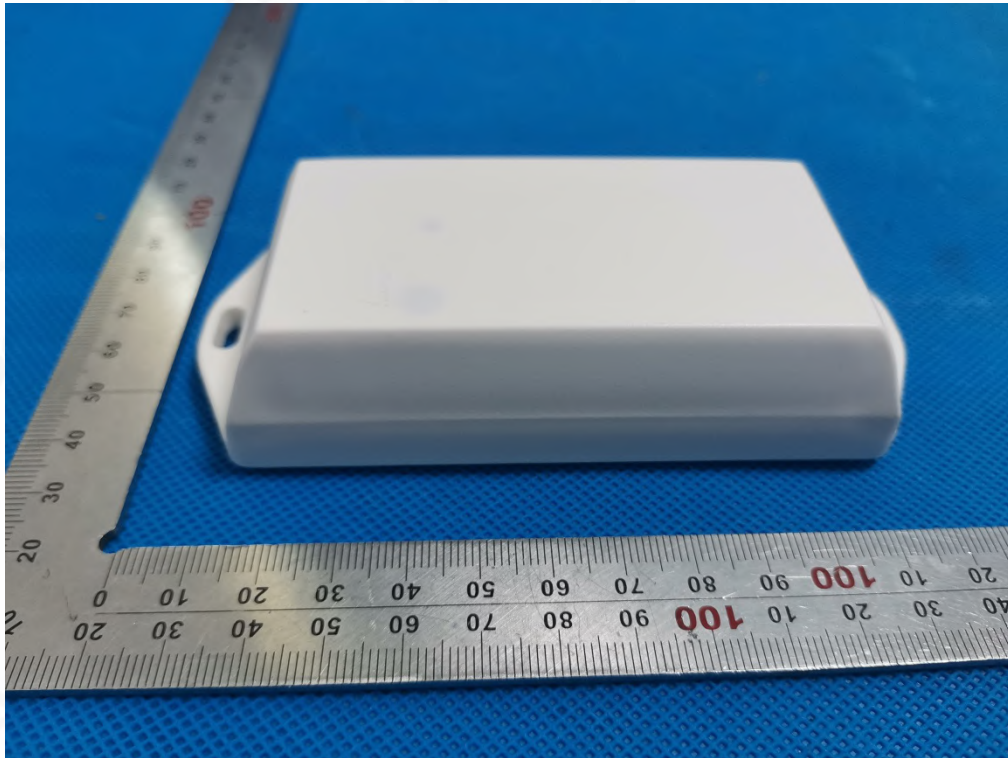
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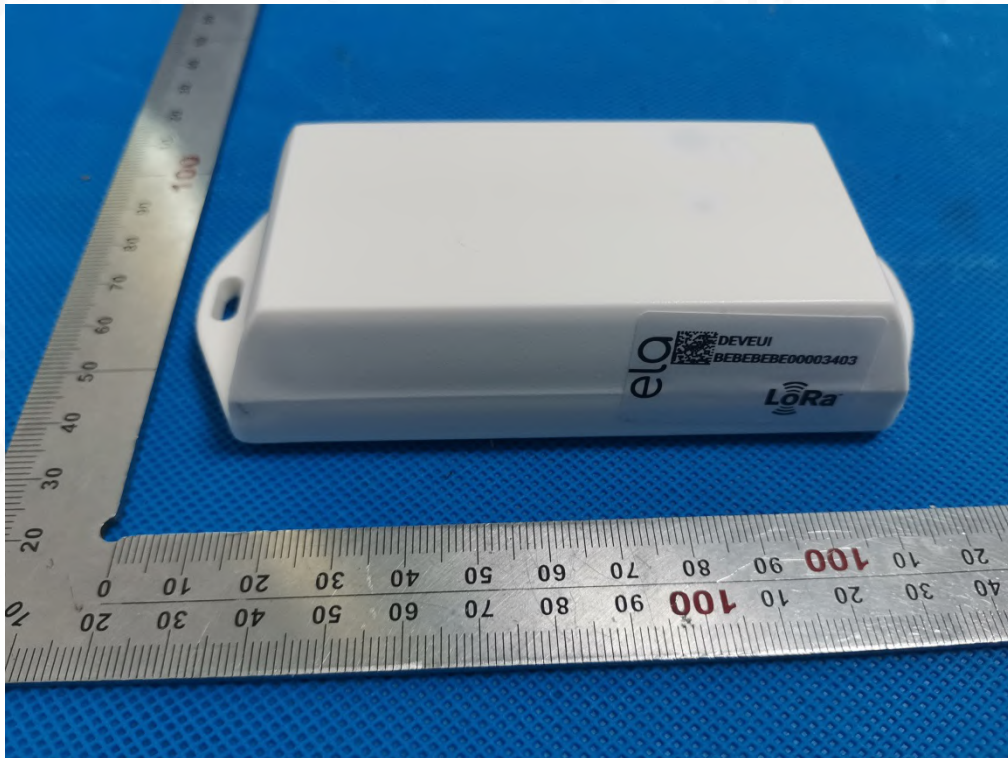




EXTERNAL VIEW-3 OF EUT



EXTERNAL VIEW-4 OF EUT

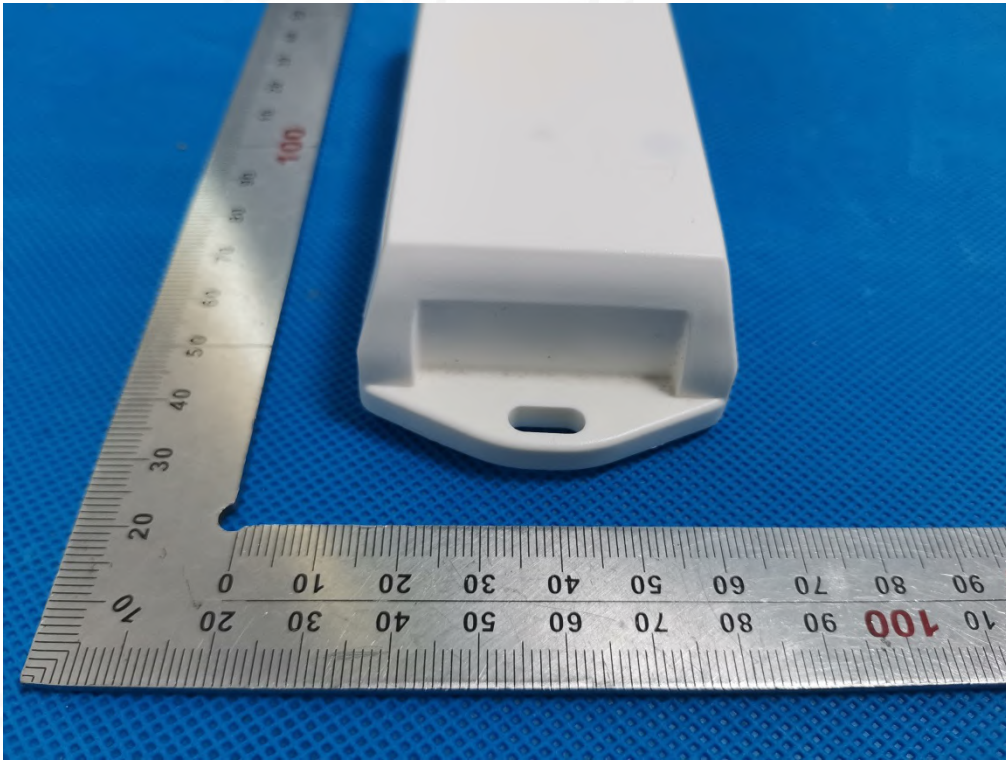


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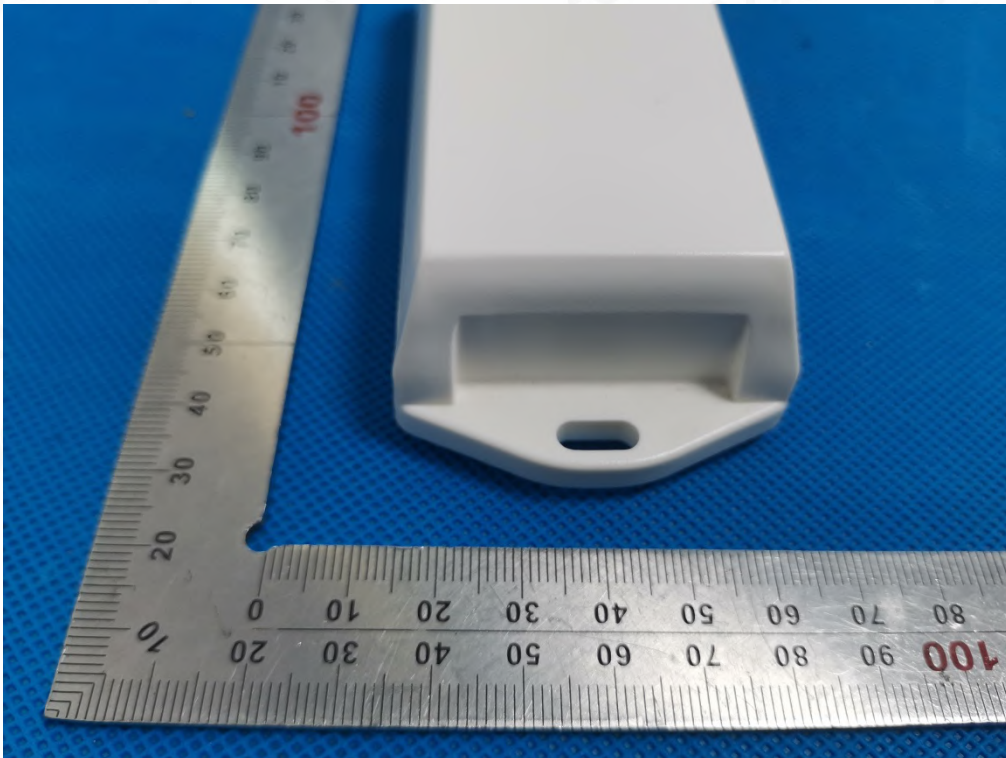
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EXTERNAL VIEW-5 OF EUT



EXTERNAL VIEW-6 OF EUT

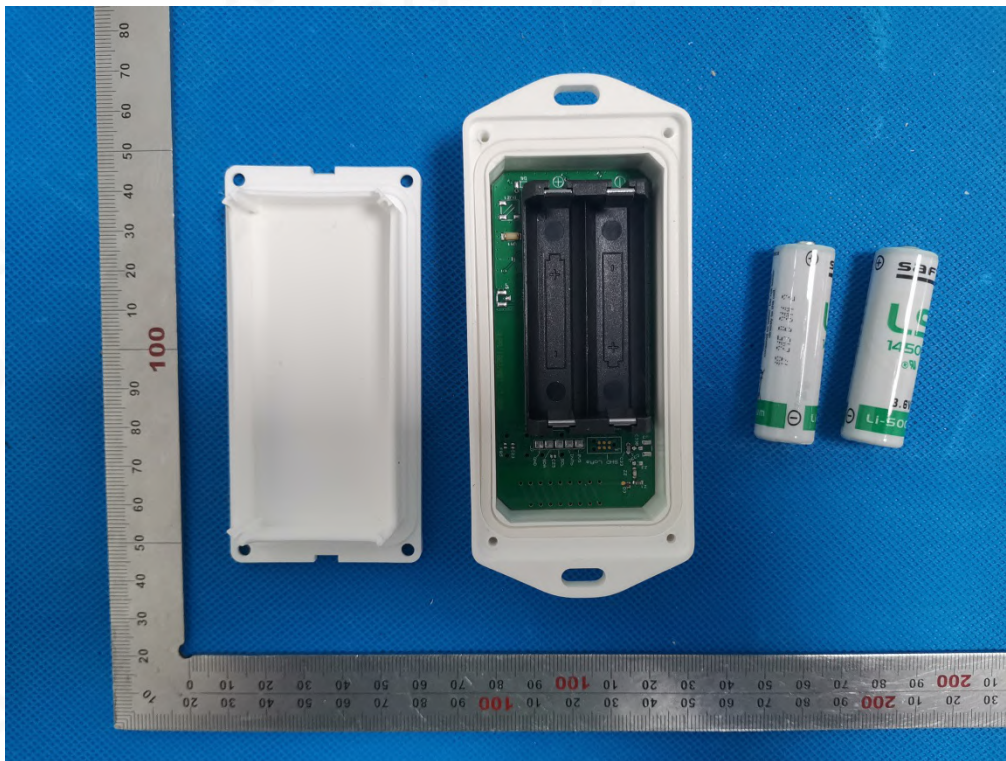


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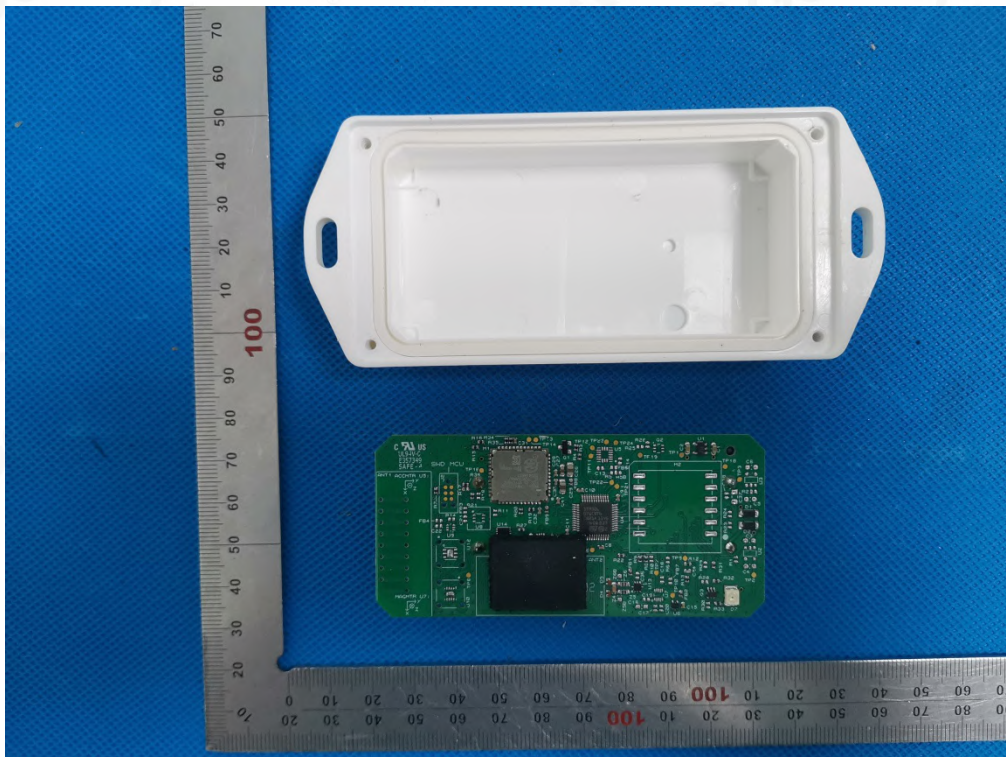
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INTERNAL VIEW-1 OF EUT



INTERNAL VIEW-2 OF EUT

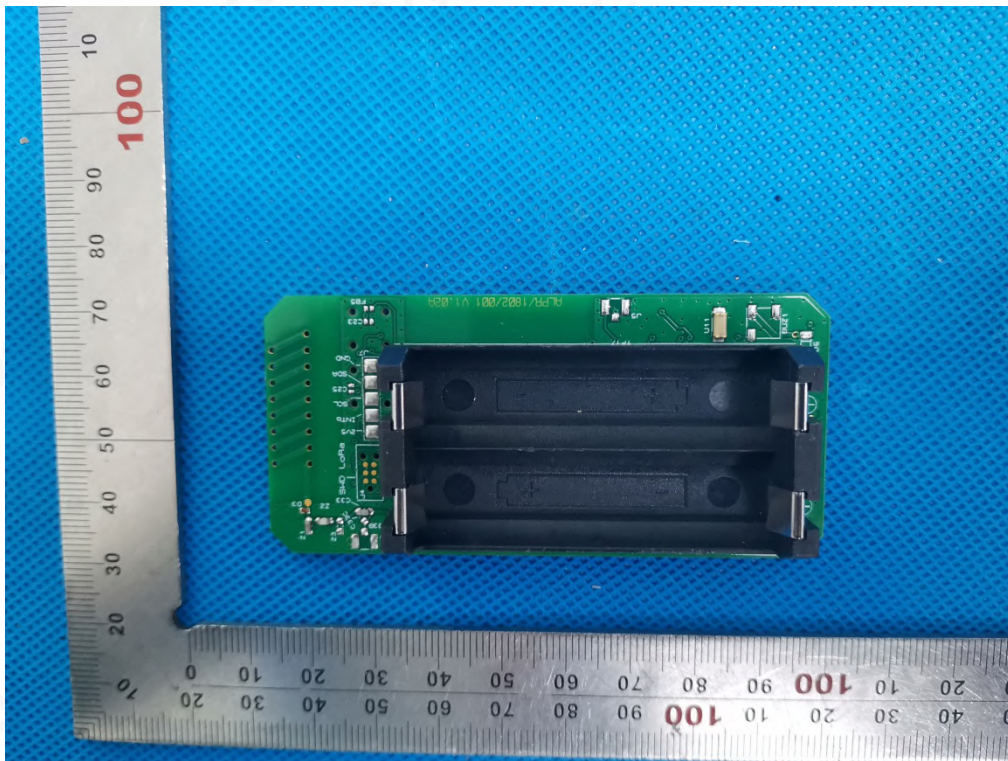


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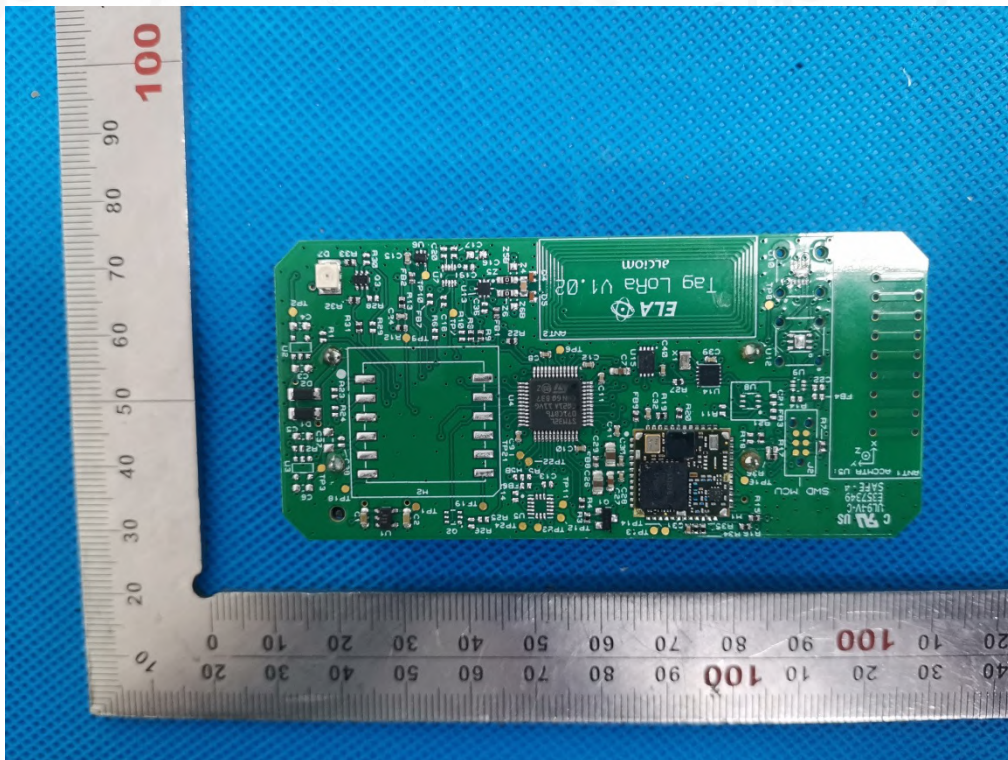
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INTERNAL VIEW-3 OF EUT



INTERNAL VIEW-4 OF EUT

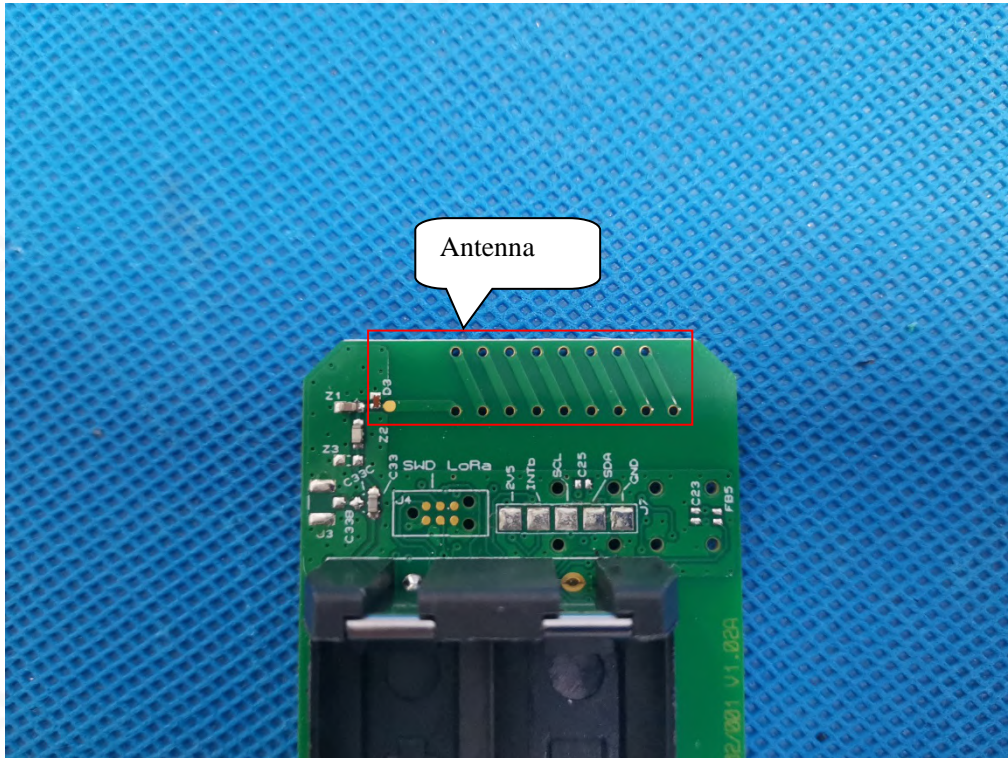


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INTERNAL VIEW-5 OF EUT



INTERNAL VIEW-6 OF EUT

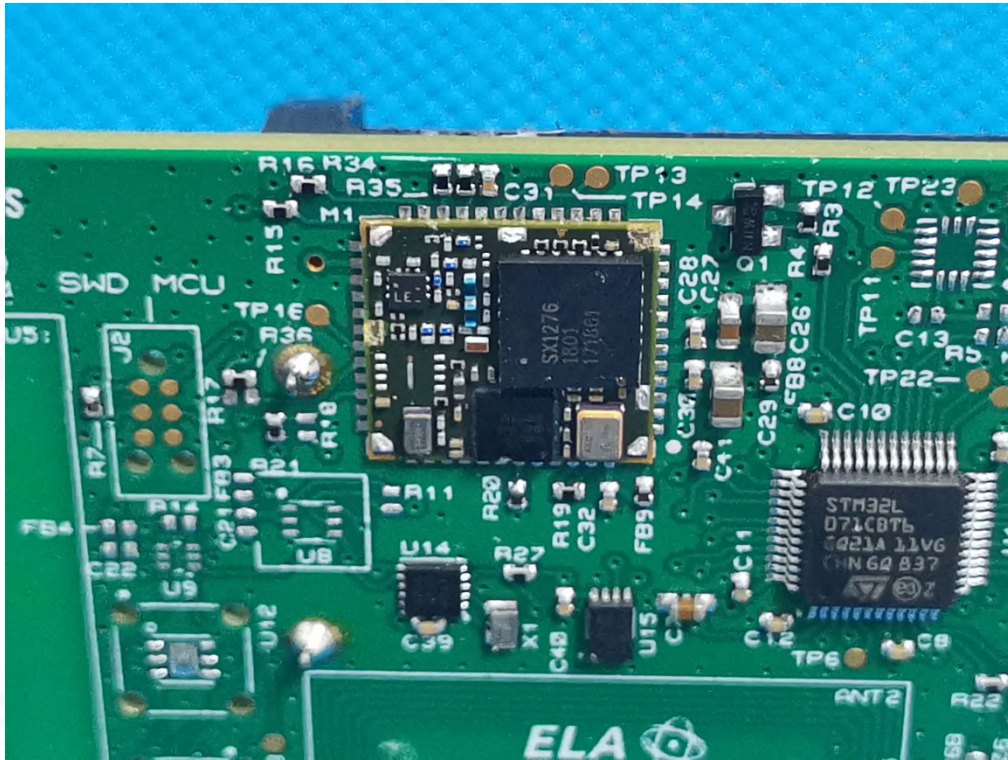


Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15 days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Attestation of Global Compliance(Shenzhen)Co., Ltd  
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INTERNAL VIEW-7 OF EUT



VIEW OF BATTERY



----END OF REPORT----

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## Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the “Company”) solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the “Clients”).
2. Any report issued by Company as a result of this application for testing services (the “Report”) shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. The non-CMA report issued by AGC is only permitted to be used by the client as internal reference use and shall not be used for public demonstration purpose.
5. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
6. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
7. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
8. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
9. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
10. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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