

TEST REPORT

Applicant : Shenzhen Qianhai Linghangwan Technology Co., Ltd.
Address : 18th Floor, Building 1, COFCO Chuangxin R&D Center, Liuxian 1st Road, Xinan Street, Bao'an District, Shenzhen City
Manufacturer : SHENZHEN MAKERFIRE TECHNOLOGY CO.,LTD.
Address : 18th Floor, Building 1, COFCO Chuangxin R&D Center, Liuxian 1st Road, Xinan Street, Bao'an District, Shenzhen City
Product Name : LoRa AIOT Development Kit
Model Number : W10-V1.2, DEVK V1.1
Trademark :  MESHnology
FCC ID : 2BRTY-DEVK
Test Date : Feb.05 , 2026 -Feb.12, 2026
Date of Report : Apr.09, 2026
Test Result : This device described above has been tested by BKC, and the test results show that the equipment under test (EUT) is in compliance with the Standard requirements. And it is applicable only to the tested sample identified in the report.
Test Procedure Used:
Standards : FCC CFR Title 47 Part 15 Subpart C Section 15.249
ANSI C63.10:2020+Cor 1-2023

Prepared by(Test Engineer):
Carey Zheng



Reviewer(Supervisor):
Casey Wang



Approved(Manager):
Jerry Liao



TABLE OF CONTENT

1. General Information	4
1.1. Description of Device (EUT)	4
1.2. Channel List	4
1.3. Summary of test result	4
1.4. Special Accessories and Auxiliary Equipment	4
1.5. Block Diagram	5
1.6. Test mode	5
1.7. Test Conditions	5
1.8. Measurement Uncertainty (95% confidence levels, k=2)	5
1.9. Test Facility	6
1.10. Test Equipment	6
2. Conducted emission at the mains terminals test	9
2.1. Limit	9
2.2. Test Setup	9
2.3. Test Procedure	9
2.4. Test Result	10
3. Radiated Spurious Emissions	12
3.1. Limit	12
3.2. Test Setup	13
3.3. Test Procedure	15
3.4. Test Result	16
4. -20 dB Bandwidth Measurement	22
4.1. Limit	22
4.2. Test Setup	22
4.3. Test Procedure	22
4.4. Test Result	22
5. Antenna Requirement	24
6. Test Photographs	24
7. Appendix I: Photos of the EUT	24

[illegible]

1. General Information

1.1. Description of Device (EUT)

EUT Name	: LoRa AIOT Dev Kit
Model No.	: W10-V1.2, W10-V1.1 (Note: This time, the "W10-V1.2" model is the main test model.)
Model Difference	: All the models have the same configuration, only the model numbers and product colors are different.
Power supply	: Input: 5V DC 3A
Operation frequency	: 913.2-917.4MHz
Modulation	: LoRa(CSS)
Antenna Type	: Rod antenna, Maximum Gain is 4.3dBi
Intend use environment	: Residential, commercial and light industrial environment

1.2. Channel List

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	913.2MHz	2	914.4MHz	4	915.6MHz	6	916.8MHz
1	913.8MHz	3	915.0MHz	5	916.2MHz	7	917.4MHz

Remark: Channel 0, 3&7 have been tested.

1.3. Summary of test result

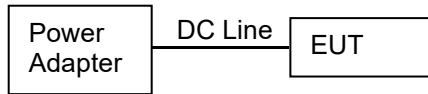
RF PART		
Test Items	Test Requirement	Result
Antenna requirement	FCC part 15.203/15.249 (c)	PASS
AC Power Line Conducted Emission	FCC part 15.207	PASS
Field strength of the fundamental signal	FCC part 15.15.249 (a)	PASS
Spurious emissions	FCC part 15.15.249 (a) (d)/15.209	PASS
Band edge	FCC part 15.249 (d)/15.205	PASS
20dB Occupied Bandwidth	FCC part 15.215 (c)	PASS
Remark: N/A is an abbreviation for Not Applicable. Measurement Uncertainty is not taken into account for conformity statement		

1.4. Special Accessories and Auxiliary Equipment

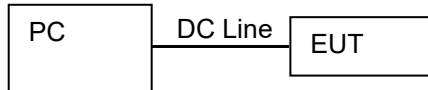
Description	Manufacturer	Model No.	Serial Number
Adapter	Salcomp	A2244	F1625031EBDPMG9DK
/	/	/	/

1.5. Block Diagram

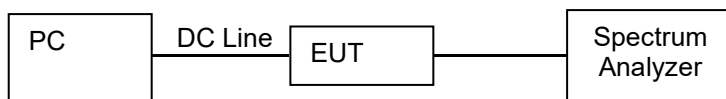
Conducted Emission



Radiated Emission



RF Conducted Test



1.6. Test mode

The special RF test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode.

Test mode	Low channel	Middle channel	High channel
LoRa(CSS)	913.2MHz	915MHz	917.4MHz

Note: This refers only to the poorest data recorded in the report (Middle channel: 915MHz).

1.7. Test Conditions

Category	Normal Conditions	Extreme Conditions
Temperature range	15-35°C	N/A
Humidity range	20-75%	N/A
Pressure range	86-106kPa	N/A
Power supply	120Vac for adapter or DC 5V	N/A

Note: N/A is an abbreviation for Not Applicable.

1.8. Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for radio frequency	$\pm 7 \times 10^{-8}$	
Conducted Emissions (150kHz~30MHz)	$\pm 2.54\text{dB}$	
Radiated Emission(9KHz~30MHz)	$\pm 1.6\text{ dB}$	
Radiated Emission(30MHz~1GHz)	Vertical: $\pm 4.14\text{dB}$ Horizontal: $\pm 4.25\text{dB}$	
Radiated Emission(1GHz~6GHz)	$\pm 3.9\text{dB}$	
Radiated Emission(6GHz~18GHz)	$\pm 4.3\text{dB}$	

Radiated Emission(18GHz~40GHz)	±3.38dB	
Uncertainty for conducted RF Power	±0.20dB	
Conducted spurious emissions	±0.24dB	
Uncertainty for temperature	0.6℃	
Uncertainty for humidity	1%	
Bandwidth	± 1.5 x 10 ⁻⁶	
Time	±2%	
Duty Cycle	±2%	
Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%		

1.9.Test Facility

Site Description		
Name of Firm	:	Shenzhen BKC Testing Co., Ltd.
Site Location	:	Room 103, 1/F, Huaya Building, Huaya Industrial Park, Longhua Community, Longhua District, Shenzhen, Guangdong, China.
ISED CAB identifier	:	CN0188
ISED Company Number	:	34333
FCC Designation Number	:	CN1416
FCC Test Firm Registration Number	:	701543

1.10.Test Equipment

Conducted Test Site

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	102762	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
2	EMI Test Receiver	R&S	ESCI	101424	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
3	Rf cables	HTEC	HCE 2M-CE	N/A	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
4	Coupling/ Decoupling Network	Diamond	CX210	N/A	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
5	CE Testing software	EZ	EZ-EMC	/	/	/

Radiated Test Site(Below 1G and Above 1G)

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Antenna	Schwarzbeck	VULB 9168	01321	Mar. 20. 2025	Mar. 19. 2028
2	EMI Test Receiver	R&S	ESRP	101478	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
3	Preamplifier	HP	8447D	2727A05345	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
4	Double Ridged Broadband	SCHWARZBECK	BBHA 9120D	02621	Mar. 10. 2025	Mar. 19. 2028
5	Preamplifier	Schwarzbeck	BBV 9718D	00041	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
6	Rf cables	HUBER+SUHNER	8M-RE	N/A	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
7	Rf cables	HUBER+SUHNER	1.5M-RE	N/A	Mar. 10. 2025	Mar. 09. 2026
					Mar. 11. 2026	Mar. 10. 2027
8	Rf cables	HUBER+SUHNER	1.5M-AP-RE	N/A	Mar. 10. 2025	Mar. 09. 2026
					Mar. 09. 2026	Mar. 10. 2027
9	Spectrum	Agilent	N9020A	MY50510311	Mar. 09. 2026	Mar. 10. 2026
					Mar. 11. 2026	Mar. 10. 2027
10	Spectrum analyzer	R&S	FSP40	200061	Feb. 13. 2025	Feb. 12. 2026
					Mar. 11. 2026	Mar. 10. 2027
11	Double Ridged Broadband Horn Antenna	COM-POWER	AH-1840	10100009	Mar. 09. 2026	Mar. 10. 2026
					Mar. 11. 2026	Mar. 10. 2027
12	RE Testing software	EZ	EZ-EMC	/		/

RF Test Site

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum	Agilent	N9020A	MY50510311	Mar. 09. 2026	Mar. 10. 2027
					Mar. 11. 2026	Mar. 10. 2027
2	Vector source	Agilent	N5182A	MY47420223	Mar. 09. 2026	Mar. 10. 2027
					Mar. 11. 2026	Mar. 10. 2027
3	All instrument	Rohde & Schwarz	CMW 500	101131	Mar. 09. 2026	Mar. 10. 2027
					Mar. 11. 2026	Mar. 10. 2027
4	control unit	MW	MW100-RFCB	MW200411BK-34	Mar. 09. 2026	Mar. 10. 2027
					Mar. 11. 2026	Mar. 10. 2027
5	RF Testing software	MW	MTS 8310	/	/	/

6	Spectrum analyzer	R&S	FSP40	200061	Feb. 13. 2025	Feb. 12. 2026
					Mar. 11. 2026	Mar. 10. 2027

Test software

Software name	RF Testing software
Software version	2.0.0.0
Software name	RE Testing software
Software version	EMEC-03A2 RE+
Software name	CE Testing software
Software version	EMEC-3A1+



2. Conducted emission at the mains terminals test

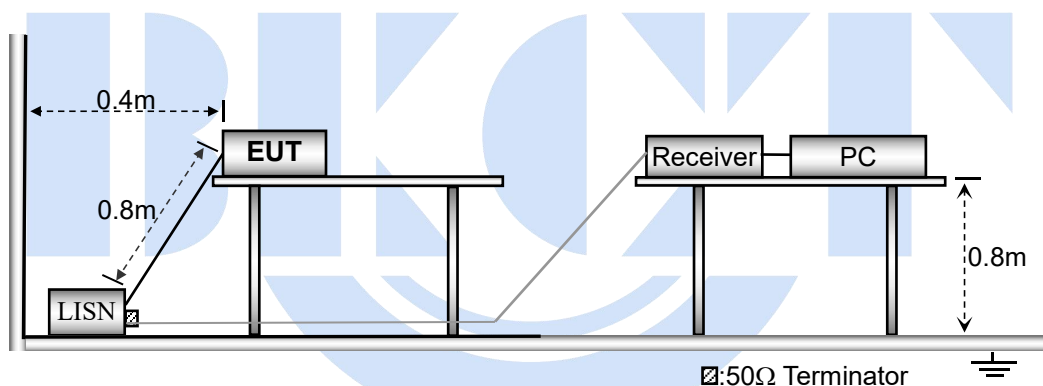
2.1.Limit

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2020+Cor 1-2023
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

2.2.Test Setup



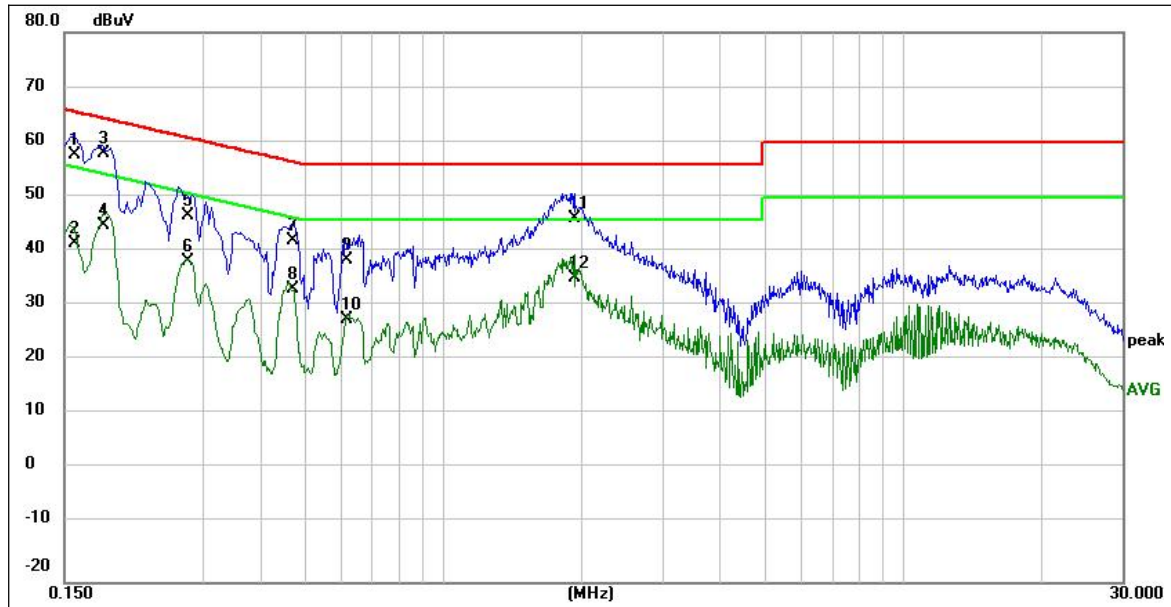
2.3.Test Procedure

1. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
2. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
3. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
4. LISN at least 80 cm from nearest part of EUT chassis.
5. For the actual test configuration, please refer to the related Item - EUT Test Photos.

2.4.Test Result

This refers only to the poorest data recorded in the report (Middle channel: 915MHz).

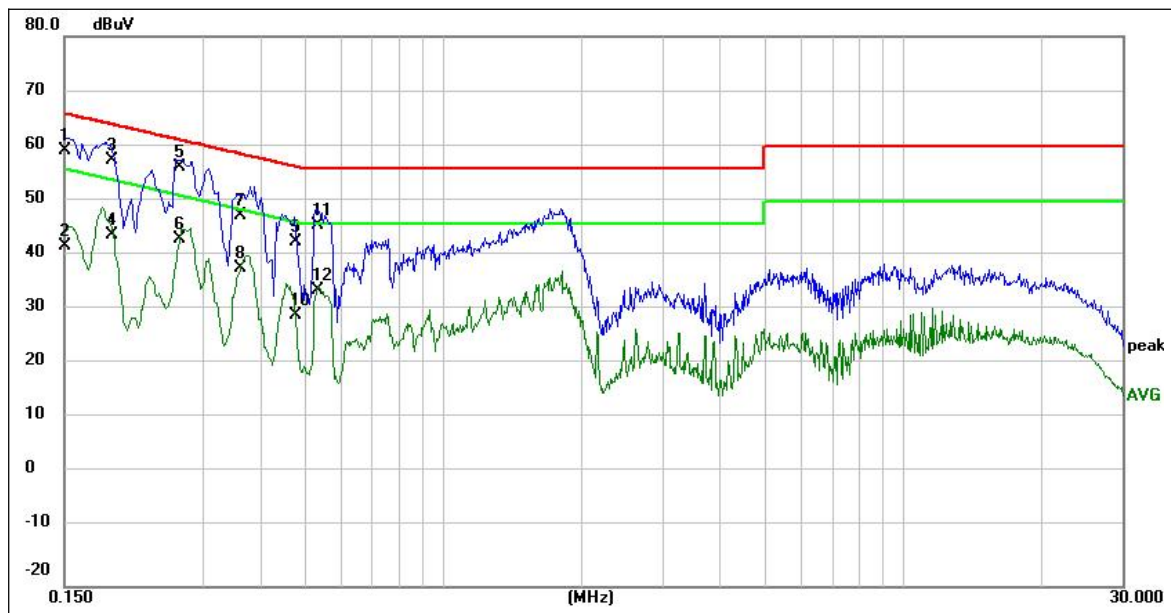
Conducted Emission At The Mains Terminals Test Data			
Temperature:	25.1 °C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Line
Test Voltage :	AC 120V/60Hz	Test Mode:	915MHz
Model No. :	W10-V1.2		



No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measurement(dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	37.39	20.29	57.68	65.57	-7.89	QP
2	0.1580	21.27	20.29	41.56	55.57	-14.01	AVG
3	0.1819	36.70	21.24	57.94	64.40	-6.46	QP
4	0.1819	23.62	21.24	44.86	54.40	-9.54	AVG
5	0.2779	24.86	21.89	46.75	60.88	-14.13	QP
6	0.2779	16.60	21.89	38.49	50.88	-12.39	AVG
7	0.4700	20.28	21.89	42.17	56.51	-14.34	QP
8	0.4700	11.41	21.89	33.30	46.51	-13.21	AVG
9	0.6140	16.79	21.89	38.68	56.00	-17.32	QP
10	0.6140	5.90	21.89	27.79	46.00	-18.21	AVG
11	1.9340	25.17	20.95	46.12	56.00	-9.88	QP
12	1.9340	14.50	20.95	35.45	46.00	-10.55	AVG

Conducted Emission At The Mains Terminals Test Data

Temperature:	25.1 °C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Neutral
Test Voltage :	AC 120V/60Hz	Test Mode:	915MHz
Model No. :	W10-V1.2		



No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measurement(dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	39.18	19.98	59.16	66.00	-6.84	QP
2	0.1500	21.95	19.98	41.93	56.00	-14.07	AVG
3	0.1900	36.07	21.55	57.62	64.04	-6.42	QP
4	0.1900	22.49	21.55	44.04	54.04	-10.00	AVG
5	0.2672	34.26	21.90	56.16	61.20	-5.04	QP
6	0.2672	21.36	21.90	43.26	51.20	-7.94	AVG
7	0.3620	25.67	21.89	47.56	58.68	-11.12	QP
8	0.3620	15.91	21.89	37.80	48.68	-10.88	AVG
9	0.4780	20.71	21.89	42.60	56.37	-13.77	QP
10	0.4780	7.56	21.89	29.45	46.37	-16.92	AVG
11	0.5299	23.93	21.89	45.82	56.00	-10.18	QP
12	0.5299	12.04	21.89	33.93	46.00	-12.07	AVG

3. Radiated Spurious Emissions

3.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.249
Test Method: KDB 558074 D01 15.247 Meas Guidancev05r02;
ANSI C63.10:2020+Cor 1-2023
Test Result: PASS
Measurement Distance: 3m

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log(2400/F(\text{kHz})) + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log(24000/F(\text{kHz})) + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log(30) + 40$
30 ~ 88	100	3	100	$20\log(100)$
88 ~ 216	150	3	150	$20\log(150)$
216 ~ 960	200	3	200	$20\log(200)$
Above 960	500	3	500	$20\log(500)$

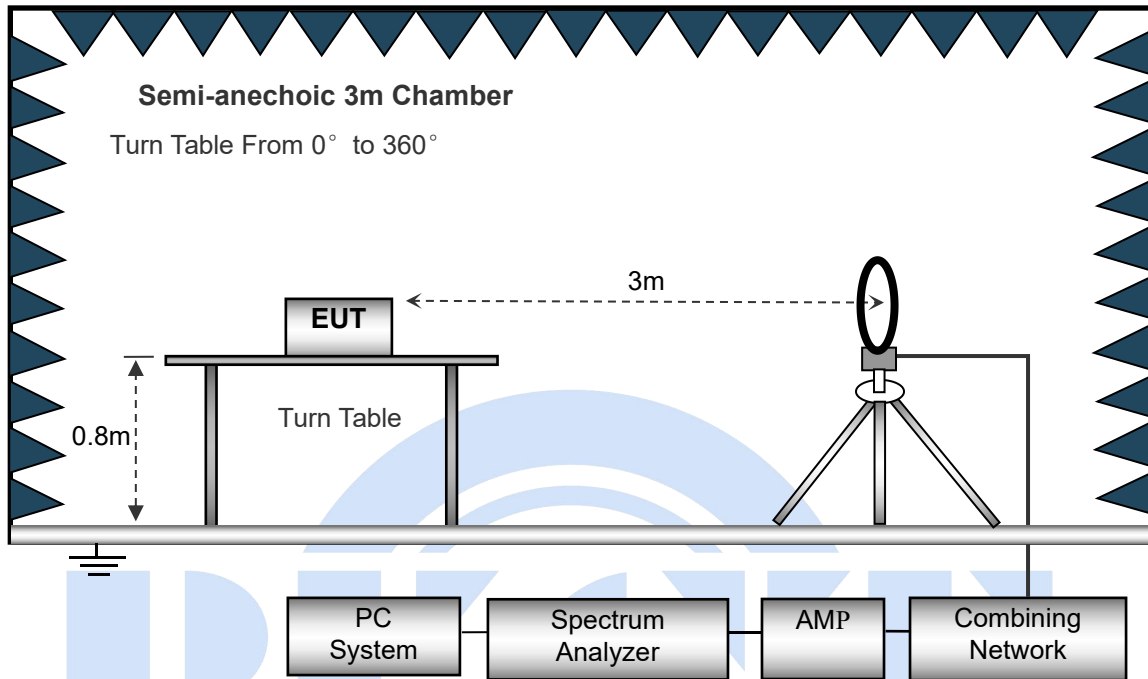
The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 - 928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

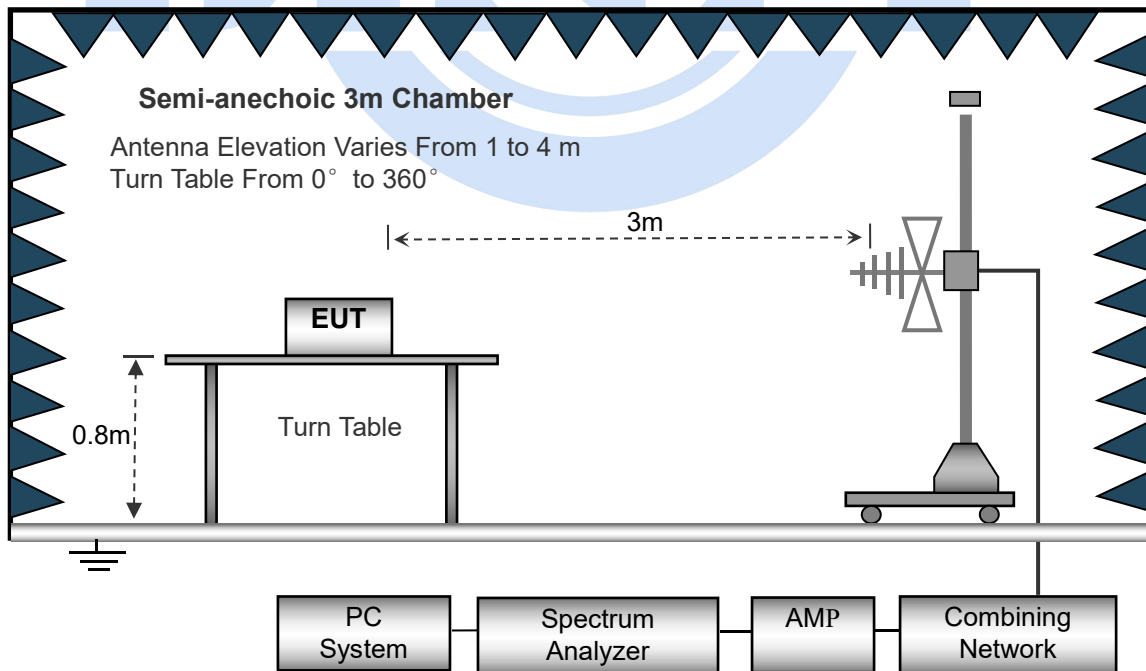
3.2. Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10.

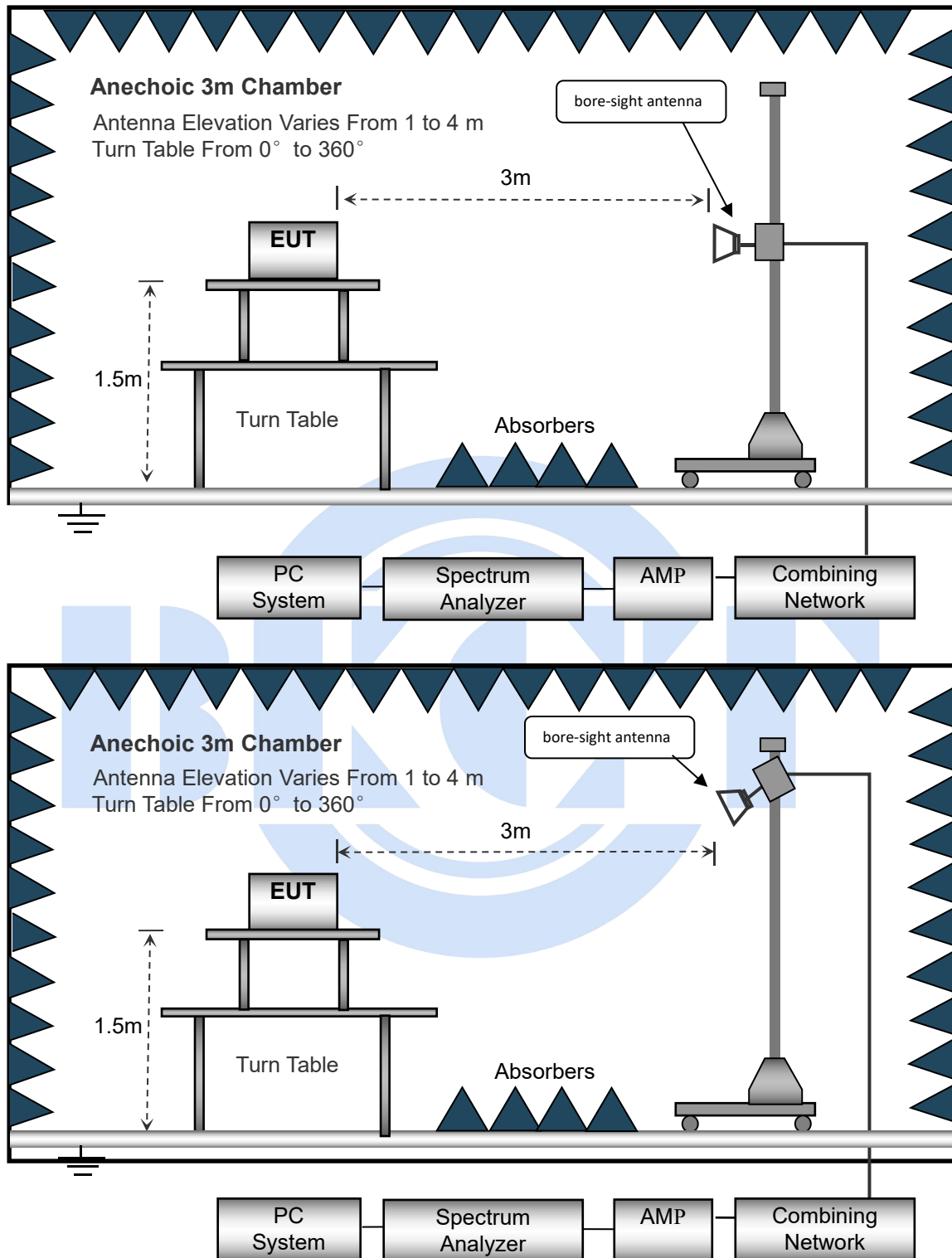
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



3.3. Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in Z axis,so the worst data were shown as follow.
8. A 2.4GHz high - pass filter is used during radiated emissions above 1GHz measurement.



3.4. Test Result

Test Frequency: 9KHz~30MHz

The measurements were more than 20 dB below the limit and not reported.

Test Frequency : 30MHz ~ 1GHz

This refers only to the poorest data recorded in the report (Middle channel: 915MHz).

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	AC 120V/60Hz	Test Mode	915MHz
Model No. :	W10-V1.2		



No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark			
1	68.1514	44.33	-10.39	33.94	40.00	-6.06	QP			
2	85.5976	40.36	-9.76	30.60	40.00	-9.40	QP			
3	99.5281	33.55	-4.97	28.58	43.50	-14.92	QP			
4	164.9074	39.29	-4.86	34.43	43.50	-9.07	QP			
5	294.1137	29.37	-1.10	28.27	46.00	-17.73	QP			
6 *	915.0000	46.88	8.39	55.27	94.00	-38.73	QP			

Note: Point 6 is the fundamental frequency.

Radiation Emission Test Data			
Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	AC 120V/60Hz	Test Mode	915MHz
Model No. :	W10-V1.2		



No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark			
1	39.5756	31.67	-2.02	29.65	40.00	-10.35	QP			
2	50.7635	39.60	-6.13	33.47	40.00	-6.53	QP			
3	64.4330	41.95	-10.11	31.84	40.00	-8.16	QP			
4	170.1947	38.93	-5.30	33.63	43.50	-9.87	QP			
5	261.0581	33.50	-2.32	31.18	46.00	-14.82	QP			
6 *	915.0000	51.66	8.39	60.05	94.00	-33.95	QP			

Spurious Emission Above 1GHz (1GHz to 25GHz)

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Channel 0: 913.2MHz									
V	1,826.4	50.61	30.55	5.77	33.52	59.35	74.00	-14.65	Pk
V	1,826.4	30.06	30.55	5.77	33.52	38.80	54.00	-15.20	AV
V	2,739.6	52.70	30.33	6.32	36.30	64.99	74.00	-9.01	Pk
V	2,739.6	31.74	30.33	6.32	36.30	44.03	54.00	-9.97	AV
V	3,652.8	52.84	30.85	7.45	38.80	68.24	74.00	-5.76	Pk
V	3,652.8	33.74	30.85	7.45	38.80	49.14	54.00	-4.86	AV
H	1,826.4	53.95	30.55	5.77	33.52	62.69	74.00	-11.31	Pk
H	1,826.4	31.54	30.55	5.77	33.52	40.28	54.00	-13.72	AV
H	2,739.6	51.27	30.33	6.32	36.30	63.56	74.00	-10.44	Pk
H	2,739.6	34.65	30.33	6.32	36.30	46.94	54.00	-7.06	AV
H	3,652.8	51.71	30.85	7.45	38.80	67.11	74.00	-6.89	Pk
H	3,652.8	30.96	30.85	7.45	38.80	46.36	54.00	-7.64	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Channel 3: 915MHz									
V	1830	53.17	30.55	5.77	33.52	61.91	74.00	-12.09	Pk
V	1830	31.97	30.55	5.77	33.52	40.71	54.00	-13.29	AV
V	2745	51.20	30.33	6.32	36.30	63.49	74.00	-10.51	Pk
V	2745	32.40	30.33	6.32	36.30	44.69	54.00	-9.31	AV
V	3660	52.68	30.85	7.45	38.80	68.08	74.00	-5.92	Pk
V	3660	34.47	30.85	7.45	38.80	49.87	54.00	-4.13	AV
H	1830	53.42	30.55	5.77	33.52	62.16	74.00	-11.84	Pk
H	1830	32.07	30.55	5.77	33.52	40.81	54.00	-13.19	AV
H	2745	53.74	30.33	6.32	36.30	66.03	74.00	-7.97	Pk
H	2745	34.27	30.33	6.32	36.30	46.56	54.00	-7.44	AV
H	3660	52.43	30.85	7.45	38.80	67.83	74.00	-6.17	Pk
H	3660	31.76	30.85	7.45	38.80	47.16	54.00	-6.84	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Channel 7: 917.4MHz									
V	1834.8	52.31	30.55	5.77	33.52	61.05	74.00	-12.95	Pk
V	1834.8	33.29	30.55	5.77	33.52	42.03	54.00	-11.97	AV
V	2752.2	52.75	30.33	6.32	36.30	65.04	74.00	-8.96	Pk
V	2752.2	34.17	30.33	6.32	36.30	46.46	54.00	-7.54	AV
V	3669.6	52.80	30.85	7.45	38.80	68.20	74.00	-5.80	Pk
V	3669.6	30.74	30.85	7.45	38.80	46.14	54.00	-7.86	AV
H	1834.8	54.51	30.55	5.77	33.52	63.25	74.00	-10.75	Pk
H	1834.8	34.15	30.55	5.77	33.52	42.89	54.00	-11.11	AV
H	2752.2	54.23	30.33	6.32	36.30	66.52	74.00	-7.48	Pk
H	2752.2	31.24	30.33	6.32	36.30	43.53	54.00	-10.47	AV
H	3669.6	50.96	30.85	7.45	38.80	66.36	74.00	-7.64	Pk
H	3669.6	33.39	30.85	7.45	38.80	48.79	54.00	-5.21	AV

Note: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit

2. If peak below the average limit, the average emission was no test.

3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Spurious Emission in Restricted Band 870-902MHz and 928-960MHz

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Detector Type	Result
Channel 0: 913.2MHz									
H	870.0000	34.18	30.22	4.85	23.98	32.79	46	QP	PASS
H	902.0000	32.15	30.22	4.85	23.98	30.76	46	QP	PASS
V	870.0000	32.19	30.22	4.85	23.98	30.80	46	QP	PASS
V	902.0000	32.45	30.22	4.85	23.98	31.06	46	QP	PASS
Channel 7: 917.4MHz									
H	928.0000	31.22	30.22	4.85	23.98	29.83	46	QP	PASS
H	960.0000	32.76	30.22	4.85	23.98	31.37	46	QP	PASS
V	928.0000	33.06	30.22	4.85	23.98	31.67	46	QP	PASS
V	960.0000	34.17	30.22	4.85	23.98	32.78	46	QP	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level – Limit

Field Strength of The Fundamental Signal Data

LoRa

Polar (H/V)	Frequency	Reading Level	Correct Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	913.2	42.1	8.39	50.49	94	-43.51	QP
V	913.2	44.26	8.39	52.65	94	-41.35	QP
H	915	46.88	8.39	55.27	94	-38.73	QP
V	915	51.66	8.39	60.05	94	-33.95	QP
H	917.4	43.79	8.39	52.18	94	-41.82	QP
V	917.4	45.28	8.39	53.67	94	-40.33	QP

Remark:

1. Emission Level = Reading Level + Correct Factor, Margin= Emission Level – Limit



4. -20 dB Bandwidth Measurement

4.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.215

Test Method: KDB 558074 D01 15.247 Meas Guidancev05r02; ANSI C63.10:2020+Cor 1-2023

4.2.Test Setup

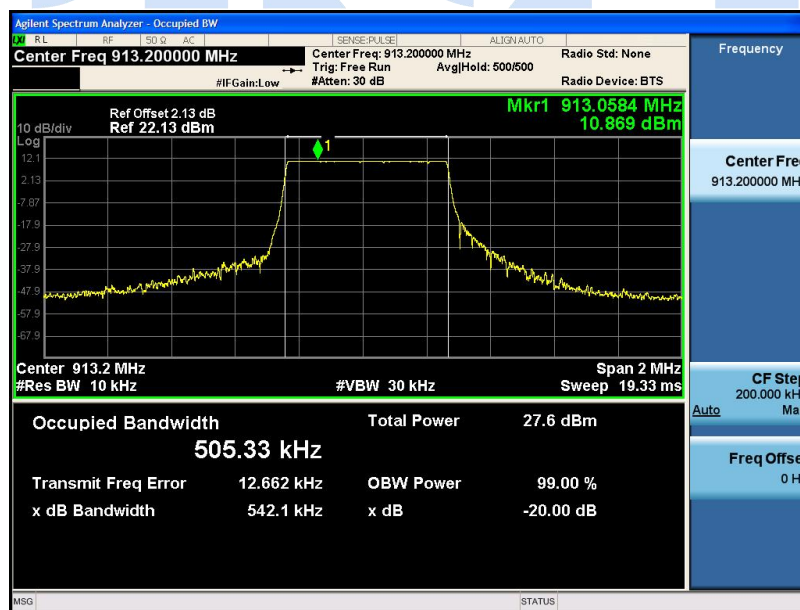


4.3.Test Procedure

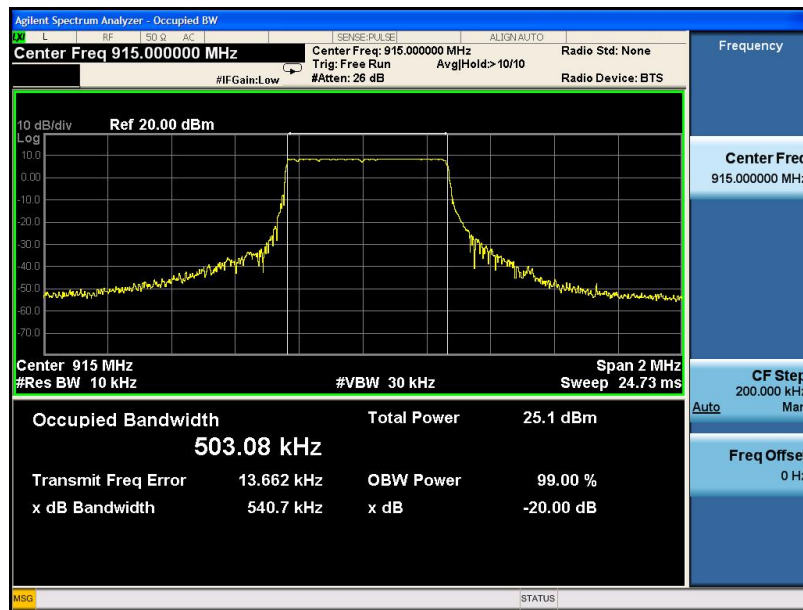
1. Set the spectrum analyzer: RBW = 1%-5% OBW
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by -20 dB relative to the maximum level measured in the fundamental emission

4.4.Test Result

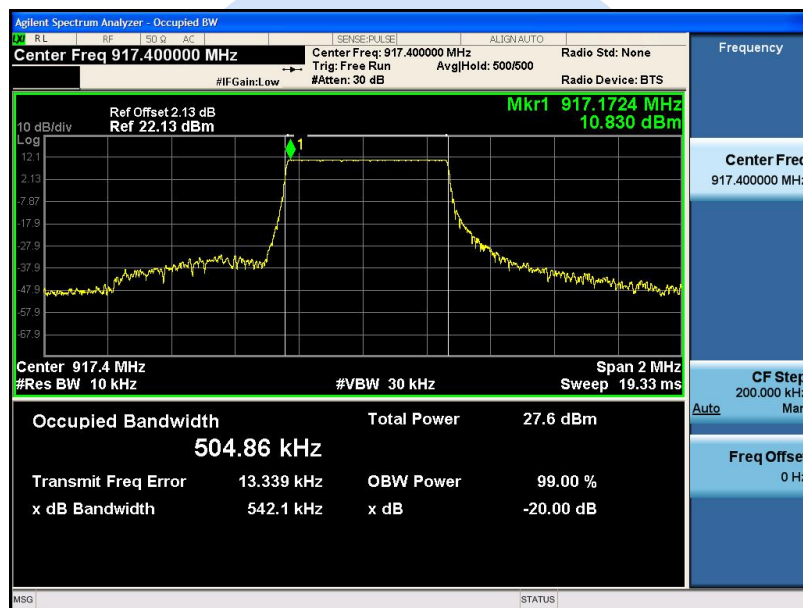
Mode	Channel (MHz)	Frequency (MHz)	99% OBW (MHz)	-20dB OBW (MHz)
LoRa(CSS)	0	913.2	0.50533	0.5421
	3	915	0.50308	0.5407
	7	917.4	0.50486	0.5421



LoRa: 913.2 MHz



LoRa: 915 MHz



LoRa: 917.4 MHz

5. Antenna Requirement

According to the FCC Part 15 Paragraph 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. This product has an integrated antenna fulfill the requirement of this section.

6. Test Photographs

Please see the attachment for Test Photographs.

7. Appendix I: Photos of the EUT

Please see the attachment

***** END OF REPORT *****