TEST REPORT

Applicant:	Hangzhou Shakaraka Technology Co., Ltd
Address of Applicant:	Room 4120, Building 2, No. 1197, Bin'an Road, Binjiang District, Hangzhou City, Zhejiang Province
Manufacturer/Factory:	Hangzhou Green Palm Technology Co., Ltd.
Address of Manufacturer/Factory:	Room 412, Building C, Hangzhou Xinxigan, No.198, Mingxing Road, Beigan Street, Xiaoshan District, Hangzhou City, Zhejiang Province

Equipment Under Test (EUT)

Product Name:	Pisces outdoor gateway
Model No.:	Pisces P100, Pisces P110, Pisces P120, Pisces P130, Pisces P140, Pisces P150, Pisces P160, Pisces P170, Pisces P180, Pisces P190
Trade Mark:	Pisces IoT
FCC ID:	2A3AD-PISCESP100
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	Sep. 17,2021
Date of Test:	Sep. 17,2021-Oct. 20,2021
Date of report issued:	Oct. 20,2021
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Luo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*Oct. 20,2021*	*Original*

Prepared By: ***Date:*** *Oct. 20,2021*

Project Engineer

Check By: ***Date:*** *Oct. 20,2021*

Reviewer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Remarks:

1. Test according to ANSI C63.10: 2013.

2. Pass: The EUT complies with the essential requirements in the standard.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

	Product Name:	Pisces outdoor gateway
	Model No.:	Pisces P100
	Serial model:	Pisces P110, Pisces P120, Pisces P130, Pisces P140, Pisces P150, Pisces P160, Pisces P170, Pisces P180, Pisces P190
	Model Declaration:	PCB board, structure and internal of these model(s) are the same, So no additional models were tested.
	Hardware Version:	LoRa_WG_V4.4
	Software Version:	Pisces Hotspot V1.00
	Test sample(s) ID:	GTSL202109000231-1
	Sample(s) Status	Engineered sample
Lora		
	Operation Frequency:	904MHz~926MHz
	Channel separation:	2MHz
	Modulation type:	GFSK
	Antenna Type:	FRP Antenna
	Antenna gain:	4.00dBi
	Power supply:	DC 5V/1A Form POE Switch
	Adapter Information (Auxiliary test provided by the lab):	Mode: TL-SG1005P Input: DC 53.5V, 2.4A

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency		
1	904.00MHz	4	905.30MHz	7	923.30MHz		
2	904.70MHz	5	905.60MHz	8	924.50MHz		
3	905.10MHz	6	915.00MHz	9	926.00MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	904.00MHz
The middle channel	915.00MHz
The Highest channel	926.00MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: During the test, the dutycycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	75.86	73.29	72.63

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

● **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Special test command provided by manufacturer
Power level setup	Default

5.9 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Conducted testing：

Temperature:	25.2 ° C
Humidity:	51.2 %
Atmospheric pressure:	950-1050mbar

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 24 2021	June. 23 2022
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 24 2021	June. 23 2022
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 24 2021	June. 23 2022
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 24 2021	June. 23 2022
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 24 2021	June. 23 2022
9	Coaxial Cable	GTS	N/A	GTS211	June. 24 2021	June. 23 2022
10	Coaxial cable	GTS	N/A	GTS210	June. 24 2021	June. 23 2022
11	Coaxial Cable	GTS	N/A	GTS212	June. 24 2021	June. 23 2022
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 24 2021	June. 23 2022
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 24 2021	June. 23 2022
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 24 2021	June. 23 2022
15	Band filter	Amindeon	82346	GTS219	June. 24 2021	June. 23 2022
16	Power Meter	Anritsu	ML2495A	GTS540	June. 24 2021	June. 23 2022
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 24 2021	June. 23 2022
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 24 2021	June. 23 2022
19	Splitter	Agilent	11636B	GTS237	June. 24 2021	June. 23 2022
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 24 2021	June. 23 2022
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17 2021	Oct. 16 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17 2021	Oct. 16 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17 2021	Oct. 16 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 24 2021	June. 23 2022

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 24 2021	June. 23 2022
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 24 2021	June. 23 2022
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 24 2021	June. 23 2022
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 24 2021	June. 23 2022
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	June. 24 2021	June. 23 2022
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	July. 09 2021	July. 08 2022

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 24 2021	June. 23 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 24 2021	June. 23 2022
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 24 2021	June. 23 2022
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 24 2021	June. 23 2022
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 24 2021	June. 23 2022
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 24 2021	June. 23 2022
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 24 2021	June. 23 2022

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 24 2021	June. 23 2022
2	Barometer	ChangChun	DYM3	GTS255	June. 24 2021	June. 23 2022

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

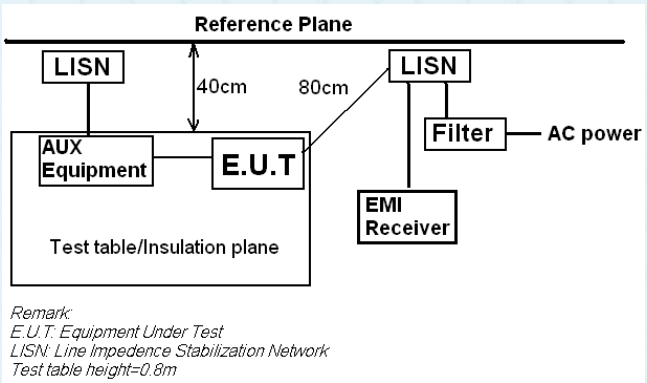
15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

EUT Antenna:

The antennas are FRP Antenna, the best case gain of the antennas are 4.00dBi, reference to the appendix II for details

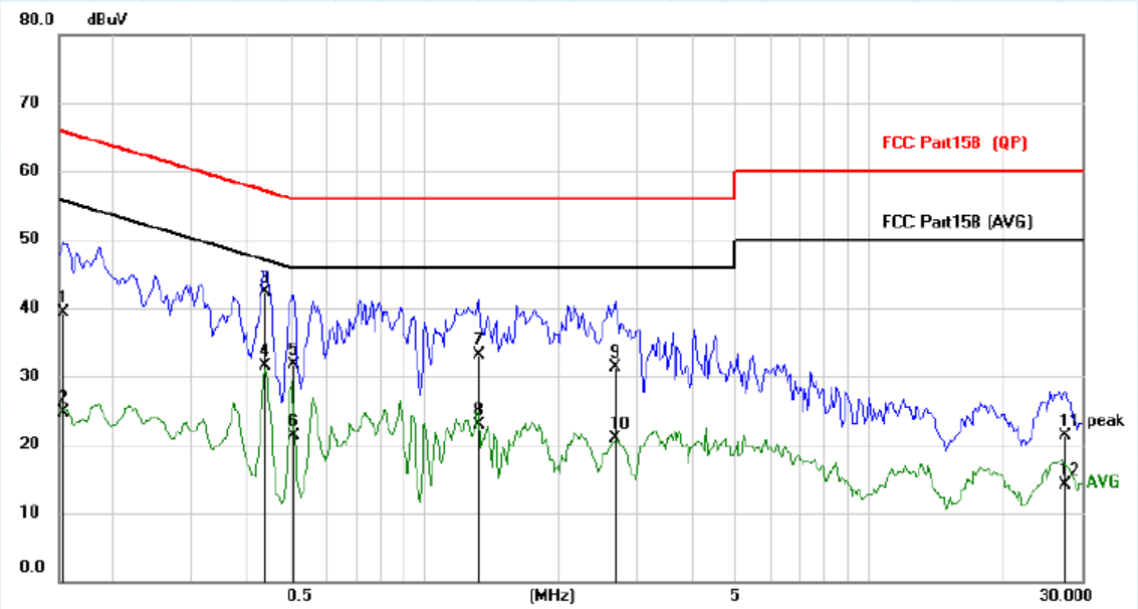
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test environment:	Temp.: 25 °C / Humid.: 52% / Press.: 1012mbar
Test voltage:	AC 120V, 60Hz
Test results:	Pass

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

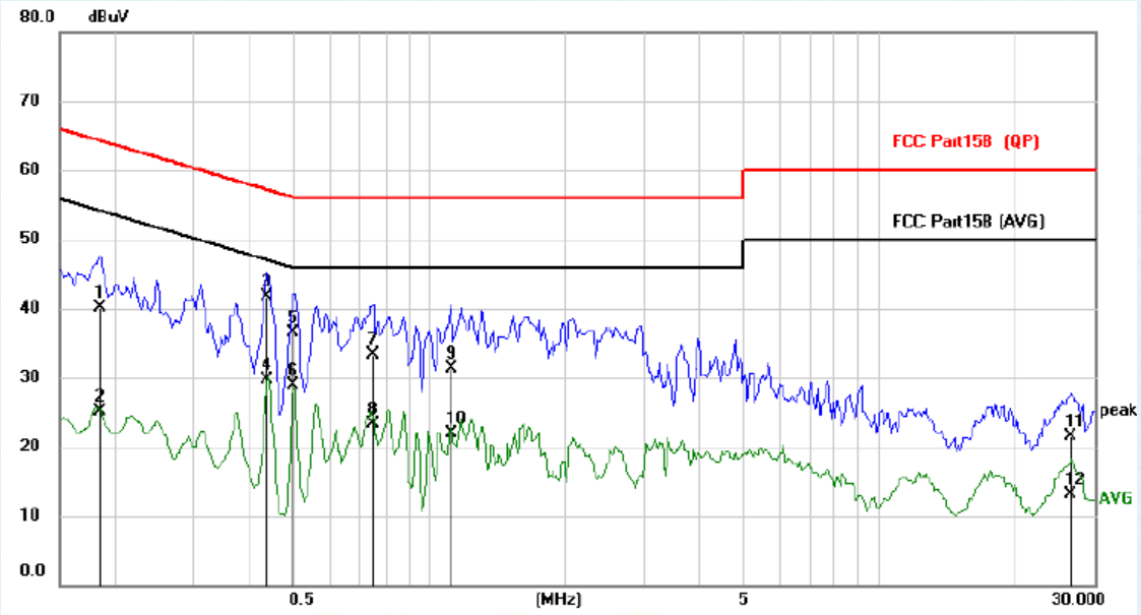
Measurement data

Line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1539	28.38	10.92	39.30	65.79	-26.49	QP	
2		0.1539	13.85	10.92	24.77	55.79	-31.02	AVG	
3	*	0.4385	31.33	10.92	42.25	57.09	-14.84	QP	
4		0.4385	20.67	10.92	31.59	47.09	-15.50	AVG	
5		0.5088	20.85	10.92	31.77	56.00	-24.23	QP	
6		0.5088	10.41	10.92	21.33	46.00	-24.67	AVG	
7		1.3239	22.10	10.94	33.04	56.00	-22.96	QP	
8		1.3239	11.98	10.94	22.92	46.00	-23.08	AVG	
9		2.6850	20.38	11.00	31.38	56.00	-24.62	QP	
10		2.6850	9.94	11.00	20.94	46.00	-25.06	AVG	
11		27.4879	9.27	11.99	21.26	60.00	-38.74	QP	
12		27.4879	2.12	11.99	14.11	50.00	-35.89	AVG	

Neutral:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1850	29.28	10.92	40.20	64.26	-24.06	QP
2		0.1850	14.21	10.92	25.13	54.26	-29.13	AVG
3	*	0.4346	30.71	10.92	41.63	57.16	-15.53	QP
4		0.4346	18.75	10.92	29.67	47.16	-17.49	AVG
5		0.4970	25.67	10.92	36.59	56.05	-19.46	QP
6		0.4970	17.93	10.92	28.85	46.05	-17.20	AVG
7		0.7506	22.36	10.92	33.28	56.00	-22.72	QP
8		0.7506	12.36	10.92	23.28	46.00	-22.72	AVG
9		1.1210	20.36	10.92	31.28	56.00	-24.72	QP
10		1.1210	11.02	10.92	21.94	46.00	-24.06	AVG
11		26.6340	9.48	11.96	21.44	60.00	-38.56	QP
12		26.6340	1.07	11.96	13.03	50.00	-36.97	AVG

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Remark
9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Limit:
(Field strength of the fundamental signal)

Frequency	Limit (dBuV/m @3m)	Remark
2400MHz-2483.5MHz	94.00	Average Value
	114.00	Peak Value

Limit:
(Spurious Emissions)

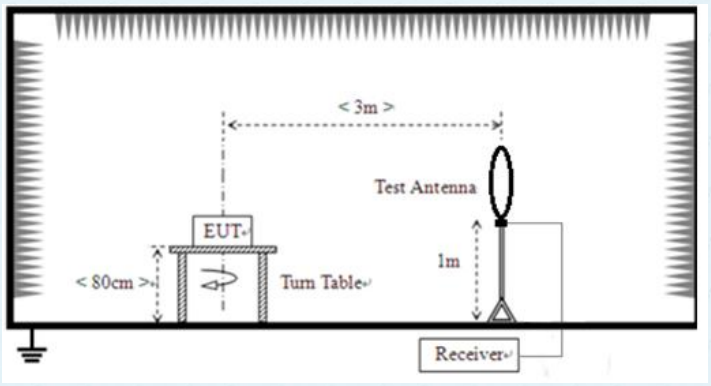
Frequency	Limit (uV/m)	Remark
0.009MHz-0.490MHz	2400/F(kHz) @300m	Quasi-peak Value
0.490MHz-1.705MHz	24000/F(kHz) @30m	Quasi-peak Value
1.705MHz-30.0MHz	30 @30m	Quasi-peak Value
30MHz-88MHz	100 @3m	Quasi-peak Value
88MHz-216MHz	150 @3m	Quasi-peak Value
216MHz-960MHz	200 @3m	Quasi-peak Value
960MHz-1GHz	500 @3m	Quasi-peak Value
Above 1GHz	500 @3m	Average Value
	5000 @3m	Peak Value

Limit:
(band edge)

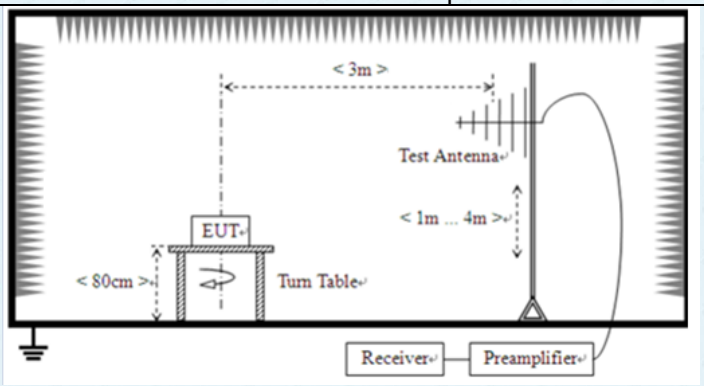
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

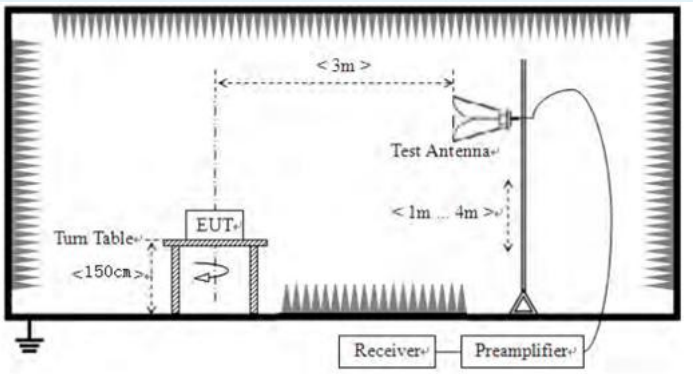
Test setup:

For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz

<table>
<tr><td></td><td>


For radiated emissions above 1GHz


</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.: | 25 °C | Humid.: | 52% | Press.: | 1012mbar</td></tr>
<tr><td>Test voltage:</td><td>AC 120V, 60Hz</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Field Strength of The Fundamental Signal and Spurious emissions

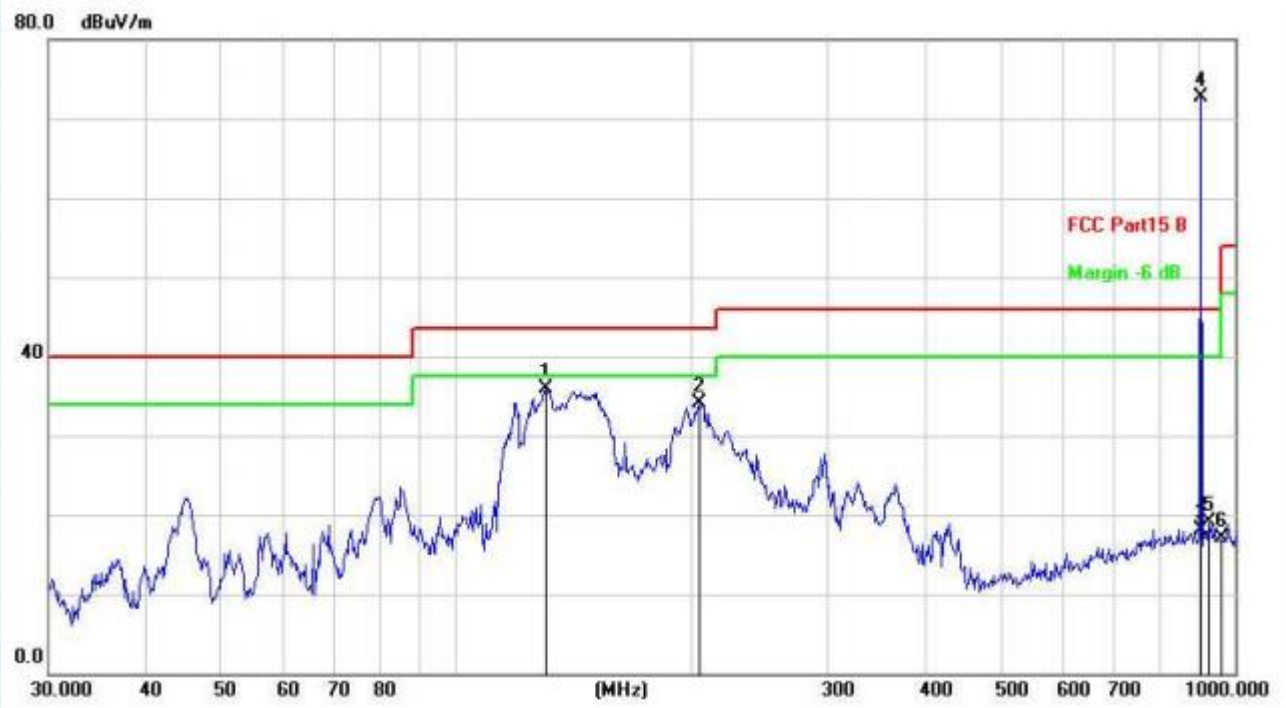
- **Below 30MHz**

  The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.

- **Below 1GHz**

For 904.00MHz

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		130.3789	55.24	-19.27	35.97	43.50	-7.53	QP
2		205.6751	54.03	-19.96	34.07	43.50	-9.43	QP
3		902.0000	27.61	-9.55	18.06	46.00	-27.94	QP
4	*	904.0000	82.18	-9.52	72.66	94.00	-21.34	QP
5		928.0000	28.44	-9.25	19.19	46.00	-26.81	QP
6		960.0000	25.92	-8.91	17.01	46.00	-28.99	QP

Measurement =Receiver Read level + Correct Factor

Vertical:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	!	58.6126	52.83	-18.71	34.12	40.00	-5.88	QP
2	!	129.9226	57.10	-19.30	37.80	43.50	-5.70	QP
3		902.0000	27.56	-9.55	18.01	46.00	-27.99	QP
4	*	904.0000	85.39	-9.53	75.86	94.00	-18.14	QP
5		928.0000	28.63	-9.31	19.32	46.00	-26.68	QP
6		960.0000	25.38	-8.99	16.39	46.00	-29.61	QP

Measurement =Receiver Read level + Correct Factor

For 915.00MHz

Horizontal:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		130.3788	54.74	-19.27	35.47	43.50	-8.03	QP
2		205.6750	52.53	-19.96	32.57	43.50	-10.93	QP
3		902.0000	27.27	-9.55	17.72	46.00	-28.28	QP
4	*	915.0000	82.18	-9.40	72.78	94.00	-21.22	QP
5		928.0000	27.62	-9.25	18.37	46.00	-27.63	QP
6		960.0000	25.68	-8.91	16.77	46.00	-29.23	QP

Measurement =Receiver Read level + Correct Factor

Vertical:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	!	58.6126	52.83	-18.71	34.12	40.00	-5.88	QP
2		129.9225	56.60	-19.30	37.30	43.50	-6.20	QP
3		902.0000	26.79	-9.55	17.24	46.00	-28.76	QP
4	*	915.0000	83.21	-9.43	73.78	94.00	-20.22	QP
5		928.0000	27.66	-9.31	18.35	46.00	-27.65	QP
6		960.0000	25.78	-8.99	16.79	46.00	-29.21	QP

Measurement =Receiver Read level + Correct Factor

For 926.00MHz

Horizontal:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		130.3788	55.74	-19.27	36.47	43.50	-7.03	QP
2		207.8500	52.52	-19.88	32.64	43.50	-10.86	QP
3		902.0000	26.95	-9.55	17.40	46.00	-28.60	QP
4	*	926.0000	81.64	-9.28	72.36	94.00	-21.64	QP
5		928.0000	27.64	-9.25	18.39	46.00	-27.61	QP
6		960.0000	25.74	-8.91	16.83	46.00	-29.17	QP

Measurement =Receiver Read level + Correct Factor

Vertical:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		45.6948	51.37	-18.30	33.07	40.00	-6.93	QP
2		58.6126	51.33	-18.71	32.62	40.00	-7.38	QP
3		902.0000	27.18	-9.55	17.63	46.00	-28.37	QP
4	*	926.0000	84.53	-9.33	75.20	94.00	-18.80	QP
5		928.0000	27.61	-9.31	18.30	46.00	-27.70	QP
6		960.0000	25.97	-8.99	16.98	46.00	-29.02	QP

Measurement =Receiver Read level + Correct Factor

■ Above 1GHz

For 1GHz to 10GHz

For 904.00MHz

Horizontal:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1240	58.53	-9.12	49.41	74	-24.59	peak
1240	42.69	-9.12	33.57	54	-20.43	AVG
1808	61.37	-8.86	52.51	74	-21.49	peak
1808	49.49	-8.86	40.63	54	-13.37	AVG
2712	57.36	-4.09	53.27	74	-20.73	peak
2712	43.68	-4.06	39.62	54	-14.38	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1240	59.83	-9.12	50.71	74	-23.29	peak
1240	43.97	-9.12	34.85	54	-19.15	AVG
1808	63.39	-8.86	54.53	74	-19.47	peak
1808	48.45	-8.86	39.59	54	-14.41	AVG
2712	58.75	-4.09	54.66	74	-19.34	peak
2712	42.39	-4.06	38.33	54	-15.67	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

For 915.00MHz

Horizontal:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1240	58.85	-9.12	49.73	74	-24.27	peak
1240	44.18	-9.12	35.06	54	-18.94	AVG
1830	66.36	-8.8	57.56	74	-16.44	peak
1830	48.45	-8.8	39.65	54	-14.35	AVG
2745	57.21	-4.07	53.14	74	-20.86	peak
2745	43.39	-4.07	39.32	54	-14.68	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1240	60.12	-9.12	51	74	-23	peak
1240	45.68	-9.12	36.56	54	-17.44	AVG
1830	62.39	-8.8	53.59	74	-20.41	peak
1830	46.85	-8.8	38.05	54	-15.95	AVG
2745	60.19	-4.07	56.12	74	-17.88	peak
2745	43.75	-4.07	39.68	54	-14.32	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

For 926.00MHz

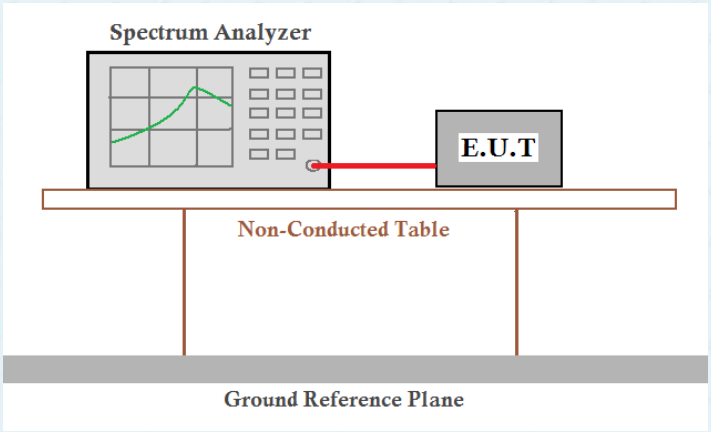
Horizontal:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1240	58.42	-9.12	49.3	74	-24.7	peak
1240	43.83	-9.12	34.71	54	-19.29	AVG
1852	62.74	-8.75	53.99	74	-20.01	peak
1852	47.79	-8.75	39.04	54	-14.96	AVG
2778	58.42	-4.03	54.39	74	-19.61	peak
2778	42.91	-4.03	38.88	54	-15.12	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1240	58.95	-9.12	49.83	74	-24.17	peak
1240	45.83	-9.12	36.71	54	-17.29	AVG
1852	62.72	-8.75	53.97	74	-20.03	peak
1852	46.69	-8.75	37.94	54	-16.06	AVG
2778	55.32	-4.03	51.29	74	-22.71	peak
2778	41.33	-4.03	37.3	54	-16.7	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

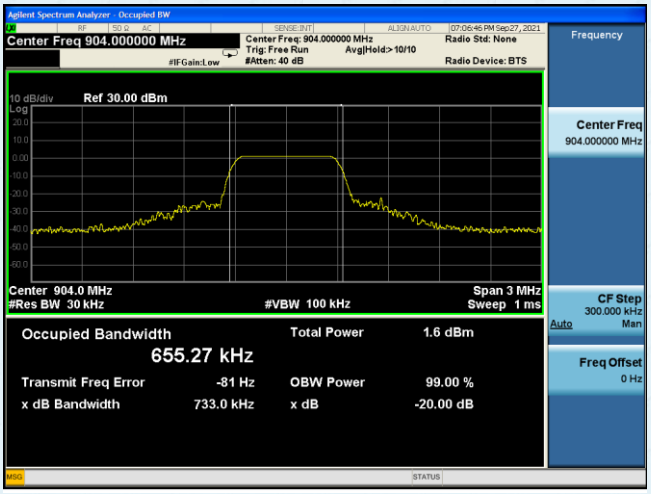
7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

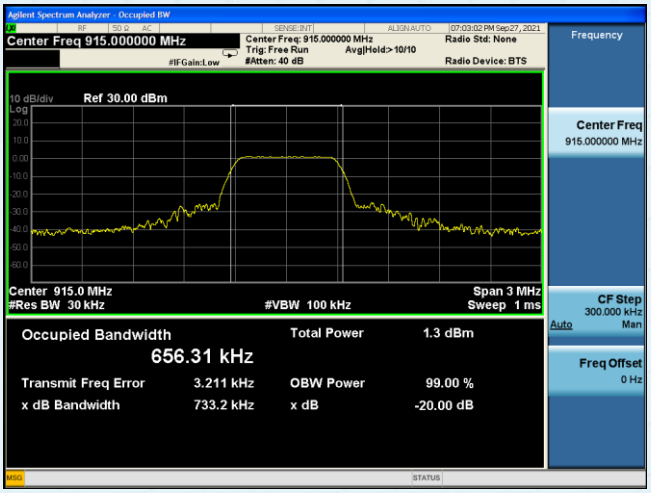
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
01	0.7330	Pass
06	0.7332	Pass
09	0.7370	Pass

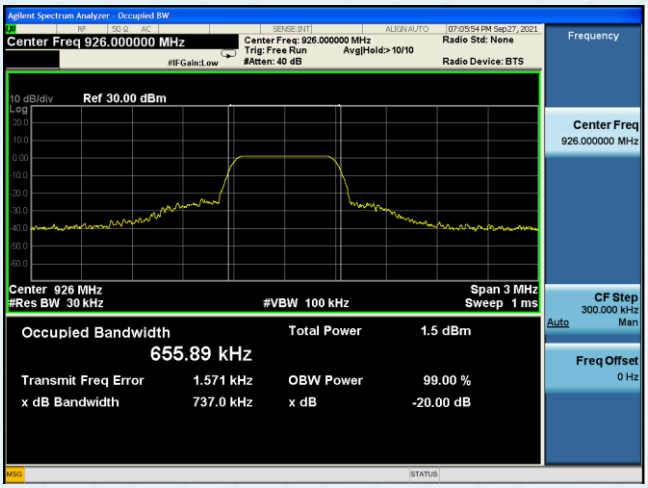
Test plot as follows:



Lowest channel



Middle channel



Highest channel

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

------End------