Antenna Passive TEST REPORT

Report No：DDT-B23122601-1E01

Applicant	:	Guangdong A-OK Technology Grand Development Co.,Ltd.
Applicant Address	:	Hexing Road South Side Sanhe Economic Development Zone.Huiyang Huizhou, Guangdong PEOPLE'S REPUBLIC OF CHINA
Equipment Under Test	:	emitter
Model No.	:	PX140-06C
Trade Mark	:	A-OK
Manufacturer	:	Guangdong A-OK Technology Grand Development Co.,Ltd.
Manufacturer Address	:	Hexing Road South Side Sanhe Economic Development Zone.Huiyang Huizhou, Guangdong PEOPLE'S REPUBLIC OF CHINA

Issued By: Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park, Development Area, Tianjin, China.

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REPORT

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Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jan. 02, 2024	

Test Report Declare

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We Declare:

The equipment described above is tested by Tianjin Dongdian Testing Service Co., Ltd and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Tianjin Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these tests.

Report No:	DDT-B23122601-1E01		
Date of Receipt:	Dec. 27, 2023	**Date of Test:**	Dec. 29, 2023

Prepared By: ***Approved By:***

Novak Wei Aaron Zhang

Novak Wei / Engineer ***Aaron Zhang / RF Manager***

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

1. General TEST Information

1.1 Description of EUT

EUT Description	:	emitter
Model Number	:	PX140-06C
Frequency Band	:	433 MHz
Power Supply	:	N/A
Sample No	:	Y23122601-01
Note	:	N/A

1.2 Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
N/A	N/A	N/A	N/A	N/A

1.3 Assistant equipment used for test

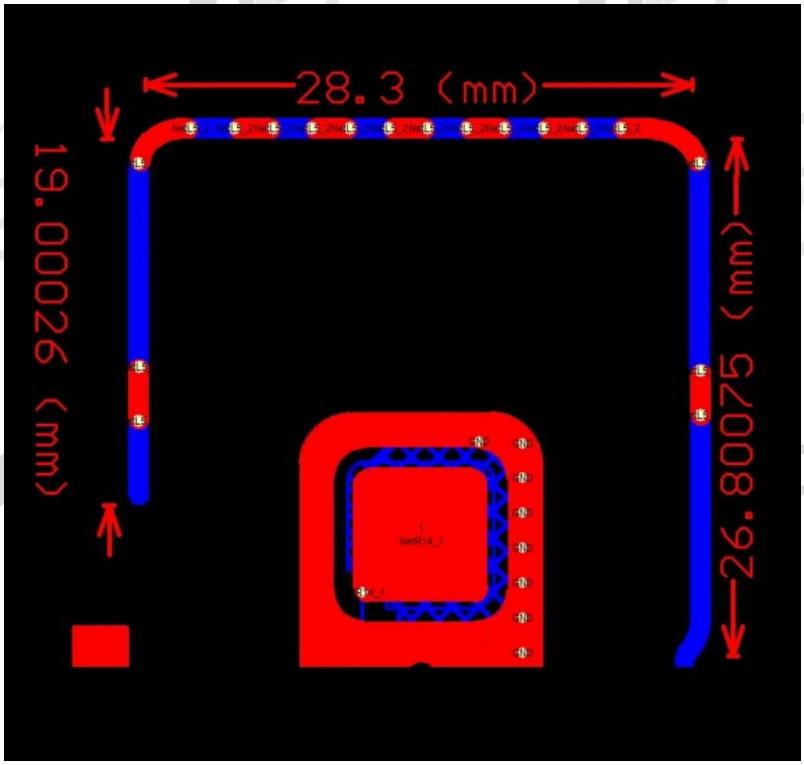
Description of Accessories	Manufacturer	Model number	Description	Remark
N/A	N/A	N/A	N/A	N/A

1.4 Block diagram of EUT configuration for test

1.5 Measurement uncertainty

Test Item	uncertainty
Near-field gain measurement	0.44 dB
Near-field pattern measurement	0.44 dB
Note: This uncertainty indicates that the extended uncertainty confidence interval is about 95% and the corresponding inclusion factor k=2 is obtained.	

1.6 Antenna Parameter



1.7 Test laboratory

Tianjin Dongdian Testing Service Co., Ltd OTA Laboratory

Address: 2-1-805-1, Zone 1, Fubao Industrial Park, No.1 Fubao Road, Zhangjiawo Town, Xiqing District, Tianjin

Tel: +86-22-58038033, http://www.ddttest.com, Email: ddt@dgddt.com

NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0

CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402

FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676

ISED (Innovation, Science and Economic Development Canada) Company Number: 27768

Conformity Assessment Body Identifier: CN0125

VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

2. Near-field gain measurement

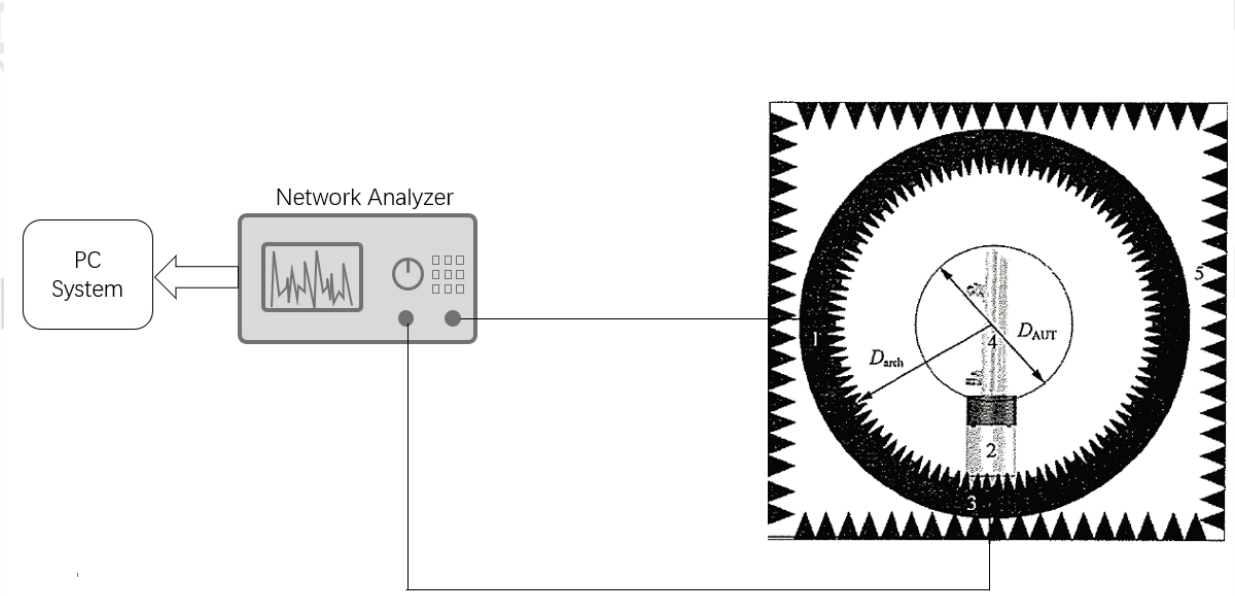
2.1 General Information

Test Date	2023-12-29		
Test Condition	Temperature：22.7±1℃	Humidity：14±1%	Pressure：101.3±0.2 kPa
Test Place	OTA Room	**Test Engineer**	Novak Wei

2.2 Test Equipment

Equipment	Manufacturer	Mode No	Serial No	Last Cal.	Cal.Interval
ENA network analyzer	Keysight	E5071C	MY46900684	2023-04-11	1 year

2.3 Block Diagram of Test Setup



2.4 test standard

According to customer requirements.

2.5 Test Procedure

(1) Set up the antenna to be measured. Set up the antenna and mark the cross reference line at the center of the antenna port surface to be measured.

(2) Connect the reception antenna test port to the test equipment port

(3) Open the test software, create the test project, and configure the test port.

(4) Use test software for automatic testing and save test data of electromagnetic field distribution.

(5) Change the port, downdip Angle, or test frequency (if necessary), and repeat steps (3) to (4) until all status data to be measured is collected.

2.6 Result

Frequency ID	Frequency (MHz)	Efficiency (dBi)	Efficiency (%)	Peak Gain (dBi)
1	433.0	-22.73	0.53	-13.51

3. Near-field pattern measurement

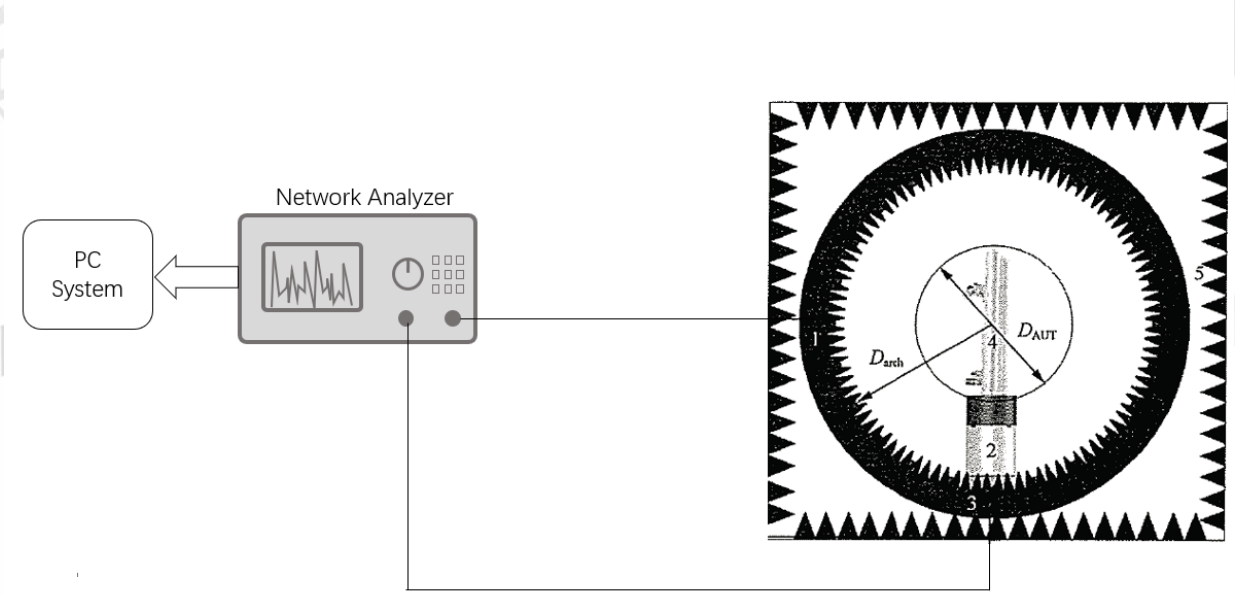
3.1 General Information

Test Date	2023-12-29		
Test Condition	Temperature：22.7±1℃	Humidity：14±1%	Pressure：101.3±0.2 kPa
Test Place	OTA Room	**Test Engineer**	Novak Wei

3.2 Test Equipment

Equipment	Manufacturer	Mode No	Serial No	Last Cal.	Cal.Interval
ENA network analyzer	Keysight	E5071C	MY46900684	2023-04-11	1 year

3.3 Block Diagram of Test Setup



3.4 test standard

According to customer requirements.

3.5 Test Procedure

(1) Set up the antenna to be measured. Set up the antenna and mark the cross reference line at the center of the antenna port surface to be measured.

(2) Connect the cable connector and adjust the downdip Angle (electrically tuned antenna).

(3) Open the test software, create the test project, and configure the test port.

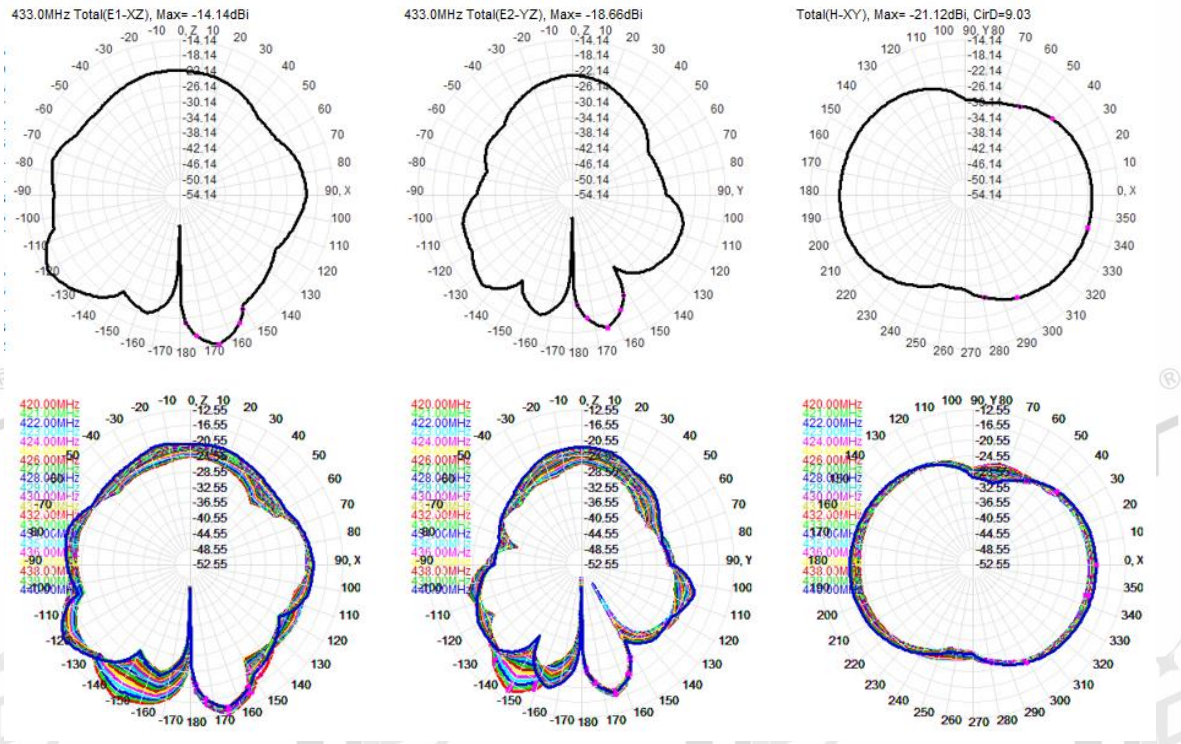
(4) Use test software for automatic testing and save test data of electromagnetic field distribution.

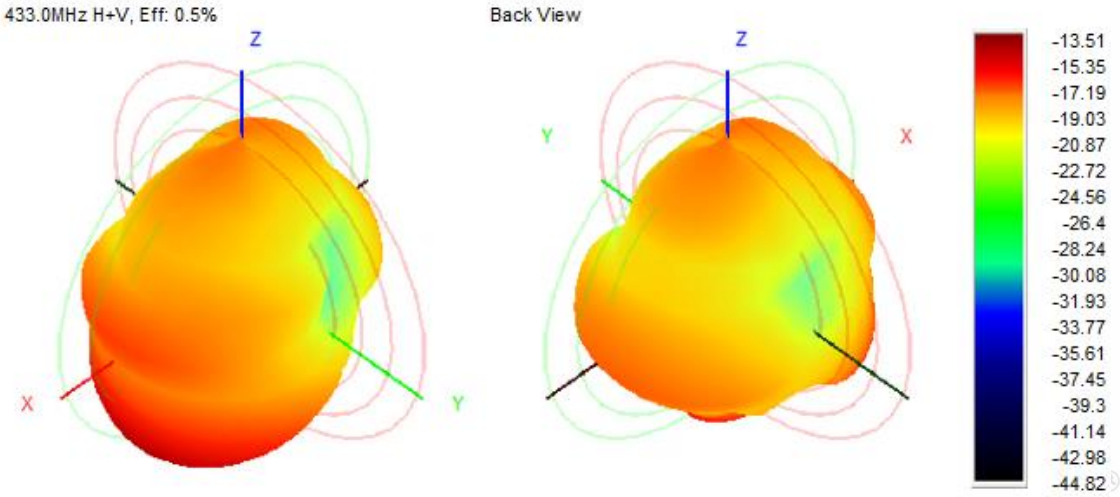
(5) Change the port, downdip Angle, or test frequency (if necessary), and repeat steps (3) to (4) until all status data to be measured is collected.

(6) After near and far field exchange, the three-position spherical pattern of the antenna to be tested is obtained, and the Theta and Phi angles of the position where the maximum level of the three-position spherical pattern is located are found. The horizontal plane pattern curve of the antenna to be tested is obtained by cutting according to equal Theta Angle, and the vertical plane pattern of the antenna to be tested is cancelled by cutting according to equal Phi Angle. Then the radiation parameters of the horizontal plane and vertical plane pattern of the antenna to be measured are obtained by using the processing method similar to that of the far field.

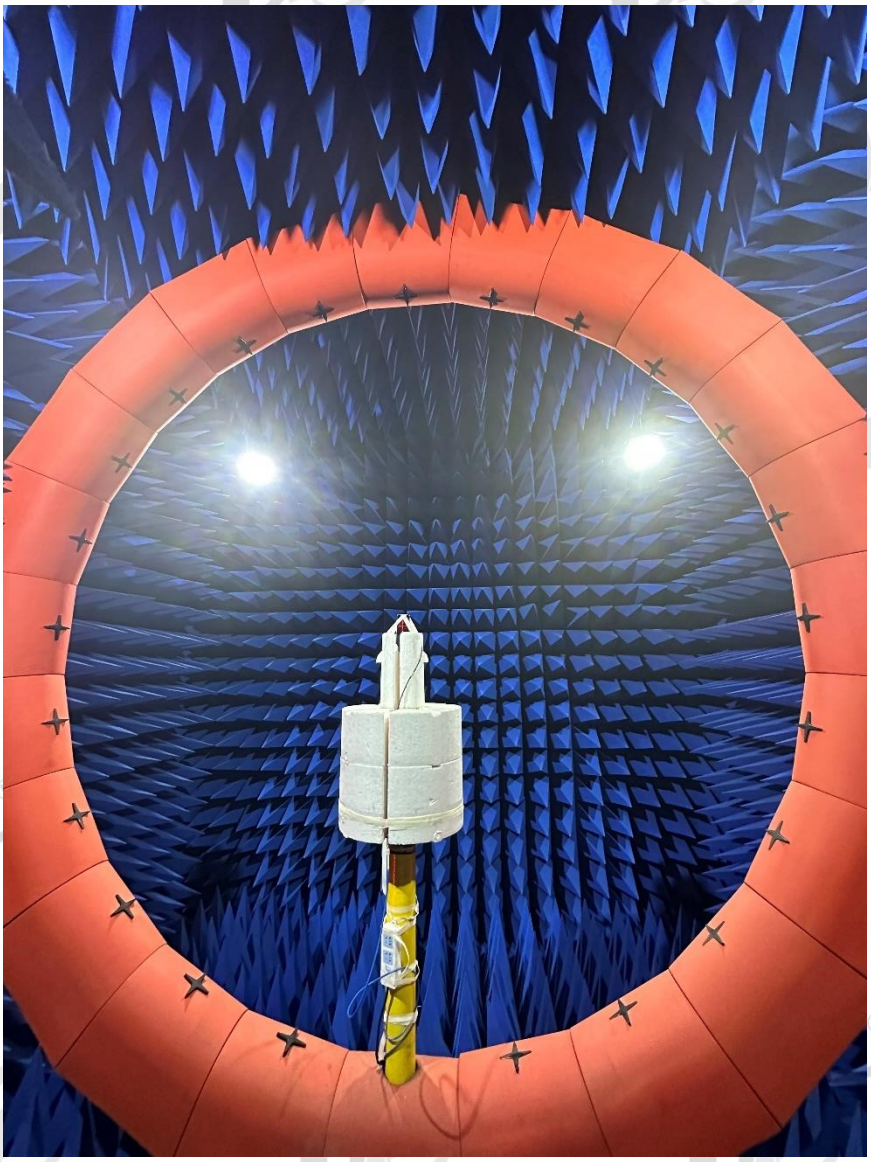
3.6 Result

Fre. (MHz)	Eff. (dBi)	Gain (dBi)	Eff. (%)	Directivity (dB)	Peak Gain Position (Theta)	Peak Gain Position (Phi)	Eff. ThetaPol (%)	Eff. PhiPol (%)	Upper Hem. Eff. (%)	Lower Hem. Eff. (%)
433.0	-22.73	-13.51	0.53	9.22	165.00	165.00	0.38	0.15	0.17	0.36


433.0MHz Total(E1-XZ), Max= -14.14dBi
433.0MHz Total(E2-YZ), Max= -18.66dBi
Total(H-XY), Max= -21.12dBi, CirD=9.03


433.0MHz H+V, Eff: 0.5%
Back View
Z
X
Y
-13.51
-15.35
-17.19
-19.03
-20.87
-22.72
-24.56
-26.4
-28.24
-30.08
-31.93
-33.77
-35.61
-37.45
-39.3
-41.14
-42.98
-44.82

Annex A Test Setup Photo



Annex B EUT Photos

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