

Sample Product Acceptance Certificate of Shenzhen Walite Electronics Co., Ltd.

SAMPLE APPROVAL SHEET

Component information:

Customer	ZhongShanCity Richsound Electronic Industrial Ltd.
Material Description	TB615DW2 BT Antenna
Customer's part number	
Specifications	FPC (L39*W9mm)
Supplier's part number	136-625DW3-10A
Sample submission date	2024-6-18

sign :

Prepared by	Audited by	Approved By
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Customer approval:

Recognition	Audited by	Approved By

Accept results:

- ☐ Full Approval
- ☐ Conditional Approval
- ☐ Unqualified
- ☐ Others:

Our company hereby confirms the authenticity of this sample acknowledgment. Upon verification and approval by your R&D department, please promptly return it to us. In case of any other circumstances, please notify us in writing.

This sample approval sheet is guaranteed to be true. If it is confirmed by your R&D department, please send it back to us as soon as possible. If there are other reasons, please inform us in writing.

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1 Specifications

This report mainly provides the test status of various electrical and structural performance parameters of the TB615DW2 BT antenna



Figure 1 Antenna

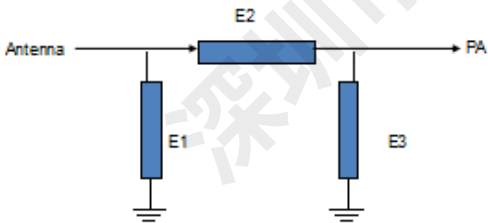
1.1 Electrical Specification

1.1.1 Electrical Performance Index

The antenna working frequency is 2400-2480MHz. The following table is the electrical performance index of the antenna designed by our company.

Antenna	TB625DW3 BT antenna
Frequency range	2400-2480MHz
Standing-wave ratio	< 2
Producti-veness	>40%
Impedance	50 ohm
Polarization mode	Linear polariza-tion

1.1.2 Matching Circuit Diagram



Element	Value
E1(0402)	N/A
E2(0402)	0R
E3(0402)	N/A

2 Test

The antenna is tested and debugged with the sample provided by the customer.

2.1 Test of Passive S11

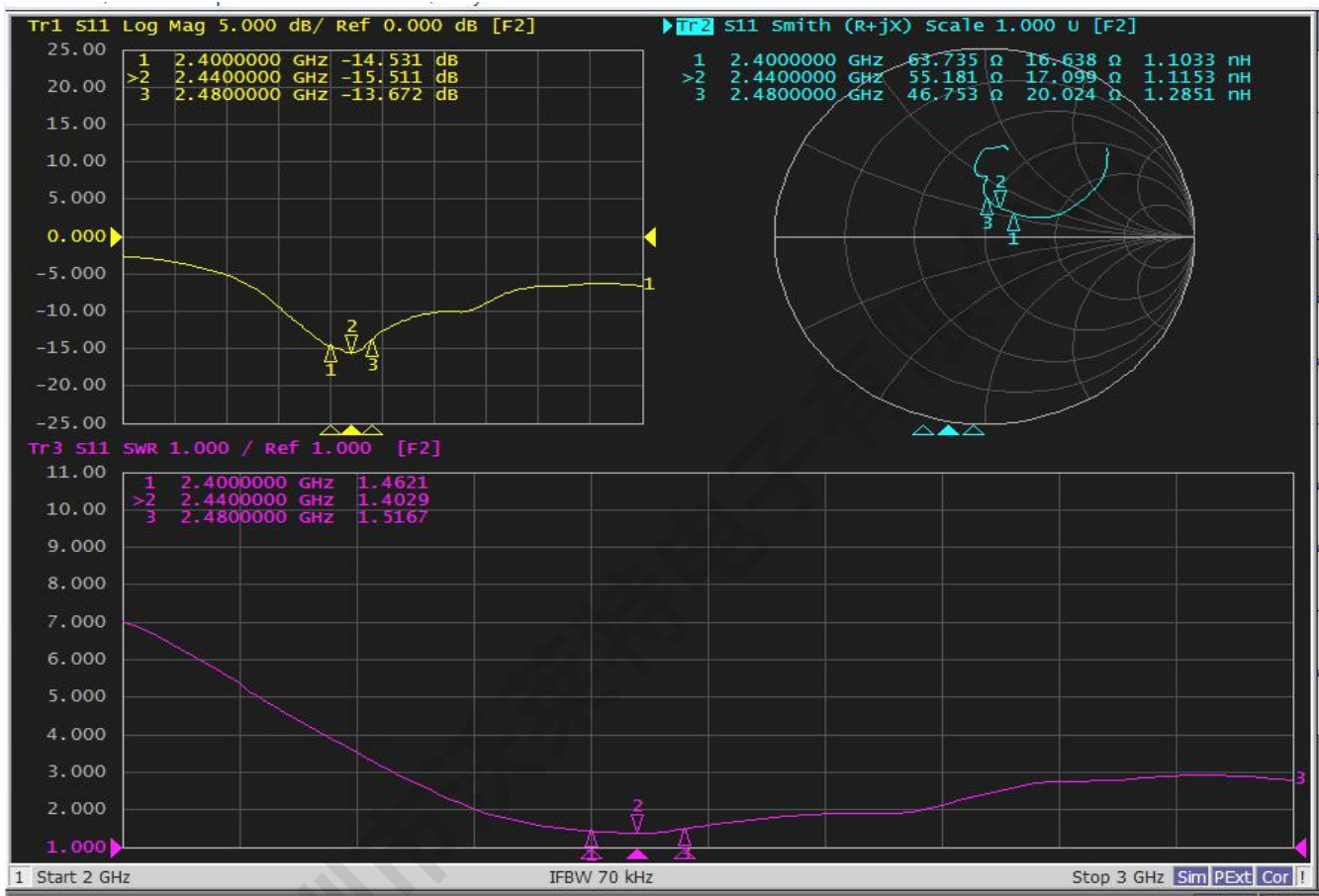
2.1.1 Test Connection

The passive S11 test device is connected in sequence as follows: network analyzer → test line → test fixture.

2.1.2 Passive S11

The table below displays the standing wave ratio (SWR) values at the edge frequencies of the antenna's operating band. The waveform diagrams of Return Loss (RL) and VSWR obtained from the test are shown in the figure below.

Frequency (MHz)	2400	2440	2480
VSWR	1.46	1.4	1.51
Return Loss	-14.53	-15.51	-13.67



2.2 Test of Gain and Efficiency

2.2.1 Test Site

Microwave anechoic chamber: test frequency range is 400MHz-6GHz

2.2.2 Test Instrument

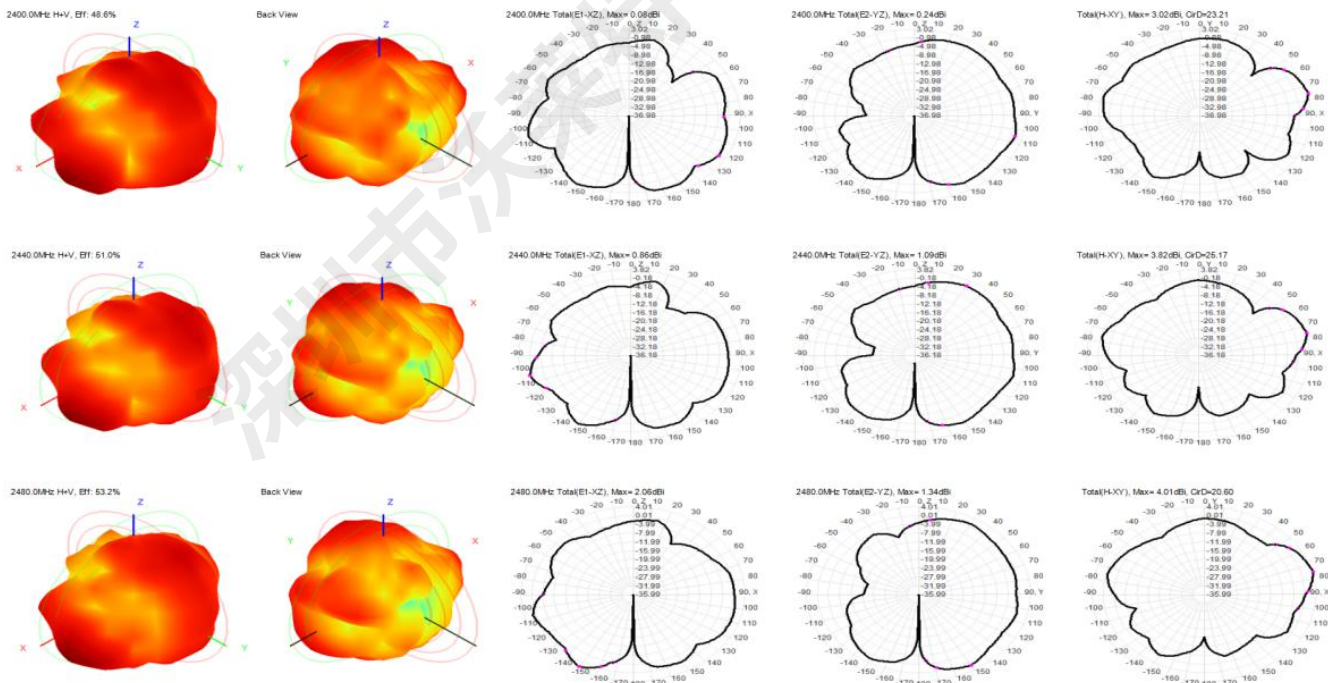
Network analyzer, standard horn antenna, multi-probe near-field antenna test system, test computer, etc.

2.2.3 Test Result

In the microwave anechoic chamber, the test values related to efficiency and gain are shown in the table below.

Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	3.02	48.60%
2410	3.10	48.90%
2420	3.26	49.50%
2430	3.54	50.50%
2440	3.82	51.10%
2450	4.08	52.10%
2460	4.16	52.60%
2470	4.14	53.20%
2480	4.01	53.20%
2490	3.95	52.80%
2500	4.19	52.80%

2.2.4 Passive Radiation Pattern



2.3 Active Test

2.3.1 Test Result

Channels	TRP (dBm)	TIS (dBm)
0	-2.67	-91.35
39	-1.25	-90.73
78	-1.53	-90.04

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3、 Conclusion

This antenna was designed based on the prototype provided by the client. The electrical parameters were tested under the environmental conditions of the test prototype, and both the electrical parameters and structural performance meet the technical requirements. Please confirm.

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