

Specification

for

2.4-5.8 GHz Rubber Duck Antenna

Customer Part No.

Company Part No.

SD-2.4-5.8G Rubber Duck Antenna-195MM

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Reviewed by:

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Date: 2025.04.14

Manufacturer: Shenzhen Enster Electronics Co., Ltd.

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1. Confirmation by Both Parties

1.1 Customer Confirmation Signature

Customer:

Customer Dept./Position	Approver Signature	Confirmation Date
Hardware/RF		
Mechanical		
Project Manager		
Sales/Purchasing		
Review		

1.2 Confirmation Signature

Department/Position	Approver Signature	Confirmation Date
Antenna Engineer		
Mechanical Engineer		
Project Manager		
QA		
Review		

2. General Information

2.1 Scope of Application

This specification applies only to the 2.4-5.8G rubber duck antenna.

2.2 Operating Temperature Range

Operating temperature range: -20 to +65 ?C

2.3 Storage Temperature Range

Storage temperature range: -30 to +75 ?C

3. General Product Specifications

NO.	ITEMS	DETAILS
1	Model	Rubber Duck Antenna
2	Frequency Band	2400-2500MHz&5100-5900MHz
3	VSWR	≤ 3.0
4	GAIN	$3.5 \pm 0.5\text{dBi}$
5	Impedance	50 Ω
6	Antenna Type	Dipole
7	Antenna Configuration	External Antenna
8	Antenna Image	

4. Detailed Product Specifications

4.1 Product Mechanical Parameters

4.11 Product Material Composition:

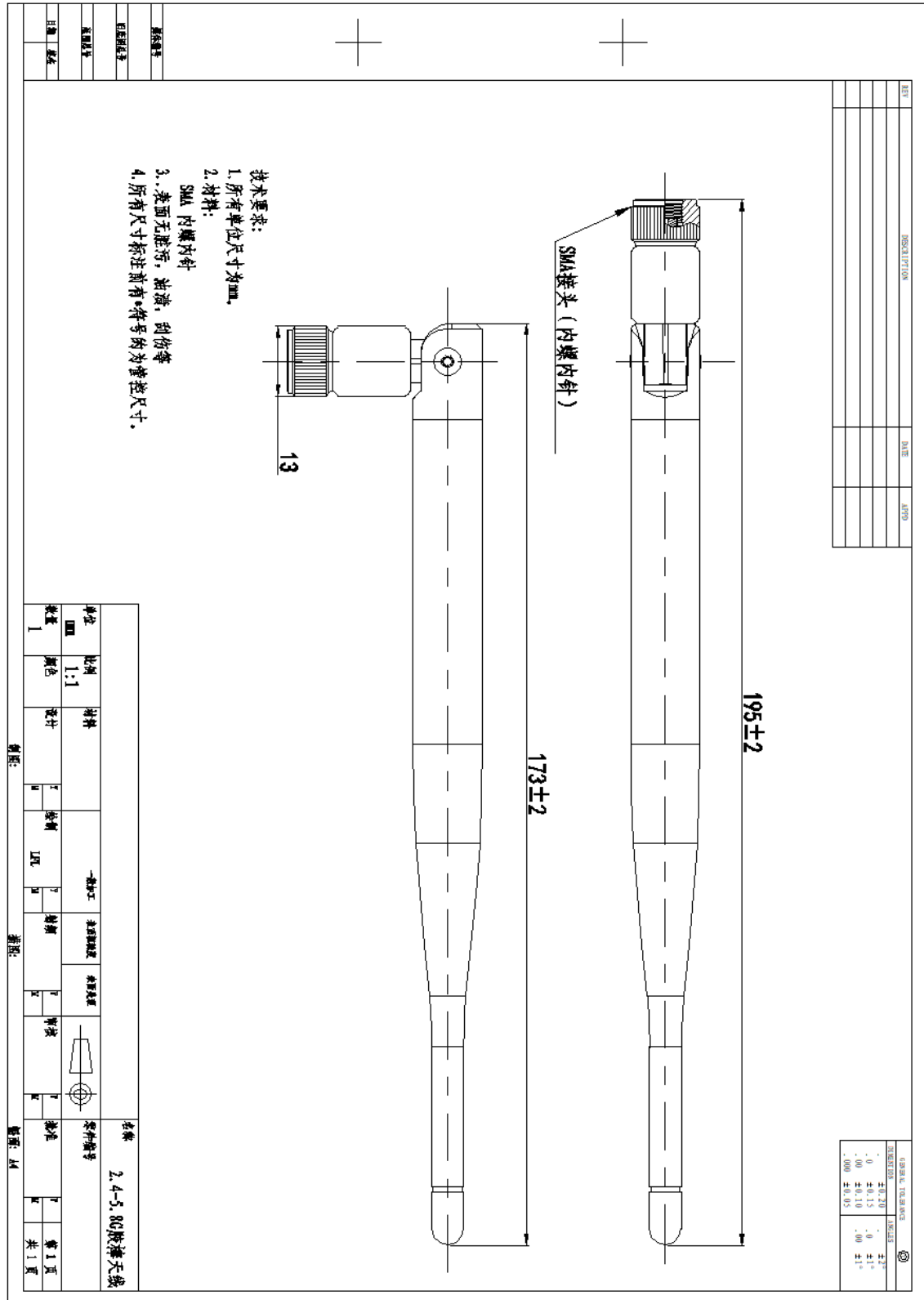
No.	Material	Specification (mm)
1	TPE Housing + SMA Connector	195 x 13 mm, SMA Male Plug with Male Pin

4.12 Appearance

The product shall have a good appearance, with no defects that seriously affect appearance, such as scratches, sweat marks, or protrusions.

4.13 Mechanical Dimensions

Product Drawing:



4.2 Product Electrical Performance Test Data

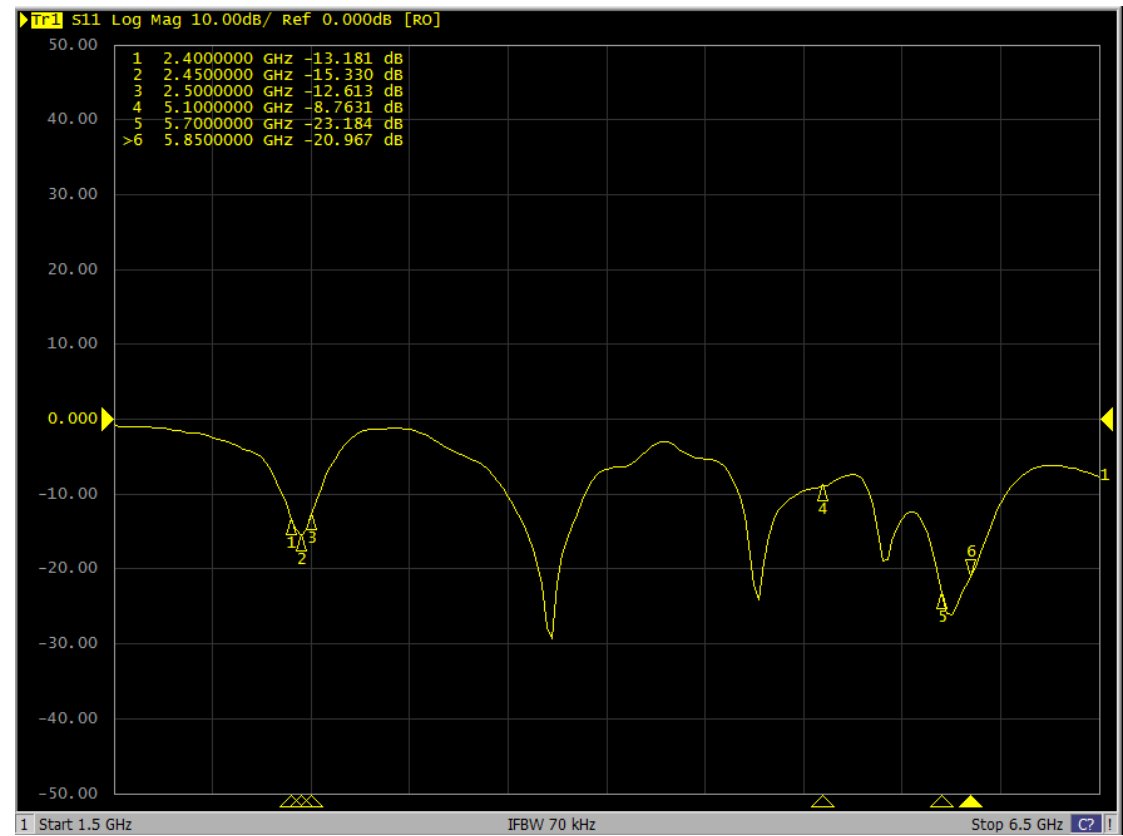
4.21 Test Environment and Instruments

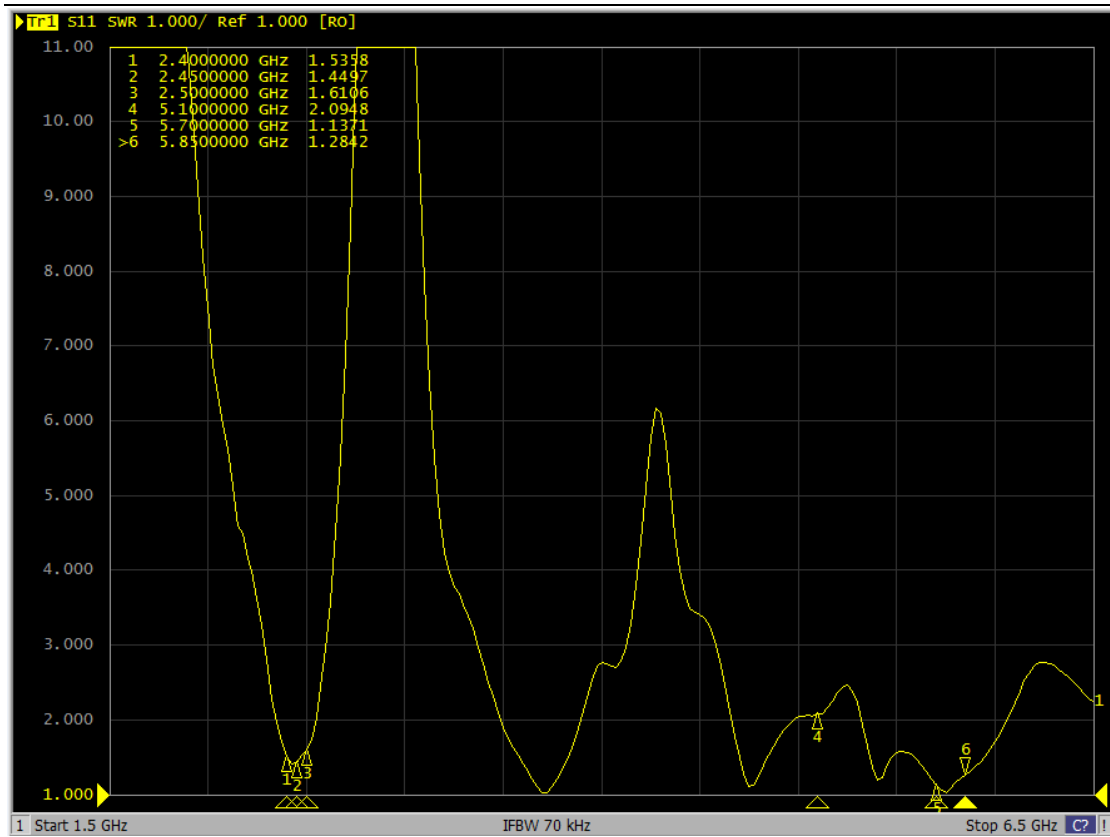
Test Environment:	Test Equipment:
Temperature: 10°C to +30°C	Network Analyzer
Relative Humidity: <=80% (+40°C)	KEYSIGHT E5071C
Atmospheric Pressure: 750 mmkg ? 30 mmkg	Multi-Probe Microwave Anechoic Chamber

4.22 Product Electrical Performance Test Data:

4.22.1 Product S11 Plot:

Frequency (MHz)	2400	2450	2500	5100	5700	5850
Return Loss	-13.18	-15.33	-12.61	-8.76	-23.18	-20.96
VSWR	1.53	1.44	1.61	2.09	1.13	1.28





4.22.2 Gain, Efficiency and Radiation Patterns

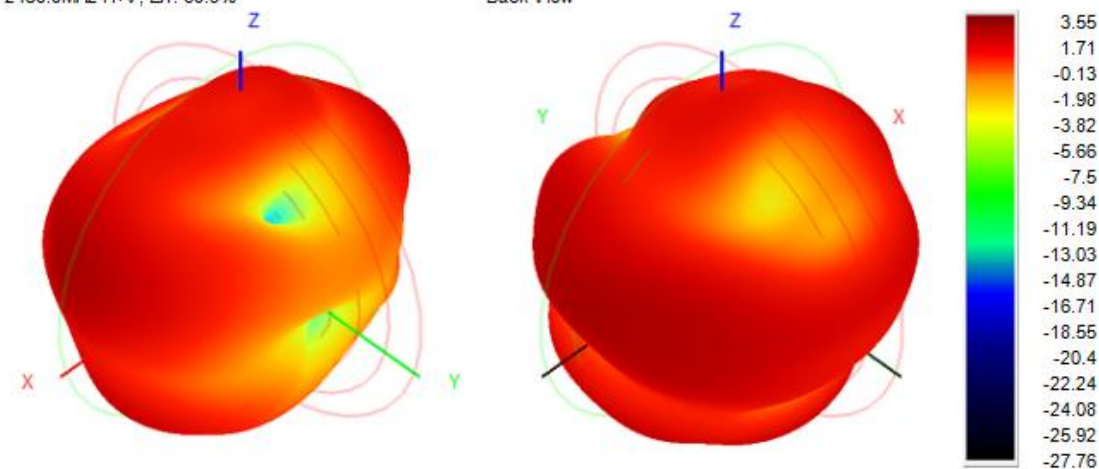
Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Gain (dBi)	3.46	3.40	3.31	3.36	3.49	3.55	3.66	3.90	3.95	4.11	4.00
Efficiency (%)	64.79	66.58	66.95	68.04	68.90	68.91	68.22	67.38	64.03	63.83	61.87
Frequency (MHz)	5000	5050	5100	5150	5200	5250	5300	5350	5400	5450	5500
Gain (dBi)	2.72	2.23	2.90	3.08	3.26	3.71	3.74	4.34	3.92	4.18	3.94
Efficiency (%)	60.71	56.13	57.33	59.76	59.28	61.37	59.49	64.56	61.58	67.37	68.45
Frequency (MHz)	5550	5600	5650	5700	5750	5800	5850	5900	5950	6000	
Gain (dBi)	4.00	3.56	3.78	3.60	3.38	4.10	3.53	3.41	3.49	3.26	
Efficiency (%)	65.04	64.52	63.08	63.82	61.05	64.49	61.92	60.13	60.53	57.44	

Radiation Patterns:

2450MHz

2450.0MHz H+V, Eff: 68.9%

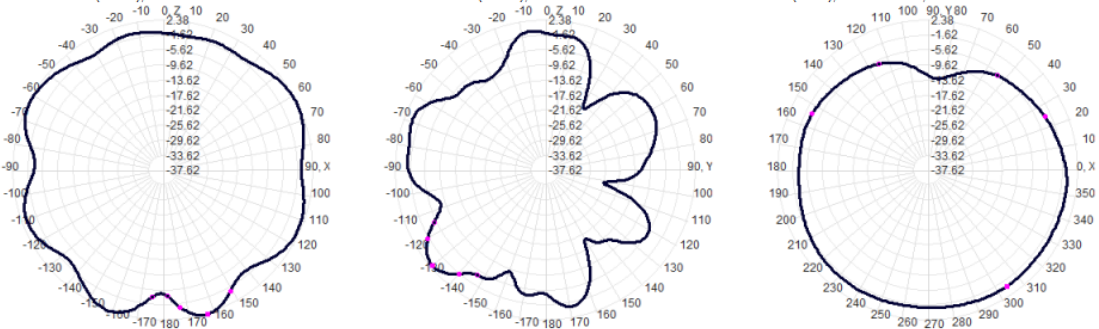
Back View



2450.0MHz Total(E1-XZ), Max= 2.38dBi

2450.0MHz Total(E2-YZ), Max= 1.61dBi

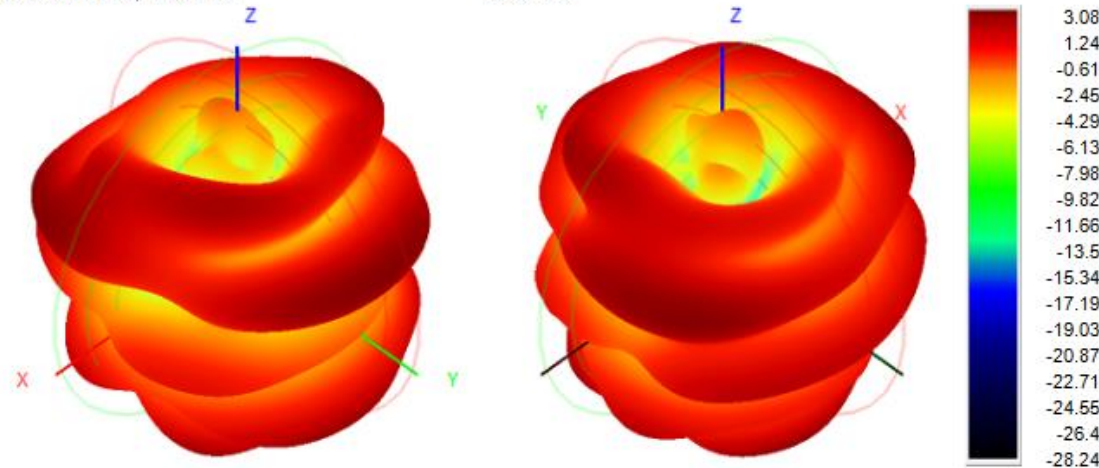
Total(H-XY), Max= -0.41dBi, CirD=12.77

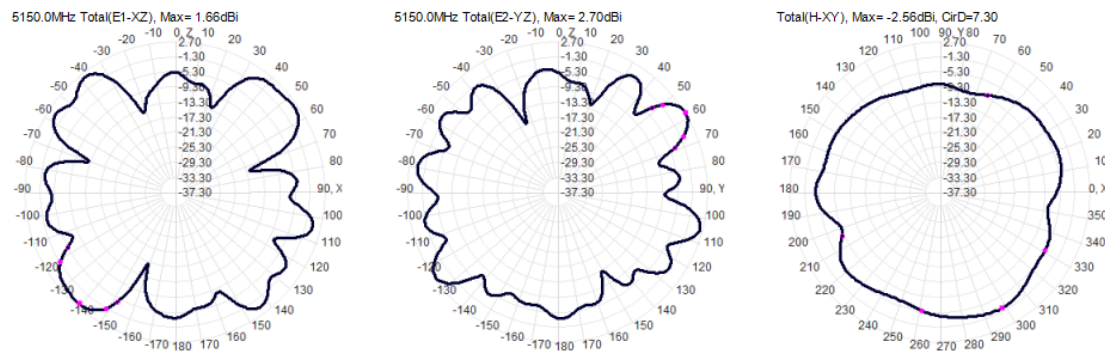


5150MHz

5150.0MHz H+V, Eff: 59.8%

Back View

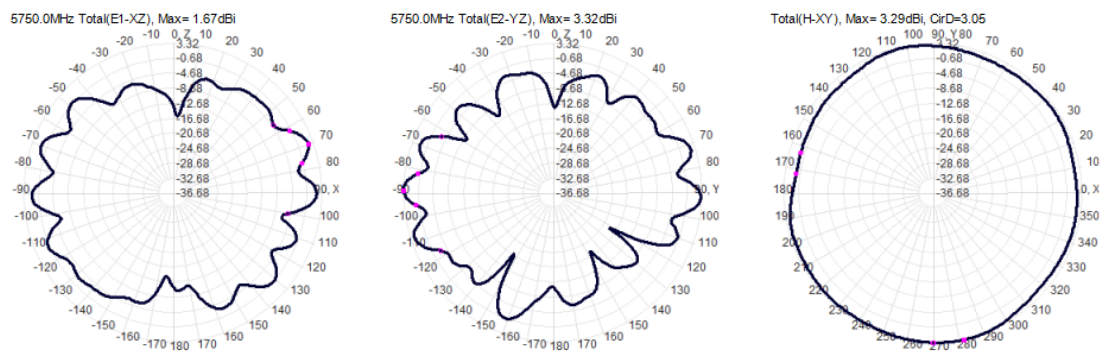
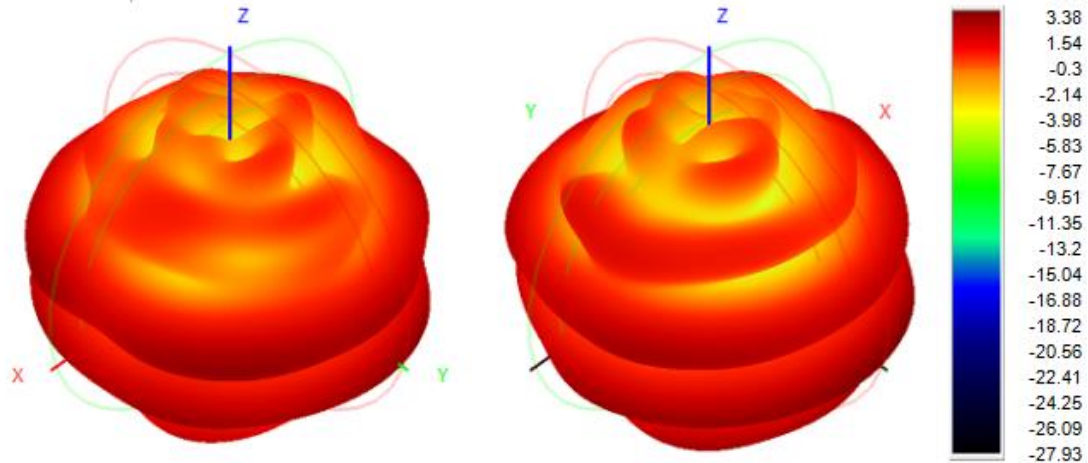




5750MHz

5750.0MHz H+V, Eff: 61.1%

Back View



5. Product Packaging Method

Packaging Method:

Packed in resealable bags, 50 PCS per bag.

6. Document Revision History

Document No.	
Release Date	2025/04/14
Author	Hungjie
Review	WH

Revised History

Date	Version	Revised Record
2025/04/14	1.00	New Project