

# Rubber Duck Antenna

## AL101



Datasheet  
V 1.0.0



## Version Note

| Version | Details    | Contributor(s) | Date       | Notes |
|---------|------------|----------------|------------|-------|
| 1.0.0   | First edit | Michelle       | 2026.03.06 |       |
|         |            |                |            |       |
|         |            |                |            |       |

## Part Number

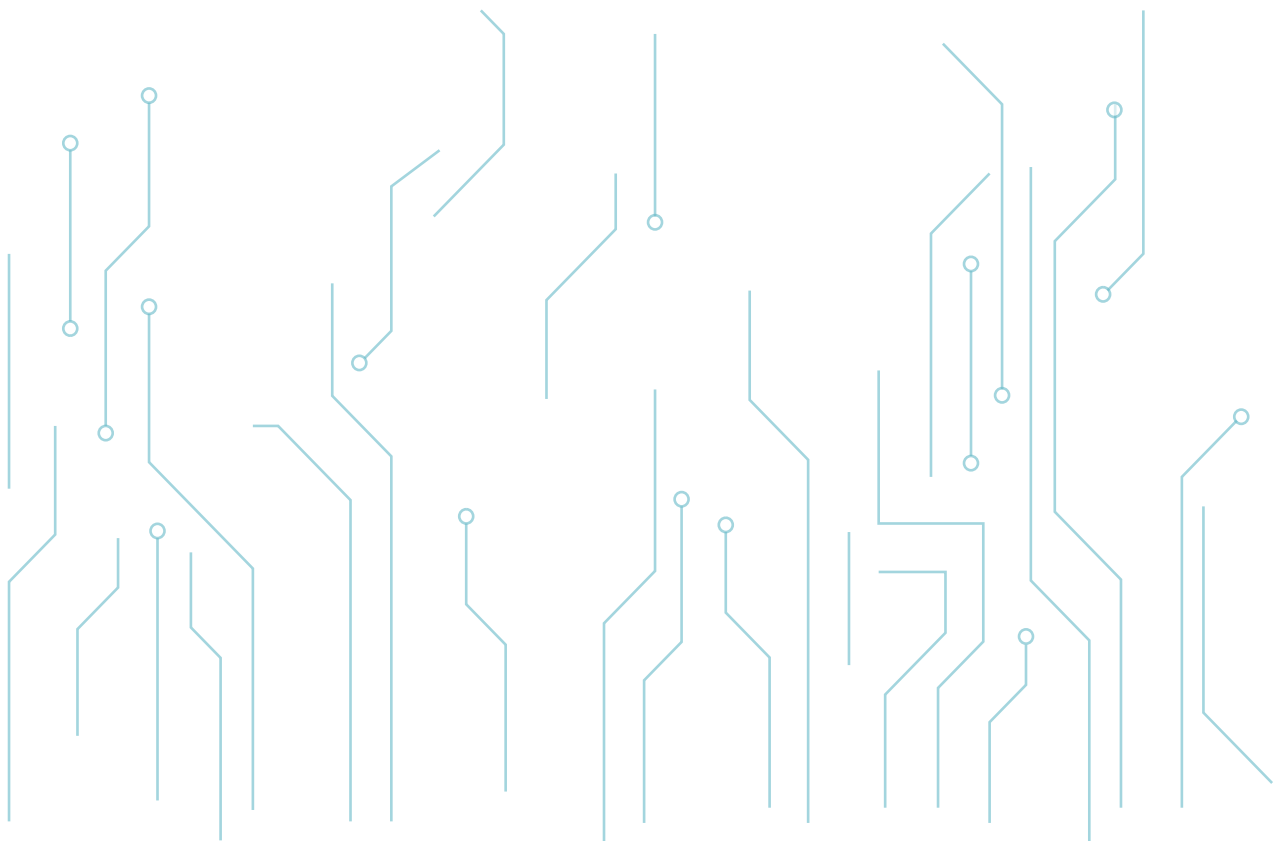
| Model | Hardware Code |
|-------|---------------|
| AL101 | -             |
|       |               |

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[https://en.minewsemi.com/file/AL101\\_Datasheet\\_EN.pdf](https://en.minewsemi.com/file/AL101_Datasheet_EN.pdf)



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# 1 PRODUCT OVERVIEW

## 1.1 Overview

AL101 is a highly adaptable folding rubber rod antenna specifically designed for the 433MHz frequency band. Its stacked structure balances portability with installation flexibility, and it has passed comprehensive reliability testing and RoHS environmental certification. With its stable signal transmission performance, wide temperature compatibility, and lightning protection design, it is widely applicable to various scenarios such as IoT terminals, smart home systems, and industrial wireless control. It efficiently meets diverse low-power, long-range wireless communication requirements.



## 1.2 Product Features

- Stable and Efficient Performance: Voltage standing wave ratio  $\leq 2.0$ , gain up to 3.0 dBi. Omnidirectional radiation with vertical polarization design ensures uniform signal coverage and low transmission loss, guaranteeing stable communication between devices.
- Compliance is guaranteed: Strictly conforms to the ROHS 2015/863/EU environmental standards.

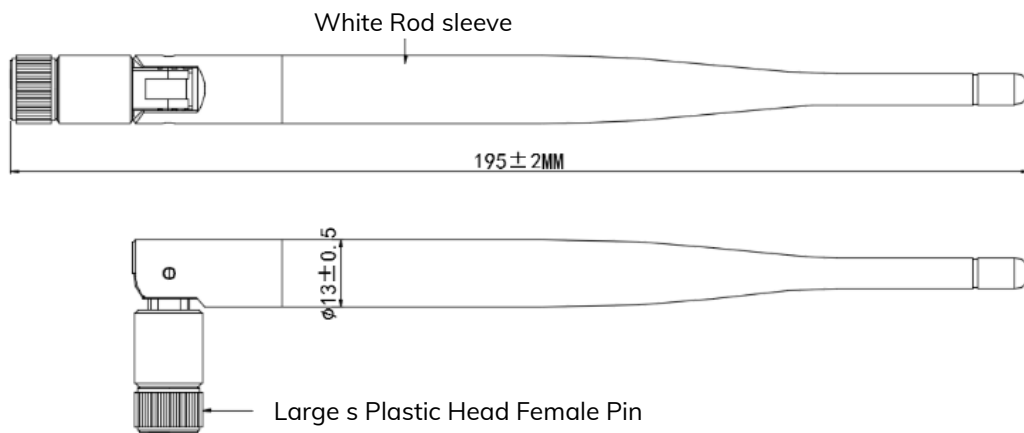
## 1.3 Electrical Properties and Mechanical Properties

| Electrical Specifications |             |
|---------------------------|-------------|
| Frequency Range           | 433MHz      |
| VSWR                      | $\leq 2.0$  |
| GAIN                      | 3.0 dBi     |
| Radiation                 | OMNI        |
| Polarization              | LINEAR      |
| Input Impedance           | 50 $\Omega$ |

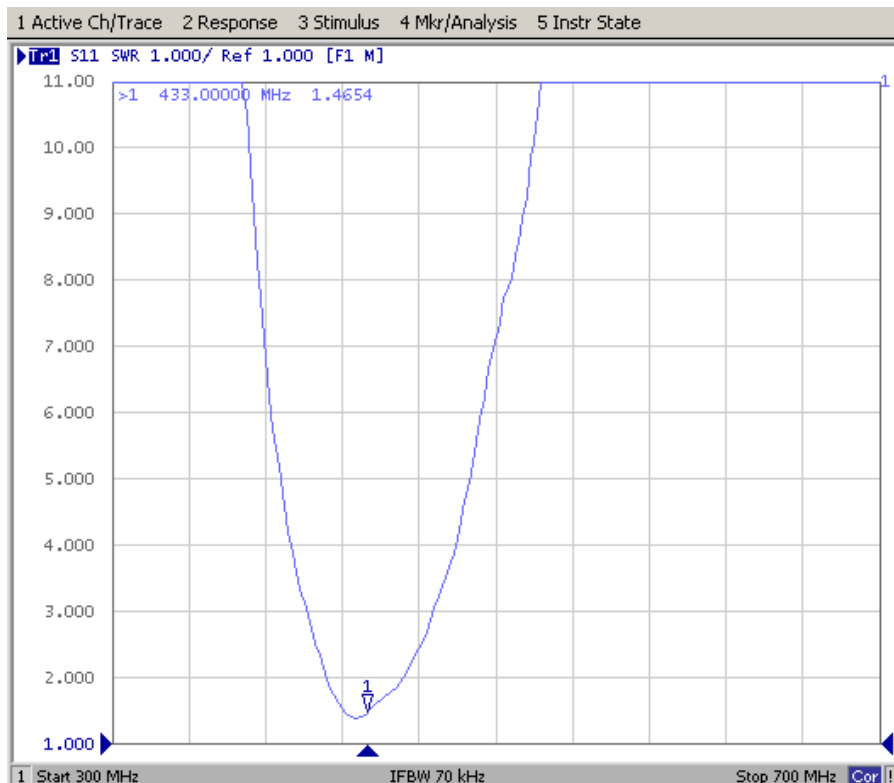
## Mechanical Specifications

|                      |               |
|----------------------|---------------|
| Input connector      | SMAJ          |
| Antenna material     | ABS & COPPER  |
| Working Temperature  | -30°C ~ +80°C |
| Lightning Protection | DC Ground     |
| Weight               | 17g±1g        |

## 2 ANTENNA STRUCTURE DIMENSIONS



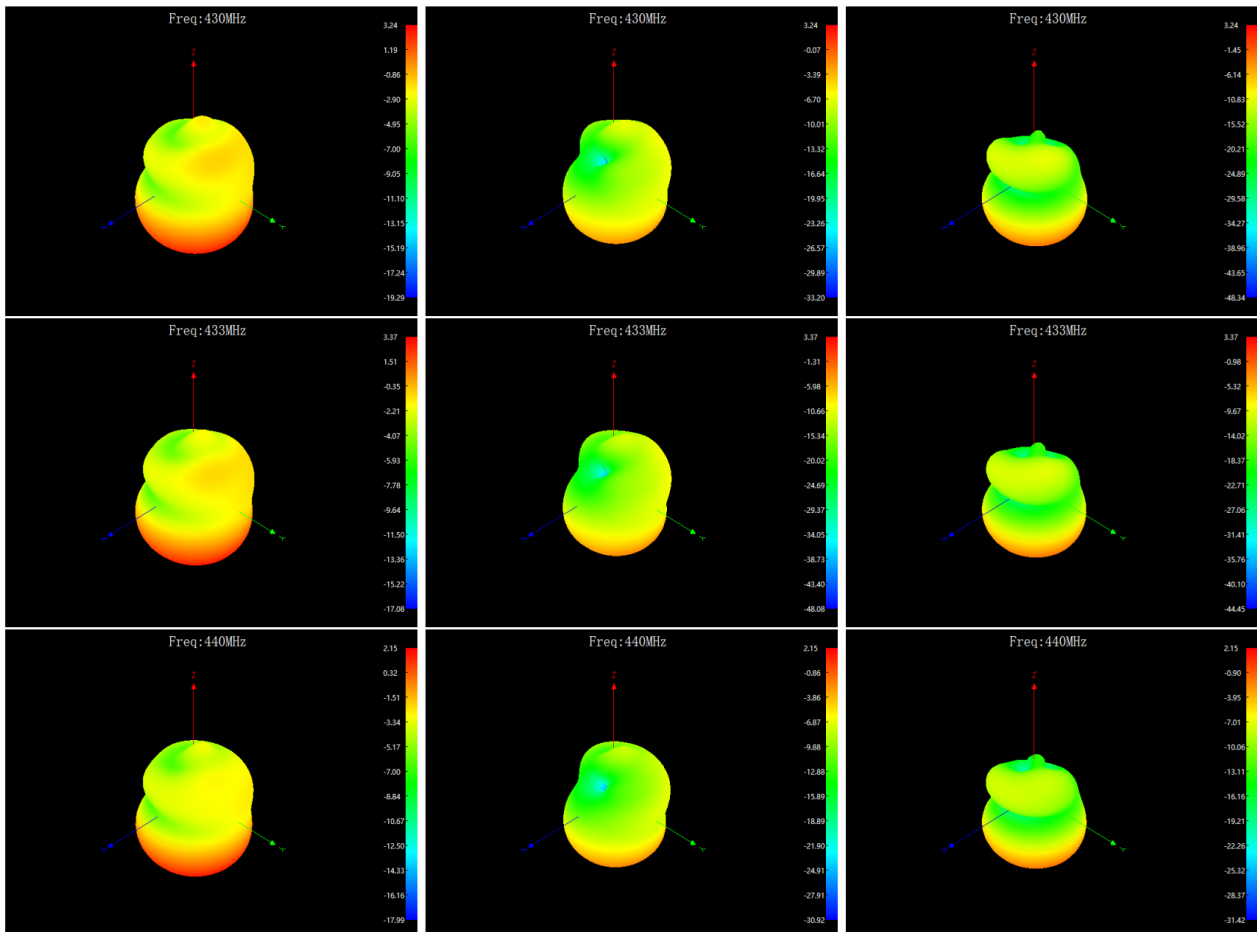
## 3 PASSIVE TEST DATA

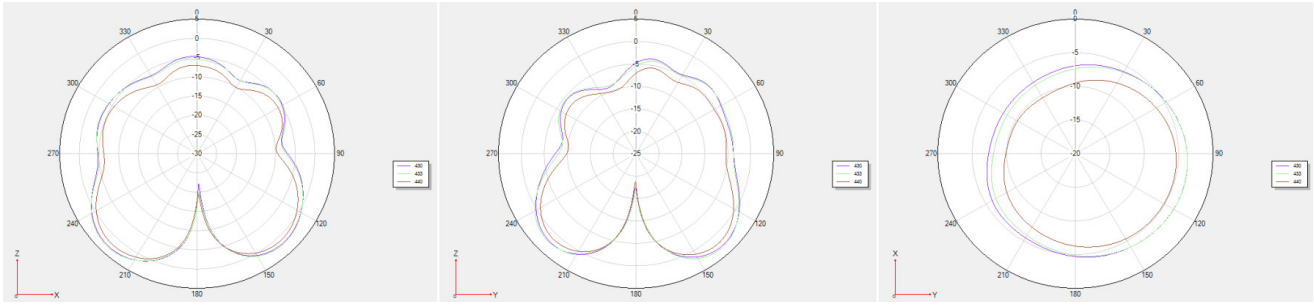


## 4 GAIN EFFICIENCY TEST DATA




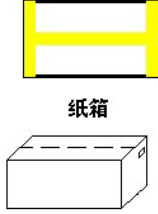
| Frequency/MHz | Efficiency / % | MaxGain/dBi |
|---------------|----------------|-------------|
| 430           | 41.78          | 3.24        |
| 431           | 41.21          | 3.35        |
| 432           | 39.9           | 3.42        |
| 433           | 38.46          | 3.37        |
| 434           | 37.33          | 3.19        |
| 435           | 36.64          | 2.9         |
| 436           | 36.48          | 2.59        |
| 437           | 36.56          | 2.31        |
| 438           | 36.64          | 2.13        |
| 439           | 36.48          | 2.07        |
| 440           | 35.89          | 2.15        |

## 5 DIRECTION DIAGRAM





## 6 PACKAGING INFORMATION

| Products   | Packaging 1  | Packaging 2  | Shipping cartons  |
|--|--|--|---|
|  | <br>PE袋 | <br>PE袋 | <br>纸箱 |
| Rubber Duck Antenna  | 1PCS/bag   | 50PCS/bag  | 20 bags / carton  |

## 7 QUALITY

Cognizant of our commitment to quality, we operate our own factory equipped with state-of-the-art production facilities and a meticulous quality management system. We hold certifications for ISO9001, ISO14001, ISO27001, OHSAS18001, BSCI.

Every product undergoes stringent testing, including transmit power, sensitivity, power consumption, stability, and aging tests. Our fully automated module production line is now in full operation, boasting a production capacity in the millions, capable of meeting high-volume production demands.

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