

## 1. Description

BDE-W25-19513-HRP is a 2.4G & 5G dual band dipole antenna with hinged reverse polarity SMA connector.

Typical applications include:

- Bluetooth/ZigBee/2.4G ISM band
- Wi-Fi
- Gateways/Routers
- IoT Solutions

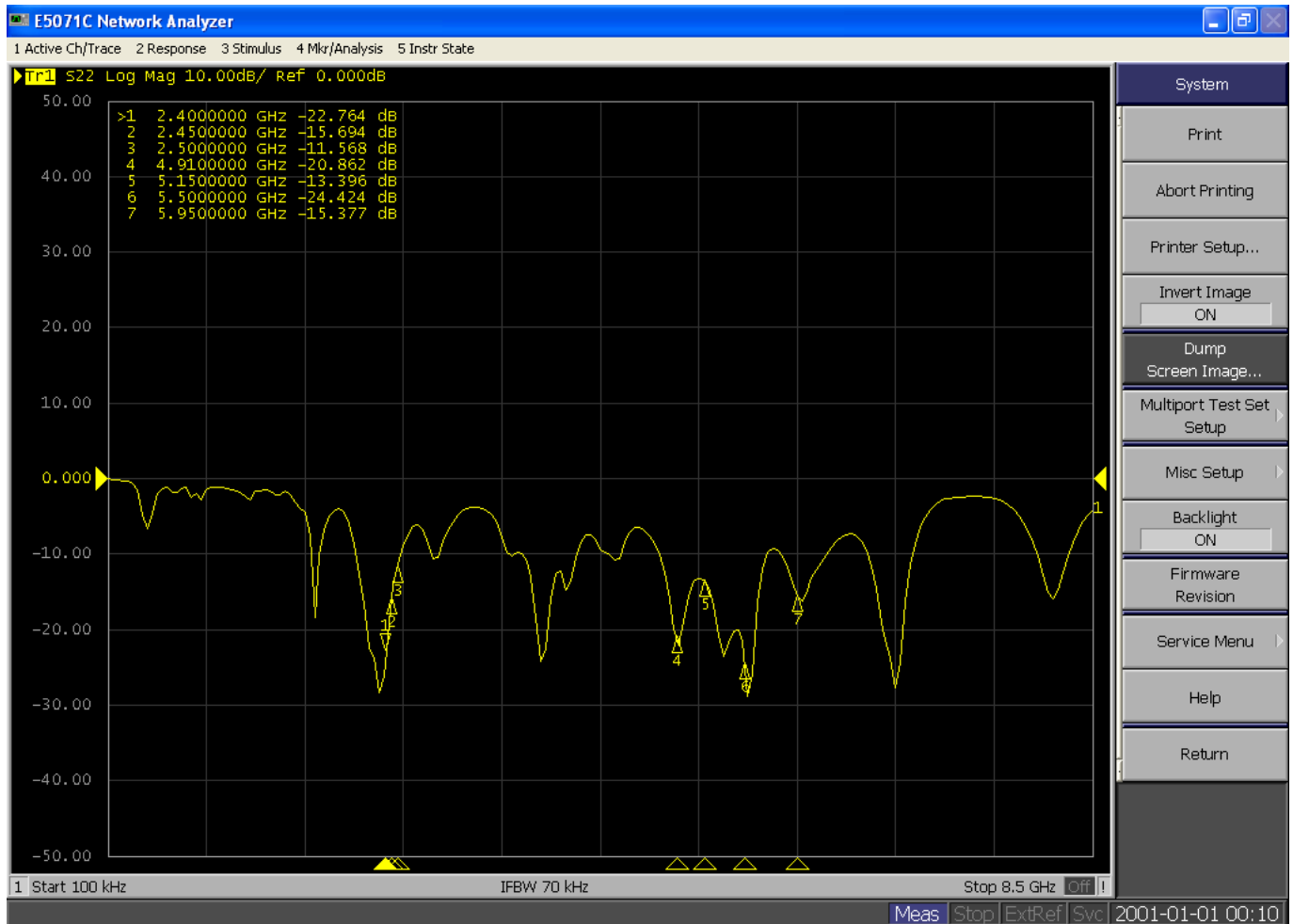


## 2. Specifications

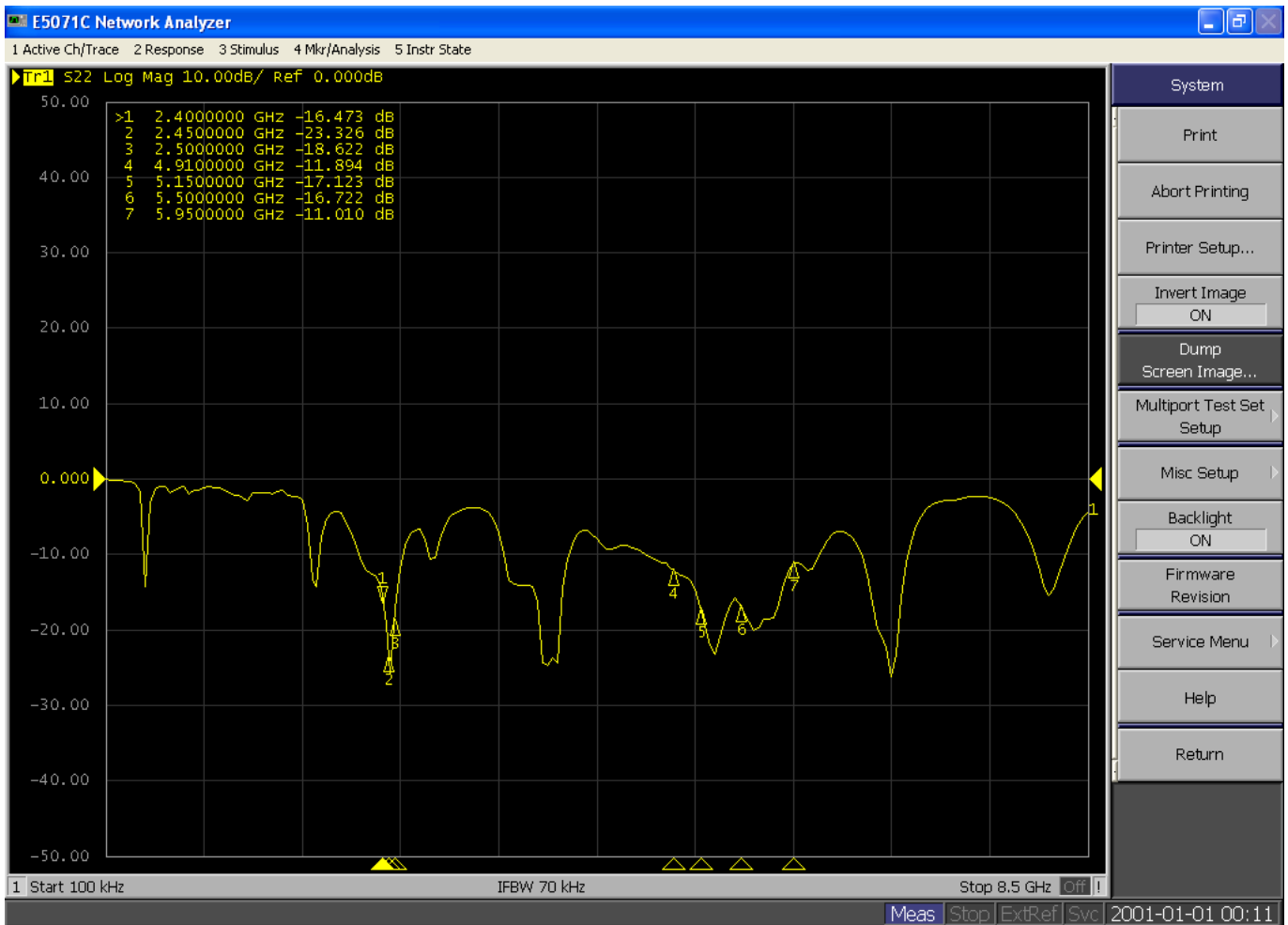
| Electrical        |                             |
|-------------------|-----------------------------|
| Frequency (MHz)   | 2400 - 2500, 4190 - 5850    |
| Efficiency        | 69.20% @ 2.4G band          |
|                   | 51.3% @ 5G band             |
| Peak Gain         | 3.0dBi @ 2.4G band          |
|                   | 1.83dBi @ 5G band           |
| Impedance         | 50 ohm                      |
| Polarization      | Linear, Vertical            |
| Radiation         | Omni-directional            |
| Mechanical        |                             |
| Heigh             | Straight: 195±2mm           |
|                   | Bent: 172±2mm               |
| Diameter          | Largest: 13±0.2mm           |
| Casing            | TPE                         |
| Connector         | Hinged reverse-polarity SMA |
| Weight            | 16.3g                       |
| Environmental     |                             |
| Temperature Range | -40°C to 85°C               |

## 3. Antenna Characteristics

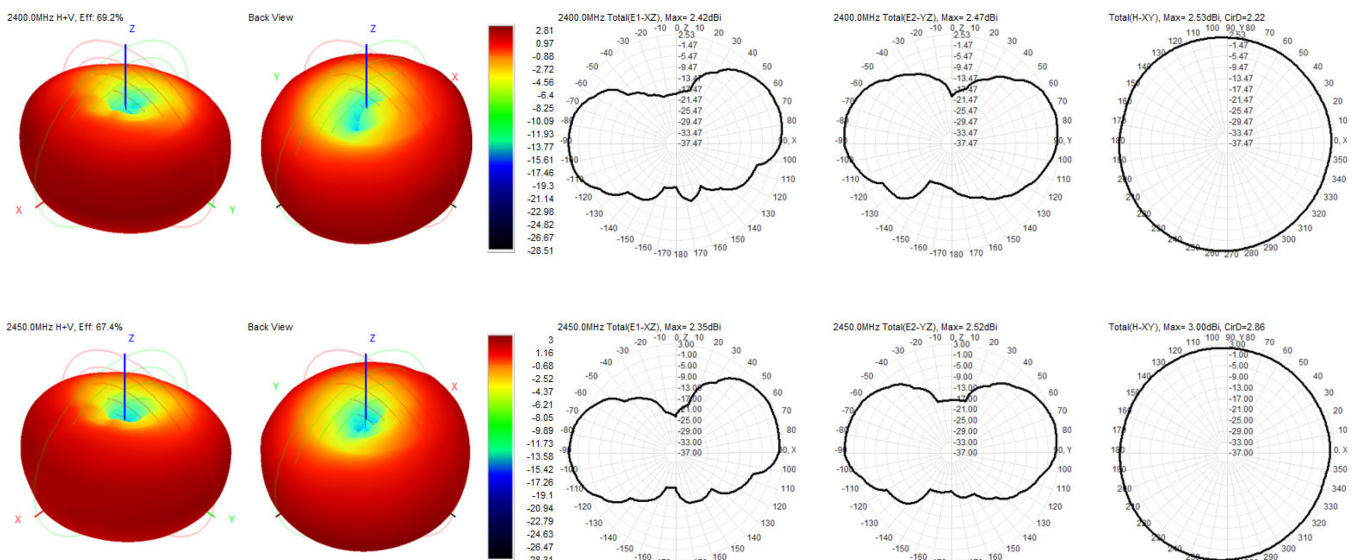
### 3.1 Return Loss – Straight Position



### 3.2 Return Loss – Bent Position (90 Degree)



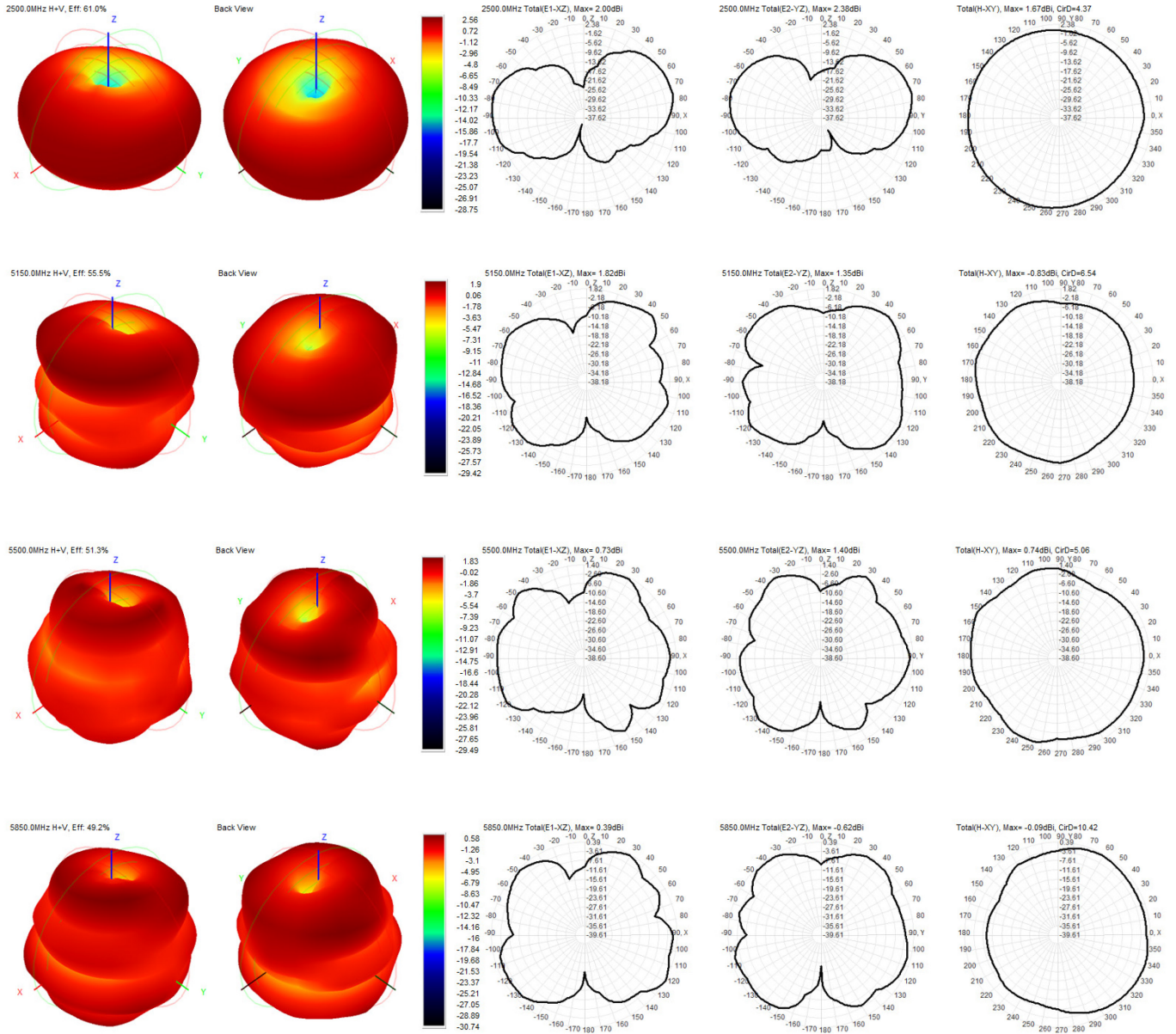
### 3.3 Radiation Pattern



# BDE-W25-19513-HRP

## 2440MHz Dipole Antenna

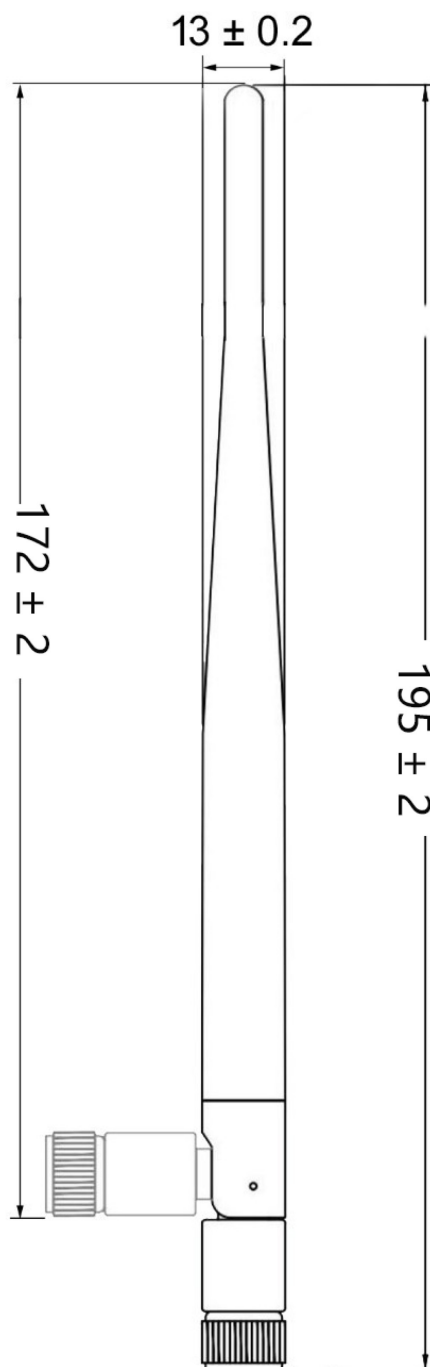
## Datasheet



### 3.4 Efficiency and Gain

| Frequency (MHz)  | Efficiency (%) | Gain (dBi) |
|------------------|----------------|------------|
| <b>2.4G Band</b> |                |            |
| 2400             | 69.18          | 2.81       |
| 2410             | 69.20          | 2.83       |
| 2420             | 68.04          | 2.87       |
| 2430             | 66.11          | 2.75       |
| 2440             | 66.49          | 2.90       |
| 2450             | 67.40          | 3.00       |
| 2460             | 66.59          | 2.89       |
| 2470             | 63.97          | 2.48       |
| 2480             | 63.22          | 2.55       |
| 2490             | 62.35          | 2.44       |
| 2500             | 61.03          | 2.56       |
| <b>5G Band</b>   |                |            |
| 5150             | 55.46          | 1.9        |
| 5250             | 58.79          | 2.19       |
| 5350             | 54.52          | 1.99       |
| 5450             | 50.61          | 1.90       |
| 5550             | 50.12          | 1.34       |
| 5650             | 45.97          | 1.35       |
| 5750             | 45.24          | 1.24       |
| 5850             | 49.18          | 0.58       |

## 4. Mechanical Drawing



All dimensions are in millimeter.

## 5. Ordering Information

| Orderable Part Number | Description                                          |
|-----------------------|------------------------------------------------------|
| BDE-W25-19513-HRP-B   | 2.4/5GHz dipole antenna with RP-SMA connector, black |
| BDE-CA-110-IPX1-RP    | IPEX I to reverse polarity SMA cable, 110mm          |

## 6. Revision History

| Revision | Remark          | Date      |
|----------|-----------------|-----------|
| V1.0     | Initial release | 2024/8/21 |

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## Contact

### **BDE Technology Inc.**

USA: 67 E Madison St, # 1603A, Chicago, IL 60603, US  
Tel: +1-312-379-9589

China: B2-403, 162 Science Avenue, Huangpu District, Guangzhou 510663, China  
Tel: +86-20-28065335

Website: [www.bdecomm.com](http://www.bdecomm.com) Email: [info@bdecomm.com](mailto:info@bdecomm.com)