

## 1. Description

BDE-W89-20713-HRP is an 868/915MHz dipole antenna with hinged reverse polarity SMA connector.

Typical applications include:

- 868MHz/915MHz ISM band
- Lora, Wi-SUN, 802.15.4 Sub-1G
- Gateways/Routers
- IoT Solutions

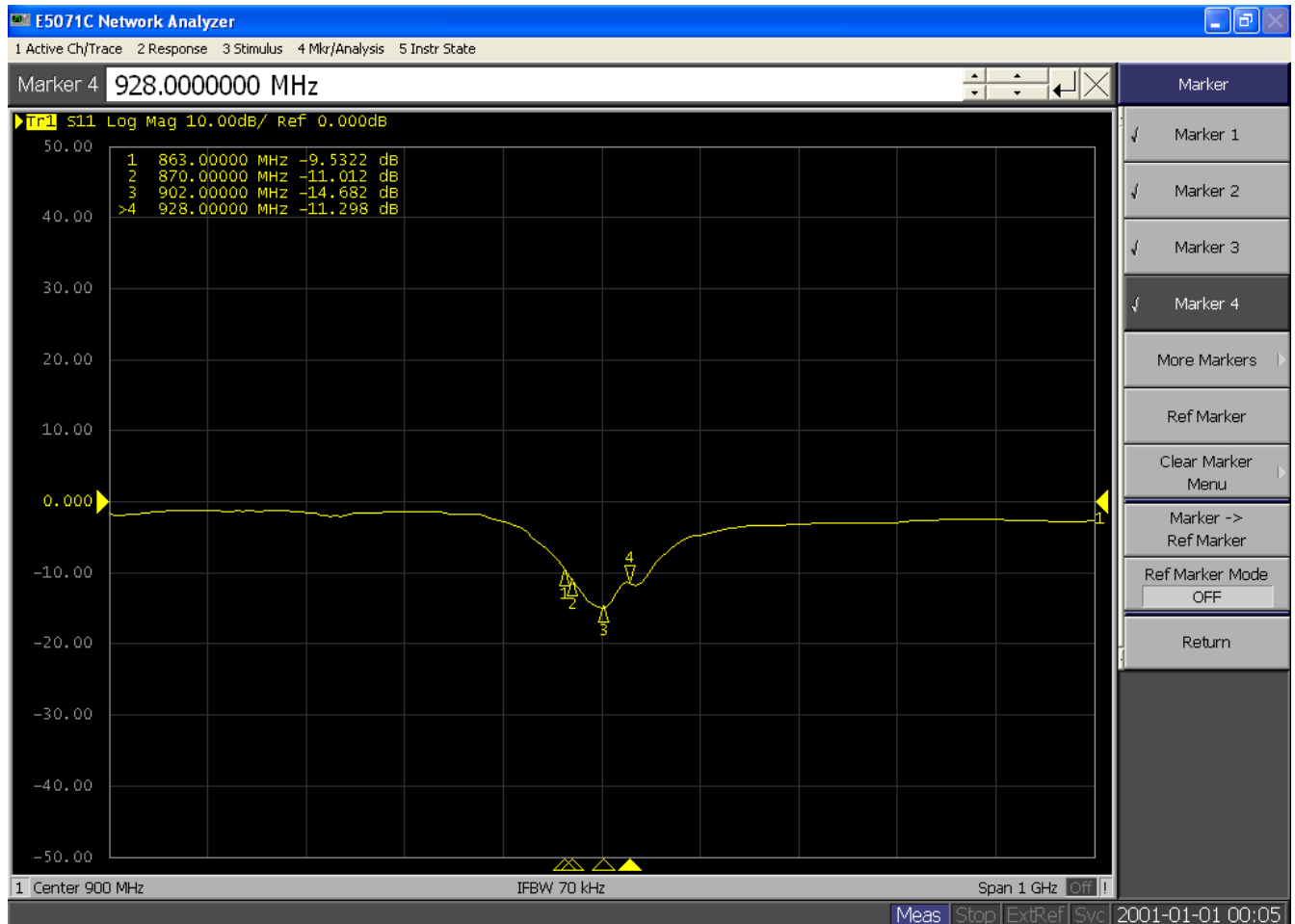


## 2. Specifications

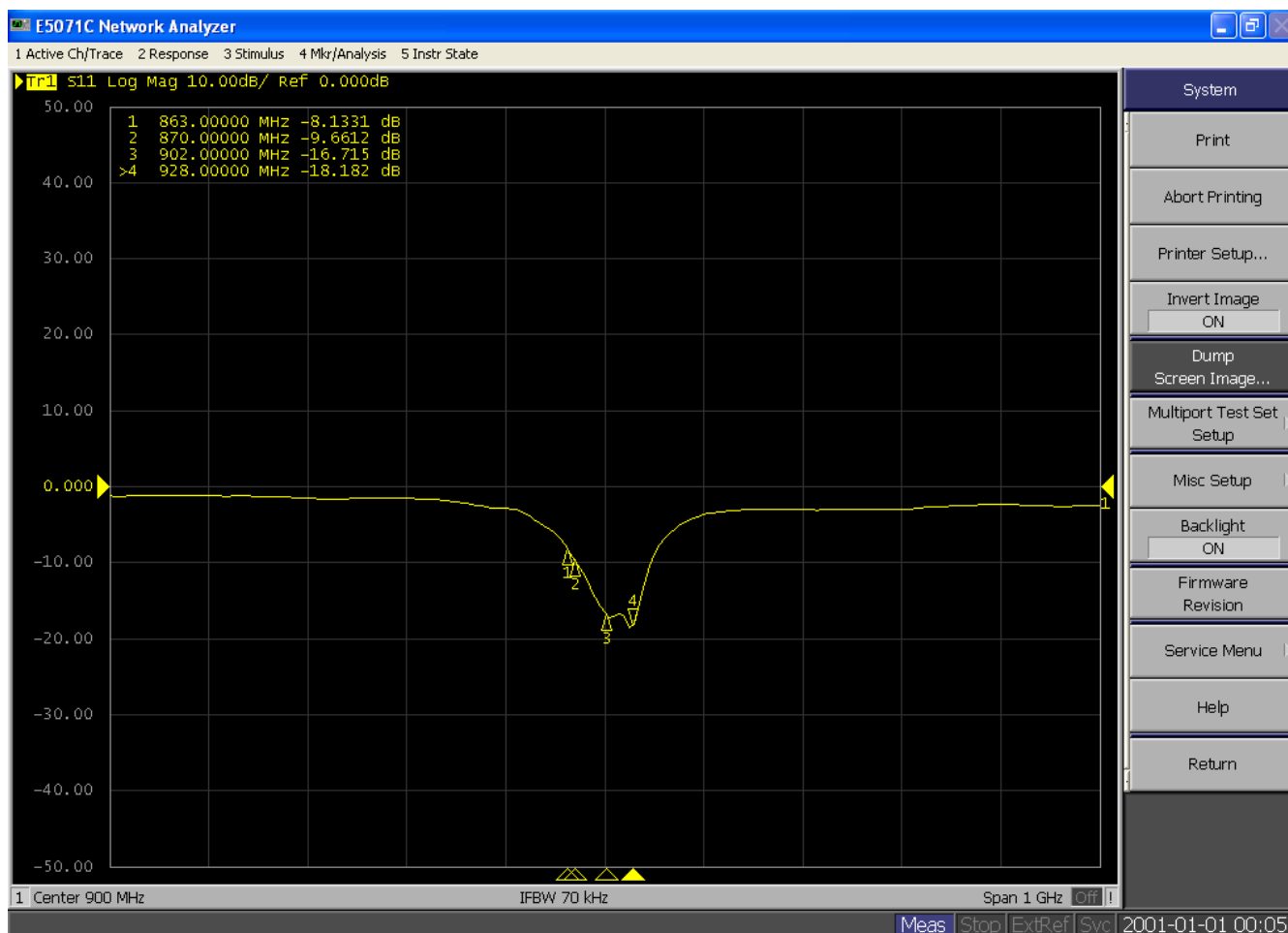
| Electrical        |                             |
|-------------------|-----------------------------|
| Frequency (MHz)   | 863 - 870, 902 - 928        |
| Efficiency        | 53% @ 868M band             |
|                   | 87% @915M band              |
| Peak Gain         | 1.9dBi @ 868M band          |
|                   | 3.8dBi @ 915M band          |
| Impedance         | 50 ohm                      |
| Polarization      | Linear, Vertical            |
| Radiation         | Omni-directional            |
| Mechanical        |                             |
| Heigh             | Straight: 207±2mm           |
|                   | Bent: 185±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

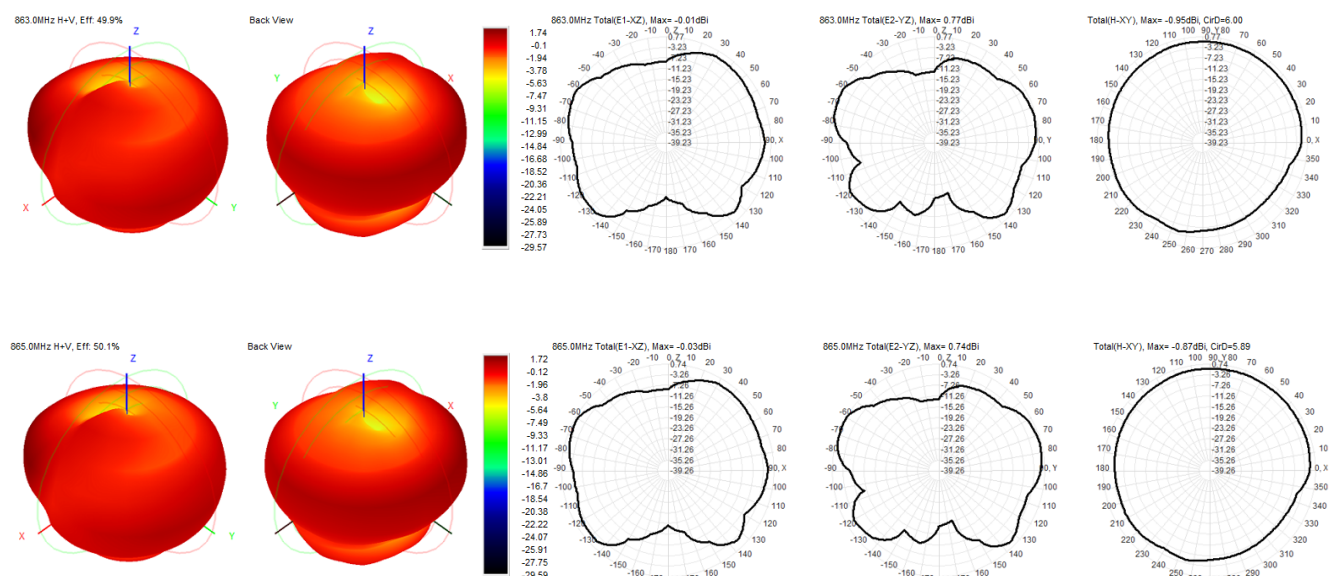
### 3.1 Return Loss – Straight Position

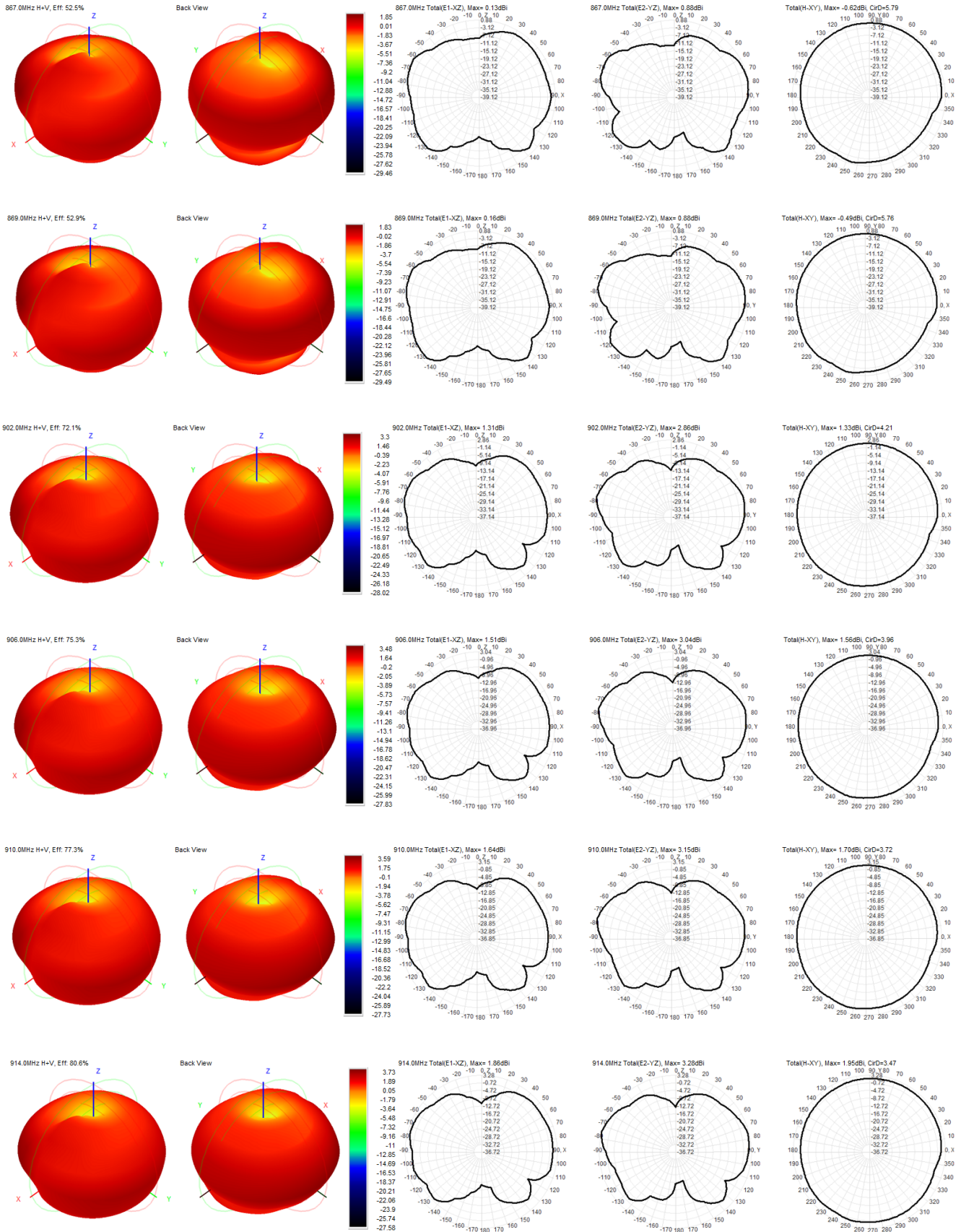


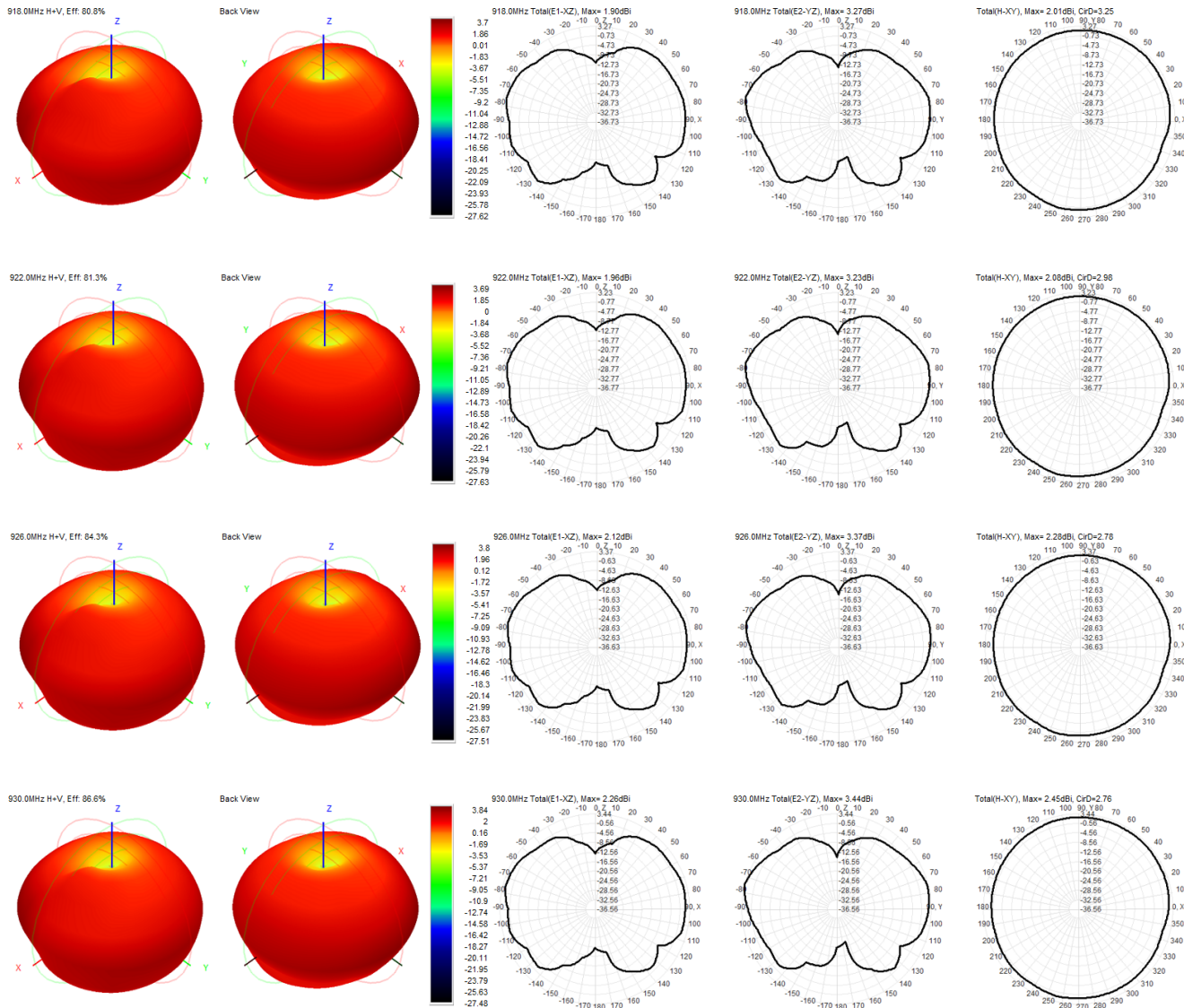
## 3.2 Return Loss – Bent Position (90 Degree)



## 3.3 Radiation Pattern





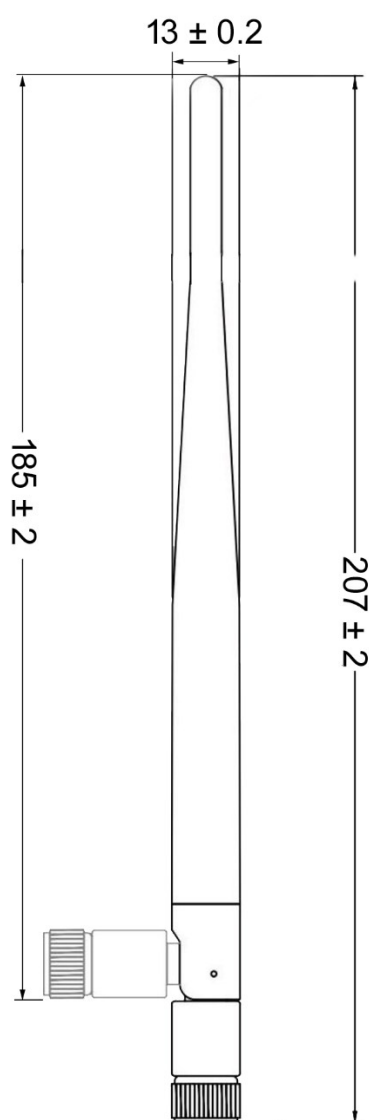


### 3.4 Efficiency and Gain

| Frequency (MHz)  | Efficiency (%) | Gain (dBi) |
|------------------|----------------|------------|
| <b>868M Band</b> |                |            |
| 863              | 50             | 1.7        |
| 864              | 50             | 1.7        |
| 865              | 50             | 1.7        |
| 866              | 52             | 1.8        |
| 867              | 53             | 1.9        |
| 868              | 53             | 1.9        |
| 869              | 53             | 1.8        |
| 870              | 53             | 1.8        |
| <b>915M Band</b> |                |            |
| 902              | 72             | 3.3        |

| Frequency (MHz) | Efficiency (%) | Gain (dBi) |
|-----------------|----------------|------------|
| 906             | 75             | 3.5        |
| 910             | 77             | 3.6        |
| 914             | 81             | 3.7        |
| 918             | 81             | 3.7        |
| 922             | 81             | 3.7        |
| 926             | 84             | 3.8        |
| 930             | 87             | 3.8        |

## 4. Mechanical Drawing



All dimensions are in millimeter.

## 5. Ordering Information

| Orderable Part Number | Description                                            |
|-----------------------|--------------------------------------------------------|
| BDE-W89-20713-HRP-B   | 868/915MHz 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 | 2024/6/3 |

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