

# Approval Paper

## Internal Antenna

Manufacturer: SUPREMA

MODEL: BS3M-OAPB, BS3M-ODB

PART No: BS3M-BLE Antenna

page2 ----- Spec

page3----- Electrical Performance Data

page4 ----- Drawing & picture

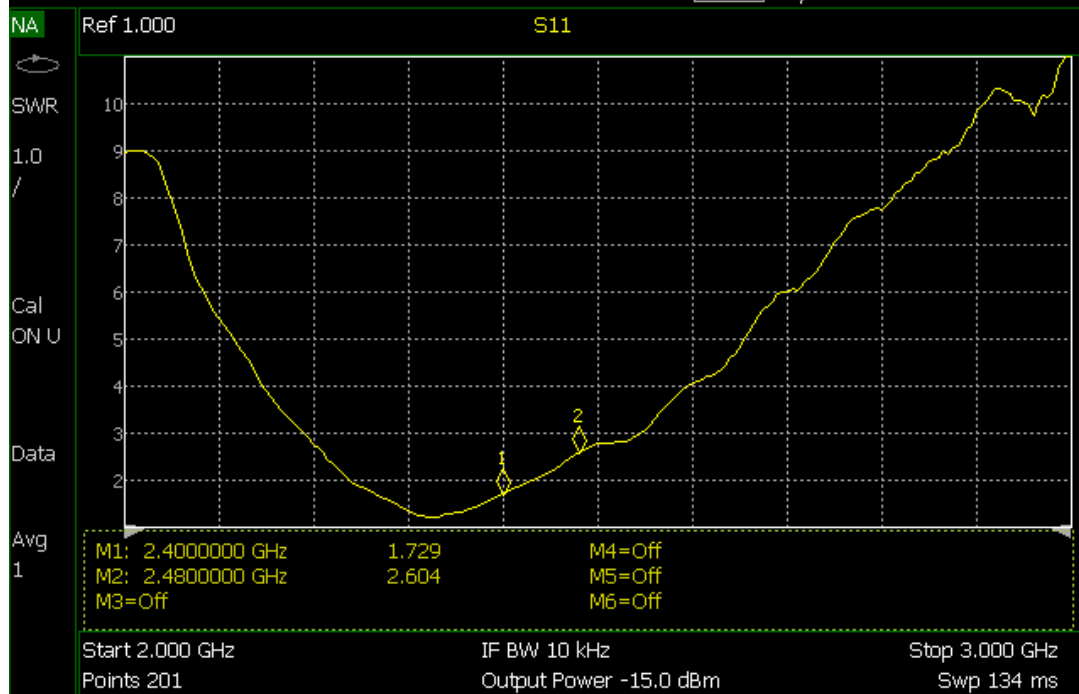
## Spec

|              |                    |
|--------------|--------------------|
| Band         | 2.4GHz ISM         |
| Frequency    | 2.4~2.483GHz       |
| VSWR         | $\leq 3$           |
| Peak Gain    | 1.46 ~ 2.27 dBi    |
| Avg Gain     | -5.09 ~ -4.59 dBi  |
| Directivity  | Directional        |
| Polarization | Linear             |
| Imapedance   | 50 Ohms            |
| TYPE         | PCB(FR4) type PIFA |

## VSWR

Keysight Technologies: N9914A, SN: MY61271723

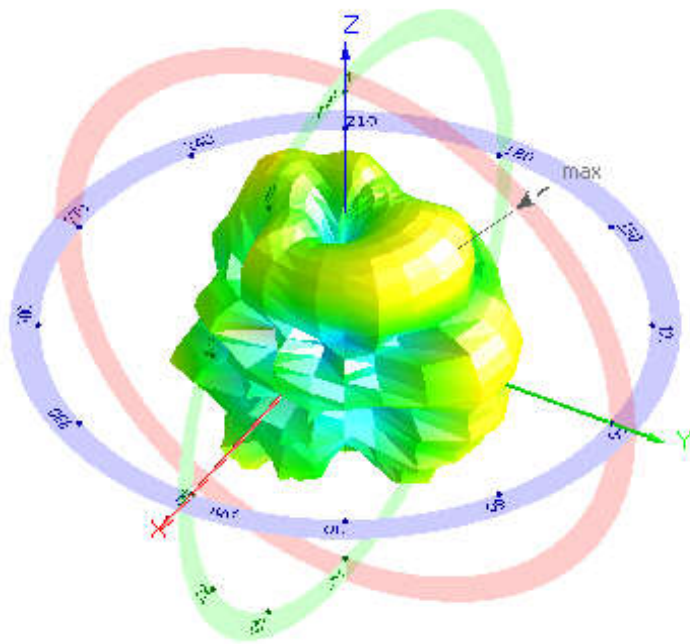
Fri, 30 Jan 2026 8:23:28 AM



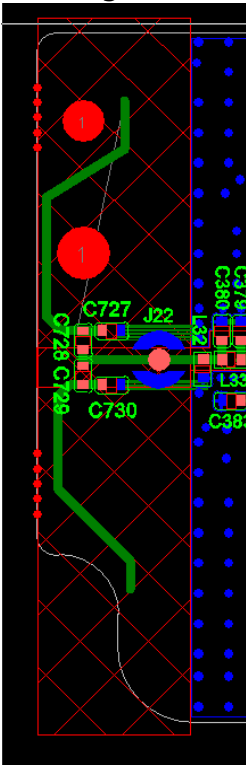
## Radiation

|            | $\theta$ -Pol(H) |           |           |                |              | $\phi$ -Pol(V) |           |           |                |              |  | PwrSum  |           |           |                |              |
|------------|------------------|-----------|-----------|----------------|--------------|----------------|-----------|-----------|----------------|--------------|--|---------|-----------|-----------|----------------|--------------|
| Freq.[GHz] | Eff.[%]          | Avg.[dBi] | Peak[dBi] | $\theta$ [deg] | $\phi$ [deg] | Eff.[%]        | Avg.[dBi] | Peak[dBi] | $\theta$ [deg] | $\phi$ [deg] |  | Eff.[%] | Avg.[dBi] | Peak[dBi] | $\theta$ [deg] | $\phi$ [deg] |
| 2.4        | 17.44            | -7.58     | -0.06     | 35             | 90           | 17.34          | -7.61     | 1.33      | -125           | 135          |  | 34.79   | -4.59     | 1.46      | -125           | 135          |
| 2.43       | 14.86            | -8.28     | -0.71     | 35             | 90           | 17.67          | -7.53     | 1.35      | -125           | 135          |  | 32.53   | -4.88     | 1.51      | -125           | 135          |
| 2.46       | 14.49            | -8.39     | -0.91     | 40             | 75           | 18.28          | -7.38     | 2.02      | -110           | 135          |  | 32.77   | -4.85     | 2.19      | -110           | 135          |
| 2.48       | 14.16            | -8.49     | -1.29     | -35            | 75           | 16.82          | -7.74     | 2.17      | -110           | 135          |  | 30.99   | -5.09     | 2.27      | -110           | 135          |

## Pattern



Drawing



Pictures

