

# 2.4GHz Foldable Female Small Antenna

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## Description:

This 2.4GHz 3.2dBi RP-SMA Female Omni antenna is intended for use for all 2.4GHz applications. The antenna is fitted with an RP-SMA male connector and a blade, made of a flexible material that can be rotated 360 degrees. Suitable for telemetry and WIFI transmissions on lightweight unmanned platforms.

This 2.4GHz 3.2dBi Gain indoor antenna provides high gain and provides tilt and swivel functions for full flexibility. It is fully compatible with Zigbee XBee Pro S2C. This antenna can be used for a variety of other applications within the specified frequency range. When used as the access point, the antenna is ideally located at the centre of the coverage area.

This antenna mates nicely with the SMA male connector.

## Specifications:

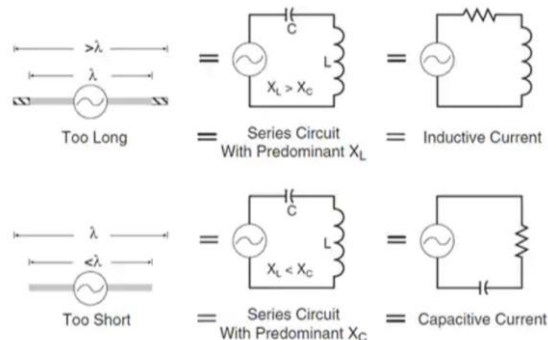
- Frequency (Center/Band): 2.4GHz
  - Frequency Range: 2.4GHz ~ 2.5GHz
  - Antenna Type: Whip, Tilt
  - Number of Bands: 1
  - Antenna Connector: RP SMA Female
  - VSWR: 1.9
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- Gain: 3.2dBi
- Applications: WLAN, Zigbee
- Body Material: Plastic and Rubber
- Color: Black
- Height (Max): 19 cm.
- Weight(g): 17

### Working Principle:

- An antenna is a device that converts electric currents into electromagnetic waves to transmit information and the reverse to receive it. You can think of an antenna as a complex RLC network. If the antenna is too long, it will display a predominantly inductive reactance. If it is too short, it will present to the PA as a primarily capacitive reactance; at resonance, these reactances will cancel each other out and the impedance will be purely resistive.



- The length of the antenna is determined by its intended operating frequency, where wavelength is determined by the following formula:

where:

$\lambda$  = wavelength in meters

$c$  = speed of light (299,792,458 meters per second)

$f$  = frequency in Hz

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- An electromagnetic wave has two components: an electrical field and magnetic field that are at right angles to each other. By convention, the orientation of the electrical field to the earth's surface determines its polarization. Polarization can be horizontal, vertical, or even circular. All that matters is that both the transmitting and receiving antennas are oriented in the same plane, otherwise a considerable amount of energy can be lost due to the receiving antenna intercepting only a small portion of the electrical field.
- An omnidirectional antenna is a class of antenna which radiates equal radio power in all directions perpendicular to an axis (azimuthal directions), with power varying with angle to the axis (elevation angle), declining to zero on the axis. When graphed in three dimensions this radiation pattern is often described as doughnut-shaped. Note that this is different from an isotropic antenna, which radiates equal power in all directions, having a spherical radiation pattern. Omnidirectional antennas oriented vertically are widely used for nondirectional antennas on the surface of the Earth because they radiate equally in all horizontal directions, while the power radiated drops off with elevation angle so little radio energy is aimed into the sky or down toward the earth and wasted.
- Omnidirectional antennas are widely used for radio broadcasting antennas, and in mobile devices that use radio such as cell phones, FM radios, walkie-talkies, wireless computer networks, cordless phones, GPS, as well as for base stations that communicate with mobile radios, such as police and taxi dispatchers and aircraft communications

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### Applications:

- 802.11b/g/n Wi-Fi Networks.
- Zigbee.
- Bluetooth.
- Streaming Wireless Video.
- RFID.
- Public Hot Spots.
- Schools or Universities.
- Hotel Lobby and Hallways.
- Medical Buildings.
- Any Commercial Office, Retail Store.