DATASHEET WI-FI ANTENNAS

Dual-Band Dipole Antenna for 2.4/5 GHz Wi-Fi

Wi-Fi Antennas

EMB-910004

Description

Dual-band dipole antenna designed to cover the 2.4 GHz and the 5 GHz Wi-Fi bands

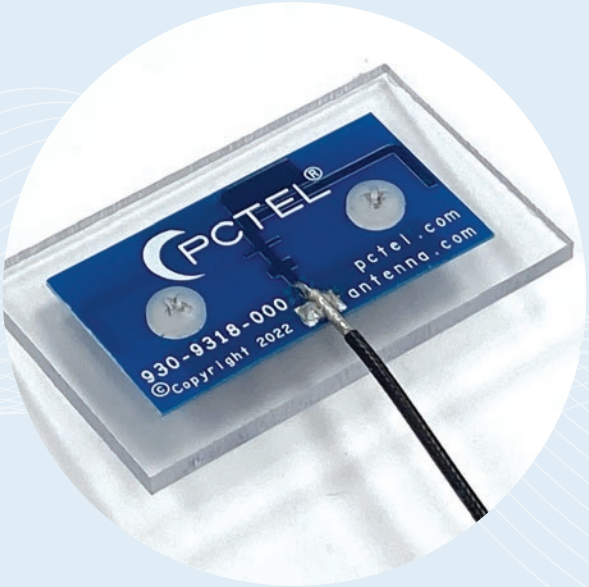
Technologies

- Wi-Fi
- Bluetooth®
- Zigbee

Features

- Designed to be mounted to a plastic support or directly to a non-metallic surface in the host product with plastic screws/nuts or heat stakes or other features in the host device
- Low-profile antenna design exhibits wide coverage patterns in the 2.4 and 5 GHz frequency bands
- Comes with an attached 6” micro-coax cable with a U.FL-style connector
- Approved for use with the PCTEL RM-WIFI-AC-2X2-HP 5 GHz radio module

PCTEL



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The EMB-910004 antenna is a dual-band dipole designed to cover the 2.4 GHz and 5 GHz Wi-Fi bands. The antenna design consists of 2.4 GHz and 5 GHz half-wavelength dipoles and a 5 GHz reflector. The use of a reflector produces a slight directionality in the 5 GHz radiation patterns and desensitizes the antenna to reflective surfaces and/or obstructions that are located behind the antenna in the direction of the cable. This allows the antenna to be placed in front of an external reflector to direct the radiated energy at 2.4 GHz (if desirable) without severely impacting the 5 GHz return loss and radiation patterns. Additionally, the slight directionality in the 5 GHz radiation patterns can be exploited to improve pattern diversity and increase the overall system coverage area when utilized in multi-antenna MIMO and MU-MIMO systems.

The EMB-910004 antenna is designed to be mounted to a plastic support or directly to a non-metallic surface in the host product with plastic screws/nuts, heat stakes, or other features in the host device. The antenna is tuned to be mounted to a 0.1" (2.5 [mm]) thick plastic surface. The antenna comes with an attached 6" micro-coax cable having a U.FL-style plug connector. It is approved for use with the PCTEL RM-WIFI-AC-2X2-HP 5 GHz radio module.

Features

- Designed to be mounted to a plastic support or directly to a non-metallic surface in the host product with plastic screws/nuts or heat stakes or other features in the host device
- Low-profile antenna design exhibits wide coverage patterns in the 2.4 and 5 GHz frequency bands
- Comes with an attached 6" micro-coax cable with a U.FL-style connector
- Approved for use with the PCTEL RM-WIFI-AC-2X2-HP 5 GHz radio module

SPECIFICATIONS

Dual-Band Dipole Antenna for 2.4/5 GHz Wi-Fi

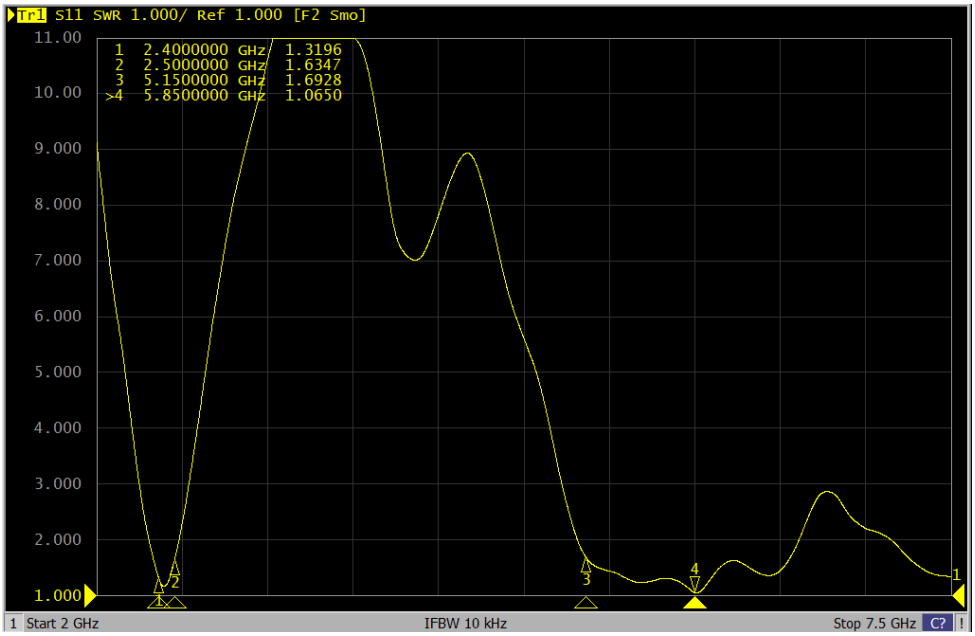
Wi-Fi Antennas

Specifications

	2.4 GHz Band	5 GHz Band
Antenna Type	Dual-Band Dipole	
Frequency Range	2400 - 2500 MHz	5150 - 5875 MHz
VSWR	< 2:1	< 2:1
Peak Gain	2 dBi	2.8 dBi
Dimensions	36 [mm] x 19 [mm] x 0.5 [mm] (1.42" x 0.75" x 0.020")	
Recommended Radome Separation	> 2.5 [mm]	
Fastening Method	#4-40 pan head nylon screws, heat stakes, etc. to non-metalic surface	
Material	FR-4 (UL 94 V-0)	
Cable	Micro-coax, 6"	
Connector	U.FL-style plug	
Operating Temperature Range	-40ºC to +85ºC	

All performance parameters were measured with the antenna fastened to a 46 [mm] x 29 [mm] plastic carrier. A depiction of the carrier is shown (at right) in the mechanical drawing.

VSWR – EMB-910004



The VSWR of the antenna measured from 2 - 7.5 GHz.

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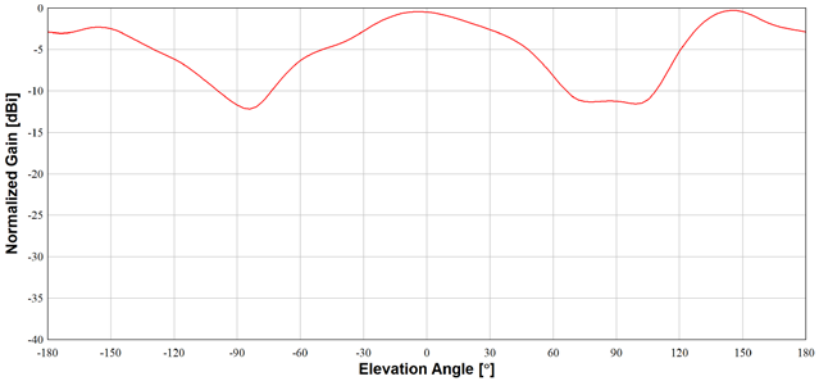
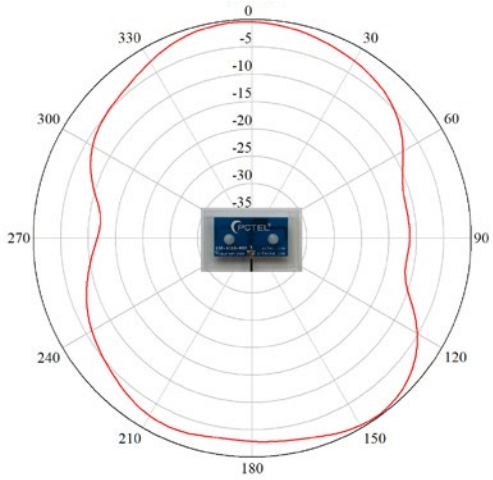
Elevation Plane Pattern – EMB-910004

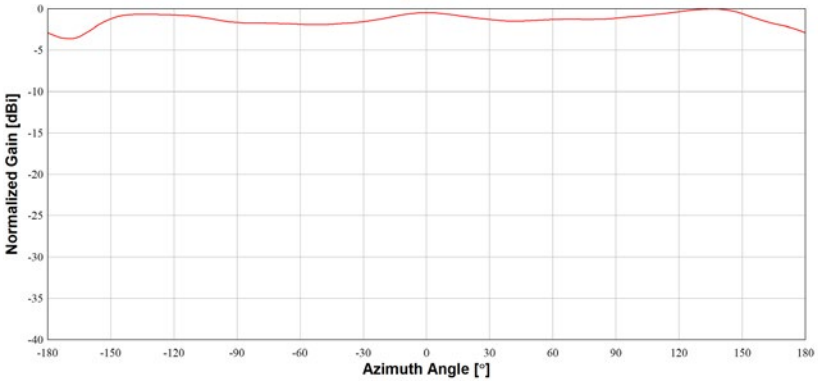
2.4 GHz Band

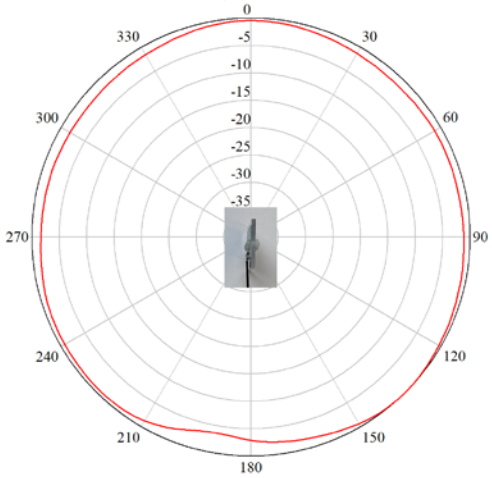




Azimuth Plane Pattern – EMB-910004

2.4 GHz Band



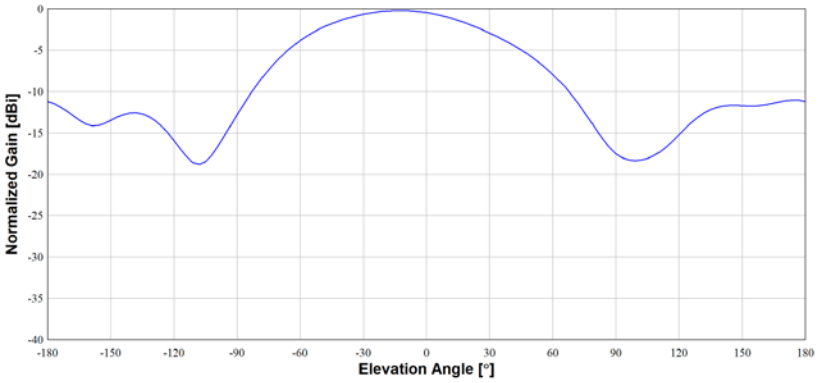


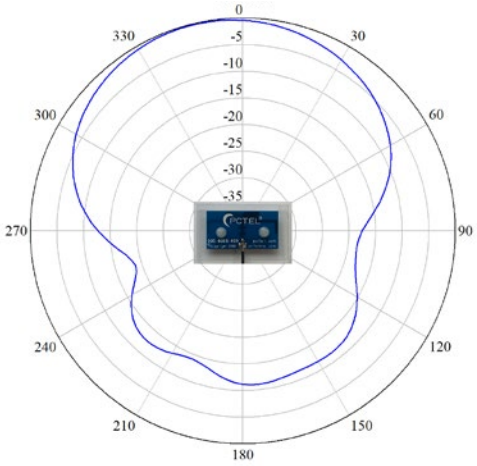
Dual-Band Dipole Antenna for 2.4/5 GHz Wi-Fi

Wi-Fi Antennas

Elevation Plane Pattern – EMB-910004

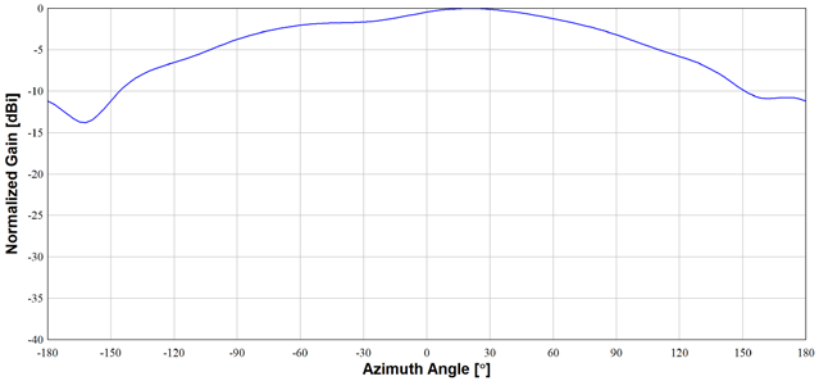
5 GHz Band

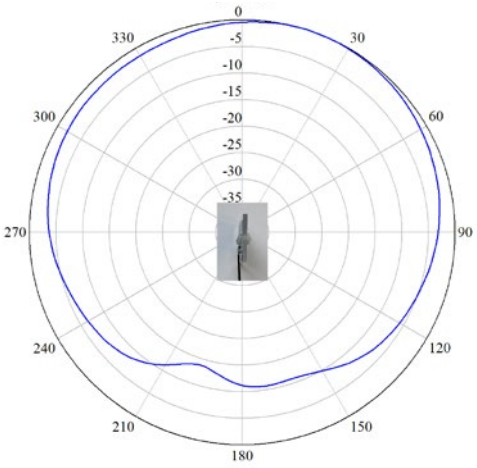




Azimuth Plane Pattern – EMB-910004

5 GHz Band



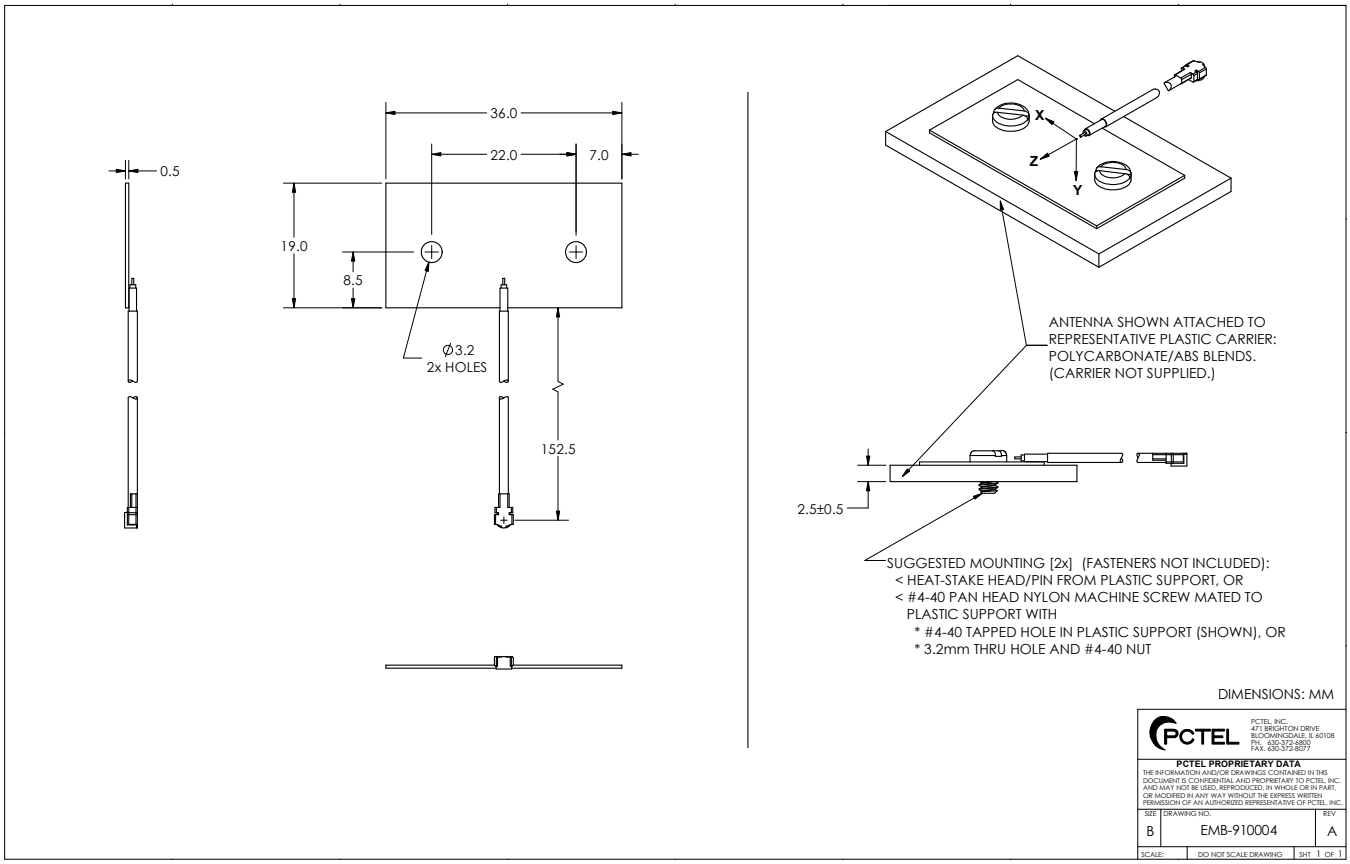


MECHANICAL DRAWING

Dual-Band Dipole Antenna for 2.4/5 GHz Wi-Fi

Wi-Fi Antennas

Mechanical Drawing



CONTACT US

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> pctel.com/contact

WHERE TO BUY

To order the EMB-910004, please contact your local PCTEL distributor:

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