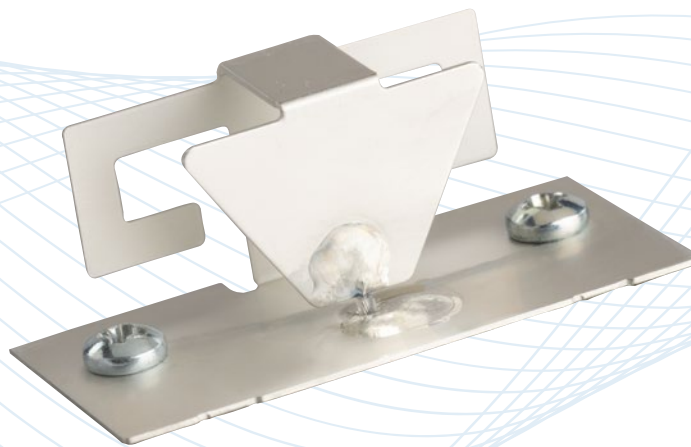


Tri-Band Monopole Antenna for 2.4/5/6 GHz Wi-Fi

Wi-Fi Antennas

EMB-910003



Description

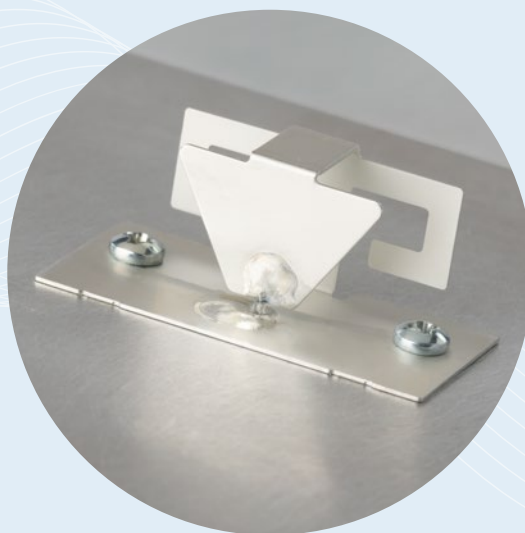
Tri-band monopole antenna covers the 2.4 GHz, 5 GHz, and 6 GHz Wi-Fi bands

Technologies

- Wi-Fi
- Bluetooth
- Zigbee

Features

- Easy to deploy: the antenna mounts directly to a metal ground plane using two screws
- Small and low-profile: the antenna is easily integrated into tight spaces or onto multi-antenna platforms
- High impedance bandwidth over 2.4 GHz enables good impedance matching and efficiency in a variety of deployment scenarios, including those compromised by obstructions
- Comes with a micro-coaxial cable soldered to the element that is terminated in a U.FL-style connector
- Approved for use with the PCTEL RM-WIFI-AC-2X2-HP 5 GHz radio module



Tri-Band Monopole Antenna for 2.4/5/6 GHz Wi-Fi

Wi-Fi Antennas

The EMB-910003 antenna element is a tri-band monopole antenna that covers the 2.4 GHz, 5 GHz, and 6 GHz Wi-Fi bands. It is a compact, vertically-polarized antenna that is designed for use in multi-antenna platforms where polarization diversity and element-to-element isolation are key objectives. (We note that the combination of EMB-910001 and EMB-910003 realizes such a cross-polarized antenna scheme.) The omnidirectional radiation patterns are well-suited to ceiling-mount and high-density deployments such as office spaces and airports.

The antenna mounts directly to a metal ground plane with two screws and is terminated in a micro-coaxial cable having a U.FL-style connector. The solder termination of the coaxial cable is strengthened through the use of an extruded hole in the base of the element. Additionally, the EMB-910003 antenna is approved for use with the PCTEL RM-WIFI-AC-2X2-HP 5 GHz radio module.

Features

- Easy to deploy: the antenna mounts directly to a metal ground plane using two screws
- Small and low-profile: the antenna is easily integrated into tight spaces or onto multi-antenna platforms
- The high impedance bandwidth over 2.4 GHz enables good impedance matching and efficiency in a variety of deployment scenarios, including those compromised by obstructions
- Comes with a micro-coaxial cable soldered to the element that is terminated in a U.FL-style connector
- Approved for use with the PCTEL RM-WIFI-AC-2X2-HP 5 GHz radio module

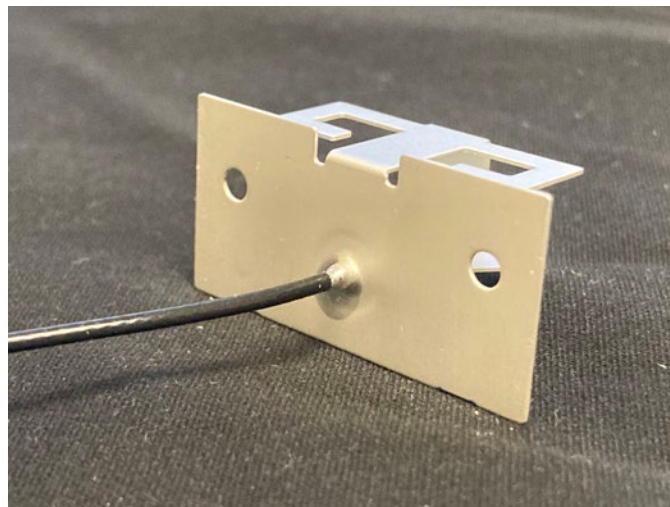
Tri-Band Monopole Antenna for 2.4/5/6 GHz Wi-Fi

Wi-Fi Antennas

Specifications

	2.4 GHz Band	5 GHz Band	6 GHz Band
Antenna Type	Tri-Band Monopole		
Frequency Range	2400 - 2500 MHz	5150-5875 MHz	5925 - 7125 MHz
VSWR	1.5:1 nominal, 2:1 maximum (integration-dependent)		
Peak Gain	2.6 dBi	2.4 dBi	3.7 dBi
Dimensions	34 [mm] x 20.2 [mm] x 13.5 [mm]		
Recommended Radome Separation	> 2.5 [mm]		
Fastening Method	#3-48 pan head machine screws		
Cable	1.37 [mm] Ø microcoax; 6" length		
Connector	U.FL-style plug		
Ground Plane Clearance Hole	4 [mm] Ø		
Operating Temperature Range	-40°C to +85°C		

All performance parameters were measured with the antenna mounted on a 4"x4" ground plane loaded by a 100 mil-thick polycarbonate radome spaced 16 [mm] above the ground plane.

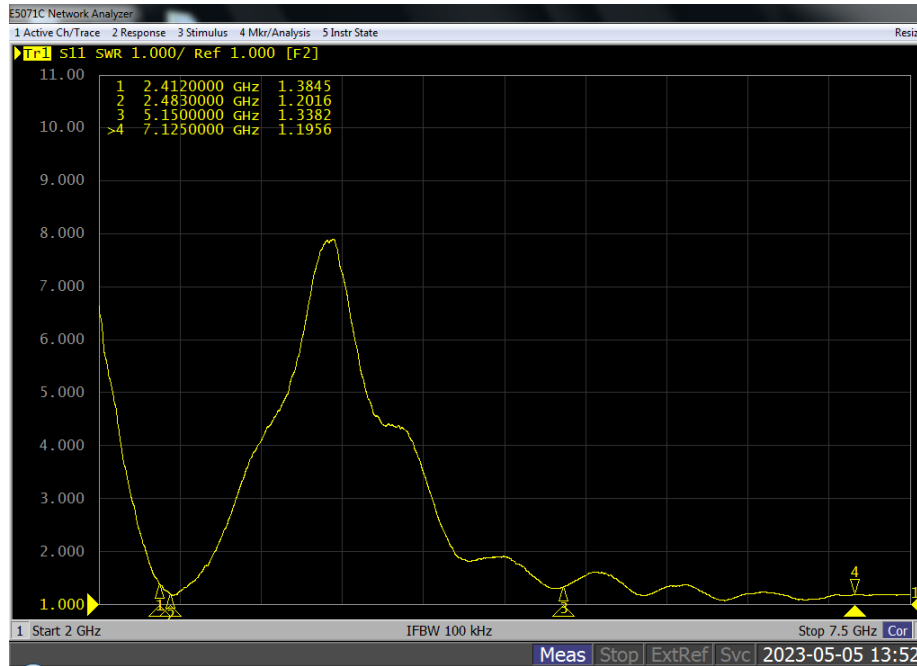


The extruded hole formed in the base of the element strengthens the attachment of the outer conductor of the coaxial cable to the antenna.

Tri-Band Monopole Antenna for 2.4/5/6 GHz Wi-Fi

Wi-Fi Antennas

VSWR – EMB-910003



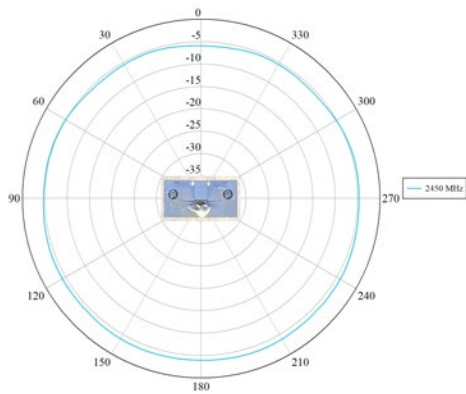
The VSWR of the antenna measured from 2 - 7.5 GHz.

Tri-Band Monopole Antenna for 2.4/5/6 GHz Wi-Fi

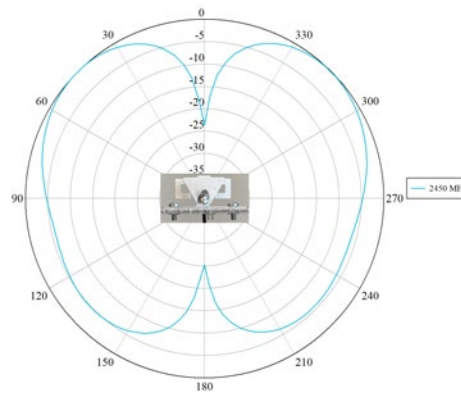
Wi-Fi Antennas

2.4 GHz Radiation Patterns

Azimuth Plane

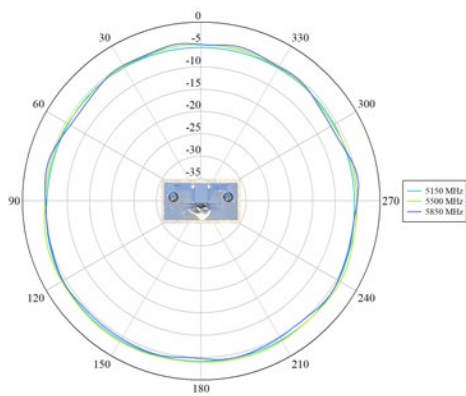


Elevation Plane

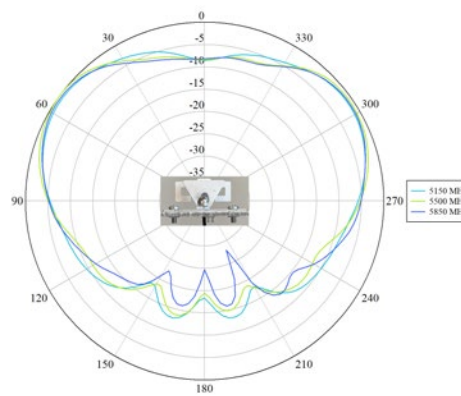


5 GHz Radiation Patterns

Azimuth Plane

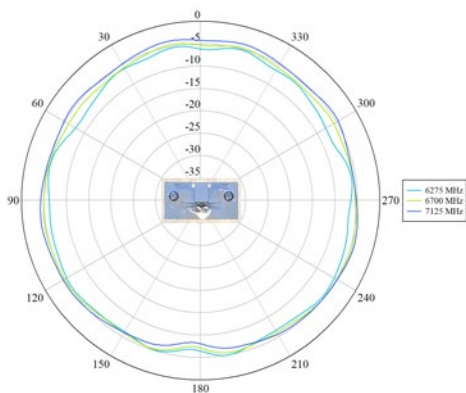


Elevation Plane

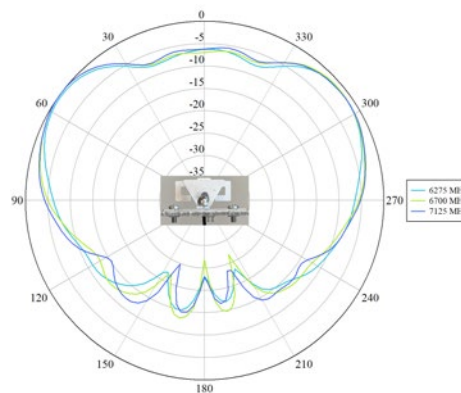


6 GHz Radiation Patterns

Azimuth Plane



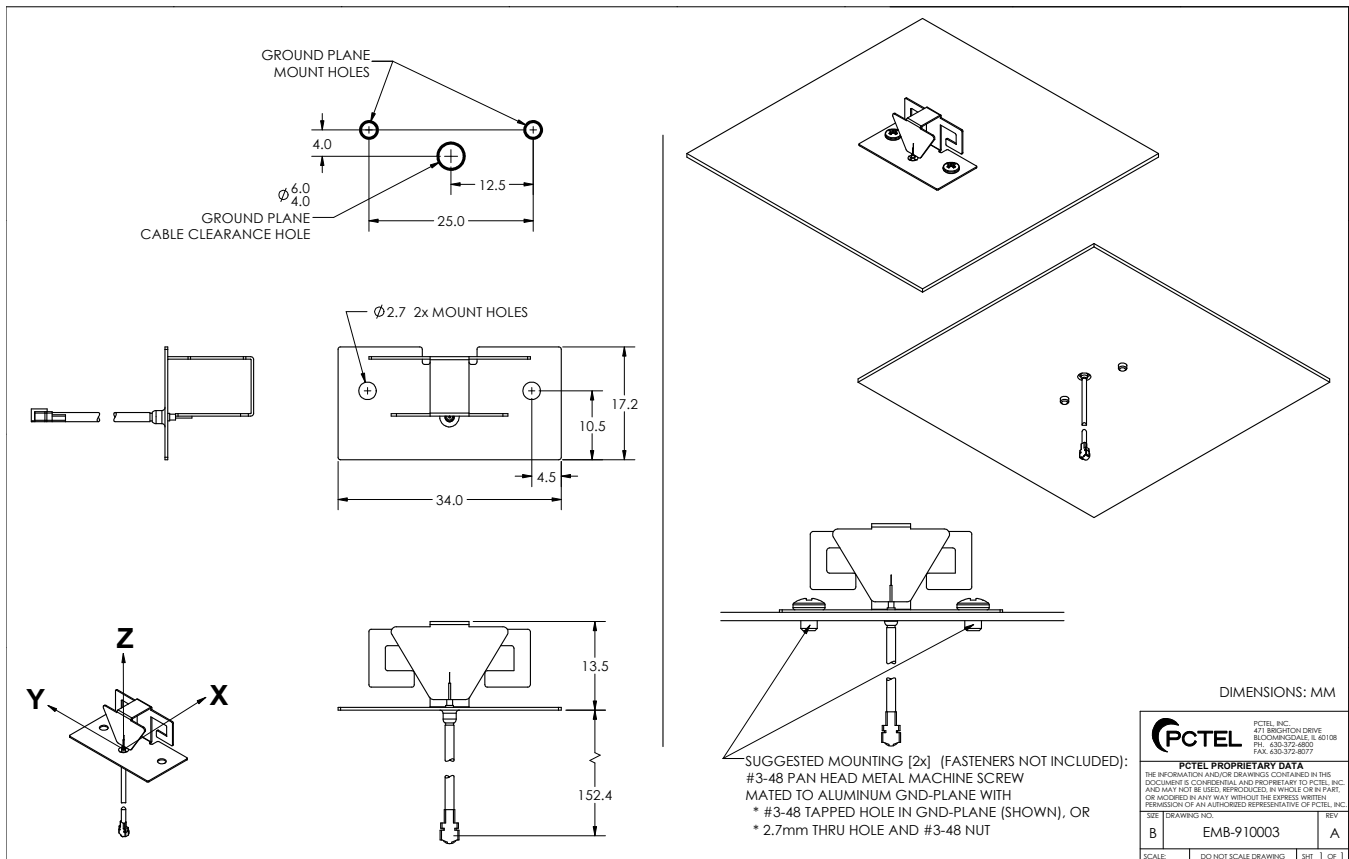
Elevation Plane



Tri-Band Monopole Antenna for 2.4/5/6 GHz Wi-Fi

Wi-Fi Antennas

Mechanical Drawing



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