

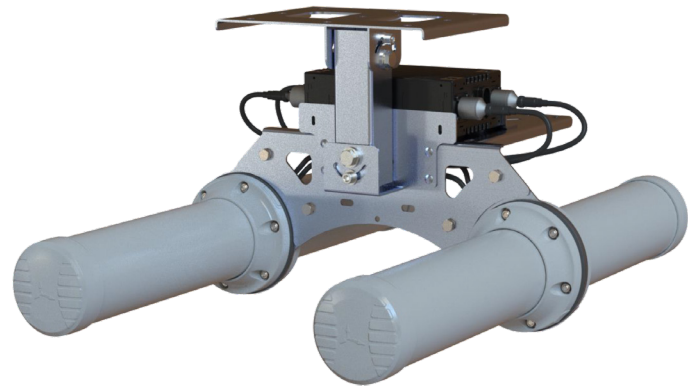
# RCP-2450

## Circular Polarized, Bi-directional Mine/Tunnel Antenna

**Rajant's RCP-2450 wideband circular polarized antenna** achieves bi-directional coverage using both 2.4 and 5 GHz mesh links in underground mining as well as various tunnels. Circular polarization delivers significantly greater signal propagation to go around obstructions and bends when compared to linear or omni antennas. These antennas typically achieve distances up to a kilometer underground with throughput up to 50Mbps using 5 GHz. Ideally suited for autonomous and tele-remote applications.

### Bi-directional Mine/Tunnel Antenna Features

- Circular polarized antenna provides enhanced signal propagation and connection stability within a tunnel
- Four port 2.4 GHz and 5 GHz Wi-Fi antenna
- Frequency Range: 2400-2500 MHz and 5000-6000 MHz
- Left-hand Circular (LHC) and Right-Hand Circular (RHC) polarized
- Bi-directional – radiates in two directions in a tunnel
- IP 65 Rated – Ruggedized, water and dust ingress protected
- Ideal for Mining & Tunnel M2M and IoT deployments
- Temperature Range (Operating): -40 to 70 deg. C



**Dual Frequency 2.4/5 GHz 9/11 dBi Bi-Directional Mine and Tunnel Antenna System**

### Ideal for the Deployment of IIoT and Autonomous Applications Underground and in Tunnels

The RCP-2450 is a dual-band 2.4 GHz and 5 GHz Wi-Fi antenna, radiating in both directions (i.e. bi-directional). This makes it ideal for the directional transmission of both 2.4 and 5 GHz mesh links in underground mining as well as various other types of tunnels. These antennas are ideal for the deployment of autonomous and semi-autonomous applications underground and the deployment of IIoT within any tunnel to provide video, telemetry, and mine automation.

RCP-2450 antennas are available in both Left-hand Circular (LHC) & Right-Hand Circular (RHC) polarized antenna elements to provide optimal decorrelation within a MIMO deployment. The decorrelation is due to the polarization difference and spatial diversity between the two antenna elements which enhances MIMO performance and RF reliability within a mining tunnel.

Model	Description
<b>RCP-2450</b>	Circular Polarized, Bi-directional Mine/Tunnel Antenna, Dual-band Wi-Fi, 2400 - 2500 MHz 9 dBi; 5000 - 6000 MHz, 11 dBi
Wireless	
<b>Frequency Bands</b>	2400 MHz - 2500 MHz 5000 MHz - 6000 MHz
<b>Max Gain</b>	9 dBi @ 2400 MHz - 2500 MHz 11 dBi @ 5000 MHz - 6000 MHz
<b>VSWR</b>	<2:1 Over 90% of the Bands

## Power

<b>Feed Power Handling</b>	30 W
<b>Input Impedance</b>	50 Ohm (nominal)

## Physical

<b>Dimensions</b>	603 mm x 415 mm x 266 mm
<b>Weight</b>	5.6 kg
<b>Polarization</b>	Circular Polarized (LHC and RHC)
<b>Coax Cable Loss</b>	0.97 dB/m @ 2400 MHz 2.0 dB/m @ 5800 MHz
<b>Material</b>	ABS & PVC
<b>Color</b>	Grey
<b>Mounting Type</b>	Ceiling Mounted
<b>Environment</b>	Outdoor/Indoor, $\leq 120$ km/h Wind Survival, IP 65 Water Ingress Protection Ratio/Standard, MIL-STD 810F/ASTM B117 Salt Spray, IK 08 Impact Resistance, UL 94-HB Enclosure Flammability Rating, Up to 98% Operating Relative Humidity
<b>Compliance</b>	CE and RoHS standards

## Technical Drawings

