



Lab 7.2.6 Omnidirectional Antennas

Estimated Time: 15 Minutes

Number of Team Members: Students will work in teams of two.

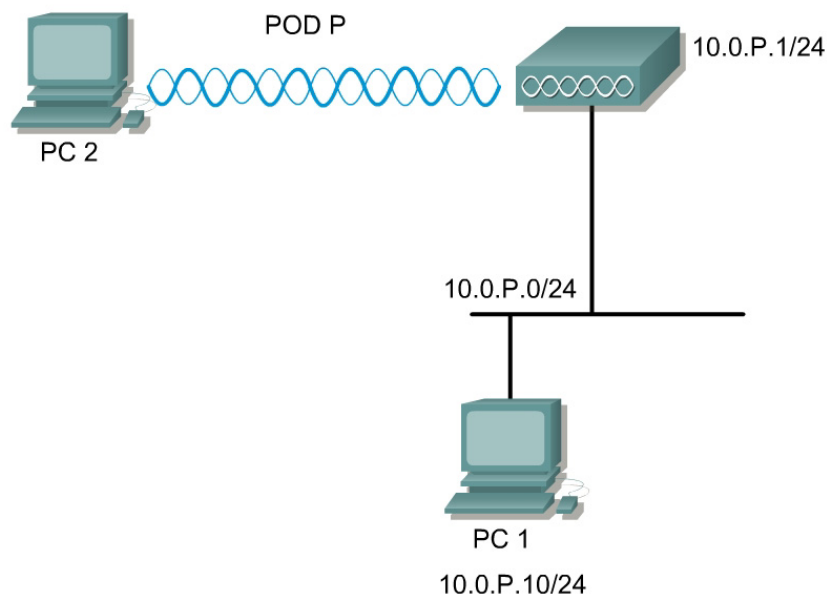
Objective

Test the range capabilities of the Cisco Aironet AP with an omni-directional antenna configuration.

Scenario

Omni-directional antennas create more coverage area away from the antenna in all directions, but the energy level directly below the antenna will become lower. Omni-directional antennas are generally used for point-to-multipoint implementations.

Topology



Preparation

Prior to the lab, configure a Cisco Aironet AP as a root unit and ensure it is performing properly. Obtain a laptop computer with a Cisco Aironet client adapter and the utilities installed.

Tools and Resources or Equipment

Each team will require the following:

- Cisco Aironet AP installed with Cisco Aironet AIR-ANT4941 2.2 dBi dipole antenna.
- Personal Computer with a client adapter properly installed

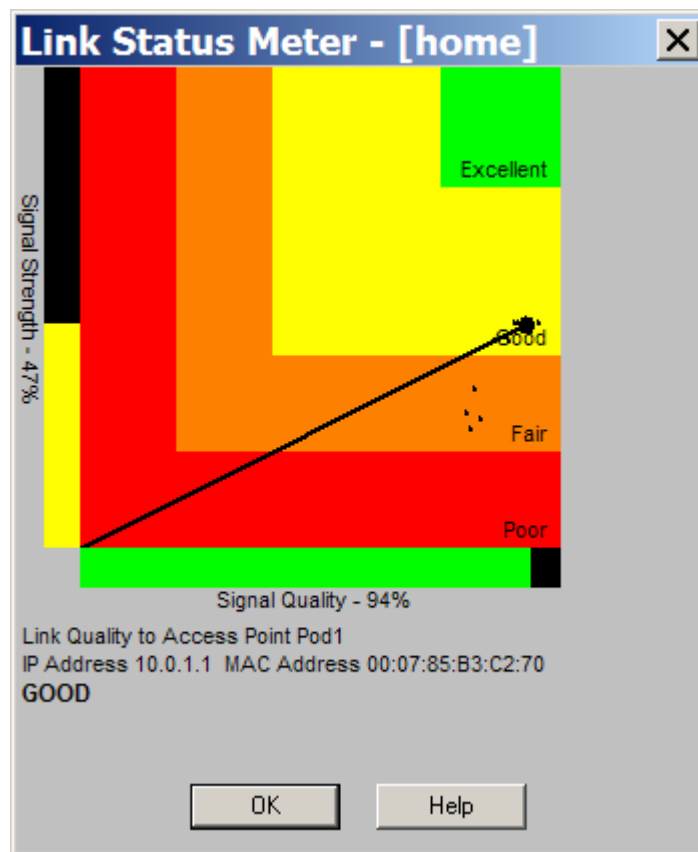
Step 1 Omni-directional antenna



- In order to set up the Cisco Aironet omni-directional antenna, complete the following steps:
- The AP should be turned on and configured.
- Open a Web browser and type in the AP IP address in the browser address box. This should bring up the AP Summary Status or home page.

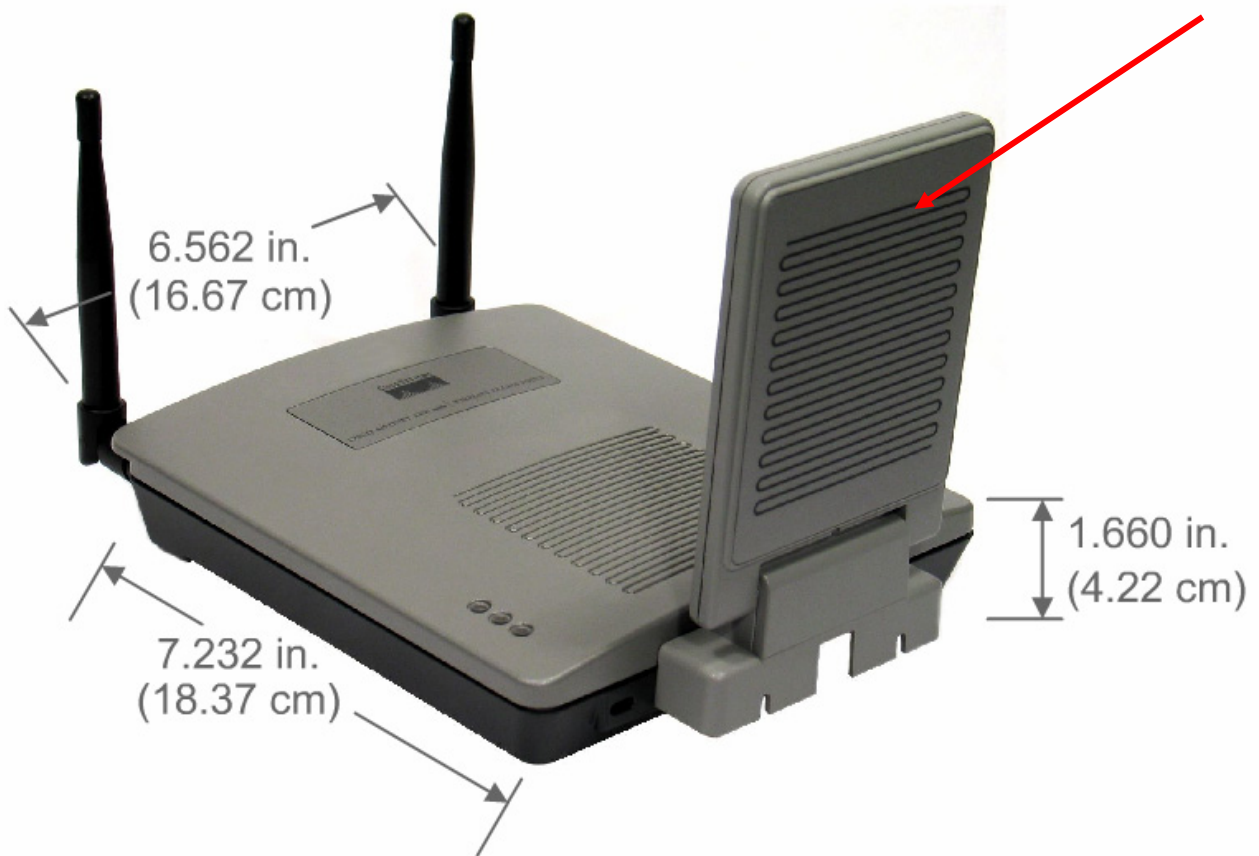
Receive Antenna:	<input checked="" type="radio"/> Diversity	<input type="radio"/> Left	<input type="radio"/> Right
Transmit Antenna:	<input checked="" type="radio"/> Diversity	<input type="radio"/> Left	<input type="radio"/> Right

- Check the Receive and Transmit mode of the antennas. Since two standard dipole antennas are being used on the AP, the Receive and Transmit antenna modes should be set to Diversity. This allows the AP to use the left or right antenna, depending on which is receiving the stronger signal.



- e. Double click on the Link Status Meter (LSM) icon on the laptop and note the signal quality and signal strength meter.
 - f. Move the laptop computer around the room and possibly the building to note any changes in the Link Status Meter. This will give an indication of the coverage area afforded this particular antenna configuration.
 - g. This lab is using an omni-directional antenna and should generate a radio signal uniformly in all directions.
 - h. Approximately how far is the indoor range of the AP (Meters or Feet)?
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- i. Experiment with changing the data rate on the AP. Were you able to extend your coverage range?
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Step 2 Omni-directional 5GHz patch (if available)



Total Weight = 26 oz (737g)

In order to set up the Cisco Aironet 5GHz Omni directional antenna, complete the following steps:

- Flip up the patch antenna perpendicular to the Aironet AP1200.
- The patch now operates in omni directional mode. The antenna is also dual diversity.