

Application Note: AeroGuard™ AP Installation Considerations

Tips to help you maximize the performance of your MIMO wireless LAN solution.

January 18, 2005

The following are recommendations for various topics related to designing and installing an AeroGuard™ MIMO wireless LAN solution. For specific details on configuring the AP, consult the Administrative User Guide on the CD provided. For additional site installation questions, contact SOHware technical support (support@sohware.com).

Topic Links:

[Antenna Performance and AP Orientation](#)

[AP Mounting Bracket](#)

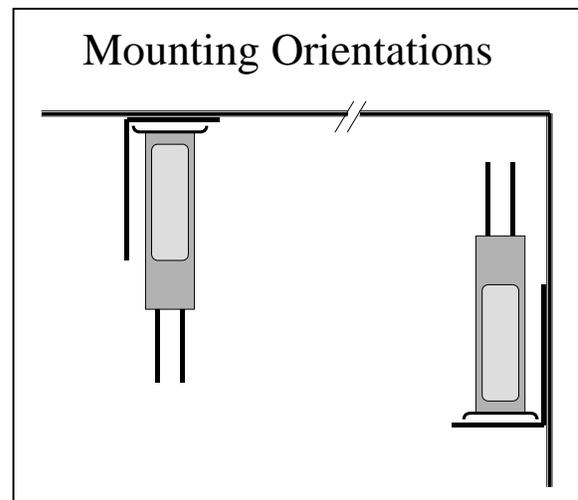
[Protective Enclosures – Type and Source](#)

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Antenna Performance and AP Orientation

To obtain the optimum performance from the AeroGuard™ MIMO AP, follow these guidelines when mounting the AP to a wall or ceiling:

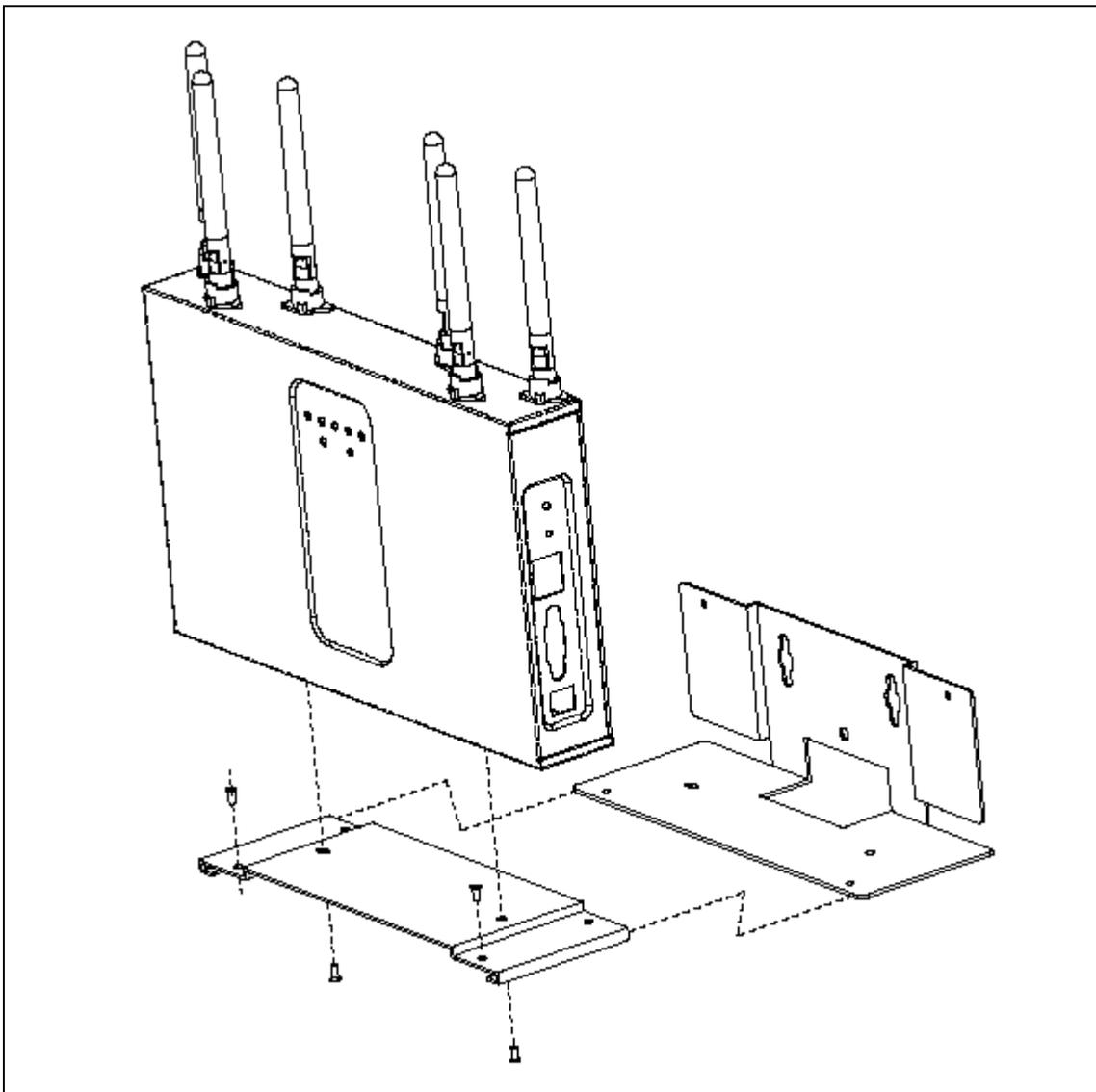
- Antenna positioning – the antennas are fully articulating to protect against damage from being struck during or after installation. For optimum RF connectivity however, the antennas should be fully extended straight out to obtain the best RF pattern distribution.
- AP orientation – position the AP in one of two orientations, either with the antenna top side facing up or facing down to maintain the positioning of the antennas in a vertical orientation.
- Antenna RF pattern – The antenna provides a horizontal omni-directional pattern and should not be positioned in a horizontal orientation.



AP Mounting Bracket

Each AeroGuard™ MIMO AP is shipped with a bracket assembly for mounting the AP to a wall or ceiling. The bracket includes two pieces; (1) the AP attachment plate, and (2) the mounting L bracket. Follow these guidelines for using the mounting bracket assembly:

- Mount the AP to the attachment plate using the screws provided, and aligning the holes in the plate with the threaded holes in the bottom of the AP.
- Mount the L bracket to the wall or ceiling in the desired location (note recommendations in “Antenna Performance and AP Orientation” above).
- Slide the attachment plate onto the L bracket and secure the assembly together with the screws provided. The L bracket includes two aligning holes with threads.



AGN1202 Access Point with Mounting Bracket Assembly

Protective Enclosures – Type and Source

There may be applications where you desire to protect the AeroGuard™ AP by mounting the device inside a box or other enclosure, such as in a public environment where it may be desirable to prevent unauthorized access. SOHware does not currently provide or specify an enclosure for use with AeroGuard™. However, we can provide basic guidelines to help you decide whether to offer an enclosure to your customer on your own, as follows:

- Note: SOHware cannot warrant the use of an enclosure with the AeroGuard™ AP, whether indoors or outdoors, and doing so is “at your own risk.”
- Materials of the enclosure should not obstruct RF signals. Plastics such as ABS, Lexan (polycarbonate), and polystyrene have been tested and found to attenuate RF at less than 8% typically.
- Size: the enclosure should accommodate the antennas in their fully extended position for best RF performance. The interior dimensions, therefore, should be a minimum of 11 x 11 x 3 inches for full clearance of the AP and antennas.
- Access for cables, including Ethernet and power input, should be easily accommodated. Some enclosures are designed for electrical junction box applications and include access “knock outs” for conduit.
- Outdoor vs. indoor locations: SOHware does not recommend locating the AeroGuard™ AP outdoors, even when inside a protective box. Temperature and humidity factors cannot be adequately controlled inside an enclosure and the AGN1200 Series AP is not designed for environmental extremes (see product data sheet for details).
- Example enclosure: Below is a photo of an example plastic enclosure that was found to have minimal RF attenuation, appropriate internal dimensions, and accommodations for cabling access. The source of this box is noted.

Source: Hi-Tech Controls

Model: Mi Series (Mi-0220)

www.hitechcontrols.com



Power over Ethernet

The AeroGuard™ AGN1200 Series AP supports both local D.C. input power (adapter included) and Power over Ethernet. This gives you flexibility in approaching an installation to support either a wired or wireless backhaul network design. For a PoE installation, please review the following guidelines to assist in the solution:

- The AGN1200 Series AP is fully 802.3af compliant.
- Pre-test the PoE injector: make sure to pre-test a PoE vendor's solution with the AeroGuard™ MIMO AP to make sure there is full compatibility. Having 802.3af compliance does not insure compatibility as some PoE vendors may modify their implementation to meet the requirements of specific AP vendors.
- SOHware's recommendation: SOHware has tested and confirmed that the following PoE vendor's injector is fully compatible with the AGN1200 Series AP:

Source: Red Hawk / CDT

Model: BL-8000 PowerSense Series

www.red-hawk.com



BL-8551HW Single Port

- Consult the manufacturers instructions regarding cabling, device location and other factors for installation.
- For Red-Hawk, select the model with the desired number of ports. Note, select the specific models that support "higher wattage" devices (ie, 20 Watts).



BL-8520 20 Port Chassis