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Frequently Asked Questions
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Intel® PRO/Wireless 2011B LAN Solution

Version 3.0

The latest version of this document can be obtained at
Intel(R) PRO/Wireless 2011B LAN Access Point Support Site
http://support.intel.com/support/network/wireless/pro2011B/accesspoint/

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Frequently Asked Questions

Will the PROSet/3.x software work with the 2011 PC Card?

Yes, the PROSet/3.x software will work just fine with the 2011 PC card, as well as the 2011B PC Card. New features of the 2011B products will be unavailable of course.

Will the 3.x firmware work with the 2011 Access Point?

No, the 3.x firmware not designed for use with the 2011 access point. Continued usage of the 2.x firmware is needed.

On the support web site I can't find 3.x firmware for the 2011B PC Card?

The 2011B PC Card's firmware in contained in the 3.x driver itself. It is automatically loaded into the PC Card each time the device driver is started. This precludes the need for a separate update process for the PC Card firmware. Should an updated firmware be released, it will be along with a new device driver.

Where can I find additional information regarding the difference between the 2011 and 2011B products?

On the support web site there is a document that provides a listing of feature and capabilities differences. Please refer to that document.

What is the practical range of the product?

The range of the system is virtually unlimited in practicality. By design, range of the system is extended via multiple Access Points (AP) arranged into an overlapping micro cell coverage arrangement - similar to the cellular telephone system. This allows for virtually unlimited range via roaming, maximum throughput, automatic load balancing, redundancy, minimized interference issues, and increased reliability.

The range of each AP with micro cell varies with physical objects and interference in the coverage area. The rated range is 1500' for line of site, open area, optimal conditions, and minimal throughput. Realistically, in a common office/business environment, each AP micro cell will have approximately a 200' range while maintaining optimal throughput. A bridging situation, such as building-to-building connectivity, may have a range of several hundred feet to thousands of feet with optional high gain antenna.

IP addressing recommendations

Utilize DHCP to automatically assign IP addresses and other configuration information to both the Access Point (AP) and the mobile workstation. The AP will automatically obtain an address from a DHCP server as well as act as a relay agent for the workstations so the workstations also automatically obtain an IP address. Note that the user may want to place each AP with an address reservation in the DHCP server to ensure they always maintain the same address. This provides easier access and maintenance via the built-in web server. If the user does not want to utilize DHCP, the user can of course manually assign the IP addresses in both the AP and the workstation.

Coverage problems - post installation

My wireless network previously worked just fine, and now it doesn't. So what's changed? Walls relocated? Have metal storage cabinets or fish tanks been introduced into the coverage area? Have other obstructions or reflectors moved or been introduced (i.e. Mylar birthday balloons)? It may be necessary to repeat a portion of your site survey and relocate or add additional APs or antennas

Will the signal travel through walls?

Yes, the signal will travel through many barriers including glass, cement, wood and brick.

What devices will cause interference?

Both Access Points and adapters operate in the unlicensed 2.4 Ghz band. Other items operating in this frequency range that can potentially cause interference are microwave ovens and 2.4 Ghz portable phones (not PCS or analog cell phones). PCS or analog cell phones do not operate at 2.4Ghz, so there is no interference issue with these products. A site survey and proper AP placement usually eliminates interference problems created by other 2.4Ghz devices.

What is the difference between Bluetooth and 802.11b?

Bluetooth is a 1 Mbps technology designed for the interconnection of devices that are in close proximity to one another: PDAs or handhelds to computers; notebooks to printers; and phones to headsets. The 802.11b products are a full Local Area Network (LAN) connectivity solution, designed to provide network transmissions at Ethernet data rates (10Mbps).

What is the real speed throughput?

802.11b data transmission provides is an 11 Mbps data rate. Actual throughput, however, will be less, just as 10 Mbps cabled Ethernet does not always provide 10 Mbps actual performance.

Transmission speeds vary with files size, number of users, or distance from the Access Point. Properly designed, a system can provide Ethernet like performance for users. As signal strength becomes reduced, automatic data rate reductions from 11 Mbps to 5.5, 2, or 1 Mbps will occur in order to maintain the connection.

What if I roam to another subnet across a router?

Mobile IP, an advanced feature from Intel, allows the user to roam another subnet via a router. You may want to consider implementing a VLAN and have all APs located on one VLAN

What optional antenna and other accessories are available?

The Power Over Ethernet Module centralizes power connections and provides power to access point over Ethernet cable and eliminates the need for a nearby AC power outlet.
See the accessories page
(http://www.intel.com/support/network/wireless/pro2011B/accesspoint/30665.htm) for antennas and recommendations.

Is this a shared or switched technology?

The Access Point is similar to a hub, which is a shared medium.

How can I manage the Access Points?

Access Points can be managed via a number of method: Telnet, SNMP, PPP, or the built-in web server via a browser. Please see the AP documentation on your CD or the support web site for details.

How do I place access points for optimal coverage?

Each AP will support up to about a 200' radius, depending on obstacles and interference issues. In order to ensure optimal coverage a site survey should be performed to determine the proper number and placement of APs. See the administrators and site survey manual for more details and the installation section of the support web site. The site survey software is included with every adapter and Access Point.

I cannot get a workstation to communicate with an Access Point?

All the usual troubleshooting techniques apply - it's still just a NIC, albeit wireless in topology. Please note that both the AP's and the workstation's ESSID numbers must match, and the WEP encryption options must be the same (enabled/disabled). If enabled, the encryption keys on the AP must match the keys on the adapter.

When I get out of range of an AP, what happens?

Roaming is supported to automatically hand off workstations from one AP to another AP as the user moves from one area to another; this roaming capability ensures that the connection from one AP to another AP is not dropped. Should a user roam beyond the reach of an AP, then the network is suspended, and the network connection will resume once the user returns to the range of the nearest AP.

Do wireless adapters consume a lot of power on my laptop?

The Power Save Protocol (PSP) on the AP or adapter provides excellent throughput while minimizing power consumption.

What is the physical connection to the wired network?

Each 2011B AP has a 10/100 Ethernet connection, which allows communication with either a 10 Mbps or 10/100 Mbps hub or switch. With multiple APs, just as with multiple wired hubs, each being plugged into a switch port would enhance performance by creating an individual Ethernet collision domain for each AP.

What are the communication parameters and the cable type for the serial interface into the AP?

The communication parameters are 19200, none, 8, 1. The cable for the AP is a DB9F-DB9F null wired.

Does the AP have a default IP address?

The default IP address of the 2011B AP is 192.0.2.1

Why would I want an antenna other than the antenna provided with the Access Point?

Installation Flexibility & Custom Coverage:

- Cosmetics – placing the AP in an unobtrusive location or ceiling
- Longer line-of-site range via usage of directional antennas
- Building(s) to Building bridging, utilizing directional or high performance antennas – note that point-to-point or multi-point bridging is supported
- Improved coverage (larger area, shape of area, etc.) via directional or high performance antenna
- System reliability – placing the AP in a ceiling or other out of the way location

- Reduction of interference by limiting or controlling the coverage pattern
- Hostile environments – for example, to provide wireless capabilities inside a refrigerator cooler, the AP is mounted outside the cooler, the antenna is mounted inside
- Manufacturing or warehousing- when performing inventory checks, the user may want his/her handheld to transmit data over the LAN, and specialty antennas placed throughout the manufacturing plant or warehouse improves transmission

Are there any known health issues caused by RF transmission?

There is no conclusive evidence, to date, that radio waves from the 2.4 Ghz range pose any health issue. Although wireless LAN devices operate at the same frequency as microwave ovens, wireless access points and adapters at 2.4Ghz emit a power signal of 100mW, less than other 2.4Ghz products (such as microwave ovens or cordless phones).

Are there notebook computers available with integrated wireless adapters? Will these computers work with the Intel® PRO/Wireless LAN Access Point?

Several computer manufacturers are offering integrated 802.11b wireless adapters as an add-on option. If the integrated adapter is WiFi* ™ certified, the adapter should interoperate with the Intel® PRO/Wireless Access Point.

Does the Intel® PRO/Wireless LAN Access Point support bridging of two or more Ethernet LANS?

Yes, each Access Point can support either a point-to-point bridging situation, or a multi-point bridging situation of up to four remote locations. This is accomplished by enabling the WLAN mode in the Access Point.

Does the Intel PRO/Wireless LAN Access Point support repeating?

Yes, the Access Point can connect to another Access Point via the WLAN mode. This may be useful for situations where it is impossible or impractical to have a wired Ethernet connection to an AP.

In WLAN mode, can the Access Point still associate with and support wireless workstations?

Yes, it can. As with any LAN device, be aware of data traffic loads placed by the combination of bridged traffic and local traffic. You may want to dedicate a pair or a set of Access Points to support the bridging function.

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What is the WLAN priority setting?

Each Access Point used in a WLAN configuration must have a different priority setting. The Access Point with the lowest setting will be the ROOT Access Point. The ROOT Access Point is the master, or controller, of the set of WLAN Access Points. If the user is configuring a WLAN to act as a repeater, the ROOT Access Point should be the AP connected to the wired Ethernet LAN. In a multi-point bridging situation, the ROOT should be the common or central point Access Point.

What is the maximum number of users in Ad Hoc (peer-to-peer) Mode?

This feature allows computing devices to connect with each other without communicating through an access point. The logical limit is 256, however, the type of applications and data, range between peer workstations, and so forth determines the practical limit. As is typically recommended for a wired peer-to-peer network, a maximum of 10 devices is common – with perhaps 20 to 24 if the usage allows. However, with your specific situation, a number more or less, may be the practical limit.

Can the access point attach to a hub, switch, or router?

For larger systems with a large number of AP's, or where users desire to roam across router boundaries, a switch and a VLAN implementation would be recommended - a separate VLAN for all the APs. This eliminates the issues of Mobile IP. Also with a larger number of users and APs, a switch connection provides a single collision zone for each AP, thus providing improved performance.

Connection to a hub is of course okay, easy and economical for smaller to medium installations.

Connection to a router is fine if, for example, the AP is the only infrastructure device in a remote office. All the workstations then connect to the main office via the router.

How can I reset the AP if I cannot gain access via Telnet, web server, or cable connection to the unit?

To reset the AP, remove power from the AP. Short jumper pins 2&3 together on the DB9 connector. Reapply power and allow the AP to fully initialize (the leftmost green light will be illuminated). Remove power and remove the jumper. Reapply power and when the AP initializes again, and the AP will be reset. Note: you may want to make up a "shorting plug" with a DB9 connector to make this easy to accomplish.

What if other vendors' wireless adapters will not communicate with the Intel® PRO/Wireless LAN Access Point? (e.g. The Intel AP

appears in the known AP list but the adapter will not associate with the AP or pass data)

Remedy: In the Intel Access Point, on the RF parameters screen, set the SHORT RF PREAMBLE parameter to DISABLE. Reset the Access Point.

The preamble is approximately 8 bytes of the packet header generated by the AP and attached to the packet prior to transmission. The short preamble is 50% shorter than the long preamble. Thus, disable the short preamble feature, and use the standard preamble length in a mixed hardware network for interoperability.

Do rated power consumption variances between different manufacturer's wireless PC Cards really make a difference in real battery life on a notebook computer?

No, the differences are typically inconsequential. For example: For a mini-notebook, average power for the entire platform is ~ 9.5W. So a .07 watt difference is less than 1% of the overall power usage of the computer. And for a regular notebook, average power for the entire platform is ~20W, where the same .07 watt difference would be 1/2%.

With the Intel® PRO/Wireless LAN PC Card, the user can easily select five levels of the PSP (Power Saving Protocol), making the card "sleep" during periods of inactivity. This greatly reduces the overall power consumption of the card.

Is the Intel® PRO/Wireless LAN Access Point plenum rated for installation in plenum type ceilings?

Yes, the 2011B Access Point is rated for installation in Plenum ceilings.

Where can I find the MAC address of the Access Point?

The system summary screen displays the MAC address. The unit's serial number, located on the bottom of the Access Point, is also the MAC address.

I can't get the PC Card drivers working with Windows 95a?

Windows 95a requires an NDIS-3 driver, which is not supported. Upgrade to Windows 95b or other later version of Windows, which will use the available NDIS-4 or NDIS-5 driver.

Having difficulty saving parameters in the Access Point?

You press SAVE [F1] to save parameter changes, reset the AP - but then nothing is changed when the AP comes back up???

Ensure when you press SAVE [F1] that you are prompted for a yes/no confirmation. If not, for some reason your F1 function key is not working properly with your telnet session or ASCII terminal configuration. Alternate method: use the tab key or arrow keys to highlight the SAVE [F1] selection, then press enter. You should be prompted for confirmation, tab or arrow to YES, and press enter.

Save All APs [F2] updates some, but not all APs.

The save to all APs function will save all parameters preceded with a period to all APs – given that the ESS-ID and the major revision number of the firmware in the AP's are all the same. An example of major revision number being different would be 2.00-xx vs. 2.20-xx.

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