



## POSITIONING STATEMENT

# 802.11a and 3Com

3Com has established itself as a leading provider of 802.11b wireless LAN (WLAN) equipment. Our 802.11b product portfolio addresses security, manageability, scalability, ease of use, standards compliance, location-based usage scenarios, and affordability. Our ability to successfully meet these customer needs is a major reason why our 3Com® 11 Mbps wireless LAN solutions have been so well received in the industry.

In addition, 3Com's leadership position in driving IEEE standards and wireless LAN industry consortiums like Wireless Ethernet Compatibility Alliance (WECA) is well recognized. Chaired by 3Com, WECA certifies the interoperability of 802.11b components for Wi-Fi certification. To receive this certification, products must pass stringent interoperability and performance tests. Users who purchase Wi-Fi certified products are assured interoperability with other Wi-Fi certified products—regardless of manufacturer.

As a leading WLAN equipment supplier, 3Com is committed to providing end users with solutions for bandwidth-hungry wireless LAN applications. To that end, 3Com will be introducing 5 GHz (802.11a) solutions in mid-2002. Our goal will be, as it always is, to minimize market and technology risks through managed deployment of such solutions.

## 802.11a vs. 802.11g

When looking to boost the data transfer rates for the wireless portions of your network, you now have two new technologies on the horizon: 802.11a and 802.11g. Both are standards-driven and industry-acknowledged.

Operating in the 5 GHz band, the 802.11a specification provides for data rates up to 54 Mbps. As it works in a different frequency range than 802.11b networks, it is wholly incompatible with Wi-Fi networks, though it can coexist without interference risks.

The 802.11g standard, on the other hand, was designed to enhance the performance and possible application of 802.11b networks. Operating in the 2.4 GHz band, it increases the data rate of Wi-Fi type devices above 20 Mbps.

## 3Com's Wireless LAN Direction

In an effort to meet customers' need for higher throughput, 3Com intends to provide solutions based on 802.11a high-speed wireless technology, while continuing to leverage the rapid adoption and installed base of existing 802.11b networks. However, scalability with existing 802.11b and upcoming 802.11g technology

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deserves further investigation. 3Com is currently in the process of working out details and guidelines to ensure peaceful coexistence with and smooth deployment of 802.11b and 802.11a WLAN equipment.

Current 802.11a products come from a single chip set supplier. Until WECA standards are established, there is no assurance that these products will operate with those based on chip sets from future suppliers.

For sites with installed 802.11b networks, users should be aware that 802.11a can coexist with 802.11b technology. However, this scenario requires separate radios for these two markedly different technologies—leading to inconvenience and added infrastructure cost burden that may result as additional 802.11a access points are added for optimum coverage.

### Range and Power Limitations

First-to-market 802.11a implementations are expected to have a considerably shorter range than current 802.11b systems (approximately 50 percent that of 802.11b systems). Since price points for 802.11a solutions are expected to be equal to or greater than those for 802.11b units, costs for supporting the same mobility distances that 802.11b users currently enjoy will be appreciably higher.

Higher signal absorption, lower multipath resistance, and higher attenuation than 2.4 GHz-based networks diminish signal strength in a variety of environments. Equipment vendors must address the signal strength issue, as well as the access point density difference for both technologies.

Power consumption is another factor that differentiates 802.11b and 802.11a technologies. Higher data rates and increased signal requirements of 802.11a will inherently require more power, presenting an added burden on the battery life of notebook PC platforms.

### Deployment Considerations

Currently, there is no interoperability certification available for 802.11a products. The present state of 802.11a technology and this lack of certification standards limit its usage to specific applications such as high-speed links for outdoor LAN-to-LAN bridging, where there is no intention of a possible mixed 802.11b/802.11a network environment.

WECA currently has more than 170 Wi-Fi certified vendors supporting 802.11b technology. 802.11a, currently a standard, and 802.11g, not yet a standard, are relatively new technologies and demand cautious user evaluation for any wide-scale deployment.

Also, only North America has approved the 802.11a frequency spectrum. The European Telecommunications Standards Institute (ETSI) has yet to approve the spectrum. ETSI insists on additional features from WLAN equipment providers, which none of the current 802.11a product offerings from other vendors adhere to. Plus, Europe's competing HiperLAN2 standard has been developed for high-speed wireless networking in the 5 GHz band. Thus, global deployment for 802.11a technology is not currently feasible. Commitments from equipment providers are primarily exhibiting a support for the technology and may not necessarily support the wide-scale business viability of such technology.

3Com is actively developing a scalable platform, which accommodates both existing and higher data rate technologies

802.11b has wide-scale usage scenarios ranging from office settings and home environments to public access. However, it will take significant time before users will see widespread deployment and mobility of higher data rate WLAN technologies, be it 802.11a or 802.11g.

3Com plans to provide 802.11a standards-based products by mid 2002, while protecting our customers' 802.11b investment. In addition, this platform will provide enhanced standards-based security via such technologies as 802.1x and 802.11i.

## Conclusion

3Com anticipates coexistence between 802.11b and 802.11a networks, and is fully committed to support and deliver higher data bandwidth WLAN technologies. 3Com intends to ensure that specific issues are well addressed and resolved, when we unveil higher data bandwidth wireless LAN solutions. Some of these key issues include enterprise security, standards adherence, 802.11a coexistence with 802.11b, scalability from 802.11b to 802.11g, 802.11a standards compliance, affordability, and 802.11g standards closure.



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102013-001 11/01