



FREQUENTLY ASKED QUESTIONS

Wi-Fi™ and HomeRF™ Wireless Home Networks

Q. What are Wi-Fi and HomeRF?

A. Wi-Fi and HomeRF are different radio-based technologies for wireless home networking. Both use radio signals in the 2.4 GHz frequency band to wirelessly link computers, communications, and entertainment systems throughout the home, and allow users to share an Internet connection. While there are many similarities between these two systems, significant differences in their performance and state of development bear close investigation by careful consumers.

Q. Where do the two systems come from?

A. Wi-Fi systems are built to comply with specification 802.11b, the Institute of Electrical and Electronic Engineers (IEEE) global standard for high-rate wireless local area networks. 802.11b has been widely accepted by business and industry as the preferred technology for adding wireless extensions to corporate networks, and is rapidly gaining support as a high-performance home networking solution. Wi-Fi is short for Wireless Fidelity, and comes from the Wi-Fi certification awarded by the Wireless Ethernet Compatibility Alliance (WECA), an industry group dedicated to promoting interoperability among 802.11b products.

HomeRF is a more recent standard, developed exclusively for home networking equipment and promoted by the HomeRF Working Group, whose members are beginning to market equipment built to their standard.

Q. How does the performance of the two systems compare?

A. HomeRF systems provide a range of up to 150 feet and data transfer rates up to 1.6 Mbps, and require approximately 125 mWatts of transmitted RF power. Through the use of very sensitive receivers, Wi-Fi systems link devices at distances up to 330 feet, provide data transfer rates up to 11 Mbps, and use only 30 mWatts of transmitted RF power.

Q. What do these numbers mean to me?

A. In the new digital home—the household with high speed, broadband Internet access and a growing collection of information and entertainment systems in simultaneous use—speed is essential. When Dad prints a proposal in the home office while Junior plays on-line games in the living room, his sister searches the university library from her bedroom, and Mom downloads a dinner recipe at the refrigerator door, network

speed is as important to the home as it is to any business. Add to this the swelling tide of streaming media, with new opportunities to view, listen and access anywhere and anytime, and it seems obvious that the need for home speed is likely to grow apace. Wi-Fi home networking systems feed that need with nearly four times the data rate and twice the operating range of Home RF, using only a quarter of the radio power.

Q. Are Wi-Fi and HomeRF systems compatible?

A. Wi-Fi and HomeRF systems will not work together, and may even cause interference if used in close proximity. Wi-Fi systems, because they are based on a global engineering standard and are widely deployed in corporate networks, offer a high degree of compatibility among products of different manufacturers and between home and workplace systems. WECA currently has 68 active member firms committed to testing their products and guaranteeing interoperability among Wi-Fi networks and components. Thus home users have a wide choice of products certified to work together in home applications and be fully compatible with most wireless corporate networks. For business people who routinely use a notebook PC in both home and office workspaces, having Wi-Fi systems compatible with both environments is essential. At this writing there are 66 Wi-Fi certified products available to consumers.

By contrast, only a small handful of manufacturers actually produce HomeRF systems. Because the HomeRF standard was designed exclusively for home use, products that comply with it will not work in most corporate wireless environments.

Q. What developments are in progress for Wi-Fi and HomeRF networks?

A. Two expansions of the 802.11b standard are currently in development. The first, intended for release sometime in the next 12 to 24 months, will increase the speed of Wi-Fi networks from the current 11 to 22 Mbps. The second expansion targets a capacity of 54 Mbps.

A recent FCC ruling has approved changes in the radio operation of HomeRF systems that may allow transfer speeds as high as 10 Mbps. One manufacturer has announced plans to offer products based on the expanded HomeRF standard, which should be available sometime in late 2001.

Q. What were the key points of the FCC decision on wideband frequency hopping, and what effect will they have on HomeRF and Wi-Fi systems?

A. The FCC changed several of the rules governing the design of frequency-hopping spread spectrum (FHSS) radios. It increased the maximum bandwidth of the channels on which an FHSS radio may operate, and reduced the transmission power of radios using the wider channels. It left unchanged rules limiting the maximum hop rate, and restrictions on overlapping channels.

The exact effect of these changes is not yet clear, but it could eventually allow manufacturers of HomeRF wireless systems to achieve data transfer rates in the 10 Mbps range, albeit at higher price points than the systems currently available. It may also increase the incidence of interference between Wi-Fi and HomeRF systems, but until high-rate HomeRF radios become available, the severity of that problem is difficult to ascertain.

Q. Is either system likely to become a prevailing standard for home wireless?

A. While a period of competition seems certain, Wi-Fi wireless networking systems are increasingly recognized as the leader. Wi-Fi products offer home users greater speed and capacity today than will be available from HomeRF components a year from now. Home users can currently purchase more than 65 Wi-Fi certified products from manufacturers that include 3Com, Cisco, Lucent, IBM, Intel, Nokia, Compaq, Samsung, Sony and many more. These products are compatible in both home and office environments, and their manufacturers benefit from the production economies of established commercial markets. Wi-Fi products are widely used in corporate networks and are being deployed for network access in a growing number of hotels, airports and other public areas. Unlike HomeRF, Wi-Fi systems enable the user to use the same technology at work, at home, and in many environments in between. In short, Wi-Fi wireless networks offer home users the most compelling combination of superior current performance and long-term investment security.

Wi-Fi is a trademark of the Wireless Ethernet Compatibility Alliance. HomeRF is a trademark of the HomeRF Working Group.

More information is available at www.wi-fi.org.



3Com Corporation, Corporate Headquarters, 5400 Bayfront Plaza, Santa Clara, CA 95052-8145

To learn more about 3Com solutions, visit www.3com.com. 3Com Corporation is publicly traded on Nasdaq under the symbol COMS.

Copyright © 2000 3Com Corporation. All rights reserved. 3Com is a registered trademark of 3Com Corporation. The 3Com logo is a trademark of 3Com Corporation. All other company and product names may be trademarks of their respective companies.

Printed in the U.S. on recycled paper.

100877-001 11/00