



HomeRF Imagine a World Without Wires

A world where you can...

Enjoy the integration of cordless data and voice, taking full advantage of a broadband connection.

Wireless Telephone Communications



Experience the freedom of wireless Internet access and printer sharing in and around your home or small office.

Wireless Data Networking



Simultaneously access another PC or Internet gateway, listen to your favorite music, and watch streaming media from anywhere without wires.

Wireless Entertainment



Key Messages

1. Designed for homes and small offices, so certified products are Simple, Secure, Reliable, and Affordable
2. Ideally suited for broadband services with a unique ability to integrate Voice, Data and Entertainment
3. Extending home and small office networking with 10Mb/s performance, up to 8 phone lines, audio/video streaming, and standardized roaming

What is HomeRF?

In simple terms, HomeRF™ is the next step in wireless networking – a way to connect PCs, peripherals, cordless phones, stereo systems, televisions, and other consumer electronic devices so they can “talk” with each other to share resources and access the Internet. HomeRF makes advanced networking possible without the expense and complexity associated with running wires.

In more technical terms, HomeRF is an open industry spec that combines several industry standards so a variety of devices can share and communicate voice, data and streaming media in and around the home or small office. HomeRF-compliant products operate in the license-free 2.4 GHz frequency band and utilize frequency-hopping spread spectrum RF technology for secure and robust wireless communications.

Only HomeRF provides simultaneous support for up to 8 toll-quality voice connections, 8 prioritized streaming media sessions and multiple Internet and network resource connections at Broadband speeds. And HomeRF accomplishes this with excellent comparative ratings for low cost, small size, low power consumption, interference immunity, and security.

Unlike networks designed for enterprises, HomeRF does not require a network administrator to “tune” the network and add security measures. Its design lets HomeRF scale upward to support high network density environments such as apartments and small businesses where neighboring networks and interfering devices are likely to be nearby.

HomeRF Technical Summary

- Frequency: 2.4 GHz ISM band (available globally)
- Speed: 10 Mb/s peak data rate in 2001, going to 20+ Mb/s in 2002 and potentially reaching 100 Mb/s later, with the ability to back off to 5 Mb/s or lower to extend the range or maintain backwards compatibility with first generation HomeRF products operating at 1.6 Mb/s
- Range: Up to 50m radius covers a typical home and yard with just 100 mW of transmission power
- Radio Technology: Digital Frequency Hopping Spread Spectrum, hopping 50 times per second
- Data Networking: Unlimited peer devices; CSMA/CA technology derived from OpenAir and IEEE 802.11
- Voice Networking: 4-8 high-quality full-duplex voice connections; TDMA technology derived from DECT
- Entertainment Networking: Quality-of-service support for up to 8 prioritized media streaming sessions independent of data and voice
- Industry Leading Security: Frequency Hopping, plus 24-bit network ID, plus 128-bit encryption
- Interference Immunity: Adaptive frequency hopping even in the presence of severe interference from microwave ovens, cordless phones, Bluetooth devices and nearby neighbors avoids two consecutive hops into RF interference.
- Roaming: Supports low cost roaming into HomeRF/OpenAir networks in public places

HomeRF Future

HomeRF was designed from the beginning for consumer households to enable the sharing of dial-up and broadband connections to the Internet. Today's 1.6Mb/s HomeRF performance is more than adequate for this purpose and will encourage more rapid deployment of broadband services to PC users. We will continue to see growth in multiple-PC households, demand for shared Internet access, and deployment of service bundles over broadband networks. This will drive the development of new products and services that allow users to find, create, consume, and communicate information, whenever and wherever they want.

HomeRF 2.0 10Mb/s performance is designed for digital entertainment streaming, integrated telephony, and other new and higher-bandwidth applications, devices, and services. HomeRF 3.0 products will operate at over 20Mb/s by the end of 2002 -- all with backwards compatibility to ensure that HomeRF products purchased today will operate with more advanced versions yet to come. Some examples of what users will be able to do with products that adhere to the HomeRF protocol specification include:

- Access the Internet from anywhere in and around the home or small office from portable display devices and share resources and ISP connections between PC's and other new devices
- Set up a wireless home network to share voice, data and media between PC's, peripherals, enhanced cordless phones, and new devices such as enhanced PDAs and web tablets
- Use PCs or music servers to manage digital formats and Internet radio broadcasts for wireless distribution to home stereos (or cars entering the garage).
- Watch Internet-based video-on-demand, giving consumers access to thousands of TV programs that can be viewed at any time and paused in the middle.
- Play with multi-player games and/or toys based on PC or Internet resources
- Establish a universal mailbox for voice, email, pager and fax, with the ability to review contents from handheld devices and forward to remote locations. Forward calls and messages to multiple cordless handsets, FAX machines and voice mailboxes
- Receive voice services over broadband networks with cordless voice dialing and voice access to Internet, PC and home control applications - all with PC-enhanced phones.

HomeRF Working Group

The HomeRF Working Group is a non-profit organization consisting of industry leading companies from the personal computer, consumer electronics, peripherals, communications, software, and semiconductor industries. It started with a shared vision of home networking and a deep-rooted understanding of market needs, derived from extensive Ethnographic Market Research by anthropologists, psychologists, and sociologists who met with families in their homes.

When it was discovered that no existing technology could meet market requirements, the group combined "best in class" technologies to form the HomeRF specification. Accordingly HomeRF blends technologies from several worldwide standards. Data networking technologies based on CSMA/CA protocols (essentially wireless Ethernet) were derived from the OpenAir and IEEE 802.11 standards, and cordless phone technologies based on TDMA were adapted from DECT. DECT is the Digitally Enhanced Cordless Telephone standard that is widely used across Europe but not available in Asia or the Americas because it uses a frequency band that has been set-aside for other purposes. HomeRF combines these technologies using the license-free 2.4 GHz frequencies that are available worldwide, an exciting prospect for makers of cordless phones who see HomeRF as the Global DECT standard.

Wireless is an obvious solution for a home networking market that is limited so far by the cost and complexity of adding new wires and being unable to easily move about with portable devices. The mass market, however, is confused by an array of incompatible standards, most of which only handle data applications. The HomeRF specification is expected to break through these barriers by (1) providing the flexibility and mobility of a wireless solution that handles voice, data and entertainment; (2) enabling interoperability between consumer devices available from numerous manufacturers; and (3) making it easier for carriers to offer integrated service bundles.

The current mission is to establish the mass deployment of interoperable wireless networking access devices to both local content and the Internet for voice, data and streaming media in consumer environments. The Working Group is dedicated to developing new and emerging wireless networking products that are simple, secure, reliable and affordable to consumers.

Since 1998 when the HomeRF Working Group was announced, its membership has grown to exceed 70 and continues to expand to include nearly all of the leading consumer electronics companies. This helps ensure that the spec remains complete and robust and that consumers benefit from a wide variety of innovative and interoperable devices for use in and around their homes and small offices.

Membership Benefits

Membership in the HomeRF Working Group is open, and companies are encouraged to get involved, put their ideas into action, share their industry experience, and help speed market development and industry-wide acceptance of the HomeRF protocol specification. You too can get in line with the wireless world's most capable and promising technology. To accommodate the specific goals of industry participants, the Working Group has created a range of membership levels. Benefits vary depending on your degree of commitment and include:

- Subscribe to member communications and news clip service
- Obtain HomeRF market research, market requirements, adopted specs, competitive analysis, usage models, and marketing collateral from the members-only Web site
- Gain access to the HomeRF IP pool, reference designs, and training
- Participate in general member meetings, working groups, tradeshow, speaking opportunities, press & analyst meetings, press releases, newsletters, brochures, presentations, white papers, videos, and Web site promotions
- Review, comment on, and contribute to future HomeRF specifications

Visit www.homerf.org or www.europe.homerf.org for more information about HomeRF and member benefits.