HomePlug 1.0

Proponent: HomePlug Powerline Alliance, 40+ members. Formed in April by 13 companies, including 3Com, Cisco, Compaq, Diamond Multimedia, Intellon, Motorola, Panasonic, RadioShack.

Type: Power-line-based standard for distributing broadband Internet access throughout home and sharing data, voice, audio, video among products within home. Final spec due by year's end, based on Intellon PowerPacket technology.

Target markets: Initially SOHO and multi-PC households, with A/V product potentially at later date. Home automation (such as lighting, air conditioning control) not a primary target because multiple, lower-cost, lower-speed power-line technologies such as X-10 are already in use.

Applications: Initial driving app will be broadband Internet gateways that let multiple PCs share Internet access while sharing files and peripherals, said HomePlug secretary Dave Martella, also RadioShack's VP of emerging technologies. In-house networked gaming and wide-area-networked gaming via Internet also possible.

Next generation could include set-top boxes for TV-based Web surfing and home audio components that connect to the Internet gateway to download/stream Web-based audio. Such audio devices could connect via power lines to remote amplified speakers.

Later-generation home security systems could distribute security-camera video throughout house or via Internet to remote PC.

Due to initial cost, last products to get technology will be Internet-accessing appliances such as microwave ovens and refrigerators. (Intellon estimates initial $100 cost at retail to add technology to products, based on volume shipments of enabling chipsets.) Proponents envision refrigerator-based Web pads and home phones that check e-mail, microwaves that download recipes.

Capabilities: Proprietary power-line technologies have been available for years, but average data rates of about 7.5 Kbps limit primarily to issuing simple function commands such as on/off. Some remotely monitor product's status and, for air conditioning, a room's temperature.

HomePlug specifies minimum gross data rate of 10 Mbps for an effective throughput of 5 Mbps or more. Intellon's PowerPacket technology, however, already delivers 13.75 Mbps data rate and throughput of about 7.5 Mbps; it's scalable to higher rates, and though Intellon hasn't announced a time frame for implementation, the company said it's confident of a 100 Mbps rate.

With net throughput of about 5 Mbps, Intellon said, first-generation products would allow broadband modem sharing; multiplayer network gaming; and dozens of simultaneous streams of 128 Kbps MP3 audio served up from a PC's hard drive or hard-drive-based audio component.

Also supported: multiple streams of uncompressed 1.2 Mbps CD audio to HomePlug-compliant amplified speakers, and one compressed video program with MPEG1 (VCR-like) quality at about 4 Mbps.

Intellon has tested the technology in homes up to 7,000 square feet in size with limited data rate drop-offs; will share power lines with existing technologies such as X-10 without interference as it operates in a different frequency band.

Product availability: Intellon plans production-level chip quantities in Q3, allowing for first PC-oriented products in early 2001. The first products will probably be home Internet gateways.

Website: www.homeplug.org