Home network

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ITU-T Home networking Recommendations	
Common Name	**Recommendations**
HomePNA 2.0	G.9951, G.9952, G.9953
HomePNA 3.0	G.9954 (02/05)
HomePNA 3.1	G.9954 (01/07)
G.hn/HomeGrid	G.9960, G.9961
G.cx	G.9972
G.hnta	G.9970

A **home network** or **home area network** (**HAN**) is a residential local area network. It is used for communication between digital devices typically deployed in the home, usually a small number of personal computers and accessories, such as printers and mobile computing devices. An important function is the sharing of Internet access, often a broadband service through a cable tv or Digital Subscriber Line (DSL) provider. Additionally, a home server may be added for increased functionality.

More recently telephone companies such as AT&T and British Telecom have been using home networking to provide triple play services (voice, video and data) to customers. These use IPTV to provide the video service. The home network usually operates over the existing home wiring (coax in North America, phone wires in multi dwelling units (MDU) and powerline in Europe). These home networks are often professionally installed and managed by the telco. The ITU-T G.hn standard, which provides high-speed (up to 1 Gbit/s) local area networking over existing home wiring (power lines, phone lines and coaxial cables), is an example of a home networking technology designed specifically for IPTV delivery.

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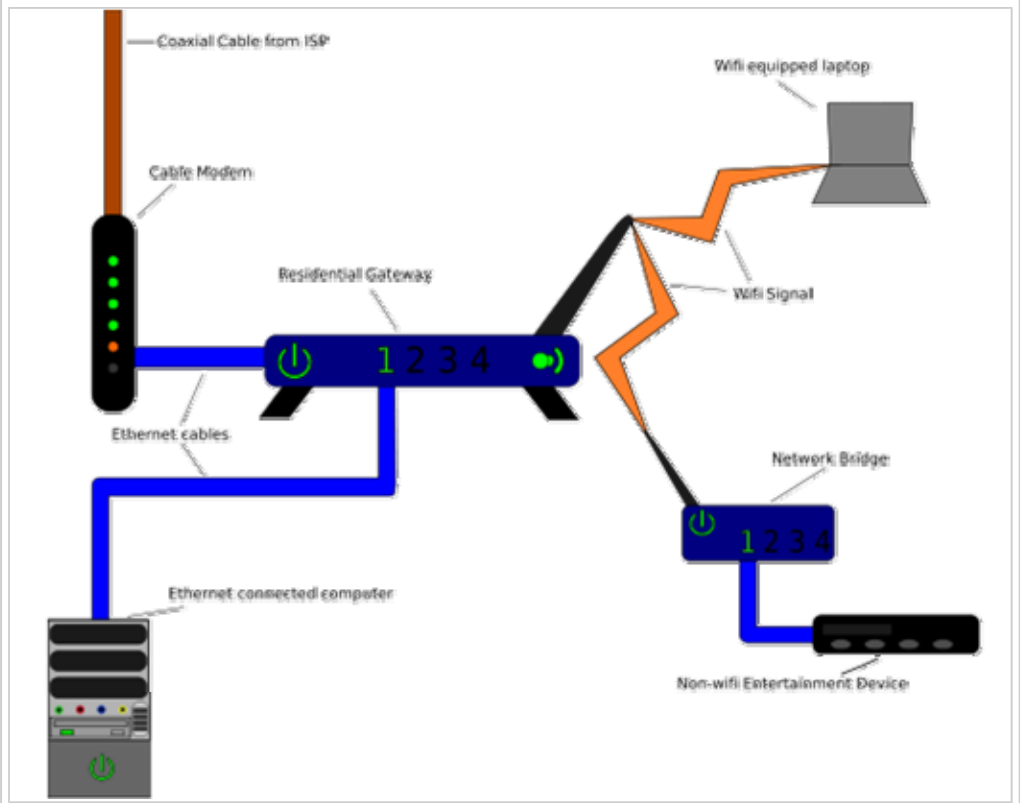
Network devices

A home network may consist of the following components:

- A broadband modem for connection to the internet (either a DSL modem using the phone line, or cable modem using the cable internet connection).
- A residential gateway (sometimes called a router) connected between the broadband modem and the rest of the network. This enables multiple devices to connect to the internet simultaneously. Residential gateways, hubs/switches, DSL modems, and wireless access points are often combined.
- A PC, or multiple PCs including laptops
- A wireless access point, usually implemented as a feature rather than a separate box, for connecting wireless devices
- Entertainment peripherals - an increasing number of devices can be connected to the home network, including DVRs like TiVo, digital audio players, games machines, stereo system, and IP set-top box.
- Internet Phones (VoIP)
- A network bridge connects two networks together, often giving a wired device, e.g. Xbox, access to a wireless network.
- A network hub/switch - a central networking hub containing a number of Ethernet ports for connecting multiple networked devices
- A network attached storage (NAS) device can be used for storage on the network.
- A print server can be used to share printers among computers on the network.

Older devices may not have the appropriate connector to the network. USB and PCI network controllers can be installed in some devices to allow them to connect to networks.

Network devices may also be configured from a computer. For example, broadband modems are often configured through a web client on a networked PC. As networking technology evolves, more electronic devices and home appliances are becoming Internet ready and accessible through the home network. Set-top boxes from cable TV providers already have USB and Ethernet ports "for future use".



An example of a simple home network

Network media

Ethernet cables are the standard medium for networks. However, homes are often more difficult to wire than office environments, and other technologies are being developed which don't require new wires.

Home networking may use

- Ethernet Category 5 cable, Category 6 cable - for speeds of 10 Mbit/s, 100 Mbit/s, or 1 Gbit/s.
- Wi-Fi Wireless LAN connections - for speeds up to 248 Mbit/s, dependent on signal strength and wireless standard.
- Coaxial cables (TV antennas) - for speeds of 270 Mbit/s (see Multimedia over Coax Alliance or 320 Mbit/s see HomePNA)
- Electrical wiring - for speeds of 14 Mbit/s to 200 Mbit/s (see Power line communication)
- Phone wiring - for speeds of 160 Mbit/s (see HomePNA)
- Fiber optics - although rare, new homes are beginning to include fiber optics for future use. Optical networks generally use Ethernet.
- All home wiring (coax, powerline and phone wires) - future standard for speeds up to 1 Gbit/s being developed by the ITU-T (see G.hn)

Ethernet and Wireless are the most common standards. As the demand for home networks has increased, the other alliances have formed to produce standards for networking alternatives.

See also

- Home server

- WikiBooks:Transferring Data between Standard Dial-Up Modems

External links

- Home Network Help Site