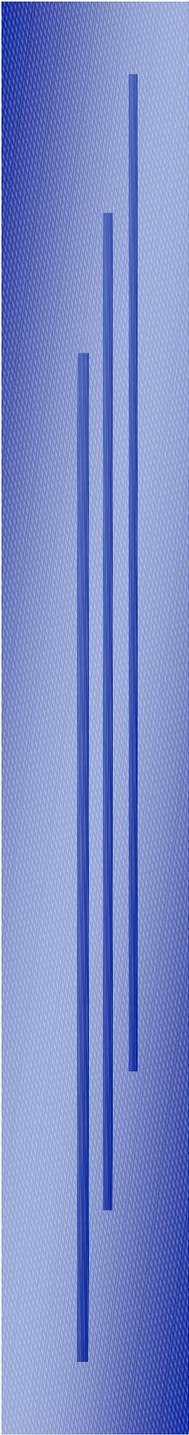


HomePNA Solutions

Chipset manufacturers & OEM Vendors
Product Portfolios



Chipset Manufacturers

Intel Corp, Tut Systems, Broadcom Corp,
Conexant Systems, Lucent Microelectronics,
AvioDigital

Broadcom Corporation

- ◆ Made its home networking entry through the Epigram acquisition in April 1999
 - Founding member of HomePNA
 - Creates silicon for consumer devices
 - Technology is being licensed by Lucent and other giants
- ◆ Supplies BCM4210/BCM4100 “iLine10” chipsets
 - Complete host bus to phone wire solution for home networking
 - Each code a packet of data so that the receiver can properly decode it

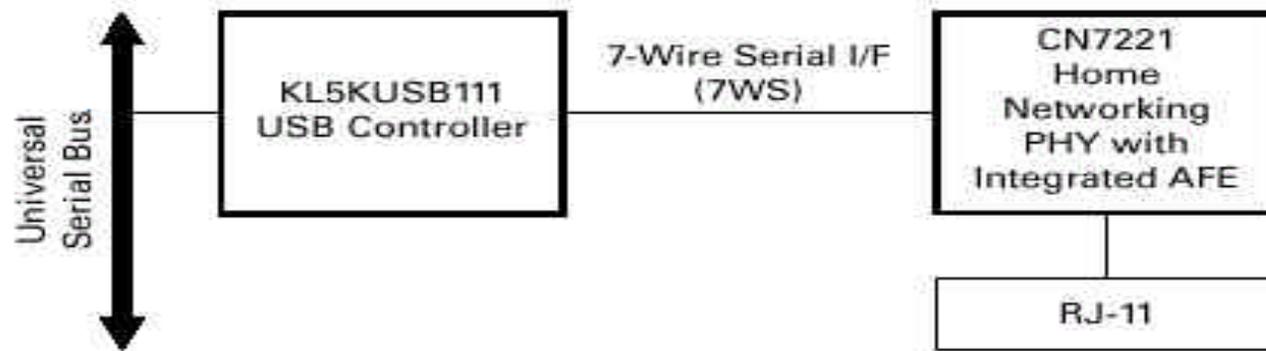
Broadcom Corporation

- ◆ BCM4210 MAC/PHY features
 - 10Mbps Ethernet controller for phoneline networks
 - Meets HPNA 2.0 proposed spec requirements
 - 16Mbps peak data rates
 - Integrated CSMA/CD Ethernet MAC with multi-level QoS
 - Integrated iLine10 digital PHY

- ◆ BCM4100 Integrated Analog Front End (IAFE) features
 - Custom IAFE for iLine10 controllers
 - Performs all required Analog Front End transmit & receive operations (PMD Function)
 - Transmit & receive filters
 - Analog to digital & digital to analog converters

Conexant Systems

- ◆ USB Home Networking Solution
 - KL5KUSB111 USB Controller
 - Interfaces the USB to the HPNA PHY layer
 - HPNA compliant MAC layer interface
 - IEEE 802.3-compliant 10Mbps Ethernet MAC layer interface
 - CN7221 HomePNA PHY layer device
 - Integrated Analog Front End circuitry
 - Interfaces to the USB port for easy system installation



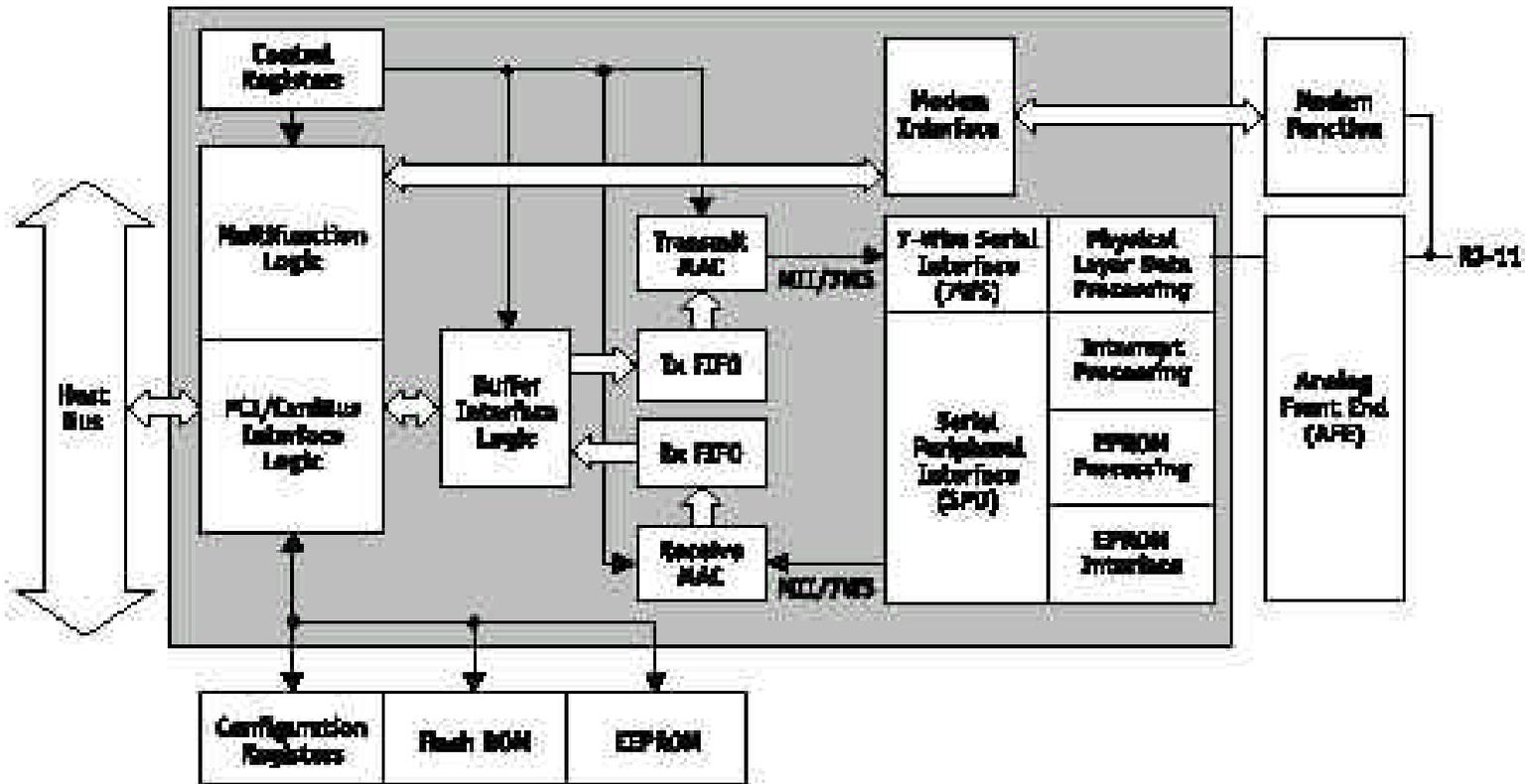
Conexant Systems

- ◆ Provides ADSL modem chipset & V.90/K56flex modem
- ◆ Home phone line networking
 - 1Mbps data rates, scalable to higher speeds
 - Ethernet: standard 802.3 MAC, CSMA/CD
 - Uses existing phonelines - no new wires required
 - Supports up to 25 nodes across 500 feet
 - Compatible with existing services such as Internet access, voice services, & home network coexists on the same wire
 - Robustness assures performance over poor wiring
 - True plug and play operation
 - Secure because home wiring is not shared

Conexant Systems

- ◆ LANfinity RS7112 - Multifunction Ethernet Controller with Integrated HomePNA 1.0 PHY layer
 - Multifunction 1/10/100 Mbps LAN/modem controller
 - 100 Mbps IEEE 802.3 100Base-T compliant
 - 10 Mbps IEEE 802.3 10Base-T compliant
 - Integrated HomePNA 1.0 1Mbps physical layer
 - Supports host controlled (HCF) or software (HCS) modems
 - Supports CardBus & PCI bus interface
 - Multifunction logic supports simultaneous modem/network operation
 - Media Independent Interface (MII)

Conexant Systems - Ethernet Controller



RS7112 functional block diagram

Lucent

- ◆ Home Wire products
 - Uses ordinary copper phone wires
 - Provide easy interface to communication products such as DSL modems & Ethernet
 - Data transmission rates from 1Mbps to 16Mbps
 - Compliant to HPNA 2.0 10 Mbps spec, backward compliant
 - Allows
 - Fast in-home Web surfing & high bandwidth file transfer
 - Download video & graphics
 - Connect more devices to home networks
 - Multimedia & real-time applications
 - In-home video distribution, voice compression & VoIP

Lucent (contd.) - Products

- ◆ HW3130 Home Wire PCI/Cardbus HPNA/LAN/Modem Controller
 - Integrated 1/10 Mbps device with a dual speed 10/100 Mbps LAN Controller
 - Interfaces to 10/100 Mbps Ethernet PHY
 - Ideal solution for triple-function PC add-in card
- ◆ HW3100 Home Wire PCI/Cardbus HPNA/Modem Controller
 - Integrated 1/10 Mbps device
 - Support for 56 Kbps modem
 - Ideal solution for dual-function PC add-in card

Lucent (contd.) - Products

- ◆ HW3000S Home Wire MSI Controller
 - Integrated 1/10 Mbps device
 - 16 bit microprocessor slave interface
 - Glueless interface to analog front end
 - Interfaces to ADSL modem chip set
 - Ideal solution for broadband residential gateways (DSL, cable modem) & other in-home networking appliances

Lucent (contd.) - Products

- ◆ HW3000M Home Wire MII PHY
 - Integrated 1/10 Mbps HPNA PHY device
 - Media Independent Interface to an external 10/100 Mbps Ethernet MAC
 - Ideal solution for PC and Embedded motherboard applications
- ◆ HW2000 Home Wire Analog Front End
 - Fully integrated analog front end transceiver for HPNA 2.0 10 Mbps home networking

Avio Digital

- ◆ Products are not based on HPNA 2.0 technology
- ◆ Products - MediaWire chipsets
 - Phoneline networking solutions
 - Provide up to 88Mbps bandwidth for home networking over Category 3 wiring & double over Category 5
 - Offer up to 33 meters between devices using standard Cat 3 telephone wiring, 100 meters with Cat 5 wiring or 400 meters with coaxial cable
 - Capable of supporting up to 100 different types of devices located through out the house

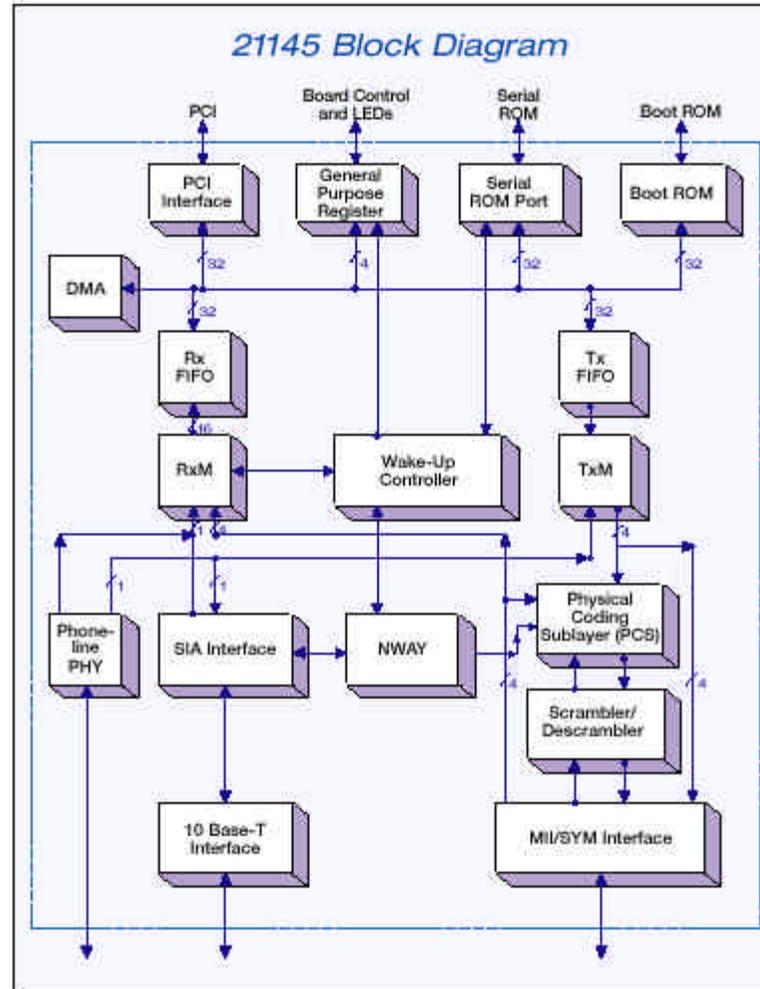
Intel Corporation

- ◆ Believes that the existing phoneline infrastructure in the home is an excellent basis for implementing home networks today
 - Founding member of HPNA
 - Working with industry leaders to establish open spec for phoneline-based home networking

Intel Corporation

- ◆ Intel 21145 Phonerline/Ethernet LAN Controller
 - Integrated single-chip silicon solution for 1Mbps phonerline & 10Mbps Ethernet connectivity
 - Provides foundation for implementing fully functional home phonerline network
 - Utilizes 21x4x MAC core for 10Base-T Ethernet network
 - Fully compatible with HPNA 1.0 spec
 - Fully compliant with the IEEE 802.3 & ANSI 802-3 Ethernet standards
 - PCI interface

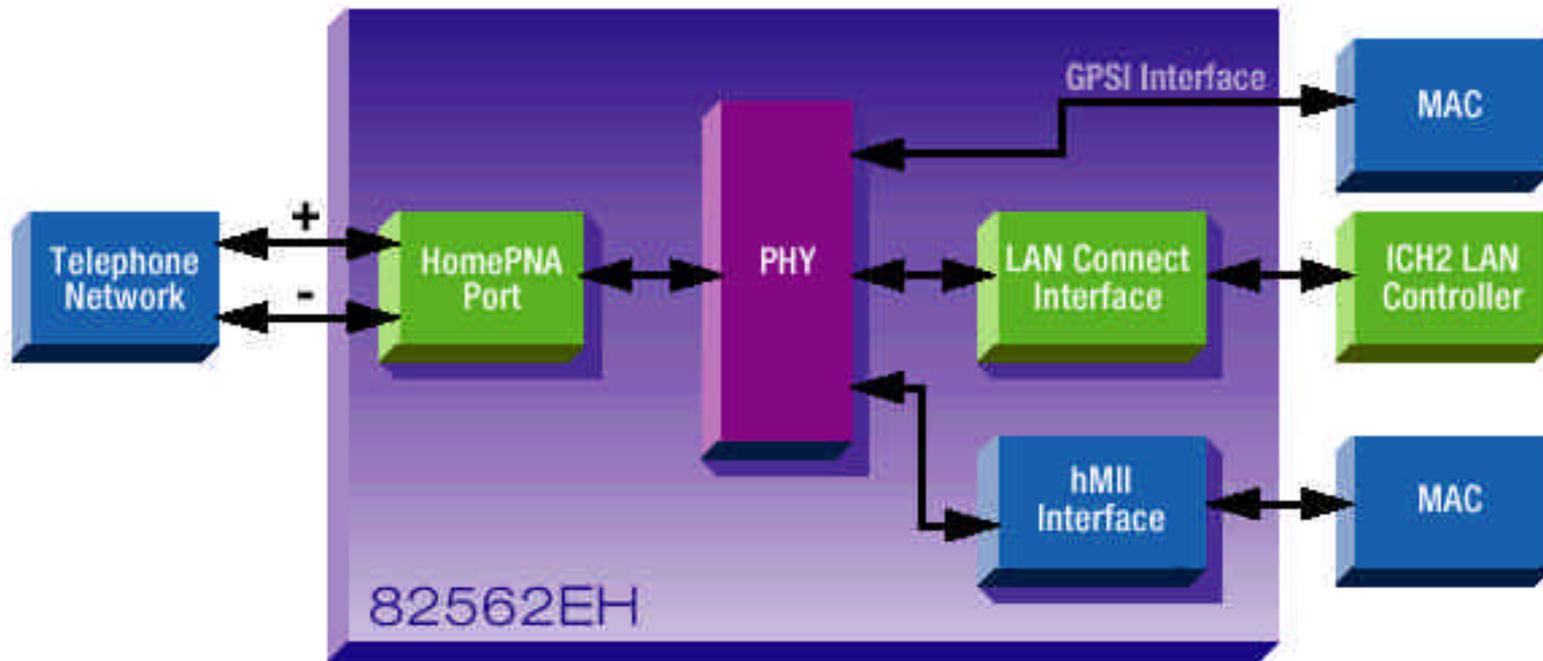
Intel - 21145 Phonenumber/Ethernet LAN Controller

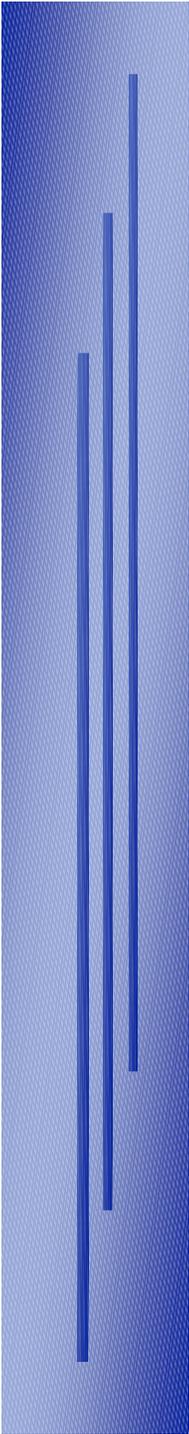


Intel

- ◆ Intel 82562EH - HomePNA LAN Connect Option
 - Highly-integrated, low cost, fully flexible network component ideal for use in a wide range of home networking designs
 - Fully compliant with HPNA 1.0 and includes a 1Mbps HomePNA port for connection to home telephone with three data interfaces
 - LAN Connect Interface for connecting Intel I/O Communications Hub2 (ICH2)
 - HomePNA Media Independent Interface (hMII)
 - General Purpose Serial Interface (GPSI)
 - Targeted for LAN-on-motherboard (LOM), Communication and Networking Riser Cards (CNR), set-top boxes, residential gateways or network information appliances
 - Supports Wake-On LAN
 - Low power consumption

Intel - 82562EH HomePNA LAN Connect





Key Vendors

Diamond Multimedia/S3

- ◆ Diamond Multimedia was acquired by S3
- ◆ Offers the HomeFree Phonenumber 10Mbps Desktop Pack (PCI)
 - Includes 2 PCI Cards & associated software

D-Link Systems

- ◆ Offers DHN-910
 - 10Mbps Phoneline network
 - Kit includes 2 standard PCI adapters with phone-line cords, software, and RJ-11 jacks

Intel

- ◆ Branded its HPNA technology under AnyPoint Home Network
 - Offers parallel, PCI, external USB versions
 - PCI & USB versions are rated at 10Mbps
 - Parallel port & another USB version is rated at 1Mbps

Linksys

- ◆ Offers HomeLink Phone Network in a Box
 - Includes 2 PCI cards with RJ-45 jacks
- ◆ Dual capability of being used for HPNA network or 10BaseT Ethernet network

NETGEAR

- ◆ Former Nortel subsidiary
- ◆ Offers Home Phone Line PCI Adapter (PA 301) & USB versions
 - Rated at 10Mbps

3Com

- ◆ Offers HomeConnect 10Mbps PCI Phoneline Kit
 - Includes 2 PCI adapters & HomeClick networking software
 - Rated at 10 Mbps