

# Agenda

- ◆ Introduction
  - What is Ethernet?
  - Market Analysis Data
- ◆ Technology
  - MAC Types
    - What is CSMA/CD?
    - Variables of CSMA
  - What is OSI Model?
  - What is TCP/IP Model?
  - Ethernet Frames
  - Ethernet PHY Specs
  - Ethernet MAC
  - Ethernet Cabling and Connectors
  - Ethernet Devices
- ◆ Ethernet & Home Networking
  - Motivation for home networking
  - Ethernet in HN
- ◆ Xilinx Solution
- ◆ Alliances
  - Gigabit Ethernet
  - IEEE 802.3
- ◆ Summary

# Ethernet - A Viable Technology for Your Home

- ◆ Ethernet is a proven and mature technology
  - Has been used in enterprise networking for years
  - Inexpensive standard interface on most computers
- ◆ Simple algorithm, inexpensive implementation
  - Network Interface Cards, Cables, Hubs, and other equipment are relatively inexpensive
- ◆ Handles video applications quickly and effectively
  - High quality video applications require bandwidth of greater than 30 Mbps
- ◆ Scalability
  - Install/ disconnect stations on the fly without disruption

# Summary

- ◆ The digital consumer revolution & the Internet are forcing high-bandwidth broadband to the home
  - Ethernet offers a viable home networking technology
- ◆ Various Ethernet-based products are being developed
  - Residential gateways: DSL, cable, satellite modem
  - Technology bridges: Ethernet-to-1394, HomePNA-to-Ethernet, Ethernet-to-wireless LANs
  - Ethernet enabled information appliances: digital TV, DVD player, Internet screen phones, PCs, printers, etc.
- ◆ Spartan-II FPGAs, CoolRunner & 9500 CPLDs provide system interconnectivity in Ethernet based products