Multimedia home networking from Altera

PLDs for emerging markets

Because they are flexible and reprogrammable, our PLDs cost effectively get you to market faster, ahead of your competition, and position you to stay there longer.
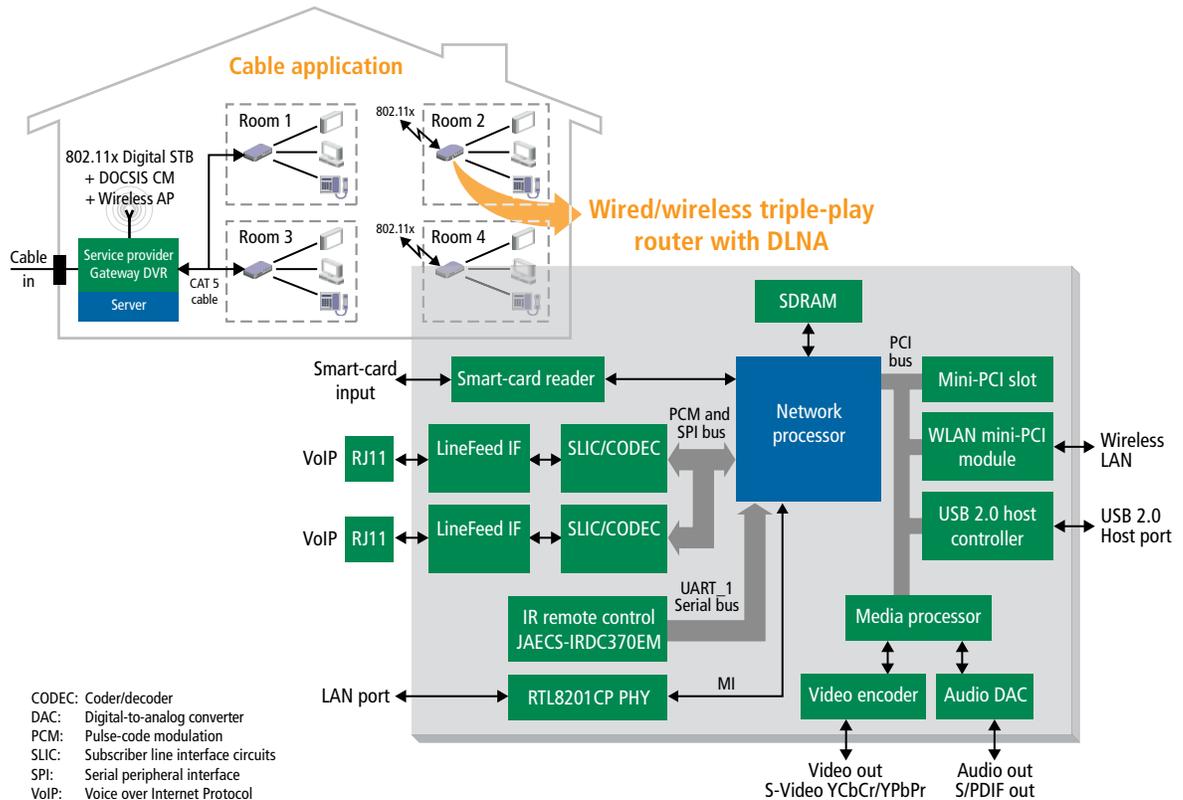
Multimedia home networking is on the technology fast track. Disparate new technologies are being networked into convenient, integrated home solutions at affordable rates, causing consumer demand to soar. With Altera, you can gain a competitive edge in this burgeoning market because we simplify and accelerate the process of incorporating the latest technology in multimedia home networking environments. While you build environments that are seamless for your customer, Altera® programmable logic device (PLD) solutions enable you to maneuver around the tricky back-end and quickly respond to changing standards, so you can keep in front of a cutting edge that's continually on the move.

Popular home networking technologies

As consortiums such as Digital Living Network Alliance (DLNA) and High-Definition Audio-Video Network Alliance (HANA) work to establish pervasive technology standards, Altera helps you make the connection while as yet no common connectivity technology prevails. Today, home networking is a hybrid of coax, telephone, Ethernet and wireless connections. Technologies like HPNA v3, MoCA and HomePlug are vying for consumer acceptance, but there is no clear winner in the foreseeable future. Because they are reprogrammable, Altera PLDs can be your insurance against a backdrop of fragmented technologies, enabling the sharing of audio and video data across consumer products.

Multimedia home networking example

CODEC: Coder/decoder
DAC: Digital-to-analog converter
PCM: Pulse-code modulation
SLIC: Subscriber line interface circuits
SPI: Serial peripheral interface
VoIP: Voice over Internet Protocol
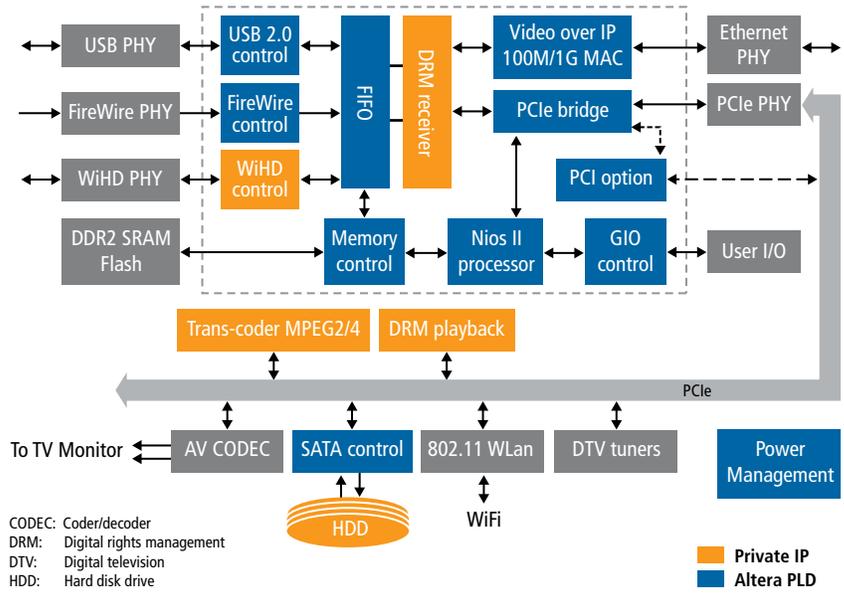
About today's multimedia home server

Within a home network, a media server acts as a central unit. It typically has a large hard drive that stores hundreds of gigabytes of audio, video, and data files, as well as high-speed connectivity to stream and store files to and from different devices. Triple speed Ethernet, PCI, or PCI Express, USB, FireWire, and WirelessHD are just some of the many network interfaces the server has to support. It may also need a transcoder to convert between MPEG-2/MPEG-4/H.264 video formats.

Employing ASIC or ASSP design methodologies alone puts you at significant risk of being late to market and releasing a product with dated features. This is not the case with an Altera PLD on board because you can:

· Implement all evolving networking technologies and the video formats that current ASSP/ASIC solutions lack
· React fast to shifting standards without the need to develop a costly and time-consuming custom ASIC

FPGA-centric home networking example

With Altera PLD solutions, you can develop a system where your customers can store live broadcast content on their multimedia home server to watch whenever they please: a system that enables them to stream the video data to their TV, DVD player/recorder, PC, printer, PDA, personal media player, digital camera, camcorder, and more.

CODEC: Coder/decoder
DRM: Digital rights management
DTV: Digital television
HDD: Hard disk drive

Private IP
Altera PLD

How Altera can help

Leveraging PLDs in home networked products gives you the flexibility to get to market fast with the latest features. By integrating Altera Cyclone® III or Arria™ GX FPGAs into your design, you can easily accommodate unsupported networking standards or video formats, and add feature enhancements or transcoding capabilities into the media server. You can also manage system configuration or system power consumption with an Altera MAX® II CPLD. In the end, Altera PLDs enhance your established platforms and let you react to market and technology shifts rapidly, greatly reducing your risk over using ASIC or ASSP platforms alone.

Want to dig deeper?

Learn more about how Altera can enable multimedia home networking at:
www.altera.com/consumer

Altera multimedia home networking solutions include:

- Cyclone III FPGAs—unprecedented combination of low power, high functionality, and low cost
- Arria GX FPGAs—Low-cost, transceiver-based, and protocol-optimized for the PCI Express, Gigabit Ethernet, and Serial RapidIO™ standards
- MAX II CPLDs—lowest-cost, lowest-power CPLDs
- Nios® II embedded processors
- Quartus® II design software—#1 in performance and productivity
- Low-cost development kits
- Intellectual property
- Application-specific reference designs
- White papers, including *Quality of Service in Home Networking, Achieving Low Power in 65-nm Cyclone III FGPAs, Video and Image Processing Design Using FPGAs*

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