



Home Connectivity:

How to keep the connection simple

The home connectivity market is still in its infancy. With the creation of digital content becoming easier than ever before, consumers are looking for ways to share and distribute this content throughout the home in a simple and consistent manner. As digital media becomes the primary source of information, education and entertainment, the home computer is no longer relegated to word processing and emailing, but houses the family photo album, music library, videos, games and is the conduit to the extremely popular online social communities. The home computer has become the heart of the digital home, but integration with traditional media outlets like TVs and stereos remains a challenge.

While the tech savvy consumer can find solutions to interconnect their home electronics, the everyday user needs simple device connectivity solutions that are reliable and secure. For home connectivity to truly become ubiquitous, these connection solutions need to “just work”.

A true digital home will require the ability to connect and consolidate the content and applications available on the PC(s) to various multimedia products throughout the home.

This white paper discusses how to take the user beyond the desktop, and enable a home connectivity solution that is easy to set up, and simple to use.

The Opportunity

The internet has opened up the world to new possibilities for consumers. They now have access to a wealth of informational, educational and entertainment based content, creating a knowledgeable consumer with complicated demands. While many homes have more than one computer, and various digital multimedia devices, most homes still have one primary PC or home server that houses most of the content and is the primary conduit for internet access.

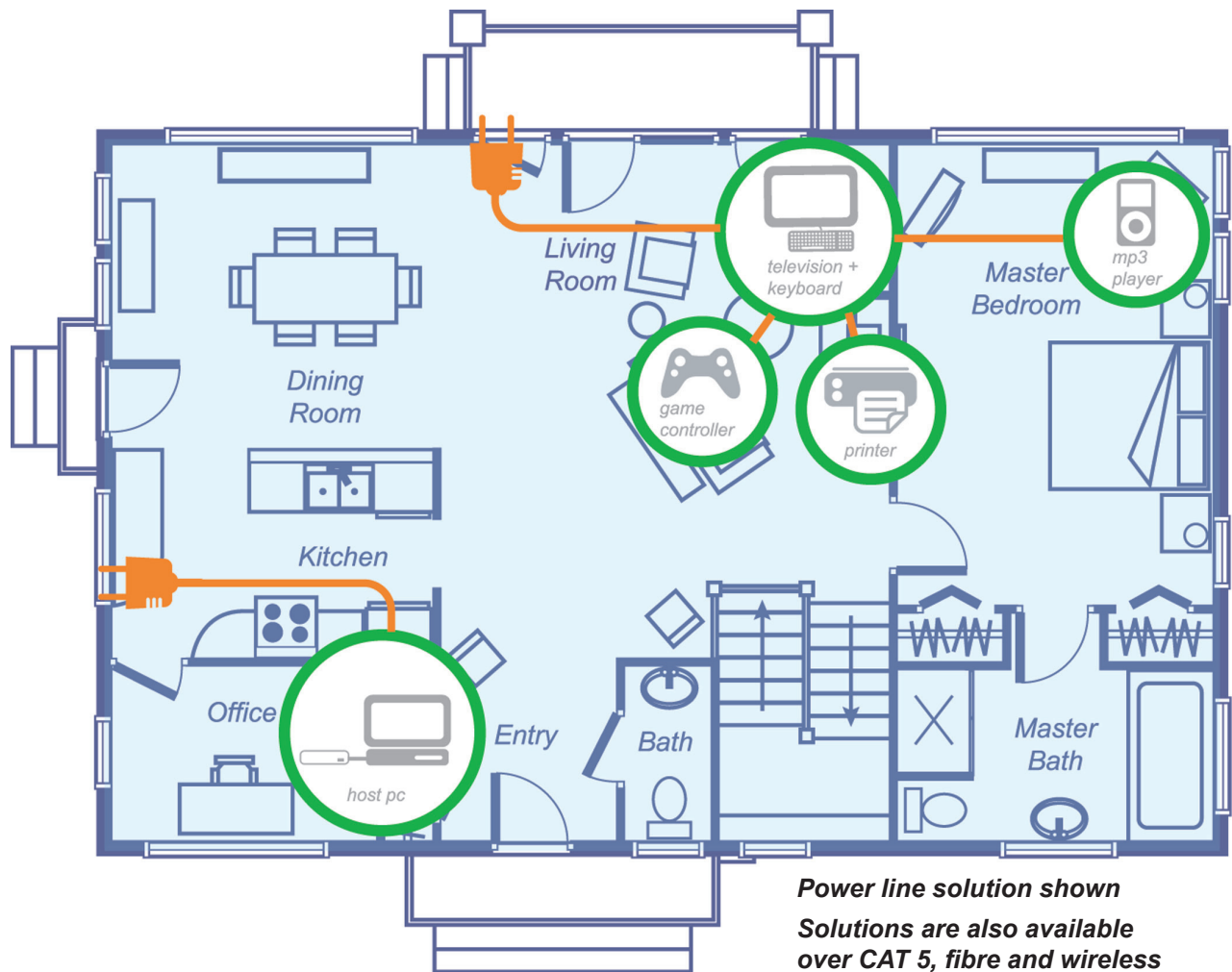
A major challenge for the connected home is finding a simple way to distribute this content through the home. One of the key issues in most homes is that there is only one central computer, usually in the home office or den, yet there is a desire to have access to all that content while the user is in the family room, or in front of the TV. Solutions exist today, but they require sophisticated users with a strong understanding of computer networking that is beyond the scope of most consumers. Many of today's solutions focus on moving some of the TV content over to the PC, but very few actually focus on delivering true PC content to the TV. Leading solutions available today deliver only selected media content, pictures, music and sometimes video, but none deliver a true PC experience with full online interactive browser capabilities, and access to PC applications that have become a part of everyday life for so many of us.

Providing true PC to TV connectivity, with a rich, full PC experience anywhere in the home is the ideal goal. By enabling access to all PC applications throughout the home, wherever a TV is available, convenient computing applications become an integral part of home life:

- Surf the internet on the TV in the family room.
- Check email, bank balance, YouTube, Facebook, MySpace or other sites.
- Have Skype/VOIP video calls from the couch, instead of in front of a tiny screen.
- Share and distribute your multimedia content more effectively throughout the home, including pictures and music.
- Enable PC or Online gaming via the large screen in the home theatre or family room, including educational games for the kids, or MMPORG games for the teens.

The critical differentiator from existing media solutions is the ability to maintain a full PC experience and user interface, so that the learning curve is short, and users will have a familiar experience out of the box.

The applications are endless and growing and all can be serviced simply and easily using standard technology that is available today.



The Solution

For a PC to TV solution to differentiate from existing media extenders and provide a complete PC experience anywhere in the home, it must offer interface connections the same as those available when sitting in front of the PC, specifically, video and USB.

With numerous digital video technologies capable of extending high quality video from the desktop to a remote monitor or television, the challenge in implementing true PC to TV solutions is in enabling peripheral connectivity. With over two billion devices in the marketplace, USB has become the peripheral interface of choice for PC and connected electronics. Offering plug and play functionality for all types of devices from keyboards and mice to music players, digital cameras and hard drives, USB is the ideal choice, but for limitations in connection reach. USB standards restrict wired connections to 5 metres in length.

With technologies such as ExtremeUSB from Icron Technologies, USB connections can break through the 5 metre cable limitation and can be deployed to provide peripheral connectivity in many remote desktop applications.

These solutions, designed together with standard video interfaces such as VGA, DVI or HDMI create a unique solution that extends the power of a PC well beyond the traditional desktop.

Combined video and USB connectivity solutions allow the primary PC in the home to be connected to a variety of devices without having to move the computer from where they are currently situated. It allows the consolidation of content and applications to be accessed throughout the home via a standard and well understood means.

The Enabling Technology - ExtremeUSB

ExtremeUSB, developed and commercialized by Icron Technologies Corporation, enables USB peripherals to be placed wherever users need them. Agnostic to the physical connection medium, ExtremeUSB provides true USB 2.0 over various wired and wireless media, simplifying installation and enabling a variety of solutions to suit user needs. ExtremeUSB is capable of providing USB 2.0 up to 10 km (6.2 miles) away from a host computer over fibre optics, or any distance over wireless technologies such as 802.11g or .11n. With ExtremeUSB technology, peripheral devices function as if they are within the 5 metre (16.4 foot) limit specified by USB-IF. Bringing home entertainment to a new level, ExtremeUSB enables remote connection of any USB device, from iPods, hard drives, webcams, educational toys, and mobile phones, to simple keyboards, mice and joysticks.

Key advantages of USB 2.0 connections enabled by ExtremeUSB:

- True plug-and-play connectivity. No new software drivers required for operation. USB devices are connected and operate as if they were plugged directly into the PC.
- No restrictions on device types supported. Other media extenders and USB connection protocols restrict access to certain devices. ExtremeUSB supports all USB devices, including hard drives, and webcams.
- Common hardware support for multiple operating systems. A true plug and play solution, ExtremeUSB needs no software drivers and operates on Windows, MAC OSX and Linux PCs.

ExtremeUSB is the ideal solution for peripheral connectivity in home networking applications. Agnostic to physical layer transmission media and not requiring software drivers on the host computer, PC to TV solutions that are simple to install and “just work” become a reality. Extension solutions using CAT 5 cabling, Ethernet, wireless, power Line, or coax, are possible, leveraging connection infrastructure already available in the home and making what once was available only to the tech savvy user, available to anyone who can plug in a mouse or keyboard.

As ExtremeUSB becomes more tightly integrated with these complimentary technologies, we will see a proliferation of solutions focused on delivering high quality, low cost content throughout the home.

Conclusion

With an ever expanding list of acronyms and technologies promising to be the next best thing in home networking only serving to add to the confusion and complexity, Icron recognizes that existing technologies that are well understood and accepted can be used to provide simplified home connectivity solutions. By utilizing USB combined with video running over existing connection infrastructure, users can extend their PC experience throughout the home, and enjoy the endless benefits of home network connectivity today.

For more information on ExtremeUSB based solutions please contact:

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