

## Primer on HD Media / IPTV Streaming Solutions

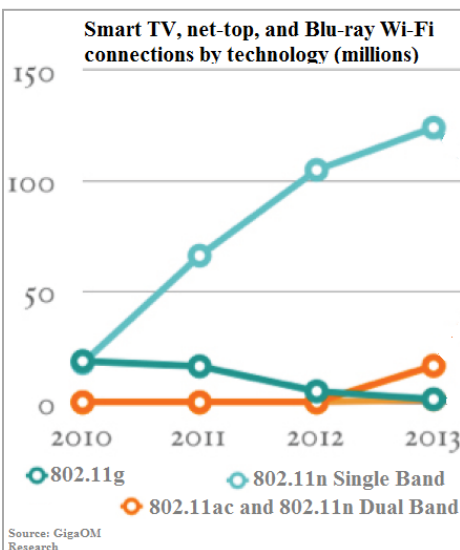
There is a growing demand for high-tech connected homes with multiple, built-in entertainment and productivity options that blur the lines between where the content originates (TV networks, Internet, home videos) and the device on which it is accessed. Here are some interesting statistics to consider:

- According to Neilson, online video consumption in the U.S. has increased 45% over the last one year
- ComScore says 40% of U.S. households have four or more connectivity devices including TVs, PCs, mobile phones and tablets
- Smart or connected TVs are TV with built-in Wi-Fi or Ethernet capability. Smart TVs are expected to grow from 67 million in 2012 to 134 million by end of 2015 according to GigaOM Research

And these numbers don't show signs of slowing down any time soon. These stats indicate that there is a huge market of families who are consuming an alarming amount of content over multiple connectivity devices. They want to be able to view their content anytime and on any device. These changes have not only increased the consumer appetite for faster broadband but is fueling the demand for home connectivity and storage solutions, and someone who can help them make sense of it all.

### Wi-Fi Goes Prime Time

**802.11ac** wireless standard that is currently being ratified promises speeds of up to 1Gbps. It operates only on the less traversed and so less interference 5GHz frequency band – building on all the advantages



of its predecessor 802.11n standard. Given the penchant for the connected consumer to go wireless, the technology is expected to see a quick adoption. The integration of 802.11ac chips in smart TVs and mobile devices will further speed up proliferation of 802.11ac devices. 802.11ac with its speed and range capability will provide the necessary infrastructure required for a multi-room DVR set-up and multi-screen video experience that the connected consumer is increasingly demanding.

The regular **802.11n** WiFi technology was a huge leap forward with speed of up to 300Mbps but it still wasn't stable enough for reliably streaming HD video. However devices designed with 802.11n standard but using the 5GHz frequency band

instead of the more congested 2.4GHz have been extremely successful with streaming HD media content.

ZyXEL offers 5GHz, 802.11n media streamers (WAP5605) which connects multiple devices such as set-top boxes to home entertainment center screens wirelessly. The devices can function in access point and client mode by using the convenient AP/Client mode switch on the unit. Its SmartRange technology enhances wireless performance by enabling multiple WAP5605s clients to transmit wireless signals directly to each other, bypassing the AP.

By connecting media players, set-top boxes and game consoles to the WAP5605, families can enjoy IPTV services and music, videos, photos, and play online games without unsightly wiring arrangements. Each WAP6205 offers two Gigabit Ethernet ports

Even though 5GHz, 11n products have distinct advantages over their 2.4GHz counterparts, the majority of older laptops and mobile devices don't come with the 5GHz WiFi built-in so an additional adapter may be needed for these devices to connect with 5GHz WiFi streamers and routers.

### Dual-Band

Another class of premium 802.11n devices offers simultaneous dual-band operation offering best of both worlds. So users can use 2.4Ghz for Internet surfing and 5Ghz for video streaming and gaming.

ZyXEL's premium simultaneous dual-band, 802.11n router – the NBG5715 comes built-in with three dual-band antennas featuring MIMO technology for blazing fast data transfer rates of up to 450 Mbps\* simultaneously on both frequency bands. In addition, advanced QoS traffic prioritization features allow users to take full advantage of their fast fiber broadband connection.

### WiFi Router, Access Point (Media Streamers) and Adapter Product Portfolio

	Wireless Home Router Series	Wireless Access Point	Wireless Adapter
Wireless N Media Series	 <p><b>NBG5715</b> Simultaneous Dual-Band Wireless N Media Router</p>	 <p><b>WAP5605</b> 5-GHz Wireless N Media Streaming Box</p>	
Wireless N Series	 <p><b>NBG4615</b> Wireless N Gigabit NetUSB Router</p>  <p><b>NBG-419N v2</b> Wireless N NetUSB Router</p>	 <p><b>WAP3205</b> Wireless N Access Point</p>	 <p><b>NWD2205</b> Wireless N USB Adapter</p>

## 60GHz WirelessHD

WirelessHD technology standard is architected and optimized for the sole purpose of wirelessly streaming HD multimedia. It leverages 60 GHz millimeter wave technology, providing the necessary bandwidth for multi-Gigabit data rates, which are required to wirelessly stream reliable, uninterrupted HD video and audio. The 60 GHz spectrum also eliminates interference from other wireless technologies, such as popular 802.11x standards.

Based on this revolutionary technology, ZyXEL Aerobeam WHD6215 is a transmitter/receiver combo that enables consumers to place their HDMI enabled entertainment devices anywhere in the room to wirelessly stream digital content, without worrying about unsightly wires. Simply plug any HDMI® device, including Blu-ray / DVD players, game consoles, smartphones and tablets, into the Aerobeam WirelessHD transmitter and connect the receiver to the TV. No extra configuration is required. The WHD6215 adapters provide full 1080P video playback, including 3D, with no lag or loss in picture quality. It also supports 7.1 surround sound audio for the highest-quality A/V (audio/video) experience available.



## Powerful Powerline

Powerline adapters turn power outlets into a high speed home network. With no additional wiring and literally plug-n-play simplicity, powerline networking is an extremely cost-effective networking option for customer homes. Based on HomePlug AV standard, ZyXEL's powerline devices are optimized for streaming HD media making them ideal for provisioning IPTV and triple-play services.



**PLA4205**  
500Mbps Powerline Adapter  
with Gigabit Ethernet



**PLA4215**  
500Mbps Powerline Adapter  
with Gigabit and  
Pass-through Plug



**PLA4225**  
4-Port, 500Mbps Powerline  
Switch with Gigabit Ethernet

## Coax Still In the Mix

HomePNA offers operators yet another option to deliver IPTV and network the subscriber home for HD media streaming using the coax cabling that already exist in many houses throughout North America. With speeds of up to 320 Mbps, HPAN3.1 compliant adapters are ideal for streaming HD media and IPTV in subscriber homes without any set-up required.



## What's in it for the Telcos?

A huge opportunity to up sell! Telcos already have their foot in the door via telephony and Internet service, and they can now generate additional revenue by selling these home connectivity solutions and helping guide their subscribers towards a fully connected digital home bliss. In addition to generating new revenue from products and services, this also helps them improve the customer experience since they are the first to get call no matter what IT problem the consumer happens to have. There couldn't be a better example of a win-win situation. Consumers get all their communication and entertainment services from a single trusted technology vendor, and the telcos not only increase their ARPU, they also have a chance to stay close to their biggest assets – their customers!

## About ZyXEL

ZyXEL is leading the digital home revolution with a complete portfolio of fiber, xDSL and award-winning LTE broadband gateways, home connectivity and entertainment solutions and smart home devices. Headquartered in Anaheim, California, ZyXEL offers service providers unmatched logistic, sales and technical support by a domestic team of reliable and expert professionals. [www.zyxel.com](http://www.zyxel.com)

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