

## HOME NETWORKING

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### One Thing We Learned

One of the things we learned from the powerline tests as well as previous Wi-Fi tests is that both have speeds that vary widely - day-to-day, even minute-to-minute, from room to room and when electrical devices are in use – vacuum cleaners, microwave ovens, coffee makers, rechargers and such. Wi-Fi speed is also impacted by the neighbors' Wi-Fi, an often major obstructions in apartments and nearby standalone residences. The varying speeds was driven home this week by the testing we conducted in a second residence.

We saw the Wi-Fi fluctuations in two homes we have tested with ASSIA's CloudCheck app. We have seen the results of the fluctuations on a 4K TV set. We have also seen, as has almost everyone we have asked, Wi-Fi deadspots - locations in or around a residence where devices cannot connect to even the newest, highest rated 11ac Wi-Fi router – or connecting only to the slower 2.4 MHz Wi-Fi channel but not the faster 5.0 MHz Wi-Fi channel.

What's the answer for all the confused consumers that are grappling with the need for more simultaneous Wi-Fi connections and increased bandwidth demands by applications such as 4K TV sets and 4K smartphones? Ethernet, especially with 1 Gbps connections and the 5e version of CAT 5 cable, has much higher speeds – in the 600+ range. Most consumers, however, won't pay the costs or bear the disruptions that occur when an Ethernet network is installed in their home. That leaves Wi-Fi to Wi-Fi extenders, which help but doesn't always provide the needed speeds – or wireline-to-Wi-Fi adapters, which use powerline or coax networking to serve as the home's network backbone without the need to install Ethernet networking cables.

Beware: In 2006 Ethernet cables were installed to three rooms in my home BUT in one of the rooms the 5e version of CAT Ethernet cables was not used. That limits speeds to that room to 100 Mbps, not the 1 Gbps that the 5e cable can provide. That was a number that seemed to be Nirvana 10 years ago when it was installed but not now when homes are being connected with 300 Mbps and higher broadband. Of

course, the sending device, typically the router or media storage, and the receiving devices also need to have a 1 Gbps Ethernet port.

### So What?

The increasing use of Wi-Fi devices – from TVs to tablets – and the coming of bandwidth-hungry apps such as 4K plus the coming of the new iPhones that have 4K recording capability (which will increase demand for upload bandwidth as well as downloads), have caused increased demand for Wi-Fi bandwidth and coverage in and around the home. People sitting on their porches or patios expect to watch 4K on a mobile device or outdoor TV.

When most people think of powerline or MoCA adapters, they think of its use to extend the often short range of their Wi-Fi routers: powerline or coax adapters with Wi-Fi built in, not just as adapters to connect a smart TV or Blu-ray player. The fact is they can do both Wi-Fi and Ethernet-over-powerline or –coax as shown by recent product launches, which show that Wi-Fi, despite all its recent improvements, is still for most residences a “whole home” network.

The industry is recognizing that increasingly there is Wi-Fi performance that does not meet the customer's needs as shown by:

- Equipment maker **Comtrend** recently selected launched a powerline to Wi-Fi adapter that uses G.hn powerline chips, probably Marvell's, and **Celeno's** Wi-Fi provide “virtualized Wi-Fi” throughout the home.
- Equipment maker **Actiontec** plans to launch a consumer version of its coax-based adapter that it says is capable of providing 300 Mbps of usable Wi-Fi. The adapter has MoCA chips and **Quantenna's** super-fast Wi-Fi chips.

Both are intended to bring Wi-Fi to rooms that are Wi-Fi deadspots.

### G.hn Products Start Appearing

G.hn products mostly in powerline format are now shipping in volume into China in the retail market, not just through operators, according to *Faultline*. Chinese equipment manufacturers **Wondertek** and

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**Brightech**, have brought out ranges of G.hn products powered by **Marvell's** G.hn silicon, sold via **Alibaba**, and consumer portal **Taobao**. **HomeGrid** also says that G.hn is being used in Blu-Ray players and set top boxes and is being embedded in IP-Networked HD TVs including those from **Skyworth**.

### Denmark's Wao! Bets It All on AirTies' Wi-Fi

Equipment maker **AirTies Wireless Networks** and Danish broadband and IPTV provider **Wao!** have extended and enlarged their five year deal with a commitment by **Wao!** to deploy advanced premium Wi-Fi technologies and UHD-capable set-top boxes.

Wao! was one of the world's first and Denmark's very first to add **Netflix** to its offerings.

Wao! plans to deploy products that offer

broadband at fiber speeds over Wi-Fi, which uses AirTies' MESH technology. MESH is already in use by Tier 1 operators in Europe and elsewhere to deliver broadband and premium TV services to all corners of the home.

Joergen Stensgaard, CEO of Wao!, said "Quality of experience has always been a major driver of the AirTies partnership for Wao! Wao! has been awarded best Danish broadband provider four years in a row and the user experience is a crucial feature to all our services. The high quality provided to us by AirTies has been outstanding. AirTies has played a major role helping us meet the fast rising demand for high quality video streaming services and we anticipate this continuing as we step into the UHD era."

AirTies' CEO Philippe Alcaras said, "Wao! is definitely one of the most innovative and consumer oriented operators in Europe."

"AirTies has played a major role helping us meet the fast rising demand for high quality video streaming services and we anticipate this continuing as we step into the UHD"

## MOBILE VIEWING DEVICES

### Microsoft's Upcoming Surface Pro 4 Could Cause Problems for iPad Sales

- And for Desktop & Laptop PCs
- Especially at Businesses & Business-Oriented Consumers

After **Microsoft's** Surface tablet got off to a very bad start (by Microsoft's own admission), Microsoft has been slowly catching up with **Apple's** iPad – despite the fact that Apple keeps introducing new and improved iPads.

Microsoft has invited the media to a major launch of Windows 10 devices launch on October 5 in New York. Microsoft says it has "some exciting news to share about Windows 10 devices."

One of the products is expected to be the fourth iteration of the Surface, the Surface Pro 4. It's coming at a good time because many consumers have realized that in the current Surface, the Pro 3, they can get about the closest equivalent to a desktop Windows PC, a Windows laptop and an increasingly functional Windows tablet. Plus it runs an external keyboard and mouse for when they want it to be a desktop PC, a built

in keyboard and mouse for when they want it to be a laptop and a tablet that runs all their Windows apps and has an increasingly large library of tablet apps. An optional docking station provides all the functions of a desktop such as having an Ethernet port.

If Microsoft keeps improving the Surface in meaningful ways, and there is no certainty that it will, Surface Pro 4 could be a threat to the iPad with consumers and organizations that are Windows-addicted.

#### The Windows Advantages

Microsoft has two major advantages over Apple when it comes to tablets:

- The Surface runs Windows. People and companies have invested billions in buying and customizing off-the-shelf Windows software and developing customized application software for Windows. Billions!
- Microsoft has the world's largest PC makers – **HP, Dell, Lenovo** and such, except for Apple, selling its products both at retail and to the corporate and government crowd. They develop innovative versions of Windows software. Apple has no third party companies that can match them

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