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**New Broadcom Tuner Technology Helps Cablecos Transition to IPTV for the TV-Everywhere World**

- **Full-Band Capture Tuner Technology Helps Remove Boundary between Cable Broadcast and Broadband Services**
  - Concurrent Dual-Band 2.4 & 5.0 GHz Streams Increases Wi-Fi’s Ability to Handle Home’s Increasing Data & Video

Simple arithmetic is driving the development of digital media technology.

Upwards of 80% of the 300 million or so homes in North America, Europe and the Pac Rim seem certain to buy one or more smart TVs in the next few years, all needing a stream of IP video. Most pay-TV subscribers are getting DVRs that require at least two videostreams, more for whole-home DVRs, which are becoming popular — start watching in one room and finish watching in another. Then there will be millions of Blu-ray players, all of which need a video stream. Add to those a tablet, at least one per household, and one smartphone for every resident over 13 years old. Suddenly every home will need multiple, simultaneous streams of video delivered both to and within the home.

If you want to make or buy an IP DVR or home gateway that can handle all those streams, you’ll find Broadcom has developed a chip technology called Full-Band Capture Digital Tuning that supports up to eight DOCSIS (broadband) and broadcast digital streams. The first system-on-a-chip (SoC) with it also includes dual-band Wi-Fi for streaming high-quality video within the home.

They are the solution for consumers who are getting Internet-based video services like Netflix and Lovefilm and for cablecos that want to upgrade their pay-TV network to IP technology.

The chips will help cablecos make the transition to the world of TV Everywhere with IPTV technology and also significantly improve DOCSIS broadband and Wi-Fi performance.
DOCSIS 3.0 is the fastest broadband technology for existing broadband networks, save for new fiber optic networks that run fiber all the way to the home. Broadcom is making DOCSIS 3.0 even faster with the new BCM3383 DOCSIS/Euro-DOCSIS 3.0 SoCs for use in home gateways.

The SoCs have dual-band concurrent Wi-Fi and a custom applications processor to bring the speeds that consumers need because of the rapid growth of devices, apps and advanced Internet services in the home.

Dual-band concurrent Wi-Fi 802.11n strengthens the wireless network’s reliability for video distribution, whether OTT, locally stored or pay-TV. With simultaneous 2.4 and 5.0 GHz IEEE 802.11 band streams, gateways can segregate data and video distribution (video having its own band), reducing interference and enabling a high-quality user experience, said Jay Kirchoff, Broadcom’s VP of marketing for cable broadband. Most current Wi-Fi products are only 2.4 GHz; however, Apple has a 5.0 GHz Wi-Fi option in some Macs, showing it’s getting ready for the future.

Whether the dual-band Wi-Fi has sufficient reliability, speed and security to meet the demands of the cablecos for streaming their paid content is not certain. The cablecos were expected to show some of their plans at The Cable Show.

Broadcom’s Full-Band Capture (FBC) Digital Tuning technology supports DOCSIS and broadcast digital video on any frequency, eliminating the “block” limitations of wideband tuners. This enables operators to efficiently utilize their 1 GHz spectrum for broadband and broadcast services.

FBC extends Broadcom’s FastTV channel change acceleration, adding “near instant” channel changes across frequencies, an important feature in this very impatient “click-click” world.

The applications processor runs Linux, which supports advanced applications such as DLNA, file transferring and home security without impacting the voice and gateway performance.

A multi-threaded 500 MHz processor increases CPU speed by 50%.

Broadcom is very proud of its new 1 GHz FBC technology, calling it revolutionary because it will help the cablecos transition to hybrid IP-based cable TV networks. IP technology is needed for a world that is increasingly “TV Everywhere,” not just in the living room. It can simultaneously handle up to eight broadcast or DOCSIS broadband streams within a single device like an STB or gateway, according to Brett Tischler, Broadcom’s senior manager for cable set-top boxes.
It enables more efficient distribution of video streams and IP services to connected devices in the home. Using one FBC digital multi-receiver instead of nine cable tuners and demodulators cuts costs. It simplifies cable tuner design and reduces power usage by up to 50%.

The chips will be used in IP cable TV companies’ set-top boxes and DOCSIS 3.0 cable gateways, whose growth is expected to be 40% through 2014, according to In-Stat research last August.

Cablecos are expected to start upgrading immediately to IP networks for delivering pay-TV just as the telcos have been doing.

Broadcom’s BCM3383 is now sampling to early-access customers. Its 40nm 8-QAM BCM3128 and 4-QAM BCM3124 cable multi-receiver SoCs and the 400 Mbps BCM3383 Euro/DOCSIS 3.0 cable gateway are now sampling.

Boxes with the chips must first be DOCSIS certified, both in Europe and the US. Some boxes may be sold at retail, a decision that’s up to the box makers.

The battle for using Wi-Fi to stream pay-TV is already underway. Turkey-based Airties is using Broadcom 2 x 2 MIMO Wi-Fi chips in STBs and selling them for in-home pay-TV streaming. Quantenna and Celeno say they are winning pay-TV services, mostly telcos, with STBs that have their multiple-MIMO chips that can do the same. Motorola has announced an STB with Quantenna’s Wi-Fi chips.

The cable TV companies have a much larger installed base of pay-TV subscribers than the telcos, so there are a lot more cable TV homes that’ll need to be upgraded to IP to satisfy the surge in consumer demand for TV Everywhere and to feed video to millions of smart TVs, Blu-ray players, tablets and smartphones.

Any way you look at it, the potential market is very large, numbering in the millions.