cable

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EX PARTE

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

RE: Consumer Information and Disclosure, CG Docket No. 09-158

Dear Ms. Dortch:

On November 4, 2010, Rich Woundy and David Don of Comcast, Michael Kelsen and Steven Teplitz of Time Warner Cable, and Jim Partridge and Steve Morris of the National Cable & Telecommunications Association, met with Zac Katz, Legal Advisor to Chairman Genachowski and Jordan Usdan, Attorney Advisor, National Broadband Plan Task Force, to discuss the PowerBoost technology used by many cable operators. We explained that PowerBoost can provide significant increases in the performance experienced by cable broadband customers on the most common forms of online activity – streaming video and web browsing. Accordingly, if it is designed in a manner that accurately reflects consumer experience, we anticipate that the performance testing regime established by the Commission will demonstrate the benefits of PowerBoost. The attached materials were discussed during the meeting.

Please do not hesitate to call should you have any questions regarding this filing.

Respectfully submitted,

/s/ Steven F. Morris

Steven F. Morris

cc: Z. Katz
J. Usdan

What is PowerBoost?

•PowerBoost is a service that allows customers to boost beyond their subscribed tier and consume all the available bandwidth in the upstream and downstream of the Cable Modem Termination System (CMTS) for a pre-defined amount of burst.

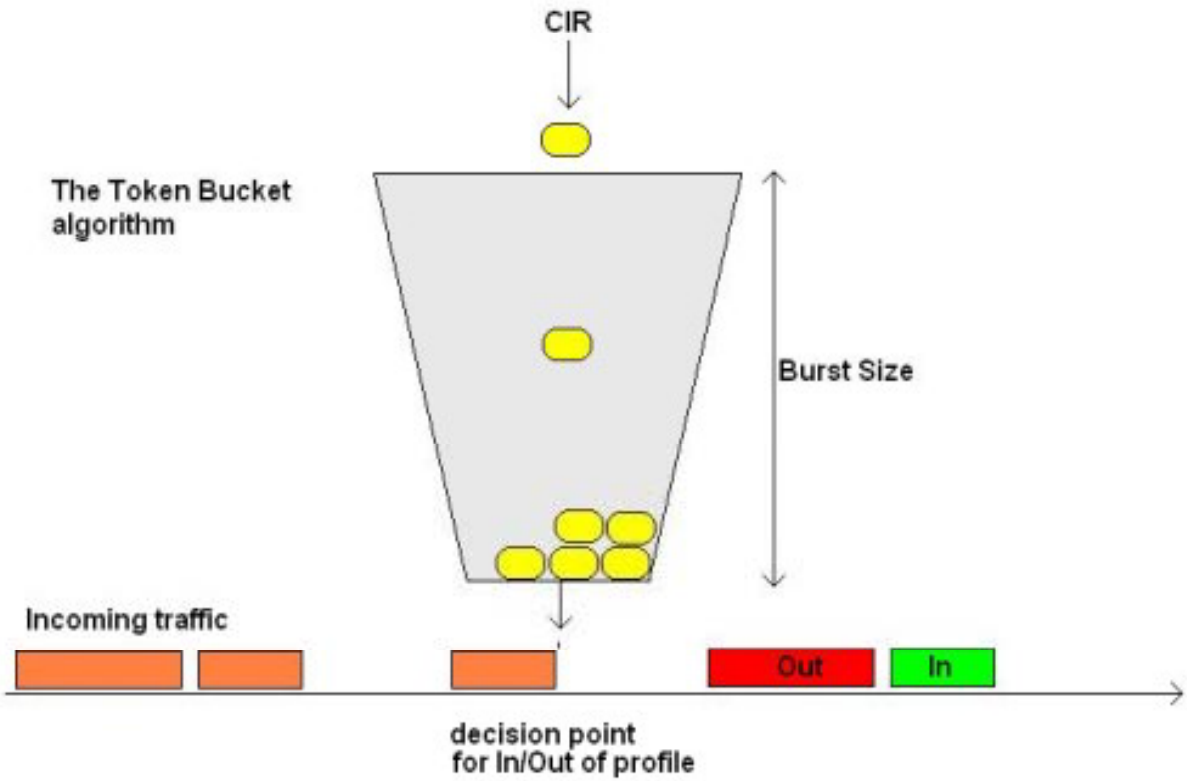
•While based on DOCSIS, PowerBoost can be configured differently by each MSO to customize the service. For example, an operator could offer PowerBoost in the downstream only.

•The cable modem may also limit the throughput that could otherwise be achieved. If the cable modem only supports 30 Mbps when 38 Mbps is available, for instance, then the burst would be 30 Mbps.

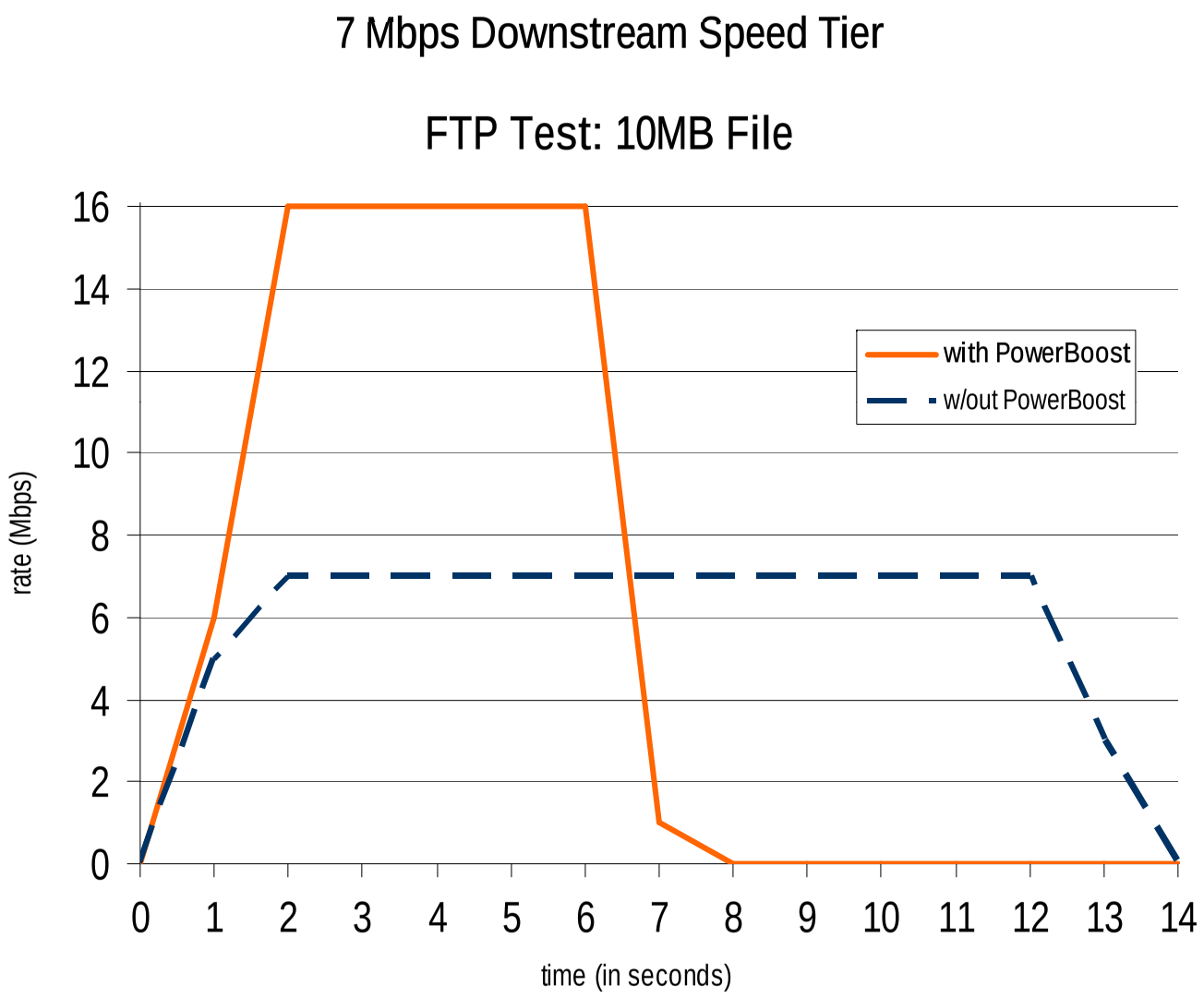
How does PowerBoost work?

- PowerBoost is governed by the well known “Token Bucket” principle for traffic shaping and policing.
- Token Bucket is a mechanism that regulates the rate at which flows are allowed to inject packets into the network.
- Each packet transmitted into the network must first remove a token from the token bucket. If the bucket is empty, the packet must wait for a new token or alternatively it is dropped or delayed.

How does PowerBoost work?



Downstream PowerBoost Example



The Impact of PowerBoost on Online Activity

Cisco VNI [1]	% of total traffic	
Internet Video	51%	• Before a streaming video begins to play, a buffer needs to be filled up • PowerBoost fills the buffer more quickly and enables videos to start playing sooner • Once the buffer is filled, the speed of the video feed generally slows down • The highest quality of online video today is 1080p, which is typically streamed at a bitrate of 3.75 Mbps. However, most streaming sites only stream video at 1.25 Mbps to 2.25 Mbps. • As these speeds are well below the provisioned rate of most cable broadband services, PowerBoost, or an absence thereof, does not affect the ongoing viewing of a streaming video.
Web-data	23%	• PowerBoost enables web pages to load more quickly by provisioning up to 10 MBs of additional data to be downloaded when there is excess capacity • Many current web pages are graphically intensive, but an MIT study found that a 10 second duration test was acceptable for web-like usage patterns today based on statistical information from Google that suggests that at least 90 percent of pages will easily load with a PowerBoost (10 seconds and 10 MBs) window given the total amount of KBs per page. • Because of the bursty nature of users accessing web pages and then reading them, the PowerBoost capacity "bucket" has frequent opportunities to be replenished when the customer is not actively using the broadband connection.
P2P file sharing	23%	• P2P applications do not utilize the full throughput potential of a broadband connection. • According to online research, uTorrent, a protocol that claims to accelerate torrents, only achieves a download speed of 176 Kbps. • Other search results indicate that people using BitTorrent generally only achieve 50 Kbps downstream and 30 Kbps upstream. • Therefore PowerBoost isn't needed to enhance the experience of P2P, and in the same vein, it is irrelevant to consider any sustained speeds that might be achieved outside of a PowerBoost surge because the P2P application will not come close to approaching the provisioned speed of the broadband connection.
Non-P2P file sharing/software downloads	1.7%	According to Cisco, the remainder of broadband traffic includes a variety of traffic types, including some file downloading activity. The portion that includes large file downloads, which may be accessing broadband connections for a sustained period of time, is probably in the range of 1% to 3%. However, anecdotal evidence indicates that many file transfer servers do not serve up content at speeds that reach the throughput capacity of many broadband connections.
Other	1.3%	

[1] Cisco VNI Forecast Widget - U.S. residential traffic, available at www.ciscovni.com/vni_forecast/advanced.html, supplemented with additional information provided by Cisco in response to queries sent to traffic-inquiries@cisco.com