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“USA and Canada 700 MHz Regulatory and Market Analysis”

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Executive Summary

The 700 MHz band includes the spectrum occupied by UHF TV channels 52 through 69 (698 MHz – 806 MHz). As a result of the 1996 amendments to the Communications Act, this band was re-allocated for use by other communications services, including Public Safety and Public Commercial use. Although development of Public Safety use in the 700 MHz band began in 1997, few systems have actually been deployed due to concerns with interference from the incumbent broadcasters.

In accordance with the Balanced Budget Act of 1997, public use of the 700 MHz band was mandated via the FCC Auction process. At the onset of this process, the FCC announced that commercial licensees in this band would be permitted to provide fixed, mobile and broadcast services. Suggested uses of the 700 MHz commercial spectrum included mobile and new digital broadcast operations, fixed and mobile wireless broadband services (including FDD and TDD based systems) as well as fixed and mobile wireless uses for private internal radio needs. Commencing in September 2002, followed by a second auction in May/June 2003, 735 licenses were awarded in these auctions, raising over \$144M.

Two companies, **Aloha Partners** and **Qualcomm**, have emerged as the major license holders and are currently developing businesses utilizing their 700 MHz spectrum. Aloha Partners intends to provide fixed and mobile wireless broadband internet access services but the company is still undecided about what technology to deploy. Qualcomm plans to establish and market a mobile video service under the MediaFLO® brand name to cellular and PCS operators. MediaFLO® will support real time video streaming as well as “Clip Casting” to mobile handsets.

Both Aloha Partners and Qualcomm have sufficient spectrum to support nationwide footprints.

In Canada, a similar regulatory process has been underway for almost a year, beginning with Public Safety systems that will be closely harmonized with those in the U.S. Over the next year or so, Industry Canada is expected to follow a similar process as the U.S. in developing commercial operations in the 700 MHz.

What makes 700 MHz spectrum exceptionally attractive for wireless broadband operators is the cost dynamics of system deployments: the lower the frequency

of operation, the farther signals propagate and penetrate through trees and buildings and bend around obstacles. This has a dramatic impact on the cost of deployments compared to systems operating at higher frequencies. As a seat of the pants rule, a doubling of frequency at which a wireless system operates, equates to a doubling of deployment costs and at least a doubling of cell sites or halving of each cell's coverage area. Of course there are other factors to consider such as available spectrum bandwidth and subscriber density, but all else being equal, lower spectrums provide unique competitive advantage compared to similar bandwidth spectrum at higher frequencies. Digital video broadcast and mobile broadband services can be made very cost effective despite relatively narrow spectrum bands.

The 700 MHz spectrum is increasingly being developed for use of OFDM based technologies: Qualcomm has shifted from use of CDMA to OFDM as the core technology in MediaFlo. Similarly, Airspan, Intel and other companies are pursuing development of systems based on OFDM/WIMAX. Migration of TV broadcasters away from the spectrum and licensing of the vacated spectrum could become the decisive factor in how quickly and extensively development unfolds.