"I am familiar with the recent eband allocations . . . and their limitations . . .

How We Transmitted Video During The Vietnam War

The April Editor's Note mentioned that broadcasters had to fly film (and later, videotape) from Vietnam to Honolulu for editing and transmission during the war 35 years ago. I covered Vietnam for CBS News. As the editorial noted, we could not directly transmit video from Saigon. Although we may have sent some to Honolulu, I don't remember any. We usually used Hong Kong and occasionally Bangkok.

Peter Larkin
Cambridge, MA

E-Band Mimics Physical Fiber But Has Its Limitations

Your April issue, as always, was interesting and informative. I was particularly interested in your news article "Interest in FSO [Free Space Optics] and E-Band Broadband" on page 44 of the News and Views section.

As MMW Product Manager for Terabeam Wireless, I am familiar with the recent e-band allocations, their strengths and also the limitations. As you know, Terabeam Wireless continues to provide broadband, last mile connectivity with our interference free, unlicensed, v-band 60GHz, point-to-point, Gigalink radio systems. Our Gigalink radio systems mimic physical fiber by providing an optically synchronized physical layer RF circuit between connected devices. To date, over 1,000 of these systems have been deployed.

While the recent e-band allocations offer the promise of extending the oxygen absorption limited range of the 60GHz systems, operation in the higher e-band frequency regions does not come without certain unavoidable drawbacks. Operational ranges in the 60GHz region are limited by the physical effects of atmospheric oxygen absorption plus the added attenuation resulting from heavy rainfall. RF transmissions in the 70GHz and 80GHz e-band regions, while lacking the specific oxygen absorption limitation, are affected more severely by heavy rain; rain fade increases exponentially with frequency. Due to this physical attribute, the 99.999% maximum range of a 70GHz or 80GHz system will be only a few hundred meters greater than that of a comparable 60GHz system in some of the more severe domestic rain regions.

The lack of specific oxygen absorption in the 70GHz and 80GHz region also increases the likelihood of interference between closely located systems. While 60GHz sidelobe and link overshoot radiation is quickly absorbed by atmospheric oxygen, this is not the case for e-band frequencies. As only a few prototype e-band systems have been deployed to date, interference has not been an issue. However as 70-80GHz systems proliferate, interference may limit deployment in metropolitan areas.

We whole-heartedly support both the e-band frequency allocations and the important work done by our colleague Mr. Doug Locke in promoting e-band use. We believe there is a place for both mature v-band (60GHz) and future e-band (70, 80 and 90GHz) systems to provide reliable broadband services but that there is also a lot of unsubstantiated hype being put forth. For creating an educated consumer market for e-band systems a better understanding of the technology benefits and practical limitations is needed.

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Broadband Properties welcomes letters to the editor; send them via email to steve@broadbandproperties.com.