

the FCC demonstrating that increasing digital power asymmetrically (to digital power levels already authorized by the FCC) may provide enhanced digital coverage that is not achievable while stations are constrained to operate with equal level digital sidebands.³

Today, stations can avail themselves of the Commission's 2010 authorization of up to 10 dB in increased digital power (and the concomitant increase in digital coverage) only if they can increase their power up to this level in both digital sidebands (symmetric operation) without creating interference to a first adjacent station, per the constraints outlined in the Order.⁴ In many areas today, increasing digital power by 10 dB (or less) would potentially cause interference to a first adjacent signal on only one side of the subject station's signal (operating on either the upper or lower first adjacent channel), so the full potential digital power increase on the opposite (nonlimiting) side cannot be achieved. This unnecessary digital power limitation is especially harmful to listeners of multicast (*i.e.*, HD-2, HD-3, etc.) channels, where, in digital drop-off areas, the multicast channel completely drops out (mutes), rather than blending to the analog signal as the digital signal does for the main channel.

Now, iBiquity and NPR have demonstrated in their studies that digital coverage can be improved with asymmetric sideband operation, increasing power up to the already authorized 10 dB level in one digital sideband, where interference is not a

³ "FM HD Radio Field Performance With Unequal Digital Sideband Carrier Levels" (iBiquity Report) filed in MM Docket No. 99-325, October 4, 2011; "PAPR and Asymmetrical Sidebands Field Results: HD Radio Coverage Technologies" (NPR Report) filed in MM Docket No. 99-325, October 24, 2011.

⁴ See *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, Order, DA 10-208 (2010).

concern, while protecting reception of a vulnerable first adjacent station that may be potentially impacted by increasing the power in the other digital sideband.⁵

These reports demonstrate that asymmetric sideband operation can enable incremental but significant improvements in digital radio coverage, particularly by filling in drop-out areas⁶ that can disrupt service to listeners in mobile (automobile) environments. Increasing the power in a single digital sideband also should improve reception inside buildings and enhance the performance of portable radios and other handheld devices.⁷ In short, where there is more signal power, a whole host of potential benefits accrue.

Permitting this requested change for asymmetric digital operation would be entirely consistent with previous Commission decisions authorizing HD Radio digital technology and approving subsequent improvements to the digital radio service, such as dual antenna operation, extended hybrid digital service, multicast channel operation and increased digital power operation. Granting the request for asymmetric sideband

⁵ The asymmetric sideband field testing described in the iBiquity Report was funded in part by the NAB FASTROAD technology advocacy program. iBiquity is today submitting with its comments a laboratory test report also funded by NAB FASTROAD. This latest report, HD Radio Asymmetric Sideband Laboratory Test Report, November 1, 2011, clearly shows the improvement in digital signal-to-noise ratio (SNR) that can be realized with the use of asymmetric sideband operation. See Comments of iBiquity Digital Radio, MM Docket No. 99-325, filed December 19, 2011.

⁶ See, e.g., iBiquity Report at 14, Figure 11, where an asymmetric power increase fills in drop out areas seen at 13, Figure 10; iBiquity Report at 17, Figure 14, where, similarly, an asymmetric power increase fills in drop out areas seen at 16, Figure 13.

⁷ NAB FASTROAD currently is helping fund development of a prototype "smart" phone with HD Radio receiver capability. This smart phone device will rely upon a headset cord antenna for reception of the digital radio signal, and the increased signal power afforded by the asymmetric operation contemplated here will help listeners achieve the maximum performance possible from this and other digital radio devices.

operation will be another step to improve listeners' digital service and to continue the development and increased adoption of HD Radio by stations and listeners alike.

For these reasons, NAB endorses the request by iBiquity and NPR and urges the Media Bureau to expeditiously authorize asymmetrical digital sideband operations for FM digital stations. NAB also supports the tentative conclusion of the Media Bureau to modify Form FCC 335-FM, currently used for Digital Notifications, to accommodate requests for increased digital power and/or operation with asymmetric digital sideband power.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Valerie Schulte". The signature is fluid and cursive, with a large initial "V" and a long, sweeping underline.

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