**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, DC 20554**

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| In the Matter of | ) | |
| | ) | |
| Digital Audio Broadcasting Systems | ) | MB Docket No. 99-325 |
| And Their Impact On The Terrestrial | ) | |
| Radio Broadcast Service | ) | |

To: Office of the Secretary
Attn: The Media Bureau, Audio Division

**COMMENTS**

The signatories hereto ("Joint Parties"), by their attorneys, hereby submit Comments in response to the November 1, 2011 Public Notice in the above-captioned proceeding. The Public Notice seeks comment on a request by iBiquity Digital Corporation ("iBiquity") and National Public Radio, Inc. ("NPR") that the Federal Communications Commission (the "Commission" or the "FCC") allow FM radio stations, when operating digitally, to voluntarily utilize a technique referred to as asymmetric digital sideband power (the "Asymmetric Sideband Proposal").[1] The Joint Parties, which consist of licensees operating more than 315 commercial FM radio stations nationwide, as well as several prominent broadcast equipment manufacturers, unqualifiedly support the Asymmetric Sideband Proposal. Implementation of this creative and flexible approach will allow more FM broadcasters to increase HD Radio power to the maximum

[1] *Comment Sought on Request for FM Asymmetric Sideband Operation and Associated Technical Studies*, FCC 99-325 (rel. Nov. 1, 2011) ("*Public Notice*"). iBiquity and NPR submitted two reports in support of their request. iBiquity submitted a report titled "FM HD Radio Field Performance With Unequal Digital Sideband Carrier Levels" ("iBiquity Report") and NPR submitted a report titled the "PAPR and Asymmetrical Sidebands Field Results: HD Radio Coverage Technologies" ("NPR Report").

permissible levels, facilitating the continued rollout of HD Radio, and thereby improving the quality of service provided to the public.

Historically, the Commission has recognized that HD Radio "promises the benefits that have generally accompanied digitalization – better audio fidelity, more robust transmission systems, and the possibility of new auxiliary services."[2] To realize these important public interest benefits, the Commission has taken "significant steps to facilitate the digital radio conversion by adopting rules and policies that encourage radio stations to invest in digital equipment and programming."[3]

In January 2010, the Commission's Media Bureau issued an Order permitting FM stations voluntarily to increase digital effective radiated power from the very modest level originally authorized in 2002 (the "HD Radio Power Increase").[4] The HD Radio Power Increase, which stemmed from a request filed by 18 radio group owners and four equipment manufacturers (most of which are signatories hereto), permitted all FM broadcasters to increase digital power by 6 dB (from -20 dBc to -14 dBc), with some broadcasters able to increase digital power by 10 dB (to -10 dBc) depending upon distance separations from first-adjacent stations.[5] The HD Radio Power Increase was based on the Media Bureau's conclusion that "it [was] important to increase FM Digital ERP to improve FM digital coverage and to eliminate regulatory

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[2] *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, First Report and Order, 17 FCC Rcd 19990, 19991 (2002).

[3] *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, Second Report and Order, First Order on Reconsideration and Second Further Notice of Proposed Rulemaking, 22 FCC Rcd 10344, 10351 (2007).

[4] *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, Order, DA 10-208 (2010) (so-called super-powered FM stations were not permitted to automatically take advantage of the HD Radio Power Increase). In 2002, the Commission had limited HD Radio power to one percent (-20 dBc) of the analog carrier level, which in many instances did not permit analog service replication.

[5] *Id.*, at ¶ 20.

impediments to FM digital radio's ability to meet its full potential and deliver its promised benefits."[6] The HD Power Increase allowed FM broadcasters operating in hybrid analog/digital mode to more closely replicate analog service, in terms of geographic coverage area and building penetration, with their digital signals.

While the HD Power Increase allowed most HD Radio stations to improve digital service, the Public Notice correctly points out that "a significant number of FM stations currently are precluded from taking advantage of the full 10 dB (-10 dBc) digital power increase … due to the presence of a nearby station on one but not both of the two first-adjacent channels."[7] This constraint results from the fact that the digital signal of an FM station operating in hybrid mode is situated on the "sidebands" immediately above and below the station's main analog signal. The digital sideband of an FM station operating in hybrid mode is thus closer in frequency to a first-adjacent station's frequency than the hybrid station's analog signal.

The Asymmetric Sideband Proposal is a flexible tool, designed to allow stations – which would otherwise be limited by a first-adjacent station – to take additional advantage of the HD Power Increase, thereby improving digital service to the public. Pursuant to the HD Power Increase, stations must currently operate with their sidebands at equal, or "symmetric", digital power levels, which may be limited by a first-adjacent station on either the lower or upper frequency. Under the Asymmetric Sideband Proposal, an FM station would be able to increase the digital power level on the digital sideband furthest from the first-adjacent station's frequency without causing harmful interference.

The iBiquity Report and the NPR Report both demonstrate the public interest benefits that would result from implementation of the Asymmetric Sideband Proposal. The iBiquity

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[6] *Id.*, at ¶ 13.

[7] *Public Notice*, at 2.

Report studied the effect of asymmetric digital sideband operation by station WKLB-FM, Fac. ID No. 10542, 102.5 mHz, Waltham, Massachusetts ("WKLB"), licensed to a subsidiary of Greater Media, Inc. pursuant to an FCC-issued experimental authorization. WKLB is one of numerous stations currently limited to a 6 dB increase (-14 dBc) in its digital ERP because of a limiting first-adjacent station, WRNI, 102.7 mHz, Narragansett, RI. The WKLB test observed mobile reception of the WKLB digital signal, utilizing both symmetric and asymmetric digital sidebands along two driving routes in the Boston metropolitan area. The test results confirm that operation with asymmetric digital sideband power offers stations a viable and effective option to increase digital power to levels that would not otherwise be permissible under the HD Power Increase.

The iBiquity Report also shows that asymmetric operation facilitated improved HD Radio coverage while maintaining requisite protection for first-adjacent channel stations. The report concludes that the Asymmetric Sideband Proposal "affords the broadcaster the ability to mitigate potential first-adjacent digital-to-analog interference by allowing independent adjustment of upper and lower IBOC digital sideband levels."

The NPR Report was prepared by Nautel, Ltd., NPR Labs, and radio station WAMU(FM), Fac. ID No. 65399, Washington DC, licensed to American University. The NPR Report analyzed the results of compatibility testing and field trials of an enhanced Peak to Average Power Ratio Reduction ("PAPR") algorithm for HD Radio operation that would provide increased transmitter output power while improving operating efficiency, including operation with asymmetrical digital sidebands. Although the NPR Report focused principally on the potential benefits that could be achieved by use of the PAPR algorithm, the report also concluded

that HD Radio "coverage improvements are possible with an increase of only one sideband."[8] The NPR Report also included results of asymmetric digital sideband operation of station WAMU, pursuant to FCC experimental authority. Based on that experimental operation, the report notes that WAMU's "HD Radio signal extended several miles farther out than it had, and there were some spots where dropouts were filled in, by use of asymmetric sidebands."

The iBiquity and NPR Reports amply demonstrate that implementation of the Asymmetric Sideband Proposal will improve digital coverage while continuing to afford first adjacent stations adequate protection from harmful interference. As a result, the Joint Parties strongly support the Asymmetric Sideband Proposal and urge its adoption and implementation as soon as is practicable.

The Public Notice also seeks comment on the process by which FM stations operating with asymmetric digital sidebands would notify the Commission. The Joint Parties support the tentative conclusion described in the Public Notice to modify Form FCC 335-FM to permit such notifications.

[8] NPR Report, at 8.

Respectfully submitted,

**Beasley Broadcast Group, Inc.**
**Broadcast Electronics, Inc.**
**CBS Radio Inc.**
**Continental Electronics Corp.**
**Emmis Communications Corporation**
**Entercom Communications Corp.**
**Greater Media, Inc.**
**Harris Corporation**
**Journal Broadcast Corporation**
**Lincoln Financial Media Company**
**Nautel Maine Inc.**
**Radio One, Inc.**

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