

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Digital Audio Broadcasting Systems	)	MM Docket No. 99-325
And Their Impact on the Terrestrial	)	
Radio Broadcast Service	)	

**Comments of  
iBiquity Digital Corporation**

iBiquity Digital Corporation (“iBiquity”), by counsel, respectfully submits these comments in response to the Media Bureau’s Public Notice in this proceeding.<sup>1</sup> The Bureau has requested additional comments regarding the proposal by various broadcasters and transmitter manufacturers (“Joint Parties”) to increase the authorized power for FM HD Radio™ broadcasts. In these comments, iBiquity again urges the Commission to grant the Joint Parties request and immediately allow broadcasters to increase the power for FM HD Radio transmissions. As is discussed below, iBiquity believes a power increase will enable broadcasters to bring the full benefit of HD Radio technology to the largest possible audience while maintaining the integrity of existing analog FM signals. iBiquity therefore urges the Commission to grant expeditiously the request of the Joint Parties.

**I. Background**

On June 10, 2008 a group of 18 broadcasters and four broadcast transmission equipment manufacturers submitted a request to the Commission seeking to increase the maximum permissible digital operating power of FM stations from the current level of 1 percent of a

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<sup>1</sup> See Comments Sought on Specific Issues Regarding Joint Parties Request for FM Digital Power Increase and Associated Technical Studies, DA 09-1127, Public Notice, MM Docket No. 99-325 (May 22, 2009)(“Second Public Notice”).

station's authorized analog power (-20 dBc) to a maximum of 10 percent of a station's authorized analog power (-10 dBc). Concurrently, iBiquity filed with the Commission a detailed report on extensive field tests iBiquity and the Joint Parties had conducted in several diverse markets across the United States. The Commission placed the Joint Parties proposal and the test report on Public Notice on October 23, 2008.<sup>2</sup>

The comments to the Public Notice demonstrated a virtual consensus that the proposed power increase will improve digital coverage and building penetration of an FM station's HD Radio digital signal. Almost all commercial broadcasters who submitted comments supported the proposed power increase.

After completion of the iBiquity/Joint Parties field tests, National Public Radio ("NPR") filed with the Commission a report on the results of laboratory tests NPR conducted using a proprietary digital propagation model NPR has developed. As iBiquity previously indicated to the Commission, the NPR report was based on certain worst case assumptions that cannot be relied upon as the Commission considers the Joint Parties request. For example, the NPR study assumed all stations in the United States had converted to digital broadcasts and all stations were broadcasting at the maximum -10 dBc power level. However, only about 15% of U.S. stations have converted to digital broadcasts since HD Radio technology was introduced in 2002. Moreover, even if there was an immediate demand to upgrade all FM radio stations, it would take several years to manufacture and install all the required equipment. Additionally, it is extremely unlikely that all stations currently broadcasting digitally will elect to increase power by 10 dB. Therefore, iBiquity finds NPR's assumptions an unrealistic basis to use to predict interference for the foreseeable future. When assessing the validity of the NPR model it is

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<sup>2</sup> See Comment Sought on Joint Parties Request for FM Digital Power Increase and Associated Technical Studies, DA 08-2340, Public Notice, MM Docket No. 99-325 (October 23, 2008)("Public Notice").

important to note the NPR study predicts fairly extensive digital interference at the existing -20 dBc power level. iBiquity's real world experience and the absence of interference complaints at the Commission substantiates the potential problem with the NPR model and report. Therefore, iBiquity again encourages the Commission not to rely on the NPR report when considering the Joint Parties request.

Based on the NPR study, some noncommercial broadcasters and NPR expressed concern about the impact of the power increase on first adjacent analog signals. Since these comments were submitted, the commercial broadcasters and iBiquity have repeatedly urged the Commission to approve the power increase. Recently, NPR informed the Commission that it is conducting a follow-on test program to help provide additional information the Commission could use to develop what NPR characterizes as a "managed" power increase. iBiquity and a number of commercial broadcasters have been working with NPR on these additional studies and have provided facilities and other resources to support the tests. As a result of these recent developments, the Commission issued the Second Public Notice seeking further input on the issues raised by the proposal of the Joint Parties. As discussed below, iBiquity again urges the Commission to promptly authorize broadcasters to implement a power increase so that their listeners can obtain all the benefits associated with HD Radio broadcasting.

## **II. The Commission Should Promptly Provide Authority to Allow Broadcasters to Immediately Increase FM HD Radio Digital Power Levels**

It has been a year since the Joint Parties originally submitted their proposal for an FM digital power increase. In the original proposal the Joint Parties demonstrated that without a power increase, many FM broadcasters would not be able to replicate the analog coverage of their stations, and the digital signal would continue to have difficulty penetrating buildings. These issues continue to provide impediments to the successful rollout of HD Radio

broadcasting. During the year since the Joint Proposal was filed, broadcasters have been faced with increased competitive and economic pressures that have presented many challenges to this industry. At the same time, the regulatory uncertainty over the power increase has made it more difficult for FM broadcasters to upgrade to HD Radio broadcasting because they cannot make an informed decision about investments in transmission equipment. Also, it is difficult for manufacturers of FM HD Radio transmission equipment and receivers to make long term plans about their products absent greater regulatory certainty about the HD Radio transmission environment. Prompt Commission action to authorize a power increase is required to address these concerns.

iBiquity has seen firsthand the impact of the current regulatory uncertainty. Broadcasters have slowed station conversions due to unwillingness to invest in transmission equipment that may be insufficient for higher power operations. At the same time, broadcasters are unwilling to invest in higher power equipment that may never be authorized for use. iBiquity has also seen automobile companies and receiver manufacturers express concern about digital coverage and consumer reactions to products that may not have the same coverage as analog radio receivers. The upcoming introduction of portable HD Radio products this fall has greatly increased the urgency for Commission action on this issue. Microsoft Corporation recently announced the next generation Zune music player will include HD Radio technology.<sup>3</sup> At the NAB Show in April, iBiquity demonstrated a portable radio that is scheduled for retail introduction this fall. In both cases, the devices use the earphone as an antenna, creating a much more challenging receiver environment than exists for a car or tabletop receiver. Because portable devices move

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<sup>3</sup> Microsoft Announces the Expansion of the Zune Entertainment Service to New Platforms and Markets; Confirms New Zune HD Portable Media Player, News Press Release dated May 26, 2009, available at <http://www.microsoft.com/Presspass/press/2009/may09/05-26ZuneHDPR.msp>.

with the user, the antenna is constantly changing in relation to the station's transmission tower. In addition, portable devices need to make the transition from outdoor to indoor listening environments. These issues will present difficult challenges at existing power levels that may impede consumer acceptance of these new devices and influence the decisions of portable radio manufacturers to produce HD Radio receivers in volume.

**III. The Commission Should Authorize an Intermediate Power Level Increase Pending Final Approval of a Full 10 dB Power Increase**

iBiquity continues to believe Commission authorization of a 10 dB power increase is the appropriate means to address concerns about HD Radio coverage and that this power increase can be implemented without harmful interference to analog broadcasting. In order to address any concerns about the power increase, however, iBiquity encourages the Commission immediately to authorize an intermediate power increase of 6 dB pending final approval of the full 10 dB increase. A 6 dB increase is attainable for many FM broadcasters with existing transmission equipment and can be put in place relatively quickly in numerous cases. An intermediate power increase also will give the Commission and the industry real world experience on the true impact of a power increase and the potential improvements that can be realized at higher power. Finally, an intermediate power increase will signal to automobile and receiver manufacturers that power increases will be approved and products can be planned with an expectation of better HD Radio coverage. iBiquity's support for an intermediate 6 dB increase is predicated, however, on continued Commission consideration of the full 10 dB power increase that the Joint Parties requested. Moreover, based on the tests described below, iBiquity believes an increase of less than 6 dB will provide an insignificant improvement that will not address any of the industry's concerns about digital coverage.

iBiquity and Greater Media recently conducted tests in the Boston market to analyze the

potential benefits of a 6 dB power increase. Those results are included with Greater Media's comments in this proceeding. The tests demonstrate the 6 dB increase in power provides FM broadcasters with a significant improvement in coverage that comes much closer to replicating analog coverage for mobile users. Therefore, the Commission can conclude there is value to an intermediate increase to help support the imminent introduction of new digital products this fall. At the same time, the tests demonstrate a full 10 dB increase is necessary to truly replicate analog coverage, particularly for indoor listening. Thus, iBiquity continues to believe a full 10 dB increase should be authorized notwithstanding any immediate relief the Commission provides in the form of an intermediate increase. iBiquity intends to continue to work with NPR to complete the current test program and analyze those results. iBiquity believes those tests should provide the Commission with additional information relevant to its consideration of the 10 dB increase. However, sufficient information already exists in the public record in this proceeding for the Commission to immediately authorize a 6 dB increase in FM digital power.

**IV. The Commission Should Not Wait for Further NPR Test Results Before Authorizing an Intermediate Power Increase**

The Commission in the Second Public Notice asks whether it should delay consideration of the power increase until after the completion of the latest NPR studies. There can be little doubt that if the Commission decides to wait until after the NPR studies are completed, there will be another very lengthy delay before the benefits of higher digital power can reach the marketplace. Although NPR has indicated it intends to complete the tests by the end of the summer, as an active participant in the test program, iBiquity has observed that it is extremely unlikely that the tests can be completed and a report prepared before the fall. It will take additional time for the Commission to receive the report and make it available for public comment. This entire process could take several months. Interested parties will then need to be

given the opportunity to file comments and reply comments. It is hard to envision a scenario where this process is completed before the first quarter of 2010. The Commission then will need to draft and adopt an order authorizing the power increase, which will likely take several months to complete. Given this timeline it is hard to imagine that broadcasters will be allowed to increase their power levels before the third quarter 2010. During this period, concerns about digital coverage will grow and new HD Radio products will continue to suffer from unnecessarily low digital power output. This will merely add uncertainty in the marketplace, which could have a detrimental impact on the roll-out of HD Radio technology.

The Commission can move forward today with a power increase with confidence that an increase in digital power will have a *de minimis* impact on adjacent analog channels. The technical record in this proceeding demonstrates through real world experience that the power increase will not harm adjacent channel analog stations in the vast majority of cases. The field test reports iBiquity originally filed in this proceeding were based on the performance of actual radio stations in a variety of environments over an extended period of time. These tests were designed and conducted with significant technical rigor so that broadcasters would have the data to insure that they could increase power without impairing analog radio. No one has more at stake from the power increase than existing analog broadcasters who have billions of dollars invested in analog radio stations. Broadcasters are the ones who would be harmed if the digital signal impairs first adjacent analog stations. Broadcaster's confidence in the technical record in this proceeding is amply demonstrated by the Joint Parties request itself and related subsequent filings.

The Commission also should consider that not all broadcasters will increase the power of their FM digital stations at the same time. Rather, stations are likely to increase the power at

different times, creating a gradual transition. Some stations will not increase power at all and others may opt for much less than 10 dB or 6 dB. Decisions on power increases are likely to be influenced by equipment replacement schedules, overall capital budgets, and the coverage profile of the particular station. Thus, any power increase will be limited in scope and will be phased in over time, significantly inhibiting any chance for significant widespread problems. All of these factors should give the Commission comfort to move forward immediately with the authorization for broadcasters to increase the power levels of the HD Radio digital signal.

**V. The Existing Standards and Complaint Procedures for Digital Radio are Sufficient to Meet the Needs of Broadcasters and Listeners.**

The Commission in the Second Public Notice seeks comments on whether new standards or complaint procedures are needed to insure that the transition from analog-to-digital can be completed with minimal disruption. The Commission's existing standards and complaint procedures have proven effective for the limited number of questions about digital-to-analog interference that have arisen to date; and iBiquity does not believe that there is any need to modify the existing standards or procedures. Today, the existing interference protection standard is the FM frequency mask.<sup>4</sup> Over the years this has been an effective standard to insure that broadcasters do not receive harmful interference. Even if the Commission were to approve the entire power increase as proposed by the Joint Parties, the digital HD Radio signal would still be within the existing FM frequency mask. Absent any evidence that the Commission's existing standards and complaint procedures are inadequate, there is no reason to change this existing standard. In fact, these procedures have been effective in maintaining the viability of the FM analog and HD Radio digital signals. Until evidence exists that the complaint process does not work, iBiquity believes that the Commission should leave these procedures in place.

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<sup>4</sup> See 47 CFR § 73.317 (2009).

**VI. Conclusion**

iBiquity, the broadcasters, manufacturers and consumers have all made a substantial investment in HD Radio technology. Prompt approval of a power increase will enhance this existing investment and ensure that listeners are able to reap the full promise of radio's transition to digital. The current power level represents an unnecessarily conservative power limitation, which is having the unintended consequence of delaying the broader adoption of HD Radio technology thereby having a detrimental impact on the existing commercial FM radio industry. For the foregoing reasons, iBiquity Digital Corporation urges the Commission to authorize an intermediate power increase of 6 dB and work toward authorization of a full 10 dB increase after completion of NPR's current test program.

Respectfully submitted,

/s/ \_\_\_\_\_

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