

December 9, 2008

VIA ELECTRONIC FILING

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
236 Massachusetts Ave. NE, Suite 110
Washington, DC 20002-4980

Re: FCC 08-196, Notice of Inquiry in the Matter of Development of Devices Capable of Supporting Multiple Audio Entertainment Services, MB Docket No. 08-172

To Whom It May Concern:

Thank you for the opportunity to file reply comments on matters raised for inquiry in the above referenced proceeding. My name is Jonathan Hardis, and I submit these reply comments as an individual citizen interested in the development of digital broadcasting.

1. Commission Mandates Would Have Unintended Consequences

Although the Commission made many inquiries, the key ones relate to a proposition that a mandate might be imposed to require SDARS receivers to include IBOC receiver capability.^{1,2}

¹ *Notice of Inquiry in the Matter of Development of Devices Capable of Supporting Multiple Audio Entertainment Services (NOI)*, MB Docket No. 08-172, FCC 08-196, Released August 25, 2008; available electronically at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-196A1.pdf.

² The *NOI (Ibid.)* makes frequent use of the expression “HD Radio.” “HD Radio” is a trademark of iBiquity Digital Corporation. It indicates those IBOC radio receivers—the generic term—that contain iBiquity’s proprietary software and components and which conform to iBiquity’s nonpublic labeling standards. Herein, I use the generic term “IBOC” in response to Commission inquiries. I address separately in MM Docket No. 99-325 the problem that Commission action has thus far precluded other firms from developing compatible IBOC equipment to compete against the HD Radio brand.

Rarely have I seen such poor justification for the heavy hand of Government to manipulate consumer choice, with a proposal that is so ill conceived that its adoption would have exactly opposite of the intended effect.

The Commission's inquiry pertains to the possible forced inclusion of IBOC reception in *all* SDARS receivers.³ This was the proposition that iBiquity originally petitioned in December 2007.⁴ Later, the iBiquity proposition transformed into one where the mandate would apply to *only* those receivers that also had AM/FM reception capability.⁵ This limited version is the one that iBiquity still supports,⁶ as does the NAB.⁷

Since the parties supposedly most aggrieved no longer ask for regulation requiring IBOC capabilities in *all* SDARS receivers, the Commission may safely dismiss its further consideration.

The only remaining question is whether IBOC capability should be required if the SDARS receiver is also capable of AM/FM reception.

³ *NOI (Id.)* at 6.

⁴ *See, e.g.,* iBiquity Digital Corporation, Notice of Ex Parte Presentation, MB Docket No. 07-57, December 20, 2007; available electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6519820254. Other ex parte presentations followed.

⁵ *See, e.g.,* iBiquity Digital Corporation, Notice of Ex Parte Presentation, MB Docket No. 07-57, March 10, 2008; available electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6519865865.

⁶ Comments of iBiquity Digital Corporation, MB Docket No. 08-172, November 10, 2008; available electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6520184394.

⁷ Comments of the National Association of Broadcasters, MB Docket No. 08-172, November 10, 2008; available electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6520184390.

We arrive, therefore, at a rather odd proposition. The petitioners are *not* asking the Commission for a uniform and nondiscriminatory mandate for IBOC capabilities in all AM/FM radio receivers. While this would potentially be a discussion point for an orderly transition to an all-digital broadcast service and the management of the broadcast bands, it is something the Commission has already declined to do for now.⁸ Instead, the petitioners single out SDARS receivers as somehow singularly influential in the future of IBOC. This is utter hogwash—SDARS receivers amount to only a small fraction of AM/FM receivers that are sold.

Current regulation does not require SDARS receivers to be capable of receiving any terrestrial broadcast format, either analog or digital.⁹ Yet there seems to be little dispute that most SDARS receivers today are also capable of receiving analog terrestrial formats.¹⁰

This indicates that the marketplace is working properly. Analog reception may be implemented at a very small marginal cost, and it provides sufficient utility to consumers that they are willing to pay for this feature at a price acceptable to the receiver makers—who have no vested interest in which entertainment service(s) their customers might choose to patronize after the radio is sold. Such receivers *already* allow for competition between a single SDARS entertainment provider and many terrestrial entertainment providers, including Beasley Broadcast Group, Inc.,

⁸ *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 10,344 (2007), at 100; available electronically at http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-07-33A1.pdf.

⁹ *NOI (Id.)* at 7. See also Fn. 29 therein.

¹⁰ See, e.g., “Essentially every automobile sold in the U.S. is equipped with an AM/FM receiver,” in Comments of Sirius XM Radio, Inc., MB Docket No. 08-172, November 10, 2008; available electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6520184402.

Bonneville International Corporation, CBS Radio, Inc., Clarke Broadcasting Corp., Emmis Communications Corporation, Entercom Communications Corp., Greater Media, Inc., Journal Broadcast Corporation, Premier Broadcasters, Inc., and Saga Communications, Inc., all of whom seem to under appreciate this.¹¹

In contrast, and as explained more fully in the next section, the cost to provide IBOC capability is substantially greater than for AM/FM capability alone. The Commission runs a substantial risk that an IBOC mandate, which would raise the cost of the AM/FM reception feature while providing the customer little or no utility in return, would generate a huge disincentive for consumers to purchase SDARS receivers with AM/FM reception *at all*.

If customers were to be faced with a much higher price for terrestrial broadcast reception, they could easily decide to do without it. The true competitive threat to terrestrial broadcasters is artificially pricing receivers for their services above what the market will bear.¹²

2. The Marketplace is Responding Rationally to IBOC's Price and Utility, and No Corrective Mandates are Warranted

Ultimately it is the marketplace, not any commenter on this docket, that provides the verdict on whether or not IBOC is worth what iBiquity and others charge for it. However, the market appears to be acting rationally.

¹¹ Comments of Beasley Broadcast Group, Inc., et al., MB Docket No. 08-172, November 10, 2008; available electronically at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6520184410.

¹² In other circumstances, iBiquity has made essentially the same argument. *Second Report and Order (Id.)* at 84.

First, we consider the incremental cost of IBOC capability over AM/FM capability alone. This cost consists of two parts. First, iBiquity charges a license fee for their intellectual property (IP), to recoup their development costs. Second, there are costs to include the extra electronic components necessary for IBOC reception.

To my knowledge, iBiquity does not disclose its licensing fees for receivers.¹³ In their Comments, they also declined to provide information about their fee structure in response to Commission inquiry.¹⁴ However, we can deduce approximately what the license fee is. In the past, iBiquity has offered rebates on IBOC receivers manufactured by their licensees. These rebates have been on the order of \$25, for low-end receivers, to \$50, for high-end receivers.¹⁵ On the presumption that iBiquity was not rebating significantly higher amounts than their per unit revenue, this would be the approximate cost for the *IP alone* in an IBOC receiver.¹⁶

More significantly, though, we should not have to guess at the number. iBiquity has committed to reasonable and nondiscriminatory licensing. Since the fees are nonnegotiable, there is no reason not to make them public—indeed, to require them as essential background data for Commission decision-making. There was a time when it was considered impolite, if not an antitrust problem, to have cost (license fee) disclosures before deciding technology standards.

¹³ In contrast, iBiquity's licensing fees for broadcasters may be found on their website at http://www.ibiquity.com/broadcasters/licensing/technology_license.

¹⁴ *NOI (Id.)* at 8.

¹⁵ See http://www.ibiquity.com/press_room/news_releases/2006/369.

¹⁶ Confirmatory evidence: "Supposedly, it costs a manufacturer about \$50 to implant an iBiquity HD chip into a radio, thus transforming it into an HD radio. That \$50 (or so) is the fee the manufacturer pays to iBiquity." At <http://www.hear2.com/2007/10/the-ongoing-tra.html> (visited December 7, 2008).

This is no longer the case. In response to a policy change by the IEEE-SA,¹⁷ the Department of Justice has decided it permissible for IP owners to disclose—and to commit to—the maximum fee they would charge if a standards body adopts their technology.¹⁸ IEEE-SA came to realize that this information was necessary for making rational decisions, and the Commission's need for this information is no less great.¹⁹ Any rulemaking on the instant matter should require iBiquity's disclosure and agreement as a prerequisite.

In addition to IP licensing, IBOC reception requires electronic components to perform computationally intensive digital processing. iBiquity gives the incremental cost of adding these components at about \$12–\$15.²⁰

The total incremental cost for an IBOC receiver, therefore, might be something broadly in the neighborhood of \$30–\$60 in the price of raw goods—parts and fees. The price to the consumer would end up being a multiple of this as the receiver moves through the value chain from manufacturer to distributor to retailer. Since the lowest cost, standalone IBOC receivers today cost

¹⁷ The IEEE Standards Association (SA) develops voluntary consensus standards in fields of electronics and electrical engineering, including broadcast technology. <http://standards.ieee.org/>

¹⁸ U.S. Department of Justice, Antitrust Division, Business Review, April 30, 2007; available electronically at <http://www.usdoj.gov/atr/public/busreview/222978.htm>.

¹⁹ *Revised Patent Procedures of the Federal Communications Commission*, 3 FCC 2d 26–27 (1966), committing to record a Public Notice adopted December 1961, and as further explained at 3 FCC 2d 25 (1966).

²⁰ iBiquity Digital Corporation, Notice of Ex Parte Comments, MB Docket No. 07-57, July 9, 2008; available electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6520033660.

about \$100,²¹ it would not be unreasonable to peg the incremental retail cost of IBOC capability in SDARS receivers as something in the neighborhood of \$50-\$100 minimum.

Compared to analog AM/FM capability, which costs very little, this is a staggering increase. So what, exactly, would the consumer gain in terms of utility? The utility of IBOC spans three things: main channel audio, supplemental channel audio, and prospective additional features.

In terms of entertainment content, main channel audio is *exactly the same* as is found in analog. Broadcasters such as Beasley Broadcast Group, Inc., et al.,²² make a huge deal about being disenfranchised, even though consumers *already* have access to their services. On main channel audio, IBOC is about a purported improvement in sound quality, even though broadcasters are under no obligation to provide better quality audio.²³ The petitioners' complaint here reduces to a plea that Government should intervene in a consumer's decision of how much they should pay for what level of sound quality, even though the petitioners themselves do not commit to enabling higher sound quality. As silly as this sounds, there is more. In my experience, even analog FM has noticeably better audio quality than does bit-rate constrained SDARS audio. Terrestrial broadcasters have absolutely no basis for complaint.

The second aspect of IBOC utility is supplemental channel audio. Here is where the petitioners make their strongest case, asking for Government intervention to ensure that consumers can

²¹ See <http://www.hdradio.com/gift/>

²² *Comments of Beasley Broadcast Group, Inc., et al., (Id.)*.

²³ *Second Report and Order (Id.)* at 28 and 32.

receive “all channels,” whether they want to receive them or not. However, several factors puncture this argument. First, no broadcaster is obligated to originate supplemental channel audio. A mandate to receive these supplemental channels would be inappropriate absent a guarantee that they will continue to be produced. Second, in answer to the *NOI* (at 7), supplemental channel audio appears in large part to be a temporary use of IBOC bandwidth—a short-term marketing gimmick to help sell IBOC receivers.²⁴ Supplemental channels by and large produce no revenue for commercial stations, and presumably they will be replaced by subscription services once the Commission allows it.²⁵ While there are some supplemental audio streams with good production values, particularly on noncommercial stations, these are the exception rather than the rule. Commercial radio, with all of its expertise in marketing its stations to build and retain audience, seems to make little such effort for its supplemental channels. To date, no supplemental channel has an audience large enough to show up in Arbitron ratings.²⁶ These indicate that supplemental channel programming may soon be “cancelled.”

The sad truth is that commercial radio has made the implicit judgment that no supplemental audio channel has greater commercial appeal than the entertainment service on the lowest rated station in the market. If they felt otherwise, they would be free to change the format of that station to that of the supplemental channel—increasing the reach of the programming at least a

²⁴ The HD Radio Alliance <http://www.hdradioalliance.com/>, which is a consortium of *broadcasters*, not receiver manufacturers, nonetheless focuses its marketing and sales efforts on *receivers* rather than their own products (entertainment programming). Nonetheless, these broadcasters of course are investors in iBiquity and benefit from the steep receiver licensing fees that iBiquity charges.

²⁵ *Second Report and Order (Id.)* at 49.

²⁶ See, e.g., S. McBride, “*Weak Signals: Can HD Radio Find Listeners?*” Wall Street Journal, November 4, 2008. Supplemental channels often have a larger audience as Internet streams than by radio.

thousand fold without need of Government intervention, and not limited to only SDARS receivers. Somewhere there might be an argument that says that the public good requires AM/FM receivers to receive all programming—even that with ratings too low to meter. But certainly commercial broadcasters cannot complain of economic harm in the absence of such a mandate.

Finally, IBOC radio promises additional features in the future. However, petitioners cannot honestly complain of market failure on services that are not yet marketed, nor should they expect that consumers would pay a premium for receivers with features neither demonstrated nor yet proven.

The most interesting prospective development for IBOC radio is the deployment of “conditional access,” which will enable IBOC radio for fee-based services. According to the trade press, all IBOC receivers will soon include this technology.²⁷ That is, consumers that purchase IBOC receivers must pay for fee-based service capability whether they have any interest in it or not. iBiquity is the monopoly provider of IBOC software, and they dictate the features a receiver must have in order to carry their “HD Radio” trademark.

Cynics might say that the true purpose of the petitioners’ campaign is not to ensure reception of free supplemental channels, but rather to enlist the power of Government to stealthily force dis-

²⁷ See, e.g., T. Rucktenwald and H. Latapie, “How Serialization Benefits Radio Broadcasters,” Radio Business Report, November 24, 2008, online at http://www.rbr.com/features/intel_briefs/11500.html.

tribution of their digital vending machines. In reply, I would encourage the Commission to discount such talk and to take iBiquity and the broadcasters at their word that this is not their goal. Not one Comment cited competition in fee-based services (the only type of service provided by SDARS) as requiring Government intervention. Instead, iBiquity twice cited radio service as “free”²⁸ as did NAB.²⁹ Beasley Broadcast Group, Inc., et al., stressed the term “free” nine times.³⁰ And Clear Channel, to ensure the Commission got the point, emphasized “free” 66 times in 21 pages.³¹

Therefore, the Commission should be disabused of any concern of competitive harm in the market for pay (subscription) broadcast services, as the petitioners are not claiming any. The Commission should limit its inquiry strictly to free broadcast services—that is, main channel and supplemental channel entertainment services, as we know them today—and not speculative future services that have yet to come forward.

So, to review, the proposition before the Commission reduces to one where consumers would be forced to spend about \$50 to \$100 extra for the same main channel entertainment service that they can already receive, plus second-tier entertainment service of dubious longevity. I suggest that the Commission’s policy here should mirror that in the cable TV arena, and the SDARS

²⁸ *Comments of iBiquity Digital Corporation (Id.)*.

²⁹ *Comments of the National Association of Broadcasters (Id.)*.

³⁰ *Comments of Beasley Broadcast Group, Inc., et al., (Id.)*.

³¹ Comments of Clear Channel Communication, Inc., November 10, 2008; available electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6520184401.

merger matter, where the Commission promotes unbundling. Proper policy is to continue to allow consumers of radio receivers to purchase the level of service that meets their needs.

3. iBiquity is Victim of Its Own Anticompetitive Conduct

The slow consumer update of IBOC receivers, and its general lack of integration to date with SDARS receivers, can be attributed as much as anything to iBiquity's own anticompetitive conduct. It should not be the function of Government to assist them in continuing it.

As explained *supra*, SDARS receivers generally contain AM/FM analog reception capability because receiver makers are able to add that feature at a price consumers are willing to pay. The ingenuity and competitive forces within the consumer electronics industry have a long history of driving down costs to enable products with more capabilities. Evolving to IBOC capability at a popular price point would be a no-brainer, if these forces could act unrestrained.

iBiquity, however, does not see it that way. They insist that receiver makers purchase \$12–\$15 in additional parts (which would cost a multiple of that by the consumer at retail) from their licensees and corporate owners. What are these parts? The principal cost is for a high-performance digital signal processor (DSP) chip, which an SDARS receiver *already has*. Rather than letting a single DSP do double duty for both SDARS and IBOC, iBiquity insists that these two processes

be stovepiped, using separate parts. As explained elsewhere,^{32,33} iBiquity reneged on its promise to provide a complete and open standard for IBOC. As a result, receiver manufacturers cannot develop the software to utilize a single DSP, at lower cost.

Not only does iBiquity insist on the purchase of unnecessary hardware, they would double-bill the consumer for essential IP. According to a published report, combining IBOC and XM satellite radio functions in the same radio receiver would be “relatively easy since the codecs are virtually identical.”³⁴ However, iBiquity will not disclose the details of its IBOC codec—not even the patents that must be licensed for its use. As a result, in a combined SDARS/IBOC receiver one might pay double for the same licenses, once through the SDARS stovepipe, and once through the IBOC.

If consumers are unwilling to pay the extra price for IBOC in SDARS receivers, iBiquity has only itself to blame. Rather than encouraging innovation and entrepreneurship to bring down the price, they would rather maintain their monopoly and its consequent inefficiencies.

It is not the function of Government to aid and abet this type of anticompetitive conduct. Instead, the Commission should use its power to end it. Here, the Commission should quickly deny any

³² *Petition for Reconsideration of Jonathan E. Hardis*, MM Docket No. 99–325, July 9, 2007; electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6519550109.

³³ Comments of Jonathan E. Hardis, MM Docket No. 99–325, July 14, 2005; available electronically at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518010460.

³⁴ *Let's Break Down the Anti-HD Radio Arguments*, Radio World Online, October 11, 2004; available electronically at http://www.rwonline.com/reference-room/guywire/anti_hd.shtml.

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petition to force consumers to buy IBOC gear at inflated, monopoly prices. Until iBiquity gets its own house in order, claims of unfair competition by others ring hollow.

4. Conclusion

The Commission has no rational basis to mandate IBOC capabilities in SDARS receivers.

Sincerely,

A handwritten signature in black ink that reads "Jonathan E. Hardis". The signature is written in a cursive style with a large initial 'J' and a distinct 'E'.

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