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

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

COMMENTS OF iBIQUITY DIGITAL CORPORATION

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EXECUTIVE SUMMARY

iBiquity Digital Corporation ("iBiquity"), by its attorneys, hereby submits its comments on the Commission's recent Further Notice of Proposed Rulemaking and Notice of Inquiry in this proceeding. iBiquity is the original developer of In-Band On-Channel ("IBOC") digital audio broadcasting technology and is the licensor of the HD Radio™ IBOC system. iBiquity concurs with the Commission's determination that the rollout of the HD Radio system has progressed significantly since the Commission's 2002 Report and Order authorizing commencement of digital broadcasts on an interim basis. iBiquity offers these comments in support of the Commission's efforts to use this proceeding "to foster the development of a vibrant terrestrial digital radio service for the public" and encourages the Commission to expedite its adoption of final IBOC rules consistent with iBiquity's comments.

Specifically, iBiquity encourages the Commission to allow market forces to guide the conversion from analog to digital broadcasts. iBiquity agrees with the Commission's conclusion that the absence of new radio spectrum for conversion to digital broadcasts is a significant distinguishing factor between the radio and television digital transitions and removes the need for mandatory digital conversion for radio. Absent evidence in the record that market forces are not working, there is no need for conversion mandates at this time.

Furthermore, iBiquity strongly endorses the Commission's initial conclusion that a "flexible DAB service policy would likely increase the ability of broadcasters to compete in an increasingly competitive marketplace." Relatedly, it supports the authorization of both scalability and the extended hybrid mode in order to foster the development of robust new services for consumers using the HD Radio system. Without these features, the HD Radio system will be able to offer the important improvements to the existing analog AM and FM

signals that have always been contemplated, but the system will fall short of providing the revolutionary upgrade to AM and FM broadcasting that both the FCC and the broadcast industry envisioned.

iBiquity supports the use of the HD Radio system to improve audio quality and to enhance quality levels, however, iBiquity believes market forces should be allowed to determine the optimal audio quality levels of the HD Radio system. Therefore, it is iBiquity's view that the Commission should not establish a minimum audio quality level but rather it should allow radio broadcasters to make their own determination of the appropriate level of audio quality for their particular listeners.

iBiquity supports the Commission's tentative conclusion that the public interest would be served by authorizing supplemental audio services without the need for experimental authorization. It also encourages the FCC to authorize broadcasters to provide datacasting services with sufficient flexibility in order to promote innovation in this area. Furthermore, iBiquity believes that even if the Commission had legislative authority, it should not impose additional spectrum fees for new multicasting or datacasting services. These services are digital upgrades to existing SCA services. Currently, broadcasters can provide both datacasting and supplemental audio channels using SCA frequencies without incurring additional spectrum fees. The same approach should be applied to digital datacasting and multicasting services.

iBiquity takes exception with the Commission's proposal to create a separate station identification requirement associated with digital broadcasts. iBiquity submits that separate station identification is not required for the main digital channel audio or any supplemental digital audio or datacasting services. The HD Radio system operating in the hybrid mode simulcasts identical programming in an analog and digital format. All programming must be

simulcast in both analog *and* digital. Broadcasting a separate digital call sign would require significant system modifications, new expense and new delays in equipment deployment that will deter conversions to digital broadcasts.

iBiquity endorses both the Media Bureau's proposal to expand the existing interim authorization for AM IBOC to include nighttime service and the Commission's proposal to expand that interim authorization to permanently allow AM stations to broadcast digitally at night. It also believes that the Media Bureau's authorization of FM station conversions using a separate antenna implementation should be made permanent and the Commission should eliminate any requirement for special temporary authority. Moreover, the Commission should delegate to the Media Bureau authority to authorize future innovations in HD Radio implementation involving the entire physical plant rather than just the antenna system. The Commission should also create a presumption of validity for equipment and implementation approaches absent evidence that a particular approach will cause additional harmful interference or degrade digital service.

iBiquity believes that any action on the part of the Commission to implement a digital audio content control regime for IBOC would be premature and has a great potential to stifle consumer acceptance of HD Radio. iBiquity agrees with the Commission that these issues "are not appropriate subjects for a rulemaking at this stage of the DAB conversion process." Moreover, iBiquity urges the Commission to avoid any regulation which places IBOC at a disadvantage when compared to current analog radio.

iBiquity is encouraged by the Commission's efforts to create appropriate rules for IBOC service that will foster the nation's conversion to digital broadcasts. Based on these comments, iBiquity urges the Commission to expedite its implementation of final rules eliminating the

interim status of its IBOC authorization and permanently authorizing digital broadcasting using iBiquity's HD Radio system.

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1 *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Broadcast Service*, MM Docket No. 99-325, *Further Notice of Proposed Rulemaking and Notice of Inquiry* (Apr. 20, 2004) (The portions of the item relating to the Further Notice of Proposed Rulemaking are referred to herein as "Further Notice". The elements that relate to the Notice of Inquiry are referred to as the "NOI").

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

3 Further Notice at 2.

As an initial matter, iBiquity offers its congratulations to the Commission for the execution of this proceeding. Since 1999, when the Commission initiated this proceeding, it has used this docket as a means to gather information and encourage the various industries supporting the introduction of IBOC to come together and create a market-driven approach for implementing this technology. The Commission allowed the industry to shape the introduction of IBOC technology and created an extremely flexible interim set of rules to provide broadcasters and equipment manufacturers with the ability to be innovative. That approach has resulted in an industry consensus on IBOC and a successful launch of the HD Radio system. The Further Notice provides the Commission with the opportunity to extend this flexible approach to IBOC technology by embodying this same level of adaptability in its permanent IBOC rules. iBiquity believes the continuation of the Commission's flexible approach for the IBOC service will provide the most productive environment for the rollout of this technology.

I. BACKGROUND

iBiquity's HD Radio system offers terrestrial AM and FM broadcasters the opportunity to participate in the digital conversion that already has transformed most other forms of communication and entertainment. Since the Commission initiated this proceeding in 1999, there has been a steady increase in digital challenges to the position of local AM and FM radio stations. The nation has witnessed continued growth of peer-to-peer file sharing among computer users, the widespread proliferation of low cost and portable MP3 players and, most recently, the introduction of the Satellite Digital Audio Radio Service ("SDARS") by Sirius Satellite Radio ("Sirius") and XM Satellite Radio ("XM"). There were more than 16 million MP3 players sold in the United States in 2003, representing an increase of 225% from the

previous year.[4] In its first year, iTunes, Apple Computer's online music store, sold more than 70 million downloadable songs.[5] Apple® announced on May 5, 2004 that more than 3.3 million songs had been downloaded from its iTunes site in one week.[6] All this digital music can be loaded in portable devices that replace radio listening.

The most direct challenge to terrestrial radio has come from the new satellite radio services. Earlier this week, XM announced it had more than 2 million subscribers, less than three years after introducing service to the public.[7] At the end of the first quarter of 2004, Sirius announced it had more than 350,000 subscribers and projected it would have one million subscribers by the end of 2004.[8] XM predicts it will have 20 million subscribers by 2010.[9] Both Sirius and XM compete with terrestrial radio not only with new programming but also by emphasizing digital quality and new features such as song title and artist information. The decision by both satellite providers to offer instant local traffic and weather information has further heightened their competition with terrestrial radio.[10]

The HD Radio system allows AM and FM broadcasters to bring new digital offerings to all listeners throughout the United States. Terrestrial radio plays a unique role in our society, providing news, entertainment and information to the vast majority of Americans on a daily

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4 *Digital Audio Comes of Age*, CIBC World Market Reports (May 2004).

5 http://www.apple.com/itunes.

6 *iTunes Music Store Sells 3.3 Million Songs in One Week*, Apple Press Release dated May 5, 2004, available at http://www.apple.com/pr/library/2004/may/05itunes.html.

7 http://www.xmradio.com.

8 "Sirius Update" dated April 21, 2004, available at http://www.apple.com/pr/library/2004/may/05itunes.html.

9 *XM Satellite Radio Tops Two Million Subscribers*, XM Press Release dated June 14, 2004, available at http://www.xmradio.com/newsroom/screen/pr_2004_06_14.html.

10 Sirius currently provides traffic and weather information for twenty cities. *See Sirius Satellite Radio Expands Traffic And Weather Information to 20 Markets Nationwide*, Sirius Press Release dated March 26, 2004, available at http://www.sirius.com/servlet/ContentServer?pagename=Sirius/CachedPage&c=PresReleAsset&cid=1079995335425. XM provides traffic and weather information for twenty-one metropolitan markets and several interstate corridors. *See* http://www.xmradio.com/programming/neighborhood.jsp?hood=traffic.

basis. The HD Radio system provides radio broadcasters with the means to upgrade their broadcasts and offer new services to meet the needs of listeners. Terrestrial radio plays a unique role in our society, providing news, entertainment and information to the vast majority of Americans on a daily basis. The HD Radio system provides radio broadcasters with the means to upgrade their broadcasts and offer new services to meet the needs of listeners. FM broadcasters will be able to provide CD-quality audio and AM broadcasters will be able to provide FM-like service. In addition, the HD Radio system supports a number of new innovative features. All stations are able to provide program associated data, such as artist name and song title, along with the digital audio programming. Broadcasters that choose to offer more advanced services have the option to introduce supplemental audio services and data services. These options provide significant improvements over existing Subsidiary Communication Authority ("SCA") services.

As of May 31, 2004 approximately 107 stations had commenced digital broadcasts using HD Radio technology. These stations operate in 24 states and the District of Columbia. Together, they have a combined audience of 13 million listeners and serve markets with a total population of 110 million people. To date more than 300 stations have committed to converting their operations.

Since January 2004 when Ultimate Electronics sold the first commercial HD Radio receiver, manufactured by Kenwood Corporation, several receiver manufacturers have advanced the rollout of HD Radio technology. Kenwood offers an HD Radio tuner that can operate with more than twenty Kenwood aftermarket automobile headunits. Panasonic Corporation introduced an integrated HD Radio automobile tuner and headunit in February 2004. JVC currently is manufacturing an integrated HD Radio auto receiver that will be offered for sale in

the next few weeks. Onkyo Corporation will introduce this fall an HD Radio home receiver. The Kenwood and Panasonic receivers currently are available nationwide from Crutchfield Corporation, a large catalog and Internet retailer, as well as from a variety of regional and local retailers in markets currently served by HD Radio broadcasts. Visteon Corporation has announced its intention to launch an Original Equipment Manufacturer ("OEM") automobile receiver for a 2005 Model Year vehicle.

II. RESPONSES TO THE FURTHER NOTICE

A. Conversion Policy

iBiquity encourages the Commission to allow market forces to guide the conversion from analog to digital broadcasts. HD Radio technology is designed for a market-driven transition. No new spectrum is required for digital conversion, and new digital broadcasts are compatible with existing analog services. iBiquity designed the HD Radio system's hybrid mode to permit the simulcast of the digital signal alongside each station's existing analog signal. Therefore, stations can convert to digital at their own pace without interfering with the digital or analog operations of other stations. iBiquity agrees with the Commission's conclusion that the absence of new radio spectrum for conversion to digital broadcasts is a significant distinguishing factor between the radio and television digital transitions and removes the need for mandatory digital conversion for radio.[11] Absent evidence in the record that market forces are not working, there is no need for conversion mandates at this time.

A review of some of the early filed comments in this proceeding indicates there is considerable confusion about the transition using the HD Radio system. The system is designed to allow indefinitely, analog and digital broadcasts to co-exist. In the early stages of the

[11] Further Notice at ¶ 16.

transition, iBiquity believes the Commission should favor and protect existing analog signals. This is accomplished by limiting the power level and bandwidth occupancy of the digital carriers in the hybrid mode. At some point in the future, when the Commission determines there is sufficient market penetration of digital receivers, iBiquity believes the public interest will be best served by reversing the presumption in favor of digital rather than analog operations. At that time, broadcasters will no longer need to protect analog operations by limiting the digital signal and stations should *have the option* to implement all digital broadcasts. The all digital mode increases the power and bandwidth occupancy of the digital carriers. This increase may result in greater interference to first-adjacent analog signals, but will not affect adjacent channel digital transmissions. Although first-adjacent analog stations may experience more interference from the all digital mode, there is nothing to prevent them from continuing to operate an analog signal. The first-adjacent all digital signal may impact analog coverage, but, that does not mean coverage will be eliminated. There is no technical reason why the Commission would need to mandate an end to analog broadcasting as long as digital broadcasts were no longer required to protect analog transmissions.

iBiquity suggests there are some limited steps the Commission can undertake to facilitate the transition to digital broadcasts without imposing conversion mandates. First, the expedited adoption of final IBOC rules will give broadcasters and receiver manufacturers the appropriate level of regulatory certainty to continue to invest in the digital transition. Although iBiquity has been pleased by the strong response to the introduction of the HD Radio system by both group-owned and independent stations, many broadcasters would prefer to have final IBOC rules in place before they invest in station upgrades. Second, iBiquity believes the Commission should conduct periodic reviews of station conversions and receiver introductions to ensure the

functioning of market forces. iBiquity recommends the commencement of a first review five years after adoption of a Report and Order implementing final IBOC rules. Finally, although iBiquity agrees that additional work is required before there is an industry consensus on the IBOC all-digital system, iBiquity encourages the Commission to clarify its intention to foster a transition to an all-digital future. All hybrid receivers include the ability to operate in an all-digital environment, so deferring consideration of all-digital will not preclude those operations in the future. Nonetheless, a clear policy statement from the Commission specifying a goal of reaching an all-digital future will encourage broadcasters and receiver manufacturers to move in that direction.

B. iBiquity Supports a Flexible Approach to Service Rules for HD Radio Services

iBiquity strongly endorses the Commission's initial conclusion that a "flexible DAB service policy would likely increase the ability of broadcasters to compete in an increasingly competitive marketplace."[12] HD Radio technology offers broadcasters tremendous flexibility to upgrade existing services and develop innovative new services for their listeners. Because the options the HD Radio system enables have only begun to be explored, the Commission should adopt a flexible approach to its service rules. This will encourage broadcasters to experiment and will foster the development of innovative new services that will benefit listeners. Imposition of unnecessarily restrictive service rules will stifle the development of new services and preclude many of the new offerings that can be enabled based on an HD Radio platform.

The HD Radio system offers broadcasters a high level of flexibility to tailor their offerings, primarily through the use of two system features. Scalability allows the broadcaster to reduce the number of bits devoted to main channel audio and to devote the remainder to

[12] Further Notice at ¶ 18.

advanced services. The extended hybrid mode allows broadcasters to add digital carriers closer to the existing analog signal, thereby increasing the amount of capacity available for these advanced services. These two features are not mutually exclusive. Broadcasters have the option to take advantage of either, both or neither.

The FM HD Radio system allows broadcasters to scale their audio quality from 96 kbps downward in 8 bit increments. Broadcasters are not restricted to using only 96, 84 and 64 kbps. Any reduction below 96 kbps frees capacity that can be devoted to other services. The AM system offers two levels of audio quality. The "core" AM carriers provide 20 kbps of robust monophonic sound. The "enhanced" layer adds an additional 16 kbps of digital carriers and enables full stereo sound. The AM system design allows broadcasters to devote the full 36 kbps to a single audio signal or select only the 20 kbps core mode for audio and devote the remaining 16 kbps enhanced carriers for other services.

The scaling of the audio codec, which reduces the number of bits devoted to the main channel audio signal, may impact the quality of the audio. It will not impact the robustness of the signal. The audio quality may be affected because the reduction in the bit rate may increase the likelihood of digital artifacts. The trade-off between bits and audio quality is not linear. There can be a substantial reduction in bit rate before most listeners would notice any digital artifacts that might impact audio quality. However, the broadcaster's and listeners' tolerance for reduced audio quality is dependent on many factors, with the station format serving as the most important factor.

Recent tests iBiquity conducted in conjunction with the National Radio Systems Committee ("NRSC") confirm that broadcasters can scale their audio without compromising the quality of their broadcasts. At the request of the NRSC, iBiquity conducted subjective

evaluations of the AM and FM HD Radio system in an unimpaired state.[13] General population listeners were used to subjectively evaluate the audio quality of the FM HD Radio system operating at 96 and 64 kbps, which was compared with a CD source and various unimpaired FM analog audio samples. The AM HD Radio system was evaluated at 36 and 20 kbps in comparison with an unimpaired FM analog reference and various unimpaired analog AM audio samples. The tests confirmed that general population listeners evaluated both 96 and 64 kbps HD Radio audio as a significant improvement over analog FM and as equivalent to a CD source. The difference between the evaluation of 96 and 64 kbps HD Radio audio was not statistically significant. Similarly, the tests confirmed that the AM system at both 36 and 20 kbps offers a significant improvement over analog AM audio and sound quality approaching unimpaired analog FM. These test results should give the Commission and the broadcast industry a high degree of comfort that the scalability feature of the HD Radio system, even if used to set FM bit rates at levels different from those tested, will not undermine the audio quality upgrade of the HD Radio system.

The extended hybrid mode is available only in the FM system. It allows broadcasters to add digital carriers that extend closer to the existing analog signal. Depending on the mode selected, and the degree to which the digital carriers are extended toward the analog signal, the

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[13] These tests did not include any of the impairments or interference that are typically found in over the air broadcasts in both the AM and FM bands. Because the tests were conducted without any impairments or interference, they represent a focused evaluation of only one feature: the system audio quality. The HD Radio system has been shown to be significantly more resistant to interference and impairments than analog radio. As a result, the overall improvement from conversion to HD Radio will be greater than the significant increase in audio quality demonstrated in this one test. It also is important to note the difference between analog and digital broadcasts in this context. If a digital signal is received, it always is unimpaired. Interference or channel impairments will impact the likelihood of receiving the digital signal, but will not decrease the quality of that signal. Analog signals, on the other hand, are rarely found in an unimpaired state. More typically, interference and impairments will degrade the overall quality and listening experience from analog broadcasts. Therefore, the comparison of unimpaired digital and unimpaired analog does not represent a real world example. In reality, the comparison will be an unimpaired digital signal against a lower quality impaired analog signal. This increases the perceived upgrade from digital even beyond that shown by these tests.

broadcaster can obtain 12.5, 25 or 50 kbps of additional capacity that can be devoted to audio or data services that are ancillary to the main channel audio.[14] Because the extended hybrid carriers extend inward toward the existing analog signal, the extended hybrid mode increases the risk of interference to the host station's analog signal. Although iBiquity's internal testing indicates the extension of the digital carriers to obtain the first 12.5 kbps will not have a significant impact on most host digital broadcasts, the risk of host interference increases as the digital carriers are extended further inward to obtain the full 50 kbps capacity. Unlike scalability, which increases the risk of digital artifacts or unnatural sounds, host interference would result in increased background noise, typically viewed as "white noise" in the background of the analog signal. As is explained in greater detail below, iBiquity encourages the Commission to structure its final IBOC rules to include sufficient flexibility for broadcasters to take advantage of both these important system features.

C. The Commission Should Not Unduly Restrict Options for Either Scalability or the Extended Hybrid Mode

iBiquity strongly supports the authorization of both scalability and the extended hybrid mode in order to foster the development of robust new services for consumers using the HD Radio system. Without these features, the HD Radio system will be able to offer important improvements to the existing analog AM and FM signal quality, but the system will fall short of providing the revolutionary upgrade to AM and FM broadcasting that both the FCC and the broadcast industry envisioned. The Commission itself has recognized the importance of auxiliary services based on the HD Radio system. iBiquity continues to support the Commission's 2002 statement about the value of auxiliary services:

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[14] The additional digital carriers of the extended hybrid mode cannot be used to increase nor do they have an impact on the quality or reliability of the digital carriers of the standard hybrid mode.

> We recognize that one of the most significant benefits of digital technology is its potential to enhance existing auxiliary services such as reading for the blind and foreign language programming. Entirely new auxiliary services may also be possible – for example, multiple audio programming channels, audio-on-demand services, and interactive features.[15]

iBiquity believes this is the appropriate point in the commercialization of the HD Radio system for the Commission to authorize the marketplace to begin developing these upgrades to existing analog based services and new auxiliary services.

Scalability and the extended hybrid mode present issues that differ from those the FCC and the industry considered prior to authorizing hybrid mode IBOC at 96 kbps. Prior to the Commission's 2002 interim authorization of IBOC, the industry and the FCC focused their attention on the potential for IBOC to cause interference to other stations' analog broadcasts. In particular, the FCC focused on the potential for first-adjacent channel interference. The FCC did not authorize the commencement of digital broadcasts until industry authorized testing demonstrated that IBOC would not cause harmful interference to adjacent channel signals. Scalability and extended hybrid operations do not increase the risk of adjacent channel interference. In the case of scalability, reducing the number of bits devoted to audio does not extend the digital carriers closer to the adjacent channel analog signal. The extended hybrid mode extends the bandwidth occupancy of the digital carriers, but they are extended closer to the host station's analog signal, not the analog signal of any adjacent channel stations. In the absence of any increased risk of interference to adjacent channel signals, the Commission should forbear from regulating these operations at this time. Broadcasters have no incentive to scale their audio quality or to introduce extended hybrid digital carriers if the impact will be to reduce

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[15] Report and Order at ¶ 37. *See also In the Matter of Digital Audio Broadcasting Systems And Their Impact on the Terrestrial Radio Service,* 15 FCC Red 1722(1999)("NPRM") at ¶ 29 ("The Commission is committed to encourage a DAB system design that would permit the flexible and dynamic development of new broadcast and non-broadcast services and features and allow broadcasters to realize specific service opportunities.").

the satisfaction of their listeners. The Commission should let each broadcaster make its own determination of the optimal trade off between the analog audio quality, the main channel digital audio and advanced digital services. In many cases, the unique relationship between the broadcaster and its listeners, which may be influenced by the demographics of the target audience, local conditions in the market being served and the format of the station, will significantly influence the broadcaster's decision on this subject. For example, the typical age of the target audience may influence the station's level of concern for the impact of digital artifacts on its listeners. Typically, younger listeners are more attuned to high frequency distortions in audio. Similarly, in markets where consumers exhibit higher levels of enthusiasm for digital broadcasting, there may be a higher tolerance for additional analog host interference. Finally, station format will significantly influence these decisions. Stations offering highly processed dense music, such as urban, rock or country stations, may have a higher tolerance for both digital artifacts and host interference than the typical classical or jazz station.

iBiquity also encourages the Commission to consider the difference between potential interference to analog versus digital broadcasts. Although the FCC and broadcasters appropriately are most focused on ensuring digital broadcasts do not unnecessarily harm analog broadcasts, over time the focus will shift toward protection and expansion of the digital signal. The importance of host interference to existing analog signals will decrease as the percentage of hybrid digital receivers in the marketplace increases. Consequently, a blanket FCC policy restricting extended hybrid operations would place unnecessary burdens on stations with significant levels of digital listenership or markets with significant digital receiver sales. In the case of scalability, the Commission should note that future improvements in audio compression technology will reduce the digital artifacts that may be created at lower bit rates. Again,

restrictions on scalability will eliminate the flexibility broadcasters should have in order to take advantage of audio compression improvements that are developed. As a result, iBiquity encourages the FCC to authorize both scalability and extend hybrid mode operations and to provide the broadcasters flexibility in their use of these system features.

D. The FCC Should Not Set a Minimum Audio Quality Level

iBiquity supports the use of the HD Radio system to improve audio quality and to enhance quality levels, however, iBiquity believes market forces should be allowed to determine the optimal audio quality levels of the HD Radio system. Therefore, it is iBiquity's view that the Commission should not establish a minimum audio quality level, but rather it should allow radio broadcasters to make their own determination of the appropriate level of audio quality for their particular listeners.

The Commission currently does not regulate audio quality for either AM or FM broadcasts, and there is no reason for the FCC to commence that practice for digital broadcasts. Moreover, the Commission does not set audio quality levels for the SDARS providers. In the analog world, some stations use heavy audio processing to develop a signature sound that the broadcasters believe is appropriate for their station format and enjoyable for their listeners. Other stations use little or no processing in order to achieve a purer sound with fewer artifacts. These choices, however, are made by each station based on its own unique circumstances and its view of the image and sound it wants to convey to the public. The FCC does not regulate this decision. The same approach should be followed in the digital world.

Stations will not ignore the issue of audio quality. A station's format, however, will impact how many bits need to be devoted to audio. For example, a classical station seeking to provide high quality audio may require a higher bit rate devoted to audio than a rock station. Absent a demonstration that the industry has undercut the value of digital audio by transmitting

clearly inferior audio, the Commission should allow broadcasters to make the appropriate determination of the audio quality they want to provide to their listeners. The Commission has provided XM and Sirius with complete flexibility to set the audio quality levels for their broadcasts. In both cases, the SDARS systems are operating at levels well below the 96 kbps level of the HD Radio system with no complaints about audio quality. Terrestrial broadcasters should be given the same flexibility to make their own determinations about audio quality.

iBiquity's recent tests of its new audio compression technology demonstrated that the HD Radio system can deliver superior audio quality equivalent to a CD source at both 96 and 64 kbps. Similarly, at both 36 and 20 kbps the AM HD Radio system offers a significant upgrade over analog AM. These tests demonstrated that affording flexibility to broadcasters to reduce their audio bit rate will not lead to unacceptable audio quality levels. The Commission always retains the option to revisit this issue at a later date. iBiquity suggests that the Commission abstain from establishing minimum quality levels unless there is a demonstrated problem with station implementations of the HD Radio system.

E. The Commission Should Authorize Broadcasters to Offer Multicasts of Audio Channels

The HD Radio system allows broadcasters to offer supplemental audio services along with their main program audio channel. These supplemental audio services are a digital upgrade for the SCA services currently authorized for analog FM broadcasts. iBiquity supports the Commission's tentative conclusion that the public interest would be served by authorizing supplemental audio services without the need for experimental authorization.[16]

In order to provide supplemental audio, a broadcaster can reduce the audio bit rate of its main channel broadcasts or use the extended hybrid mode to obtain additional capacity that is

[16] Further Notice at ¶ 20.

devoted to a lower bit rate supplemental audio channel. Recent testing conducted by National Public Radio established the viability of this functionality and also demonstrated that the supplemental channel will have coverage equivalent to the coverage of the main channel audio signal.[17] Due to system design constraints, however, any supplemental audio services will not be able to take advantage of the blend function available to the main channel audio. The blend function enhances rapid tuning for the main channel digital signal and provides a backup signal in the event the main channel audio signal is lost. Therefore, any supplemental channel will require several seconds for tuning and will experience muting of the audio in the event of signal blockage.

Notwithstanding these limitations on the supplemental channel, iBiquity believes the supplemental audio capability provides broadcasters with important functionality. At a minimum, multicasting will allow stations to offer a digital upgrade to existing SCA services. Although SCA services currently suffer from severe quality limitations, they often are used to provide important services. Radio reading services in many communities are based on analog SCAs. iBiquity has been working with the International Association of Audio Information Services and National Public Radio to ensure that radio reading services can benefit from the transition to digital technology by enjoying an upgraded channel broadcast as part of the supplemental audio service. Similarly, iBiquity believes it is important for the Commission to continue to foster the provision of foreign language and other ethnic broadcasts that are frequently based on SCA channels. In many cases, although the target audience may be of limited size, the SCA-based service may be the only communications service addressed to the

[17] *Tomorrow Radio Field Testing in the Washington, D.C., New York City, San Francisco and Los Angeles Radio Markets* dated Jan. 6, 2004.

target community. Supplemental audio services can be used to transition these services to a digital world and to expand upon these services.

In addition, iBiquity believes multicasting will allow broadcasters to create new services and niche programming targeted at underserved audiences. NPR® has announced plans to introduce "Tomorrow Radio", a service that will allow NPR affiliates to broadcast a supplemental channel of NPR programming in addition to a main channel broadcast.[18] Many communities have the benefit of only one NPR affiliate station. As a result, that community is limited to only one of the several simultaneous feeds of NPR programming that are available throughout the day. With Tomorrow Radio, however, those stations currently offering one NPR feed, such as classical music, will be able to offer a second source of programming, such as *Morning Edition*, on a supplemental channel. However, the Commission must authorize multicasting in order to promote this type of development. Commercial broadcasters are examining the use of supplemental audio services to provide fulltime traffic and weather information that competes with those services now being offered by XM and Sirius to their subscribers.[19]

iBiquity encourages the Commission to provide broadcasters with sufficient flexibility to promote the development of these supplemental audio services. iBiquity believes it would be inappropriate for the Commission to require minimum bit rates for supplemental channels. Broadcasters should be allowed to make their own determination of the preferred audio quality for their supplemental audio channels based on the broadcast material and the needs of their listeners. For example, a station may need more bits for a supplemental classical music channel

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[18] *NPR Initiates Tomorrow Radio Project, Kenwood USA and Harris Corporation to Join the Project's First Development and Testing Team,* NPR Press Release dated Jan. 10, 2004 available at http://www.npr.org/about/press/030110.tomorrowradio.html.

[19] *See supra* n. 10.

than for a supplemental speech channel. Moreover, iBiquity encourages the Commission to authorize broadcasters to offer multicasting on a subscription basis. There may be certain niche programming that cannot be offered effectively using an advertiser sponsored model but that is still of high value to particular groups of listeners. For example, broadcasters might be able to create programming targeted at particular ethnic groups or market segments that would be willing to pay subscriptions in order to obtain higher quality and more targeted programming than is otherwise available in their market. Similarly, iBiquity believes that broadcasters should be authorized to provide excess capacity for programming developed by third parties. In many cases outside parties may be in a better position than the broadcaster to develop programming for more targeted audiences. In those cases, the broadcaster should be authorized to make excess capacity available to others, as is the case for existing SCA services.

It also is important for the Commission to note that these supplemental audio services will help drive penetration of digital receivers in the marketplace. iBiquity is confident that the audio quality and reliability upgrade of the basic hybrid system will be a compelling reason for consumers to invest in IBOC technology. Supplemental channels, however, represent an added value that may help to convert additional listeners at a faster pace than would otherwise be the case. As a result, iBiquity encourages the Commission to provide all broadcasters with blanket authority to offer multicasting without the need for individual FCC authorization of this service.

F. The FCC Should Adopt a Flexible Policy for Datacasting Services

iBiquity encourages the FCC to authorize broadcasters to provide datacasting services and to include sufficient flexibility in the datacasting authorization to promote innovation in this area. iBiquity believes there is tremendous opportunity for the development of innovative datacasting services that can be provided to the public at low cost using the HD Radio system. The datacasting features of the system are digital successors to SCA-based data services.

However, the greater capacity, coverage, and reliability of data services based on the HD Radio system will help ensure that data services finally become a reality for broadcast radio. iBiquity also recognizes there needs to be significant development work and innovation on the part of datacasting providers and applications developers in order for these services to flourish. The FCC can provide an environment that is conducive to this development work and that will support investments in this area if the Commission provides flexibility and minimal regulation of datacasting services. Promotion of datacasting will help introduce new services to the public and will also provide added value for consumers that will promote investment in HD Radio receivers. Fostering a supportive environment for innovative datacasting will promote both the Commission's goal of enhancing the availability of advanced services for the public[20] and motivating broadcasters and consumers to transition to digital technology.

G. No Additional Measures are Required to Protect Existing SCA Services

Previous tests presented to the Commission and the NRSC demonstrated that the introduction of HD Radio will not cause harmful interference to analog SCA-services except in limited circumstances.[21] The scaling of the HDC codec to obtain additional capacity for multicasting or datacasting only impacts the audio of the main channel signal. It does not change the bandwidth occupancy of the digital signal so it cannot change the interference potential from the digital signal. The use of the extended hybrid mode increases the bandwidth occupancy of the digital carriers, but they are extended inward toward the host signal rather than outward toward the adjacent channel stations. Thus, the use of the extended hybrid mode cannot increase interference to adjacent channel SCA operations. Although there is the possibility that the

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[20] *See supra* n. 15.

[21] *See* Letter from Michael Starling and David Andrews to Marlene H. Dortch, MM Docket No. 99-325, dated May 24, 2002, attaching *Further Report on Analog SCA Compatibility with iBiquity Digital's FM-IBOC System* dated March 2002.

extended hybrid mode could increase the potential for interference to the host station's existing analog SCA services, it is fully within the control of the host station to address this situation. If the host station is broadcasting important analog SCA-based services and cannot tolerate interference, it does not need to elect to use the extended hybrid mode. The station can wait until there are sufficient digital receivers in use among its listeners before transitioning its SCA listeners to HD Radio enabled multicasting channels. The broadcaster also has the option to use scalability rather than the extended hybrid mode to support advanced services. These decisions, however, should be left for the broadcaster who is in the best position to make appropriate determinations of what approach will best meet the needs of the station's listeners.

H. There is No Reason To Impose Fees on Multicasting or Datacasting Services

iBiquity does not believe there are any valid public policy reasons to impose additional spectrum fees for new multicasting or datacasting services.[22] These services are digital upgrades to existing SCA services. Currently, broadcasters can provide both datacasting and supplemental audio channels using SCA frequencies without incurring additional spectrum fees. The same approach should be applied to digital datacasting and multicasting services. There is no justification for penalizing digital broadcasts by imposing unique fees on digital service.

It is easy to distinguish HD Radio-based multicasting and datacasting from ancillary services provided using the ATSC digital television standard. Based on its decision to allocate new spectrum for digital television, the Commission concluded broadcasters would have an unfair advantage vis-à-vis entities that had obtained other datacasting spectrum at auction. As a result, the Congress provided the FCC authority to impose spectrum fees on ancillary services

[22] Spectrum fees are imposed on DTV licenses on their datacasting service pursuant to a Congressional statute. *See* 47 U.S.C. § 336(e). No such statutory authority exists for digital radio. Thus, the FCC has no jurisdiction to impose fees on data services offered by radio licensees.

provided by third parties using the television broadcaster's spectrum.[23] In the case of HD Radio, however, no new spectrum allocation was necessary for digital radio and there is no Congressional mandate to impose fees. Any datacasting or multicasting services come at a potential cost to the broadcaster in terms of reduced audio bit rates or increased possibility of host interference. Unlike the DTV situation, there is no windfall for radio broadcasters. Moreover, imposition of spectrum fees may stifle the development of these innovative services. Broadcasters and service providers will need to make an investment to build the market for new datacasting and multicasting services. Until there is a base of users for these services, there will be limited revenue from datacasting and multicasting. The imposition of spectrum fees will add a significant new economic burden on top of the investment that will need to be made. Any such additional burden will deter development of these services, delay innovation and prevent the introduction of new features that will benefit the public. Thus, iBiquity does not believe Congress or the Commission should attempt to impose license fees on radio broadcaster data services.

I. The Commission Should Not Impose Separate Station Identification Requirements on Digital Broadcasts

iBiquity takes exception with the Commission's proposal to create a separate station identification requirement associated with digital broadcasts. iBiquity submits that separate station identification is not required for the main digital channel audio or any supplemental digital audio or datacasting services. The HD Radio system operating in the hybrid mode simulcasts identical programming in an analog and digital format. A single audio feed from the studio enters the transmission chain that produces both the analog and digital signal. The system is not designed to allow broadcasters to inject a separate call sign (or any other discrete content)

[23] *Id.*

for only the analog or digital signal. All programming must be simulcast in both analog *and* digital. Broadcasting a separate digital call sign would require significant system modifications, new expense and new delays in equipment deployment that will deter conversions to digital broadcasts.

Moreover, imposition of a separate identification requirement for digital transmissions would be inconsistent with the Commission's existing station identification rules. The station identification rules are designed to allow a listener to identify the station originating a broadcast in case of interference. A separate call sign for digital broadcasts is not required to fulfill this mission. The Commission does not require that licensees use separate station call signs for their current SCA broadcasts. Those broadcasts are part of the main channel broadcast and are under the control of the station licensee. The same logic applies for IBOC. The digital transmission originates from the same station as the analog broadcast. The analog licensee is the digital licensee. Even in the case of multicasting of digital signals, the broadcasts all originate from the same station. Therefore, there is no need to separately identify the digital signal or to create a separate identification for any of the digital streams. The station licensee should remain responsible for all analog and digital transmissions from the station. iBiquity would not object to a requirement that the licensee include the station call sign in all digital broadcasts for the station, but only one call sign should be used for each station.

J. The Commission Should Include in Its Permanent IBOC Rules Authorization of Nighttime AM IBOC Service

iBiquity endorses both the Media Bureau's proposal to expand the existing interim authorization for AM IBOC to include nighttime service[24] and the Commission's proposal to expand that interim authorization to permanently allow AM stations to broadcast digitally at

[24] Public Notice, DA 04-1007 (rel. April 14, 2004).

night.[25] As iBiquity stated in its comments on the Media Bureau's Public Notice, the testing and analysis completed on nighttime AM IBOC broadcasts confirmed that the introduction of that service will not result in widespread harm to nighttime analog broadcasts. Although nighttime AM IBOC broadcasts do have the potential to create new interference in certain limited circumstances, the impact should be largely confined to areas at the periphery of a station's coverage. Moreover, iBiquity believes, and the NAB's proposal to the Commission confirms, that the benefits of the upgrade to digital AM greatly outweigh any concerns about the impact of IBOC on existing analog services.

iBiquity was an active participant in the NAB's evaluation of nighttime AM IBOC service. To foster the NAB's work, iBiquity conducted a number of analytical studies of the impact of nighttime AM IBOC as well as laboratory and field tests. The tests and studies delivered fairly consistent results. The introduction of AM IBOC at night will not eliminate either groundwave or skywave analog broadcasts. The tests indicated that there is a potential for an impact to groundwave analog service outside a station's primary coverage area, however, this should not have a significant impact on the majority of a station's listeners. The potential impact on analog skywave service is somewhat harder to predict due to the variable nature of skywave service. The tests indicate that nighttime AM IBOC may reduce the availability of the analog skywave signal but it will not eliminate the service.

As iBiquity emphasized in its comments on the Public Notice, the AM HD Radio system has the potential to revitalize AM broadcasting. The high quality stereo sound will enable broadcasters to offer music formats on AM that should compete with FM and prerecorded music. Broadcasters that have nighttime service, however, will not be able to offer new formats if they

[25] Further Notice at ¶ 44.

cannot be supported past sunset. Broadcasters are not going to invest in promoting new music formats to listeners if the station will be forced to revert to analog broadcasts (and talk formats) after dark. The industry's enthusiasm for AM nighttime service and the need for new means for AM to compete has led to the NAB's strong endorsement of nighttime AM IBOC service. iBiquity encourages the Commission to remove any regulatory uncertainty about this issue by permanently authorizing nighttime AM IBOC broadcasts.

K. The Media Bureau's Authorization of Separate Antenna Implementations Should be Made Permanent

The Media Bureau's authorization of FM station conversions using a separate antenna implementation should be made permanent and the Commission should eliminate any requirement for Special Temporary Authority ("STA"). Moreover, the Commission should delegate to the Media Bureau authority to authorize future innovations in HD Radio implementation involving the entire physical plant rather than just the antenna system. Finally, the Commission should create a presumption of validity for equipment and implementation approaches absent evidence that a particular approach will cause additional harmful interference or degrade digital service.

The Further Notice correctly details the Media Bureau's decision to allow FM stations to convert to HD Radio technology using a separate antenna implementation. That implementation allows certain broadcasters to use an auxiliary antenna for a separate digital transmission rather than requiring that both the analog and digital transmissions are combined and sent through the station's main antenna. This separate antenna approach helps to reduce the implementation costs for certain stations and may facilitate conversions where space limitations or other constraints make combined implementations infeasible. The current Media Bureau authorization, however, requires that broadcasters obtain an STA prior to commencing broadcasts. Although the Media

Bureau has taken extraordinary steps to expedite its consideration of these STA requests and has not delayed any station conversions, this regulatory requirement places unnecessary burdens on both the Media Bureau and the broadcasters pursuing separate antenna implementations. The test data that was presented to the Commission by the NAB in support of separate antenna implementations contained a strong industry endorsement of this approach. There has been no report of problems from separate antenna implementations. The Commission should regularize the situation by permanently authorizing the use of separate antennas without the need for prior Commission authorization.

iBiquity believes that the manufacturers of transmission equipment will continue to develop innovative approaches to streamline and reduce the costs associated with digital conversions. Particularly in the first few years of digital operations, iBiquity anticipates additional innovation will be forthcoming. iBiquity encourages the Commission to prepare for this innovation by delegating to the Media Bureau authority to approve improvements in antennas or other aspects of the digital system without the need for Commission approval of each proposal. The Media Bureau has the appropriate expertise to evaluate proposed implementation innovations in order to ensure that changes will not increase interference or degrade digital service. Delegation of authority should streamline the approval process and allow for faster implementation of innovative approaches.

iBiquity also encourages the Commission to create a presumption in favor of innovation unless there is a clear showing that a proposal has a potential for significant harm. The transmission equipment industry has a long track record of innovation without disruption. iBiquity believes the industry will continue to ensure innovations will not cause disruptions

before bringing new products to market. A presumption in favor of new approaches will help streamline regulations and ensure a more timely introduction of innovations.

L. iBiquity Continues to Work with the NRSC to Develop an IBOC Standard

iBiquity is continuing its work with the NRSC to develop a standard for both the AM and FM HD Radio systems. The NRSC has made significant progress in these efforts during the last few months. iBiquity anticipates that any final industry approved standard will be submitted to the FCC for broader public comment and ultimate adoption in the Commission's rules.

M. There is No Need for Additional Inquiry about iBiquity's Patents

The Further Notice accurately points out that iBiquity previously committed to the Commission that it would adhere to the Commission's patent policy by charging its licensees reasonable and nondiscriminatory fees.[26] iBiquity has adhered to this commitment in its agreements to license its technology. iBiquity has licensed every entity that has sought a license to manufacture a product incorporating HD Radio technology. iBiquity believes its agreements have complied with the requirement to use fair, reasonable and nondiscriminatory terms. The Commission has rarely, if ever, interjected itself into defining what constitutes compliance with these requirements. Based on iBiquity's existing licensing process, it would be extraordinary and unnecessary for the Commission to take any action on this topic.

N. The Commission Should Consider Increasing Digital Power Levels in Certain Situations

iBiquity agrees with the Commission's concern that the digital signal for stations with low analog power may fall below the noise floor.[27] Particularly in areas with terrain obstructions or high noise levels, the extremely low power of the digital signal may limit digital coverage.

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[26] Further Notice at ¶ 57.

[27] Further Notice at ¶ 50.

iBiquity recommends that the Commission implement procedures to authorize digital operations at levels exceeding 20 dB below the analog signal where needed to overcome coverage limitations. Any increase in digital power levels, however, may raise concerns about the impact on adjacent channel stations. Because there has been insufficient field work completed on higher digital power levels and any potential increase in adjacent channel interference, iBiquity believes it would be difficult for the Commission to establish a minimum power level for the digital signal at this time. Instead, iBiquity recommends that the Commission allow stations to adopt higher digital power levels upon an adequate showing that the proposed power level will not cause incremental harmful interference to adjacent channel operations. This will allow the Commission to assess geographic separation, terrain and other factors that may decrease concerns about adjacent channel interference. This also will allow the Commission to set an appropriate digital power level for the actual station rather than relying on a more generic minimum power level. iBiquity also recommends that these authorizations be implemented as part of the station license rather than as experimental or special temporary authorizations. At a future date, when more information about these operations is available, the Commission may be in a better position to establish a uniform minimum digital power.

O. The Commission Should Not Disadvantage Digital Broadcasts

As a general matter, iBiquity encourages the Commission to avoid imposing greater regulatory burdens on digital broadcasts than currently exist for analog broadcasting. For any new technology there is a natural tendency to impose regulations on the unknown until the Commission becomes more familiar with the technology and the services provided that it supports. In the case of the HD Radio system, however, the technology will not create completely new services. The HD Radio system enables upgrades to existing analog services. As a result, there is no need for a new range of regulations for digital service. Moreover, after

more than seven years of experimental and commercial HD Radio broadcasts, the Commission should be comfortable with the technology. More than 100 stations in 38 markets already have converted their broadcasts without ill effect.

The Further Notice seeks input on many potential regulations that already exist for analog broadcasts, but also suggests the imposition of new regulations for both the main channel and the datacasting and multicasting services enabled by HD Radio technology. Although iBiquity cannot comment on the appropriateness of specific service regulations for broadcasting, iBiquity encourages the Commission to avoid disadvantaging digital broadcasts by imposing greater regulatory burdens on the digital signal. To the extent that the Commission creates new regulatory burdens on the digital signal, it will increase costs for broadcasters and deter broadcasters from converting to digital.

P. It is Feasible for LPFM Stations to Convert to Digital Broadcasts

LPFM stations should have the option to convert their operations to digital broadcasts. HD Radio system equipment can operate at the power levels authorized for LPFM service. In the case of 10 watt stations, however, the extremely low power level of those stations may make digital broadcasts infeasible. The FM HD Radio system broadcasts the digital signal at one percent of the station's analog power level. In the case of a 10 watt LPFM station, that digital power level would fall below the noise floor and would be difficult for any receiver to recover. In the case of a 100 watt LPFM station, it is more likely that the digital signal will be recovered by a receiver. Because these LPFM stations are required to comply with the Commission's adjacent channel interference restrictions, the introduction of digital broadcasts by these stations should not create harmful new interference.

III. RESPONSES TO THE NOI

A. It is Unnecessary for the Commission to Consider any Digital Audio Content Control at this Time

Any action on the part of the Commission to implement a digital audio content control regime for IBOC would be premature and has a great potential to stifle consumer acceptance of HD Radio. iBiquity strongly encourages the Commission to avoid any rush to judgment on the issue of the need for content control for digital radio. iBiquity agrees with the Commission that these issues "are not appropriate subjects for a rulemaking at this stage of the DAB conversion process."[28] Moreover, iBiquity urges the Commission to avoid any regulation which places IBOC at a disadvantage when compared to current analog radio.

1. Unauthorized Redistribution

As an initial matter, iBiquity submits it is critical that the Commission distinguish between concerns about (i) unauthorized redistribution of copyright protected works and (ii) storage or copying of audio content.[29] iBiquity does not support the unauthorized redistribution of any copyright protected works, whether derived from over-the-air broadcasts or otherwise. iBiquity repeatedly and publicly has stated that it is prepared to implement a content control scheme designed to prevent unauthorized distribution of copyright protected works *to the extent there is an industry consensus on the existence of a problem and an acceptable solution.* As the Commission is aware, however, industry discussions have indicated little support for the Recording Industry Association of America's ("RIAA") view that there is a need for redistribution controls. As far as iBiquity is aware, there have been no industry discussions

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[28] Further Notice at ¶ 1.

[29] *See Digital Broadcast Content Protection*, MB Docket No. 02-230, *Report and Order and Further Notice of Proposed Rulemaking* (rel. Nov. 4, 2003) at n. 1 (explicitly draws the distinction between redistribution control and copying and emphasizes that the Commission's television broadcast flag "in no way limits or prevents consumers from making copies of digital broadcast television content").

about what would be an appropriate redistribution control mechanism if there were industry support for such a mechanism. Absent broader industry concern about the potential for or existence of a problem, iBiquity believes it would be premature for the Commission to consider any proposals for a rulemaking in order to develop redistribution controls for digital radio.

iBiquity notes the industry's views on redistribution controls for digital radio are in sharp contrast with the situation the Commission confronted concerning digital television. In the case of DTV, detailed industry discussions led to the development of an industry proposal for adoption of the television "broadcast flag". Although there was and continues to be opposition to redistribution controls for television, the broadcast flag had support from the motion picture, broadcast and consumer electronics industries.[30] In the case of digital radio, the broadcast, consumer electronics and technology industries have indicated that they do not believe there is a problem that the Commission needs to address.

In its study of the issue of redistribution controls, iBiquity encourages the Commission to consider two issues. First, it is important to note, the currently available commercial IBOC receivers do not permit the extraction of either analog or digital programming. As a result, it is currently not possible to use a commercial IBOC receiver to extract copyright protected content for unauthorized redistribution. Second, the Commission is aware of the numerous other channels, such as peer-to-peer file sharing networks, for unauthorized redistribution of recorded music that have existed long before the introduction of digital radio.

The recording industry releases unprotected content that is available for unauthorized redistribution every time a consumer purchases a CD. iBiquity finds it puzzling that the RIAA

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[30] *Id*. at 7 ("Development of an ATSC flag system occurred in the Broadcast Protection Discussion Subgroup ("BPDG") under the auspices of the Copy Protection Technical Working Group ("CPTWG"). From November 2001 to June 2002, more than 80 representatives from the consumer electronics, information technology, motion picture, cable and broadcast industries took part in the BPDG discussions.")

would propose that greater restrictions on distribution of content should be imposed on digital radio than the recording industry is willing to impose on itself. There are no redistribution controls imposed on the SDARS service providers nor are there redistribution controls on Internet streaming. The RIAA will need to articulate a compelling reason why IBOC should be subject to restrictions that are not applied to all the other forms of digital distribution with which IBOC will compete. iBiquity also finds it highly unlikely that consumers determined to engage in unauthorized redistribution of music are going to wait until a song is broadcast on their local radio station. The determined redistributors can much more easily take advantage of peer-to-peer file sharing networks to find and redistribute music. Although iBiquity in no way condones or encourages this type of behavior, iBiquity feels that the RIAA's efforts to combat piracy through regulation of IBOC are misplaced when there are so many better sources for unauthorized music downloads.

2. Copying Restrictions

iBiquity strongly opposes the RIAA's efforts to impose storage and copying restrictions on digital radio. Before considering any suggestions to restrict the use of digital radio, iBiquity encourages the Commission to examine consumers' current expectations about the use of a typical radio. Millions of radios sold in this country every year are paired with cassette decks, MP3 recorders or other storage devices. These devices provide a ready means for legally copying and storing broadcast programming.[31] Moreover, consumers can convert analog programs to digital files on their computers and transfer those files to portable devices in an MP3 or similar format. For example, the "RadioSHARK" allows users to add AM and FM radio reception to any MAC computer. This device can be programmed to record a scheduled show or

[31] *See Sony Corp. v. Universal City Studio, Inc.*, 464 U.S. 417 (1984).

to pause a live broadcast.[32] These analog radio devices can use RDS "metadata" to identify songs by artist, title or genre. There is no technical or legal impediment that would prevent existing analog radio devices from "automatically search[ing] for and record[ing] a large amount of the music of an individual artist or group or find[ing] and record[ing] particular specified song titles,"[33] as the Commission notes would be the case some time in the future for digital radio. Moreover, the SDARS systems have similar "metadata" to that broadcast using HD Radio technology.

iBiquity urges the Commission to reject any attempt by the RIAA to disadvantage digital radio and prevent consumers from enjoying digital radio in the same way that they enjoy analog radio. There are no restrictions on personal copying and time shifting of AM and FM analog broadcasts. Consumers expect to have this functionality available in many classes of radios. Any move to restrict this type of copying of audio content for personal use or time shifting for digital radios would put IBOC at a tremendous disadvantage in the marketplace. It is unlikely that manufacturers of consumer electronics products would be interested in producing home or portable IBOC radios if recording capabilities had to be removed in return for the introduction of IBOC. Moreover, consumers would have little incentive to buy home or portable products if the upgrade to digital came at the expense of the convenience of personal recording for time shifting purposes.

The RIAA bears an extremely high burden to demonstrate a compelling need for regulation of digital radio, a burden which iBiquity believes the RIAA has not met, before the

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[32] http://www.griffintechnology.com/products/radioshark. *See also* http://www.mobilemag.com/content/100/337/C1666/ (The Radio YourWay device from PoGo! Products allows listeners to schedule recording of radio programming and to transfer stored programs to the user's computer); http://www.jmtek.com/products/melodibox.html (The MelodiBox is advertised as a "personal jukebox" that allows the user to store FM broadcasts in an MP3 format and transfer them to a computer).

[33] Further Notice at ¶ 67.

Commission should consider any proposals for a rulemaking proceeding to implement copy restrictions for digital radio. The imposition of copy restrictions on digital radio would be contrary to the existing regulatory regime for SDARS service as well as digital television, where the Commission repeatedly emphasized it did not intend to restrict copying:

> we wish to reemphasize that *our action herein in no way limits or prevents consumers from making copies of digital broadcast television content*. . . . The creation of a redistribution control regime establishes a technical protection measure that broadcasters may use to protect content. However, the underlying rights and remedies available to copyright holders remain unchanged.
>
> ****
>
> We also wish to clarify our intent that the express goal of a redistribution control system for digital broadcast television be to prevent the indiscriminate redistribution of such content over the Internet or through similar means. *This goal will not (1) interfere with or preclude consumers from copying broadcast programming and using or redistributing it within the home or similar personal environment as consistent with copyright law. . . .* [34]

The RIAA needs to provide a justification for its request to fundamentally limit consumer choice in a manner that the Commission and Congress have rejected for all other digital technologies they regulate. The Commission should reject even partial limitations on copying for home use. The RIAA recently commenced a public relations offensive to promote the idea of restricting the copying of long segments that could not be subdivided by individual songs.[35] Even this approach would impose an extraordinary and unsupportable restriction on legal and justifiable copying on the part of consumers.

In addition, iBiquity questions the Commission's jurisdiction to impose copying restrictions on digital radio. The Communications Act provides no jurisdictional basis for

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[34] Digital Broadcast Content Protect, *supra* n. 29, at ¶ 9 (emphasis added).

[35] *See* Sullivan, *Music Industry Seeks Digital Radio Copying Limits*, Reuters (June 11, 2004).

imposing copyright restrictions on digital radio listeners. The Copyright Act exempts free terrestrial digital radio from licensing requirements that benefit content owners.[36] iBiquity believes the RIAA must provide a jurisdictional basis for Commission action before any rulemaking could commence.

B. There is No Need for the Commission to Modify its Current Process for International Coordination of IBOC

The Commission's International Bureau has appropriately analyzed the ability of the United States to implement IBOC consistent with the United States' treaty obligations to Canada and Mexico. The International Bureau also has held informal discussions with both the Canadian and Mexican governments concerning implementation of IBOC in the United States. iBiquity supports these efforts of the International Bureau and submits that the current process is adequately addressing the international requirements for implementing IBOC.

IV. CONCLUSION

iBiquity is encouraged by the Commission's efforts to create appropriate rules for IBOC service that will foster the nation's conversion to digital broadcasts. Based on the foregoing comments, iBiquity urges the Commission to expedite its implementation of final rules

[36] 17 U.S.C. § 114.

eliminating the interim status of its IBOC authorization and permanently authorizing digital broadcasting using iBiquity's HD Radio system.

Respectfully submitted,

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