PUBLIC VERSION

Before the
COPYRIGHT ROYALTY JUDGES
LIBRARY OF CONGRESS
Washington, D.C.

In the Matter of Digital Performance Right in Sound Recordings and Ephemeral Recordings for a New Subscription Service	)	Docket No. 2005-5 CRB DTNSRA

EXHIBITS ADMITTED AT JULY 10, 2007 HEARING DURING THE TESTIMONY OF

Dr. Tasneem Chipty

Vice President, CRA International
ON BEHALF OF XM SATELLITE RADIO INC. AND
SIRIUS SATELLITE RADIO INC.

Services Ex. 2

Written Direct Testimony

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In the Matter of:	)	
	)	**DOCKET NO. 2005-5 CRB DTNSRA**
Digital Performance Right in Sound Recordings and Ephemeral Recordings For a New Subscription Service	)	

DIRECT TESTIMONY OF DR. TASNEEM CHIPTY
(ON BEHALF OF SIRIUS SATELLITE RADIO INC. AND XM SATELLITE RADIO INC.)

I. Introduction and Qualifications

1. My name is Tasneem Chipty. I am a vice president of CRA International ("CRA"), an economic and business consulting firm headquartered in Boston, Massachusetts. My fields of specialization within economics are industrial organization and econometrics. I have served on the faculties of The Ohio State University, Brandeis University, and the Massachusetts Institute of Technology, where I taught courses in microeconomics, industrial organization, antitrust and regulation policy, and econometrics. I have published several articles in peer-reviewed professional journals, and have made numerous invited presentations to various government and academic institutions. I received my Ph.D. in Economics from the Massachusetts Institute of Technology in 1993 and my Bachelor of Arts degree in Economics and Mathematics from Wellesley College in 1989.

2. In the course of my academic research and consulting work, I have studied economic issues in cable television, terrestrial radio, music performance rights, concert promotion, and sports. I have examined questions of market definition and abuse of market power and am familiar with the Department of Justice and Federal Trade Commission's joint *Horizontal Merger Guidelines*. I have served as a consultant to a

variety of businesses in the entertainment industry, including cable television operators, content providers, terrestrial and satellite radio companies, and sports leagues, as well as the Federal Communications Commission ("FCC"). I have assisted businesses involved in licensing negotiations as well as rate setting hearings. A copy of my resume, which describes my background, including education and publications, is attached as Exhibit 1.

3. I have been retained by counsel for Sirius Satellite Radio Inc. ("Sirius") and XM Satellite Radio Inc. ("XM") to determine a reasonable royalty rate for the use of sound recording performance rights on digital audio channels transmitted as part of a bundled package of channels provided by a Multichannel Video Programming Distributor ("MVPD") to its residential consumers.[1] I understand that the statutory standard for determining rates in this proceeding is the "willing buyer – willing seller" standard for new subscription services. This statutory standard does not involve consideration of the 801(b) factors, which play a role in the pre-existing services proceeding. Beginning on May 20, 2004, Sirius partnered with the DISH Network ("DISH") satellite television service[2] to bring 63 commercial-free music channels and 1 kids' channel[3] to DISH's more than 12 million subscribers.[4] Similarly, beginning on November 15, 2005, XM partnered with the DirecTV satellite television[5] service to bring 70 commercial-free music channels (including the channel "Special X"), 2 kids' channels, and 1 talk channel[6]

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[1] An MVPD is a term defined by the FCC to include cable system operators, such as Comcast Cable Communications or Time Warner Cable, as well as Direct Broadcast Satellite ("DBS") services, such as DISH and DirecTV.

[2] Sirius.com – News Releases, "Sirius Satellite Radio Now Offered to Millions of Dish Network Homes," http://investor.sirius.com/releasedetail.cfm?ReleaseID=152259&Cat=&newsroom= (accessed October 22, 2006); and Memorandum of Agreement between EchoStar Satellite L.L.C. and Sirius Satellite Radio Inc., February 11, 2004 (hereafter "Sirius-DISH Agreement").

[3] Sirius offers fewer channels on DISH than it does on its satellite radio service. Reported channel counts were compiled by CRA and are based upon a complete listing of Sirius channels on DISH, obtained from the DISH website, as of the last week of September 2006. See Appendix 1 for the actual listing.

[4] EchoStar Communications Corportation 10-K, 2005 (hereafter "Echostar 10-K, 2005"), pp. 1-2.

[5] XMradio.com – Press Releases, "XM Satellite Radio Channels Now Available on DIRECTV," http://www.xmradio.com/newsroom/screen/pr.2005.11.15.html (accessed October 22, 2006); and Letter Agreement between DirecTV, Inc. and XM Satellite Radio Inc., August 18, 2005 (hereafter "XM-DirecTV Agreement").

[6] XM offers fewer channels on DirecTV than it does on its satellite radio service. "Special X" does not appear on XM's satellite radio lineup. Reported channel counts were compiled by CRA and are based

to DirecTV's more than 15 million subscribers.[7] I understand that all of these Sirius and XM channels use commercially released music. For convenience, I use the term "music channels" to refer to all of these channels.

4. In forming my opinions I have reviewed a variety of materials, most of which are referenced in this report. In particular, I have reviewed the contracts between Sirius and DISH and XM and DirecTV, Sirius and XM's financial statements, as well as various analyst reports. I have interviewed XM's Mr. Stephen Cook, Executive Vice President, Automotive, and Sirius' Mr. Douglas Kaplan, Senior Vice President for Business Affairs, Entertainment, and Sports, to understand XM's and Sirius' businesses and their motivation for partnering with an MVPD. I have also reviewed previous decisions relating to the determination of reasonable fees paid by Music Choice to Broadcast Music, Inc. ("BMI") and to the Recording Industry Association of America ("RIAA"), by webcasters to RIAA, and by Showtime to the American Society of Composers, Authors and Publishers ("ASCAP"). I have reviewed publicly available information on Music Choice, including its revenues and subscriber base, and as Music Choice is available only through third parties, the number of Music Choice channels offered by Comcast, Time Warner, and Cox Communications to their cable television subscribers. (See Appendix 3 for a list of materials reviewed.) In addition, I have relied upon my training and experience as an economist specializing in industrial organization. The analyses that I present in this report have been performed by me or under my direction. As additional evidence becomes available prior to trial, I reserve the right to refine my analyses.

II. Summary of Opinions

5. To determine the appropriate license terms for the public performance of sound recordings on digital audio channels carried by an MVPD, I begin with a consideration of the relevant economic framework and the "willing buyer – willing seller" standard for new subscription services. In applying this standard, I have looked to

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upon a complete listing of XM channels on DirecTV, obtained from the DirecTV website, as of the last week of September 2006. See Appendix 2 for the actual listing.

[7] DirecTV Group Inc.10-K, 2005 (hereafter "DirecTV 10-K, 2005"), pp. 2-3.

a variety of benchmarks to evaluate both the appropriate rate as well as the appropriate base to which this rate should be applied. As a practical matter in rate-setting proceedings, royalties for use of intellectual property are typically established by reference to comparables or "benchmarks" rather than derived explicitly from fundamentals of cost or value considerations.

6. There are a number of potential benchmarks available for determining the rate in this proceeding, including ASCAP and BMI's recent proposals to Sirius for use of musical works rights in public performances on DISH, Music Choice's rate with BMI, and the pre-existing digital audio radio subscription services ("PSS") rate for Music Choice, DMX, and Muzak with SoundExchange. Benchmark analysis begins with consideration of the comparability of the potential benchmark rate to the new subscription service and the nature of the specific rights at issue. These considerations can result in adjustments to account for material differences between the benchmarks and the new service. I have considered the importance of potential cost and value differences, including the effect of secondary benefits from other streams of revenue for sound recording performance rights holders, as well as to Sirius and XM, on the reasonable rate. The following points summarize my main conclusions:

- Sirius and XM's core business is subscription satellite radio delivered direct-to-the-consumer.
- The significance to Sirius and XM of carriage by an MVPD stems from its subscriber acquisition value – that is, the value in attracting new subscribers to their core line of business. Royalties associated with this value will be determined in the upcoming satellite digital audio radio ("SDARS") proceeding. Accordingly, the rate which I focus on in this proceeding is a through-to-the listener/viewer rate for the standalone use of sound recording rights for public performances on Sirius and XM's digital audio channels carried by an MVPD.
- Upon consideration of available benchmarks, it is my opinion that a competitive rate under the willing buyer – willing seller standard would range between 5.30 percent and 5.83 percent of revenues that appropriately reflect the standalone value associated with the carriage agreements.

- Consideration of the terms of Sirius and XM's agreements with DISH and DirecTV suggests that the actual value associated with the agreements is difficult to interpret. Indeed, these terms conflate the direct value of providing music content through an MVPD with the promotional value of this carriage to Sirius and XM's satellite radio services. In the case of Sirius, for example, the terms involve a two way stream of payments that result in no net payment. Accordingly, the individual components of the stated flow of payment from DISH to Sirius, or vice versa, may not be easily interpretable.

- I estimate a revenue base for Sirius and XM based on the revenues earned by Music Choice, one of the pre-existing services, from cable operators for provision of a bundle of audio music channels to be sold as part of a larger package of video programming. The estimated revenues based on Music Choice (referred to hereafter as "attributed revenues") provide an upper bound on a reasonable revenue base for Sirius on the DISH Network and XM on DirecTV.

- A Music Choice equivalent service would generate about $0.28 per subscriber in 2006 (or $0.0233 per subscriber per month) for a bundle of audio music channels for distribution to residential subscribers. Accordingly, the attributable revenues for Sirius and XM, to which a reasonable royalty rate can be applied, are calculated by multiplying the estimated revenue per subscriber and the number of MVPD subscribers receiving the Sirius and XM music channels. Based on current subscriber counts, attributed revenues for Sirius are at most **[[ ]]**. Similarly, attributed revenues for XM are at most **[[ ]]**.

- To the extent that Sirius and XM would have a higher revenue base because they provide more music channels to DISH and DirecTV than Music Choice provides to cable operators, I have also estimated attributed revenues on a per subscriber, per channel basis. However, there is no evidence to suggest that the incremental value of additional music channels is proportional to the number of channels.

7. The remainder of this report discusses each of these points in detail. In particular, the next section describes the economic framework and the statutory standard. Section IV provides relevant industry background. Section V discusses the significance

to Sirius and XM of carriage by an MVPD. Section VI describes the Sirius-DISH and XM-DirecTV agreements. Section VII contains a discussion of the potential benchmarks for determining the appropriate rate in this proceeding. Section VIII describes the calculation of an appropriate revenue base. Section IX presents a calculation of the implied SoundExchange fees as well as a discussion of extending the methodology forward to cover the term of the license. Section X concludes.

III. Economic Framework and the Statutory Standard

8. In a competitive marketplace, buyers and sellers of sound recording rights for use in public performances over digital audio channels carried by MVPDs would negotiate directly over an appropriate sound recording performance rate. In such a setting, the market mechanism would inherently balance buyers' value, sellers' costs, and other factors such as risk and secondary benefits from the transaction not captured elsewhere. Accordingly, the market price would appropriately reflect the marginal value and the marginal cost associated with the transaction, provide a competitive return to sellers, and generate the socially efficient outcome.

A. Buyers' Value

9. In this context, the buyers are Sirius and XM, who use sound recording performance rights as inputs into the production of their product, which in this matter is a bundle of digital audio entertainment channels provided to DISH and DirecTV. These MVPD services, in turn, sell different packages of channels to their subscribers that may include the digital audio entertainment channels. The inherent value of the sound recording performance rights for this use derives from two potential sources. The first is the direct value to the consumers or listeners of the music on an MVPD service. The second is the promotional value associated with the effect of listening to music over an MVPD service on the sale of additional subscriptions to the satellite radio services of Sirius and XM.

10. This promotional value plays two important roles. First, Sirius and XM are willing to accept less from DISH and DirecTV, respectively, than would a content provider like Music Choice. In this way, DISH and DirecTV also benefit from the promotional value realized by Sirius and XM. Second, to the extent that listening to

music on these MVPDs leads to increased sales of subscription satellite radio (Sirius and XM's core business), Sirius and XM would receive additional subscription revenue. Recording rights owners would receive additional payments from Sirius and XM for the sound recording performance rights associated with this additional subscription revenue (at an appropriate rate determined in the SDARS proceeding). Accordingly, this secondary effect would benefit Sirius and XM, as well as sound recording performance rights owners. This benefit to sound recording performance rights owners should, if anything, place downward pressure on the arms-length rate in this proceeding.

B. Sellers' Costs

11. The sellers are the record companies. According to the RIAA, record companies spend substantial amounts of money creating new sound recordings, which ultimately enable the public performance of recorded music. Record company costs cover everything from recording, producing and manufacturing, to marketing and promotion of new music; these costs also include the cost of failed creations.[8] While some of these functions, such as recording and producing, are required to create the sound recording itself, others are required for the creation and sale of a physical CD. The costs associated with the creation of pre-existing sound recordings that enable public performances are sunk costs, that is, these costs have been incurred and are not recoverable. Accordingly, these costs would not affect the market price for sound recordings rights in public performances over digital audio channels carried by an MVPD. Costs of creating new sound records over the term of the license agreement have not yet been incurred and as such, may place some upward pressure on the competitive price. According to Warner Music Group, the third largest record company and part owner of Music Choice, nearly half of its recorded music sales stem from its catalog of existing music and the other half from the sale of its new album releases.[9]

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[8] RIAA.com – Press Room, "Cost of a CD," http://www.riaa.com/news/marketingdata/cost.asp, (accessed October 16, 2006).

[9] According to Warner Music Group, 83 percent of total revenues are from the sale of recorded music, and 43 percent of total revenues are from the new album releases. Accordingly, I estimate that 48 percent of revenues from the sale of recorded music derive from the sale of pre-existing, catalog music (i.e. 1 – 43/83). (See Warner Music Group, 2005 Annual Report, p. 6 of Introduction.)

12. Whether and by how much the cost of new albums not yet incurred by the record companies would influence the price in a well-functioning market for sound recording performance rights depends upon the degree to which these costs are incremental to the sale of the rights at issue. To understand this point, consider two polar examples. On the one hand, suppose that none of the additional albums would be developed without an agreement with Sirius and XM for the use of sound recording performance rights over digital audio channels carried by an MVPD. In this case, all of these new album costs would be relevant to the negotiation, and they would place substantial upward pressure on the transaction price. On the other hand, suppose that all of the additional albums would be developed regardless of whether an agreement with Sirius and XM were reached. In this case, none of these new album costs would be relevant to the negotiation, and they would have no effect on the transaction price, even though these costs were not sunk. The answer to the question of whether and by how much new album costs affect the transaction price lies somewhere in between these two extremes, but is likely much closer to the second scenario.

13. Indeed, it is difficult to imagine that but-for the sale of sound recording rights for public performances over digital audio channels on an MVPD's service, record companies would forgo their worldwide revenues from new recorded music. Record companies earned a total of $24.4 billion from worldwide sales in 2005.[10] Based on my calculations, I estimate that sound recording performance rights owners would receive about $0.4 million, calculated as 5.83 percent of attributed revenues of no more than approximately $7.4 million, though as I explain below, even this amount is too high. Even if these companies received ten times this amount, sound recording rights fees would be less than 1/50 of a percentage point of the total revenues earned from the retail sale of recorded music. Accordingly, it is unreasonable to believe that the decision to license recording rights for public performances over an MVPD's service would have any material effect on the record companies' decision to create new music. Thus, it is my opinion that the costs borne by the record companies, whether or not they are sunk, are,

[10] I estimate worldwide record company sales of $24.4 billion by dividing Warner Music Group's $2.924 billion in worldwide recorded music sales by its 12 percent shares of retail record sales. (Warner Music Group, 2005 Annual Report, p. 2; and *Market Share Reporter, 2007*, Volume 1, "Top Music Firms Worldwide, 2006," p. 446.)

for all practical purposes, irrelevant to the negotiations for the rights at issue in this proceeding.

C. SoundExchange and the Statutory Standard

14. Because the transactions costs for licensing recording rights can be extremely high, rights holders are permitted to centralize or coordinate sale of their rights, through SoundExchange, in order to reduce these costs. At the same time, out of concern that this centralization itself may allow rights holders to exercise market power, the compulsory licensing and regulatory regime established by policymakers requires that the licensing terms satisfy a "willing buyer – willing seller" that reflects relevant "economic, competitive, and programming information."[11] Given the policy goal of mitigating market power created by the centralization of the sale of recording rights coupled with the socially desirable aspects of the perfect competition paradigm, it is reasonable to interpret the willing buyer – willing seller standard to mean the rates that would have prevailed in a competitive marketplace. From an economist's perspective, a benchmark stemming from a more competitive marketplace is preferred to one from a less competitive marketplace. Consistent with this interpretation, I am not aware of any regulatory body that uses another paradigm as a backdrop to generate the appropriate regulatory benchmark. Furthermore, both the Librarian of Congress in determining sound recording performance rights fees as well as the Federal Courts in enforcing the ASCAP Consent Decrees have held this interpretation.[12,13]

15. As a matter of economic analysis, it is typically not possible to determine explicitly the rates that would prevail in a competitive marketplace based on a ground-up analysis of costs and values. The difficulties here stem both from the fact that the marginal cost associated with the use of intellectual property is essentially zero or near

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[11] 17 U.S.C. Sec 112(e)(4), Title 17 – Copyrights, Chapter 1 – Subject Matter and Scope of Copyright, Section 112. Limitations on Exclusive Rights: Ephemeral Recordings, p. 3 of 9.

[12] 2002 Librarian's Decision, Library of Congress, Copyright Office 37 CFR Part 261, Docket No. 2000-9 CARP DTRA1&2, Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings and Ephemeral Recordings, *Federal Register*, Volume 67, No. 130, 912 F.2d 563, July 8, 2002, pp. 45244-5.

[13] ASCAP v. Showtime/The Movie Channel, No. 90-6034, United States Court of Appeals for the Second Circuit, 912 F. 2d 563, 1990, pp. 1, 4.

zero and from the fact that the value to the user of the sound recording performance right is commingled with the value of other inputs to production, including value the use of musical works. For these reasons, it is more customary to rely on comparable rates set in a marketplace similar to the marketplace at issue, rather than to determine these rates based on a ground-up analysis. Because benchmark analysis requires careful understanding of the market environment, I turn next to a description of the relevant industry background.

IV. Industry Background

16. Sirius and XM are licensed in the United States by the Federal Communications Commission as digital audio radio satellite ("DARS") services. Their core business is to sell nationwide subscription radio services that include a wide array of commercial-free music, comedy, talk shows, news programs, and sports entertainment.[14] In addition to buying a subscription plan, subscribers must also purchase a radio either through a retail outlet or through automobile manufacturers, which offer Sirius and XM radios in new models. Both companies engage in a variety of activities designed to attract new subscribers to their subscription radio service.

17. As of end of fiscal year 2005, Sirius had gross revenues of $242.2 million and net losses of $863.0 million. XM had gross revenues of $558.3 million and net losses of $666.7 million. Subscription radio fees accounted for about 95 and 90 percent of Sirius and XM revenues, respectively.[15] The balance of their revenue was accounted for by advertisements, activation fees, radio equipment sales, and revenues from carriage on satellite television services, the last of which is relatively small compared to the other components, particularly for XM. The significant losses for both companies reflect the substantial past and on-going investments in programming, delivery infrastructure, radio technology, and other subscriber-acquisition activities required to produce and sell a competitive subscription satellite radio service.[16]

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[14] Both companies offer a short menu of prices, including a discounted fee for additional radios and monthly, annual, and multi-year subscription plans. "Satellite Radio Outlook," Kagan Publishing, 2005, p. 71.

[15] Sirius 10-K, 2005, pp. 33, F-4; and XM 10-K, 2005, pp. 30-32 and F-13.

[16] Sirius 10-K, 2005, pp. 17-22, 43; and XM 10-K, 2005, p. 20-25.

18. Sirius and XM have carriage agreements with Dish and DirecTV, pursuant to which DISH and DirecTV provide certain digital audio channels to their subscribers. (See Appendices 1 and 2.) DISH and DirecTV are Direct Broadcast Satellites that provide MVPD services to households and businesses in the United States. DISH distributes over 180 television program channels through various subscription packages to its more than 12 million subscribers.[17] Beginning in May 2004, DISH also offers a total of 64 music channels from Sirius, across its various tiers of services offerings. Similarly, DirecTV distributes over 250 television program channels to its over 15 million subscribers.[18] Beginning in November 2005, DirecTV also offers a total of 73 channels from XM, across its various tiers of service offerings. MVPD subscribers get different numbers of music channels depending on which tier of service they choose. (See Exhibit 2.)

19. Other companies that provide digital audio channels over satellite or cable television include DMX, Muzak, and Music Choice. DMX and Muzak provide their services primarily to commercial customers,[19] while Music Choice's service focuses primarily on residential customers. Specifically, Music Choice sells a bundle of digital audio music channels for distribution to cable television households, and as such is likely most functionally similar to Sirius and XM, relative to DMX and Muzak.[20] Music Choice is a partnership between Microsoft Corporation, Motorola Inc., Sony Corporation of America, Warner Music Group Inc., EMI Music, Adelphia Cable Communications, Comcast Cable Communications, Cox Communications and Time Warner Cable.[21,22] Music Choice offers 58 commercial-free music channels, music videos, artist interviews,

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[17] See, for example, DishHD Platinum, http://www.allamericandish.com/dishhd_platinum.htm (accessed October 22, 2006). See also EchoStar 10-K, 2005, p. 1-2.

[18] See, for example, DirecTV – Total Choice Premier, http://www.directv.com/DTVAPP/packProg/channel Chart1.jsp?assetId= 900041 (accessed October 22, 2006). See also DirecTV 10-K, 2005, p. 3.

[19] Dmxmusic.com – DMX Corporate Profile, http://www.dmxmusic.com/dmx_profile.htm (accessed October 22, 2006). Muzak.com, http://muzak.com/muzak.html (accessed October 22, 2006). See also Pacific Business News, "That Background Music Is a Big Business," July 11, 2003.

[20] Before November 2005, Music Choice was also available on DirecTV. Satellite News, "DirecTV Takes First Step Into Music Business with XM Deal," October 3, 2005.

[21] Music Choice Company Blurb, http://company.monster.com/w17419174w/ (accessed August 28, 2006).

[22] Several of these companies are represented by SoundExchange in this proceeding.

and performances on-demand and reaches approximately 38 million cable television subscribers.[23] Of the three PSS providers, Music Choice has a comparable product offering to both the Sirius – DISH service and the XM – DirecTV service in terms of their channel offerings and their distribution, as well as the value placed on their programming by residential consumers who listen to their programming on satellite or cable television.

20. There are some notable differences between Sirius and XM, on the one hand, and Music Choice, on the other. First, Music Choice does not operate a subscription radio service, so its revenues from provision of its music programming to cable operators are not affected by the incentive to promote its radio subscription service via satellite or cable television. Second, Music Choice also sells its content through mobile services and video on demand, revenues which are not subject to the PSS rate.[24] Finally, there are fewer Music Choice channels on cable television than there are Sirius and XM channels on DISH or DirecTV, respectively. I consider each of these differences in using Music Choice as a benchmark to calculate both an appropriate rate as well as revenue bases for Sirius and XM.

V. Significance to Sirius and XM of Carriage on DISH and DirecTV

21. It is my understanding, based on the testimonies of Mr. Douglas Kaplan and Mr. Stephen Cook, Sirius' Senior Vice President for Business Affairs, Entertainment, and Sports and XM's Executive Vice President, Automotive, respectively, that Sirius and XM provide their services to DISH and DirecTV for the potential subscriber acquisition value, that is, as a way of exposing consumers to their satellite radio services.[25]

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[23] Hoover's Company Record – Basic Record, Music Choice, August 22, 2006; Music Choice Company Blurb, http://company.monster.com/w17419174w/ (accessed August 28, 2006). See also Music Choice Channel Descriptions, http://www.musicchoice.com/what_we_are/channel_ descriptions.html (accessed October 20, 2006).

[24] MusicChoice – FAQs, http://www.musicchoice.com/what_we_are/faqs.html (accessed October 22, 2006).

[25] Sirius and XM also engage in a number of different subscriber acquisition activities that are designed to attract subscribers to their subscription radio service. Both companies offer factory installed radios through their automaker partners which in some cases include prepaid trial subscriptions to the satellite radio service. Both companies have strategic partnerships with car rental companies to provide satellite radio service in the rental fleet: XM has partnership agreements with AVIS, Alamo, and National, while Sirius has partnered with Hertz. In addition, XM has strategic partnerships with United Airlines, AirTran, and JetBlue that make XM audio channels available in-flight, an agreement with Hyatt to provide XM service

According to Mr. Cook, satellite radio subscribers are more likely than the general population to have a subscription to satellite television, suggesting that satellite television subscribers who currently do not subscribe to satellite radio may be receptive to purchasing a subscription to Sirius or XM. In his conclusions, Mr. Cook cited survey data from the Simmons Market Research Bureau's National Consumer Study ("NCS") from both 2004 and 2005 that show that satellite television subscribers were both more likely to own satellite radio and somewhat more likely to buy a satellite radio subscription over the next twelve months. (See Exhibit 3.) In fact, it is my understanding that XM relied on these NCS surveys in deciding whether to pursue a carriage deal with DirecTV.

VI. Sirius and XM's Agreements with DISH and DirecTV

22. The Sirius and XM agreements with DISH and DirecTV conflate the promotional value of carriage by an MVPD for satellite radio and the direct value of the suite of audio music channels provided through an MVPD. Accordingly, the individual components of the stated flow of revenues from DISH to Sirius (or DirecTV to XM), or vice versa, may not be directly interpretable. As such, I do not rely on the actual terms of the agreements themselves, but rather I estimate the standalone value of the use of sound recording performance rights over digital audio music channels carried on an MVPD's service - recognizing that this approach is likely to overstate the appropriate revenue base. Nonetheless, I provide here an overview of both agreements.

23. In February 2004, Sirius and EchoStar, the parent company of DISH, signed an agreement under which Sirius would provide Sirius' music channels on a non-exclusive basis to DISH. The terms of the agreement through December 31, 2005 were as follows:

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in guest rooms, and has partnered with Bally's Total Fitness, giving new Bally's members a free XM satellite radio device, with free car kit and waived activation fee. Each company has engaged in various subscriber acquisition activities through its sports broadcasting partners (including Major League Baseball, the PGA Tour, and the Indy Racing League for XM and the National Football League, NASCAR, and the National Basketball Association for Sirius). Finally, both companies engage in more traditional forms of advertising, such as radio, television, and billboard. (See Sirius 10-K, 2005, pp. 2-4; and XM 10-K, 2005, pp. 1, 2, and 5. United.com – Press Release Archive, "United Airlines Goes Beyond AM, Beyond FMTM with In-Flight Music Programming by XM Satellite Radio," March 2, 2006, http://www.united.com/press/detail/0,6862, 53718-1,00.html (accessed October 29, 2006). XMradio.com – Bally Total Fitness, "Tune-In and Tone-Up with Bally and XM," http://www.xmradio.com/bally/index.jsp (accessed October 29, 2006)).

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24. It is noteworthy that the two way stream of payments, from Sirius to DISH and from DISH to Sirius, completely offset each other, and it is my understanding that no money actually changes hands. [[

[26] Sirius-DISH Agreement, [[ ]]

[27] Sirius-DISH Agreement, [[ ]]

[28] Sirius-DISH Agreement, [[ ]]

[29] Sirius-DISH Agreement [[ ]]

[30] Sirius-DISH Agreement [[ ]]

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25. In August 2005, XM and DirecTV signed an agreement under which XM would provide XM music channels [[ ]] to DirecTV [[ ]][31] Under the agreement:

- [[
- [32]
- [33]
- [34]]]

26. The direct value of this deal to XM depends on the fair market valuation of the advertising commitments. To see this, suppose that XM would have sold all of its advertising spots to others had DirecTV not agreed to purchase advertising. In this case, DirecTV's commitment to buy one million in advertising has no direct value to XM. In addition, if XM would have advertised on DirecTV anyway, the one million dollar credit translates directly into one million dollars in value. In any case, the revenues associated with the deal can be no more than $2.50 million.

27. It is my understanding that Sirius and XM would not have entered into these agreements absent the promotional value of attracting subscribers to subscription radio. Accordingly, the terms of the contractual agreement conflate the value of music on satellite television (i.e., on Dish and DirecTV) and the promotion value of the agreement to Sirius and XM. If the promotional value is large enough, the stated payments

[31] In particular, XM agreed not to provide its channels to DISH and DirecTV agreed not to carry Sirius channels. See XM-DirecTV Agreement, Section 3b, p. 2.

[32] XM-DirecTV Agreement, Section 12, p. 3.

[33] XM-DirecTV Agreement, Section 11, p. 3.

[34] XM-DirecTV Agreement, Section 10, pp. 2-3.

associated with the deals could well be zero. In such a situation, it is possible for the parties to structure the terms of their agreements to result in any level of payments. [[

]] It is conceivable that the parties could restate these terms to have no payments in either direction. As this example highlights, the stated revenues may not be interpretable and as such, reliance on the actual terms to assess reasonable royalties for the public performance of sound recordings may not be appropriate. For this reason, I do not rely on the stated revenues associated with these deals themselves. Instead, I rely upon an imputed revenue base, which I describe in more detail below.

VII. Potential Benchmark Rates

28. In determining an appropriate rate for the license of recording rights for public performances over digital audio channels carried by an MVPD, I rely upon three different benchmarks. These benchmarks include: (i) recent offers from ASCAP and BMI to Sirius for the use of musical works on channels sold through DISH; (ii) the recently decided Music Choice – BMI rate; and (iii) the PSS – SoundExchange rates from 1998 and 2003. I discuss each in turn.

A. On the Use of Musical Works Benchmark for Sound Recording Rights

29. All of the proposed benchmarks, either directly or indirectly involve the use of a musical works benchmark for sound recording public performance rights. I note as an initial matter that there is precedent in using a musical works rate as a benchmark for determining the appropriate sound recording rights fee.[35] I also understand that the musical works rates are set under the Consent Decrees under a standard equivalent to the

[35] For example, the 1998 CARP Decision was based on a musical works benchmark. See Library of Congress, Copyright Office, "In re: Determination of Statutory License Terms and Rates for Certain Digital Subscription Transmissions of Sound Recordings," Docket No. 96-5 CARP DSTRA, Report of the Copyright Arbitration Royalty Panel, ¶ 167-169, 201-202. See also the 1998 Librarian's Decision, Library of Congress, Copyright Office, "Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings," Docket No. 96-5 CARP DSTRA, *Federal Register*, Vol. 63, Number 89, May 8, 1998, p. 25403.

willing buyer- willing seller standard required in this proceeding. Nonetheless, in evaluating the issue, it is useful to consider both the value generated by and the costs associated with each of the music works and sound recording rights. On the value side, the musical works and the sound recording performance rights are inextricably linked in producing the value of a public performance. Even if one were to believe that the sound recording rights on a particular song were not worth the same as the musical work rights for that song, I am aware of no evidence that there is a difference in the value of these rights across an entire library of songs. Further, I am aware of no evidence to suggest that consumers of public performances tend to value renditions/recordings more than the musical works/lyrics themselves.

30. On the cost side, there is also no reason to suppose any systematic differences between musical works performance rights and sound recording performance rights. As I have explained earlier, the sunk costs and the future incremental costs associated with the creation of music are immaterial to the willing buyer – willing seller dynamic for licensing rights for the use of music carried by an MVPD. The only relevant costs are those that are likely to influence the hypothetical negotiation between a willing buyer and a willing seller. In this context, the relevant incremental costs associated with the public performance of both musical works and sound recordings are zero or near zero.

31. Finally, to the extent that there are material differences in other fundamentals of the payment for musical works performance rights relative to the payment for sound recording performance rights, reliance on a musical works benchmark is likely to be conservative. First, to the extent that ASCAP, BMI, and SESAC have some market power, the musical works benchmark would likely result in a higher implied rate for Sirius and XM than a competitive benchmark.[36] Second, to the extent that listening to music on an MVPD's service stimulates sales of recorded music, owners of sound recordings would benefit significantly more than owners of the musical works

[36] Though ASCAP and BMI are constrained by the courts, as a result of the Consent Decrees, they may still be able to charge supracompetitive rates, at least to the extent that litigation risks and transactions costs prevent users from involving the courts. In addition, SESAC rates are not subject to rate court review.

copyrights.[37] This additional promotional value would likely place downward pressure on the transaction price, i.e. the price at which a willing buyer and willing seller of sound recording performance rights for use over an MVPD's service would trade. Third, fees for the use of musical works in public performances cover all copyrighted music in the libraries of ASCAP, BMI, and SESAC, whereas users of sound recordings in public performances do not need to pay for the use of pre-1972 sound recordings. In addition, the public performance of sound recordings for the use over an MVPD's service is limited by the "Complement" rule, that is Sirius and XM cannot play in any three-hour period, without explicit permission from the record companies, more than three songs from a particular album, including no more than two consecutively, or four songs by a particular artist or from a boxed set, including no more than three consecutively.[38] The use of musical works is not subject to the same restriction. Finally, the musical work rate is typically expressed as a percentage of adjusted revenues – adjusting, for example, for a percentage of subscriber acquisition costs. The effect of these adjustments is to reduce the revenue base, so that an equivalent rate stated as a percent of total revenues would be somewhat lower. Accordingly, for all of these reasons, a sound recording performance rights rate based on a musical works benchmark is likely to be too high.

B. Sirius – DISH – Musical Works Rate

32. It is my understanding that ASCAP and BMI have each recently proposed to Sirius a rate of 2.5 percent of revenues, based on the recently decided Music Choice – BMI decision, for the use of musical works rights for public performances on DISH. This is an appealing benchmark for three important reasons. First, the proposal represents an offer by willing sellers to a potentially willing buyer and, as such, directly satisfies the statutory standard. Second, given that the rate is a proposal from the seller, not the buyer, it is likely to represent the upper bound of the rate that may ultimately be agreed upon. Third, there is no issue of comparability in terms of the value of the

[37] I understand, for example, that record companies expend a great deal of effort arranging for "airplay" and that the owners of musical works rights do not do the same. This behavior by itself suggests that record companies benefit disproportionately from the sale of recorded music, relative to owners of musical works.

[38] See *Federal Register*, Vol. 62, No. 121, June 24, 1997, p. 34035, http://www.copyright.gov/fedreg/1997/62fr34035.html (accessed October 30, 2006).

services offered or the cost of distribution, because the proposal is specifically for Sirius on DISH, which is the service under review in this proceeding.

33. Thus, I use this musical works rate to calculate the corresponding rate for the use of sound recording performance rights over DISH and DirecTV. My calculation assumes that the BMI rate would be equal to the ASCAP rate. I understand that historically, payments to ASCAP were somewhat higher than the payments to BMI;[39] however, more recent evidence suggests that the two are now equal.[40] My calculation also assumes that the SESAC rate would be approximately 6 percent of the combined ASCAP and BMI rates. The SESAC portion is calculated based on Sirius and XM's actual payments to ASCAP, BMI, and SESAC for the use of musical works performance rights on satellite radio.[41] The implied fee for the use of sound recording performance rights on DISH and DirecTV is 5.30 percent of revenues.[42]

C. Music Choice – BMI Rate

34. It is also my understanding that the Music Choice – BMI rate was recently set at 2.75 percent for past payments and 2.5 percent for on-going payments. Like the Sirius – DISH – musical work rate, this is an appealing benchmark for a number of reasons, chief among which is the functional similarity between Music Choice on cable systems and Sirius and XM on satellite television. It also has the advantage that the musical works rate was set under the willing buyer-willing seller standard, the same standard required in this proceeding. Assuming, as before, that the ASCAP rate would

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[39] 1998 Librarian's Decision, p. 25403.

[40] For example, terrestrial radio payments from 2004 to 2006 to ASCAP are the same as its payments to BMI. (ASCAP – FAQ, See http://www.radiomlc.com/ascap_faq.html (accessed October 29, 2006) and BMI – FAQ, http://www.radiomlc.com/faq.html (accessed October 29, 2006).) In addition, Music Choice and ASCAP reached an agreement in 2002 for a rate of 1.75 percent, based on the Music Choice I decision of 1.75 percent. (See Music Choice III, United States of America, Music Choice, v. Broadcast Music, Inc., No. 64 Civ. 3787 (LLS), p. 2.)

[41] Based on actual payments by XM and Sirius for SDARS over 2005 and 2006, payments to SESAC equal approximately 6 percent of the combined payments to ASCAP and BMI. Given both that XM and Sirius payments to ASCAP during this time were actual, not interim, payments, and that the BMI payments were equal to the ASCAP payments, this relationship between SESAC and combined ASCAP BMI payments provides a reasonable indication of what SESAC would receive, relative to the others, for use of musical works on satellite television.

[42] The 5.30 percent rate is calculated as the sum of 2.50 percent for BMI, 2.50 percent for ASCAP, and 0.30 percent for SESAC.

equal the BMI rate, and that the SESAC rate would be approximately 6 percent of the combined ASCAP and BMI rates, the implied fee, based on the 2.5 percent going forward rate, for the use of sound recording performance rights on DISH and DirecTV is 5.30 percent of revenues.[43]

D. PSS – SoundExchange Rate

35. Finally, I consider the rate paid by Music Choice, DMX, and Muzak, the three pre-existing satellite services, to SoundExchange for sound recording performance rights over an MVPD's service as a potential benchmark for the determination of the rate for XM and Sirius in this proceeding. The similarities between Music Choice's content and distribution over cable television (Music Choice has also provided its programming to satellite television operators in the past) and the Sirius – DISH and XM – DirecTV arrangements suggest that this is an obvious benchmark, but there are at least two complications in the use of this benchmark that need to be addressed.

36. First, the PSS – Soundexchange rate of 6.5 percent of gross revenues, set in 1998, was based on a Music Choice – ASCAP rate that was being adjudicated at the time.[44] Recognizing that this benchmark rate itself was still being decided, both the Librarian and the CARP based the PSS rate on "an upper limit on the value of the performance right for the musical compositions."[45] The benchmark rate, however, was ultimately decided at a rate below this upper limit.[46] Had the CARP and the Librarian known the actual benchmark rate at the time of their decision, they would have likely chosen a lower rate.

37. To see this, consider the effect of the benchmark rate on the determination of the final rate. While the actual "upper limit" considered by the Librarian and the

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[43] As before, the 5.30 percent rate is calculated as the sum of 2.50 percent for BMI, 2.50 percent for ASCAP, and 0.30 percent for SESAC.

[44] 1998 Librarian's Decision, pp. 25404. 25414.

[45] 1998 Librarian's Decision, p. 25403.

[46] In 2002, following the Music Choice I decision of a 1.75 percent rate, Music Choice and ASCAP reached a settlement agreement for 1.75 percent. The Music Choice – BMI decision, however, was appealed successfully twice, before Music Choice and BMI was decided at a rate of 2.75 percent for the past time period. (See Music Choice I, United States of America v. Broadcast Music, Inc., No. 64 Civ. 3787(LLS), Memorandum and Order, July 23, 2001, p. 1).

CARP is not available in the public decisions, it is reasonable to assume (at least in principle) that the upper bound would reflect an offer from ASCAP (the seller) to Music Choice (the buyer). In the Music Choice – BMI proceeding, which was taking place simultaneously, BMI offered Music Choice a rate of 3.75 percent.[47] To the extent that this offer was similar to the offer made by ASCAP to Music Choice, the rate of 3.75 percent may reflect the "upper limit" the Music Choice – RIAA decision was based on. Thus, it is reasonable to assume that the starting point for the PSS rate, based on this benchmark rate, would have been 7.95 percent – the sum of 3.75 for ASCAP, 3.75 for BMI, and 0.45 percent for SESAC. This rate was then lowered to 6.5 percent, upon consideration of the 801(b) statutory factors used to evaluate the rate in the pre-existing services proceeding.[48] Had the CARP and the Librarian started with a benchmark rate of 2.75 percent, instead of 3.75 percent for BMI - ASCAP, they would have imputed a total PRO benchmark rate of 5.83 percent,[49] instead of 7.95 percent. Accordingly, they would have ultimately decided on a lower Music Choice – RIAA rate than 6.5 percent.

38. Putting aside this substantive complication, there is also the issue that the PSS – SoundExchange rate was established in the context of 801(b) factors, which are not applicable to new subscription services. The appropriate use of the PSS benchmark for the new subscription services proceeding requires consideration not of the final rate, but rather the initial rate before the consideration of the 801(b) factors – which in this case would have been 5.83 percent. Accordingly, 5.83 percent serves as a useful upper bound for an appropriate rate in this proceeding. A caveat is that 5.83 percent is likely too high even as an upper bound because it is a rate based on adjusted revenues,

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[47] See Music Choice I, pp. 5-6.

[48] The four statutory objectives are: (a)To maximize the availability of creative works to the public; (b) To afford the copyright owner a fair return for his creative work and the copyright user a fair income under existing economic conditions; (c) To reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and the contribution to the opening of new markets for creative expression a media for their communication; and (D) To minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices. (See 17 U.S.C. 801(b)(1).)

[49] The rate of 5.83 percent is calculated as the sum of 2.75 percent for ASCAP, 2.75 percent for BMI, and 0.33 percent for SESAC.

not total revenues. The equivalent rate stated as a percent of total revenues would be somewhat lower.

VIII. Using Music Choice to Impute the Appropriate Revenue Base for Sirius on DISH and XM on DirecTV

39. Each of the benchmark rates considered above is applied against revenues associated with the provision of music services over an MVPD's service. However, as I have explained, the revenues associated with the Sirius – DISH and the XM – DirecTV agreements conflate the direct value of music provided through an MVPD with the promotional value of the agreements, and as such, the actual terms of the agreements may not be interpretable.

40. I estimate the appropriate revenue base using a benchmark analysis based on Music Choice's revenues. Other possible candidates for this analysis include DMX and Muzak. However, data limitations restrict their use; in particular, publicly available revenue numbers do not identify revenues from residential subscribers to cable television. As I have explained, DMX and Muzak's focus is on commercial, not residential subscribers, accordingly their revenues are likely to substantially differ from the relevant revenues that Sirius on DISH and XM on DirecTV may earn, even putting aside the promotional value issue. By contrast, Music Choice focuses primarily on residential subscribers and as such is more comparable to Sirius and XM in the services they provide to satellite and cable television operators.

41. A significant difference between the services is that the revenues of Music Choice are not affected by the promotional value of attracting subscribers to its core business. Indeed, MVPD service is Music Choice's core business. This difference has the advantage, on the one hand, in that it makes Music Choice a useful benchmark for estimating Sirius and XM's true revenue potential in deals that reflect the standalone value of the use of sound recording performance rights on an MVPD's service. On the other hand, I recognize that the standalone value of providing music over satellite radio is likely greater than the actual value of the service when the principal motivation of providing the service in the first instance is promotional. As such, reliance on attributed revenues based on this standalone value is conservative.

42. Another potential difference is that Sirius and XM use a variety of talent, including personalities and programmers with genre-specific expertise, to develop music programming in order to make their music channels more attractive to listeners. By contrast, Music Choice offers continuous music generated primarily by computer-generated playlists. To the extent that enhanced music programming generates more listening over television, revenues based on Music Choice's experience may be too low. However, there is no evidence to suggest that enhanced music programming generates more listening over television. Accordingly, the available evidence suggests that Music Choice's ability to generate revenues serves as an appropriate benchmark to estimate the standalone revenues XM and Sirius would earn in the absence of the subscriber acquisition value.

43. Based on publicly available information, Music Choice earned total revenues of $10.3 million in fiscal year 2005.[50] I use these revenues as a starting point in valuing the Sirius and XM agreements. It is noteworthy, however, that these revenues likely include total revenues from all of Music Choice's lines of business, including cable television, mobile services,[51] as well as video-on-demand.[52] At the present time, I do not have information on Music Choice revenues from cable television only. Thus, my reliance on total revenues is conservative, in that it will result in an overestimate of the appropriate revenue base.

44. My analysis adjusts for the fact that Music Choice reaches substantially more subscribers than do either Sirius on DISH or XM on DirecTV. In particular, Music Choice reaches about 38 million subscribers,[53] while Sirius on DISH reaches [[

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[50] Hoover's Company Record – Basic Record, Music Choice, (accessed August 22, 2006).

[51] Music Choice provides a bundle of music channels to Sprint PCS, Cingular Wireless and MobiRadio customers. (See MusicChoice – FAQs, http://www.musicchoice.com/what_we_are/faqs.html (accessed October 22, 2006). MusicChoice – Mobile, http://www.musicchoice.com/what_we_are/ mobile.html (accessed October 22, 2006). Market Wire, "Music Choice Tapped By MobiTV," November 2005.)

[52] Between November 2004 and August 2006, more than 400 million video on-demand orders were placed, and more than 7 million orders were placed per week on average during the first three weeks of July 2006. (See Market Wire, "Music Choice On-Demand Remains the Leading Video-on-Demand Music Service in the Country, Surpassing 400 Million Orders," August 2, 2006.)

[53] Music Choice: Hoover's Company Record – Basic Record, Music Choice, (accessed August 22, 2006).

]] subscribers,[54] and XM on DirecTV reaches an estimated [[ ]] subscribers.[55] On a per subscriber basis, a Music Choice-like service would have earned $0.27 per subscriber per year, or equivalently $0.0225 per subscriber per month in 2005. Based on the increase from 2005 to 2006 in the "Cable Networks" producer price index ("PPI"), published by the Bureau of Labor Statistics ("BLS"),[56] I estimate that a Music Choice-like service should earn slightly more, about $0.28 per subscriber per year or equivalently $0.0233 per subscriber per month in 2006. Further, based on current subscriber counts, I estimate attributed revenues associated with a comparable Sirius-DISH contract are at most [[ ]] for Sirius. Similarly, the attributed revenues associated with a comparable XM-DirecTV contract are at most [[ ]] for XM. (See Exhibit 4.)

45. For the purpose of illustration, I have also calculated revenues on a per subscriber basis assuming that about 5 percent of Music Choice's $10.3 million in gross revenues is attributable to other lines of business. This adjustment lowers the revenue per subscriber for a Music Choice-like service from $0.28 per subscriber per year to $0.26 per subscriber per year in 2006. Based on current subscriber counts, attributed revenues for a comparable Sirius-DISH contract are at most [[ ]] for Sirius. Similarly, attributed revenues for a comparable XM-DirecTV contract are at most [[ ]] for XM. (See Exhibit 4.)

46. Finally, while there is no evidence to suggest that increases in music offerings are associated with a proportional increase in revenue, I have considered calculations that adjust for differences in both the number of television subscribers reached as well as the number of music channels offered. The number of channels offered by Music Choice varies somewhat by cable operator as well as by the operator's

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[54] Communication from Sirius. Approximately [[ ]] of DISH's 12.46 million subscribers receive Sirius' music channels.

[55] Using information on Sirius' penetration on DISH, I estimate that [[ ]] DirecTV's 15.5 million subscribers receive XM music channels.

[56] The BLS' PPIs are based upon the North American Industrial Classification System codes ("NAICS codes"), which are developed by the Economic Classification Policy Committee on behalf of the Office of Management and Budget. Prior to 2002, NAICS code 513210 was called "Cable Networks." After 2002, the NAICS code description was updated to "Cable and Other Subscription Programming," although the BLS maintained its original name. See the discussion below, in Section IX, for a full description of this NAICS category.

tiers of service offerings. Based on a systematic review of the carriage practices of Comcast, the largest of all cable operators in the country, I found that of Comcast programming packages that offer Music Choice channels, the average number of channels offered by a cable operator is about 46 and that there was little variation in the number of Music Choice channels offered by tier of service.[57,58] (See Exhibit 5) Accordingly, on a per subscriber, per channel basis, a Music Choice-like service would have earned $0.0060 per subscriber, per channel per year in 2006. (See Exhibit 6.)

47. Calculation of the attributed revenues for Sirius and XM based on this approach requires more detailed information on the number of Sirius and XM channels offered on DISH and DirecTV, respectively. DISH offers 59 Sirius channels on its America's Top 120, America's Top 180, America's Everything Pak, and DishLatino packages, and it offers 64 Sirius channels on its high definition packages. I understand that about [[ ]] of DISH's 12.46 million subscribers actually receive Sirius music channels and of these, [[ ]] subscribers receive the channels through DISH's Latino packages. Further, I understand that about 4 percent of DirecTV's subscribers actually subscribe to its high definition packages. Assuming that DISH achieves the same penetration for its high definition packages, I estimate that about 96 percent of DISH subscribers that receive Sirius music channels receive 59 channels and

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[57] My analysis of Comcast's carriage of Music Choice channels involves a four-step process. First, I identified 717 principal communities served by Comcast, using the 2006 Television and Cable Factbook ("*Factbook*"), the on-line edition. Next, I imputed homes passed for 133 of the 193 principal communities that were missing this information, using Comcast's average penetration rate across all Designated Market Areas ("DMAs"). I then identified the top 20 Comcast DMAs, as measured by the number of homes passed. Finally, I examined the carriage of Music Choice channels for the largest principal communities within each DMA, surveying sufficient principal communities to account for the majority of Comcast homes passed within each DMA. This procedure identified a total of 55 Comcast communities across 20 DMAs.

Information on channel offerings was obtained from the Comcast website, which provides a detailed listing of channels by zipcode. For each principal community surveyed, I used the zipcode given in the *Factbook* (when available) or the US Postal Service's main post office. I obtained the channel counts for at least three digital tiers of service (where available), including an introductory, midsize, and full digital package. In a handful of instances, where the information on the website was ambiguous, I relied on information provided by a Comcast customer service representative, obtained by telephone. (See Exhibit 5.)

[58] A similar pattern is observed in an initial review of Time Warner and Cox service offerings. See e.g. their websites (http://www.timewarnercable.com/CustomerService/CLU/TWCCLUs.ashx?ChangeCLU=true (accessed October 29, 2006)), (http://www.cox.com/gocox/digitalcable/musicchoice.asp (accessed October 29, 2006)).

the remaining receive 64 channels. Accordingly, the attributed revenues associated with a comparable Sirius-DISH contract are at most [[ ]] for Sirius. (See Exhibit 6.)

48. DirecTV offers only 2 XM channels on its Family Choice package, 7 XM channels on its Seleccion Extra package, 49 XM channels on its Total Choice package, 56 XM channels on its Seleccion Mas, 67 XM channels in its Total Choice Plus and Total Choice Premier packages, 70 XM channels on its Titanium package and 72 XM channels in its Seleccion Premier and Seleccion Ultra packages. (See Exhibit 2.) At present, I do not have information on the distribution of subscribers across the different tiers of DirecTV service offerings. Assuming that all DirecTV subscribers who receive XM music channels receive the *same* number of channels and that this is the maximum number of channels offered, I estimate attributed revenues associated with a comparable XM-DirecTV contract would be at most [[ ]] for XM. (See Exhibit 7.) However, it is unreasonable to suppose that all subscribers buy packages with the largest number of channel offerings. For the purpose of illustration, I have recalculated the implied revenues using a per subscriber, per channel approach based on a hypothetical distribution of subscribers. Based on this distribution, I estimate attributed revenues for XM would equal at most [[ ]] for XM. (See Exhibit 7.)

IX. Calculation of SoundExchange Fees

49. Based on this analysis, I find that the reasonable range of rates for sound recording public performance rights for use over digital audio channels carried on an MVPD's service is [[ ]] percent, though the upper bound is likely too high. I also estimate that a Music Choice-like service should currently earn gross revenues of about $0.28 per subscriber per year or $0.006 per subscriber per channel (per year). Finally, I estimate attributed revenues associated with the Sirius-DISH contract to be no more than [[ ]] for Sirius and attributed revenues associated with the XM-DirecTV contract to be no more than [[ ]] million for XM.

50. Going forward over the term of the license, SoundExchange fees can be calculated by multiplying the royalty rate, the number of subscribers to DISH or DirecTV that receive Sirius and XM's music services, and the imputed revenues per subscriber per

year. In thinking about applying this methodology to future years, I consider increases in both the number of DISH and DirecTV subscribers that receive Sirius and XM's music channels as well as the revenue per subscriber estimate. Growth in Sirius and XM's penetration of MVPD homes over the term of the license will automatically be reflected in the going-forward number of subscribers, which Sirius and XM should be able to provide.

51. In practice, growth in revenues per subscriber can be handled in a number of different ways. For example, revenues might be recalculated in each year based on the then Music Choice experience. Not only is this option cumbersome, but it requires Music Choice to remain like Sirius and XM, at least in terms of their services over television, over the term of the license.[59] Another, more reasonable alternative is to allow revenues per subscriber to grow with inflation. In particular, it makes sense to grow these revenues using the Cable Networks PPI.[60] As described by the BLS, this index covers "establishments primarily engaged in operating studios and facilities for the broadcasting of programs on a subscription or fee basis. The broadcasting programming is typically narrowcast in nature (e.g. limited format, such as news, sports, education, or youth-oriented). These establishments produce programming in their own facilities or acquire programming from external sources. The programming material is usually delivered to a third party, such as cable systems or direct-to-home satellite systems, for transmission to viewers."[61]

52. It is my understanding that the BLS generates this PPI (along with a long list of others) on a monthly basis. It also forecasts forward for several months. A review of the historical cable and other subscription programming PPI shows that this index has been increasing slightly over time. (See Exhibit 8.) Accordingly, I expect that this adjustment will result in slight increases in the revenue per subscriber estimate over time.

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[59] As I have explained, Music Choice also provides mobile content and video on demand services. To the extent that these business lines develop into the future, it will become more difficult to use Music Choice as a benchmark for the revenue analysis.

[60] The BLS' cable networks PPI reflects price general inflation for the "cable and other subscription programming" industry, a North American Industry Classification System ("NAICS") classification.

[61] "2002 NAICS Definitions: 515 Broadcasting (except Internet)," http://www.census.gov/epcd/naics02/def/ NDEF515.HTM (accessed October 28, 2006).

X. Conclusion

53. I have assessed a reasonable royalty rate and revenue base for Sirius and XM's use of recording rights for public performances over digital audio channels on an MVPD's service. Upon consideration of available benchmarks, it is my opinion that a reasonable rate under the willing buyer – willing seller standard would range between 5.30 percent and 5.83 percent of revenues.

54. Further, it is my opinion that this rate should be applied to attributed revenues, not the stated revenues associated with the Sirius and XM agreements. As I have explained, the actual terms of Sirius and XM's agreements with DISH and DirecTV conflate the direct value of carriage on an MVPD's service with the promotional value associated with attracting subscribers to satellite radio. Indeed, I understand that carriage on satellite television in and of itself is of no importance to Sirius and XM and that their core business is satellite radio sold directly to final consumers. For these reasons, it is possible that the agreements are structured to have no actual payments. To be conservative, I estimated revenues attributable to these agreements based on Music Choice. Music Choice provides a bundle of audio music channels to be sold as part of a larger package of video programming to cable operators. Given this functional similarity, its revenues provide a meaningful benchmark for determining a reasonable revenue base for Sirius on the DISH Network and XM on DirecTV. However, Music Choice does not benefit from any secondary promotional value from carriage on an MVPD's service. Accordingly, estimated revenues using this approach provide an upper bound on a reasonable revenue base for Sirius on the DISH Network and XM on DirecTV. In particular, I estimate attributed revenues associated with the Sirius and XM agreements of no more than $0.28 per subscriber per year or ¢2.33 per subscriber per month for the bundle of audio music channels they provide to DISH and DirecTV.

55. I understand that Sirius and XM are proposing a rate of ¢0.1235 per subscriber per month, calculated by multiplying the rate of 5.30 percent and attributed revenues of ¢2.33 per subscriber per month. Such a rate is consistent with my analysis. This per subscriber rate can be adjusted for inflation going forward based on the BLS' Cable Networks PPI.

56. Finally, I note that my analysis of both the sound recording performance rights rate as well as the rate base is generally conservative. All of my rate benchmarks, either directly or indirectly, involve a musical works rate. As I have explained, there are a number of reasons why a musical works rate is likely higher that the corresponding performance rights rate. These include the potential market power of ASCAP, BMI, and SESAC; the fact that owners of sound recordings would benefit significantly more from additional sales of recorded music (that might result from listening to music on an MVPD's service), relative to owners of the musical works copyrights; the fact that fees for the use of musical works in public performances cover all copyrighted music, whereas users of sound recordings in public performances do not need to pay for the use of pre-1972 sound recordings; the "Complement" rule, which limits the use of public performances of sound recordings, but not musical works; and the fact that the musical works rate is stated as a percent of adjusted revenues. Accordingly, for all of these reasons, a rate based on a musical works benchmark is likely to be too high.

57. In addition, I have estimated attributed revenues, based on Music Choice's ability to generate revenues. Sound recording performance rights fees are then calculated by applying the relevant rate to these revenues. However, as I have explained, Sirius and XM would accept lower payments from DISH and DirecTV than would another content provider, like Music Choice, for whom there is no promotional value. Further, Music Choice's revenues themselves are likely too high, as they likely include revenues from Music Choice's other lines of business (like mobile and video on demand). As such, reliance on attributed revenues based on this standalone value is too high, and thus, conservative.

58. For all of these reasons, it is my opinion that (while there may be assumptions embedded within my analysis that could result in an understatement of the appropriate sound recording performance right fees) my analysis on balance overstates the appropriate fees, and as such is conservative.

Certification

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

Dated: Boston, MA

October 30, 2006

Tasneem Chipty

Tasneem Chipty
Vice President

Exhibits to Written Direct Testimony

Exhibit 1

CRA INTERNATIONAL

TASNEEM CHIPTY
Vice President

Ph.D. Economics,
Massachusetts Institute of
Technology

B.A. Mathematics and
Economics, with honors,
Wellesley College

Dr. Chipty is an expert in the area of industrial organization and econometrics. She has assisted numerous clients in the entertainment industry, including cable television operators, content providers, terrestrial and satellite radio companies, as well as sports leagues. She has designed and conducted numerous economic and econometric analyses in cases involving antitrust liability and damages. She has also provided expert consultation to businesses involved in licensing negotiations, rate setting hearings, and breach of contract matters. Dr. Chipty has extensive experience working with data, including company financials. She has published articles in scholarly journals, and is author of a nationally recognized article on vertical foreclosure in the cable television industry. She is also an experienced public speaker. Prior to joining CRA, Dr. Chipty served on the faculties of a number of different universities, where she taught courses in antitrust and regulation, industrial organization, and econometrics.

Representative Consulting Experience

Dr. Chipty has been a consultant with CRA International since 1999.

Antitrust Liability, Mergers, and Acquisitions

She has worked on a wide range set of cases involving class certification, antitrust liability, mergers and acquisitions, and damage analyses.

- Examined the effects of vertical integration between cable system operators and program service providers in the cable television industry to determine whether integrated program services tend to foreclose or exclude their rivals from distribution.
- Assisted a successful merger between two telecommunications equipment manufacturers, including submitting a report on behalf of the parties to the Department of Justice. With Dr. Stanely Besen and Dr. Andrew Dick.
- Submitted an expert report to the European Commission, DG Competition Bureau, on behalf of the European Liner Affairs Association, analyzing the impact of shipping conferences on carriers' ability to collude on prices. With Dr. Nils Von Hinten Reed and Professor Fiona Scott Morton.

- Assisted a generic drug manufacturer in its successful acquisition of the branded drug, including giving a presentation to the Federal Trade Commission explaining the likely affects of the deal. With Professor Steven C. Salop.

- Advised a National Football League team in an antitrust liability against a cable television operator, in a matter involving allegations of refusal to deal.

- Provided expert advice to a physician group with a financial interest in an ambulatory surgical center in a lawsuit involving allegations of collusion and monopolization.

- Developed an econometric approach to analyze patterns of discounting and led a team that analyzed the discounts observed in defendants' customer contracts, on behalf of plaintiffs in a case involving allegations of predatory bundling of mainframe software.

Damages

Dr. Chipty has also calculated damages in matters involving allegations of patent infringement, breach of contract, conspiracy, fraudulent advertising, and vertical foreclosure. Examples of her work in this area are described below:

- Provided expert advice to cable operator Media One, Inc. in a damage calculation for a matter involving fraudulent advertising.

- Designed an approach for damage calculations in a case involving alleged piracy of satellite cable program signals.

- Worked on behalf of Spanish Broadcasting Systems, Inc. to calculate damages in a radio antitrust matter involving allegations of vertical foreclosure.

- Calculated damages and provided written testimony to a software company in a breach of contract claim against the Department of Defense.

Intellectual Property and Innovation

Dr. Chipty has experience valuing intellectual property and structuring incentives for innovation. Examples of her work in this area are described below:

- Provided expert advice and calculations to a regional sports programming network in negotiations with a cable operator for an appropriate affiliate fee.

- Provided expert consultation to cable program service provider HBO, in order to assess reasonable fees for music performance rights, for use in both business negotiations as well as litigation.

- Provided business consultation to a satellite radio provider, in order to assess reasonable fees for music performance rights, for use in both business negotiations as well as litigation.

- Assisted a national sports league in assessing the ability of local economy to support a professional sports team, including the ability of the local media markets to generate the necessary revenues from sports coverage.

- Performed sales, profitability, and present value analyses to determine economic damages, including the calculation of lost profits, reasonable royalty, and prejudgement interest in a patent infringement case against a tobacco company.

- Provided litigation support for plaintiffs' in a civil RICO case against certain tobacco manufacturers and associations involving allegations of conspiracy to suppress information and to suppress innovation. Dr. Chipty led the CRA team on behalf of the Department of Justice in U.S. v. Phillip Morris, *et. al.*

Econometrics and Statistics

Dr. Chipty is an expert in the area of econometrics and has been successful at using econometric arguments to both construct affirmative arguments in litigation as well as criticizing the use of econometrics by opposing experts. Examples of Dr. Chipty's work in this area are described below:

- Developed and drafted a report on behalf of defendants in the In Re: Monosodium Glutamate Litigation in support of a defendants' motion to dismiss plaintiff's expert testimony based upon improper use of econometrics.

- Used advanced regression analysis to demonstrate that the pattern of prices and sales in the marketplace was consistent with dumping strategies on the part of foreign rivals, in a series of antidumping cases brought before the International Trade Commission involving cold rolled steel, corrosion resistant steel, and structural steel beams.

- Used advanced statistical techniques along with a large volume of administrative data, on behalf of United Parcel Service, to evaluate the Postal Service's expert testimony on variable costs.

- Led a team to collect data and develop an econometric model to analyze the impact of a proposed government sale of that metal on market price, on behalf of an international metal supplier.

Academic Experience

Dr. Chipty has served on the faculties of a number of different universities where she conducted research on the strategic use of vertical integration for market foreclosure, the role of firm size in bilateral business negotiations, and the effects of regulations on firm behavior. She has taught graduate and undergraduate level courses in industrial organization, antitrust and regulation, microeconomic theory, as well as courses in econometrics and statistics. Dr. Chipty also supervised graduate and undergraduate student dissertations and served on a number of department and university committees.

Massachusetts Institute of Technology – Visiting Associate Professor of Economics, 2005

Brandeis University – Assistant Professor of Economics at Brandeis's Graduate School of International Economics and Finance, 1997-1999

Osaka University – Visiting Foreign Scholar, 1995

Ohio State University – Assistant Professor of Economics, 1993 - 1997

TriState Research Partnership

Researcher, 1997–1999. In this Department of Health and Human Resources funded collaboration that included the states of Massachusetts, Alabama, and Florida, Dr. Chipty worked with state governments to design research experiments, develop econometric models, and process large *administrative* databases, in an effort to understand the structure, administration, and impact of minimum standards regulations.

Selected Publications, Reports, and Presentations

Publications and Reports

"Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry," *American Economic Review*, Vol. 91, No. 3, June 2001, pp. 428–453.

"The Role of Buyer Size in Bilateral Bargaining: A Study of the Cable Television Industry" (with Christopher Snyder), *Review of Economics and Statistics*, May 1999, 81(2): 326–340.

"Economic Effects of Quality Regulations in the Daycare Industry," *American Economic Review*, Vol. 85, No. 2, May 1995, pp. 419–424.

"Horizontal Integration for Bargaining Power: Evidence from the Cable Television Industry," *Journal of Economics and Management Strategy*, Vol. 4, No. 2, Summer 1995, pp. 375–397.

"A Marginal Cost Transfer Pricing Methodology," *Tax Notes*, Nov. 26, 1990 (with Ann Dryden Witte, Wellesley College and NBER).

The Journal of Economic Literature, June 1992, Vol. XXX, No. 2, Book Review of Frank Cowell, *Cheating the Government* (with Ann Dryden Witte, Wellesley College and NBER) (Cambridge, MIT Press, 1990).

"An Empirical Study of the Effects of Information Provision on Prices and Observable Quality in the Market for Child Care," (with Ann Dryden Witte).

"Antidumping and Countervailing Orders: A Study of the Market for Corrosion-Resistant Steel," (with Brian L. Palmer).

"Strategies of Auctioneers and the Value of Time in Outcry Auctions" (with Lucia Dunn and Stephen Cosslett).

"Firms' Responses to Minimum Standards Regulations: An Empirical Investigation" (with Ann Dryden Witte), NBER Working Paper # 6104.

"Effects of Information Provision in a Vertically Differentiated Market" (with Ann Dryden Witte), NBER Working Paper # 6493.

"Unintended Consequences? Welfare Reform and the Working Poor" (with Ann Dryden Witte, Magaly Queralt, and Harriet Griesinger), NBER Working Paper # 6798.

Presentations

Invited presentations the Federal Trade Commission and the Department of Justice.

Invited seminars at Rutgers University; Harvard University; UCLA; University of Florida; University of Michigan; University of Tennessee; and Wellesley College.

Conference presentations at the George Mason University Antitrust Symposium; the National Bureau of Economics Research; the Econometrics Society Meetings; University of Michigan's Conference on Telecommunications; Telecommunications Research Policy Conference; American Enterprise Institute's Conference on Telecommunications Policy.

REFEREE

American Economic Review
Economic Journal
Economic Inquiry
Journal of Business and Statistic
Journal of Development Economic
Journal of Economic Education
Journal of Economics and Management Strategy
Journal of Industrial Economics
Journal of Labor Economics
Journal of Money Credit and Banking
Journal of Political Economy
Journal of Public Economics
Review of Economics and Statistics
National Science Foundation

MEMBERSHIPS

American Economic Association

American Bar Association

Honors

National Science Foundation Fellowship, 1989–1992

Wellesley College Trustee Scholarship for graduate study, 1989

Phi Beta Kappa, 1988

Exhibit 2: Digital Audio Channels on DISH, DirecTV, and Comcast, By Tier of Service

DISH Service	Count of Sirius Channels
Total Sirius Channels on DISH	**64**
America's Top 60	0
America's Top 60 Plus	0
Dish Family	0
DishHD Bronze	0
DishLatino	0
DishLatino Plus	0
America's Top 120	59
America's Top 180	59
America's "Everything" Pak	59
DishLatino Dos	59
DishLatino Max	59
DishLatino "Everything" Pak	59
DishHD Gold	64
DishHD Platinum	64
DishHD Silver	64

DirecTV Service	Count of XM Channels
Total XM Channels on DirecTV	**73**
HD Package	0
Family Choice	2
Seleccion Extra	7
Total Choice	49
Seleccion Mas	56
Total Choice Plus	67
Total Choice Premier	67
DirecTV Titanium	70
Seleccion Premier	72
Seleccion Ultra	72

Comcast Service	Count of Music Choice Channels
Total Music Choice Channels on Comcast	**47**
Non-Digital Basic Cable Service	0
Digital Cable Service	46

Notes:

1) Sirius and XM offer fewer channels on DISH and DirecTV than they do on their satellite radio services. Reported channel counts were compiled by CRA and are based primarily upon a complete listing of Sirius and XM channels on DISH and DirecTV, obtained from the DISH website on 9/27/06 and 10/5/06, from allamericandish.com on 10/29/06 and from the DirecTV website as of 9/27/06, 9/29/06 and 10/5/06. See Appendices 1 and 2 for the actual listings.

2) Channel counts represent total music channels provided by each company, for each tier of service.

3) The Music Choice channel count is obtained from a sampling of Comcast Cable areas as of October 10, 2006. (See Exhibit 5 for details.)

4) The DISH HD channel counts come from a phone call with a DISH customer service representative on 9/29/06 and are corroborated by information from www.allamericandish.com, last visited on 10/29/06.

Sources:

http://www.dishnetwork.com; http://www.directv.com; http://www.comcast.com; www.allamericandish.com; and a telephone call with a DISH customer service representative on 9/29/06.

SIR/XM Chipty Ex. 3

THIS EXHIBIT CONTAINS RESTRICTED INFORMATION PURSUANT TO THE DECEMBER 20, 2006 PROTECTIVE ORDER AND THEREFORE WAS OMITTED FROM THIS PUBLIC VERSION

THIS EXHIBIT CONTAINS RESTRICTED INFORMATION PURSUANT TO THE DECEMBER 20, 2006 PROTECTIVE ORDER AND THEREFORE WAS OMITTED FROM THIS PUBLIC VERSION

Exhibit 5 - Comcast Music Choice Channel Availability Across Comcast's Top 20 DMAs

Top 20 DMAs By Comcast Homes Passed	Number of Principal Communities Sampled	% of Comcast Homes Passed within DMA	Average Number of Music Choice Channels on Lowest Digital Tier Available	Change by Tier?
1 Chicago, IL	3	51%	46	
2 Philadelphia, PA	5	53%	47	
3 San Francisco-Oakland-San Jose, CA	6	51%	45	
4 Boston, MA-Manchester, NH	7	51%	46	
5 Detroit, MI	3	55%	44	Yes
6 Washington, DC (Hagerstown, MD)	4	56%	46	
7 Miami-Fort Lauderdale, FL	2	81%	45	
8 Seattle-Tacoma, WA	1	62%	45	
9 Pittsburgh, PA	2	52%	47	
10 New York, NY	2	55%	46	
11 Atlanta, GA	2	80%	47	
12 Baltimore, MD	2	64%	46	
13 Los Angeles, CA	2	51%	46	
14 Sacramento-Stockton-Modesto, CA	1	54%	47	
15 Denver, CO	1	77%	47	
16 Hartford & New Haven, CT	4	56%	44	
17 West Palm Beach-Fort Pierce, FL	3	64%	*Service Unavailable*	
18 Portland, OR	1	53%	40	Yes
19 Minneapolis-St. Paul, MN	1	100%	46	
20 Harrisburg-Lancaster-Lebanon-York, PA	3	53%	47	Yes

Average Number of Music Choice Channels	46

Notes:

1) The Factbook City, State, and Zip Code fields were used to search the Comcast Website if the Principal Community and the geographic information listed matched each other. Otherwise, the US Postal Service main post office zipcode closest to the Principal Community was used to search the Comcast website.

2) Missing homes passed were calculated using the average basic cable penetration ratio across all Comcast DMAs.

3) "Average Number of Music Choice Channels on Lowest Digital Tier Available" is calculated as the weighted average of channels in the Principal Communities within the DMA. The weights are the numbers of homes passed in the principal communities.

4) "Average Music Choice Channel Count" is the weighted average of Music Choice channels across the DMAs. The weights are the homes passed sampled in the DMAs.

5) "Change by Tier" indicates whether the number of Music Choice channels offered varies by tier of service. Offerings vary by tier of service in three communties sampled: one in the Detroit, MI; one in Portland; and one in Harrisburg-Lancaster-Lebanon-York PA.

6) According to its website, Comcast does not offer services in Plymouth, MA. Beverly, MA was sampled instead.

7) In two communities of the Washington DC DMA and one community of the Pittsburgh, PA DMA, channels are not listed by tier of service; as such, their change of channel count by tier of service cannot be verified.

8) According to its website, Comcast does not offer services in York, PA. Chambersburg, PA was sampled instead.

9) A Comcast Customer Service Representative confirmed that channels 900-944 in Seattle, WA are Music Choice (phone call on October 10, 2006).

10) Factbook identifies West Palm Beach-Fort Pierce, FL as a Comcast area. However, information is unavailable on the Comcast website.

Sources:

http://www.comcast.com; www.usps.com; 2006 Television & Cable Factbook, Electronic Edition.

THIS EXHIBIT CONTAINS RESTRICTED INFORMATION PURSUANT TO THE DECEMBER 20, 2006 PROTECTIVE ORDER AND THEREFORE WAS OMITTED FROM THIS PUBLIC VERSION

THIS EXHIBIT CONTAINS RESTRICTED INFORMATION PURSUANT TO THE DECEMBER 20, 2006 PROTECTIVE ORDER AND THEREFORE WAS OMITTED FROM THIS PUBLIC VERSION

Exhibit 8: Annual Producer Price Indices for Cable Networks

	2003	2004	2005	2006	Change 2005-2006
PPI	100	101.4	104.3	106.2	1.83%

Notes:

1) The Annual Producer Price Indices ("PPIs") for 2003 to 2005 are from the Bureau of Labor Statistics ("BLS"). The 2006 PPI is calculated as the average of the monthly PPIs from January through September of 2006. I understand that the June through September 2006 PPIs are still preliminary and may be revised by the BLS.
2) The Cable Networks PPI is based on NAICS code 515210 and covers "establishments primarily engaged in operating studios and facilities for the broadcasting of programs on a subscription or fee basis. The broadcasting programming is typically narrowcast in nature (e.g. limited format, such as news, sports, education, or youth-oriented). These establishments produce programming in their own facilities or acquire programming from external sources. The programming material is usually delivered to a third party, such as cable systems or direct-to-home satellite systems, for transmission to viewers."

Sources:

Bureau of Labor Statistics Website - PPIs, http://www.bls.gov/ppi/home.htm, series ID: PCU515210515210; NAICS website at http://www.census.gov/epcd/naics02/def/NDEF515.HTM.

Appendix 1

Music Channel GUIDE — SIRIUS music

POP

6001	SIRIUS Hits	Top 40 Hits
6002	Starlite	Lite Pop
6003	SIRIUS Love	Love Songs
6004	Movin' Easy	Easy Listening
6005	SIRIUS Gold	The '50s
6006	'60s Vibrations	The '60s
6007	Totally '70s	The '70s
6008	Big '80s	The '80s
6009	The Pulse	The '90s & Now
6010	The Bridge	Mellow Rock
6011	BBC Radio 1	New Music From The U.K.
6012	Super Shuffle	SIRIUS Super Mix
6013	Elvis	All Elvis Presley

ROCK

6014	Classic Vinyl	Early Classic Rock
6015	Classic Rewind	Later Classic Rock
6016	The Vault	Deeper Classic Rock
6017	Jam On	Jam Bands
6018	The Spectrum	Adult Album Rock
6019	Buzzsaw	Classic Hard Rock
6020	Octane	Pure Hard Rock
6021	Alt Nation	Alternative Rock
6022	First Wave	Classic Alternative
6023	Hair Nation	'80s Hair Bands
6024	SIRIUS Disorder	Eclectic/Free Form
6025	Underground Garage	Little Steven's Underground Garage
6026	Left Of Center	Indie/College Rock
6027	Hard Attack	Heavy Metal
6028	Faction	Punk, Hip-Hop Hard Rock Mix
6030	The Coffee House	Acoustic Coffee House Music
6031	Radio Margaritaville	Escape to Margaritaville
6032	Reggae Rhythms	Reggae

ELECTRONIC/DANCE

6033	Area 33	Trance & Progressive House
6034	Boombox	Breakbeats/Old Skool
6035	Chill	Smooth Electronic
6036	The Beat	Dance Hits
6037	The Strobe	Disco/Classic Dance

HIP-HOP/R&B

6040	Hip-Hop Nation	Nonstop Hip-Hop 24/7
6043	Back Spin	Old Skool Rap
6045	Shade 45	Shady's Uncut Hip-Hop
6050	Hot Jamz	R&B/Hip-Hop Hits
6051	Heart & Soul	R&B Hits
6053	Soul Town	Classic Soul & Motown

COUNTRY

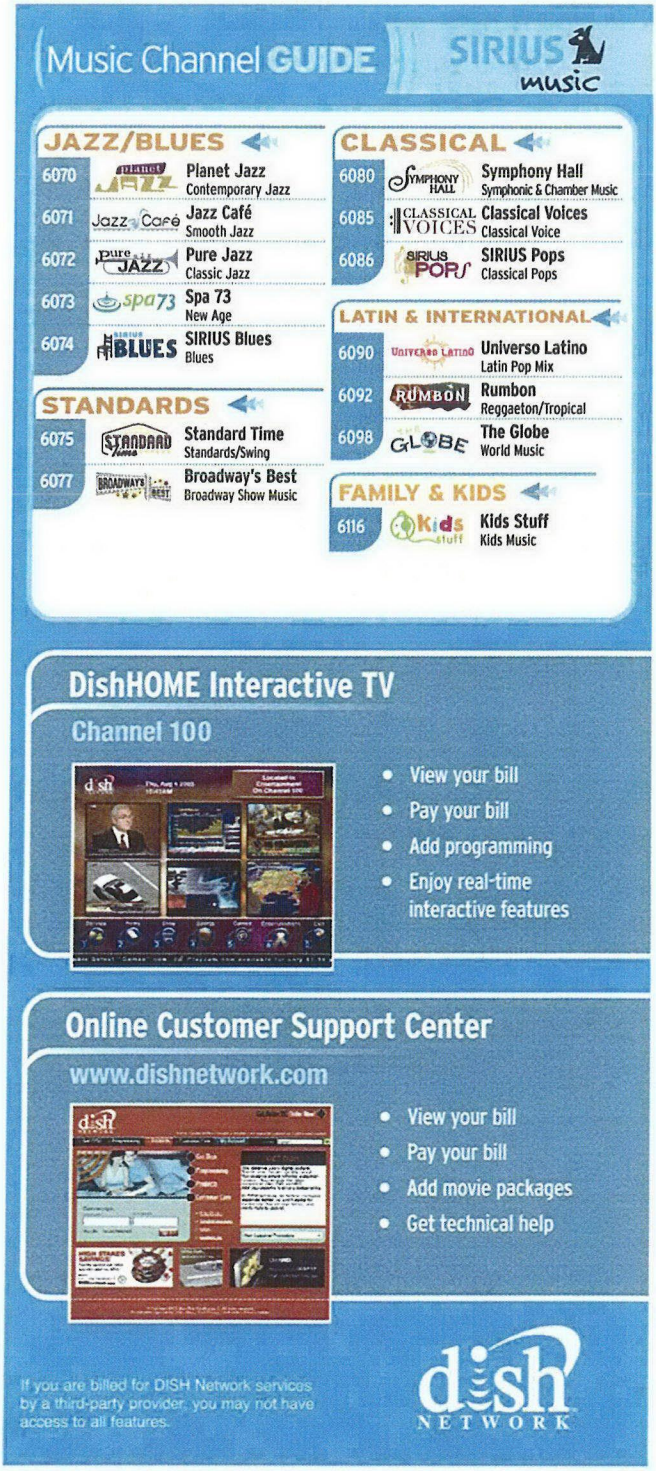
6060	New Country	Today's Country Hits
6061	Prime Country	'80s & '90s Country Hits
6062	The Roadhouse	Classic Country
6063	Outlaw Country	Outlaw Country
6065	Bluegrass	Bluegrass

CHRISTIAN

6066	Spirit	Christian Hits
6067	Revolution	Christian Rock
6068	Praise	Gospel

dish NETWORK

Appendix 1


Music Channel GUIDE
SIRIUS music
JAZZ/BLUES
6070 Planet Jazz Contemporary Jazz
6071 Jazz Café Smooth Jazz
6072 Pure Jazz Classic Jazz
6073 Spa 73 New Age
6074 SIRIUS Blues Blues
STANDARDS
6075 Standard Time Standards/Swing
6077 Broadway's Best Broadway Show Music
CLASSICAL
6080 Symphony Hall Symphonic & Chamber Music
6085 Classical Voices Classical Voice
6086 SIRIUS Pops Classical Pops
LATIN & INTERNATIONAL
6090 Universo Latino Latin Pop Mix
6092 Rumbon Reggaeton/Tropical
6098 The Globe World Music
FAMILY & KIDS
6116 Kids Stuff Kids Music
DishHOME Interactive TV
Channel 100
View your bill
Pay your bill
Add programming
Enjoy real-time interactive features
Online Customer Support Center
www.dishnetwork.com
View your bill
Pay your bill
Add movie packages
Get technical help
If you are billed for DISH Network services by a third-party provider, you may not have access to all features.
dish NETWORK

DIRECTV - XM Satellite Radio

Tune It In

Kickin' country. Smooth soul. Rock 'n' roll. With up to 73 XM Satellite Radio channels, including music, news, entertainment and even lifestyle audio programming there's something for everyone.

Channel Lineup

XM: Aguila, Channel 871

Welcome to the ranch! *Aguila* is a celebration of the many flavors of regional Mexican music...banda, norteno, grupo, mariachi, tejano, ranchera, and cumbia. *Aguila* El Orgullo Mexicano!
Artists – Vicente "Chente" Fernandez, Joan Sebastian, Ramon Ayala, Jenni Rivera, Los Tigres del Norte, Los Tucanes de Tijuana

Coming up:

Aguila
Aguila
Aguila

XM: America, Channel 808

America focuses on the history and the tradition of country music plus a blatant dose of patriotism and a sense of pride in what America stands for. *America* plays some newer music as well from traditional country stars and mixes in a lot of the history and stories behind the songs.
Artists – Alabama, Merle Haggard, Willie Nelson, Loretta Lynn, Johnny Cash, Barbara Mandrell

Coming up:

America
America
America

XM: Audio Visions, Channel 856

Audio Visions is a place of peace in a sometimes too-crazy world. It's a visit to a beautiful world where you are surrounded by nature, inspired by poetry, filled with joy, and soothed by dreamy, flowing, electronic, and acoustic music and voices.
Artists – Enya, Brian Eno, Tangerine Dream, Kevin Braheny, Mark Isham, Suzzane Ciani

Coming up:

Audio Visions
Audio Visions
Audio Visions

XM: Beyond Jazz, Channel 852

This is the world's only authentic modern jazz radio station. *Beyond Jazz* plays the greats of the jazz fusion era, the stars of

Coming up:

Beyond Jazz

modern electric and acoustic jazz, the new jazz singers, the jazzy jambands, acid jazz, techno-jazz and whatever jazz has to offer in the future.
Artists -- Pat Metheny, John Scofield, Herbie Hancock, Charlie Hunter, Weather Report, Joshua Redman

Beyond Jazz
Beyond Jazz

XM: Big Tracks, Channel 837

From mullets to air guitars, *Big Tracks* picks up where *Top Tracks* leaves off...these are the biggest classic rock hits from the mid 70s through the early 90s.
Artists -- Journey, The Cars, REO Speedwagon, Bryan Adams, Boston, Tom Petty

Coming up:
Big Tracks
Big Tracks
Big Tracks

XM: Bluegrass Junction, Channel 812

Bluegrass Junction is the home of Steam Powered Radio, bringing you the earliest bluegrass recordings mixed in with the latest efforts from the next generation with deep respect for those who brought us to the dance.
Artists -- Bill Monroe, Flatt & Scruggs, New Grass Revival, Seldom Scene, Ricky Skaggs, Alison Krauss & Union Station

Coming up:
Bluegrass Junction
Bluegrass Junction
Bluegrass Junction

XM: Bluesville, Channel 854

Bluesville is like a beginning course in art history. We play music of the forefathers and mothers from the 20s and 30s and we play the most contemporary blues acts of today, without forgetting all the great artists in between.
Artists -- BB King, Buddy Guy, Stevie Ray Vaughn, Etta James, Muddy Waters, Robert Cray

Coming up:
Bluesville
Bluesville
Bluesville

XM: Boneyard - XL, Channel 830

This is the heyday of the 80s hard rock, the European hard rock bands, their American counterparts, 80s hair bands plus all the new tunes from those artists. Mix it all together with a slightly bent and irreverent attitude and you have Da' *Boneyard*.
Artists -- AC/DC, Guns N' Roses, Ozzy Osbourne, Van Halen, Metallica, Bon Jovi

XL -- May include frequent explicit language. The DIRECTV System has a feature which allows restricted access to channels.

Coming up:
Boneyard - XL
Boneyard - XL
Boneyard - XL

XM: BPM, Channel 859

BPM plays pure, mainstream dance music...the biggest remixes and club hits from all over America, plus some pop and

Coming up:
BPM
BPM

Top 40 crossovers. This is the music you hear in stadiums and arenas and at the hottest clubs coast to coast.
Artists -- Paul Van Dyk, Kristine W, Ian Van Dahl, Madonna, Daft Punk, Amber

BPM

XM: Caliente, Channel 872

Your tropical taste is on *Caliente* with a great mix of salsa, merengue and bachata. Your Caribbean vacation is waiting for you...*Caliente Tu Sabor Del Caribe*.
Artists -- Marc Anthony, Gilberto Santa Rosa, El Gran Combo, Oscar D'Leon, Juan Luis Guerra, Monchy y Alexandra

Coming up:

Caliente
Caliente
Caliente

XM: Caricia, Channel 875

An affectionate excursion into classic romantic love songs. *Caricia* takes you back to the days when you fell in love for the first time.
Artists -- Julio Iglesias, Camilo Sesto, Jose Jose, Raphael, Dyango, Los Yonics

Coming up:

Caricia
Caricia
Caricia

XM: Chrome, Channel 861

Break out the bell bottoms and get ready for *Chrome*...nothing but the biggest disco hits from the late 70s plus some classic dance, funk and freestyle from the 80s. It's like walking right in to Studio 54!
Artists -- The Bee Gees, Donna Summer, KC & the Sunshine Band, Kool & the Gang, Diana Ross, the Village People

Coming up:

Chrome
Chrome
Chrome

XM: Cinemagic, Channel 822

Cinemagic invites listeners to escape into the audio presentations of movies. Relive your favorite movies by listening to the music and some of the most memorable scenes from those films.
Soundtracks -- Star Wars, Lord of the Rings, Batman, Raiders of the Lost Ark, King Kong, Titanic

Coming up:

Cinemagic
Cinemagic
Cinemagic

XM: Deep Tracks, Channel 840

Forget everything you knew about classic rock. *Deep Tracks* goes deeper &madsh; playing the nuggets rarely heard on FM radio...the landmark songs, the lost gems and classic concerts from the 60s through the 70s. Plus, exclusive weekly shows with Bob Dylan, Tom Petty and the Grateful Dead.
Artists -- The Beatles, The Doors, Jethro Tull, The Grateful Dead, Yes, Jimi Hendrix

Coming up:

Deep Tracks
Deep Tracks
Deep Tracks

XM: Enlighten, Channel 828

Southern gospel's roots go back more than a

Coming up:

century with a rich history based on four-part harmony. *Enlighten* features family groups, trios, quartets and soloists from a wide range of Southern gospel artists. The church doors are always open on *Enlighten*.
Artists -- Ivan Parker, Gold City, Happy Goodmans, Gaither Vocal Band, McKameys, Greater Vision

Enlighten
Enlighten
Enlighten

XM: Escape, Channel 820

Escape plays instrumental arrangements of the great popular melodies from the past 60 years, along with an occasional vocal recording of a melody with a message.
Artists -- Andy Williams, The Carpenters, Chet Atkins, Ray Conniff, Percy Faith, Neil Diamond

Coming up:
Escape
Escape
Escape

XM: Ethel, Channel 834

Ethel is where new alternative rock lives...the biggest hits from the newest modern rock superstars mixed with 90s flashbacks.
Artists -- Foo Fighters, Coldplay, Weezer, Audioslave, My Chemical Romance, Blink 182

Coming up:
Ethel
Ethel
Ethel

XM: Fine Tuning, Channel 855

Fine Tuning plays the world's most interesting music. There's a method to the freeform nature at Fine Tuning. Some fans say we sound like their home music library. Others love the abstract and eclectic balance. You'll hear great players and superb melodies from around the genres and around the world done by key and programmed just for your taste.
Artists -- Philip Glass, The Chieftains, Mannheim Steamroller, Al DiMeola, Peter Gabriel, Kitaro

Coming up:
Fine Tuning
Fine Tuning
Fine Tuning

XM: Flight 26, Channel 818

Flight 26 plays a great mix of modern hits from the 90s and now. All the new music you love without the rap or teen music mixed with the best modern pop hits from the past fifteen years.
Artists -- Dave Matthews Band, Gwen Stefani, Goo Goo Dolls, Matchbox Twenty, Sheryl Crow, James Blunt

Coming up:
Flight 26
Flight 26
Flight 26

XM: Frank's Place, Channel 853

The Great American Songbook, *Frank's Place* celebrates the incomparable American song style under the leadership of radio personality Jonathan Schwartz. It provides an unmatched showcase for the music and lyrics that have earned these

Coming up:
Frank's Place
Frank's Place
Frank's Place

songs a special place in world of music.
Artists -- Frank Sinatra, Ella Fitzgerald, Tony Bennett, Nat King Cole, Rosemary Clooney, Bing Crosby

XM: Fred, Channel 839

Fred is an audio history of alternative music. We take you from the early roots of Alternative, through the New Wave of the 80s into the early 90s...music long since banished from FM radio stations.
Artists -- The Cure, Talking Heads, The Police, Psychedelic Furs, The Clash, The Smiths

Coming up:

Fred
Fred
Fred

XM: Fuego, Channel 870

The home of Reggaeton is *Fuego* playing the hottest sounds in Latin music today...reggaeton, Latin hip hop and rap. Dembow is the beat and *Fuego* is the channel...*Fuego* Donde Vive El Reggaeton.
Artists -- Daddy Yankee, Don Omar, Tego Calderon, Ivy Queen, Wisin y Yandel, Zion y Lennox

Coming up:

Fuego
Fuego
Fuego

XM: High Voltage - XL, Channel 879

Beware ... this is radio like you've never heard it before. Irreverent, uncensored, so good you won't want to stop listening. Opie and Anthony in the morning with Ron and Fez in the afternoon.

XL -- May include frequent explicit language. The DIRECTV System has a feature which allows restricted access to channels.

Coming up:

High Voltage - XL
High Voltage - XL
High Voltage - XL

XM: Highway 16, Channel 814

Highway 16 is your home for Today's Top Country Hits featuring the latest from country music's biggest stars and hot new artists. You'll also hear in-depth, exclusive interviews with all of today's hit makers, including XM World Premieres of new album releases and intimate introductions to hot country newcomers!
Artists -- Keith Urban, Martina McBride, Kenny Chesney, Rascal Flatts, Gretchen Wilson, Tim McGraw

Coming up:

Highway 16
Highway 16
Highway 16

XM: Liquid Metal - XL, Channel 841

Liquid Metal is industrial-strength metal undiluted for the masses. Torturously hard and loud, *XMLM* delivers the juice painfully and without compromise.
Artists -- Exodus, Slayer, Megadeth, Morbid Angel, Metallica, Sabbath

Coming up:

XM Liquid Metal XL
XM Liquid Metal XL
XM Liquid Metal XL

XL — May include frequent explicit language. The DIRECTV System has a feature which allows restricted access to channels.

XM: Lucy, Channel 838

Lucy plays the biggest songs in the history of alternative music...over 25 years of songs that shaped a generation. You'll hear the biggest modern rock hits of today mixed with classics from the 80s and 90s.
Artists — Pearl Jam, Nirvana, R.E.M., Red Hot Chili Peppers, Smashing Pumpkins, Depeche Mode

Coming up:

Lucy
Lucy
Lucy

XM: Luna, Channel 873

From Havanna to Rio de Janeiro, from Santo Domingo to Buenos Aires, it's an intoxicating sound full of fire, passion, spirit and rhythm like no other.
Artists — Chano Dominguez, Arturo O'Farrill, Mongo Santamaria, Cal Tjader, Chucho Valdes, Poncho Sanchez

Coming up:

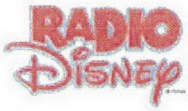
Luna
Luna
Luna

XM: On Broadway, Channel 823

No matter where you live, *On Broadway* brings Broadway to you. You'll hear the best from Broadway, off-Broadway, national tours, London's West End and movie musicals, plus you'll hear directly from the people who create and appear in musicals and plays.
Shows — A Chorus Line, Phantom of the Opera, Wicked, Kiss Me Kate, Monty Python's Spamalot, My Fair Lady

Coming up:

On Broadway
On Broadway
On Broadway



XM: Radio Disney, Channel 867

This party rocks with the music that kids and tweens want to hear! The biggest new stars share center stage as pop music, novelty oldies and movie and television favorites are combined with hilarious interaction from kids coast to coast. Plus, fantasy prizes and amazing edutainment features!
Artists — Hilary Duff, Aly & AJ, Jesse McCartney, B5, Cheetah Girls

Coming up:

Radio Disney
Radio Disney
Radio Disney

XM: RAW - XL, Channel 846

Raw is real hip-hop, mixtape-style radio in its purest...nothing but uncut, uncensored hip-hop and lots of fresh music, plus exclusive weekly shows hosted by Ludacris, Paul Wall, Chamillionaire and Trick Daddy. If it's hot on the streets, it's on *Raw*.
Artists — Jay-Z, Busta Rhymes, Dem Franchize Boyz, Young Jeezy, Lil' Kim, Three 6 Mafia

Coming up:

Raw - XL
Raw - XL
Raw - XL

XL — May include frequent explicit language. The DIRECTV System has a feature which allows restricted access to channels.

XM: Real Jazz, Channel 850

Real Jazz plays swingin' straight-ahead jazz...everything from classic jazz, traditional New Orleans-style jazz, the women of jazz and live concerts from the Blue Note and Jazz at Lincoln Center. This is swingin' jazz true to its core and rooted in the deepest recesses of hard-core blues.
Artists — Miles Davis, Duke Ellington, John Coltrane, Wynton Marsalis, Dave Brubeck, Billie Holiday

Coming up:

Real Jazz
Real Jazz
Real Jazz

XM: Soul Street, Channel 842

Soul Street is a celebration of the Motown, Stax and Atlantic record labels...vintage soul and classic R&B. From James Brown to Aretha Franklin, Soul Street plays all the great music from the 60s and early 70s.
Artists — The Four Tops, The Supremes, Otis Redding, The Temptations, Wilson Pickett, Jackie Wilson

Coming up:

Soul Street
Soul Street
Soul Street

XM: Special X, Channel 848

Special X is traditional radio's worst nightmare...a collection of the most bizarre and often worst music ever recorded. So pathetic...it's brilliant. A clearly deranged channel, *Special X* will take any sane mind to new depths of artistic insanity.
Artists — Ernie Kovacs, Andy Griffith, William Shatner, Spike Jones, Yazoo City High School Choir

Coming up:

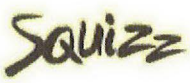
Special X
Special X
Special X

XM: Spirit, Channel 827

Glory is what gospel is all about...the glory of its inspirational message and the sheer glorious sound of the music. Let your heart soar with your favorite gospel recordings of all time on *Spirit*.
Artists — Yolanda Adams, Kirk Franklin, Fred Hammond, Colorado Mass Choir, Angela Spivey

Coming up:

Spirit
Spirit
Spirit



XM: Squizz - XL, Channel 835

Squizz is new rock for the extreme generation...hard alternative in the post-grunge era fusing metal-rap-funk-world with aggressive, heavy guitars. You'll hear the pioneers of new rock right through today's emerging artists.
Artists — Nine Inch Nails, Korn, System of a Down, Staind, Mudvayne, Rage Against the

Coming up:

Squizz - XL
Squizz - XL
Squizz - XL

Machine

XL — May include frequent explicit language. The DIRECTV System has a feature which allows restricted access to channels.

XM: Suite 62, Channel 843

The big stars of R&B live in the Suite. *Suite 62* plays the latest R&B hits mixed with classic R&B ballads, slow jams and the smooth, polished sounds from the 80s and 90s.
Artists — Luther Vandross, Eric Benet, Babyface, Alicia Keys, Brian McKnight, Anita Baker

Coming up:

Suite 62
Suite 62
Suite 62

XM: The 40s, Channel 801

Take a ride on the Savoy Express for the biggest hit songs from the 40s including the big band recordings of the Swing Era and the greatest standards to come out during the first half of the 20th century. Plus, listen for coverage of the news and big events of this historical era.
Artists — Glenn Miller, Duke Ellington, Benny Goodman, Dinah Shore, Bing Crosby, Dorsey Brothers

Coming up:

40s On 4
40s On 4
40s On 4

XM: The 50s, Channel 802

Relive the roots of rock and roll's earliest days or follow the hit parade and the pre-rock sounds of Doo Wop, Rock-a-Billy, early R&B and the Swinging Sounds of the Las Vegas "Rat Pack" era. *The 50s* captures all the great American music.
Artists — Elvis Presley, Bill Haley & His Comets, the Coasters, Buddy Holly, Chuck Berry, Bobby Darin

Coming up:

50s On 5
50s On 5
50s On 5

XM: The 60s, Channel 803

The times they were a changin' and it caused a revolution in music. *The 60s* re-creates the decade. It's 60s pop culture re-visited, including the surfin' tunes, R&B and "girl groups," the British invasion, the Woodstock era and Wolfman Jack every night!
Artists — the Beatles, the Rolling Stones, the Supremes, Simon and Garfunkel, Bob Dylan, Stevie Wonder

Coming up:

60s On 6
60s On 6
60s On 6

XM: The 70s, Channel 804

The 70s takes you back to the days of Watergate, bell bottoms and pet rocks. Your favorite AM radio stations were moving to FM and the music was wider than ever. *The 70s* captures it all from singer

Coming up:

70s On 7
70s On 7
70s On 7

songwriters and great classic rock to the best R&B, soul and disco, plus Casey Kasem's original American Top 40 countdowns every weekend.
Artists – Elton John, Donna Summer, the Eagles, Chicago, the Bee Gees, Fleetwood Mac

XM: The 80s, Channel 805

The "Totally awesome" *80s 8* is like listening to one of the great Top 40 radio stations of the time, complete with great air personalities and those jingles you grew to love. *The 80s* covers it all...rock, rhythm and pop complete with the hair bands and everything that launched the MTV music generation and Casey Kasem's 80's countdowns every weekend.
Artists – Michael Jackson, Madonna, Duran Duran, Whitney Houston, George Michael, Prince

Coming up:

80s On 8

80s On 8

80s On 8

XM: The 90s, Channel 806

The 90s covers all the "Gen X" hits. The channel is as diverse as the decade was and plays everything from grunge rock to boy bands plus everything in between.
Artists – Mariah Carey, Green Day, Janet Jackson, Dave Matthews Band, Hootie & the Blowfish, Backstreet Boys

Coming up:

90s On 9

90s On 9

90s On 9

XM: The Blend, Channel 821

A great blend of music from the 70s through today...nothing too sleepy and never any rap or hard rock, *The Blend* plays the biggest superstars of pop music from the past 30 years...it's the musical soundtrack of your life.
Artists – Rod Stewart, Billy Joel, Whitney Houston, John Mellencamp, Hall and Oates, Madonna

Coming up:

The Blend

The Blend

The Blend

XM: The City, Channel 847

The City is the nation's premiere R&B channel that funnels the urban vibe into one City. You'll hear fresh, new hip-hop and R&B including mix shows, new music features and exclusive interviews with the artists who make the music.
Artists – Kanye West, Mary J. Blige, Yung Joc, Keishia Cole, John Legend, Ciara

Coming up:

The City

The City

The City

XM: The Groove, Channel 844

R&B is the international language of partying and *The Groove* goes back in the day every day with all the great R&B headliners from the mid 70s through the 80s. You'll hear a great mix of R&B, funk,

Coming up:

The Groove

The Groove

The Groove

dance and party music along with some songs you forgot you knew.
Artists – Kool & the Gang, Prince, Earth, Wind & Fire, Michael Jackson, Chaka Khan, the Gap Band

XM: The Heart, Channel 819

The Heart plays the biggest love songs and lite rock favorites from the 60s through today. This is the perfect place to relax, unwind and lose the stress.
Artists – Elton John, Gloria Estefan, James Taylor, Phil Collins, Rod Stewart, Chicago

Coming up:

The Heart
The Heart
The Heart

XM: The Heat, Channel 825

The Heat is XM's home for hip hop, R&B and Top 40 crossovers. This is the music that's selling across America and burning up the charts.
Artists – Pussycat Dolls, Black Eyed Peas, Chris Brown, 50 Cent, Shakira, Lil' Jon

Coming up:

The Heat
The Heat
The Heat

XM: The Joint, Channel 863

The Joint is where the past, present, and future of reggae music resides. You'll hear roots reggae, ska, rock steady, dancehall, dub on your daily trip to Jamaica.
Artists – Bob Marley, Peter Tosh, Dennis Brown, Burning Spear, Gregory Isaacs, Damian Marley

Coming up:

The Joint
The Joint
The Joint

XM: The Loft, Channel 836

The Loft is an intelligent, eclectic mix of tunes by singer-songwriters who can craft a good lyric then put it across. It's a broad range of styles and subjects, but nothing so loud or so fast that it gets between you and the words. Just song after well-crafted song, including many you can't hear anywhere else.
Artists – Jackson Browne, Joni Mitchell, Neil Young, Van Morrison, Norah Jones, Ryan Adams

Coming up:

The Loft
The Loft
The Loft

XM: The Message, Channel 826

It's music with a positive message. *The Message* plays a bright mix of Christian pop hits from the 80s through today...refreshing, sonically rich and family-friendly.
Artists – Mercy Me, Amy Grant, Steven Curtis Chapman, Michael W. Smith, Natalie Grant, Jeremy Camp

Coming up:

The Message
The Message
The Message

XM: The Move, Channel 858

The Move is on the pulse of what's happening in clubland today. It's a

Coming up:

The Move

collection of active DJs and producers who travel the world and play dance music in every corner of the globe. You'll hear house, progressive, drum and bass, and downtempo/chill every Sunday.
Artists – Louie Vega, D: Fuse, David Morales, Kaskade, Derrick Carter, Mark Farina

The Move
The Move

XM: The Rhyme - XL, Channel 845

Fans of hip-hop culture unite! Snoop Dogg takes you on a journey through the first 25 years of hip-hop...everything from breakbeats to gangsta, Jazz rap to turntablism. Hear how the music progressed and changed through the years, and relive the decades that defined hip-hop for you.
Artists – Run DMC, Sugar Hill Gang, LL Cool J, A Tribe Called Quest, Big Daddy Kane, Too Short

XL – May include frequent explicit language. The DIRECTV System has a feature which allows restricted access to channels.

Coming up:

The Rhyme - XL
The Rhyme - XL
The Rhyme - XL

XM: The System, Channel 860

Taking a trip into *The System* will blow your mind, expand your musical boundaries and create a listening experience that you will never forget. Trance, Breaks, Progressive...it's electronic dance music presented in a way that is uncompromising, pure, relentless, and international.
Artists – Paul Oakenfold, Crystal Method, Prodigy, Chemical Brothers, Underworld, Faithless

Coming up:

The System
The System
The System

XM: The Torch, Channel 829

The Torch plays contemporary rock hits with a positive message. Plus, we mix in Christian rock favorites from the past 15 years. It's "Jesus Music" for the 21st century.
Artists – Disciple, Switchfoot, Project 86, Blindside, Jars of Clay, Chemistry

Coming up:

The Torch
The Torch
The Torch

XM: The Village, Channel 813

From the ballads of early American songwriters to the contemporary masters of folk, *The Village* presents music of protest and political change and the voice of communities passed from generation to generation. You'll hear all the styles and feelings that make up the rich tapestry known as folk.
Artists – Bob Dylan, Judy Collins, Tom Paxton, Joan Baez, Tom Rush, Kingston Trio

Coming up:

The Village
The Village
The Village

XM: Top 20 on 20, Channel 816

Top 20 on 20 is the world's first fully interactive hit music experience playing just the songs you vote for! For what's hot right this second...just interact with 20 on 20...it's all that matters!
Artists – Kelly Clarkson, Justin Timberlake, Rihanna, Ne-Yo, Green Day, Pussycat Dolls

Coming up:

20 on 20

20 on 20

20 on 20

XM: Top Tracks, Channel 833

These are the killer cuts that rocked America during the 1960s and 70s. *Top Tracks* plays nothing but the biggest classic rock hits that shaped a generation.
Artists – Led Zeppelin, The Rolling Stones, Queen, Pink Floyd, Eric Clapton, The Who

Coming up:

Top Tracks

Top Tracks

Top Tracks

XM: U-Pop, Channel 824

U-Pop plays the biggest hits on the planet. You'll hear today's hit music from England, France, Sweden, Ireland, Belgium and the rest of Europe mixed with J-Pop from Japan, Afro-pop and Latin American Hits.
Artists – Robbie Williams, Coldplay, Peter Gabriel, Brit Superstar, Chemical Brothers

Coming up:

U-Pop

U-Pop

U-Pop

XM: US Country, Channel 809

US Country picks up where *America* leaves off. This channel celebrates the careers of the biggest country superstars that arrived in the late 80s and brought country music to the forefront of American culture. *US Country* has no DJs and very few interruptions...just great country music 24/7.
Artists – Alan Jackson, Trisha Yearwood, Vince Gill, Garth Brooks, Clint Black, Reba McEntire

Coming up:

US Country

US Country

US Country

XM: Vibra, Channel 874

These are the biggest names and brightest stars in rock en espanol and musica alternativa...it's fast-paced, cutting edge Latin pop rock.
Artists – Fabulosos Cadillacs, Mana, Café Tacuba, Volumen Cero, Enanitos Verdes, Fito Paez

Coming up:

Vibra

Vibra

Vibra

XM: Viva, Channel 876

Viva explores the contemporary side of Latin pop and ballads. Relax and feel empowered with the biggest superstars of Latin pop hits from the 90s and today.
Artists – Shakira, Ricky Martin, Luis Miguel,

Coming up:

Viva

Viva

Viva

Laura Pausini, RBD, Luis Fonsi

XM: VOX, Channel 865

XM Vox presents the human voice across the range of over a century of recorded sound and 2000 years of music. We'll take you from the sung prayer of ancient chant to the spectacle of grand opera from the exaltation of cathedral choirs to the quiet melancholy of the solo singer.
Artists -- Placido Domingo, Robert Shaw, Luciano Pavarotti, Renee Fleming, Tallis Scholars, Cecilia Bartoli

Coming up:

VOX
VOX
VOX

XM: Watercolors, Channel 851

Cool, Contemporary Jazz instrumentals and hip vocals create a muted musical backdrop of sophistication on *Watercolors*. These groovy sounds expand the boundaries of smooth to not only seduce and relax but to engage and inspire.
Artists -- Dave Koz, Diana Krall, George Benson, Chris Botti, Sade, George Duke

Coming up:

Watercolors
Watercolors
Watercolors

XM: Willie's Place, Channel 811

Willie Nelson is the proprietor and executive producer of the honky tonk that never closes with cowboy coffee, cold beer and colas. There's a nickel jukebox and a cast of characters from the bartender to the yellow school bus that gets folks home safely.
Artists -- Willie Nelson, Hank Williams, Ray Price, Marty Robbins, Loretta Lynn, Lefty Frizzell

Coming up:

Willie's Place
Willie's Place
Willie's Place

XM: World Zone, Channel 862

Music has no borders. Neither does *World Zone*. Some of the most compelling music you've never heard is here. We scout it from sources around the globe...Ireland, Brazil, Pakistan, India, Cuba, Japan and Mexico. Listen for new features on popular music from different regions of the world, international soul, Caribbean rhythms and contemporary Folk Music.
Artists -- Angelique Kidjo, Baaba Maal, Bebel Gilberto, Cesaria Evora, Frankie Negron, Johnny Cleg & Savuka, Lila Downs

Coming up:

World Zone
World Zone
World Zone

XM: X Country, Channel 810

Cross Country brings you a musical landscape that blends the genres of folk, rock, country and blues creating a sonic space that is something akin to the birth of rock and roll. You'll hear honky tonk, Western swing, folk rock, swamp rock and Southern boogie among other styles from

Coming up:

X Country
X Country
X Country

the red-hot Americana music scene.
Artists – Dwight Yoakum, Lucinda Williams, Steve Earle, John Prine, Pat Green, John Hiatt

XM: XM Café, Channel 832

Growing up doesn't mean growing old but it does increase your enjoyment of more challenging rock artists. If your ear can discern the difference, come to the *XM Café*, where a mellow approach to modern adult alternative music lives.
Artists – Dave Matthews Band, Sheryl Crow, The Wallflowers, Elvis Costello, Bonnie Raitt, Jack Johnson

Coming up:

XM Cafe
XM Cafe
XM Cafe

XM: XM Chill, Channel 857

XM Chill takes you on a voyage into the Chill zone...a place that pulses with exotic and cerebral music known as smooth electronica. A European phenomenon that is finally emerging in North America, XM Chill is beyond a channel...it's an experience in sound.
Artists – Moby, Eno, Thievery Corporation, Zero 7, Chemical Brothers, Air

Coming up:

XM Chill
XM Chill
XM Chill

XM: XM Classics, Channel 864

All genres and all eras of classical music are offered in a style that mixes unassuming authority with genuine friendliness and enthusiasm. *XM Classics* strives to inform, entertain and inspire, believing without apology that music is one of the greatest gifts that humankind has bestowed upon itself.
Artists – Bach, Haydn, Mozart, Beethoven, Schubert, Brahms, Stravinsky

Coming up:

XM Classics
XM Classics
XM Classics

XM: XM Hitlist, Channel 817

While *20 on 20* plays just the fresh, new music, *XM Hitlist* plays all of today's hit music plus the biggest pop, rock and rhythmic hits from the past ten years...nothing but hits on the *XM Hitlist*.
Artists – Black Eyed Peas, Three Doors Down, Destiny's Child, Nickelback, Pink, Usher

Coming up:

XM Hitlist
XM Hitlist
XM Hitlist

XM: XM Kids, Channel 868

XM Kids reaches kids and families all over America with award-winning original content blended with a music mix of the most popular kid's movie and TV soundtracks and all the best children's recording artists. The sensibilities are family-friendly but the presentation style is always done with a wink and nod to Mom

Coming up:

XM Kids
XM Kids
XM Kids

and Dad, who are always along for the ride!
Artists — The Wiggles, Sponge Bob Squarepants, They Might be Giants, Tom Chapin, Dan Zanes, Kids Movie/TV Soundtracks

XM: XM Pops, Channel 866

XM Pops is classical music for everyone...the classical music you know, even if you don't think you know classical music. These are the biggest names in classical music history, and their best pieces of music.
Artists — Beethoven, Mozart, Dvorak, Vivaldi, Handel, Rachmaninov

Coming up:

XM Pops
XM Pops
XM Pops

XM: XMU, Channel 831

XMU plays what's next...now! Imagine your favorite college radio station. Add a couple of satellites, national coverage and a litany of music that you will only discover...and that's *XMU*. It's indie pop, indie rock, electronic, down-tempo and underground hip-hop.
Artists — Aqueduct, Figurine, Death From Above 1979, Joy Zipper, The Decemberists, Styrofoam

Coming up:

XMU
XMU
XMU

Appendix 3
List of Materials Reviewed

I. Sirius and XM Internal Documents

1. Memorandum of Agreement between EchoStar Satellite L.L.C. and Sirius Satellite Radio Inc., February 11, 2004
2. Letter Agreement between DirecTV, Inc. and XM Satellite Radio Inc., August 18, 2005
3. Sirius financials
4. XM financials
5. Sirius data on subscribers via Dish
6. XM Satellite Radio Annual Shareholders Meeting, May 26, 2006
7. Sirius Satellite Radio Customer Satisfaction Monitor, 2Q '06 Results, August 28, 2006
8. Sirius Satellite Radio Listener Study – Wave 2, June 2006
9. Sirius Satellite Radio 2005 Annual Report and Proxy Statement

II. 10-Ks and Other SEC Filings

1. XM 10-K, 2005
2. Sirius 10-K, 2005
3. EchoStar Communications Corporation 10-K, 1996 – 2005
4. DirecTV Group Inc. 10-K, 1999 – 2005
5. EchoStar Communications Corporation 10-Q, 2006
6. DirecTV Group Inc. 10-Q, 2006
7. Sirius 10-Q, 2006
8. Muzak 10-K, 2002, 2004, 2005
9. Microsoft Corporation 10-K, 1997 – 2006
10. Motorola Inc. 10-K, 1997 – 2005
11. Sony Corporation of America 10-K, 1997 – 2006
12. Warner Music Group Inc 10-K, 2005
13. EMI Music 10-K, 2001 – 2005
14. Adelphia Cable Communications 10-K, 1994 – 2005
15. Comcast Cable Communications 10-K, 1997 – 2005
16. Cox Communications 10-K, 1996 – 2005
17. Time Warner Cable 10-K, 1997, 2004, 2005

III. Analyst Reports

1. Morgan Stanley Analyst Reports
2. Bernstein Analyst Reports
3. Lehman Brother Analyst Reports

IV. Prior Testimony, Decisions, and Codes of Law

1. 17 U.S.C. Sec 112(e)(4)
2. 17 U.S.C. 801(b)(1)
3. Copyright Office 37 CFR Part 261, Docket No. 2000-9 CARP DTRA1&2, Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings and Ephemeral Recordings, *Federal Register*, Volume 67, No. 130, July 8, 2002
4. ASCAP v. Showtime/The Movie Channel, No. 90-6034, United States Court of Appeals for the Second Circuit, 912 F. 2d 563, 1990
5. Copyright Office, "Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings," Docket No. 96-5 CARP DSTRA, *Federal Register*, Vol. 63, Number 89, May 8, 1998
6. Copyright Office, "In re: Determination of Statutory License Terms and Rates for Certain Digital Subscription Transmissions of Sound Recordings," Docket No. 96-5 CARP DSTRA, Report of the Copyright Arbitration Royalty Panel
7. Copyright Office, "Notice and Recordkeeping for Subscription Digital Transmissions," Docket No. RM 96-3A, *Federal Register*, Volume 62, No. 121, June 24, 1997
8. United States, Music Choice v. Broadcast Music, Inc., No. 64 Civ. 3787 (LLS), 2001 U.S. Dist. LEXIS 10368 (S.D.N.Y. July 23, 2001)
9. United States, Music Choice v. Broadcast Music, Inc., Docket no 01-6138 (January 14, 2003)
10. United States, Music Choice v. Broadcast Music, Inc., No. 64 Civ. 3787 (LLS), (May 26, 2004)
11. United States, Music Choice v. Broadcast Music, Inc., Docket no 04-3444-CV (October 6, 2005)
12. Testimony of Adam B. Jaffe, in the matter of Digital Performance Right Sound Recordings and Ephemeral Recordings on behalf of Digital Media Association
13. Direct and Rebuttal Testimony of Erik Brynjolfsson, in the matter of Digital Performance Right Sound Recordings and Ephemeral Recordings, on behalf on SoundExchange
14. Testimony of Michael Pelcovits, in the matter of Digital Performance Right Sound Recordings and Ephemeral Recordings, on behalf of SoundExchange

15. Direct and Rebuttal Testimony of John R. Woodbury in re: Determination of Statutory License Terms and Rates for Certain Digital Subscription Transmissions of Sound Recordings on behalf of DCR and DMX
16. Direct and Rebuttal Testimony of John R. Woodbury in BMI rate setting proceeding on behalf of Music Choice
17. Direct and Rebuttal Testimony of E. Jane Murdoch and John R. Woodbury before CARP on reasonable license fees for digital performance right in sound recordings and ephemeral recordings of music performed on public radio websites on behalf on NPR/Corporation for Public Broadcasting

V. Interviews and Affidavits

1. Affidavit of Mr. Stephen Cook, Executive Vice President, Automotive (XM)
2. Affidavit of Mr. Douglas Kaplan, Senior Vice President for Business Affairs, Entertainment, and Sports (Sirius)
3. Interviews with Mr. Stephen Cook (XM) and Mr. Douglas Kaplan (Sirius)
4. Telephone call with a DISH customer service representative on 9/29/06
5. Telephone call with a Comcast customer service representative 10/10/06
6. Telephone call with a BLS representative, 10/19/06

VI. Publicly Available Data Sources

1. Bureau of Labor Statistics, Producer Price Index, Cable Networks
2. 2006 Television and Cable Factbook, Electronic Edition
3. NAICS Industry Codes

VII. Websites (visited in October, 2006)

1. http://investor.sirius.com/releasedetail.cfm?ReleaseID=152259& Cat=& newsroom=
2. http://www.xmradio.com/newsroom/print/pr_2005_11_15.html
3. http://www.riaa.com/news/marketingdata/ cost.asp
4. http://www.allamericandish.com/dishhd_platinum.htm
5. http://www.directv.com/DTVAPP/packProg/channelChart1.jsp?assetId=900041
6. http://www.dmxmusic.com/dmx_profile.htm
7. http://muzak.com/muzak.html
8. http://www.monster.com
9. http://www.musicchoice.com/what_we_are/channel_descriptions.html

10. http://www.musicchoice.com/what_we_are/faqs.html
11. http://www.musicchoice.com/what_we_are/mobile.html
12. http://www.united.com/press/detail/0,6862,53718-1,00.html
13. http://www.xmradio.com/bally/index.jsp
14. http://www.radiomlc.com/ascap_faq.html
15. http://www.radiomlc.com/faq.html accessed
16. http://www.timewarnercable.com/CustomerService/CLU/TWCCLUs.ashx?ChangeCLU=true
17. http://www.cox.com/gocox/digitalcable/musicchoice.asp
18. http://www.dishnetwork.com
19. http://www.directv.com
20. http://www.comcast.com
21. http://www.dmxmusic.com
22. http://www.allamericandish.com
23. http://www.usps.com
24. http://www.dishnetwork.com/downloads/pdf/programming/sirius/Sirius_ChannelLinup.pdf
25. http://www.directv.com/DTVAPP/packProg/channelChart2.jsp?assetId=1200006
26. http://www.bls.gov
27. http://www.census.gov/epcd/naics02/def/NDEF515.HTM

10. Other Sources

1. Warner Music Group, 2005 Annual Report
2. *Market Share Reporter, 2007*, Volume 1, "Top Music Firms Worldwide, 2006"
3. "Satellite Radio Outlook," Kagan Publishing, 2005
4. Hoover's Company Record – Basic Record, Music Choice, August 22, 2006
5. Hoover's Company Record – Muzak, October 25, 2006
6. Hoover's Company Record – , DMX, October 25, 2006
7. Satellite News, "DirecTV Takes First Step Into Music Business with XM Deal," October 2, 2005
8. Market Wire, "Music Choice Tapped By MobiTV," November 2005
9. Market Wire, "Music Choice On-Demand Remains the Leading Video-on-Demand Music Service in the Country, Surpassing 400 Million Orders," August 2, 2006
10. Pacific Business News, July 11, 2003, "That Background Music Is a Big Business

11. National Consumer Study, Fall 2004 and Spring 2005, Simmons Market Research Bureau

12. Dun's Market Identifiers, September 2006

13. Newspaper articles, e.g. in Associated Press, New York Times and Washington Post

Range of Reasonable Rates

	Sirius-ASCAP, BMI Musical Works on Sat TV	Music Choice-BMI Musical Works on Cable TV	PSS-SoundExchange/RIAA Sound Recordings on Cable TV
	[1]	[2]	[3]
Rate	2.5%	2.5%	2.75%
Scaled Rate, to Reflect Full Library	5.3%	5.3%	5.83%

Scaled Rate = {ASCAP or BMI Rate} x 2 x 1.06

Services Exhibit 3

Implied Fees for XM and Sirius

	Sirius	XM
Estimated Music Choice revenues per subscriber per month	¢2.33	¢2.33
Implied fees per subscriber receiving digital audio music channels on satellite television per month to SoundExchange in 2006, based on 5.3% rate	¢0.1235	¢0.1235