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FCC RELEASES TENTH ANNUAL REPORT ON COMPETITION IN VIDEO MARKETS

Washington, DC – The Federal Communications Commission (“FCC”) released its tenth annual report on competition in the market for the delivery of video programming. The report examines the status of competition, discusses changes that have occurred in the competitive environment over the last year, and describes barriers to competition that continue to exist. Today’s tenth annual report also examines the status of competition in the market for the delivery of video programming over the past decade and at various intervals in between.

The report finds that overall, due, in part, to Congressional efforts made over the past decade, technological advances, and investment in new platforms for delivering video programming, the vast majority of Americans enjoy more choice, more programming and more services than any time in history. In addition to an increase in the number of video channels, cable operators and other multichannel video programming distribution (“MVPD”) services also now offer advanced video services and many non-video advanced services. Cable television remains the predominant technology for the delivery of video programming. Ten years ago, cable operators served almost 100% of the nation’s subscribers. Today, cable’s share has fallen to approximately 75% of all MVPD subscribers.

Competitive alternatives to incumbent cable operators have been available during the past ten years to varying degrees and continue to develop, although not always as envisioned. For example, Congress and the FCC previously expected local exchange telephone companies (“LECs”) to launch video systems and become the primary competitors to cable systems. In 1992, the FCC established the video dialtone framework that permitted LEC entry consistent with statutory prohibitions. Subsequently, Congress amended the Communications Act to permit LEC entry in their telephone service areas under one of four statutory frameworks. Despite these efforts to foster competition, however, significant LEC entry into the video marketplace has failed to materialize.

On the other hand, direct broadcast satellite (“DBS”) TV service, which first became commercially available in 1993, has become the most significant national competitor to cable. Today, most consumers have the additional choice of at least two national DBS providers that provide service similar to that of cable operators, including advanced video and non-video services. DBS now serves almost 22% of all MVPD subscribers. Today, other delivery technologies (*i.e.*, overbuilders, wireless cable systems, private cable systems) only serve small numbers of subscribers in limited areas with competitive alternatives to cable systems as they have over the last ten years.

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The total number of subscribers to both cable and non-cable MVPDs has increased significantly over the last ten years and continues to increase incrementally each year. A total of 60.3 million households subscribed to MVPD services as of year-end 1993. As of June 2003, 94.1 million households subscribed to MVPDs, an increase of more than 56% over the last ten years. The number of cable subscribers continues to grow, reaching almost 70.5 million subscribers as of June 2003, up from the 57.2 million cable subscribers at year-end 1993. In the last several years, however, cable subscribership has declined such that as of June 2003, there was approximately the same number of cable subscribers as there were at year-end 1999. The total number of non-cable MVPD subscribers grew from 3.1 million as of year-end 1993, to 11.23 million as of June 1998, to 23.7 million as of June 2003, a significant increase since 1993.

During the period under review, cable rates have risen significantly. According to the Bureau of Labor Statistics, between year-end 1993 and the end of June 2003, the Consumer Price Index ("CPI"), which measures general price changes, increased approximately 25.5%, while cable prices, also measured as a subcategory of the CPI, rose approximately 53.1%. Between June 2002 and June 2003, cable prices rose 5.1% compared to a 2.1% increase in the overall CPI. Concurrently with these rate increases, the number of video and non-video services offered increased, including a substantial increase in the number of video channels, increased use of cable (as measured by a substantial increase in cable viewership), and the addition of advanced service offerings, which are paid for separately by consumers. Cable operators attribute rising costs to increased programming costs and higher labor costs that have risen faster than inflation, as cable operators have increased the size and proficiency of their customer service workforce. A recent study by the U.S. General Accounting Office (GAO) also found that programming costs, infrastructure investments, and increased spending by cable operators on customer service were putting upward pressure on cable rates.

The tenth annual report details the status of competitors in the market for the delivery of video programming including: cable systems, direct-to-home satellite service (DBS and home satellite dishes), broadband service providers, wireless cable systems, private cable operators (a.k.a. SMATV), broadcast television, local exchange carrier (LEC) entry, open video systems, Internet video, home video sales and rentals, and electric and gas utilities.

The report also examines market structure and competition by evaluating horizontal concentration in the MVPD marketplace; analyzing vertical integration between cable television systems and programming services; and discussing technical issues such as cable modems, navigation devices and emerging services.

A list of the key findings of the report is attached.

Action by the Commission, January 5, 2004, by Report (FCC 04-5). Chairman Powell issuing a separate statement; Commissioners Copps and Adelstein concurring and issuing a joint statement.

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KEY FINDINGS OF THE FCC'S TENTH ANNUAL REPORT ON VIDEO COMPETITION

Industry Growth:

In the *2003 Report*, the FCC examines the status of competition in the market for the delivery of video programming, discusses changes that have occurred in the competitive environment over the last year and the past decade, and describes barriers to competition that continue to exist. Competition provides consumers with choice, better services, higher quality, and greater technological innovation. Overall, due, in part, to Congressional efforts made over the past decade, technological advances, and investment in new platforms for delivering video programming, the vast majority of Americans enjoy more choice, more programming and more services than any time in history. In addition to an increase in the number of video channels, cable operators and other MVPDs also now offer advanced video services and many non-video advanced services. Cable television, however, remains the predominant technology for the delivery of video programming. At year-end 1993, 94.89% of MVPD subscribers received their video programming from a franchised cable operator, and by June 2003, 74.87% of MVPD subscribers received their video programming from a franchised cable operator.

The total number of subscribers to both cable and non-cable MVPDs has increased significantly over the last ten years and continues to increase incrementally each year. A total of 60.3 million households subscribed to multichannel video programming services as of year-end 1993, where as of June 2003, 94.1 million households subscribed to MVPDs, an increase of more than 56% over the last ten years. This subscriber growth over the last ten years accompanied 14.2 and 21.26 percentage point increases respectively in MVPDs' penetration of television households to 85.25% as of June 2003. MVPD penetration of television households was at its highest in June 2001, when 86.42% of television households subscribed to an MVPD.

Since our first *Report*, the number of cable subscribers continues to grow, reaching almost 65.9 million subscribers as of June 2003, up from the 57.2 million cable subscribers at year-end 1993. In the last several years, however, cable subscribership has declined such that as of June 2003, there were approximately the same number of cable subscribers as there were at year-end 1999. The total number of non-cable MVPD subscribers grew from 3.1 million as of year-end 1993, to 23.7 million as of June 2003, a significant increase over 1993.

DBS subscribership has grown significantly since its introduction ten years ago in 1993, and now represents 21.63% of all MVPD subscribers. Since its introduction, the DBS growth rate has exceeded the growth rate of cable by double digits in every year except in the past year, when DBS growth exceeded cable growth by 9.16 percentage points. Between June 2002 and June 2003 alone, the number of DBS subscribers grew from about 18.2 million households to more than 20.4 million households. The continued growth of DBS is still, in part, attributable to the authority granted to DBS operators to distribute local broadcast television stations in their local markets by the Satellite Home Viewer Improvement Act of 1999 ("SHVIA"), and an increase in the number of markets where such service is offered. Since its introduction, DBS has attracted former cable subscribers as well as consumers not previously subscribing to an MVPD.

Over the last year, the number of subscribers to MMDS and large dish satellite service ("HSD") continued to decline, the participation of incumbent local exchange carriers in the distribution of video programming also continued to decline, and the number of subscribers to open video systems ("OVS") and private cable has remained relatively stable, although their market share remains

small. Although subscribership to these services and their relative market share have been steadily declining over the last several years, the deployment and use of these services has contributed significantly to the early acceptance of non-wireline alternatives to traditional MVPD service, and has inspired current iterations of all-digital, wireless DBS services.

Cable Rates:

During the period under review, cable rates have risen significantly. According to the Bureau of Labor Statistics, between year-end 1993 and the end of June 2003, the Consumer Price Index (“CPI”), which measures general price changes, increased approximately 25.5%, while cable prices, also measured as a subcategory of the CPI, rose approximately 53.1%. Between June 2002 and June 2003, cable prices rose 5.1% compared to a 2.1% increase in the CPI. Using a different methodology and covering a different mix of cable services and a different time period, the FCC’s annual survey of cable industry rates found that the monthly rate for basic service, the most highly subscribed to cable programming service tier (expanded basic or CPST), and equipment rose 8.2% between July 1, 2001, and July 1, 2002.

Concurrently with these rate increases, however, the number of video and non-video services offered increased, including a substantial increase in the number of video channels, increased use of cable (as measured by a substantial increase in cable viewership), and the addition of advanced service offerings. Cable operators attribute rising costs to increased programming costs and higher labor costs that have risen faster than inflation, as cable operators have increased the size and proficiency of their customer service workforce. In a recent study, GAO also found that programming costs, infrastructure investments, and increased spending by cable operators on customer service are putting upward pressure on cable rates. GAO notes that industry representatives believe that certain factors related to the nature of ownership affiliations may also indirectly influence cable rates through their influence on cable operators’ choice of which cable networks to carry. The FCC also notes that in certain locales, cable operators’ pricing decisions may be affected by direct competition. Available evidence indicates that when an incumbent cable operator faces “effective competition,” as defined by the Communications Act, it responds in a variety of ways, including lowering prices or adding channels without changing the monthly rate, as well as improving customer service and adding new services such as interactive programming. In this regard, GAO’s recent study reports that where wire-based competition is available, cable rates are lower by about 15%. GAO further found that in markets where DBS companies provide local broadcast stations, rates are only slightly lower, but cable operators are more likely to improve the quality of their service in response to DBS competition.

Convergence of Cable and Telephone Service:

Congress and the FCC expected LEC video systems to become the primary competitors to cable systems. In 1992, the FCC established the video dialtone framework that permitted LEC entry into the video marketplace consistent with statutory prohibitions. Subsequently, Congress amended the Communications Act to permit LEC entry in their telephone service areas under one of four statutory frameworks, including the open video system (“OVS”) framework. Both efforts were aimed to facilitate competition between incumbent cable operators and telephone companies. Despite these efforts to foster competition, significant LEC entry into the video marketplace has failed to materialize. A few smaller LECs continue to offer, or are preparing to offer, MVPD service over existing telephone lines. The FCC first noted in our *1997 Report* that several cable multiple system operators (“MSOs”) were beginning to offer resale, and in some cases, facilities-based telephone service. The FCC anticipated that telephone service offered by cable operators would

become a significant source of competition to incumbent LECs. Today some cable MSOs are offering circuit switched telephony. Most cable MSOs, however, are waiting for IP technology to become widely available before accelerating their rollout of telephone service. Some of these cable operators are currently offering, or continuing to test, IP telephony products.

High-Speed Internet Service:

The most significant convergence of service offerings continues to be the pairing of Internet access services with video programming services. The FCC first reported in our *1997 Report* that cable operators were beginning to offer a bundle of services to include high-speed access to the Internet via cable modem. By year-end 1998, there were approximately 500,000 subscribers. Some cable operators offer access to the Internet through the subscriber's television and a specially designed set-top box, but the most popular way to access the Internet over cable was, and still is, through the use of a cable modem and personal computer. Today, virtually all of the major MSOs offer Internet access services via cable modems in large portions of their service areas and about half of all mid-sized and small cable operators provide this service. As of June 2003, there were more than 13.8 million cable modem high-speed Internet access subscribers. Like cable, the DBS industry is continuing to develop ways to bring advanced services to their customers. Many MMDS and private cable operators also offer Internet access services. In addition, BSPs continue to build advanced systems specifically to offer a bundle of services, including video, voice, and high-speed Internet access.

Promotion of Entry and Competition:

Since our first *Report*, non-cable MVPDs have described regulatory and other barriers to entry that limit their ability to compete with incumbent cable operators. These non-cable MVPDs continue to report that many of the same barriers to entry noted in the *1994 Report* are still experienced today. For example, in our *1994 Report*, the FCC noted that non-cable MVPDs experienced some difficulties in obtaining programming from vertically-integrated cable programmers and from unaffiliated programmers which make exclusive agreements with cable operators. Many non-cable MVPDs report the same difficulties today. Others described problems accessing vital sports and regional news programming as a result of exemptions to the program access rules, most notably, the terrestrial delivery of programming to distributors. In our *1998 Report*, the FCC noted that in multiple dwelling units ("MDUs") potential entry was discouraged or limited because an incumbent video programming distributor has a long-term and/or exclusive contract. This remains a concern for commenters today. In addition, as described in previous *Reports*, non-cable wireline MVPDs report problems obtaining franchises from local governments and difficulties in gaining access to utility poles needed to build out their systems. These concerns also remain.

Distribution Technologies Findings:

FCC findings as to particular distribution technologies operating in the market for the delivery of video programming include the following:

Cable Systems: Since the *1994 Report*, subscribership to cable television services has increased steadily (between year end 1993 and June 2003, there was a 15.2% increase in subscribership from 57.2 million subscribers to 65.9 million subscribers). In recent years, some specific cable operators have experienced decreases in subscribership, but the industry on a whole has experienced average year-to-year increases of about 2% each year. The industry has also continued to grow in terms of revenue (an approximate 125% increase between year-end 1993 and year-end 2002), all-day audience shares for cable networks (which rose from an average 29 share during the 1993-1994

television season to an average 55 share for the 2002-2003 season), and expenditures on programming.

Over the last decade, the cable industry has invested more than \$75 billion to upgrade and improve cable plant. As a result, digital compression technology has been implemented, resulting in significant increases in channel capacity over the last ten years, as well as the introduction of such non-video services such as Internet access and telephony.

Direct-to-Home (“DTH”) Satellite Service (DBS and HSD): Since 1994, video service has been available from high power DBS satellites that transmit signals to small DBS dish antennas installed at subscribers’ premises (DBS service). Video service using low power satellites and larger antennas (HSD service) has been available since 1979. DBS currently has over 20 million subscribers, an increase of approximately 11.6% since the *2002 Report*. There are currently a little more than 500,000 subscribers to HSD services, as measured by the number of HSD users that actually purchase programming packages. This is down significantly from its peak subscribership of 2.4 million in 1995. DirecTV and EchoStar are each among the five largest providers of multichannel video programming service. In 1993, DBS was not available to consumers. As of June 2003, DBS represented a 21.6% share of the national MVPD market. Currently HSD represents another 0.53% of the MVPD market. At its peak, HSD represented almost 3.5% of MVPD service subscribers.

Broadband Service Providers: In our *1994 Report*, the FCC identified municipal and independent overbuilders. At that time, video distribution was the sole focus of overbuilding activity. In our *2001 Report* the FCC addressed a new class of providers called BSPs, entities that compete with existing cable systems using state-of-the-art systems that offer a bundle of telecommunications services, including video, voice, and high-speed Internet access. As of June 2003, BSP served approximately 1.4 million subscribers, representing approximately 1.5% of all MVPD households.

Wireless Cable Systems: Currently, the wireless cable industry (“MMDS”) provides competition to the cable industry in limited areas. At year-end 1993, there were approximately 400,000 subscribers to MMDS service. At its peak in mid-1998, MMDS systems provided video service to approximately one million customers. MMDS subscribership declined over the last year from approximately 490,000 subscribers in June 2002 to 200,000 subscribers in June 2003. With the advent of digital MMDS and the FCC’s authorization of two-way MMDS service, it appears that most MMDS spectrum eventually will be used to provide high-speed data services. Wireless cable represented an approximately 0.66% share of the MVPD market at year-end 1993, and approximately 0.21% share of the national MVPD market in June 2003. At its peak, MMDS has represented only 1.3% of the MVPD market.

Private Cable Operators: Private cable operators, also known as SMATV operators, use some of the same technology as cable systems, but do not use public rights-of-way, and focus principally on serving subscribers living in MDUs. At year-end 1993, there were about one million subscribers to SMATV services, representing 1.67% of the MVPD market and today, there are a little more than 1.2 million subscribers, representing approximately 1.27% of the MVPD market. Subscribership has declined over the last year, from its peak subscribership in mid-2002, when there were approximately 1.6 million reported subscribers to SMATV services, representing 1.78% of the MVPD market.

Broadcast Television: Broadcast stations and networks, and non-broadcast networks alike, must either produce programming or purchase programming from third-party producers. Broadcast networks and stations also are suppliers of content for distribution by MVPDs. In addition, they supply video programming directly to those television households that are not MVPD subscribers and to television sets in MVPD households that are not connected to such service. Since the *1994 Report*, the broadcast industry has continued to grow in the number of operating stations (from 1,518 as of November 1993 to 1,726 as of June 2003), adding about 1.3% more stations on average each year over the last ten years. Broadcast stations and networks, like MVPDs and non-broadcast networks, derive revenue from advertising. Advertising revenues averaged an annual six percent increase since the *1994 Report*, but fell dramatically during the general economic recession of 2001, when advertising revenues declined about 12% from the prior year. Audience levels continue to decline as they have for many years. During the 2002-2003 television season, broadcast television stations collectively (network affiliates, independent stations and public broadcast stations) accounted for an average 49 share of prime time viewing for all television households, compared to an average 74 share ten years earlier. During the 2002-2003 television season, broadcast television stations collectively accounted for an average 45 share of all-day viewing for all television households, compared to an average 71 share ten years earlier. Broadcast television stations continue to deploy digital television (“DTV”) service. As of September 2003, all but two of the 40 stations that make up the top-four network affiliates in the top ten television markets were broadcasting DTV service. Virtually all of the more than 1,300 commercial television stations have been granted DTV construction permits or licenses and 1,038 are on the air with DTV operation, or nearly 80%.

LEC Entry: LEC involvement into the video market over the last ten years has been lackluster. The FCC previously reported that the largest incumbent LECs have largely exited the video business. The most notable exception is BellSouth, which currently operates overbuild cable systems in 14 franchise areas, passing 1.4 million homes. In addition, a few incumbent LECs offer, or are preparing to offer, MVPD service over existing telephone lines. Qwest Communications International (formerly US West), offers video service in several markets, high-speed Internet access, and telephone service over existing copper telephone lines using very high-speed digital subscriber line (“VDSL”). Currently, BSPs, many of which also operate incidentally as competitive LECs, are the primary OVS certification holders. In fact, over the last ten years, Ameritech (now owned by SBC) made the most significant entry of any incumbent LEC into the video programming distribution market, purchasing and building facilities-based services such that by 1998, it held 111 cable franchises with the potential to pass more than 1.7 million homes, and had nearly 250,000 subscribers. But Ameritech (SBC) eventually sold all of its interests in video program distribution systems, and no longer remains involved in the video business.

Internet Video: In 1994, Internet video was not yet in use. The World Wide Web was a nascent technology. As of June 2003, an estimated 59 million Americans subscribed to an Internet access service (with 20 million of those subscribing to a high-speed Internet access service). Real-time and downloadable video accessible over the Internet continues to become more widely available and the amount of content is increasing. Yet, despite the evidence of increased interest in Internet video deployment and use, the medium is still not seen as a direct competitor to traditional video services.

Home Video Sales and Rentals: The FCC considers the sale and rental of home video, including videocassettes, DVDs, and laser discs, part of the video marketplace because they provide services similar to the premium and pay-per-view offering of MVPDs. In 1994, VCR penetration was 84%

of TV households. In 2003, Nielsen Media Research estimates VCR penetration at 91% of TV households. Our *1998 Report* was the first *Report* in which the FCC reported that DVD technology, introduced in 1997, would likely replace laser disc technology as another means to view video programming. The number of homes with DVD players has grown rapidly since their introduction, and DVDs have made significant impact on the home video market. In the first half of 2003 alone, equipment manufacturers sold 10.3 million DVD players. The newest home video technology is the personal video recorder (“PVR”). Introduced in 1999, PVRs may be purchased from and subscription obtained through an MVPD or directly from a PVR service operator. Currently, there are approximately 2.1 million PVRs in use, as measured by PVR subscriptions.

Electric and Gas Utilities: In 1994, some utilities were engaged in the provision of video services through overbuilding incumbent cable systems, though such activity was very limited. Section 103 of the Communications Act, enacted as part of the 1996 Act, removed a significant regulatory barrier that had deterred registered public utility holding companies’ entry into video markets. Today, many utilities continue to move forward with ventures involving multichannel video programming distribution. Though their services are still not widespread, utilities do, provide competition in scattered localities. Some of their characteristics, such as ownership of fiber optic networks and access to public rights-of-way, make them competitively significant. Some utilities offer telecommunications services on their own, while others partner with broadband service providers, such as Starpower, RCN’s joint venture with PEPCO. It also appears that utilities, particularly municipal utilities in rural areas, are willing to build advanced telecommunications networks to offer a full range of services where incumbent cable operators and telephone companies are not. Reports indicate that 105 public power entities offer video services.

Additional Findings

- **Consolidations and Clustering:** Although cable operators continue to acquire and trade systems, consolidation of the top cable operators appears to have declined slightly over the past year, after many years of rapid consolidation and concentration. For example, the four largest operators served about 51.7% of all U.S. cable subscribers in June 2002, and in June 2003, that number was down to about 50.5% of all U.S. cable subscribers. In terms of one traditional economic measure, national concentration among the top MVPDs has increased since last year as the largest MSOs have grown larger over the past year, and current levels are above levels reported since the *1994 Report*. DBS operators DirecTV and EchoStar rank among the five largest MVPDs in terms of nationwide subscribership along with three cable MSOs. As of year-end 2002, slightly more than 51 million of the nation’s cable subscribers were served by systems that are included in 109 regional clusters. At year-end 1994, only about 20 million subscribers were served by systems that were included in 97 regional clusters.
- **Programming Networks:** The number of satellite-delivered programming networks has increased significantly over the last ten years. As of year-end 1994, there were approximately 106 non-broadcast programming networks available for carriage by MVPDs. As of June 2003, there were more than 339 national non-broadcast programming networks. During the same period, vertical integration of national programming services between cable operators and programmers has decreased from 53% at year-end 1994 to 33% as of June 2003. As the number of vertically-integrated networks has increased, the total number of networks also has increased such that the percentage of vertically integrated networks has steadily declined (from over 50%

in 1994 to 30% in 2002) until this year when the percent rose to 33%. In 2003, four of the top six cable MSOs, ranked by subscribership, held ownership interests in satellite-delivered programming services. In 1994, five of the top six cable MSOs held ownership interests in satellite-delivered programming services. Sports programming warrants special attention because of its widespread appeal and strategic significance for MVPDs. The *2003 Report* identifies at least 84 regional networks, 28 of which are sports channels, many owned at least in part by MSOs. There are also 37 regional and local news networks that compete with local broadcast stations and national cable news networks.

- **Program Access:** The program access rules adopted pursuant to the 1992 Cable Act, and recently extended by the FCC, were designed to ensure that other MVPDs can access vertically-integrated satellite delivered programming on non-discriminatory terms. The *2003 Report* recognizes that the terrestrial distribution of programming, including in particular regional sports programming, remains an important issue and could have an impact on the ability of alternative MVPDs to compete in the video marketplace.
- **Advanced Technologies:** In 1994, most technical efforts were focused on the development and use of digital compression and modulation technologies. The cable industry was just beginning to accelerate the upgrade of its wired networks to increase capacity and enhance the capabilities of their transmission platforms to include such advanced services as voice, data transport (later known as Internet access services), and advanced video services such as video-on-demand (“VOD”). Today, many advanced services are available to subscribers, but many more are still evolving. Many advanced services such as telephony and high-speed Internet access services, are now in widespread use. MVPDs are now focusing on deployment of VOD and other emerging interactive television services.
- **Cable Modems:** There have been numerous significant technical developments regarding cable modems and other technologies used to access a wide range of services offered by MVPDs. Although cable modems were not available for residential use at the time of our *1994 Report*, a group of cable operators, joined together in December 1996 to issue a Request for Proposal (“RPF”) that resulted in the development of the DOCSIS standard. As of September 2003, 365 DOCSIS modems have received certification and 54 Cable Modem Termination Systems (“CMTSs”) have gained qualified status under DOCSIS. In addition, most operators continue to improve their high-speed Internet access service, offering higher speeds and special features. PacketCable, another CableLabs project, began in 1997, and is the standard developed for delivering advanced, real-time multimedia services over two-way cable plant. PacketCable enables a wide range of services, including IP telephony, multimedia conferencing, interactive gaming, and general multimedia applications. By June 2003, there were approximately 13.4 million cable modem subscribers in the U.S.
- **Navigation Devices:** There also have been numerous significant technical developments regarding the navigation devices used to access a wide range of services offered by MVPDs. In 1998, the FCC adopted rules, pursuant to Section 629 of the Communications Act, so that consumers could obtain “navigation devices” from commercial sources other than their cable providers. In 2003, the FCC further adopted rules to permit television sets to be built with “plug-and-play” functionality for one-way digital cable services, without the need for a set-top box. The cable and consumer electronics industries continue to work on the development of an agreement

for two-way “plug-and-play” receivers. The FCC also extended the date for the ban on cable operators provision of integrated set-top boxes from January 1, 2005, until July 1, 2006. In addition, the FCC adopted rules to assure that DTV broadcast content will not be indiscriminately redistributed. Content marked by the descriptor may only be output or recorded through to analog outputs, protected digital outputs, and a small class of unprotected digital outputs at a lower resolution. Through the OpenCable project, CableLabs developed hardware specifications as well as specifications for the software interface that a host device needs to accommodate these changes.

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