

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

In the Matter of)	
)	
Revisions to Rules Authorizing the Operation of Low Power Auxiliary Stations in the 698- 806 MHz Band)	WT Docket No. 08-166
)	
Public Interest Spectrum Coalition, Petition for Rulemaking Regarding Low Power Auxiliary Stations, Including Wireless Microphones, and the Digital Television Transition)	WT Docket No. 08-167
)	
Amendment of Parts 15, 74 and 90 of the Commission’s Rules Regarding Low Power Auxiliary Stations, Including Wireless Microphones)	ET Docket No. 10-24
)	

REPLY COMMENTS OF THE WALT DISNEY COMPANY

The Walt Disney Company (“Disney”),¹ by its attorneys, respectfully submits the instant reply comments (“Reply Comments”) in the above-captioned proceeding in which the Federal Communications Commission (“FCC” or “Commission”) seeks to refresh the record in its wireless microphone proceeding.² As explained below, Disney’s experiences – and comments filed in this proceeding – demonstrate that broadcasters and other professional program producers rely on wireless microphones and other low power auxiliary devices licensed under

¹ Disney is filing these Reply Comments on behalf of itself, the ABC Owned Television Stations and ESPN (80% owned by Disney). The ABC Owned Television Stations are located in the following markets: New York (WABC-TV), Los Angeles (KABC-TV), Chicago (WLS-TV), Philadelphia (WPVI-TV), San Francisco (KGO-TV), Houston (KTRK-TV), Raleigh-Durham (WTVD(DT)), and Fresno (KFSN-TV).

² See *The Wireless Telecommunications Bureau and the Office of Engineering and Technology Seek to Update and Refresh the Record in the Wireless Microphones Proceeding*, Public Notice, WT Docket Nos. 08-166 & 08-167, ET Docket No. 10-24 (rel. Oct. 5, 2012).

Part 74 on a widespread and daily basis. Notably, as the record demonstrates, the spectrum available for interference-free licensed Part 74 communications is becoming increasingly congested, and it is often challenging to ensure that licensed wireless operations will not suffer interference from unlicensed services using the same spectrum.

In these Reply Comments, Disney explains that, to the extent the Commission seeks to expand the categories of user eligibility for licensing under Part 74, such expansion should be limited to professional users similarly situated to broadcasters, such as professional sports leagues like the National Football League, Broadway productions, the Kennedy Center, and theme parks and cruise lines that produce professional theater events. As explained herein, it also is imperative that the Commission's rules ensure protection and maximum flexibility for licensed Part 74 operations, and that the Commission authorize licensed operations in any spectrum that is made available for unlicensed wireless microphones or other white spaces devices.

I. PART 74 OPERATIONS ARE ESSENTIAL TO PROGRAM PRODUCTIONS AND SPECTRUM FOR SUCH OPERATIONS IS USED ON A WIDESPREAD AND EXTENSIVE BASIS EVERY DAY

As demonstrated below and in the record in this proceeding, broadcasters, video programming networks, and other entities in the entertainment industry utilize wireless microphones every day on an extensive and widespread basis.³ Such use is not occasional,

³ See, e.g., Comments of The Broadway League to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 5-6 (filed Jan. 25, 2013) (“Broadway League Comments”) (explaining that wireless microphones are “invaluable” to stage performances because they facilitate both the ability of audiences to hear the sounds of a performance and the production of the event); Comments of National Football League to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 2-3 (filed Jan. 25, 2013) (“NFL Comments”); (stating that hundreds of wireless microphones are required for each individual football game); Comments of the National Association of Broadcasters to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 2 (filed Jan. 25, 2013) (“NAB Comments”) (explaining that wireless microphone “operations are used in the production

fleeting use, but rather is an absolute necessity to ensure that the sounds of events are heard by viewers, as well as to facilitate seamless communications between producers and talent, and to ensure safety of performers and the public.

A. Wireless Microphones Are Essential To Production of Programming And Coverage Of Sports Events, Breaking News, And Other Events Of Interest To The Public

As an initial matter, Disney wishes to emphasize the critical role that wireless microphones play every day in its production of programming. ESPN, for example, uses wireless microphones for its commentators and for on-the-field reports.⁴ Wireless microphones also are essential to ESPN's production efforts, and are utilized by ESPN's production teams to communicate directly with the talent.⁵ Additionally, wireless microphones play an integral role in ESPN's ability to bring the sounds of events to its viewers. In many venues, wireless microphones are required due to venue-specific prohibitions against the use of wired microphones. Indeed, one of the most common sources of liability at professional events is injury resulting from an individual tripping over cable. Moreover, wired microphones cannot be used at certain events because cables present serious safety concerns.⁶ In short, ESPN is able to

of broadcast programming and ENG activities essential to the services that broadcasters provide to the viewing public"); Comments of Shure Incorporated to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 5 (filed Jan. 25, 2013) ("Shure Comments") (noting that wireless microphones play an integral role in the operations of, *inter alia*, broadcasters, film producers, sports leagues, music tours and venues, and theme parks).

⁴ See also NFL Comments, *supra* note 3, at 5 (explaining that wireless microphones enable communications between coaches and players, as well as between referees and replay officials).

⁵ For example, production of the X-Games involved the use of thirty-five wireless microphones on more than forty frequencies. See *infra* notes 11-12 and accompanying text for more detailed discussion regarding the number of frequencies used by ESPN to support its wireless operations.

⁶ For example, it is not possible to lay cable in pits at motorsports events given the number of people in the area and the fact that cars are racing in and out of the pit. See also Comments of the John F. Kennedy Center for the Performing Arts to *Public Notice* in WT

use wireless microphones where laying cable is not possible or practical, or where laying cable may create a safety hazard to the participants and general public in the venue. Notably, ESPN uses wireless microphones to cover events throughout the nation, often in congested urban areas where sporting events are likely to occur. Thus, ESPN knows firsthand the challenges of coordinating spectrum for wireless microphone use.

Like ESPN, ABC News and the ABC Owned Television Stations rely on wireless microphones heavily to support their broadcast operations. Wireless microphones are used both in-studio as well as out in the field for coverage of “breaking news” events. For example, wireless microphones are critical to the ability of KABC to deliver over seven hours of local news on a daily basis to its viewers in Los Angeles, California. To this end, KABC operates between twenty-five and one hundred wireless microphones and other itinerant communications links each day. KABC also uses UHF television spectrum to employ a two-way radio communication system to support its “in-the-field” coverage efforts.⁷ Similarly, on any given

Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 4 (filed Jan. 25, 2013) (“Kennedy Center Comments”) (“[W]ireless communications [are relied upon] to ensure the safety of performers, production staff and audience members from special effects such as moving scenery, flying and pyrotechnics, which are common in large productions and musicals.”); Broadway League Comments, *supra* note 3, at n.7 (“Cue and control devices used by stagehands and technical staff prevent accidents and personal injury from moving props and scenery and special effects such as pyrotechnics.”); Shure Comments, *supra* note 3, at n.17 (“Imagine the Lion King prowling across a Broadway stage singing the “Circle of Life” while a long microphone cord trails behind the singer.”).

⁷ This two-way radio system is used on a daily basis for communications among production crews but also is designed to provide support in the event of loss of commercial services in a disaster situation. Any loss of bandwidth in the UHF television band currently available for these wireless microphone operations will limit the station’s ability to continue providing news and information to the public after a major disaster such as an earthquake. Although digital modulation techniques may enable stations like KABC to use UHF spectrum resources more efficiently in the future, there is not yet adequate real-world experience with digital microphones. *See, e.g.*, NAB Comments, *supra* note 3, at 10-12 (noting that the market for digital equipment is in nascent stages). Moreover, broadcasters only recently have expended significant resources to purchase equipment necessary to transition from channels 52-69, and,

day, WLS uses wireless microphones to facilitate its coverage of thirty to fifty breaking news events at disparate locations throughout the Chicago metropolitan area.⁸ Additionally, each weekday, WLS produces seven in-studio programs throughout the day, each of which uses eight to twelve wireless microphones that require UHF spectrum. In-studio productions also use one or two UHF channel pairs for intercom communications. WLS also uses wireless IFBs on six channels on an ongoing basis throughout each day to send cues and program audio to talent on the set. Accordingly, it is imperative that the Commission does not take any action that may impact negatively the ability of such entities to continue to utilize wireless microphones for their productions.⁹

B. Programmers Rely On Wireless Microphone Operations On An Extensive And Widespread Basis Every Day And Require Spectrum To Support These Needs

The Commission not only must recognize the essential role of wireless microphones to the operations of broadcasters, programmers and entertainment venues such as theme parks, it also must support and protect the extensive and widespread use of such wireless spectrum. For example, ESPN's experiences demonstrate that programmers use broadcast television spectrum on a widespread and extensive basis to support their coverage of events.¹⁰ As evidenced by

due to the lack of digital equipment on the market at the time of this transition, much of the equipment purchased was analog. *See id*

⁸ WLS typically fields approximately thirty wireless transmitters each day, all of which are frequently utilized to cover more than one story. WTVD also uses wireless microphones to facilitate its coverage of news events in the Raleigh-Durham area and, on an average day, may cover twelve or more news stories.

⁹ As the NAB observes, “[b]roadcasters’ wireless microphone operations are essential for newsroom, newsgathering, and other operations. These operations serve the public interest and help to protect public safety, as when broadcasters provide live reporting on severe weather conditions and other emergencies.” NAB Comments, *supra* note 3, at 6.

¹⁰ The comments in this proceeding demonstrate that professional stage performances also require extensive use of wireless frequencies. *See, e.g.,* Kennedy Center Comments, *supra* note 6, at 3 (stating that, on a typical Saturday, the Kennedy Center uses nearly 200 frequencies for wireless microphones, in-ear monitors, speakers, and intercoms).

Exhibit A hereto, nearly sixty percent of the 3,200 events televised by ESPN in 2012 utilized spectrum in the broadcast television band to support its wireless microphone operations.¹¹ In 2012, ESPN estimates that its studio operations in Bristol, Connecticut alone used 245 UHF frequencies over thirty-one channels *in a single day*.¹² Notably, ESPN's estimated use of television spectrum for its wireless microphone operations is conservative, and ESPN often requires more frequencies and channels than listed on Exhibit A.

Importantly, no single programmer operates wireless microphone systems to cover an event in isolation. Rather, there are frequently multiple entities covering a single event. Local and national news events are almost always covered by multiple news operations, such that there are any number of wireless microphones for which spectrum must be coordinated.¹³ KABC, for example, must coordinate spectrum for its wireless needs with at least seven other local news operations as well as major television networks and sports production companies. This task is quite difficult, given that Los Angeles is one of the markets in which UHF spectrum is highly congested, due to the fact that the city is home to a significant number of entities that require wireless microphones, including film and television production studios, theme parks, and other

¹¹ See Exhibit A, ESPN Remote UHF Utilization.

¹² More specifically, ESPN currently operates eight separate studios, as well as one facility for outdoor studio segments, in Bristol, Connecticut. These studios are used to produce programming on a daily basis, often concurrently. The majority of the studios utilize thirty frequencies to assist in program production, and at least one studio uses nearly fifty frequencies each day. These frequencies are used for wireless microphones, IFBs, and communications channels. ESPN's use of spectrum for licensed wireless microphones is anticipated to increase at the end of the first quarter of 2013 when it begins to use four additional studios for its program productions in Bristol.

¹³ This task is particularly difficult when covering news events in major urban areas, such as Washington, D.C., Los Angeles, New York, or Chicago. See Comments of The Walt Disney Company to the *Notice of Proposed Rulemaking* in GN Docket No. 12-268, at 44 (filed Jan. 25, 2013) (describing the use of wireless microphones by entities covering the second inauguration of President Barack Obama on January 21, 2013, which required extensive coordination and over 108 MHz total bandwidth over twenty-five UHF television channels to support wireless microphones, IFBs (for cueing talent and program return), and communications channels).

entertainment venues. Any reduction in wireless spectrum assets without a corresponding action to offset these losses would have a detrimental impact on local broadcasters' ability to serve their viewers as well as upon the other entertainment venues that rely on UHF television spectrum to support their wireless needs.¹⁴ In short, it is critical that the Commission not take action that will reduce the amount of spectrum available for wireless microphones and other wireless devices (e.g., IFBs) because the itinerant nature of these operations are essential to the coverage of local and national "breaking news", sports, and other live entertainment events.

II. DISNEY SUPPORTS A LIMITED EXPANSION OF THE PART 74 ELIGIBILITY RULES

As discussed above, Part 74 licensed operations are essential to the production of quality programming, and spectrum for such operations is increasingly constrained. Nevertheless, Disney appreciates that certain entities, such as Broadway and other professional live musical and theater productions, are not currently eligible to obtain a license under Part 74. Wireless microphone use by these entities is sufficiently similar to that employed by broadcasters and cable programming producers to warrant expansion of Part 74 to include professional sports leagues like the National Football League, Broadway theaters and the Kennedy Center, and large-scale theme parks.¹⁵ Given that spectrum for Part 74 operations already is highly

¹⁴ In Los Angeles, for example, most television news operations rely heavily on the 2 GHz band for their electronic news gathering operation because virtually all of the 7 GHz and 13 GHz bands are consumed with fixed links. While great efforts are expended on coordination and efficient usage of licensed wireless microphones, congestion often forces local news operations to use of unlicensed bands, which does not ensure interference-free wireless communications.

¹⁵ As the NAB observes, these categories of users "will, by their nature operate in a manner that avoids interference to full-power television stations". NAB Comments, *supra* note 3, at 4. Moreover, these users will have access to professional technicians to manage their wireless microphone operations, including, frequency coordination. *Id.*; *see also* NFL Comments, *supra* note 3, at 6-7 (urging FCC to permit sports leagues to be eligible for Part 74 licensing); Broadway League Comments, *supra* note 3, at 3-11 (seeking Part 74 eligibility for professional theater productions); Kennedy Center Comments, *supra* note 6, at 2-4(advocating

congested, it is critical that that the Commission not expand eligibility under Part 74 beyond these enumerated categories of professional users.

III. THE FCC MUST RETAIN TWO DEDICATED CHANNELS FOR WIRELESS MICROPHONES AND AUTHORIZE SPECTRUM FOR INTERFERENCE-FREE WIRELESS MICROPHONE COMMUNICATIONS

It is imperative that the FCC preserve spectrum for wireless microphone operations by broadcasters and cable networks like ESPN. As the record in this proceeding reflects, there is significant demand for spectrum for wireless microphone operations each day, and that demand will continue to grow. Thus, any reduction of UHF spectrum for licensed wireless microphone use will degrade the quality of production of events such as those produced by ESPN, ABC News, and the ABC Owned Television Stations.¹⁶ This is especially the case given the unique qualities of UHF spectrum, which enables low power signals to propagate over large distances and facilitates the use of small antennas with minimal gain.¹⁷ Unfortunately, however, UHF spectrum for wireless microphone use often is congested and unavailable, particularly given that

that the FCC expand Part 74 eligibility to large venues and multi-theater presenters, like the Kennedy Center).

¹⁶ See, e.g., NFL Comments, *supra* note 3, at 11 (“Without dedicated spectrum for wireless microphones, it will be impossible to reliably communicate, no matter how efficient the technology.”); Comments of the Society of Broadcast Engineers to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 10-14 (filed Jan. 25, 2013) (urging the FCC to retain at least 24 MHz of UHF spectrum for licensed wireless operations).

¹⁷ It also is notable that UHF spectrum has been harmonized globally for wireless microphone use, and manufacturers have developed equipment in reliance on this global harmonization. See Shure Comments, *supra* note 3, at 35-36. Thus, should the FCC take action to further mitigate the use of wireless microphones in the UHF band, another harmful effect is the possibility that equipment costs may increase as manufacturers are forced to develop wireless equipment that can only be used in the U.S.

wireless microphones no longer are permitted in the 700 MHz band.¹⁸ Thus, today's wireless microphone needs presently are not satisfied by relying on UHF spectrum alone.¹⁹

Accordingly, Disney urges the Commission to continue to permit wireless microphone use in the television bands to the maximum extent permitted under current rules and to adopt rules that will support the extensive spectrum needs of wireless microphones. Specifically, the Commission should (i) retain spectrum solely for use by wireless microphone systems, including by retaining the two channels currently reserved for wireless microphone use and by creating new blocks of spectrum for wireless microphones to operate on an interference-free basis;²⁰ (ii)

¹⁸ See, e.g., Shure Comments, *supra* note 3, at 2 (noting that the wireless industry is still adapting to the disruption caused by the relatively recent prohibition of wireless microphones in the 700 MHz band).

¹⁹ For example, ESPN frequently relies on spectrum from other bands, including frequencies in the 900 MHz, 1.4 GHz and other spectrum bands (pursuant to special temporary authorization as necessary). This is frequently the case when producing events in large cities, such as Los Angeles, Dallas, and Chicago, where spectrum for wireless operations is particularly limited. See also NFL Comments, *supra* note 3, at 3-4 (explaining that, the amount of spectrum for wireless microphones has decreased markedly since 2010, such that opposing teams often are forced to “share the same frequency and limiting the number of users who could access their microphones during a game.”). Such bands, however, either have too few channels, already are used to capacity, or are sufficiently congested that wireless microphones could not operate without significant interference. See, e.g., Comments of Public Interest Spectrum Coalition to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to the *Public Notice* in WT Docket Nos. 08-166 & 08-167 & ET Docket No. 10-24, at 18, 47 (filed Jan. 25, 2013). The characteristics of these bands also lead to unreliable performance and the impairment of audio quality. See Comments of Sennheiser Electronic Corporation to *Notice of Proposed Rulemaking* in GN Docket Nos. 12-268 and to the *Public Notice* in WT Docket Nos. 08-166 & 08-167 & ET Docket No. 10-24, at 4 (filed Jan. 25, 2013).

²⁰ There is significant support in the record for the retention of two channels for wireless microphone operations. See, e.g., Broadway League Comments, *supra* note 3, at 2, 5; NAB Comments, *supra* note 3, at 5-10; NFL Comments, *supra* note 3, at 2-4; Shure Comments, *supra* note 3, at 15-17; Comments of Audio-Technica U.S., Inc. to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 6-10 (filed Jan. 25, 2013); Comments of The Performing Arts Wireless Microphone Working Group to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 4 (filed Jan. 25, 2013); Comments of Robert Bosch LLC to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-

authorize operations of wireless microphones in guard band spectrum; and (iii) permit wireless microphones to operate in any spectrum authorized for WiFi and other unlicensed devices, including on unused spectrum (*i.e.*, white spaces) in the television band.²¹

IV. CONCLUSION

As demonstrated herein, wireless microphones play a critical role every day in the delivery of news, sports, and other important programming to the nation's viewers. Accordingly, Disney urges the Commission not to take any action that would restrict or otherwise inhibit the ability of wireless microphones to be used in the spectrum currently authorized for such use. Nevertheless, Disney supports a limited expansion of Part 74 eligibility as described herein.

24, at 11-14 (filed Jan. 25, 2013); Comments of Screen Actors Guild-American Federation of Television and Radio Artists to *Notice of Proposed Rulemaking* in GN Docket No. 12-268 and to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 2 (filed Jan. 25, 2013). Importantly, the Commission expressly determined in its white spaces proceeding that it was necessary to reserve two channels for licensed wireless microphones and other LPAS operations licensed under Part 74 to ensure that licensed operations used in electronic news gathering activities would be protected from interference from white spaces devices. *See* Comments of the National Association of Broadcasters to *Public Notice* in WT Docket Nos. 08-166 and 08-167 & ET Docket No. 10-24, at 47 (filed Jan. 25, 2013).

²¹ In the *Incentive Auction NPRM*, the Commission proposes to make available for general unlicensed use (1) the two channels currently reserved for licensed operations of LPAS and wireless microphones and (2) newly available guard band spectrum. *See Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, Notice of Proposed Rulemaking ¶¶ 234, 238 (rel. Oct. 2, 2012). As the NAB observes, there is “no reason why the Commission could not designate and reserve these guard bands for licensed wireless microphones rather than propose the elimination of the existing two reserved channels.” NAB Comments, *supra* note 3, at 6. Although the repacking may reduce the amount of UHF spectrum available for licensed wireless microphone and LPAS operations, this does not in any way mitigate the need to protect operations licensed under Part 74, particularly given that these operations are critical to the coverage of live news, weather, and sporting events, and especially if the FCC ultimately expands the number of entities eligible for Part 74 licenses.

Respectfully submitted,

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EXHIBIT A

ESPN Remote UHF Utilization

In 2012, ESPN televised approximately 3,200 events, 1,784 of which utilized wireless microphones, communications and talk back to talent.

The following is a conservative representation of one week of wireless utilization across all of the ESPN networks nationwide.

The TV Channel totals as listed below are indicative of the available frequencies/channels coordinated in a given market.

Tuesday 11/06/2012:

1-College Football Game: 25 UHF Frequencies @ 2.604 MHz Total Bandwidth over 9 TV Channels.

Wednesday 11/07/2012:

1-College Football Game: 25 UHF Frequencies @ 2.604 MHz Total Bandwidth over 9 TV Channels.

2-NBA Games: 24 UHF Frequencies @ 2.352 MHz Total Bandwidth over 8 TV Channels.

Thursday 11/08/2012:

2-Studio Shows Veterans Day: 20 UHF Frequencies @ 2.160 MHz Total Bandwidth over 8 TV Channels.

2-College Football Games: 50 UHF Frequencies @ 5.208 MHz Total Bandwidth over 18 TV Channels.

1-Soccer Game: 7 UHF Frequencies @ 720 KHz Total Bandwidth over 3 TV Channels.

Friday 11/09/2012:

6-College Basketball Games: 36 UHF Frequencies @ 3.888 MHz Total Bandwidth over 18 TV Channels.

1-College Football Game: 25 UHF Frequencies @ 2.604 MHz Total Bandwidth over 9 TV Channels.

1-NBA Game: 12 UHF Frequencies @ 1.176 MHz Total Bandwidth over 4 TV Channels.

Saturday 11/10/2012

1-Studio Show Game Day: 20 UHF Frequencies @ 2.160 MHz Total Bandwidth over 8 Channels.

21-College Football Games: 525 UHF Frequencies @ 54.684 MHz Total Bandwidth over 189 TV Channels.

1-NASCAR Event: ESPN utilizes one, 6 MHz TV channel for communications. Due to the crowded spectrum in the UHF TV channels, ESPN utilizes frequencies under a STA the 1.4 and 2.3 GHz bands to accommodate the wireless microphones use.

Sunday 11/11/2012:

4-College Basketball Games: 100 UHF Frequencies @ 2.592 MHz Total Bandwidth over 36 TV Channels.

1-NASCAR Event: ESPN utilizes one, 6 MHz TV channel for communications. Due to the crowded spectrum in the UHF TV channels, ESPN utilizes frequencies under a STA the 1.4 and 2.3 GHz bands to accommodate the wireless microphones use.

1-NHRA Event: ESPN utilizes one, 6 MHz TV channel for communications. Due to the crowded spectrum in the UHF TV channels, ESPN utilizes frequencies under a STA the 1.4 and 2.3 GHz bands to accommodate the wireless microphones use.

1-Soccer Game: 7 UHF Frequencies @ 720 KHz Total Bandwidth over 3 TV Channels.

Monday 11/12/2012:

9-College Basketball Games: 54 UHF Frequencies @ 6.120 MHz Total Bandwidth across 27 TV Channels.

1-Studio Show NFL Game Day: 20 UHF Frequencies @ 2.160 MHz Total Bandwidth over 8 Channels.

1-Monday Night NFL: 40 UHF Frequencies @ 4.248 MHz Total Bandwidth over 12 TV Channels.

ESPN Studio Operations:

Bristol, CT:

245 UHF Frequencies @ 24.2 MHz Total Bandwidth over 31 TV Channels.

Los Angeles Studio Operations:

42 UHF Frequencies @ 3.320 MHz Total Bandwidth over 8 TV Channels.

Longhorn Studio Operations:

34 UHF Frequencies @ 3.384 MHz Total Bandwidth over 13 TV Channels.

Charlotte Studio Operations:

31 UHF Frequencies @ 3.072 MHz Total Bandwidth over 10 TV Channels.