

# Engineers for the Integrity of Broadcast Auxiliary Services Spectrum

BY FIRST CLASS MAIL

## EIBASS Co-Chairs

DANE E. ERICKSEN, P.E.,  
CSRTE, 8-VSB, CBNT  
Hammett & Edison, Inc.  
San Francisco, CA  
707/996-5200  
[dericksen@h-e.com](mailto:dericksen@h-e.com)

RICHARD A. RUDMAN, CPBE  
Remote Possibilities  
Santa Paula, CA  
805/921-0382  
[rar01@mac.com](mailto:rar01@mac.com)

## EIBASS Members

KENNETH J. BROWN  
Broadcast Technical Consultant  
Carneys Point, NJ

PAUL B. CHRISTENSEN, Esq.,  
CPBE, CBNT, 8-VSB, AMD  
Law Office of Paul Christensen  
Jacksonville, FL

GERRY DALTON, CBRE, CBNT  
Communications Consultant  
Dallas, TX

HOWARD FINE  
SCFCC Database Administrator  
Los Angeles, CA

JOHN C. KEAN  
NPR Technology Research Cntr  
Washington, DC

MICHAEL G. McCARTHY, CSRE  
McCarthy Radio Engineering  
Chicago, IL

MICHAEL S. NEWMAN  
CSI Telecommunications, Inc.  
San Francisco, CA

WILLIAM F. RUCK  
NCFCC Chairman  
San Francisco, CA

KARL VOSS  
Frequency Coordinator  
Scottsdale, AZ

BURT I. WEINER  
Broadcast Technical Services  
Glendale, CA

October 4, 2011

**Petition for Rulemaking**

Marlene H. Dortch, Secretary  
Federal Communications Commission  
Office of the Secretary  
445 12th Street, SW  
Washington, DC 2-554

Dear Ms. Dortch:

Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) hereby files an original and four copies of its Petition for Rulemaking to amend the Part 74, Subpart D, Remote Pickup (RPU) rules. Electronic copies of this petition are also being filed in the Electronic Comment Filing System (ECFS), to ET Docket 01-75, WT Docket 99-87, and WP Docket 07-100.

Respectfully,

**/s/ Dane E. Ericksen**

**/s/ Richard A. Rudman**

Dane E. Ericksen

Richard A. Rudman

Enclosures

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	
	)	RM _____
	)	
Adopting	)	
Revised Center Frequencies for Part 74,	)	
Subpart D, Remote Pickup Stations, and	)	
Allow Digital Modulation for RPU Stations	)	
	)	
Updating and Harmonizing the Part 74	)	(ET Docket 01-75)
Broadcast Auxiliary Services Rules	)	
	)	
Narrowbanding of Private Land Mobile	)	(WT Docket 99-87)
Radio Service Channels	)	
	)	
Amendment of Part 90 of the	)	(WP Docket 07-100)
Commission's Rules	)	

To: The Commission

**EIBASS Petition for Rulemaking**

Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) hereby respectfully submits its Petition for Rulemaking to amend the Part 74, Subpart D, Remote Pickup (RPU) station Broadcast Auxiliary Services (BAS) rules to allow flexibility in the interpretation of center frequency assignments, allow the use of digital modulation, and clarify the identification requirements for digitally-modulated RPU stations.

**I. Background**

1. As was noted in the November 24, 2009, EIBASS comments to WT Docket 99-87 (Narrow Banding of Private Land Mobile Radio Service (PLMRS) channels), Part 74 RPU stations are not subject to mandatory narrow banding.<sup>1</sup> However, that doesn't mean that RPU licensees should be prohibited from narrow banding, if they wish. The ability to use digital radios with channels spaced 12.5 kHz or 6.25 kHz apart, depending on the technology in use by

---

<sup>1</sup> Except for the 153 MHz RPU channels, which are shared with PLMRS and operate on a secondary basis; RPU stations in this band would have a *de facto* narrow banding obligation, since continued wide band operation on a secondary basis with PLMRS stations that have converted to narrow band operation would not be possible.

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

broadcasters<sup>2</sup> could foster voluntary narrow banding of RPU channels in certain cases and on certain channels. These changes to the RPU rules proposed by EIBASS would allow BAS licensees both greater flexibility in their operations and a significant cost benefit, because commercially available, off-the-shelf Part 90 digital radios could then be used for Part 74 RPU operations. Nevertheless, it is important not to preclude use of wideband RPU signals, which are still needed to convey better quality audio for rebroadcast (as opposed to “communications quality” transmissions for internal dispatch operations), or where analog operations are still needed to avoid latency issues during real-time broadcast operations that are an inherent limitation of digital modulation.

2. It should be noted that Part 74 Subpart D RPU channels have special characteristics that make them different than conventional “two-way” frequencies in Part 90. Specifically, Part 74 Subpart D channels have sufficient bandwidth to provide broadcast quality program material to Part 73 broadcast stations. Since Section 90.415(a) of the Part 90 PLMRS rules prohibits stations in that service from transmitting program material of any kind, Part 74 Subpart D spectrum is the only option for broadcast quality audio.<sup>3</sup> Although broadcast licensees are eligible to be licensed for Part 90 frequencies, this use is limited by rule to dispatching and other “housekeeping” uses.

3. Because Part 74 Subpart D frequencies are the only frequencies that allow program material to be broadcast, EIBASS supports the order of priority of transmissions given in the current Section 74.403(b) of the FCC rules, and does not propose any change to that rule.

### **II. Re-Visiting the ET Docket 01-75 RPU Center Frequencies**

4. In the ET Docket 01-75 rulemaking, intended to update and, where feasible, harmonize the Part 74 BAS rules with the Part 101 Private Operational Fixed Service (POFS) microwave rules, the Commission also re-farmed the VHF RPU band into 7.5-kHz wide segments, and reformed the UHF RPU band into 6.25-kHz wide segments. EIBASS has created the attached Figure 1, showing the difference in center frequencies between Part 90 channel splitting and the ET Docket 01-75 channel splitting. Up to four segments (30 kHz total bandwidth) could be used at VHF, and up to eight segments (50 kHz total bandwidth) and up to two of certain 50 kHz

---

<sup>2</sup> In addition to the licensees of AM, FM or TV stations, an RPU license may also be issued to the licensee of a Class A TV station, an International (short wave) broadcast station, an LPTV station, a broadcast network entity (BNE), or a cable network entity (CNE). However, the majority of RPU licensees are broadcasters.

<sup>3</sup> The term “broadcast quality” usually refers to an audio frequency response at or approaching 50 Hz to 15 kHz, a dynamic range at or approaching 60 dB, and low total harmonic distortion (THD).

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

segments (100 kHz bandwidth) could be used at UHF. However, this RPU band re-farming has proven to be impractical, because it requires center frequencies that many modern-day analog Part 90 radios, also Certified and available for Part 74 use, cannot achieve; that is, the required center frequencies exceed the resolution of the frequency synthesizer steps and readout display resolution of most currently manufactured, modern-day radios. EIBASS is not aware of any radio manufacturer that has produced analog radios that are capable of the of the center frequency resolution necessary for the current RPU rules. This is because the BAS community is not a large enough user to justify the cost of such custom-made radios.

5. While currently manufactured *digital* Part 90 radios can tune these center frequencies, after January 1, 2013, the Commission's rules prohibit Part 90 radios from being marketed that operate with the 25 or 50 kHz wide analog channels that broadcasters require to carry program material, or the latency of Part 90 digital radios make them unacceptable for some uses that involve real-time broadcasts.<sup>4</sup> Additionally, because analog two-way radios are likely to become less available as more time passes from the January 1, 2013, PLMRS narrow banding deadline, it is important that broadcasters have the option of converting some of their RPU operations to digital, if narrowband digital will satisfy the needs of the broadcaster.

6. Prior to the aforementioned BAS RPU re-farming, broadcasters were able to procure affordable, type-accepted off-the-shelf radios that could be programmed for proper operation using the center frequencies then shown in the Part 74, Subpart D rules. But that is no longer possible for the re-farmed channels, as documented in the next paragraph. Accordingly, EIBASS believes that the 2003 ET Docket 01-75 re-farming of the VHF and UHF RPU bands has brought not only operational complications to the lives of RPU band users, but also represents an economic bar to rule-compliant operations. In short, building special analog radios capable of the 6.25-kHz channel segments center frequencies, 3.125 kHz frequency synthesizer steps, and 25 or 50 kHz channel bandwidths currently required for RPU radios would cost a lot of money—much more than the cost of current generation off-the-shelf Land Mobile Part 90 radios.

---

<sup>4</sup> During real-time live broadcast situations digital latency makes exchanges between the field and the studio disruptive to natural program flow that impacts viewers and listeners directly. The use of these RPU channels requires what broadcasters call Interrupted Feedback (IFB). An IFB system permits a director or producer to talk to the talent, typically an "on air" announcer, newscaster, or sportscaster. Normally the talent hears the broadcast program audio. When the director or producer activates the IFB, the program audio is replaced by the director's or producer's voice. Sometimes the program audio continues in the other ear, sometimes the program audio is reduced instead of completely removed. For any of these forms of IFB, excessive latency is not acceptable.

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

7A. EIBASS offers the following example of broadcasters wishing to apply for a new RPU are forced to use five such segments and license a 31.25-kHz wide channel that occupies 25 kHz, to create a 25-kHz wide channel capable of being programmed into commonly available analog radios using 6.25-kHz wide segments, as follows:

455.48750 MHz

455.49375

**455.50000 (a programmable center frequency in all radios)**

455.50625

455.51250

7B. If one attempts to use just four segments to create the same 25-kHz wide channel, then the required channel segments become:

455.48750 MHz

455.49375

455.50000

455.50625

These four stacked channel segments would require a center frequency of 455.496875 MHz. This not a programmable center frequency in off-the-shelf analog Part 90 radios, because it requires a 3.125 kHz synthesizer step these radios cannot accommodate.

7C. Another example is

455.49375 MHz

455.50000

455.50625

455.51250.

These four stacked channels would require a center frequency of 455.503125 MHz, which again is not a programmable center frequency in off-the-shelf commercially available analog Part 90 radio that EIBASS is aware of.

8. Alternatively, if a broadcaster wishes to “split” an existing 25-kHz wide channel into two 12.5-kHz wide channels, the resulting center frequencies are not licensable under the current FCC rules and require a rule waiver. For example, if that broadcaster wishes to split an existing 25-kHz wide channel at 450.4125 MHz (*i.e.*, channel boundaries of 450.4000 and 450.4250 MHz), the resulting center frequencies would be 450.40625 and 450.41875 MHz. These frequencies are not programmable into off-the-shelf analog Part 90 radios.

9. If our broadcaster did not want to license the newly created split channels using the Special Temporary Authority (STA) or the waiver process, and wished to license under the current FCC

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

rules, it would have to license each channel by stacking three 6.25 kHz segments, to create an 18.75-kHz wide channel. But two 18.75-kHz wide channels would not fit into the original 25-kHz wide channel; again defeating the purpose of channel splitting. If the Commission's goal is greater spectrum efficiency, this does just the opposite.

10. Further complicating this process is that in most areas the entire Part 74 Subpart D UHF band has legacy licensees on most if not all of the 25 kHz-wide channels. Many areas have adopted a well thought out and carefully negotiated band plan to maximize the use of the 450/455 MHz RPU frequency pairs. For example, in Northern California the broadcasters agreed to such a band plan in the late 1970's, where all San Francisco stations use the "odd" channels (for example, 450.0325, 450.0625, 450.0875 MHz, *etc.*) and areas surrounding San Francisco, such as Sacramento, the San Joaquin Valley, and the Salinas/Monterey market, use the 12.5 kHz offset "even" channels (for example, 450.050, 450.075, 450.100 MHz, *etc.*). This allows every 25 kHz-wide channel to be used in each market with reduced co-channel interference between markets. A similar plan was adopted in 1981 by the Southern California Frequency Coordinating Committee, Inc. (SCFCC) to deal with UHF line-of-sight propagation challenges that exist from Fresno in the north all the way south to the border with Mexico. Today, it would be difficult, if not impossible, for any station to attempt to squeeze in a non-25 kHz increment channel in the NCFCC or SCFCC plans.

11. For a limited period after the ET Docket 01-75 rulemaking stations were able to license new or changed RPU stations on the legacy RPU center frequencies without regulatory difficulty, but once the three-year ET Docket 01-75 deadline went into effect in 2006,<sup>5</sup> applicants found they were unable to comply with local area band plans based on the "old" 25 kHz center channel spacing unless the grandfather clause provided in paragraph 115 of the November 13, 2002, ET Docket 01-75 R&O<sup>6</sup> was invoked. However, most RPU applicants did not know about this provision, or how to properly claim it.<sup>7</sup> While at the time the stacking of small segments appeared to be a method of allowing flexibility, experience and an ever growing

---

<sup>5</sup> The ET Docket 01-75 R&O was published in the Federal Register on March 17, 2003, thereby creating an effective date of April 16, 2003, except for the microwave prior coordination notice (PCN) portion, which was given an effective date of six months later (*i.e.*, October 16, 2003), and the digital modulation for BAS microwaves portion, which was provided an immediate effective date (*i.e.*, November 13, 2002).

<sup>6</sup> And re-affirmed at Paragraph 14 of the October 20, 2003, ET Docket 01-75 MO&O.

<sup>7</sup> For an example of a 450/455 MHz RPU application that successfully invoked the grandfather clause, see the supplemental exhibit to the November 12, 2010, KQB648 application; the URL is <http://wireless2.fcc.gov/UlsApp/ApplicationSearch/applAdmin.jsp?applID=5749847>.

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

number of rejected BAS RPU applications now show that shifting to a system not on the legacy 25 kHz channel centers has not worked.

12. As documented by the attached Figure 2, the above issues have caused many FCC “return” letters to RPU licensees attempting to update their systems, or attempting to license new systems, resulting in frustration and increased cost to broadcasters. EIBASS has evidence that some broadcasters have resorted to operating under Special Temporary Authority (STA) until a rule waiver could be granted, or have given up trying to license or re-license their RPU systems under the strict interpretation of the current rule, and are operating pursuant to Section 74.24 of the FCC Rules (Short-term Operation). However, it is debatable whether Section 74.24 can be interpreted as a basis for not licensing or updating an RPU system. Such operation, even if it doesn’t exceed the 720-hour per year limit, would on its face be an intentional, anticipated need, as opposed to a need triggered by a major news event. As noted in Section 74.24(g)(3) of the FCC Rules, “An unanticipated need will never be deemed to exist for a scheduled event, such as a convention, sporting event, etc.” Further, even when valid, Section 74.24 operation is secondary to licensed RPU stations, a point EIBASS believes is sometimes overlooked.

13. Assuming the Commission’s goal is to eventually see all RPU stations comply with the ET Docket 01-75 re-farming strategy, a more liberal interpretation of allowable center frequencies for RPU channels would eliminate the current disincentive for broadcasters to carry out cost-effective minimization of operational bandwidths for their RPU operations, while not impacting wideband RPU operations that are still needed in the larger radio markets.

14. Thus, this EIBASS Petition for Rulemaking is based on a revised Section 74.402 (Frequency Assignment), as shown in the attached Figure 3. This proposed table of frequencies is modeled after the tables in Part 90, Sections 90.20 and 90.35. Experience has shown that the Part 90 table of frequencies can be used and understood by licensees, coordinators, manufacturers, and the Commission. Special limitations for certain frequencies are clearly noted at the bottom of the table. Because WT Docket 99-87 will require all PLMRS licensees to convert to narrow band operation by January 1, 2013, and the 152–153 MHz Part 74 Subpart D frequencies are secondary to PLMRS, the table shows a maximum bandwidth of 15 kHz for these channels. Note that no change is being proposed for the RPU frequencies exclusive to Puerto Rico and the Virgin Islands.

15. EIBASS recognizes that a search of the ULS shows licensed center frequencies that are neither “old” center frequencies, or from the list of “new” segments, or on our proposed table of

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

frequencies. EIBASS proposes that licensees on these particular frequencies should out of fairness be grandfathered, and those licensees should be encouraged to work with their local Part 74 database administrator to migrate to one of the center frequencies shown in our proposed table. EIBASS also recognizes that there are some current RPU licenses showing bandwidths incompatible with either the “new” segments or the proposed table. EIBASS similarly proposes that licensees using these non-standard bandwidths be grandfathered, and again encouraged to shift their operations to appropriate bandwidths with the help of the local BAS database administrator.<sup>8</sup>

16. EIBASS recognizes the long-standing and important role the Society of Broadcast Engineers, Inc. (SBE) voluntary frequency coordination programs and stand-alone BAS coordination groups such as NCFCC, SCFCC and Washington Executive Broadcast Engineers (WEBE)<sup>9</sup> have had in facilitating the management of Part 74, Subpart D, RPU spectrum. Spectrum usage among markets is different and the local frequency coordination facilitators have intimate *local* knowledge, based on decades of *local* experience, to help licensees make the best use of the limited BAS spectrum. There can be no single nationwide plan that will be as spectrum efficient as the present program based on local facilitation of frequency coordination that began in 1976. For this reason EIBASS notes that the concurrence of the local coordination facilitator will be required for many of the channels listed in the proposed table.

### **III. The RPU Rules Should Be Updated to Allow Any Type of Digital Modulation**

17. Section 74.462 of the FCC Rules (Authorized Bandwidth and Emissions) allows RPU stations usage of various forms of amplitude modulation (emission designators A1A, A1B, A1D, A1E A2A, A2B, A2E and A3E) and various forms of frequency modulation (emission designators F1A, F1B, F1D, F1E, F2A, F2B, F2D, F3E and F9E). While the “1” and “2” in the emission designator signify certain types of digital modulation,<sup>10</sup> modern Part 90 digital radios also use other forms of digital modulation, including time-division multiplex.<sup>11</sup> Similarly,

---

<sup>8</sup> Of course, if the “oddball” frequency or bandwidth are not accurate, and conventional center frequencies and/or bandwidths are actually in use, then the RPU licensee should update its record in the ULS.

<sup>9</sup> See <http://www.webe.org/>

<sup>10</sup> From Section 2.201 of the FCC rules, a “1” second symbol emission designator means “a single channel of quantized or digital information *without* the use of a modulating sub-carrier, excluding time-division multiplex,” and a “2” second symbol emission designator means “a single channel containing quantized or digital information *with* the use of a modulating sub-carrier, excluding time-division multiplex.”

<sup>11</sup> Digital radios using time-division multiplex would have either a “7” as the second emission symbol, meaning “two or more channels containing quantized or digital information,” or “X”, meaning “cases not otherwise covered.”

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

Section 74.464 (Modulation Requirements) mentions only amplitude modulation and frequency modulation. EIBASS believes that “digital modulation” should be explicitly added, to allow broadcasters to take advantage of two-way radios using newer and more efficient digital technologies, when the problem of digital latency is not a factor.

18. EIBASS notes that in the MM Docket 84-280 rulemaking<sup>12</sup>, extensive comments were made on the suitability of amplitude companded sideband (ACSB) for land mobile stations. This technology was proven to be unworkable and at this date no equipment is available with this form of modulation. In addition, no mention was made of any digital emission in the November 15, 1984, MM Docket 84-280 R&O, and since then the industry has adopted several different forms of digital modulation.

19. Thus, EIBASS proposes that Section 74.462 be amended to allow any emission designator, and that Section 74.463 (Modulation Requirements) be amended to explicitly mention digital modulation.

20A. EIBASS realizes that today there are multiple competing digital land mobile modulation schemes:

20B. **ANSI/TIA-102A (P25):** Based on the Association of Public Safety Communications Officials (APCO) Project 25. EIBASS understands P25 to be a suite of standards for public safety digital radios, for use by both federal and non-federal government agencies. Generally this is the only digital radio standard acceptable if Federal funding for the radio system is involved.

20C. **Trans-European Trunked Radio (TETRA):** These radios are based on the European Technical Standards Institute (ETSI) EN300 392 suite of standards and use a four-slot 25 kHz-wide time division multiple access (TDMA) modulation scheme.

20D. **Next Generation Digital Network (NXDN):**<sup>13</sup> NXDN was chosen as the digital modulation standard for the U.S. railroad industry and is being increasingly used by the business community; NXDN is a four-level frequency shift keying (4FSK) algorithm, with frequency

---

<sup>12</sup> *Amendment of Frequency Assignment Procedures in the Broadcast Remote Pickup Service to Facilitate More Efficient Use of Available Spectrum.*

<sup>13</sup> A term trademarked by Icom Incorporated (products marked as “IDAS”) and Kenwood Corporation (products marked as “Nexedge”).

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

division multiple access (FDMA) and AMBE+2 voice coding,<sup>14</sup> thereby enabling common air protocol (CAI) communications. Emission designators are 4K00F1E (6.25 kHz spaced digital voice channels); 4K00F1D (6.25 kHz spaced digital + data channels); 4K00F1W (6.25 kHz-spaced voice + data channels); 4K00F2D (6.25 kHz spaced analog carrier wave identification channels); 8K30F1E (12.5 kHz spaced digital voice channels); and 8K30F1D (12.5 kHz spaced digital data), 8K30F1W (12.5 kHz spaced wide voice + data channels). NXDN radios are also capable of operating in the conventional narrow band 12.5-kHz and wide band 25-kHz wide analog FM modes.

20E. **Digital Private Mobile Radio (dPMR):** dPMR is based on the ETSI standards TS102 490 and TS102 658 for mobile digital radios. While based on 4FSK and FDMA, dPMR uses a different protocol and voice coder (vocoder) than NXDN.

20F. **Digital Mobile Radio (DMR):**<sup>15</sup> Radios using the DMR mode employ 4FSK modulation, an AMBE+2 vocoder, and a 2-slot TDMA scheme using 12.5 kHz wide digital channels, pursuant to ETSI standard TS102 361. Emission designators are 7K60FXD (data only); 7K60FXE (data & digital voice); 11K0F3E (narrowband analog voice); and 16K0F3E (wideband analog voice). DMR radios, like NXDN radios, are also capable of operating in a conventional narrow band 12.5-kHz and wide band 25-kHz wide analog FM mode.

21. Because of these competing digital systems, and since there is no requirement (or, generally, need) for interoperability between BAS licensees, and the inevitability of new and improved digital modulation schemes in the future, EIBASS is not proposing that any particular digital radio modulation scheme be required for RPU operations, only that RPU licensees be allowed to license digital emission(s) if they wish. To that end, EIBASS proposes that all mention of specific emission designators be removed from the Part 74, Subpart D rules and replaced with wording taken from Part 74, Subpart H: “Any form of modulation may be used.” The only restriction should be on occupied bandwidth.

22. However, for coordination and licensing EIBASS proposes that applicants must continue to state the emission designator on their application. In addition, equipment must be FCC Certified<sup>16</sup> and must meet the appropriate emission mask for the proposed bandwidth. EIBASS

---

<sup>14</sup> A term trademarked by Digital Voice Systems, Inc. AMBE digitizes 300 Hz to 3 kHz “toll quality” audio with data rates between 2 and 4.8 kbps.

<sup>15</sup> In the United States, radios using this standard are marketed by Motorola under the MOTOTRBO name.

<sup>16</sup> EIBASS notes that in the ET Docket 97-94 rulemaking, the Commission replaced Type Acceptance with Certification. Effective October 8, 1998, Part 90 two-way radios became subject to the Certification

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

believes that the existing Section 90.210 Emission Mask B for 25 kHz channels, Emission Mask D for 12.5 kHz channels, and Emission Mask E for 6.25 kHz channels, would be appropriate. For the 100 and 50 kHz wideband channels the existing Section 74.462(c) emission mask would continue to be appropriate. EIBASS accordingly proposes a revised Section 74.462 as shown in the attached Figure 4.

### **IV. Modification of Section 74.482 (Station Identification)**

23. Allowing digital modulation will also require a revision to Section 74.482 of the FCC rule (Station Identification). Section 74.482(e) states that RPU stations using F1E or G1E<sup>17</sup> emissions (*i.e.*, digitized voice) transmit station identification (ID) in F3E analog mode or in International Morse code using FSK, once every 15 minutes. This FCC rule needs to be amended to cover all forms of commercially-available digital land mobile radios, and worded broadly enough so that the rule remains valid as new forms of digital signals are developed.

24. From a practical standpoint, when RPU licensees operate with analog modulation it is relatively easy to identify them. The usual players in a radio or TV market stay on their frequency and everybody in that market knows who is where. No special form of ID is needed when troubleshooting problems. A frequency coordinated itinerant user is on defined channel(s) and gives the local BAS facilitator contact numbers. Again, no ID is needed to troubleshoot a problem. It is the uncoordinated itinerant that can be a problem. All of a sudden there is a carrier that may or may not have program material. If there is program material, it may be music, background noise and conversation, or no modulation at all for lengthy intervals on IFB carriers. In these cases, the local BAS facilitator/local users don't know who is causing the interference or how to contact them. In most cases, the quickest method of finding an unknown interfering user is by listening to the transmissions. Based on what is heard, it is sometimes possible to figure out who the unknown user is and solve the problem.

25. The problem changes significantly when users operate with digital modulation. In many cases it is unknown how a third party can be assured of the ability to decode the station ID portion of a digital signal. For example, for the DMR protocol, the receiver is muted unless the user knows the frequency, the "color code" (the digital equivalent of coded squelch), the timeslot

---

process. In accordance with Sections 2.007 and 2.911 of the FCC rules, though, test data must still be submitted by the manufacturer to the Commission, and the Commission will still generate a radio equipment Certification number.

<sup>17</sup> It is perplexing to EIBASS that G1E emission is not listed Section 74.462 as an allowable emission for RPU stations, yet is mentioned in Section 74.482(e).

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

and in some cases, an encryption key. But a third party trying to identify a “mystery” digital RPU signal is unlikely to have this information; much less a radio that could make use of it.

26. Section 90.425(b) of the PLMR rules require that station identification be transmitted in either unscrambled voice mode, or by using International Morse code between 20 and 25 words per minute (WPM), using 1,200 Hertz tone. EIBASS notes that in its August 13, 2007, comments to WT Docket 07-100, Motorola, Inc. (Motorola) asked the Commission to update this rule to allow identification using “digital modulation.”<sup>18</sup> EIBASS further notes that on July 12, 2011, Kenwood USA Corporation (Kenwood) filed a request for a blanket waiver of Section 90.425(b) to allow PLMRS stations using digital modulation to transmit their station IDs using digital modulation.<sup>19</sup>

27. EIBASS believes that a better method of identifying digital signals, regardless of the type of type of digital modulation and/or any encryption employed, is the use of a watermark ID, as adopted in the Advanced Television Systems Committee (ATSC) A/82 Data Return Link (DRL) standard.<sup>20</sup> That technique “overlays” a pre-defined and simple digital protocol to an incoming digital electronic news gathering (ENG) signal that identifies the transmission regardless of the many permutations of digital modulation, payload encryption, symbol rate, bit rate, or the various amounts of forward error correct (FEC) that might be employed.<sup>21</sup> Details of the applicable-to-all-flavors of digital ENG signals watermark ID are given in the *A/82 Annex A: D-ENG Feeder Link Identification Watermark*.

28. While the matter of digital PLMRS station identification is still an open issue in the WP Docket 07-100 rulemaking (else Motorola and Kenwood would not have needed to have filed their requests to allow digital identification of transmitters using digital modulation<sup>22</sup>), and while EIBASS realizes that it is raising the watermark ID approach late in that rulemaking, EIBASS submits that it is important that Section 74.482 of the Part 74, Subpart D, RPU rules adopt a

---

<sup>18</sup> Motorola comments, at Page 13.

<sup>19</sup> Kenwood waiver request, at Pages 1 and 9.

<sup>20</sup> The *A/82 Automatic Transmitter Power Control (ATPC) Data Return Link (DRL) Standard* is available on the ATSC web site, at <http://www.atsc.org/cms/index.php/standards/published-standards/61-atsc-a82-standard>.

<sup>21</sup> Section 4.5.2 of the A/82 Standard notes “ENG COFDM transmitters may use a watermark signal independently of whether they interface with a DRL system. This permits identification of a noise-like digital signal without having to know the digital coding (e.g., the FEC settings) or the incoming feed. A watermark station identification can also be used with encrypted feeds. That is, a watermark signal embedded in a digital ENG signal can provide basic station identification information (e.g., “KXYZ-TV, Truck 5”) without needing to decode the program content.”

<sup>22</sup> See the April 13, 2007, Motorola filing, and the July 12, 2011, Kenwood filing, to WT Docket 07-100.

## **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

station ID requirement that allows use of commercially available, off-the-shelf digital two-way radios but is still able to be universally decoded to identify interfering transmitters. Therefore, EIBASS proposes that whatever language is ultimately adopted for Section 90.425 of the Part 90 PLMRS rules also be adopted for the Part 74 RPU rules. However, there should be a grandfather provision to cover digital radios manufactured prior to the effective date of any forthcoming digital station ID rule through their useful life cycle.<sup>23</sup>

### **V. Summary**

29. EIBASS proposes that the RPU center frequencies created by the ET Docket 01-75 rulemaking should be revised, so as to allow broadcasters use of the center frequencies necessary to successfully stack 6.25 kHz wide channels into whatever bandwidth is needed, to split 25 kHz wide channels into either 6.25 kHz or 12.5 kHz wide channels if necessary, and additionally use modern, dual-modulation capable, Part 90 radios. The Commission should allow, but not require, digital modulation on all of the RPU channels. Finally, although EIBASS would like to see Part 90 digital radios adopt a universally decodable watermark form of station identification that would work with any digital coding scheme, the Part 74, Subpart D, RPU rules should apply the applicable provisions ultimately adopted in the WP Docket 07-100 rulemaking.

---

<sup>23</sup> EIBASS suggests “useful life cycle” be defined as ending when the manufacturer of the radio formally ceases parts support.

# **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

## **VI. List of Figures**

30. The following figure has been prepared as a part of this EIBASS Petition for Rulemaking:

1. Figure showing the RPU channel splits adopted in the ET Docket 01-75 rulemaking vs. Part 90 channel splits.
2. Example of RPU application “return” letter for a center-frequency problem.
3. Figure showing proposed new text for Section 74.402 (Frequency Assignment) of the FCC rules.
4. Figure showing proposed new text for Sections 74.462 (Authorized Bandwidths and Emissions) of the FCC rules.

Respectfully submitted,

/s/ Dane E. Ericksen, P.E., CSRTE, 8-VSB, CBNT  
EIBASS Co-Chair  
Hammett & Edison, Inc., Consulting Engineers  
San Francisco, CA

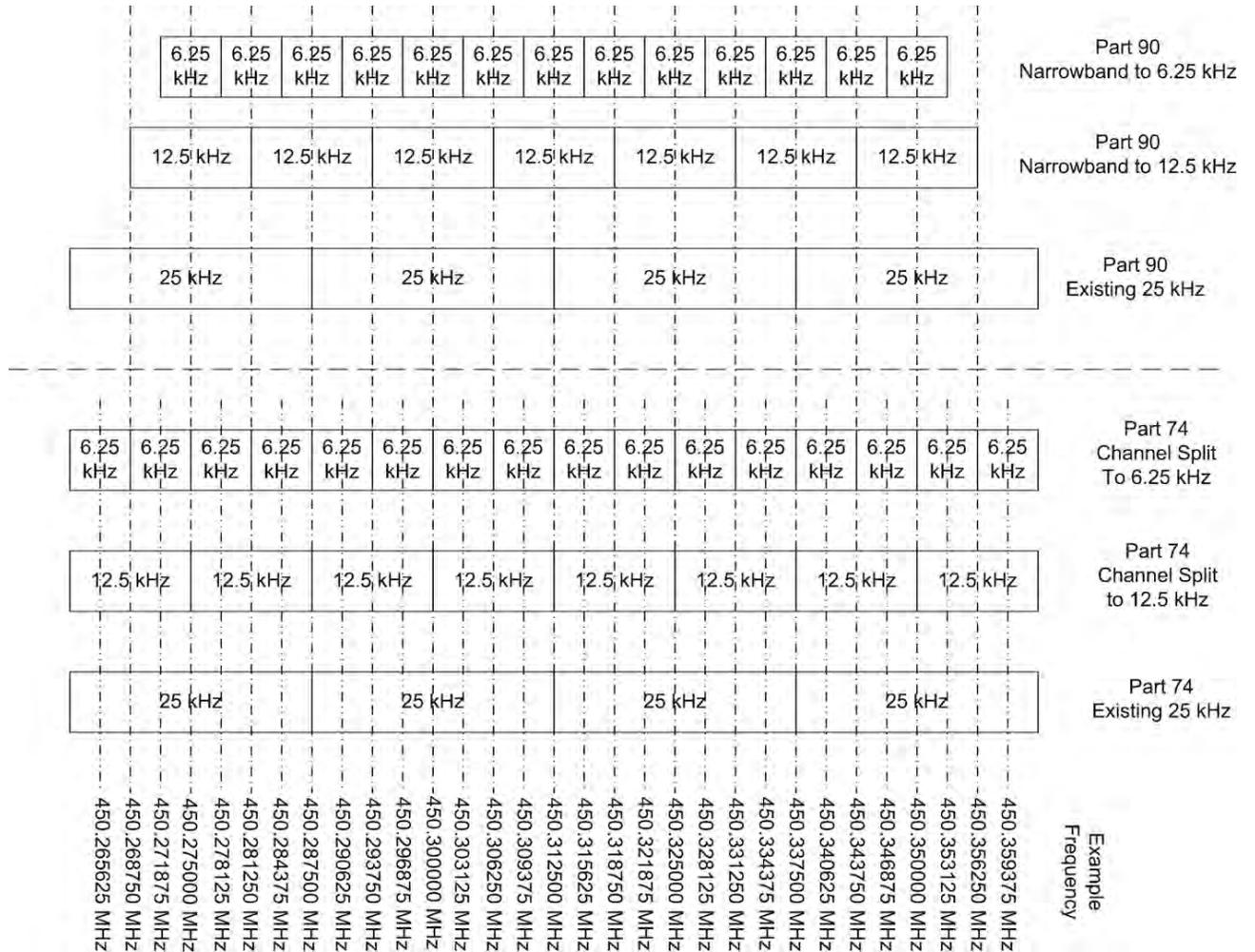
/s/ Richard A. Rudman, CPBE  
EIBASS Co-Chair  
Remote Possibilities  
Santa Paula, CA

October 4, 2011

EIBASS  
18755 Park Tree Lane  
Sonoma, CA 94128  
707/996-5200  
dericksen@h-e.com

# EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations

## Part 90 vs. Part 74 Channel Splitting



# EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations

## Example of RPU "Return" Letter for Center Frequency Problem



### Federal Communications Commission

Wireless Telecommunications Bureau  
1270 Fairfield Road  
Gettysburg, PA 17325-7245

#### NOTICE OF RETURN

Date: 09/10/2011  
Reference No.: 5214410  
File No.:   
Radio Service: RP  
Call Sign:  
Market Area:  
FAC#:

Re:

Your application is in a return status for the reason(s) indicated below. You must file an Amendment to your application referenced above using FCC Form 601, 602, 603, 605 or 608, as appropriate, to provide the requested information before the FCC will resume processing your application. Amending your application without making all the necessary changes and/or providing the requested information may result in dismissal of your application pursuant to Section 1.934 for failure to prosecute. If you do not file an Amendment to your application within 60 days of the date at the top of this letter, your application will be Dismissed. If a fee is submitted with the amendment, refer to the Fee Filing Guide for the proper mailing address in St. Louis, MO. Please note: This return notice may be sent to multiple parties to the application such as the applicant, the point of contact, and/or the coordinator. Please coordinate your response to this return notice to ensure that only one amendment to the application is filed. Commercial Radio Operator applicants should return this notice along with the amended FCC Form 605 and any attachments including PPC and photographs in the package when resubmitting.

Certain services are subject to mandatory electronic filing pursuant to Section 1.913. For all other services, you may file your application either electronically or manually, but not both. Electronic filing is recommended for the few radio services where manual filing is permitted. For information on how to file electronically, visit the website at <http://wireless.fcc.gov/uls>. If you wish to file your application manually, application forms can be obtained from the FCC's website at <http://www.fcc.gov/formpage.html>, by calling the FCC's Forms Distribution Center 800-418-FORM (800-418-3676), or from FCC's Fax Information System by dialing (202) 418-0177. Amendments submitted manually should be mailed to Federal Communications Commission, 1270 Fairfield Road, Gettysburg, PA 17325-7245. Overnight courier and hand delivered amendments should be sent to Federal Communications Commission, 1280 Fairfield Road, Gettysburg, PA 17325. For additional assistance, you may visit the website at <http://esupport.fcc.gov>. You may also call the FCC at (877) 480-3201 (TTY 717-338-2824). To provide quality service and ensure security, all telephone calls are recorded.

Your application is returned due to the frequency and bandwidth selection. Please review Rule Section 74.402(b) & 74.462. Pursuant to 74.402(b)(4), you may stack up to eight 6.25 kHz UHF segments to form a channel. The bandwidth emission of 25K0F3E and the center frequencies 450.300 MHz, 450.400 MHz, 455.300 MHz, and 455.400 MHz do not follow the frequency assignment.

Under the Part 74 rulemaking, which became effective 4/16/2003, new RPU stations have to comply with the new narrowband channels of 74.402. Station authorized prior to the effective date 4/16/2003 are grandfathered for 3 years until 4/16/2006 and

# EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations

## Example of RPU “Return” Letter for Center Frequency Problem

can continue to operate on a secondary basis thereafter. Your application is returned to allow you an opportunity to amend your operation to frequencies which follow the new channel plan of 74.402.

Please reference Rule 74.402 regarding frequency assignment. Per 74.402; when an even amount of channels are stacked, the channel will be assigned by a frequency half way between those listed. Please amend the frequency data on your application by modifying the center frequency and/or bandwidth. (Example: You may select 25K0F3E with frequency 450.303125 MHz).

# EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations

## Proposed Revised Section 74.402

### §74.402 Authorized Frequencies

Operation on any channels listed in this section shall be in accordance with the “priority of use” provisions in §74.462, except as noted by Limitation 9.

(a) The following channels (except 1606, 1622, and 1646) may be assigned for use by broadcast remote pickup stations using any emission that will be in accordance with the provisions of §74.462.

#### (1) MF Channels

Center Frequency kHz	Maximum Bandwidth, kHz	Emission	Limitation
1,606	10	A3E	1
1,622	10	A3E	
1,646	10	A3E	

#### (2) HF Channels

Center Frequency MHz	Maximum Bandwidth, kHz	Emission	Limitation
25.87	40	Any	2
25.91	40	Any	2
25.95	40	Any	2
25.99	40	Any	2
26.03	40	Any	2
26.07	20	Any	2
26.09	20	Any	2
26.11	20	Any	
26.13	20	Any	
<i>etc.</i>			
26.31	20	Any	
26.33	20	Any	
26.35	20	Any	
26.37	20	Any	
26.39	20	Any	
26.41	20	Any	
26.43	20	Any	
26.45	20	Any	
26.47	20	Any	

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

(3) VHF Channels

Center Frequency MHz	Maximum Bandwidth, kHz	Emission	Limitation
152.8625	7.5	Any	3, 4, 5, 10
152.86625	7.5	Any	3, 4, 5, 10
152.870	15.0	Any	3, 4, 5, 10
152.87375	7.5	Any	3, 4, 5, 10
152.8775	15.0	Any	3, 4, 5, 10
152.88125	7.5	Any	3, 4, 5, 10
152.885	15.0	Any	3, 4, 5, 10
152.8875	7.5	Any	3, 4, 5, 10
152.8925	15.0	Any	3, 4, 5, 10
152.89625	7.5	Any	3, 4, 5, 10
152.9000	15.0	Any	3, 4, 5, 10
152.90375	7.5	Any	3, 4, 5, 10
152.9075	15.0	Any	3, 4, 5, 10
152.91125	7.5	Any	3, 4, 5, 10
152.915	15.0	Any	3, 4, 5, 10
152.91875	7.5	Any	3, 4, 5, 10
152.9225	15.0	Any	3, 4, 5, 10
152.92625	7.5	Any	3, 4, 5, 10
152.930	15.0	Any	3, 4, 5, 10
152.93375	7.5	Any	3, 4, 5, 10
152.9375	15.0	Any	3, 4, 5, 10
152.94125	7.5	Any	3, 4, 5, 10
152.945	15.0	Any	3, 4, 5, 10
152.94875	7.5	Any	3, 4, 5, 10
152.9525	15.0	Any	3, 4, 5, 10
152.95625	7.5	Any	3, 4, 5, 10
152.960	15.0	Any	3, 4, 5, 10
152.96385	7.5	Any	3, 4, 5, 10
152.9675	15.0	Any	3, 4, 5, 10
152.97125	7.5	Any	3, 4, 5, 10
152.975	15.0	Any	3, 4, 5, 10
152.97875	7.5	Any	3, 4, 5, 10
152.9825	15.0	Any	3, 4, 5, 10
152.98625	7.5	Any	3, 4, 5, 10
152.990	15.0	Any	3, 4, 5, 10
152.99375	7.5	Any	3, 4, 5, 10
152.9975	15.0	Any	3, 4, 5, 10
153.00125	7.5	Any	3, 4, 5, 10

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

153.005	15.0	Any	3, 4, 5, 10
153.00875	7.5	Any	3, 4, 5, 10
153.0125	15.0	Any	3, 4, 5, 10
153.01625	7.5	Any	3, 4, 5, 10
153.020	15.0	Any	3, 4, 5, 10
153.02375	7.5	Any	3, 4, 5, 10
153.0275	15.0	Any	3, 4, 5, 10
153.03125	7.5	Any	3, 4, 5, 10
153.035	15.0	Any	3, 4, 5, 10
153.03875	7.5	Any	3, 4, 5, 10
153.0425	15.0	Any	3, 4, 5, 10
153.04625	7.5	Any	3, 4, 5, 10
153.050	15.0	Any	3, 4, 5, 10
153.05375	7.5	Any	3, 4, 5, 10
153.0575	15.0	Any	3, 4, 5, 10
153.06125	7.5	Any	3, 4, 5, 10
153.065	15.0	Any	3, 4, 5, 10
153.06875	7.5	Any	3, 4, 5, 10
153.0725	15.0	Any	3, 4, 5, 10
153.07625	7.5	Any	3, 4, 5, 10
153.090	15.0	Any	3, 4, 5, 10
153.08375	7.5	Any	3, 4, 5, 10
153.0875	15.0	Any	3, 4, 5, 10
153.09125	7.5	Any	3, 4, 5, 10
153.095	15.0	Any	3, 4, 5, 10
153.09875	7.5	Any	3, 4, 5, 10
153.1025	15.0	Any	3, 4, 5, 10
153.10625	7.5	Any	3, 4, 5, 10
153.110	15.0	Any	3, 4, 5, 10
153.11375	7.5	Any	3, 4, 5, 10
153.1175	15.0	Any	3, 4, 5, 10
153.12125	7.5	Any	3, 4, 5, 10
153.125	15.0	Any	3, 4, 5, 10
153.12875	7.5	Any	3, 4, 5, 10
153.1325	15.0	Any	3, 4, 5, 10
153.13625	7.5	Any	3, 4, 5, 10
153.140	15.0	Any	3, 4, 5, 10
153.14375	7.5	Any	3, 4, 5, 10
153.1475	15.0	Any	3, 4, 5, 10
153.15125	7.5	Any	3, 4, 5, 10
153.155	15.0	Any	3, 4, 5, 10
153.15875	7.5	Any	3, 4, 5, 10

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

153.1625	15.0	Any	3, 4, 5, 10
153.16625	7.5	Any	3, 4, 5, 10
153.170	15.0	Any	3, 4, 5, 10
153.17375	7.5	Any	3, 4, 5, 10
153.1775	15.0	Any	3, 4, 5, 10
153.18125	7.5	Any	3, 4, 5, 10
153.185	15.0	Any	3, 4, 5, 10
153.1875	7.5	Any	3, 4, 5, 10
153.1925	15.0	Any	3, 4, 5, 10
153.19625	7.5	Any	3, 4, 5, 10
153.200	15.0	Any	3, 4, 5, 10
153.20375	7.5	Any	3, 4, 5, 10
153.2075	15.0	Any	3, 4, 5, 10
153.21125	7.5	Any	3, 4, 5, 10
153.215	15.0	Any	3, 4, 5, 10
153.21875	7.5	Any	3, 4, 5, 10
153.2225	15.0	Any	3, 4, 5, 10
153.22625	7.5	Any	3, 4, 5, 10
153.230	15.0	Any	3, 4, 5, 10
153.23375	7.5	Any	3, 4, 5, 10
153.2375	15.0	Any	3, 4, 5, 10
153.24125	7.5	Any	3, 4, 5, 10
153.245	15.0	Any	3, 4, 5, 10
153.24875	7.5	Any	3, 4, 5, 10
153.2525	15.0	Any	3, 4, 5, 10
153.25625	7.5	Any	3, 4, 5, 10
153.260	15.0	Any	3, 4, 5, 10
153.28375	7.5	Any	3, 4, 5, 10
153.2675	15.0	Any	3, 4, 5, 10
153.27125	7.5	Any	3, 4, 5, 10
153.275	15.0	Any	3, 4, 5, 10
153.27875	7.5	Any	3, 4, 5, 10
153.2825	15.0	Any	3, 4, 5, 10
153.28625	7.5	Any	3, 4, 5, 10
153.290	15.0	Any	3, 4, 5, 10
153.29375	7.5	Any	3, 4, 5, 10
153.2975	15.0	Any	3, 4, 5, 10
153.30125	7.5	Any	3, 4, 5, 10
153.305	15.0	Any	3, 4, 5, 10
153.30875	7.5	Any	3, 4, 5, 10
153.3125	15.0	Any	3, 4, 5, 10
153.31625	7.5	Any	3, 4, 5, 10

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

153.320	15.0	Any	3, 4, 5, 10
153.32375	7.5	Any	3, 4, 5, 10
153.3275	15.0	Any	3, 4, 5, 10
153.33125	7.5	Any	3, 4, 5, 10
153.335	15.0	Any	3, 4, 5, 10
153.33875	7.5	Any	3, 4, 5, 10
153.3425	15.0	Any	3, 4, 5, 10
153.34625	7.5	Any	3, 4, 5, 10
153.350	15.0	Any	3, 4, 5, 10
153.35375	7.5	Any	3, 4, 5, 10
153.3575	15.0	Any	3, 4, 5, 10

\* \* \* \* \*

160.8600	7.5	Any	6, 10
160.86375	7.5	Any	6, 10
160.8675	7.5	Any	6, 10
160.87125	7.5	Any	6, 10
160.875	15.0	Any	6, 10
160.87875	7.5	Any	6, 10
160.8825	7.5	Any	6, 10
160.88625	7.5	Any	6, 10
160.890	30.0	Any	6, 10
160.89375	7.5	Any	6, 10
160.8975	7.5	Any	6, 10
160.90125	7.5	Any	6, 10
160.905	15.0	Any	6, 10
160.90875	7.5	Any	6, 10
160.9125	7.5	Any	6, 10
160.91625	7.5	Any	6, 10
160.920	30.0	Any	6, 10
160.92375	7.5	Any	6, 10
160.9275	7.5	Any	6, 10
160.93125	7.5	Any	6, 10
160.935	15.0	Any	6, 10
160.93875	7.5	Any	6, 10
160.9425	7.5	Any	6, 10
16094625	7.5	Any	6, 10
160.950	30.0	Any	6, 10
160.95375	7.5	Any	6, 10
160.9575	15.0	Any	6, 10
160.96125	7.5	Any	6, 10

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

160.965	15.0	Any	6, 10
160.96875	7.5	Any	6, 10
160.9725	15.0	Any	6, 10
160.97625	7.5	Any	6, 10
160.980	30.0	Any	6, 10
160.98375	7.5	Any	6, 10
160.9875	15.0	Any	6, 10
160.99125	7.5	Any	6, 10
160.995	15.0	Any	6, 10
160.99875	7.5	Any	6, 10
161.0025	15.0	Any	6, 10
161.00625	7.5	Any	6, 10
161.010	30.0	Any	6, 10
161.01375	7.5	Any	6, 10
161.0175	15.0	Any	6, 10
161.02125	7.5	Any	6, 10
161.025	15.0	Any	6, 10
161.02875	7.5	Any	6, 10
161.0325	15.0	Any	6, 10
161.03625	7.5	Any	6, 10
161.040	30.0	Any	6, 10
161.04375	7.5	Any	6, 10
161.0475	15.0	Any	6, 10
161.05125	7.5	Any	6, 10
161.055	15.0	Any	6, 10
161.05875	7.5	Any	6, 10
161.0625	15.0	Any	6, 10
161.06625	7.5	Any	6, 10
161.070	30.0	Any	6, 10
161.07375	7.5	Any	6, 10
161.0775	15.0	Any	6, 10
161.08125	7.5	Any	6, 10
161.085	15.0	Any	6, 10
161.08875	7.5	Any	6, 10
161.0925	15.0	Any	6, 10
161.09625	7.5	Any	6, 10
161.100	30.0	Any	6, 10
161.10375	7.5	Any	6, 10
161.1075	15.0	Any	6, 10
161.11125	7.5	Any	6, 10
161.115	15.0	Any	6, 10
161.11875	7.5	Any	6, 10

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

161.1225	15.0	Any	6, 10
161.12625	7.5	Any	6, 10
161.130	30.0	Any	6, 10
161.13375	7.5	Any	6, 10
161.1375	15.0	Any	6, 10
161.14125	7.5	Any	6, 10
161.145	15.0	Any	6, 10
161.14875	7.5	Any	6, 10
161.1525	15.0	Any	6, 10
161.15625	7.5	Any	6, 10
161.160	30.0	Any	6, 10
161.16375	7.5	Any	6, 10
161.1675	15.0	Any	6, 10
161.17125	7.5	Any	6, 10
161.175	15.0	Any	6, 10
161.17875	7.5	Any	6, 10
161.1825	15.0	Any	6, 10
161.18625	7.5	Any	6, 10
161.190	30.0	Any	6, 10
161.19375	7.5	Any	6, 10
161.1975	15.0	Any	6, 10
161.20125	7.5	Any	6, 10
161.205	15.0	Any	6, 10
161.20875	7.5	Any	6, 10
161.2125	15.0	Any	6, 10
161.21625	7.5	Any	6, 10
161.220	30.0	Any	6, 10
161.22375	7.5	Any	6, 10
161.2275	15.0	Any	6, 10
161.23125	7.5	Any	6, 10
161.235	15.0	Any	6, 10
161.23875	7.5	Any	6, 10
161.2425	15.0	Any	6, 10
161.24625	7.5	Any	6, 10
161.250	30.0	Any	6, 10
161.25375	7.5	Any	6, 10
161.2575	15.0	Any	6, 10
161.26125	7.5	Any	6, 10
161.265	15.0	Any	6, 10
161.26875	7.5	Any	6, 10
161.2725	15.0	Any	6, 10
161.27625	7.5	Any	6, 10

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

161.280	30.0	Any	6, 10
161.28375	7.5	Any	6, 10
161.2875	15.0	Any	6, 10
161.29125	7.5	Any	6, 10
161.295	15.0	Any	6, 10
161.29875	7.5	Any	6, 10
161.3025	15.0	Any	6, 10
161.30625	7.5	Any	6, 10
161.310	30.0	Any	6, 10
161.31375	7.5	Any	6, 10
161.3175	15.0	Any	6, 10
161.32125	7.5	Any	6, 10
161.325	15.0	Any	6, 10
161.32875	7.5	Any	6, 10
161.3325	15.0	Any	6, 10
161.33625	7.5	Any	6, 10
161.340	30.0	Any	6, 10
161.34375	7.5	Any	6, 10
161.3475	15.0	Any	6, 10
161.35125	7.5	Any	6, 10
161.355	15.0	Any	6, 10
161.35875	7.5	Any	6, 10
161.3625	15.0	Any	6, 10
161.36625	7.5	Any	6, 10
161.370	30.0	Any	6, 10
161.37375	7.5	Any	6, 10
161.3775	15.0	Any	6, 10
161.38125	7.5	Any	6, 10
161.385	15.0	Any	6, 10
161.38875	7.5	Any	6, 10
161.3925	15.0	Any	6, 10
161.39625	7.5	Any	6, 10
161.400	7.5	Any	6, 10

\* \* \* \* \*

161.62875	7.5	Any	4, 7, 10
161.6325	15.0	Any	4, 7, 10
161.63625	7.5	Any	4, 7, 10
161.640	30.0	Any	4, 7, 10
161.64375	7.5	Any	4, 7, 10
161.6475	15.0	Any	4, 7, 10

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

161.65125	7.5	Any	4, 7, 10
161.655	15.0	Any	4, 7, 10
161.65875	7.5	Any	4, 7, 10
161.6625	15.0	Any	4, 7, 10
161.66625	7.5	Any	4, 7, 10
161.670	30.0	Any	4, 7, 10
161.67375	7.5	Any	4, 7, 10
161.6775	15.0	Any	4, 7, 10
161.68125	7.5	Any	4, 7, 10
161.685	15.0	Any	4, 7, 10
161.66875	7.5	Any	4, 7, 10
161.6925	15.0	Any	4, 7, 10
161.69625	7.5	Any	4, 7, 10
161.700	30.0	Any	4, 7, 10
161.70375	7.5	Any	4, 7, 10
161.7075	15.0	Any	4, 7, 10
161.71125	7.5	Any	4, 7, 10
161.715	15.0	Any	4, 7, 10
161.71875	7.5	Any	4, 7, 10
161.7225	15.0	Any	4, 7, 10
161.72625	7.5	Any	4, 7, 10
161.730	30.0	Any	4, 7, 10
161.73375	7.5	Any	4, 7, 10
161.7375	15.0	Any	4, 7, 10
161.74125	7.5	Any	4, 7, 10
161.745	15.0	Any	4, 7, 10
161.74875	7.5	Any	4, 7, 10
161.7525	15.0	Any	4, 7, 10
161.75625	7.5	Any	4, 7, 10
161.760	30.0	Any	4, 7, 10
161.76375	7.5	Any	4, 7, 10
161.7675	15.0	Any	4, 7, 10
161.77125	7.5	Any	4, 7, 10
161.775	15.0	Any	4, 7, 10

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

(4) UHF Channels

Center Frequency MHz	Maximum Bandwidth, kHz	Emission	Limitation
450.0100000	10.000	Any	9, 10
450.0125000	12.500	Any	9, 10
450.0156250	6.250	Any	9, 10, 16
450.0187500	6.250	Any	9, 10, 16
450.0200000	10.000	Any	9, 10
450.0218750	6.260	Any	9, 10, 16
450.0250000	12.500	Any	11
450.0281250	6.250	Any	11, 16
450.0312500	12.500	Any	11
450.0343750	6.250	Any	11, 16
450.0375000	25.000	Any	11
450.0406250	6.250	Any	11, 16
450.0437500	12.500	Any	11
450.0468750	6.250	Any	11, 16
450.0500000	25.000	Any	11
450.0531250	6.250	Any	11, 16
450.0562500	12.500	Any	11
450.0593750	6.250	Any	11, 16
450.0625000	25.000	Any	11
450.0656250	6.250	Any	11, 16
450.0687500	12.500	Any	11
450.0718750	6.250	Any	11, 16
450.0750000	25.000	Any	11
450.0781250	6.250	Any	11, 16
450.0812500	12.500	Any	11
450.0843750	6.250	Any	11, 16
450.0875000	25.000	Any	11
450.0906250	6.250	Any	11, 16
450.0937500	12.500	Any	11
450.0968750	6.250	Any	11, 16
450.1000000	25.000	Any	11
450.1031250	6.250	Any	11, 16
450.1062500	12.500	Any	11
450.1093750	6.250	Any	11, 16
450.1125000	25.000	Any	11
450.1156250	6.250	Any	11, 16
450.1187500	12.500	Any	11
450.1218750	6.250	Any	11, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

450.1250000	25.000	Any	11
450.1281250	6.250	Any	11, 16
450.1312500	12.500	Any	11
450.1343750	6.250	Any	11, 16
450.1375000	25.000	Any	11
450.1406250	6.250	Any	11, 16
450.1437500	12.500	Any	11
450.1468750	6.250	Any	11, 16
450.1500000	25.000	Any	11
450.1531250	6.250	Any	11, 16
450.1562500	12.500	Any	11
450.1593750	6.250	Any	11, 16
450.1625000	25.000	Any	11
450.1656250	6.250	Any	11, 16
450.1687500	12.500	Any	11
450.1718750	6.250	Any	11, 16
450.1750000	25.000	Any	11
450.1781250	6.250	Any	11, 16
450.1812500	12.500	Any	11
450.1843750	6.250	Any	11, 16
450.1875000	25.000	Any	11
450.1906250	6.250	Any	11, 16
450.1937500	12.500	Any	11
450.1968750	6.250	Any	11, 16
450.2000000	25.000	Any	11
450.2031250	6.250	Any	11, 16
450.2062500	12.500	Any	11
450.2093750	6.250	Any	11, 16
450.2125000	25.000	Any	11
450.2156250	6.250	Any	11, 16
450.2187500	12.500	Any	11
450.2218750	6.250	Any	11, 16
450.2250000	25.000	Any	11
450.2281250	6.250	Any	11, 16
450.2312500	12.500	Any	11
450.2343750	6.250	Any	11, 16
450.2375000	25.000	Any	11
450.2406250	6.250	Any	11, 16
450.2437500	12.500	Any	11
450.2468750	6.250	Any	11, 16
450.2500000	25.000	Any	11
450.2531250	6.250	Any	11, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

450.2562500	12.500	Any	11
450.2593750	6.250	Any	11, 16
450.2625000	25.000	Any	11
450.2656250	6.250	Any	11, 16
450.2687500	12.500	Any	11
450.2718750	6.250	Any	11, 16
450.2750000	25.000	Any	11
450.2781250	6.250	Any	11, 16
450.2812500	12.500	Any	11
450.2843750	6.250	Any	11, 16
450.2875000	25.000	Any	11
450.2906250	6.250	Any	11, 16
450.2937500	12.500	Any	11
450.2968750	6.250	Any	11, 16
450.3000000	25.000	Any	11
450.3031250	6.250	Any	11, 16
450.3062500	12.500	Any	11
450.3093750	6.250	Any	11, 16
450.3125000	25.000	Any	11
450.3156250	6.250	Any	11, 16
450.3187500	12.500	Any	11
450.3218750	6.250	Any	11, 16
450.3250000	25.000	Any	11
450.3281250	6.250	Any	11, 16
450.3312500	12.500	Any	11
450.3343750	6.250	Any	11, 16
450.3375000	25.000	Any	11
450.3406250	6.250	Any	11, 16
450.3437500	12.500	Any	11
450.3468750	6.250	Any	11, 16
450.3500000	25.000	Any	11
450.3531250	6.250	Any	11, 16
450.3562500	12.500	Any	11
450.3593750	6.250	Any	11, 16
450.3625000	25.000	Any	11
450.3656250	6.250	Any	11, 16
450.3687500	12.500	Any	11
450.3718750	6.250	Any	11, 16
450.3750000	25.000	Any	11
450.3781250	6.250	Any	11, 16
450.3812500	12.500	Any	11
450.3843750	6.250	Any	11, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

450.3875000	25.000	Any	11
450.3906250	6.250	Any	11, 16
450.3937500	12.500	Any	11
450.3968750	6.250	Any	11, 16
450.4000000	25.000	Any	11
450.4031250	6.250	Any	11, 16
450.4062500	12.500	Any	11
450.4093750	6.250	Any	11, 16
450.4125000	25.000	Any	11
450.4156250	6.250	Any	11, 16
450.4187500	12.500	Any	11
450.4218750	6.250	Any	11, 16
450.4250000	25.000	Any	11
450.4281250	6.250	Any	11, 16
450.4312500	12.500	Any	11
450.4343750	6.250	Any	11, 16
450.4375000	25.000	Any	11
450.4406250	6.250	Any	11, 16
450.4437500	12.500	Any	11
450.4468750	6.250	Any	11, 16
450.4500000	25.000	Any	11
450.4531250	6.250	Any	11, 16
450.4562500	12.500	Any	11
450.4593750	6.250	Any	11, 16
450.4625000	25.000	Any	11
450.4656250	6.250	Any	11, 16
450.4687500	12.500	Any	11
450.4718750	6.250	Any	11, 16
450.4750000	25.000	Any	11
450.4781250	6.250	Any	11, 16
450.4812500	12.500	Any	11
450.4843750	6.250	Any	11, 16
450.4875000	25.000	Any	11
450.4906250	6.250	Any	11, 16
450.4937500	12.500	Any	11
450.4968750	6.250	Any	11, 16
450.5000000	25.000	Any	11
450.5031250	6.250	Any	11, 16
450.5062500	12.500	Any	11
450.5093750	6.250	Any	11, 16
450.5125000	25.000	Any	11
450.5156250	6.250	Any	11, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

450.5187500	12.500	Any	11
450.5218750	6.250	Any	11, 16
450.5250000	25.000	Any	11
450.5281250	6.250	Any	11, 16
450.5312500	12.500	Any	11
450.5343750	6.250	Any	11, 16
450.5375000	25.000	Any	11
450.5406250	6.250	Any	11, 16
450.5437500	12.500	Any	11
450.5468750	6.250	Any	11, 16
450.5500000	25.000	Any	11
450.5531250	6.250	Any	11, 16
450.5562500	12.500	Any	11
450.5593750	6.250	Any	11, 16
450.5625000	25.000	Any	11
450.5656250	6.250	Any	11, 16
450.5687500	12.500	Any	11
450.5718750	6.250	Any	11, 16
450.5750000	25.000	Any	11
450.5781250	6.250	Any	11, 16
450.5812500	12.500	Any	11
450.5843750	6.250	Any	11, 16
450.5875000	25.000	Any	11
450.5906250	6.250	Any	11, 16
450.5937500	12.500	Any	11
450.5968750	6.250	Any	11, 16
450.6000000	25.000	Any	11
450.6031250	6.250	Any	11, 16
450.6062500	12.500	Any	11
450.6093750	6.250	Any	11, 16
450.6125000	25.000	Any	11
450.6156250	6.250	Any	11, 16
450.6187500	12.500	Any	11
450.6218750	6.250	Any	11, 16
450.6250000	25.000	Any	11
450.6281250	6.250	Any	12, 13, 16
450.6312500	12.500	Any	12, 13
450.6343750	6.250	Any	12, 13, 16
450.6375000	25.000	Any	12, 13
450.6406250	6.250	Any	12, 13, 16
450.6437500	12.500	Any	12, 13
450.6468750	6.250	Any	12, 13, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

450.6500000	50.000	Any	12, 13
450.6531250	6.250	Any	12, 13, 16
450.6562500	12.500	Any	12, 13
450.6593750	6.250	Any	12, 13, 16
450.6625000	25.000	Any	12, 13
450.6656250	6.250	Any	12, 13, 16
450.6687500	12.500	Any	12, 13
450.6718750	6.250	Any	12, 13, 16
450.6750000	25.000	Any	12, 13
450.6781250	6.250	Any	12, 13, 16
450.6812500	12.500	Any	12, 13
450.6843750	6.250	Any	12, 13, 16
450.6875000	25.000	Any	12, 13
450.6906250	6.250	Any	12, 13, 16
450.6937500	12.500	Any	12, 13
450.6968750	6.250	Any	12, 13, 16
450.7000000	50.000	Any	12, 13
450.7031250	6.250	Any	12, 13, 16
450.7062500	12.500	Any	12, 13
450.7093750	6.250	Any	12, 13, 16
450.7125000	25.000	Any	12, 13
450.7156250	6.250	Any	12, 13, 16
450.7187500	12.500	Any	12, 13
450.7218750	6.250	Any	12, 13, 16
450.7250000	25.000	Any	12, 13
450.7281250	6.250	Any	12, 13, 16
450.7312500	12.500	Any	12, 13
450.7343750	6.250	Any	12, 13, 16
450.7375000	25.000	Any	12, 13
450.7406250	6.250	Any	12, 13, 16
450.7437500	12.500	Any	12, 13
450.7468750	6.250	Any	12, 13, 16
450.7500000	50.000	Any	12, 13
450.7531250	6.250	Any	12, 13, 16
450.7562500	12.500	Any	12, 13
450.7593750	6.250	Any	12, 13, 16
450.7625000	25.000	Any	12, 13
450.7656250	6.250	Any	12, 13, 16
450.7687500	12.500	Any	12, 13
450.7718750	6.250	Any	12, 13, 16
450.7750000	25.000	Any	12, 13
450.7781250	6.250	Any	12, 13, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

450.7812500	12.500	Any	12, 13
450.7843750	6.250	Any	12, 13, 16
450.7875000	25.000	Any	12, 13
450.7906250	6.250	Any	12, 13, 16
450.7937500	12.500	Any	12, 13
450.7968750	6.250	Any	12, 13, 16
450.8000000	50.000	Any	12, 13
450.8031250	6.250	Any	12, 13, 16
450.8062500	12.500	Any	12, 13
450.8093750	6.250	Any	12, 13, 16
450.8125000	25.000	Any	12, 13
450.8156250	6.250	Any	12, 13, 16
450.8187500	12.500	Any	12, 13
450.8218750	6.250	Any	12, 13, 16
450.8250000	25.000	Any	12, 13
450.8281250	6.250	Any	12, 13, 16
450.8312500	12.500	Any	12, 13
450.8343750	6.250	Any	12, 13, 16
450.8375000	25.000	Any	12, 13
450.8406250	6.250	Any	12, 13, 16
450.8437500	12.500	Any	12, 13
450.8468750	6.250	Any	12, 13, 16
450.8500000	50.000	Any	12, 13
450.8531250	6.250	Any	12, 13, 16
450.8562500	12.500	Any	12, 13
450.8593750	6.250	Any	12, 13, 16
450.8625000	25.000	Any	12, 13
450.8656250	6.250	Any	12, 13, 16
450.8687500	12.500	Any	12, 13
450.8718750	6.250	Any	12, 13, 16
450.8750000	25.000	Any	12, 13
450.8781250	6.250	Any	13, 14, 16
450.8812500	12.500	Any	13, 14
450.8843750	6.250	Any	13, 14, 16
450.8875000	25.000	Any	13, 14
450.8906250	6.250	Any	13, 14, 16
450.8937500	12.500	Any	13, 14
450.8968750	6.250	Any	13, 14, 16
450.9000000	25.000	Any	13, 14
450.9031250	6.250	Any	13, 14, 16
450.9062500	12.500	Any	13, 14
450.9093750	6.250	Any	13, 14, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

450.9125000	25.000	Any	13, 14
450.9156250	6.250	Any	13, 14, 16
450.9187500	12.500	Any	13, 14
450.9218750	6.250	Any	13, 14, 16
450.9250000	100.000	Any	13, 14
450.9281250	6.250	Any	13, 14, 16
450.9312500	12.500	Any	13, 14
450.9343750	6.250	Any	13, 14, 16
450.9375000	25.000	Any	13, 14
450.9406250	6.250	Any	13, 14, 16
450.9437500	12.500	Any	13, 14
450.9468750	6.250	Any	13, 14, 16
450.9500000	25.000	Any	13, 14
450.9531250	6.250	Any	13, 14, 16
450.9562500	12.500	Any	13, 14
450.9593750	6.250	Any	13, 14, 16
450.9625000	25.000	Any	13, 14
450.9656250	6.250	Any	13, 14, 16
450.9687500	12.500	Any	13, 14
450.9718750	6.250	Any	13, 14, 16
450.9750000	25.000	Any	13, 14
450.9781250	6.250	Any	9, 10, 16
450.9800000	10.000	Any	9, 10
450.9812500	12.500	Any	9,10
450.9843750	6.250	Any	9, 10, 16
450.9875000	12.500	Any	9, 10
450.9900000	10.000	Any	9, 10
450.9906250	6.250	Any	9, 10, 16
450.9937500	6.250	Any	9, 10
455.0100000	10.000	Any	9, 10
455.0125000	12.500	Any	9, 10
455.0156250	6.250	Any	9, 10, 16
455.0187500	6.250	Any	9, 10, 16
455.0218750	6.260	Any	9, 10, 16
455.0250000	12.500	Any	11, 15
455.0281250	6.250	Any	11, 15, 16
455.0312500	12.500	Any	11, 15
455.0343750	6.250	Any	11, 15, 16
455.0375000	25.000	Any	11, 15
455.0406250	6.250	Any	11, 15, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

455.0437500	12.500	Any	11, 15
455.0468750	6.250	Any	11, 15, 16
455.0500000	25.000	Any	11, 15
455.0531250	6.250	Any	11, 15, 16
455.0562500	12.500	Any	11, 15
455.0593750	6.250	Any	11, 15, 16
455.0625000	25.000	Any	11, 15
455.0656250	6.250	Any	11, 15, 16
455.0687500	12.500	Any	11, 15
455.0718750	6.250	Any	11, 15, 16
455.0750000	25.000	Any	11, 15
455.0781250	6.250	Any	11, 15, 16
455.0812500	12.500	Any	11, 15
455.0843750	6.250	Any	11, 15, 16
455.0875000	25.000	Any	11, 15
455.0906250	6.250	Any	11, 15, 16
455.0937500	12.500	Any	11, 15
455.0968750	6.250	Any	11, 15, 16
455.1000000	25.000	Any	11, 15
455.1031250	6.250	Any	11, 15, 16
455.1062500	12.500	Any	11, 15
455.1093750	6.250	Any	11, 15, 16
455.1125000	25.000	Any	11, 15
455.1156250	6.250	Any	11, 15, 16
455.1187500	12.500	Any	11, 15
455.1218750	6.250	Any	11, 15, 16
455.1250000	25.000	Any	11, 15
455.1281250	6.250	Any	11, 15, 16
455.1312500	12.500	Any	11, 15
455.1343750	6.250	Any	11, 15, 16
455.1375000	25.000	Any	11, 15
455.1406250	6.250	Any	11, 15, 16
455.1437500	12.500	Any	11, 15
455.1468750	6.250	Any	11, 15, 16
455.1500000	25.000	Any	11, 15
455.1531250	6.250	Any	11, 15, 16
455.1562500	12.500	Any	11, 15
455.1593750	6.250	Any	11, 15, 16
455.1625000	25.000	Any	11, 15
455.1656250	6.250	Any	11, 15, 16
455.1687500	12.500	Any	11, 15
455.1718750	6.250	Any	11, 15, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

455.1750000	25.000	Any	11, 15
455.1781250	6.250	Any	11, 15, 16
455.1812500	12.500	Any	11, 15
455.1843750	6.250	Any	11, 15, 16
455.1875000	25.000	Any	11, 15
455.1906250	6.250	Any	11, 15, 16
455.1937500	12.500	Any	11, 15
455.1968750	6.250	Any	11, 15, 16
455.2000000	25.000	Any	11, 15
455.2031250	6.250	Any	11, 15, 16
455.2062500	12.500	Any	11, 15
455.2093750	6.250	Any	11, 15, 16
455.2125000	25.000	Any	11, 15
455.2156250	6.250	Any	11, 15, 16
455.2187500	12.500	Any	11, 15
455.2218750	6.250	Any	11, 15, 16
455.2250000	25.000	Any	11, 15
455.2281250	6.250	Any	11, 15, 16
455.2312500	12.500	Any	11, 15
455.2343750	6.250	Any	11, 15, 16
455.2375000	25.000	Any	11, 15
455.2406250	6.250	Any	11, 15, 16
455.2437500	12.500	Any	11, 15
455.2468750	6.250	Any	11, 15, 16
455.2500000	25.000	Any	11, 15
455.2531250	6.250	Any	11, 15, 16
455.2562500	12.500	Any	11, 15
455.2593750	6.250	Any	11, 15, 16
455.2625000	25.000	Any	11, 15
455.2656250	6.250	Any	11, 15, 16
455.2687500	12.500	Any	11, 15
455.2718750	6.250	Any	11, 15, 16
455.2750000	25.000	Any	11, 15
455.2781250	6.250	Any	11, 15, 16
455.2812500	12.500	Any	11, 15
455.2843750	6.250	Any	11, 15, 16
455.2875000	25.000	Any	11, 15
455.2906250	6.250	Any	11, 15, 16
455.2937500	12.500	Any	11, 15
455.2968750	6.250	Any	11, 15, 16
455.3000000	25.000	Any	11, 15
455.3031250	6.250	Any	11, 15, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

455.3062500	12.500	Any	11, 15
455.3093750	6.250	Any	11, 15, 16
455.3125000	25.000	Any	11, 15
455.3156250	6.250	Any	11, 15, 16
455.3187500	12.500	Any	11, 15
455.3218750	6.250	Any	11, 15, 16
455.3250000	25.000	Any	11, 15
455.3281250	6.250	Any	11, 15, 16
455.3312500	12.500	Any	11, 15
455.3343750	6.250	Any	11, 15, 16
455.3375000	25.000	Any	11, 15
455.3406250	6.250	Any	11, 15, 16
455.3437500	12.500	Any	11, 15
455.3468750	6.250	Any	11, 15, 16
455.3500000	25.000	Any	11, 15
455.3531250	6.250	Any	11, 15, 16
455.3562500	12.500	Any	11, 15
455.3593750	6.250	Any	11, 15, 16
455.3625000	25.000	Any	11, 15
455.3656250	6.250	Any	11, 15, 16
455.3687500	12.500	Any	11, 15
455.3718750	6.250	Any	11, 15, 16
455.3750000	25.000	Any	11, 15
455.3781250	6.250	Any	11, 15, 16
455.3812500	12.500	Any	11, 15
455.3843750	6.250	Any	11, 15, 16
455.3875000	25.000	Any	11, 15
455.3906250	6.250	Any	11, 15, 16
455.3937500	12.500	Any	11, 15
455.3968750	6.250	Any	11, 15, 16
455.4000000	25.000	Any	11, 15
455.4031250	6.250	Any	11, 15, 16
455.4062500	12.500	Any	11, 15
455.4093750	6.250	Any	11, 15, 16
455.4125000	25.000	Any	11, 15
455.4156250	6.250	Any	11, 15, 16
455.4187500	12.500	Any	11, 15
455.4218750	6.250	Any	11, 15, 16
455.4250000	25.000	Any	11, 15
455.4281250	6.250	Any	11, 15, 16
455.4312500	12.500	Any	11, 15
455.4343750	6.250	Any	11, 15, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

455.4375000	25.000	Any	11, 15
455.4406250	6.250	Any	11, 15, 16
455.4437500	12.500	Any	11, 15
455.4468750	6.250	Any	11, 15, 16
455.4500000	25.000	Any	11, 15
455.4531250	6.250	Any	11, 15, 16
455.4562500	12.500	Any	11, 15
455.4593750	6.250	Any	11, 15, 16
455.4625000	25.000	Any	11, 15
455.4656250	6.250	Any	11, 15, 16
455.4687500	12.500	Any	11, 15
455.4718750	6.250	Any	11, 15, 16
455.4750000	25.000	Any	11, 15
455.4781250	6.250	Any	11, 15, 16
455.4812500	12.500	Any	11, 15
455.4843750	6.250	Any	11, 15, 16
455.4875000	25.000	Any	11, 15
455.4906250	6.250	Any	11, 15, 16
455.4937500	12.500	Any	11, 15
455.4968750	6.250	Any	11, 15, 16
455.5000000	25.000	Any	11, 15
455.5031250	6.250	Any	11, 15, 16
455.5062500	12.500	Any	11, 15
455.5093750	6.250	Any	11, 15, 16
455.5125000	25.000	Any	11, 15
455.5156250	6.250	Any	11, 15, 16
455.5187500	12.500	Any	11, 15
455.5218750	6.250	Any	11, 15, 16
455.5250000	25.000	Any	11, 15
455.5281250	6.250	Any	11, 15, 16
455.5312500	12.500	Any	11, 15
455.5343750	6.250	Any	11, 15, 16
455.5375000	25.000	Any	11, 15
455.5406250	6.250	Any	11, 15, 16
455.5437500	12.500	Any	11, 15
455.5468750	6.250	Any	11, 15, 16
455.5500000	25.000	Any	11, 15
455.5531250	6.250	Any	11, 15, 16
455.5562500	12.500	Any	11, 15
455.5593750	6.250	Any	11, 15, 16
455.5625000	25.000	Any	11, 15
455.5656250	6.250	Any	11, 15, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

455.5687500	12.500	Any	11, 15
455.5718750	6.250	Any	11, 15, 16
455.5750000	25.000	Any	11, 15
455.5781250	6.250	Any	11, 15, 16
455.5812500	12.500	Any	11, 15
455.5843750	6.250	Any	11, 15, 16
455.5875000	25.000	Any	11, 15
455.5906250	6.250	Any	11, 15, 16
455.5937500	12.500	Any	11, 15
455.5968750	6.250	Any	11, 15, 16
455.6000000	25.000	Any	11, 15
455.6031250	6.250	Any	11, 15, 16
455.6062500	12.500	Any	11, 15
455.6093750	6.250	Any	11, 15, 16
455.6125000	25.000	Any	11, 15
455.6156250	6.250	Any	11, 15, 16
455.6187500	12.500	Any	11, 15
455.6218750	6.250	Any	11, 15, 16
455.6250000	25.000	Any	11, 15
455.6281250	6.250	Any	12, 13, 15, 16
455.6312500	12.500	Any	12, 13, 15
455.6343750	6.250	Any	12, 13, 15, 16
455.6375000	25.000	Any	12, 13, 15
455.6406250	6.250	Any	12, 13, 15, 16
455.6437500	12.500	Any	12, 13, 15
455.6468750	6.250	Any	12, 13, 15, 16
455.6500000	50.000	Any	12, 13, 15
455.6531250	6.250	Any	12, 13, 15, 16
455.6562500	12.500	Any	12, 13, 15
455.6593750	6.250	Any	12, 13, 15, 16
455.6625000	25.000	Any	12, 13, 15
455.6656250	6.250	Any	12, 13, 15, 16
455.6687500	12.500	Any	12, 13, 15
455.6718750	6.250	Any	12, 13, 15, 16
455.6750000	25.000	Any	12, 13, 15
455.6781250	6.250	Any	12, 13, 15, 16
455.6812500	12.500	Any	12, 13, 15
455.6843750	6.250	Any	12, 13, 15, 16
455.6875000	25.000	Any	12, 13, 15
455.6906250	6.250	Any	12, 13, 15, 16
455.6937500	12.500	Any	12, 13, 15
455.6968750	6.250	Any	12, 13, 15, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

455.7000000	50.000	Any	12, 13, 15
455.7031250	6.250	Any	12, 13, 15, 16
455.7062500	12.500	Any	12, 13, 15
455.7093750	6.250	Any	12, 13, 15, 16
455.7125000	25.000	Any	12, 13, 15
455.7156250	6.250	Any	12, 13, 15, 16
455.7187500	12.500	Any	12, 13, 15
455.7218750	6.250	Any	12, 13, 15, 16
455.7250000	25.000	Any	12, 13, 15
455.7281250	6.250	Any	12, 13, 15, 16
455.7312500	12.500	Any	12, 13, 15
455.7343750	6.250	Any	12, 13, 15, 16
455.7375000	25.000	Any	12, 13, 15
455.7406250	6.250	Any	12, 13, 15, 16
455.7437500	12.500	Any	12, 13, 15
455.7468750	6.250	Any	12, 13, 15, 16
455.7500000	50.000	Any	12, 13, 15
455.7531250	6.250	Any	12, 13, 15, 16
455.7562500	12.500	Any	12, 13, 15
455.7593750	6.250	Any	12, 13, 15, 16
455.7625000	25.000	Any	12, 13, 15
455.7656250	6.250	Any	12, 13, 15, 16
455.7687500	12.500	Any	12, 13, 15
455.7718750	6.250	Any	12, 13, 15, 16
455.7750000	25.000	Any	12, 13, 15
455.7781250	6.250	Any	12, 13, 15, 16
455.7812500	12.500	Any	12, 13, 15
455.7843750	6.250	Any	12, 13, 15, 16
455.7875000	25.000	Any	12, 13, 15
455.7906250	6.250	Any	12, 13, 15, 16
455.7937500	12.500	Any	12, 13, 15
455.7968750	6.250	Any	12, 13, 15, 16
455.8000000	50.000	Any	12, 13, 15
455.8031250	6.250	Any	12, 13, 15, 16
455.8062500	12.500	Any	12, 13, 15
455.8093750	6.250	Any	12, 13, 15, 16
455.8125000	25.000	Any	12, 13, 15
455.8156250	6.250	Any	12, 13, 15, 16
455.8187500	12.500	Any	12, 13, 15
455.8218750	6.250	Any	12, 13, 15, 16
455.8250000	25.000	Any	12, 13, 15
455.8281250	6.250	Any	12, 13, 15, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

455.8312500	12.500	Any	12, 13, 15
455.8343750	6.250	Any	12, 13, 15, 16
455.8375000	25.000	Any	12, 13, 15
455.8406250	6.250	Any	12, 13, 15, 16
455.8437500	12.500	Any	12, 13, 15
455.8468750	6.250	Any	12, 13, 15, 16
455.8500000	50.000	Any	12, 13, 15
455.8531250	6.250	Any	12, 13, 15, 16
455.8562500	12.500	Any	12, 13, 15
455.8593750	6.250	Any	12, 13, 15, 16
455.8625000	25.000	Any	12, 13, 15
455.8656250	6.250	Any	12, 13, 15, 16
455.8687500	12.500	Any	12, 13, 15
455.8718750	6.250	Any	12, 13, 15, 16
455.8750000	25.000	Any	12, 13, 15
455.8781250	6.250	Any	13, 14, 15, 16
455.8812500	12.500	Any	13, 14, 15
455.8843750	6.250	Any	13, 14, 15, 16
455.8875000	25.000	Any	13, 14, 15
455.8906250	6.250	Any	13, 14, 15, 16
455.8937500	12.500	Any	13, 14, 15
455.8968750	6.250	Any	13, 14, 15, 16
455.9000000	25.000	Any	13, 14, 15
455.9031250	6.250	Any	13, 14, 15, 16
455.9062500	12.500	Any	13, 14, 15
455.9093750	6.250	Any	13, 14, 15, 16
455.9125000	25.000	Any	13, 14, 15
455.9156250	6.250	Any	13, 14, 15, 16
455.9187500	12.500	Any	13, 14, 15
455.9218750	6.250	Any	13, 14, 15, 16
455.9250000	100.000	Any	13, 14, 15
455.9281250	6.250	Any	13, 14, 15, 16
455.9312500	12.500	Any	13, 14, 15
455.9343750	6.250	Any	13, 14, 15, 16
455.9375000	25.000	Any	13, 14, 15
455.9406250	6.250	Any	13, 14, 15, 16
455.9437500	12.500	Any	13, 14, 15
455.9468750	6.250	Any	13, 14, 15, 16
455.9500000	25.000	Any	13, 14, 15
455.9531250	6.250	Any	13, 14, 15, 16
455.9562500	12.500	Any	13, 14, 15
455.9593750	6.250	Any	13, 14, 15, 16

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.402**

455.9625000	25.000	Any	13, 14, 15
455.9656250	6.250	Any	13, 14, 15, 16
455.9687500	12.500	Any	13, 14, 15
455.9718750	6.250	Any	13, 14, 15, 16
455.9750000	25.000	Any	13, 14, 15
455.9781250	6.250	Any	9, 10, 16
455.9800000	10.000	Any	9, 10
455.9812500	12.500	Any	9,10
455.9843750	6.250	Any	9, 10, 16
455.9875000	12.500	Any	9, 10
455.9900000	10.000	Any	9, 10
455.9906250	6.250	Any	9, 10, 16
455.9937500	6.250	Any	9, 10

# **EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies and Allow Digital Modulation for RPU Stations**

## **Proposed Revised Section 74.402**

### Limitations

- 1 Operation is subject to the condition that no harmful interference is caused to the reception of AM broadcast stations.
- 2 Operation is subject to the condition that no harmful interference is caused to stations in the broadcast service.
- 3 Operation is subject to the condition that no harmful interference is caused to stations operating in accordance with the Table of Frequency Allocations set forth in Part 2 of the Commission's Rules and Regulations. Applications for licenses to use frequencies in this band must include statements showing what procedures will be taken to ensure that interference will not be caused to stations in the Industrial Radio Services.
- 4 These frequencies will not be licensed to network entities.
- 5 These frequencies will not be authorized to new stations for use on board aircraft.
6. These frequencies are allocated for assignment to broadcast remote pickup stations in Puerto Rico or the Virgin Islands only. NOTE: These frequencies are shared with Public Safety and Land Transportation Radio Services.
- 7 These frequencies may not be used by broadcast remote pickup stations in Puerto Rico or the Virgin Islands. In other areas, certain existing stations in the Public Safety and Land Transportation Radio services have been permitted to continue operation on these frequencies on condition that no harmful interference is caused to broadcast remote pickup stations.
- 8 Operation on the frequencies 166.25 MHz and 170.15 MHz is not authorized:
  - (i) Within the area bounded on the west by the Mississippi River, on the north by the parallel of latitude 37 degrees 30 minutes N, and radius equal to the air-line distance between Springfield, IL, and Montgomery, AL, subtended between the foregoing west and north boundaries;
  - (ii) Within 150 miles (241 kilometers) of New York City; and,
  - (iii) In Alaska or outside the continental United States; and is subject to the condition that no harmful interference is caused to radio stations in the band 162 – 174 MHz.
- 9 These frequencies are limited to operational communications, including tones for signaling and for remote control and automatic transmission system control and telemetry. Operation of these stations are exempt from "priority of use" provisions in §74.462.
- 10 Use of these frequencies is subject to concurrence from the local area frequency coordinator.
- 11 Use of these frequencies is in accordance with the local area UHF band plan and subject to concurrence from the local area frequency coordinator.
- 12 Users committed to 50 kHz bandwidth and transmitting program material will have primary use of these channels.
- 13 Use subject to concurrence from the local area frequency coordinator and subject to the provision that no interference may be caused to stations transmitting program material.
- 14 Users committed to 100 kHz bandwidth and transmitting program material will have primary use of these channels.
- 15 Mobile only operation, base stations will not be authorized on these frequencies.
- 16 Use limited to not greater than 6.25 kHz bandwidth and must not interfere with existing wider bandwidth licensees.

**EIBASS Petition for Rulemaking To Adopt Revised RPU Center Frequencies  
and Allow Digital Modulation for RPU Stations**

**Proposed Revised Section 74.462**

§74.462 Authorized Bandwidth and Emissions

- (a) Each authorization for a new remote pickup broadcast station or system shall require the use of certificated equipment and such equipment shall be operated in accordance with emission specifications included in the grant of certification and as prescribed in paragraphs (b), (c), and (d) of this section.
- (b) Any form of modulation may be used except as noted in the Table of Frequencies in §74.402. The maximum authorized bandwidth of emissions shall be as shown in the Table of Frequencies in §74.402.
- (c) For emissions on frequencies above 25 MHz with authorized bandwidths up to 30 kHz, the emissions shall comply with the emission mask and transient frequency behavior requirements of §90.210 and §90.214 of this chapter. Specifically, for 30 kHz (VHF) and 25 kHz (UHF) channels the Emission Mask B shall be used; for 15 kHz (VHF) and 12.5 kHz (UHF) channels the Emission Mask C shall be used; and for 7.5 kHz (VHF) and 6.25 kHz (UHF) channels the Emission Mask E shall be used. For all other emissions, the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
- (1) On any frequency removed from the assignment frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB;
  - (2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB;
  - (3) On any frequency removed from the assigned frequency by more than 250 percent on the authorized bandwidth: at least 43 plus  $10 \log_{10}$  (mean output power, in Watts) dB.
- (d) In the event a station's emissions outside its authorized channel cause harmful interference, the Commission may, at its discretion, require the licensee to take such further steps as may be necessary to eliminate the interference.