

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

Permitting Remote Pickup Broadcast Auxiliary Stations to Utilize Modern Digital Technologies)	WT Docket No. 15-36
)	
Petition for Rulemaking Regarding Amendment of Part 74, Subpart D of the Commission’s Rules)	RM-11648
)	
Petition for Rulemaking Regarding Amendment of the Part 74, Subpart D Remote Pickup (RPU) Rules)	RM-11649
)	
Request for Temporary Waiver of Section 74.462 of the Commission’s Rules to Permit Licensees of Remote Pickup Broadcast Auxiliary Stations to Utilize Digital Radio Telephony and Data Emissions)	

To: The Commission

**COMMENTS OF THE SOCIETY OF BROADCAST ENGINEERS,
INCORPORATED**

The Society of Broadcast Engineers, Incorporated (“SBE”)¹ hereby respectfully submits its Comments in response to the *Notice of Proposed Rulemaking* portion of the *Notice of Proposed Rulemaking and Order* in the above-captioned proceeding.² The Notice seeks to enable Broadcast Auxiliary Remote Pickup Station (RPU) licensees under Part 74 of the Commission’s Rules to utilize modern technologies, specifically digital emission equipment that is now prohibited by the Commission’s Rules. The Commission’s proposal was based in large part on

¹ SBE is the national association of broadcast engineers and technical communications professionals, with more than 5,000 members worldwide.

² *Notice of Proposed Rulemaking*, FCC 15-22, 80 Fed. Reg. 11614 (released February 18, 2015) (the “*Notice*”). By virtue of the publication date of March 4, 2015, these comments are timely filed.

SBE's *Petition for Rule Making*, RM-11648, filed November 7, 2011.³ In support of the proposal contained in the Notice to permit these digital emissions for the first time for RPU licensees, and in response to the questions asked by the Commission in the Notice concerning station identification and the like, SBE states as follows:

I. Introduction.

1. SBE is constrained to note that it is highly disconcerting that the Commission has taken more than three years to address the rather straightforward issues raised by SBE in RM-11648. It is even more disconcerting that the Commission's handling of the channel center issue raised in that Petition (which addressed a significant problem for licensees and applicants created by the Commission in 2002⁴) was dealt with summarily. Had the matter been as simple to resolve as the Commission states at paragraphs 12 and 13 of the *Notice of Proposed Rulemaking and Order*, certainly it did not require three years and three months to explain the Commission's argument. Equally troublesome is the denial, after three years and three months of a temporary waiver seeking interim authority to utilize certified, off-the-shelf equipment that is now and has for years been in regular use in both the Land Mobile Radio Service by Part 90 licensees and in the Amateur Radio Service by Part 97 licensees. The Commission's failure in the *Notice of Proposed Rulemaking and Order* to offer even a cursory explanation for the extreme delay in addressing this Temporary Waiver request filed by SBE, and its patently inadequate justification for the denial are inexplicable. This is especially of concern, given that a virtually identical temporary waiver request seeking authority for Amateur Radio Operators to use some of the exact same equipment was *granted* by the Mobility Division of the Wireless Bureau in a far

³ A similar petition was filed at the same time by a small group of individuals called Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS).

⁴ Revisions to Broadcast Auxiliary Service Rules in Part 74 and Conforming Technical Rules for Broadcast Auxiliary Service, Cable Television Relay Service and Fixed Services in Part 74, 78 and 101 of the Commission's Rules, ET Docket No. 01-75, *Report and Order*, 17 FCC Rcd 22979, 23021-23022 ¶¶ 111-112 (2002)

more timely fashion.⁵ Honestly, the Commission's response in this proceeding has been neither responsive nor transparent. It is hoped that it will not be another three years before the Commission gets around to issuing a Report and Order in this proceeding.

2. RM-11648 was very limited in scope and quite straightforward. It sought to facilitate the use by BAS licensees of certain digital voice and data emissions in BAS allocations at VHF and above by Remote Pickup (RPU) Broadcast Stations. It contained proposed revised rules for Subpart D of FCC Rule Part 74. It was intended (1) to facilitate the use of existing, narrowband, spectrum-efficient digital voice and data technology by permitting the use of digital emissions not currently permitted in Subpart D, Part 74 for RPU stations; and (2) to address an anomaly in the Part 74 Rules which was created unintentionally by the FCC in 2002 in ET Docket No. 01-75 relative to licensing of stacked, narrowband RPU channels. SBE was and still is of the view that encouraging the conversion of analog RPU systems to narrowband digital voice technologies at VHF and above, and simplifying the use of stacked, narrowband channels for RPU operation by BAS licensees (and as well encouraging the use of the *minimum necessary occupied bandwidth* for RPU facilities were quite obviously good ideas. The Notice and its accompanying Order, however, after an unprecedented delay, was surprisingly non-responsive to the concerns raised in the petition.

3. SBE's Petition first asked for Part 74 rule changes that would permit BAS licensees to migrate to the use of spectrum-efficient narrowband digital technology and equipment which is now and has been in regular use in the Land Mobile Radio Service for years. Time Division Multiple Access (TDMA) technology and (NXDN) technologies are two examples of emissions

⁵ See the *Order*, DA 13-542, released March 25, 2013. The Temporary Waiver request had been filed by ARRL, the national association for Amateur Radio on October 5, 2012. It permitted the use of Time Division Multiple Access (TDMA) emissions by Amateur Radio licensees who were for years prior to that already permitted to use other digital emission systems including Next Generation Digital Network (NXDN; FDMA narrowband digital emissions).

that can facilitate the gradual conversion from analog voice to narrowband digital voice and data technologies by RPU station licensees. Those emissions should *clearly* be permitted where analog voice and data emissions are now permitted pursuant to Section 74.462 of the Commission's Rules, but they are not. Both TDMA and NXDN are permitted for Part 90 PMRS licensees at VHF and UHF, and have been in regular use for years. TDMA is now permitted in the Amateur Radio Service as well and NXDN has been permitted in that Service for years.⁶ In general, the applications for this equipment by Part 90 and Part 97 licensees are similar to those of Part 74 RPU licensees. SBE requested that Section 74.462 be amended to simply permit any emission that meets the applicable emission mask and bandwidth limitations. This would create the flexibility in the rules necessary to accommodate future digital technologies to which RPU licensees can adapt to their purposes. By enacting such a flexible rule, FCC would have effectuated the policy adopted in 2002 to permit RPU licensees to utilize a "wide variety" of digital modulation schemes.

4. At the same time that the Petition was filed, SBE also filed a temporary waiver request asking that, while SBE's Petition was being considered (and because of the inherent delay in implementing rule changes through normal processes), Section 74.462 of the FCC Rules should be waived in order to permit RPU licensees to immediately begin utilizing: (1) a Motorola TDMA system that is in regular use in the private land mobile radio service and which is also authorized through the Commission's certification program for Part 74 applications; and (2) radios using the NXDN Common Air Interface technology, which is an FDMA (Frequency Division Multiple Access) technology with 4FSK modulation that uses 6.25 kHz channel bandwidths, also already certified in two different manufacturer configurations for Part 74 use.

⁶ See the *Report and Order*, Amendment of Part 97 of the Commission's Rules to Facilitate Use in the Amateur Radio Service of Single Slot Time Division Multiple Access Telephony and Data Emissions, 29 FCC Rcd. 6311 et seq. (2014).

5. Second, SBE's Petition asked that the Commission permit the opportunity for stacking RPU channels in 3.125 kHz segments in the frequency ranges specified in Section 74.402(b)(4), because to do that would eliminate a problem in specifying channel centers in applications for RPU facilities. In the 2002 Report and Order that modified the Part 74 RPU rules in numerous respects, the Commission adopted the channel plan, consistent with the Part 90 channel plan, to utilize 7.5 kHz (stackable) channels in the 150-160 MHz band and 6.25 kHz (stackable) channels in the 450-451 MHz and 455-456 MHz bands. That system was generally workable. However, the unintended consequence of the channel stacking formula relates to the channel centers specified in Rule Section 74.402. That subsection permits the stacking of up to eight, 6.25 kHz channels, which are listed in a table of channel centers beginning at 450.03125 MHz and ending at 455.61875 MHz. The problem is that, if one attempts to stack an *even* number of channels in this list, the applicant must specify as a center frequency a channel that extends to *six decimal places*. The resultant center frequency *cannot* be programmed into many, if not most, analog radios now in use. The Commission regularly returns applications specifying an *offset* channel center for even numbers of stacked channels to assemble a 12.5, 25 or 50 kHz channel. So, the applicant has no choice but to specify an *odd number of channels* in order to obtain a license specifying a channel center that can actually be used and which is specified in the license. So, if, for example, RPU Applicant X really wants to utilize a 25 kHz-wide channel bandwidth for transmission of program material, but cannot specify a center frequency that would result from stacking four adjacent, 6.25 kHz channels specified in Section 74.402(b)(4), Applicant X has no choice but to specify, for example, five stacked channels (31.25 kHz) instead of four (25 kHz); which is more bandwidth than what that applicant needs. Under these circumstances, the process defeats the Commission's narrowbanding goal in the 2002 RPU band plan, since the original

goal was to permit applicants to utilize the *minimum* amount of spectrum necessary for the transmission of program material.⁷ The Order portion of the *Notice of Proposed Rulemaking and Order* states that this is not a real problem because it is acceptable to utilize a channel center that is not actually the channel center that is intended to be used or specified in the license, if it is as close to the licensed channel center as the equipment will allow, and provided that all of the transmissions are within the emission masks specified in Section 74.462. In SBE's view, this explanation could have been provided a long time ago, and in any case, a far more appropriate solution⁸ would have been to afford the opportunity to stack channels in *3.125 kHz segments* in the frequency ranges specified in Section 74.402(b)(4). It is hoped that the Commission will revisit this issue in the future and provide a reasonable solution to this problem. One such solution is to amend Section 74.402 so as to allow center frequency channel offsets.

6. Finally, while reviewing this issue, SBE concluded that there is no longer a need to apply for *new*, 100 kHz RPU channels. SBE is unaware of any off-the-shelf equipment now on the market that permits such a wide bandwidth. The outstanding licenses specifying 100 kHz channel bandwidths should be grandfathered and should be renewed. SBE's petition thus also asked that no new, 100 kHz RPU facilities be licensed after the effective date of an order adopted in this proceeding *absent a showing of need* in individual cases. The Commission seeks comment on this proposal. SBE continues to endorse it.

⁷ Encouraging narrow bandwidth channelization maximizes spectrum efficiency, necessary in the crowded RPU bands.

⁸ In effect, the Commission concluded that it doesn't matter if an applicant specifies a channel center that is not the exact channel center on which it intends to transmit, as long as licensees comply with the applicable emission mask measured from the center frequency specified in the license, and provided that the licensee programs the center frequency as closely to the specified center frequency as the equipment will allow. This is a determination that is not comforting to most broadcast engineers, because it requires a certification by the applicant (often over the signature of a broadcast engineer) on an FCC application of a specified channel center that the applicant does not actually intend to use. That is not a sound regulatory provision, in SBE's view. Instead, there is a continued need to revise the RPU channel center rule as SBE proposed.

II. RPU Digital Emissions and Modulation Requirements.

7. SBE supports the Notice proposal to allow broadcasters to use modern digital technologies such as TDMA and NXDN for RPU operations and to amend Section 74.462 of the Rules to permit RPU stations to use *any digital emission that meets the applicable emissions mask and bandwidth limitations*. It is understood that applicants would still be required to state all emissions they propose to use in their applications and that those emissions would have to be specified in the license. It makes absolutely no sense to restrict digital emissions because as a practical matter in every case, broadcasters will be making use of off-the-shelf equipment that has long been in regular use in the Land Mobile Radio Service. RPU operation is universally, by custom and usage, subject to SBE's frequency coordination procedures and that cooperative, real-time coordination provides the necessary level of compliance that there need be no concern about use of an unspecified digital code that would not be subject to enforcement monitoring. The Commission has never provided any substantive enforcement in the shared RPU bands and the broadcast community has kept its own house in order through SBE's frequency coordination program. The Notice asks what the maximum authorized bandwidth should be, and proposes 50 kilohertz. That appears to be a reasonable maximum authorized bandwidth. It is hoped that most RPU applications could be successfully accommodated with the narrow TDMA and NXDN occupied bandwidths between 4 and 7.5 kHz, and in any case 6.25 kHz channel efficiency is achievable now using equipment with reasonable audio quality. Nevertheless there are instances in which a broadcaster might want higher quality audio and the 50 kHz bandwidth maximum provides that flexibility.

8. The main question in the Notice concerns station identification requirements. This issue has already been addressed in the land mobile radio service relative to VHF and UHF

digital emissions. There is no need to re-create the wheel in this context. Until recently, however, the Part 90 rules did not permit digital emission station identifications. The current rule, Section 90.425(f)(2), provides as follows:

Stations licensed on an exclusive basis in the bands between 150 and 512 MHz that normally employ digital signals for the transmission of data, text, control codes, or digitized voice may be identified by digital transmission of the call sign. A licensee that identifies its call sign in this manner must provide the Commission, upon request, information sufficient to decode the digital transmission and ascertain the call sign transmitted.

This same provision is sufficient to permit monitoring of new digital emission technologies as they develop. More is not required. SBE specifically urges that the Commission not adopt the proposal of EIBASS for requiring use of “watermark IDs” or any other method that vitiates the ability of broadcasters to use off-the-shelf, Part 74 certified TDMA or NXDN equipment and that which may be developed for both Part 90 and Part 74 use in the future. There is no need to treat similar users of identical radios in dissimilar fashion. The above-referenced rule was taken from the 800 and 900 MHz PLMR rules which have long permitted digital identifications.

9. Finally, the Commission asks about SBE’s proposed elimination of newly licensed, 100 kHz bandwidth RPU channels in the future, noting that there is still an option to seek a waiver in individual cases where a 100 kHz RPU channel was necessary for high audio quality program material transmission. The waiver option should be preserved, though it seems unnecessary to license new, 100 KHz bandwidth RPU systems as a matter of course. The Commission should continue to renew RPU licenses which include 100 kHz bandwidths but it would be reasonable to ask for a certification of continued use in connection with those renewal applications as an attachment to those applications.

III. Conclusions.

It is unfortunate that the Commission has not been more responsive to the needs of broadcasters and broadcast engineers in the context of this rulemaking. The “band-aid” response to the channel center issue offered in the Order portion of this proceeding, and the denial after 3 years of a temporary waiver request, *pendente lite*, for the use of already-certified Part 74 digital equipment that has been in widespread use in the Land Mobile Radio Service for many years signals a lack of responsiveness on the part of the Wireless Bureau and the Commission as a whole to the needs of America’s broadcast community. In any case, denial of that waiver at this late date mandates that, as a matter of basic fairness, the Commission should expeditiously resolve the Notice part of this proceeding. There is an obvious benefit in allowing broadcasters to use modern digital technologies such as TDMA and NXDN for RPU operations and in amending Section 74.462 of the Commission’s Rules to permit RPU stations to use any digital emission that meets the applicable emissions mask and bandwidth limitations. In so doing, the Commission should make the same provision for digital RPU station identification that applies to the same equipment used at VHF and UHF by Part 90 licensees.

Accordingly, SBE respectfully urges that the Commission amend the Part 74 RPU rules as per the comments herein.

Respectfully submitted,

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