

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

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In the Matter of)
)
Amendment of Part 73 of the)
Commission's Rules to Permit)
the Introduction of Digital Audio)
Broadcasting in the AM)
and FM Broadcast Services)

Docket No. RM-9395

STATEMENT OPPOSING PETITION FOR RULEMAKING

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STATEMENT OPPOSING PETITION FOR RULEMAKING

On this date, December 22, 1998, Digital Radio Express, Inc., hereafter DRE, a California corporation, with its offices at 1130 Wrigley Way, Milpitas, CA, 95035, provides herein a statement opposing the petition for rulemaking in the matter of "Amendment of Part 73 of the Commission's Rules to Permit the Introduction of Digital Audio Broadcasting in the AM and FM Broadcast Services," docket No. RM-9395, as declared in FCC Public Notice DA 98-2244, dated November 6, 1998.

In its petition entitled "Petition for a Terrestrial Digital Radio Service," USA Digital Radio, hereafter to be known as USADR, requests that the Commission initiate a rulemaking proceeding to develop rules for in-band on-channel (IBOC) digital audio broadcasting (DAB). USADR requests that the Commission undertake the following:

- i) make a finding that IBOC is the most appropriate means to implement DAB in the United States
- ii) establish interference protection criteria with proposed specific emission masks for hybrid and all-digital embodiments
- iii) establish a transition plan from current analog transmission to hybrid analog and digital transmission and finally to all-digital transmission with a proposed 12-year transition period
- iv) make a finding that a single DAB transmission standard will be adopted by the Commission
- v) establish criteria and a timetable for IBOC system evaluation using the rulemaking process

With regard to the request by USADR that the Commission make a finding that IBOC is the most appropriate means to implement DAB, DRE suggests that the Commission has already explicitly or implicitly authorized delivery of digital radio signals by alternative wireless methods, so that any such finding cannot be exclusive. For example, the Commission has already authorized satellite-based digital audio radio services (S-DARS), including terrestrial regeneration

of the satellite signals. Furthermore, the Commission has not precluded the broadcast of ancillary digital audio signals as part of the data stream of advanced television system (ATS) signals. The convergence of conventional mass media, such as broadcast radio and television, with the Internet and next generation broadband cellular telephony will result in entirely new wireless multimedia systems. At least some of these systems will broadcast digital audio signals. DRE believes that the authorization of IBOC digital broadcasting by the Commission is necessary to permit existing radio broadcasters to remain competitive in an increasingly crowded marketplace of information providers by offering new and enhanced services, including, but not limited to sound broadcasting, while the broadcasters continue to fulfill their unique community and public service functions.

With regard to the request by USADR that the Commission establish interference protection criteria, DRE agrees that modifications to Part 73 of the Commission's Rules and Regulations are necessary to permit the broadcast of IBOC DAB signals and analog signals in a mutually compatible fashion. However, DRE does not support the specific amendments proposed by USADR in Appendix A of the Petition. In proposed amendment §73.130 (c) for AM Digital Audio Broadcasting, USADR recommends that the Commission enact a rule that would constrain the transmitted analog audio bandwidth to less than 5.5 kHz for stations broadcasting analog AM-band signals and AM-band IBOC digital signals. Such a restriction may be necessary for the proper operation of the USADR AM IBOC system. However, the audio bandwidth restriction is not required for other AM-band IBOC systems, for example, the AM IBOC system developed by DRE. Restricting the transmitted audio bandwidth will degrade the received analog AM signal and will increase the disparity in audio quality between existing AM-band and FM-band sound broadcasts. Furthermore, the proposed amendments do not describe restrictions on AM IBOC digital signal power at frequencies removed from the carrier by less than 5 kHz. Amendment §73.130(a)(i) and §73.325 describe new emission mask restrictions for AM-band and FM-band IBOC broadcasting, respectively. At the time of this writing, USADR has not presented sufficient evidence in its petition that actual system hardware performance will accomplish the coverage goals of IBOC in realistic signal reception circumstances at the proposed power levels. Determination of the nominal signal power level requires extensive laboratory testing with a

variety of existing radio receivers to assess signal compatibility and field investigations in different terrain and interference conditions. DRE does not object to proposed amendment §73.130(a)(ii)(iii), §73.325(b)(ii) and §73.325(c)(iv), all of which describe specific methods for measuring discrete spectrum emissions in order to determine emission mask compliance.

With regard to the request by USADR that the Commission establish a transition plan for the eventual conversion of existing analog sound broadcasting to future all-digital audio broadcasting, DRE supports the USADR proposal to permit IBOC broadcasting once a standard has been adopted by the Commission. DRE also supports the USADR proposal to permit broadcasters to increase their digital signal power after some period of time, without mandating that they discontinue analog broadcast operations. Analog radio receivers are extremely inexpensive and are thus ubiquitous, which makes them invaluable for functions such as emergency notification. Furthermore, analog radio receivers will continue to provide useful functionality even when the IBOC signal power level is substantially increased, albeit with some deterioration in audio quality. DRE does not object to a maximum 12-year transition period before modification of the emission mask to permit high power IBOC operation, as described by USADR, but there should be provision in the rulemaking for a more rapid conversion. An earlier date would be determined based on the pace of industry deployment of IBOC transmissions and quantitative measurement of the consumer acceptance of IBOC radio receivers.

With regard to the request by USADR that the Commission make a finding that a single IBOC DAB transmission standard be adopted, DRE agrees that a single standard is necessary to promote rapid consumer and industry acceptance of the system and to ensure interoperability of radio receivers. Any such IBOC DAB standard should comprehend operation in existing and future allocations for both AM-band and FM-band sound broadcasting. The standard should be adopted at the conclusion of an evaluation process, provided that an economical system implementation according to the standard can be shown to accomplish the performance goals of IBOC DAB, as defined by the DAB Subcommittee of the National Radio Systems Committee (NRSC).

With regard to the request by USADR that the Commission establish criteria and a timetable for IBOC system evaluation, DRE wishes to bring to the attention of the Commission the significant body of work on guidelines for IBOC DAB system testing, which has been prepared by the NRSC DAB Subcommittee. The membership of the Committee is diverse and includes broadcasters and transmitter and receiver equipment manufacturers. DRE supports the aggressive timetable suggested by USADR for IBOC DAB system submission and evaluation within calendar year 1999. DRE has no comment on the involvement of the Commission in the evaluation process without further information from the Commission as to how it would conduct such a process and under what expert authority.

In its petition, USADR suggests that the designation of its IBOC system as the DAB transmission standard will serve the public interest. In this response, DRE gives notice that it opposes certain of the rulemaking requests of USADR on the basis that they are specific to the USADR IBOC system. DRE does not believe that the USADR petition demonstrates technical and economic viability of their system because the claims of viability are supported through limited computer simulations and notably without field trials or laboratory evaluation of actual hardware systems. Furthermore, competitive systems, being developed by DRE and other organizations, have specific performance advantages when compared to the USADR system. However, DRE acknowledges the substantial resources expended by USADR in the preparation of its petition. The technical information supplied by USADR will be of service to the broadcasting community, to appropriate standards organizations and to the Commission in determining the best approach to implementing terrestrial digital radio in the United States.