

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

In the matter of:)	
)	RM-9682
Creation of an Indoor Sports and Entertainment)	DA 99-1337
Radio Service)	
)	

AMENDMENT

REC Networks (“REC”) had conducted some field testing as well as solicited feedback from radio listeners through our web site regarding the interference standards we originally proposed for the proposed service. We did this by showing which channels could be assigned inside sports arenas and asked listeners to provide reports on the channels that were recommended. Based on the feedback we received as well as field testing conducted in the Phoenix area by REC, we have come to the conclusion that the 60 dBu co-channel and 70 dBu adjacent channel interference standards would cause severe interference to the arena stations as well as some nearby stations just outside the service contours. We also looked at 40dBu (50,10 method) and found that to be too restrictive. There were still a lot of “quiet spots” left. Because the nature of this service, a signal would not be able to radiate outside the enclosed structure. We had found that based on the typical type of radio the sports fan would use in an arena (walkman type), that a 54dBu (50,10 method) interference contour on the co-channel and first adjacent channels could meet the needs of the arena broadcaster while protecting the signals of the local and nearby broadcasters whose signals could be received on a walkman type radio inside an enclosed arena.

For this reason, we re-submit our comments showing the revised 54 dBu interference contour protections. In the attachments herein, we enclose a copy of our original comments with the revised wording. All revisions are in [blue](#).

Interested parties who wish to search for channels based on this new protection criteria can visit our LPFM Channel Search website at www.recnet.com/rec/lpfm to conduct the search. This service is provided to the general public free of charge and no membership is required.

In this filing we have submitted a new “Appendix C” showing all National Hockey League arenas in the United States and channels that could be used in the arenas based on this new interference criteria.

REC’s interest in this petition is solely to assure that the interests of broadcasters, both low power and full power are met while introducing this exciting new radio service.

REC does not have any interests in any professional sports teams or any event venues that would benefit from this petition. REC has no intention of applying for a license for the proposed Indoor Sports Entertainment Radio Service.

Respectfully Submitted,

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August 6, 1999

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REVISED COMMENTS OF REC NETWORKS

1. REC Networks (“REC”) supports the petition for rulemaking made by the National Hockey League (“NHL”) for the creation of an Indoor Sports and Entertainment Radio Service (“ISERS”).
2. REC feels that ISERS could provide visitors to enclosed sports arenas with entertainment, news and information on the FM Broadcast Band while attending a sporting or entertainment event without having to purchase or rent a special type of radio receiver. In the extreme case, these stations could promote safety inside an arena by providing essential announcements by the public address announcer in the unlikely event of an emergency. Public address systems are sometimes very difficult to hear, especially for those who have hearing impairments.
3. The NHL is proposing an operation, which would involve the use of multiple channels. REC supports a multiple channel arrangement as long as it does not prevent the reception of full power broadcast stations as well as future low power broadcast stations currently under consideration in MM Docket 99-25 (“LPFM”). REC is asking that ISERS stations be secondary to full power and primary LPFM

stations as well as being sub-secondary to translators, boosters and any LPFM stations that may be designated as secondary status.

4. REC feels that ISERS should be authorized by license. Facilities eligible for ISERS should be limited to fully enclosed structures which have a minimum seating capacity for 10,000 seated persons and engaged in the presentation of professional and/or [amateur](#) sporting events. REC does not feel that small venues, such as high school gymnasiums should be eligible for ISERS. Based on the small size of such facilities, REC feels that these facilities can be better served by intentional radiators in the FM broadcast band operating under the provision of Part 15 of the FCC Rules.

5. REC must insist that these authorizations be given only to fully enclosed arenas. These arenas are usually engaged in the sports of hockey, basketball, arena football and indoor soccer. The walls of the stadium can help suppress a low power signal to the field strengths that are being proposed in this rulemaking. For outdoor sports facilities such as baseball and football stadiums, REC recommends the shared time 10-watt service proposed in our comments in MM Docket 99-25 as well as leaky coax, carrier current and intentional radiators covered in Part 15 of the FCC Rules. Large baseball and football stadiums with “domes” should be eligible for ISERS as long as the structure is totally enclosed at all times. “Retractable” stadiums, like the Bank One Ballpark in Phoenix utilize a retractable roof and side panels which would allow signals to radiate outside the confines of the structure and therefore should not be eligible for ISERS.

6. REC feels that ISERS stations should only be authorized enough power to provide a strong signal throughout the open seating area of the arena. Outside the arena, field strengths need to be kept to a minimum and the field strength should be 0 dBu at points at points more than 0.5 km outside the outer perimeter of the arena. As noted in the NHL petition, power for these stations should not exceed 5 watts.

7. We feel that a very basic distance spacing method should be used to determine operating frequencies. No ISERS station would be permitted within a 54 dBu interference contour (50,10 method) of any primary or secondary station (including LPFM). No ISERS station would be permitted within a 54 dBu interference contour (50,10 method) of any primary or secondary station (including LPFM) on the first adjacent channel. Appendix A of these comments gives information on our recommended distance spacing for ISERS stations. REC feels that ISERS channels can be coordinated through the LPFM Frequency Coordinator proposed by REC in our comments for MM Docket 99-25.

8. For translators, boosters and Class-D (Secondary) stations, REC recommends that translators be “sub-classed” into three separate sub-classes based on the antenna height and operating power of the secondary station. This is the same exact chart we used to determine translator sub-class in our comments on MM Docket 99-25.

Secondary LPFM stations would not be subject to this sub-class method. To make the application process easier, the following matrix should be used to determine the sub-class of secondary translator, booster and educational stations:

HAAT in meters	ERP (watts)						
	0-10	10.1-25	25.1-50	50.1-75	75.1-125	125.1-200	200.1-250
0-30	A	A	A	A	A	A	A
30.1-60	A	A	A	B	B	B	B
60.1-90	A	A	B	B	B	B	B
90.1-120	A	B	B	B	B	B	C
120.1-150	A	B	B	B	B	C	C
150.1-180	A	B	B	B	C	C	C
181.1-210	B	B	B	C	C	C	C
210.1-330	B	B	C	C	C	C	C
330.1-540	B	C	C	C	C	C	C
540.1-UP	C	C	C	C	C	C	C

9. As mentioned before, ISERS stations are not subject to any protection from any other class of broadcast station (including secondary classes). ISERS stations should be listed in the FCC Engineering Database as Class D3. ISERS stations in adjacent venues should not be authorized on the same channels as both venues may have simultaneous events. If there are not enough channels to meet the needs of multiple venues, the venues should develop a channel sharing plan which would assure that both venues would be able to provide the best service possible.

10. In conclusion, ISERS would prove to be a beneficial service, enhancing the spectator experience, promoting safety and helping the economy of the local businesses in and around the stadium. With such a service, we must feel that fans should also have the right to choose which radio station they want to listen to while inside the arena. We must provide all radio stations (full power, low power and secondary) with protections, which entitle them to have their signal heard inside the stadium. The establishment of the ISERS, concurrent with the establishment of the Low Power Radio Service would meet the public interest. We urge the Commission to give RM-9682 further consideration.

Respectfully Submitted,

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APPENDIX “A” – PROPOSED DISTANCE SEPERATIONS FOR CLASS D3 (ISERS) STATIONS.

Class of nearby station:	Co-Channel (54 dBu)	First Adjacent (54 dBu)
A, Mex. A, Mex. AA, Can. A	44	44
C3, B1, Mex. B1, Can. B1	61	61
B, C2, Mex. B, Can. B	79	79
C1, Mex. C1, Can. C1	105	105
C, Mex. C, Can C	137	137
LP-1000, A1	22	22
LP-250, A2	12	12
LP-100 A3 D1	8	8
Microradio D2	4	4
Translator-A	10	10
Translator-B	19	19
Translator-C, Can A1	20	20

No protections for second adjacent, third adjacent or IF is proposed for Class D3 stations.

ARENA STATIONS WILL BE PERMITTED TO APPLY FOR VACANT CHANNELS THAT ARE ALSO AVAILABLE TO HIGHER CLASS STATIONS. THE ARENA OPERATIONS WILL BE SECONDARY AND ARE SUBJECT TO DISPLACEMENT IF THE CHANNEL IS NEEDED BY A FULL POWER STATION, LPFM STATION, TRANSLATOR OR BOOSTER.

APPENDIX “B” – ARIZONA MICRORADIO ASSOCIATION RECOMMENDED CHANNELS FOR PHOENIX AREA ARENAS WHICH WOULD QUALIFY UNDER ISERS.

AMERICA WEST ARENA

Phoenix Suns NBA Basketball

Phoenix Coyotes NHL Hockey

Arizona Rattlers Arena Football

Jefferson & First Streets, Phoenix.

AzMA recommends **93.9 99.5 101.1 107.5**

VETERAN’S MEMORIAL COLISEUM

Phoenix Minor League Hockey

Phoenix Indoor Soccer

19th Avenue & McDowell Rd, Phoenix.

AzMA recommends **93.9 99.5 101.1 107.5**

WELLS FARGO ARENA

Arizona State University Basketball

Other ASU Indoor College Sports

(Formerly University Activity Center)

Arizona State University Campus, Tempe, Arizona.

AzMA recommends **93.9 97.5 99.5 107.5**

LOS ARCOS STADIUM DISTRICT SITE

Possible future home of the Phoenix Coyotes NHL Hockey Team

McDowell & Scottsdale Rd, Scottsdale.

AzMA recommends **93.9 97.5 99.5 107.5**

APPENDIX “C” – LIST OF U.S. NHL ARENAS AND CHANNEL SUGGESTIONS. (THIS IS A NEW DOCUMENT)

Please note on this search, we are basing the channels on the geographic center of the city where the arena is and may vary from the actual channel(s) that may be used inside the arena. For ease of reading, we will use frequencies instead of channels.

City	Team	Arena Name	Possible Frequencies
Anaheim, CA	Mighty Ducks	Arrowhead Pond	93.5 100.7 102.3 104.7
Dallas, TX	Stars	Reunion Arena	99.9 102.5 104.1 107.1
Inglewood, CA 90306	Kings	Great Western Forum	95.9 100.7 104.7 106.3
San Jose, CA 95113	Sharks	San Jose Arena	91.9* 92.7 96.9 100.7
Denver, CO 80204	Avalanche	McNichols Arena	103.9 104.7 105.5 106.3
Chicago, IL	Blackhawks	United Arena	103.9 104.7 105.5 107.1
Detroit, MI 48226	Red Wings	Joe Louis Arena	104.7 105.5 106.3 107.1
Nashville, TN 37203	Predators	Nashville Arena	97.5 98.3 99.3 107.1
St. Louis, MO	Blues	Kiel Center	103.7 104.5 105.3 106.1
E. Rutherford, NJ 07073	Devils	Continental Airlines	98.3 99.9 102.3 106.3
New York, NY 10121	Rangers	Madison Square Garden	99.9 102.3 104.7 105.5
Uniondale, NY 11553	Islanders	Nassau Veterans Mem.	99.1 101.5 104.7 105.5
Philadelphia, PA 19148	Flyers	First Union Arena	92.9 98.5 99.9 105.7
Pittsburgh, PA 15219	Penguins	Civic Arena	101.9 102.9 103.9 105.3
Boston, MA	Bruins	Fleet Center	100.1 102.1 102.9 103.7
Buffalo, NY 14203	Sabres	Marine Midland Arena	99.9 100.7 102.1 104.5
Atlanta, GA	Thrashers	Philips Arena	96.7 102.9 103.7 105.1
Greensboro, NC 27403	Hurricanes	Greensboro Coliseum	96.5 100.7 102.9 106.1
Sunrise, FL	Panthers	National Car Rental	101.1 105.5 106.3 107.1
Tampa, FL	Lightning	Ice Palace	104.1 105.1 105.9 106.9
Washington, DC 20004	Capitals	MCI Center	98.3 100.7 103.1 104.7
Columbus, OH**	Blue Jackets	Nationwide Arena	96.7 97.5 104.3 105.3
St. Paul, MN **	Wild	St. Paul Arena	100.7 101.7 102.5 103.7

*-Non commercial band channel assigned when no other commercial band channels were available.

**-Team will not start play until the 2000-2001 season, arena under construction.

Channels selected are based on distance spacing only. The licensee may find that other channels meeting distance spacing criteria may work better than the channels selected.

In this chart, we attempted to assign the highest channels where available. 107.9 was avoided due to possible interference to aviation. 92.1 was avoided because it is adjacent to the non-commercial band.

In this search, we attempted to place 4 commercial-band channels in each arena. We were able to do this in all but one (San Jose).

CERTIFICATE OF SERVICE

REC Networks has served a copy of these comments upon the petitioner:

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(Served by electronic mail with the consent of the petitioner.)