Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Creation of Low	)	MM Docket No. 99-25
Power Radio Service	)	
	)	RM-9208
	)	RM-9242
	)	

PETITION FOR RECONSIDERATION

To The Commission:

Craig L. Fox ("Petitioner") hereby submits its comments for reconsideration in specific part of the above-captioned proceeding regarding a Low Power FM Service ("LPFM").

1) Fox believes the LPFM rules to be generally well founded in terms of the allocation scheme, power and height limitations and qualifications, etc.
2) However, in the specific instance of "transmissions standards" as discussed in para. 109, and "transmitter certification" in para. 116 of the Report and Order, Petitioner believes that the Commission did not develop a full understanding of the practical problems that have already existed with previous "unlicensed" broadcasters and is likely to continue with the implementation of an LPFM service.
3) The Report and Order has correctly determined that any transmitters be "type certified." What was not discussed in enough detail was the nature of certain types of interference that have previously occurred with unlicensed operations and are likely to occur with LPFM as the rules stand as adopted.

4) Over the years in which unlicensed stations have been in operation, Petitioner has heard such stations in Florida, New Jersey, New York, and California. One of the most common infractions (beside that of the operators' lack of holding a basic broadcast license) was that of overmodulation. Overmodulation is a condition in which the operator is broadcasting in such a way as to cause excessive instantaneous frequency deviation thereby causing interference to adjacent channel stations. In the case of FM, it would be deviation in excess of +/- 75 kHz. Excessive deviation is the primary cause of "splatter." This is unlike spurious interference which is caused by lack of proper filtering or poor circuit design. Rather, it is a simple matter of too high of a level of audio being fed to the exciter or transmitter. The adopted rules do not address this matter.

5) A common reason for the occurrence of this problem is that most operators do not have (and are not required to have) a calibrated modulation monitor. Much of the level setting of the modulated audio is done by "ear," that is simply setting the level to seem equivalent to that of other licensed stations. In practice, what may seem like the proper level may actually seriously exceed +/- 75 kHz as will be described.

6) FM broadcasting has always used a standard of 75 microsecond pre-emphasis in the transmitter and a corresponding 75 microsecond de-emphasis in receivers. This is a means in which the high frequencies (treble) of audio is <u>greatly</u> accentuated in transmission to overcome residual noise inherent in FM

broadcasting . Uncontrolled, the type of interference caused by this phenomenon, can be devastating to adjacent channel stations.

7) Unfortunately, the use of a “type certified” exciter or transmitter does not ensure that this type of interference will not occur. A “type certified” exciter or transmitter is not required to have any type of “built-in” display of modulation, nor is it required to have any type of peak limiter. A full service broadcaster is more than likely to use a processing limiter designed to regulate audio in accordance with the standards of the pre-emphasis curve while previously unlicensed or future LPFM broadcasters are not necessarily inclined to use industry specific audio limiters. Even though LPFM operators may believe that they are using limiters of top quality, they are likely to be those that are in common usage for high fidelity audio as is likely to be the case with the rest of their studio facilities. It has in the past and will occur too often in the future, that the LPFM broadcaster will have no concept of what occurs in FM modulation regarding pre-emphasis and de-emphasis and the consequences of using regular audio equipment or using exciters and/or transmitters with no modulation indicating instruments.

8) Therefore, in conclusion, it is highly recommended that a rule be adopted requiring LPFM operators to use exciters or transmitters having a “built-in” audio peak limiter or clipper for monaural service or a composite limiter or clipper for stereo service. In addition, any exciter for LPFM should employ a peak-reading bar graph or LED display, or an analog meter with a peak detector light. It is only then that we can be assured that this new LPFM

service will develop in harmony with our existing services and with a minimum of interference. To ignore this potential problem and conclude that LPFM broadcasters will fully understand and use industry standard audio processing equipment will be to invite annoying complaints from listeners and full-service stations and further use time-consuming Commission resources to address and resolve these problems.

Respectfully submitted,

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