FCC and the LAW

It is unclear in the law weather or not the FCC really has legal jurisdiction over unlicensed broadcasters that broadcast signals that don't cross state boundaries. Most people give the FCC the benefit of the doubt since they are a government agency and have much more ammunition than the average unlicensed broadcaster. Much like taxpayers and the IRS. But as you shall see later the FCC's jurisdiction may be resolved in the near future.

Unlicensed operation of transmitting devices is discussed in "Part 15" of the FCC Rules. These Rules are published in a maximum of 100 "Parts," covering all aspects of telecommunications. A compleat set of these rules should be available at your local Public Library. If you have questions about the legalities of operating any of the projects in this book that are not covered here or are unclear, please consult these Regulations.

Part 15 covers "wireless microphones" and "unlicensed broadcast band" transmitters for a number of different frequencies. While Part 15 allows 100 milliwatts output power for unlicensed, home-built transmitting devices, on the FM broadcast band your allowable power output is measured in a different way.

On the FM broadcast band you are not allowed to transmit a signal that would cause a field strength greater than 250 microvolts (uV) at a distance of 3 meters from the antenna. You may be asking yourself "what does this mean in real terms?" The answer is a difficult one to answer. You could have transmitter that generates 100mw running into one antenna that is legal and have another transmitter that generates 10mw into another antenna that is twice or more this legal limit. This depends mostly on how efficient your antenna and feedline are.

It is the Authors opinion that these regulations regarding FM broadcast band field strength could of been written by Machiavelli himself. Most of the "bugs", FM broadcaster kits, and Mr. Microphones that are available on the open market today can easily exceed these regulations. To be able to follow this regulation you would need a calibrated field strength meter that could measure field strengths accurately down to about 100 uV, and use it every time you broadcast, even with your Radio Shack Mr. Microphone.

Other regulations for the FM broadcast band include :

- The transmitter must NEVER be tuned to a frequency above 108 MHz. FCC Rule 15.205 lists the frequency range between 108 to 121.94 as restricted, due to potential interference with aircraft navigation equipment.
- The bandwidth (or amount of spectrum your transmission can occupy) of your transmission is limited to 200 kHz centered on the actual operating frequency. This is plenty of room for a stereo signal and several subcarriers.
- It is the sole responsibility of the builder-user of any FM broadcast-band device to research and fully avoid any and all interference to licensed FM broadcast transmission and reception.

There is much more in the Part 15 Rules. FM broadcast band usage is specifically addressed in Rule No. 15.239. Please consult the rules for more info.