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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)
	)
PR Docket 93-61	)
	)
Creation of the Location	)
and Monitoring Service (LMS)	)
	)
June 7, 1993	)

PR Docket 93-61

Dear Mr. Secretary,

Please find enclosed the original and eleven copies of comments on PR docket 93-61. Please see to it that they are distributed to whom they are to go to.

Thank you very much.

RESPECTFULLY SUBMITTED,
THE ROCHESTER VHF GROUP,
Tim Stoffel, NS9E,
Secretary.

Timothy J. Stoffel

Rochester VHF Group
P.O. Box 92122
Rochester, NY 14692

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PR Docket 93-61

The FCC, in PR Docket 93-61, seeks to create a new service in the 902-928 MHz band. This service would be called the Location and Monitoring Service. The purpose of this new service is to allow the position of vehicles and other objects to be remotely monitored. In order to accommodate this new service, changes may need to be made in the 902-928 MHz band. In these comments, the Rochester VHF Group will show why the interests of the Amateur Radio community should be protected.

The Rochester VHF Group, based in Rochester, NY, is the oldest Amateur Radio VHF society in the country. Its' 200 or so members have always been on the forefront of VHF, UHF and Microwave communication. We feel that any restrictions to, or elimination of the Amateur Radio service from this band would not be in the public interest, or in the best interests of the Amateur Radio service. Furthermore, it would hamper the development of technology for use in this band both within and outside of the Amateur Radio community.

Lets start these comments by examining what is already going on in this band. First off, there is the Industrial, Scientific and Medical service (ISM). They do not have to protect anybody. Secondly, there is some military use of this band. Geographic restrictions have been imposed on the Amateur Radio Service to minimize interference with the military[1]. As on all the other bands that we share with the military, co-existence is quite peaceful. Next, is the Automatic Vehicle Monitoring service (AVM). Although this was initially supposed to be a 'boom' and be in all large cities in a couple of years, it has been a 'bust' so far, and has appeared in only a few places. The next level of user is the Amateur Radio service. At this point, we must point out that our use of this band is still limited, but for reasons to be explained later, this is rapidly changing. Last but not least are the thousands and thousands of part 15 users out there who use this band for short distance television transmission and wireless computer networking, among other things.

And yet another service is under consideration for this band: Wind Profiler Radars. This is a busy, busy band!

At this point, let us ask a couple of questions: Is this spectrum the best place for a service like this? Is a service

gradually raising the noise floor throughout the band, especially around 915 MHz.

Now, let us turn our attention to what the Amateur Radio community is doing in this band, and what lies ahead for the future.[2]

At this time, there are three main groups using this band: Amateur television, weak signal operations, and fixed links.

Amateur television (ATV) stands the most to lose if the 902-928 MHz band is eliminated or restricted. This service provides a unique public service that cannot be easily provided by any other service. An example of this is the use of Amateur Television to monitor different parts of a long parade route and rapidly identify trouble along the route. By being able to see exactly what is going on, the appropriate response can be taken much more quickly. Another use for this service is the transmission of space shuttle video and audio to the classroom. This allows students to participate directly in the space program from their classrooms. This is only possible (and cost-effective) with the assistance of Amateur Radio.

Amateur television users center most of their activity in the 909-915 MHz region. This service requires a lot of bandwidth and relatively quiet noise floors. There is little hope of reducing

increase in the noise floor of this band would cause serious problems for the EME user.

Recently, Amateurs have succeeded in communicating by using the auroral curtain as a reflector. This operation demanded the best equipment and the most skilled operators. Another challenging communication mode being used in this band is meteor scatter. Ham research has led to the routine use of meteor scatter on lower frequencies. If this band is restricted or eliminated, this research cannot continue.

To make a long story short, the weak signal operators need spectrum that is shared with a minimum of other services. We urge the FCC to adopt plans that would ensure that our weak signal operations on this band (902-904 MHz) are protected as much as possible from competition with other services.

The other major use of this band is for fixed linking. With the ample bandwidth available, the 902-928 MHz band readily lends itself to high speed packet data links. This band is also an ideal place for auxiliary and repeater linking. Commercial equipment is now available that facilitates these uses of this band.[3] Surplus equipment is just now becoming widely available that is easily modified for use on this band. In fact, it is just a matter of time before repeater operation with handheld or mobile radios becomes popular.

Although still in it's infancy in the Amateur Radio community, Spread Spectrum (SS) will offer us the means to put more users in less spectrum with less interference. Room is needed to continue work on this emerging and exciting technology. Since the 902-928 MHz band is relatively uncrowded, this is a good place to

availability of equipment for a given band for years to come, even if nothing ever happens. It happened on 222 MHz. It is happening on 902-928 MHz. If we want to utilize our bands to the

1.) That the Amateur allocation at 902-928 MHz be left as is. There must be better spectrum available for LMS than 902-928 MHz. One underutilized area of spectrum worth considering is 30-50 MHz.

2.) If LMS must go into the 902-928 MHz band, it should be confined to the top 6 MHz. (922-928) This was until 1989 considered an experimental area. Since spread spectrum is the primary choice for modulation in this new service, it should have the least impact on existing Amateur operations, and Amateur operations should have little effect on LMS. In any case, 6 MHz should be ample spectrum in which to build a substantial LMS system. All possible consideration should be given to the use of other spectrum efficient modulation methods for LMS, such as PSK, SSB, CW, etc. We have done very well with these modulation methods. Why can't the commercial sector adopt these methods?

3.) If at all possible, keep LMS out of the 902-904 MHz segment, and out of the 909-915 MHz. segment. These areas represent weak signal operations, and the primary ATV area, respectively.

RESPECTFULLY SUBMITTED,
THE ROCHESTER VHF GROUP,
Tim Stoffel, NS9E,
Secretary.

Rochester VHF Group
P.O. Box 92122
Rochester, NY 14692

(1) Quoted from section 97.303 of the Amateur Radio rules and regulations:

(g) In the 33 cm band:

(1) No amateur station shall transmit from within the States of Colorado and Wyoming, bounded on the south by latitude 39 degrees N, on the north by latitude 42 degrees N, on the east by longitude 105 degrees W, and on the west by longitude 108 degrees W. This band is allocated on a secondary basis to the amateur service subject to not causing harmful interference to [illegible] and not receiving any protection.

(2) Here is the most recent American Radio Relay League bandplan for the 902-928 MHz band (Revised 1989):

902.0-903.0	Weak signal (902.1 calling frequency)
903.0-906.0	Digital *(903.1 alternate calling frequency)
906.0-909.0	FM Repeater outputs
909.0-915.0	Amateur TV
915.0-918.0	Digital
918.0-921.0	FM Repeater inputs
921.0-927.0	Amateur TV
927.0-928.0	FM simplex and links.

* In much of the country, 903.1 is the weak signal calling frequency.

(3) Hamtronics, of Hilton, NY, manufactures 902-928 FM transmitter and receiver kits, specifically designed for repeaters and links. Address: 65-E Moul Rd. Hilton, NY 14468-9535

(4) In addition to Hamtronics above, here are a few companies marketing products for the 902-928 MHz band.

Communications Concepts, Inc.
508 Millstone Drive
Beavercreek, OH 45434-5840
Products: Amateur television receive converters for the 902-928 MHz band.

Down East Microwave
RR1 Box 2310
Trov, ME 04987

vide an Amateur radio service having a fundamental purpose as expressed in the following principles:

(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communications service, particularly with respect to providing emergency communications.

(b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.

(c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art.

(d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians and electronics experts.

(e) Continuation and extension of the amateur's unique ability to enhance international goodwill.

It seems to me that retaining our interests in the 902-928 MHz band is consistent with (a)-(d) above, and even (e) when propagation is right!