

Before the
Federal Communications Commission
Washington, D.C. 20554

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JUN - 5 1997

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)
)
Amendment of the Amateur Service)
Rules to Provide For Greater Use of)
Spread Spectrum Communication)
Technologies)

WT Docket No.97-12

To: The Commission

**REPLY COMMENTS OF
THE RADIO AMATEUR SATELLITE CORPORATION (AMSAT)**

1. AMSAT filed Comments in this proceeding on May 5, 1997. We have since reviewed the Comments filed by William A. Tynan (Tynan), Central States VHF Society (CSVHFS), American Radio Relay League (ARRL), Tucson Amateur Packet Radio (TAPR), Raphael Soifer (Soifer), Philip R. Karn, Jr. (Karn), Metricom, Robert J. Carpenter (Carpenter), The Part 15 Coalition (The Coalition), Lyle V. Johnson, Jr. (Johnson), Robert A. Buaas (Buaas) and The 220 MHz Spectrum Management Association of Southern California (220 SMA). The following Reply Comments are provided with respect to the Comments reviewed.

2. To the extent that they are consistent with our comments, we support the views of Tynan, Soifer, Carpenter and CSVHFS with respect to protection of frequencies utilized by the Amateur-satellite Service.

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3. TAPR and Karn propose to extend amateur SS operation to all frequencies in the 50, 144 and 222 MHz bands, as well as the bands above 420 MHz as proposed by the Commission.

AMSAT will not address the portion of these proposals regarding the 50 MHz band, since it is not an Amateur-satellite Service allocation. However, the 144 to 148 MHz band does contain an Amateur-satellite Service allocation, namely 144 to 146 MHz. If the Commission should favorably consider the TAPR/Karn proposal, consistent with our comments, AMSAT urges that it exclude this segment of the 2 meter band from use by SS stations communicating terrestrially.

4. Most of those commenting in favor of SS use terms like "no restrictions" and "maximum flexibility". RM-8737 and this Docket are absolutely silent on what SS is. No bandwidth limits are specified. Presumably amateur spread spectrum emissions would be limited to the amateur bands, but even that is not stated. The amateur community is being asked to accept this new technology without any information as to what its effect will be. Buaas takes particular exception to Tynan's expressed concerns regarding potential SS interference to weak signal and satellite communications, terming them "conjectures of doom as fact, without bothering to conduct any realistic tests". Neither Tynan nor AMSAT are in a position to conduct SS tests. However, Mr. Buaas presumably is in such a position. Quantitative results of ss tests need to be seen before concluding that terrestrial SS operation poses no threat to relatively weak amateur satellite signals.

5. Much has also been said in comments as well as in informal correspondence between SS proponents and those concerned about its possible impact, with regard to the amateurs working out "band plan" arrangements among themselves. In their comments, TAPR and

Karn suggest that amateur SS experimenters will publish information about their activities on the Internet. For one thing, there is no assurance that they will. Certainly, no such requirement is contained in the proposed Rules. In addition, how would this prevent interference? Additionally, there is no definition in the Docket as to how much bandwidth SS will occupy. It might be 1, 2, 10, or perhaps even 30 MHz. Even if a frequency coordinating body were to attempt to coordinate 70 cm SS operation so as to not impact the Amateur-satellite Service allocation from 435 to 438 MHz, how could this be done if the SS operation in question is 30 MHz wide? AMSAT continues to feel that the provisions we proposed in our comments, namely that no terrestrial SS communication be permitted in Amateur-satellite Service allocations, are appropriate and will afford SS ample room in which to develop without impacting amateur satellite activities. We continue to wish to be able to employ SS techniques in the Amateur-satellite Service bands for purposes of communicating with and through amateur satellites. Our proposal contained in our comments does permit this.

6. AMSAT is very disturbed by the comments filed by Metricom and The Coalition. Metricom is an unlicensed user of the radio spectrum, namely 902 to 928 MHz and 2400 to 2450 MHz, and The Coalition represents various companies so engaged. Both urge the Commission to limit the power of amateur SS stations operating in these bands to the same level they, as Part 15 users, are permitted - 1 watt. We contend that, not only would such a limitation represent a very dangerous precedent which could have long term negative consequences for the Amateur and Amateur-satellite services, it might also have an

immediate impact on the ability of amateurs to use SS in the 2400 MHz Amateur-satellite Service band for satellite uplinks. The question also arises as to whether the power limitation would apply to satellite downlinks. The Phase 3D spacecraft presently being completed in our Orlando, Florida facility for launch later this year will carry a high power 2400 MHz transmitter. Since this satellite is to be licensed in Germany, not the U.S., one wonders how such a power limitation could even be imposed by the Commission.

7. The comments of Metricom and the Coalition are entirely out of order and inappropriate. Essentially, they want some amateur stations and amateur-satellite stations to be limited to emissions and power levels which are similar to the limits on Part 15 devices. Unlicensed operation under Part 15 is on a secondary basis to all licensed services, industrial, scientific, and medical (ISM) devices, and even incidental radiators sharing the relevant frequency allocations:

"Operation of an intentional radiator is subject to the conditions that no harmful interference is caused and that interference must be accepted that may be caused by the operation of an authorized radio station, by another intentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator."

See 47 CFR 15.5(a).

Making rules to protect Part 15 unlicensed intentional radiators is entirely inconsistent with the intent of Part 15, the purposes of the various services, and the Table of Frequency Allocations. Therefore, the proposals of Metricom and the Coalition should be rejected.

8. Copies of these Reply Comments have been provided to those individuals and organization whose comments are cited herein.

RESPECTFULLY SUBMITTED,

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~~May~~ ^{June} 5, 1997