

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)	
)	
Amendment of Part 100 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Fixed Microwave Licensees)	WT Docket No. 10-153
)	
Petition for Rulemaking filed by Fixed Wireless Communications Coalition to Amend Part 101 Of the Commission's Rules to Authorize 60 and 80 MHz Channels in Certain Bands for Broadband Communications)	RM-11602
)	

Reply Comments of United States Cellular Corporation

United States Cellular Corporation ("U.S. Cellular") hereby submits these reply comments in response to the comments filed concerning the Commission's Further Notice of Proposed Rulemaking in the above-captioned docket.¹

Introduction

U.S. Cellular provides wireless service to approximately 6.1 million customers. It makes extensive use of fixed microwave facilities to provide "backhaul" between its base stations and switches, holding approximately 2,600 microwave licenses. Thus, it has a large stake in the outcome of this proceeding.

U.S. Cellular applauds the FCC's efforts to improve microwave service in rural areas, and supported making available additional 6 and 13 GHz spectrum available for FS operations and

¹ See, Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Fixed Microwave Licensees, WT Docket No. 10-153, Report and Order, Further Notice of Proposed Rulemaking and Memorandum Opinion and Order, 26 FCC Rcd. 1614 (2011) ("Further Notice").

permitting "adaptive modulation" on microwave paths at an earlier stage of this proceeding. For reasons to be discussed below, U.S. Cellular also supports amending the FCC's rules to allow the use of smaller microwave antennas, and relaxing channel "loading" standards in rural areas. And U.S. Cellular believes that it should not be necessary to obtain a waiver before an FS transmitter may "point" toward the geostationary arc.

However, U.S. urges that the FCC not permit at this time a relaxation in channel "capacity" standards or automatic "bonding" of microwave channels to permit wider channel operation. U.S. Cellular believes that case by case review remains appropriate in such cases.

I. U.S. Cellular Supports Allowing Smaller Microwave Antennas to Be Licensed

U.S. Cellular supports the FCC's proposal to allow smaller, high performance antennas in the 6 GHz, 18 GHz, and 23 GHz bands as originally proposed by Comsearch.² Comsearch and FWCC, as well as other commenters, make a very strong case for permitting smaller antennas.³ They demonstrate that permitting smaller antennas will reduce microwave deployment costs and stimulate investment in wireless and broadband systems, as well as permitting deployment of microwave facilities at locations incapable of supporting larger antennas.⁴ U.S. Cellular also agrees with PCIA that smaller antennas should make it easier for carriers to secure local zoning consent to microwave deployment.⁵

However, U.S. Cellular also believes that the comments of Clearwire and Comsearch offer thoughtful suggestions as to how any increased interference which might result from the

² Further Notice, ¶73 See, also Comments of Comsearch, filed October 4, 2011 ("Comsearch Comments"), pp. 1-3; Comments of Fixed Wireless Communications Coalition, filed October 4, 2011 ("FWCC Comments"), pp. 1-4.

³ See, e.g. Comments of MetroPCS Communications, Inc., filed October 4, 2011 ("MetroPCS Comments"), pp. 4-5; Comments of Clearwire Corporation, filed October 4, 201 ("Clearwire Comments"), pp. 6-8; Comments of PCIA-The Wireless Infrastructure Association, filed October 4, 201 ("PCIA Comments"), pp. 2-4; Comments of Fiber Tower Corporation, filed October 4, 2011 ("Fiber Tower Comments"), pp. 2-3.

⁴ MetroPCS Comments, pp. 4-6.

⁵ PCIA Comments, pp. 3-4.

use of smaller antennas could be mitigated.⁶ Taken as a whole, the comments demonstrate that it is possible for the FCC to capture the benefits of permitting smaller antennas while preventing interference to other microwave facilities.

II. U.S. Cellular Agrees The FCC Should Lower Minimum Traffic Loading Requirements For Rural Areas While Maintaining Capacity Requirements

In the Further Notice, the FCC proposed reducing the minimum payload capacity requirements of Section 101.141(a)(3) of the Rules when Standard B antennas are used.⁷ This proposal provoked controversy, including opposition from Comsearch. Comsearch, after noting the previous steps the FCC has taken to reduce the cost of rural links and the likelihood that smaller antennas will soon be permitted, stated its opposition to any rules allowing a loss of antenna "efficiency."⁸ U.S. Cellular shares Comsearch's concern with preservation of antenna efficiency but believes that FWCC has proposed a workable compromise.⁹

FWCC does not believe that the payload capacity of either Standard A or Standard B microwave antennas should be decreased, but does support lowering the minimum traffic loading percentages in rural areas, defining rural areas as counties or equivalent areas having a population density of 100 persons per square mile or less.¹⁰ It argues that in that way "rural areas will be relieved of unrealistic loading requirements, but the equipment will be capable of meeting the minimum bit rate in the future should circumstances change."¹¹ That seems to be a reasonable approach, which permits operational flexibility, while preserving efficiency standards as population in the relevant areas increases.

⁶ Clearwire Comments, pp. 7-8; Comsearch Comments, pp. 3-4.

⁷ Further Notice, p. 84.

⁸ Comsearch Comments, pp. 7-8.

⁹ FWCC Comments, pp. 5-6.

¹⁰ FWCC Comments, pp. 5-6.

¹¹ Ibid.

III. U.S. Cellular Does Not Support Automatic Allowance of Wider Channels In The 6 and 11 GHz Bands

The Further Notice also sought comment on FWCC's proposal to allow 60 MHz channels in the lower 6 GHz band, and 80 MHz channels in the 11 GHz band, by combining the relevant adjacent 30 MHz and 40 MHz channels.¹²

The proposal attracted widespread support from commenters who maintain that wider channels would allow carriers to provide increased capacity and higher data rates.¹³ MetroPCS also argued that wider spectrum bandwidth sizes will also spur the growth of mobile broadband.¹⁴

U.S. Cellular has no objection to combining adjacent microwave channels under appropriate circumstances, but shares the concerns expressed by Comsearch regarding this proposal.¹⁵ Comsearch notes that under the present approach to channel assignment in the 6 GHz and 11 GHz bands, the neighboring channels generally follow an "adjacent-channel alternative polarization" plan. Such "cross polarization" of adjacent channels reduces interference. But if the channels are combined, the cross-polarization would disappear, creating additional interference to newly adjacent channels. Comsearch also argues that wider channels might encourage speculative licensing and warehousing of spectrum.

U.S. Cellular agrees with Comsearch that if wider channels are to be allowed carriers should be required to explain why they need such channels and that effective loading standards should be developed to guard against "warehousing." We would also note that in the coming decades spectrum scarcity is likely to be a considerable problem and thus no licensee, large or

¹² Further Notice, ¶ 89.

¹³ FWCC Comments, p.6; Clearwire Comments, pp. 8-9.

¹⁴ MetroPCS Comments, pp. 6-7.

¹⁵ Comsearch Comments, pp. 9-10.

small, should be permitted to reserve large spectrum blocks in perpetuity with insufficient justification.

IV. U.S. Cellular Supports The Further Notice's Geostationary Orbit Proposals

The Further Notice, echoing a request by Comsearch, proposes amending Section 101.145 of the FCC's Rules to require a waiver filing for FS facilities pointing near the geostationary arc only if the proposed EIRP of the facilities is greater than the values listed in the ITU Radio Regulations.¹⁶ At present, in order to protect the receivers of geostationary satellites, waiver filings are required by Section 101.145 of the FCC's Rules for: (1) FS transmitters in the 2655-2690 MHz and 5925-7075 MHz bands with an antenna aimed within 2 degrees of the geostationary arc; and (2) FS transmitters in the 12700-13250 MHz range with an antenna aimed within 1.5 degrees of the geostationary arc.¹⁷

U.S. Cellular supports the changes in the rule for the reasons given by Comsearch, which notes that the present requirement primarily protects satellites located over Europe, Africa, the Atlantic or Pacific Oceans, FWCC also supports this request.¹⁸ FWCC notes that the change would reduce the need for waivers and allow FS links to go into operation more quickly than at present, which will promote broadband deployment.¹⁹

The proposal is, however, opposed by Sirius XM, which charges that allowing new FS facilities to go into operation under the circumstances proposed might interfere with its "feeder links" and "telemetry, tracking and control" facilities in the 7025-7075 MHz band.²⁰

U.S. Cellular believes that the FCC should evaluate Sirius XM's claims carefully and we certainly have no wish to interfere with any licensed service. However, we would note that, to

¹⁶ Further Notice, ¶ 94.

¹⁷ Further Notice, ¶ 93.

¹⁸ FWCC Comments, p. 7

¹⁹ Ibid

²⁰ Comments of Sirius XM Radio, Inc. filed October 4, 2011 ("Sirius XM Comments"), pp. 2-4.

our knowledge, no U.S. Cellular 6 GHz microwave facility has interfered with any of Sirius XM's feeder links or other facilities.

Conclusion

U.S. Cellular supports the FCC's continuing efforts to promote and improve microwave backhaul service. We urge the Commission to take actions described in these Reply Comments to advance that effort.

Respectfully submitted,

By: Grant B. Spellmeyer *pc*
Grant B. Spellmeyer
Executive Director, Federal Affairs
and Public Policy
United States Cellular Corporation
555-13th Street, NW, Ste. 304
Washington, DC 20003
grant.spellmeyer@uscellular.com

UNITED STATES CELLULAR CORPORATION
By: Peter M. Connolly *PC*
Peter M. Connolly
Holland & Knight LLP
2099 Pennsylvania Avenue, NW
Suite 100
Washington, DC 20006
Peter.connolly@hklaw.com

Its Attorneys

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