

Before the
Federal Communications Commission
Washington DC 20554

In the Matter of

Amendment of Part 101 of the
Commission's Rules to Increase Spectrum
Use Through More Flexible Antenna Rules
for the 10.7-11.7 GHz Band

RM- 11043

**COMMENTS OF THE
FIXED WIRELESS COMMUNICATIONS COALITION**

August 23, 2004

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Pursuant to Section 1.405(a) of the Commission's Rules, the Fixed Wireless Communications Coalition (FWCC) files these comments in support of the above-captioned Petition for Rulemaking.¹

That petition, filed by FiberTower, Inc., asked the Commission to amend Sections 101.113 and 101.115 of the Rules so as to permit the use of two-foot Fixed Service Category A and Category B antennas in the 10.7-11.7 GHz (11 GHz) band as an optional alternative to the four-foot antennas presently required. The Commission recently permitted two-foot antennas in the 10.55-10.68 GHz band.² FiberTower asks for the same relief at 11 GHz.

¹ Petition for Rulemaking of FiberTower, Inc. (filed May 26, 2004; date-stamped July 14, 2004). The FWCC is a coalition of companies, associations, and individuals interested in the Fixed Service -- *i.e.*, in terrestrial fixed microwave communications. Our membership includes manufacturers of microwave equipment, licensees of terrestrial fixed microwave systems and their associations, and communications service providers and their associations. The membership also includes railroads, public utilities, petroleum and pipeline entities, public safety agencies, and/or their respective associations, landline and wireless, local, and interexchange carriers, and telecommunications attorneys and engineers. Our members build, install, and use both licensed and unlicensed point-to-point, point-to-multipoint, and other fixed wireless systems, in frequency bands from 900 MHz to 95 GHz.

² See 47 C.F.R. Sec. 101.115(b), *amended by Processing of Microwave Applications in the Wireless Telecommunications Services*, 17 FCC Rcd 15040 (2002).

FiberTower explains that smaller antennas will reduce the costs of providing, installing, and maintaining equipment for an 11 GHz Fixed Service link; that they will allow the installation of links at locations not available to large antennas; and that lower costs and new deployment options will reduce end user costs for a broad range of services. FiberTower also notes that smaller, less expensive antennas will create new competition with fiber and other modes of broadband delivery, reducing costs for all users. According to FiberTower, services that stand to benefit from small antennas include, among others, wireless local loop and T-1 transport, broadband Internet access for schools, businesses, and apartment buildings, and interconnection of industrial campuses for LANs and PBXs.

FiberTower states that a 2-foot antenna entails only 1/3 the cost and 1/4 the weight of a 4-foot antenna. These factors should permit installation at sites incapable of supporting large dishes, thus enabling last-mile delivery of broadband service to locations that are otherwise impractical for broadband radio. Two-foot antennas also promise to raise fewer esthetic objections than larger ones.

The FWCC concurs on all of these points. We also agree that lower costs and easier installation at 11 GHz will make it easier to accommodate Fixed Service users displaced by reallocations of Fixed Service spectrum to other uses. Newly allocated Fixed Service spectrum, while welcome, is suitable only for short-range operations.³ FWCC members particularly need spectrum capable of handling reasonably long links. That potentially includes the 4, 6, 11, and 23 GHz bands, and the remaining Fixed Service allocation at 18 GHz. But FiberTower correctly

³ *E.g., Allocations and Service Rules for the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands*, 18 FCC Rcd 23318 (2003). Free-space attenuation of a microwave signal increases with frequency, limiting the useful range of high-frequency signals of a given power.

notes that each of these bands has serious limitations. Earth stations in the 4 and 6 GHz bands, which are routinely coordinated and licensed for the entire band and satellite arc, block many Fixed Service coordination efforts. Federal Government installations in the 23 GHz band limit private use, and there is little 18 GHz left spectrum for the Fixed Service following recent reallocations to satellite operations.⁴ The Commission should enable the Fixed Service industry to make the best use of the limited spectrum still available.

FiberTower correctly notes that a smaller antenna has one possible drawback: a less tightly focused beam. Specifically, a smaller antenna exhibits both a wider main lobe and bigger sidelobes relative to the main lobe. Without suitable safeguards, this property could lead to potentially adverse effects. Other things being equal, a smaller antenna increases the likelihood of interference to a receiver located off the antenna axis, and has more susceptibility to received interference originating from a source off the antenna axis.

To accommodate these characteristics, FiberTower proposes changes to the coordination rules at 11 GHz to ensure that deployment of small antennas does not disadvantage either satellite earth stations or users of 4-foot Fixed Service antennas.⁵ The FWCC is satisfied that these changes will accomplish their purpose and render the use of small antennas transparent to others sharing the spectrum.

⁴ *Redesignation of the 17.7-19.7 GHz Frequency Band*, 17 FCC Rcd 24248 (2002); (redesignating 18.3-18.58 GHz); *Redesignation of the 17.7-19.7 GHz Frequency Band*, 15 FCC Rcd 13430 (2000).

⁵ For details, see Petition for Rulemaking of FiberTower, Inc. at 6-9.

CONCLUSION

The rules proposed by FiberTower will deliver the benefits of small antennas -- lower cost, greater flexibility of installation, and more efficient use of the band -- with no detriment to other users. The FWCC agrees with FiberTower that these advantages will ultimately increase competition and reduce prices for the end users of wireless network services, and facilitate relocation from former Fixed Service spectrum reallocated to other uses. We ask the Commission to issue and act on a Notice of Proposed Rulemaking as soon as possible.

Respectfully submitted,

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