

Before the
Federal Communications Commission
Washington DC 20554

In the Matter of)
)
Encina Communications Corporation,) ULS File No. 0007928686
Request for Authorization to Use a)
Multi-Directional Antenna as Described)
Under Part 101.115(a) of the Rules)

**INFORMAL OBJECTION TO APPLICATION
AND OPPOSITION TO WAIVER**

Pursuant to Section 1.41 of the Commission’s rules, the Fixed Wireless Communications Coalition, Inc.¹ opposes the request for waiver attached to the above-referenced application filed by Encina Communications Corporation, and objects to the application insofar as it relies on the waiver request.

SUMMARY

A grant of the waiver would allow Encina to coordinate, and thus keep out of service, 6 GHz spectrum in geographical sectors where Encina has no plans to operate. This would violate long-standing Commission policies that promote the efficient use of spectrum.

The Commission recently denied a request similar to Encina’s in a rulemaking proceeding. The issue is the topic of a pending Petition for Reconsideration. The Commission should decide the question in that proceeding, on the basis of a fully developed record.

¹ The FWCC is a coalition of companies, associations, and individuals actively involved in the fixed services—*i.e.*, terrestrial fixed microwave communications. Our membership includes manufacturers of microwave equipment, fixed microwave engineering firms, 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, cable TV providers, backhaul providers, and/or their respective associations, communications 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. For more information, see www.fwcc.us.

DISCUSSION

The Commission's rules require Fixed Service (FS) operators to both transmit and receive through highly directional antennas.² The provision supports the dense use of spectrum. By delivering signal to the intended receiver, while minimizing interfering effects elsewhere, compliant antennas allow multiple FS links to operate reliably in the same area, even on the same frequency.

Rules for the 6 GHz band at issue set the maximum antenna beamwidth at 2.2 degrees for Category A and B1 antennas, and 4.1 degrees for Category B2.³ Encina seeks to use a 90 degree beamwidth antenna. In defending the request, it erroneously compares its antenna to a Category B2 (4.1 degree) antenna subject to interference from a foreign transmitter, and calculates that the 90-degree antenna would receive interference from a lesser distance: 14 miles vs. 92 miles. The argument is specious. The 90-degree antenna receives interference over a shorter distance but also communicates over a shorter distance because of its lower gain, and it is subject to interference from foreign sources over a 22-times-wider angle.

Figure 3 in the waiver request compounds the error.⁴ It purports to show that a single 90-degree antenna could receive interference from a new transmitter over a much smaller area than 22 compliant antennas. But any compliant antenna directed significantly away from the new transmitter would have lower gain towards it, and so would need a shorter separation distance than the 90-degree antenna. For example, Category B2 requires minimum 20 dB suppression at 10-15 degrees off-axis, which would result in 13 dBi gain towards the interferer versus 16 dBi

² 47 C.F.R. § 101.115.

³ 47 C.F.R. § 101.115(b) (table). More precisely, these values are the maximum 3 dB beamwidths.

⁴ Waiver Request at 3.

for the 90-degree antenna. The gain and distance would decrease further with increasing off-axis angle. Figure 3 vastly overstates the affected area, while the waiver request fails to acknowledge the more robust link budget and greater communication distance supported by a compliant Category B2 antenna.

Furthermore, a new FS applicant would have to protect Encina's entire 90-degree sector, even at azimuths where Encina is not receiving. The Commission should not permit that unnecessary waste of spectrum.

The Commission has already ruled on Encina's issue:

To the extent WSI [Wireless Strategies, Inc.] proposes to allow the use of antennas that do not meet Category B standards, such a change would not result in the efficient use of spectrum. Eliminating the minimum Category B standards would allow licensees to deploy inefficient antennas that would radiate excessive radiofrequency energy away from the desired path of communication. *That change would result in an increased potential for interference and make it more difficult for other licensees to share spectrum.* The Category B standards have been in existence for many years, and WSI has not argued that it is burdensome for licensees to meet the Category B standards. We therefore reject the concept of allowing antennas that do not meet Category B standards.⁵

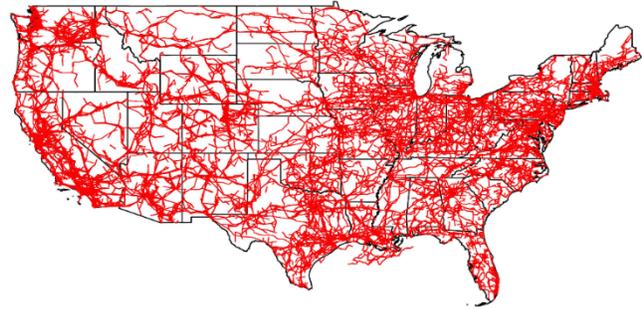
Encina must be aware of this ruling, as the principal who signed its application also signed WSI's pleadings in the rulemaking proceeding.

Encina does not argue for a waiver based on particularized facts in some atypical situation, but instead challenges the wisdom of the rule overall, just as WSI did in the rulemaking. The proper vehicle for that argument is not a waiver request attached to an application, but a Petition for Reconsideration in the rulemaking. And indeed, WSI filed a

⁵ *Facilitating the Use of Microwave for Wireless Backhaul*, Second Report and Order, WT Docket 10-153, Second Further Notice of Proposed Rulemaking, Second Notice of Inquiry, Order on Reconsideration, and Memorandum Opinion and Order, 27 FCC Rcd. 9735 at ¶ 75 (2012) (emphasis added).

petition that specifically challenges the passage above.⁶ The Commission gave public notice of the petition,⁷ but has not yet acted on it. The Commission should not permit WSI or its principal, through a differently-named company, to bypass the rulemaking process with a non-specific waiver request.

The 6 GHz FS frequencies are a scarce and needed resource. The 4 and 6 GHz bands are the only ones suitable for very long links, as range at higher frequencies is limited by rain fade and by greater free-space attenuation. At 4 GHz, an



6 GHz Fixed Service Links

FS applicant must protect every Fixed Satellite Service earth station against interference across the entire 3.7-4.2 GHz band and the entire geostationary arc—even if the earth station communicates with only one transponder on one satellite. The requirement makes it impossible to coordinate 4 GHz FS links across most of the country.

That leaves only the 6 GHz bands for links that must span tens of miles. The band is heavily occupied, with 94,000 transmit frequencies operating nationwide. To needlessly block the coordination of additional unused 6 GHz spectrum, as Encina's request would require, is contrary to the public interest.

⁶ Petition for Reconsideration of Wireless Strategies, Inc. in WT Docket 10-153 (filed Aug. 31, 2012). The FWCC opposed the petition on the same grounds as we oppose the present waiver request. Opposition to Petition for Reconsideration of the Fixed Wireless Communications Coalition in WT Docket No. 10-153 (filed Dec. 5, 2012).

⁷ *Public Notice*, Report No. 2964 (released Oct. 23, 2012).

Encina notes that its proposals would be less expensive than installing compliant antennas.⁸ The saving to Encina comes at the cost of taking irreplaceable spectrum out of useful service, depriving others of needed links. The same argument would support eliminating all standards for FS antennas.

CONCLUSION

The Commission should deny the waiver request as being contrary to the public interest, pending resolution of the same issue in WT Docket No. 10-153. If the Commission is disposed instead to consider the waiver, it should recognize that the action would constitute a significant shift in long standing-policy, and accordingly put the request on individual public notice so as to develop a record on the likely consequences. The matter is too important to treat as a routine attachment to an obscure application.

Respectfully submitted,



Cheng-yi Liu
FLETCHER, HEALD & HILDRETH, P.L.C.
1300 North 17th Street, 11th Floor
Arlington, VA 22209
Counsel for the Fixed Wireless
Communications Coalition

October 12, 2017

⁸ Waiver Request at 4.

CERTIFICATE OF SERVICE

I, an attorney with the firm Fletcher, Heald & Hildreth, PLC certify that I have caused a true copy of the preceding Informal Objection to Application and Opposition to Waiver to be sent by first-class mail, postage prepaid to:

Encina Communications Corporation
6701 Democracy Boulevard, Suite 300
Bethesda, MD 20817
ATTN Michael Mulcay

Signed at Arlington, Virginia, this 12th day of October 2017:

A handwritten signature in black ink, appearing to be 'Cheng-yi Liu', written in a cursive style.

Cheng-yi Liu