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Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: WT Docket No. 10-153, *Amendment of Part 101 to Facilitate Wireless Backhaul*

Dear Ms. Dortch:

On behalf of the Fixed Wireless Communications Coalition (FWCC),[1] pursuant to Section 1.1206(b)(2) of the Commission's Rules, I am electronically filing this written *ex parte* communication in the above-referenced docket.

We are proposing to amend an earlier suggestion by Comsearch to revise Section 101.115(f).

[1] 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, 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.

Comsearch offered the following change:

> In the 10,700–11,700 MHz band, a fixed station may employ transmitting and receiving antennas meeting performance standard B in any area. If a Fixed Service or Fixed Satellite Service licensee or applicant makes a showing that it is likely to receive interference from such fixed station and that such interference would not exist if the fixed station used an antenna meeting performance standard A, the fixed station licensee must modify its use. Specifically, the fixed station licensee must either substitute an antenna meeting performance standard A or operate its system with an EIRP reduced so as not to radiate, in the direction of the other licensee, an EIRP in excess of that which would be radiated by a station using a Category A antenna and operating with the authorized EIRP. ~~maximum EIRP allowed by the rules~~. A licensee or prior applicant using an antenna that does not meet performance Standard A may object to a prior coordination notice based on interference only if such interference would be predicted to exist if the licensee or prior applicant used an antenna meeting performance standard A.[2]

In support of this proposal, Comsearch explained that most 11 GHz stations use an EIRP far below the Part 101 maximum of 85 dBm. Indeed, most are below 60 dBm.

To illustrate the need for Comsearch's change, consider a Category B incumbent operating with a mainbeam EIRP of 70 dBm (far above average). If a later applicant predicts interference, the original rule language requires the incumbent to turn down the power so that its signal, in the direction of the later applicant, is no greater than that from an 85 dBm mainbeam signal using a Category A antenna. But at 11 GHz, the maximum difference in any direction between Category A and Category B is 15 dB.[3] So a Category B licensee operating at a mainbeam EIRP of 70 dBm (or lower) already meets the requirement of the rule in every direction!—and cannot be obligated to modify its operation at all.[4] This situation applies to nearly all 11 GHz licenses.

Comsearch proposed the rule change shown above to remedy this problem. The FWCC supported the change.[5]

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[2] Comments of Comsearch at 4-7 (filed Oct. 4, 2011) (proposing to amend 47 C.F.R. § 101.115(f).

[3] 47 C.F.R. § 101.115(b)(2) (table). The 15 dB differential applies in the 100-140 degree sector. The differential in other directions is as low as 4 dB.

[4] *See* Comments of Comsearch, above, at 5.

[5] Reply Comments of the FWCC at 2 (filed Oct. 25, 2011).

On further reflection, however, we think the language needs an additional adjustment. The Comsearch proposal could have the unwanted effect of encouraging Category B applicants to apply for more power than they need, in order to leave themselves headroom in case a later applicant predicts interference. An operator that needs 60 dBm, say, might apply for 75 dBm, and operate at 60 dBm. In the event of predicted interference later on, the now-incumbent can truthfully say that its EIRP in every direction is less than that of a Category A antenna at the authorized EIRP, *i.e.*, 75 dBm. No change in operation would ever be needed. Yet the needlessly high 75 dBm authorization in the database would hinder frequency coordination in the area.

The FWCC accordingly proposes a further language change, shown here in underlined boldface type:

> In the 10,700–11,700 MHz band, a fixed station may employ transmitting and receiving antennas meeting performance standard B in any area. If a Fixed Service or Fixed Satellite Service licensee or applicant makes a showing that it is likely to receive interference from such fixed station and that such interference would not exist if the fixed station used an antenna meeting performance standard A, the fixed station licensee must modify its use. Specifically, the fixed station licensee must either substitute an antenna meeting performance standard A or operate its system with an EIRP reduced so as not to radiate, in the direction of the other licensee, an EIRP in excess of that which would be radiated by a station using a Category A antenna and operating with the authorized EIRP**; however, a fixed station licensee may reduce its EIRP pursuant to this paragraph only once during the station's operating life; and if the licensee would have to reduce its EIRP to a level that is less than 3 dB below its authorized EIRP in order to resolve the predicted interference, then the licensee must substitute an antenna meeting performance standard A.** ~~maximum EIRP allowed by the rules.~~ A licensee or prior applicant using an antenna that does not meet performance Standard A may object to a prior coordination notice based on interference only if such interference would be predicted to exist if the licensee or prior applicant used an antenna meeting performance standard A.

This additional change would eliminate one incentive for an applicant to overstate its power needs for the purpose of avoiding later modification to Category B operations.

The permitted 3 dB reduction in power, other things being equal, reduces the path availability. As an illustration, consider a 14.2 km long 11 GHz link in New Jersey having a 31.3 dB fade margin, designed for 99.995% availability. A 3 dB drop in power would reduce availability to 99.991%; the unavailability increases from 26 minutes to 47 minutes per year. Links having different parameters will show comparable changes. If the incumbent is unwilling to accept the lower availability, it can instead upgrade to a Category A antenna.

* * * *

Alternatively, the Commission could achieve much the same result by keeping Comsearch's proposed change to Section 101.115(f), as quoted above, and also amending Section 101.113 to clarify that a licensee may not hold an authorization for substantially more power than it actually needs.

Section 101.113(a) now provides:

> On any authorized frequency, the average power delivered to an antenna in this service must be the minimum amount of power necessary to carry out the communications desired. . . .

Strictly read, this language only prevents a licensee from *operating* at a higher power than needed. It does not prevent an applicant from *requesting authorization* for a higher power than needed. We therefore propose the following amendment:

> On any authorized frequency, the average power **requested in an application for authorization and** delivered to an antenna in this service must be the minimum amount of power necessary to carry out the communications desired**, except as provided in paragraph (b)**. . . .

Section 101.113(b) now provides:

> The power of transmitters that use Automatic Transmitter Power Control shall not exceed the power input or output specified in the instrument of station authorization. The power of non-ATPC transmitters shall be maintained as near as practicable to the power input or output specified in the instrument of station authorization.

The second sentence should suffice to prevent a non-APTC licensee from requesting more power than it plans to use, but the first sentence imposes no such restriction on an ATPC licensee. We therefore propose an amendment that would apply to both APTC and non-APTC transmitters:

> The **maximum** power of transmitters that use Automatic Transmitter Power Control **(ATPC) and the power of non-ATPC transmitters** shall not exceed**, and** ~~the power input or output specified in the instrument of station authorization. The power of non-ATPC transmitters~~ shall be maintained as near as practicable to**,** the power input or output specified in the instrument of station authorization. **A licensee that reduces power in order to resolve interference pursuant to Section 101.115(f) must update its license to reflect the reduced power level.**

The FWCC believes that amending either Section 101.115(f), as proposed above, or adopting Comsearch's proposed change to Section 101.115(f) and also amending Section 101.113, as proposed above, will accomplish the Commission's original intent with regard to power decreases in lieu of antenna upgrades.

Please contact me with any questions.

Respectfully submitted,

Mitchell Lazarus
Counsel for the Fixed Wireless
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