

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
AIRCELL, Inc.)	WT Docket No. 02-86
)	
Petition for Extension of Waiver)	DA 03-721

SPRINT REPLY COMMENTS

Sprint Corporation, on behalf of its wireless division (“Sprint”), hereby submits its response to comments filed April 10, 2003 regarding the March 28, 2002 Petition for Extension of Waiver filed by AirCell, Inc. (“AirCell”).¹

Sprint is not directly affected by whether AirCell’s waiver is extended, because Sprint does not hold any cellular licenses. Sprint is, however, affected by the Commission’s development and application of standards for determining whether to allow access to already-licensed spectrum. In particular, Sprint is concerned by the Commission’s use of a novel standard for assessing whether secondary AirCell operations cause harmful interference to primary, licensed, cellular operations in its *AirCell Remand Order*.²

In that order, the Commission appears to have based its interference analysis on several assumptions that deviate from the test record, industry standards, and customer expectations.

¹ Comments were filed by AT&T Wireless Services, Inc., Cingular Wireless LLC, and Cellco Partnership d/b/a Verizon Wireless (“Joint Commenters”); AirCell; Rural Cellular Corporation (“RCC”); Rural Cellular Association (“RCA”); and Lucent Technologies, Inc. (“Lucent”).

² *AirCell, Inc., Order on Remand*, FCC 02-324 (Feb. 10, 2003) (“*AirCell Remand Order*”), *pet. for review pending sub nom. AT&T Wireless Services, Inc., et al. v. FCC*, No. 03-1043 (D.C. Cir., filed Feb. 26, 2003).

The Commission there chose to assess potential interference not from the “bottom up” (*i.e.*, by measuring up from the noise floor to determine where interference occurs and becomes harmful), but from the “top down” (*i.e.*, by establishing a threshold below which it deemed interference non-existent), based on arbitrary criteria and contrary to test data in the record.³ Having established a -117 dBm threshold in this way, the Commission then contradicted its own assumption that a 17 dB C/I ratio was necessary for acceptable service and decided that this ratio could be degraded up to 6 dB by interference (even though this would result in a noisy, objectionable-quality call) without it being considered harmful. In other words, the Commission found that interference would only be deemed harmful, and thus prohibited, if it reached -110 dBm, thereby reducing the quality of an arbitrary -100 dBm call from the 17 dB industry-standard C/I ratio to 10 dB.

The Commission’s determination that a cellular signal is not receiving harmful interference until the quality necessary for acceptable service is impaired by 7 dB is unreasonable on its face. A harmful interference threshold of -110 dBm based on arbitrary assumptions is not a rational basis for evaluating AirCell’s petition for extension of its waiver, including its use of digital channels. That would virtually ensure that the terrestrial cellular service relied on by customers for emergencies, as well as for business and personal communications, will be seriously degraded and disrupted by AirCell operations in a wide swath along the airborne terminal’s flight path. Sprint could not accept the precedent of using an arbitrary standard such as this to evaluate

³ The Commission established its “interference threshold level” by stating that the minimum necessary received signal strength for an acceptable quality call was -100 dBm, and then subtracting the 17 dB C/I ratio necessary for such quality from it, to arrive at a -117 dBm threshold. It selected the -100 dBm figure from a textbook, rather than based on an analysis of actual received signal strength levels from the test sites, a large proportion of which were lower than -100 dBm.

interference to PCS operations from a supposedly secondary use of Sprint's exclusively licensed spectrum.

Here, the Commission need not — and should not — engage in arbitrary assumptions or use an arbitrary harmful interference threshold. The Joint Commenters have provided a wealth of test data under a variety of actual operating conditions showing precisely what effects AirCell's interference levels will have on real-world analog and digital terrestrial traffic. Their consultant, V-Comm, appears to have used reasonable, unbiased criteria for assessing the effects of such interference — indeed, the Commission would have been well justified in using considerably more conservative criteria that would have provided more protection to terrestrial service. There can be no doubt, based on V-Comm's tests and analysis, that AirCell operations will be likely to seriously disrupt and degrade terrestrial service — *i.e.*, will cause harmful interference.⁴

Sprint notes that Lucent has filed comments supporting V-Comm's methodology for analyzing the effect of AirCell interference. Lucent has included a white paper explaining the effects of such interference on CDMA systems, in particular.⁵ Given the nature of CDMA systems, interference does not manifest itself in the same ways as in analog FM systems. Instead of adding noise or distortion to a given co-channel call or causing dropouts or lost calls, interference has the effect of reducing the system's effective coverage and/or capacity. These effects constitute harmful interference to the CDMA network's operation just as surely as reduced C/I ratio and consequent loss of audio quality on an analog channel represents harmful interference. A reduction in cell size or capacity results in a denial or disruption of calls that would otherwise

⁴ The Joint Commenters have further shown that even if the -110 dBm harmful interference threshold arbitrarily adopted in the *AirCell Remand Order* is used to analyze the V-Comm test data, the Commission must conclude that AirCell will cause harmful interference. *See* Comments of Joint Commenters at 70-71; *id.*, Exhibit III (V-Comm Remand Analysis).

⁵ *See* Lucent Comments, Attachment, *Impact of External Interference on CDMA* (May 24, 2002).

have been carried without incident, consistent with the definition of harmful interference. If an E-911 call cannot be placed or maintained on a CDMA system because interfering AirCell signals have caused a reduction in cell size or capacity, AirCell has unquestionably caused harmful interference.

CONCLUSION

Based on the evidence before the Commission, Sprint urges the Commission to deny the AirCell waiver extension request.

Respectfully submitted,

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Certificate of Service

I, Felicia Lane, hereby certify that copies of the foregoing “Reply Comments of Sprint Corporation” were served this 9th day of June, 2003 via first class U.S. mail on the following:

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