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October 27, 2005

BY ELECTRONIC FILING

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
The Portals  
445 Twelfth Street, S.W.  
Washington, D.C. 20554

Re: Docket No. 03-66  
*Written Ex Parte Presentation*

Dear Ms. Dortch:

A single party to this proceeding, NY3G Partnership (NY3G), has attempted to portray a commonplace regulatory fact-of-life – boundaries between wireless geographic service areas – as somehow preventing millions of people from accessing broadband services over the 2.5 GHz band.<sup>1</sup> Specifically, NY3G claims that creating a geographic boundary over the New York City area between co-channel licensees will preclude service on the 2.5 GHz band's E and F channels to all people who live and work within 7.8 kilometers on either side of the border between the Partnership's license area and that of Trans Video Communications (TVC). NY3G's engineering analysis is deeply flawed and should be accorded no weight.

Sprint Nextel Corporation engaged a highly respected third-party consultant, Kessler and Gehman Associates, Inc., to examine the border area and to determine how much, if any, coverage would be compromised as a result of the "split-the-football" rule that the Commission adopted in the *BRS-EBS Realignment Order*.<sup>2</sup> Robert Gehman, Jr., a professional engineer with more than 25 years of experience in telecommunications engineering, conducted the analysis that is attached.

According to Mr. Gehman, the *worst-case* result from applying the Commission's "split-the-football" rule would result in an affected area of no more than 0.98 kilometers on either side of the cellular boundary, *not* 7.8 kilometers as NY3G claims. This worst-case scenario completely ignores the real-world interference mitigation techniques that operators

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<sup>1</sup> See, e.g., Letter from Bruce D. Jacobs and Tony Lin, Counsel to NY3G Partnership, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket 03-66 (Oct. 17, 2005).

<sup>2</sup> *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Report and Order, 19 FCC Rcd 14165 (2004) (*BRS/EBS Realignment Order*), recon. pending.

use on a daily basis in the commercial mobile radio service and other bands to operate in proximity to geographic area boundaries. As Mr. Gehman observes, commonly used low-cost techniques such as carefully selecting tower locations, pointing antenna sectors away from the border, and placing attenuating material on the back of the transmit antenna, will greatly mitigate any interference problems. Even minimal coordination by the licensees on either side of the border will, in Mr. Gehman's words, "essentially eliminate" NY3G's so-called "exclusion zone."

In conclusion, NY3G's engineering analysis is highly misleading and warrants no further consideration. Prompt Commission action denying NY3G's proposal will advance the regulatory certainty essential to achieving the broadband promise of the realigned 2.5 GHz band.

Under section 1.1206(b) of the Commission's rules, 47 C.F.R. § 1.1206(b), please associate this letter with the above-referenced proceeding.

Sincerely,

A handwritten signature in black ink, appearing to read "Lawrence R. Krevor". The signature is fluid and cursive, with a long horizontal stroke at the end.

Lawrence R. Krevor  
Vice President Government Affairs - Spectrum  
Sprint Nextel Corporation

cc: Fred Campbell, John Branscome, John Giusti, Barry Ohlson, Catherine Seidel, Catherine Massey, Uzoma Onyeije, Joel Taubenblatt, John Schauble



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## **ENGINEERING STATEMENT OF ROBERT GEHMAN, JR., P.E.**

The FCC Rules contain various parameters within which BRS and EBS stations must operate while in close proximity to their GSA boundary as an aid in minimizing interference between adjacent markets. This engineering statement will demonstrate that it is possible to use most of the area within close proximity of the GSA boundary while at the same time complying with these FCC parameters.

### **47 dBu Field Strength Limit**

The first parameter is the 47 dBu field strength limit at the boundary, which is a measured parameter, but for the purposes of this demonstration will be based on worst-case calculations assuming a clear line of sight between the transmitting antenna and the boundary for free-space propagation conditions. Assuming a base station operating with a maximum EIRP of 0.1 watt and a transmitting antenna with a 20 dB front-to-back (F/B) ratio, a base station must be located a minimum distance of 0.61 mile from the boundary to prevent the field strength from exceeding the 47 dBu limit at the boundary. The calculations are detailed in the following table.

<b>FCC 27.55 Boundary Protection</b>	<b>47.0 dBu</b>
(EIRP Maximum -10.0 dBW)	
(Tx F/B ratio 20.0 dB)	
<b>EIRP</b>	<b>-30.0 dBW</b>
<b>Minimum Boundary Distance</b>	<b>0.61 miles</b>

### **-107 dBm Co-Channel Protection**

The second parameter is the -107 dBm (-137 dBW) power limit at the receiving base station in the adjacent market, which is also a measured parameter, but for the purposes of this demonstration will again be based on worst-case calculations assuming a clear line of sight between the transmitting antenna and the boundary for free-space propagation conditions. Assuming a base station operating with a maximum EIRP of 0.1 watt and a transmitting antenna with a 20 dB front-to-back (F/B) ratio, a base station must be located a minimum distance of 0.90 mile from the protected base station to prevent the field strength from exceeding the -107 dBm limit. The calculations of the 0.9 mile spacing requirement is depicted in the following table. This would be equivalent to each station being located

## Engineering Statement

0.45 mile from the boundary, which is closer than the 0.61 mile distance required to comply with the 47 dBu field strength limit, and thus implies a minor degree of cooperation between the adjacent market operators.

<b>Frequency</b>	<b>2600 MHz</b>
<b>FCC 27.1221 Protection</b>	<b>-137.0 dBW</b>
(EIRP Maximum	-10.0 dBW)
(Tx F/B ratio	20.0 dB)
<b>EIRP</b>	<b>-30.0 dBW</b>
(Rx Gain Maximum	17.0 dBi)
(Rx F/B ratio	20.0 dB)
<b>Rx Gain</b>	<b>-3.0 dBi</b>
<b>Free Space Loss</b>	<b>-104.0 dB</b>
<b>Minimum Base Station Spacing</b>	<b>0.90 miles</b>

### Conclusions

The above demonstrates that it would be possible to operate a base station 0.61 mile inside a GSA boundary with a 20 dB null toward the boundary to comply with the 47 dBu limit, which would significantly reduce the area and population of the so-called “exclusion zone”. This facility would also protect a similar co-channel base station located 0.61 mile inside the adjacent GSA. With cooperation of the adjacent operators these two stations could be moved to 0.45 mile and still provide co-channel protection to each other, further reducing the excluded area and population. Furthermore, there are other engineering techniques (beam-tilt, antenna shielding, smart antennas) that could be used to further reduce the spacing between the two base stations, as well as licensee coordination, which would essentially eliminate the exclusion zone.

KESSLER AND GEHMAN ASSOCIATES, INC.



Robert Gehman, Jr., P. E.  
President  
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October 25, 2005