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

In the Matter of	)	
	)	
Service Rules for Advanced Wireless Services	)	
in the 1915-1920 MHz, 1995-2000 MHz,	)	WT Docket No. 04-356
2020-2025 MHz and 2175-2180 MHz Bands	)	
	)	
Service Rules for Advanced Wireless Services	)	WT Docket No. 02-353
in the 1.7 GHz and 2.1 GHz Bands	)	
	)	

JOINT REPLY COMMENTS OF SPRINT CORPORATION, VERIZON WIRELESS AND NEXTEL COMMUNICATIONS

Sprint Corporation, Verizon Wireless and Nextel Communications (collectively, the "Parties") jointly submit these reply comments in response to the Federal Communications Commission's ("Commission") *NPRM*, which seeks to develop service rules for Advanced Wireless Services operating in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz bands.[1]

The Parties believe it is the Commission's obligation to establish rules and policies that prevent harmful interference to existing services, while at the same time enabling new services to develop and flourish. In the 1915-1920 MHz and 1995-2000 MHz bands ("H Block"), the Parties have conducted extensive testing and analyses in examining the potential for the H Block to cause harmful interference to existing services. Although the Parties may have reached different conclusions regarding H Block interference, they remain resolute in their efforts to mitigate the potential for interference and maximize the use of the H Block spectrum and, in fact,

[1] *Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands*, Notice of Proposed Rulemaking, 19 FCC Rcd 19263 (2004) ("*NPRM*").

all other PCS spectrum. Accordingly, the Parties brought together their engineering experts to review and analyze the entire body of test data with the goal of finding effective solutions to the H Block interference problems. The result of this effort is a technology-neutral set of rules, set forth in the attached *Joint H Block Proposal*, which the Parties believe would provide adequate protection for all PCS operations, while making the H Block usable for mobile and other services.

The *Joint H Block Proposal* addresses, in a technology-neutral manner, the three types of interference that could occur, *i.e.*, overload, intermodulation, and out-of-band emission ("OOBE"), by proposing mobile transmit power and OOBE limits that would substantially mitigate the potential for interference. In addition, the proposal recognizes that technology continues to advance and that improved filtering techniques and/or other technological developments may address the H Block interference issues without the need for the power and OOBE limits proposed herein. The proposal is described more fully in the following paragraphs.

First, the *Joint H Block Proposal* recommends transmit power limits for terrestrial mobile devices that are designed to prevent overload and intermodulation interference. The potential for interference to occur, as demonstrated by the evidence in the record, is greater for the 1917-1920 MHz portion of the H Block as compared to the 1915-1917 MHz portion of the H Block. Consequently, the Parties recommend the Commission establish power limits that are more stringent for 1917-1920 MHz and less stringent for 1915-1917 MHz. Specifically, based on the test data submitted by CTIA – The Wireless Association ("CTIA"),[2] the Parties recommend a 6

[2] *See* Comments of CTIA – The Wireless Association ("CTIA Comments"), filed Dec. 8, 2004 at 18-23.

dBm EIRP limit at 1917-1920 MHz and a 30 dBm EIRP limit at 1915-1917 MHz, which would permit this band to be used with existing handset technology.[3]

Second, the *Joint H Block Proposal* recommends an OOBE limit of -76 dBm/MHz for all PCS emissions that fall into the PCS receive band (1930-2000 MHz), including emissions from PCS Blocks A through H. This limit has already been established by TIA as an industry standard for CDMA, and the Parties believe this standard is met today and can be met in the future by other technologies on a technology-neutral basis.[4] Specifically, test data in the record demonstrates that GSM handsets can meet –76 dBm/MHz OOBE limit, provided that compliance with the limits is measured on an RMS average basis. This limit would be applied prospectively to handsets twelve months from the adoption of the rules developed in this proceeding.

Third, the *Joint H Block Proposal* provides a framework for raising the H Block power limits if warranted by technological advancements. Specifically, the *Joint H Block Proposal* provides mechanisms for assessing in the future whether filtering and/or other technologies have developed that both (i) are comparable to existing PCS handset technologies in terms of cost and performance and (ii) would prevent overload and intermodulation interference from H Block

[3] The range of maximum power limits for Class II mobiles set forth in PCS industry standard, TIA-98 – to which CDMA handsets are certified – is +23 to +30 dBm. Although PCS handsets typically operate at or below the +23 dBm power level, the maximum transmit power towards the peak antenna gain direction measures +26 to +28 dBm, including the peak antenna gain of +3 dBi or more. Accordingly, while the Parties do not anticipate that mobile operations in the 1915-1917 MHz band will exceed the +23 dBm level on average (and generally will operate below that level), the +30 dBm limit is proposed to accommodate and account for the variance in antenna gains and permit compliance with existing measurement requirements.

[4] T-Mobile stated in its Comments to the NPRM that it believes "all existing CDMA and GSM PCS handsets fully comply with OOBE limits of -76 dBm/MHz, confirming that such OOBE restrictions are eminently achievable and commercially viable." *See* Comments of T-Mobile USA, Inc., filed Dec. 8, 2004 at 10.

mobile operations into the PCS mobile receive bands, without the need for the power limits described therein. If the assessment demonstrates that such technologies exist, the Commission would raise the power limits in the 1915-1920 MHz band. If such rule changes are made, the Commission should establish a transition period that would ensure sufficient time is afforded to facilitate the phase-out and replacement of PCS handsets that are adversely affected by the changes.

CONCLUSION

The Parties respectfully request that the Commission incorporate the terms of the Joint H Block Proposal into the PCS rules.

Respectfully submitted,

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ATTACHMENT

Joint H Block Proposal

Sprint Corporation – Verizon Wireless – Nextel Communications

JOINT H BLOCK PROPOSAL

Note: The proposed rules described here would apply to the transmissions of terrestrial mobile or portable stations in the 1850-1920 MHz band. Such devices would be excluded from transmitting in the 1930-2000 MHz band.

(1) EIRP Limits

(a) Transmissions in the 1915-1917 MHz band would be limited to 30 dBm EIRP (*Measured as described in current rules*).

(b) Transmissions in the 1917-1920 MHz band would be limited to 6 dBm EIRP (*Measured as described in current rules*).

(2) OOBE Limit

(a) For operations in the 1850-1920 MHz band, the power of any emission outside of the authorized operating frequency range must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

(b) Notwithstanding the preceding section, for operations in the 1850-1920 MHz band, the power of any emission outside of the authorized operating frequency range that falls within the 1930-2000 MHz band cannot exceed -76 dBm/MHz. (*Measured as an average RMS measurement*).

(c) For mobile devices operating on PCS Blocks A-F, the OOBE limit set forth herein will apply twelve months after the effective date of the order adopting these rules.

(3) Changes in Filter Technology

(a) No more than three years from the effective date of the Order establishing these rules, the Commission will initiate a Notice of Inquiry (NOI) to assess the status of filter technology at that time and consider whether changes to the EIRP limits are warranted.

(1) The Commission shall consider whether improved filters are commercially available and capable of providing: (i) at least 50 dB of attenuation rejection for mobile transmit signals from the 1850-1920 MHz band; and (ii) insertion loss in the 1930-2000 MHz band comparable to existing values in the 1930-1990 MHz band. The Commission's analysis shall consider whether the improved filters are comparable in terms of performance, size, and cost to Surface Acoustic Wave (SAW) and other filters used in existing PCS handsets, such that the improved filters can be economically employed into PCS handsets (*i.e.*, by maintaining comparable production costs, operational features, and capabilities as the existing PCS handsets).

(2) As an alternative, the Commission shall consider whether other technical enhancements besides or in addition to improvements in filter technology, such as improvements in low noise amplifiers (LNAs), mixers, and other handset components, will provide the functional equivalent of the performance, capabilities, price, and operational characteristics identified in the preceding subparagraph (1) above.

(b) Upon finding that comparable filters or other functionally equivalent technical enhancements are available as described in paragraph (a) above, the Commission shall issue a Notice of Proposed Rulemaking that establishes a relaxed EIRP limit for mobile transmit operations in the 1915-1920 MHz band and a transition period that will apply before the relaxed EIRP limit can become effective, based upon the amount of time reasonably required to phase out and replace existing PCS handsets adversely affected by such a rule.

(c) Notwithstanding the preceding paragraph, anyone may petition the Commission to initiate a Notice of Proposed Rulemaking in advance of the three-year deadline to conduct a Notice of Inquiry. Petitioners should explain how improvements in filter technology have occurred that meet the criteria set forth in subparagraph (a) above.