

EXHIBIT B

Request for Partial Waiver of Section 25.210(i) 30 dB Cross-Polarization Requirement

Section 25.210(i) of the Commission's rules requires space station antennas in the Fixed-Satellite Service to be designed to meet a cross-polarization isolation of 30 dB within the primary coverage area of the antenna. The DIRECTV 15 transmit and receive antennas (for spot and CONUS,) have a design requirement to meet a minimum cross-polarization isolation of 27 dB and for telecommand of 25 dB.

Cross-polarization interference can result from either ground terminal or spacecraft polarization imperfections, or from atmospheric effects such as rain. While the DIRECTV 15 satellite antenna beam design does not specify a minimum 30 dB cross-polarization over the entire coverage area as required by Section 25.210(i), cross-polarization interference is predominantly an intra-system design issue and does not affect inter-system coordination. Use in the DIRECTV 15 system of digital modulation with forward error correction coding on both polarization senses reduces the system sensitivity to cross-polarization interference. Specifically, polarization isolation, directivity and antenna implementation losses have been jointly optimized to yield the best overall performance. The expected level of cross-polarization isolation and resulting cross-polarization interference accounts for a small fraction of the overall total link noise. DIRECTV designed its satellite in light of all of these factors, and has concluded that a minimum isolation of 27 dB for communications carriers and 25 dB for telecommand is more than sufficient to avoid excessive levels of intra-system interference. Based on these same considerations, DIRECTV also submits that other Ka-band satellite systems will not be affected by the operations of DIRECTV 15. Grant of the requested waiver would be consistent with prior Commission decisions, including those for two other DIRECTV satellites.¹

Accordingly, DIRECTV requests a waiver of the 30 dB cross-polarization isolation requirement of Section 25.210(i).

¹ See Grant Stamp, IBFS File No. SAT-LOA-20040909-00168, Condition 3 (Int'l Bur., issued Mar. 8, 2005); Grant Stamp, IBFS File No. SAT-MOD-20040614-00113, Condition 6 (Int'l Bur., issued Nov. 4, 2004).