EXHIBIT B

1. 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 14 transmit and receive antennas (for spot, CONUS, and TT&C) have a design requirement to meet a minimum cross-polarization isolation of 27 dB.

Cross-polarization interference can result from either ground terminal or spacecraft polarization imperfections, or from atmospheric effects such as rain. While the DIRECTV 14 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 14 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 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 14. Grant of the requested waiver would be consistent with prior Commission decisions, including those for two other DIRECTV satellites operating at the same nominal orbital location.[1]

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

2. Request for Waiver of Section 25.202(g) In-Band TT&C Requirement

Section 25.202(g) of the Commission's rules provides that telemetry, tracking and command ("TT&C") functions shall be conducted at either or both edges of the allocated bands. The bands allocated for Ka-band FSS service are 18.3-18.8/19.7-20.2 GHz (downlink) and 28.35-28.6/29.25-30.0 GHz (uplink). DIRECTV has been authorized to operate using all of these frequencies at the nominal 99º W.L. orbital location.[2] The

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[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).

[2] *See generally id.*

communications payload on DIRECTV 14 will operate only in the 19.7-20.2 GHz/29.5-30.0 GHz portions of these bands. TT&C functions for this spacecraft, however, will use frequencies at the upper edge of the 18.3-18.8 GHz and lower edge of the 28.35-28.6 GHz bands. This will allow DIRECTV to better integrate the TT&C frequencies for DIRECTV 14 with its existing infrastructure.

Accordingly, to the extent necessary, DIRECTV requests a waiver of Section 25.202(g) such that it may conduct TT&C functions at the edges of the allocated Ka-band frequencies even though they are not contiguous with the portion of the band that DIRECTV will use for communications.

3. Request for Partial Waiver of Section 25.114(d)(3) and Schedule S .gxt Filing Requirement

Section 25.114(d)(3) of the Commission's rules requires applicants for geostationary orbit satellite authorizations to provide predicted space station antenna gain contours for each transmit and each receive antenna beam in the .gxt format. Similarly, Item S8 of Schedule S calls for a .gxt file containing antenna gain contour data for each beam on the spacecraft. DIRECTV requests partial waiver of these requirements in two respects.

First, DIRECTV has found that the Schedule S software is unable to accommodate .gxt files for the number of beams on a satellite such as DIRECTV 14. Accordingly, as it has done in previous cases, DIRECTV will submit the .gxt files directly to the International Bureau staff in a GIMS container database file for inclusion in the record with the other materials supporting this application.

Second, antenna gain contours for the on-station command (OSC) and telemetry (OST) horns have been provided graphically in Appendix B to the application, rather than as .gxt files. As can be seen in that Appendix, the beamwidth of the OSC and OST horn antennas is very wide (*e.g.*, the 1.5 dB beamwidth would easily cover all of CONUS), and as such, there is little useful information gained by providing this information in .gxt format.

Accordingly, DIRECTV requests a waiver of the .gxt filing requirements of Section 25.114(d)(3) and Schedule S.