EXHIBIT B
WAIVER REQUESTS

1. Request for Partial Waiver of Section 25.210(i)(1) 30 dB Cross-Polarization Requirement

Section 25.210(i)(1) 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 KU-76W Ku-band transmit antenna (for communications and TT&C) is estimated to have a cross-polarization isolation of 29 dB and the global telecommand and telemetry antennas 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 KU-76W Ku-band transmit antenna falls just short of a minimum 30 dB cross-polarization over the coverage area as required by Section 25.210(i)(1), cross-polarization interference is predominantly an intra-system design issue and does not affect inter-system coordination. Use in the DIRECTV KU-76W 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 the 29 dB of isolation for the Ku-band transmit, and the 27 dB of isolation for the telecommand and telemetry global beams is more than sufficient to avoid excessive levels of intra-system interference. Based on these same considerations, DIRECTV also submits that other Ku-band satellite systems will not be affected by the operations of DIRECTV KU-76W. Grant of the requested waiver would be consistent with prior Commission decisions, including those for other DIRECTV satellites.[1]

Accordingly, DIRECTV requests a waiver of the 30 dB cross-polarization isolation requirement of Section 25.210(i)(1).

2. Request for Waiver of 17/24 GHz BSS Application Requirements

As noted in the main Application, DIRECTV does not seek Commission authority to operate the 17/24 GHz BSS payload on the DIRECTV KU-76W satellite, but is providing technical information regarding that payload for the Commission's records. In these circumstances, DIRECTV submits that the Commission's requirements concerning

---

[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).

17/24 GHz BSS operations do not apply. Nevertheless, out of an abundance of caution, DIRECTV seeks any waivers of Sections 25.140(b) and 25.264(a) and (b), which specify information that must be provided in support of an application for a 17/24 GHz BSS space station license.

A. Section 25.140 Interference Analysis Requirement

Section 25.140(b) of the Commission's rules requires each applicant for a 17/24 GHz BSS space station license to provide one of several interference analyses to demonstrate either the compatibility of its proposed network with any current or future authorized 17/24 GHz BSS space station or the lack of additional interference to such a space station.

DIRECTV is not an applicant for a 17/24 GHz BSS space station license. Accordingly, by its own terms, the rule does not apply here. Nonetheless, to the extent necessary, DIRECTV requests a waiver of this requirement. Section 25.140(b) was adopted as part of the Commission's four-degree spacing environment for 17/24 GHz BSS operations. The requested waiver will not contravene that underlying purpose. Because the 17/24 GHz BSS payload on DIRECTV KU-76W will not be licensed by the Commission at this time, an applicant for a 17/24 GHz BSS authorization will not have to take that payload into account in its own interference analysis. Moreover, DIRECTV's 17/24 GHz BSS downlink beam is designed to serve areas outside the U.S. (Mexico, Central America, and parts of the Caribbean), creating geographic separation from any system that would serve the U.S.[2] In addition, although it could not provide the complete PFD calculation required by the Commission, DIRECTV did submit a worst-case calculation in the main Application, which shows that the maximum PFD on the Earth's surface from this satellite is lower than the lowest value specified in the regional PFD limitations set forth in Section 25.208(w), and lower than the lowest values specified for the 17.7-17.8 GHz band in 25.208(c), of the Commission's rules.

Under these circumstances, granting any necessary waiver of the interference analysis requirements in Section 25.140 would not undermine the rule and would serve the public interest. Accordingly, to the extent necessary, DIRECTV requests a waiver of Section 25.140(b).

B. Section 25.264 Requirements to Facilitate Reverse Band Operations

Section 25.264 of the Commission's rules sets forth various requirements to facilitated reverse band operation in the 17.3-17.8 GHz band by 17/24 GHz BSS and Direct Broadcast Satellite ("DBS") space stations. In particular, it requires each applicant for a 17/24 GHz BSS space station license to submit with its application specific

---

[2] DIRECTV also notes that there are no 17/24 GHz BSS space stations authorized by the Commission within 4 degrees of the 76° W.L. orbital location. DIRECTV also notes that there are no operational 12/17 GHz DBS space stations within 0.2 degrees of the 76° W.L. orbital location.

predicted transmitting antenna off-axis gain information and a power flux density ("PFD") calculation based thereon to show that its proposed operations would not exceed the applicable coordination trigger at the location of any prior-filed U.S. DBS space station.[3]

Here again, DIRECTV is not an applicant for a 17/24 GHz BSS space station license. Accordingly, by its own terms, the rule does not apply here. Nonetheless, to the extent necessary, DIRECTV requests a waiver of this requirement. Section 25.264 is designed to mitigate the potential for space path interference to DBS operations. The requested waiver will not contravene that underlying purpose. The requested orbital location of DIRECTV KU-76W is 1.2 degrees away from the center of the nearest cluster of operational DBS satellites (operating under Mexican authority at the 77° W.L. orbital location). The Commission has recognized that interference between 17/24 GHz BSS and operational DBS space stations is unlikely even at separations as small as 0.2 degrees.[4] In addition, although it could not provide the complete PFD calculation required by the Commission, DIRECTV did submit a set of worst-case calculations in the main Application, which show that the satellite's far off-axis PFD is below the coordination trigger established under the Commission's rules for any orbital separation of 0.074° or greater. DIRECTV also indicated that it intends to have the manufacturer perform the required far off-axis transmit antenna measurements in order that such measurement results would be available should they be needed in the future.

Under these circumstances, granting any necessary waiver of the information requirements in Section 25.264 would not undermine the rule and would serve the public interest. Accordingly, to the extent necessary, DIRECTV requests a waiver of Section 25.264(a) and (b).

---

[3] *See* 47 C.F.R. § 25.264(a) and (b).

[4] *See* 47 C.F.R. § 25.264(g).