

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)

Echostar Satellite L.L.C.)

For Modification of License to)
Select TT&C Frequencies for its)
Ka-band GSO Satellite at 117° W.L.)

File No. SAT-MOD-20041208-00218
Call Sign: S2490

Order and Authorization

Adopted: **March 2, 2005**

Released: **March 2, 2005**

By the Chief, Satellite Division, International Bureau

I. INTRODUCTION

1. By this Order, we modify Echostar Satellite L.L.C.'s (Echostar's) authorization to construct, launch, and operate a Ka-band¹ Geostationary Satellite Orbit (GSO) satellite at the 117° W.L. orbital location, to include Ka-band and Ku-band² Tracking, Telemetry, and Command (TT&C) links. In addition, we grant Echostar's request for a limited waiver of Section 25.202(g)³ of the Commission's rules to operate TT&C links in the Ku-band on a non-interference basis outside of its authorized frequency band during launch and transfer orbit operations. Grant of this limited waiver will allow Echostar to maintain communications with the satellite, known as Echostar-117W (Call Sign 2490) during critical launch and transfer orbit operations using the well-established Ku-band ground network.

II. BACKGROUND

2. Echostar is authorized to construct, launch, and operate a GSO satellite in the 18.3-18.8 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-30.0 GHz (Earth-to-space) frequency bands. A condition (condition 8) of its authorization required Echostar to submit to the Commission a modification to its authorization specifying the exact frequencies for TT&C for Echostar-117W, on, or prior to, the date of its first construction milestone, *i.e.* December 8, 2004⁴. In its original application, Echostar stated that the TT&C frequencies would be within the Ka-bands and that it would provide its final TT&C frequencies for the satellite to the Commission shortly after it had selected a manufacturer for the satellite. In the initial grant, the Bureau reminded EchoStar that, consistent with Section 25.202(g),⁵ the frequencies selected for TT&C functions must be at either or both edges of the

¹ For purposes of this order, the Ka-band is defined as the 18.3-18.8 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-30.0 GHz (Earth-to-space) frequency bands.

² For purposes of this order, Ku-band is defined as the 11.700-12.200 GHz (space-to-Earth), 14.000-14.500 GHz (Earth-to-space) frequency bands.

³ 47 C.F.R. § 25.202(g).

⁴ See Stamp Grant File No. SAT-LOA-20030827-00177 (Dec 8, 2003); as modified by Stamp Grant, File No. SAT-MOD-20041008-00196, (granted Dec. 6, 2004) (authorizing Echostar to operate at 117° W.L., rather than at 123° W.L., as initially authorized).

⁵ 47 C.F.R. § 24.202(g).

Ka-band.

3. Consistent with the condition of its authorization, Echostar submitted a modification application on December 8, 2004 requesting on-station TT&C frequencies at the band edges of the Ka-band at 29.999 GHz (Right Hand Circular Polarization (RHCP)) for command, and 19.701 GHz and 20.199 GHz (both Left Hand Circular Polarization (LHCP)) for telemetry. Echostar also submitted a request to operate at 14.001 GHz (RHCP) and 14.003 GHz (RHCP) for command and at 11.7055 GHz (LHCP) and 12.198 GHz (LHCP) for telemetry during the launch and transfer orbit phase. In support of its waiver to operate TT&C outside the Ka-band during launch and transfer orbit, Echostar indicated that no worldwide Ka-band TT&C network exists at this time to support these operations, but that a well-established system exists in the Ku-band. Echostar also stated that Ku-band operation would be more reliable over a wider variety of weather conditions during these critical operations. Echostar further indicated that it would turn off the Ku-band TT&C system once Echostar-117W reaches its assigned orbital location, and that Echostar would request further use of the Ku-band TT&C system only if the Ka-band TT&C system fails.

III. DISCUSSION

4. Echostar's proposed on-station Ka-band TT&C frequencies are consistent with Commission rule. Accordingly, we grant Echostar's request to modify its authorization to reflect on-station TT&C at the band edges in the Ka-band, specifically to operate at 29.999 GHz (RHCP) for command and 19.701 GHz and 20.199 GHz (both LHCP) for telemetry.

5. To permit it to use Ku-band frequencies for TT&C during launch and transfer orbit, Echostar requests a waiver of Section 25.202(g)⁶ of the Commission's rules, which requires that TT&C functions for U.S. domestic satellites shall be conducted at either or both edges of the allocated band(s). The rule further provides that frequencies, polarization, and coding shall be selected to minimize interference into other satellite networks and within their own satellite system. The Commission may grant a waiver for good cause shown.⁷ Waiver is appropriate if (1) special circumstances warrant a deviation from the general rule, and (2) such deviation would better serve the public interest than would strict adherence to the general rule.⁸ Generally, the Commission may grant a waiver of its rules in a particular case only if the relief requested would not undermine the policy objective of the rule in question, and would otherwise serve the public interest.⁹

6. As the Commission has indicated, Section 25.202(g) of the rules limits FSS operators to operating TT&C links in the same frequency bands as their FSS operations.¹⁰ Thus a GSO/FSS operator will generally coordinate its TT&C operations with the same set of satellites, at adjacent orbital locations, with which it coordinates its FSS operations. In this respect, the rule serves the purpose of simplifying the coordination process for FSS systems, by limiting the number of potentially affected operators. It also provides an incentive for an operator to maximize the efficiency of a system's TT&C operations, and minimize the constraints placed on other satellite operations, since the greatest impact of any inefficiency in TT&C operations is likely to be on the services offered by the operator's own satellite.

⁶ See 47 C.F.R. § 25.202(g).

⁷ 47 C.F.R. § 1.3. See also *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969) (*WAIT Radio*); *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1166 (D.C. Cir. 1990) (*Northeast Cellular*).

⁸ See *Northeast Cellular*, 897 F.2d at 1166.

⁹ See *WAIT Radio*, 418 F.2d at 1157.

¹⁰ *Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band*, FCC 00-363, 15 FCC Rcd 20488, paragraph 129.

7. Echostar argues that grant of a waiver will not undermine the purposes of Section 25.202(g). Echostar states that it proposes to use only small amounts of Ku-band spectrum at the edges of the allocated band for a very limited amount of time during launch and transfer orbit operations on a non-interference basis. Echostar also indicates that it will coordinate with other operators using those frequencies in order to ensure that no interference is caused.

8. We agree that a waiver will not undermine Section 25.202(g) of the rules because of the short term nature of the proposed Ku-band TT&C operations and its non-harmful interference status. Further, Section 25.202(g) is premised upon the coordination and efficiency of operations once the satellite is operating at its assigned orbit location. Here, Echostar will terminate the Ku-band TT&C once the satellite reaches its assigned orbit location at 117° W.L. Echostar's justification for its limited use of Ku-band TT&C during launch and transfer orbit is also consistent with the Commission's decision with respect to TT&C for transfer operation for DBS.¹¹ Specifically, in *Part 100 Order*, the Commission recognized that for transfer orbit operations, DBS operators might seek to use different earth stations than those that would ultimately be used for on-orbit operations. The Commission noted that, in those cases, operators might seek to use earth stations for relatively short-term transfer orbit TT&C functions operating outside the edges of the DBS service bands. The Commission decided to evaluate requests by DBS operators to use FSS frequencies for transfer orbit TT&C operations on a case-by-case basis.

9. We will grant Echostar's request to operate TT&C in the Ku-band during launch and transfer operations on a non-harmful interference basis. Accordingly, we grant Echostar's waiver request and authorize it to operate its TT&C at the 14.001 GHz (RHCP) (Earth-to-space), 14.003 GHz (RHCP) (Earth-to-space), 11.7055 GHz (LHCP) (space-to-Earth), and the 12.198 GHz (LHCP) (space-to-Earth) frequencies during launch and transfer orbit operations on a non-harmful interference basis.

10. To prevent interference to other systems that may be authorized at Ku-band at 117° W.L. orbital location, Echostar is required to turn off the Ku-band TT&C system upon arrival at its assigned orbital location. Echostar shall not reactivate the Ku-band TT&C system on the spacecraft without prior authorization from the Commission.

IV. ORDERING CLAUSES

11. Echostar Satellite LLC's (Echostar's) application, File No. SAT-MOD-20041208-00218, to modify its current authorization to construct, launch, and operate a Ka-band Geostationary Satellite Orbit satellite at 117° W.L. orbital location, to include Tracking, Telemetry and Command (TT&C) IS GRANTED. Accordingly, EchoStar is authorized to operate its EchoStar-117W (Call Sign S2490)¹² satellite in the 117° W.L. orbital location using the 18.3-18.8 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-30.0 GHz (Earth-to-space) frequency bands and to operate its on-station TT&C in the 29.999 GHz (RHCP) (Earth-to-space), 19.701 GHz (LHCP) (space-to-Earth), and 20.199 GHz (LHCP) (space-to-Earth) frequencies, in accordance with the terms, conditions, and technical specifications set forth in its application, this Order and the Federal Communications Commission's Rules.

12. IT IS FURTHER ORDERED that Echostar's request to waive 47 C.F.R. § 25.202(g) IS GRANTED as described herein. Accordingly, Echostar may operate the TT&C for the Echostar-117W satellite during launch and transfer orbit operations using the 14.001 GHz (RHCP) (Earth-to-space), 14.003 GHz (RHCP) (Earth-to-space), 11.7055 GHz (LHCP) (space-to-Earth), and 12.198 GHz (LHCP) (space-to-Earth) frequencies.

¹¹ See Policies and Rules for the Direct Broadcast Satellite Service, IB Docket No. 98-21, *Report and Order*, 17 FCC Rcd 11331, FCC 02-110 (rel. April 8, 2002).

¹² The spacecraft was formally known as Echostar-123W.

13. IT IS FURTHER ORDERED that Echostar must cease operations of the TT&C for the Echostar-117W satellite at 14.001 GHz (RHCP) (Earth-to-space), 14.003 GHz (RHCP) (Earth-to-space), 11.7055 GHz (LHCP) (space-to-Earth), and 12.198 GHz (LHCP) (space-to-Earth) frequencies upon arrival at its assigned orbital location. Upon arrival at its assigned orbital location, Echostar shall not operate the TT&C for Echostar-117W on 14.001 GHz (RHCP) (Earth-to-space), 14.003 GHz (RHCP) (Earth-to-space), 11.7055 GHz (LHCP) (space-to-Earth), and 12.198 GHz (LHCP) (space-to-Earth) without further Commission authorization.

14. IT IS FURTHER ORDERED that Echostar shall coordinate its launch and transfer orbit TT&C operations with existing satellite networks to ensure that no unacceptable interference results from its TT&C operations during its launch and transfer orbit operations.

15. IT IS FURTHER ORDERED that Echostar's launch and transfer orbit operations shall not cause harmful interference to any lawfully operating in-orbit satellites or other radio communications systems and Echostar shall cease operations immediately upon notification of such interference and Echostar shall inform the FCC in writing immediately of such an event.

16. IT IS FURTHER ORDERED that Echostar is required to accept interference from other lawfully operating in-orbit satellites and radio communication systems during its launch and transfer orbit operations.

17. IT IS FURTHER ORDERED that all conditions of the December 6, 2004 grant with the exception of condition 8 otherwise remains in effect.¹³

18. This Order is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon adoption. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within 30 days of the date of the Public Notice announcing that this action was taken.

FEDERAL COMMUNICATIONS COMMISSION

Fern J. Jarmulnek
for Thomas S. Tycz
Chief
Satellite Division

¹³ See Stamp Grant, SAT-LOA-20030827-00177, Call Sign S2490, (granted Dec. 8, 2003); Stamp Grant, SAT-MOD-20041008-00196, Call Sign S2490, (granted Dec. 6, 2004).