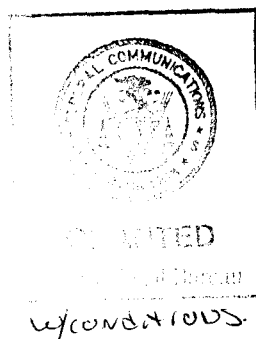


EchoStar Satellite Operating Corporation  
Conditions of Authorization: SAT-STA-20061020-00124  
Call Sign: S2232  
Grant Date: April 10, 2007

EchoStar Satellite Operating Corporation (EchoStar's) request for special temporary authority (STA), File No. SAT-STA-20061020-00124, is GRANTED.<sup>1</sup> Accordingly, EchoStar is authorized for 180 days to conduct Telemetry, Tracking, and Control (TT&C) operations on a non-harmful interference basis, at the 110.4° W.L. orbital location, sufficient to maintain the EchoStar 6 satellite as an in-orbit spare with +/- 0.05 longitudinal station keeping in accordance with the terms, conditions, and technical specifications set forth in its application, Federal Communication Commission rules, and this attachment.

1. EchoStar is required to accept inference from other lawfully operating space stations or other radio communication systems.
2. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at EchoStar's own risk.
3. EchoStar is afforded 30 days from the date of the release of this action to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of this authorization as conditioned.
4. This grant is issued pursuant to 47 C.F.R. § 0.261 of the Commission's rules on delegated authority and is effectively immediately.



File # SAT-STA-20061020-00124

Call Sign S2232 Grant Date 4/10/07  
(or other Identifier)

Term Dates  
From 10/25/06 To: + 180 days

Approved: [Signature]  
Policy Branch Chief

<sup>1</sup> This application was accepted for filing and placed on public notice on November 17, 2006. Satellite Space Stations Applications Accepted for Filing, Policy Branch Information, *Public Notice*, Report No. SAT-00402 (rel. Nov. 17, 2006). No comments were filed. See also SAT-STA-20060425-00049 (granted April 28, 2006).

Date & Time Filed: Oct 20 2006 12:01:07:810PM

File Number: SAT-STA-20061020-00124

Callsign: S2232

EchoStar 6 @ 110.4° W.L.

FEDERAL COMMUNICATIONS COMMISSION  
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY

FOR OFFICIAL USE ONLY

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

Request to Renew STA Granted in File No. SAT-STA-20060303-00023 For An Additional 180 Days

I. Applicant

<b>Name:</b>	EchoStar Satellite Operating Corporation	<b>Phone Number:</b>	303-723-1000
<b>DBA Name:</b>		<b>Fax Number:</b>	303-723-1699
<b>Street:</b>	9601 South Meridian Boulevard	<b>E-Mail:</b>	
<b>City:</b>	Englewood	<b>State:</b>	CO
<b>Country:</b>	USA	<b>Zipcode:</b>	80112 -
<b>Attention:</b>	David K Moskowitz		



w/conditions

File # SAT-STA-20061020-00124

Call Sign S2232 <sup>PN</sup> Grant Date 4/10/07

(or other identifier)

Term Dates  
From 10/25/06 To: + 180 days

Approved: [Signature]

Policy Branch Chief

<b>2. Contact</b>	
<b>Name:</b> Pantelis Michalopoulos	<b>Phone Number:</b> 202-429-6494
<b>Company:</b> Steptoe & Johnson LLP	<b>Fax Number:</b> 202-429-3902
<b>Street:</b> 1330 Connecticut Ave., NW	<b>E-Mail:</b> pmichalo@steptoe.com
<b>City:</b> Washington	<b>State:</b> DC
<b>Country:</b> USA	<b>Zipcode:</b> 20036 -1795
<b>Attention:</b>	<b>Relationship:</b> Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
<b>3. Reference File Number</b> SATSTA2006030300023 <b>or Submission ID</b>	
<b>4a. Is a fee submitted with this application?</b>	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114). <input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee <input type="radio"/> Other (please explain):	
<b>4b. Fee Classification</b> CRY - Space Station (Geostationary)	
<b>5. Type Request</b>	
<input type="radio"/> Change Station Location <input checked="" type="radio"/> Extend Expiration Date <input type="radio"/> Other	
<b>6. Temporary Orbit Location</b> 110.4W	<b>7. Requested Extended Expiration Date</b> 2007-04-23 00:00:00.0

8. Description (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

EchoStar request an extension of the special temporary authority granted in SAT-STA-20060303-00023 to allow EchoStar 6 to remain at 110.4W where it is being stored as an in-orbit spare. See the attached narrative and technical appendix (Attachment A) for additional detail.

9. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes.  Yes  No

10. Name of Person Signing  
David K. Moskowitz

11. Title of Person Signing  
Executive Vice President and General Counsel

12. Please supply any need attachments.

Attachment 1: Narrative App.

Attachment 2: Attachment A

Attachment 3:

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT  
(U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION  
(U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

**FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT**

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to [jboley@fcc.gov](mailto:jboley@fcc.gov). PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

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**THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.**

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

In the Matter of	)	
ECHOSTAR SATELLITE OPERATING	)	File No. SAT-STA-20060303-00023
CORPORATION	)	File No. SAT-STA-2006_____
For Special Temporary Authority to Maintain	)	
EchoStar 6 at 110.4° W.L. as an In-orbit Spare	)	S 2232

**APPLICATION TO RENEW SPECIAL TEMPORARY AUTHORITY**

By this application, EchoStar Satellite Operating Corporation ("EchoStar") respectfully requests that the Commission renew the special temporary authority ("STA") it granted EchoStar to store the EchoStar 6 satellite at the 110.4° W.L. orbital location as an in-orbit spare for 180 days. See File No. SAT-STA-20060303-00023. This authority expires on October 25, 2006 and by this application, EchoStar requests authority to continue maintenance of EchoStar 6 at 110.4° W.L. as an in-orbit spare for an additional 180 days. The continued maintenance of EchoStar 6 as an in-orbit spare at this location serves the public interest and will not cause harmful interference to any authorized spectrum user. Accordingly, the Commission should grant this request for renewal of the EchoStar 6 STA.

**I. GRANT OF THIS APPLICATION IS IN THE PUBLIC INTEREST**

The Commission has a long-standing policy of granting Special Temporary Authority where such authorization will not cause harmful interference and will serve the public interest, convenience and necessity. See e.g., *In the Matter of Newcomb Communications, Inc.*, 8 FCC Rcd. 3631, 3633 (1993); *In the Matter of Columbia Communications Corp.*, 11 FCC Rcd. 8639,

8640 (1996); *In the Matter of American Telephone & Telegraph Co.*, Order, 8 FCC Rcd. 8742 (1993). The requested operations meet both of these tests.

Continued temporary operation of the EchoStar 6 at 110.4° W.L. as an in-orbit spare will not cause harmful interference to any other U.S.-licensed satellite operator. Maintaining EchoStar 6 to this orbital location and limiting operations to TT&C would, if anything, reduce any potential for interference with DIRECTV 5 at 109.8° W.L. and any Broadcast Satellite Service (“BSS”) satellites further east. In addition, the closest operational BSS satellites to the west of EchoStar 6’s proposed location (except other EchoStar satellites) are two DIRECTV satellites located at 119° W.L. Maintaining the EchoStar 6 satellite with only its TT&C beams operating at 110.4° W.L. will not appreciably increase the interference experienced by the satellites located at the 119° W.L. orbital location. This is demonstrated in the technical showing in *Attachment A*.

EchoStar recognizes that maintaining EchoStar 6 as an in-orbit spare at 110.4° W.L. has resulted in the satellite operating outside of the 110° W.L. DBS “cluster” allotted to the United States by the International Telecommunication Union (“ITU”).<sup>1</sup> Under the current ITU Region 2 BSS Plan, the United States has the authority to allow satellite operators to provide BSS (*i.e.*, DBS service in the United States) at orbital locations within plus/minus 0.2° of the designated orbital location, known as clusters.<sup>2</sup> Under this plan, the United States has sole authority over the BSS frequencies located at the 110° W.L. cluster.<sup>3</sup> This cluster consists of orbital locations

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<sup>1</sup> See ITU Regulations, Appendix 30, Annex 7, Section B.

<sup>2</sup> *Id.*

<sup>3</sup> ITU Regulations, Appendix 30, Art. 10.

from 109.8° W.L. to 110.2° W.L. In order to operate its satellite permanently outside of the authorized cluster, an operator must seek to modify the ITU Region 2 BSS Plan.<sup>4</sup>

However, as noted in its initial STA request, EchoStar is not seeking to operate permanently on the DBS frequencies at 110.4° W.L. Rather, it is only seeking authority to continue to maintain the satellite at 110.4° W.L. for an additional 180 days, as an in-orbit spare with its communications payload turned off, utilizing only its TT&C frequencies.

The Commission has previously granted temporary authority to operate outside of an orbital location cluster on the condition that operations do not cause harmful interference to lawfully operating satellite systems and that the satellite system operate without protection from lawful systems.<sup>5</sup> In fact, in very similar circumstances, the Bureau has approved a similar request by DIRECTV for relocation of the DIRECTV 6 satellite outside of the 110° W.L. cluster (east of the cluster).<sup>6</sup> As discussed above and in *Attachment A*, maintaining EchoStar 6 at 110.4° W.L. as an in-orbit spare will not cause harmful interference to any authorized spectrum users.

## II. SECTION 304 WAIVER

In accordance with Section 304 of the Communications Act of 1934, 47 U.S.C. § 304, EchoStar hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum because of the previous use of the same, whether by license or otherwise.

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<sup>4</sup> ITU Regulations, Appendix 30, Art. 4.2.

<sup>5</sup> See Letter from Thomas S. Tycz, Chief, Satellite and Radio Communications Division, FCC, to David K. Moskowitz, Senior Vice President and General Counsel for EchoStar Satellite Corporation, at 2, dated Jan. 14, 2000 (granting authority to operate the EchoStar 4 satellite at 119.35° W.L., outside of the 119° W.L. cluster).

<sup>6</sup> See, e.g., *DIRECTV Enterprises, LLC*, DA-05-2654, Order and Authorization, File Nos. SAT-A/O-20050504-00093 and SAT-STA-20050518-00105, at ¶¶ 10, 15-16 (rel. Oct. 5, 2005) (“DIRECTV 6 STA”).





**ATTACHMENT A**  
**Technical Appendix**

**Potential Interference Issues**

The EchoStar-6 satellite operates in the frequency bands covered by Appendices 30 and 30A of the Radio Regulations. These bands are 12.2 – 12.7 GHz (space-to-Earth) and 17.3 – 17.8 GHz (Earth-to-space). Operational co-frequency satellites within 10 degrees of the 110°W orbital location, aside from EchoStar's, are the DIRECTV DBS satellites at 101°W and 119°W.<sup>1, 2</sup>

The result of the requested shift for the EchoStar-6 satellite from 110.2°W to 110.35°W and then to 110.4°W provides a greater orbital separation from the DIRECTV satellites at the 101°W location and therefore there is no negative impact to these operations. With the proposed shift, the EchoStar-6 satellite will move closer to the US-assigned 119°W orbital location where both EchoStar and DIRECTV satellites operate within a ± 0.2 degree cluster. Currently, there are two operational satellites at the 119°W cluster - EchoStar-7 located at 118.9°W and DIRECTV-7S located at 119.2°W. Currently the orbital separation between the EchoStar-6 satellite and the DIRECTV-7S satellite is therefore nominally 9 degrees, or 8.9 degrees taking into account station-keeping tolerances of both satellites. With the requested shift of EchoStar-6 to 110.35°W and then 110.4°W the orbital separation would be nominally 8.85 to 8.8 degrees, or 8.75 to 8.7 degrees taking into account the station-keeping tolerances of both satellites. Taking the worst case of EchoStar 6 at 110.4°W, the result of the shift in terms of receive earth station off-axis gain is a difference of less than 0.25 dB and the off-axis discrimination of the receiving earth station is still greater than 29 dB. Similarly the large feeder link earth stations used by EchoStar provide sufficient isolation at these orbital separations to prevent any uplink interference effects. Therefore, the proposed shift of EchoStar-6 from 110.2°W to 110.35 and then to 110.4°W will result in negligible impact to the DIRECTV operations at the 119°W location.

In addition to these operational satellites, a search using the ITU's on-line databases show there are several AP30/30A BSS filings at "tweener" orbital locations, e.g. 105.5°W and 114.5°W. There is no indication, however, that these satellites will be operational in the time-frame of the requested temporary operation of EchoStar-6 satellite at the 110.35°W orbital location. At the 110.4 °W orbital location, the EchoStar 6 satellite will be closer to the 114.5°W orbital location. However, the EchoStar 6 satellite will not be providing service from this location so only its TT&C frequencies will be operating. If in the future

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<sup>1</sup> Other operational co-frequency DBS satellites, e.g. the Canadian network at 91°W are further removed. The off-axis discrimination of the receive earth stations at separations greater than 10 degrees is 31 dB or greater (assuming an equivalent 45 cm dish antenna that meets ITU-R BO.1213 reference pattern). Thus, the requested shift of 0.2 degrees for the EchoStar-6 satellite would have an even more attenuated impact on operations of DBS satellites operating more than 10 degrees away than what will be seen to be a negligible effect on the satellites at 119°W.

<sup>2</sup> This annex covers both the proposed transitional operation of EchoStar 6 at 110.35° W.L. and the subsequent proposed temporary operation at 110.4° W.L. For simplicity, we will use the 110.4° W.L. position in this analysis.

a satellite is located at the 114.5°W orbital location, successful coordination of the TT&C frequencies should be possible given the narrow bandwidths and the larger earth station used by EchoStar for its TT&C operations. There are also many filings for use of the Region 2 17.3 – 17.8 GHz BSS downlink allocation. These satellites cannot be brought into use until 1 April 2007. Moreover, the issue with these networks is 17 GHz feeder link earth station interference into receiving earth stations, and this would be unaffected by the precise orbital location of the EchoStar 6 satellite. Similarly, there are FSS Ka-band filings that include the 17 GHz spectrum in the space-to-Earth direction. The ITU databases also includes FSS filings for the 12 GHz band in Regions 1 and 3. Because of the large geographic separation of the service areas the up to 0.2° shift of EchoStar 6 would not impact these networks either.

### **Collision Avoidance Issues**

In considering current and planned satellites that may have a station-keeping volume that overlapping the EchoStar-6 satellite's new proposed locations at 110.35°W and 110.4°W, we have reviewed the lists of FCC licensed satellite networks, as well as those that are currently under consideration by the FCC. In addition, non-USA networks for which a filing has been submitted to the ITU in the vicinity of 110° W have also been reviewed.

Only those networks that either operate, or are planned to operate, and have an overlapping station-keeping volume with the EchoStar-6 satellite, have been taken into account in the analysis. For purposes of calculating potential station-keeping volume overlap, US satellites have been assumed to have a maximum east-west excursion of  $\pm 0.05^\circ$  from their nominal location, while non-US satellite networks have been assumed to have a maximum excursion of  $\pm 0.1^\circ$  from their nominal location.

Currently there are four operational US licensed satellites within  $\pm 0.5^\circ$  of 110°W.L. These are the DIRECTV-6 satellite at 109.5°W, the DIRECTV-5 satellite at 109.8°W, the EchoStar-6 satellite at 110.2°W and the EchoStar-8 satellite at 110.0°W. Additionally, EchoStar has requested authority to provide DBS service from the nominal 110° W.L. orbital position using the EchoStar-10 satellite, and plans to locate the satellite at the 110.2° W.L. orbital location. Taking into account the maximum east-west excursion of  $\pm 0.05^\circ$ , none of these satellites have the potential to overlap with the station-keeping volume of the EchoStar-6 satellite at the 110.35°W or 110.4°W orbital locations.

In addition to these operational satellites a review of the ITU on-line databases include the following non-USA filings at the 110°W orbital location: EMARSAT-5B/M from the United Arab Emirates, INMARSAT-S7 from the United Kingdom and PAS-ENDEAVOUR-110W from Australia. A review of the FAA Quarterly Launch Report does not indicate that these satellites will be launched in the near future. In addition to these filings there are US filings for Region 2 17 GHz BSS operations. The earliest these networks can be brought into use is 1 April 2007, however. It is noted that, with the assumed station-keeping maximum excursions stated above, there would be no overlapping station-keeping volume with the EchoStar 6 satellite at 110.35°W and 110.4°W orbital locations.

**CERTIFICATION OF PERSON RESPONSIBLE**  
**FOR PREPARING ENGINEERING INFORMATION**

I hereby declare under penalty of perjury that I am the technically qualified person responsible for preparation of the engineering information contained in the foregoing submission, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this pleading, and that it is true and correct to the best of my knowledge and belief.

\_\_\_\_\_  
/s/

Richard J. Barnett, PhD, BSc  
Telecomm Strategies, Inc.  
6404 Highland Drive  
Chevy Chase, Maryland 20815  
(301) 656-8969

Dated: March 3, 2006