

S2461 SAT-STA-20100525-00107  
DIRECTV Enterprises, LLC IB2010001641

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Callsign:

File # SAT-STA-2010 0525-00107  
Call Sign S2641 Grant Date 06/02/10  
(or other identifier) Term Dates period of  
From 06/02/10 To: 30 days  
Approved: *Stephen J. Dwall*  
Stephen J. Dwall  
Chief, Satellite Policy Branch

Approved by OMB  
3060-0678



FEDERAL COMMUNICATIONS COMMISSION  
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY

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APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:  
STA - D10 - 102.6 WL IOT

I. Applicant

Name:	DIRECTV Enterprises, LLC	Phone Number:	310-964-3982
DBA Name:		Fax Number:	310-964-4883
Street:	2230 E. Imperial Hwy CA/LAI/N340	E-Mail:	bmregan@directv.com
City:	El Segundo	State:	CA
Country:	USA	Zipcode:	90245 -
Attention:	Mr Brian M Regan		


**ATTACHMENT**  
**Conditions of Authorization**  
**IBFS File No. SAT-STA-20100525-00107**  
**Call Sign S2641**  
**Grant Date: June 2, 2010**

The request of DIRECTV Enterprises, LLC (DIRECTV) for special temporary authority (STA), IBFS File No. SAT-STA-20100525-00107, IS GRANTED. Accordingly, for a period of 30 days DIRECTV is authorized to conduct in-orbit testing of the DIRECTV 10 space station (Call Sign S2641) at the 102.6° W.L. orbital location, using the 18.58-18.8 GHz (space-to-Earth) frequency band and the 28.35-28.6 GHz and 29.25-29.5 GHz (Earth-to-space) frequency bands. Following the completion of in-orbit testing, DIRECTV is authorized to operate the communication links and the telemetry, tracking, and telecommand (TT&C) links of DIRECTV 10 in the 18.3-18.8 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-29.5 GHz (Earth-to-space) frequency bands during the relocation of DIRECTV 10 back to the 102.815° W.L. orbital location. During the period of this STA, DIRECTV is authorized to conduct operations on the 29251.00 MHz and 29493.00 MHz telecommand uplink frequencies and the 18300.25 MHz and 18300.75 MHz telemetry and beacon downlink frequencies. This authorization is granted in accordance with the terms, conditions, and technical specifications set forth in DIRECTV's existing authorization, this application and its supplements, the conditions set forth in this Attachment, and the Commission's rules.

1. All operations shall be on an unprotected and non-harmful interference basis, *i.e.*, DIRECTV shall not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating radiocommunication system.
2. In the event of any harmful interference as a result of the operations of the DIRECTV 10 space station during in-orbit testing at the 102.6° W.L. orbital location, DIRECTV shall cease operations immediately upon notification of such interference and shall immediately inform the Commission, in writing, of such an event.
3. DIRECTV shall coordinate its TT&C operations for the in-orbit testing and relocation of DIRECTV 10 with any other potentially-affected operators.
4. DIRECTV shall notify the Chief of the Satellite Division, International Bureau, Federal Communications Commission, in writing, on the date that DIRECTV commences in-orbit testing of the DIRECTV 10 space station (Call Sign S2641) at the 102.6° W.L. orbital location and on the date that the DIRECTV 10 space station arrives back at the 102.815° W.L. orbital location. Courtesy copies of this filing shall be sent via email to [Chip.Fleming@fcc.gov](mailto:Chip.Fleming@fcc.gov) and [Mark.Young@fcc.gov](mailto:Mark.Young@fcc.gov).
5. DIRECTV shall notify Scott Kotler (202-482-7983, [skotler@ntia.doc.gov](mailto:skotler@ntia.doc.gov)) when it initiates and terminates in-orbit testing at the 102.6° W.L. orbital location.

6. During in-orbit testing, DIRECTV shall maintain the DIRECTV 10 satellite within an east/west longitudinal station-keeping tolerance of  $\pm 0.05$  degrees of the 102.6° W.L. orbital location.
7. Operations of the DIRECTV 10 space station at the 102.6° W.L. orbital location are limited to in-orbit testing and shall not include any provision of commercial services. DIRECTV is authorized to resume commercial operations of DIRECTV 10 during the relocation of DIRECTV 10 from the 102.6° W.L. orbital location back to the 102.815° W.L. orbital location.
8. DIRECTV must coordinate all of its Ka-band downlink operations within the 18.3-18.8 GHz frequency band with U.S. Government systems, including Government operations to earth stations in foreign countries, in accordance with footnote US334 to the United States Table of Frequency Allocations (Table of Allocations), 47 C.F.R. § 2.106. Absent a coordination agreement pursuant to footnote US334 to the Table of Allocations, DIRECTV shall operate its Ka-band downlinks on a non-harmful interference basis with regards to operating U.S. Government systems within the 18.3-18.8 GHz band, and DIRECTV shall terminate immediately its Ka-band downlink operations in the event that such operations cause harmful interference into operating U.S. Government systems, and DIRECTV must accept interference from U.S. Government systems.
9. DIRECTV IS GRANTED, with conditions, a waiver of Section 25.208(c) of the Commission's rules, 47 C.F.R. § 25.208(c), effective beginning Wednesday, June 9, 2010, until completion of the in-orbit testing of DIRECTV 10 at the 102.6° W.L. orbital location. This section states that the power flux density at the Earth's surface produced by emissions from a space station for all conditions for all methods of modulation shall not exceed certain angle-of-arrival power flux density limits that are listed in its subsections. The underlying purpose of Section 25.208(c) is to protect other radiocommunication systems operating in the 17.7-17.8 GHz, 18.3-18.8 GHz, 19.3-19.7 GHz, 22.55-23.00 GHz, 23.00-23.55 GHz, and 24.45-24.75 GHz frequency bands. DIRECTV states that it will exceed the Section 25.208(c) pfd limits for a minimal number of tests, each test conducted for a short period of time (10 to 15 seconds), on varying frequencies in the 18.58-18.8 GHz frequency band. This band is shared with other co-primary Fixed-Satellite Service (FSS), Earth Exploration Satellite Service (EESS), and Space Research Service (SRS) satellite radiocommunication systems. There are no Commission-licensed EESS or SRS systems in this band. DIRECTV states that it has reached a coordination agreement with co-frequency satellites up to six degrees away from the 102.6° W.L. orbital location at which DIRECTV will conduct in-orbit testing of DIRECTV 10, thus, the potential for interference to other satellite radiocommunication systems from in-orbit testing of DIRECTV 10 is very low. There are also a number of co-primary Fixed Service (FS) radiocommunication systems operating in the 18.58-18.8 GHz frequency band within the geographic area toward which DIRECTV will aim its downlink signal during in-orbit transponder gain transfer testing. In accordance with Sections 101.85(b)(2) and 101.147(r) of the Commission's rules, 47 C.F.R. §§ 101.85(b)(2), 101.147(r), stations that were licensed or had applications pending before the Commission as of June 8, 2000 may continue operations on a co-primary basis with FSS systems until June 8, 2010. After June 8, 2010, these FS stations are not entitled to protection from the FSS. Thus, granting a waiver of Section 25.208(c) effective beginning June 9, 2010 will not undermine the purpose of the rule, and serves the public interest by allowing DIRECTV to gather test data on its DIRECTV 10 space station. Prior to June 9, 2010, DIRECTV shall not operate DIRECTV 10 in such a manner as to exceed the pfd limits of Section 25.208(c).
10. In addition to any other applicable limits, the power flux-density across the 200 MHz band 18.6-18.8 GHz produced at the surface of the Earth by emissions from DIRECTV 10 under assumed free-space propagation conditions shall not exceed  $-95\text{dB(W/m}^2\text{)}$  for all angles of arrival. This limit may be exceeded by up to 3 db for no more than 5% of the time.

11. During the period in which DIRECTV is conducting in-orbit testing of DIRECTV 10 at the 102.6° W.L. orbital location, DIRECTV shall have personnel with authority to correct interference conditions caused by the in-orbit testing of DIRECTV 10 available by telephone at (720) 733-7290.
12. Any action taken or expense incurred as a result of operations pursuant to this STA is at DIRECTV's own risk.
13. DIRECTV is afforded 30 days from the date of release of this authorization to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of the authorization as conditioned.
14. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately. 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 indicating that this action was taken.

 <b>GRANTED*</b> International Bureau <i>*subject to conditions</i>	<b>File #</b> <u>SAT- STA -20100525- 00107</u>
	<b>Call Sign</b> <u>S2641</u> <b>Grant Date</b> <u>06/02/10</u>
	<b>(or other identifier)</b>
	<b>From</b> <u>06/02/10</u> <b>Term Dates</b> <u>period of 30 days</u>
	<b>To:</b> _____
<b>Approved:</b> _____ <i>Stephen J. Duall</i> Stephen J. Duall Chief, Satellite Policy Branch	

2. Contact	
<b>Name:</b> William M. Wiltshire	<b>Phone Number:</b> 202-730-1350
<b>Company:</b> Harris, Wiltshire & Grannis, LLP	<b>Fax Number:</b> 202-730-1301
<b>Street:</b> 1200 18th Street, NW	<b>E-Mail:</b> wwiltshire@harriswiltshire.com
<b>City:</b> Washington	<b>State:</b> DC
<b>Country:</b> USA	<b>Zipcode:</b> 20036 -
<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.)	
3. Reference File Number or Submission ID	
4a. Is a fee submitted with this application?	
<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):	
4b. Fee Classification CRY - Space Station (Geostationary)	
5. Type Request	
<input type="radio"/> Change Station Location	<input type="radio"/> Extend Expiration Date
	<input checked="" type="radio"/> Other
6. Temporary Orbit Location	
102.6	7. Requested Extended Expiration Date

<p>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.)</p> <div style="border: 1px solid black; padding: 5px;"> <p>DIRECTV Enterprises, LLC requests Special Temporary Authority for 30 days to repeat an abbreviated set of in-orbit tests on the DIRECTV 10 satellite at the 102.6 WL location.</p> </div>	
<p>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.</p> <p style="text-align: right;"> <input checked="" type="radio"/> Yes      <input type="radio"/> No         </p>	
<p>10. Name of Person Signing James Butterworth</p>	<p>11. Title of Person Signing Senior Vice President</p>
<p>12. Please supply any need attachments.</p>	
Attachment 1: STA Request	Attachment 2:
	Attachment 3:
<p style="text-align: center;">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).</p>	

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

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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.**

May 25, 2010

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC 20554

Re: ***Request for Special Temporary Authority for In-Orbit Testing of  
DIRECTV 10 at 102.6° W.L.***

Dear Ms. Dortch:

DIRECTV Enterprises, LLC (“DIRECTV”) hereby requests Special Temporary Authority (“STA”) to repeat an abbreviated set of in-orbit tests on the DIRECTV 10 satellite (call sign S2641) at the 102.6° W.L. orbital location. DIRECTV requests that this STA cover a period of approximately 30 days starting on June 2, 2010.

DIRECTV 10 is currently drifting toward the 102.6° W.L. orbital location while traffic is being transferred from DIRECTV 10 to the recently launched DIRECTV 12 satellite.<sup>1</sup> Once DIRECTV 10 arrives at 102.6° W.L. and all traffic has been successfully transferred to DIRECTV 12, DIRECTV will conduct a restorative procedure on the spacecraft. The abbreviated set of tests that are the subject of this request are needed to quantify any performance improvement achieved as a consequence of the restorative procedure.

Testing of DIRECTV 10 after the restorative procedure will consist of verification testing of certain specific aspects of the satellite’s performance. The maximum value of satellite transmit power used during most of this testing will generate power flux density (“PFD”) levels on the Earth’s surface below the -118 dBW/m<sup>2</sup>/MHz value specified in Section 25.138(a)(6) of the Commission’s rules. However, a few of the tests will exceed this PFD level for short periods of time when the maximum satellite transmit power could

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<sup>1</sup> This activity is taking place under Grant Stamp, IBFS File No. SAT-STA-20100507-00095 (granted May 12, 2010).



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exceed the value specified in the current DIRECTV 10 authorization by up to 7 dB.<sup>2</sup> This testing will not result in harmful interference to other satellite systems. The only other non-DIRECTV owned co-frequency satellite operating within  $\pm 6^\circ$  of the  $102.6^\circ$  W.L. orbital location is AMC-15 located at the  $105.05^\circ$  W.L. location, and DIRECTV has already been discussing the coordination of these operations with SES World Skies, the licensee of that satellite, as required under Section 25.138(b), and is confident that an agreement with SES World Skies will be reached. DIRECTV will also coordinate its TT&C operations with all other potentially affected operators to ensure that no harmful interference results. Furthermore, DIRECTV is prepared to terminate all testing operations immediately upon notification from the Commission that its operations cause harmful interference to any authorized user of the spectrum.

As discussed above, a few of the tests to be conducted will result in the PFD on the Earth's surface exceeding the value specified in Section 25.138(a)(6) for short periods of time (*i.e.*, seconds to tens of seconds) in specific DIRECTV 10 downlink spot beams. In addition, due to the use of unmodulated CW carriers during these tests, the PFD in these spot beams will also exceed the PFD limit in Section 25.208(c) of the Commission's rules for the 18.3-18.8 GHz band by up to 7.5 dB.<sup>3</sup> Nonetheless, for the reasons discussed below, DIRECTV submits that the requested STA will not cause harmful interference to any co-primary terrestrial user of the band.

The DIRECTV 10 operations in the relevant band consist of multiple spot beams supporting satellite channels in the 18.58-18.8 GHz frequency range. During the tests in question, the Section 25.208(c) PFD level will be exceeded only in the beams near DIRECTV's Castle Rock, CO Broadcast Center. The spot beams will only exceed the PFD limit in Section 25.208(c) for a period of 10-15 seconds near the peak of each such test, and the frequencies used will vary as different beams are tested. Thus, over the course of the few days during which these tests will be conducted, any one frequency will be subject to additional PFD a minimal number of episodes and for a minimal amount of time in each episode.

The figure below shows the maximum geographical extent of the set of spot beams in which the PFD limit of Section 25.208(c) will be exceeded. Because the figure shows the -10 dB contour for each of the beams, the actual potentially affected geographical area is less than that shown in the figure (as the tests will exceed the PFD limit by only 7.5 dB). As can be seen in this diagram, the potentially affected area

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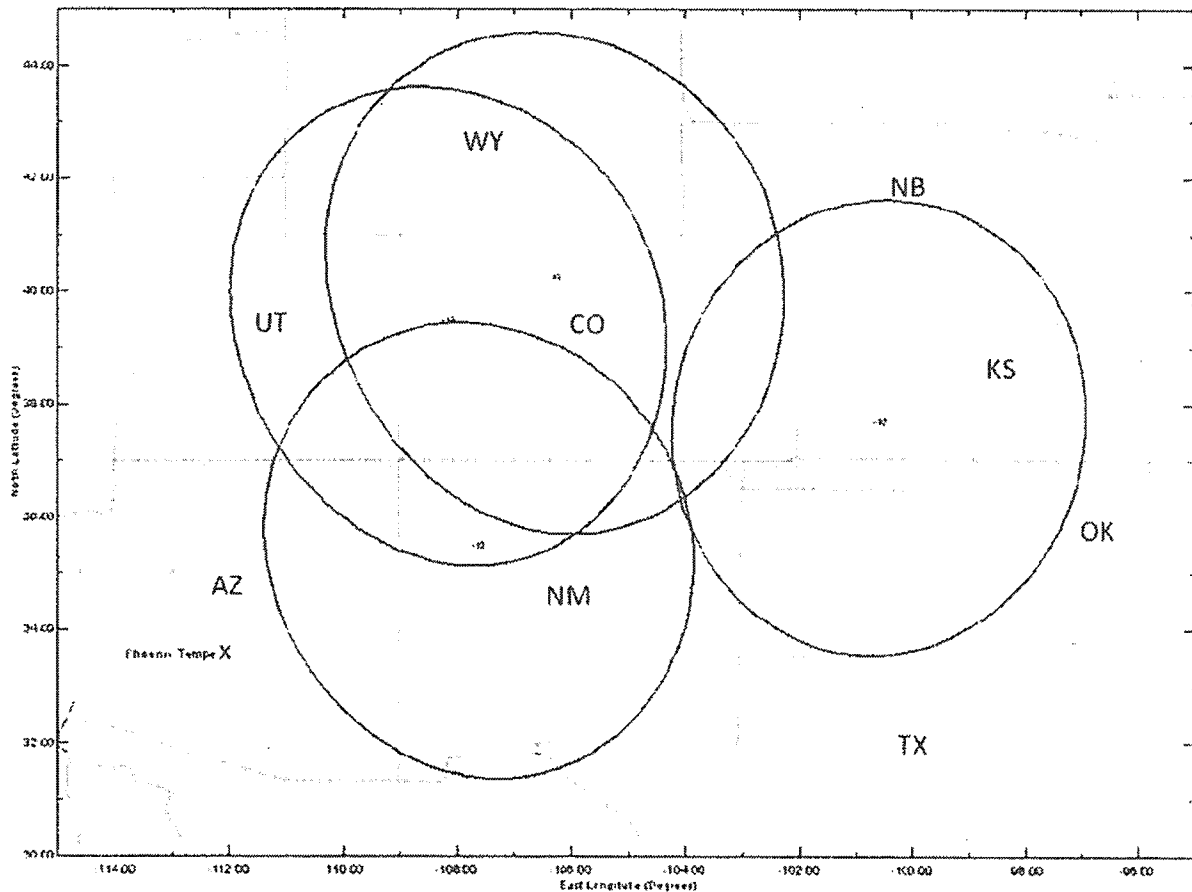
<sup>2</sup> See IBFS File No. SAT-MOD-20091009-00109. Note that all of this DIRECTV 10 testing will be closely coordinated with U.S. government systems under FN US334.

<sup>3</sup> At no time during this testing will DIRECTV 10 exceed the PFD limits established in Section 25.208(d).

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includes all of Colorado, most of New Mexico, and parts of Wyoming, Nebraska, Kansas, Oklahoma, Texas, Arizona and Utah.

In order to determine the impact of these operations in the potentially affected area, DIRECTV accessed the Commission's Universal Licensing System ("ULS") to determine what terrestrial operators might also be authorized to operate in the 18.58-18.8 GHz band in each of the potentially affected areas. As specified in Section 101.97 of the Commission's rules, any such system that was the subject of a license extension after June 8, 2000 is authorized on a secondary basis to FSS systems. As shown on the attached spreadsheet, all of the 111 terrestrial systems identified by ULS as operating in this band in the target states have been renewed after June 8, 2000. Accordingly, each of these licensees operates on a secondary basis in the band.



Accordingly, DIRECTV submits that, even though the requested operations of DIRECTV 10 will slightly exceed the PFD limits in Section 25.208(c) for brief periods,

**WILTSHIRE & GRANNIS LLP**

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grant of the requested STA will not result in harmful interference to any co-primary user of the 18.3-18.8 GHz band.<sup>4</sup>

In addition, as has been done in the past, DIRECTV would like to take this opportunity to provide 24/7 contact information in case any issue arises in connection with the operations of DIRECTV 10 under the requested STA. The direct number at DIRECTV's Castle Rock facility is 720-733-7290 and DIRECTV personnel will be at that location during all testing.

Grant of this STA request will serve the public interest by allowing DIRECTV to test the DIRECTV 10 satellite after a restorative procedure has been conducted and thereby to quantify any improvement in performance obtained as a consequence of that procedure. Allowing DIRECTV to test the satellite at 102.6° W.L. will serve the public interest by minimizing the time that DIRECTV 10 is out of service. Accordingly, and in light of the impending launch date, DIRECTV requests the expeditious grant of special temporary authority.

Respectfully submitted,



William M. Wiltshire  
*Counsel to DIRECTV Enterprises, LLC*

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<sup>4</sup> To the extent the Commission concludes that a waiver of the PFD limit in Section 25.208(c) is required in connection with this STA request, DIRECTV submits that the public interest would be served by the grant of such a waiver for the reasons stated herein, and requests that such a waiver be granted.