

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:  
1.8-m station, Phase II IOT, extension to 06-30-2010 (Feb 2010)

1. Applicant

|                   |                         |                      |                            |
|-------------------|-------------------------|----------------------|----------------------------|
| <b>Name:</b>      | TerreStar License Inc.  | <b>Phone Number:</b> | 703-483-7800               |
| <b>DBA Name:</b>  |                         | <b>Fax Number:</b>   |                            |
| <b>Street:</b>    | 12010 Sunset Hills Road | <b>E-Mail:</b>       | doug.brandon@terrestar.com |
| <b>City:</b>      | Reston                  | <b>State:</b>        | VA                         |
| <b>Country:</b>   | USA                     | <b>Zipcode:</b>      | 20190 -                    |
| <b>Attention:</b> | Mr Douglas I Brandon    |                      |                            |

*With Condition*



File # SES-STA-20100208-00166  
Call Sign E070098 Grant Date 2/18/2010  
(or other identifier)  
Term Dates  
From 2/11/2010 To: 6/30/2010  
Approved: \_\_\_\_\_

*Shahna Z Ghavami*

Attachment

SES-STA-20100208-00166  
E070098

Condition:

All operations shall be on an unprotected and non-harmful interference basis, i.e., TerreStar License Inc. shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference.

*With Conditions*



File # SES-STA-20100208-00166

Call Sign E070098 Grant Date 2/18/2010  
(or other identifier)

From 21112990 Term Dates To: 6/30/2010

Approved: \_\_\_\_\_

*Shahnaaz Ghavamli*

**2. Contact**

|                   |                                 |                      |                  |
|-------------------|---------------------------------|----------------------|------------------|
| <b>Name:</b>      | Joseph A. Godles, Esq.          | <b>Phone Number:</b> | 202-429-4900     |
| <b>Company:</b>   | Goldberg Godles Wiener & Wright | <b>Fax Number:</b>   | 202-429-4912     |
| <b>Street:</b>    | 1229 19th Street, NW            | <b>E-Mail:</b>       | jgodles@g2w2.com |
| <b>City:</b>      | Washington                      | <b>State:</b>        | DC               |
| <b>Country:</b>   | USA                             | <b>Zipcode:</b>      | 20036 -2413      |
| <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?

If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).

Governmental Entity  Noncommercial educational licensee

Other (please explain):

4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station

5. Type Request

Use Prior to Grant

Change Station Location

Other

6. Requested Use Prior Date

02/11/2010

7. City North Las Vegas

8. Latitude

(dd mm ss.s h) 36 14 9.9 N

|  |  |
|--|--|
| 9. State NV  | 10. Longitude<br>(dd mm ss.s h) 115 7 13 W                               |
| 11. Please supply any need attachments.<br>Attachment 1: STA extension                      Attachment 2:                      Attachment 3:   |  |
| 12. 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.)<br><div style="border: 1px solid black; padding: 5px; margin: 10px 0;">In accordance with the details of the attached exhibit, Applicant hereby requests a further extension, commencing February 11, 2010, of its Special Temporary Authority, in order to continue conducting Phase II in-orbit testing (IOT) of the TerreStar-1 satellite using a 1.8-m mobile earth terminal that will be co-located with TerreStar's North Las</div> |  |
| 13. 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. <input checked="" type="radio"/> Yes <input type="radio"/> No   |  |
| 14. Name of Person Signing<br>Douglas I Brandon  | 15. Title of Person Signing<br>General Counsel and Senior Vice President |
| WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT<br>(U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION<br>(U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).  |  |

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## **12. Description**

In accordance with the details of the attached exhibit, Applicant hereby requests a further extension, commencing February 11, 2010, of its Special Temporary Authority, in order to continue conducting Phase II in-orbit testing (IOT) of the TerreStar-1 satellite using a 1.8-m mobile earth terminal that will be co-located with TerreStar's North Las Vegas gateway earth station. Applicant requests that the STA be extended through and including June 30, 2010.

## REQUEST FOR EXTENSION OF SPECIAL TEMPORARY AUTHORITY

Following the successful launch of the TerreStar-1 satellite on July 1, 2009, TerreStar conducted and successfully completed, pursuant to grants of special temporary authority (“STA”), satellite payload In-Orbit-Testing (IOT) activity. Since the third quarter of 2009, also pursuant to STAs, TerreStar has been engaged in “Phase II” SBN-IOT (Satellite Beamforming Network – In-Orbit-Testing) of its Ground Based Beam Forming (GBBF) and other subsystems. The STAs for SBN-IOT will expire on February 10, 2010.

Due to the complex and ground-breaking nature of the GBBF and the base station technologies involved, TerreStar’s SBN-IOT test activities need to be extended beyond the February 10. Therefore, it is seeking an extension of the STAs to June 30, 2010.

As before, the following four facilities will be used for SBN-IOT: (1) TerreStar-1, a Canadian-licensed satellite as to which TerreStar holds a letter of intent (“LOI”) authorization (Call Sign S26333) to serve the United States; (2) the 6.3-m and 9.3-m antennas associated with TerreStar’s licensed gateway earth station located in North Las Vegas, Nevada (Call Sign E070098); (3) an unlicensed 1.8-m mobile earth terminal (“MET”)<sup>1</sup> that is co-located with TerreStar’s North Las Vegas gateway earth station; and (4) TerreStar’s Calibration Earth Stations (“CES”).

A copy of this exhibit accompanies each STA extension request TerreStar is filing in connection with SBN-IOT. The STA request form this exhibit is attached to identifies, for each STA extension request: (1) the time period for which an STA is sought; and (2) the facility for which an STA is sought.<sup>2</sup>

The essence of the continuing SBN-IOT testing activity is described below:

- The test involves over-the-satellite debugging and performance improvement of the GBBF and related element channel amplitude/phase calibration and pointing subsystems.
- The activity will also involve the testing of a new beam-forming algorithm, called Enhanced Beam Forming (EBF), which will significantly improve the performance of the system.
- Two tests that were authorized by the previously-granted STA, specifically Payload Bake-out test and the Interface Verification test under the Forward

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<sup>1</sup> The 1.8-m MET, operating in a temporary fixed mode, uses a custom antenna that is designed for the express purpose of testing service link performance on TerreStar-1. The 1.8-m MET is entirely different from the MET handsets that will be used by TerreStar’s customers.

<sup>2</sup> Based on discussions with the FCC’s staff, and in light of the fact that no FCC radio license has been issued for TerreStar-1, TerreStar did not file any request for special temporary authority for the satellite in connection with IOT. Rather, TerreStar identified in the initial IOT STA request the parameters for TerreStar-1’s operations during IOT that deviate from the parameters on which the LOI authorization for TerreStar-1 are based.

Payload Tests, have been completed and will not need to be executed during the STA extension period requested in this filing.

In addition to the SBN-IOT test activity described above, for the information of the Commission, TerreStar has also been engaged, in parallel, in the end-to-end testing of its satellite system under the existing licenses of its North Las Vegas (NLV) gateway station and the handsets (i.e. user terminals). Test calls have been placed over the S-band and Ku-band satellite channels. Major ground subsystems being tested include the satellite base station (S-BSS), GBBF, handsets, and the Core Network. A new version of the S-BSS is scheduled to be tested during the coming STA extension period that will result in improved system capability and performance. Finally, TerreStar handsets, with a trade name Genus, have been subject to numerous satellite field tests to improve their functionalities and performance.