

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
180 Day STA Renewal for 74cm Ka-band FSS Earth Terminals (E060445)

I. Applicant

Name: HNS License Sub, LLC Phone Number: 301-428-5893
DBA Name: DBA Name: 301-428-2818
Street: 11717 Exploration Lane E-Mail: jennifer.manner@echostar.com
City: Germantown State: MD
Country: USA Zipcode: 20876
Attention: Jennifer Manner


"180 days" "Extension with condition"

File # SES-STA-20151111-00824

Call Sign E060445 Grant Date 12/23/2015
(or other identifier)

Term Dates
From 12/24/2015 To 06/20/2016

Approved: *Jennifer Manner*



The stamp features the FCC seal on the left and the text "GRANTED International Bureau" on the right.

Applicant: HNS License Sub, LLC.
File No.: SES-STA-20151111-00824
Call Sign: E060445
Special Temporary Authority (STA)

HNS License Sub, LLC. ("HNS") is granted STA for 180 days, beginning December 24, 2015, to operate up to 100,000 Ka-band frequency remote earth station user antenna terminal models: Skyware Global 74 cm GD (Metal) RMS 0.479 mm manufactured by Skyware Global and Winegard 74 cm manufactured by Winegard in the fixed satellite service to communicate with: SPACEWAY 1 at orbital location 103 degrees W.L.; SPACEWAY 2 at orbital location 99 degrees W.L., SPACEWAY 3 at orbital location 94.95 degrees W.L.; AMC-15 (S2180) at orbital location 105 degrees W.L.; AMC-16 at orbital location 85 degrees W.L.; DIRECTV 11 at orbital location 99.2 degrees W.L.; DIRECTV 10 at orbital location 102.8 degrees W.L.; ECHOSTAR-9 at orbital location 121 degrees W.L.; Echostar XVII at orbital location 107.1 degrees W.L.; DIRECTV 11 at orbital location 99.2 degrees W.L.; DIRECTV 10 at orbital location 102.8 degrees W.L. in the frequency bands: 28.35-28.6 GHz (Earth-to-space), 29.25-30.0 GHz (Earth-to-space); 18.3-18.8 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth) under the following conditions:

1. The 17.8 - 20.2 GHz band is shared with U.S. Government space stations and associated earth stations in the fixed-Satellite Services. Services within the United States over the satellite network of which this is a cooperating earth station are subject to coordination under US334 and operation of the earth station(s) authorized herein will be subject to any technical constraints resulting from this coordination. See 47 C.F.R. Section 2.106, Footnote US334.
2. Operations under STA are limited with transmit emission carriers 650KG7W at 45.8 dBW eirp/23.7 dBW/4kHz eirp density; receive emission carriers 100KG7W and 500MG7W.
3. HNS 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.
4. Grant of this authorization is without prejudice to any determination that the Commission may make regarding any other pending or future application filed by HNS.
5. Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the antennas' power flux-density levels exceed the specified guidelines.
6. The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits

defined in 47 CFR 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions, such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling, or by field measurement. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.

7. In the event that there is a report of interference, HNS must immediately terminate transmissions and notify the FCC in writing.
8. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at HNS' own risk.
9. Operations during the period December 1, 2015 to the date of this grant we4re authorized pursuant to Section 1.62 of the Commission's rules 47 C.F.R. § 1.62.

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.

180 days "with conditions"



File # SES-STA-20151111-00824

Call Sign E060445 Grant Date 12/23/2015
(or other identifier)

Term Dates
From 12/24/2015 To: 06/20/2016

Approved: *Paul E. Blas*

2. Contact			
Name:	Phuong N. Pham	Phone Number:	202-383-3395
Company:	Wilkinson Barker Knauer, LLP	Fax Number:	202-783-5851
Street:	1800 M Street, NW Suite 800N	E-Mail:	ppham@wbklaw.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036 -
Attention:		Relationship:	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 SESSTA2015081400524 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 CGX – Fixed Satellite Transmit/Receive Earth Station			
5. Type Request			
<input checked="" type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input type="radio"/> Other			
6. Requested Use Prior Date			
12/02/2015			
7. City		8. Latitude	
		(dd mm ss.s h) 0 0 0.0	

9. State	10. Longitude (dd mm ss.s h) 0 0 0.0
11. Please supply any need attachments. Attachment 1: Narrative 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.) Application seeks to renew its special temporary authorization for an additional 180 days until May 30, 2016, to operate up to 100,000 remote earth terminals (74 cm. in diameter) in the Ka-band fixed satellite service, including a partial waiver of Section 25.209(b)'s cross-polarization requirements. See Exhibit 1.	
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. Yes <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Jennifer A. Manner	15. Title of Person Signing Vice President, Regulatory Affairs
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).	

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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.

EXHIBIT 1

REQUEST FOR RENEWAL OF SPECIAL TEMPORARY AUTHORIZATION (Response to Question 12, FCC Form)

Pursuant to Section 25.120(b)(3) of the Commission's rules,¹ HNS License Sub, LLC (together with its affiliates, "Hughes") requests to renew its special temporary authorization ("STA"),² for an additional 180 days until May 30, 2016, to operate up to 100,000 remote earth terminals (74 cm. in diameter) (Call Sign E060445) in the fixed satellite service ("FSS") on the following Ka-band frequencies: 28.35-28.6 GHz (uplink), 29.25-30.0 GHz (uplink), 18.3-19.3 GHz (downlink), 19.7-20.2 GHz (downlink).³ These earth terminals will operate with certain satellites to provide high-speed broadband services to consumers throughout the United States. Hughes further requests a partial waiver of the cross-polarization requirements of Section 25.209(b) of the FCC's rules to permit prompt deployment of the proposed earth terminals to consumers nationwide.

I. BACKGROUND

Hughes holds a blanket license (Call Sign E060445) to operate a network of transmit/receive Ka-band FSS earth terminals used to provide high-speed broadband services to U.S. consumers. On August 10, 2015, the FCC granted Hughes's application to modify its blanket license so as to: (i) add the EchoStar XIX (or Jupiter 97W) satellite at 97.1° W.L. as a point of communication for each antenna type;⁴ and (ii) increase the number of earth station

¹ See 47 C.F.R. § 25.120(b)(3).

² See IBFS File No. SES-STA-20150814-00524 (granted Oct. 2, 2015).

³ Hughes has a pending modification application for regular authority to operate these same Ka-band FSS earth terminals. See IBFS File No. SES-MOD-20151102-00791 (filed Nov. 2, 2015).

⁴ On July 27, 2012, the FCC authorized Hughes to access the U.S. market by using Jupiter 97W, a satellite that will operate in the Ka-band and provide broadband services to U.S. consumers across the country. See Hughes, Letter of Intent, IBFS File No. SAT-LOI-20110809-00148 (granted Jul. 27, 2012). On June 23, 2015, the FCC granted a modification of Hughes' U.S. market access authorization for

terminals authorized under the blanket license to five million terminals for the TR74CM antennas.⁵

II. DESCRIPTION OF PROPOSED STA OPERATIONS

Hughes requests a 180-day STA renewal to operate up to 100,000 Ka-band FSS earth terminals (74 cm. in diameter) manufactured by Skyware Global (formerly, Raven) and Winegard (and originally designed and manufactured by GD Satcom). The proposed earth terminals will operate with the following satellites to provide high-speed broadband services to consumers throughout the United States:

- 1) SPACEWAY 1 at 103° W.L.;
- 2) SPACEWAY 2 at 99° W.L.;
- 3) SPACEWAY 3 at 94.95° W.L.;
- 4) AMC-15 at 105° W.L. (U.S.-licensed);
- 5) AMC-16 at 85° W.L. (U.S.-licensed);
- 6) EchoStar-9 at 121° W.L. (U.S.-licensed);
- 7) EchoStar XVII at 107.1° W.L. (U.S.-licensed);
- 8) DIRECTV 10 at 102.8° W.L. (U.S.-licensed); and
- 9) DIRECTV 11 at 99.2° W.L. (U.S.-licensed).

Except with respect to cross-polarization gain (for which a waiver is sought, as discussed below), these earth terminals are technically identical to the 74 cm. earth terminals manufactured by GD Satcom (formerly, Prodelin) and authorized under Hughes' existing blanket license.⁶ Further, Hughes will operate these terminals in accordance with all coordination agreements. Accordingly, there are no interference concerns with the proposed STA operations.

Jupiter 97W to permit the following: (i) adding the 27.85-28.35 GHz frequencies (gateway uplink); and (ii) updating the FCC licensing information associated with the satellite to reflect that it will be operated by Hughes under the International Telecommunications Union filing for the RAGGIANA-5 network, registered at the ITU by Papua New Guinea. *See* Hughes, IBFS File No. SAT-MOD-20141210-00127 (granted June 23, 2015).

⁵ *See* Hughes, IBFS File No. SES-MFS-20150401-00186 (filed Apr. 1, 2015).

⁶ *See* Attachment A (Technical Specifications).

Coordination with Non-geostationary Satellite Orbit (“NGSO”) Feeder Links. Hughes will operate these earth terminals in the 29.25-29.50 GHz frequency band. This frequency band is shared on a co-primary basis with the feeder link stations of MSS NGSO systems under 47 C.F.R. § 25.258. Hughes has previously concluded a coordination agreement with Iridium, the only NGSO licensee in this band. Hughes operations comply with the coordination agreement, hence protecting Iridium’s operations in the band.

Waiver Request. The proposed Ka-band FSS earth terminals will slightly exceed the cross-polarization gain specified in Section 25.209(b) of the FCC’s rules⁷ only in the elevation plane and only on one side (*i.e.*, the side higher than the main beam). Accordingly, pursuant to Section 1.3 of the FCC’s rules,⁸ Hughes requests a partial waiver of the cross-polarization requirements of Section 25.209(b).⁹

Except with respect to cross-polarization gain, the proposed earth terminals are technically identical to the 74 cm. earth terminals that have been authorized under Hughes’ existing blanket earth station license (Call Sign E060445) and fully consistent with the FCC’s technical requirements. Based upon the manufacturers’ test reports, the degree of non-conformance with respect to the cross-polarization antenna pattern is *de minimis*, and occurs only in the elevation plane and only on one side. Specifically, the cross-polarization pattern in the upper elevation side is higher than the FCC’s cross-polarization mask ($19-25\log_{10}\Theta$) for $\Theta > 7$ only. At no point is the cross-polarization pattern higher than the FCC’s co-polarization mask

⁷ 47 C.F.R. § 25.209(b).

⁸ 47 C.F.R. § 1.3.

⁹ A waiver of the Commission’s rules is warranted when “good cause” is shown. *See* 47 C.F.R. § 1.3; *see also WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969). A waiver may be granted if the grant “would not undermine the policy objective of the rule in question and would otherwise serve the public interest.” *See EchoStar KuX Corp. Application for Authority to Construct, Launch and Operate a Geostationary Satellite Using the Extended Ku-band Frequencies in the Fixed-Satellite Service at the 83° W.L. Orbital Location*, Order and Authorization, 20 FCC Rcd 919, ¶ 12 (2004).

($32-25\log_{10}\Theta$). Moreover, the proposed earth terminals are in compliance with the power density limits under Section 25.138 of the FCC's rules.¹⁰

III. GRANT OF THE REQUESTED STA WILL SERVE THE PUBLIC INTEREST

Grant of the requested STA renewal will serve the public interest by allowing Hughes to quickly deploy user terminals that will provide high-speed broadband services to consumers throughout the United States without any interference concerns. Specifically, these user terminals will be deployed to meet the broadband needs of business and residential users in the United States, delivering such high demand services as high-definition video programming, on-demand entertainment, digital music, interactive television, video conferencing, and high capacity two-way communications.

Following the successful launch of EchoStar XVII in 2011, Hughes has deployed more than one million broadband user terminals throughout the United States and Canada, and demand continues to increase.¹¹ This increasing demand for high-speed broadband service demonstrates that there is an ample market for the types of services that Hughes provides.¹² These services include high-speed data transmission and high-speed broadband Internet access, which can be used to support Internet and content-provider offerings such as high-definition video programming, on-demand entertainment, digital music, interactive television, video conferencing, and high-capacity two-way communications.

Areas of the United States that are currently underserved or unserved by terrestrial broadband technologies will benefit from the availability of these new user terminals. Provision

¹⁰ 47 C.F.R. § 25.138.

¹¹ See Hughes, Press Release, *Hughes Becomes First Satellite Internet Provider to Surpass One Million Active Users* (Sept. 8, 2014).

¹² See Hughes, Press Release, *Hughes to Highlight Growth in High Throughput Satellite Technology at CSAT 2014 Conference* (Sept. 8, 2014).

of broadband service to these areas will promote regional commerce while providing new job opportunities in the United States through launch of the satellite, development of applications and content for consumers, and deployment of gateway earth stations and user terminals. The additional high-speed capacity will improve communications links in rural and underserved areas, and create new opportunities for economic development in the United States.