

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
Request for STA to operate 7.2m on exented Ku while permanent application is under reivew

I. Applicant

Name: HARRIS CORPORATION Phone Number: 321-727-9234
DBA Name: Fax Number: 321-727-9125
Street: 1025 West Nasa Blvd. E-Mail: smikuen@harris.com
City: Melbourne State: FL
Country: USA Zipcode: 32919
Attention: Scott T Mikuen Esq

SES-STA-20120710-00643

Call Sign: E080151 Grant Date: 9-6-12

(or other identifier)

From: 9-7-12 Term Dates: To: 11-6-12

Appr: [Signature] with conditions




GRANTED

Applicant: Harris Corporation
Call Sign: E080151
File No.: SES-STA-20120710-00643
Special Temporary Authority (STA)

Harris Corporation is granted STA from September 7, 2012 through November 6, 2012 to operate a Vertex 7.3m antenna transmit on 13.8-14.0 GHz (Earth-to-space) to communicate with satellite Estrela Do Sul 2 at orbital location 63 degrees W.L., under the following conditions:

- 1) Operations in the 13.75-14.0 GHz band below 68 dBW (Footnote US356 of the Table of Frequency Allocations) are permitted on an unprotected basis.
- 2) Harris Corporation, E080151, 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.

SES-STA-20120710-00643



GRANTED
International Bureau

Call Sign E080151 Grant Date 9-6-12
(or other identifier)
From 9-7-12 Term Expires 11-6-12
Applicant Paul E. Harris

2. Contact			
Name:	Raul Magallanes	Phone Number:	281 317 1397
Company:	The Law Office of Raul Magallanes, PLLC	Fax Number:	281 271 8085
Street:	PO Box 1213	E-Mail:	raul@rmtelecomlaw.com
City:	Friendswood	State:	TX
Country:	USA	Zipcode:	77549 -
Attention:	Raul Magallanes	Relationship:	Other
(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 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			
07/16/2012			

7. City/Melbourne	8. Latitude (dd mm ss.s h) 28 5 23.0 N
9. State FL	10. Longitude (dd mm ss.s h) 80 38 20.0 W
11. Please supply any need attachments. Attachment 1: Cover Letter Attachment 2: Exhibit A 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.) <div style="border: 1px solid black; padding: 5px;">Request for STA to operate 7.2m on exented Ku while permanent application is under reivev</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. Yes <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing EllenAnn Sands	15. Title of Person Signing Senior Counsel
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

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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.

Compliance with FCC Report & Order (FCC96-377)

Vertex RSI Ku 7.2m

This exhibit demonstrates that the antenna at issue complies with FCC Report & Order 96-377. Also addressed is the potential harmful interference to US Navy shoreboard operations (RADAR) and the NASA space research activities in the 13.75 - 14.0 GHz band. The parameters for the earth station are shown below:

<u>Earth Station Coordinates</u>	<u>Deg</u>	<u>Min</u>	<u>Sec</u>	
Latitude	28	5	23.0	North
Longitude	80	38	20.0	West
Location	Melbourne, Florida			

<u>Earth Station</u>	<u>Value</u>	<u>Unit</u>	<u>Symbol</u>
Antenna Diameter:	7.2	m	D
Antenna Transmit Gain:	58.10	dBi	G
Uplink Frequency (lower)	13.8	GHz	f_l
Uplink Frequency (upper)	14.00	GHz	f_u
Elevation Angle	51.87	Degrees	θ_e
Power Input to the Antenna:	250.00	W	P

Satellite

Satellite Name	T14R	
Orbital Longitude	63.0	West

Distance to Shoreline

Closest Distance to Shoreline	10.00	Km	d
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The above spectrum is shared with the Federal Government. Therefore, coordination in this band requires resolution data pertaining to potential interference between the earth station and both, Navy Department and NASA systems. Potential interference from the earth station could impact the Navy and/or NASA systems in two areas. These areas are noted in FCC Order 96-377 dated September 1996, and consist of (1) Radiolocation and radio navigation, and (2) Data Relay Satellites.

Potential Impact to Government Radiolocation (Shipboard Radar)

Radiolocation operations (RADAR) may occur anywhere in the 13.4 - 14.0 GHz frequency band aboard ocean going United States Navy ships. FCC Order 96-377 allcates the bottom 250 MHz of this 600 MHz band to the Fixed Satellite Service (FSS) on a co-primary basis with the radiolocation operations and provides for an interference protecion level of -167 dBW/m²/4KHz.

Calculation of the power spectral density at antenna input is given by:

	<u>Carrier 1</u>	<u>Carrier 2</u>	<u>Units</u>	<u>Symbol</u>
Clear Sky EIPR	58.60	66.60	dBW	<i>EIRP</i>
Carrier Bandwidth	5700	36000	MHz	<i>BW_o</i>
Power Density at Antenna Input	-31.04	-31.04	dBW/4KHz	<i>PD_i</i>

The proposed earth station will radiate toward the ocean according to its off-axis side-lope performance. A conservative analysis, using FCC standard reference pattern, results in off-axis antenna gains toward the ocean as follows:

The signal density at the shoreline, through free space is:

$$PDF = \text{Antenna Feed Power Density (dBW/4KHz)} + \text{Antenna Off-Axis Gain (dBi)} - \text{Spread Loss (dBw-m}^2\text{)}$$

	<u>Carrier 1</u>	<u>Carrier 2</u>		<u>Formula</u>
Antenna Dentity at Antenna Input	-31.04	-31.04	dBW/4KHz	<i>EIRP - G - 10log(BW_o/4KHz)</i>
Antenna Off-Axis Gain	-10.9	-10.9	dB	<i>32-25log(θ_e)</i>
Spread Loss	91.0	91.0	dBW-m ²	<i>10log(4πd²)</i>
PFD without Terrain Loss & Blockage	-132.9	-132.9	dBW/4KHz/m ²	
Terrain Loss*	25.0	25.0	dB	
Tree & Building Blockage	10.0	10.0	dB	
PFD with Terrain Loss	-167.9	-167.9	dBW/4KHz/m ²	
Margin below -167dBW/4KHz/m ²	0.9	0.9	dB	

*does not include absorition loss and earth diffraction loss

The calculated Power Flux Density (PFD), including free space loss, to the closest shoreline location is below the 167 dBW/4KHz/m² interefence criteria by a positive margin for all carriers. Therefore, there will be no discernable interference to the US Navy Radar from the proposed earth station.

Potential Impact to NASA's Data Relay Satellite System (TDRSS)

The geographic location of the proposed earth station is outside the 390 Km radius coordination contour surrounding NASA's White Sands, New Mexico ground station complex. Therefore, the TDRSS space-to-earth link will not be impacted by the proposed earth station.

The TDRSS space-to-space link in the 13.772 to 13.778 GHz band is not within the operational frequency of the proposed system. Therefore, there will not be interference to the TDRSS space-to-space link.

July 10, 2012

System Analysis Branch
Satellite Division
International Bureau
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: Request for Special Temporary Authority – Harris Corporation

Pursuant to Section 25.120(b) of the Rules and Regulations (“Regulations”) of the Federal Communications Commission (“Commission”), Harris Corporation (“HARRIS”) seeks Commission consideration for a Special Temporary Authority (“STA”) to operate a Vertex 7.3m on satellite T14 (63W) on 13800 MHz to 14000 MHz extended Ku band while an application for modification is being reviewed.¹

According to Section 25.120(b)(1) of the Regulations, *“the Commission may grant a temporary authorization only upon a finding that there are extraordinary circumstances requiring temporary operations in the public interest and that delay in the institution of these temporary operations would seriously prejudice the public interest.”*

HARRIS is a global provider of fully managed communications solutions for remote and harsh environments. The proposed application, through the Vertex 7.3m hub at issue, would authorize HARRIS to service a fleet of vessels in the Atlantic Ocean.² The vessels are primarily cruise ships that carry thousands of passengers. These ships often travel to remote areas in the ocean where a VSAT connection can act as a lifeline in case of an emergency. The ability to communicate with the hub is paramount to the safety of the passengers and the ship crew.

This is an extraordinary circumstance that requires temporary operations in the public interest. The delay in the institution of these temporary operations would seriously prejudice the public interest.

The proposed carrier EIRP does not exceed the licensed total EIRP for all carriers. Furthermore, according to an FCC96-377 study, the proposed power flux density will fall below the -167 dBW/4KHz/m² prescribed limit. As such, no harmful interference is anticipated to NASA’s Data Relay Satellite System (TDRSS) or government radiolocation systems.

Pursuant to Section 25.120(b)(3) of the Regulations, the Commission may grant temporary authorization for a period not to exceed 60 days, if the STA has not been placed on public notice, and the applicant plans to file a request for regular authority for the service. In the instance case, the Commission has not placed the STA application on public notice. Furthermore, HARRIS has filed an application for permanent authority. HARRIS is asking the Commission to grant it STA beginning July 16, 2012. The planned satellite is T14 (63W).

¹ See file SES-MOD-INTR2012-00635, callsign E080151.

² The antennas on the vessels are already licensed as Earth Stations on Vessels (ESVs)