

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:  
Extension of E150010 STA Mod. App 2/13/2018

1. Applicant

Name:	Hawaii Pacific Teleport, L.P.	Phone Number:	808-674-9157
DBA Name:		Fax Number:	808-674-1826
Street:	P.O. Box 693	E-Mail:	lsmith-ryland@hawaiiiteleport.com
City:	Rumson	State:	NJ
Country:	USA	Zipcode:	07760
Attention:	Ms Leeana A Smith-Ryland		



File # SES-STA-20180215-00126  
E150010  
Call Sign E150010 Grant Date 2/21/18  
(or other identifier)  
Term Dates From: 2/21/18 To: 4/22/18  
Approved: [Signature]

Applicant: Hawaii Pacific Teleport, L.P.  
Call Sign: E150010  
File No.: SES-STA-20180215-00126

Hawaii Pacific Teleport, L.P. ("HPT") is granted a Special Temporary Authority for 60 days, beginning February 21, 2018 to operate a fixed earth station at Kapolei, HI with the Eutelsat 1728 (S3021) located at the 172° E.L. orbital location in the 29.1-29.15 GHz (Earth-to-space) frequency bands under the following conditions:

1. Operations shall not cause harmful interference to or claim protection from other lawfully operating stations and it shall cease transmissions immediately upon notice of such interference.
2. Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future **HPT** applications.
3. US table of allocations foot note NG166, the use of the band 29.1 -29.25 GHz by the fixed-satellite service is limited to feeder links for non-geostationary satellite systems in the mobile-satellite service. However, due to unique circumstances of HPT's urgent need for access to the 29.1-29.15 GHz band; coordination discussions between HPT and Iridium this authorization is provided contingent on continued coordination and good will between both operators.
4. Operations during the period February 18,2018 to the date of this grant were authorized pursuant to Section 1.62 of the Commissions' rules 47 C.F.R. § 1.62
5. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at HPT's risk.

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.



File # SES-STA-20180215-00126

Call Sign E150010 Grant Date 2/21/2018  
(or other identifier)

Form Dates  
From 2-21/2018 To: 4/7/2018

Approved: [Signature]

<b>2. Contact</b>	
<b>Name:</b> Frank R. Jazzo	<b>Phone Number:</b> 703-812-0470
<b>Company:</b> Fletcher, Heald & Hildreth, PLC	<b>Fax Number:</b> 703-812-0486
<b>Street:</b> 1300 N 17th St. 11th Floor	<b>E-Mail:</b> jazzo@fhhlaw.com
<b>City:</b> Arlington	<b>State:</b> VA
<b>Country:</b> USA	<b>Zipcode:</b> 22209
<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 SESSTA2018011600032 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 type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input checked="" type="radio"/> Other	
6. Requested Use Prior Date	
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: Extension of STA 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.) Extension of STA	
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 Leeana A. Smith-Ryland	15. Title of Person Signing Chief Executive Officer
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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## Analysis of Non-Ionizing Radiation for a 1.8-Meter Earth Station System

This report analyzes the non-ionizing radiation levels for a 1.8-meter earth station system. The analysis and calculations performed in this report comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65 first published in 1985 and revised in 1997 in Edition 97-01. The radiation safety limits used in the analysis are in conformance with the FCC R&O 96-326. Bulletin No. 65 and the FCC R&C specifies that there are two separate tiers of exposure limits that are dependant on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. The Maximum Permissible Exposure (MPE) limits for persons in a General Population/Uncontrolled environment are shown in Table 1. The General Population/Uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less. The MPE limits for persons in an Occupational/Controlled environment are shown in Table 2. The Occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less. The purpose of the analysis described in this report is to determine the power flux density levels of the earth station in the far-field, near-field, transition region, between the subreflector or feed and main reflector surface, at the main reflector surface, and between the antenna edge and the ground and to compare these levels to the specified MPEs.

Table 1. Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm <sup>2</sup> )
30-300	0.2
300-1500	Frequency (MHz)*(0.8/1200)
1500-100,000	1.0

Table 2. Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm <sup>2</sup> )
30-300	1.0
300-1500	Frequency (MHz)*(4.0/1200)
1500-100,000	5.0

Table 3. Formulas and Parameters Used for Determining Power Flux Densities

Parameter	Symbol	Formula	Value	Units
Antenna Diameter	D	Input	1.8	m
Antenna Surface Area	A <sub>surface</sub>	$\pi D^2 / 4$	2.54	m <sup>2</sup>
Feed Flange Diameter	D <sub>fa</sub>	Input	10.7	cm
Area of Feed Flange	A <sub>fa</sub>	$\pi D_{fa}^2 / 4$	89.92	cm <sup>2</sup>
Frequency	F	Input	14250	MHz
Wavelength	$\lambda$	300 / F	0.021053	m
Transmit Power	P	Input	125.00	W
Antenna Gain (dBi)	G <sub>es</sub>	Input	46.5	dBi
Antenna Gain (factor)	G	10 <sup>G<sub>es</sub>/10</sup>	44668.4	n/a
Pi	$\pi$	Constant	3.1415927	n/a
Antenna Efficiency	$\eta$	$G\lambda^2/(\pi^2 D^2)$	0.62	n/a

Transmissions from the feed assembly are directed toward the antenna reflector surface, and are confined within a conical shape defined by the type of feed assembly. The most common feed assemblies are waveguide flanges, horns or subreflectors. The energy between the feed assembly and reflector surface can be calculated by determining the power density at the feed assembly surface. This can be determined from the following equation:

$$\begin{aligned} \text{Power Density at the Feed Flange} \quad S_{fa} &= 4000 P / A_{fa} & (6) \\ &= 5560.484 \text{ mW/cm}^2 \end{aligned}$$

## 5. Main Reflector Region

The power density in the main reflector is determined in the same manner as the power density at the feed assembly. The area is now the area of the reflector aperture and can be determined from the following equation:

$$\begin{aligned} \text{Power Density at the Reflector Surface} \quad S_{\text{surface}} &= 4 P / A_{\text{surface}} & (7) \\ &= 196.488 \text{ W/m}^2 \\ &= 19.649 \text{ mW/cm}^2 \end{aligned}$$

## 6. Region between the Reflector and the Ground

Assuming uniform illumination of the reflector surface, the power density between the antenna and the ground can be determined from the following equation:

$$\begin{aligned} \text{Power Density between Reflector and Ground} \quad S_g &= P / A_{\text{surface}} & (8) \\ &= 49.122 \text{ W/m}^2 \\ &= 4.912 \text{ mW/cm}^2 \end{aligned}$$

## 7. Summary of Calculations

Table 4. Summary of Expected Radiation levels for Uncontrolled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm <sup>2</sup> )		Hazard Assessment
1. Far Field ( $R_{ff} = 92.3$ m)	$S_{ff}$	5.211	Potential Hazard
2. Near Field ( $R_{nf} = 38.5$ m)	$S_{nf}$	12.165	Potential Hazard
3. Transition Region ( $R_{nf} < R_t < R_{ff}$ )	$S_t$	12.165	Potential Hazard
4. Between Feed Assembly and Antenna Reflector	$S_{fa}$	5560.484	Potential Hazard
5. Main Reflector	$S_{surface}$	19.649	Potential Hazard
6. Between Reflector and Ground	$S_g$	4.912	Potential Hazard

Table 5. Summary of Expected Radiation levels for Controlled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm <sup>2</sup> )		Hazard Assessment
1. Far Field ( $R_{ff} = 92.3$ m)	$S_{ff}$	5.211	Potential Hazard
2. Near Field ( $R_{nf} = 38.5$ m)	$S_{nf}$	12.165	Potential Hazard
3. Transition Region ( $R_{nf} < R_t < R_{ff}$ )	$S_t$	12.165	Potential Hazard
4. Between Feed Assembly and Antenna Reflector	$S_{fa}$	5560.484	Potential Hazard
5. Main Reflector	$S_{surface}$	19.649	Potential Hazard
6. Between Reflector and Ground	$S_g$	4.912	Satisfies FCC MPE

It is the applicant's responsibility to ensure that the public and operational personnel are not exposed to harmful levels of radiation.



## 8. Conclusions

Based upon the above analysis, it is concluded that FCC RF Guidelines have been exceeded in the specified region(s) of Tables 4 and 5. The applicant proposes to comply with the Maximum Permissible Exposure (MPE) limits of  $1.0 \text{ mW/cm}^2$  for the Uncontrolled Areas, and the MPE limits of  $5.0 \text{ mW/cm}^2$  for the Controlled Areas.

The antenna is mounted above the roof of a truck, and the bottom lip of the dish will be at least 10 feet above ground level.

The area around the antenna, equal to one diameter removed from the main beam will be roped off, and public access will be denied. This restricted area will be at least 10 feet around the antenna, and radiation hazard signs will be posted during the operation of this earth station. Since one diameter removed from the center of the main beam the levels are down at least 20 dB, or by a factor of 100, these potential hazards do not exist for either the public, or for earth station personnel.

The applicant will ensure that the main beam of the antenna will be pointed at least one diameter away from any buildings or other obstacles in those areas that exceed the MPE levels.

Finally, the earth station's operating personnel will not have access to areas that exceed the MPE levels, while the earth station is in operation, and the transmitter(s) will be turned off during any antenna maintenance.