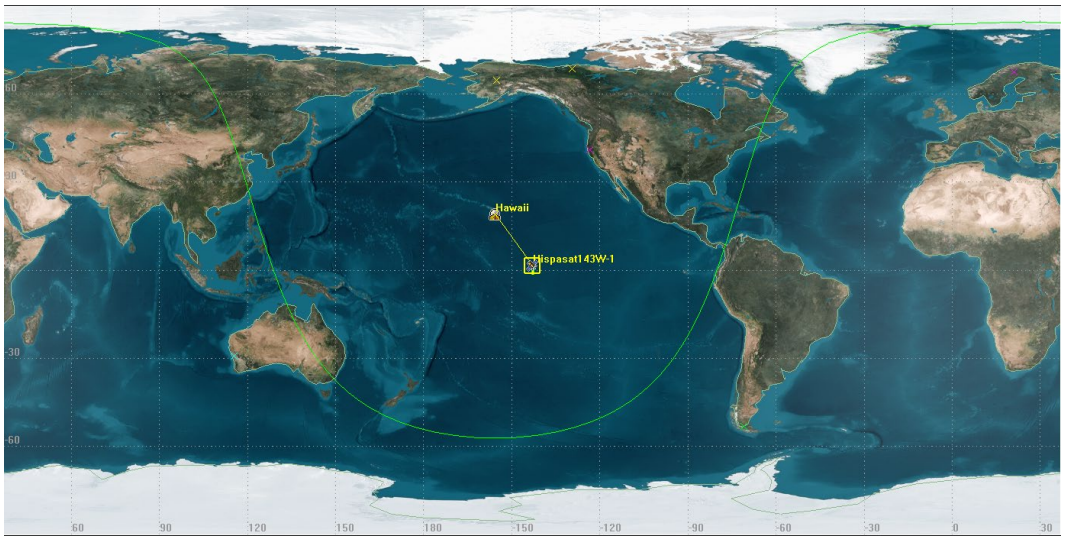
USN TT&C backup support for HispaSat-143W-1 from Hawaii

HispaSat 143W-1 (call sign S3058) is an operational on orbit satellite currently parked at 143 degrees west and has been granted US market access. The owner (Intelsat Debtor in possession) is requesting USN offer TT&C backup support for health and welfare of the spacecraft from USN's Hawaiian earth station. USN will support the spacecraft as backup to the owners earth station if required. A proficiency contact may occur once a month for the period of the license. This request is for a 180 day STA.

The uplink = 2072.795 MHz, and has been fully coordinated by Comsearch. The Spacecraft downlink = 2251.000 MHz.

The Hawaiian support could occur at any time during the 24/7 visibility as the spacecraft is in view at all times.



Flux Density impinging on the ground in Hawaii from HispaSat 143W-1

The Flux density is calculated as:

$$\boldsymbol{Flux\ density = EIRP \div (4\,\pi\, Rse^2)}$$

Where $\boldsymbol{Rse}$ is the distance from spacecraft to the ground.
Where $\boldsymbol{EIRP}$ is the Effective Isotropic Radiated Power of the Spacecraft.

Data from the spacecraft vendor indicates that the maximum EIRP of HispaSat-143W-1 TT&C link is 1.10 dBW. The altitude of the relocation orbit is approximately = 35,500 Km.

Converting 1.10 dBW to scalar watts = 1.288 watts transmitted at 2251.0 MHz

Therefor:

$$\boldsymbol{Flux\ density = 1.288 \div (4\,\pi * 35{,}500{,}000\ meters^2)}$$

Flux density = 8.133 x 10^{-17} Watts/meter^2
Or
Flux density = 8.133 x 10^{-18} mW/cm^2

I. GOOD CAUSE EXISTS FOR A WAIVER OF THE UNITED STATES TABLE OF FREQUENCY ALLOCATIONS

USN further requests a waiver of the United States Table of Frequency Allocations ("U.S. Table") as described in section 2.106 of the rules for the frequency bands 2025 – 2110 MHz (Earth-to-Space) and 2200 – 2290 MHz (Space-to-Earth).[6] Section footnotes allow for non-federal Government use of these bands in the United States on a case-by-case non-interference basis. Such use by USN necessitates a waiver of the U.S. Table.

Good cause exists to grant USN a limited waiver of the U.S. Table to allow backup of the HispaSat 143W-1 satellite. In considering request for case-by-case spectrum uses, the Commission has indicated that is would generally grant such waivers "where there is little potential for interference into any service authorized under the Table of Frequency Allocations and when the case-by-case operator accepts any interference from authorized services." [7] USN will contact the satellite on a rare schedule as backup to the owners earth stations and will coordinate with other parties operating communication systems in compliance with the Table of Frequency Allocations to ensure that no harmful interference is caused. USN seeks to operate only pursuant to special temporary authorization and thus agrees to accept any interference from authorized services. In summary, USN's operation on a non-interference, non-protected basis support waiver of the U.S. Table.

[6] 47 C.F.R. §2.106

[7] Previously approved STA's for Universal Space Network SES-STA-20020725-01174; SES-STA-20021112-02008; SES-STA-20040315-00475