

From: Will Lewis <will.lewis@ses.com>

Sent: Friday, March 8, 2019 10:55 AM

To: Paul Blais <Paul.Blais@fcc.gov>; Trang Nguyen <Trang.Nguyen@fcc.gov>

Subject: RE: 30 day STA Hawaii ses-sta-20190214-00174FW: O3b mod to add 27.5 27.6, waiver to ignore UMFUS ses-mod-20190207-00084

Hi Paul and Trang,

Thank you for your email. My apologies for the mistakes in the application and I appreciate you reaching out about them.

Below are my answers to your questions. Please let me know if you have any follow up questions or further information requests:

1. These next four satellites will be O3b 17-20 and these are the ones we are seeking to communicate with in SES-STA-20190214-00174. These satellites will operate in the equatorial orbit and will utilize the 19.7-20.2 GHz and 29.5-30.0 GHz bands in addition to the original O3b bands. Please see the below chart from O3b's Market Access Grant for the frequency breakdown on these satellites:

O3b Satellites 17-20	
	27.6-28.4 GHz (FSS)
O3b Satellites 17-20	
17.8-18.6 GHz (FSS)	28.6-29.1 GHz (FSS)
18.8-19.3 GHz (FSS)	
	29.5-30.0 GHz (FSS/MSS)
19.7-20.2 GHz (FSS/MSS)	

2. Please see the below values for the mid-band antenna gain values in the 19700-20200 GHz & 29.5-30.0 GHz bands:

Calculated values

	Freq [GHz]	Gain dBi
Tx	29.5	65.64
	29.75	65.71
	30.00	65.78
Rx	19.7	63.61

	19.95	63.72
	20.20	63.83

Best regards,

Will