

## Leann Nguyen

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**From:** Carlos Flores  
**Sent:** Thursday, May 18, 2017 9:53 AM  
**To:** Bjornson, Christopher  
**Cc:** Leann Nguyen; Jeanette Spriggs; Kathryn Medley; Paul Blais; Jose Trevino; Chip Fleming  
**Subject:** RE: Coordination for 351-EX-ST-2017

Hi Chris,

There is concern with the ground to rooftop transmissions since this is the Ka satellite uplinks of license operators and since FCL provide ranges for the azimuth and elevation of their antennas, this test could potentially point towards the GSO arc or equatorially to O3b NGSO satellite and potentially cause harmful interference.

From my original email below, it indicated that we have concerns of potential interference to our satellite uplink from the experimental antennas transmitting in the 27.5-29.7 GHz and 29.7-30 GHz band in a ground-to rooftop direction with **ERP values of 767 W and 48,434 Watts.**

We will need **more detail antenna information** for these operations since they are **pointing up in the same direction as our satellite uplinks.**

Frequency	Direction	Az (deg)	Elevation (deg)
29.7-32 GHz	Ground to rooftop	+/-180	-20/70
27.5-29.7 GHz	Ground to rooftop	+/-180	-20/70

I will discuss this internally with other satellite folks and will get back to you. We may need a teleconference with FCL to get additional information and clarification.

Thanks,  
Carlos

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**From:** Bjornson, Christopher [mailto:Cbjornso@steptoe.com]  
**Sent:** Wednesday, May 17, 2017 6:12 PM  
**To:** Carlos Flores <Carlos.Flores@fcc.gov>  
**Cc:** Leann Nguyen <Leann.Nguyen@fcc.gov>; Jeanette Spriggs <Jeanette.Spriggs@fcc.gov>  
**Subject:** RE: Coordination for 351-EX-ST-2017

Carlos:  
Below are the ranges. Please note that the 24.0-27.5 GHz band is used from rooftop-to-ground.

Frequency	Direction	Az (deg)	Elevation (deg)
29.7-32 GHz	Ground to rooftop	+/-180	-20/70
27.5-29.7 GHz	Ground to rooftop	+/-180	-20/70
24.0-27.5 GHz	Rooftop to ground	+/-180	-90/-20
18-20 GHz	Rooftop to ground	+/-180	-90/-20

Please let us know if you have any questions or need anything else.

Sincerely,  
Chris

Christopher R. Bjornson  
Steptoe & Johnson LLP  
1330 Connecticut Avenue, N.W.  
Washington, D.C. 20036  
Phone: 202.429.3059  
e-mail: [cbjornson@steptoe.com](mailto:cbjornson@steptoe.com)

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**From:** Carlos Flores [<mailto:Carlos.Flores@fcc.gov>]  
**Sent:** Friday, May 05, 2017 2:06 PM  
**To:** Bjornson, Christopher  
**Cc:** Leann Nguyen; Jeanette Spriggs  
**Subject:** RE: Coordination for 351-EX-ST-2017

Hi Chris,

Sorry, but I'm a bit confuse of the directionality of frequency range.  
Could please have FCL fill in the ??? below so we have a better understanding of each frequency range the antennas will be pointing in their AZ and Elev.

Frequency	Direction	Az (deg)	Elevation (deg)
29.7-32 GHz	Ground to rooftop	???	???
27.5-29.7 GHz	Ground to rooftop	???	???
24.0-27.5 GHz	Ground to rooftop	???	???
18-20 GHz	Rooftop to ground	???	???

Thank you,  
Carlos

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**From:** Bjornson, Christopher [<mailto:Cbjornso@steptoe.com>]  
**Sent:** Friday, May 05, 2017 11:25 AM  
**To:** Carlos Flores <[Carlos.Flores@fcc.gov](mailto:Carlos.Flores@fcc.gov)>  
**Cc:** Leann Nguyen <[Leann.Nguyen@fcc.gov](mailto:Leann.Nguyen@fcc.gov)>; Jeanette Spriggs <[Jeanette.Spriggs@fcc.gov](mailto:Jeanette.Spriggs@fcc.gov)>  
**Subject:** RE: Coordination for 351-EX-ST-2017

Carlos:  
The range of CPE pointing angles is:

Azimuth +/-180  
Elevation -20/70

Please let us know if you have any questions.  
Sincerely,

Chris

Christopher R. Bjornson  
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**From:** Carlos Flores [<mailto:Carlos.Flores@fcc.gov>]  
**Sent:** Friday, April 07, 2017 8:28 AM  
**To:** Bjornson, Christopher  
**Cc:** Leann Nguyen; Jeanette Spriggs  
**Subject:** RE: Coordination for 351-EX-ST-2017

Chris,

Thank you for this information.

We will still need the exact pointing direction (azimuth and elevation) of the transmit antennas in the 27.5-29.7 GHz and 29.7-30 GHz bands.

Carlos

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**From:** Bjornson, Christopher [<mailto:Cbjornso@steptoe.com>]  
**Sent:** Thursday, April 06, 2017 3:10 PM  
**To:** Carlos Flores <[Carlos.Flores@fcc.gov](mailto:Carlos.Flores@fcc.gov)>  
**Cc:** Leann Nguyen <[Leann.Nguyen@fcc.gov](mailto:Leann.Nguyen@fcc.gov)>; Jeanette Spriggs <[Jeanette.Spriggs@fcc.gov](mailto:Jeanette.Spriggs@fcc.gov)>  
**Subject:** RE: Coordination for 351-EX-ST-2017

*Contains Highly Confidential Attachment*

Carlos:

Thanks for getting in touch. Attached is additional information on the antennas. The antenna for the 24-27.5 GHz operations will be pointing from the roof to the ground. Please let me know if you need anything else.

Sincerely,  
Chris

Christopher R. Bjornson  
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**From:** Carlos Flores [<mailto:Carlos.Flores@fcc.gov>]  
**Sent:** Thursday, April 06, 2017 1:26 PM  
**To:** Bjornson, Christopher  
**Cc:** Leann Nguyen; Jeanette Spriggs  
**Subject:** RE: Coordination for 351-EX-ST-2017

Hello Chris,

IB/SD has reviewed the response to our questions and we have concerns of potential interference to our satellite uplink from the experimental antennas transmitting in the 27.5-29.7 GHz and 29.7-30 GHz band in a ground-to rooftop direction with ERP values of 767 and 48,434 Watts.

We will need more detail antenna information for these operations since they are pointing up in the same direction as our satellite uplinks. A presentative antenna pattern would be very useful and the exact pointing direction of the transmit antenna 27.5-29.7 GHz and 29.7-30 GHz band.

Also, we would need to know the antenna pointing direction for the 24-27.5 GHz band operations.

Thanks,  
Carlos Flores  
FCC/IB/SatDiv