Eleanor Lott

From: Towanda Bryant
Sent: Tuesday, October 25, 2016 7:07 PM
To: Eleanor Lott
Cc: Trang Nguyen
Subject: FW: please up load this form in Notes and Other filings FW: Your STA for Formula Austin
Attachments: 312 B STA Multi-Link_Rev 1.doc

Meant to forward this one to you eleanor

From: Trang Nguyen
Sent: Wednesday, October 19, 2016 8:00 AM
To: Towanda Bryant <Towanda.Bryant@fcc.gov>
Cc: Trang Nguyen <Trang.Nguyen@fcc.gov>
Subject: please up load this form in Notes and Other filings FW: Your STA for Formula Austin

Thanks.

From: Marco van Uffelen [mailto:mvanuffelen@multi-link.tv]
Sent: Tuesday, October 18, 2016 4:45 PM
To: Trang Nguyen <Trang.Nguyen@fcc.gov>
Cc: Towanda Bryant <Towanda.Bryant@fcc.gov>; Paul Blais <Paul.Blais@fcc.gov>
Subject: Re: Your STA for Formula Austin

Hi Trang,

The satellite i like to communicate with is indeed the NSS806, Callsign S2591

I will check on Schedule B. A Prodelin 1385 is compliant with 25.209

It looks that i have made a error in my former calculation!! :-(
With the power need from the HPA for 1 carrier (18MHz) of 100 Watts output at the HPA flange I get the follow results:

EIRP (dBW) = Pt (dBW) + Lt (dB) + Gt (dBi) ,

where Pt = maximum value of per-carrier power (from the HPA) = 20dBW

L t = minimum value of transmitting system losses = - 1.50 dB (4.5m x 0.3 dB/m loss in the waveguide)

G t = maximum value of transmit antenna gain = 46.0dBi

EIRP dBW = 20 dBW + (-1.5dBW) + 46 dBi (Gtx prodeling 1385)
=64 dBW

For a given transmitted signal, the maximum (on-axis) RF power density (at the output of the antenna) is given by:

EIRP Density (dBW/4 kHz) = EIRP (dBW) + 36.0 dB-Hz - 10 log B + PF,

where EIRP = maximum (on-axis) value of per-carrier output EIRP = 64 dBW

36.0 dB-Hz is a factor to convert power density from a 1 Hz bandwidth to a 4 kHz bandwidth B is the bandwidth occupied by the signal
B= 18 Mhz

PF = signal peaking factor (dependent on the signal type) = 0 dBW

EIRP density (dBW/4kHz) = 64 dBW +36 dB-Hz- 10 Log 18.000.000 + 0 dBW
= 27.45 dBW/4kHz

So i think I am fine!! :-) Sory for the confusion!!

Kind regards,

Marco van Uffelen

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Website: www.multi-link.tv

Trang Nguyen schreef op 18-10-2016 18:44:

> Hi,
>
> Please provide the name of the satellite you want to communicate. (Is it NSS806, S2591)

Please the complete schedule B that includes whether or not the antenna meet 25.209.

There is a confusion in a parameter listed on the Freq Coordination: you listed Max EIRP Main Beam (dBW/4kHz) value at 33.00, did you mean EIRP density since the unit is in dBW/4kHz? If it its EIRP Density, please update this Freq Coordination page to reflect the correct information.

The currently approved lists of National http://transition.fcc.gov/ib/sd/nresa/# for C-band shows there is a record that was authorized with 30.16 dBW/4kHz eirp density level for this antenna. The antenna gain for that antenna model Prodelin 1385 was 45.9 dBi. Therefore, you need to lower your eirp density to meet that 30.16 dBW/4kHz.

I need these information so I can work with your STA.

Thanks,

Trang

SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)

Location of Earth Station

E1. Site Identifier: Circuit of the Americas		E5. Call Sign: ??	
E2. Contact Name: Marco van Uffelen, Multi-Link Holland		E6. Phone Number: +31612588224	
E3. Street: Name 9201 Circuit of the Americas Blvd		E7. City: Del Valle, Austin, Texas	
		E8. County	
E4. State Texas		E9. Zip Code 78617	
E10. Area of Operation: Television Compound			
E11. Latitude: 30°8" 5.28' N (or Googlemaps Decimal 30.1348) N			
E12. Longitude: 97° 38" 28.58' W (or Googlemaps Decimal -97.6413) W			
E13. Lat/Lon Coordinates are:	NAD-27	NAD-83 X	N/A
E14. Site Elevation (AMSL): 150 meters			

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and(b) as demonstrated by the manufacturer's qualification measurement? If NO, provide as a technical analysis showing compliance with two-degree spacing policy.	Yes
E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	Yes
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as Exhibit D	Yes
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	No
E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and/or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	No

POINTS OF COMMUNICATION

Satellite Name: NSS806 @ 47.5 W	Callsign S2591
E21. Common Name: NSS806 @ 47.5 W	E22. ITU Name
E23. Orbit Location: 312.5° E.L. (47.5° W.L.)	E24. Country: HOL

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier	
E26. Common Name: Eurovision, Washington DC	E27. Country: USA

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E 32. Antenna Size	E41/42. Antenna Gain Transmint and/or Recieve (dBi at GHz)
	ML002USA	1	Prodelin	1385	3.8m	Gtx 46.3 dBi @ 6.135Ghz
	ML003USA	1	Prodelin	1385	3.8m	& Grx 42 dBi @ 3.9125Ghz

E28. Antenna Id	E33/34. Diameter Minor/Major (meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
ML002USA	3.8m	2m	152m	2m	100	0m	64 dBW
ML003ASA	3.8m	2m	152m	2m	100	0m	64 dBW

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization (H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum ERIP Density per Carrier(dBW/4kHz)
ML002USA ML003USA	5941 Mhz 5959 Mhz	Tx Tx	L L	18M0D7W 18M0D7W	64 dBW 64 dBW	27.45 dBW/4kHz 27.45 dBW/4kHz
E50. Modulation and Services: DVB-S2, 8 PSK, MPEG 4, Television Broadcast						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits (MHz)	E54/55. Range of Satellite Arc Eastern/Western Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon (dBW/4kHz)
ML002USA	GEO	C-band	Manual	Manual	Manual	Manual	Manual	-16.8dBW/4kHz
ML003USA	GEO	C-band	Manual	Manual	Manual	Manual	Manual	-16.8dBW/4kHz

REMOTE CONTROL POINT LOCATION

E61. Call Sign N/A NOTE: Please enter the callsign of the controlling station, not the call sign for which this application is being filed.			E66. Phone Number N/A
E62. Street Address N/A			
E63. City N/A	E68. County	E67/68. N/A	E64. Zip N/A