



LMI Advisors
1821 M Street, NW
Suite 300
Washington, D.C. 20036

O +1 202 730 9706
F +1 202 697 5037

Carlos M. Nalda
T +1 571 332 5626
cnalda@lmiadvisors.com

January 20, 2015

VIA ELECTRONIC FILING

Nnake Nweke
Experimental Licensing Branch
Office of Engineering and Technology
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Re: Astronics AeroSat Corporation, Call Sign WH2XJQ, File No. 0579-EX-PL-2014;
Addition of New Antenna Type for Experimental Testing and Demonstration

Dear Mr. Nweke:

Astronics AeroSat Corporation (“Astronics AeroSat”), through its representative, hereby notifies the Commission, pursuant to Section 5.77 of the Commission’s Rules, 47 C.F.R. § 5.77, that Astronics AeroSat will test and demonstrate an additional Ku-band terminal type pursuant to the above-referenced experimental license, which authorizes the operation of up to five (5) HR6400 terminals. Astronics AeroSat will operate up to two (2) “tail-mount” HR123 aeronautical terminals within the same operational envelope and pursuant to the same terms and conditions embodied in existing experimental license, and will reduce the number of HR6400 terminals to three (3) so that the total number of authorized terminals does not change.

The HR123 terminal, manufactured by Astronics AeroSat and designed to be mounted on the tail of “T-tail” business jets (rather than the aircraft fuselage), has been fully certified for aviation safety. Moreover, the terminal has been previously licensed by the Commission for experimental and commercial operations.¹ Astronics AeroSat now seeks to test and demonstrate the previously authorized terminal with its new FliteStream network.

¹ See The Boeing Company, Radio Station Authorization, Call Sign E000723, File No. SES-MFS-20050701-00853; *see also* The Boeing Company, Experimental Radio Station Construction Permit and License, Call Sign WC2XVE, File No. 0153-EX-RR-2005.

The HR123 terminal complies fully with Section 25.227 of the Commission's rules governing earth stations aboard aircraft ("ESAAs"),² although the terminal will be operated for limited testing and demonstration purposes under Astronics AeroSat's existing experimental authority. Moreover, Astronics AeroSat acknowledges and accepts that the conditions in its existing experimental license will apply to operation of the HR123 terminal, including operation on an unprotected, non-interference basis and the requirement to immediately cease operations in the event of harmful interference.

Because the HR123 antenna will operate within the same emissions envelope as the currently authorized HR6400 antenna and Astronics AeroSat will otherwise conform to the conditions of its existing experimental license, operation of the terminal is consistent with Section 5.77 of the Commission's Rules, 47 C.F.R. § 5.77.

Please do not hesitate to contact the undersigned with any questions you may have regarding this matter.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Carlos M. Nalda".

Carlos M. Nalda

Attachment

cc (w/ att.): Tony Serafini

² See 47 C.F.R. § 25.227.

HR123 29cm Antenna System – Performance Characteristics

Parameter	Performance
Antenna Directivity Gain:	28.9 dBi @ 10.7 GHz; 30.4 dBi @ 12.75 GHz 31.1 dBi @ 14.0 GHz; 31.3 dBi @ 14.5 GHz
EIRP (25W power amp)	41.9 dBW at 14.5 GHz
G/T (15°K Sky Temperature):	10.0 dB/K @ 10.7 GHz 11.5 dB/K @ 12.75 GHz
Receive Frequency Range:	10.7 GHz to 12.75 GHz
Transmit Frequency Range:	14.0 GHz to 14.5 GHz
Polarization:	Linear Tx/Dual Pol Rx, Dual Pol Circular Rx only
Cross Polarization Rejection:	20 dB
Polarization Control:	45°±105°
Antenna Element Type:	Horn with lens
Field of View:	
Azimuth (continuous):	360°
Elevation:	+90° to -0°
RMS Pointing Accuracy:	
Azimuth:	0.2°
Elevation:	0.2°
Polarization:	Sufficient to maintain specified cross polarization
Azimuth, Elevation, Polarization Motion	7.0° / sec
Azimuth, Elevation, Polarization Acceleration	7.0° / sec ²

HR123 (Side View)

HR123 (Back View)

