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January 18, 2013

VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

**Re: Panasonic Avionics Corporation; File No. 0026-EX-ST-2013,
Call Sign WF2XMD; Satellite Operator Certification Letter**

Dear Ms. Dortch:

Panasonic Avionics Corporation ("Panasonic") hereby updates the above-captioned experimental application to include the enclosed satellite operator certification letter of Hispamar Satelites S.A., operator of the AMAZONAS-2 satellite. Panasonic seeks expedited access to the satellite to further develop its in-flight connectivity offering and to address certain technical issues being experienced on domestic flights of U.S.-registered aircraft.

Panasonic would note that the off-axis EIRP spectral density mask set forth in the satellite operator certification letter includes a factor for pointing accuracy. See Letter from Hispamar Satelites S.A., dated January 18, 2013 at 2 (mask beginning with "15-25 log₁₀ (Θ + 0.2) dBW/4 kHz..."). This mask is actually more restrictive than the FCC's rules for Ku-band earth stations aboard aircraft ("ESAAs") and other mobile VSAT terminals (*i.e.*, results in a lower off-axis EIRP limit) because it includes a pointing offset of 0.2 degrees in calculating the maximum off-axis EIRP spectral density that may be produced by the antenna. Thus, the mask reflects Panasonic's conservative approach to avoiding adjacent satellite interference – including incorporating the nominal pointing offset (as well as other factors) in setting maximum power levels of the antenna – rather than a restatement of the FCC's two-degree spacing limits applicable to ESAAs.

Please feel free to contact the undersigned with any questions you may have or if Panasonic can provide any additional information to facilitate expeditious action on its application.

Respectfully submitted,

Squire Sanders (US) LLP

/s/ Carlos M. Nalda

Carlos M. Nalda

Attachment

Counsel to Panasonic Avionics Corporation

cc: Paul Blais, FCC International Bureau
Tony Serafini, FCC Experimental Licensing Branch



January 18th, 2013

Federal Communications Commission
International Bureau
445 12th Street, S.W.
Washington, D.C. 20554

To Whom It May Concern:

This letter certifies that Hispamar is aware that Panasonic Avionics Corporation ("PAC") is seeking FCC authorization to access the Amazonas 2 at 61° W.L. as an authorized point of communication for its eXConnect Ku-band aeronautical mobile-satellite service ("AMSS") system to operate within U.S. airspace using transmit/receive antennas and moreover that the operational conditions imposed to PAC terminal over Amazonas-2 will be consistent with Hispamar's coordination agreements and will comply with the FCC's two-degree spacing rules and will not result in unacceptable interference.

The basic characteristics provided by PAC of the eXConnect phased array terminal (also known as the Aura LE terminal) are summarized in Table 1.

Table 1. Aura LE Antenna Characteristics

Characteristic	Aura LE
Frequency	Tx: 14.0 GHz to 14.5 GHz Rx: 10.7 GHz to 12.75 GHz
Aperture Size	2 Apertures of 34.7" X 6.6" each
EIRP	48.0 dBW @ 90 deg Elevation
G/T	10 - 14 dB/K
Tracking Rate	40 deg/sec in Azimuth 20 deg/sec in Elevation
Az Pointing Accuracy	0.2 deg 1-sigma

The off-axis EIRP spectral density limits applied to AMSS operations are the same as those defined for ESV and VMES operations¹. The off-axis EIRP spectral density generated by an AMSS terminal operating in a two-degree spacing environment should not exceed:

15-25log10($\Theta + 0.2$)	dBW/4 kHz	for	$1.5^\circ \leq \Theta \leq 7^\circ$
-6	dBW/4 kHz	for	$7^\circ < \Theta \leq 9.2^\circ$
18-25log10($\Theta + 0.2$)	dBW/4 kHz	for	$9.2^\circ < \Theta \leq 48^\circ$
-24	dBW/4 kHz	for	$48^\circ < \Theta \leq 85^\circ$
-14	dBW/4 kHz	for	$85^\circ < \Theta \leq 180^\circ$

where Θ is the angle in degrees from the line connecting the focal point of the antenna to the orbital location of the target satellite.

The eXConnect system will limit off-axis EIRP spectral density to the levels coordinated for the Amazonas 2 satellite (in particular with those in the arc of ± 6 degrees) through various means, including: (i) limiting transmit power spectral density by controlling the transmit power of the terminal and by selecting appropriate carrier bandwidths; (ii) controlling the off-axis gain of the antenna along the GSO by inhibiting transmissions when the skew angle exceeds a specified threshold and (iii) controlling pointing error and inhibiting transmissions when the pointing offset exceeds a threshold of 0.35. The specific transmit power, bandwidth and skew angle thresholds will be selected based on the desired terminal transmission rates, coverage area, and satellite performance.

Please let me know if you require any additional information regarding PAC's operation of the eXConnect phased-array AMSS terminal on the Amazonas 2 satellite.

Sincerely,


José Edio Gomes
Hispamar

JAN 18th, 2013
Date


Carlos González
Hispamar

¹ Off-axis EIRP spectral density levels are set forth in analogous Ku-band earth station onboard vessels ("ESV") and vehicle-mounted earth stations ("VMES") rules. See 47 C.F.R. § 25.222 and 25.226.