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Federal Communications Commission
International Bureau
445 12th Street, SW
Washington, DC 20554

6 April, 2012

Dear Sir/Madam:

In response to Title 47 Section 25 part 222(a) and (b) of the FCC's Rules governing the operational use of an Earth Station on Vessel (ESV), L-3 Interstate Electronics Corporation (IEC) hereby provides the following substantiating information with respect to the Cobham Sea Tel Model 6009 Ku-band ESV antenna as Exhibit K to the application. Note: only those requirements that are applicable to IEC's situation are addressed in this Exhibit.

With regard to 25.222(a)(1)(i), L-3 IEC is compliant.

The manufacturer, Cobham SATCOM, has certified that the Sea Tel 6009 meets the off-axis spectral density envelope set forth in FCC 47 C.F.R 25.222(a)(1)-(4) with an input power spectral density less than -14.0 dBW/4kHz (see Exhibit B). Details associated with sub-paragraphs to 25.222(a)(1)(i) are presented in subsequent section of this Exhibit.

The IEC communications terminal has a calculated maximum EIRP density of -15.78 dBW/4kHz for all configurations and combination of carriers the terminal will provide (see Exhibit J). This is 1.78 dB below the limit value specified by Cobham.

With regard to 25.222(a)(1)(i)(A), L-3 IEC is compliant.

Cobham antenna test data showing off-axis EIRP spectral density for coarse azimuth angle increments between -180 and +180 degrees are presented in Exhibit C. Test data for fine angle increments between -10 and +10 degrees are presented in Exhibit D.

With regard to 25.222(a)(1)(i)(B), L-3 IEC is compliant.

Cobham antenna test data showing off-axis EIRP spectral density for elevation angles between 0 and 30 degrees are presented in Exhibit E.

With regard to 25.222(a)(1)(i)(C), L-3 IEC is compliant.

Cobham antenna test data showing off-axis EIRP spectral density for cross-polarized signals for azimuth angles between -10 and +10 degrees are presented in Exhibit F.

With regard to 25.222(a)(1)(ii)(A), L-3 IEC is compliant.

The Cobham Sea Tel 6009 antenna system is mounted on a three-axis stabilization assembly that uses 3 rate sensors and 3 accelerometers to stabilize the antenna within ±0.1 degrees of the desired position target. The pedestal control software immediately responds to any disturbance by applying corrections in three axes (azimuth, elevation, and polarization). The closed-loop sensors and servomotors integrated within the above-deck equipment on the antenna, combined with ship's navigation information, result in highly accurate system pointing under any sea-state condition. The closed-loop tracking feedback system removes any absolute inaccuracies from the reference sensors, allowing the system to achieve a peak mis-pointing <0.1 degree. Stabilization is maintained during ship motion of ±20 degrees in roll and ±10 degrees in pitch.

With regard to 25.222(a)(1)(iii)(A), L-3 IEC is compliant.

Cobham SeaTel 6009 ESV terminal supervisory software continuously monitors the pedestal pointing error. An error flag is set and carrier transmissions are ceased within 100 milliseconds after an instantaneous pointing error exceeding 0.5 degrees is detected. The terminal controller suppresses carrier transmissions until the pointing accuracy of the antenna is within ±0.2° of the known pointing angle.

With regard to 25.222(a)(3), L-3 IEC is compliant.

Site Name	Site Code	Operator	Telephone Number
USNS WATERS	ESV	Mr. Ron Chatfield	954-885-5755, available 24/7
Morrell Operations Center, Cape Canaveral Air Force Station, FL	BAX	Mr. Larry FitzGerald	321-506-6805
DARC, Cape Canaveral Air Force Station, FL	BAX	Mr. Larry FitzGerald	321-506-6805
Bldg 1118, Pier Rd, Cape Canaveral, FL	BAX	Mr. Larry FitzGerald	321-506-6805
L-3 IEC, Anaheim, CA	BAX	Mr. Steve Cunio	714-493-9415
Naval Air Warfare Center Weapons Division Pt. Mugu, CA.	BAX	Mr. Steve Cunio	714-493-9415
PATS* US Virgin Islands, St. Croix	BAX	Mr. Steve Cunio	714-493-9415

Flight Test Support Systems (FTSS) engineer technical liaison contact information is Mr. Paul Watts at 714-758-4147 or at mobile number 714-469-4147, 24/7/365 availability.

Program Manager contact information is Mr. Dennis Beem at 714-758-3282 or at mobile number 714-936-6978.

For reference, FTSS Engineering Manager is Mr. Stanley Wang at 714-758-2711; and L-3 IEC, Anaheim, California may be reach by dialing 800-854-6979 or 714-758-0500.

With regard to 25.222(a)(4), L-3 IEC is compliant.

The ESV management computer collects terminal health and status information at 15-minute intervals. The information includes the latitude and longitude provided by the Cobham Sea Tel Digital Antenna Control model 2202. This data logging is only performed locally when the ESV is actively transmitting. The information will be made available upon request.

Depending on vessel operations, the data collected to meet compliance with 25.222(a)(4) maybe classified and require special handling

With regard to 25.222(a)(6), L-3 IEC is essentially compliant.

The vessel on which the L-3 ESV terminals will be mounted is a U.S.-registered and U.S.-flagged vessel (USNS WATERS).

The L-3 ad-hoc network topographically is an altered mesh network design, in which the East Coast and West Coast deployments are different. This network design does not provide for a central or master hub that provides remote control or monitoring for the ESV or VSAT locations. However, the ESV and VSAT sites are attended by IEC personnel whenever it is operating; that operator is reachable by a U.S. telephone number at all times.

The point of contact for the L-3 ad-hoc network and site locations is found in our response to 25.222(a)(3). Additional locations maybe added or deleted depending on requirements.

With regard to 25.222(b)(1), L-3 IEC is compliant.

See Exhibits C, D, E, and F.

With regard to 25.222(b)(1)(ii), L-3 IEC is compliant.

See Exhibit B.

With regard to 25.222(b)(1)(iii), L-3 IEC is compliant.

See Exhibit B.

With regard to 25.222(b)(1)(iv), L-3 IEC is compliant.

See Exhibit B.

With regard to 25.222(b)(1)(iv)(A), L-3 IEC is compliant.

See Exhibit B.

With regard to 25.222(b)(1)(iv)(B), L-3 IEC is compliant.

Exhibit N presents a block diagram of our implementation to address this requirement.

With regard to 25.222(b)(4), L-3 IEC is compliant.

L-3 operator and point of contacts are listed in the response to (a)(3). The principal point of contact is identified in our application.

With regard to 25.222(b)(5), L-3 IEC is compliant.

Our Radiation Hazard Report is included as Exhibit G to our application; it shows that IEC's 6009 ESV terminal does not exceed the radiation guidelines of Section 1.1310 of the FCC's rules and regulations.

With regard to 25.222(c) and 25.222(d), L-3 IEC is compliant.

L-3 IEC's Ku-Band ESV will operate in U.S. Coastal waters in the Atlantic and Pacific Oceans, and in the Gulf of Mexico. IEC will not operate in the Ku-Band transmit frequencies 14.47-14.5 GHz when the vessel is operating within 45 km of St. Croix, Virgin Islands, 125 km of Mauna Kea, Hawaii or 90 km of Puerto Rico and in the Ku-Band frequencies 14.0-14.2 GHz when the vessel is operating within 100 km of Guam.

For technical questions, please contact

Paul Watts
714-758-4147
Paul.Watts@L-3com.com

Sincerely,

Mr. Rick Lloyd
Senior Director Instrumentation Systems Engineering