



Federal Communications Commission  
Washington, D.C. 20554

DA 05-1548

May 27, 2005

Jennifer D. Hindin, Esq.  
Wiley Rein & Fielding LLP  
1776 K-Street, N.W.  
Washington, DC 20006

Re: Iridium Satellite LLC (“Iridium”)  
Call Sign: E960132  
SES-MOD-20050408-00401

Iridium Carrier Services LLC (“Iridium”)  
Call Sign: E960622  
SES-MOD-20050408-00402

Dear Ms. Hindin:

On April 8, 2005, Iridium filed modification applications SES-MOD-20050408-00401 and SES-MOD-20050408-00402 to add a repeater exchange system for its licensed Mobile-Satellite Service (“MSS”) earth stations E960132 and E960622 respectively. Pursuant to Section 25.112(a)(1) of the Commission’s rules, 47 C.F.R. §25.112(a)(1), we dismiss both applications as defective because of internal inconsistencies provided.

Specifically, there are inconsistencies for the Equivalent Isotropic Radiated Power (EIRP) provided in the applications when compared with that derived from other data in the applications. In Form 312 Schedule B of both applications, you indicate that the Total EIRP for All Carriers is 11.77 dBW (Item E40), while the computed Total EIRP for All Carriers is 7 dBW derived from the “5 Watts Maximum Total Input Power at the Antenna Flange (Item E38)” and “0 dBi Antenna Gain Transmit (Item E41). Moreover, the EIRP Density you provided in the applications do not agree with that derived from other information in the application. Specifically, in Item E49, you indicate that the Maximum EIRP Density per Carrier is  $-3.36$  dBW/4 kHz. This value is less than and therefore inconsistent with the average value of  $-3.11$  dBW/4 kHz as derived from the Maximum EIRP per carrier of 7.0 dBW (Item E48) and a 41 kHz bandwidth for the emission (Item E47). Given these inconsistencies, we cannot determine the actual emission power in use. Furthermore, the Maximum EIRP Density towards the Horizon (Item E60) of  $-2.0$  dBW/4 kHz is inconsistent with the Maximum EIRP Density per Carrier (Item E49) of  $-3.36$  dBW/4 kHz, considering the type of the antenna specified in the applications.

While we dismiss the application on the above basis, we take the opportunity to apprise you of other concerns we have should you choose to re-file the application.

In Question E16 of Form 312 Schedule B, you indicate that the proposed antennas comply with the antenna gain patterns specified in Section 25.209(a)(2) and (b) as demonstrated by the manufacturer's qualification measurements. This is not consistent with an omni-directional antenna.

Iridium requests a 10.5 megahertz (1616.0-1626.5 MHz) band of operation. Within an operational band, the repeater gain is usually relatively uniform. Iridium's Test Report,<sup>1</sup> however, shows that the output of the in-band test-tone at 1616.0 MHz is approximately 20 dB lower than the output of the in-band test-tone at 1626.5 MHz.<sup>2</sup> This means that the repeater's actual band of operation may be less than 10.5 megahertz when compared with the band requested in the application (Item E43/44). Moreover, we question whether use of an output test-tone of at least 20 dB below the test power level demonstrates compliance with Section 25.216(c) and (f) of the Commission's Rules. Therefore, in any refiling, you should explain the reasons for this difference or, alternatively, change the parameters in the application.

To ensure that the demonstration for compliance with Section 25.216(c) and (f) of the Commission's Rules is valid, the test parameters should be essentially identical to the operating conditions. The Intermodulation Test Setup diagram<sup>3</sup> in your application, does not indicate that you used the same repeater output level for testing as is specified in Item E38 (Total Input Power at the Antenna Flange). Please identify the test power repeater output you used. Further, please confirm that the labeling for "IM without filter" (dark trace) and "IM with filter" (light trace) are correct in Figure 14 of the Test Report.

In addition, we cannot determine, on the basis of the Test Report's Intermodulation Plot,<sup>4</sup> whether emissions from the repeater are consistent with the requirements specified in Section 25.216 of the Commission's Rules, 47 C.F.R. §25.216. Specifically, our studies show that, across the 10.5 megahertz of the pass band, there is a possibility that emissions from the repeater as a result of input signals from multiple handsets may cause third order intermodulation products in the 1605.5-1610 MHz band-segment, and fifth order intermodulation products in the 1595-1610 MHz band-segment. Also, Section 25.216(c) and (f) of the Commission's Rules requires a fixed attenuation for the 1559-1605 MHz band and a progressive attenuation for the 1605-1610 MHz band, respectively. Iridium's Test Report, however, reveals only a single Intermodulation test, with test-tones set at 1616.0 and 1626.5 MHz for a third order intermodulation product (2A-B) at 1605.5 MHz, and a fifth order intermodulation product (3A-2B) at 1595.0 MHz. To facilitate our

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<sup>1</sup> Test Report titled "Eagle Broadband L-band Iridium 3 User SatMax System Test Results of Aeronautical RadioNavigational Satellite Service and Test Power Output (Rev 1.1)", dated April 6, 2005. See Exhibit in the Application.

<sup>2</sup> See Figure 14 of the Test Report.

<sup>3</sup> See Figure 2 on page 5 of the Test Report.

<sup>4</sup> See Figure 14 on page 7 of the Test Report.

review of any refiled application please provide a demonstration of intermodulation testing showing the *bottom*, *middle*, and *top* frequencies of the third and fifth order intermodulation products in their band-segments.

Accordingly, pursuant to Section 25.112(a)(1) of the Commission's rules, 47 C.F.R. §25.112(a)(1), and Section 0.261 of the Commission's rules on delegations of authority, 47 C.F.R. §0.261, Iridium's applications to modify E960132 (SES- MOD-20050408-00401) and E960622 (SES-MOD-20050408-00402), are dismissed as defective without prejudice to refiling.<sup>5</sup>

Sincerely,

Scott A. Kotler  
Chief, Systems Analysis Branch  
Satellite Division  
International Bureau

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<sup>5</sup> If Iridium refiles an application identical to the one dismissed, with the exception of supplying the corrected information, it need not pay an application fee. See 47 C.F.R. Section 1.1109(d).