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ORIGINAL

September 16, 2004

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

Int'l Bureau

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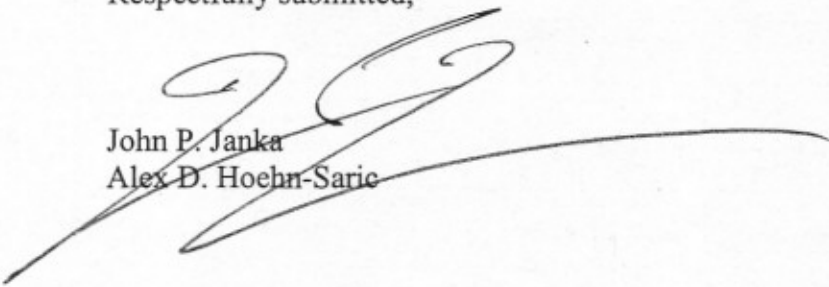
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: Mobile Satellite Ventures Subsidiary LLC
IB Docket No. 01-185
File No. SAT-MOD-20031118-00333
File No. SAT-AMD-20031118-00332
File No. SES-MOD-20031118-01879
Ex parte presentation

Dear Ms. Dortch:

On August 31, 2004, Mobile Satellite Ventures Subsidiary LLC ("MSV") made an *ex parte* submission in the above-cited proceedings, a paper entitled "Technical Considerations for Measuring the Receiver Overload Threshold of an Inmarsat Mobile Earth Terminal (MET)." Enclosed of behalf of Inmarsat Ventures Limited are its comments on that paper.

Respectfully submitted,


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Comments On MSV Proposals For Procedures To Test Receiver Overload Performance Of Inmarsat Terminals





Inmarsat provides the following comments on the test procedures proposed by MSV in its August 31, 2004 submission. At the outset, it is important to understand that the MSV submission both raises and ignores certain critical issues that are currently at issue in the ATC proceeding, such as the need to consider the impact of ATC interference on the entire RF chain of an Inmarsat receiver, and the impact of intermodulation effects from ATC base station transmissions. Inmarsat has briefed those issues fully before. For purposes of promptly responding to the recent MSV proposal, Inmarsat provides the following brief comments, and will be glad to elaborate as needed.

Section II.A

1) Figures 1 and 2 in Section II of the MSV document show a spectrum analyzer being connected to the output of the RF unit of the Inmarsat terminal, which suggests a measurement of terminal nonlinearity based on the RF unit alone. As Inmarsat has explained in its previous pleadings, the whole of the RF chain plays a role within the performance specification and isolating just the RF unit or the modem will not give a true measure of the MES non-linearity performance. Furthermore, the input to the modem is not readily available and disassembly of the MES may be required to achieve this. This in itself may cause additional problems and inaccuracies.

Section II.B

2) There is no need to try the (Fig 2) solution as additional antennas have been supplied that facilitate the connection of the MES to the test equipment at the L-band diplexer point.

Section III.A

3) The performance of the Inmarsat System is based upon achieving a minimum acceptable BER at the minimum received operational RF level. A "typical" received level, as suggested by MSV, does not exist, as Inmarsat uses power control to reduce the downlink EIRP where excess downlink margin exists, such as would occur away from the beam edge locations. This power control system, which provides just the necessary power for every link, is crucial to maintaining efficient use of satellite power and hence the economic viability of the system. Therefore the FCC tests should measure the minimum BER at the minimum RF level since this corresponds to the situation that the users of the system are currently operating with, and is the situation specified for the system. This is critical, particularly in the operation of safety services.

4) MSV's suggestion to increase the satellite transmitted power to combat interference is not a standard practice and raises two issues: it could affect the reuse arrangements in place with other operators and it would increase the power consumption of the satellites. The latter point is particularly important, as the Inmarsat-3 satellites already operate close to saturation.





5) Inmarsat's currently operational MES cannot automatically change their link data rate to cope with interference. Interference over and above that catered for would mean either poor BER or ultimately loss of communications.

Section III.B

6) Comment 3 applies.

Section III.C

7) There is no such thing as a "Standard Subjective Test". Tests have to be specific to the codec used. In designing the Inmarsat codec, Inmarsat performed substantial Mean Opinion Score (MOS) testing and adapted the codec design to optimise performance. This included adaptations to account for Chinese and Arabic sounds. Inmarsat has also developed, in collaboration with the original designers of the Inmarsat codec, an electronic test tool for testing implementations of the codec. This tool [called a "gold brick"] is only available at the manufacturers premises and provides a detailed analysis of the variations from the optimum for a large number of detailed characteristics of the codec implementation. Inmarsat does not believe that MOS testing based upon a limited number of "listeners" of limited languages should be used; this would not be representative of the full range of Inmarsat users and would add no credibility to the interference evaluation.

8) Inmarsat needs to provide the customer with the expected communications quality and not only 'intelligible' transmissions.

Section III (additional comment)

9) A further concern with Section III is that it only talks about the interfering carrier separation from the wanted signal as if the test involves only a single interfering signal. The FCC should do intermodulation measurements where the 3rd order IM product falls in the Inmarsat receive channel. It is essential to do these tests as well as the pure overload ones.

Section IV

10) Section II.A comments & Section III.A comments apply.

11) Section IV of the MSV document (and its Appendix 1) places too much emphasis on the 1 dB compression point. This does not directly relate to the expected ATC interference levels. Inmarsat encourages the Commission to measure the interference resulting from 3rd order (and maybe higher odd order) intermodulation products falling in the Inmarsat receive band.