

Before the
Federal Communications Commission
Washington, D.C. 20554

RECEIVED

DEC 22 1999

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Petition For Rulemaking To Address)
Satellite Network Unwanted Emissions)

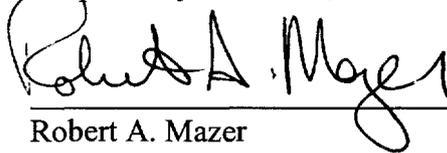
File No. RM-9740

MOTION TO ACCEPT LATE-FILED COMMENTS

Leo One Worldwide, Inc. ("Leo One"), by counsel, hereby requests that the Commission accept the attached late-filed comments in response to the Commission's Public Notice ("Notice") (DA 99-2601, released November 19, 1999).

According to the Notice, comments in this proceeding were due to be filed no later than December 20, 1999. As a result of logistical problems, counsel was unable to receive all the technical information necessary to file these comments on December 20, 1999. Given the preliminary nature of this proceeding and the fact that the attached comments will enhance the record, Leo One does not believe any party will be harmed by the acceptance of the attached late-filed comments. Leo One, therefore, respectfully requests that the Commission accept the attached comments in response to the Notice.

Respectfully submitted,



Robert A. Mazer
Albert Shuldiner
Vinson & Elkins L.L.P.
1455 Pennsylvania Avenue, N.W.
Washington, DC 20004-1008
(202) 639-6500

Counsel for Leo One Worldwide, Inc.

Dated: December 21, 1999

No. of Copies rec'd
List ABCDE

014

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Motion to Accept Late-Filed Comments of Leo One Worldwide, Inc. was sent by first-class mail, postage prepaid, this 21st day of December, 1999, to each of the following:

Albert Halprin, Esq.
Stephen L. Goodman, Esq.
Halprin, Temple, Goodman & Maher
Suite 950, 555 12th Street, N.W.
Washington, D.C. 20004

Henry Goldberg, Esq.
Joseph Godles, Esq.
Mary Dent, Esq.
Goldberg, Godles, Wiener & Wright
1229 Nineteenth Street, N.W.
Washington, D.C. 20036

Aileen Pisciotta, Esq.
Kelley, Drye & Warren
1200 19th Street, N.W.
Suite 500
Washington, D.C. 20036

Leslie Taylor, Esq.
Leslie Taylor Associates, Inc.
1333 H Street, N.W., Suite 1100 West
Washington, D.C. 20005-4707


Patricia Patton

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Petition For Rulemaking To Address)	File No. RM-9740
Satellite Network Unwanted Emissions)	

COMMENTS

Leo One Worldwide, Inc. ("Leo One"), by its counsel, submits these comments in response to the Commission's Public Notice¹ of the July 1, 1999 Joint Letter from Motorola Satcom, Teledesic and Hughes Space and Communications Corporation requesting that the Commission initiate a rulemaking proceeding to update its existing rules relating to out-of-band ("OOB") emissions from satellite networks. The Notice seeks comment on whether to proceed with a rulemaking proceeding and if so, what issues should be addressed in such a proceeding.

Leo One currently holds a license to construct, launch and operate a Non-Voice, Non-Geostationery Mobile Satellite Service ("NVNG MSS") system operating in bands below 1 GHz² and therefore has a keen interest in the outcome of this proceeding. Leo One has been participating in the ITU-R meetings which are developing a Recommendation on the Essential Technical Requirements for NVNG MSS Earth Stations operating in bands below 1 GHz. ITU-R Working Party 8D uses the current FCC OOB emission mask specified in Section 25.202 of the Commission's Rules as an example of an OOB emission mask used by one country. Several European

¹ *Public Notice*, DA 99-2601 (rel. Nov. 19, 1999) ("Notice").

Administrations have pressed for the incorporation of a more rigid mask based on ETSI standards. Leo One analyzed the ETSI standard and determined that meeting the proposed European emission mask would be inefficient. It would require additional filtering and the non-use of frequencies near the edge of the Leo One operating bands. This would decrease the amount of frequency available to an individual NVNG MSS system, such as the one being implemented by Leo One. This dispute in the ITU-R highlights the need for the FCC to examine the emission masks currently used by the United States. Leo One believes that one goal of this examination should be to insure the satellite system operator uses good engineering practice and design to achieve the practicable levels of OOB emissions, without requiring the expense and added mass of additional filtering. Leo One provides below the following comments on the specific questions raised in the joint letter.

1. Should generic OOB mask be in dBc, dBs, or PFD units or some combination?

Leo One believes that the Commission should maintain the current dBc specifications for OOB emissions. There are no identifiable benefits to move to a dBs or a PFD specification. For instance, a dBs mask is more stringent than the dBc mask when the masks have the same numerical values for attenuation. The FCC dBc specification is referenced to the total mean power which provides an appropriate relative power interpretation. dBs proponents would argue the OOB emissions when referenced to total mean power allow a higher OOB spectral density than in-band. The difference between the dBc and dBs masks becomes more pronounced for wideband transmissions. Thus, practical levels of dBs become dependent on the transmission bandwidth.

² Leo One USA Corporation, 13 FCC Rcd 2801 (1998).

These limits must take into account the practicability of attaining the requirements and the needs of other services to obtain protection. Decreasing OOB emissions and spurious emissions from current levels as defined by the FCC to lower levels may require space station amplifiers to be backed off into the linear range and may require large fixed filters. This potentially increases size, weight and power of space stations. This can have significant impact on space segment cost and in turn may increase the cost of service to customers.

A mask based upon PFD levels would involve calculations related to the distance between the transmitter in the satellite network and the potentially affected receiver. For geostationary satellite systems, the distances between the satellite transmitters and terrestrial receivers vary by a relatively small percent, and the angle of arrival of the OOB emissions is fixed. For low earth orbit satellites, the distances from the satellite transmitters to the potentially affected receivers vary greatly, as do the arrival angles. This would result in a situation where an emission would comply with a PFD mask over some portions of the earth, but not others. For earth stations, an emission mask based upon PFD levels would be even more problematic, as the limit requires the definition of a reference point where the PFD is to be measured.

Based on the above, Leo One believes that retaining a dBc type specification for the OOB emission masks would be an appropriate outcome of this proceeding. However, specific values would need to be determined for the different types of satellite services and networks.

2. Should the emissions of a multi-carrier system with a wideband frequency allocation be treated differently than of a system with a single broadband carrier?

Leo One believes that the overall system bandwidth is appropriate for use in the spectral mask for OOB emissions for both multi-carrier and single carrier systems. A multi-carrier system has more rapid fall-off of emissions at the edge of the occupied bandwidth, because of the narrower modulation bandwidth on each carrier. Therefore, if a multi-carrier system is treated the same as the broadband system, meeting the OOB requirement would be easier for the multi-carrier system than for the broadband system. On the other hand, a broadband system has a more gradual fall-off of OOB emissions and therefore, it needs more bandwidth to reach a given limit. The present OOB emission limit in Section 25.202 of the Commission's Rules takes into account the authorized bandwidth that accounts for the different bandwidths used. A narrowband system has to fall-off with absolute frequency at a faster rate than a wideband system.

In the past the Commission has not specified OOB emission limits to protect particular systems. It would be extremely cumbersome to review each system or service operating in a particular band in order to develop an appropriate limit. This would likely lead to inequities among various radio services and would not necessarily provide the optimal approach. Therefore, an appropriate treatment of all systems is to include a factor related to the system bandwidth (as is done in Section 25.202 of the Commission's Rules).

With regard to the system bandwidth to be used, it would be easiest for the multi-carrier system to meet an OOB emission specification based upon the total multi-carrier bandwidth. However, there would be no added difficulty in meeting an OOB emission

specification that was based upon the bandwidth of a single channel since the OOB emission specifications might have to be met at frequencies within the multi-carrier system bandwidth. Using the multi-carrier bandwidth would avoid this situation.

3. Should the mask be defined as a function of authorized band width (FCC approach) or necessary bandwidth (ITU approach)?

The authorized bandwidth can be wider than the necessary bandwidth. Using the authorized bandwidth eases the burden on the satellite network operator and also allows use of a greater portion of the allocated bandwidth by possibly reducing the size of or eliminating entirely the use of guardbands. Thus, Leo One believes that authorized bandwidth is the preferred approach.

4. Should a generic mask be used for all space services allocations unless otherwise specified?

Different space services would have varying degrees of difficulty in meeting a specific OOB emission mask. If a single generic mask were to be used, it would need to be the most relaxed OOB emission mask among all the space services in order to avoid the cost associated with more stringent receiver design. Leo One supports the use of a single generic emission mask.

5. Should the FCC Rules incorporate the OOB values agreed in Recommendations of the ITU-R?

Leo One does believe that there would be some utility if the ITU-R and FCC OOB emission values are the same. It would be particularly useful for there to be one value when coordinating with other administrations. However, Leo One believes that the FCC should specify the value in the FCC rules only after conclusion of an independent rulemaking proceeding.

CERTIFICATE OF SERVICE

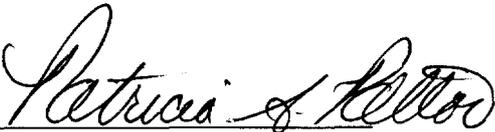
I hereby certify that a true and correct copy of the foregoing Comments of Leo One Worldwide, Inc. was sent by first-class mail, postage prepaid, this 21st day of December, 1999, to each of the following:

Albert Halprin, Esq.
Stephen L. Goodman, Esq.
Halprin, Temple, Goodman & Maher
Suite 950, 555 12th Street, N.W.
Washington, D.C. 20004

Henry Goldberg, Esq.
Joseph Godles, Esq.
Mary Dent, Esq.
Goldberg, Godles, Wiener & Wright
1229 Nineteenth Street, N.W.
Washington, D.C. 20036

Aileen Pisciotta, Esq.
Kelley, Drye & Warren
1200 19th Street, N.W.
Suite 500
Washington, D.C. 20036

Leslie Taylor, Esq.
Leslie Taylor Associates, Inc.
1333 H Street, N.W., Suite 1100 West
Washington, D.C. 20005-4707


Patricia Patton