

Mitchell Lazarus
Tel: 202/857-6466
Fax: 202/857-6395
lazarusm@arentfox.com
http://www.arentfox.com

August 14, 1997

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Jackie Chorney
Office of Chairman Reed E. Hundt
Federal Communications Commission
Room 814 - Stop 0101
1919 M Street NW
Washington DC 20554

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**Re: Rules and Policies for Local Multipoint Distribution Service
and for Fixed Satellite Services, CC Docket No. 92-297 (Ex
Parte Communication)**

Dear Ms. Chorney:

This is an ex parte written communication filed on behalf of Sierra Digital Communications, Inc. ("Sierra") pursuant to Section 1.1206(a)(1) of the Commission's Rules. This letter responds to questions you raised during the visit Hal Tenney, President of Sierra, and I made to your office on July 31.

As you know, Sierra filed a Petition for Partial Reconsideration in the above-referenced proceeding in which Sierra asked the Commission not to allocate all 300 MHz of the 31 GHz band to LMDS, but instead to retain the outer 150 MHz (31.000-31.075 and 31.225-31.300 GHz) for private use under the current rules. Further to this request, Sierra has shown that more than 70% of transmitters in the band are dedicated to governmental systems, hospitals, schools, traffic control and monitoring systems, and other public safety uses.

During our meeting, you asked why the 31 GHz public safety users cannot easily relocate to other point-to-point microwave bands. We discussed the issue briefly at the time, and I am now pleased to write with more details.

The strongest proof that the 31 GHz band is best suited to this class of public safety applications is the large investment that many local governmental jurisdictions have made in the band. Tax-supported local governments, which are chronically short of cash, typically make their capital investment decisions only after careful study and expert consultation. The rapid increase in the number of

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states, counties, and municipalities choosing to put their resources into the band is incontrovertible evidence that it is optimal for their purposes.

These assertions of increasing investment in the band are supported by hard numbers. Sierra, which accounts for the majority of the 31 GHz transmitters in operation, shipped 75% more equipment in 1996 than it did in 1995. Prior to release of the Fourth Notice (which first proposed reallocating the 31 GHz band), Sierra projected to ship four times more equipment in 1997 than in 1996 — a conservative estimate based on Sierra's past business with governmental entities and master contract relationships with its common carrier customers. Soon after release of the Fourth Notice, one 31 GHz supplier listed 42 customer sites — some quite large — then being installed, on order, or in the planning and specification stages. The Commission itself conceded that several applications were filed after the release date of the Fourth Notice by applicants not currently licensed — further evidence of pressure for growth in the band, even under the chilling effect of the Fourth Notice. The Commission also acknowledged that some of the parties filing applications after the Fourth Notice were governmental entities with jurisdiction over large populations.^{1/}

All of these licensees and applicants reached the same conclusion: The 31 GHz band is better suited to their applications than the bands either below or above 31 GHz. The following brief discussion explains why.

Bands Below 31 GHz

The bands below 31 GHz are unsuitable for traffic coordination and monitoring, which is the most widespread application at 31 GHz.

These bands are all congested, particularly in the urban areas where traffic communications are most critical. Even where frequencies can be successfully coordinated and licensed, the high level of congestion requires using a narrow beamwidth to achieve an adequate degree of frequency re-use. At 31 GHz, an antenna big enough to achieve an acceptably narrow beamwidth fits neatly inside a standard traffic light housing. (We brought one of these units to your office last October 23.) Such an antenna can be installed quickly and inexpensively by city workers trained to handle traffic light hardware, with little disruption of traffic. Once installed, it is inconspicuous to drivers and pedestrians alike.

^{1/} Documentation appears in Sierra's Petition for Partial Reconsideration at 6-9 (filed May 5, 1997).

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The laws of physics state that as frequency goes down, antenna size must go up in proportion to maintain a given beamwidth. Below 31 GHz, the antenna becomes too big for the traffic light housing and must be installed in a housing of its own. This seems like a small matter, but it has a disproportionate effects on cost. Not only is a separate, weatherproof housing itself a significant cost element, but city workers must be specially trained to install it. And any existing 31 GHz facility may have to be pulled out and junked prematurely to achieve compatibility with the new system.

Moreover, experience has shown that a microwave installation separate from the traffic light housing tends to draw undesirable attention. Not only is it distracting to drivers, but in some parts of the country it tends to attract gunfire. Cities near the Mexican border report that people sometimes shoot at microwave units in the apparent belief they are devices for tracking the movements of illegal aliens. Even away from the border, microwave units are popular for target practice. This is dangerous to passers by, of course, and it also pushes up maintenance costs. The cities find that 31 GHz units in traffic light housings are not subject to any of these problems or additional costs.

Bands Above 31 GHz

The issues above 31 GHz relate solely to high equipment cost.

The first allocated band above 31 GHz is at 38 GHz. That band is heavily licensed in metropolitan areas throughout the United States. Sierra has determined that no capacity is available to accommodate 31 GHz users.

All other capacity is above 40 GHz, where technical considerations increase the cost of equipment many times over. Sierra put this explanation into the record several months ago:

The increased costs associated with a move to above 40 GHz would increase the [radio frequency] head cost from a list price of \$4000 to a list price between \$6000 and \$7500. This does not include amortization of any of the engineering. The per head cost of converting the present units sent back from the field would be

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about \$5000. To equip the lab would cost about \$250,000.
Engineering would be close to \$200,000.^{2/}

All of these costs, including the large engineering and laboratory costs, would have to be recovered in product prices. Unlike commercial service providers and many other microwave licensees, tax-supported governmental users cannot recover costs by raising rates, or in any other way. For these entities, more than a nominal increase in costs would effectively foreclose the use of microwave communications.

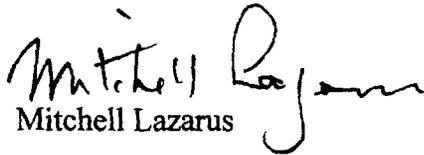
Conclusion

Equipment at 31 GHz for public safety applications is popular with local governments in part because it is optimally inexpensive. As shown above, equipment in other bands incurs additional costs either in installation and maintenance (below 31 GHz) or in equipment costs (above 31 GHz). A relocation in either direction would put the technology beyond the financial reach of many governments.

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I hope this information is helpful. Please do not hesitate to call me directly if you have any further questions.

Respectfully submitted,


Mitchell Lazarus

Enclosure

cc (by Hand Delivery):

Office of the Secretary (2 copies)

Chairman Reed E. Hundt

Commissioner James H. Quello

^{2/} Letter from Drew Lance, Chairman and CEO, Sierra to Mitchell Lazarus, filed as attachment to Letter from Mitchell Lazarus to Ms. Jackie Chorney, Office of Chairman Reed E. Hundt (filed Sept. 25, 1996),

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Nancy Boocker

David Wye

Hal Tenney

Sierra Digital Communications, Inc.