

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of)	
)	
Interference Immunity Performance)	ET Docket No. 03-65
Specifications for Radio Receivers)	
)	
Review of the Commission's Rules and)	MM Docket No. 00-39
Policies Affecting the Conversion to Digital)	
Television)	

**REPLY COMMENTS OF THE
SATELLITE INDUSTRY ASSOCIATION**

The Satellite Industry Association (“SIA”) hereby replies to the comments submitted on the Commission’s Notice of Inquiry (“NOI”) in this proceeding, which initiates an inquiry into the possibility of developing certain receiver interference immunity performance specifications as part of the Commission’s spectrum policy.¹

As noted in its Comments, SIA endorses the Commission’s stated intent not to implement a new regulatory regime that generally would subject all receivers to

¹ SIA is a U.S.-based national trade association representing the leading U.S. satellite manufacturers, service providers, and launch service companies. SIA serves as an advocate for the U.S. commercial satellite industry on regulatory and policy issues common to its members. With its member companies providing a broad range of manufactured products and services, SIA represents the unified voice of the U.S. commercial satellite industry. SIA Executive Members include: The Boeing Company; Globalstar, L.P.; Hughes Network Systems, Inc.; ICO Global Communications; Intelsat; Lockheed Martin Corp.; Loral Space & Communications Ltd.; Mobile Satellite Ventures; Northrop Grumman Corporation; PanAmSat Corporation; and SES Americom, Inc.. SIA’s Associate Members include Inmarsat, New Skies Satellites Inc, and Verestar Inc.

mandatory standards.² The vast majority of commenters in this proceeding--- representing a wide range of interests, including standards setting bodies, the consumer electronics industry, and leading equipment manufacturers and wireless operators--- oppose the development of a new regulatory scheme that generally would regulate receiver performance.³

A number of commenters correctly recognize that there are significant costs involved with the government establishing mandatory receiver standards. The Consumer Electronics Association echoes SIA's warning that mandatory standards could slow the development and deployment of new technologies that---until now---have been spurred by market forces.⁴ Ericsson similarly cautions that mandatory receiver performance specifications could lead to technology stagnation, inefficient spectrum management and unnecessary increased costs, and constrain the ability of manufacturers to respond quickly to marketplace demands and changes.⁵ Thus, these commenters echo the Commission's recognition that "mandatory standards could also stifle innovation by restricting the introduction of products with otherwise desirable new features that are inconsistent with the standards."⁶ Indeed, setting mandatory receiver standards can limit the ability of existing services to maximize the performance of their systems in the future.

² NOI at ¶ 2. SIA has not taken a position on the spectrum sharing issues in IB Docket 01-185 (involving spectrum flexibility for MSS licensees). These comments are not intended to address those issues and should not be read as doing so.

³ *See, e.g.*, Comments of Consumer Electronics Association, Comments of the Telecommunications Industry Association, Comments of Ericsson, Inc., Comments of BellSouth Corporation and Cingular Wireless LLC.

⁴ Comments of Consumer Electronics Association at 2. *See* Comments of SIA at 5.

⁵ Comments of Ericsson, Inc. at 1-2.

⁶ NOI at ¶ 37.

SIA urges the Commission to reject the suggestion of Harris Corporation to use military specifications regarding interference sensitivity as the basis for setting standards in this proceeding, including with respect to satellite receivers.⁷ As SIA previously has explained, the “price” associated with new technologies that have yielded great efficiencies in satellite network operations is that satellite network design---in particular receiver performance---is increasingly sensitive to interference from other sources. For example, higher-gain satellite receive antennas are more susceptible to receiving signals from unwanted sources, and higher-order modulation techniques are more sensitive to interference due to their higher carrier-to-noise ratio requirements. Thus, basing receiver standards on military interference-rejection specifications may foreclose future efficiencies in satellite network design and the types of improvements in satellite technology that the satellite industry has developed in response to market demands.⁸ Moreover, it is not clear why Harris believes those military specifications, which may have been developed for entirely different purposes and entirely different operating environments, are a relevant starting point for commercial satellite receivers.

SIA endorses the views of Nokia and Motorola, who (i) recognize that existing users have natural incentives to improve receiver performance in order to yield greater capacity for their own systems, and (ii) advocate that those who “shoulder the burden” of improved receiver performance in terms of cost and impact on system performance should receive the benefits of their investment.⁹ Motorola likewise urges the Commission not to develop receiver standards in order to facilitate increased access

⁷ Comments of the Harris Corporation at 4, 8.

⁸ *See* Comments of the SIA at 3-6.

⁹ Comments of Nokia, Inc. at 5; Comments of Motorola, Inc. at 5-6.

to licensed bands by new users.¹⁰ The Consumer Electronics Association sums it up when it observes: “[i]nstead of fostering innovation, FCC-required receiver performance standards would serve to protect the last-to-market at the expense of the spectrum-efficient innovator.”¹¹

Microsoft is one of the main proponents for setting receiver standards in order to facilitate the use of spectrum by new users---a position strongly opposed by many commenters. Microsoft attempts to “soften the blow” of its proposal for mandatory receiver standards by arguing that doing so will make a licensee’s right more definite.¹² That would be a hollow victory, indeed. What Microsoft really advocates is defining boundaries by carving out a large segment of actual or potential system capacity from existing licensees in order to accommodate new “underlay” users.¹³ This is easy for Microsoft to propose---it does not operate in the licensed telecommunications area either as a service provider or as a manufacturer, and it therefore would not bear any of the burdens of mandatory receiver standards.

There is a very real burden associated with its proposal that Microsoft wholly ignores. Requiring existing users to improve receiver performance to facilitate new “underlay” uses creates a whole separate problem: new underlay uses would increase the level of noise in the interference environment that current spectrum users must accommodate in their system designs. Thus, adopting Microsoft’s proposal would impose two burdens on existing licensees: (i) the expense of developing new technology

¹⁰ Comments of Motorola, Inc. at 5-6.

¹¹ Comments of Consumer Electronics Association at ii.

¹² Comments of Microsoft Corporation at 5.

¹³ Comments of Microsoft Corporation at 6-8.

so someone else can benefit, and (ii) the increased interference from an industry whose development they just underwrote. Nokia is correct when it recognizes that allowing new users of the spectrum to take advantage of the additional capacity made possible by improved receiver designs would amount to a government-created market distortion that would create economic disincentives for existing users to maximize spectrum efficiency.¹⁴

Further, Microsoft is simply wrong when it makes the sweeping statement that “it is often the case that neither users nor licensees have any incentive to take advantage of improvements in receiver technology.”¹⁵ As explained in greater detail in SIA’s Comments, the record is clear how advances in earth terminal technology over the past few decades have fostered the use of satellite services by a wider range of users. Earth terminals have shrunk in size, use lower powered amplifiers, and are less expensive and less obtrusive than ever before. Much of this improvement has been made possible by market-driven efforts of manufacturers to lower the noise floor generated by the terminal itself. Satellite operators also have been driven by market forces to achieve greater spectrum efficiency by using advanced coding and modulation techniques. But, as SIA previously explained, and as the NOI recognizes,¹⁶ these technological advances also affect the susceptibility of receivers to interference. Higher order modulation schemes that allow information to be transmitted in less bandwidth typically require a higher C/N ratio, and therefore are more sensitive to interference.

¹⁴ Comments of Nokia, Inc. at 5

¹⁵ Comments of Microsoft Corporation at 8.

¹⁶ NOI at ¶ 13.

In sum, the comments of many other parties echo SIA's views that there are strong market-based incentives that continue to drive improvements in receiver technology, and that imposing mandatory receiver standards could constrain the continued deployment of more advanced and spectrum-efficient technologies. Competitive and economic forces perform this function best, and this has long been true for satellite services. Rather than imposing receiver standards by regulatory fiat, SIA urges the Commission, as a cornerstone of its new spectrum policies, to encourage the continued development of flexible, voluntary, marketplace-driven standards with a minimum of government intervention.

Respectfully submitted,

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