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

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

To: The Commission

COMMENTS OF PANAMSAT CORPORATION

PanAmSat Corporation ("PanAmSat") hereby submits these comments in response to the Commission's Notice of Inquiry concerning whether receiver interference immunity performance specifications should be developed.[1] As set out below, because existing satellite receiver standards foster efficient spectrum use while additional regulatory mandates would unnecessarily constrain satellite operations and consumer choice, the Commission should continue to rely on its current standards and market forces to foster the efficient and productive use of satellite spectrum.

I. Introduction

PanAmSat owns and operates a global satellite system comprised of geostationary fixed satellite service ("FSS") space stations operating on C-band and Ku-band frequencies. A leader in the commercial FSS satellite industry, PanAmSat created the first private international satellite distribution network and currently reaches 98% of the world's population with its services. As a company whose business is built upon

access to the radio spectrum, PanAmSat has an obvious interest in the Commission's spectrum policies.

The satellite industry has long benefited from forward-thinking spectrum management, and is properly regarded as a model of spectrum use. Because it costs hundreds of millions of dollars to construct, launch, insure, and operate a geostationary satellite, satellite operators have powerful market-based incentives to use their spectrum efficiently. The operation of this fundamental economic rule is confirmed by the history of satellite services. While the first communications satellites, launched in the 1960s, could transmit a single television channel or 500 simultaneous phone calls, today's satellites can carry over 500 television channels and thousands of data circuits. This dramatic growth in capacity has been accompanied by equally dramatic reductions in cost and equipment size, benefits that have been passed on to consumers and paved the way for continued innovation.

II. Discussion

PanAmSat strongly endorses the Commission's initial conclusion that "it is preferable to rely primarily on market incentives and voluntary industry programs . . . rather than formal mandatory standards."[2] As the Commission has acknowledged, the benefits of regulation of interference immunity depend heavily on the particular characteristics of any band in which such requirements are given effect.[3] Although receiver standards may have a role to play in cases in which the RF environment is predictable and the user community is relatively homogenous, in practice these conditions rarely exist. Attempting to impose receiver standards in a dynamic

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[1] *Interference Immunity Performance Specifications for Radio Receivers; Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television,* Notice of Inquiry, ET Docket No. 03-65, MM Docket No. 00-39, FCC 03-54 (rel. Mar. 24, 2003).
[2] Notice of Inquiry ¶2.
[3] Notice of Inquiry ¶23.

environment or in bands shared by users with different characteristics can undermine market incentives, stifle innovation, and raise costs for consumers.

The Commission, in Part 25 of its rules, has implemented limited standards for FSS receivers.[4] These standards do not mandate use of any particular technology or establish performance specifications. Rather, they define the extent to which receive earth stations are entitled to inference protection vis-à-vis adjacent satellites transmitting in accordance with the Commission's two-degree spacing requirements. In essence, the earth station receiver standards reflect the limits that the Commission has established for space stations operating in a two-degree environment, and are one of the few examples, if not the only one, of immunity performance specifications currently in the Commission's FSS regulations.

The Commission's two-degree requirements have worked well to protect against adjacent satellite interference, and the traditional control of emissions approach to promoting spectrum efficiency already guides receiver design. Accordingly, there is no need to develop additional receiver requirements for adjacent satellite interference purposes.

Developments internationally support this conclusion. Since at least the early 1970's, the ITU and its working groups, particularly ITU-R Study Group 4 (Fixed Satellite Service) and Working Party 4A (Efficient Orbit/Spectrum Utilization), have conducted numerous studies addressing the efficient use of geostationary satellite resources and sharing between fixed satellite service and fixed service. These studies have never identified any receiver standard except for the receive earth station antenna standard described above. In particular, the need for specifying receiver frequency response has never arisen.[5] Similarly, the ITU has unsuccessfully pursued homogeneity among satellite links by attempting to set maximum and minimum uplink and

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[4] *See* 47 C.F.R. § 25.209(c).

downlink transmit levels. The constraints such limits placed on satellite system design, however, were deemed unacceptable. Attempts to set limits on link sensitivity were similarly unavailing.

Imposing receiver standards addressing interference to FSS receivers from non-FSS transmitters also is unwarranted, and would not improve existing interference environments. In particular, if the focus is placed on the situation in which interference originates from unlicensed stations, it is noted that estimating or controlling such interference is largely hampered by the inability to predict or control the deployment of such stations. The traditional regulatory approach and the receiver standards approach face identical limitations. If the aggregate interference level that can be produced at an earth station is agreed upon and defined, there is no need for receiver specifications because the set interference level defines the earth station's level of protection and the earth station must be designed to tolerate that level of interference. Receiver standards would merely duplicate the interference tolerance requirements implicit in emissions limits, without addressing the problem of enforcing such limits where deployment of unlicensed stations makes interference environments volatile and difficult to control.

The Commission should be wary of adopting receiver standards except in cases in which a compelling case can be made for them, because mandatory standards impose real and substantial costs. Under existing rules, operators and manufacturers have incentives to protect their devices from harmful interference, and consumers are free to choose among the receivers that best balance cost and interference immunity. Consumers do not purchase equipment that is insufficiently immune to interference, forcing operators and manufacturers to design equipment with adequate tolerance. If the Commission, rather than the market, requires manufacturers to adopt interference immunity technology, manufacturing and equipment costs will increase unnecessarily. Receiver standards could, among other things, force operators to use bigger dishes and

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[5] Receiver selectivity has been listed in § 12 of the NOI as one of the factors determining

less efficient coding schemes. Such changes would increase consumer expense and constrain consumer choice. Unnecessary limits, furthermore, would stifle innovation by preventing development and deployment of new technologies inconsistent with those standards.

Should the Commission nevertheless determine that additional FSS receiver parameters are necessary, PanAmSat agrees that the appropriate method for setting such standards is through industry consensus.[6] Any standards developed through this process should, like the existing Section 209 standards, encourage increased receiver performance by setting the level below which receivers will not be protected. Because earth station directionality is an important element of interference immunity performance in the fixed satellite service, moreover, any interference immunity standards governing FSS receivers should take antenna directionality into account.

Respectfully submitted,

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receiver immunity performance.

[6] Notice of Inquiry ¶¶ 2 & 18.