BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Review of Part 15 and Other Parts of the Commission's Rules	)	ET Docket 01-278
	)	RM-9375
	)	RM-10051
	)	

REPLY COMMENTS OF HUGHES NETWORK SYSTEMS, INC.

Hughes Network Systems, Inc., ("HNS") a subsidiary of Hughes Electronics Corporation, hereby submits its reply comments in this proceeding.[1] Specifically, HNS replies to the comments relating to the Commission's proposal to establish standards for the manufacturing of radio receivers operating above 960 MHz, including radar detectors.

I. INTRODUCTION

The record in this proceeding supports the need for a rule to limit emissions in the Ku band to prevent radar detectors from interfering with VSATs. Contrary to what Radio Association Defending Airwave Rights, Inc. ("RADAR") and its members assert, the record now contains concrete evidence of harm to VSATs caused by radar detector operation. Although HNS appreciates the proposal by RADAR to voluntarily resolve the interference problem, RADAR's proposed solution is not sufficient to prevent continued radar detector interference into VSAT systems. The Commission must establish a rule to limit the levels of emissions from radar detectors in the 11.7-12.2 GHz band. HNS urges the Commission to focus in this proceeding on the issue of interference from radar detectors into satellite earth stations operating in the 11.7-12.2 GHz band. The serious commercial impact of the specific interference problem

[1] *Review of Part 15 and Other Parts of the Communication's Rules, FCC 01-290* (rel. Oct. 15, 2001) ("*Notice*").

caused by radar detectors requires immediate resolution. The issues raised by other commenters calling for a general review of emissions limits for unlicensed Part 15 devices should be dealt with in a separate proceeding.

II. THE RECORD CONTAINS CONCRETE EVIDENCE OF HARMFUL INTERFERENCE TO VSATS.

The record in this proceeding clearly demonstrates that radar detectors cause harmful interference to VSAT networks. Contrary to RADAR's claim that VSAT interference from radar detectors is merely anecdotal,[2] commenters have submitted into the record numerous examples of VSAT interference attributable directly to radar detectors. The comments of SIA members and other satellite operators contain real examples of the radar detector interference into VSATs, as well as into critical satellite telemetry, tracking and control operations.[3] Furthermore, studies submitted in this proceeding by SES Americom, Inc., Spacenet Inc. and StarBand Communications, Inc., and HNS provide quantitative evidence that radar detectors radiate emissions that indeed cause interference in the 11.7-12.2 GHz band.[4]

Additionally, HNS's Field Quality Assurance and Technical Support Team has documented actual instances of radar detector interference. The following examples describe instances in which HNS has confirmed that a radar detector was the sole cause of interference to a particular HNS customer:

- **Auto Parts Store – Jackson, Michigan:** HNS Field Service began to visit this site on November 12, 2001 to resolve problems with the HNS DirecPC relay. On December 17, 2001, a spectrum analyzer was shipped to the site and a field technician identified a radar detector in a vehicle parked next door as the source of the interference. The owner of the vehicle was located and the radar detector was powered off. The interference

[2] RADAR Member Comments at 4.

[3] PanAmSat Corporation Comments at 3; Loral Space & Communications Ltd. Comments at 1, Exhibit 1; SES Americom, Inc. Comments at Appendix A; HNS Comments at 4.

[4] SES Americom, Inc. Comments at Appendix A; Spacenet, Inc. and StarBand Communications, Inc. Joint Comments at Attachments 1, 2; HNS Comments at Exhibit A.

disappeared and the auto parts store was restored to service. On January 14, 2002, the store's system went off line again. The store manager reported that he saw the same vehicle with the radar detector parked next door and asked the owner if they would unplug the device. The owner refused to power off the radar detector and told the store manager to talk to her lawyer if he wanted it turned off.

- **Law Enforcement Agency – McAllen, Texas:** HNS Field Service began to visit this site on December 11, 2001 to investigate extended outages in the customer's VSAT system. On January 15, 2002, a spectrum analyzer was shipped to the site and a field technician identified a radar detector in a vehicle parked nearby as the cause of the interference. The owner of the vehicle was found, the radar detector was powered off and the VSAT came back on line.

- **Stock Brokerage – Metropolis, Illinois:** HNS Field Service was dispatched to this site beginning on October 23, 2001 to resolve problems with lost data and video. A spectrum analyzer was brought to the site and radio frequency interference was found. Using the spectrum analyzer, the source of the interference was determined to be a radar detector in a car parked next door. The owner of the vehicle was found and the radar detector was powered off. The interference disappeared and the site came back online.

- **Car Rental – Mesquite, Texas:** HNS Field Service was dispatched to this site beginning on December 31, 2001 to resolve problems with the customer losing data packets. On January 7, 2002, a spectrum analyzer was shipped to the site to check for radio frequency interference. A radar detector was found in a vehicle in the parking lot and identified as the source of the interference. The radar detector was powered off and the interference disappeared.

In short, the record is replete with actual examples where radar detectors are found to be the definitive cause of interference to VSATs. This record is growing every month.

III. THE SOLUTION PRESENTED BY RADAR AND ITS MEMBERS DOES NOT SOLVE THE PROBLEM.

HNS appreciates the efforts of RADAR and its members to reduce radar detector interference by "moving out" of the 11.7-12.2 GHz Ku band frequencies.[5] Essentially, the member radar detector manufacturers propose to design their products so that the local oscillators in their radar detectors would operate only at 10.7-11.7 GHz. This proposal to modify the product design of some radar detectors, however, is insufficient to cure the problem. First,

by RADAR's own admission, some 15% of radar detectors sold in the U.S. today are made by non-member companies.[6] RADAR's proposal will be ineffectual if non-members of its coalition and other manufacturers are not bound by any limits on the manufacture of radar detectors. Moreover, even if all current manufacturers agreed to "move out" of the 11.7-12.2 GHz band, there is nothing preventing a new manufacturer from designing a radar detector that radiates in the 11.7-12.2 GHz band, or any current manufacturer from changing its mind in the future and radiating in the 11.7-12.2 GHz band again. Therefore, the Commission must adopt a rule that binds all radar detector manufacturers who wish to sell their devices in the U.S.

Second, RADAR's proposal to move radar detector operations to the 10.7-11.7 GHz band is inadequate because it simply moves the interference problem in another satellite receive band. The 10.95-11.2 and 11.45-11.7 GHz segments of that band are of particular concern to HNS and its customers. Those GSO FSS downlink bands support important international satellite links, and could also be used for VSAT services in general. In addition, just over a year ago, the Commission opened the entire 10.7-11.7 GHz band for licensing to the NGSO FSS.[7] Moving radar detectors out of the 11.7-12.2 GHz band would solve the immediate problem, but it would do so at the expense of satellite operations in an adjacent band.

Moreover, the proposal of some RADAR members to reduce radar detector emissions in the 11.7-12.2 GHz band to the Class B emission limits (500 uV/meters measured at

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[5] RADAR Member Comments at 5; Cobra Electronics Corporation Comments at 5; Escort Incorporated and BEL Incorporated Joint Comments at 3; The Whistler Group, Inc. Comments at 2.

[6] RADAR Member Comments at n. 2.

[7] *Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range; Amendment of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates; and Applications of Broadwave USA, PDC Broadband Corporation, and Satellite Receivers, Ltd. to Provide a Fixed Service in the 12.2-12.7 GHz Band,* First Report and Order and Further Notice of Proposed Rulemaking, 16 FCC Rcd 4096 (2000).

a distance of 3 meters) is also insufficient.[8] Studies submitted by HNS and SES Americom, Inc. demonstrate that current Class B levels are inadequate to prevent harmful interference in the Ku band and that a limit of 30 uV/meter measured at a distance of 3 meters at 11.7-12.2 GHz should be adopted instead for radar detectors.[9] Other SIA members support the findings of these studies and endorse this limit as appropriate for the 11.7-12.2 GHz band.[10] Therefore, HNS reiterates its requests that the Commission set the emissions limit for radar detectors at 30 uV/meter measured at a distance of 3 meters in the 11.7-12.2 GHz band.[11]

Finally, the proposal by RADAR to vacate the 11.7-12.2 GHz band by June 1, 2003 is inadequate. RADAR proposes that certain radar detector manufacturers would accomplish this by voluntarily limiting radar detector emissions in this band from units that are imported or domestically manufactured on or after June 1, 2003.[12] RADAR indicates that the delay is required for the "manufacturers to redesign, retool and empty the present inventory."[13] However, by allowing possibly hundreds of thousands of radar detectors, or more, to be sold through mid-2003, RADAR is in effect proposing that VSATs continue to suffer harmful interference for the useful life of all radar detectors now in existence and all radar detectors sold in the next 15 months.

Radar detectors are not the type of product that consumers are likely to replace frequently. As with other typical consumer electronics, consumers are likely to use these devices

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[8] Cobra Electronics Corporation Comments at 5; RADAR Member Comments at 2.

[9] HNS Comments at Exhibit 1; SES Americom, Inc. at Appendix A. Comsearch proposes a limit of 60 uV/m, however, their calculations are based on generic link parameters. The calculations performed by HNS and SES Americom, Inc. incorporate link parameters that are based on actual customer data. Therefore, the 30 uV/m limit is more appropriate.

[10] SIA Comments at 3.

[11] SES Americom, Inc. Comments at 7; SIA Comments at 3.

[12] RADAR Member Comments at 5.

until they cease to function. Based on HNS's experience on the length of use of consumer electronics, the net result of RADAR's proposal is that VSAT network users will have to continue living with disruptive radar detector interference for more than 5 years. This is fully unacceptable.

Even though the users of radar detectors are obligated to operate these devices on a non-interference basis,[14] there is no effective way to enforce that requirement absent a product recall.[15] In light of the significant harm to VSAT and other satellite operations caused by radar detectors, HNS therefore strongly endorses the suggestion of Spacenet Inc. and StarBand Communications, Inc. that the Commission require the removal of all radar detectors from interstate commerce: "Interference generated by the embedded consumer use of the detectors can be substantially reduced through creating positive incentives for returning interfering models to the manufacturer, such as, for example, 'buy back' or 'trade in' programs."[16]

IV. THE COMMISSION SHOULD CONDUCT A SEPARATE PROCEEDING TO ADDRESS OTHER INTERFERENCE ISSUES.

A. Radar Detector Inference in Other Frequency Bands.

HNS also supports StarBand's request to implement appropriate emissions limits for radar detectors in other bands, such as the Ka band.[17] However, HNS urges that this issue be addressed in a separate proceeding. Because interference by radar detectors presents an immediate threat to many existing users of the Ku band, HNS urges the Commission to solve this

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[13] *Id.*

[14] 47 C.F.R. § 15.5.

[15] The Commission has asserted its authority to take appropriate action against those that are "instrumental in creating radiation causing harmful interference to radiocommunication service." *See Cease and Desist Order to be Directed to Kenneth E. Miller, tr/as Kentown Speedway & Hobbies, 10716 Westminster Boulevard, Garden Grove, California*, 1 FCC 2d 889, para. 16 (1965).

[16] Spacenet Inc. and StarBand Communications Inc. Joint Comments at 14.

[17] Spacenet Inc. and StarBand Communications Inc. Joint Comments at 3.

particular interference problem before examining the potential for radar detectors interference in other frequency bands, such as the nascent Ka band.

B. Other Radio Receivers Operating Above 960 MHz.

Likewise, HNS also agrees with commenters who oppose adoption of a regulation that applies equally to all radio receivers that tune above 960 MHz.[18] There are many different types of radio receivers used in many different environments. Radar detectors cause interference because they are used outdoors and within line-of-sight of VSATs. This problem is not present with other radio receivers that are used indoors. The Commission should establish, on an urgent basis, rules to deal with the very real interference problem presented by radar detectors, before considering broader regulation that would affect a wider variety of unlicensed Part 15 devices.[19]

C. Other Unlicensed Part 15 Devices.

HNS agrees with XM and Sirius and other commenters requesting that the Commission generally explore and establish new limits for unlicensed Part 15 devices other than radar detectors.[20] However, because of the immediate harm posed by radar detectors, HNS urges the Commission to solve that problem now and deal with the much broader question about revising Part 15 limits in a separate proceeding.

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[18] Interlogix, Inc. Comments at 5; Short Range Automotive Radar Frequency Allocation Group Comments at 9.

[19] In the absence of a demonstrated problem in this proceeding with any other radio receivers, it is inappropriate to apply the same emissions limit to all radio receivers operating above 960 MHz. Therefore, HNS disagrees with the comments of Cisco Systems, Inc. and Uniden America Corporation, which propose a uniform limit for all radio receivers operating above 960 MHz. *See* Cisco Systems, Inc. Comments at 5; Uniden America Corporation Comments at 3.

[20] *See, e.g.,* XM Radio Inc. Comments; Sirius Satellite Radio Inc. Comments; United Telecom Council Comments; Spacenet Inc. and StarBand Communications Inc. Joint Comments at 15.

V. CONCLUSION

In order to prevent further harmful interference by radar detectors into VSAT networks, HNS asks the Commission to establish, on an urgent basis, rules to keep interference from radar detectors out of the 11.7-12.2 GHz band and to limit radar detector emissions in this band to 30 uV/meters measured at a distance of 3 meters. Furthermore, radar detectors that do not comply with this limit should be recalled and replaced. Finally, HNS requests that the Commission institute a separate proceeding to address appropriate emission limits for other unlicensed Part 15 devices and establish emission limits for radar detectors in bands other than the Ku band.

Respectfully submitted,

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Certificate of Service

I, Lorraine Self, of Latham & Watkins, 555 Eleventh Street, NW, Suite 1000, Washington, DC 20004, do hereby certify that a copy of the foregoing "Reply Comments of Hughes Network Systems, Inc." was served on this 12th day of March 2002, via hand delivery to the following parties:

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