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

In the Matter of	)	
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Review of Part 15 and other Parts of the Commission's Rules	)	ET Docket No. 01-278
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To: The Commission

REPLY COMMENTS OF THE SHORT RANGE AUTOMOTIVE RADAR FREQUENCY ALLOCATION GROUP

The Short Range Automotive Radar Frequency Allocation Group ("SARA"), by its attorneys, hereby submits reply comments in response to the Notice of Proposed Rulemaking and Order (the "NPRM") released by the Federal Communications Commission (the "FCC" or the "Commission") on October 15, 2001 in the above-captioned proceeding. 1/

I. Background

SARA is composed of leading automobile manufacturers and automotive component manufacturers, 2/ working together to achieve a regulatory environment that fosters the development and deployment of short-range vehicular radar systems

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1/ *Review of Part 15 and other Parts of the Commission's Rules,* Notice of Proposed Rulemaking and Order, FCC 01-290, ET Docket No. 01-278 (rel. Oct. 15, 2001) ("NPRM").

2/ SARA includes the following automotive component manufacturers: *A.D.C., Bosch, Delphi Automotive Systems, Hella, InnoSent, Megamos, Siemens VDO, TRW, Tyco Electronics, Valeo* and *Visteon.* It also includes the following automobile manufacturers: *Audi, BMW, DaimlerChrysler, Fiat, Ford, General Motors, Jaguar, MAN, Opel, Porsche, PSA Peugeot Citroën, Renault, Saab, Seat, Skoda, Volkswagen* and *Volvo.*

operating with a center frequency of 24.125 GHz. These short range radars ("SRRs"), employing ultra-wideband technology, will serve as the core component in the next generation of collision mitigation systems, capable of addressing up to 88 percent of all causes of rear-end collisions. 3/

In its initial comments, SARA urged the Commission to: (1) lift the restricted band designation that currently applies to all frequencies above 38.6 GHz, and (2) refrain from imposing Part 15 emission limits on receivers operating above 960 MHz. SARA was pleased to see that all commenters addressing the restricted band issue unanimously support the Commission's proposal to lift the current blanket restriction. 4/ Because the record contains no opposition to removing this unnecessary restriction, SARA does not repeat here why adoption of this proposal will facilitate the design and introduction of vehicular SRRs into the marketplace. 5/ Instead, SARA devotes its reply comments to responding to the few commenters calling for the imposition of new restrictions on radar detectors and other receivers operating above 960 MHz.

3/ *See* SARA *ex parte* filing of November 14, 2001 in ET Docket 98-153, at page 5 of Attachment (citing NHTSA statistics).

4/ *See* Comments of CISCO Systems at 2-3 ("removing unnecessarily restrictive Part 15 emissions limits allows manufacturers to reduce costs"); Comments of the Information Technology Industry Council at 8 (removing restrictions "may open up the market for new unlicensed devices"); Comments of Safety Warning Systems at 2-4 (restricted bands are "overdue for reevaluation"). *See also* Memo from John Zuzek, NASA Spectrum Management Office, to Russel Slye, NTIA (Oct. 17, 2001). NASA indicates no opposition to lifting the blanket designation, but requests that passive sensing bands above 38.6 GHz be individually listed as restricted bands. SARA fully supports this approach.

5/ SARA does, however, remind the Commission of the importance of prompt action on this proposal. SARA members will have to make certain final design decisions within the year.

II. The Record Does Not Support New Emission Limits for All Receivers

In the NPRM, the Commission requested comment on whether radar detectors and other receivers operating above 960 MHz should be required to comply with Part 15 emission limits for unintentional radiators. This query was prompted by reports of interference to very small aperture satellite terminals ("VSATs") caused by radar detectors used to detect police radar. 6/ In the initial comments filed in this proceeding, the radar detector industry responded to these interference concerns by pledging to voluntarily limit the spurious emissions from radar detectors in the 11.7-12.2 GHz band to Part 15 Class B levels. 7/ These changes should go far in eliminating the possibility of interference to VSAT operators and may well eliminate the need for any new FCC regulation. Should the Commission determine, nevertheless, that new rules are needed to reassure VSAT licensees, the Commission should be careful to tailor those new rules narrowly in order to avoid any unintended consequences.

A new emissions limit that is applied indiscriminately to all receivers in all frequency bands, as some commenters recommend, would significantly impair the ability of SARA members to design, manufacture and deploy affordable SRR devices. Most 24 GHz SRR devices being developed by SARA members will rely on a single local oscillator for both transmit and receive functions. When functioning as a receiver, the device will produce spurious emissions within a bandwidth of less than

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6/ *See NPRM* at ¶¶ 11-12.

7/ *See* Comments of RADAR Members at 6; Comments of Cobra Electronics Corporation at 5

1 MHz at its center frequency that results from the inability of the switch to suppress all carrier emissions. 8/ The use of additional switches to further suppress carrier emissions would be prohibitive both in terms of device size and cost. Higher production costs and/or physical constraints could result in the safety advantages of SRR technology being confined to high-end vehicles, or could lead to a determination that certain SRRs are not viable at all.

SARA reminds the Commission of its relevant precedent in the 77 GHz radar proceeding in which it determined that imposing tighter emission limits on vehicular radars would be contrary to the public interest because such limits "would increase the cost of these [radar] devices and result in the delay or interruption of availability of these beneficial devices to the public."9/ SARA notes that the short range 24 GHz radars now under development will provide even more dramatic safety benefits than those provided by the existing long range 77 GHz radars.

Moreover, new emission limits for receivers at 24 GHz are simply not needed. The record contains no suggestion by any party that interference is occurring at 24 GHz. Nor does the record – either in this proceeding or in the voluminous record of the ultra-wideband proceeding 10/ – contain any evidence to suggest that 24 GHz SRRs are likely to cause interference to other operations. Nevertheless, a few

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(pledging to move oscillator emissions to the 10.7 – 11.7 GHz band).

8/ We note that such spurious emissions will be significantly less than the level allowed for intentional emissions under section 15.249 of the FCC's rules.

9/ *Amendment of Parts 2, and 15 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications*, Third Memorandum Opinion and Order, 15 FCC Rcd 10515, 10518 ¶ 9 (2000).

commenters call for a simplistic one-size-fits-all rule that would apply to all receivers at all frequencies over 960 MHz. 11/ By proposing new constraints even where no interference exists, the commenters are suggesting a solution in search of a problem. Moreover, while such a "universal standard" may initially sound appealing, it ignores the fact that one standard emissions limit will have a different impact in different frequency bands, due to the natural variations in frequency propagation characteristics. 12/ More importantly, such an approach leads to an inefficient use of spectrum and discourages the development of new technologies. For example, a relatively strict emissions limit may be needed to protect a particular service at a particular frequency. Applying that same limit to all bands, however, would result in over-protection for most bands, and could render those bands unusable by many unlicensed devices that otherwise could have used the spectrum without causing interference to any service. To encourage the best use of the spectrum, the better approach is to impose new emission limits only where there is specific evidence of interference. 13/

10/ *See* ET Docket No. 98-153.

11/ *See* Comments of Uniden America Corporation at 3; Comments of Shure Incorporated at 2; Comments of CISCO Systems Inc. at 5.

12/ For example, at 24 GHz, a limit on spurious emissions of –13.25 dBm would provide as much protection as a –41.25 dBm limit provides at 960 MHz. The free space propagation loss can be calculated as 20log(f). The isotropic receiver antenna area is proportional to the square of the wavelength and therefore decreases with the square of the frequency.

13/ *See* Comments of Interlogix, Inc. at 5 ("If police radar detectors warrant regulation, then the rules should be limited accordingly. But the Commission should not cast its net so wide that manufacturers of other receivers, even radar receivers, are subjected to increased and costly regulation.").

III. CONCLUSION

By removing the blanket restricted band status from frequencies above 38.6 GHz and by avoiding any unnecessary new regulations on the spurious emissions of receivers, the Commission can help promote the deployment of potentially life-saving 24 GHz vehicular radars onto the nation's roadways. Doing otherwise – by imposing new regulatory constraints even where no interference exists – would risk denying the public the significant safety benefits this new SRR technology can bring.

Respectfully submitted,

THE SHORT RANGE AUTOMOTIVE RADAR FREQUENCY ALLOCATION GROUP

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