

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
Revision of Part 15 of the Commission's) ET Docket No. 98-153
Rules Regarding Ultra-Wideband)
Transmission Systems)

**COMMENTS
of the
SHORT RANGE AUTOMOTIVE RADAR FREQUENCY
ALLOCATION GROUP**

The Short Range Automotive Radar Frequency Allocation Group

("SARA") 1/ hereby submits these Comments in response to the *Further Notice of Proposed Rulemaking* issued in the above-referenced docket. 2/ As discussed below, SARA supports proposals to modify the current UWB rules to provide for greater flexibility without increasing the likelihood of harmful interference to authorized

1/ SARA is an association composed of the world's leading automobile manufacturers and automotive component manufacturers, working to promote the deployment of short-range ultra-wideband vehicular radars that will serve as the key component in next generation collision mitigation systems. SARA is made up of 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.

2/ Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems, ET Docket 98-193, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, FCC 03-33 (rel. March 12, 2003) ("*Further Notice*").

and protected services. Specifically, SARA endorses the comments being filed by Delphi Automotive Systems Corporation (“Delphi”) and Siemens VDO Automotive AG (“Siemens”) in this proceeding.

Elimination of the UWB Minimum Bandwidth Requirement. SARA joins with both Delphi and Siemens in supporting the elimination of the 500 MHz minimum UWB bandwidth requirement currently contained in section 15.503(d) of the Commission’s rules. SARA agrees with the Commission that the requirement “could cause a manufacturer to design transmitters that occupy more bandwidth than is operationally necessary” in order to qualify as a UWB device.³ Such a result would be counterproductive to reducing emissions in the restricted bands and, as Delphi points out, could potential deny consumers the advantages of UWB devices designed in the most useful and cost efficient manner.⁴

UWB Operations in the 3.1 – 10.6 GHz Band. SARA supports an expansion of the types of UWB devices, including vehicular radars, permitted to operate in accordance with the standards currently limited to hand held devices in the 3.1 – 10.6 GHz band. SARA agrees with Delphi, however, that any expansion in that band should not unfairly discriminate based on the technology to be used, so long as it has been shown that the proposed technology will not increase the likelihood of harmful interference (as Delphi has shown with regard to its

^{3/} *Further Notice* at ¶ 166.

^{4/} Delphi Comments at 8 (stating that the “best design” of a device may sometimes call for a variable bandwidth capability, ranging from 250 MHz to 2500 MHz) .

technology).⁵ Thus, consistent with the Commission’s policy that “various modulation types should be permitted as long as the products comply with all of the technical standards,”⁶ the Commission should provide manufacturers with the flexibility to design devices with alternative waveforms as well as with pulse repetition frequencies (“PRFs”) higher than the 200 kHz proposed in the *Further Notice*.⁷ Moreover, in view of the existing interference-limiting restrictions on UWB peak and average power, there is no reason why flexibility should not also be afforded to UWB devices that operate above 10.6 GHz in addition to those that operate in the 3.1 to 10.6 GHz band.⁸

Siemens’ Pulsed Frequency Hopping Vehicular Radar. In its Petition for Reconsideration, Siemens requested minor changes in the UWB rules to the permit the operation of its pulsed FH device in the 22 – 29 GHz band. SARA is pleased that the Commission has proposed to adopt most of these requested changes, and SARA reemphasizes its support for the Siemens’ key proposals:

- To the extent the Commission does not eliminate the minimum bandwidth requirement as requested above, the Commission should adopt one of the bandwidth measurements proposed by Siemens. Importantly, the rules

⁵/ Delphi Comments at 3.

⁶/ Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems, ET Docket 98-153, *First Report and Order*, FCC 02-48 (rel. Apr. 22, 2002) at ¶ 32.

⁷/ SARA notes that Siemens’ Petition for Reconsideration requested only that its pulsed frequency hopping device be permitted to operate in the 22-29 GHz band. SARA does not ask the Commission to expand the bands in which pulsed FH devices may operate beyond that which Siemens itself has advocated.

⁸/ See Delphi Comments at 6.

should permit the 500 MHz bandwidth requirement to be satisfied over a 10 millisecond (ms) time period.

- Measurements of the average power should be permitted to be taken with the frequency hopping active in order to obtain an accurate reading. Recent measurement testing performed by NTIA in consultation with the FCC confirmed that “radiated emissions from a pulsed FH radar prototype can be accurately measured in frequency hopping mode.”^{9/}
- Also for the purpose of obtaining the most accurate average power reading, an averaging time of 10 ms should be permitted. This longer averaging time is consistent with recommendations contained in the spectrum analyzer manuals and is supported by the NTIA’s conclusion that a “longer averaging time does tend to result in a smoother emission spectra.”^{10/} However, to facilitate the resolution of this issue, SARA notes that Siemens has suggested in its comments that the 1 ms averaging period could be retained in the passive services band from 23.6 – 24 GHz.

SARA agrees with Siemens that permitting its pulsed FH device to operate in the 22 – 29 GHz band would not present any increased likelihood of harmful interference to authorized and protected services, regardless of whether the incumbent users are terrestrial or space borne, or whether the receiver has a fast transient response time.

^{9/} NTIA, “Measurements of Siemens Pulsed Frequency Hopping Vehicular Radar Prototype,” Mar. 20, 2003 at 37.

^{10/} *Id.*

V. Conclusion

As an association composed of a wide variety of automakers and auto component manufacturers working together to promote a regulatory environment that will allow for the deployment of vehicular radars, SARA has always advocated rules that would permit the operation of a wide variety of different vehicular radar designs. Such rules will promote a competitive, level playing field that will provide automakers and their customers with the largest possible selection of devices from which to choose. For the reasons set forth above, SARA respectfully requests that the Commission grant the additional flexibility requested by Delphi and Siemens.

Respectfully Submitted,

**SHORT RANGE AUTOMOTIVE RADAR
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