

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20544**

In the Matter of	)	
	)	
Petition for Rulemaking of the Wireless	)	
Ethernet Compatibility Alliance to Permit	)	RM-10371
Unlicensed National Information	)	
Infrastructure Devices to Operate	)	
in the 5.470-5.725 GHz Band	)	
	)	
To: The Commission	)	

**COMMENTS OF ATHEROS COMMUNICATIONS, INC.**

Atheros Communications, Inc., by its attorneys, hereby submits comments in the above-captioned proceeding in favor of granting the Petition for Rulemaking and promptly instituting a proceeding to allocate the 5.470-5.725 GHz band for use by unlicensed radio local area network ("RLAN") and other unlicensed devices. This additional spectrum is needed to accommodate growing demand. Access to the requested band also would facilitate the sale of RLAN devices in international markets, where the spectrum used for this purpose is consistent with the spectrum allocation requested by the Wireless Ethernet Compatibility Alliance ("WECA") in its Petition. Furthermore, extending the spectrum allocation for unlicensed devices can be accomplished without resulting in harmful interference to other users by applying the Commission's current

technical rules governing the 5.25–5.35 GHz sub-band to the new requested band.<sup>1</sup>

### INTRODUCTION

Atheros Communications, a California company founded in 1998, designs and provisions wireless chipsets and software for use in devices that provide wireless high-speed broadband connectivity within offices and homes. Devices using Atheros' chipsets and software are being used to connect a variety of computing, communications, audio and video units. Connectivity speeds of 54+ mbps are being achieved by RLAN devices using Atheros' chipsets that are deployed in the current 5 GHz band and employ the IEEE 802.11a standard. Atheros therefore has a substantial interest in ensuring that the spectrum addressed in this proceeding is allocated for unlicensed devices in order to realize the promised RLAN broadband connectivity among devices and to facilitate worldwide deployment of these devices. Atheros is an active member of WECA and of the IEEE 802.11 Wireless Local Area Network Standards Working Group.

### ADDITIONAL SPECTRUM IS NEEDED

Wireless broadband RLAN devices increasingly are being deployed in homes and offices to connect computers, printers, audio and video devices, and internet devices. Forecasts of future usage almost universally indicate strong upward demand for these devices. WECA, in its petition, submitted information on a European study that demonstrates the demand there.<sup>2</sup> Here in the United States, business forecasts are at least

---

<sup>1</sup> See 47 C.F.R. 15.401 *et seq.* (2001).

<sup>2</sup> WECA Petition at 11-12.

as optimistic. Consumers easily grasp the convenience of using unlicensed wireless devices to connect the broadband devices in their homes and offices. One driving application is to connect multiple computers to a single printer and to a single point of entry for the broadband connection. The demand for wireless connectivity is accelerating as broadband cable, DSL, and satellite internet access services gain market share and replace the ubiquitous dial-up modem. Rather than run wires throughout the home or office to connect to the broadband connection, consumers are finding it more convenient to connect multiple computers and related devices using RLANs. Additional spectrum is needed as devices proliferate in order to avoid interference by near-by devices and users, and thereby ensure the highest speed for the device.

REQUESTED SPECTRUM WOULD LOWER CONSUMER COSTS AND FACILITATE INTERNATIONAL MARKETS

Another critical consideration is the cost of RLAN devices. As a general matter and in typical quantities, due to the economies of scale realized for large numbers of units the more units sold, the lower the price. In order to sell RLAN devices outside the United States and maximize economies of scale, however, the frequency bands used must be the same in the United States as in other countries. The Commission explicitly recognized the benefits of identical worldwide spectrum usage for RLANs and similar consumer devices when it initially allocated the current 5 GHz bands for these purposes. In 1997, when it allocated the 5 GHz spectrum, the Commission stated that it “will also open opportunities for American industry to be competitive in the global market . . . . providing access to the 5.15.-5.30 GHz band would permit U-NII devices to be

compatible with the European HIPERLAN and would allow American industry the flexibility to create products for both markets.”<sup>3</sup>

While the 5.15-5.30 GHz band continues to be used for unlicensed devices in both Europe and the United States,<sup>4</sup> it has been recognized in Europe that more spectrum is needed in the relatively near future to accommodate the demand. For this purpose, the European Union has authorized use of the additional spectrum in the 5.470-5.725 GHz band, as noted by WECA in its Petition.<sup>5</sup> In addition, worldwide spectrum allocations within this same frequency range of 5.150-5.725 GHz are the subject of an item to be considered by the 2003 World Radio Conference (WRC-03).<sup>6</sup> The position of the United States on this World Radio Conference Agenda Item is under active consideration by the government agencies and by the FCC’s Industry Advisory Committee.

The Commission therefore should act promptly to allocate the 5.470-5.725 GHz band for unlicensed RLAN uses. Doing so would restore the Commission’s intended worldwide harmonization of this spectrum for RLAN devices and encourage an even

---

<sup>3</sup> Amendment of the Commission’s Rules to Provide for Operation of Unlicensed NII Devices in the 5 GHz Frequency Range, ET Docket No. 96-102, *Report and Order*, 12 FCC Rcd 1576 at para. 29 (1997).

<sup>4</sup> Japan also permits use of a smaller segment, 5.15-5.25 GHz, for RLAN devices.

<sup>5</sup> WECA Petition at 9-10.

<sup>6</sup> See International Telecommunication Union, Resolution 1156, Agenda for the World Radiocommunication Conference (WRC-03), Agenda Item 1.5 (Document C2000/88-E dated 26 July 2000). This and related documents are available on the FCC’s website at: [http://www.fcc.gov/wrc-03/files/docs/conf\\_agenda/agenda\\_02\\_12\\_01.pdf](http://www.fcc.gov/wrc-03/files/docs/conf_agenda/agenda_02_12_01.pdf)

more robust market for these devices. American consumers will benefit from the increased functionality and lower prices that would result.

#### HARMFUL INTERFERENCE WILL BE AVOIDED

In its petition, WECA requests that the existing U-NII rules governing unlicensed usage of 5.250-5.350 GHz be applied to the new band. These rules rely upon secondary, non-interfering status for the unlicensed devices as well as strict power limitations and out-of-band emission limits to ensure protection of other users of the spectrum. Applying these rules to unlicensed RLAN devices in the new proposed band would be fully appropriate and fully protect other users with whom this spectrum would be shared. In addition, there are techniques that can be built into the devices that will further mitigate the chances of interference. Since the responsibility for resolving all cases of interference involving unlicensed devices is posited with the device user, there exists a strong incentive for manufacturers not only to utilize existing techniques to protect against interference, but also to develop new methods as the technology evolves.

#### CONCLUSION

The Commission should act favorably on WECA's Petition at its earliest possible opportunity. This additional spectrum is needed to accommodate the growing domestic demand for RLAN devices, and it also would greatly facilitate sales in markets worldwide. Furthermore, extending the spectrum allocation at 5 GHz for unlicensed RLAN devices can be accomplished without creating the possibility of harmful interference to other services by extending the Commission's current rules governing the

5.250-5.350 GHz band to the requested new band. By taking these actions, the Commission would promote American industry and provide consumers in this country with a wide array of leading-edge devices at low cost.

Respectfully submitted,

ATHEROS COMMUNICATIONS, INC.



---

David R. Siddall  
PAUL, HASTINGS, JANOFSKY & WALKER LLP  
1299 Pennsylvania Avenue, N.W.  
10th Floor  
Washington, DC 20004  
(202) 508-9519

Its Attorney

February 28, 2002