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

In the matter of	)	
	)	
Modification of Parts 2 and 15 of the	)	
Commission's Rules for unlicensed devices	)	ET Docket No. 03-201
and equipment approval.	)	

REPLY COMMENTS OF THE CONSUMER ELECTRONICS ASSOCIATION

The Consumer Electronics Association ("CEA")[1] respectfully submits these Reply Comments to address issues raised by the Commission in its Notice of Proposed Rulemaking ("*Notice*") in the above captioned proceeding[2] and comments filed thereon by industry and the public.

In its Comments, CEA, like most commenters, expressed support for most of the amendments that the Commission proposes to make to its unlicensed rules. Implementation of these amendments will improve the services provided by unlicensed devices without increasing the overall interference level.

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[1] The Consumer Electronics Association is the principal U.S. trade association of the consumer electronics and information technologies industries, including manufacturers of the television receivers, monitors, and associated equipment such as set-top boxes, personal video recorders (PVRs), video cassette recorders (VCRs) and digital versatile disc (DVD) players that bring the video marketplace into consumers' homes. Our members also design and manufacture a broad array of unlicensed devices, including Wi-Fi and similar equipment that increasingly will be used throughout the home to network audio and video equipment such as television sets and monitors with video delivery services such as cable, DBS, and over-the-air broadcast as well as personal computers and broadband Internet access.

[2] *Modification of Parts 2 and 15 of the Commission's Rules for unlicensed devices and equipment approval*, ET Docket No. 03-201, Notice of Proposed Rulemaking, 18 FCC Rcd 18910 (2003) ("*Notice*").

In particular, widespread support was expressed for permitting the flexibility to use sectorized and phased antennas with unlicensed devices. A number of commenters made useful comments on drafting the rule to best carry out its intent, including extending its flexibility to devices that operate in other unlicensed bands.[3] Similarly, widespread general approval was expressed with regard to proposals to amend restrictions on antenna replacements, harmonize power measurement procedures for similar unlicensed devices, modify the channel spacing requirements for 2.4 GHz frequency hopping spread spectrum devices, and clarify the equipment authorization requirements for modular transmitters.[4]

An exception to the general expressed approval was the response to the Commission's request for comment on the more general policy issue of whether Commission adoption of an "etiquette" for unlicensed devices would improve spectrum efficiency. Almost all commenters, like CEA, oppose adding new restrictions on devices that operate in the existing unlicensed bands or suggest that the FCC work with industry to assess whether specific requirements are necessary when opening a new band for unlicensed operations.[5]

In its Comments, CEA pointed out that the etiquette used as an example by the Commission in its *Notice* in fact resulted in spectrum *in*efficiency. Other commenters expressed

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[3] *See* Comments of CEA at 3-4; Comments of Intel Corporation at 3; Comments of Atheros Communications at 1-3; Comments of Wireless Internet Service Providers (WISPA) at 2; Reply Comments of Alvarion at 4.

[4] *See, e.g.,* Comments of Motorola; Comments of WiFi Alliance; Comments of Intel; Comments of Information Technology Industry Council; Comments of Hewlett-Packard; Comments of GlobespanVirata; Comments of Symbol Technologies; Comments of PART-15 Organization; Comments of IEEE 802; Comments of Nortel.

[5] *See e.g.,* Comments of Intel at 3, 5-8; Comments of Panasonic at 6-8; Comments of IEEE 802 at paras. 23-28; Comments of GlobespanVirata at 15-16; Comments of Motorola at 5; Comments of Nortel at 13-16; Reply Comments of Alvarion at 14; Comments of Pegasus at 2-3; Comments of SkyPilot Network at 1.

similar concerns that etiquettes become outmoded quickly and stymie innovation, just as happened with the Commission-adopted UPCS etiquette. Like planned economies and 5-year plans, Government mandated spectrum etiquettes have a theoretical appeal but in operation they often stymie introduction of new technologies, chill innovation, and in the actual case of the UPCS spectrum contributed to the spectrum falling into relative disuse.[6]

The primary reason articulated by the Commission for attaching the etiquette to the UPCS spectrum when it was re-allocated for use by unlicensed devices was "to facilitate efficient use of the unlicensed PCS spectrum" and permit "all users to have equal access to the available spectrum on a shared basis."[7] The result has proved to be exactly the opposite of efficient spectrum use. Today the bands are all but vacant notwithstanding that this spectrum is in a prime neighborhood where comparable bands have been auctioned for several **billions** of dollars and over the past decade society has benefited from the resulting manufacture of equipment and provision of services.[8] As we pointed out in our Comments, the Commission is in the process of considering how these bands should be used in the future.[9]

One might inquire as to the role of the FCC-adopted etiquette in this outcome. The spectrum etiquette associated with the UPCS bands, like all such standards and etiquettes, was

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6 *See* Comments of CEA at 11 and fn. 22.

7 *See Amendment of the Commission's Rules to Establish New Personal Communications Services*, GEN Docket No. 90-314, Second Report and Order, 8 FCC Rcd 7700 at 7777, ¶ 183 (1993).

8 To be precise, in the Commission's Auction number 11 that ended on January 14, 1997, over $2.5 ***billion*** was bid for three 10 MHz bands (broadband PCS bands D, E & F) of neighboring spectrum. *See* FCC, *D, E, and F Block Auction Closes*, DA 97-81 (Jan. 15, 1997). We therefore can determine that the two 10 MHz bands of UPCS spectrum (1910 – 1930 MHz) had a conservative value of $1.7 billion in January of 1997. This is not even considering the third UPCS band, which is adjacent to the 2.4 GHz unlicensed band where literally millions of WiFi access points, WISP broadband links, and a plethora of other unlicensed devices operate.

9 *See supra* note 6.

based on the technology of the time when it was proposed and adopted. As technological adaptation and innovation progressed, however, the technologies consistent with the adopted etiquette became outdated. But unlike an industry-adopted standard, *requiring* use of the etiquette removed the ability to port other existing technologies into these bands or to design new technologies to use the spectrum. Had the etiquette been merely an industry standard, such as the very successful IEEE WiFi standards of the 802.11 series, industry would have been free to enter the band with other devices and technologies and the marketplace would have been allowed to work as it has for devices in the 915 MHz, 2.4, GHz, 5 GHz U-NII, and 5.8 GHz unlicensed bands.

There are other issues for the Commission to consider before being tempted to jump on the mandates wagon in the name of spectrum efficiency. Issues such as occupying a frequency with empty bits requires only an equipment authorization rule that is technologically neutral, not dissimilar to the rule that U-NII devices must have capacities of at least 1 mbps. As Intel points out, an "intra-service" etiquette "would require the FCC to set additional technical mandates that would necessarily favor particular users, services, technologies or companies over others."[10] GlobespanVirata adds that industry has every incentive to address intra-service sharing because poor spectrum utilization will adversely impact performance and user satisfaction. The unlicensed industry is addressing efficiency and interference mitigation through industry groups. For example, Bluetooth has a co-existence group (IEEE 802.15.2); 802.11 equipment utilizes a method called Carrier Sense Multiple Access ("CSMA") to control spectrum use and the radio resource management group within 802.11 is considering how to further improve throughput;

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[10] Comments of Intel at 6.

and the 802.19 Coexistence Technical Advisory Group also is studying these issues.[11]

For these reasons, CEA concludes that the Commission must resist the temptation to adopt spectrum etiquettes in the name of fostering spectrum efficiency. They are not needed and do not work. Instead, the Commission should continue to rely on industry to address spectrum sharing issues, considering regulatory mandates only in the limited instance that doing so is necessary to protect a primary licensee in the same spectrum.

Respectfully submitted,

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[11] Comments of GlobespanVirata at 15-16.