

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

In the Matter of	)	
	)	
Proposed Changes in the Commission's	)	ET Docket No. 03-137
Rules Regarding Human Exposure to	)	
Radiofrequency Electronic Fields	)	

**COMMENTS OF THE  
CELLULAR TELECOMMUNICATIONS & INTERNET ASSOCIATION**

Michael F. Altschul  
Senior Vice President & General Counsel

Andrea D. Williams  
Assistant General Counsel

Christopher R. Day  
Staff Counsel

**CELLULAR TELECOMMUNICATIONS &  
INTERNET ASSOCIATION**  
1250 Connecticut Avenue, N.W.  
Suite 800  
Washington, D.C. 20036  
(202) 785-0081

Dated: December 8, 2003

## SUMMARY

The Cellular Telecommunications & Internet Association (“CTIA”) supports efforts to update the Commission’s rules governing RF emissions. In updating the rules, however, CTIA urges the Commission to ensure that any modifications to the RF exposure requirements and limits are not overreaching, and are based on valid science. To this end, CTIA recommends the following changes to the proposed rules.

First, CTIA urges modification of the Commission’s proposal regarding the appropriate evaluation of fixed antennas. Such evaluation must consider the height of an antenna and the antenna beam “line-of-sight” in addition to the separation distance in order to calculate whether the antenna should be subject to routine evaluation or categorical exclusion. Accordingly, CTIA requests that the Commission modify its proposed definition of “separation distance” and modify the power limit in the proposed 3 meter to 10 meter categorical exclusion.

CTIA also recommends modification of the Commission’s proposed rules concerning very low-power fixed transmitters, or “microtransmitters” to provide sufficient flexibility for transmitters that operate at powers slightly above the proposed categorical exclusion threshold. With respect to transmitter modules, CTIA supports the Commission’s proposal to categorically exclude modules with a peak output power of 100 mW or less. However, the three options for ensuring that transmitter modules remain compliant in various host devices should be modified to add additional clarity.

Certain other changes to the RF rules should also be made. CTIA notes that the Commission’s proposal to add together the SAR values of multiple transmitters in one device will most likely result in an overestimation of the total SAR of a device.

Accordingly, the proposal should be modified to include an alternate provision that adds the SAR distributions from the different transmitters. The references to OET Bulletin 65 should be modified to reflect international testing standards. In addition, the proposed definitions for occupational use training require minor modifications. Finally, the six-month transitional period for phasing in any new RF rules is far too short considering the large volume of planned antenna sites that may need to be reviewed under any new RF rules. Accordingly, CTIA requests that the Commission provide a transitional period of at least one year, and “grandfather” existing fixed antennas under current RF emission requirements.

**TABLE OF CONTENTS**

I. Routine RF Evaluations and Categorical Exclusions of Transmitters, Facilities and Operations.....3

    A. The Commission’s Proposed Rules on Fixed Antennas Should Include Height and Antenna Beam Line-of-Sight as Parameters.....3

    B. The Commission’s Proposed Categorical Exclusions for “Microtransmitters” Are Too Restrictive.....7

II. The Proposed RF Evaluation Requirements for Host-Dependent Transmitter Modules Should Be Modified.....8

III. The Commission’s Proposal to Add Together the SAR Values of Multiple Transmitters in One Device Will Overestimate the Total SAR for a Device.....10

IV. The Reference to OET Bulletin 65 Should Be Modified to Reflect International Standards.....11

V. The Proposals for Occupational Use Should Be Modified.....12

VI. The Commission Should Grandfather Existing Fixed Antennas and Provide a Transition Period of At Least One Year for Any New Rules.....13

CONCLUSION.....15

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

In the Matter of )  
 )  
Proposed Changes in the Commission’s ) ET Docket No. 03-137  
Rules Regarding Human Exposure to )  
Radiofrequency Electronic Fields )

**COMMENTS OF THE  
CELLULAR TELECOMMUNICATIONS & INTERNET ASSOCIATION**

The Cellular Telecommunications & Internet Association (“CTIA”)<sup>1</sup> hereby submits comments in response to the Commission’s June 26, 2003, Notice of Proposed Rulemaking (“NPRM”)<sup>2</sup> requesting comment on proposed modifications to the Commission’s rules regarding compliance with guidelines for human exposure to radiofrequency (“RF”) energy emitted by transmitters, facilities and devices regulated by the Commission.

CTIA supports efforts to update the Commission’s rules governing RF emissions. In updating the rules, however, CTIA urges the Commission to ensure that any modifications to the RF exposure requirements and limits are not overreaching, and are based on valid science. To this end, CTIA recommends the following changes to the proposed rules. First, CTIA urges the Commission to modify its proposal regarding the appropriate evaluation of fixed antennas. Such evaluation must take into account the

---

<sup>1</sup> CTIA is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers all Commercial Mobile Radio Service (“CMRS”) providers and manufacturers, including cellular, broadband PCS, ESMR, as well as providers and manufacturers of wireless data services and products.

<sup>2</sup> See *Proposed Changes in the Commission’s Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields, Notice of Proposed Rulemaking*, ET Docket No. 03-137, FCC 03-132 (rel. June 26, 2003) (hereinafter “NPRM” or “Notice”).

height of an antenna and antenna beam “line-of-sight” in addition to the separation distance in order to calculate whether the antenna should be subject to routine evaluation or categorical exclusion. Second, the Commission should modify its proposed rules concerning very low-power fixed transmitters, or “microtransmitters” to provide sufficient flexibility for transmitters that operate at powers slightly above the proposed categorical exclusion threshold. Third, CTIA supports the Commission’s proposal to categorically exclude from evaluation transmitter modules that have a peak output power of 100 mW or less. However, CTIA recommends modification of the three options for ensuring that transmitter modules remain compliant in various host devices. Fourth, CTIA notes that the Commission’s proposal to add together the SAR values of multiple transmitters in one device will most likely result in an overestimation of the total SAR of a device. Accordingly, the proposal should be modified to include an alternate provision that adds the SAR distributions from the different transmitters. Fifth, the references to OET Bulletin 65 should be modified to reflect international testing standards. Sixth, the proposed definitions for occupational use training require minor modifications. Seventh, the six-month transitional period for phasing in any new RF rules is far too short considering the large volume of planned antenna sites that may need to be reviewed under any new RF rules. Accordingly, CTIA requests that the Commission provide a transitional period of at least one year, and “grandfather” existing fixed antennas under current RF emission requirements.

**I. Routine RF Evaluations and Categorical Exclusions of Transmitters, Facilities and Operations**

**A. The Commission’s Proposed Rules on Fixed Antennas Should Include Height and Antenna Beam Line-of-Sight as Parameters**

Under the Commission’s current RF emission guidelines, antennas are treated differently depending on whether they are located on towers or mounted on a building.<sup>3</sup> Under these rules, building-mounted antennas require routine evaluation if the total transmitter power exceeds 1000 watts effective radiated power (“ERP”), regardless of height or separation from other accessible areas.<sup>4</sup> Tower-mounted antennas, on the other hand, are only subject to routine evaluation when their height above ground is less than 10 meters and the total transmitter power is greater than 1000 watts ERP.<sup>5</sup>

In the NPRM, however, the Commission tentatively concludes that “[w]e believe that it is important to consider both total transmitter power and separation distance in our RF exposure requirements and exclusions.”<sup>6</sup> The Commission also tentatively concludes that “the current ‘height above ground’ separation requirement may not be appropriate in all cases since it does not take into account accessible locations that may be adjacent to the transmitting antenna, such as where a tower is installed next to a building.”<sup>7</sup>

The NPRM proposes to implement this tentative conclusion by modifying the Commission’s rules to provide that: 1) fixed transmitting facilities “where the separation

---

<sup>3</sup> See NPRM at ¶ 7 (noting the different RF evaluation requirements for tower-mounted and building-mounted antennas).

<sup>4</sup> See *id.* See also 47 C.F.R. § 1.1307(b).

<sup>5</sup> See NPRM at ¶ 7. See also 47 C.F.R. § 1.1307(b).

<sup>6</sup> NPRM at ¶ 8.

<sup>7</sup> See *id.*

distance from accessible areas is less than 3 meters, regardless of operating frequency or power,” with the exception of certain microtransmitters, would be subject to routine evaluation; 2) that routine evaluation would be required for “facilities where the separation distance from publicly accessible areas is less than 10 meters” and the transmitting power is greater than 200 watts ERP at frequencies above 1.5 GHz or 100 watts ERP at frequencies below 1.5 GHz; and 3) fixed transmitting facilities would be categorically excluded “if the separation distance to publicly accessible areas is 10 meters or greater.”<sup>8</sup>

CTIA appreciates the Commission’s efforts to achieve more uniform and consistent requirements across services with respect to routine evaluation and categorical exclusions. In doing so, however, the Commission cannot ignore the fact that height and antenna beam “line-of-sight” – in addition to separation distance and power – are significant factors, and must be taken into account in determining appropriate RF exposure levels. A 1996 report commissioned by CTIA and conducted by Richard Tell Associates (“Tell Report”) demonstrates the significant importance of height and antenna beam line-of-sight in estimating approximate RF exposure levels.<sup>9</sup> In the Tell Report, an “eight element collinear dipole array was modeled with MININEC using a one wavelength element center to center spacing and an assumed operating frequency of 881.5 MHz (the center of the cellular base station frequency band).”<sup>10</sup> For power

---

<sup>8</sup> *Id.* at ¶ 11.

<sup>9</sup> *See* CTIA’s EME Design and Operational Considerations for Wireless Antenna Sites (dated Nov. 15, 1996) (conducted by Richard A. Tell, Richard Tell Associates, Inc., 8309 Garnet Canyon Lane, Las Vegas, Nevada 89129-4897) (hereinafter “Tell Report”).

<sup>10</sup> Tell Report at 14.

calculations, “an input power of 215.86 watts was used which corresponds to an effective isotropic radiated power (EIRP) of 3,280 W ERP relative to a dipole antenna” in order to simulate the power associated with a “cellular transmitting antenna operating with 20 channels, each having an ERP of 100 W.”<sup>11</sup> Calculations were then made with the antenna array mounted at heights of 2, 4, 6, 8 and 10 feet above a roof surface.<sup>12</sup> The Tell Report found that when computing power density from a location 2 feet parallel to the antenna, the spatial average power density dropped from 1.52 mW/cm<sup>2</sup> when the antenna was only 2 feet off the roof surface<sup>13</sup> to only 0.25 mW/cm<sup>2</sup> when the antenna was 6 feet off the roof.<sup>14</sup> The Tell Report also noted the “dramatic impact that elevating antenna can have on reducing roof level exposure.”<sup>15</sup>

The proposed guidelines in the NPRM, however, do not consider either height or whether a publicly accessible area is directly in the “line-of-sight” of the radiating surface of the antenna. Consequently, the proposed guidelines would treat a cellular antenna mounted directly on a rooftop with a transmitting power of 2000 W ERP in exactly the same manner as a cellular antenna mounted on a pole 8 feet above the roof with a transmitting power of 2000 W ERP, even though the antenna located 8 feet above the

---

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 18.

<sup>13</sup> See Exhibit 1, Spatial Power Density Variation 2 Feet Adjacent and Parallel to an 8 Element Collinear Dipole Antenna (Having 1 Wavelength Element Spacing) Mounted at 2 Feet Above a Perfectly Conductive Roof Operating at 881.5 MHz With an Input Power of 215.86 Watts (ERPd=2000 W) (*reprinted from Tell Study, Figure 24*).

<sup>14</sup> See Exhibit 2, Spatial Power Density Variation 2 Feet Adjacent and Parallel to an 8 Element Collinear Dipole Antenna (Having 1 Wavelength Element Spacing) Mounted at 6 Feet Above a Perfectly Conductive Roof Operating at 881.5 MHz With an Input Power of 215.86 Watts (EPRd=2000 W) (*reprinted from Tell Study, Figure 36*).

<sup>15</sup> Tell Report at 19.

roof would not come close to exceeding the Maximum Permissible Exposure (“MPE”) Limit of 0.6 mW/cm<sup>2</sup>. Furthermore, the NPRM provides neither technical data supporting its rationale for such disparity, nor any analysis explaining the failure to take technical and scientific matters into account other than the Commission’s apparent goal of “consistency.”

Therefore, CTIA urges the Commission to revisit the proposed guidelines for fixed antenna exposure, and ensure that the guidelines take into account all relevant factors, including height and whether a publicly accessible area is within the line-of-sight of an antenna’s radiating surface. First, the Commission should modify the definition of “separation distance” delineated in the NPRM.<sup>16</sup> The definition provided in the NPRM does not account for the directionality of antennas widely used in the wireless industry. The front-to-back signal loss on a typical directional antenna can range from 20dB to greater than 40dB. This level of loss will produce a negligible amount of energy emitted to the area opposite the mainbeam, measuring well below the General Population MPE. Accordingly, CTIA urges the Commission to revise the definition of “separation distance.” The new definition should include only the line-of-sight within the main beam of the antenna. The main beam should be determined by the antenna’s beamwidth.

Second, the Commission should also modify its proposed categorical exclusion for fixed antennas. Specifically, for fixed antennas that have more than 3 meters from but less than 10 meters separation distance from publicly accessible areas, the Commission’s rules should permit a power threshold of at least 1000 watts ERP (1640

---

<sup>16</sup> See NPRM at ¶ 11 (“Separation distance in this context is defined as the minimum distance from the radiating structure of the transmitting antenna in any direction to any area that is accessible to a worker or to a member of the general public.”).

watts EIRP) for services operating below 1.5GHz, and 2000 watts ERP (3280 watts EIRP) for services operating at 1.5 GHz or above.<sup>17</sup> Furthermore, in those areas where routine evaluation would be required, the Commission should simplify the process by allowing the evaluation “to consist of only what is necessary to verify that the RF exposure guidelines will not be exceeded.”<sup>18</sup>

**B. The Commission’s Proposed Categorical Exclusions for “Microtransmitters” Are Too Restrictive**

In the NPRM, the Commission also proposes to create a categorical exclusion for “certain very low-power fixed transmitters, such as indoor ‘micro’ base stations and similar fixed devices” that operate “within 3 meters of publicly accessible areas.”<sup>19</sup>

CTIA supports the creation of a categorical exclusion for very low-power fixed transmitters. The Commission’s proposal to only exclude very low-power fixed transmitters where persons are not normally “closer than 20 cm from any part of the radiating structure” and that emit less than 1.5 W ERP at frequencies below 1.5 GHz and 3 W ERP at frequencies above 1.5 GHz, however, is too restrictive. CTIA notes that the

---

<sup>17</sup> Under this proposal, areas close to the radiating surface of the antenna where there is a risk of exposure in excess of the General Public MPE would be covered by the proposed rule governing antennas with separation distances of 3 meters or less, while exempting antennas that are more than 3 meters separation distance from publicly accessible areas from unnecessary routine evaluations. For example, a 12dB gain antenna operating at 100 watts ERP translates into a maximum of 6.3 watts at the antenna. Considering a 6-foot antenna with an 80 degree beamwidth mounted at 2 feet above ground level, the General Public MPE is only exceeded at a distance up to 2 feet within the main beam of the antenna. Distances greater than 0.6096 meters (2 feet) are below the limit. Using a 6-foot omni-directional antenna (horizontally transmitting in all directions), the General Public MPE is not exceeded anywhere. Furthermore, using the same antenna configuration as before but applying 1000 watts ERP (63 watts), the General Public MPE limit is only exceeded within 2.74 meters (9 feet) of the main beam.

<sup>18</sup> NPRM at ¶ 16.

<sup>19</sup> *Id.* at ¶ 14.

proposal does not take into account transmitters operating at slightly higher power levels that are normally located slightly farther from people transiting publicly accessible areas.<sup>20</sup> Accordingly, CTIA recommends that the Commission expand its proposed categorical exclusion to include very-low power transmitters that are normally located no closer than 60 cm from persons in publicly accessible areas and emit power levels slightly higher than those delineated in the Commission’s proposed categorical exclusion.

## **II. The Proposed RF Evaluation Requirements for Host-Dependent Transmitter Modules Should Be Modified**

In the NPRM, the Commission requests comment on the appropriate treatment for transmitter modules, and proposes a categorical exclusion for transmitter modules “provided that the operating configurations and exposure conditions of the host product are identified and the maximum peak conducted output power is 100 mW or less.”<sup>21</sup>

CTIA supports this categorical exclusion because it will facilitate further streamlining of the overall equipment authorization process.

The Commission also requests comment on a proposal to “permit transmitters that have been successfully evaluated for compliance to be certified as a Part 15 transmitter module provided” compliance can be “maintained in any intended application of the transmitter.”<sup>22</sup> The proposal includes three suggested options for demonstrating compliance of a transmitter module in various host devices. The first proposal “require[s] measurements in a certain number of typical host devices.”<sup>23</sup> The second

---

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* at ¶ 21.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

proposed option conditions the grant of compliance to “configurations where the host device is substantially similar.”<sup>24</sup> The third option includes a proposal where approved modules “could be approved for operation in another host as a Class I Permissive Change if the measured SAR values for the module are the same or less when operating in the new host device.”<sup>25</sup>

CTIA generally supports these options, provided the Commission ensures that the parameters of each option are clear. The first option presents what could be a relatively easy procedure for ensuring compliance by providing measurements from certain host devices. This proposal does not, however, identify either the “number” of devices that would be measured or how exactly the term “typical” would be defined. Accordingly, CTIA strongly recommends that the Commission clarify these issues prior to the adoption of such an option.

The second option conditions the grant of compliance to devices that are “physically similar,” and recognizes the physical configuration or form of a device as one of the most important factors associated with RF exposure. Accordingly, CTIA supports adoption of this option as one of the simplest ways to ensure that new uses of a module will comport with exposure guidelines.

CTIA also supports the “permissive change” option, provided the Commission clarifies the “same or less” SAR language proposed in the NPRM. Under that proposal, an applicant would not be required to file an application when “measured SAR values for the module are the same or less when operating in the new host device.” This proposal is

---

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

ambiguous, however, with respect to the phenomenon of “total system measurement uncertainty,”<sup>26</sup> which may cause products with identical SAR values to produce measurements that vary within a range of uncertainty. As a result of this ambiguity, devices that fall within the measurement uncertainty range may require Class II permissive changes, even though the SAR level is still in the same range as the device that was originally approved. Accordingly, CTIA recommends that the Commission clarify the third option by stating that it will be available for devices where the SAR level is the same or less in a new device, taking into account measurement uncertainty.

### **III. The Commission’s Proposal to Add Together the SAR Values of Multiple Transmitters in One Device Will Overestimate the Total SAR for a Device**

The NPRM also requests comments on methods to calculate the SAR of a single device that uses multiple transmitters. While the Commission recognizes there are a number of methods that could be used to calculate the SAR, the Commission states that adding “together the SAR values individually obtained for each transmitter” would be a “convenient” method to calculate the SAR.<sup>27</sup>

While adding the maximum SAR values of all transmitter modules may be an easy and convenient method for determining compliance, it should not be the only option available. There is significant concern that the Commission’s proposed method will overestimate the actual SAR in a number of cases. Accordingly, CTIA urges the Commission to also include a standard that adds the SAR distributions from the different

---

<sup>26</sup> See *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions, Supplement C* (Edition 01-01) to *OET Bulletin 65* (Edition 97-01), at 51 (hereinafter “Supplement C”).

<sup>27</sup> NPRM at ¶ 32.

transmitters, rather than just add the maximum SAR values. Such a method of computation is detailed, along with the appropriate test procedures in draft IEC standard TC106, PT 62209.

#### **IV. The Reference to OET Bulletin 65 Should Be Modified to Reflect International Standards**

The Commission proposes to “avoid confusion” over “acceptable procedures for evaluating SAR for portable devices” by modifying Section 2.1093(d) to contain a specific reference to Supplement C of OET’s Bulletin 65.<sup>28</sup> CTIA appreciates the Commission’s desire to avoid any confusion over acceptable procedures. It is important to note, however, that Supplement C is intended mainly to provide guidance to parties “on complying with the latest requirements using up-to-date procedures.”<sup>29</sup> In fact, Supplement C clearly states that it “is not intended, however, to establish mandatory procedures, and other methods and procedures may be acceptable if based on sound engineering practice.”<sup>30</sup>

Due to the fact that Supplement C only provides guidance and reference to acceptable testing procedures, it makes far more sense to incorporate references to the actual organizations setting internationally accepted testing techniques and procedures—such as the Institute of Electrical and Electronics Engineers, Inc. (“IEEE”) and the International Electrotechnical Commission (“IEC”) – rather than refer to a document that describes some, but not all, internationally-accepted testing techniques. Accordingly,

---

<sup>28</sup> *Id.* at ¶ 34.

<sup>29</sup> Supplement C at 3.

<sup>30</sup> *Id.*

CTIA recommends that Section 2.1093(d) of the Commission’s rules be revised as follows:

Compliance with SAR limits can be demonstrated by either laboratory measurement or by computational modeling. Acceptable methodologies for SAR relevant evaluation of wireless handsets and similar devices should include the standards published by the IEEE or IEC.

**V. The Proposals for Occupational Use Should Be Modified**

The Commission’s RF guidelines currently incorporate a set of exposure limits for the general public and a less restrictive limit for workers.<sup>31</sup> The difference in exposure levels is premised on the fact that occupational workers are aware of their exposure and can take efforts to limit their RF exposure.<sup>32</sup> In the NPRM, the Commission proposes to add a note to Section 1.1310 in order to clarify the responsibilities of employers to ensure that employees working in close proximity to areas of RF emissions are “fully aware” of their exposure and potential methods they can take to control exposures.<sup>33</sup>

CTIA supports the addition of the note to Section 1.1310 defining “fully aware,” provided the note clarifies the type of training that must be provided “regarding

---

<sup>31</sup> See NPRM at ¶ 36; *see also* 47 C.F.R. §§ 1.1310; 2.1091; 2.1093.

<sup>32</sup> See NPRM at ¶ 36 (“The difference in the acceptable exposure levels is based on the premise that workers are aware of their exposure and have the knowledge and means to effectively control their exposure and also on the greater potential for continuous exposure on the part of the public.”).

<sup>33</sup> See *id.* at ¶ 38.

appropriate work practices relating to controlling or mitigating his or her exposure.”<sup>34</sup> As currently drafted, the proposed note states that workers must receive both written and oral information concerning RF exposure, but it does not clarify the nature of instruction workers should receive for work practices to control RF exposure. CTIA notes that training on these two topics is often an integrated presentation. Therefore, an oral presentation and demonstration of safe working techniques may actually be more appropriate and helpful to workers than a split information session of written materials on one issue and live training on another. Accordingly, CTIA recommends that the Commission change the requirement that individuals receive “written and verbal information” concerning RF exposure and appropriate work practices to specify that workers should receive either “written or oral information” relating to RF exposure and safe work practices.

**VI. The Commission Should Grandfather Existing Fixed Antennas and Provide a Transition Period of At Least One Year for Any New Rules**

In the NPRM, the Commission proposes a “transition period of six months after any new rules are adopted in this proceeding before they become effective.”<sup>35</sup> First and foremost, CTIA urges the Commission to clarify that any new RF emission requirements governing fixed antennas will not be applied retroactively to existing RF facilities. Retroactive application of any new RF emission rules is patently unfair to licensees who constructed and installed facilities in accordance with the RF emission requirements in effect at the time of such construction. Accordingly, CTIA urges the Commission to “grandfather” existing fixed antennas and apply any new RF rules prospectively.

---

<sup>34</sup> *See id.*

<sup>35</sup> *See id.* at ¶ 49.

In addition to the prospective application of any new RF rules, CTIA also urges the Commission to allow, at a minimum, a one-year transition period prior to the effective date of any rules governing fixed antenna RF emissions. As noted previously, many of the changes proposed in the NPRM are significant and will require substantial changes in business plans and practices for many companies that have a significant number planned sites subject to the new rules. A one-year transition period will provide impacted stakeholders with an opportunity to make the changes, and implement them in a cost-effective manner.

## CONCLUSION

For the forgoing reasons, CTIA urges the Commission to modify its proposed rules regarding RF energy emitted by transmitters, facilities and devices regulated by the Commission.

Respectfully submitted,

/s/ Michael Altschul

**CELLULAR TELECOMMUNICATIONS  
& INTERNET ASSOCIATION**  
1250 Connecticut Avenue, N.W.  
Suite 800  
Washington, D.C. 20036  
(202) 785-0081

Michael F. Altschul  
Senior Vice President & General Counsel

Andrea Williams  
Assistant General Counsel

Christopher R. Day  
Staff Counsel

Its Attorneys

Dated: December 8, 2003