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August 20, 2001

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

Ms. Magalie Roman Salas  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
12<sup>th</sup> Street Lobby, TW-A325  
Washington, DC 20554

Re: Ex Parte Presentation  
ET Docket No. 98-153

Dear Ms. Salas:

On August 17, 2001, the undersigned along with Brian Fontes, Mel Frerking, David Shively and Carl Povelites of Cingular Wireless LLC met with Commissioner Kathleen Abernathy and Bryan Tramont to discuss regulatory issues and interference potential relating to ultra wideband (UWB) technology.

We emphasized that while UWB technology holds promise, the FCC must be deliberate in setting forth rules for this technology. The positions taken and issues discussed have been previously put forward in writing for the record in the above-mentioned proceeding. The enclosed materials served as basis for these discussions.

Pursuant to Sections 1.1206 of the Commission's Rules, an original and one copy of this letter and the attachment are being filed with your office. If you have any questions concerning this submission, please contact the undersigned.

Sincerely,



Jim Bugel  
Executive Director

Attachment

Cc: Commissioner Kathleen Abernathy  
Bryan Tramont

No. of Copies rec'd 071  
List A B C D E

**ULTRA-WIDEBAND (UWB)**  
ET Docket 98-153

**The Record Shows the Need for Caution regarding UWB**

- Cingular agrees that UWB technology holds promise; however, the Commission must not put at risk existing radio services which all Americans depend on for communications related to safety, personal convenience, and business, merely because of the potential benefits of a new and untried technology.
- The majority of studies to date have shown that there is an interference concern with UWB and that the effects of multiple UWB devices are additive. NTIA reported that “operations of UWB devices below 3.1 GHz will be quite challenging” (NTIA Special Publication 01-43).
- The promises of greater efficiency have not yet been demonstrated. Is there a reason to promote UWB technologies if there is not a clear gain over Bluetooth, IEEE 802.11a, etc?

**Cingular’s Concerns**

- Cingular is concerned about the impact of UWB devices:
  - UWB devices would potentially interfere with base station and handset receivers used in cellular/PCS systems having a negative impact on receiver performance. Effects could include cell shrinkage, coverage holes, degraded voice quality, and decreased throughput of data.
  - UWB will impact GPS for both location and network synchronization. Assisted-GPS systems would be even more susceptible to interference. Additional analysis is needed.
  - UWB could interfere with other RF-based systems including public safety communications systems, entertainment systems, mobile satellite services, military systems, etc.
  - UWB could also interfere with non-RF based systems including hearing aids, pacemakers, implantable defibrillators, and hospital equipment.
- Various UWB devices have signal characteristics that are very different from one another, not all of which have been studied or identified. The characteristics of all types of UWB devices need to be considered.
- The additive nature of multiple types of transient waveforms needs to be examined in much greater detail, including additional measurements as well as detailed numerical simulations. Fundamentally, the signals emitted from multiple transmitters will have an additive effect.

## **Recommendations**

- Limit UWB devices to spectrum above 6 GHz for most systems and below 1 GHz for ground penetrating radars.
- The operation of UWB devices should be licensed and coordinated so that any interference issues can be examined as additional UWB systems are deployed. Conventional licensees and other users of UWB technology need to be able to determine who is using UWB devices, and their location, to avoid causing interference and to be able to track any interference that occurs.
- Identify specific categories of UWB devices and establish proposed rules for licensing these categories based on individual waveforms, power levels, and deployment scenarios. These proposed rules should be sent out for public comment.
- Identify areas where further testing is needed, including the additive effect of multiple UWB devices.