

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

**In the Matter of**

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	)	
<b>Amendment of the Commission's</b>	)	<b>RM-10330</b>
<b>Rules to Shield Electronics</b>	)	
<b>Equipment Against Acts of War</b>	)	
<b>Or Terrorism Involving Hostile</b>	)	
<b>Use of Electromagnetic Pulse</b>	)	
<b>(EMP)</b>	)	

**To: The Commission**

**REPLY COMMENTS of Donald J. Schellhardt and Nickolaus E. Leggett**

The following are reply comments from Nickolaus E. Leggett and Donald J. Schellhardt to the comments filed by REC Networks. Leggett and Schellhardt are the petitioners in RM-10330 that requests regulations for the protection of civilian communications equipment from electromagnetic pulse (EMP).

We are aware of the excellent work that REC Networks has done in the low power FM (LPFM) broadcasting field. However, there are some aspects to their comments on the subject of EMP that need to be addressed by us. In our reply comments below, we respond in a point-by-point format with their specific comment referenced followed by our response.

**The Non-essential Equipment Argument**

REC comments that: "REC feels however, that the shielding and protections for non-essential equipment requested in this petition should be driven by industry initiative and not through additional federal regulation." Our response is that almost all communications equipment is essential equipment in terms of EMP protection. This is because EMP is a

comprehensive phenomenon that disables communications equipment over a wide area. This area is large enough in many situations to cover entire communications networks or broadcast station contours. Thus shielding just a few “critical” devices such as central office telephone switches or full power broadcast stations will not provide adequate protection because EMP will disable the other parts of the system as well. Protecting a broadcast station does not help in a situation where the EMP has disabled the radios in its coverage area. Protecting a telephone switch does not help in a situation where the telephones in homes don’t work. Protecting a police dispatcher’s radio does not help when the police car radios are disabled. Protecting an internet switch does not help when all of the connected modems are inoperative. So the Commission cannot accept the argument that much of the communications world is non-essential equipment.

### **The Private Sector Argument**

REC states that we should depend on the free market to protect against EMP attacks: “We feel that it is up to the private sector to determine the need to protect their networks and data.” We feel that this is inadequate for the war on terrorism. Our President has reminded us that this is a serious war. In wartime we need to step beyond the routine operations of the marketplace and take positive steps to protect the Nation’s communications assets.

The private sector has not taken serious steps to protect the civilian communications infrastructure since our first filing on EMP protection in the mid-1980s (RM-5528). There is no evidence that this inaction would change in the future. The basic problem is that private industry does not see any profit in EMP shielding. As a result of this, industry will not move ahead with shielding efforts.

There is a strong national interest in the defense of the civilian communications infrastructure from EMP attacks. There are ample legal and Constitutional precedents for government regulation to protect against significant problems such as EMP. We have crafted our proposed regulations to avoid heavy costs on private industry and consumers. The Commission can modify or replace these proposed regulations to make an even lighter load on industry. However, leaving the choice up to industry does not provide meaningful protection for our Nation's civilian communications infrastructure.

### **The Military Equipment Argument**

REC states "From our understanding, the Commission does not have any jurisdiction over equipment used exclusively in the military (as well as any U.S. Government radio service)." This is quite true. We are sure that the Commission has enough to do without worrying about EMP shielding in United States Air Force battle stations. However, we are addressing the shielding of civilian communications facilities that are carrying significant amounts of military traffic. In the proceedings on RM-5528, the Department of Defense stated that a large percentage of their communications was carried by civilian telephone networks. We are attempting to protect this communications traffic by establishing specially effective EMP shielding for civilian communications devices that are carrying this traffic. Other communications assets such as civilian communications satellites can be utilized as needed for emergency military communications. These special communications assets should be shielded with high efficiency shielding.

### **Amateur Radio: Luxury or Essential ?**

Both of us are strongly aware of the major emergency radio communications services provided by amateur radio operators. Mr. Leggett is a licensed amateur radio operator

(N3NL amateur extra class). How much emergency communication is amateur radio going to provide if the radio sets are disabled by intense EMP pulses? Our opinion is that amateur radio earns its frequencies by its significant emergency communications and technical self-training activities. EMP shielding fits naturally into this public service orientation. Clearly the specific regulations that would apply to amateur radio are subject to detailed discussion and debate. However, the National interest does require serious progress on some type of EMP protection for amateur radio stations. In many ways amateur radio is highly critical because it offers decentralized and self-powered communications stations with a global reach. This is just the type of communications needed after an EMP attack.

### **We Are At War Here**

As President Bush has said several times, “We are at war here.” It is time for the Commission to step up to the plate and provide meaningful leadership in obtaining EMP shielding for civilian communications equipment and networks.

Respectfully submitted,

**Nickolaus E. Leggett**  
**N3NL Amateur Radio Operator**  
**1432 Northgate Square, Apt. 2A**  
**Reston, VA 20190-3748**  
**(703) 709-0752**  
[nleggett@earthlink.net](mailto:nleggett@earthlink.net)

**Donald J. Schellhardt, Esquire**  
**Member, Virginia Bar & Connecticut Bar**  
**B.A. Wesleyan; J.D. George Washington**  
**45 Bracewood Road**  
**Waterbury, Connecticut 06706**  
**(203) 756-7310**  
[Connyanks@aol.com](mailto:Connyanks@aol.com)

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A copy of these reply comments has been sent by United States Postal Service first class mail to REC Networks:

Mr. Richard Eyre, K7REC  
REC Networks  
P.O. Box 3002  
Scottsdale, AZ 85271