

# FISH & RICHARDSON P.C.

601 Thirteenth Street N.W.  
Washington, DC 20005

Telephone  
202 783-5070

Facsimile  
202 783-2331

Web Site  
www.fr.com

Frederick P. Fish  
1855-1930

W.K. Richardson  
1859-1951

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February 4, 1999

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

## VIA HAND DELIVERY

Ms. Magalie Roman Salas  
Secretary  
Federal Communications Commission  
The Portals TW-A325  
445 12th Street, S.W.  
Washington, DC 20554

Re: ET Docket No. 98-153  
Reply Comments of Zircon Corporation  
Our File 07147/005001

Dear Ms. Salas:

Enclosed please find an original and four copies of reply comments for Zircon Corporation in the above-captioned proceeding.

Please contact the undersigned counsel if you have any questions regarding this matter.

Very truly yours,

  
Terry G. Mann

Enclosures

cc: Charles E. Heger, Zircon Corporation  
John A. Reed, FCC  
Julius Knapp, FCC

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**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

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OFFICE OF THE SECRETARY

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In the Matter of )  
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Revision of Part 15 of the Commission's ) Docket No. 98-153  
Rules Regarding Ultra-Wideband )  
Transmission Systems )  
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**REPLY COMMENTS OF ZIRCON CORPORATION**

Zircon Corporation, by its undersigned counsel, hereby submits these Reply Comments in the above-captioned Notice of Inquiry (NOI).

After reviewing the 50+ comments filed by a remarkably broad cross-section of ultra wideband (UWB) manufacturers, users, researchers and spectrum licensees, a consensus has emerged on at least three important issues:

- ▶ UWB technologies have the potential to offer important and unique public benefits not available from other types of RF devices;
- ▶ No single regulatory scheme can accommodate the wide variety of UWB applications currently in use, or under development; and
- ▶ The valid interference concerns of spectrum licensees are the same for UWB emitters as they are for the many other types of RF devices with which licensees deal every day.

There seems to be little question then, but that a sound legal and public policy basis exists for the Commission to proceed with a rulemaking to establish technical rules for UWB development. In such a rulemaking the Commission's task will be threefold:

- (1) establishing UWB technical standards in the form of field strength limits, spectral power density or a similar measure of interference potential;
- (2) defining test procedures for a wide range of UWB applications; and
- (3) determining the type of compliance program (e.g., certification, Declaration of Conformity, or licensing) that will best serve the public interest for each type of UWB application.

In essence, the Commission's task will be to classify a broad range of UWB devices based on a host of regulatory factors.

Zircon supports and encourages the Commission to undertake this classification effort as expeditiously as possible. At the same time, however, Zircon urges that UWB classification be pursued with sufficient flexibility so as not to delay the introduction of "benign" technologies while the Commission grapples with how to accommodate UWB applications that pose more difficult challenges to spectrum users.

From the many comments submitted, it is clear that UWB encompasses a diversity of applications with varying degrees of interference potential. Parties have suggested, for example, that UWB devices be classified based on such factors as the digital device Class A and B limits<sup>1</sup>; consumer versus professional applications<sup>2</sup>; surface penetration versus open

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<sup>1</sup> Many parties suggest that UWB devices be regulated essentially the same as digital devices under Part 15 with licensing required only for those devices which cannot meet these limits. See, e.g., Comments of Lawrence Livermore Laboratories, at 6; Comments of Time Domain Corporation, at 31; and Comments of XtremeSpectrum, Inc., at 6.

air transmissions<sup>3</sup>; mass market versus low volume devices<sup>4</sup>; and residential versus industrial usage<sup>5</sup>. While each of these criteria deserve careful consideration, the Commission is urged not to attempt to resolve all of these issues in one "ultra-wide swoop."

One way of accomplishing this goal is to liberally grant waiver requests (like Zircon's, now pending for over 9 months) during the pendency of the rulemaking proceeding. Another way is to devise a rulemaking format that can accommodate UWB issues in "modular" fashion, so that, as standards for less harmful UWB applications are agreed upon they can be put into affect immediately. Few would argue, for instance, that the rules for a randomly-pulsed rebar locator operating 10 to 20 dB below the Class B limits should be forced to await the development of complex test procedures and/or licensing requirements that might be needed for high powered UWB range finders, wideband data links or ground penetrating radar applications for which interference issues are more significant.<sup>6</sup> To inter-link all UWB issues in a monolithic rulemaking will serve only to penalize many types of harmless low power UWB emitters with no corresponding benefit to the public.

Based on the foregoing, therefore, the Commission is encouraged to develop a UWB rulemaking paradigm that is both flexible and efficient -- one in which UWB rules can be

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<sup>2</sup> See Comments of TEM Innovations, at 7.

<sup>3</sup> See, Comments of P. Patrick Leahy, U.S. Geological Survey, and Comments of Gary Olhoeft, Phd., Colorado School of Mines, at 3.

<sup>4</sup> See, Comments of Arthur D. Little Inc., at 6, and Comments of Geophysical Survey Systems, Inc.

<sup>5</sup> See, Comments of the American Radio Relay League, at 5; Comments of Lawrence Livermore Laboratories, at 6; and Comments of Rosemount Measurement, at 2.

<sup>6</sup> Zircon notes that the American Radio Relay League criticizes the interference properties of Zircon's UWB device, based on the same grounds that it asserted previously (and which Zircon thoroughly refuted), in the Zircon waiver proceeding. See Comments of the American Radio Relay League, at 2 nn.2-3. The Commission's own test data shows the Zircon device to be well below the Class B limits. See Comments of Zircon, at 2.

developed on a time table which reflects the "spectrum complexity" of each particular technology. Zircon submits that a logical first step is to focus on UWB devices that operate below the Class B limits.

Respectfully submitted

A handwritten signature in black ink, appearing to read 'TGM', is written over a horizontal line.

Terry G. Mann, Esq.  
Fish & Richardson P.C.  
601 13th Street, N.W.  
Washington, DC 20005  
Counsel for Zircon Corporation

February 4, 1999

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**CERTIFICATE OF SERVICE**

The undersigned hereby swears that on February 4, 1999, a copy of the foregoing REPLY  
COMMENTS OF ZIRCON CORPORATION was deposited in the U.S. first class mail,  
postage prepaid, addressed to the following:

Gerald J. Markey  
Program Director for Spectrum Policy  
and Management  
U.S. Department of Transportation  
Federal Aviation Administration  
800 Independence Ave., S.W.  
Washington, DC 20591

Terence W. Barrett, Ph.D.  
UltraPulse Communications, Inc.  
1453 Beulah Road  
Vienna, VA 22182

Gerald F. Ross, Ph.D.  
Anro Engineering, Inc.  
1800 Second Street  
Suite 740  
Sarasota, FL 34236-5992

Barry L. Nolde  
Manager, Defense Automation Systems  
Quality Research  
4901-D Corporate Drive  
Huntsville, AL 35805-6201

Paul Withington  
Time Domain Corporation  
6700 Odyssey Drive  
Suite 100  
Huntsville, AL 35806

Gary R. Olhoeft, Ph.D.  
Professor of Geophysics  
Colorado School of Mines  
1500 Illinois Street  
Golden, CO 80401-1887

Dr. Hugh Burchett  
Arthur D. Little inc.  
Acorn Park  
Cambridge, MA 02140-2390

Robert A. Scholtz  
Electrical Engineering - Systems Department  
School of Engineering  
University of Southern California  
Los Angeles, CA 90089-2560

Thomas E. McEwan  
TEM Innovations  
P.O. Box 10601  
Pleasanton, CA 94588-0601

John B. Fenn  
President  
NeoVac  
980-B Airway Court  
Santa Rosa, CA 95403

Olle Edvardsson  
MSEE Senior Specialist  
SAAB Marine Electronics AB  
Box 13045  
SE-402 51 GÖTEBORG  
SWEDEN

Dwain K. Butler, Ph.D.,  
Research Geophysicist, U.S. Army  
Corps of Engineers  
Professor of Geophysics,  
Texas A&M University  
3909 Halls Ferry Road  
Vicksburg, MS 39180-6199

Richard C. Benson  
President  
Technos Inc.  
3333 Northwest 21st Street  
Miami, FL 33142

Rexford M. Morey, L-395  
Micropower Impulse Radar Program  
U.S. Department of Energy  
Lawrence Livermore National Laboratory  
P.O. Box 808  
Livermore, CA 94551-9989

Daniel K. Schramm  
Program Manager, Automotive Sensors  
M/A-COM Corp.  
PO Box 3295  
1011 Pawtucket Boulevard  
Lowell, MA 01853-3295

William S. Moorehead  
President  
Pulson Medical, Inc.  
#540  
7910 Woodmont Avenue  
Bethesda, MD 20814

Christopher D. Imlay, Esq.  
BOOTH FRERET IMLAY & TEPPER, P.C.  
5101 Wisconsin Avenue, NW  
Suite 307  
Washington, DC 20016-4120

Paul Withington  
The Ultra Wideband Working Group  
6700 Odyssey Drive  
Suite 100  
Huntsville, AL 35806

Russ Taylor, Esq.  
GARDNER, CARTON & DOUGLAS  
1301 K Street, NW  
Suite 900, East Tower  
Washington, DC, 20005

P. Patrick Leahy  
Chief Geologist, U.S. Geological Survey  
12201 Sunrise Valley Drive  
MS 911  
Reston, VA 20192

Henry M. Rivera, Esq.  
Larry S. Solomon, Esq.  
Katherine L. Calderazzi, Esq.  
SHOOK, HARDY & BACON, LLP  
1850 K Street, NW  
Suite 900  
Washington, DC 20006

Gary Klein  
Vice President, Government and Legal Affairs  
CONSUMER ELECTRONICS MANUFACTURERS ASSOC.  
2500 Wilson Blvd.  
Arlington, VA 22201

Henry L. Baumann  
Executive Vice President for  
Legal and Regulatory Affairs  
NATIONAL ASSOCIATION OF BROADCASTERS  
1771 N Street NW  
Washington, DC 20036

Dr. Robert J. Fontana  
President  
Multispectral Solutions, Inc.  
202 Perry Parkway  
Gaithersburg, MD 20877-2172

Raul R. Rodriguez, Esq.  
Stephen D. Baruch, Esq.  
Leventhal, Senter & Lerman P.L.L.C.  
2000 K Street, NW  
Suite 600  
Washington, DC 20006

Jay E. Padgett  
President  
Wireless Information Networks Forum  
1200 19th Street, NW  
Washington, DC 20036-2422

Alan E. Schutz, Vice President, Engineering  
Dennis J. Johnson, President  
Geophysical Survey Systems, Inc.  
13 Klein Drive  
PO Box 97  
North Salem, NH 03073-0097

John McCorkle  
Martin Rofheart  
XtremeSpectrum, Inc.  
1077 30th Street NW, Suite 311  
Washington, DC 20007

David R. Hughes  
Principal Investigator  
National Science Foundation Wireless Field Test Project  
2502 West Colorado Avenue  
Suite 203  
Colorado Springs, CO 80904

Doria Kutrubes  
President  
Radar Solutions International  
72 Orange Street  
Suite 2  
Waltham, MA

Kathryn Vestal  
P.O. Box #413  
Billings, MT 59103

Enrico M. Staderini  
Viale J.F. Kennedy  
141/b 00043  
Ciampino ROME, Italy  
Fax: 39-679321107

James M. Tennant  
President  
Low Tech Designs, Inc.  
1204 Saville Street  
Georgetown, SC 29440

Thomas J. Fenner  
President  
MALA GeoScience USA, Inc.  
400 Harvey Road  
Manchester, NH 03103

Jon Benway  
Engineering Manager  
Magnetrol International  
5300 Belmont Road  
Downers Grove, IL 60515-4499

Merritt Pulkrabek, Project/Test Engineer  
John Kielb, Senior Principal Engineer  
Rosemount Inc.  
12001 Technology Drive  
MS CB07  
Eden Prairie, MN 55344

Dr. Barry Dunbridge  
Chief Scientist, Electronics and Technology Division  
TRW Electronics & Technology Division  
Space & Electronics Group  
One Space Park  
Redondo Beach, CA 90278

Don H. Heimmer, P.G.  
President  
Geo-Recovery Systems, Inc.  
400 Corporate Circle, Suite B  
Golden, CO 80401

Steven D. Warwick  
Broadband Telecom Systems  
600 Bellevue Way SE, Suite #102  
Bellevue, WA 98004

A handwritten signature in cursive script, appearing to read "Susan Anne Gallo", is written over a horizontal line.

Susan Anne Gallo