

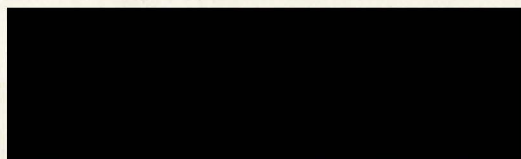


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Official Publication of the Chicago Section • Institute of Electrical & Electronics Engineers • OCTOBER 1994



TIME SENSITIVE MATERIAL

CALENDAR OF EVENTS

Call IEEE Chicago Section Office at 1-800-898-IEEE to make your reservations.

October 3 Monday	Antenna/Propagation & Microwave Theory and Tech Societies	Microwave Power Module Pocket Sized Transmitter for New or Used Systems	Chinese Garden 754 E. Schaumburg Rd Schaumburg, IL	Social: 6:00 PM Dinner: 6:30 PM Meeting: 7:30 PM
October 11 Tuesday	Chicago Section	Executive Committee	DeVry - DuPage 1221 N. Swift Rd Addison	Meeting: 7:15 PM
October 12 Wednesday	Power Engineering Society	Transmission Open Access Issues	Chicago Bar Assoc. 321 S. Plymouth Ct Chicago, IL	Social: 11:30 AM Lunch: 12:00 PM Meeting: 12:30 PM
October 12 Wednesday	Chicago Consultants Corner	What Consultants and Students Need to Know About Intellectual Property Law	DeVry - DuPage Room 254 1221 N. Swift Rd Addison	Meeting: 7:00 PM
October 20 Thursday	IAS/IES and PEL Chapters	Overview of O'Hare Airport Airfield Lighting and Power Systems	Como Inn 546 N. Milwaukee Ave Chicago	Social: 5:30 PM Dinner: 6:15 PM Meeting: 7:15 PM
October 26 Wednesday	Fox Valley Subsection	Broadband Personal Communications Service	Jerry Sharko's 2225 Ogden Ave Lisle, IL	Social: 6:00 PM Dinner: 7:00 PM Meeting: 8:00 PM
November 8 Tuesday	Chicago Section	Executive Committee	DeVry - DuPage 1221 N. Swift Rd Addison	Meeting: 7:15 PM

Dear Fellow Member,

October 1994

I would like to thank Bechtel Corporation for their generous contribution of a printer for the Section. We needed a wide carriage printer to generate mailing labels for our Scanfax newsletter. Fred Wettling came to our rescue. Thanks Fred!

Are you familiar with the Color Books series? The Color Books series is designed to be an up-to-date and comprehensive library of information on industrial and commercial power systems design. Each book in the series covers a different subject. There presently are ten books in print, with an additional three books in progress.

These books are a great reference source for experienced engineers and are particularly good tutorials for young engineers to familiarize themselves quickly with the technology associated with industrial and commercial power systems. These books can be purchased one at a time or the entire set can be purchased at a discount rate. Of course, IEEE members receive a discount.

For more information about any of the projects in the IEEE Color Book series or about joining a working group, contact John Parisi at (908) 562-3814 (j.parisi@ieee.org).

Ed Capouch — Chicago Section IEEE Chair

CHICAGO CHAPTER OF THE
ANTENNAS AND PROPAGATION SOCIETY
and
MICROWAVE THEORY AND
TECHNIQUES SOCIETY

FEATURES A JOINT DINNER PROGRAM

MICROWAVE POWER MODULE POCKET SIZED
TRANSMITTER FOR NEW OR USED SYSTEMS

Presented by

Gary Groshart of Northrop Grumman ESD-RMS

Monday, October 3, 1994

ABOUT OUR TOPIC

A complete 100 Watt power transmitter covering the 6 to 18 GHz frequency band is contained in just 7.5 cubic inches. The Microwave Power Module (MPM) combines the best RF performance of a Monolithic Microwave Integrated Circuit (MMIC) solid state amplifier with the high efficiency power output of a miniature Traveling Wave Tube (TWT) integrated with a power supply, modulator, and control and protection logic circuitry. This highly affordable package provides the technology to upgrade existing systems and its compact size is the enabling technology for the next generation of EMC, RADAR, and communications transmitters with potential commercial and space applications.

Gary Groshart will show some examples of applications, the design concepts of the TWT, Solid State Amplifier (SSA), power conditioner, and current performance of the MPM. RF performance of the complete MPM transmitter shows CW power output at 100 Watts with gain better than 60 dB and 10 dB Noise Figure.

ABOUT OUR SPEAKER

Mr. Gary Groshart is the manager of Northrop's Advanced Tube Development and Research. He has more than 30 years experience in the electron tube and high power microwave device field. He worked for Drs. Oscar Doehler and Günter Döhler during their tenure at Northrop. Mr. Groshart has particular expertise in the design, development and manufacture of Crossed Field Amplifiers and Traveling Wave Tubes. His most recent accomplishment is the development of the world's smallest power TWT that is used in the Microwave Power Module.

PLACE	TIME
Chinese Garden Restaurant	Social 6:00 PM
754 E. Schaumburg Rd.	Dinner 6:30 PM
Schaumburg, IL	Meeting 7:30 PM

DIRECTIONS

The Chinese Garden Restaurant is on the northwest corner at the intersection of Schaumburg Road and Plum Grove Road in the Market Square Center.

From the South

Exit Route 53 at Biesterfield.
Left on Biesterfield to Meham.
Right on Meham to Schaumburg Rd.
Left on Schaumburg Rd. to
Plum Grove Rd.

From the North

Exit Route 53 at Higgins.
Right on Higgins to Meham.
Left on Meham to Schaumburg Rd.
Right on Schaumburg Rd. to
Plum Grove Rd.

NOTES

Call the IEEE Message Center (800) 898-4333 to make your reservation. Dinner is optional. You can select your dinner from the full service menu of the restaurant. Everyone will be billed individually on their selection. Please make a reservation even if you attend the meeting only. Non-IEEE members are always welcome.

THE SECOND
WIRELESS/PCS SYMPOSIUM

Chicago Chapter of the IEEE
Communications Society
at the University of Illinois - Chicago
Wednesday, October 12, 1994

In Cooperation With

Chinese Academic and Professional Association in Mid-America

Symposium Agenda:

Keynote Speaker: Ira Brodsky, President, DataComm Research

PCS Service Issues

"Applications" — Kris Peters, Director, Ameritech

"Privacy/Authentication" — Dan Brown, Principal Staff
Engr. (PSE), Motorola

PCS Standards and Regulatory

"Industry Standards" — Ken Felix, MTS, Motorola

"Regulatory Issues" — Ruth Kretschmer, Commissioner,
Illinois Commerce Commission

Technologies for PCS

"AIN" — Debbie McCann,

Network Service Engineer, Ameritech

"Air Interface" — John Haug, PSE, Motorola

"Systems" — Bo Piekarski, Vice President-PCS, Ericsson

Wireless Data Applications and Technologies

"Applications" — Dave Robbins, Director, ARDIS

"CDPD" — Jim Peterson, Technical Manager, AT&T Corp

Personal Satellite Systems

"Iridium" — Chris Kirby, PSE, Motorola

Includes Tour of UIC Research Labs

Registration Fees are \$99 (\$124, after 09/30) for IEEE/CAPAMA members and students, and \$139 (\$164, after 09/30) for non-members. No refunds or cancellations after September 30.

This charge covers one-day seminar, proceedings, and lunch.

Registration: 8:00 A.M.

Program: 8:30 A.M. - 5:00 P.M.

Send completed form below with payment to:

Wireless/PCS Symposium Registration (c/o Mr. Janusz Hyziak)

Motorola Wireless Data Group

50 E. Commerce Dr., Suite M1

Schaumburg, IL 60173

Telephone: (708)576-8426

FAX: (708)576-0892

Name	Bus Phone.....
Company/Organization	Rm/ Mail Stop.....
Street Address	City/State/ZIP.....
IEEE Membership Number.....	Registration Fee
Make checks payable to: Chicago Chapter of the Communications Society	
To register by credit card, please complete the following information.	
If your payment is jointly covered by another registrant, include primary registrant's name with the amount of the registration fee. The primary registrant needs to attach a list of the names of all the registrants covered by the payment.	
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POWER
ENGINEERING
SOCIETY

FEATURES A LUNCHEON PROGRAM

TRANSMISSION OPEN ACCESS ISSUES

Presented by

Steven T. Naumann of

Commonwealth Edison Company

Wednesday, October 12, 1994

ABOUT OUR TOPIC

Mr. Naumann will talk about the latest developments in the area of transmission access and wheeling, especially recent decisions of the Federal Energy Regulatory Commission (FERC). His talk will explain the decisions and the impact of the changes to the Energy Policy Act of 1992 on electric utilities.

ABOUT OUR SPEAKER

Mr. Naumann presently is the Section Engineer in ComEd's System Planning Department, in charge of interconnection planning studies, including transmission access and wheeling studies. He has worked for Edison for nineteen years in various engineering and management positions, including thirteen years in System Planning and two years at the Mid-America Interconnected Network (MAIN) Coordination Center. He is a member of the Transmission Task Force Steering Committee of MAIN and Chairman of the MAIN Transmission Assessment Study Group. Mr. Naumann was awarded a B.S. and a Master of Engineering from Rensselaer Polytechnic Institute and a J.D. from Chicago-Kent College of Law. He is a registered Professional Engineer and a licensed attorney in Illinois. Mr. Naumann is a Senior Member of the IEEE and is the author of numerous papers on various aspects of power system planning.

PLACE

Chicago Bar Association

321 S. Plymouth Court

Chicago, IL

(Near Jackson and Dearborn)

TIME

Social 11:30 AM

Lunch 12:00 PM

Presentation 12:30 PM

NOTES

Reservation must be made by noon, Monday, October 10, 1994 by calling (800) 898-4333. Please leave your name(s) and company name. Purchase lunch tickets in lobby (\$7.50).

SCANFAX (Publication) Number (ISSN 0018-1297), October 1994, Volume 47, Number 2, SCANFAX is published monthly (except July and August) by the Chicago Section Institute of Electrical and Electronics Engineers for the information of its members. Subscription rate for IEEE members collected in dues, \$1.50. Third class postage paid at Glen Ellyn, Illinois. Unless otherwise specified, Chicago Section IEEE neither endorses nor sanctions any positions or actions espoused in SCANFAX. Submit articles to Editor. Articles for Dec '94 Scanfax due October 27. Articles for Jan '95 Scanfax due Nov 22.				
EDITOR Martin Lake AT&T, Dept. NA63B1200 2600 Warrenville Rd. Lisle, IL 60532 708/224-6626, -3405 FAX m.lake@ieee.org	ADVERTISING Len Cohen 8117 Parkside Ave. Morton Grove, IL 60053 708/272-8800 x42692 708/559-1849 FAX	ASSISTANT EDITOR James Carroll 708/979-8820 j.carroll@ieee.org	BUSINESS OFFICE IEEE Chicago Section 2460 Wisconsin Ave. Downers Grove, IL 60515 800/898-4333 708/964-4333 708/963-2122 FAX	SEND CHANGE OF ADDRESS TO: Roseann Schultz, Member Services IEEE Service Center, 445 Hoes Lane Piscataway, NJ 08854-4150 Include your SCANFAX mailing label if possible or phone direct to 800/678-4333. We cannot forward this information for you, so please do not send it to the local office.

INDUSTRY APPLICATIONS/
INDUSTRIAL ELECTRONICS SOCIETY
and
POWER ELECTRONICS SOCIETY

FEATURES A JOINT DINNER PROGRAM

OVERVIEW OF O'HARE AIRPORT LIGHTING AND
POWER SYSTEMS

Presented by

Peter G. Contos, P.E., FIES

Thursday, October 20, 1994

ABOUT OUR TOPIC

Aviation lighting is remarkably different in technique, principle and equipment as contrasted to roadway lighting. Aviation Ground Lighting must provide pilots navigational guidance for airport location, runway, approach, landings and take offs. This discussion of Aviation Ground Lighting will cover the navigational aids for airports that convey information to pilots by means of color, brightness, location, flash characteristics and light patterns.

ABOUT OUR SPEAKER

Peter G. Contos, P.E, FIES, received his B.S.E.E. from the Illinois Institute of Technology. He has recently retired from the City of Chicago after more than forty years of service. He was the Chief Electrical Engineer for the Department of Public Works and was responsible for the design and construction of Chicago's Municipal Facilities which included:

- O'Hare Airport power distribution; emergency power, runway lighting and control tower improvements,
- Mass Transit extension of CTA to O'Hare,
- Water purification, pumping and distribution in Chicago and to eighty-six suburbs,
- Cogeneration of steam and electricity by waste to energy incinerator, and
- Power and control of Chicago's movable bridges.

He has authored and presented many papers covering O'Hare Airport.

PLACE	TIME
Como Inn	Social 5:30 PM
546 N. Milwaukee Ave.	Dinner 6:15 PM
Chicago, IL	Presentation 7:15 PM

NOTES

Advance registration should be made by calling the IEEE Office at (800) 898-IEEE before October 17, 1994. Dinner cost is \$20.00 per person. Dinner entree is Breast of Chicken or Pasta, and includes Soup, Salad, Rolls, Coffee and Dessert.

FOR MORE INFORMATION

Contact Irwin Smiley, P.E. at (312) 648-1700.

FOX VALLEY SUBSECTION
Joint with Communications Society
FEATURES A DINNER PROGRAM

BROADBAND
PERSONAL COMMUNICATIONS SERVICE

Presented by
John Nguyen of InTouch PCS, Inc.

Wednesday, October 26, 1994

ABOUT OUR TOPIC

Come and enjoy a talk on a fast emerging technology and industry — Broadband PCS. Also called the "next generation" of cellular telephones, PCS will revolutionize the way people communicate — "phones go to people not places".

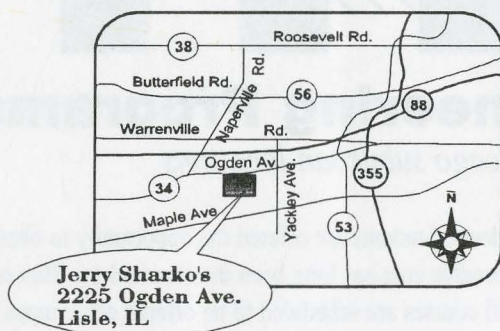
John will discuss the technologies behind PCS, the factors that have enabled the introduction of PCS and the progress that has been made by the FCC and Congress to make PCS become a reality in the United States in 1995.

PCS introduces and represents the single largest opportunity in telecommunications industry in terms of market share, revenue, and profit margin. The PCS market is estimated to generate over \$40 billion in service revenue and to have over half of the share of the wireless market by the year 2001. PCS will improve productivity of the work force, provide universal access to information and computers, and create a new mass market of electronic consumer products.

ABOUT OUR SPEAKER

John Nguyen is the President of InTouch PCS, Inc. He holds a Masters Degree in Computer Science from the Illinois Institute of Technology. John has presented talks on PCS architecture for several IEEE conferences.

PLACE



TIME

Social	6:00 PM
Dinner	7:00 PM
Presentation	8:00 PM

NOTES

Call the IEEE Message Desk today at (800) 898-IEEE to make your reservation. Dinner cost is \$15 per person. The dinner includes a Caesar Salad, Stir Fry Beef, Dinner Rolls, Coffee, Dessert, and complimentary cocktails from 6:30 to 7:00 PM. Dietary and vegetarian meals can be requested when you make your reservation.

FOR MORE INFORMATION

Contact Peter Nguyen at (312) 913-9811.

ICAST 95

CALL FOR PAPERS

The University of Chicago
Chicago, Illinois
March 25, 1995

**The 11th International Conference on
Advanced Science and Technology**

SPONSOR:

Chinese Academic and Professional Association in Mid-America
(CAPAMA)

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IN ASSOCIATION WITH: IEEE Chicago Section

CONFERENCE THEME:

MARCHING TO A HARMONIC 21ST CENTURY

This conference will bring together professionals and researchers from academic, governmental and industrial sectors to discuss recent advances in science, engineering and technology. It is ideal for high quality papers to be presented in the lowest possible cost in a very compact, but productive technical program. All papers will be peer reviewed. Pre-printed proceedings will be available at the conference site. The conference will be organized along the following THEMES:

(A) Media Technologies and Management

- Government Regulations, Legislation and Management
- Technological Trends in Print and Electronic Media
- Interactive Television, Interactive Newspaper and Internet
- Multimedia, Information Superhighway and Telecommunication

(B) Pharmaceutical and Medical Technologies

- Controlled-Release Technology in Drug Formulation
- Development of Peptide and Protein Drugs
- Genome Project and Gene Therapy
- Prevention and Treatments of Cancer and AIDS

(C) Energy and Environment

- Pollution Prevention and Environmental Technologies
- Environmental Regulatory Agenda and Social, Economic Impact
- Low-Pollution Energy Conversion Systems
- New Trends in Fuel Processing Technology

(D) Business, Economics and Management Science

- Business, Energy and Environmental Management
- International Trade and Financial Market Development
- Public Finance and National Development Projects
- Quality of Life and Information Infrastructure Networking

Information For Authors

The conference language is English and all papers must be written in English. Authors are requested to submit 3 copies of abstract. Your abstract, 300-400 words, should be informative, containing (a) a title with author's name(s) and affiliation(s); (b) the study's specific objective; (c) brief statements of methods, if pertinent; (d) a summary of the results; and (e) the conclusions. A submission letter must accompany the abstract, containing (a) the conference theme relevant to your paper, and (b) the principal author's address and telephone number for correspondence. Abstracts must be received by November 1, 1994. Principal authors will be notified of acceptance by December 1, 1994 and will be given instructions for the paper format. Three drafts of the paper are due February 1, 1995. Final camera-ready papers will be required by March 1, 1995 for inclusion in the ICAST Proceedings.

Submit abstracts to:

Prof. Yun L. Chan
Univ. of Illinois at Chicago
College of Medicine
835 S. Wolcott Ave., MC 901
Chicago, IL 60612

For Further Information:

Dr. Wei-Pang Chin
AT&T Bell Laboratories
(708) 979-5158
wpchin@ihlpm.att.com

Student Paper Contest

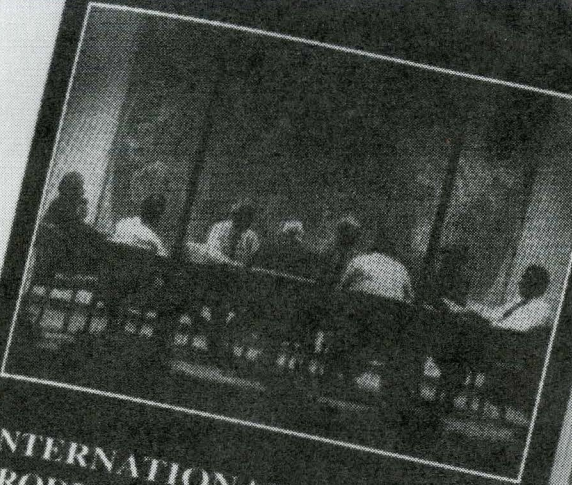
Student paper contest for university graduate students will be held as part of this conference. A full-time student must be the principal author. Awards will be presented to the authors of the top papers.

Supplementary Information

Featured speakers will be invited to make presentations. A workshop on job interviews and possibly a job fair will be held in conjunction with the conference.

Acknowledgement

CAPAMA appreciates the courtesies extended by members of the Chicago Section and invites them to participate in this call for papers and conference.



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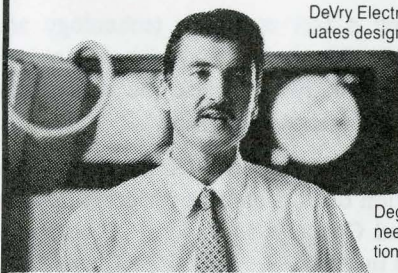
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CONTACT: **John Petrik**
Dean of Graduate Placement & Student Affairs
1221 N. Swift Road • Addison, IL 60101

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UIC The University of Illinois
at Chicago

Off-Campus Graduate Engineering Programs

accommodating working adults with evening classes at Chicago suburban locations

The classes, offered one evening per week, are particularly suited to working students. Students are offered the opportunity to obtain an advanced engineering degree in a program designed to fit their schedule. Reasonable cost has long been the standard for Illinois residents at state-supported universities such as UIC. The following graduate-level courses are scheduled to be offered off-campus the spring semester 1995.

Spring 1995: January 9–May 5, 1995

Multi-University Center, Oak Brook, and Harper College Locations

EECS 432 Digital Communications
EECS 470 Introduction to Software Engineering
EECS 510 Advanced Network Analysis
EECS 576 Object-Oriented Programming Languages and Environments

Motorola, Inc. — Schaumburg Location

EECS 422 Wave Propagation and Communication Links
EECS 466 Advanced Computer Architecture
EECS 530 Statistical Communication Theory
EECS 573 Distributed Computing Systems

Project and thesis coursework is also offered each term.

Spring 1995 applications must be complete by October 28.

Contact the Off-Campus Engineering Programs Office at (312) 996-2311 for complete details. Fax: (312) 413-7950

This schedule is subject to change without notice. Courses with insufficient enrollment will be canceled.

9/94

Scanfax -- October 1994

FREE European Testing Guide



DLS
ELECTRONIC SYSTEMS, INC.
10350 DEARLOVE ROAD, GLENVIEW, ILLINOIS 60025-3668 • PHONE 708-699-9060

EU THOUGHTS AND COMMENTS

What is the new European Union? "In 1993 the term European Union (EU) replaced the European Community (EC) as the official name used in Europe. The CE marking remains the same." What is EC-92?

Twelve (soon to be nineteen) have united to their new EMC and marketing requirements. The Union's new EMC Directive's products to be sold in any of the business has an enormous stake. Over of U.S. exports and investments (\$126 billion) go to the Union. 2.5 million people. \$430 billion in 1991.

DLS
ELECTRONIC SYSTEMS, INC.

Immunity Testing Guide

IEC 801-2 IEC 1000-4-2 EN 55022-2	ESD Electrostatic discharge Static from humans Radiated RF electromagnetic field Walkie talkies
IEC 801-3 IEC 1000-4-3 EN 55022-3	EFT Fast Electrical Transient Relays & motors on and off
IEC 801-4 IEC 1000-4-4 EN 55024-4	Surge Voltage Lightning
IEC 801-5 IEC 1000-4-5 EN 55024-5	Conducted CW Conducted induced RF energy Power wire near transmitters
IEC 801-6 IEC 1000-4-6 EN 55024-6	Radiated Magnetic Power frequency magnetic field Magnetic flux from power lines
IEC 801-8 IEC 1000-4-8 EN 55024-8	Voltage Dips Voltage Interruptions Voltage Variations
IEC 801-11 IEC 1000-4-11 EN 55024-11	Drop in voltage for a short period Voltage Interruptions Loss of power for short period Voltage Variations Variation of power line voltage

Emissions Testing Guide

CISPR 11, I EN 55011, I	ISM (Group I) No intentional or harmonic emissions testing for ISM
CISPR 11, II EN 55011, II	ISM (Group II) Intentional or harmonic emissions testing for ISM
CISPR 14 EN 55014	ITEA Household appliances and similar apparatus Broadband emissions test & for all ITEA
CISPR 22 EN 55022	ITE Information Technology Equipment Harmonic emissions testing for Computers
IEC 555-2 EN 60555-2	Harmonic voltage on power lines
IEC 555-3 EN 60555-3	Voltage fluctuation on power lines Voltage variation due to various load

Level (see notes)	Test Required	Units	Frequency Range
A or B	Conducted	dBμV	150 kHz - 30 MHz
A or B	Radiated	dBμV/m	30 MHz - 1 GHz
A or B	Radiated	dBμV/m	117 GHz - 12.76 GHz

Notes on Levels:
The limits for Level A equipment are derived for typical commercial establishments for which a 30 m protection distance is used. The Class A limits may be too liberal for domestic establishments and most residential use. These are typically used in a domestic environment which, in Europe, CISPR 14 limits vary from ITEA (general) to three levels based on power consumed.

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An **Immunity and Emissions Testing Guide/Slide Chart** is available from D.L.S. along with **EU Thoughts and Comments**—a complete guide to the EMC requirements for Europe.

Call: (708) 699-9060 or FAX: (708) 699-9093 with your request.

Ask for the **Testing Guide** and **EU Thoughts and Comments**.

D.L.S. Electronic Systems, Inc. ■ 10350 Dearlove Road ■ Glenview, IL 60025-3668

Scanfax -- October 1994