

**LORAL**

Data Systems



**FACILITIES &  
CAPABILITIES**



# INTRODUCTION

Loral Data Systems is a division of Loral Corporation. The Corporate program and technology base constitutes a commanding presence in both the U.S. and international markets for sophisticated, high-technology defense electronics.

## **Our Facility . . .**

- Loral Data Systems is located on a 90-acre tract in Sarasota, Florida
- Employs 850 people
- Modular design permits optimum use of our facility
- Over 350,000 square feet . . . air conditioned . . . under one roof . . .
  - One third is used for
    - administration
    - engineering
    - support
    - development and documentation of standard products and systems
  - Two thirds are used for manufacturing and it includes
    - fabrication
    - assembly
    - test
- Top Secret Department of Defense (DoD) approved facility
- Sensitive Compartmented Industrial Facility (SCIF) area of 15,000 square feet

## **Our Product Categories...**

### **Telemetry**

EMR is the major player in large, turn-key telemetry systems. We tailor components for specialized applications. From Boeing Aerospace to White Sands Missile Range, EMR is synonymous with command and control for defense and space. As future requirements call for more data, higher transmission rates and higher reliability, we are positioned to supply everything from PC boards to integrated mainframe systems.

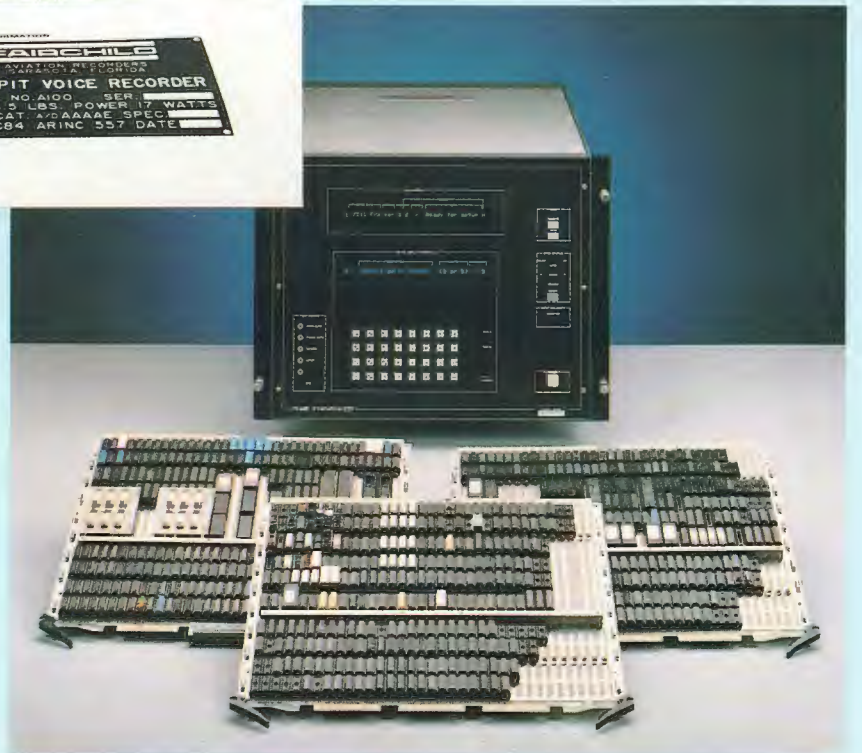
### **Aviation Recorders**

We are the world-wide leader and major supplier of commercial digital flight and cockpit voice recorders. We combine state-of-the-art electronics with time-proven crash- and fire-protected tape transport technology.

### **Signal Processing Systems**

Dedicated to special projects for the U.S. Government, this group delivers custom designed systems and equipment to DoD. These systems and products support the collection, processing, analysis, and study of command/control/communication signals.





# EMR OUR HISTORY...

1940's-1950's

1960's

1970's

1980's

1990's

EMR 27  
THE WORLD'S  
FIRST TELEMETRY  
PRODUCT



EMR 67



EMR 410



EMR 8470

**FM**  
RECEIVING

RECEIVING  
TUNABLE  
FM

SENDING  
FM

**PCM**

RECEIVING  
DECOM

RECEIVING  
BIT SYNC

STANDARD  
PRODUCTS

RECEIVING  
SIMULATOR

SENDING  
PCM

**PAM**



EMR 5m



EMR 730

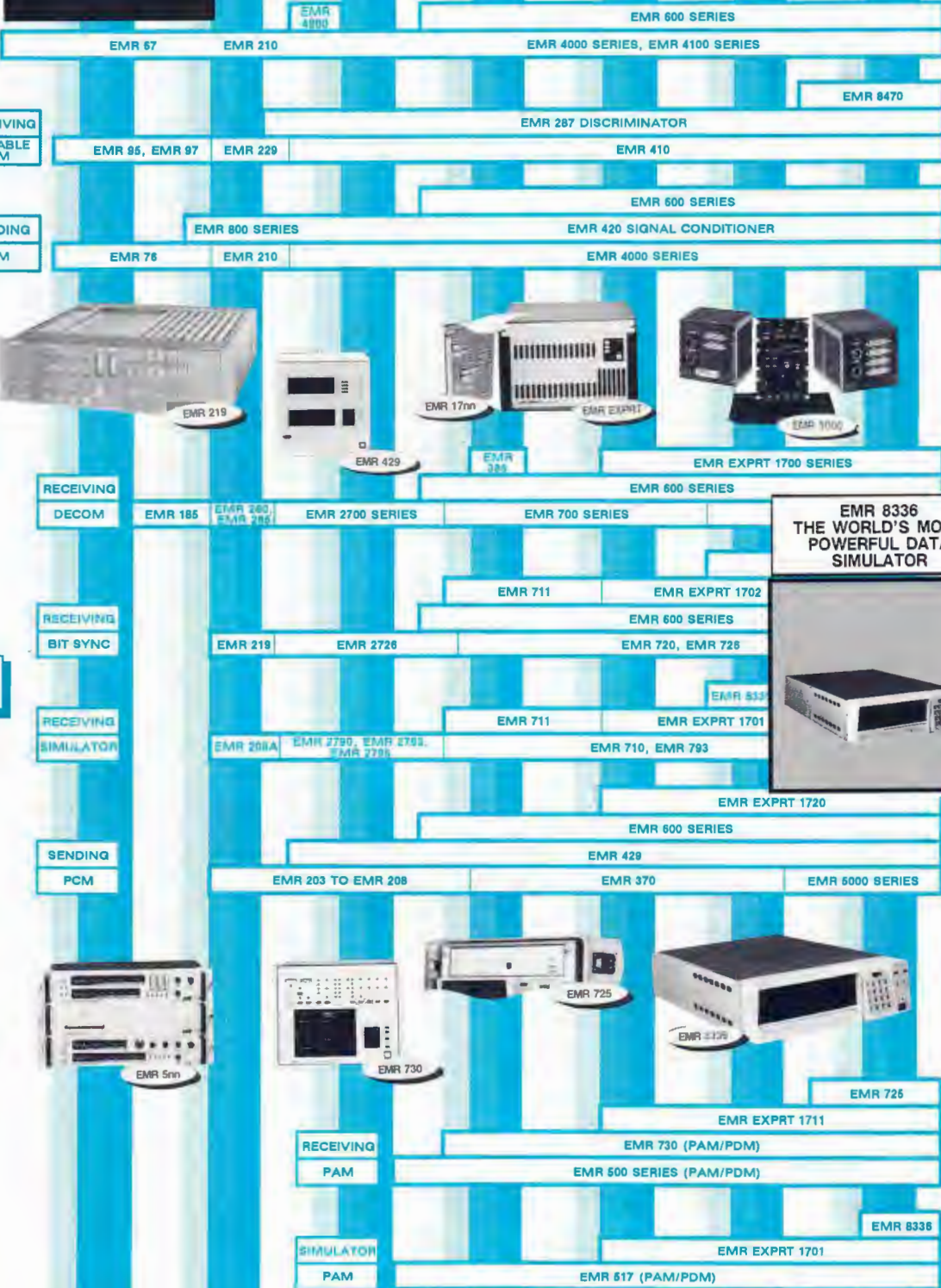


EMR 725



EMR 8336

EMR 8336  
THE WORLD'S MOST  
POWERFUL DATA  
SIMULATOR





# SUCCESS YESTERDAY AND TODAY

1940's-1950's

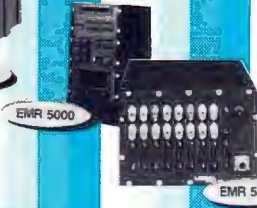


**DYNA-SOAR  
WORLD'S FIRST  
FM/PCM HYBRID SYSTEM**

1960's



EMR 3620



EMR 5000

1970's



EMR 8220

1980's



EMR System 90

1990's



EMR SYSTEM 90

EMR 8715

EMR 1786, EMR 8385

VAX SYSTEMS

EMR 8900 SERIES SOFTWARE

EMR SYSTEM 90

IUS

EMR 8716

PARAMETER DATABASE (VERSION 2)

EMR 8715

EMR 712

EMR 8340

EMR 714

EMR 716

EMR 8390 (GDI)

EMR 8760

EMR 8386 (TIC)

EMR 732

EMR 780

EMR 2763

MUX-DEMUX PRODUCTS

EMR 8210, EMR 8220

EMR 8380

EMR SYSTEM 90

EMR 1786, EMR 8385

EMR 708

EMR EXPRT 1714, EMR EXPRT 1750

DISPLAY STATION PRODUCTS

EMR 8300 SERIES (NSTL SYSTEMS)

EMR 800 SERIES

EMR 814

WEATHER PRODUCTS

1553 BUS AIRBORNE

EMR 5500

EMR 5000 SERIES

1553 BUS GROUND

EMR 8716

EMR 8300 SERIES

INDUSTRIAL PRODUCTS

EMR 3200 SERIES, EMR 3400 SERIES

SWIMS

LLWSAS

LLWAS

**LLWAS  
ONLY APPROVED GROUND-BASED  
WIND SHEAR DETECTION SYSTEM**

RADIO TRANSMITTER PRODUCTS

EMR 121

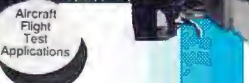
EMR 3600

EMR 248

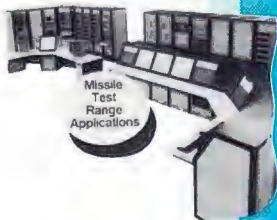
## STANDARD SYSTEMS



Trailer & Van Applications



Aircraft Flight Test Applications



Missile Test Range Applications



**LLWAS  
ONLY APPROVED GROUND-BASED  
WIND SHEAR DETECTION SYSTEM**



# DESIGN, ENGINEERING AND DRAFTING

## Design Facilities and Capabilities . . .

Correct, efficient, quick-response design in a cost-effective manner is the key to high-technology programs.

- Our 200 full-time engineering team members are experts in telemetry.
- We lead the industry in developing new ways of acquiring, conditioning, recording, reducing, and displaying data.
- We maintain our dominant position in the market by continuous investment in research and development programs.
- New Independent Research and Development (IR&D) projects are an integral part of the Corporate growth plan.

## Engineering . . .

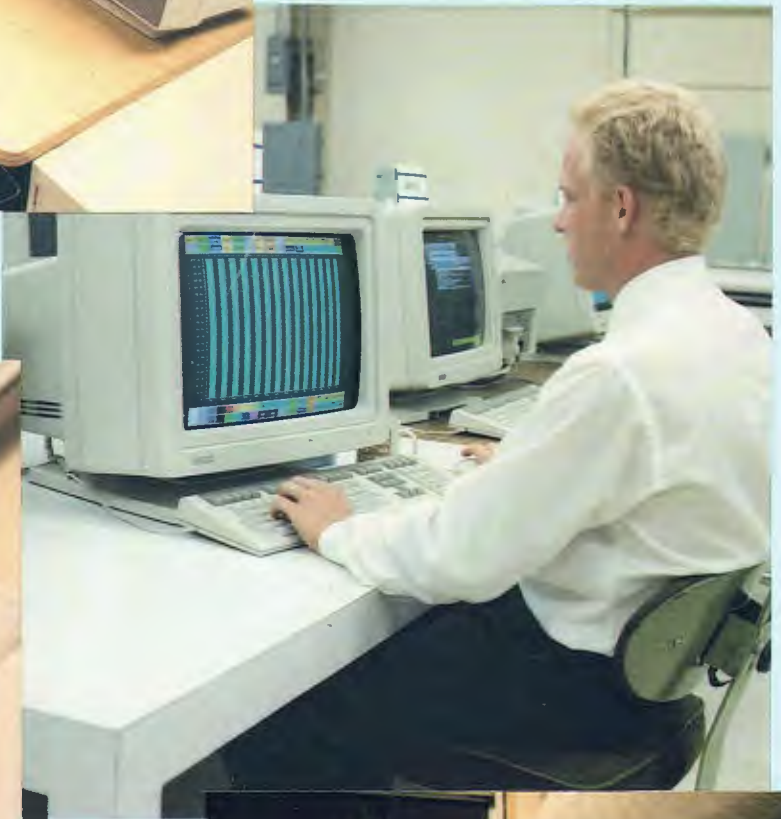
- **Top-Level Design:** Workstations are used by engineers for system-level design.
- **Module-Level Digital Design:** With almost 40 MIPS of Valid computer-aided engineering systems, module designs become reality in record time.
- **System-Level Design Verification:** In-house computer equipment, with a full telemetry front end, provides our engineers with a test bed system for design evaluation and verification.
- **Data Processing Laboratory and Ethernet Network:** From prototype design simulation to system integration and delivery, our Engineering Data Processing Laboratory provides a wide range of micro- and mini-computer processors to support this in-house function.

## Drafting . . .

Computer-aided design and drafting tools serve to decrease development costs, shorten development cycle time, verify the design performance, and assure a superior design.

- Workstations, utilizing the latest software, convert engineering design information into Manufacturing readable data via Engineering Documentation.
- Computer Aided Design and Drafting (CADD) tools serve to decrease engineering development costs.
- Automated tools shorten the development cycle time to Manufacturing.
- Use of Design Rules Checking (DRC) programs assure superior design.

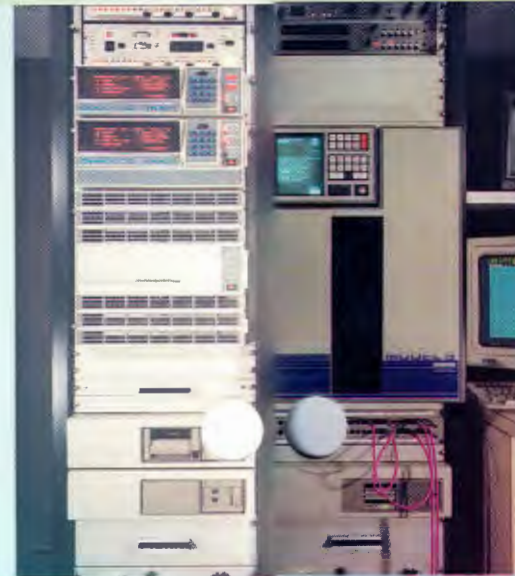






# EMR

## TELEMETRY SYSTEMS *fc today... and tomorrow*





# CONTRACTS, PRODUCTION, MANUFACTURING AND SHIPPING

## Contracts Administration . . .

- Our experts in International, Domestic and U.S. Government contracts:
  - Conduct customer negotiations
  - Perform all contract administrative details, including export laws and procedures

## Production . . .

- Equipped with automated material requirements planning system
- Utilizes an automated production control system

## Manufacturing . . .

Build to Print — Loral Data Systems manufactures customer products within the customer's requirements or within the necessary/required military specifications. Workmanship and quality standards meet or exceed MIL-STD-454.

- Fabrication
  - Machine shop is equipped with precision boring and grinding equipment
  - Computer-controlled milling machines meet precise measurement requirements
- Construction
  - Our experienced team builds, tests, and inspects production units in a timely and efficient manner
  - Microprocessor-controlled semiautomatic insertion machines offer accuracy and speed
  - Numerically-controlled wire wrapping of printed-wiring boards shortens response time on new designs
- Systems Assembly
  - Our systems project engineers coordinate with manufacturing to ensure that system components are available as the phases of system integration progress.
  - Racks are assembled and cabled in a system subassembly staging area.
  - Each system is laid out to match the final system configuration on the integration and test floor. Each system remains here through customer acceptance until ready for final inspection and shipment.

## Shipping . . .

Product configurations are verified prior to packing.

- Requirements, both commercial and government, are met by our shipping facility
- Ensures safe delivery with custom-designed packing







# QUALITY ASSURANCE, LAB, TEST AND STOCKROOM

## Quality Assurance . . .

Reliability, Components, and Software Engineering are a part of Loral Data Systems' exceptional Quality Assurance program. Our specialized areas include:

- Quality Program as outlined in MIL-STD-9858A
- State-of-the-art testing, calibration, and failure analysis labs
- Environmental, material and process analysis functions
- Incoming fabrication and in-process inspection stations
- Dynamic testing of assemblies
- Reliability Program as outlined in MIL-STD-785
- Inspection System as detailed in MIL-I-45208A

## Lab Facilities . . .

- Materials and Processes Laboratory
- Calibration Laboratory as outlined in MIL-STD-45662
- Reliability Analysis Laboratory

## Test . . .

- End-to-end system test and logistic support
- Automated Test Equipment (ATE) . . . high-speed simulation test
- Test records retained for years . . . available for inspection upon request
- Over 800 pieces of commercial and custom test equipment, including Gen Rad Functional Board Testers and Function Test Development Stations . . . Marconi In-circuit Board Testers . . . super-mini ATE testing and software development stations, and PC based ATE and RST development stations.
- Written and formalized test procedures ensure a solid and stable product shipment
- Board-level testing completed in end products ensures a "turn-key" operation

## Stockroom . . .

- 10,000 square-foot area
- Over 30,000 components in stock
- Bar coding used for efficient operation
- Greater than 97% accuracy on cycle counts
- Inspection sampling as outlined in MIL-STD-105D







# PROGRAM MANAGEMENT, TRAINING AND DOCUMENTATION, AND CUSTOMER SUPPORT

## Program Management . . .

- Over 40 years of experience gives EMR the leading edge on building high-quality telemetry and control systems
- We have total in-house engineering capabilities
- Our technical know-how supports the full spectrum of development and manufacturing expertise

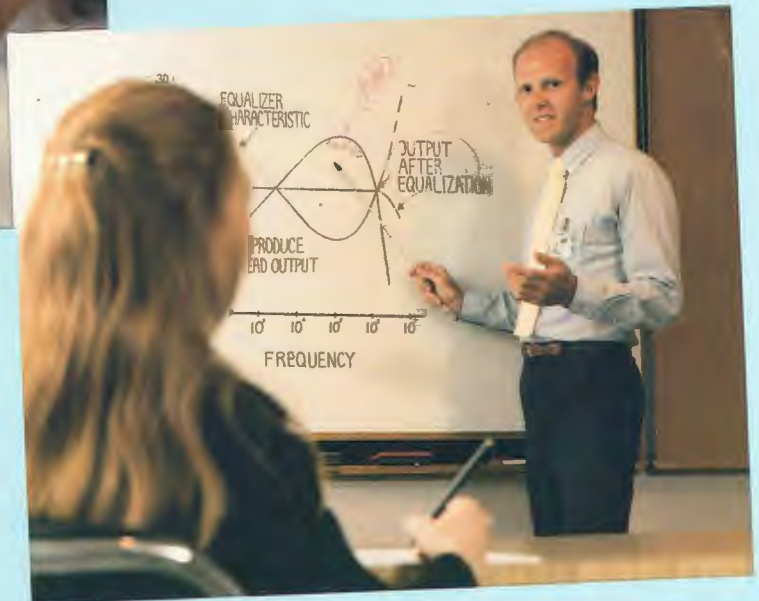
## Training and Documentation . . .

- Training
  - Full range of product and systems courses are available for hardware and software
  - Courses can be tailored to your needs
  - Instructors conduct courses in-house or at your facility
- Documentation
  - Appropriate hardware and software manuals supplied with each system
  - Our technical publication system is ready to support CALS
  - Writers work closely with engineers to produce documentation that ensures maximum system utilization

## Customer Support . . .

- Upon system delivery, we offer support for installation and retesting, assistance in system operation, and advisory services.
- A set of spare modules and/or components can be recommended for self-maintenance organizations.
- Loral equipment is warranted for 3 to 12 months (equipment dependent). Additional warranty coverage can be purchased.
- On-site customer support programs are available through a service contract and include:
  - Total Care — 24-hour response times and monthly preventive maintenance
  - Depot — priority handling at our Depot Centers and unlimited telephone support
  - On-site — 48-hour response and a series of free on-site visits
  - Hourly — annual agreement where rates are frozen and assured rapid support.









- 350,000 Square Feet
- 850 Employees
- High Technology for DoD Contracts for Over 30 Years
- Systems, Software, Hardware Product
- Top Secret DoD Approved Facility
- 15,000 Square Feet of SCIF Area

**LORAL**  
Data Systems

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