



### LABORATORY



- Telemetry Receivers
- PCM Bit Synchronizers
- Multifunction Telemetry Boards
- Software and Integration Tools

### TEST & TRAINING



- Fixed and Rotary Wing Aircraft
- Missiles & Munitions
- Laboratory and Avionics Bench Testing

### LAUNCH VEHICLES



- Assembly, Integration, and Test
- Launch Vehicle Test and Monitoring
- Range Safety Support
- High Power Amplifiers

### SATELLITE SUPPORT SOLUTIONS



- Assembly, Integration, and Test
- Mission Planning & On-Orbit Operations
- Launch and Early Orbit Phase (LEOP)
- Payload and Ground Monitor and Control



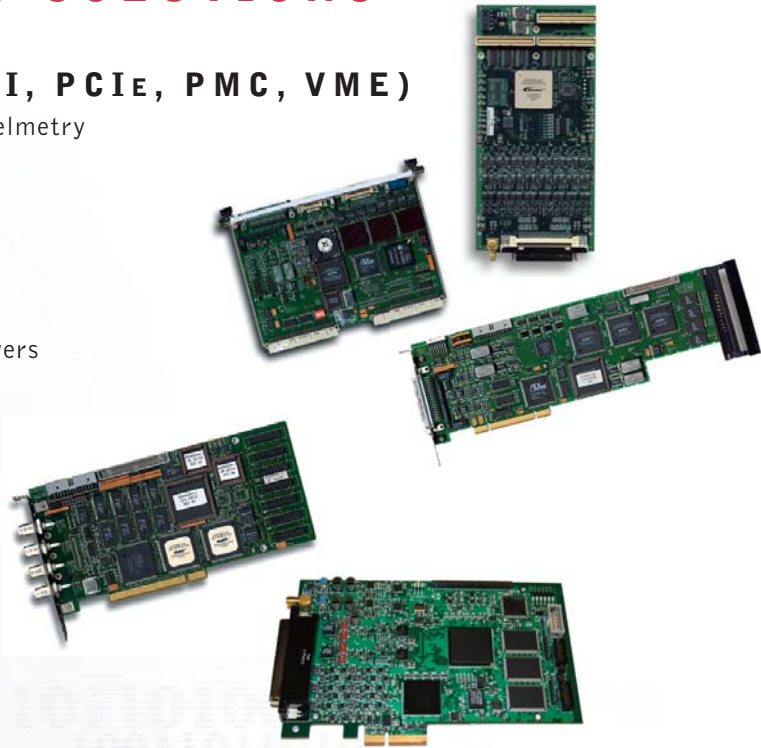
*Excellence  
You Can  
Measure*



## COMPONENT SOLUTIONS

### CARDS (PCI, PCIe, PMC, VME)

- Multi-function Telemetry
- Bit Syncs
- Analog
- Decom
- Timecode
- Telemetry Receivers



**L-3 Telemetry & RF Products brings a variety of products and capabilities to the ground telemetry market.**

L-3 has provided thousands of ground telemetry products over the past 40 years in support of major aircraft, weapons, satellite and launch vehicle programs. We continue to be the supplier of choice for the majority of test, training and launch programs worldwide.

We offer a host of products geared specifically for the reception, processing, visualization, distribution and archiving of telemetry data for test, training and operational needs of government and commercial programs.

L-3 has the unique position of not only being the world's largest provider of ground telemetry products and services, but also being the industry's largest provider of airborne and satellite telemetry collection and transmission products. This broad industry leadership allows us a unique perspective when designing solutions for our customers.

Contact us with your telemetry requirements — we are your one-stop headquarters for all your telemetry needs!

### TELEMETRY RECEIVERS

- Single and dual receiver configurations
- Dynamic pre-detection diversity combiners
- L, S & UHF/VHF bands, multi-band tuner
- Bandwidths up to 30 Mbps
- IRIG 106 Tier-1 and Tier-2 compliant
- Standard FM, PM, BPSK, QPSK, OQPSK, FQPSK, Trellis FM, & SOQPSK



## PC BASED SOLUTIONS



### SOLUTIONS

- Fully integrated PC Solutions
- Windows or Linux Operating System
- Desktop, portable, rugged or rackmount versions available
- Telemetry Processing
- 1553 Processing

### BIT SYNCHRONIZERS

- Up to 40 Mbps for NRZ codes, 30 Mbps for Bi $\phi$  codes
- S/N BER within 1dB of theoretical
- Up to 4 independent bit sync channels
- PN Randomizer / Derandomizer
- Viterbi decoding option
- Resequencer for QPSK / OQPSK mode
- Easy to see & use front panels



# TELEMETRY/AVIONICS PROCESSING

## TRUE REAL-TIME PROCESSING SYSTEMS

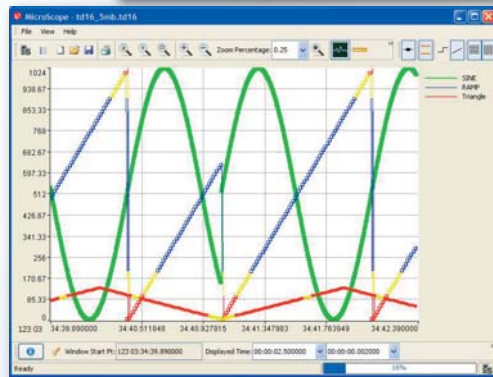
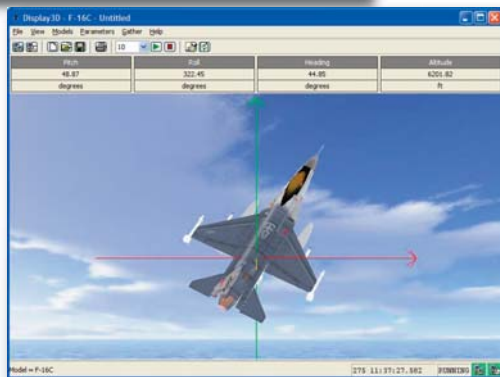
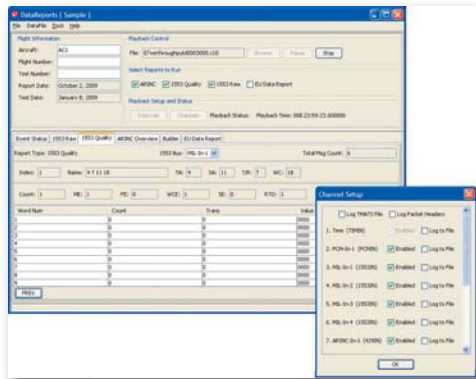
### 550

The industry's highest channel mixed I/O telemetry and avionics processing system. With over 800 real-time and post processing installations worldwide. Up to 64 different PMC I/O functions. 20-slot 6U VME chassis. Parallel and distributed processing, linear, scalability. Network-telemetry capable. Continuous improvements.



### AVALON

Midrange real-time system. Front-loading Avalon chassis. PMC-and-Carrier based. Deterministic processing. Up to 20 PMC I/O functions. 6-slot 6U VME chassis. 100% compatible with 550V hardware and software. Windows, Linux, or Solaris.



# SOFTWARE SOLUTIONS

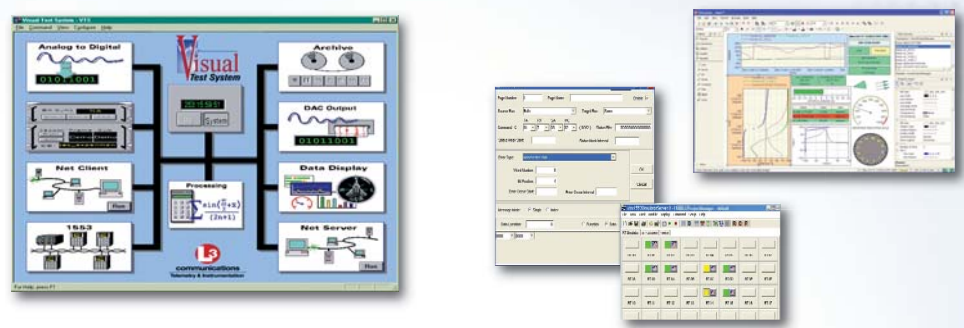
## VISTA

Vista 4.0 is the latest enterprise software solution from L-3 Telemetry & RF Products for the full spectrum of telemetry and avionics processing applications — providing a complete operating environment for configuring, controlling, and monitoring the Vista family of ground station products. Vista also supports L-3's airborne equipment, creating a unified software platform and common parameter database for flight and ground system configuration, management, and visualization. Vista software can additionally be run standalone — without any hardware — acquiring data off a network for "desktop" telemetry processing.



## VTS

Easiest to use GUI on the market. Intuitive "Heartbeat" display shows all VTS modules and status at a glance. Most widely-fielded PC-based real-time telemetry system in the industry. Supports Multifunction PCI Telemetry Module with 1,000+ installations. Ideal for lab test, bench test, and flight line checkout applications. Desktop, rack-mount, portable and rugged configurations. Client/Server architecture allows multiple users on a local area network (LAN) to each view and archive data.



# VISUALIZATION

## Jade

Jade software offers you a what-you-see-is-what-you-get drawing interface. Design views and monitor live data simultaneously. Drag and drop to instantly animate live data displays. You can add external data display widgets and data sources. It can be integrated into custom apps.



## Prospector (IRIG Chapter 10 and HFS File format Analysis)

Prospector is a web browser application for users to quickly and easily import data files into a centralized data storage location, then visualize and export that data for use in post-test data analysis. Prospector is a multi-user, multi-threaded, platform independent software application that time-orders, sorts and processes data from recorded IRIG Chapter 10 or HFS files and exports data on demand through a web browser interface to multiple users.

## Microscope

MicroScope is a powerful post-mission processing tool ideal for graphical viewing and analysis of pre-recorded parameter data. The application allows plotting of multiple parameters in a single strip chart or in a series of stacked strip charts, and provides various tools for manipulation and comparison of parameter data against a common time axis.

After selecting parameters of interest users may then progressively zoom in to examine specific data points in precise detail, controlling the amount of data displayed in the graph(s) by specifying a time interval with microsecond resolution. Like all of Vista, MicroScope is written in multi-platform Java and runs on Linux, Windows, and Solaris workstations.

## SYSTEM SOLUTIONS

L-3 Telemetry & RF Products integrates the capabilities of many L-3 Communications divisions to provide turnkey system solutions. These solutions are based on commercial-off-the-shelf products coupled with software and design capabilities. Our end-to-end system capabilities include satellite systems for both the space and ground segments that provide data reception and recovery, launch vehicle support, satellite monitoring, network infrastructures, and complete telecommunications infrastructures. We'll design and deliver a complete electronics system solution tailored to your needs.



### EXAMPLE SYSTEMS

- Turnkey test sites
  - Aircraft, missile, and UAV test and training ranges
  - Remotely controlled test ranges
  - Flight termination and telecommand systems
- Shipborne, mobile, and transportable ground stations
- Airborne / spaceborne components and overall air / space / ground integration capabilities
- Airborne flying test beds



### MOBILE TELEMETRY GROUND STATIONS

Turnkey mobile solutions for the testing and validation of telemetry range test articles. Ideal for the testing of unmanned aerial vehicles (UAVs) and similar platforms.

- Self-contained mobile telemetry ground station
- Integrated flight test control center with acquisition, display, archive, and analysis capabilities
- Processing of live and recorded flight test data
- Full capacity flight test crew: Test Director, Test Coordinator, Range Safety, Antenna Control, and Test Engineers / Analysts
- Custom vehicle layout; TV studio-quality interior
- Onboard communication systems including private and broadcast intercom capabilities
- Full range of safety and comfort systems
- End-to-end integration of third party content including antennas and controller, GPS receivers, strip charts, and other essential systems

# UNMATCHED CAPABILITIES

We offer the broadest range of technologies available to make ground systems for real-time telemetry, data acquisition, avionics and communication systems easier to build and integrate. By reducing development time and costs, we give you something of tangible value: a competitive edge in a competitive environment!

## HARDWARE DEVELOPMENT

- PWB design
- VME, PC, PCI, PCIe, PMC, SCSI
- FPGA and DSP designs
- RF design
- Mechanical engineering
- Environmental engineering

## SOFTWARE DEVELOPMENT

- Unix, Windows and Linux
- VxWorks real-time software
- Embedded software
- Device drivers
- Java, C, and C++ development
- Object-oriented programming
- GUI development
- Communication protocols
- Internet protocols

## MANUFACTURING

- PWB assembly
- Hardware assembly
- Quality control
- Supplier management and relations

## SYSTEMS INTEGRATION

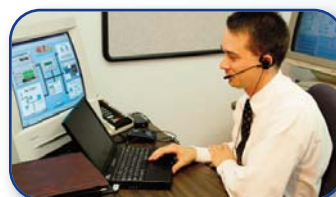
- Requirements definition
- Third-party integration
- Custom software and hardware engineering
- Factory acceptance testing

## PROGRAM MANAGEMENT

- Project management
- Scheduling
- Design reviews
- Custom documentation
- Configuration management
- Acceptance test planning

## CUSTOMER SUPPORT

- Installation
- Standard and Customized Training
- Maintenance Plans
- On-site support
- Applications engineering



# Telemetry & RF Products

## EXCELLENCE YOU CAN MEASURE

L-3 Telemetry & RF Products has over 50 years of heritage, bringing performance and value to virtually every major defense and aerospace organization in the World. We're joined in that legacy by over 100 L-3 divisions, each a leader in it's area of expertise — from microwave components, antennas and telemetry instrumentation to satellite communications and secure communications systems. Our breadth of capability continues to grow with full spectrum solutions including integrated ground-based and airborne telemetry components and systems as well as complete systems engineering and integration services. Turnkey solutions from a single source — delivered on time and with complete after market support. That's what L-3 is all about. With over 14 billion dollars in annual revenue and one of the highest ratios of engineering staff to total employees, we have what it takes to give you the competitive edge.

## L-3 Telemetry & RF Products Group

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