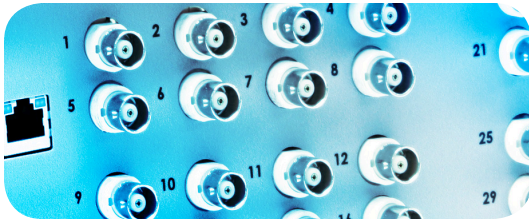# Test Partner™ 4

Test Partner 4 (TP4) is Lansmont's latest generation data acquisition system designed to capture and analyze dynamic events. The system incorporates a host controller for processing and analyzing data from 8-channel analog card(s) with built-in signal conditioning to support IEPE type sensors or perform event detection. Analog channels can be configured with sample rates up to 2.5MHz, providing versatility to acquire high frequency data associated with drop, shock, and impact applications or detecting events where discontinuities occur within electrical connections of devices subjected to dynamic input conditions. An additional external trigger channel can be configured to trigger the system and an Ethernet interface allows the user to operate TP4 remotely over the network or connected locally to a computer.

Analog Event Detection provides capabilities to define test constraints of electrical interconnect designs and determine when those design constraints have been exceeded. TP4 enables setup of event detection conditions per analog channel by configuring minimum event duration and corresponding voltage levels to detect intermittent electrical faults, permanent faults and/or critical faults.

Hardware Features

- Software configurable analog channels for Acceleration or Voltage-based Event Detection

- Gigabit Ethernet interface
  - Local or remote system management
  - Efficiently manage large data files
  - Fast re-arm & re-trigger functionality
  - "Rapid Fire" mode

- External Trigger capability

- Support for IEPE sensors

- High Channel Count Capability
  - Up to 32 dynamic analog channels per standalone system
  - Configure high channel count systems up to 256 dynamic channels

- Valid bandwidth up to 200kHz

- 24-bit Sigma-Delta A/D per channel

Test Partner™ 4

Lansmont
Field-to-Lab®
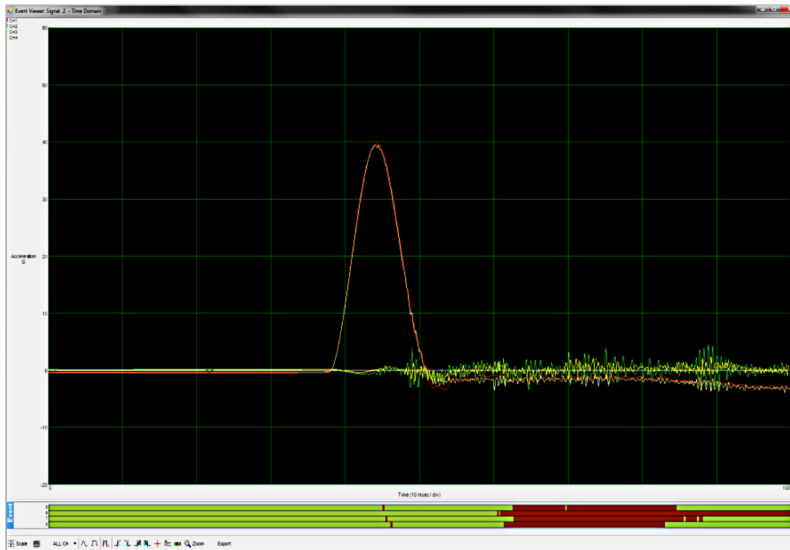
TP4 Software

TP4 software provides the user with an intuitive interface, loaded with powerful features for handling system setup and recording configurations with a suite of tools for analyzing, reporting and managing data. Database file management simplifies processing, retention of large data sets, and ability to generate data reports. The software allows the user to configure and interact with single or multiple TP4 systems over the network via commercially available Ethernet hubs and switches

Software Features

- Intuitive, powerful User Interface
  - Shock Analysis
  - Vibration Analysis
  - Voltage-based Event Detection Analysis

- Network Configurable

- Database File Management

- Automatic or manual analysis of Shock or Vibration events
  - Time History, SRS, PSD, FFT

- Automatic or manual analysis of Events Detected
  - Detected, Duration, Min/Max Limits, Critical-to-Failure "CTF"

- Configure analog channels for Acceleration or Voltage-based Event Detection

- "Preview Mode" - Verify channel(s) signal integrity prior to event trigger

Test Partner™ 4

Lansmont
Field-to-Lab®

SPECIFICATIONS

SYSTEM	8-CH	16-CH	24-CH	32-CH
Size	9.2" x 7.9" x 3.7" (234 x 200 x 95)cm	13.9" x 10.6" x 6.3" (354 x 270 x 160)cm	13.9" x 10.6" x 6.3" (354 x 270 x 160)cm	13.9" x 10.6" x 6.3" (354 x 270 x 160)cm
Communications	Gigabit Ethernet			
ENVIRONMENTAL				
Operating Temperature	(0 to 55)°C			
POWER				
Watts	34W	53W	74W	93W
Frequency	(50 to 60)Hz			
AC Voltage	(94 to 240)VAC			
ANALOG INPUTS				
Type	BNC			
Input Impedance	100kΩ			
Input Protection	±59.6V			
Maximum Input Voltage	±10V			
Maximum Input Current @ 10V	100µA			
Input Type	IEPE			
IEPE Excitation Voltage	23.5V			
IEPE Excitation Current	4.7mA			
IEPE DC Bias Voltage	(6 to 16)V			
IEPE AC Bias Voltage	(4 to 18)V			
Selectable Voltage Input Ranges	±2.5V, ±5.0V, ±10.0V			
Signal-to-Noise Ratio (SNR)	90dB			
DC Valid Bandwidth	(DC up to 200) kHz			
DC Max. Phase Response	Linear (DC up to 800) kHz			
AC Valid Bandwidth	(1 up to 200)kHz			
AC Max. Phase Response	Linear (1 up to 800) kHz			
Analog-to-Digital Conversion (ADC)	24-bit Sigma-Delta			
Input Oversampling	20MHz			
Analog Anti-Alias Filter	9MHz			
Output Sample Data Rates	5kHz to 2.5MHz			
Digital Decimation Filtering	Dependent upon output sample data rate			
EXTERNAL TRIGGER				
Connector	BNC			
Trigger	Input/Output			
Max. Input Voltage	±12VDC			
Max. Output Voltage	±5VDC			

Magnitude and Phase Linearity Plots

Channel Input Signal Phase - AC Mode

Channel Input Signal Magnitude - AC Mode