Test Partner™ 3

Test Partner 3 (TP3) is a powerful combination of computer software and hardware specifically tailored to the capture and analysis of transient shock events. It can acquire up to four channels of acceleration data simultaneously from shock, drop, or other kinds of impact events.

TP3 utilizes the USB port on your computer for convenient plug-and-play simplicity. TP3 comes in a four-channel Mini configuration, providing flexible, portable testing operations. TP3 Mini includes all signal conditioning built into the hardware. The Mini is fully powered through the USB, providing flexible mobility.

TP3 systems are available with two different software options: TP3.Lite, and **TP3.ETC.** The Lite version includes 4 channels of acquisition, basic shock analysis, and reporting functions. The ETC software includes all features of the Lite software, plus the ability to compute Shock Response (SR) time domain, Shock Response Spectra (SRS), Force vs. Deflection analysis, Tolerance Bands for MIL-Spec compliance and FFT analysis.

Test Partner Mini

Test Partner™ 3

Lansmont
Field-to-Lab®

SPECIFICATIONS

Channels:	4 Total
Sampling Rate:	1 MHz
Resolution:	16 Bits
External Trigger:	Included
CE Compliant:	Yes

POWER

| USB:	Yes
AC Adapter:	Included
Voltage:	110 – 220 VAC
Frequency:	50 – 60 Hz

DIMENSIONS

Length:	8.0 in. (20.0 cm)
Width:	4.6 in. (11.7 cm)
Height:	2.3 in. (5.7 cm)

Software Features

• Selectable channel and threshold triggering

• Pre- and/or Post- acquisition signal filtering

• Time domain display, multi-channel overlay

• Tri-axial resultant overlay

• Shock Response Spectra (SRS)

• Shock Response - time domain display

• Ideal waveform - with SRS target and tolerance

• SRS Visualizer

• Force / Deflection / Energy calculations

• Rotational shock

• FFT

• Comprehensive data acquisition, output and reporting functionality
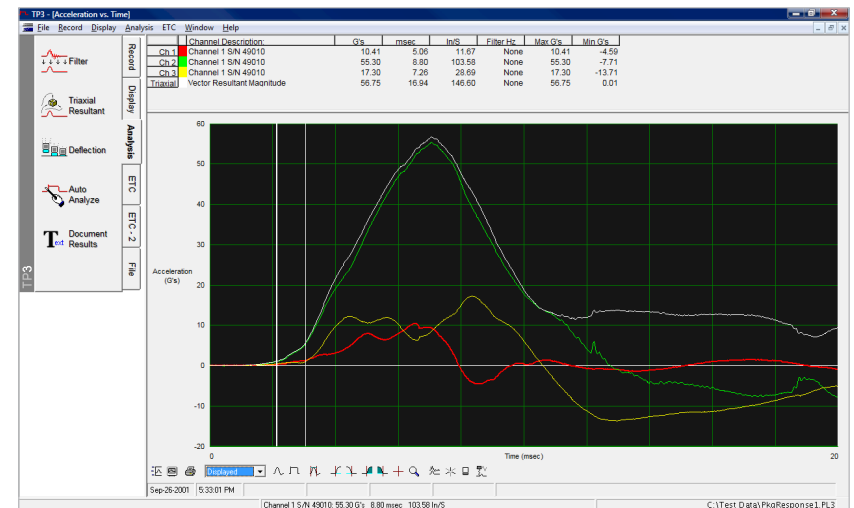
Multi-channel acceleration vs. time waveforms
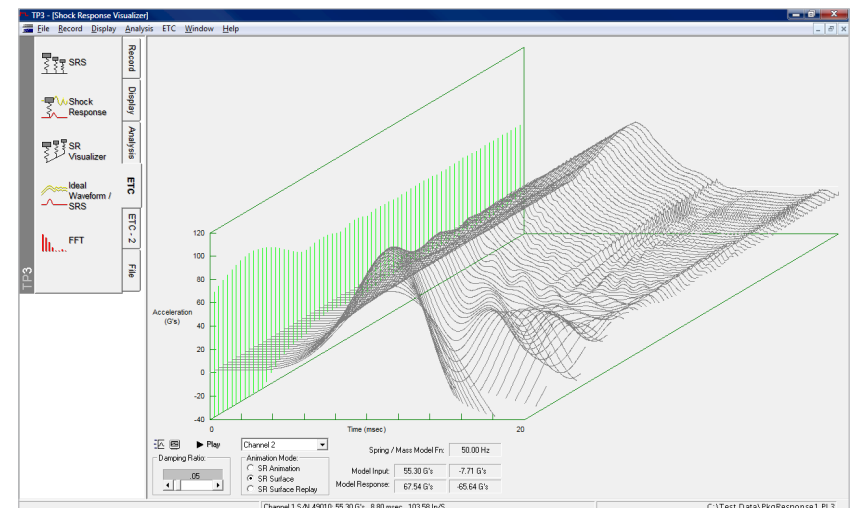
Shock Response 3D surface waveform

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Test Partner 4 Data Acquisition

Test Partner 4 (TP4) is our latest generation data acquisition system designed to capture and analyze dynamic events. TP4 incorporates a processing engine to capture substantial amounts of dynamic data as well as an intuitive interface to quickly analyze data parameters.

Data acquisition is provided through analog and/or bridge input channels which support a variety of voltage-based and Wheatstone bridge-type sensors. All channels are over-sampled at 20 MHz with 24-bit ADC providing versatility to acquire dynamic data attributed to drop, shock, impacts, strain, as well as pyro-shock and blast impact events where captured data is rich with high frequency content.

Analog channels support IEPE-type or voltage-based sensors for performing measurements of acceleration or event detection. The voltage-based event detection provides capabilities to define test constraints for electrical connections and determine when those design constraints have been exceeded.

Bridge/strain channels support quarter-, half-, or full-bridge and DC-based sensors to measure acceleration, force, strain, pressure, and voltage levels.

An External I/O channel can be configured to trigger or arm the system and an Ethernet interface allows the user to operate TP4 remotely over the network or connected locally to a PC.
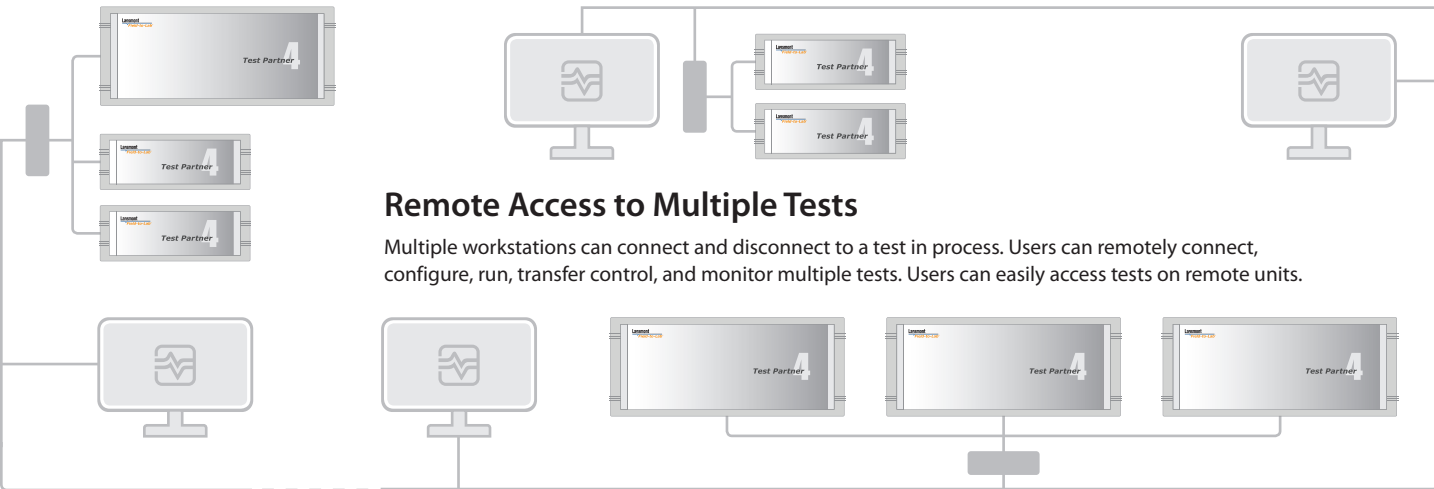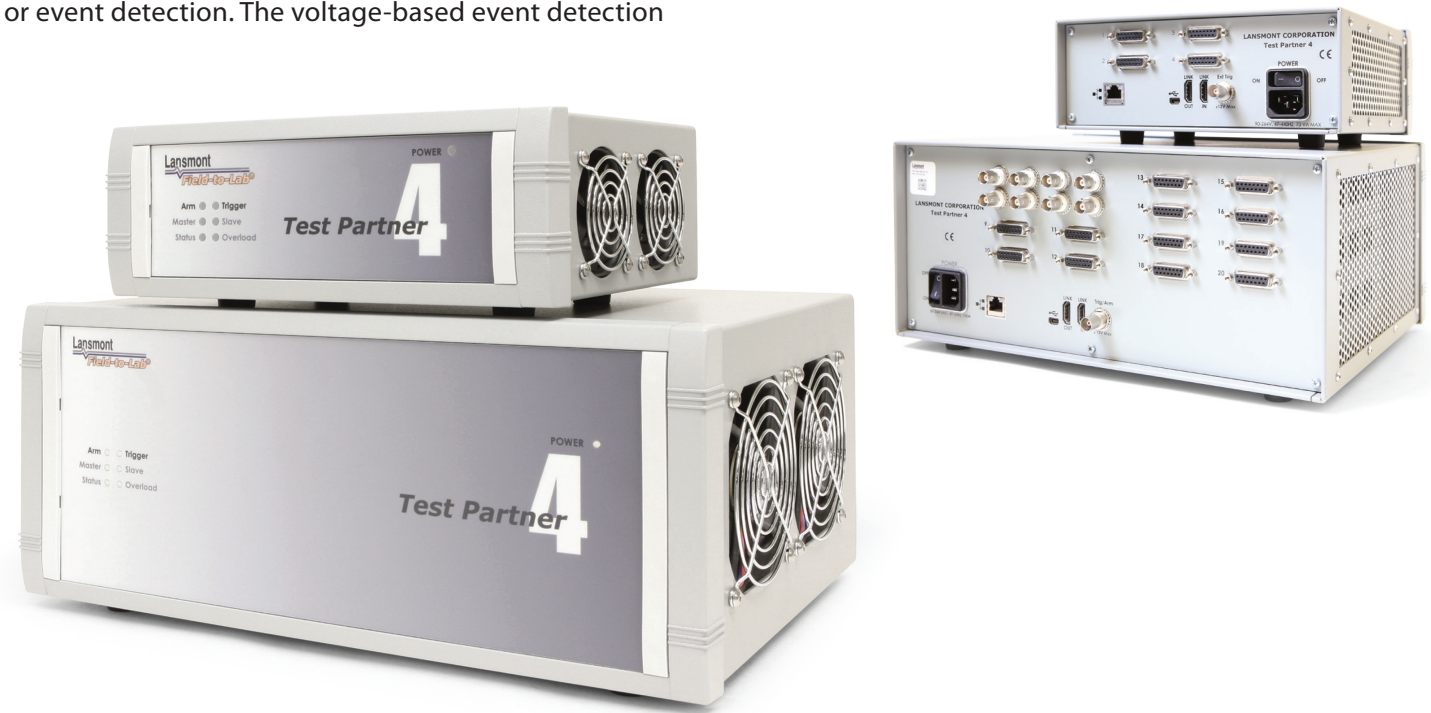
ANALOG CHANNEL SPECIFICATIONS

Input Impedance	100 kΩ, 75 pF
Absolute Max. Input Voltage	±49 V
Useful Max. Input Voltage	±10 V
Max. Input Current @ 10 V	±100 µA
Sample Rates	1.25 kHz to 2.5 MHz
ADC	24-bit Sigma-Delta (20 MHz oversampling)
IEPE Mode	
Stimulus Voltage	22 VDC
Stimulus Current	4.5 mA

STRAIN/BRIDGE CHANNEL SPECIFICATIONS

Input Specifications	
Input Impedance	>10 MΩ
Input Bias Current	<5 nA
Absolute Max. Input Voltage	±35 V
Common Mode Input Range	±260 mV
Balance Offset Adjust Range	±60 mV
Channel Input Warm Up Time	10 min.
Output Data Sample Rates	1.25 kHz to 2.5 MHz
ADC	24-bit Sigma-Delta (20 MHz oversampling)
Excitation Specifications	
Excitation Voltage Range	0 – 10 V (Excitation + to Excitation -)
Excitation Voltage Accuracy	0.2% of Full-scale
Ripple/Noise	±2 mV
Output Current	100 mA
Load Regulation	±.05% (10 V, No load - 100 Ω)
Short Circuit Protection	390 mA, 200 ms to trip
Over-Range Protection Timeout	2 seconds (Excitation to 0 V after timeout)

Remote Access to Multiple Tests

Multiple workstations can connect and disconnect to a test in process. Users can remotely connect, configure, run, transfer control, and monitor multiple tests. Users can easily access tests on remote units.
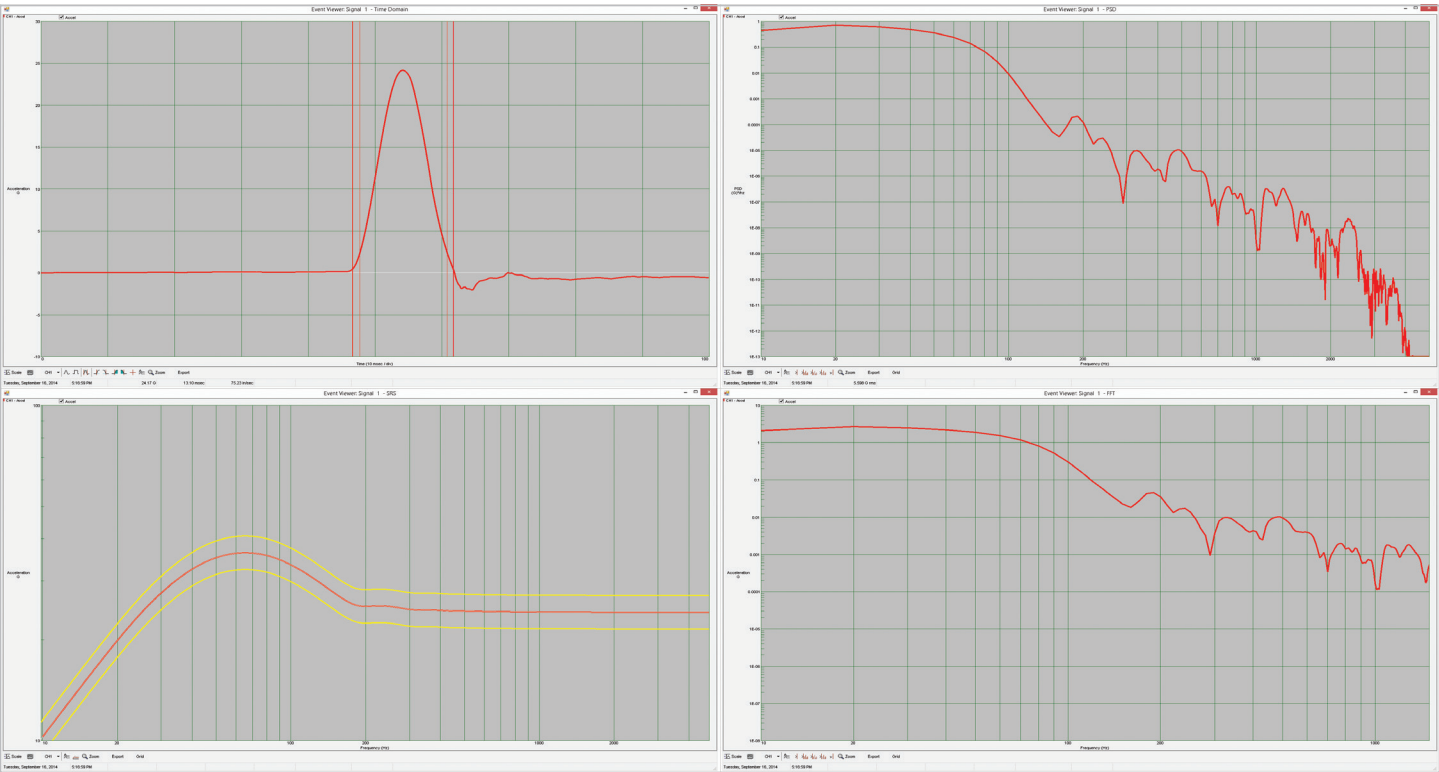
Test Partner

Test Partner 4 Software

TP4 software provides the user with an intuitive interface, loaded with powerful features for system setup and recording configurations with a suite of tools for analyzing, managing and reporting of the data. Database file management simplifies processing and retention of large data sets. 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.

- Intuitive, powerful user interface
  - Shock analysis
  - Vibration analysis
  - Event detection analysis
  - Strain/force/voltage analysis
- Network configurable
- Database file management
- Automatic or manual non-destructive filtering
- Automatic or manual analysis of shock or vibration events - peak acceleration, duration, velocity change, Grms

- Automatic or manual analysis of events detected - duration, min/max, critical-to-failure "CTF"
- Automatic or manual analysis of strain events – principle peak acceleration, duration and strain rate
- Software configurable analog channels for acceleration or analog event detection
- Software configurable bridge/strain channels with quarter-, half-, or full-bridge for strain, force, acceleration, pressure, voltage
- "Preview mode" – verify channel signal conditions prior to event trigger

Test Partner 4 Hardware

- Valid bandwidth up to 200 kHz for analog channels; 100 kHz for bridge/strain channels
- 20 MHz over-sampling with 24-bit Sigma-Delta ADC per channel
- User configurable output data sample rates - up to 2.5 MHz
- High channel count capability
- Up to 40 dynamic analog or 20 dynamic bridge/strain channels per standalone system
- Link multiple systems for higher channel count configurations
- Analog channels support IEPE sensors; Bridge/Strain channels support 1/4, 1/2 and Full-Bridge configurations for active DC sensors and strain gauges

- User configurable analog channels for acceleration or event detection acquisition
- External arm or trigger capability
- Gigabit Ethernet interface
- Local or remote system management
- Efficiently manage large data files
- Fast re-arm & re-trigger functionality - "rapid fire" mode

Large Chassis

TP4 large chassis allows for up to five input cards (Analog or Bridge) to be configured per system, providing versatility to acquire data from various types of measurement sensors.

- Up to 40 Analog Input channels per chassis
- Up to 20 Bridge Input channels per chassis
- Link with small or large chassis systems for additional channel tests
- External Trigger channel - software configurable Input/Output and Active High/Low conditions
- Ethernet Interface

Small Chassis

TP4 small chassis is a small format data acquisition system offered with with either 8 Analog or 4 Bridge input channels that can be linked with other small or large chassis systems for additional channel tests.

- Eight Analog Input channels or;
- Four Bridge Input channels
- External Trigger channel -software configurable Input/ Output and Active High/Low conditions
- Ethernet Interface

SYSTEM	Small Chassis	Large Chassis (Minimum Channels)	Large Chassis (Maximum Channels)
Dimensions (W x D x H)	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
Weight	4.6 lbs (2.1 kg)	11.0 lbs (5.0 kg)	13.4 lbs (6.1 kg)
Communications	Gigabit Ethernet (10Base-T)	Gigabit Ethernet (10Base-T)	Gigabit Ethernet (10Base-T)
ENVIRONMENTAL			
Operating Temperature	(0 to 55) ℃	(0 to 55) ℃	(0 to 55) ℃
POWER			
Frequency	(50 to 60) Hz	(50 to 60) Hz	(50 to 60) Hz
AC Voltage	(94 to 240) VAC	(94 to 240) VAC	(94 to 240) VAC
EXTERNAL TRIGGER			
Connector	BNC	BNC	BNC
Trigger	Input/Output	Input/Output	Input/Output
Max. Input Voltage	±12V	±12V	±12V
Max. Output Voltage	±5V	±5V	±5V