

# TestStation™ PXI Expansion Board

Industry's Most Integrated PXI/ICT Solution

## Key Features:

- Plugs directly into TestStation Instrument Backplane
- Supports 4 PXI Instruments
- Flexible switching matrix
- Up to 100MHz Signal bandwidth
- Expands ICT test capabilities
- Based on Industry Standards
- Open Architecture
- Small form factor does not increase tester footprint
- Easy Integration
- Best-in-Test Award Finalist

Test & Measurement World



The TestStation™ PXI Expansion Board extends manufacturing test capability beyond traditional ICT.

Teradyne's PXI Expansion Board enables manufacturers to expand the functionality of In-Circuit testing by supporting the installation of commercial off-the-shelf PXI Instruments in a specially designed chassis that plugs directly into an Accessory or Pin Board Slot of TestStation in-circuit test systems. The board's innovative and compact design makes it easy to add functional test capability without growing tester footprint or expanding equipment floor space.

## PXI Expansion Board Overview

The bottom half of the TestStation PXI Expansion Board is based on the PCI *eXtensions for Instrumentation* (PXI) specification. PXI is an industry standard, open architecture specification that was created in response to the needs of a variety of instrumentation and automation users who require increasing performance, functionality, and reliability from compact rugged systems that are easy to integrate and use. The Teradyne designed PXI chassis allows manufacturers to install up to four 3U PXI instruments. The PXI chassis backplane is connected by an HDMI cable to a Teradyne PCI Express Controller board that resides in a PCI Express slot of the tester PC.

The top half of the TestStation PXI Expansion Board has a Signal Distribution Hub that supports routing of the PXI instrument signals

directly to the Unit-Under-Test, to external IEEE-488 instrument ports, or to the system's Analog Bus (where they can be further routed to any pin in the test system). Operators can control the signal path using documented TestStation programming language commands.

Buffers/Amplifiers are also available on the top half of the Board to handle situations of UUT signal conditioning. The buffers can be DC or AC coupled and a 50 ohm termination can be programmed to match transmission line impedance. Additional lines are provided to connect the TestStation's Arbitrary Waveform Generator and to synchronize the PXI instruments with the TestStation's DMM Instrument.

Up to two PXI Expansion Boards can be installed in the accessory or pin board slots of the TestStation system - supporting a maximum of eight independent 3U PXI instrument modules.

## Software Overview

Application programs to communicate and control the PXI instruments can be developed using National Instrument's LabView or LabWindows/CVI software - popular and intuitive graphical programming environments that are test industry standards. Other programming languages, such as Microsoft Visual Studio can also be used to develop programs for the PXI instruments in the TestStation PXI Expansion Board chassis. Since the

Teradyne solution is based on industry standards, most Windows-based PC PXI test solutions that have already been developed for your engineering or manufacturing environment can be transported to the TestStation PXI Expansion Board without having to re-write your test procedures.

The PXI functional test procedures can be tightly integrated with standard in-circuit test programs using TestStation's powerful **Dynamic Programming Extension** feature. The Dynamic Programming Extension license provides a mechanism to link the tester Runtime System directly with external Dynamic Link Library routines (DLLs). With this license, the tester runtime can easily communicate with custom software applications that are developed by programmers to control the PXI instruments. Program status and measurement variables can also be passed between the tester runtime and external software applications providing maximum flexibility for test program developers.

## Expanding Test Capabilities

With the TestStation PXI Expansion Board, manufacturers can move beyond traditional ICT testing to perform value-adding functional, compliance, and system testing procedures that are typically performed at separate stations on the manufacturing floor. The benefits of consolidation include reduced fixture and tooling costs, lower handling costs, reduced development costs, fewer test operators, faster production beat rate, and greater system utilization.

The TestStation in-circuit test system is supported worldwide by Teradyne's global service organization and by the Teradyne Support Network (TSN) of service providers.

For more information on Teradyne's TestStation PXI Expansion Board contact your local Teradyne Sales Representative or visit [www.teradyne.com/atd](http://www.teradyne.com/atd).

## General Product Features

- Compliant with PXI Specification Revision 2.2
- Requires TestStation Software version 6.4.0 or greater
- Supports up to four 3U PXI Peripheral Modules per board (100 x 160 mm)
- Supports up to two PXI Expansion Boards per tester (8 PXI instruments total)
- Supports 5V or Universal voltage PXI instruments
- Does not support Star Trigger bus
- Board can be plugged into TestStation Accessory slot or Pin Board slots (if plugged into Pin Board slot it requires four empty pin board locations)
- Relay switched signals to the UUT with current handling capacity of 2 Amps
- 100MHz bandwidth signals through Direct Connect signals
- High signal isolation (< -40dB @ 100MHz)
- Switched and un-switched ground pins
- Four high performance unity gain linear amplifiers
- Direct cable access to eight IEEE-488 BNC ports at rear of system
- Connection to ICA Arbitrary Waveform Generator output signal
- Connection to trigger ICA Digital Multi-meter instrument
- Eight analog channel connections to the system backplane and scanner matrix
- Four maskable trigger pulses are available for synchronization with digital bursts
- Sixteen switched analog I/O lines plus 16 direct analog signal lines available at the receiver interface



Contact your Teradyne sales representative for more information or visit [www.teradyne.com/atd](http://www.teradyne.com/atd).