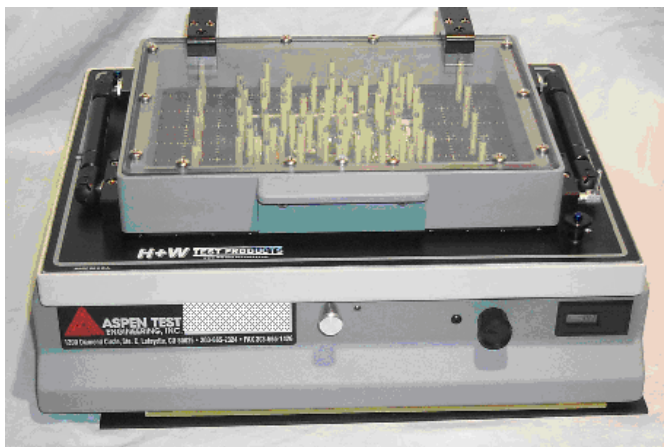




ASPEN TEST
ENGINEERING, INC.

TEST FIXTURES

Aspen Test Engineering, Inc. specializes in complete in-circuit and functional test solutions to optimize your manufacturing productivity and reliability. Our extensive electrical engineering and mechanical design experience enable us to provide complete custom fixture services for complex circuit boards. Fixture solutions include top and side-access probing, led detection, accommodation of dual-sided boards, custom vacuum covers, and custom electronics. All fixtures pass a 100% point-to-point verification prior to shipment, using our automated verifier. We have developed an automated pogo-pin insertion machine to expedite production and increase quality.



Custom fixture electronics for increased test coverage:

- Optical Sensors
- Frequency Measurements
- Opens Xpress and Test Jet Probes
- Acoustic Measurements
- Relay Isolation
- Electro-Mechanical Devices
- Switch Actuators

In-Circuit Programming and Test Fixture Finishing Services for the Following Systems:

- GenRad
- Hewlett-Packard
- Teradyne/Zentel
- Schlumberger/Factron

Special Mechanics Design

- Vacuum, Mechanical or Pneumatic Actuation
- Top and Side Access Probes




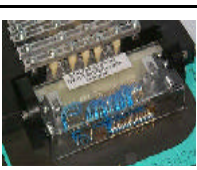


Functional Fixtures

- VXI, PC-Base, GPIB, Proprietary or Client defined interface

Single and Double Sided Boards



Fixture Accessories

| | | |
|---|---------------------------|--|
|  | <p>Top Access</p> | <p>Used to house Opens Express probes and custom electronics. Allows access to points found on top side of board and dense circuitry. We have vacuum, manual, or pneumatic options.</p> |
|  | <p>Vacuum Cover</p> | <p>Our custom vacuum covers accommodate any UUT size. The new design incorporates vertical travel for top-side probing of the UUT.</p> |
|  | <p>Pneumatic Actuator</p> | <p>There is half an inch of vertical travel, making this pneumatic acuator ideal for top-side probing and non-vacuum fixtures</p> |
|  | <p>Side Access</p> | <p>Our Mechanical Side Access allows for the testing of typical printed circuit board assemblies through board mount connectors. There are manual, pneumatic, and vacuum-actuated options.</p> |
|  | <p>Over-Clamp</p> | <p>Aspen Test Over-Clamps hold PC boards in place for probe engagement when there is no vacuum seal. They are also useful for mounting Opens Xpress probes and custom electronics.</p> |
|  | <p>Molded Gasket</p> | <p>Aspen Test custom designs our urethane gaskets for vacuum sealed boards.</p> |

