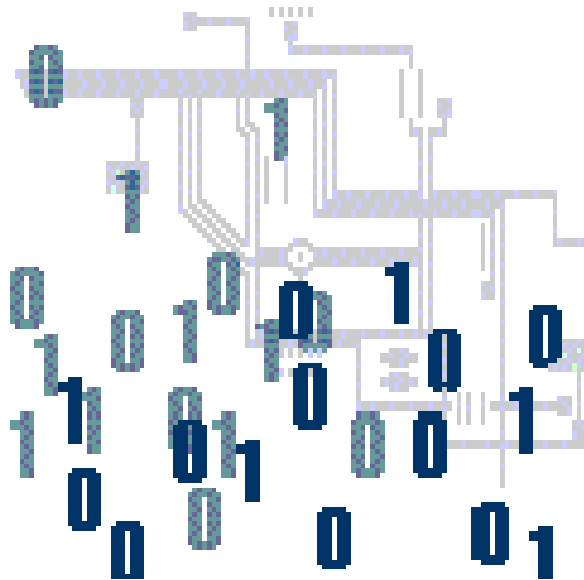


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ScanPathExtender™-7

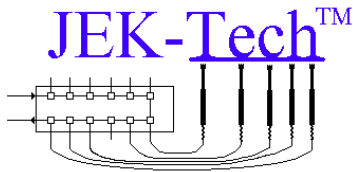
Technology Overview



Date: December 4, 2008
Revision: 1.0.4

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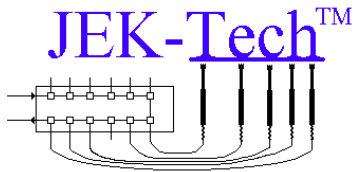
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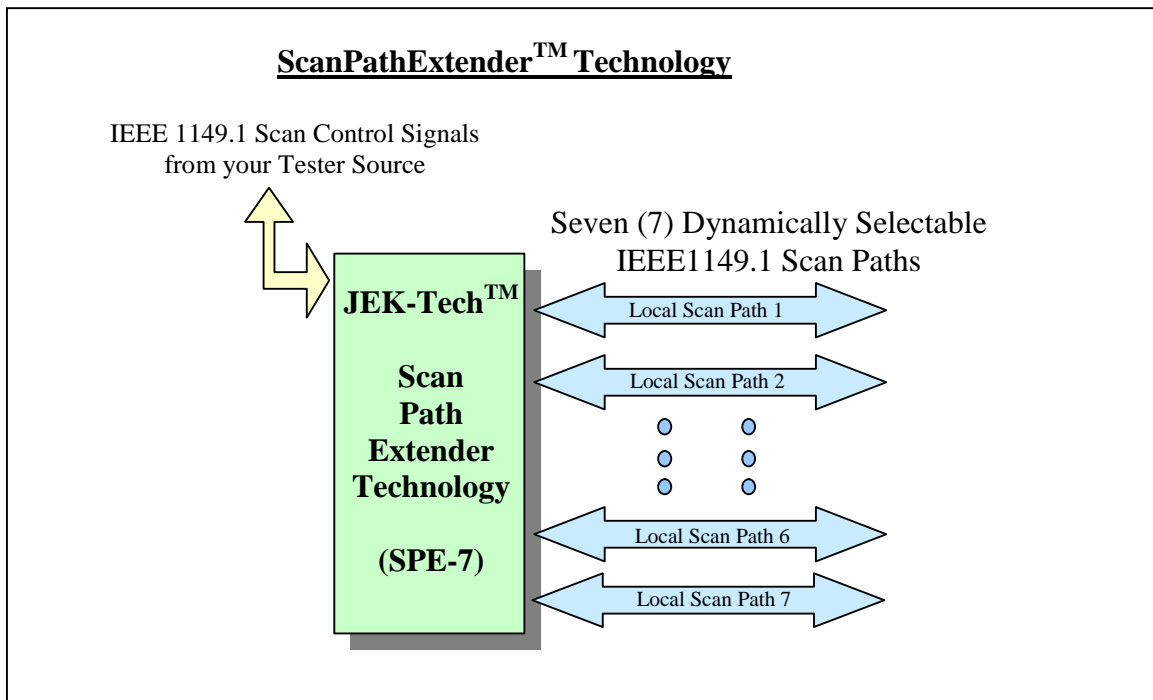
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1. ScanPathExtender™ (SPE-7) Technology

The ScanPathExtender™-7 technology (SPE-7) enables up to seven Test Access Ports (TAPs) to be used in a Multi-Drop test environment, **without** the addition of external discrete I/O control signals.

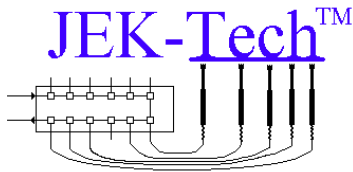
The ScanPathExtender™-7 technology (SPE-7) is intended for use when multiple IEEE1149.1 TAPs need to be dynamically connected together on your hardware product, under IEEE1149.1 compatible protocol software control.

Connecting multiple IEEE1149.1 Boundary Scan Test Access Port (TAP) paths into one scan chain, easily increases test coverage by allowing cross TAP boundary scan testing. Each SPE-7 allows up to seven (7) TAPs to be dynamically selected in any combination.



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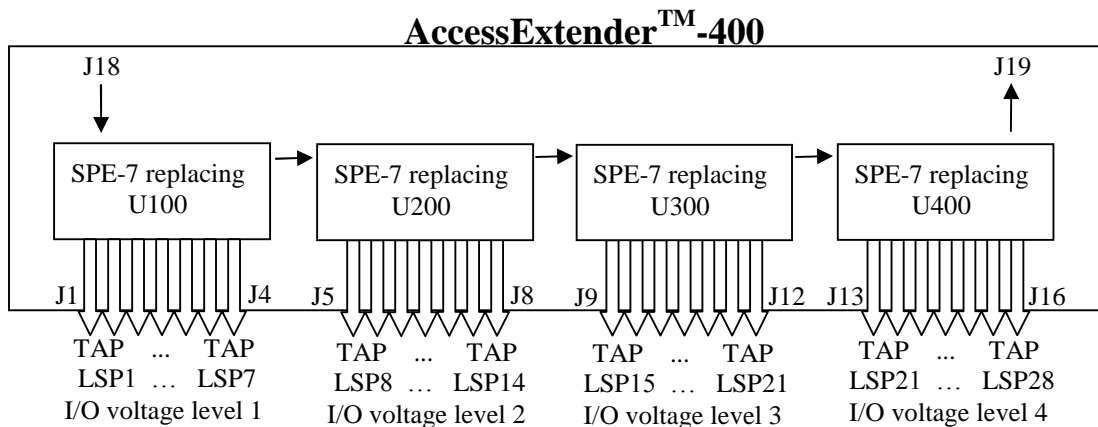
1.1. ScanPathExtender™ (SPE-7) Key Features

- **ATPG Software Models:** standard SPE-7 functionality works with existing software models, no new models are required.
- **Seven LSP TAPs:** up to seven selectable Local Scan Port (LSP) TAPs per SPE-7.
- **20Mhz:** runs TAP protocol at 20Mhz on Test Clock (TCK) on all LSPs.
- **Multi-Level TAP Protocol:** two levels of TAP protocol for accessing features.
- **Multi-Drop Addressable:** supports protocol for Multi-Drop addressing.
- **LSP State Machines:** each LSP is controlled by independent configuration state machines.
- **TAP Stitcher:** supports TAP Stitcher mode, bypassing addressing requirements.
- **Transparent:** supports transparent mode, bypassing TAP protocol requirements.
- **GPIO:** supports sixteen (16) advanced General Purpose Input Output signals.

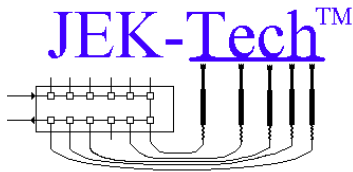
1.2. SPE-7 within an AccessExtender™-400

One AccessExtender™-400 has the ability to be upgraded with a maximum of four (4) SPE-7s, allowing up to twenty-eight (28) dynamically selectable Local Scan Ports (LSPs).

Each SPE-7 upgraded location/position can be set to any I/O voltage that the AccessExtender™-400 supports, allowing a maximum of four (4) different Unit-Under-Test (UUT) TAP voltage levels simultaneously.



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1.3. Recommended Applications

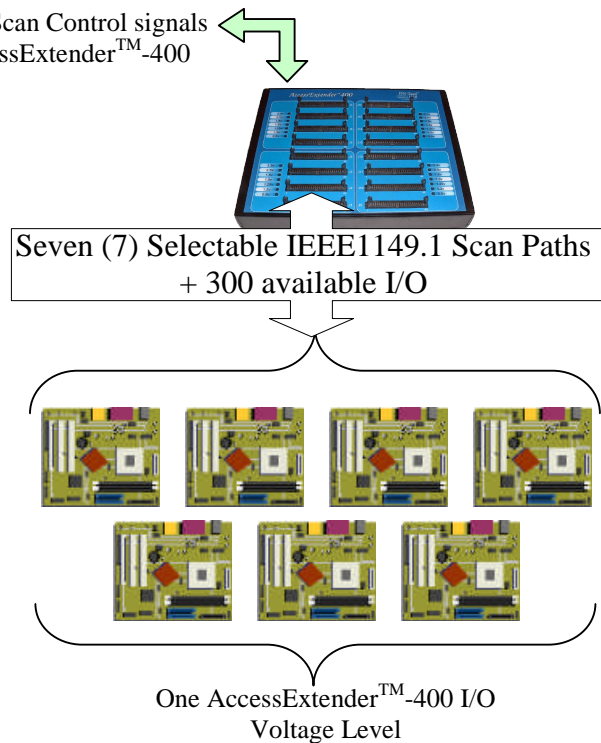
Using the ScanPathExtender™ technology within an AccessExtender™-400 allows the user to dynamically connect up to seven (7) different IEEE1149.1 TAP ports at one user selectable voltage setting.

1.3.1. Backplane or Multiple UUTs

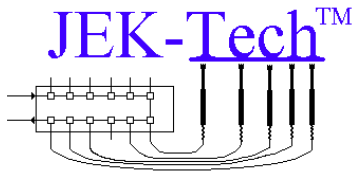
The AccessExtender™-400 with one ScanPathExtender™-7 can be used to test multiple Units Under Test (UUTs) on the bench or in a backplane configuration, at one user selectable voltage level. AND, each LSP contains its own configuration state machine, allowing the test application to add, remove, park and unpark each LSP independently.

AccessExtender™-400 with ONE ScanPathExtender™-7

IEEE 1149.1 Scan Control signals
to your AccessExtender™-400



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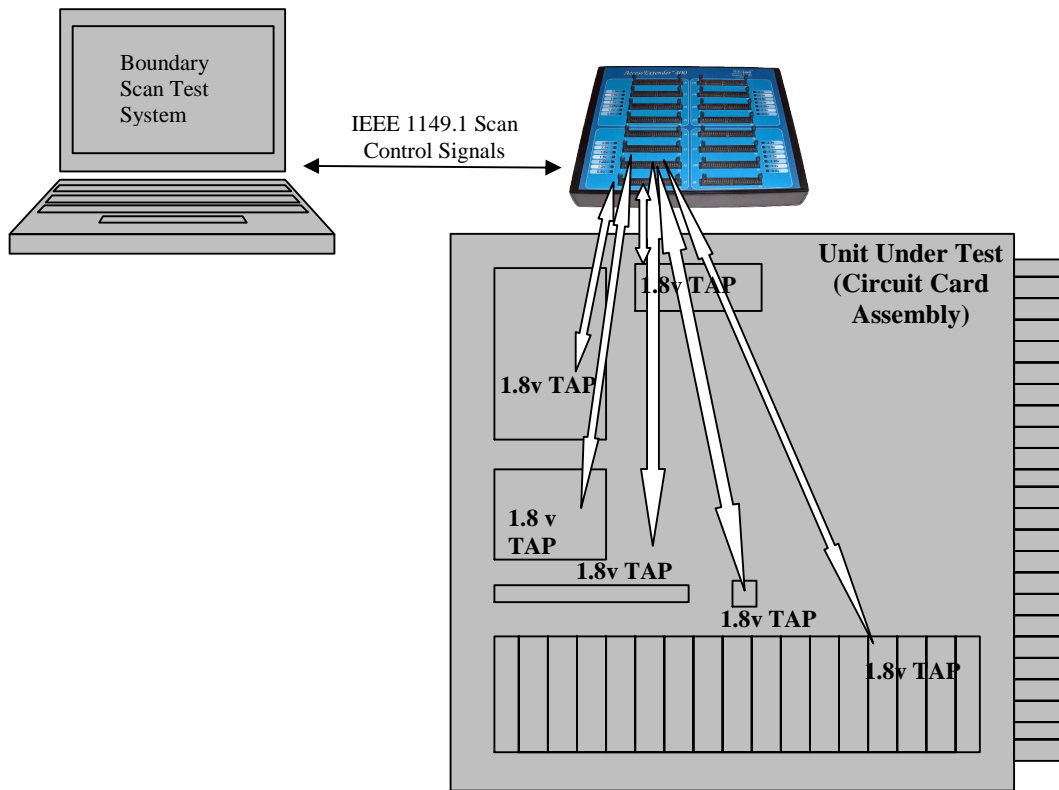


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1.3.2. Multiple Scan Paths on one UUT

The AccessExtender™-400 with one ScanPathExtender™-7 can be used to dynamically connect multiple scan paths on one UUT¹ inside In-Circuit fixtures, while still providing three hundred (300) I/O testpoints; removing false failures due to shorts induced with loopback or jumpering to concatenate scan chains.

AccessExtender™-400 with ScanPathExtender™ technology

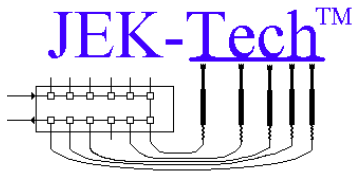


2. Power Requirements

Refer to the AccessExtender™-400 Users Manual document. This technology requires no additional power beyond that already used by the AccessExtender™-400.

¹ The AccessExtender™-400 may contain up to four SPE-7s, allowing up to four different UUT TAP I/O voltages.

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3. Scan In and Scan Out Connectors

Refer to the AccessExtender™-400 Users Manual document. This technology requires no additional Primary TAP connections beyond that already defined by the AccessExtender™-400 Users Manual. The standard Scan In (J18) and Scan Out (J19) connectors remain the Primary IEEE1149.1 TAP input/output connections for the AccessExtender™-400. Proper wiring and voltage settings of the SPE-7 UUT TAP connections (from J1 thru J16) are the responsibility of the user.

4. Voltage Settings

Refer to the AccessExtender™-400 Users Manual document. This technology requires that the user set the TAP and I/O voltages appropriately for the SPE-7 & UUT TAP.

5. Signal Pinout

ScanPathExtender™ technology within an AccessExtender™-400 has a unique TAP pin-out configuration. Contact JEK-Tech™ for further information contained within the ScanPathExtender™-7 Users Manual.

6. Contact Information

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