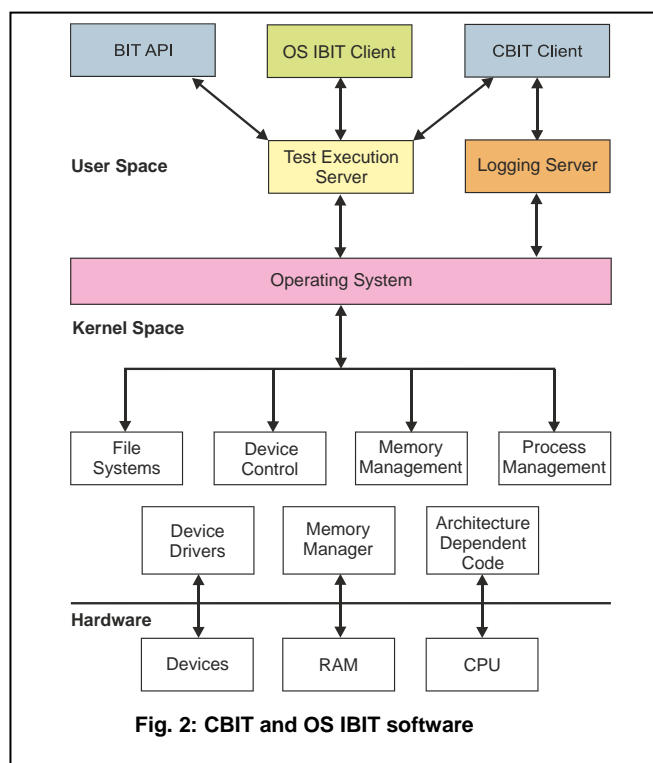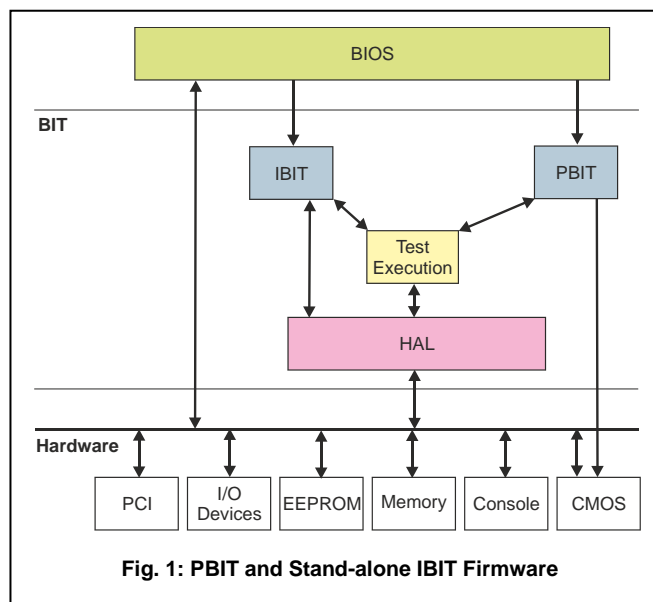# Built-In Test Firmware and Software

Key Features

Concurrent Technologies Built-In Test (BIT) software provides a range of self-test diagnostics which allows for extensive live in-system testing. It is available for a range of Concurrent Technologies single board computers spanning various system architectures, VPX™, VME and CompactPCI®.

- Available for a range of Concurrent Technologies boards utilizing Intel® processors:
  - commercial and industrial
  - rugged air-cooled
  - rugged conduction-cooled boards

- Standalone diagnostics and an Operating System specific package providing run-time diagnostics alongside applications

- Range of BIT support:
  - Power-on BIT, Initiated BIT and Continuous BIT

Fig. 1: PBIT and Stand-alone IBIT Firmware

Fig. 2: CBIT and OS IBIT software

Built-In Test (BIT)

- Built-In Test (BIT) available for a range of Concurrent Technologies boards:
  - → commercial and industrial boards
  - → rugged conduction-cooled boards
- range of BIT support:
  - → Power-on BIT (PBIT)
  - → Initiated BIT (IBIT)
  - → Continuous BIT (CBIT)
- test coverage 95% or greater (PBIT+CBIT+IBIT)
- comprehensive fault codes
- test suite functions are board dependent
- BIT available as firmware and as software:
  - → see Fig. 1 and Fig. 2

BOARD FIRMWARE BIT (build option)

Power-on BIT (PBIT)

- onboard firmware in Flash memory
- integrated into BIOS POST
- selectable test duration/coverage
- results stored in EEPROM, available to Operating System
- board's BIT firmware must be installed at the factory

Stand-alone Initiated BIT Console (IBIT)

- onboard firmware in Flash memory
- Operating System not required
- operates via serial console
- interactive test execution:
  - → extra tests available
  - → supports test parameters
  - → supports complex looped execution
- utility functions for direct hardware access
- board's BIT firmware must be installed at the factory

OPTIONAL SOFTWARE BIT (SW BIT/nnn)

Continuous BIT (CBIT)

- specific to Operating System (OS)
- integrated with PBIT for low-level tests
- fully customizable test selections
- stored results available to applications
- CPU remains interruptible and pre-emptable
- does not disconnect external interfaces
- remote operation via SSL network connection
- optionally available for the specified Operating System (SW BIT/nnn):
  - → board's BIT firmware must be pre-installed

OS Initiated BIT Console (OS IBIT)

- specific to Operating System
- interactive test execution:
  - → supports test parameters
  - → supports looped execution
- remote operation via SSL network connection
- optionally available for the specified Operating System (SW BIT/nnn):
  - → board's BIT firmware must be pre-installed

Operating Systems Supported

- Linux and VxWorks (board dependent)
- contact your local sales office for the latest Operating Systems support

Boards Supported

- a range of Concurrent Technologies rugged and commercial single board computers, supporting Intel® processors
- contact your local sales office for the latest range of boards

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Please contact your local Concurrent Technologies sales office for further details on board build options and accessories.