HP 3070 Family Advanced Digital Training

Technical Data

Course Overview

This course covers advanced digital testing techniques on the HP 3070 combinational board test system. It is designed to enhance the knowledge of students that have already completed the HP 3070 Family User Fundamentals Training (E1031A) but require more in-depth digital testing knowledge. Students will learn to write custom functional cluster tests and high speed timing set tests.

Course Features

- Implement combinational testing on the HP3070.
- Write and debug functional cluster tests including backtracing
- Write and debug custom tests using advanced timing techniques
- Implement high-speed testing on custom devices

Specifications

Course Length
5 days

Audience
Engineers and technicians responsible for developing advanced digital programs on the HP 3070 board test system.

Prerequisites

- Must have system type 3075/8/9 or purchase of E1184A combinational test software upgrade.
- Completion of the HP 3070 Family User Fundamentals Training (E1031A).
- Development of at least two custom digital devices on the HP 3070.
- Completion of the prestudy which is mailed after students have enrolled but no sooner than one month before class begins.

Delivery Method
Classroom

Format
Instruction consists of a combination of audio-visual, lectures and lab exercises.

Ordering Information

To order the HP 3070 Family Advanced Digital Training (E1024A) in the U.S. call 1-800-HPCLASS (800-472-5277).

HP's Customer Registration Center can provide you with price, scheduling, and enrollment information.

Outside the U.S., contact your nearest local HP sales office.

HP Education Services: Your Key to Higher

Classroom Training Benefits

Experienced HP Instructors
Learn from an experienced HP instructor who is an expert in using and applying instrument systems to meet your measurement needs.

Available at HP Classrooms or Your Site
Take advantage of HP's learning facilities, equipment, and interactive learning environment by attending class at an HP facility. Or, save travel expenses and time by organizing a dedicated delivery at your location.

Regularly Scheduled Classes
Plan training months in advance.

Extensive Hands-on Practice
HP classroom training is characterized by extensive hands-on experience and interactive class discussion. HP classroom training pays off immediately because it is geared to real-world solutions.

Comprehensive Student Materials
Copies of course materials are provided for future reference on the job.

Course Number: E1024A (scheduled)

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Detailed Course Agenda

- **Introduction to the Class**
  - Welcome
  - Schedule
  - Review
- **Module 1: Introduction & Review**
  - Pattern Capture Format
  - Custom Digital Test
  - Overview: Custom VCL Library tests
  - Overview of Limited Access and Cluster Test
  - Review of Cluster Test
  - Overview of Testing Non-Volatile Memory Devices (Flash RAM & EEPROM)
  - Overview of Testing Analog ICs with VCL
  - Advanced Debug tools
  - Overview of Digital Functional Testing (Backtrace)
  - *Lab 01: Build two Setup Tests*
- **Module 2: Custom Libraries**
  - Setup Only Library
  - Completing the Setup Only Test
  - Define Test Strategy
  - Reset Function
  - Define Timing Requirements
  - Define Input Patterns
  - Segment Test by device Functions
  - Debug
  - Subroutines
  - *Lab 02: Develop Input Patterns*
- **Module 3: Autolearn**
  - What is Autolearn
  - Test File
  - Assignment File
  - PCF segments created by Autolearn
  - Masking intermittent outputs
  - Editing the Final Test File
  - *Lab 03: Using Autolearn*
- **Module 4: Timing Sets**
  - Review: Timing Section and Subroutines
  - Overview: Timing Set Hardware
  - Overview: Timing Set Software
  - Writing a Timing Set
  - *Lab 04 A: Write a Timing Set for the I/O Port*
  - In-depth review of Timing Set Hardware
  - User Vectors vs. Machine Vector
  - Timing Offsets
  - Keeping Drive States
  - Using HP PushButton Debug
  - *Lab 04 B: Debugging the I/O Port*
  - Timing Set Waits (Hardware and Software)
  - The Pipe
  - Synchronizing the DUT to the HP 3070
  - *Lab 04 C: Counter & 68000*
- **Module 5: Testing Programmable, Non-Volatile Memory Devices**
  - What is a Programmable, Non-Volatile Memory Device
  - Developing a VCL Test for a Programmable, Non-Volatile Memory Device
  - *Lab 05 A: FlashRam*
- **Module 6: Analog and Mixed Devices**
  - Reasons for using Digital Tests on Analog Devices
  - *Lab 06A: Write a digital test for the Op Amps on the Integration Board*
  - Mixed tests: Analog to Digital Converter
  - Mixed tests: Digital to Analog Converter
  - *Lab 06B: Write a Mixed Test for the DAC on the Integration Board*
- **Module 7: Backtrace**
  - Review of Autolearn
  - Overview of Backtrace
  - Preview: States File, Backtrace File
  - Two Autolearn Methods
  - Sources and Outputs in the generation of a Backtrace File
  - *Lab 07 A: Class Board Backtrace File Development*

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Printed in USA 5/97

Publication Number 5965-6731E