VL Digital Programming

Flexible, Cost Optimized Test Solutions

Automotive

Mobility

IoT/IoV & Optoelectronics

Computing & Network

Industrial & Medical

Consumer

Course Description

The *Virtual Learning Digital Programming* training course provides a strong foundation for understanding and programming various digital instruments using Unison. It enables attendees to work comfortably with the Unison user interface and program the typical instrument set using Unison Test Language instructions. Students must complete the VL Unison Fundamentals course before attending this class.

Course Outline

- Digital Subsystem Use Model

Course Structure

- Three days - including classroom and practical exercises

Prerequisites

- Completion of the VL Unison Fundamentals course prior to attending this course
- Three months of test program experience

Recommended Skills

- C or C++ programming experience
- Familiarity with Unix and Linux operating systems
- A basic understanding of digital testing
- English - written and spoken

Who Should Attend?

- Test program development and support engineers
- Test system application engineers and technicians

Required Infrastructure

- A computer with internet connection
- Microsoft Teams
- Unison Simulator installed with U1909 or above

- **Next-gen test system for wide range of applications**
- **Scalable high-throughput architecture**
- **Flexible configurations and innovative solutions**
- **Small form factor**
- **Air cooled architecture and instruments**
- **Compact low power technology**

VL Digital Programming

Daily Schedule

Each topic discussed will have an associated laboratory exercise to aid in reinforcement of understanding the training material.

Day 1

Review and introduce of the commonly used Unison objects associated with developing a digital test.

- Spec Object
- Levels Object
- Pattern Object
- Pattern Setup Object

Day 2

- Digital Programming
- Pattern Debugging Tools

Day 3

- External Triggering
- Digital DSP Send and Capture

Topics Covered

This course covers the Unison user interface, including both the graphical tools and Unison Test Language instructions. Hardware discussed in the course includes:

- FX1, FX2 and GX1x digital subsystems

Course Modules

1. Unison GUI Tools

Introduction of the commonly used Unison tools to develop, test and debug a functional test or any test where a digital pattern is used:

- Levels Tool
- Pattern Tool
- Pattern Setup Tool
- Pin Format and Timing Characteristics
- Micro-instructions
- FuncTest UTL Test Method

2. Digital Programming Instructions

This unit introduces the generic (API) syntax instructions used to:

- Connect/disconnect pins
- Pattern execution
- PPMU Force instructions
- PPMU Measure instructions
- Unison Test Language Synchronization
- Global Flag states

On successful completion of this module the student will be able to create a series of tests for a digital device.

3. Digital Tests

This unit introduces the student on how to incorporate digital patterns in a variety of tests (DAC and ADC tests, instrument triggering, hand-shaking between digital pattern execution and run-time code):

- Unison Test Language Synchronization
- DSP Send and Capture

DSP Send operations are used to load pre-defined data into pattern memory and use that data to program a device under test. In addition, the digital pin can also be used to capture non-deterministic digital data from the device under test.

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