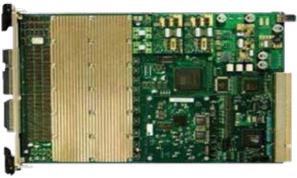# Diamond$_X$ HDVI eLearning

High-Density Voltage Instrument Introduction
Course # 0951e

Cohu

Course Description

This eLearning material introduces the student to the High-Density V/I (HDVI) instrument. The training will provide the student with an overview of the instrument, the major functional areas, interfacing guidelines and some best programming practices. On completion of the course, the student will be able to describe the components of the HDVI, understand its theory of operation including ganging, add instrument resources to an HDVI AdapterBoard Object, and complete an LDO ganging test program. This is accomplished by a combination of multimedia presentations and interactive software demonstrations.

Course Outline

- Product Overview
- Functional Blocks and Theory of Operation
- Ganging Features
- Interface Design
- Programming - Test Examples

Course Length

- Self-paced – 4-5 hours typical depending on skill level

Prerequisites

- Six months test program experience
- Successful complete of Unison Applications Programming class

Recommended

- C and C++ programming
- Familiarity with Linux Operating System
- English - written and spoken

Automotive

Consumer

Flat Panel Display

IoT/IoV & Optoelectronics

Industrial & Medical

MCU

Mobility

- **72 Channels**
- **Force/Measure 4-Quadrant Operation**
- **±7 V / 256 mA, gang to 2 A**
- **2 Precision Analog Sources**

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Course Modules

1 - Product Overview

On completion of this module the student will be able to:

- State on which systems the HDVI can be installed
- Identify target markets the HDVI is intended to meet
- Summarize the key Operating Specifications of the HDVI

2 - Functional Blocks and Theory of Operation

On completion of this module the student will be able to:

- List and locate the major functional areas of the HDVI instrument
- Describe the major functional areas of the instrument (VIS, PAS, Bypass Connection Matrix)
- Recognize the event triggering features of the HDVI instrument
- Identify unique HDVI functional features and proper usage

3 - Granging Features

On completion of this module the student will be able to:

- Describe the VIS ganging capabilities
- Identify the programming methods to enable Static and User ganging
- Recognize the Static ganging rules and constraints
- Describe the unique HDVI 'Dynamic' Ganging feature and its usage
- Summarize the ganging loadboard design considerations

4 - Interface Design

On completion of this module the student will be able to:

- Identify how HDVI resources can be added to a test program
- Describe the HDVI 400 pin Pogo interface
- Recognize the HDVI power curve and its impact on maximum per channel current
- Recognize unique HDVI EOT hardware and software design considerations
- State how to design an HDVI loadboard for increased testing parallelism
- Describe loadboard design considerations unique to the PAS
- Recognize design considerations unique to making differential voltage measurements

5 - Programming Test Examples

On completion of this module the student will be able to:

- Add HDVI resources to an AdapterBoard Object using the Unison PackageTool
- Demonstrate a working knowledge of the Unison Graphical Debug Tool (GDT) and recognize the features and benefits of the tool
- Identify many of the valid HDVI VI APIs and summarize their behavior
- Demonstrate a working knowledge of the TestTool debugger and GDT by completing a VIS Ramp Waveform interactive programming demonstration
- Complete LDO Output Voltage Accuracy and Load Regulation tests using an interactive programming demonstration

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Who Should Attend

- Test program development and support engineers

Course Viewing Requirements

- Browser supporting HTML5
- Audio-listening capabilities (such as headset or speakers)
- Connection speed of at least 600 kbps

Course Cost

- Access is free of charge to all Cohu semiconductor tester customers

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