

Diamond_x DCTM_x eLearning

Precision Data Converter Test Module

Course # 2200e



Course Description

This eLearning material introduces the student to the Data Converter Test Module (DCTM_x) instrument. The training will provide the student with an overview of the instrument, the theory of operation, accessing help, and some simple test examples. On completion of the course, the student will be able to describe the components of the DCTM_x, understand the theory of operation, be able to access the help documentation, add the instrument resources to a program, and be able to describe programming statements used in simple test examples. This is accomplished by a combination of multimedia presentations and interactive software demonstrations.

Course Outline

- Product Introduction
- Functionality and Theory of Operation
- Programming - Test Examples
- Calibration
- Using the Unison System Help

Course Length

- Self-paced – 2-3 hours typical depending on skill level

Prerequisites

- Six months test program experience
- Successful completion of Unison Application Programming course

Recommended

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



Automotive



Consumer



Power Management



IoT/IoV & Optoelectronics



Industrial & Medical



MCU



Mobility

- Bench-top capability in Semiconductor ATE
- 24 bit Resolution Source/Measure
- Front-end Smart Matrix
 - 4 x 4:1 Output Fan Out
 - 4 x 2 Alternative Inputs

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Course Modules

1 - DCTM_x Product Introduction

This module is a foundation for the later modules, providing the student with an overview of the DCTM_x. On completion of this module the student will be able to:

- State on which system the DCTM_x can be installed
- Identify target markets the DCTM_x is intended to meet
- Summarize the Operating Specifications of the DCTM_x
- Recognize the instrument's major feature set

2 – DCTM_x Functionality and Theory of Operation

This module various block diagrams to provide an in-depth description of the DCTM_x instrument functionality. On completion of this module the student will be able to:

- List the major features of the DCTM_x instrument
- Recognize where the DCTM_x instrument can be installed
- Describe how the instrument is controlled by the tester
- Describe the DC Source and Measure Features
- Describe the AC (Audio) Source and Measure features
- Describe the Bucking DAC / AC Null Capability
- Recognize the Smart MUX capability
- Describe using AC Meter ALT Relays with Loadboard Notch filter

3 - DCTM_x Programming – Test Examples

Designed to build on the student's existing knowledge of creating a Test Program in Unison, this module will introduce the student to real-world test examples including a Vref and Input Threshold test. These examples will be completed by the student using interactive software demonstrations to reinforce the programming concepts introduced. On completion of this module the student will be able to:

- Add DCTM_x resources to an Adapter Board Object using the Unison Package Tool.
- Recognize and use various Unison DSP APIs

- Recognize the Smart MUX connect / disconnect APIs
- List the preferred DC Source Signal API statement order
- List the preferred DC Measure API statement order
- Complete a Vref test for a voltage reference chip
- Complete a Input Threshold Test for a voltage ref chip

4 - DCTM_x Calibration

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

- Identify the difference between system calibration and checker
- Identify checker, verification and calibration programs
- Demonstrate the use of the Unison SMC+ tool
- Describe how the system's HP3458 DMM is used during calibration and verification of the DCTM_x board

5 - Using the Unison System Help

Unison provides an extensive help system. In this module the student will become familiar with the structure of the help system, and how to navigate to those areas where DCTM_x information can be found. On completion of the module the student will be able to:

- Launch the help system from the Operator Tool
- Navigate to the DCTM_x instrument manuals
- Create a PDF of the Unison help documents
- Navigate to the application programming instructions (API) documentation
- Be able to determine which APIs apply to the DCTM_x

At the end of each module the student will be required to pass a test, achieving a score of 75% or more. The student is encouraged to take notes throughout the course, and repeat, or pause the presentation as needed.

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Who Should Attend

- Test program development engineers

Related Courses

- Unison 5.x, or later, Application Programming

Course Viewing Requirements

To view the course, you must have:

- Microsoft® Internet Explorer® 9.0 (or later), Mozilla®, Firefox®, or Chrome®
- Audio-listening capabilities
- Connection speed of at least 600 kbps

Course Cost

- Free of charge to all Diamondx and DxV Cohu customers