RedDragon (RD8) on Diamond$_X$

Instrument Introduction and RF Programming Basics

Course Description

This eLearning material introduces the student to the RedDragon RD8 RF sub-system on the Diamondx test system. On completion of this course, the student will be able to describe a typical Diamondx test system with RD8 installed, summarize key features and markets it was designed to address, demonstrate a knowledge of RF programming using the Unison RF Class of APIs and ModDemod library, and recognize tools used to debug an RF test program. This is accomplished by a combination of multimedia presentations and interactive software demonstrations.

Course Outline

- Product Overview
- Functionality and Theory of Operations
- Programming using RF class of APIs
- Programming using ModDemod (VSA) Library
- RF GraphicalDebug Tool (GDT) and PlotWrapper

Course Length

- Self-paced – 4.5 hours depending on skill level

Prerequisites

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

Recommended

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

Automotive

Mobility

IoT/IoV & Optoelectronics

Computing & Network

Industrial & Medical

Consumer

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

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Course Modules

1 - Diamondx Test System with RedDragon

On completion of this module student will be able to:

- Summarize Diamondx test system features including RD8 components
- Describe a typical RF config for testing RF SOC
- Identify some of the Diamondx test system hardware and instruments used in support of RF testing

2 - Functionality and Theory of Operations

On completion of this module student will be able to:

- Identify RedDragon RD8 target market segments
- Summarize key features and specifications
- Identify the RF sub-system hardware components and their recommended slot configurations and related DUT site connections

3 - Programming using Unison RF Class of APIs

On completion of this module student will be able to:

- Describe how to configure a Diamondx with RD8
- Add RD8 resources to a test program
- Recognize the Unison RF Class of APIs and their sub-categories
- Navigate and use the RF API Help material
- Describe and use the RF *Config* and *Setup* RF APIs
- Identify Unison RF *Source* APIs
- Demonstrate a working knowledge of the steps and APIs used to generate a Continuous Wave (CW) and Modulated signal
- Identify Unison RF *Measure* APIs
- Demonstrate a working knowledge of the steps and associated APIs used to make RF measurements

4 – Programming using ModDemod (VSA) Library

On completion of this module student will be able to:

- Describe the purpose and API syntax of the Unison RF ModDemod(VSA) library
- Locate and use the ModDemod Help material
- Identify the structure and use of the Cohu-supplied modulation waveforms (.urf)
- Demonstrate a working knowledge of the VSA.HW and RF Envelope APIs used to source and measure *continuous* RF signals
- Demonstrate a working knowledge of how to source and measure a *modulated* LTE FDD RF signal using the ModDemod VSA.LTE and RF PowerSpectrum APIs

5 – RF GraphicalDebugTool (GDT) and Plotting

On completion of this module student will be able to:

- Recognize the different RF GDT views
- Use the GDT to confirm instrument settings and measurement results
- Describe the features of the Unison DataAnalysis (Plotter) Tool to display signals being exchanged with the Device Under Test (DUT)
- Summarize the ModDemod (VSA) library debugging features contained in the VSAPlotter Class

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Who Should Attend

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

Course Viewing Requirements

To view the course, you must have:

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

Course Cost

- Free of charge for all Cohu Semiconductor Tester Customers

REV20230816

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