

Keysight Technologies

Digitizing Oscilloscope Fundamentals

Course Overview

Course Numbers:
Keysight Training Center: H7240A #100
Onsite Training: H7240B #100

Gain a better understanding and features of a Infiniium Oscilloscope

Course Overview

This class, presented by Keysight Technologies, Inc. gives the student an in-depth understanding of the operation and measurement techniques with an Infiniium Oscilloscope.

What You will Learn

- Overview of the digital oscilloscope
- How it works
- Method of data acquisition
- Features of the oscilloscope
- How to do a set-up
- How to use it

Specifications

Course type

User Training

Audience

Technicians and Engineers new to the Keysight Infiniium product.

Prerequisites

RF and Microwave Fundamentals

Course length

½ day

Course format

Lecture and Lab

Delivery method

Scheduled at Keysight locations, or

Dedicated at a customer site.

To save you time and travel, many Keysight courses can be delivered at your site. Keysight can provide required equipment, or you can save money by furnishing your own.

Detailed Course Agenda

I. Digitizing Scopes Basics

Sampling techniques

- Real-time sampling
- Equivalent time sampling
- Sequential sampling
- Bandwidth consideration

Time domain vs. frequency domain

- Applications
- FFT conversion

Aliasing

- Correct sampling vs. undersampling
- Filter considerations, practical limits

Data Acquisition System

- Ring memory
- Trig point, pretrigger
- Readback to screen

Display modes

- Persistence mode
- Average mode
- Connect the dots
- Reconstruction mode

Functions

- Digitizing Oscilloscope block diagram
- Per block contents and functions

Probes

- Block diagram
- Source load considerations
- High vs. low frequencies

II. Hands-on

Front Panel Tour

- Run control
- Horizontal
- Vertical
- Trigger
- Quick measurements

Graphical Interface

- Turn-on
- Turn Channel on/off
- Change the V/div
- Change the time/div
- Change trigger level
- Dialog boxes
- Drag and drop measurements, clear measurement
- Zoom box, Undo
- Direct signal move, waveform, trigger, marker
- Built-up help

III. Measurement Labs

Lab 1: Search for an intermittent glitch

- The signal
- Auto set-up

Lab 2: Viewing and triggering on Anomalies

Lab 3: Finding the “Hidden” pulse stream

Lab 4: Identifying asynchronous digital cross-talk

Lab 5: Characterizing jitter with histograms

Lab 6: Pulse width compliance testing (Mask Test)

For the latest information on class schedules and locations visit our website:
www.keysight.com/find/education

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at:
www.keysight.com/find/contactus

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