HEWLETT PACKARD

Programming Instrumentation with HP BASIC

Technical Data

Course Overview

Learn to use HP BASIC to control the operation of IEEE-488 instrumentation. This course builds on previously learned HP BASIC programming skills placing heavy emphasis on communicating with external test equipment.

Course Features

- Write HP BASIC programs to control instrumentation
- Develop interrupt driven programs
- Strategies to minimize program execution
- Understand and gain experience using the IEE-488.2 communications standard
- Understand and use the Standard Commands for Programming Instrumentation (SCPI) to control test equipment

Specifications

Course Length
5 days

Audience
People responsible for developing programs that perform automated test or measurement/control tasks.

Prerequisites
HP98616B (Programming with HP BASIC) or equivalent experience.

Delivery Method
Classroom, Dedicated

Format
Course content is 40% lecture and 60% lab. This lab intenstive course provides hands-on experience using and applying course concepts to program instrumentation.

Ordering Information

To order the Programming Instrumentation with HP BASIC course in the U.S. call 1-800-HPCLASS (800-472-5277).

HP's Customer Registration Center can provide you with price and enrollment information about scheduled courses (HP 98616B+24X) or a dedicated courses (HP 98616B+24Y) which can be customized to meet your specific needs.

Outside the U.S., call your nearest HP sales office.

Course Number: HP 98616B+24X (scheduled)
HP 98616B+24Y (dedicated)

HP Educational Services: Your Key to Higher Productivity

Classroom Training Benefits

Experienced HP Instructors
Learn from an experienced HP instructor who is an expert in using and applying instrument systems to meet your measurement needs.

Available at HP Classrooms or Your Site
Take advantage of HP's learning facilities, equipment, and interactive learning environment by attending class at an HP facility. Or, save travel expenses and time by organizing a dedicated delivery at your location.

Regularly Scheduled Classes
Plan training months in advance.

Extensive Hands-on Practice
HP classroom training is characterized by extensive hands-on experience and interactive class discussion. HP classroom training pays off immediately because it is geared to real-world solutions.

Comprehensive Student Materials
Copies of course materials are provided for future reference on the job.

Programming Instrumentation with HP BASIC (HP 98616B+24X)

Detailed Course Agenda

Interface Basics
– computer interfaces
– interface communication
– keyboard interface
keyboard interrupts
– display interface

HP-IB/ IEE488.1
– Interface capabilities
– Addressing
– Interface bus details
bus protocol

IEEE 488.2
– Introduction
– Data Formats
– Listening Formats/Sytax
– Talking Formats/Syntax
– Common Commands
– Common Queries

Optimizing Bus Performance
– HP-IB Commands
– Service Request
– Explicit Bus Messages
– Bits Over the Bus

Data Representation
– Integers
– Real Numbers
– Attributes
– Free Field Formats
– Separators
– Terminators
– Formatting Output Data
– Entering Data
The Number-Builder
Entering String Data

Interrupts
– Overview of Event Initiated Branching
– Interrupt Priorities
– Interface Timeouts

Interface Registers and I/O Paths
– Status/Control
– READIO/WRITEIO

I/O Path Registers Advanced Transfer Techniques
– Outbound Transfer
– Inbound Transfer
– Buffers

Other Interfaces
– RS-232C
– GP-IO

Standard Commands for Programmable Instruments (SCPI/TMSL)
– Introduction
– General Architecture
– High Level Commands
– Low Level Commands
– Data Types
– Programming Typical SCPI Measurements
Source Instrument
Sense Instrument
Switch Instrument
– Status System
– General Status Register Model
Condition Register
Transition Filter
Event Register
Enable Register
– Trigger System
Generalized Trigger Model
Idle State
Initiate State
Event Detection
Sequence Operation
Instrument Actions

Rocky Mountain Basic Keyword Summary

Course Number: HP 98616B+24X (scheduled)
HP 98616B+24Y (dedicated)

Region Sales Headquarters:

United States:
Hewlett-Packard Company
Test and Measurement Organization
5301 Stevens Creek Blvd.
Bldg. 51L-SC
Santa Clara, CA 95052-8059

Canada:
Hewlett-Packard Ltd.
6877 Goreway Drive
Mississauga, Ontario L4V 1M8
(416) 678-9430

European Headquarters:
Hewlett-Packard S.A.
150, Route du Nant d'Avril
1217 Meyrin 2 - Geneva, Switzerland
(41) 22/780 8111

Japan:
Yokogawa-Hewlett-Packard Ltd.
15-7, Nishi Shinjuku 4 Chome
hinjuki-ku, Tokyo 160
(03) 5371 1351

Latin America:
Latin America Regicn Headquarters
Monte Pelvoux No. 111
Lomas de Chapultepec
11000 Mexico, D.F. Mexico
(525) 202 0155

Australia/New Zealand:
Hewlett-Packard Australia Ltd.
31-41 Joseph Street, Blackburn
Victoria 3130, Melbourne, Australia
(03) 895-2895

Far East:
Hewlett-Packard Asia Ltd.
22/F Bond Centre, West Tower
Queensway, Central, Hong Kong
8487777

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