Agilent E5240A I/CV Automation Software

Data Sheet

Overview

Agilent I/CV software provides automated test solutions for semiconductor characterization. I/CV supports semiconductor parameter analyzers, C-V meters, low leakage switch matrices, and popular wafer probers. It also provides wizard-based test development, test execution, and sequencing along with data logging and post-analysis tools on Windows.®

Software Functions

Interactive Measurements

I/CV includes Agilent ICS* as the default measurement tool. It provides point-and-click measurements, intuitive matrix control, and graphical analysis capabilities for semiconductor parametric measurements. Created setups can be used as measurement algorithms in the script editor.

*Refer to Agilent data sheet 5968-8667E for more detail regarding ICS.

Script Editor

The script editor provides a wizard-based interface for building test scripts used in the execution of automated tests. It allows access to libraries of built-in software components that support functions for creating test plans. Components include:

- Automated sub-die prober movement
- Switch connection execution
- Test algorithm execution
- Pass/Fail determination and processing
- Conditional branching: IF, ELSE
- Looping: FOR, WHILE
- User variable creation
- User prompts
- Message displays
- Test script commenting

Wafer Prober Navigation

I/CV provides support for popular semi-automatic probers as well as several automatic probers. Probe plans can be defined that include sub-die movement for performing automated test of multiple modules or individual devices across a wafer. Interactive prober control can also be implemented for analytical applications.

Test Execution

Test scripts can be executed for either manual or automated tests. Manual tests are used for single devices or single modules (which can include several devices) on a manual prober. Automated tests are used for wafer tests combing semi-automatic prober control with die or module test scripts. Test wizards provide step-by-step instructions for entering runtime information, selection of wafer navigation plans, selection of test plans, and starting a test.

Auto-Analysis and Test Reporting

Parametric quantities from test data can be extracted and standard reports and graphs can be generated. Supported graphs and reports include:

- Color wafer maps
- Histograms
- Parameter statistics
- Parametric values vs. die location
- Tables of I-V or C-V curve data

Software Measurement Tool Support

Test algorithms can be createted using the following tools:

- Agilent ICS
- Microsoft® VBScript (resident in the script editor)
- Agilent VEE
- National Instruments LabVIEW

Computer System Requirements

Operating System
MS Windows 98 SE, NT® 4.0 (service pack 6) or Windows 2000 (service pack 2)

CPU
233 MHz Pentium-class
(500 MHz Pentium III-class or faster recommended)

Hard Disk
5 GB available space
(20 GB recommended)

Memory
64 MB for Windows 98 SE
(128 MB recommended)
128 MB for Windows NT 4.0, 2000
(256 MB recommended)

Disk Drive
CD-ROM

Software Security
Paralell port required to attach security key

Control I/F
Supported GPIB card (see requirements below)

GPIB Card Support

Agilent

Card	Windows 98	Windows NT	Windows 2000
82341C (ISA)	X	X	X
82350A (PCI)	X	X	X

Agilent IO Library K.01.00 required

National Instruments

Card	Windows 98	Windows NT	Windows 2000
AT - GPIB/TNT	X	X	X
PCI-GPIB	X	X	X
PCMCIA-GPIB	X	X	X

Prober Support

Cascade Microtech
S 300 with Nucleus version 2.1
Summit 12 k with PCS version 2.6*
Summit 12 k with Nucleus version 2.1
PS-21
Cascade Alessi with Galaxy Software version 5.20h

*This is a 2-controller setup since PCS does not currently work in Windows NT.

Electroglas
2001, 3001, 408X, 409X, and 1034 with Option D

Karl Suss
All Karl Suss probers using Prober Bench NT v4.2

Micromanipulator
8860 with pcProbe 2.6 and pcBridge / 4460 / 9920

Supported Agilent Measurement Instruments

- 4140B pA Meter/DC Voltage*
- 4145A/B Semiconductor Parameter Analyzer
- 4142B DC Source/Monitor Unit
- 4155A/B/C Semiconductor Parameter Analyzer
- 4156A/B/C Precision Semiconductor Parameter Analyzer
- 4192A LF Impedance Analyzer*
- 4275A Multi-Frequency LCR Meter*
- 4280A 1MHz C Meter/C-V Plotter*
- 4284A Precision LCR Meter
- E5250A Low Leakage Switch Mainframe
- 4085M Switching Matrix

*Indicates the instrument does not come with pre-configured parameter extraction routines.

Ordering Information

E5240A Agilent I/CV software version 2.0

E5240AU Upgrade Kit from ICS to Agilent I/CV 2.0

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