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Version 2.0 Software Release Notes**Contents**

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Overview

This document describes the additional features added to the ACS Basic Edition software (version 2.0).

The Keithley Instruments ACS Basic Edition software supports component characterization testing of packaged parts and wafer-level testing using a manual probe station. ACS Basic Edition software can be installed on any computer or Keithley Instruments Model 4200 Semiconductor Characterization System (4200-SCS) with a Microsoft® Windows® XP Professional Service Pack 3 (SP3), or Windows 7 x 86 (32 bit), or Windows 7 x 64 (64 bit) operating system.

Supported models and test configurations

NOTE Before installing ACS Basic Edition software on a computer, read and complete all of the pre-installation requirements listed in the Installation section of the Automated Characterization Suite (ACS) Basic Edition Reference Manual (document number ACSBASIC-901-01). This manual is provided in PDF format on the ACS Basic Edition CD-ROM.

The ACS Basic Edition software can be used with the following Keithley Instruments models in several different testing configurations:

- Perform multi-group testing of Series 2600, Series 2600A, and Series 2600B System SourceMeter® instruments using ACS Basic Edition software installed on a personal computer or laptop.
- Control Model 4200-SCS Semiconductor Characterization System hardware using ACS Basic Edition software installed on the Model 4200-SCS.
- Perform combined group testing of Model 4200-SCS, Series 2600, Series 2600A, and Series 2600B, Series 2400, and Model 237 using the ACS Basic Edition software's combined test-execution engine and mixed platform test module.

Installation

ACS Basic Edition software comes with an installation option that generates a 30 day temporary license for quick installation of the software in the field. For complete ACS Basic Edition software installation requirements and instructions (including detailed licensing information), refer to the Installation section of the ACS Basic Edition Reference Manual.

ACS Basic Edition version 2.0

Overview

Version 2.0 is a maintenance release of the ACS Basic Edition software.

Software compatibility

Version 2.0 software should be used with Keithley Interactive Test Environment (KITE) software version 8.2 with no special configuration requirements.

For GPIB driver compatibility information, see the ACS Basic Edition Reference Manual (document number ACSBASIC-901-01). This manual is provided in PDF format on the ACS Basic Edition CD-ROM that is included with your shipment of ACS Basic Edition software. It is also available in the Help menu of ACS Basic within the software.

Critical fixes

PR45974

Symptom:

ACS Basic will not open after upgrading from the previous software version.

Resolution:

The issue was with the KTEI version not getting checked by the new upgrade, however, that has been corrected and will not be any issue with future versions.

PR45460

Symptom:

While utilizing the Combined Test Mixed SMUs module to setup a Model 237 sweep test, sometimes the 237 keeps forcing after the test is finished, and you have to manually stop the 237 using the front panel.

Resolution:

This issue has been corrected.

PR46353

Symptom:

While performing ITM testing and de-selecting (or un-checking) the 'Auto' checkbox in the 'Axis Settings' properties page, it will remain checked while the test is performed.

Resolution:

This issue has been corrected.

PR46280

Symptom:

Selecting the Valid for Series checkbox in the XY plot GUI and then going back to the test GUI, the 'Valid for Series' checkbox will change to un-checked and the X label on the plot is missing.

Resolution:

This issue has been corrected.

PR46028

Symptom:

Attempting to abort the ITM testing on the Model 4200-SCS instrument is not working.

Resolution:

This issue has been corrected.

PR45461

Symptom:

While appending a test and saving the test data to a .csv file, the appended data is not correct in the saved file.

Resolution:

This issue has been corrected.

PR44138

Symptom:

While importing PTM information to the PTM GUI and checking the hardware configuration, then switching back to the test GUI, the imported data does not get saved.

Resolution:

This issue has been corrected.

Enhancements

PR46538

Enhancement:

Added an abbreviated channel notation in the Test info bitmap and Device view.

PR46524, PR45722

Enhancement:

When you export a test module and you want to make modifications, you can use your keyboard to break a line by pressing the Enter key. Also, any content that you edit will be highlighted.

PR46510

Enhancement:

Added the following demo configurations for customers who will use the Demo mode of ACS Basic: 1. High Power Demo System; 2. Customized Demo System.

1. The High Power Demo System allows for a 2651A and 2657A to be present in the hardware configuration.
2. The Customized Demo System allows you to specify varied combinations for 26xx, 42xx, and other instruments, within the hardware configuration depending on your needs and preferences.

Note that the High Power Demo System is the default hardware configuration for Demo mode.

PR41828

Enhancement:

Added an additional column to the Advanced Settings table for the "Meas Var" (measure variable). Now you can select the measure variable and the measurement range for each SMU.

PR46377

Enhancement:

In Multi-test mode, when two or more devices of the same type exist and you want to add a new device of the same type, when you click the Add Test button you will get a dialog box where you select the device and choose where the new test will be located in the configuration navigator.

PR44553

Enhancement:

Able to right-click on devices in the configuration navigator and rename, copy, paste. Also, you can right-click in the configuration navigator in order to create a new PTM, STM, or an ITM.

PR40704

Enhancement:

Removed the pad number (pad No.) from ACS Basic device view window.

PR44475

Enhancement:

Provided you the ability to individually select which SMU has remote sense enable in Trace mode.

PR42812

Enhancement:

Added a function that allows you to save test data, test status, and the graphic to a .xls file for manual testing on the data page.

PR42523

Enhancement:

Added a dual sweep and a log sweep for the Model 4200 ITM.

Noncritical fixes

PR46536

Symptom:

Need to set the Model 2651A (when not in use) in high-impedance state when two 2651As are used in parallel.

Resolution:

This issue has been corrected.

PR46561, PR46358, PR46278

Symptom:

The data plotting and the related data are not displayed properly when the window is re-sized.

Resolution:

This issue has been corrected.

PR46553

Symptom:

In the CommonLib, some of the test modules contain mismatched device types.

Resolution:

This issue has been corrected.

PR46352

Symptom:

When you run a test and append the test results to the previous test, the text is the same color as the previous test text.

Resolution:

This issue has been corrected.

PR46056

Symptom:

In the PTM standard GUI, if an input or output parameter has no comment, a blank tooltip is shown.

Resolution:

This issue has been corrected.

PR45705

Symptom:

In the PTM module Combined Test Mixed SMUs, the first time you open Select SMU of the Test Module window, the highlighted SMU shows None in the SMU info.

Resolution:

This issue has been corrected.

PR45701

Symptom:

When running the mixed SMUs test in single mode an error may display in the log window if the timestamp is enabled and you select None for the measure variable parameter.

Resolution:

This issue has been corrected.

PR45315

Symptom:

Not able to add an external instrument using a GPIB address and remove the instrument and then add another external instrument using the same GPIB address.

Resolution:

Enabled the ability to easily remove and add an external instrument using the same GPIB address. This issue has been corrected.

PR45313

Symptom:

While utilizing the Graphically Define a New Device tool, if an invalid pad name or device name is input, the new device cannot be used.

Resolution:

Added an error check for the device name and pad name. This issue has been corrected.

PR44955

Symptom:

While connecting Model 70xB as group 1 and Series 2600B as group 2, and you setup the 70xB GPIB address lower than the 2600B, you will not be able to find and assign the 2600 SMUs after adding a device.

Resolution:

The priority will now be to assign the 2600B as group 1 when the hardware is scanned. This issue has been corrected.

PR46357, PR44556

Symptom:

It is not possible to right-click on the X or Y data column in a plot and select remove. In other words, the line will not be removed from the plot.

Resolution:

Added an Update checkbox in the Preference dialog box to ensure that the X or Y data column in a plot is removed when selected. This issue has been corrected.

PR46314 PR42036

Symptom:

Need the ability to change the name of the legend labels.

Resolution:

Added a Legend Settings on the data plot. Right-click the menu on the plot in order to change the legend name. This issue has been corrected.

PR46022

Symptom:

In Single Mode, the instrument's model names are displayed out of order in the Instrument Models Selection box.

Resolution:

This issue has been corrected.

PR45198

Symptom:

When you select SMU in the Combined Test Mixed SMUs module, the SMU text is highlighted and not inverted.

Resolution:

This issue has been corrected.

PR44707

Symptom:

If an invalid password is used while logging in to ACS Basic in Demo mode, the checkbox for Demo Mode is un-checked and must be selected again before entering the password.

Resolution:

This issue has been corrected.

PR44557

Symptom:

The PTM import default path is changed after saving a .csv file to the user default directory.

Resolution:

This issue has been corrected.

PR42269

Symptom:

In a data plot, the cursors disappear when aligned with the gridlines.

Resolution:

This issue has been corrected.

Known issues

PR46528

Symptom:

When you connect Series 2600A instruments (group 1), and connect Series 2600 instruments (non-A in group 2), and select multiple ITM groups for testing, there will be errors in group 2. The instruments in different groups must be the same type in order to avoid errors.

PR43674

Symptom:

When you open an ACS standard project while using ACS Basic, or open an ACS Basic multi-mode project while using ACS standard version, the project may not open. In ACS Basic V2.0 you can open ACS V4.4 or lower versioned projects, but in ACS V4.4 you can open ACS Basic V1.3 or lower versioned for a multi-mode project. Also, you should not open single and trace mode project while using ACS standard.

ACS Basic Edition version 1.3

Overview

Version 1.3 is a maintenance release of the ACS Basic Edition software.

Use ACS Basic Edition software with Keithley Interactive Test Environment (KITE) software version 7.0 or later with no special configuration requirements.

- Added Windows 7 x 86 (32-bit) and Windows 7 x 64 (64-bit) operating system support.
- Added the Model 2651A instrument support. When connected properly, the instrument will be scanned and added automatically within the hardware configuration.
- Added support for the Model 2651A DC and pulse sweep in trace mode.
- Added support for combining two Model 2651As in trace mode to produce up to 100 amps or 80 volts.
- Added IGBT device library in trace mode with support for the following tests: ICES, IcVce_StepVge, IcVge_StepVce, IGES, and VceSAT.
- Added RdsOn test module to the nMOSFET and pMOSFET devices in trace mode.

Critical fixes

- Removed changes from KCON files on the Model 4200 that were formerly made during ACS Basic installation.
- Improved the speed of aborting a test after you select the Stop button.
- Turned off the SMU outputs when aborting a test.
- Upgraded the default menu items for operator mode.
- Repaired the operator functionality so that you can return to the library GUI to select other tests in single-test mode.
- Repaired the open library functionality in single-test mode so that an unexpected library will not open.
- Repaired the Script Editor function (button) on the vertical toolbar to open a library from the configuration navigator.
- Improved the scan hardware functionality to reflect the IP address changes in an Ethernet connection.
- Eliminated the possibility of having two or more modules with the same name in Script Editor.
- Repaired the export a library to the UserLib from the Script Editor so that the test modules display immediately.
- Limited the end used from exporting an ITM to a 24xx, 2651A, GPI, KI70x, 42CVU, and KI37xx instrument.
- Repaired the PTM and STM rename function so that you will not receive an error when using the rename button on the vertical toolbar.
- Repaired the TSP LPT setHighImp_forcel so that it works as defined.
- Repaired the test result of the Vtext_24XX module so that it is correct in the pMOSFET test.
- Improved the speed of stopping a connection test function in the IP connection test window.

Non-critical fixes

Upgraded the ACS Basic Reference manual and improved the quality of the content.

Upgraded the USB license key driver in order to support Windows 7 operating system.

Updated when you set the number of steps to 1 and obtain 1 curve on the plot.

Increased the number of steps for the current step source function.

Improved functionality so that you can create test module for each device individually in the device library.

Added and enabled a DMM function to the Model KI37XX_DMM_Switch module.

Disabled the Tools -> Preferences menu for an Operator.

Added error checking with Group availability to Single Mode testing.

Repaired the plot name for clarification.

Repaired the add cursor functionality so they are not "attached" to Y1: Floating.

Repaired the cursor issue so that it remains viewable after it makes it to Minimum or Maximum.

Enhancements to the Model 3706 functions (KI37XX_DMM_*) for Ethernet connections: added node info for TSP Lib DMM and changed the GPIB address to the Matrix name for pyLibrary DMM.

Eliminated the issue of having to hard reset an instrument when a connection is lost when using an Ethernet connection.

Removed the import library function (button). Now you can only import/open the libraries in PTMLib folder.

Improved the way errors are indicated by forcing the log window to display when an error occurs (even if the log window is not opened).

Disabled the Add and Remove device buttons under User Defined for operator mode.

Double-click a project name will open a project in operator mode.

Added the system User environment and can save in support info file.

Changed the temporary license from two weeks to 30 days.

Disabled the option for the end user to make a new project as read only. The checkbox has been disabled and it is not an option as this time.

Removed the S530SN item from troubleshooting.

Created a dialog box that will allow you to continue or break the current Ethernet connection.

Repaired the dialog box when you open a project and decide to cancel opening the project so that ACS Basic closes; it will remain open so that you can choose another project to open.

Disabled the clear append function on the device level.

Disabled the up and down buttons in the module description and log console tabs in Script Editor.

Repaired the default of the enum data type so that it is correct in Script Editor.

Repaired the button and the customize GUI type so that they match in Script Editor.

Added an error check for the module name when you export a test.

Disallowed the end user to input special characters as a pad name and the device name.

Disallowed the end user to create two identical pad names.

Repaired the misspelled words in the steps to create a new device.

Repaired the postdata command, variable name "111" that caused an error.

Added content to the ACS Basic Reference Manual regarding the GPIB Driver Compatibility that was contained in a separate document.

Repaired the test help format issue that occurred when you exported a test module.

Repaired the test info bitmap error in Single-test mode (for the Series 2600).

Repaired the TSP LPT show SMU issue that caused an error to the Series 2600 instrument with only one SMU.

Fixed both the IBEO_24XX and ICEO_24XX modules so they will run.

Repaired the Series 2400 test so that you can restore the SMU from GND to the SMU1 of the SMU resource, in Single-test mode.

Removed the existing BVGSO variable in the data sheet of the idvd_biasVG_24XX module.

Updated the Model 2636A and Model 2636 visit web page information in the hardware configuration files.

Repaired the backspace issue to clear the Max source value box for the step panel so that you will not receive an "Invalid max source value" error.

Repaired the “Select SMU for test module” for Device Terminals so that all the terminals do not need an SMU assigned. If you do not assign an SMU, the terminal will indicate NONE.

Repaired misspelling and grammar issues in ACS BASIC when selecting an SMU.

Known issues

- ACS Basic will not run and does not support using a, KPCI-488LPA, or KPCI-488LP GPIB card in Trace mode.
- ACS Basic cannot scan instruments when the Series 2600A firmware is version 2.1.6 and a 2600A instrument is the master to a Model 2651A using a TSP-Link cable. You can refresh the 2600A firmware version to 2.1.3 or 2.1.1 to solve this issue.
- ACS Basic does not support the use of fast A/D on the Keithley Model 2651A System SourceMeter instrument.
- The Model KI2651A instrument model is not supported within an ITM.
- If you have a previous version of ACS Basic software installed on a PC and you are updating to ACS Basic v1.3, you will need to perform the following operations first:
 1. Uninstall the previous version of ACS Basic.
 2. Go to the C:\S4200 directory on your computer and rename it to C:\S4200_old.
 3. Remove the C:\ACS_Basic\KATS\KATS_pref.ini file.
 4. Install ACS Basic v1.3.
- In Windows 7 operating system, you will need to keep the network cable plugged-in if you are using a license file. If the network cable is removed, ACS Basic considers your license file invalid.
- In Windows 7 operating system, when you install software or update the USB license key, you may encounter a User Account Control (UAC) error. If you encounter this error, click the Yes button to continue and perform the following steps to turn off the UAC error:
 1. Go to Control Panel -> User Account and Family Safety -> User Accounts.
 2. Select a user then click Change User Account Control setting.
 3. On setting dialog, move the notify slide to Never notify and click OK to save it.
- Trace mode only supports SCPI protocol for the Series 2400 SourceMeter instruments. It does not support 488.1 protocol.
- Trace mode does not support instrument control over an Ethernet communication interface.
- Trace mode only supports Series 2400 and Series 2600A SourceMeter instruments. However, Trace mode does not support the use of SMUs from different product series in a single test.
- If a .dll conflict error is generated during ACS Basic installation, use Windows Task Manager to end the UTMServer or the KTMServer processes. Click Retry to continue installation.
- If KITE or a Keithley / CEC GPIB interface driver is uninstalled after ACS Basic has been installed, ACS Basic may not function due to .dll errors. To resolve this issue, reinstall ACS Basic.
- If the National Instruments (NI) GPIB interface driver or NI VISA software is uninstalled after ACS Basic has been installed, you must reinstall ACS Basic.
- ACS Basic only supports Keithley / CEC488 GPIB drivers 8.2 or above.
- If installing the NI GPIB interface driver NI-488.2 v2.7.3 or above, choose to also install the NI VISA option. If the NI VISA driver is not installed, the instruments may not respond when running PTMs or during Trace mode.
- If the User Defined device type is deleted, any projects previously created using this device will not function correctly.
- If ACS Basic is installed on the Model 4200-SCS instrument and KITE is version 7.2 or lower, add the statement Get4200HWCtrl() to the PTM. This is critical to maintaining control of 4200-based instruments when running PTMs immediately after ITMs. The Get4200HWCtrl() is in the ACS_PostData module.
- On the Model 4200-SCS instrument, if a test is aborted and the "Measuring" LED of the 4200 remains lit, close and reset the 4200 hardware (in the command line, run resethw). Then restart ACS Basic.

- On the Model 4200-SCS instrument, by default, KXCI starts when ACS Basic launches. To prevent KXCI from starting with ACS Basic, set the start_kxci value to 0 in the ACS_setting.ini file. The ACS-setting.ini file can be found in the directory \ACS BASIC\KATS. For example, if a PTM is running and you abort the test before it is finished, you must restart ACS Basic because of a hardware usage conflict between PTM and KXCI.
- ACS Basic cannot be launched using remote computer control software (for example, VIN, Windows XP Remote Desktop) when a USB license key is used. In order to use ACS Basic through remote computer control software, ensure that ACS Basic is already started on the remote computer.
- If additional problems are encountered, go to the Help drop-down menu in ACS Basic and select Trouble Shooting. Next, click Zip Support. The Zip file will be saved to the following directory: ACS_BASIC\KATS\support_info. Next, send the saved file by e-mail to the following address: info@keithley.com.
- ACS Basic only supports the English language. Errors may occur when saving and opening ACS Basic files if characters from other languages appear within the names of directories on the computer.
- The backup folder is under ACS_BASIC\KATS\backups, and it contains the following projects:
 - verification_project
 - single_mode_lab
 - multi_mode_lab
 - trace_mode_lab
 - CVU_CpGp_Compensation
 - Solar_Cell_24XX
 - SolarCell

ACS Basic Edition version 1.2

Enhancements:

- Added Trace mode for interactively testing device without risk of device damage (replaces previous versions' curve tracer test module)
- Added support for multiple users in Window XP.
- Upgraded for CVITM library to include test modules
- Solar Project enhancement added the following test modules: CVTest, PulseIVRseries, PulseIVRshunt and PulseIVSweep
- Instrument information appears as a tooltip when moving or hovering the mouse cursor over pad button on device map
- Updated the "Graphically define a new device" tool: added pad setting dialog, using matrix mode to set pad setting

Critical fixes

There were no critical fixes included in this release.

Non-critical fixes

- While installing ACS Basic, the KXCI patch and old KILPT.dll will be copied to ACS Basic automatically if KITE version is less than v7.0
- USB License enhancement: ACS Basic and ACS on same PC with two different USB keys
- Removed former Curve tracer library
- Disabled Auto-Load Project and Default Project path in preferences
- Get latest Series 2600A firmware images for distribution
- During ACS Basic installation, a registry check should be performed instead of Choose install platform dialog box

- Adjusted device bitmap for Series 2400-based test modules, fixed user cannot preview test conditions
- Added the Add Cursor feature to Plot window in ACS Basic
- Exit ask for confirmation
- Added Combined_Test_Mixed_SMUs.py section in ACS Basic Reference manual
- Fixed Evaluation license generating description in reference manual

ACS Basic Edition version 1.1

Overview

Version 1.1 is a maintenance release of the ACS Basic Edition software.

Critical fixes

There were no critical fixes included in this release.

Non-critical fixes

- Set default install path to ACS_Basic
- Allow KXCI program on 4200-SCS to show GUI or not by the display_flag setting in ACS_setting.ini
- Updated interval setting for ITM sampling
- Added TSP libraries under TSPLib that ScriptEditor couldn't view
- Updated Series 2400 Library to define MAX_SIZE variable
- Added Cancel button on warning dialog box that appears when an invalid license is detected
- Improved management of enabled and disabled tests during device loop run on a project
- Enabled save button of hardware configurator when appropriate
- Updated default value of IP Address Range
- Cleared IP Address in Ethernet communication interface
- Updated login bypass function so that it is no longer inverted
- Updated ITM so that test conditions match device setting when using CommonLib tests
- Added GPI (General Purpose Instrument) to instrument modules list
- Improved thumbnail view on user defined device creation tool
- Fixed Ethernet communication so that it correctly updates instrument list
- Improved device looping behavior
- Improved hybrid ITM functionality
- Updated device editor to function in multi-mode
- Updated IP Address settings to save correctly
- Improved group scanning over Ethernet
- Improved log file naming convention for dates
- Added XRC readme file
- Removed error dialog on test stop
- Added popup to remind user to restart after changing configuration
- Added 2400 configuration control of front/rear connectors, safety interlock, and beeper enable
- Improved About box to add OK button
- Updated ITM to save appended data after test name is changed
- Limit Common Settings for hybrid ITM to meaningful and valid responses
- Keep IP addresses and range settings when switching communication mode

- Saved custom instruments through scanning and save configuration operations
- Disallow clearing of user account passwords
- Linked hybrid ITM test setup to local devices and save the device setting
- Updated text in firmware update process and updated installer text
- Improved on ITM errors when conducting many samples in a test or using Ethernet communication

If you have questions or need further assistance, contact your local Field Applications Engineer.

