

Keithley Instruments
28775 Aurora Road
Cleveland, Ohio 44139
1-800-833-9200
tek.com/keithley

Contents

General information	1
Supported operating systems	1
ACS Basic Edition revision history	2
Install ACS Basic	2
Supported models and test configurations	3
Supported communication interfaces	4
Licensing	5
License management	5
ACS Basic Edition version 3.0	6

General information

This document describes the features added to the Keithley Instruments Automated Characterization Suite (ACS) Basic Edition software (version 3.0).

The 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, including Keithley Instruments Model 4200A-SCS Parameter Analyzer or Model 4200 Semiconductor Characterization System (4200-SCS).

Supported operating systems

ACS Basic Edition software is supported on the following operating systems:

Windows® 10, 64-bit

Windows® 10, 32-bit

Windows® 7, 64-bit

Windows® 7, 32-bit



ACS Basic Edition revision history

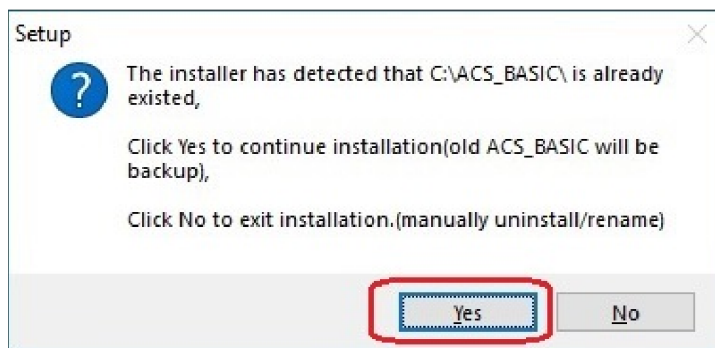
Version	Release date
3.0	August 2021
2.1.5	November 2017
2.1	November 2015
2.0	September 2012
1.3	July 2011
1.2	September 2010

Install ACS Basic

To install ACS Basic software:

1. Log in to your computer as an Administrator.
2. Open the ACS Basic executable file.
3. Select **Yes** if you have an older version of ACS Basic installed.

Figure 1: ACS Basic Software installation



4. Follow the instructions to specify how you want to install the software on your system.

Once the new version of ACS Basic is installed, the older version will be renamed. You can copy the projects and libraries from the previous version using the following steps.

To copy and paste folders:

1. Find the `C:\ACS_BASIC_DDMYYYY_HHMMSS\Projects\` folder; copy and paste to the current `C:\ACS_BASIC\Projects` folder.
2. Find the `C:\ACS_BASIC_DDMYYYY_HHMMSS\library\pyLibrary\PTMLib\` folder; copy and paste to the current `C:\ACS_BASIC\library\pyLibrary\PTMLib\` folder.
3. Find the `C:\ACS_BASIC_DDMYYYY_HHMMSS\library\26library\` folder; copy and paste to the current `C:\ACS_BASIC\library\26library\` folder.

NOTE

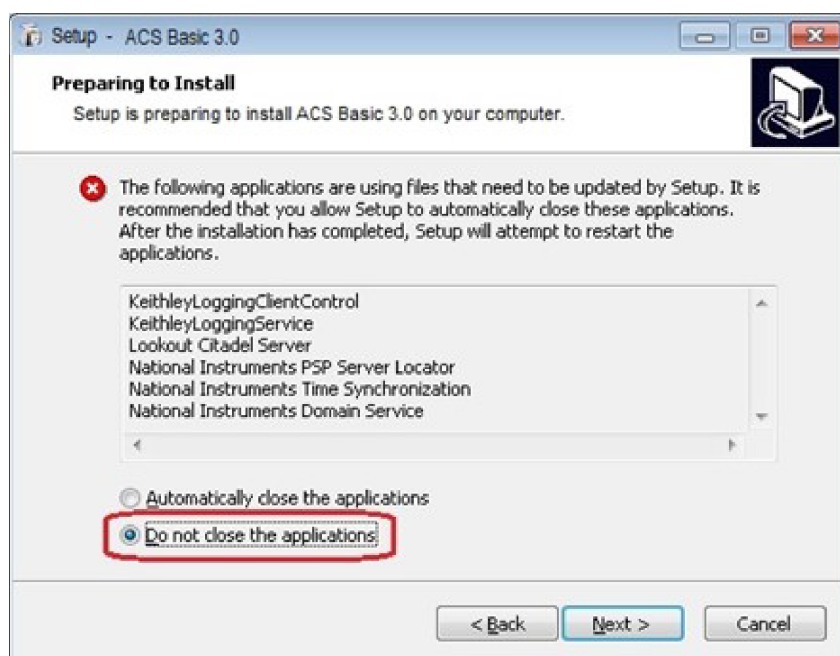
ACS Basic 3.0 is based on the Python 3.7 programming language. If you customized your projects in a previous version of ACS Basic you may need to change the projects created in the older version of ACS Basic, which includes the Python language test module (PTM) script libraries. You can go to this site to review the Python changes for more detail:

<https://docs.python.org/3/whatsnew/3.7.html#porting-to-python-37>

NOTE

When installing ACS Basic on a 4200A-SCS Parameter Analyzer, the following applications use files needed to close applications. Select **Do not close applications** and click **Next** to install (see the following figure). If you select **Automatically close the applications**, you must restart the computer after the installation has completed.

Figure 2: ACS Basic 3.0 preparation for installation



Supported models and test configurations

ACS Basic Edition software can be used to characterize semiconductor devices with a variety of Keithley Instruments products. The *ACS Basic Reference Manual* (part number ACSBASIC-901-01) contains detailed information about the supported hardware and test configurations.

The following table summarizes the instruments supported in the ACS Basic test libraries.

Instrument type	Supported models
SMU Instruments	2600B Series: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
	2600A Series: 2601A, 2602A, 2611A, 2612A, 2635A, 2636A
	2400 Graphical Touchscreen Series SMU (KI24XX TTI): 2450, 2460, 2460-NFP, 2460-NFP-RACK, 2460-RACK, 2461, 2461-SYS, 2470
	2400 Standard Series SMU: 2401, 2410, 2420, 2430, 2440
	2606B High Density SMU
	2650 Series for High Power: 2651A, 2657A
Parameter Analyzers	4200A and supported cards/modules (4210-CVU, 4215-CVU, 4225-PMU/4225-RPM, 4225-RPM-LR, 4200-SMU, 4201-SMU, 4210-SMU, 4211-SMU, 4200-PA, 4200A-CVIV)
DMMs	DMM7510, 2010 Series
Switching Systems	707A/B, 708A/B, 3700A
Pulse Generators	3400 Series

NOTE

The graphical interactive test module (ITM) supports 24xx Touch Test Invent® (TTI) instruments and 26xx instruments at the same time.

You can control any test script processor (TSP™) instrument using script test module (STM) script.

You can control any instrument using the Python language test module (PTM) script, including instrumentation from other vendors.

Also, existing ACS Basic STM and PTM libraries support specific instruments based on the library definition.

Supported communication interfaces

- GPIB
- LAN (LXI Mode)
- USB
- RS-232

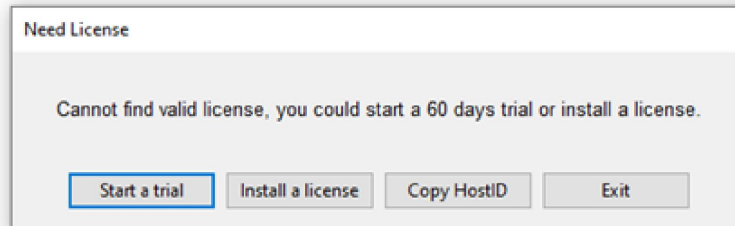
NOTE

The GPIB, LAN, and USB interfaces can be used together at the same time. GPIB and USB supports automatic hardware scan when you first start ACS Basic. For the LAN cable connection, you must manually add an IP address. You should add the IP address in the ACS_setting.ini file that is in the C: drive C:\ACS_BASIC\KATS\ACS_setting.ini.

Licensing

ACS Basic allows you to create tests, manipulate settings, and view previous data without a license. However, you must have a license for ACS Basic in to control and retrieve data from a physical instrument. You can launch a one-time, 60-day trial for ACS Basic after the initial installation. Once the license expires, you will need to purchase a full license to use the software.

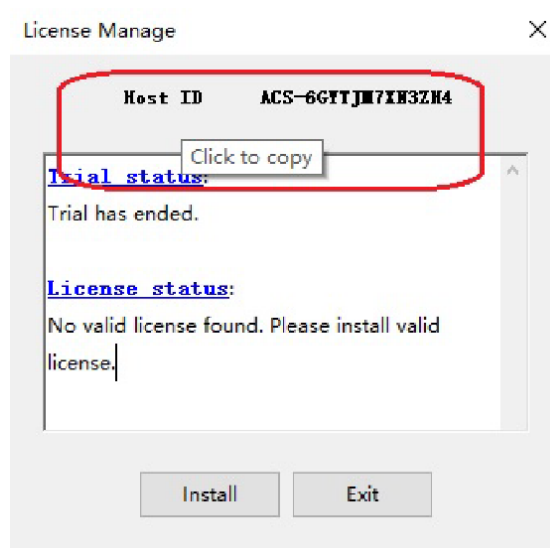
Figure 3: ACS Basic 3.0 license information



License management

The ACS Basic software license is managed using the Tektronix Asset Management System (TekAMS). To generate a license file, you must submit your Host ID to TekAMS. For more information on TekAMS, see tek.com/products/product-license. To find the host ID, open the License Manage dialogue box from the ACS Basic Help menu. Select **License** > **Host ID** > click to copy the Host ID. Select **Install**.

Figure 4: ACS Basic Host ID 3.0 license information



ACS Basic Edition version 3.0

Enhancements

Hardware configuration	
Issue number:	ACS-20
Resolution:	Added communication support using GPIB, LAN, and USB.
Issue number:	ACS-28
Resolution:	Updated software to use pyVISA as a fundamental way to communicate with instruments.
Issue number:	ACS-167
Resolution:	Added support for the following Keithley Instruments: 4201-SMU, 4211-SMU, 4215-CVU.
Enhanced support	
Issue number:	ACS-19
Resolution:	Added ITM support for Keithley Instruments: 2450, 2460, 2461, 2470, 2606B, 26x4B models, and 265xA models, in a safe configuration.
Issue number:	ACS-72
Resolution:	Added support for all Model 26xx and 24xx TTI SMU instruments using TSP in the ITM. However, the 2601B-Pulse instrument is not supported.
Data management	
Issue number:	ACS-22, ACS-109
Resolution:	Run history is available for ITM, STM, and PTM modules in SingleMode and MultiMode testing. Run history automatically stores all previous data to eliminate accidental overwriting of data. Data must now be explicitly deleted.
General test PTM	
Issue number:	ACS-72
Resolution:	Added support to communicate in TSP mode with all Model 24xx TTI instruments.
Issue number:	ACS-60
Resolution:	Added PTM support for LAN and LXI mode.
Python version update	
Issue number:	N/A
Resolution:	Updated Python software code to version 3.7.

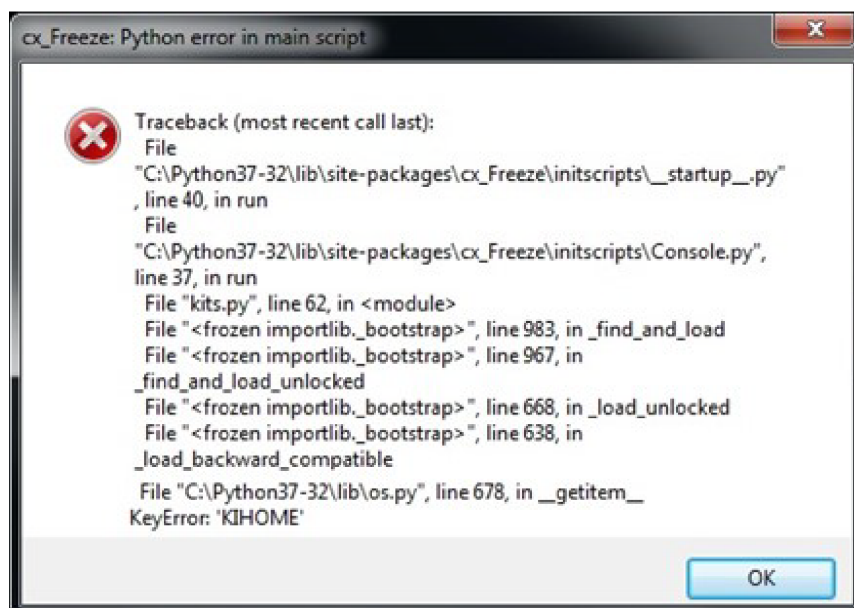
Resolved issues

Issue number:	ACS-42; PR-64587
Resolution:	Resolved an issue implementing the sequence feature for a SMU.
Issue number:	ACS-320
Resolution:	Repaired the sequential ITM multiple measurements issue when running a test in the root level of the project.

Known issues

Issue number:	N/A
Resolution:	If you uninstall Clarius software from the 4200A-SCS, ACS Basic may fail to start. The message below indicates an error in the main script. To resolve this issue, you must run Initialize New User from the Windows Start menu. Go to Program > ACS Basic 3.0 > Initialize New User . Once that is completed, reboot the computer.

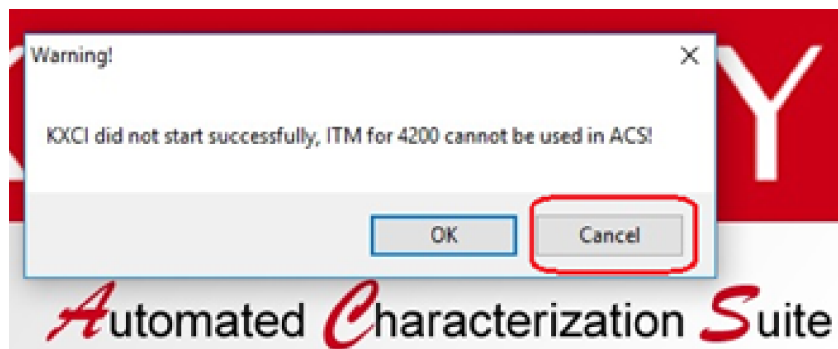
Figure 5: ACS Basic 3.0 Python error



Software compatibility

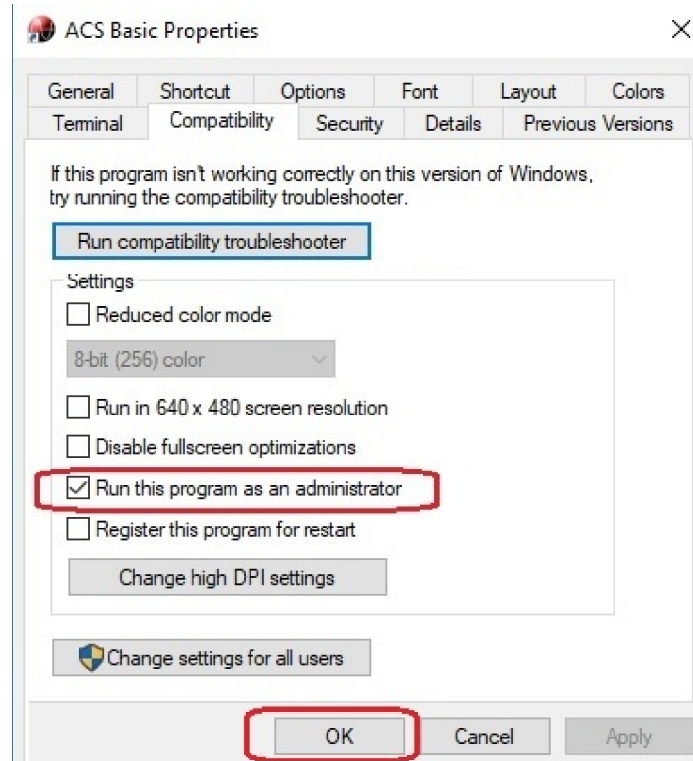
Issue number:	N/A
Resolution:	When you start ACS Basic on the 4200A-SCS that has Clarius software version 1.4 or higher (with the Windows 10 operating system), a warning message may appear indicating that KXCI did not start successfully. Select Cancel to dismiss the warning.

Figure 6: KXCI did not start



To manually configure the compatibility settings:

1. Right-click the **ACS Basic icon** and select **Properties**.
2. Open the **Compatibility** tab.
3. Select **Run this program as an administrator** and click **OK** to save.

Figure 7: ACS Basic properties

Usage note

Issue number:	N/A
Resolution:	If you install a KUSB-488B GPIB driver, you will see the following message. You must select the Keithley Command Compatible option. Select Next to continue the installation.

Figure 8: ACS Basic command compatible

