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ACS Standard Edition

Version 6.2 Release Notes

Contents

General information

This document describes the features added to the Keithley Instruments Automation Characterization Suite (ACS) Standard Edition software (version 6.2).

The Keithley Instruments ACS Standard Edition software supports component characterization testing of packaged parts and wafer-level testing using probers. ACS Standard Edition software can be installed on any computer, including Keithley Instruments Model 4200A-SCS Parameter Analyzer and Model 4200 Semiconductor Characterization System (4200-SCS).

Supported operating systems

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

Windows® 11, 64-bit

Windows® 10, 64-bit

Windows® 10, 32-bit

Windows® 7, 64-bit

Windows® 7, 32-bit

ACS Standard revision history

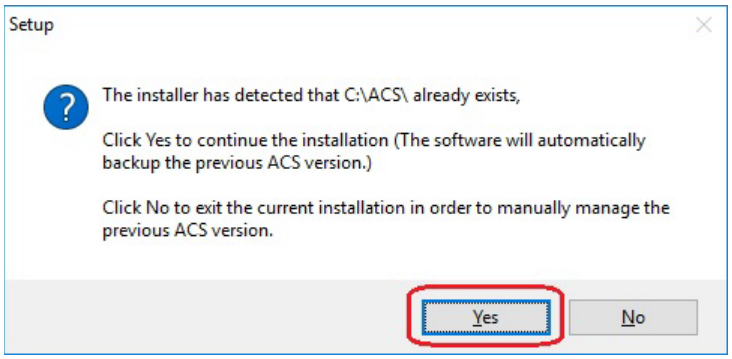
Version	Release date
6.2	November 2022
6.1	March 2022
6.0	August 2021
5.4	February 2021
5.3	December 2017
5.2.1	September 2015
5.2	December 2014
5.1	May 2014
5.0	February 2013
4.4	December 2011
4.3.1	June 2011
4.3	March 2011
4.2.5	October 2010
4.2	June 2010

Install ACS

To install ACS software:

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

Figure 1: ACS Software installation



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

Once the new version of ACS 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_DDMMYYYY_HHMMSS\Projects\` folder; copy and paste to the current `C:\ACS\Projects` folder.
2. Find the `C:\ACS_DDMMYYYY_HHMMSS\library\pyLibrary\PTMLib\` folder; copy and paste to the current `C:\ACS\library\pyLibrary\PTMLib\` folder.
3. Find the `C:\ACS\DDMMYYYY_HHMMSS\library\26library\` folder; copy and paste to the current `C:\ACS\library\26library\` folder.

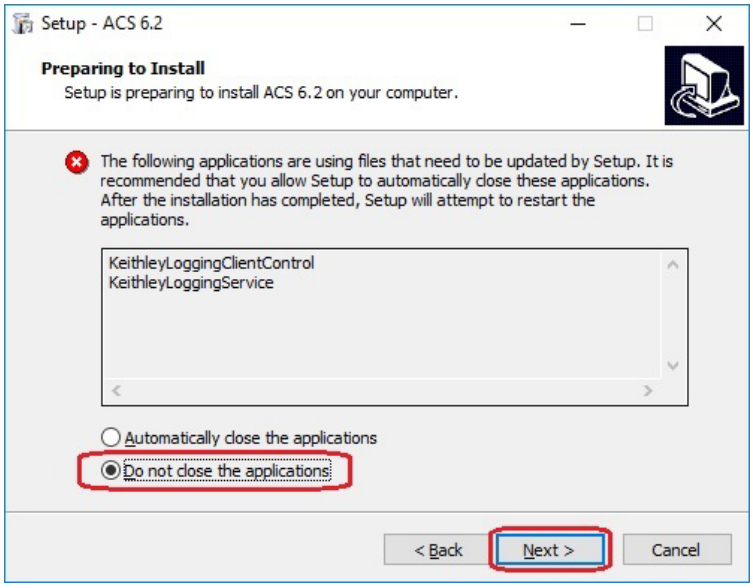
NOTE

ACS 6.2 is based on the Python 3.7 programming language. If you customized your projects in a previous version of ACS you may need to change the projects created in the older version of ACS, 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 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 6.2 prepare to install



Supported models and test configurations

ACS software can be used with the following Keithley Instruments in a variety of different test configurations. The *ACS Fundamentals Reference Manual* (part number ACS-914-01) and *ACS Advanced Features Reference Manual* (part number ACS-908-01) contain detailed information about the supported hardware and test configurations.

- Perform multi-group testing with Series 2600B and 2400 TTI instruments using ACS software installed on a personal computer or laptop.
- Control hardware using ACS software installed on the Model 4200A-SCS Parameter Analyzer or Model 4200-SCS.
- Perform combined group testing with a 4200A-SCS Parameter Analyzer or 4200-SCS, and Series 2600B instruments using the combined test-execution engine in ACS software.
- Control other external GPIB, LAN, or USB instruments using ACS software installed on a personal computer or laptop.

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

Instrument type	Supported models
SMU Instruments	2600B Series: 2601B-PULSE (DC only), 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 the following 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

The following probers are supported in ACS:

Probers	Manual Prober Micromanipulator 8860 Prober Suss MicroTec PA200/Cascade CM300 Prober Cascade 12000 Prober Cascade S300 Prober Electroglas EG2X Prober Electroglas EG4X Prober TEL P8/P12 Prober TEL 19S Prober Tokyo Semitsu TSK9(UF200/UF3000/APM60/70/80/90) Prober Wentworth Pegasus 300S Prober with SRQ check Micromanipulator P300A Prober Yang Sagi3 Prober with SRQ check Signatone CM500 Prober (WL250) TEL T78S/80S Prober MPI SENTIO Prober Semiprobe SPFA Prober MJC AP-80 prober Apollowave AP200/AP300 Prober Vector Semiconductor AX/VX Series prober

NOTE

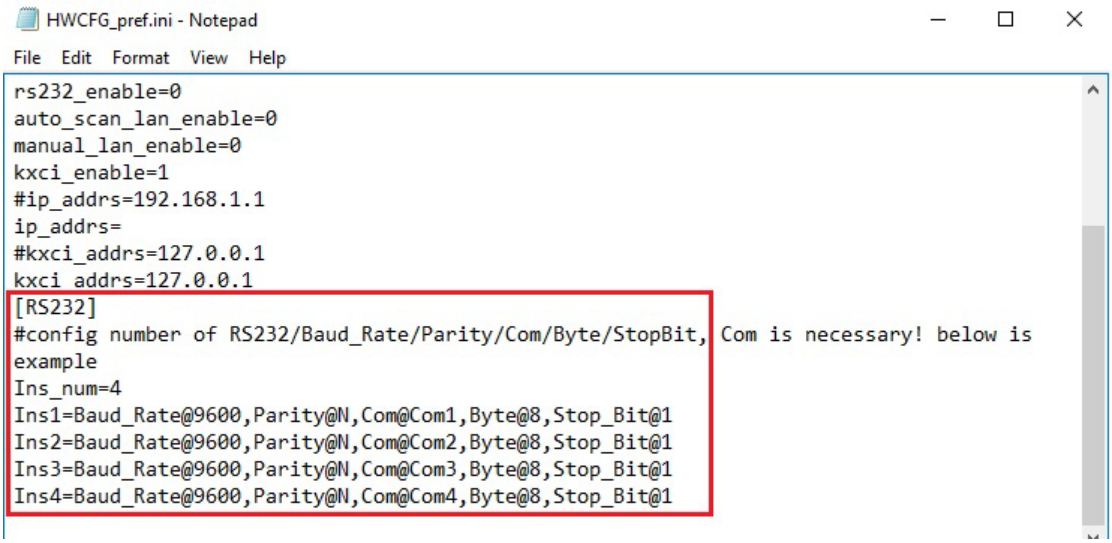
The graphical interactive test module (ITM) supports 24xx Touch Test Invent® (TTI) instruments and 26xx instruments at the same time. The 24xx instrument should be connected as the master and the 26xx connected as subordinate.
You can control any test script processor (TSP™) instrument using script test module (STM) script.
You can control any instrument using the Python language test module (PTM) script, including instrumentation from other vendors.
Also, existing ACS STM and PTM libraries support specific instruments based on the library definition.

Supported communication interfaces

- GPIB
- LAN (Auto Scan and LAN)
- USB
- RS-232

NOTE

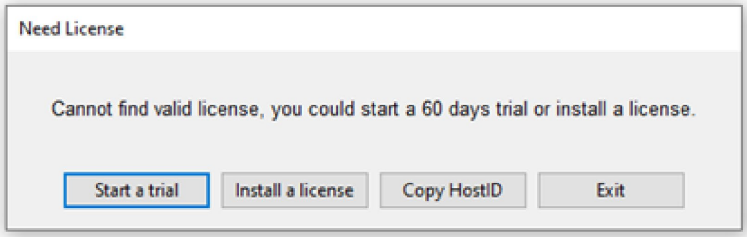
If you are using a RS-232 connection, the instrument will not be automatically added to the hardware configuration. You will have to add instruments connected with RS-232 manually. Change the hardware configuration file that is in the following directory on your computer: `C:\ACS\HardwareManagementTool\HWCFG_pref.ini.` In this file you will need to change the Baud rate, parity, byte, and stopBit settings. Review the following figure for details.



Software license

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

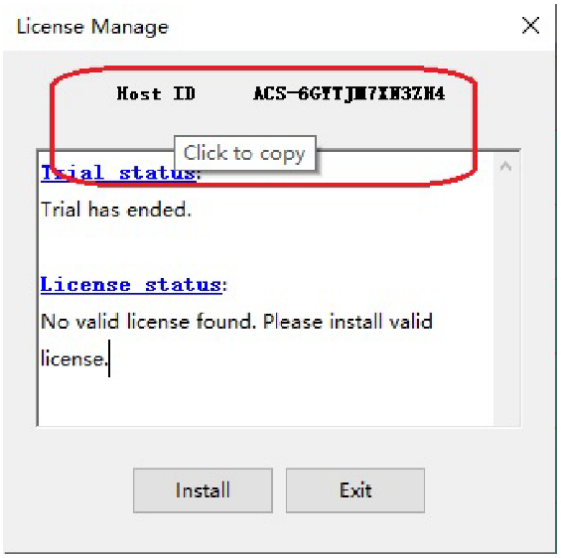
Figure 3: ACS 6.2 license information



License management

The ACS 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 about TekAMS, see tek.com/products/product-license. To find the host ID, open the License Manage dialog box from the ACS Help menu. Select **License** > **Host ID** > click to copy the Host ID. Select **Install**.

Figure 4: ACS Host ID 6.2 license information



ACS Standard version 6.2

Enhancements

Hardware configuration	
Issue number: Enhancement:	ACS-594 Added support for the MJC AP-80 prober driver.
Issue number: Enhancement:	ACS-593 Added support for the Apollowave AP200/AP300 prober driver.
Issue number: Enhancement:	ACS-592 Added support for the Vector Semiconductor AX/VX Series prober driver.
Issue number: Enhancement:	ACS-578 Updated the ACS Hardware Management to display the 4215-CVU model on the configuration page.
Issue number: Enhancement:	ACS-569 Updated the Wentworth prober driver and merged the Smartkem P300SRQ driver to ACS.
Issue number: Enhancement:	ACS-563 Added support for the Semiprobe SPFA Prober.

License management	
Issue number:	ACS-618
Enhancement:	Added support for the ACS-WLRFL-AN license and the ACS-STANDARDFL-AN license.
ACS software, plot and libraires	
Issue number:	ACS-581
Enhancement:	Updated the capacitance voltage ITM (CVITM) to support the 4215-CVU and added a step option to the sweep function in the KI42xxCVU library.
Issue number:	ACS-580
Enhancement:	Optimized the 4215-CVU slow compensation problem.
Issue number:	ACS-579
Enhancement:	Updated the generic HV libraries (GenericHVCVlib) to support a 4215-CVU.
Issue number:	ACS-570
Enhancement:	Optimized the PTM due to the slow switching problem.
Issue number:	ACS-565
Enhancement:	Optimized the ITM due to the slow switching problem.
Issue number:	ACS-564
Enhancement:	Added an "Old Parameter" in the Column Format option to the preferences page to save the legacy .csv files with the “parameters in column” format.
Issue number:	ACS-557, CAS-87771-M8P0Q5
Enhancement:	Added ACS plotting enhancements.
Issue number:	ACS-539
Enhancement:	Updated the graph Y legend color and the Y1 and Y2 autoscale feature.
Issue number:	ACS-537
Enhancement:	Updated the ability for you to move graph legends.
Issue number:	ACS-536
Enhancement:	Updated the graph display to indicate non-zero digits on the graph axis.
Issue number:	ACS-530
Enhancement:	Added a gate charge test to use with the PTM while using ACS software.
Issue number:	ACS-337
Enhancement:	ACS now supports Windows11.

Resolved issues

Issue number:	ACS-630
Symptom:	The Model 708A is not functional in ACS with a PTM using the Switchctrl.py module.
Resolution:	This issue has been corrected.
Issue number:	ACS-623, CAS-105225-N8K2F8
Symptom:	ACS Limited Auto will not reset.
Resolution:	This issue has been corrected.
Issue number:	ACS-620, CAS-103017-T4Y1Z7
Symptom:	When trying to delete a selected line in the ACS lot, the lot is not functional.
Resolution:	This issue has been corrected.
Issue number:	ACS-619, CAS-102290-V1N6M2
Symptom:	The "Valid For Series" in the data tab caused unexpected behavior.
Resolution:	This issue has been corrected.

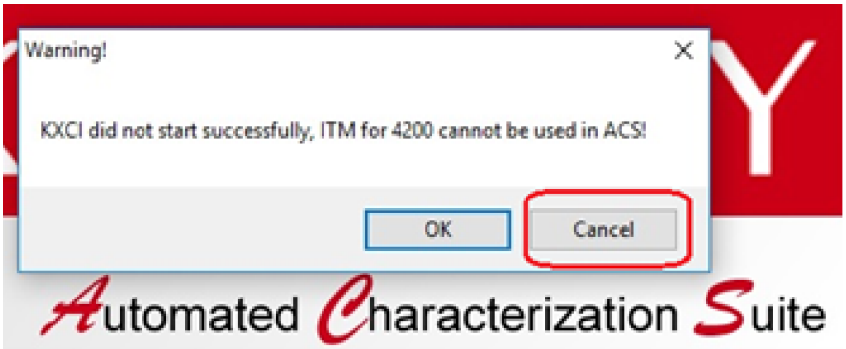
Issue number:	ACS-591
Symptom:	The Keithley Instruments Model 7510 configuration will not function with the matrix card using the Hardware Management Tool.
Resolution:	This issue has been corrected.
Issue number:	ACS-589, CAS-83785-Z9Z2N4
Symptom:	When using an ITM with the power on, the sequence of the power is slow when in IF mode.
Resolution:	This issue has been corrected.
Issue number:	ACS-588, CAS-83787-D3F4D0
Symptom:	Using the Clear All function in the wafer map does not work.
Resolution:	This issue has been corrected.
Issue number:	ACS-587, CAS-83786-D2F0B1
Symptom:	When using the Wafer Map Allow/Disallow function, it does not change the wafer map.
Resolution:	This issue has been corrected.
Issue number:	ACS-586, CAS-84619-D6X6V5
Symptom:	ACS DC Compensation is not disabled.
Resolution:	This issue has been corrected.
Issue number:	ACS-585, CAS-85224-D0R1S0
Symptom:	When using the ACS DC Compensation project with the devint() command, the routing will reset.
Resolution:	This issue has been corrected.
Issue number:	ACS-584, CAS-85223-Q4F2K9
Symptom:	The ACS 2636B instrument IF Source Range 100pA is redundant.
Resolution:	This issue has been corrected.
Issue number:	ACS-583, CAS-83407-H3N3N2, AR67308
Symptom:	ACS will not allow the AC drive voltage of a 4215-CVU instrument to be set higher than 0.1V.
Resolution:	This issue has been corrected.
Issue number:	ACS-582, CAS-88396-D3L9B3
Symptom:	ACS v6.1 has data format issue.
Resolution:	This issue has been corrected.
Issue number:	ACS-577
Symptom:	When using a GPIB communication you will encounter an error using a 24xxPTM instrument without an interlock connection.
Resolution:	This issue has been corrected.
Issue number:	ACS-576
Symptom:	If you connect a 24xx instrument to a 4200 ITM, you will receive an error.
Resolution:	This issue has been corrected.
Issue number:	ACS-575
Symptom:	When using ACS software version 6.1, you will encounter a scanning problem on the S500 system that has 11 nodes on a Model 2636B instrument.
Resolution:	This issue has been corrected.
Issue number:	ACS-574
Symptom:	While using a wafer level plot, the bin color would not be visible.
Resolution:	This issue has been corrected.
Issue number:	ACS-573
Symptom:	In the wafer level plot, you will not be notified if there is a problem in the wafer.
Resolution:	This issue has been corrected.

Issue number:	ACS-572
Symptom:	When installing a hot fix to a file in ACS, you will receive a license error.
Resolution:	This issue has been corrected.
Issue number:	ACS-571
Symptom:	If you select the P8 prober, the "All Wafers" selection and "Random Wafer" selection is missing on the automation page.
Resolution:	This issue has been corrected.
Issue number:	ACS-568
Symptom:	Unable to install DDUFT-ACS License problem.
Resolution:	This issue has been corrected.
Issue number:	ACS-567
Symptom:	The Keithley Instrument Model 2290 instrument encounters a scanning issue and cannot be used in the power supply library (PowerSupplyLib).
Resolution:	This issue has been corrected.
Issue number:	ACS-566
Symptom:	The off sequence (off_seq) command will not reset an issue if the SMU is turned off manually or by using an ICL command.
Resolution:	This issue has been corrected.
Issue number:	ACS-562
Symptom:	The Model 7530A card was displayed incorrectly in the hardware management tool.
Resolution:	This issue has been corrected.
Issue number:	ACS-561
Symptom:	The capacitance voltage ITM (CVITM) advanced dialog box will not close.
Resolution:	This issue has been corrected.
Issue number:	ACS-560
Symptom:	In the list of instruments, you will see a duplicate of the 2636B instrument and the 2602B instrument is missing in the demo instrument list.
Resolution:	This issue has been corrected.
Issue number:	ACS-558, CAS-87915-C6Q7Y7
Symptom:	The capacitance voltage ITM in CVITM.py does not work.
Resolution:	This issue has been corrected.
Issue number:	ACS-551, CAS-86141-Z2K7V0
Symptom:	The Model 2461 has issues with ACS PTM.
Resolution:	This issue has been corrected.
Issue number:	ACS-541, CAS-86743-Q3H3T9
Symptom:	When using a Model 24xx, it is moved to the front when aborted while using an ITM.
Resolution:	This issue has been corrected.
Issue number:	ACS-540, CAS-86746-K5X7Y7
Symptom:	The ACS shut down command will wait and close after the Model 4200A-SCS shuts down.
Resolution:	This issue has been corrected.

Software compatibility

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

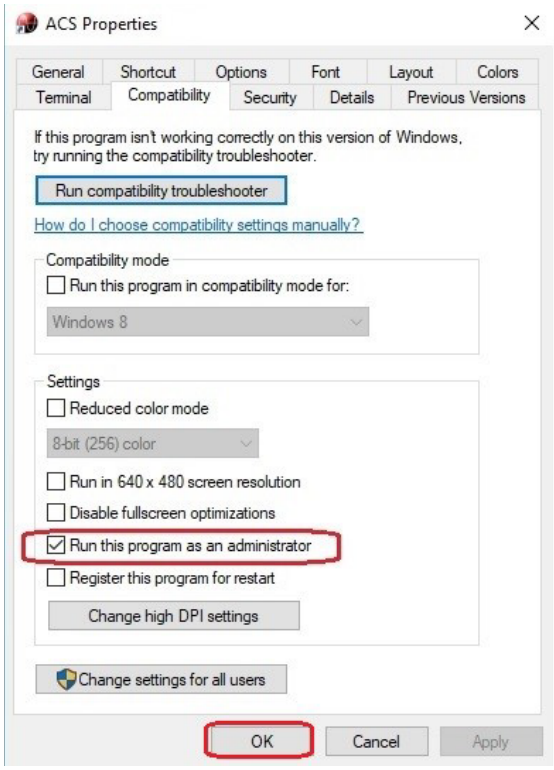
Figure 5: KXCI did not start



To manually configure the compatibility settings:

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

Figure 6: ACS 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 7: ACS command compatible