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Software Release Notes & Installation Instructions

Introduction

This document provides supplemental information regarding KTE Interactive V9.1 Service Pack 4 (SP4). This information is grouped into two categories:

- Installation Instructions – Detailed instructions describing how to install this service pack.
- Changes – Summary of Fixes and Enhancements included in this service pack.

KTE Interactive Service Pack 4 includes all changes from KTE Interactive Service Pack 3, Service Pack 2, Service Pack 1, plus additional changes. This service pack should be applied instead of Service Pack 3. However, if KTE Interactive Service Pack 3 is already installed, it is permissible to install this service pack over it. Note that KTEI V9.1 requires Windows® 7 running on your 4200-SCS.

Updates

This document is periodically updated and distributed with each release and/or service pack to provide the most up-to-date information. This revision history is included below:

- 30-NOV-2017 – V9.1 Service Pack 4 release (document number: PA895 Rev T / Nov 2017)
- 08-MAY-2017 – V9.1 Service Pack 3 release (document number: PA895 Rev S / May 2017)
- 27-JAN-2017 – V9.1 Service Pack 2 release (document number: PA-895 Rev. R / Jan 2017)
- 18-DEC-2015 – V9.1 Service Pack 1 release (document number: PA-895 Rev. Q / April 2016)

Installation instructions

The Model 4200-SCS KTE Interactive V9.1 Service Pack 4 (SP4) must be installed AFTER you have successfully installed KTE Interactive V9.1. This service pack will only install on top of KTE Interactive V9.1 or KTE Interactive V9.1 SP3 or SP2 or SP1 on a 4200-SCS running Microsoft® Windows® 7. After the software installation, make certain you have also performed all firmware upgrades described in the V9.1 installation instructions.

Before performing this installation, make sure that all of the KTE Interactive programs and all Windows® programs, including any virus checkers, are stopped.

For information on the installation of the 4200 Compiler, or the version details of supported Microsoft® Visual Studio®, see the information at the bottom of the release notes in "4200 Compiler."

CD-ROM installation

To install the Model 4200-SCS KTE Interactive V9.1SP4 CD-ROM:

- Insert the Model 4200-SCS V9.1-SP4 CD-ROM into the 4200-SCS CD-ROM drive.

NOTE: The installation will execute automatically. However, if it does not, open the executable file `KTEI_SP.exe` in Windows® Explorer or with the command prompt.

After you have successfully installed the service pack, a window opens reminding you to upgrade the instrument firmware and provides an option to display the release notes.

Update firmware

To enable all V9.1 Service Pack 4 fixes, you **MUST** flash upgrade the firmware on all Instrument cards listed below in the table that are also in the system after installing the service pack.

For instrument card flash update instructions, refer to the Version 9.1 release notes. Use the updated version table shown below rather than the table in the 9.1 release notes. To verify that all your cards are the correct version, open the KCON utility and select each card in turn. Compare the firmware version shown with the version portion of the filenames shown in the table below.

Card / hardware / firmware version table

4200-SCS Card	Hardware Version from KCON	Firmware file to use
4220-SMU / 4210-SMU	05.XXXXXXXXXX or 5.XXXXXXXXXX	H31
	06.XXXXXXXXXX or 6.XXXXXXXXXX	M31
4210-CVU	ALL (3.0, 3.1, 4.0 and later)	2.13
4220-PGU / 4225-PMU ²	1.0 and later	2.05

Changes

Enhancements

Issue Number	SCS-3287 / SCS-3474 / SCS-3545 / AR54056
Subsystem	4225-PMU, KITE, UTM
Enhancement	PMU current offset compensation functionality has been added to KITE. Instructions are located under PMU offset current compensation instructions below.

Problem fixes

Issue Number	SCS-3442 / AR60377
Subsystem	KCON
Symptom	The 4225-PMU calibration report has incorrect specifications for the 40 V / 800 mA range.
Resolution	This issue has been corrected. The calibration software has been updated to correct the specifications in generated calibration reports. Note that calibration is required to generate a corrected report.

Usage notes

In order to verify the proper installation of the Model 4200-SCS KTE Interactive V9.1SP4, follow these instructions to check the software and firmware versions:

1. In KITE, save your projects and tests.
2. Close the KITE software.
3. Run KCON software by selecting the KCON icon on the desktop.

NOTE: In the left pane, the **KI System Configuration** function will be highlighted. If it is not, click the **KI System Configuration**. The right pane shows the system configuration information. The KTE Interactive Version is **V9.1SP4**.

4. Expand the system instrument tree by selecting the + symbol next to KI 4200-SCS in the left pane.

4200 Compiler

Model 4200-SCS Semiconductor Characterization Systems shipped prior to October 2010 included the Microsoft® C++ compiler as a standard, preinstalled part of the system.

Model 4200-SCS systems, shipped after October 2010, no longer include a preinstalled compiler, unless you specifically order it when you purchase your 4200-SCS.

NOTE: You need a compiler if:

- You are using **Keithley User Library Tool (KULT)** to create user test modules (UTMs).
- You want to modify the standard UTMs supplied with KULT.
- You plan to do custom C++ programming to control the 4200-SCS or other equipment.

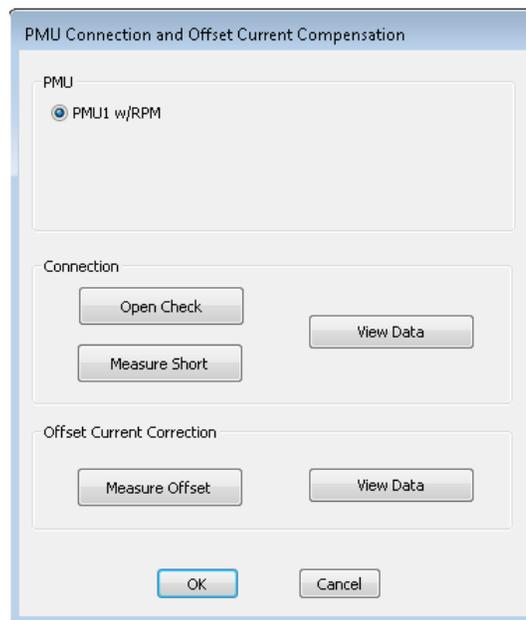
If you need the compiler, you are encouraged to order it when you are ordering your 4200-SCS system because it will then be preinstalled at the factory. If you already have a 4200-SCS system that does not include a compiler, you can order the compiler using the catalog number 4200-Compiler, which will be Microsoft® Visual Studio® Professional 2013 or 2015. You can also purchase the 2015 version (Microsoft part number C5E-01235) or the 2013 version (Microsoft part number C5E-01018) and install it on your system following the procedure “Installing the 4200-Compiler” found on the 4200 Complete Reference Technical Notes page.

PMU OFFSET CURRENT COMPENSATION INSTRUCTIONS

Measurement errors may be present in any electrical test system setup. PMU offset compensation reduces current measurement offset errors by subtracting measurements taken at 0 V from subsequent readings.

To acquire PMU current offset connection compensation constants:

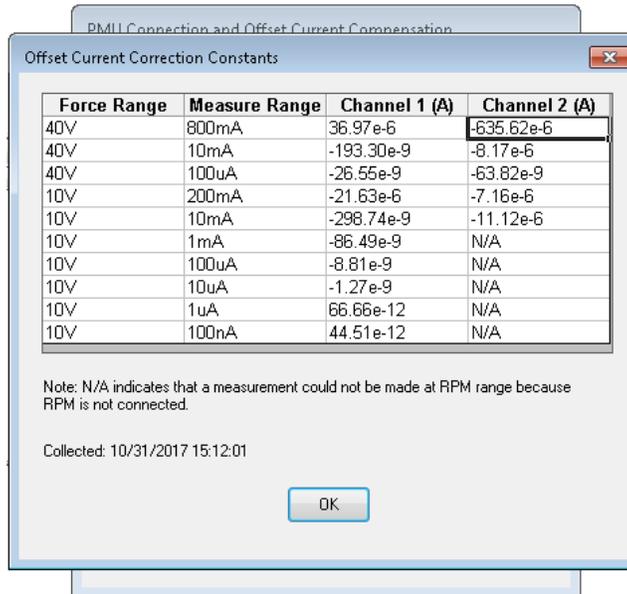
1. Under the **Tools** tab, select **PMU Connection and Offset Current Compensation**.
2. If more than one PMU is present in the system, select the radio button for the PMU that is wanted, then select **Measure Offset** under the Offset Current Correction.



3. Select **OK** to collect the offset current correction measurements.

NOTE: If the measurement fails, an error will be displayed. In this event, check the limit to verify it is not too high.

- Once the measurement is complete, select **View Data** to see the collected data. The Offset Current Correction Constants window will open and display the data.

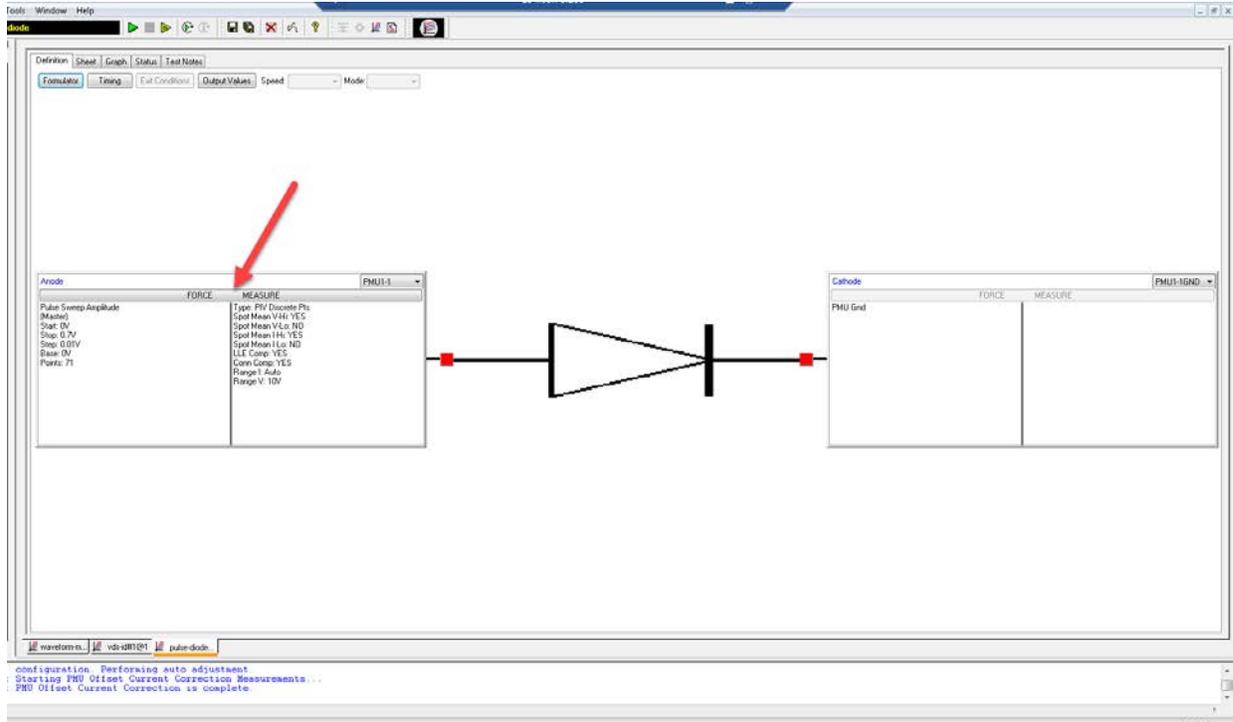


NOTE: Data gathered from the offset current correction will remain accessible in the system until another measurement is taken. Rebooting will not erase the data, and the data are available to all users.

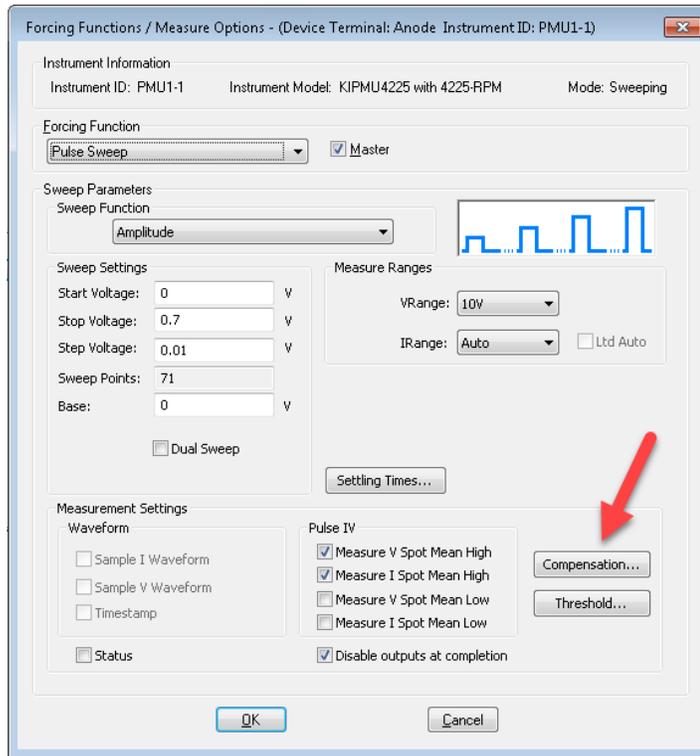
To enable PMU current offset compensation:

NOTE: Before enabling PMU current offset compensation, the offset connection compensation process above must be completed for each PMU in the test configuration.

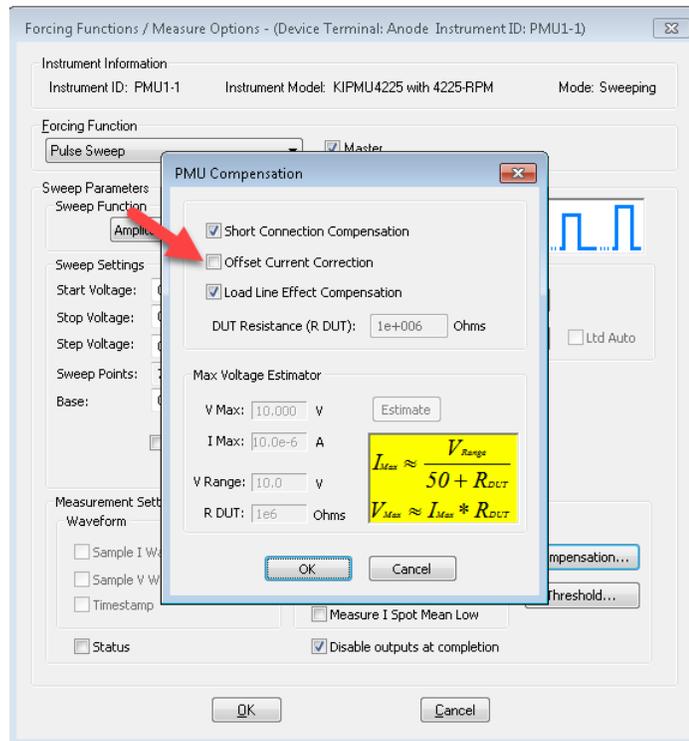
1. From the definition tab of your test, select **Force Measure** to open the Forcing Functions / Measure Options window.



- From the Forcing Functions / Measure Options window, select **Compensation** to open the PMU Compensation window.



- From the PMU Compensation window, enable **Offset Current Correction**.



- Select **OK** in both the PMU Compensation and Forcing Measure / Measure Options windows.
- Repeat for each device terminal that uses a PMU channel.

To verify PMU current offset compensation:

Test data can be viewed by selecting the **Sheet** tab. The figure below shows the **Settings** of the results on the **Sheet** tab. The current offset compensation acquisition timestamp is listed in the **Compensation** row for each terminal. If compensation is not enabled for a terminal the value will be N/A.

Definition Sheet Graph Status Test Notes					
1	=====				
2	Latest Run				
3	=====				
4	Test Name	pulse-vds-id#1@1			
5	Last Executed	11/28/2017 08:53:22			
6	KTEI Version	V9.1 SP4			
7	Execution Time	00:00:00:06			
8					
9		Stop Time	Step Time		
10	Pulse Mode	PIV Discrete Pts			
11	Step Time Param	NONE			
12	Sweep Time Param	NONE			
13	Period	1e-006			
14	Pulse Width	5e-007			
15	Rise Time	1e-007			
16	Fall Time	1e-007			
17	Avg Count	1			
18	Waveform Pre	0.2			
19	Waveform Post	0.2			
20					
21	Terminal	Gate	Drain	Source	Bulk
22	Name	PMU1-1	PMU1-2	PMU2-1	PMU2-2
23	Forcing Function	Pulse Step	Pulse Sweep	Pulse Train	Pulse Train
24	Sweep Parameter	Amplitude	Amplitude	None	None
25	Base	0	0	0	0
26	Amplitude	2	0	5	5
27	Start	2	0	N/A	N/A
28	Stop	4	5	N/A	N/A
29	Step	0.5	0.2	N/A	N/A
30	Compensation	N/A	Offset: 11/28/2017 08:50:24	Offset: 11/28/2017 08:50:50	Offset: 11/28/2017 08:50:50
31					
32					
33					
34					
35					
36					
37					
38					

◀ ▶ \ Data / Calc \ Settings /

waveform-m... vds-id#1@1 pulse-resisto... pulse-vds-id...