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## Software Release Notes & Installation Instructions

### Introduction

This document provides supplemental information regarding KTE Interactive V9.1 Service Pack 6 (SP6). 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 6 includes all changes from KTE Interactive Service Pack 5, KTE Interactive Service Pack 4, Service Pack 3, Service Pack 2, Service Pack 1, plus additional changes. Note that KTEI V9.1 requires Windows® 7 running on your 4200-SCS.

### Updates

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

- 25-OCT-2021 – V9.1 Service Pack 6 release (document number: PA-895 Rev V / Oct 2021)
- 31-OCT-2020 – V9.1 Service Pack 5 release (document number: PA-895 Rev U / Oct 2020)
- 30-NOV-2017 – V9.1 Service Pack 4 release (document number: PA-895 Rev T / Nov 2017)
- 08-MAY-2017 – V9.1 Service Pack 3 release (document number: PA-895 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 6 (SP6) 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 SP5, SP4, SP3, 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.

## Update firmware

To enable all V9.1 Service Pack 6 fixes, after installing the service pack on the 4200-SCS, you **MUST** flash upgrade the firmware on all instrument cards listed in the following table that are also in the system. 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.

**NOTE:** 4200-SCS cards are organized by families of related models in the table below. You need to perform the firmware upgrade once for each family of devices installed your 4200-SCS. All cards in a given family are upgraded at the same time. For example, if you have four 4210-SMUs in your system, all four SMUs are upgraded automatically in turn when you initiate the firmware upgrade process for the SMU. If you also have a 4210-CVU card in your 4200-SCS, you need to run the firmware upgrade utility a second time using the CVU firmware file.

### Card / hardware / firmware version table

4200-SCS card	Hardware version from KCON	Firmware version file to use
4200-SMU / 4210-SMU	05.XXXXXXXXXX or 5.XXXXXXXXXX	H31
	06.XXXXXXXXXX or 6.XXXXXXXXXX	M31
	07.XXXXXXXXXX or 7.XXXXXXXXXX	R33
4210-CVU	ALL (3.0, 3.1, 4.0 and later)	2.13
4220-PGU / 4225-PMU	1.0 and later	2.07

### Flash upgrade instructions

These instructions are for the 42x0-SMU, 422x-PxU, 4225-RPM, 4225-RPM-LR, and 42x0-CVU Firmware.

**NOTE:** KITE software checks for compatible instrument firmware during startup and will not run if all instruments have not been upgraded to compatible firmware versions.

**NOTE:** If you select the wrong firmware version for the hardware version, an error message occurs. The program returns you to the beginning of the firmware upgrade procedure, allowing you to repeat the steps with the correct revision level.

**WARNING:** It is strongly recommended that you connect the 4200-SCS to an uninterruptible power supply during the firmware upgrade process. If power is lost during the firmware upgrade, the SMUs may no longer be functional and will require factory servicing.

#### *To upgrade the firmware of your 4200-SCS cards:*

1. Exit all Keithley KTE Interactive programs and any other Windows programs that may be running.
2. Select Windows **Start**.
3. In the program/file search box, enter: **fwupgrade** <Enter>. The firmware update utility opens.
4. Select the **Start** button on the **fwupgrade** main window. A window is displayed stating the need to connect the 4200-SCS to an uninterruptible power supply. Select **Yes** when ready to proceed.

5. For each family of cards included in your 4200-SCS, complete the following steps:
    - a. Select the appropriate Flash file (see the Card/Hardware/Firmware Version Table above) from the file browser window and select **Open**.
    - b. A message window is displayed that shows status while all installed cards in that family are being upgraded to the selected firmware version. This can take several minutes. After successful upgrade is complete, there are a few audible tones and a window is displayed stating the upgrade is complete.
    - c. If you have installed cards belonging to a different family, click Windows **Start** and return to step a. Otherwise, select **Close**.
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## Changes

### Enhancements

<b>Issue Number</b>	SCS-5805
<b>Subsystem</b>	Calibration
<b>Enhancement</b>	KTEI 9.1 SP6 includes support for the MSO44 scope for calibration of the 4200-SCS. In addition to the scope, a TEK-USB-488 GPIB to USB Adapter is required. This setup requires specific GPIB settings as outlined in the updated manufacturing and service procedures.

### Problem fixes

<b>Issue Number</b>	SCS-6389
<b>Subsystem</b>	Calibration
<b>Symptom</b>	Updates are required for the 42xx-CVU specification.
<b>Resolution</b>	This issue has been corrected. The following 42xx-CVU specifications were changed: <ul style="list-style-type: none"> <li>• 1 pF: 590 ns to 600 ns</li> <li>• 10 pF: 1.8 <math>\mu</math>s to 3.9 <math>\mu</math>s</li> <li>• 1nF: 99 <math>\mu</math>s to 176 <math>\mu</math>s</li> </ul>
<b>Issue Number</b>	SCS-6407
<b>Subsystem</b>	Calibration
<b>Symptom</b>	The 422x-PxU pulse jitter verification should be a typical specification in the 4200 calibration report, as documented in the data sheet.
<b>Resolution</b>	This issue has been corrected.
<b>Issue Number</b>	SCS-6408
<b>Subsystem</b>	Calibration
<b>Symptom</b>	The 42xx-CVU verification results for the Gp readings in the calibration report contained a calculation error.
<b>Resolution</b>	This issue has been corrected. As a part of this fix, the Gp specifications were changed to typical.

## Usage notes

In order to verify the proper installation of the Model 4200-SCS KTE Interactive V9.1SP6, 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 V9.1SP6.

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