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General Information

Supported Models

This firmware is used on the following Keithley products: 2750

Installation Instructions

To aid in installation, the Flash Wizard software and Firmware file are bundled together as one file. This bundled package is located on the Keithley website at www.Keithley.com. Search for Firmware by Model 2700 under the support tab.

A14 Release

Overview

Model 2750 version A14 firmware was created to support additional flash memory devices, and to address manufacturing built-in test requirements.

Critical fixes

PR 37485: ***Symptom:***

Unit may not return readings when changing between voltage and frequency/period functions.

Resolution:

The issue has been corrected.

Enhancements

No enhancements in firmware version A14.

A13 Release

Overview

Upgrade is available for those who wish to have the latest firmware enhancements and upgrades installed on their instrument. Upgrade to A13 as needed to address the specific problems listed in the non critical fixes section.

Upgrade Considerations for 2750

Determine the firmware revision of your instrument using front panel or bus operation.

For front panel: the firmware revision is briefly displayed during power sequence. When the instrument is turned on, the display annunciators will turn on for a short period of time. After that, the firmware revision will be briefly displayed as follows:

REV: yyy zzz

where:

yyy is the mainframe revision (e.g., A04 of the Model 2750).

zzz is the display board firmware revision (e.g., A01),

which does not apply to this upgrade.

For remote operation: use the *IDN? query command. After sending the *IDN? command and addressing the instrument to talk, the following response message is sent to the computer:

KEITHLEY INSTRUMENTS INC.,MODEL wwwwww,xxxxxxx,yyy/zzz

where:

wwwwww is the mainframe model (2750).

xxxxxxx is the serial number of the mainframe.

yyy is the firmware revision of the mainframe.

zzz is the display board firmware revision

The following table outlines the considerations that should be made when deciding to upgrade to this version or not from any previous version.

Consideration	From A12	From A11	From A10	From A09	From A08	From A07	From A06
Recalibration Required	No	No	No	No	No	No	Yes

Installation Instructions

The Minimum System requirements to perform the ROM upgrade:

Pentium-class PC running Windows 95 or later.

Either IEEE-488 interface or a RS-232 communication port

- 1) If using the IEEE-488 interface: Flash software supports either Capital Equipment Corporation (CEC) or National Instruments (NI) IEEE-488.2 interfaces. Also requires a standard GPIB cable
- 2) If using the RS-232 interface: use an RS-232C cable to connect the communications port to the Model 2750. NOTE: With RS-232, upgrade takes approximately 20 minutes.

ROM upgrade procedure:

1. From Windows, click Start->Settings->Control Panel>Add/Remove Programs, and then remove any Model 2700 ROM

upgrades if previously installed. NOTE: All saved scanlists, setups, and buffer readings will be lost with this upgrade.

2. Download the 2750 A12 Firmware upgrade.exe file from the Keithley Web site, www.keithley.com, to a temporary directory on your PC.
3. From Windows click Start->Run. Click the Browse button, navigate to temporary directory and select the 2750 A12 Firmware upgrade.exe file. This should return you to the Run dialog box. Click OK to run the WinZip Self-Extractor. Specify a temporary directory to unzip the install files to and click Unzip. When the unzip operation has finished click OK and then Close.
4. From Windows click Start->Run. Click the Browse button and navigate to the temporary directory where you unzipped the files and select the setup.exe file. This should return you to the Run dialog box. Click OK to run the setup and follow all prompted instructions.
5. From Windows click Start->Programs->Keithley Instruments->Model 2750 Flash Upgrade vA12 and follow all prompted instructions.
6. Perform Step 1 above (determine the firmware revision of your mainframe) to verify correct installation. NOTE: Error +516, "Battery Backed Memory Lost" will be displayed after the first power cycle after upgrade.

Critical Fixes

PR31814

Symptom:

Sending :ROUT:CLOS:COUN? will cause +900 execution error.

Resolution:

The error no longer occurs

Enhancements

There are no enhancements in A13 release.

A12 Release

Critical Fixes

PR27943 ***Symptom:***

Unit will occasionally time out and locks up in RS-232 mode when send MEAS:FREQ? Query.

Resolution:

This has been corrected in A12.

Enhancements

There are no Enhancements in A12 release

Non-critical Fixes

PR27942 **Symptom:**

Units are displayed incorrectly when scanning using user-defined units with MX + B.

Resolution:

This has been corrected in A12.

PR26496 **Symptom:**

The SRQ does not occur to indicate the buffer is full. The fixed buffer overflow status bit is not reported correctly when using the always buffer.

Resolution:

The buffer overflow status bit now correctly reports the buffer status in release A12

PR27937 **Symptom:**

The Real Time Timestamp of a front panel scan uses 61 instead of 60 seconds in every minute. Absolute timestamp works correctly.

Resolution:

This has been corrected in A12

A11 Release

Critical Fixes

PR26354 **Symptom:**

The unit will lock up instead of having the buffer wrap properly when using monitor channel in the infinite scan mode and query the buffer with ":TRACe:NEXT?" command.

Resolution:

This has been corrected in A11.

PR26179 **Symptom:**

Potential lock up occurs when scanning one channel for multiple readings for temperature or DC Volts.

Resolution:

This has been corrected in A11

Enhancements

There are no Enhancements implemented in A11.

Non-critical Fixes

PR26152 **Symptom:**

PR26281

Does not return the correct timestamp format. When using the READ? or the scratch buffer is configured for a real time clock, the clock data will bring back 0.000, or relative clock information. Setting the trace buffer for the real time clock, then using the scratch buffer returns the real time clock information from the scratch buffer.

This remains true until the instrument is power cycled. Then only the relative clock information is returned until configure the trace buffer for the real time clock again.

Resolution:

This has been corrected in A11.

PR26166 **Symptom:**

Front panel operation, exiting ratio generates a "lockup 01" error.

Resolution:

This has been corrected in A11

PR26169 **Symptom:**

Ratio mode does not use 1V range. It jumps from the 100mV to the 10V range, losing resolution.

Resolution:

Corrected the display formatting so that ratio and MX + B readings between 1.0 and 10. 0 are no longer displayed on the 10volt range. This has been corrected in A11

PR26202 **Symptom:**

Timeout when sending the command "syst:pcard1 c7702" with a long scan list.

Resolution:

This has been corrected in A11

PR26284 **Symptom:**

Incorrect range chosen for Ratio / Channel average when channel average was used between two channels with different ranges.

Resolution:

This has been corrected in A11

PR26463 **Symptom:**

SRQ not generated for buffer full with a small size buffer. The buffer will not stop if only 2 points are stored, and the buffer full status bit is not enabled.

Resolution:

This has been corrected in A11

A10 Release

Critical Fixes

PR25541 **Symptom:**

ACV 675V/64kHz gives incorrect (low) readings.

At 675V/50kHz ACV readings are correct. Increasing frequency to about 64kHz will cause readings to drop to approximately 150V.

Resolution:

This has been corrected In A10

PR25476 **Symptom:**

Temperature is out of specifications on some TC channels with system using multiple 7708 cards. The measurement error is not seen if using the simulated junction for temperature. The error is proportional to the number of cards inserted. Removing cards 3, 4, and 5 cause the error to disappear in a linear fashion. Using 7708 cards individually shows that each of them has a negligible error, but by adding cards in slot 2 and 3 the temperature readings begin to go out of spec on certain channels. (more often in slot 2)

Resolution:

The problem was due to errors introduced by differences in the CJC temperature between cards. This has been corrected in A10.

Enhancements

There are no Enhancements implemented in A10.

Non-critical Fixes

There are no Non-critical Fixes implemented in A10

A09 Release

Critical Fixes

PR24124 **Symptom:**

A lock up error occurs if the temperature transducer is changed from 2 wire to 4 wire while the channel is already closed

Resolution:

This has been corrected in A09.

Enhancements

There are no Enhancements implemented in A09.

Non-critical Fixes

PR24339 **Symptom:**

When doing a scan, the units viewed through RECALL would not be correct for MX+B math. Similarly the units would be returned over the bus incorrectly if a READ? query was used to start a scan and return the results.

Resolution:

This has been corrected in A09.

PR23799 **Symptom:**

Timestamp can jump by as much as 200mS in the middle of a scan. For example: a Model 7710 is programmed to scan two voltage channels with both AutoZero, and Display disabled, and a delay of 20mS. After gathering 202 sample points and waiting for the buffer to fill, review the data's time stamp. It is possible to randomly see a data point is delayed by about 200 ms.

Resolution:

This has been corrected in A09.

PR24511 **Symptom:**

Incorrect readings until the function is changed or the power is re-cycled if Linesync feature is enabled.

Resolution:

This has been corrected in A09

PR24593 **Symptom:**

Unable to change the scan settings (min/ max channels) if the user set up was saved as power on default, and the unit was flash upgraded.

Resolution:

The Flash upgrade routine now forces the factory default as the power up setting. The correction is implemented in A09.

A08 Release

Critical Fixes

PR23088 **Symptom:**

The display reads zero ohms with the Input Hi lead open, OCOMP enabled, Sense hi, Sense lo, and Lo shorted. With any of the Input or Sense leads open, the 2750 should read overflow. If OCOMP is disabled, the reading reads overflow as expected.

Resolution:

Firmware A05 and analog board revision "D" added open lead detection. With Input or sense leads open. The OCOMP bits were not updated correctly. This has been corrected in A08

PR23497 **Symptom:**

The response is different length than expected, due to some channels not being scanned. The :ROUT:SCAN:LSEL does not always do all the steps it is supposed to.

Resolution:

This has been corrected in A08

Enhancements

There are no Enhancements implemented in A08.

Non-critical Fixes

PR23109 **Symptom:**

The up and down arrow keys don't work properly in 7706 card configure menu. Using the down arrow, the analog out selections can't be seen. Need to use up arrow to get to them.

Resolution:

This has been corrected in A08.