

**S E R V I C E N O T E**

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Supersedes:  
NONE

**B1500A Semiconductor Device Analyzer Mainframe**

**Serial Numbers: ALL**

**[Note 1: Not all instruments in this range are affected. Only the B1500A that has ASU or Atto-Sense and switch Unit (E5288A) are affected. Refer to page 2 of this Service Note for more details.]**

**Interlock operation speed is improved when using ASU**

**Parts Required:  
NONE**

**ADMINISTRATIVE INFORMATION**

SERVICE NOTE CLASSIFICATION:	
<b>INFORMATION ONLY</b>	
<input type="checkbox"/> Calibration Required <input checked="" type="checkbox"/> Calibration NOT Required	PRODUCT LINE: 1H AUTHOR: HT
ADDITIONAL INFORMATION:	

**Situation:**

When all the below listed conditions are met, the interlock function that limits the voltage up to  $\pm 42$  volts may take up to 25 seconds after the interlock circuit is opened, for example; by opening the fixture lid. When the interlock circuit is opened, the HVLED (High-Voltage LED) indicator on B1500A front panel is lit, though.

**Conditions:**

1. Any SMU module is forcing high voltages over  $\pm 42$  volts.
2. The SMU that ASU is connected to is used for the current measurement.
3. Auto Range mode is used.
4. The measurement is made with 1pA range.

**Solution/Action:**

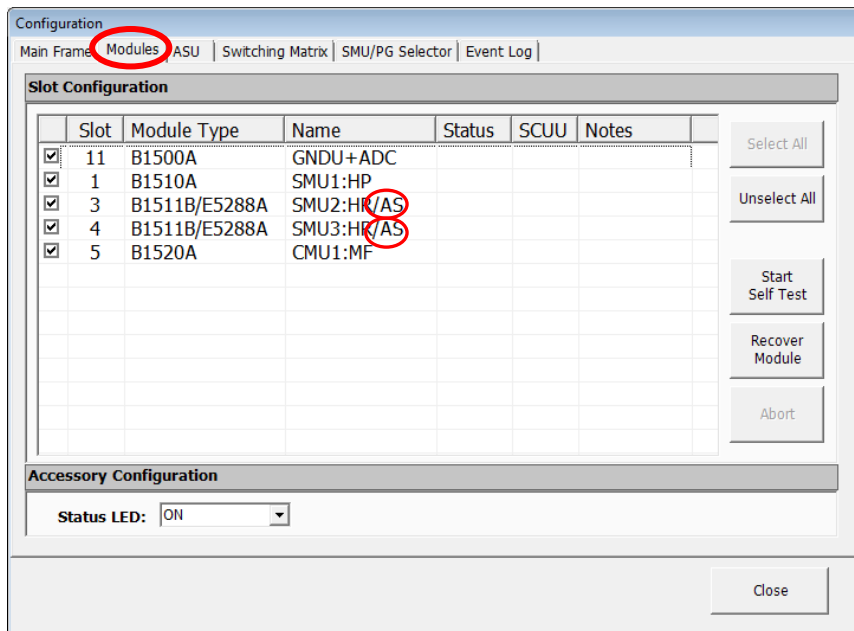
Updating the firmware to A.05.05 or A.05.51 (or later) by installing EasyEXPERT software can fix this, which enables the interlock circuit to work quicker to be at the same level as other functions of B1500A.

**Step 1: Determine whether or not the instrument is affected by this issue.**

(Note: This can be done by the customer without contacting Keysight.)

(a) Check if your B1500A has ASU (Atto-Sense and switch Unit) as follows.

- Start EasyEXPERT and go to "Configuration" window.
- Click "Modules" tab.
- Check if ASU is displayed in the module list as shown below. (It should be displayed as "AS")



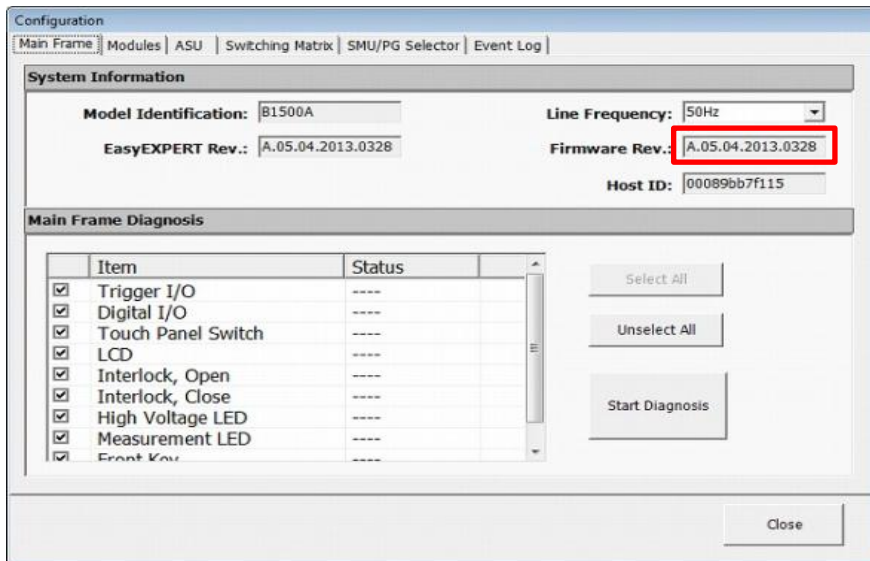
If your instrument does not have the ASU, then this Service Note does not apply.

NOTE: ASU may have been purchased as below option.

B1500A-281	Atto Sense and Switch Unit for High Resolution SMU with 1.5m cable
B1500A-282	Atto Sense and Switch Unit for High Resolution SMU with 3.0m cable
B1500A-283	Atto Sense and Switch Unit for High Resolution SMU with 3.0m cable
B1500A-284	Atto Sense and Switch Unit for High Resolution SMU with 3.0m cable
E5288A-ATO	Atto Sense and Switch Unit (ASU)
B1500AU-088	Addition of E5288A Atto sense and switch unit (HRSMU is required.)
B1500AU-089	Addition of E5288A Atto sense and switch unit (MPSMU is required.)

- (b) Check the firmware revision of the instrument as follows.
- Start EasyEXPERT and go to “Configuration” window.
  - Check the firmware revision displayed in the “Firmware Rev.:
- (indicated by ‘red’ square in the screenshot below.)

If the revision displayed is A.05.05 or A.05.51 or later, then this Service Note does not apply.  
If the revision displayed is A.05.04 or earlier, or A.05.50, proceed to the next step.



Step 2: Updating the firmware to A.05.05 or A.05.51 (or later) by installing EasyEXPERT Software.  
(Note: This can be done, without contacting Keysight.)

(a) Visit the below software download website

<http://www.keysight.com/main/software.aspx?key=2351015&lc=eng&cc=SG&nid=-33044.0.00&id=2351015>

**NOTE:**

If the B1500A's firmware revision is A.05.03 or earlier, firstly download and install A.05.04 and then download and install A.05.05.

If the B1500A's firmware revision is A.05.04, download and install A.05.05.

If the B1500A's firmware revision is A.05.50, download and install A.05.60 or later.

(b) Download the software, by clicking the 'Download' button in the website of the desired revision.

If the above does not work, you can also visit the site as follows.

1. Go to [www.keysight.com/find/b1500a](http://www.keysight.com/find/b1500a)
2. Find and click "Technical Support" under "Product Support Center" at the right-hand side.
3. Click "Drivers, firmware & Software" tab,
4. Click "B1500A/B1505A EasyEXPERT Software Update",
5. Click the "Download" button of the desired revision.

(c) Install and update the software following the instruction in the website.

**Revision History:**

Service note Revision	Date	Author	Reason For Change
01	Feb 11, 2015	HT	As published