

Signatone Prober GPIB driver for Agilent EasyEXPERT software

9/9/2010

This document describes the Signatone Prober Driver executable files used with the RepeatMeasurement function of the B1500 EasyEXPERT software. You can use the RepeatMeasurement function of the EasyEXPERT software to control probers and measure wafers.

Repeat Measurement Procedures

With the EasyEXPERT Repeat Measurement function, you can execute the following executable files at the time of the following four events.

Procedure	Event and description	Name of executable file
Start	Execute once at the start of RepeatMeasurement	Start_signatone.exe
Subsite	See Signatone Subsite programming instructions	See [NOTE] on page 2
Iterator	Move to next die after measurement is complete	Iterator_signatone.exe
Final	Execute once at the end of RepeatMeasurement	Final_signatone.exe

Function Overview

1. Start procedure

The following operations are performed during the Start Procedure.

- ID input
- Wafer load and alignment standby
- Move to first programmed site
- Acquire wafer position information
- Raise chuck

2. Subsite procedure

The following operations are performed during the Subsite Procedure.

- Lower chuck
- Move to next programmed subsite
- Acquire wafer position information
- Raise chuck

3. Iterator procedure

The following operations are performed during the Iterator Procedure.

- Lower chuck
- Move to next programmed site
- Acquire wafer position information
- Raise chuck

4. Final procedure

The following operations are performed during the Final Procedure.

- Lower chuck

Compatible Probers

Signatone CheckMate prober CM500 software V5.8 and later version.

Signatone S460 prober S460SE software V3.2 and later version.

[NOTE]

Turn on Subsite Enable on CM500 or S460SE software first, then select Iterator_Signatone.exe for Repeat Measurement Procedure.

Driver setup

1. Create a new Signatone folder under ProberControl and copy 4 executable files into the folder.
 - Program Files
 - Agilent
 - B1500
 - EasyEXPERT
 - Utilities
 - ProberControl
 - signatone
 - Final_signatone.exe
 - Iterator_signatone.exe
 - prober_info.template
 - Start_signatone.exe

2. Check the GPIB ID and instrument address.
The default GPIB ID is set as 0 and instrument address is set as 5. The content of the file prober_info.ini is listed as follows.

```
[Prober]
Address=GPIB0::5::INSTR
LogMode=False
LogName=c:\prober.log
```

```
[Target]
UseID=True
SubsiteInfo=False
WaferInfo=False
```

The Prober_info.ini file is located under c:\Documents and Settings\Application Data\Agilent\EasyEXPERT\Utilities\ProberControl\Prober_info.ini

Run EasyExpert software on the PC with National Instrument GPIB board

Install National Instrument GPIB driver V2.7.3 and make sure NI-VISA 4.6 driver is checked to be installed. It is not checked by default.

For NI software to recognize Agilent hardware, you must enable the NI-VISA Passport for Tulip. This is a software module included with NI-VISA for support of Agilent hardware, and is not enabled by default. Use the NI Masurement and Automation Explorer (NI MAX) to enable the Passport for Tulip.

In versions 3.0 and later of NI MAX, you can do this by:

1. Start NI MAX
2. Click Tools > NI-VISA > VISA Options ...,
3. Select Passports in the tree view.
4. Select the Passport for Tulip check box.
5. Click Save to save your settings
6. Exit NI MAX, wait a few seconds, and restart NI MAX (you must restart NI MAX for your changes to take effect).

For specific details for your version of NI MAX, refer to NI's documentation.

EasyEXPERT software

1. Run Signatone CM500 software.
2. Setup prober with die x,y sizes, align the wafer, program sites and subsites if needed.
3. Do wafer alignment and make the prober ready for probing.
4. Setup device test setting in EasyEXPERT software.
5. Press RepeatMeasurement button to start.

The screenshot shows the Agilent Desktop EasyEXPERT software interface. The main window is titled "Diode IV Fwd" and displays various test parameters and a circuit diagram. A red arrow points to the "Repeat Measurement" button in the right sidebar.

Device Parameters:

- Temp: 25.0 deg
- Imax: 50 mA

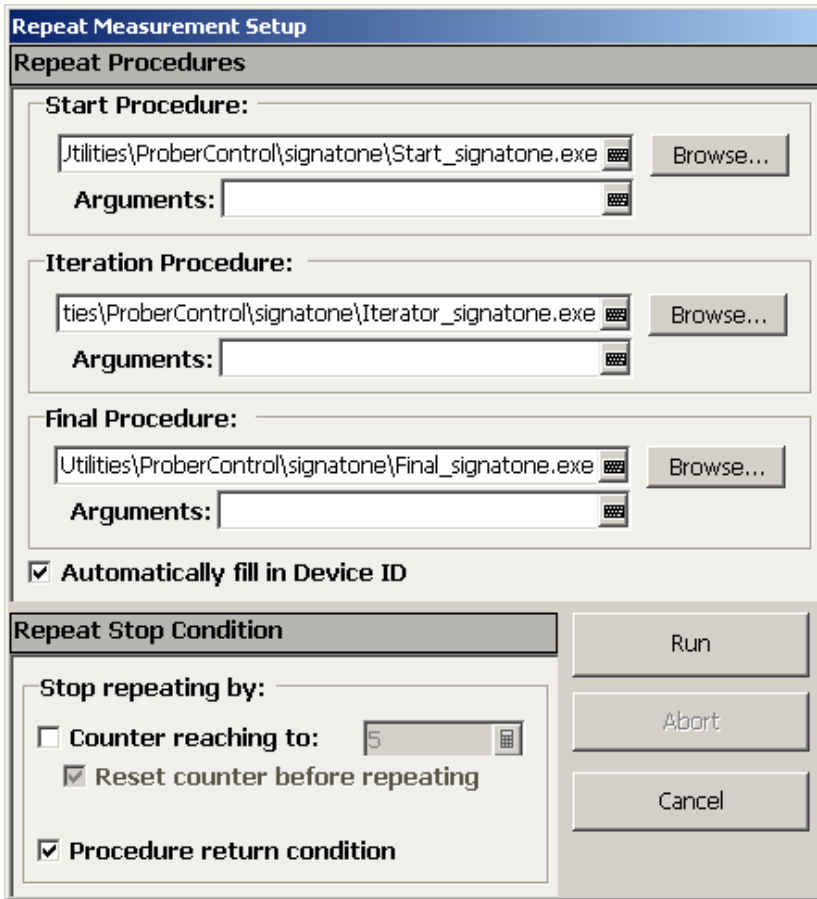
Test Parameters:

- IntegTime: MEDIUM
- Anode: SMU3:HR
- VanodeStart: 0 V
- VanodeStop: 1.50 V
- VanodeStep: 50 mV
- Cathode: SMU4:HR

Results Table:

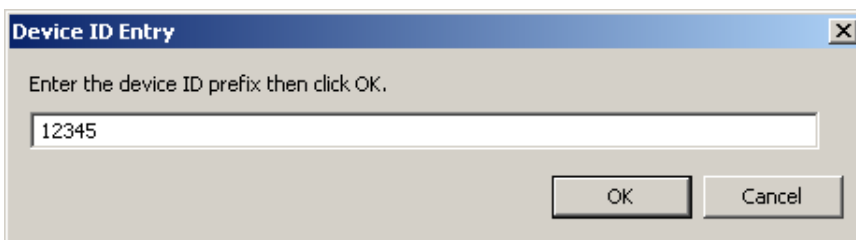
Flag	Setup Name	Date	Count	Device ID	Remarks
	Diode IV Fwd	8/5/2010 10:49:56 AM	5	111 : (nu...	
	Diode IV Fwd	8/5/2010 10:49:45 AM	4	111 : (nu...	
	Diode IV Fwd	8/5/2010 10:49:37 AM	3	111 : (nu...	
	Diode IV Fwd	8/5/2010 10:49:26 AM	2	111 : (nu...	
	Diode IV Fwd	8/5/2010 10:49:17 AM	1	111 : -59...	
	Diode IV Fwd	8/5/2010 10:48:23 AM	15	1111 : (n...	

6. Press Browse button for Start Procedure to locate the path of the file Start_signatone.exe.
7. Press Browse button for Iteration Procedure to locate the path of the file Iteration_signatone.exe.
8. Press Browse button for Final Procedure to locate the path of the file Final_signatone.exe.

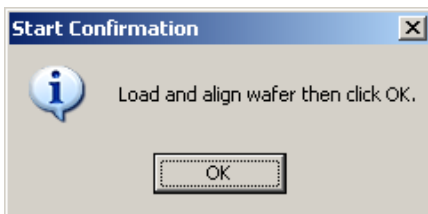


9. Check Procedure return condition and Signatone prober software will tell Repeat Measurement to stop after the last programmed site has been probed.

10. Then press Run button to start the repeat measurement.



11. Enter Device ID and press OK to continue.



12. Press OK to continue.