



Agilent Technologies

**February 2014
IC-CAP 2013.01 Hotfix 4**

IC-CAP 2013.01 Hotfix 4 ReadMe

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The IC-CAP 2013.01 hotfix 4 contains all defect fixes and enhancements from the previous IC-CAP 2013.01 hotfixes in addition to a critical B150X CV issue fix.

Version

690.hf4

Platform Support

Windows and Linux

Hotfix Installation

You can install this hotfix on top of either the IC-CAP 2013.01 release (2013.01 690.shp) or any of the previous hotfixes.

Enhancements

The IC-CAP 2013.01 hotfix 4 release includes the following enhancements:

- Support B2961A and B2962A low noise power source.

Fixed Issues

The IC-CAP 2013.01 hotfix 4 release addresses the following issues:

- Issues with B1500 and B1505 CV measurements were fixed.
 - Specific sweep setup will trigger internal measurement mode change of instrument, which may result in bad data flowing into IC-CAP was fixed.
- Issue with K2600 driver which leads to IC-CAP hanging during DC measurement was fixed.

IC-CAP 2013.01 Hotfix 3

Released November 2013

The IC-CAP 2013.01 hotfix 3 enhances the IC-CAP driver suite by adding a Keithley instrument driver and addresses issues related to the PNA/ENA instrument drivers and simulation.

Version

690.hf3

Platform Support

Windows and Linux

Enhancements

The IC-CAP 2013.01 hotfix 3 release includes the following enhancements: Support for Keithley 4200, 2600, and 2400 instrument.

- Keithley 4200-SCS Driver
 - Support modules
 - Model 4200-SMU Source Monitor Unit Module(SMU)
 - Model 4210-SMU High Power Source Monitor Unit Module(HPSMU)
 - Model 4200-PA Remote Preamplifier
 - Model 4220-PGU Pulse Generator Unit(PGU)
 - VSU Voltage Source Unit(VSU)
 - VMU Voltage Monitor Unit(VMU)
 - **Unsupported** modules
 - Model 4200-CVU Capacitance Voltage Unit
 - Model 4225-PMU Pulse Measure Unit
 - Model 4225-RPM Remote Pulse and Switch Module
 - Model 4200-SCP2HR and 4200-SCP2 Scope Card
 - Support function in ICCAP/WaferPro
 - Linear staircase sweep measurement
 - Log sweep measurement
 - List/constant bias measurement
 - Support Notes
 - Model 4220-PGU Pulse Generator Unit(PGU) not been test on instrument yet

- Keithley 2600 Series Source Meter Driver
 - Support modules
 - Models 2601A/2602A
 - Models 2611A/2612A
 - Models 2635A/2636A
 - **Unsupported** modules
 - None
 - Support function in ICCAP/WaferPro
 - Linear staircase sweep measurement
 - Log sweep measurement
 - List/constant bias measurement
 - Support Notes
 - Tested on Model 2635A only

- Model 2410 Source Meter Driver
 - Support modules
 - Model 2410
 - **Unsupported** modules
 - None
 - Support function in ICCAP/WaferPro
 - Linear staircase sweep measurement
 - Log sweep measurement
 - List/constant bias measurement
 - Support Notes
 - None

Fixed Issues

The IC-CAP 2013.01 hotfix 3 release addresses the following issues:

- Issues on two-port measurement with four-port PNA/ENA
 - The ports are not limited to port 1 and port 2
- Issues with simulation were fixed
 - REUSE_LAST_SIMULATION_RESULTS not working for \$var() changes
 - Support for HSPICE 2013.03-SP1
 - Support for PSPICE 16.6

IC-CAP 2013.01 Hotfix 2 (includes Hotfix 1)

Released July 2013

The IC-CAP 2013.01 hotfix 2 addresses issues related to IC-CAP exit, simulation, Python library, instrument drivers (PNA-X, B1500, B1505), WaferPro, DataPro, Angelov-GaN, NeuroFET, Windows OMI environment, and AgilentHBT Modeling Packages.

Version

690.hf2

Platform Support

Windows and Linux

Enhancements

The IC-CAP 2013.01 hotfix 2 release includes the following enhancements:

- New Python Libraries

Integrated the following Python libraries in IC-CAP

Python Library	Description
Scipy	Python library for mathematics, science, and engineering
matplotlib	Python 2D plotting library which produces publication quality figures in a variety of hardcopy formats

- New Built-in Functions

Added the following built-in functions to convert power data measured with PNA-X

Built-in Function	Description
dbmtow	Converts dBm to Watts
wtodbm	Converts Watts to dBm
wvtodbm	Converts voltage waves or power waves to dBm
wvtow	Converts voltage waves or power waves to Watts
phasedeg	Computes the phase angle in degrees for a complex number, or for each complex number in a matrix, data set, or data set of matrices
db	Converts a voltage ratio to decibels

- B1505 Driver Enhancements
 - New expanders for UHC, HVMCU, UHV.
 - Current and voltage synchronous measurement in UHC, HVMCU, UHV.
 - New units MPSMU, MCSMU, HVSMU (B1513B).
- NeuroFET toolkit Enhancements
 - NeuroFET toolkit supports the newly implemented model in ADS2012.08.
 - NeuroFET toolkit reads the project configuration files automatically when available.
- ICCAP GUI Enhancements
 - Removed the **Step by Step** button from the Measure/Extraction window under the Extract/Optimize tab.
 - Removed the **Set Circuit** button from the Settings window under the General Settings/Options tab.

Fixed Issues

The IC-CAP 2013.01 hotfix 2 release addresses the following issues:

- Issues on PNA-X non-linear measurement driver were fixed.
 - Data point sweep order mismatch in Gain Compression 2D measurement was fixed.
 - Instrument version check (option #086, #087) is now made for Gain Compression and Swept IMD measurements.
 - Power/GC/IMD Output component (measurement and simulation) now gives common data format.
 - Updated PNA-X example Model file.
- Issues with Power output gain and input power (Pin) simulation miscalculations were fixed.
 - Power output simulation results for output power (Pout), gain (Gain), and input power (Pin) are now calculated in voltage waves/power waves.
- Issue on B1500A and B1505A CV measurement with CMU as the first sweep was fixed.
- For WaferPro internal default functions, controlling variables that turn on/off a particular functionality are now available to provide more flexibility.
 - `WaferPro_CheckInstrResol` in Model/DUT/Setup Variable table switches for bias resolution check.
 - `SetupName + "_Precision"`, `SetupName + "_InstrOption"`, `"Measurement_Precision"`, and `"Measurement_InstrOption"` can now be used for controlling `iot` file loading.
 - `RCVariable` that has the name of `SetupName + "_MNL"`, `"Enable_" + SetupName`, and `SetupName + "_Enable"` can now be used to activate/deactivate measurement setups.
- WaferPro internal default function did not treat `iot` file setting properly. This was fixed.
- In DataPro, there is a case in file-based storage mode where the die list could show dies that should not be listed. Fixed.
- In Angelov-GaN toolkit and AgilentHBT toolkit, the settings of **Weight**, **Curve Min**, and **Curve Max** values in the Function Editor window were not working. This was fixed.
- In Angelov-GaN toolkit and AgilentHBT toolkit, **Cal Set/State** variable under S-parameter measurement Setups now displays the correct value.
- Simulation reuse flag `"REUSE_LAST_SIMULATION_RESULTS"` not working with parameter sweep.
- The ADS parser does not handle `if()` and `SDD` correctly.
- B1500A DC measurement error noting “binary read” introduced in IC-CAP 2013.01 690.HF1 was fixed.
- The 690.hf1 hotfix caused the OMI environment to fail to properly compile user-defined instrument drivers. 690.hf2 includes updates so that instrument drivers can be recompiled properly in the hotfix.
- When a PEL parsing error occurred, a state would be entered where unexpected behavior is observed. Loading a file that is already loaded would immediately load rather than prompting the user to load it under another name. Attempting to exit IC-CAP would fail, and multiple attempts to exit would result in a slow memory leak. To close IC-CAP, the process had to be killed. 690.hf2 corrects this problem.