IC-CAP 2016.01

IC-CAP 2016.01 HF2 Release Notes

KEYSIGHT TECHNOLOGIES

Notices

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Contents

New Features in 2016.01 HF2

- Flicker Noise simulations with Eldo now return units of V/sqrt(Hz), In the original implementation released in 2016.01 HF1, it returned units of V^2 /Hz. If you require the old behavior please use ELDO_SQUARE_NOISE, or SIM_USE_SQUARED_NOISE_UNITS.
- All simulators can now return equivalent input noise during a flicker noise simulation. To simulate equivalent input noise, you must specify a single 'N' output that is *not* at the AC reference as usual, but also add a 2nd 'N' output with the same nodes as defined by your AC input definition. While hpeesofsim does not require an AC input to simulate output noise, you must add one in order to acquire equivalent input noise if desired.
- In an effort to allow normalized extraction routines for noise, a new variable 'SIM_USE_SQUARED_NOISE_UNITS' has been added in addition to HPEESOFSIM_SQUARE_NOISE, SPECTRE_SQUARE_NOISE, or ELDO_SQUARE_NOISE. SIM_USE_SQUARED_NOISE_UNITS takes precedence over the latter 3 variables. If it is True/1/Yes, it has the same effect as having the latter 3 all set. If it is False/0/No, then all simulations return units of V/sqrt(Hz), regardless of the native simulation units of the simulator.

  If none of these variables are set, IC-CAP will collect the units natively returned by the simulator.

  Only hpeesofsim, spectre, and eldo natively return V/sqrt(Hz), so you can turn these to V^2/Hz individually by setting HPEESOFSIM_SQUARE_NOISE, SPECTRE_SQUARE_NOISE, or ELDO_SQUARE_NOISE, but these are now deprecated in favor of SIM_USE_SQUARED_NOISE_UNITS.

  If you want all simulations to be uniform, set SIM_USE_SQUARED_NOISE_UNITS either True or False, and IC-CAP will either square or take the sqrt() of the native results as required to return the units desired.
- IC-CAP can now control the B1513C plugin for B1505 but is limited to the features present in the B1513B

- It has been possible to use the iccap_func "Set Table Field Value" command (or equivalent Python command) to include a newline in a plot Header /Footer. Doing so results in the plot displaying more than one line of text at the header/footer. However, this makes the Plot page display odd and cannot be easily edited. Also, once saved, lines beyond the first are lost. The header and footer will now scan for octal codes as is done in GUI Studio. By specifying \012 for a newline, you can get the desired plot while allowing the field to be saved in the file and represented properly on the plot page GUI. The double quote would also cause problems while saving, but can now be included in header/footer with \042.
- The complex math in PEL (and within plot expressions or the 'Equation' function) has been improved to work properly across a larger range of the valid domain for the functions without causing a floating point exception. Functions like tanh, exp, log, etc.will still cause a floating-point exception if the result is NAN or INF, but otherwise will quietly calculate underflow results, and will do a better job of properly calculating such values in general.
- Added capability to perform sampling mode measurements with 4155 and 4156 instruments.
- New variable DISABLE_UNITS_AFTER_MEAS is supported for B1500 to give user control to disable all units when the measurement is complete.
- Additional control over the units involved in a measurements has been added for the B1500 family of instruments. This control allows the user to disable units not involve in the measurement, specify the order they are zeroed, and either disable/zero units at the end of a measurement, or leave them at the last power in anticipation of MEASURE_FAST . Currently support across all instruments is incomplete

Measurement control variables for supporting instruments:

	B1500	B1505 With Super Units	E527X	B29XX	HP415X	N67XX
MEASURE_FAST	✓	✓	✓	✓	✓	✓
MEASURE_FAST_LEVEL	✓	-	✓	-	-	-
NO_ZEROING	✓	X	✓	✓	-	✓
UNIT_ORDER_ON	✓	✓	✓ *	✓	✓ *	✓
UNIT_ORDER_OFF	✓	✓ *	✓	✓	✓	✓

	B1500	B1505 With Super Units	E527X	B29XX	HP415X	N67XX
DISABLE_UNITS_AFTER_MEAS	✓	X	X	-	X	-

NOTE

- For HP415X, UNIT_ORDER_ON is only available when “Use User Sweep” is set to YES
- For E527X, UNIT_ORDER_ON is only available when “Use User Sweep” is set to No
- For B1505 with Super Units, UNIT_ORDER_OFF works fine, but non-used units are also zeroed

'-' : not relevant

'X' : cannot be used for the purpose

Bug Fixes in 2016.01 HF2

- Fixed crash when certain changes in numbers of mdm files when using the Mos Modling toolkits (Bsim3, Bsim4, Bsimsoi4, Hisim_hv, Hisim2, Psp).
- Repaired problem while trying to change temperature when only RF devices exist in a project while using the Mos Modling toolkits (Bsim3, Bsim4, Bsimsoi4, Hisim_hv, Hisim2, Psp).
- Fixed problem in the calculation of Total Points for Log sweeps when loading a project with RF devices into the Mos Modling toolkits (Bsim3, Bsim4, Bsimsoi4, Hisim_hv, Hisim2, Psp).
- Fixed reading pulsed measurements with B2912 when 'Use User Sweep' is Yes.
- Fixed proper setting of pulse base value with B2912 when 'Use User Sweep' is No.
- Bug fix in HiSIm *.va files during Cox vs Vgb simulation.
- Fixed plot object in Python to recognize "# of Traces" field and data fields beyond 8.
- Fix plots to recognize changes to autoscale while the plot is not displayed. Now users can use "CreateImage" while turning Autoscale on or off first without having to open the plot.
- Added code to IC-CAP startup on Linux to request a maximum stack size to avoid stack overflow errors that might arise.
- Fixed condensed tuners so that the sliders properly vary the parameter values.

Known Issues in 2016.01 HF2

- The documentation for system variable ICCAP_SHOW_CONDENSED_TUNER is incorrect in the shipped manual. The documented name (ICCAP_USE_CONDENSED_TUNER) does not work. This has been repaired for the online documentation, but the doc shipped with the product is still incorrect.
- For B1505, if you perform a measurement from a setup and then change MEASURE_FAST from No to Yes, the next measurement must be from a different setup than the one performed prior to the variable change or an error message will result. To avoid the issue, always ensure that the next setup measured after changing MEASURE_FAST from No to Yes is different than the last measurement taken. If you do receive the error, simply measure a different setup and then return to the setup desired.
- DISABLE_USED_UNITS does not affect B1505, 4155/4156, or E5270
- E5270 acquires wrong measurement data with UNIT_ORDER_ON variable when 'Use User Sweep' is Yes
- Units not required for a measurement are also zeroed when using E5270
- White space in UNIT_ORDER_ON variable acquires incorrectly measured data with E5270
- The following issue may be observed when making measurements that use the B1505 accessory units DHCSMU, UHC,HVMCU, UHV, or the N1258A Module Selector
- Non-used units will still be zeroed during measurements along with the units in use.
- CMU will be enabled, even if it is not required for the measurement
- DISABLE_UNITS_AFTER_MEAS variable will not disable all units
- NO_ZERORING feature does not work

This information is subject to change without notice.

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