MQA 2016.01

MQA 2016_01 Hotfix Release Notes

KEYSIGHT TECHNOLOGIES

Notices

1400 Fountaingrove Pkwy., Santa Rosa, CA 95403-1738, United States

Restricted Rights Legend

Contents

MQA 2016.01 HF2 Release Notes

Version

710.HF2

Platform Support

Windows and Linux

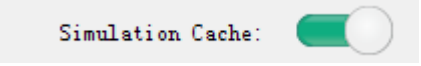
Enhancements

- Support 32bit Windows7 platform

Product Version	Supported Platform							
	Windows 7		Windows 8		RHEL 5		RHEL 6	
	32 bit	64 bit	32 bit	64 bit	32 bit	64 bit	32 bit	64 bit
MQA 2016.01.HF2	Yes	Yes	No	Yes	No	Yes	No	Yes

Note that all 32bit system users need to UPDATE new license file with codeword version >=2016.05.

- Supports simulation buffer to reduce the redundant spice simulation in project and cross projects. Enabling Simulation Cache option (depicted below) saves the simulation result in binary file format under mqa_set, which can be reused for other project(s).



To enable Simulation Cache**, select** Option > General > Simulation Cache**. You can also define the buffer time (whether it should expire after eight hours /one day/one week) or you can clear it manually. This option stands for the idle time between projects.**

NOTE **Ensure to clear the cache manually whenever a new model is upgraded. In addition, keep a note that all data is automatically removed after 10 days.**

- Enhanced rule format to include a new section for calculating more instance parameters within WPE rules.
  Syntax
  `[instancemap: Newparam=expression]`MQA adds a new instance parameters (such as, sca/scb/scc) into netlist within spice simulation.

- Enhanced rule format to include a new section for adding limitation for loops in rule.
  Syntax

  ```
  [limitation: Var1=”<limit definition>”]limit definition (type1): condition ? value_true : value_falselimit definition(type2): [vmin, vmax]E.g.:[limit :L= "L < Nmin*W ? g_lmin : L" : Vds="[0.1 , 1.0]"
  ]
  ```

  For more information, see Limit.
- Enhanced rule format to include a new option in rule `[option: appendcorner=cornername]`. This option appends the selected corner in the netlist, when current model qa is running. For instance, `[option: appendcorner=res]` and netlist generated by MQA appears as follows:

  ```
  .lib 'Hb3v3.lib' TT ---------- default corner
  ```

  .lib 'Hb3v3.lib' res ---------- appended corner
  For more information, see Option.
- Enhancements made to enable you to setup loop values with csv file for benchmark rule. You need to add `[Option:DataTable=wpe.csv]` in rule file. A sample csv file looks like:

W	L	SA	SB	SCA	SCB	SCC
1.00E-06	1.00E-06	3.00E-07	5.00E-07	1.45E-01	6.00E-12	3.96E-44
1.00E-06	1.50E-06	5.00E-07	3.00E-07	5.28E-01	1.98E-11	1.04E-22
1.00E-06	2.00E-06	5.00E-07	3.00E-07	2.58E+00	2.79E-05	4.59E-10
1.50E-06	1.00E-06	5.00E-07	5.00E-07	7.42E+00	2.33E-03	5.34E-06
1.50E-06	1.00E-06	3.00E-07	8.00E-07	1.01E+01	5.34E-03	3.24E-05
1.50E-06	1.00E-06	5.00E-07	5.00E-07	1.46E+01	1.18E-02	1.88E-04
3.00E-06	1.00E-06	5.00E-07	5.00E-07	1.82E+01	1.73E-02	4.39E-04

- Supports thermal noise QA.
- Support to define a plot title in a rule file. Keywords to include a title are, model, project, devtype, refmodel, modelalias, refmodelalias, corner, group, rule, and check.
  Example
  CheckTrend2D(p,x,y,"times=1","incAtFirst=1","@PlotInfo TITLE=%spet%(%w%);(%l%)")]
  For more information, see customizing the plot title.

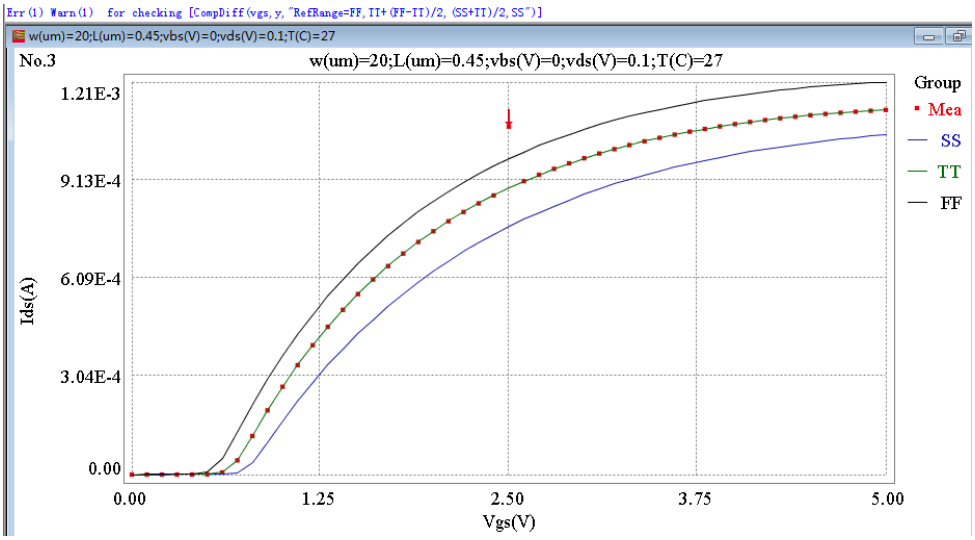
- `CompDiff()` is updated to include a new keyword, `RefRange`. This new keyword defines a range and renders M
  QA to check every point of measurement data with given range. For more information, see Compare difference between models/data.

  Syntax

  ```
  RefRange = err_min , warn_min, warn_max, err_max
  ```

  Example

  [Corner:20:Check Meas within Corners 1: CompDiff(vgs,y,"RefRange=FF,TT+(FF-TT)/2,(SS+TT)/2,SS"): error:Meas is out of corner]



- Enhanced `CompDiff()` to check corner model symmetry. MQA checks if `Diff1-Diff2<given MaxError`.
  Diff type: None: diff1=Fast-Typical, Percentage: diff1=(Fast-Typical)/Typical
  For more information, see Compare symmetry with typical model.

  Syntax

  ```
  CompDiff(x,y,"DiffOfSymmetry<MaxErr","
  DiffType=percentage")
  ```

- Use expression with special referred point in curve to normalize Y target.

  Referred point can be found by:

  ```
  Yref=Calcurve(Y,X,"FindY","X=min|max|givenvalue")Yref
  = CalCurve(Y,X,"FindY","Y=min|max|givenvalue")
  ```

  Normalizing can be implemented as:

  ```
  Ynormlized = Y / YrefYnormlized = Y – YrefYnormlized =
  ( Y –Yref ) / Yref
  ```

- Introduced new function, `SaveTable()`. This function can be applied to check, corner, or compare project and it exports to simulation result table for selected target.
  For more information, see generate tables via SaveTable() function.

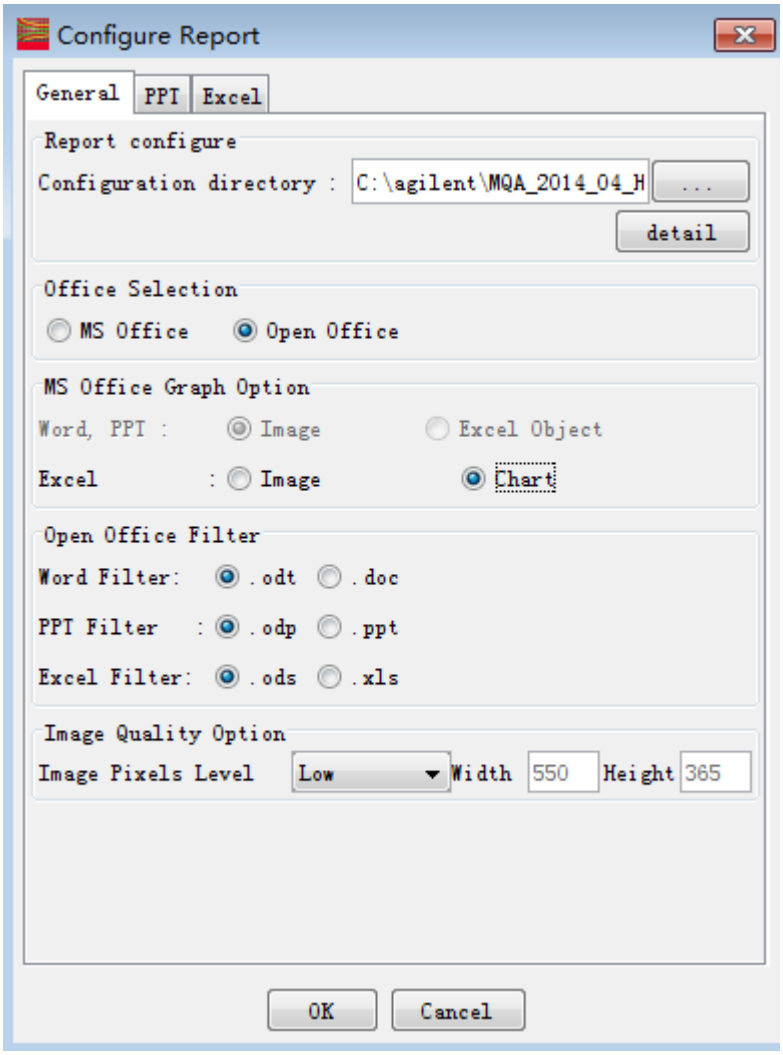
  Syntax
  `SaveTable(y), SaveTable(p,x,y), SaveTable(p,x,y1,y2,…)`

OK for checking [SaveTable(y1)]

No.	L(um)	W(um)	Vds(V)	Vbs(V)	T(C)	SS.Idsat	IT.Idsat	FF.Idsat
1	0.38	0.4	3.3	-3.3	25	1.54315E-4	2.115E-4	2.5992E-4
2	4.306	0.4	3.3	-3.3	25	1.75895E-5	2.36696E-5	2.96392E-5
3	8.232	0.4	3.3	-3.3	25	9.19759E-6	1.2361E-5	1.54833E-5
4	12.158	0.4	3.3	-3.3	25	6.22548E-6	8.36269E-6	1.04761E-5
5	16.084	0.4	3.3	-3.3	25	4.70495E-6	6.31854E-6	7.91577E-6
6	20.01	0.4	3.3	-3.3	25	3.78172E-6	5.07787E-6	6.36168E-6
7	0.38	100.25	3.3	-3.3	25	0.0339386	0.0403382	0.0451292
8	4.306	100.25	3.3	-3.3	25	5.13335E-3	5.91968E-3	6.65937E-3
9	8.232	100.25	3.3	-3.3	25	2.7929E-3	3.2145E-3	3.61101E-3
10	12.158	100.25	3.3	-3.3	25	1.91823E-3	2.20618E-3	2.47695E-3
11	16.084	100.25	3.3	-3.3	25	1.46074E-3	1.67937E-3	1.88494E-3
12	20.01	100.25	3.3	-3.3	25	1.17956E-3	1.35579E-3	1.52147E-3
13	0.38	200.1	3.3	-3.3	25	0.0677081	0.0804282	0.0900425
14	4.306	200.1	3.3	-3.3	25	0.0102344	0.0117945	0.0132653

- Report enhanced to support Chart option in Openoffice Excel report.

- Image quality option introduced in Report > Properties.



Issues Fixed

- Fixed the Variation Table issue displaying incorrect temperature.
- Resolved problem with MQA unable to read spectre result when benchmark rule under AC analysis is used.
- Problem with MQA unable to generate result for GoldenGate is resolved.
- Fixed compareRMS options bug.
- Problem with RMS table unable to send the report is resolved.

This information is subject to change without notice.

www.keysight.com