

MQA 2016.01

# MQA 2016\_01 Hotfix Release Notes

# Notices

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# MQA 2016.01 HF2 Release Notes

Version

710.HF2

Platform Support

Windows and Linux

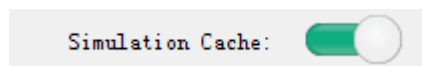
Enhancements

- 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](#).

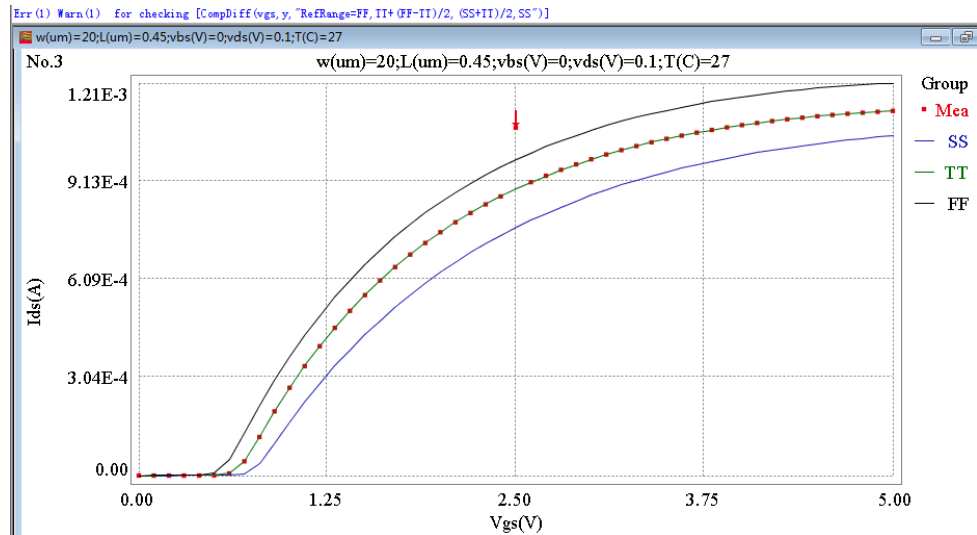
- `CompDiff()` is updated to include a new keyword, `RefRange`. This new keyword defines a range and renders MQA to check every point of measurement data with given range. For more information, see [Compare difference between models/data](#).

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  $Diff1 - Diff2 < \text{given MaxError}$ .  
Diff type: None:  $diff1 = \text{Fast} - \text{Typical}$ , Percentage:  $diff1 = (\text{Fast} - \text{Typical}) / \text{Typical}$   
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:

$Y_{ref} = \text{CalCurve}(Y, X, "FindY", "X=\text{min}|\text{max}|\text{givenvalue}')$   
 $Y_{ref} = \text{CalCurve}(Y, X, "FindY", "Y=\text{min}|\text{max}|\text{givenvalue}')$

Normalizing can be implemented as:

$Y_{normalized} = Y / Y_{ref}$   
 $Y_{normalized} = (Y - Y_{ref}) / Y_{ref}$

- 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,...)`

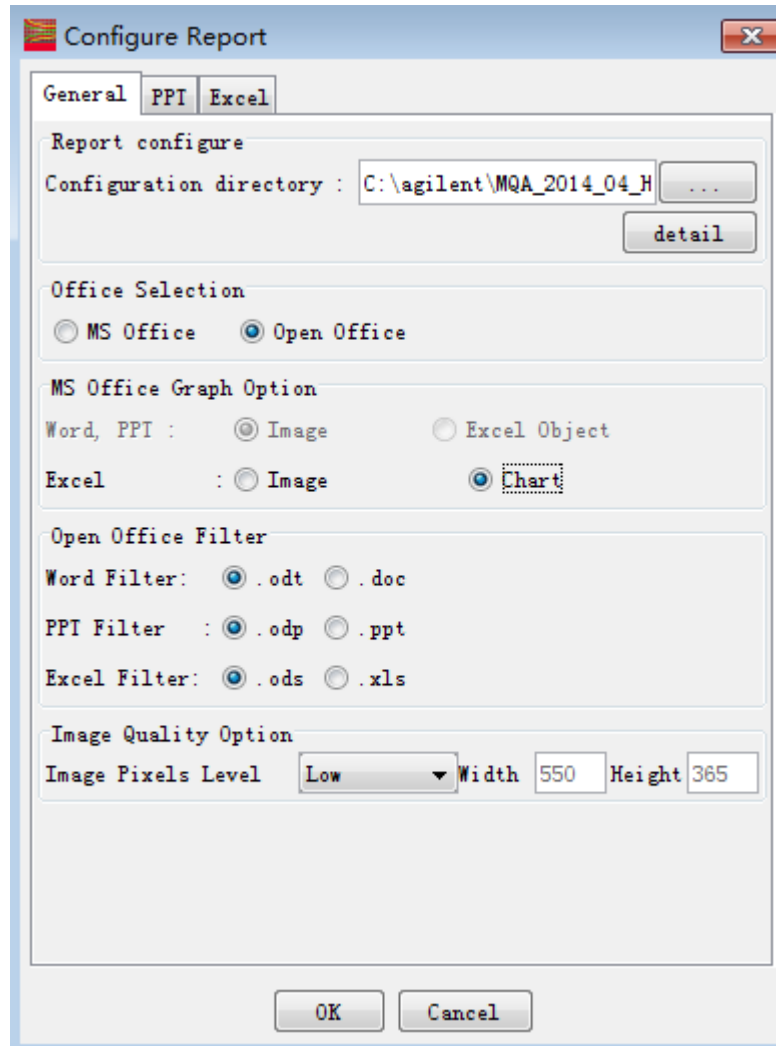
`OK for checking [SaveTable(y1)]`

No.	L (um)	W (um)	Vds (V)	Vbs (V)	I (C)	SS. Idsat	II. 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	2.36896E-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.

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