Agilent Technologies

MQA

Generate MOS Model Parameter Table

Application Note

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Generate MOS Model Parameter Table

Application Note

This application note describes how to use Lib Explorer to generate a MOS model parameter table. **Note**: This document was originally released for Model Quality Assurance (MQA) V2010.2.0 in May 2011.

Introduction

MQA can generate many special tables, one of which is called the MOS model parameter table. It is populated with parameter values that have been fetched from the model library. The user can customize parameter names in this table using a config file.

This special table generation function is a feature of MQA's Lib Explorer and is found in MQA version 2010.1.0 and on. For more information go to www.agilent.com/find/eesof or contact your local Agilent office. The complete list is available at: www.agilent.com/find/contactus.

Config File

MQA uses an XML format config file for the user to define which parameters to be exported into the table. By default, the config file is put under the folder *$MQAHOME/bin/report/*.

To begin, choose *Report -> Properties* from the main menu. The window shown in Figure 1 pops up.

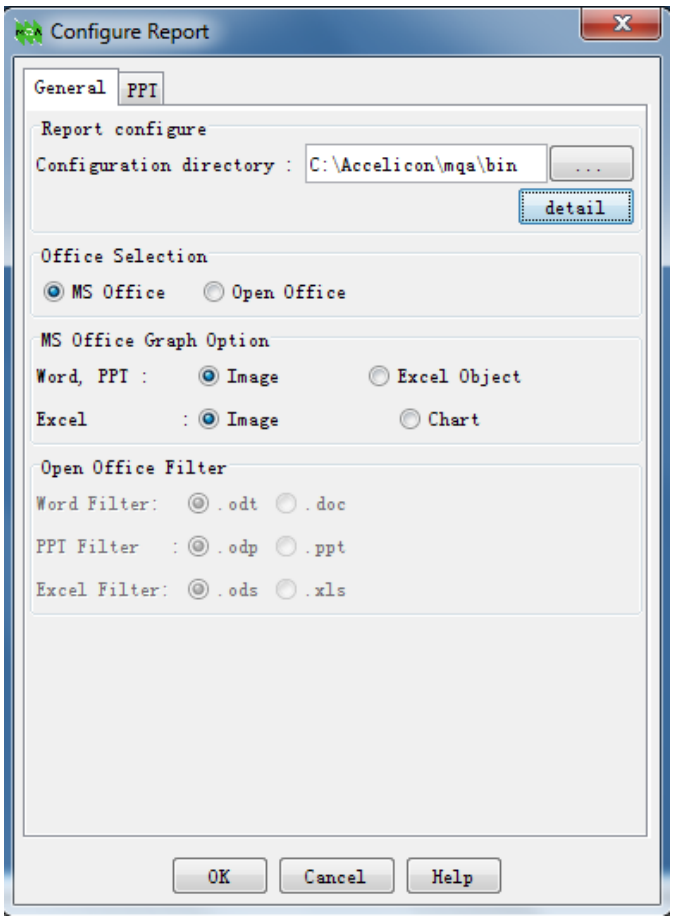

Figure 1. Configure report

Next, click the *detail* button on the right top of the Configuration Report window. The config window shown in Figure 2 will pop up.

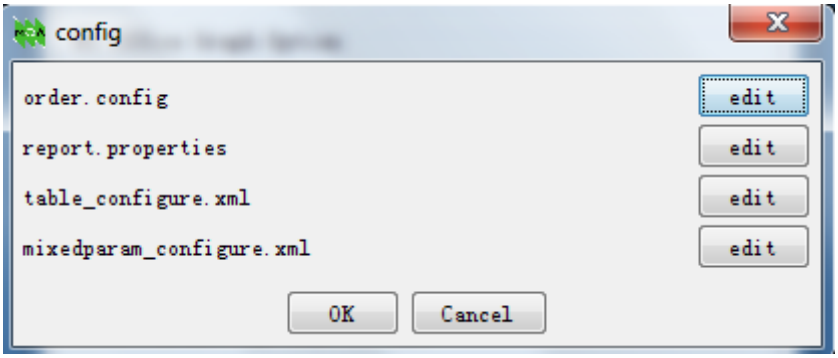

Figure 2. Config window

Then, click the *edit* button for *mixedparam_configure.xml*. Doing so opens the config file for customizing the MOS model parameter table (Figure 3).

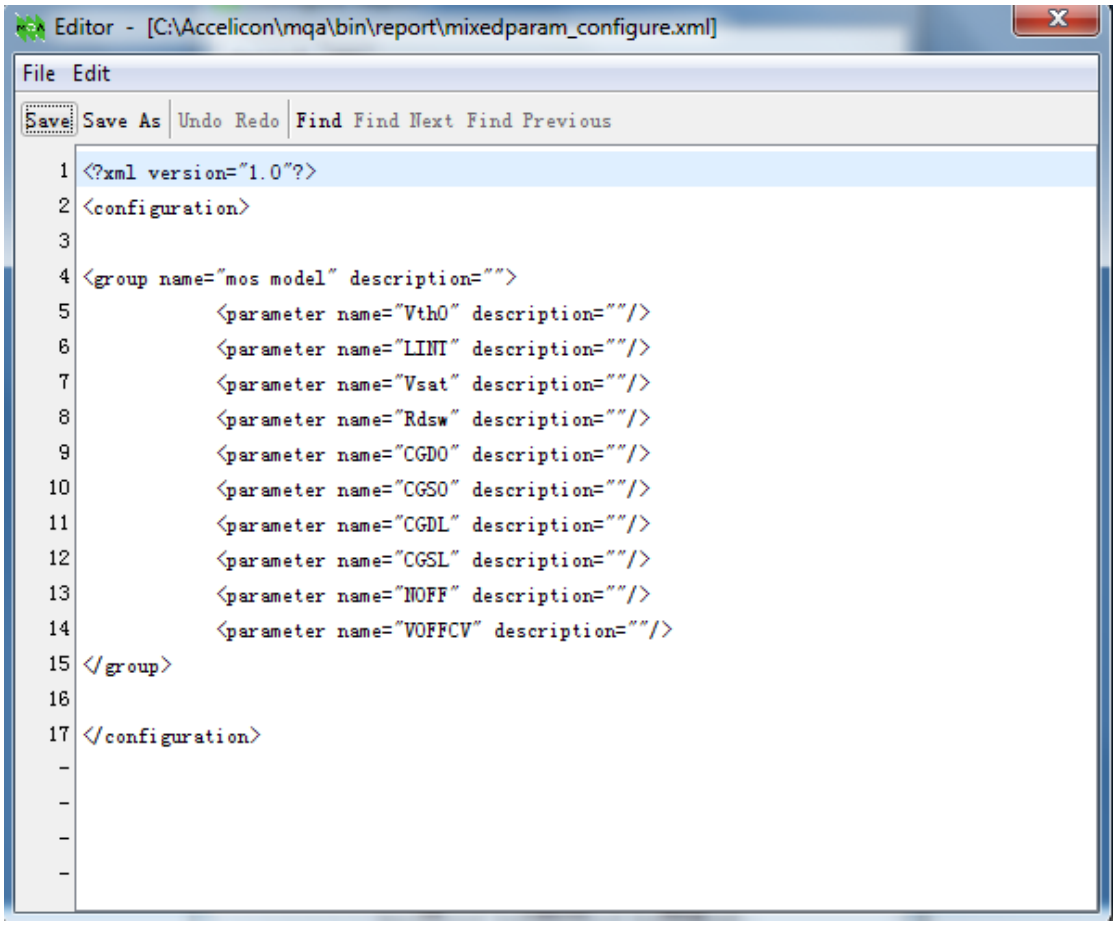

Figure 3. Editor

Users can follow the XML format, or they can add or modify parameter names, for example "*Vth0*." Note that the name is case-insensitive and one parameter is declared in one line. Also, be sure to save the file before it's closed.

Enable MOS Parameter Table in Lib Explorer

Choose *Model -> Lib Explorer* from the main menu. Then, click the button at the bottom left. This causes the setting window of Lib Explorer to pop up, as shown in Figure 4.

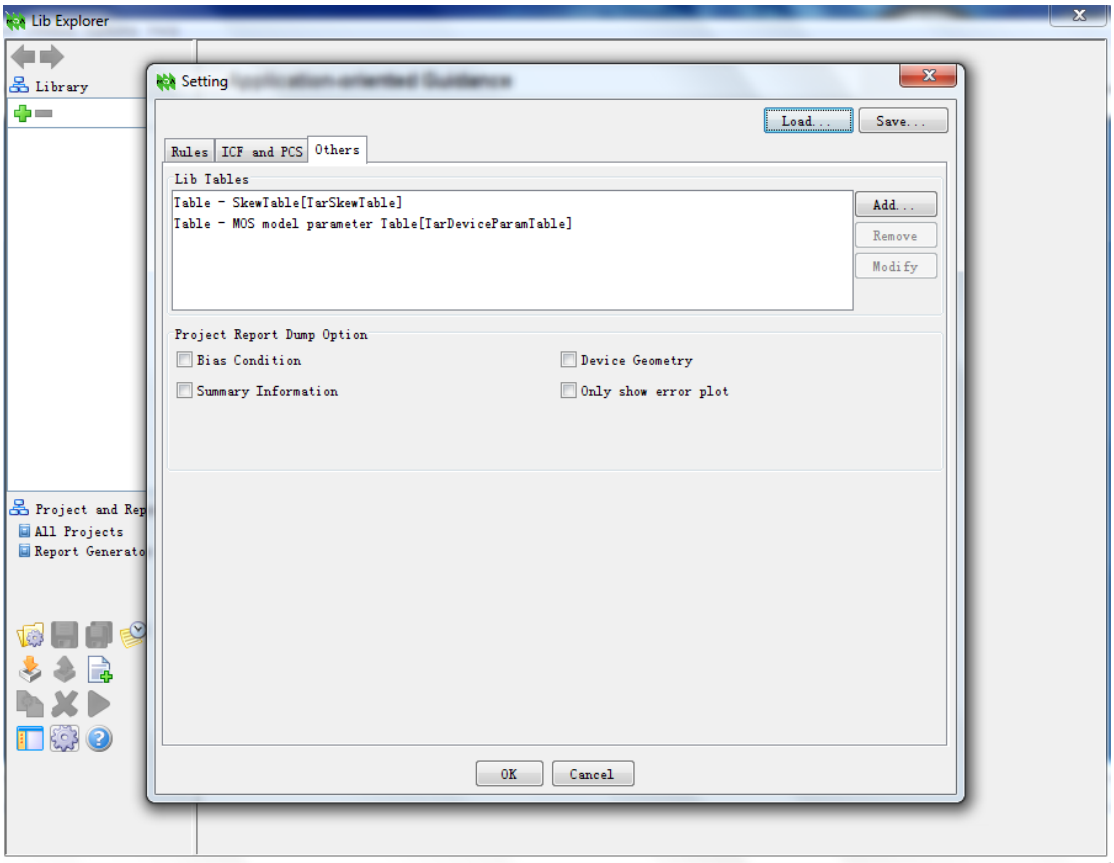

Figure 4. Setting window of Lib Explorer

Next, go to the *Others* tab. Click the *Add* button to add a MOS model parameter table, as shown in Figure 5.

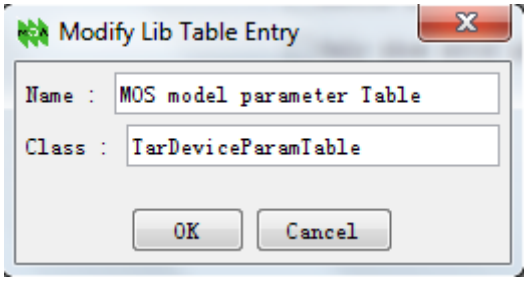

Figure 5. Modify Lib Table Entry

Finally, click *OK* to close the setting window.

Create Combined Report Project in Lib Explorer

Now, the user can go to the Report panel of Lib Explorer and create a combined report project, as shown in Figure 6.

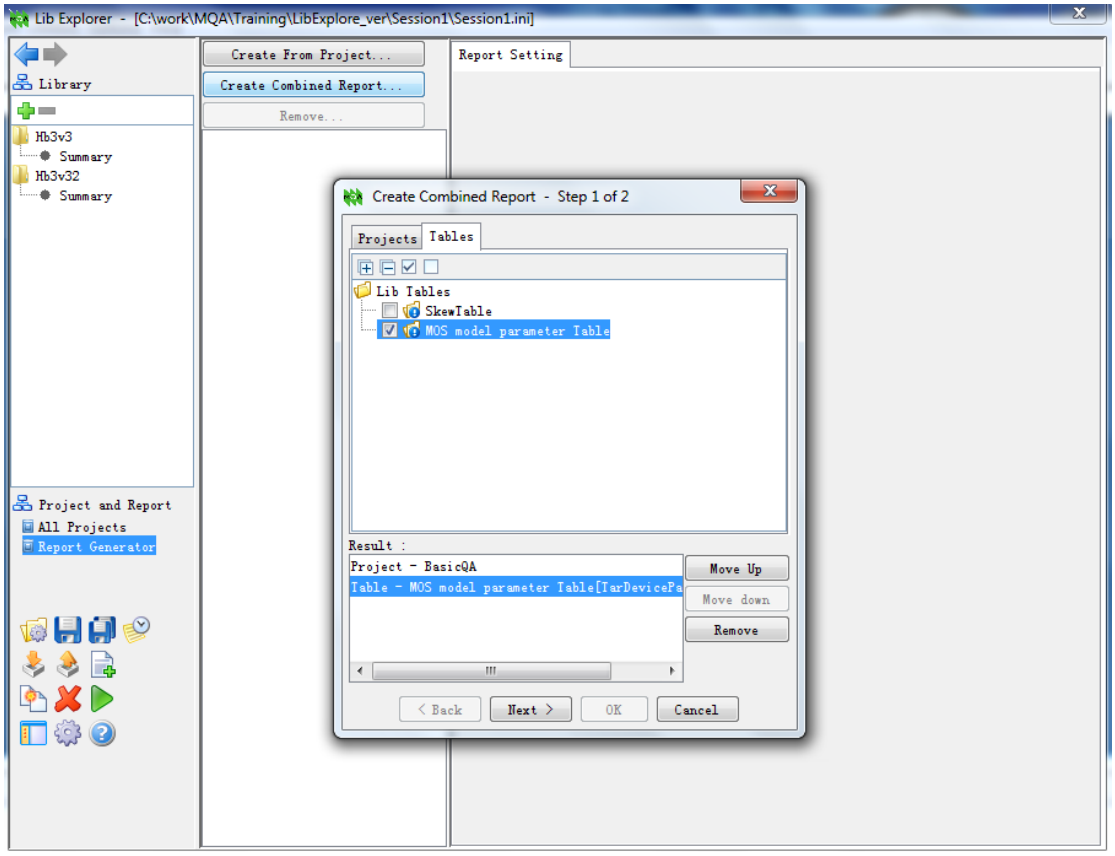

Figure 6. Create combined report

In the wizard window (step 1 of 2), the user will find a new tab named *Tables* besides the *Projects* tab. Check the checkbox of *MOS model parameter Table* to include it in the report.

Then, click the *Next* > button to finish the report project creation.

Finally, click the button on the top right to run the report (Figure 7). The corresponding document (PDF file by default) can be found under the folder assigned by *Path*. For example, in this demo, it's given by: *C:\work\MQA\Training\LibExplorer_ver\Session1\BasicQA*.

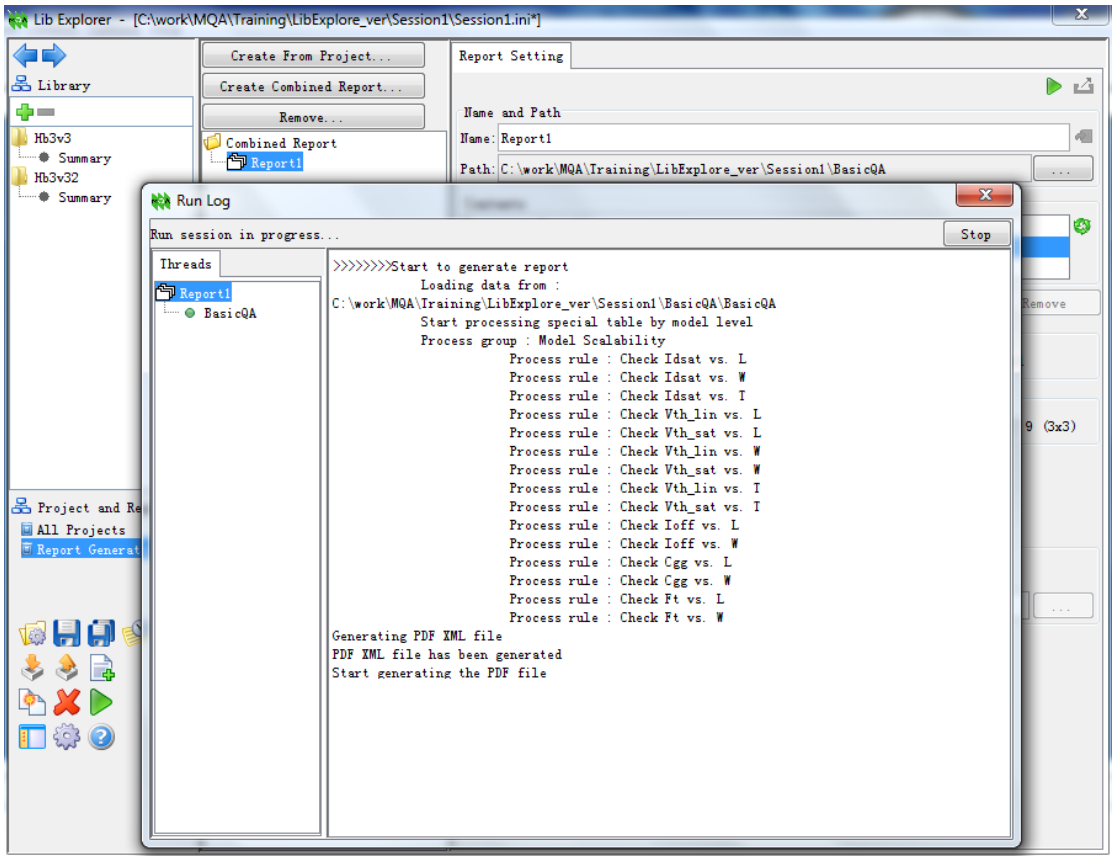

Figure 7. Run log

The resulting MOS model parameter table is shown in Table 1.

Table 1. MOS Model Parameter Table

MOSFET	NCH	PCH	ESD
Vth0	0.584049	-0.6513801	0.5761882
LINT	4.0E-8	5.0E-8	2.65E-8
Vsat	250216.5	250000.0	141052.1
Rdsw	750.0	900.0	843.02
CGDO	2.79009E-10	2.30748E-10	2.79009E-10
CGSO	2.79009E-10	2.30748E-10	2.79009E-10
CGDL			0.0
CGSL			0.0
NOFF			
VOFFCV			

Note that the table cell will be empty if no such parameters are found in the model card, such as in the case of “NOFF” and “VOFFCV” in the above table.