SimPort FAQ's

1. What is it for?

SIMPort is a new online design tool for Power MOSFETs from NXP. these tools enable our customers to determine the best MOSFETs for their application from our extensive portfolio. Two tools are available:

1.Active Datasheet – datasheet parameters can be extracted (using a SPICE model) with user selectable test conditions. In this way the behaviour of the Power MOSFET can be assessed in conditions similar to those that will be experienced in the end application

2.Buck Designer – the user inputs their application requirements for a DC-DC Buck Converter (Input & Output Voltage, Output Current etc.) and is presented with the optimum Power MOSFETs for their application. An online SPICE simulation can then be performed.

2. Why do I need to register to use the tool?

This gives you the option to receive regular product news, sample requests and technical support.

3. I have problems with error messages in my Web Browser when accessing the tools

Please ensure that any pop-up blockers are disabled and that the version of Flash being used is Version 8 or higher.

4. Can I use the tool to compare other MOSFETs on the market.

This is not possible, as we cannot guarantee the specification of competitor products or the accuracy of their SPICE models.

5. There is an NXP Power MOSFET that I am unable to find, why?

The tool is concentrated on the latest product range and is continuously being updated. For information about a particular MOSFET please visit our website www.nxp.com or contact technical support.

6. How accurate are the results?

Whilst we endeavor to ensure that our SPICE models represent the behaviour of our Power MOSFETs as accurately as possible with careful matching of modeled parameters to measured data, it is not always possible to achieve 100% matching. For this reason, the results of the on line design tools should be seen as indicative of performance but not a guarantee of it.

In the Buck Designer, the power loss equations are designed to differentiate and rank the Power MOSFETs in our portfolio in order of suitability for the application. Sources of power loss that do not influence the choice of the Power MOSFETs (e.g. output inductor losses) are excluded and hence the predicted total power loss will be lower than the total system power loss that would be experienced in an actual circuit.

7. <u>When I examine the switching waveforms in the Buck Designer, it appears that I have some cross conduction. What is the problem?</u>

To improve simulation time, a fixed deadtime MOSFET driver is used, if multiple MOSFETs are used for the lower MOSFET (or Sync FET), then the driver delay time in the advanced requirements section should be increased.

8. <u>Have you any plans to extend SimPort?</u>

Yes, new MOSFETs will regularly added to the tool and we are already looking at adding further features and would welcome any feedback or suggestions which you may have.

9. **<u>Does the tool support other topologies eg boost, flyback?</u>**

The web based design tool currently only supports the non isolated synchronous buck converter as might be used in computer processor power supplies. In the future the tool may be developed to support other commonly used topologies. However other topologies can be simulated off-line. See next question.

8. **<u>How can I simulate my own designs offline?</u>**

You can download a version of SimPort connect (a special version of Simetrix) from the SimPort webpage. This is found in the SimPort downloads section of the Design Summary window in the Buck Designer tool. You can also download your synchronous buck design from there.

10. <u>Why does the Online SPICE simulation take so much time?</u>

The speed of simulation a trade-off between the complexity of the circuit being simulated and the accuracy of the result and we have chosen simulation setting that provide a good balance between these two factors providing results in a relatively short time. The speed of simulation will also depend on the speed of the internet connection and loading on our servers. If a lot of simulation is to be performed our recommendation is simulate offline by downloading a version of SimPort connect.