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Power IR/EM Known Problems and Solutions

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About This Manual

This Known Problems and Solutions manual describes the known issues with the Virtuoso Power System (VPS) tool, Power IR/EM, in the Virtuoso Platform Suite and suggests the workarounds for these issues. Each issue is identified as a Cadence Change Request (CCR) number.

Important

Only the problems and solutions that were known at the time of release are described in this document. Log on to Cadence Online Support to view an up-to-date list.

For information about the customer issues that were fixed in theICADV12.1release, do one of the following:

- Open the `README` and `README.OA` files from your installation hierarchy.
- Open the `README` and `README.OA` files by following these steps:
  1. Log on to Cadence Online Support and from the home page, choose *Software Updates – Download Software*. This opens the *Cadence Downloads* page. Alternatively, you can visit downloads.cadence.com.
  2. From the list of releases, click the required release name.
  3. From the *Base Release, Updates, or Hotfix* section, as applicable, click the `README` and `README.OA` file links.

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CCRs

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Identified in Previous Releases

CCR 1131619: VPSL interpolation has big deviation at 107 degree for EM analysis!!

Description: Earlier, Power IR/EM only used the linear interpolation method for temperature derating factor. Now, the software is enhanced so that the interpolation can be done exponentially using the TTF=A*J^(-n)*exp(Ea/kT) formula. However, using the new formula might show a difference in the EM results generated using earlier versions of Power IR/EM.

Solution: To verify your EM results, you can revert to the linear interpolation method by setting the `_vsaLinearInterpolation` variable to `true`.

CCR 1015157: Provide extra parameters related to 28nm support (e.g Lu, Lb) in userDefined current calculation functions

Description: When the following user-defined functions are specified, *Power IR/EM* gives runtime error for missing parameters.

```
vsaGetRmsJmax
vsaGetAvgJmax
vsaGetAvgAbsJmax
vsaGetPeakJmax
vsaGetPeakACJmax
vsaGetCustomJmax
vsaUserDefinedICalc
```

Solution: For all of the above functions, a new argument "`parameters`" is provided. To avoid the runtime error for missing paramaters, you must update the existing definitions of your functions to include this argument.

For more information about the parameters, see User Procedures for Electromigration JMAX Checking in the EM Rules Specification chapter of *Power IR/EM User Guide*.

CCR 665300: J/Jmax plot indicates voltage drop in zero voltage drop region

Description: When plotting the *J/Jmax* graph during electromigration (EM) analysis, the color of each shape in the plot is the color assigned to the maximum *J/Jmax* ratio on any

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resistor within that shape. In some cases, even the region that is marked as the zero-voltage drop region indicates voltage drop as described in the example below.

This, however, is a false alarm and occurs on the shape that has connectivity between the PADS and the rest of the design.

Solution: Locate the resistors that fall within the shape and verify the current density values from the *Electromigration Analysis Results* form. The values in the result form indicate the correct current density in such cases.

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